# Vantage CNM

*Centralized Network Management*

## User's Guide

| Default Login Details | |
|---|---|
| IP Address | https://localhost or https://{Vantage CNM Server's IP address} |
| User Name | root |
| Password | root |

Software Version 3.2
Edition 1, 7/2009

***www.zyxel.com***

ZyXEL

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# About This User's Guide

Note: The screens in Vantage CNM vary by device type and firmware version. The examples in this User's Guide use one of the most comprehensive examples of each screen, not every variation for each device type and firmware version. If you are unable to find a specific screen or field in this User's Guide, please see the User's Guide for the device for more information.

## Intended Audience

This manual is intended for people who want to configure Vantage CNM using the web configurator. You should have at least a basic knowledge of TCP/IP networking concepts, topology, and the devices you want to manage.

## Related Documentation

- Quick Start Guide

  The Quick Start Guide is designed to help you get up and running right away. It contains information on setting up and connecting to your software.

- Web Configurator Online Help

  Embedded web help for descriptions of individual screens and supplementary information.

Note: It is recommended you use the web configurator to configure the Vantage CNM.

- Device User's Guide

  The User's Guide for each device provides more information about the device, its features, and its configuration.

- ZyXEL Web Site

  Please refer to www.zyxel.com for additional support documentation and product certifications.

## Documentation Feedback

Send your comments, questions or suggestions to: techwriters@zyxel.com.tw

Thank you!

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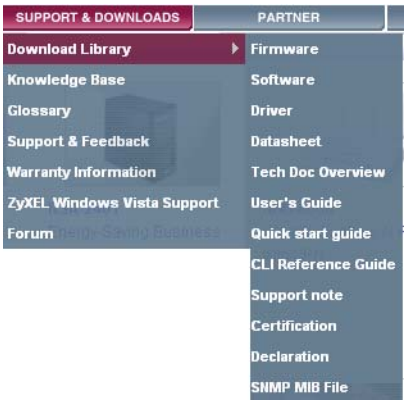
## Need More Help?

More help is available at www.zyxel.com.




- Download Library

  Search for the latest product updates and documentation from this link. Read the Tech Doc Overview to find out how to efficiently use the User Guide, Quick Start Guide and Command Line Interface Reference Guide in order to better understand how to use your product.

- Knowledge Base

  If you have a specific question about your product, the answer may be here. This is a collection of answers to previously asked questions about ZyXEL products.

- Forum

  This contains discussions on ZyXEL products. Learn from others who use ZyXEL products and share your experiences as well.

## Customer Support

Should problems arise that cannot be solved by the methods listed above, you should contact your vendor. If you cannot contact your vendor, then contact a ZyXEL office for the region in which you bought the device.

See http://www.zyxel.com/web/contact_us.php for contact information. Please have the following information ready when you contact an office.

- Product model and serial number.
- Warranty Information.
- Date that you received your device.
- Brief description of the problem and the steps you took to solve it.

# Document Conventions

## Warnings and Notes

These are how warnings and notes are shown in this User's Guide.

**Warnings tell you about things that could harm you or your device.**

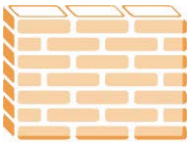
Note: Notes tell you other important information (for example, other things you may need to configure or helpful tips) or recommendations.

## Syntax Conventions

- Vantage CNM may be referred to as "Vantage CNM" or the "product" in this User's Guide.
- Vantage Report may be referred to as "Vantage Report" or "VRPT" in this User's Guide.
- A device that is managed by Vantage CNM may be referred to as the "ZyXEL device," "device," or the "system" in this User's Guide.
- Product labels, screen names, field labels and field choices are all in **bold** font.
- A key stroke is denoted by square brackets and uppercase text, for example, [ENTER] means the "enter" or "return" key on your keyboard.
- "Enter" means for you to type one or more characters and then press the [ENTER] key. "Select" or "choose" means for you to use one of the predefined choices.
- A right angle bracket ( > ) within a screen name denotes a mouse click. For example, **Maintenance > Log > Log Setting** means you first click **Maintenance** in the navigation panel, then the **Log** sub menu and finally the **Log Setting** tab to get to that screen.
- Units of measurement may denote the "metric" value or the "scientific" value. For example, "k" for kilo may denote "1000" or "1024", "M" for mega may denote "1000000" or "1048576" and so on.
- "e.g.," is a shorthand for "for instance", and "i.e.," means "that is" or "in other words".

## Icons Used in Figures

Figures in this User's Guide may use the following generic icons. Device icons are not an exact representations of your devices.

| | | |
|---|---|---|
| Device (example) | Computer | Notebook computer |
| Server | DSLAM |  |
| Telephone | Switch | Router |

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# 1

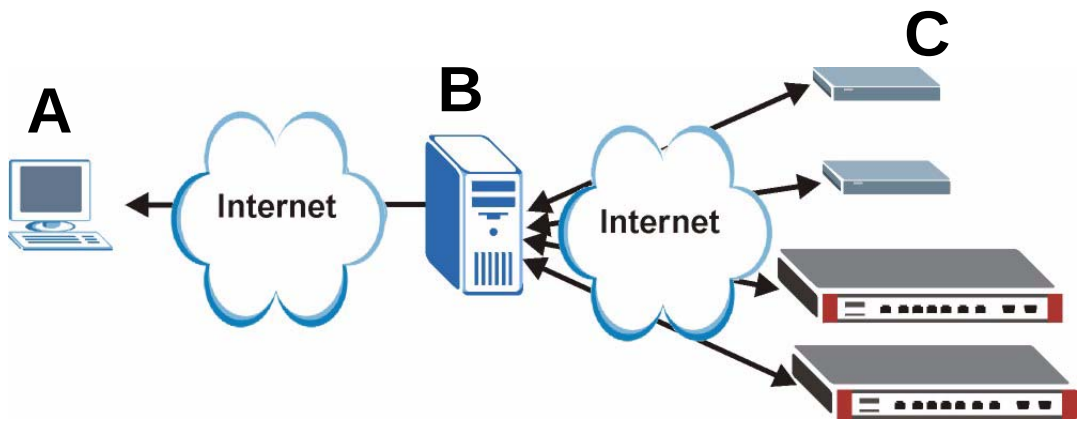
# Introducing Vantage CNM

This chapter introduces the main applications and features of Vantage CNM. It also introduces the ways you can manage Vantage CNM.

## 1.1 Overview

Vantage Centralized Network Management (“Vantage CNM”) helps network administrators monitor and manage a distributed network of ZyXEL network devices. A typical application is shown in the following example.

**Figure 1** Vantage CNM Application




In this example, you use the Vantage CNM web configurator (**A**) to access the Vantage CNM server (**B**). The Vantage CNM server is connected to the devices (**C**), and you can

- Monitor all the devices in the network and receive alarms in one place
- Create building blocks to configure one or more devices
- Set up other administrators who are allowed to perform specific functions for specific devices

You can also manage configuration files, upload firmware, and activate subscription services, such as Intrusion Detection and Protection (IDP) and

content filtering, on one or more devices. See Appendix A on page 611 for a complete list of features and supported devices.

## 1.2 Ways to Manage Vantage CNM

Use the web configurator to access and manage Vantage CNM. See the Quick Start Guide for instructions to access the web configurator and this User's Guide for more information about the screens.

## 1.3 Suggestions for Using Vantage CNM

Do the following things regularly to make Vantage CNM more secure and to manage Vantage CNM more effectively.

- Change the **root** password. Use a password that's not easy to guess and that consists of different types of characters, such as numbers and letters.
- Write down the **root** password and put it in a safe place. If you forget the **root** password, contact your local vendor.
- Back up the configuration (and make sure you know how to restore it). Restoring an earlier working configuration may be useful or necessary if the system becomes unstable or even crashes. If you have to re-install Vantage CNM, you could simply restore your last configuration afterwards.

# PART I
# Introduction

Introducing Vantage CNM (21)

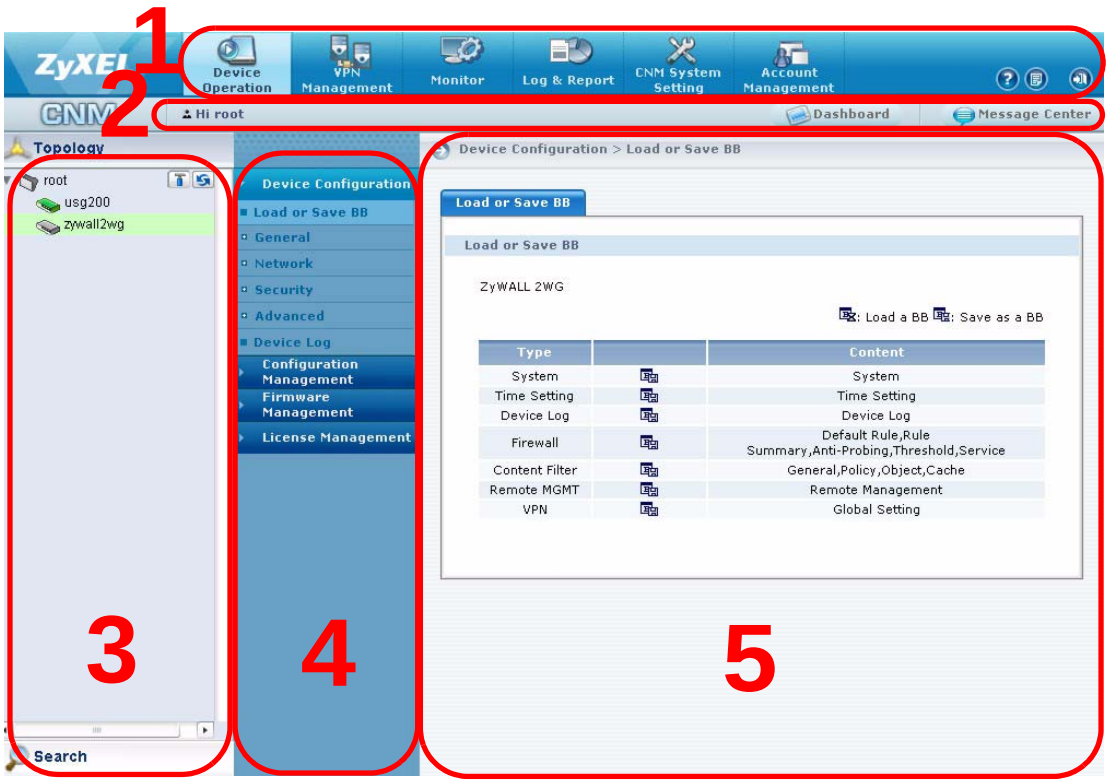
GUI Introduction (25)

# 2

# GUI Introduction

See the Quick Start Guide for instructions about installing, setting up, and accessing Vantage CNM. This chapter introduces the Vantage CNM main screen.

**Figure 2** Main Screen




The main screen consists of three main parts and are numbered in the sequence you typically follow to configure a device.

1 **Menu bar**: Displays main menu links that you use to access related submenus in the navigation panel (**4**) or to manage the Vantage CNM

2 **Title bar**: Displays login user name, dashboard and message center buttons.

3 **Device window**: Displays the devices that are managed by the Vantage CNM. You can also configure and view the logical groupings of the managed devices. This is also known as OTV (Object Tree View).

4 **Navigation panel**: Displays the navigation links that you use to access configuration, log or status screens.

5 **Configuration window**: Displays the configuration screens that you set for Vantage CNM or a selected device.

Note: For security reasons, Vantage CNM automatically times out after fifteen minutes of inactivity. Log in again if this happens.

Each part is discussed in more detail in the following sections.

# 2.1 Menu Bar

The following table describes the icons in the menu bar.

**Table 1** Menu Bar Icon Description

| ICON | DESCRIPTION |
|---|---|
| | Click this icon to display the navigation links to screens that allow you to configure, manage firmware or license for a selected device. |
| | Click this icon to display the navigation links to screens that allow you to manage VPN tunnels among ZyWALL devices and provide diagnostics for fail tunnels. |
| | Click this icon to display the navigation links to screens that allow you to check device status, ZLD ZyWALL Device HA status and device alarm. |
| | Click this icon to display the navigation links to screens that allow you to view device operation reports, CNM logs and device associated Vantage reports on Vantage Report server. |
| | Click this icon to display the navigation links to screens that allow you to configure/backup/restore the Vantage CNM system settings, upgrade Vantage CNM software version and license and view the current software informatoin. |
| | Click this icon to display the navigation links to screens that allow you to manage system group and account. |
| | Click this icon to open the help page for the current screen in Vantage CNM. |
| | Click this icon to open a screen that displays the version of Vantage CNM. |
| | Click this icon to log out of Vantage CNM. |

Note: When you click a menu icon, an introduction for the menu and its corresponding navigation panel menus appear in the configuration window. See Table 8 on page 38.

# 2.2 Title Bar

The following table describes the icons in the title bar.

**Table 2** Title Bar Icon Description

| ICON | DESCRIPTION |
|---|---|
| | This icon displays with a hi to the current login user. |
| | Click this icon to display the dashboard in the configuration window. |
| | Click this icon to open a window to display real-time Vantage CNM system logs. |

# 2.3 Device Window

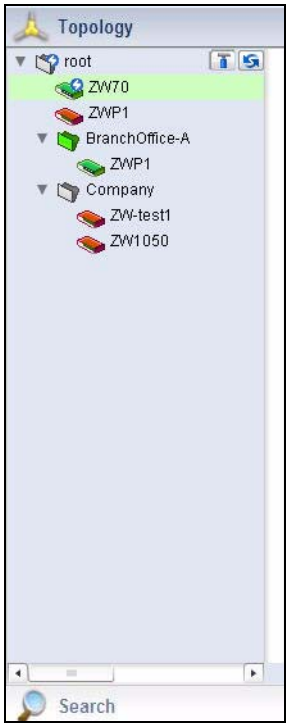
Use the device window to view the logical network topology, search for a device, view general device status or select which device(s) you want to edit configuration settings.

## 2.3.1 Topology

You can view the logical network topology in the **Topology** screen in the device window. You can also create, delete or rename a device or a folder in the **Topology** screen.

In the **Topology** screen, you can only view the folder(s) or device(s) for your login account group. You cannot view the folders created by another user group.

**Figure 3** Device Window: Topology




The following table describes the labels in the Device window.

**Table 3** Device Window: Topology

| LABEL | DESCRIPTION |
|---|---|
| Topology | Click **Topology** to display device groups in a tree structure. |
| Search | Click **Search** to look for device(s). |

There are a couple icons in the device window that perform additional functions related to views.

**Table 4** Device Window: Icons

| Icon | Description |
|---|---|
| | Click this icon to set how often the OTV tree refreshes. |
| | Click this icon to refresh the OTV tree. |

### 2.3.1.1 Folders

Folders are represented by the following icons in the device window.

**Table 5** Device Window: Folder Icons

| Icon | Status | Description |
|---|---|---|
| | On-Closed | This is a closed folder, which contains online devices. |
| | On-Open | This is a opened folder, which contains online devices. |
| | Off-Closed | This is a closed folder, which contains one or some offline devices. |
| | Off-Open | This is a opened folder, which contains one or some offline devices. |
| | On_Alarm-Closed | This is a closed folder, which contains some online devices with an alarm. |
| | On_Alarm-Open | This is a opened folder, which contains some online devices with an alarm. |
| | Off_Alarm-Closed | This is a closed folder, which contains one or some offline devices. Some are with an alarm. |
| | Off_Alarm-Open | This is a opened folder, which contains one or some offline devices. Some devices are with an alarm. |
| | On_Pending-Closed | This is a closed folder, which contains some online devices with pending tasks. |
| | On_Pending-Open | This is a opened folder, which contains some online devices with pending tasks. |
| | Off_Pending-Closed | This is a closed folder, which contains one or some offline devices. Some devices are with pending tasks. |
| | Off_Pending-Open | This is a opened folder, which contains one or some offline devices. Some devices are with pending tasks. |
| | On_Alarm_Pending-Closed | This is a closed folder, which contains some online devices with an alarm and some with pending tasks. |
| | On_Alarm_Pending-Open | This is a opened folder, which contains some online devices with an alarm and some with pending tasks. |
| | Off_ Alarm_Pending-Closed | This is a closed folder, which contains one or some offline devices. Some devices with an alarm while some with pending tasks. |
| | Off_ Alarm_Pending-Open | This is a opened folder, which contains one or some offline devices. Some devices with an alarm while some with pending tasks. |

You can right-click on a folder to see the following menu items. Some folders do not have every menu item. Click **Settings** to configure the Adobe flash player

settings. Click **About Adobe Flash Player 9** to connect to Adobe's website for more information.

**Figure 4** Folder Right-Click Options

#### *2.3.1.1.1 Add a Folder*

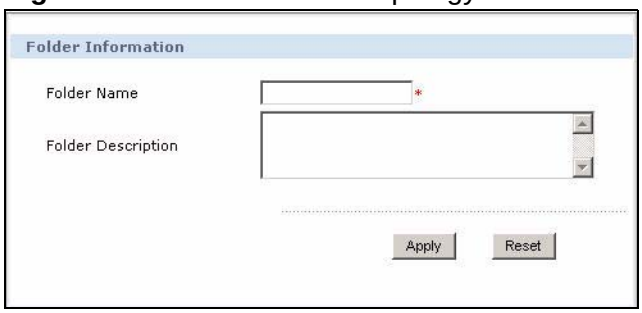
Topology folders allow you to group managed devices logically. You can add or delete device(s) in a folder. The following steps show you how to create a device group folder in the **Topology** screen.

1. In the device window, click **Topology**.
2. Right-click on a folder and click **Add Folder**.

**Figure 5** Device Window: Topology: Right Click to Add a Folder

3. The screen displays in the configuration window as shown. Enter a descriptive name (Specify a unique, up to 64 alphanumerical characters including 0-9, a-z, A-Z, _, -) in the **Folder Name** field) and/or a description for the folder. Click **Apply**.

**Figure 6** Device Window: Topology: Add Folder




4. A new folder icon displays.

#### *2.3.1.1.2 Delete a Folder*

Deleting a folder also deletes all the associated device(s).

Follow the steps below to delete a group.

1 In the device window, click **Topology**.

2 Right-click on a folder and click **Delete Folder**.

3 A warning screen displays.

Click **OK** to delete.

Click **Cancel** to close this screen without deleting the selected folder.

**Figure 7** Device Window: Topology: Delete Folder Warning

#### *2.3.1.1.3 Edit a Folder*

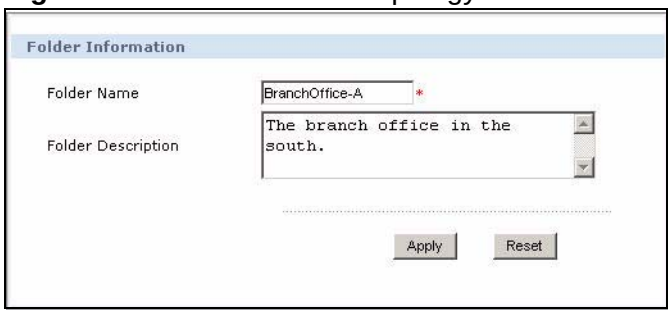
When you edit a folder, you can rename the folder or modify its description..

1 In the device window, click **Topology**.

2 Right-click on the folder you want to edit and click **Edit Folder**.

3 The screen displays in the configuration window as shown. Rename it and/or modify its description and click **Apply**.

**Figure 8** Device Window: Topology: Edit Folder




### 2.3.1.2 Devices

A device appears in the device window if it is registered (Section 19.1 on page 457) and mapped to a folder (Section 2.3.1.2.3 on page 35) in the Vantage CNM.

Devices are represented by the following icons in the device window.

**Table 6** Device Window: Device Icons

| Icon | | Description |
|---|---|---|
| | On | This is a device turned on. |
| | Off | This is a device turned off. |

**Table 6** Device Window: Device Icons (continued)

| Icon | | Description |
|---|---|---|
| | Not Yet Acquired | This is a device never registered itself to Vantage CNM since it is added in the device window. |
| | On_Alarm | This is a device turned on with an alarm. |
| | Off_Alarm | This is a device turned off with an alarm. |
| | On_Pending | This is a device turned on with pending tasks. |
| | Off_Pending | This is a device turned off with pending tasks. |
| | On_Alarm_Pending | This is a device turned on with an alarm and pending tasks. |
| | Off_Alarm_Pending | This is a device turned off with an alarm and pending tasks. |

You can right-click on a device to see the following menu. Some menu items are not available for every device. Click **Settings** to configure Adobe flash player settings. Click **About Adobe Flash Player 9** to connect to Adobe's website for more information.

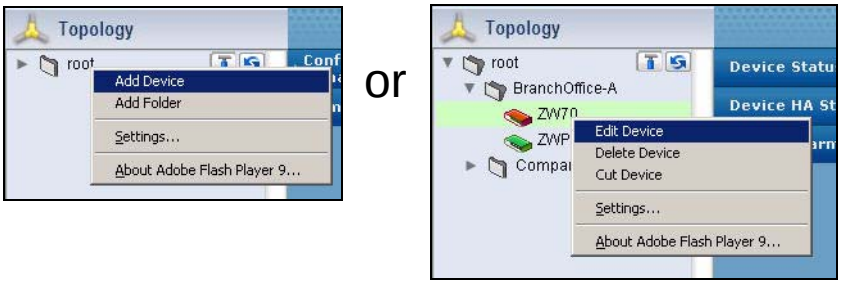
**Figure 9** Device Right-Click Options

### *2.3.1.2.1 Add/Edit a Device*

The following steps show you how to create a device in the **Topology** screen.

1. In the device window, click **Topology.**
2. Right-click on a folder and click **Add Device** or right-click on a device and click **Edit Device**.

**Figure 10** Device Window: Topology: Right Click to Add/Edit a Device



3 The screen displays in the configuration window as shown.

**Figure 11** Device Window: Topology: Add/Edit Device (ZyNOS)

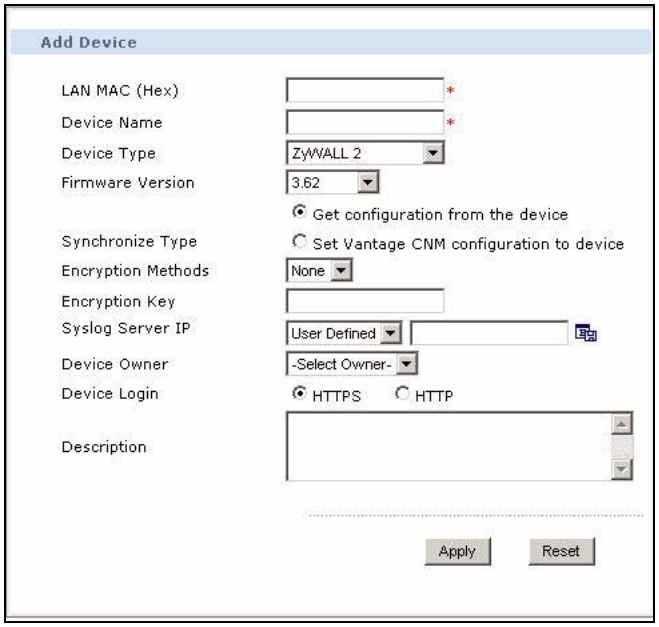
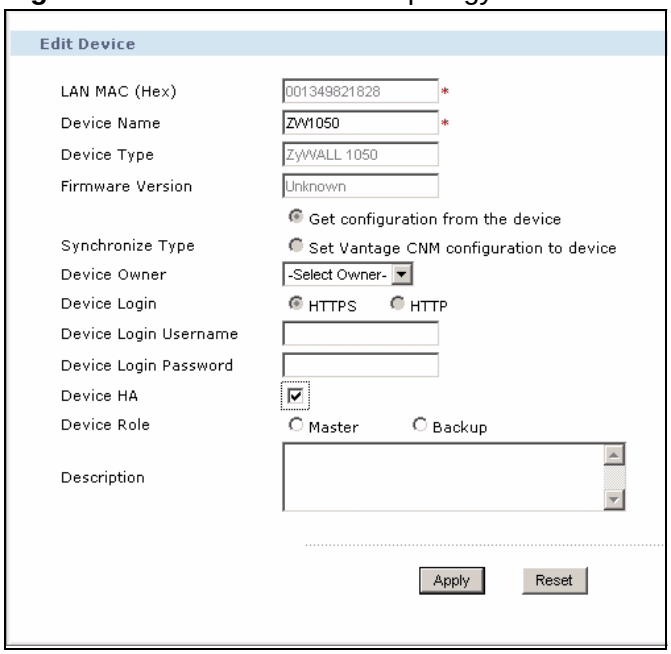



**Figure 12** Device Window: Topology: Add/Edit Device (ZLD)



The following table describes the labels in this screen.

**Table 7** Configuration Screen: Device List

| LABEL | DESCRIPTION |
|---|---|
| LAN MAC (Hex) | Enter the LAN MAC address of the device (without colons) in this field. Vantage CNM uses the MAC address to identify the device, so make sure it is entered correctly. |
| Device Name | Enter a unique name here for the device for identification purposes. The device name cannot exceed ten characters. |
| Device Type | Select the device type from the pull-down menu. The pull-down menu lists only full functions supported device types (See table xxx). Select **Unknown** if you cannot find your device model from the list. |
| Firmware Version | This field is only available for a ZyNOS device. Select the firmware version the device is currently using. The pull-down menu lists only supported firmware versions. Select **Unknown** if you don't know the device's firmware version or you cannot find your device's current firmware version from the list.<br><br>Note: Not all ZyXEL devices can work with Vantage CNM. See Quick Start Guide for the supported device models and firmware versions. |
| Synchronize Type | Select **Get configuration from the device** if you want Vantage CNM to pull all current device configurations into Vantage CNM. The current device configuration "overwrites" Vantage CNM configurations.<br><br>Select **Set Vantage CNM configuration to device** if you want Vantage CNM to push all current configurations from Vantage CNM to the device. The current device configuration is then reset to the configuration settings in Vantage CNM. |
| Encryption Methods | This field is only available for a ZyNOS device. The encryption options are DES and 3DES. Choose from **None** (no encryption), **DES** or **3DES**. The device must be set to the same encryption mode (and have the same encryption key) as the Vantage CNM server. |
| Encryption Key | This field is only available for a ZyNOS device. Type an eight-character alphanumeric ("0" to "9", "a" to "z" or "A" to "Z") for DES encryption and a 24-character alphanumeric ("0" to "9", "a" to "z" or "A" to "Z") for 3DES encryption. |
| Syslog Server IP | Select the IP address of the device's Vantage Report server, or, if the IP address is not in the drop-down box, select **User-Define** and enter the IP address. Leave the IP address blank if the device does not use a Vantage Report server. See Section 30.6 on page 571. |
| Device Owner | Select the owner's name of the device. You have to go to **CNM System Setting** > **Device Owner** screen to add device owners first. |
| Device Login | Select **HTTPS** to use HTTPS connection when login the device's web configurator from Vantage CNM.<br><br>Select **HTTP** to use HTTP connection when login the device's web configurator from Vantage CNM. |
| Device Login Username | This field is only available for a ZLD device. Type the administrator's login name of the device in this field. |

**Table 7** Configuration Screen: Device List (continued)

| LABEL | DESCRIPTION |
|---|---|
| Device Login Password | This field is only available for a ZLD device. Type the administrator's login password of the device in this field. |
| Device HA | This field is only available for a ZLD device. Select this if you want to monitor the device's device HA status from the Vantage CNM. After you select this, the **Device Role** field appears. |
| Device Role | Select **Master** or **Backup** for this device's HA role.<br><br>Note: You have to select the correct role matching to the setting on the device. Otherwise, you cannot see the related information shown in the **Monitor** > **Device HA status** on the Vantage CNM.<br><br>Note: You have to add a master device before adding the backup device in the same HA group. |
| Description | Enter a description for the ZyXEL device. |
| Apply | Click this to save your changes back to the OTV tree. |
| Reset | Click this to begin configuring this screen afresh. |

4 After clicking **Apply** and a new device icon displays.

*2.3.1.2.2 Delete a Device*

Follow the steps below to delete a group.

1 In the device window, click **Topology**.

2 Right-click on a device and click **Delete Device**.

3 A warning screen displays.

Click **OK** to delete.

Click **Cancel** to close this screen without deleting the selected device.

**Figure 13** Device Window: Topology: Delete Device Warning

*2.3.1.2.3 Associate a Device to Another Folder*

To un-associate a device from a folder, log into the web configurator as root or a user who belongs to the "super" group.

1 In the device window, click **Topology**.

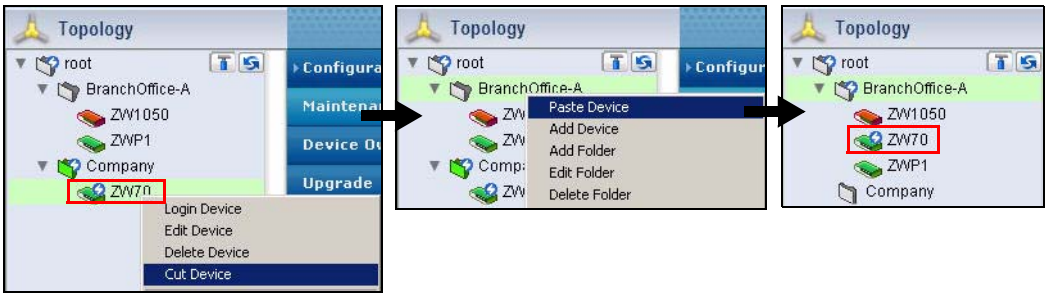
2 Right-click on a device and click **Cut Device**.

3 Right-click on a folder you want to move the device to and click **Paste Device**.

4 The device re-associates to another folder.

The following figure shows you an example to move a device from one folder to another.

**Figure 14** Device Window: Topology: Re-associate a Device




#### *2.3.1.2.4 Login a Device*

You can log into a device's web configurator from Vantage CNM web configuration directly.

1 In the device window, click **Topology**.

2 Right-click on an on-line device you want to access to and click **Login Device**.

**Figure 15** Device Window: Topology: Delete Device Warning

3 The device's web configurator appears via a HTTP or HTTPS connection. You can change the device login setting by editing a device. Refer to Figure 11 on page 33.

## 2.3.2 Device Search

Use the **Search** function in the device window to look for device(s).

1 In the device window, click **Search**.

**Figure 16** Device Window: Search

2 Specify the search criteria (such as the device type, device status, etc.) and click **Search**.

3 Vantage CNM displays the device(s) that match any of the search criteria.

# 2.4 Navigation Panel and Configuration Window

Use this panel to navigate to and display the screens. These screens are organized into different menus. You can only expand the submenus from a menu at one time. If you expand another one, the previous one automatically contracts.

Menus available in the navigation panel vary depending your login account type, whether you have selected a device or device group and the device model you manage. Following are the menus you can see under the **Device Operation** menu for different device models.

Note: Menus vary depending on the device model you select. See device's User's Guide for the detail configuration description.

**Table 8** Navigation Panel: Menu Summary - Device Operation

| DEVICE OPERATION | | |
|---|---|---|
| **ZYNOS-BASED DEVICE** | **ZLD-BASED DEVICE** | **PRESTIGE** |
| Device Configuration<br><br>Load or Save BB<br>General<br>System<br>Tim Setting<br>Network<br>LAN<br>WAN<br>DMZ<br>WLAN<br>Wireless Card<br>Port Roles<br>Security<br>Firewall<br>VPN<br>Anti-Virus<br>Anti-Spam<br>IDP<br>Signature Update<br>Content Filter<br>X Auth<br>Advanced<br>NAT<br>Static Route<br>DNS<br>Remote Management<br>Device Log<br><br>Configuration Management<br><br>Synchronization<br>Configuration File Management<br>Signature Profile Management<br>Building Block<br><br>Firmware Management<br><br>Firewall List<br>Schedule List<br>Firmware Upgrade<br><br>License Management<br><br>Service Activation<br>License Status<br>Signature Status | Device Configuration<br><br>Network<br>Interface<br>Routing<br>Firewall<br>VPN<br>IPSec VPN<br>SSL VPN<br>L2TP VPN<br>Object<br>User/Group<br>Address<br>Service<br>Schedule<br>AAA Server<br>Auth.method<br>Certificate<br>SSL Application<br>Maintenance<br>Log Setting<br><br>Configuration Management<br><br>Synchronization<br>Configuration File Management<br>Signature Profile Management<br>Building Block<br>ZLD Firewall Rule Group Configuration<br><br>Firmware Management<br><br>Firewall List<br>Schedule List<br>Firmware Upgrade<br><br>License Management<br><br>Service Activation<br>License Status<br>Signature Status | Device Configuration<br><br>Load or Save BB<br>General<br>System<br>Time Setting<br>Network<br>LAN<br>WAN<br>DMZ<br>Wireless Card<br>Security<br>Firewall<br>VPN<br>X Auth<br>Advanced<br>NAT<br>DDNS<br>Device Log<br>ADSL Monitor<br><br>Configuration Management<br><br>Configuration File Management<br>Building Block<br><br>Firmware Management<br><br>Firewall List<br>Schedule List<br>Firmware Upgrade<br><br>License Management |

Following are the other menus.

**Table 9** Navigation Panel: Menu Summary - Others

| VPN MANAGEMENT | MONITOR | LOG & REPORT |
|---|---|---|
| VPN Community<br><br>Installation Report<br><br>VPN Monitor<br><br>By Community<br>By Device | Device Status<br><br>3G Monitor<br><br>3G Summary<br>Availability Report<br>Radio Report<br>Traffic Report<br>Alert Report<br>Monitor Setting<br><br>Device HA Status<br><br>Device Alarm<br><br>Unresolved Alarm<br>Responded Alarm | Operation Report<br><br>Firmware Upgrade Report<br>Configuration Report<br>Configuration File Backup & Restore Report<br>Signature Profile Backup & Restore Report<br><br>CNM Logs<br><br>VRPT |
| **CNM SYSTEM SETTING** | **ACCOUNT MANAGEMENT** | |
| Configuration<br><br>Servers<br>User Access<br>Notification<br>Log Setting<br>VRPT Management<br>Certificate Management<br><br>Maintenance<br><br>Device Owner<br><br>Upgrade<br><br>License<br><br>About | Group<br><br>Account | |

The following table describes the links in the navigation panel.

**Table 10** Navigation Panel Links

| LINK | DESCRIPTION |
|---|---|
| Device Operation | |
| Device Configuration | This link takes you to a screen where you can configure general device information. |
| Configuration Management | This link takes you to a screen where you can configure synchronization setting between Vantage CNM and devices, backup/restore device configuration file, backup/restore anti-virus or IDP signature profiles, or manage building blocks. |
| Firmware Management | This link takes you to a screen where you can manage device firmware files, upgrade firmware for a on-line device or set a device firmware upgrade schedule. |

**Table 10** Navigation Panel Links (continued)

| LINK | DESCRIPTION |
|---|---|
| License Management | This link takes you to a screen where you can register a user account and activate UTM services to myZyXEL.com for the selected device. You also can manage UTM services license and monitor signature status for the device. |
| VPN Management | |
| VPN Community | This link takes you to a screen where you can centrally manage (add/edit/delete) VPN settings between or among managed devices. |
| Installation Report | This link takes you to a screen where you can check whether the settings of a configured VPN community are successfully applied to associated devices. |
| VPN Monitor | This link takes you to a screen where you can monitor status of tunnels. |
| Monitor | |
| Device Status | This link takes you to a screen where you can monitor device general information (ex. firmware version, WAN IP address, LAN MAC address, and so on) and current status. |
| 3G Monitor | This link takes you to a screen where you can view information about the 3G (Third Generation) card(s) installed as LAN backup(s) on Vantage CNM's monitored device(s). |
| Device HA Status | This link takes you to a screen where you can monitor device high availability (HA) status for ZLD devices (ex. ZyWALL1050 or ZyWALL USG 300). |
| Device Alarm | This link takes you to a screen where you can monitor device alarms. |
| Log & Report | |
| Operation Report | This link takes you to a screen where you can see firmware upgrade, device cofniguration, configuration backup/restore, and signature profile backup/restore reports. |
| CNM Logs | This link takes you to a screen where you can see all or specified CNM logs via a query. |
| VRPT | This function is available if any Vantage Report (VRPT) server is configured on the selected device. This link takes you to a screen where you can see reports generated by an associated VRPT server. |
| CNM System Setting | |
| Configuration | This link takes you to a screen where you can configure Vantage CNM settings. |
| Maintenance | This link takes you to a screen where you can backup/restore Vantage CNM settings and device list. |
| Device Owner | This link takes you to a screen where you can manage device owners. |
| Upgrade | This link takes you to a screen where you can see current Vantage CNM software version and perform a software upgrade. |
| License | This link takes you to a screen where you can activate or upgrade a Vantage CNM license. |
| About | This link takes you to a screen where you can see Vantage CNM software version, release date, and copyright. |
| Account Management | |

**Table 10** Navigation Panel Links (continued)

| LINK | DESCRIPTION |
|---|---|
| Group | This link takes you to a screen where you can define group privilege and manage (add/edit/remove) groups. |
| Account | This link takes you to a screen where you can manage (add/edit/kick out/remove) user accounts. |

This section provides some notes about the navigation panel.

- The configuration information appears when you click a menu item from navigation panel for a selected device, folder or for Vantage CNM management.
- Menus display may vary depending on which device model you are configuring.
- If the login user does not have permission to use a menu item, it is not displayed.
- The operation on Vantage CNM is:

| | |
|---|---|
| If you select **Device Operation**, **Log & Report (all except sub-menu VRPT)** or **Monitor** in the menu bar, | |
| 1 | click a device or a folder, |
| 2 | click a sub-menu in the navigation panel, |
| 3 | the corresponding information displays in the configuration window. |
| If you select **VPN Management**, **Log & Report (sub-menu VRPT**), **CNM System Setting** or **Account Management** in the menu bar, | |
| 1 | click a sub-menu in the navigation panel, |
| 2 | the corresponding information displays in the configuration window. |

# 2.5 Security Risk Pop-up Messages in Internet Explorer 7.0

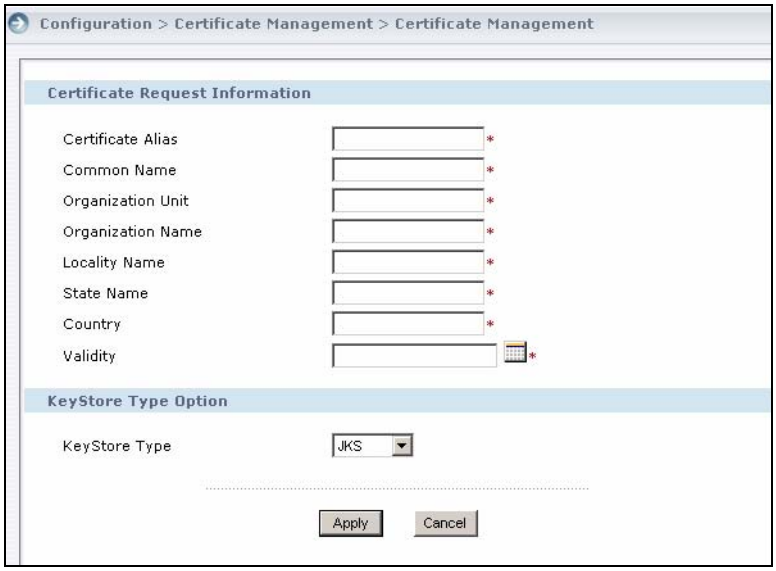
The default certificate in Vantage CNM is self-signed, not signed by a trusted CA. As a result, Internet Explorer 7.0 might give you a pop-up message about the security risk. Follow these steps to get rid of this pop-up message.

1 Click **CNM System Setting** in the menu bar.

2 Click **Configuration > Certificate Management** in the navigation panel.

3 Click **Create CSR**. The following screen appears.

**Figure 17** CNM System Setting > Configuration > Certificate Management > Create CSR

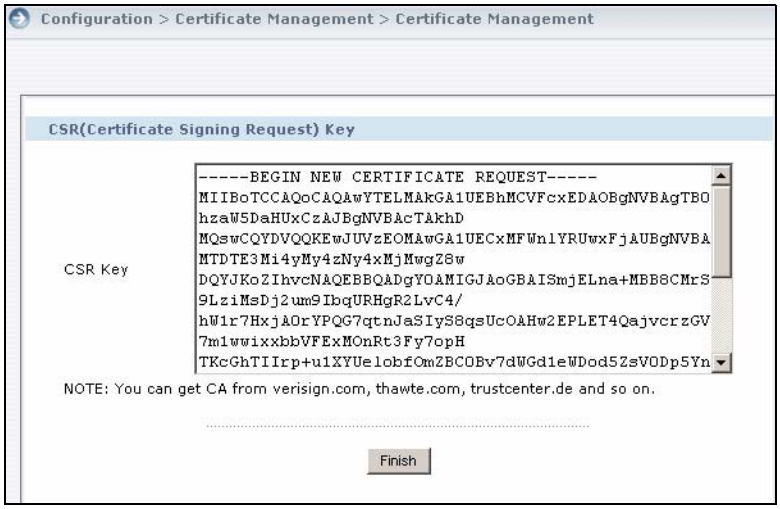



4 Type the IP address of the Vantage CNM server in the **Common Name** field. This is the IP address you use to log in (http://your IP address:8080/vantage). The value **localhost** cannot be used in the **Common Name** field.

5 Enter the rest of the required information, and click **Apply**. See Section 30.7 on page 574 for more information about these fields.

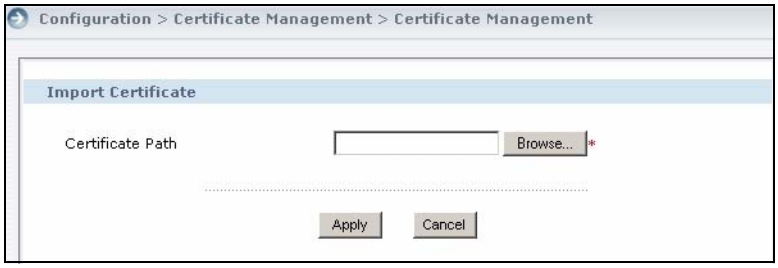
6 A CSR (Certificate Signing Request) key screen displays. Copy this CSR key and click **Finish**. Use this CSR key to get a signed certificate from a trusted CA (certification authority).

**Figure 18** CNM System Setting > Configuration > Certificate Management > Create CSR > CSR Key



7 The **Certificate Management** screen appears. Click **Import Certificate**. The following screen appears.

**Figure 19** CNM System Setting > Configuration > Certificate Management > Import Certificate




8 Enter the signed certificate file path and click **Apply**.

9 Restart the Vantage CNM server.

10 Use the IP address and log into the Vantage CNM server.

11 In Internet Explorer 7.0, click **View Certificates** when the following screen appears.

**Figure 20** Pop-up Message in Internet Explorer 7.0

12 **Certificate** screen appears. Click **Install Certificate** and follow instruction to install the new certificate.

# PART II
# Device Configuration (ZyNOS and Prestige)

Note: This menu only appears when you select a ZyNOS device. See Device Configuration (ZLD) for ZLD-based devices.

Note: The menus and screens may vary depending on the device model you select. See Table 8 on page 38 for the device model and the corresponding firmware version CNM supports.

Note: The examples in this section use one of the most comprehensive examples of each screen, not every variation for each device type and firmware version. If you are unable to find a specific screen or field in this User's Guide, please see the User's Guide for the device for more information.

Load or Save Building Blocks (BB) (47)

Device General Settings (51)

Device Network Settings (55)

Device Security Settings (123)

Device Advanced Settings (215)

Device Log (241)

# 3

# Load or Save Building Blocks (BB)

A BB is a building block used to build a device configuration using Vantage CNM.

A device BB is a combination of configuration BBs, which vary by model. A device can have only one Device BB. You can select any device and save its configuration as a BB ready to be applied to another device (of the same model type). This allows rapid configuration of new devices as you can essentially copy one device's configuration to another.

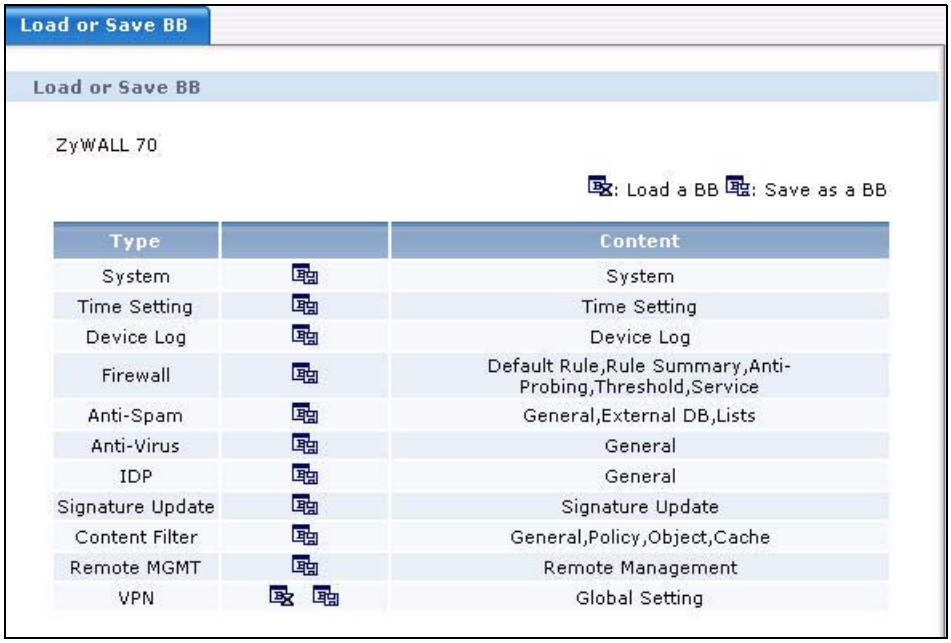
Note: These menus only appear when you select a ZyNOS-based or Prestige device.

## 3.1 Load or Save BB

Use this menu item to load building blocks to the selected device or to create building blocks from the current configuration of the selected device. This menu item appears if a device is selected. To open this menu item, select the device,

click **Device Operation** in the menu bar and then click **Device Configuration** > **Load or Save BB** in the navigation panel.

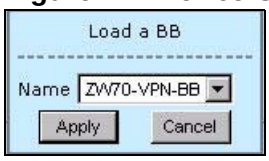
**Figure 21** Device Operation > Device Configuration > Load or Save BB




This screen displays the type of the selected device, each type of building block, and a summary of the information in each type of building block.

Click the **Load a BB** icon to load a building block to the selected device. The following pop-up screen appears.

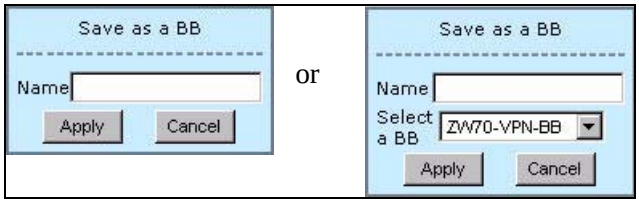
**Figure 22** Device Operation > Device Configuration > Load or Save BB > Load a BB




Select the building block you want to load to the selected device, and click **Apply**.

Click the **Save as a BB** icon to save the current configuration of the selected device as a building block. The following pop-up screen appears.

**Figure 23** Device Operation > Device Configuration > Load or Save BB > Save as a BB



Enter the name of the new building block, and click **Apply**. The name must be 1-32 alphanumeric characters or underscores (_). It cannot include spaces. The name is case-sensitive. If you have an existing BB, the **Select a BB** field appears. You can replace an existing BB with the current configuration by selecting it from the **Select a BB** field and click **Apply**.

# 4

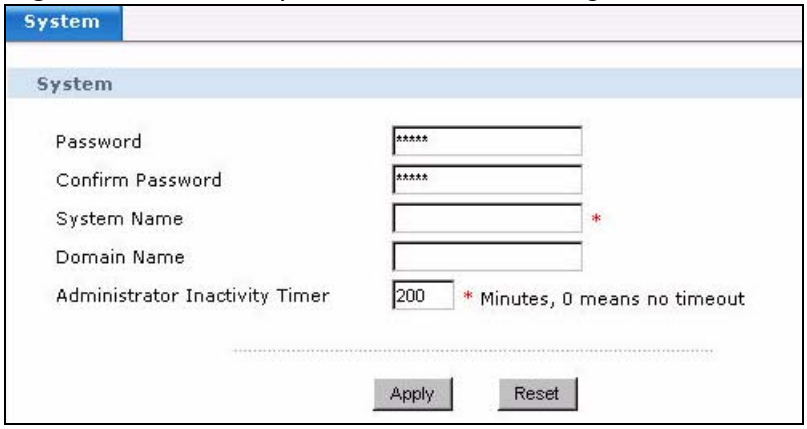
# Device General Settings

This section configures device general settings.

## 4.1 System

Use this screen to set the password, system name, domain name, idle timeout, and DNS servers for the device. Please see the device's User's Guide for more information about any of these screens or fields. To open this screen, click **Device Operation** in the menu bar, and click **Device Configuration** > **General** > **System** in the navigation panel.

**Figure 24** Device Operation > Device Configuration > General > System




The following table describes the fields in this screen.

**Table 11** Device Operation > Device Configuration > General > System

| FIELD | DESCRIPTION |
|---|---|
| Password | Enter the password used to access the device. |
| Confirm Password | Re-enter the password used to access the device. |
| System Name | Enter a unique name here for the device for identification purposes. The device name cannot exceed 31 characters. |
| Domain Name | The Domain Name entry is what is propagated to the DHCP clients on the LAN side of the target device. If you leave this blank, the domain name obtained by the device via DHCP from the ISP is used. |

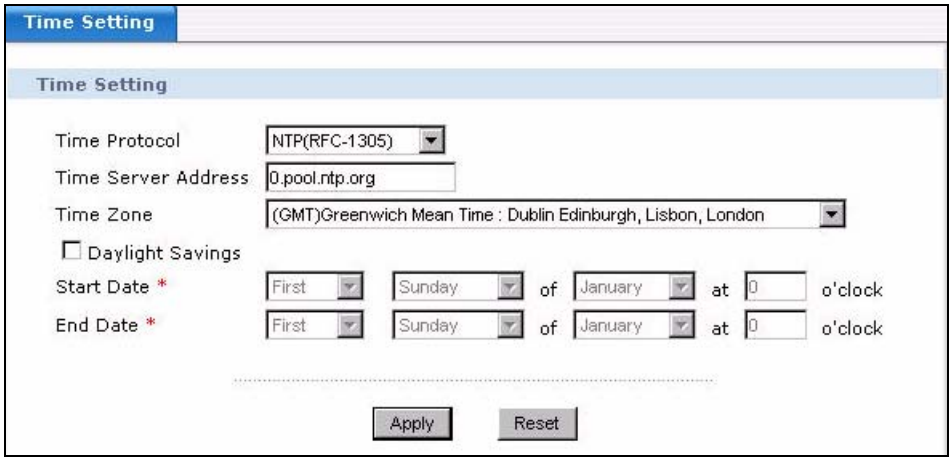
**Table 11** Device Operation > Device Configuration > General > System (continued)

| FIELD | DESCRIPTION |
|---|---|
| Administrator Inactivity Timer | Set how long a management session can remain idle before it expires. After it expires, you have to log back into the device. |
| Apply | Click this to save your changes to the device. |
| Reset | Click this to begin configuring the screen afresh. |

# 4.2 Time Setting

Use this screen to configure the time settings on the device. To open this screen, click **Device Operation** > **Device Configuration** > **General** > **Time Setting**.

**Figure 25** Device Operation > Device Configuration > General > Time Setting



The following table describes the fields in this screen.

**Table 12** Device Operation > Device Configuration > General > Time Setting

| LABEL | DESCRIPTION |
|---|---|
| Time Protocol | Select the time service protocol that your timeserver sends when you turn on the device. Not all time servers support all protocols, so you may have to check with your ISP/network administrator or use trial and error to find a protocol that works.<br><br>The main difference between them is the format.<br><br>**Daytime (RFC-867)** format is day/month/year/time zone of the server.<br><br>**Time (RFC-868)** format displays a 4-byte integer giving the total number of seconds since 1970/1/1 at 0:0:0.<br><br>The default, **NTP (RFC-1305),** is similar to Time (RFC 868).<br><br>Select **None** to enter the time and date manually. |
| Time Server Address | Enter the IP address or domain name of your timeserver. Check with your ISP/network administrator if you are unsure of this information (the default is tick.stdtime.gov.tw). |
| Time Zone | Choose the Time Zone of your location. This will set the time difference between your time zone and Greenwich Mean Time (GMT). |
| Daylight Savings | Daylight saving is a period from late spring to early fall when many countries set their clocks ahead of normal local time by one hour to give more daytime light in the evening.<br><br>Select this option if you use Daylight Saving Time. |
| Start Date | Configure the day and time when Daylight Saving Time starts if you selected **Daylight Savings**. The **o'clock** field uses the 24 hour format. Here are a couple of examples:<br><br>Daylight Saving Time starts in most parts of the United States on the first Sunday of April. Each time zone in the United States starts using Daylight Saving Time at 2 A.M. local time. So in the United States you would select **First**, **Sunday**, **April** and type 2 in the **o'clock** field.<br><br>Daylight Saving Time starts in the European Union on the last Sunday of March. All of the time zones in the European Union start using Daylight Saving Time at the same moment (1 A.M. GMT or UTC). So in the European Union you would select **Last**, **Sunday**, **March**. The time you type in the **o'clock** field depends on your time zone. In Germany for instance, you would type 2 because Germany's time zone is one hour ahead of GMT or UTC (GMT+1). |

**Table 12** Device Operation > Device Configuration > General > Time Setting

| LABEL | DESCRIPTION |
|---|---|
| End Date | Configure the day and time when Daylight Saving Time ends if you selected **Daylight Savings**. The **o'clock** field uses the 24 hour format. Here are a couple of examples:<br><br>Daylight Saving Time ends in the United States on the last Sunday of October. Each time zone in the United States stops using Daylight Saving Time at 2 A.M. local time. So in the United States you would select **Last**, **Sunday**, **October** and type 2 in the **o'clock** field.<br><br>Daylight Saving Time ends in the European Union on the last Sunday of October. All of the time zones in the European Union stop using Daylight Saving Time at the same moment (1 A.M. GMT or UTC). So in the European Union you would select **Last**, **Sunday**, **October**. The time you type in the **o'clock** field depends on your time zone. In Germany for instance, you would type 2 because Germany's time zone is one hour ahead of GMT or UTC (GMT+1). |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

# 5

# Device Network Settings

The screens explained network settings on ZyNOS ZyWALL and Prestige such as LAN, WAN, wireless card.

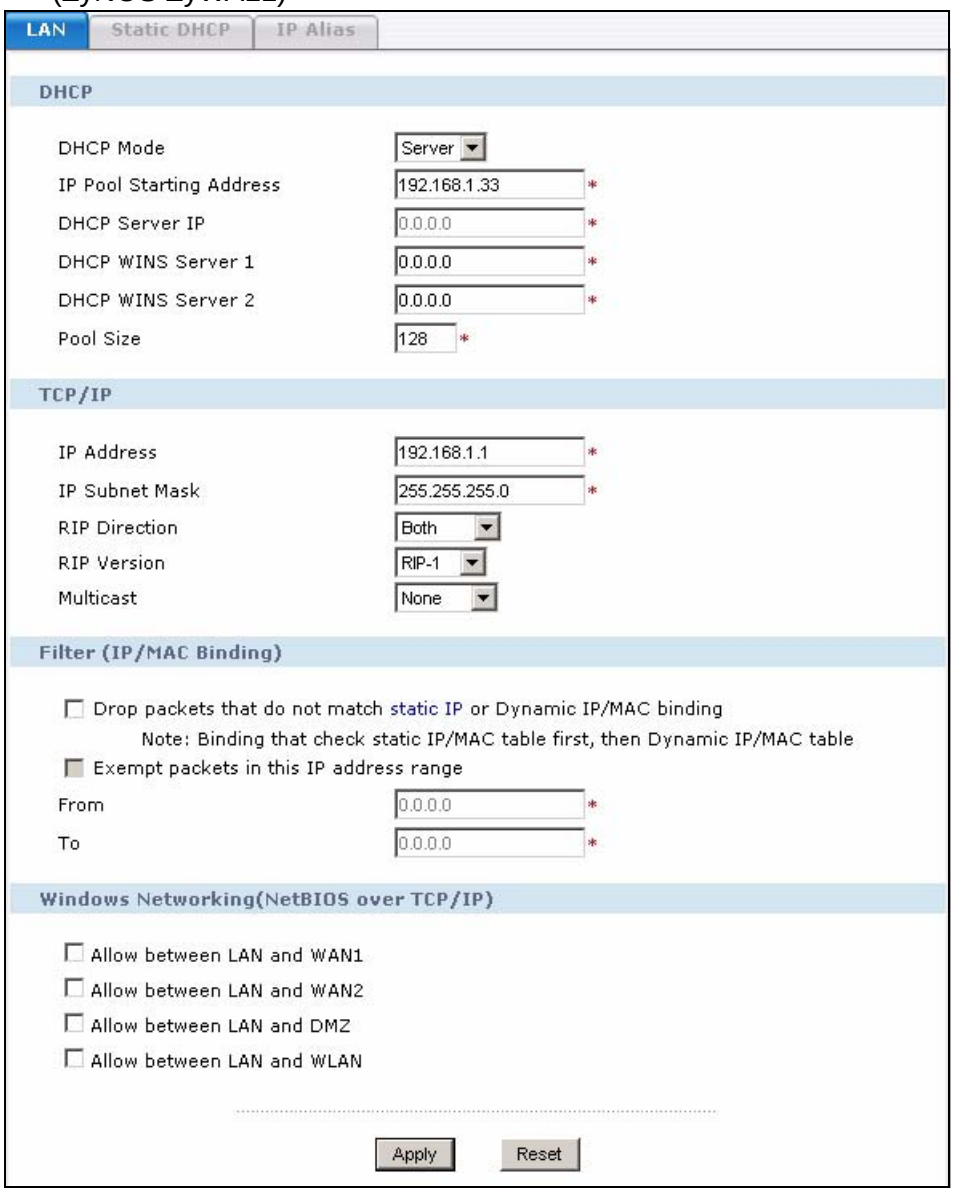
## 5.1 LAN (ZyNOS ZyWALL)

Note: This section refers only to the LAN screen, but the information is applicable for the LAN, WLAN, and DMZ screens.

Use this screen to configure the DHCP settings, TCP/IP settings, and NetBIOS settings for the LAN on a ZyNOS ZyWALL. To open this screen, click **Device**

**Operation** in the menu bar, and click **Device Configuration > Network > LAN > LAN** in the navigation panel.

**Figure 26** Device Operation > Device Configuration > Network > LAN > LAN (ZyNOS ZyWALL)



The following table describes the fields in this screen.

**Table 13** Device Operation > Device Configuration > LAN > LAN (ZyNOS ZyWALL)

| LABEL | DESCRIPTION |
|---|---|
| DHCP Mode | DHCP (Dynamic Host Configuration Protocol, RFC 2131 and RFC 2132) allows individual clients (workstations) to obtain TCP/IP configuration at startup from a server. Unless you are instructed by your ISP, leave this field set to **Server**. When configured as a server, the device provides TCP/IP configuration for the clients. When set as a server, fill in the **IP Pool Starting Address** and **Pool Size** fields.<br><br>Select **Relay** to have the device forward DHCP requests to another DHCP server. When set to **Relay**, fill in the **DHCP Server IP** field.<br><br>Select **None** to stop the device from acting as a DHCP server. When you select **None**, you must have another DHCP server on your LAN, or else the computers must be manually configured. |
| IP Pool Starting Address | This field specifies the first of the contiguous addresses in the IP address pool. |
| DHCP Server IP | Type the IP address of the DHCP server to which you want the device to relay DHCP requests. Use dotted decimal notation. Alternatively, click the right mouse button to copy and/or paste the IP address. |
| DHCP WINS Server 1, 2 | Type the IP address of the WINS (Windows Internet Naming Service) server that you want to send to the DHCP clients. The WINS server keeps a mapping table of the computer names on your network and the IP addresses that they are currently using. |
| Pool Size | This field specifies the size, or count of the IP address pool. |
| First DNS Server<br><br>Second DNS Server<br><br>Third DNS Server | These fields are enabled if the **DHCP Mode** is **Server**. Specify the DNS servers that are provided to DHCP clients.<br><br>Select **From ISP** if you want the device to use corresponding DNS server provided by the ISP.<br><br>Select **User-Defined** and specify the IP address if you want the device to use the specific DNS server.<br><br>Select **DNS Relay** if you want the device to |
| TCP/IP | |
| IP Address | Type the IP address of the device in dotted decimal notation. 192.168.1.1 is the factory default. |
| IP Subnet Mask | The subnet mask specifies the network number portion of an IP address. The device automatically calculates the subnet mask based on the IP address that you assign. Unless you are implementing subnetting, use the subnet mask computed by the device, which is 255.255.255.0. |
| RIP Direction | RIP (Routing Information Protocol, RFC1058 and RFC 1389) allows a router to exchange routing information with other routers. The **RIP Direction** field controls the sending and receiving of RIP packets. Select the RIP direction from **Both**/**In Only**/**Out Only**/**None**. When set to **Both** or **Out Only**, the device broadcasts its routing table periodically. When set to **Both** or **In Only**, it incorporates the RIP information that it receives; when set to **None**, it does not send any RIP packets and ignores any RIP packets received. **Both** is the default. |

**Table 13** Device Operation > Device Configuration > LAN > LAN (ZyNOS ZyWALL)

| LABEL | DESCRIPTION |
|---|---|
| RIP Version | The **RIP Version** field controls the format and the broadcasting method of the RIP packets that the device sends (it recognizes both formats when receiving). **RIP-1** is universally supported but RIP-2 carries more information. **RIP-1** is probably adequate for most networks, unless you have an unusual network topology. Both **RIP-2B** and **RIP-2M** sends the routing data in RIP-2 format; the difference being that **RIP-2B** uses subnet broadcasting while **RIP-2M** uses multicasting. Multicasting can reduce the load on non-router machines since they generally do not listen to the RIP multicast address and so will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting, also. By default, RIP direction is set to **Both** and the **Version** set to **RIP-1**. |
| Multicast | Select **IGMP V-1** or **IGMP V-2** or **None**. IGMP (Internet Group Multicast Protocol) is a network-layer protocol used to establish membership in a Multicast group - it is not used to carry user data. IGMP version 2 (RFC 2236) is an improvement over version 1 (RFC 1112) but IGMP version 1 is still in wide use. If you would like to read more detailed information about inter operability between IGMP version 2 and version 1, please see *sections 4 and 5 of RFC 2236*. |
| Filter (IP/MAC Binding) | |
| Drop packets that do not match static IP or Dynamic IP/ MAC binding | Select this to allow traffic only from devices on the LAN which have received an IP address from the selected device. This is done by allowing traffic only from devices on the LAN with specific combinations of IP and MAC addresses. These IP addresses are dynamically assigned by the the selected device or manually set using static DHCP.<br><br>Click **static IP** to go to the **Device Configuration** > **Network** > **LAN** > **Static DHCP** screen for a list of static IP/MAC address combinations. |
| Exempt packets in this IP address range. | Set the selected device to allow packets from the LAN with source IP addresses within a specified range. This allows packets even when their IP and MAC addresses do not match those specified in the **Device Configuration** > **Network** > **LAN** > **Static DHCP** screen.<br><br>Type this range of IP addresses in the **From** and **To** fields. |
| Windows Networking (NetBIOS over TCP/IP): NetBIOS (Network Basic Input/Output System) are TCP or UDP broadcast packets that enable a computer to connect to and communicate with a LAN. For some dial-up services such as PPPoE or PPTP, NetBIOS packets cause unwanted calls. However it may sometimes be necessary to allow NetBIOS packets to pass through to the WAN in order to find a computer on the WAN. | |
| Allow between LAN and WAN1 | Select this check box to forward NetBIOS packets from the LAN to WAN port 1and from WAN port 1 to the LAN. If your firewall is enabled with the default policy set to block WAN port 1 to LAN traffic, you also need to enable the default WAN port 1 to LAN firewall rule that forwards NetBIOS traffic.<br><br>Clear this check box to block all NetBIOS packets going from the LAN to WAN port 1 and from WAN port 1 to the LAN. |

**Table 13** Device Operation > Device Configuration > LAN > LAN (ZyNOS ZyWALL)

| LABEL | DESCRIPTION |
|---|---|
| Allow between LAN and WAN2 | Select this check box to forward NetBIOS packets from the LAN to WAN port 2 and from WAN port 2 to the LAN. If your firewall is enabled with the default policy set to block WAN port 2 to LAN traffic, you also need to enable the default WAN port 2 to LAN firewall rule that forwards NetBIOS traffic.<br><br>Clear this check box to block all NetBIOS packets going from the LAN to WAN port 2 and from WAN port 2 to the LAN. |
| Allow between LAN and DMZ | Select this check box to forward NetBIOS packets from the LAN to the DMZ and from the DMZ to the LAN. If your firewall is enabled with the default policy set to block DMZ to LAN traffic, you also need to enable the default DMZ to LAN firewall rule that forwards NetBIOS traffic.<br><br>Clear this check box to block all NetBIOS packets going from the LAN to the DMZ and from the DMZ to the LAN. |
| Allow between LAN and WLAN | Select this check box to forward NetBIOS packets from the LAN to the WLAN and from the WLAN to the LAN.<br><br>Clear this check box to block all NetBIOS packets going from the LAN to the WLAN and from the WLAN to the LAN. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

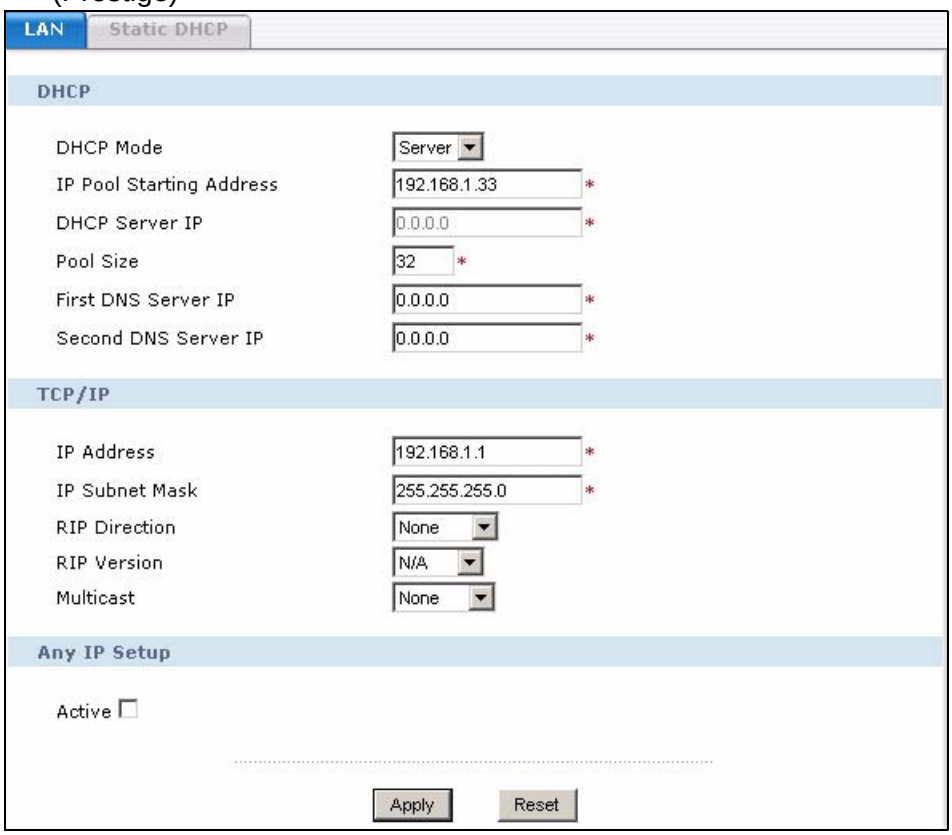
# 5.2 LAN (Prestige)

Note: This section refers only to the LAN screen, but the information is applicable for the LAN, WLAN, and DMZ screens.

Use this screen to configure the DHCP settings, TCP/IP settings, and Any IP settings for the LAN port on a device. To open this screen, click **Device Operation**

in the menu bar, and click **Device Configuration > Network > LAN > LAN** in the navigation panel.

**Figure 27** Device Operation > Device Configuration > Network > LAN > LAN (Prestige)



The following table describes the fields in this screen.

**Table 14** Device Operation > Device Configuration > Network > LAN > LAN (Prestige)

| LABEL | DESCRIPTION |
|---|---|
| DHCP Mode | DHCP (Dynamic Host Configuration Protocol, RFC 2131 and RFC 2132) allows individual clients (computers) to obtain TCP/IP configuration at startup from a server.<br><br>Select **None** if you do not want to configure DNS servers. If you do not configure a DNS server, you must know the IP address of a machine in order to access it.<br><br>When configured as a **Server**, the device provides TCP/IP configuration for the clients. When set as a **Server**, fill in the rest of the DHCP setup fields.<br><br>Select **Relay** to have the device act as a DNS proxy. The device tells the DHCP clients on the LAN that the device itself is the DNS server. When a computer on the LAN sends a DNS query to the device, the device forwards the query to the device's system DNS server and relays the response back to the computer. You can select **Relay** and enter an IP Pool Starting Address. The **First DNS Server IP** and **Second DNS Server IP** will appear as read only fields. |
| IP Pool Starting Address | This field specifies the first of the contiguous addresses in the IP address pool. |
| DHCP Server IP | If **Relay** is selected in the DHCP field above, then type the IP address of the actual, remote DHCP server here. |
| Pool Size | This field specifies the size, or count of the IP address pool. |
| First DNS Server IP<br><br>Second DNS Server IP | The device passes a DNS (Domain Name System) server IP address (in the order you specify here) to the DHCP clients. Type your First DNS Server IP and<br><br>Second DNS Server IP addresses in these fields. |
| TCP/IP | |
| IP Address | Type the IP address of the device in dotted decimal notation. |
| IP Subnet Mask | The subnet mask specifies the network number portion of an IP address. Unless you are implementing subnetting, use the "natural" subnet mask, which is usually 255.255.255.0. |
| RIP Direction | RIP (Routing Information Protocol, RFC1058 and RFC 1389) allows a router to exchange routing information with other routers. The **RIP Direction** field controls the sending and receiving of RIP packets. Select the RIP direction from **Both**/**In Only**/**Out Only**/**None**. When set to **Both** or **Out Only**, the device broadcasts its routing table periodically. When set to **Both** or **In Only**, it incorporates the RIP information that it receives; when set to **None**, it does not send any RIP packets and ignores any RIP packets received. **Both** is the default. |

**Table 14** Device Operation > Device Configuration > Network > LAN > LAN (Prestige) (continued)

| LABEL | DESCRIPTION |
|---|---|
| RIP Version | The **RIP Version** field controls the format and the broadcasting method of the RIP packets that the device sends (it recognizes both formats when receiving). **RIP-1** is universally supported but RIP-2 carries more information. **RIP-1** is probably adequate for most networks, unless you have an unusual network topology. Both **RIP-2B** and **RIP-2M** sends the routing data in RIP-2 format; the difference being that **RIP-2B** uses subnet broadcasting while **RIP-2M** uses multicasting. Multicasting can reduce the load on non-router machines since they generally do not listen to the RIP multicast address and so will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting, also. By default, RIP direction is set to **Both** and the **Version** set to **RIP-1**. |
| Multicast | Select **IGMP V-1** or **IGMP V-2** or **None**. IGMP (Internet Group Multicast Protocol) is a network-layer protocol used to establish membership in a Multicast group - it is not used to carry user data. IGMP version 2 (RFC 2236) is an improvement over version 1 (RFC 1112) but IGMP version 1 is still in wide use. If you would like to read more detailed information about interpretability between IGMP version 2 and version 1, please see *sections 4 and 5 of RFC 2236*. |
| Any IP Setup | |
| Active | Select this option to activate the Any-IP feature. This allows a computer to access the Internet without changing the network settings (such as IP address and subnet mask) of the computer, even when the IP addresses of the computer and the device are not in the same subnet.<br><br>When you disable the Any-IP feature, only computers with dynamic IP addresses or static IP addresses in the same subnet as the device's LAN IP address can connect to the device or access the Internet through the device. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

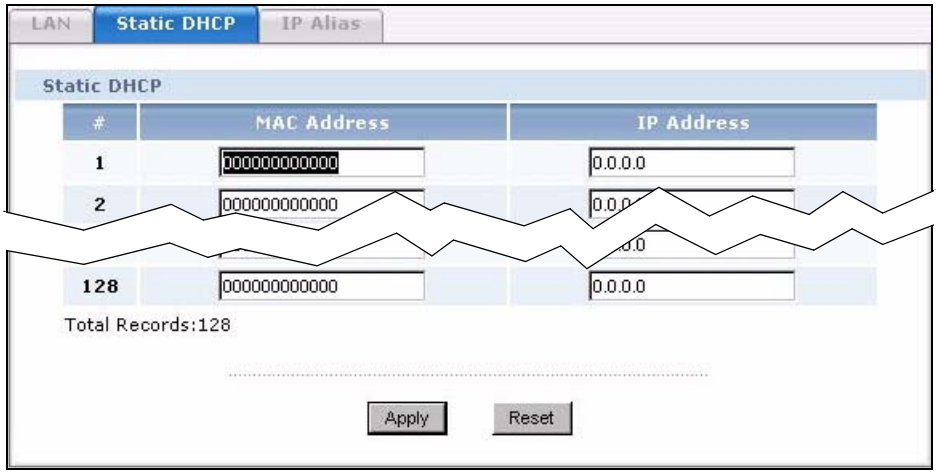
## 5.2.1 Static DHCP

Note: This section refers only to the LAN screen, but the information is applicable for the LAN, WLAN, and DMZ screens.

Use this screen to assign IP addresses to specific individual computers on the LAN based on their MAC addresses. To open this screen, click **Device Operation** in the

menu bar, and click **Device Configuration > Network > LAN > Static DHCP** in the navigation panel.

**Figure 28** Device Operation > Device Configuration > Network > LAN > Static DHCP




The following table describes the fields in this screen.

**Table 15** Device Operation > Device Configuration > Network > LAN > Static DHCP

| LABEL | DESCRIPTION |
|---|---|
| Index | This is the index number of the Static IP table entry (row). |
| MAC Address | This is the MAC address of a computer on the device's LAN. |
| IP Address | This is the IP address to be assigned to the device with the MAC address above. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

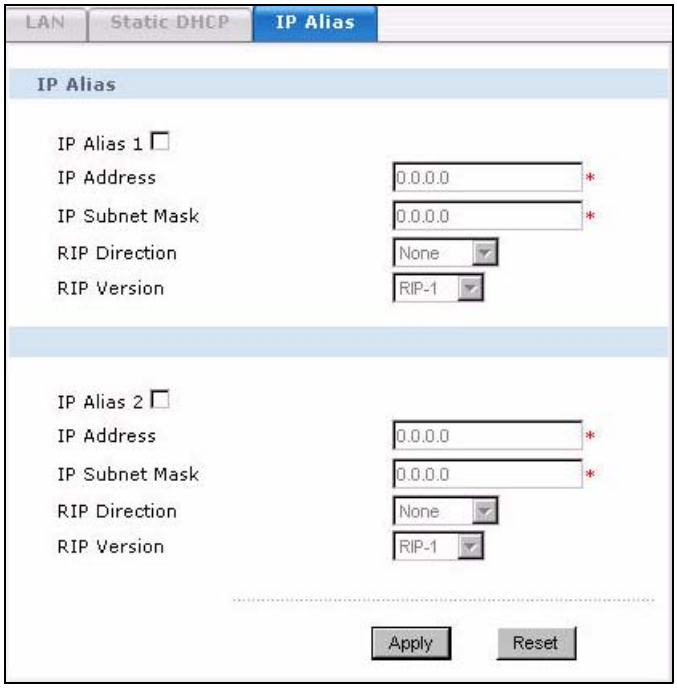
## 5.2.2 IP Alias

Note: This section refers only to the LAN screen, but the information is applicable for the LAN, WLAN, and DMZ screens.

Use this screen to configure logical interfaces (subnets) via its single physical Ethernet interface with the device itself being the gateway for each network. You can also configure firewall rules to control access between the logical networks. To

open this screen, click **Device Operation > Device Configuration > Network > LAN > IP Alias**.

**Figure 29** Device Operation > Device Configuration > Network > LAN > IP Alias




The following table describes the fields in this screen.

**Table 16** Device Operation > Device Configuration > Network > LAN > IP Alias

| LABEL | DESCRIPTION |
|---|---|
| IP Alias 1,2 | Select the check box to configure another network for the device. |
| IP Address | Enter the IP address of the device in dotted decimal notation. |
| IP Subnet Mask | The device automatically calculates the subnet mask based how many aliases you select. See also the appendices for more information on IP subnetting. |
| RIP Direction | RIP (Routing Information Protocol, RFC1058 and RFC 1389) allows a router to exchange routing information with other routers. The **RIP Direction** field controls the sending and receiving of RIP packets. Select the RIP direction from **Both**/**In Only**/**Out Only**/**None**. When set to **Both** or **Out Only**, the device broadcasts its routing table periodically. When set to **Both** or **In Only**, it incorporates the RIP information that it receives; when set to **None**, it does not send any RIP packets and ignores any RIP packets received. |

**Table 16** Device Operation > Device Configuration > Network > LAN > IP Alias

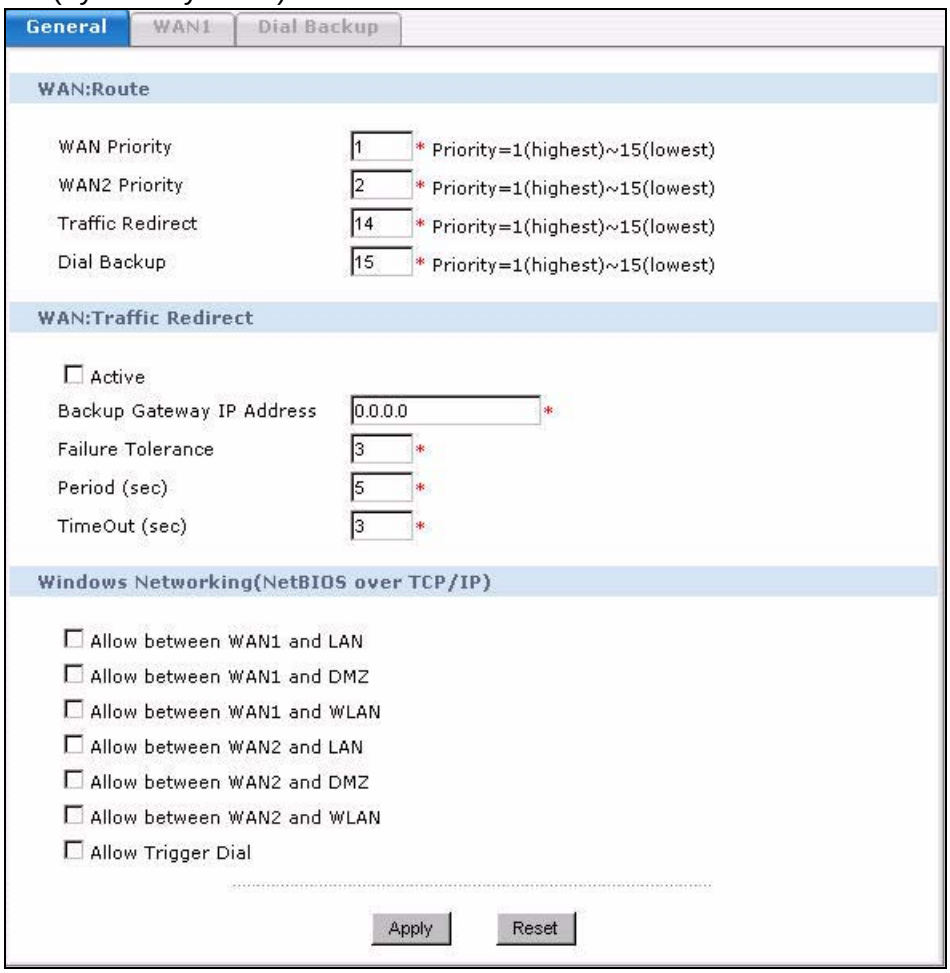
| LABEL | DESCRIPTION |
|---|---|
| RIP Version | The **RIP Version** field controls the format and the broadcasting method of the RIP packets that the device sends (it recognizes both formats when receiving). **RIP-1** is universally supported but RIP-2 carries more information. **RIP-1** is probably adequate for most networks, unless you have an unusual network topology. Both **RIP-2B** and **RIP-2M** sends the routing data in RIP-2 format; the difference being that **RIP-2B** uses subnet broadcasting while **RIP-2M** uses multicasting. Multicasting can reduce the load on non-router machines since they generally do not listen to the RIP multicast address and so will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting, also. By default, RIP direction is set to **Both** and the Version set to **RIP-1**. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

# 5.3 WAN General (ZyNOS ZyWALL)

This section gives configuration information on the fields displayed in this screen. To open this screen, click **Device Operation** in the menu bar, and click **Device Configuration > Network > WAN > General** in the navigation panel.

Note: Be careful when configuring a device's WAN as an incorrect configuration could result in the device being inaccessible from Vantage CNM (or by the web configurator from the WAN) and may necessitate a site visit to correct.

**Figure 30** Device Operation > Device Configuration > Network > WAN > General (ZyNOS ZyWALL)



The following table describes the fields in this screen.

**Table 17** Device Operation > Device Configuration > Network > WAN > General (ZyNOS ZyWALL)

| LABEL | DESCRIPTION |
|---|---|
| WAN Priority<br>WAN2 Priority<br>Traffic Redirect<br>Dial Backup | The default WAN connection is "1' as your broadband connection via the WAN port should always be your preferred method of accessing the WAN. The default priority of the routes is **WAN**, **Traffic Redirect** and then **Dial Backup** (dial backup does not apply to all device models):<br>You have two choices for an auxiliary connection in the event that your regular WAN connection goes down. If **Dial Backup** is preferred to **Traffic Redirect**, then type "14" in the **Dial Backup Priority (metric)** field (and leave the **Traffic Redirect Priority (metric)** at the default of "15"). |
| Active | Select this check box to have the device use traffic redirect if the normal WAN connection goes down. |
| Backup Gateway IP Address | Type the IP address of your backup gateway in dotted decimal notation. The device automatically forwards traffic to this IP address if the device's Internet connection terminates. |
| Fail Tolerance | Type the number of times the device may attempt and fail to connect to the Internet before traffic is forwarded to the backup gateway. |
| Period (sec) | Type the number of seconds for the device to wait between checks to see if it can connect to the WAN IP address (**Check WAN IP Address** field) or default gateway. Allow more time if your destination IP address handles lots of traffic. |
| Timeout (sec) | Type the number of seconds for the device to wait for a ping response from the IP Address in the **Check WAN IP Address** field before it times out. The WAN connection is considered "down" after the device times out the number of times specified in the **Fail Tolerance** field. Use a higher value in this field if your network is busy or congested. |
| Windows Networking (NetBIOS over TCP/IP): | NetBIOS (Network Basic Input/Output System) are TCP or UDP packets that enable a computer to connect to and communicate with a LAN. For some dial-up services such as PPPoE or PPTP, NetBIOS packets cause unwanted calls. |
| Allow between WAN1 and LAN | Select this check box to forward NetBIOS packets from the WAN1 port to the LAN port and from the LAN port to WAN1. If your firewall is enabled with the default policy set to block WAN port 1 to LAN traffic, you also need to enable the default WAN1 to LAN firewall rule that forwards NetBIOS traffic.<br>Clear this check box to block all NetBIOS packets going from the WAN1 port to the LAN port and from LAN port to WAN1. |
| Allow between WAN1 and DMZ | Select this check box to forward NetBIOS packets from the WAN1 port to the DMZ port and from the DMZ port to WAN1.<br>Clear this check box to block all NetBIOS packets going from the WAN1 port to the DMZ port and from DMZ port to WAN1. |
| Allow between WAN1 and WLAN | Select this check box to forward NetBIOS packets from the WAN1 port to the WLAN port and from the WLAN port to WAN1.<br>Clear this check box to block all NetBIOS packets going from the WAN1 port to the WLAN port and from WLAN port to WAN1. |

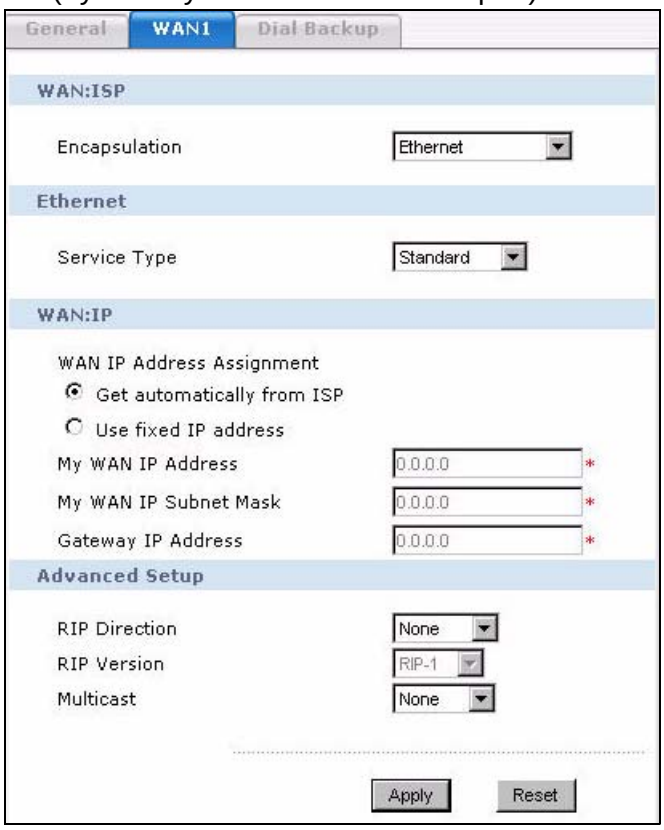
**Table 17** Device Operation > Device Configuration > Network > WAN > General (ZyNOS ZyWALL) (continued)

| LABEL | DESCRIPTION |
|---|---|
| Allow between WAN2 and LAN | Select this check box to forward NetBIOS packets from the WAN2 port to the LAN port and from the LAN port to WAN2. If your firewall is enabled with the default policy set to block WAN port 2 to LAN traffic, you also need to enable the default WAN2 to LAN firewall rule that forwards NetBIOS traffic.<br><br>Clear this check box to block all NetBIOS packets going from the WAN2 port to the LAN port and from LAN port to WAN2. |
| Allow between WAN2 and DMZ | Select this check box to forward NetBIOS packets from the WAN2 port to the DMZ port and from the DMZ port to WAN2.<br><br>Clear this check box to block all NetBIOS packets going from the WAN2 port to the DMZ port and from DMZ port to WAN2. |
| Allow between WAN2 and WLAN | Select this check box to forward NetBIOS packets from the WAN2 port to the WLAN port and from the WLAN port to WAN2.<br><br>Clear this check box to block all NetBIOS packets going from the WAN2 port to the WLAN port and from WLAN port to WAN2. |
| Allow Trigger Dial | Select this option to allow NetBIOS packets to initiate calls. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

## 5.3.1 WAN1 (ZyNOS ZyWALL with one WAN port)

The screen differs by the encapsulation type chosen.

**Figure 31** Device Operation > Device Configuration > Network > WAN > WAN1 (ZyNOS ZyWALL with one WAN port)




### 5.3.1.1 Ethernet Encapsulation

The following table describes the labels in the **Ethernet** encapsulation screen.

**Table 18** Device Operation > Device Configuration > Network > WAN > ISP (Ethernet) – ZyNOS ZyWALL (one WAN port)

| LABEL | DESCRIPTION |
|---|---|
| Encapsulation | You must choose the Ethernet option when the WAN port is used as a regular Ethernet. |
| Service Type | Choose from **Standard**, **Telstra** (RoadRunner Telstra authentication method), **RR-Manager** (Roadrunner Manager authentication method), **RR-Toshiba** (Roadrunner Toshiba authentication method) or **Telia Login**.<br><br>The following fields do not appear with the **Standard** service type. |
| WAN:IP | |

**Table 18** Device Operation > Device Configuration > Network > WAN > ISP (Ethernet) – ZyNOS ZyWALL (one WAN port) (continued)

| LABEL | DESCRIPTION |
|---|---|
| WAN IP Address Assignment | Select **Get automatically from ISP** If your ISP did not assign you a fixed IP address. This is the default selection.<br><br>Select **Use fixed IP address** If the ISP assigned a fixed IP address. |
| My WAN IP Address | Enter your WAN IP address in this field if you selected **Use Fixed IP Address.** |
| My WAN IP Subnet Mask | Enter the IP subnet mask (if your ISP gave you one) in this field if you selected **Use Fixed IP Address**. |
| Gateway IP Address | Enter the gateway or remote IP address (if your ISP gave you one) in this field if you selected **Use Fixed IP Address**. |
| Advanced Setup | |
| RIP Direction | RIP (Routing Information Protocol) allows a router to exchange routing information with other routers. The **RIP Direction** field controls the sending and receiving of RIP packets.<br><br>Choose **Both**, **None**, **In Only** or **Out Only**.<br><br>When set to **Both** or **Out Only**, the device will broadcast its routing table periodically.<br><br>When set to **Both** or **In Only**, the device will incorporate RIP information that it receives.<br><br>When set to **None**, the device will not send any RIP packets and will ignore any RIP packets received.<br><br>By default, **RIP Direction** is set to **Both**. |
| RIP Version | The **RIP Version** field controls the format and the broadcasting method of the RIP packets that the device sends (it recognizes both formats when receiving).<br><br>Choose **RIP-1**, **RIP-2B** or **RIP-2M**.<br><br>**RIP-1** is universally supported; but **RIP-2** carries more information. RIP-1 is probably adequate for most networks, unless you have an unusual network topology. Both **RIP-2B** and **RIP-2M** sends the routing data in RIP-2 format; the difference being that RIP-2B uses subnet broadcasting while RIP-2M uses multicasting. Multicasting can reduce the load on non-router machines since they generally do not listen to the RIP multicast address and so will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting, also. By default, the **RIP Version** field is set to **RIP-1**. |
| Multicast | Choose **None** (default), **IGMP-V1** or **IGMP-V2**. IGMP (Internet Group Multicast Protocol) is a network-layer protocol used to establish membership in a Multicast group - it is not used to carry user data. IGMP version 2 (RFC 2236) is an improvement over version 1 (RFC 1112) but IGMP version 1 is still in wide use. If you would like to read more detailed information about inter operability between IGMP version 2 and version 1, please see sections 4 and 5 of RFC 2236. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

### 5.3.1.2 PPPoE Encapsulation

The device supports PPPoE (Point-to-Point Protocol over Ethernet). PPPoE is an IETF Draft standard (RFC 2516) specifying how a personal computer (PC) interacts with a broadband modem (DSL, cable, wireless, etc.) connection. The **PPPoE** option is for a dial-up connection using PPPoE.

For the service provider, PPPoE offers an access and authentication method that works with existing access control systems (for example Radius). PPPoE provides a login and authentication method that the existing Microsoft Dial-Up Networking software can activate, and therefore requires no new learning or procedures for Windows users.

One of the benefits of PPPoE is the ability to let you access one of multiple network services, a function known as dynamic service selection. This enables the service provider to easily create and offer new IP services for individuals.

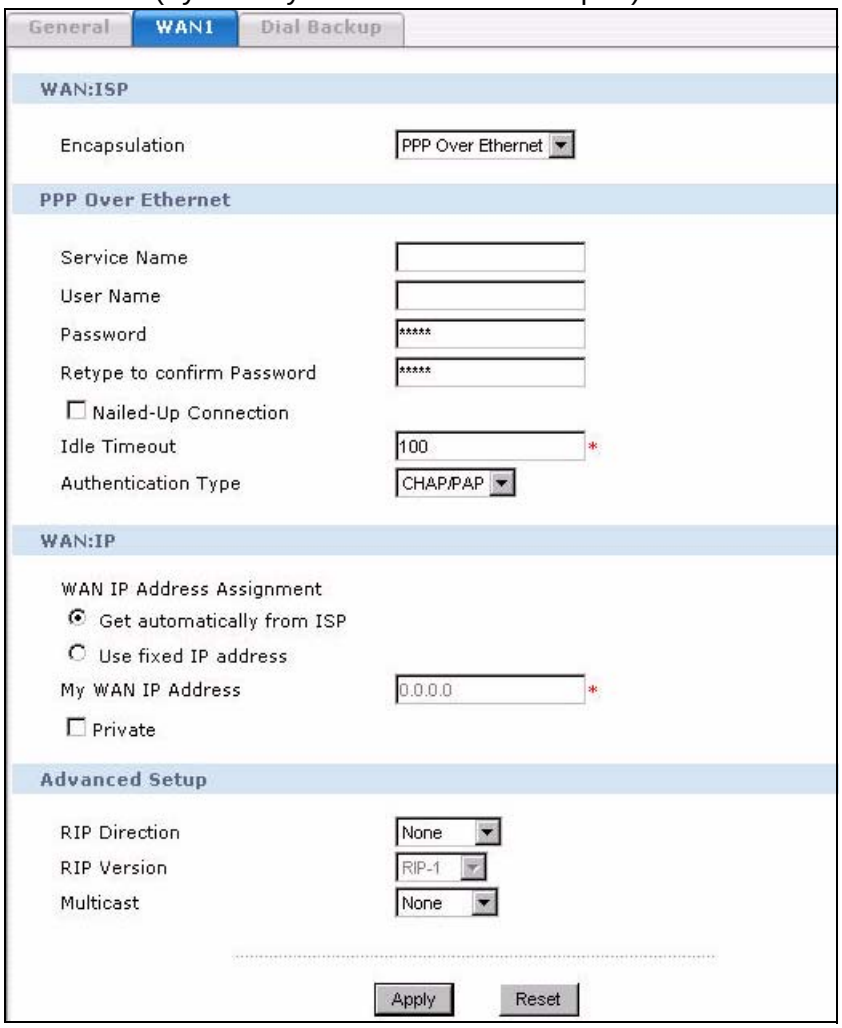
Operationally, PPPoE saves significant effort for both you and the ISP or carrier, as it requires no specific configuration of the broadband modem at the customer site.

By implementing PPPoE directly on the device (rather than individual computers), the computers on the LAN do not need PPPoE software installed, since the device does that part of the task. Furthermore, with NAT, all of the LANs' computers will have access.

Select PPP Over Ethernet from the Encapsulation field. A warning message appears. Click **OK**.

**Figure 32** Warning Message When Select PPPoE

**Figure 33** Device Operation > Device Configuration > Network > WAN > WAN1-PPPoE (ZyNOS ZyWALL with one WAN port)



The following table describes the labels in the **PPPoE** screen.

**Table 19** Device Operation > Device Configuration > Network > WAN > ISP (PPPoE) – ZyNOS ZyWALL (one WAN port)

| LABEL | DESCRIPTION |
|---|---|
| WAN:ISP | |
| Encapsulation | The PPPoE choice is for a dial-up connection using PPPoE. The router supports PPPoE (Point-to-Point Protocol over Ethernet). PPPoE is an IETF Draft standard (RFC 2516) specifying how a personal computer (PC) interacts with a broadband modem (for example, xDSL, cable, wireless, etc.) connection. Operationally, PPPoE saves significant effort for both the end user and ISP/carrier, as it requires no specific configuration of the broadband modem at the customer site. By implementing PPPoE directly on the router rather than individual computers, the computers on the LAN do not need PPPoE software installed, since the router does that part of the task. Further, with NAT, all of the LAN's computers will have access. |
| PPP Over Ethernet | |
| Service Name | Type the PPPoE service name provided to you. PPPoE uses a service name to identify and reach the PPPoE server. |
| User Name | Type the user name given to you by your ISP. |
| Password | Type the password associated with the User Name above. |
| Retype to confirm Password | Type your password again to make sure that you have entered it correctly. |
| Nailed-Up Connection | Select **Nailed-Up Connection** if you do not want the connection to time out. |
| Idle Timeout | This value specifies the time in seconds that elapses before the router automatically disconnects from the PPPoE server. |
| Authentication Type | Use the drop-down list box to select an authentication protocol for outgoing calls. Options are:<br>**CHAP/PAP** - Your Vantage CNM accepts either CHAP or PAP when requested by this remote node.<br>**CHAP** - Your Vantage CNM accepts CHAP only.<br>**PAP** - Your Vantage CNM accepts PAP only. |
| WAN:IP | |
| WAN IP Address Assignment | Select **Get automatically from ISP** If your ISP did not assign you a fixed IP address. This is the default selection.<br>Select **Use fixed IP address** If the ISP assigned a fixed IP address. |
| My WAN IP Address | Enter your WAN IP address in this field if you selected **Use Fixed IP Address.** |
| Private | This parameter determines if the device will include the route to this remote node in its RIP broadcasts. If set to Yes, this route is kept private and not included in RIP broadcast. If No, the route to this remote node will be propagated to other hosts through RIP broadcasts. |
| Advanced Setup | |

**Table 19** Device Operation > Device Configuration > Network > WAN > ISP (PPPoE) – ZyNOS ZyWALL (one WAN port) (continued)

| LABEL | DESCRIPTION |
|---|---|
| RIP Direction | RIP (Routing Information Protocol) allows a router to exchange routing information with other routers. The **RIP Direction** field controls the sending and receiving of RIP packets.<br><br>Choose **Both**, **None**, **In Only** or **Out Only**.<br><br>When set to **Both** or **Out Only**, the device will broadcast its routing table periodically.<br><br>When set to **Both** or **In Only**, the device will incorporate RIP information that it receives.<br><br>When set to **None**, the device will not send any RIP packets and will ignore any RIP packets received.<br><br>By default, **RIP Direction** is set to **Both**. |
| RIP Version | The **RIP Version** field controls the format and the broadcasting method of the RIP packets that the device sends (it recognizes both formats when receiving).<br><br>Choose **RIP-1**, **RIP-2B** or **RIP-2M**.<br><br>**RIP-1** is universally supported; but **RIP-2** carries more information. RIP-1 is probably adequate for most networks, unless you have an unusual network topology. Both **RIP-2B** and **RIP-2M** sends the routing data in RIP-2 format; the difference being that RIP-2B uses subnet broadcasting while RIP-2M uses multicasting. Multicasting can reduce the load on non-router machines since they generally do not listen to the RIP multicast address and so will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting, also. By default, the **RIP Version** field is set to **RIP-1**. |
| Multicast | Choose **None** (default), **IGMP-V1** or **IGMP-V2**. IGMP (Internet Group Multicast Protocol) is a network-layer protocol used to establish membership in a Multicast group - it is not used to carry user data. IGMP version 2 (RFC 2236) is an improvement over version 1 (RFC 1112) but IGMP version 1 is still in wide use. If you would like to read more detailed information about inter operability between IGMP version 2 and version 1, please see sections 4 and 5 of RFC 2236. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

### 5.3.1.3 PPTP Encapsulation

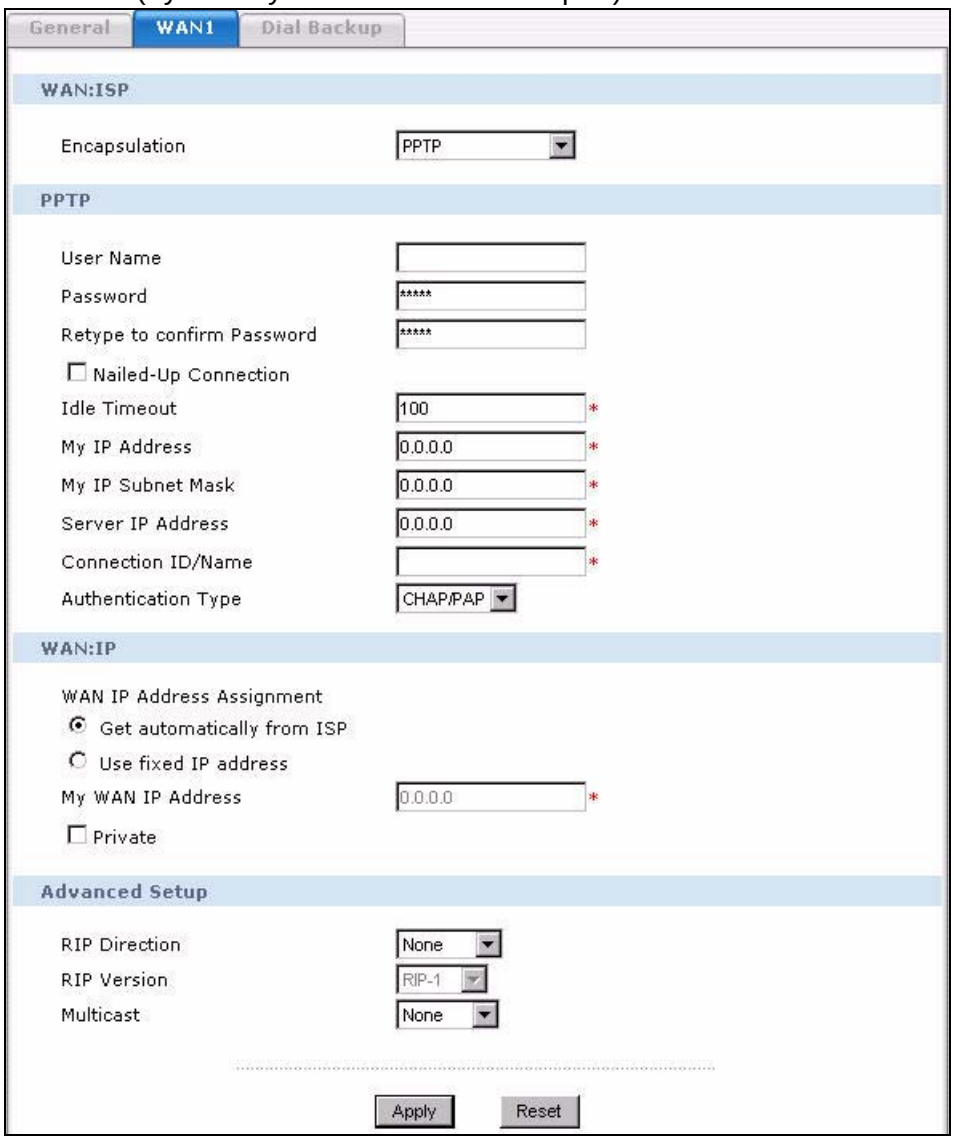
Point-to-Point Tunneling Protocol (PPTP) is a network protocol that enables secure transfer of data from a remote client to a private server, creating a Virtual Private Network (VPN) using TCP/IP-based networks.

PPTP supports on-demand, multi-protocol and virtual private networking over public networks, such as the Internet.

Select PPP Over Ethernet from the Encapsulation field. A warning message appears. Click **OK**.

**Figure 34** Warning Message When Select PPTP

**Figure 35** Device Operation > Device Configuration > Network > WAN > WAN1 - PPTP (ZyNOS ZyWALL with one WAN port)



The following table describes the labels in the **PPTP** screen.

**Table 20** Device Operation > Device Configuration > Network > WAN > ISP (PPTP) – ZyNOS ZyWALL (one WAN port)

| LABEL | DESCRIPTION |
|---|---|
| WAN:ISP | |
| Encapsulation | Point-to-Point Tunneling Protocol (PPTP) is a network protocol that enables secure transfer of data from a remote client to a private server, creating a Virtual Private Network (VPN) using TCP/IP-based networks. PPTP supports on-demand, multi-protocol, and virtual private networking over public networks, such as the Internet. The device supports only one PPTP server connection at any given time. To configure a PPTP client, you must configure the **User Name** and **Password** fields for a PPP connection and the PPTP parameters for a PPTP connection. |
| PPTP | |
| User Name | Type the user name given to you by your ISP. |
| Password | Type the password associated with the User Name above. |
| Retype to confirm Password | Type your password again to make sure that you have entered it correctly. |
| Nailed-up Connection | Select **Nailed-Up Connection** if you do not want the connection to time out. |
| Idle Timeout | This value specifies the time in seconds that elapses before the device automatically disconnects from the PPTP server. |
| My IP Address | Type the (static) IP address assigned to you by your ISP. |
| My IP Subnet Mask | The device will automatically calculate the subnet mask based on the IP address that you assign. Unless you are implementing subnetting, use the subnet mask computed by the device. |
| Server IP Address | Type the IP address of the PPTP server. |
| Connection ID/ Name | Type your identification name for the PPTP server. |
| Authentication Type | Use the drop-down list box to select an authentication protocol for outgoing calls. Options are:<br>**CHAP/PAP** - Your Vantage CNM accepts either CHAP or PAP when requested by this remote node.<br>**CHAP** - Your Vantage CNM accepts CHAP only.<br>**PAP** - Your Vantage CNM accepts PAP only. |
| WAN:IP | |
| WAN IP Address Assignment | Select **Get automatically from ISP** If your ISP did not assign you a fixed IP address. This is the default selection.<br>Select **Use fixed IP address** If the ISP assigned a fixed IP address. |
| My WAN IP Address | Enter your WAN IP address in this field if you selected **Use Fixed IP Address.** |

**Table 20** Device Operation > Device Configuration > Network > WAN > ISP (PPTP) – ZyNOS ZyWALL (one WAN port) (continued)

| LABEL | DESCRIPTION |
|---|---|
| Private | This parameter determines if the device will include the route to this remote node in its RIP broadcasts. If set to Yes, this route is kept private and not included in RIP broadcast. If No, the route to this remote node will be propagated to other hosts through RIP broadcasts. |
| Advanced Setup | |
| RIP Direction | RIP (Routing Information Protocol) allows a router to exchange routing information with other routers. The **RIP Direction** field controls the sending and receiving of RIP packets.<br><br>Choose **Both**, **None**, **In Only** or **Out Only**.<br><br>When set to **Both** or **Out Only**, the device will broadcast its routing table periodically.<br><br>When set to **Both** or **In Only**, the device will incorporate RIP information that it receives.<br><br>When set to **None**, the device will not send any RIP packets and will ignore any RIP packets received.<br><br>By default, **RIP Direction** is set to **Both**. |
| RIP Version | The **RIP Version** field controls the format and the broadcasting method of the RIP packets that the device sends (it recognizes both formats when receiving).<br><br>Choose **RIP-1**, **RIP-2B** or **RIP-2M**.<br><br>**RIP-1** is universally supported; but **RIP-2** carries more information. RIP-1 is probably adequate for most networks, unless you have an unusual network topology. Both **RIP-2B** and **RIP-2M** sends the routing data in RIP-2 format; the difference being that RIP-2B uses subnet broadcasting while RIP-2M uses multicasting. Multicasting can reduce the load on non-router machines since they generally do not listen to the RIP multicast address and so will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting, also. By default, the **RIP Version** field is set to **RIP-1**. |
| Multicast | Choose **None** (default), **IGMP-V1** or **IGMP-V2**. IGMP (Internet Group Multicast Protocol) is a network-layer protocol used to establish membership in a Multicast group - it is not used to carry user data. IGMP version 2 (RFC 2236) is an improvement over version 1 (RFC 1112) but IGMP version 1 is still in wide use. If you would like to read more detailed information about inter operability between IGMP version 2 and version 1, please see sections 4 and 5 of RFC 2236. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

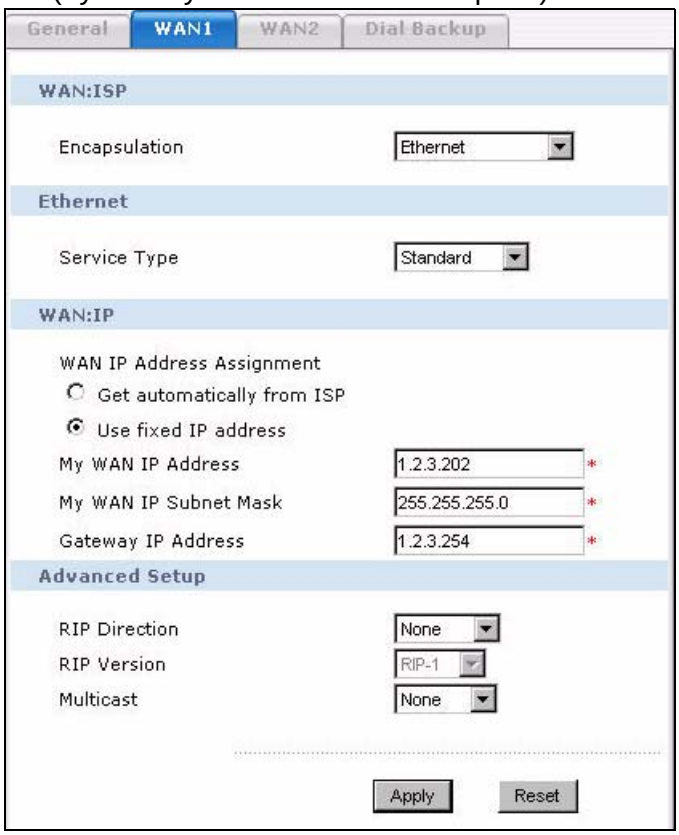
## 5.3.2 WAN1 and WAN2 (ZyNOS ZyWALL with two WAN ports)

Since ZyWALL 4.00, the WAN screens are organized differently than the previous versions because it has two WAN ports. Use the **WAN1** and **WAN2** tabs to configure the **WAN1** and **WAN2** ports. These tabs are similar and vary by encapsulation type.

### 5.3.2.1 Ethernet Encapsulation

Use this screen to configure an Ethernet connection on one of the device's WAN ports. To open this screen, click **Device Operation > Device Configuration > Network > WAN > WAN1/2**.

**Figure 36** Device Operation > Device Configuration > Network > WAN > WAN1/2 (ZyNOS ZyWALL with two WAN ports)




The following table describes the labels in this screen.

**Table 21** Device Operation > Device Configuration > Network > WAN > WAN1/2 (ZyNOS ZyWALL with two WAN ports)

| LABEL | DESCRIPTION |
|---|---|
| ISP Parameters for Internet Access | |
| Encapsulation | You must choose the Ethernet option when the WAN port is used as a regular Ethernet. |

**Table 21** Device Operation > Device Configuration > Network > WAN > WAN1/2 (ZyNOS ZyWALL with two WAN ports) (continued)

| LABEL | DESCRIPTION |
|---|---|
| Service Type | Choose from **Standard**, **RR-Telstra** (RoadRunner Telstra authentication method), **RR-Manager** (Roadrunner Manager authentication method), **RR-Toshiba** (Roadrunner Toshiba authentication method) or **Telia Login**.<br>The following fields do not appear with the **Standard** service type. |
| User Name | Type the user name given to you by your ISP. |
| Password | Type the password associated with the user name above. |
| Retype to confirm Password | Type your password again to make sure that you have entered is correctly. |
| Login Server IP Address | Type the authentication server IP address here if your ISP gave you one.<br>This field is not available for Telia Login. |
| Telia Login Server (Telia Login only) | Type the domain name of the Telia login server, for example login1.telia.com. |
| Relogin Every(mins) (Telia Login only) | The Telia server logs the Vantage CNM out if the Vantage CNM does not log in periodically. Type the number of minutes from 1 to 59 (30 default) for the Vantage CNM to wait between logins. |
| WAN IP Address Assignment | |
| Get automatically from ISP | Select this option If your ISP did not assign you a fixed IP address. This is the default selection. |
| Use fixed IP address | Select this option If the ISP assigned a fixed IP address. |
| My WAN IP Address | Enter your WAN IP address in this field if you selected **Use Fixed IP Address**. |
| My WAN IP Subnet Mask | Enter the IP subnet mask (if your ISP gave you one) in this field if you selected **Use Fixed IP Address**. |
| Gateway IP Address | Enter the gateway IP address (if your ISP gave you one) in this field if you selected **Use Fixed IP Address**. |
| Advanced Setup | |
| RIP Direction | RIP (Routing Information Protocol) allows a router to exchange routing information with other routers. The **RIP Direction** field controls the sending and receiving of RIP packets.<br>Choose **Both**, **None**, **In Only** or **Out Only**.<br>When set to **Both** or **Out Only**, the Vantage CNM will broadcast its routing table periodically.<br>When set to **Both** or **In Only**, the Vantage CNM will incorporate RIP information that it receives.<br>When set to **None**, the Vantage CNM will not send any RIP packets and will ignore any RIP packets received.<br>By default, **RIP Direction** is set to **Both**. |

**Table 21** Device Operation > Device Configuration > Network > WAN > WAN1/2 (ZyNOS ZyWALL with two WAN ports) (continued)

| LABEL | DESCRIPTION |
|---|---|
| RIP Version | The **RIP Version** field controls the format and the broadcasting method of the RIP packets that the Vantage CNM sends (it recognizes both formats when receiving).<br><br>Choose **RIP-1**, **RIP-2B** or **RIP-2M**.<br><br>**RIP-1** is universally supported; but **RIP-2** carries more information. RIP-1 is probably adequate for most networks, unless you have an unusual network topology. Both **RIP-2B** and **RIP-2M** sends the routing data in RIP-2 format; the difference being that RIP-2B uses subnet broadcasting while RIP-2M uses multicasting. Multicasting can reduce the load on non-router machines since they generally do not listen to the RIP multicast address and so will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting, also. By default, the **RIP Version** field is set to **RIP-1**. |
| Multicast Version | Choose **None** (default), **IGMP-V1** or **IGMP-V2**. IGMP (Internet Group Multicast Protocol) is a network-layer protocol used to establish membership in a Multicast group – it is not used to carry user data. IGMP version 2 (RFC 2236) is an improvement over version 1 (RFC 1112) but IGMP version 1 is still in wide use. If you would like to read more detailed information about interoperability between IGMP version 2 and version 1, please see sections 4 and 5 of RFC 2236. |
| Apply | Click this to save your changes back to the Vantage CNM. |
| Reset | Click this to begin configuring this screen afresh. |

### 5.3.2.2 PPPoE Encapsulation

PPPoE (Point-to-Point Protocol over Ethernet) is an IETF standard (RFC 2516) specifying how a personal computer (PC) interacts with a broadband modem (DSL, cable, wireless, etc.) connection. The **PPPoE** option is for a dial-up connection using PPPoE.

For the service provider, PPPoE offers an access and authentication method that works with existing access control systems (for example RADIUS).

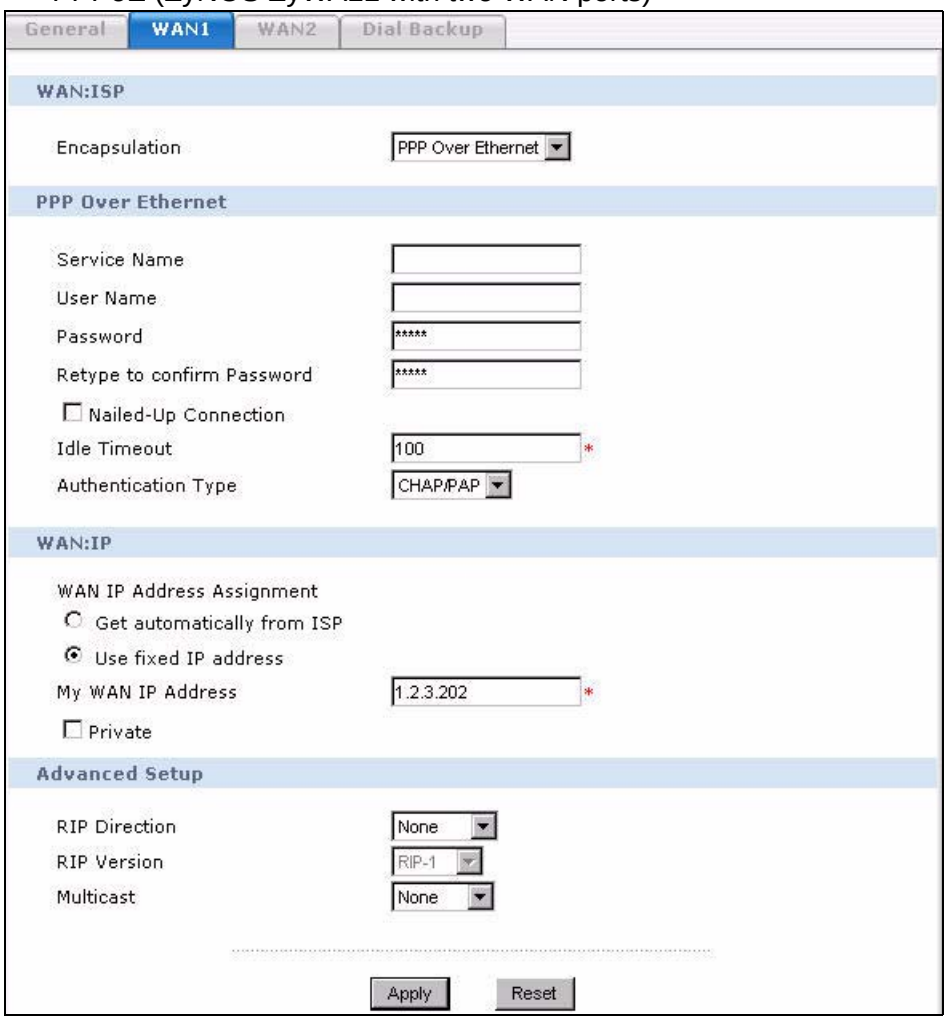
One of the benefits of PPPoE is the ability to let you access one of multiple network services, a function known as dynamic service selection. This enables the service provider to easily create and offer new IP services for individuals.

Operationally, PPPoE saves significant effort for both you and the ISP or carrier, as it requires no specific configuration of the broadband modem at the customer site.

By implementing PPPoE directly on the device (rather than individual computers), the computers on the LAN do not need PPPoE software installed, since the device

does that part of the task. Furthermore, with NAT, all of the LANs' computers will have access.

**Figure 37** Device Operation > Device Configuration > Network > WAN > WAN1/2 - PPPoE (ZyNOS ZyWALL with two WAN ports)



The following table describes the labels in this screen.

**Table 22** Device Operation > Device Configuration > Network > WAN > WAN1/2 - PPPoE (ZyNOS ZyWALL with two WAN ports)

| LABEL | DESCRIPTION |
|---|---|
| ISP Parameters for Internet Access | |
| Encapsulation | The PPPoE choice is for a dial-up connection using PPPoE. The router supports PPPoE (Point-to-Point Protocol over Ethernet). PPPoE is an IETF standard (RFC 2516) specifying how a personal computer (PC) interacts with a broadband modem (for example, DSL, cable, wireless, etc.) connection. Operationally, PPPoE saves significant effort for both the end user and ISP/carrier, as it requires no specific configuration of the broadband modem at the customer site. By implementing PPPoE directly on the router rather than individual computers, the computers on the LAN do not need PPPoE software installed, since the router does that part of the task. Further, with NAT, all of the LAN's computers will have access. |
| Service Name | Type the PPPoE service name provided to you. PPPoE uses a service name to identify and reach the PPPoE server. |
| User Name | Type the user name given to you by your ISP. |
| Password | Type the password associated with the user name above. |
| Retype to confirm Password | Type your password again to make sure that you have entered is correctly. |
| Nailed-Up Connection | Select this if you do not want the connection to time out. |
| Idle Timeout | This value specifies the time in seconds that elapses before the device automatically disconnects from the PPPoE server. |
| Authentication Type | Use the drop-down list box to select an authentication protocol for outgoing calls. Options are:<br>**CHAP/PAP** - Your Vantage CNM accepts either CHAP or PAP when requested by this remote node.<br>**CHAP** - Your Vantage CNM accepts CHAP only.<br>**PAP** - Your Vantage CNM accepts PAP only. |
| WAN IP Address Assignment | |
| Get automatically from ISP | Select this option If your ISP did not assign you a fixed IP address. This is the default selection. |
| Use Fixed IP Address | Select this option If the ISP assigned a fixed IP address. |
| My WAN IP Address | Enter your WAN IP address in this field if you selected **Use Fixed IP Address.** |
| Private | This parameter determines if the device will include this route to a remote node in its RIP broadcasts.<br>Select this check box to keep this route private and not included in RIP broadcasts. Clear this check box to propagate this route to other hosts through RIP broadcasts. |
| Advanced Setup | |

**Table 22** Device Operation > Device Configuration > Network > WAN > WAN1/2 - PPPoE (ZyNOS ZyWALL with two WAN ports) (continued)

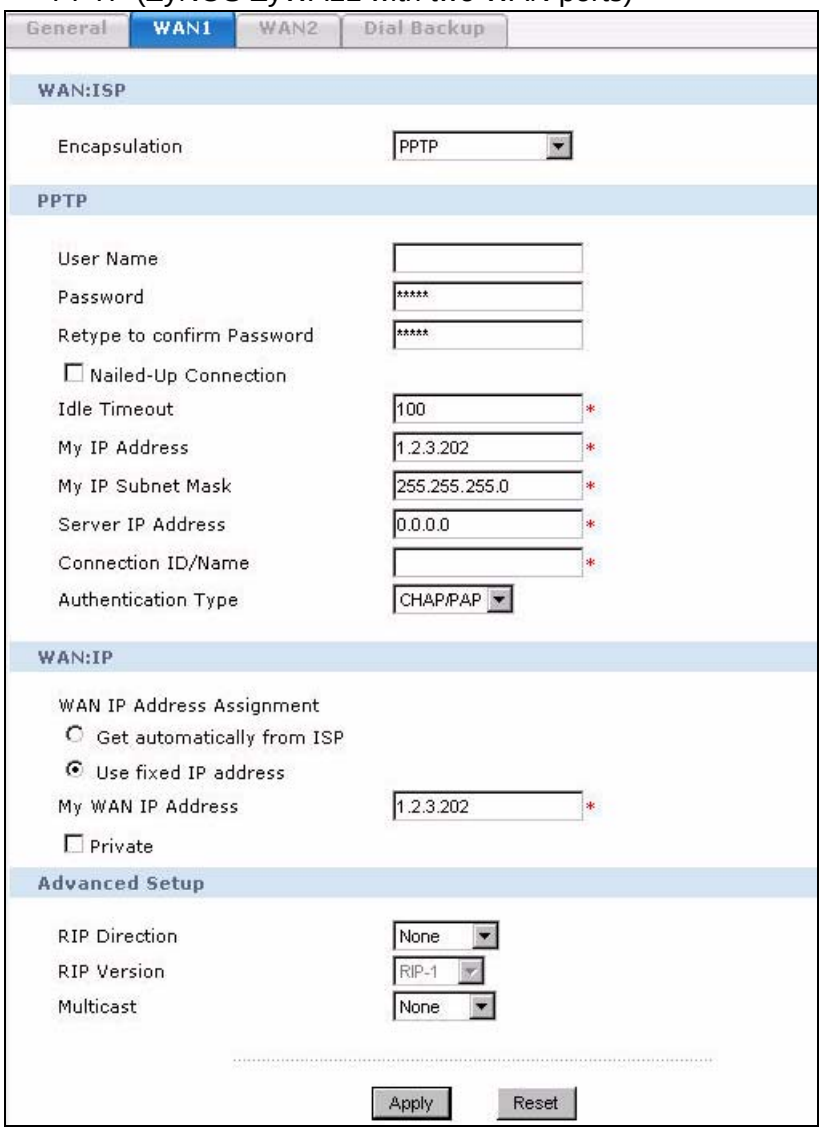
| LABEL | DESCRIPTION |
|---|---|
| RIP Direction | RIP (Routing Information Protocol) allows a router to exchange routing information with other routers. The **RIP Direction** field controls the sending and receiving of RIP packets.<br><br>Choose **Both**, **None**, **In Only** or **Out Only**.<br><br>When set to **Both** or **Out Only**, the Vantage CNM will broadcast its routing table periodically.<br><br>When set to **Both** or **In Only**, the Vantage CNM will incorporate RIP information that it receives.<br><br>When set to **None**, the Vantage CNM will not send any RIP packets and will ignore any RIP packets received.<br><br>By default, **RIP Direction** is set to **Both**. |
| RIP Version | The **RIP Version** field controls the format and the broadcasting method of the RIP packets that the Vantage CNM sends (it recognizes both formats when receiving).<br><br>Choose **RIP-1**, **RIP-2B** or **RIP-2M**.<br><br>**RIP-1** is universally supported; but **RIP-2** carries more information. RIP-1 is probably adequate for most networks, unless you have an unusual network topology. Both **RIP-2B** and **RIP-2M** sends the routing data in RIP-2 format; the difference being that RIP-2B uses subnet broadcasting while RIP-2M uses multicasting. Multicasting can reduce the load on non-router machines since they generally do not listen to the RIP multicast address and so will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting, also. By default, the **RIP Version** field is set to **RIP-1**. |
| Multicast | Choose **None** (default), **IGMP-V1** or **IGMP-V2**. IGMP (Internet Group Multicast Protocol) is a network-layer protocol used to establish membership in a Multicast group – it is not used to carry user data. IGMP version 2 (RFC 2236) is an improvement over version 1 (RFC 1112) but IGMP version 1 is still in wide use. If you would like to read more detailed information about interoperability between IGMP version 2 and version 1, please see sections 4 and 5 of RFC 2236. |
| Apply | Click this to save your changes back to the Vantage CNM. |
| Reset | Click this to begin configuring this screen afresh. |

### 5.3.2.3 PPTP Encapsulation

Point-to-Point Tunneling Protocol (PPTP) is a network protocol that enables secure transfer of data from a remote client to a private server, creating a Virtual Private Network (VPN) using TCP/IP-based networks.

PPTP supports on-demand, multi-protocol and virtual private networking over public networks, such as the Internet.

**Figure 38** Device Operation > Device Configuration > Network > WAN > WAN1/2 - PPTP (ZyNOS ZyWALL with two WAN ports)



The following table describes the labels in this screen.

**Table 23** Device Operation > Device Configuration > Network > WAN > WAN1/2 - PPTP (ZyNOS ZyWALL with two WAN ports)

| LABEL | DESCRIPTION |
|---|---|
| WAN: ISP | |
| Encapsulation | Point-to-Point Tunneling Protocol (PPTP) is a network protocol that enables secure transfer of data from a remote client to a private server, creating a Virtual Private Network (VPN) using TCP/IP-based networks. PPTP supports on-demand, multi-protocol, and virtual private networking over public networks, such as the Internet. The device supports only one PPTP server connection at any given time. To configure a PPTP client, you must configure the **User Name** and **Password** fields for a PPP connection and the PPTP parameters for a PPTP connection. |
| PPTP | |
| User Name | Type the user name given to you by your ISP. |
| Password | Type the password associated with the user name above. |
| Retype to confirm Password | Type your password again to make sure that you have entered is correctly. |
| Nailed-up Connection | Select this if you do not want the connection to time out. |
| Idle Timeout | This value specifies the time in seconds that elapses before the device automatically disconnects from the PPTP server. |
| My IP Address | Type the (static) IP address assigned to you by your ISP. |
| My IP Subnet Mask | Type the subnet mask assigned to you by your ISP. |
| Server IP Address | Type the IP address of the PPTP server. |
| Connection ID/ Name | Type your identification name for the PPTP server. |
| Authentication Type | Use the drop-down list box to select an authentication protocol for outgoing calls. Options are:<br>**CHAP/PAP** - Your device accepts either CHAP or PAP when requested by this remote node.<br>**CHAP** - Your device accepts CHAP only.<br>**PAP** - Your device accepts PAP only. |
| WAN IP Address Assignment | |
| Get automatically from ISP | Select this option If your ISP did not assign you a fixed IP address. This is the default selection. |
| Use fixed IP address | Select this option If the ISP assigned a fixed IP address. |
| My WAN IP Address | Enter your WAN IP address in this field if you selected **Use Fixed IP Address**. |

**Table 23** Device Operation > Device Configuration > Network > WAN > WAN1/2 - PPTP (ZyNOS ZyWALL with two WAN ports) (continued)

| LABEL | DESCRIPTION |
|---|---|
| Private | This parameter determines if the device will include this route to a remote node in its RIP broadcasts.<br><br>Select this check box to keep this route private and not included in RIP broadcasts. Clear this check box to propagate this route to other hosts through RIP broadcasts. |
| Advanced Setup | |
| RIP Direction | RIP (Routing Information Protocol) allows a router to exchange routing information with other routers. The **RIP Direction** field controls the sending and receiving of RIP packets.<br><br>Choose **Both**, **None**, **In Only** or **Out Only**.<br><br>When set to **Both** or **Out Only**, the device will broadcast its routing table periodically.<br><br>When set to **Both** or **In Only**, the device will incorporate RIP information that it receives.<br><br>When set to **None**, the device will not send any RIP packets and will ignore any RIP packets received.<br><br>By default, **RIP Direction** is set to **Both**. |
| RIP Version | The **RIP Version** field controls the format and the broadcasting method of the RIP packets that the device sends (it recognizes both formats when receiving).<br><br>Choose **RIP-1**, **RIP-2B** or **RIP-2M**.<br><br>**RIP-1** is universally supported; but **RIP-2** carries more information. RIP-1 is probably adequate for most networks, unless you have an unusual network topology. Both **RIP-2B** and **RIP-2M** sends the routing data in RIP-2 format; the difference being that RIP-2B uses subnet broadcasting while RIP-2M uses multicasting. Multicasting can reduce the load on non-router machines since they generally do not listen to the RIP multicast address and so will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting, also. By default, the **RIP Version** field is set to **RIP-1**. |
| Multicast | Choose **None** (default), **IGMP-V1** or **IGMP-V2**. IGMP (Internet Group Multicast Protocol) is a network-layer protocol used to establish membership in a Multicast group – it is not used to carry user data. IGMP version 2 (RFC 2236) is an improvement over version 1 (RFC 1112) but IGMP version 1 is still in wide use. If you would like to read more detailed information about interoperability between IGMP version 2 and version 1, please see sections 4 and 5 of RFC 2236. |
| Apply | Click this to save your changes back to the Vantage CNM. |
| Reset | Click this to begin configuring this screen afresh. |

### 5.3.3 WAN2 (ZyNOS ZyWALL with 3G WAN)

3G (Third Generation) is a digital, packet-switched wireless technology. Bandwidth usage is optimized as multiple users share the same channel and bandwidth is only allocated to users when they send data. It allows fast transfer of voice and non-voice data and provides broadband Internet access to mobile devices.

Note: The actual data rate you obtain varies depending on the 3G card you use, the signal strength of the service provider's base station, your service plan, etc.

If the signal strength of a 3G network is too low, the 3G card may switch to an available 2.5G or 2.75G network. See the following table for a comparison between 2G, 2.5G, 2.75G, 3G and 3.5G wireless technologies.

**Table 24** 2G, 2.5G, 2.75G, 3G and 3.5G Wireless Technologies

| NAME | TYPE | MOBILE PHONE AND DATA STANDARDS | | DATA SPEED |
|---|---|---|---|---|
| | | GSM-BASED | CDMA-BASED | |
| 2G | Circuit-switched | GSM (Global System for Mobile Communications), Personal Handy-phone System (PHS), etc. | Interim Standard 95 (IS-95), the first CDMA-based digital cellular standard pioneered by Qualcomm. The brand name for IS-95 is cdmaOne. IS-95 is also known as TIA-EIA-95. | Slow ↕ Fast |
| 2.5G | Packet-switched | GPRS (General Packet Radio Services), High-Speed Circuit-Switched Data (HSCSD), etc. | CDMA2000 is a hybrid 2.5G / 3G protocol of mobile telecommunications standards that use CDMA, a multiple access scheme for digital radio.<br>CDMA2000 1xRTT (1 times Radio Transmission Technology) is the core CDMA2000 wireless air interface standard. It is also known as 1x, 1xRTT, or IS-2000 and considered to be a 2.5G or 2.75G technology. | |
| 2.75G | Packet-switched | Enhanced Data rates for GSM Evolution (EDGE), Enhanced GPRS (EGPRS), etc. | | |
| 3G | Packet-switched | UMTS (Universal Mobile Telecommunications System), a third-generation (3G) wireless standard defined in ITU[A] specification, is sometimes marketed as 3GSM. The UMTS uses GSM infrastructures and W-CDMA (Wideband Code Division Multiple Access) as the air interface. | CDMA2000 EV-DO (Evolution-Data Optimized, originally 1x Evolution-Data Only), also referred to as EV-DO, EVDO, or just EV, is an evolution of CDMA2000 1xRTT and enables high-speed wireless connectivity. It is also denoted as IS-856 or High Data Rate (HDR). | |
| 3.5G | Packet-switched | HSDPA (High-Speed Downlink Packet Access) is a mobile telephony protocol, used for UMTS-based 3G networks and allows for higher data transfer speeds. | | |

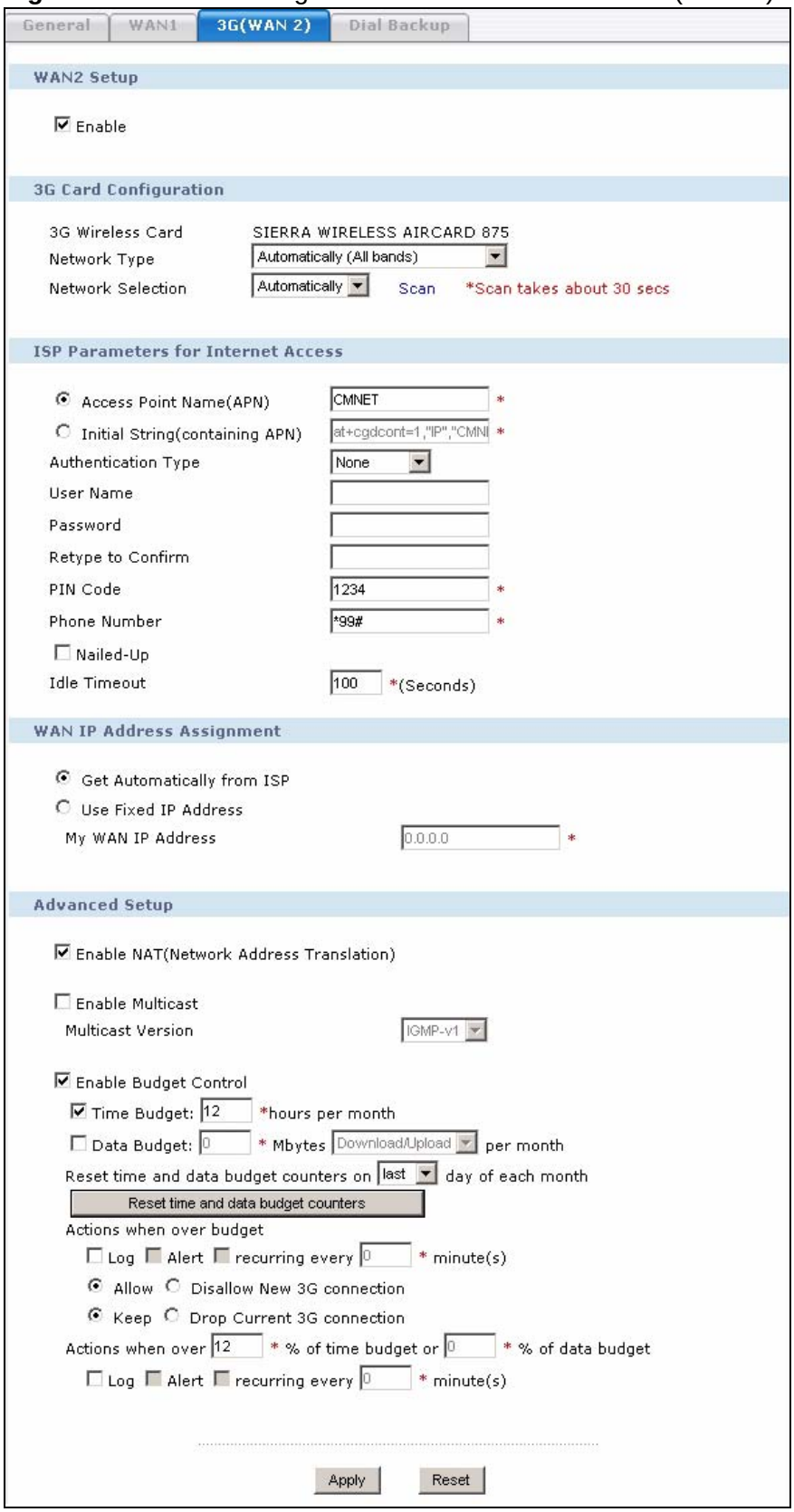
A. The International Telecommunication Union (ITU) is an international organization within which governments and the private sector coordinate global telecom networks and services.

After you insert a 3G card in a device, the 3G connection becomes WAN 2. Refer to the device's User's Guide for the type of 3G cards that you can use in the device along with the corresponding supported features.

Note: You must install a 3G card in the selected device before using this WAN 2.

Note: The WAN 1 and WAN 2 IP addresses of the device with multiple WAN interfaces must be on different subnets.

**Figure 39** Device Configuration > Network > WAN > 3G(WAN 2)



The following table describes the labels in this screen.

**Table 25** Device Configuration > WAN > 3G(WAN2)

| LABEL | DESCRIPTION |
|---|---|
| WAN2 Setup | |
| Enable | Select this option to enable WAN 2. |
| 3G Card Configuration | The fields below display only when you enable WAN 2. |
| 3G Wireless Card | This displays the manufacturer and model name of your 3G card if you inserted one in the selected device. Otherwise, it displays **Not Installed**. |
| Network Type | Select the type of the network (**UMTS/HSDPA only**, **GPRS/EDGE only**, **GSM all** or **WCDMA all**) to which you want the card to connect. See Table 24 on page 88 for more information. Otherwise, select **Automatically** to have the card connect to an available network using the default settings on the 3G card.<br><br>The types of the network vary depending on the 3G card you inserted.<br><br>This setting is saved to the flash of your 3G card. |
| Network Selection | Select a service provider to which you want the card to connect. Otherwise, select **Automatically** to have the selected device use the default settings on the 3G card and connect to your service provider's base station.<br><br>This shows **Automatically** only by default. Click **Scan** to have the selected device search for and display the available service providers.<br><br>This field resets to the default setting (**Automatically**) if the selected device restarts. |
| ISP Parameters for Internet Access | |
| Access Point Name (APN) | Select this option and enter the APN (Access Point Name) if your ISP gives you the APN only. Connections with different APNs may provide different services (such as Internet access or MMS (Multi-Media Messaging Service)) and charge methods.<br><br>You can enter up to 31 ASCII printable characters. Spaces are allowed.<br><br>This field is available only when you insert a GSM 3G card. |
| Initial String (containing APN) | Select this option and enter the initial string and APN if you know how to configure or your ISP provides a string, which would include the APN, to initialize the 3G card.<br><br>You can enter up to 72 ASCII printable characters. Spaces are allowed.<br><br>This field is available only when you insert a GSM 3G card. |

**Table 25** Device Configuration > WAN > 3G(WAN2) (continued)

| LABEL | DESCRIPTION |
|---|---|
| Authentication Type | The selected device supports PAP (Password Authentication Protocol) and CHAP (Challenge Handshake Authentication Protocol). CHAP is more secure than PAP; however, PAP is readily available on more platforms.<br><br>Use the drop-down list box to select an authentication protocol for outgoing calls. Options are:<br><br>**CHAP/PAP** - The selected device accepts either CHAP or PAP when requested by the ISP.<br><br>**CHAP** - The selected device accepts CHAP only.<br><br>**PAP** - The selected device accepts PAP only.<br><br>**None** - The selected device does not send your user name and password for authentication. The user name and password fields are grayed out. Select this option if your ISP did not give you a user name and password. |
| User Name | Type the user name (of up to 31 ASCII printable characters) given to you by your service provider. |
| Password | Type the password (of up to 31 ASCII printable characters) associated with the user name above. |
| Retype to Confirm | Type your password again to make sure that you have entered is correctly. |
| PIN Code | A PIN (Personal Identification Number) code is a key to a 3G card. Without the PIN code, you cannot use the 3G card.<br><br>Enter the PIN code (four to eight digits, 0000 for example) provided by your ISP. If you enter the PIN code incorrectly, the 3G card may be blocked by your ISP and you cannot use the account to access the Internet.<br><br>If your ISP disabled PIN code authentication, enter an arbitrary number.<br><br>This field is available only when you insert a GSM 3G card. |
| Phone Number | Enter the phone number (dial string) used to dial up a connection to your service provider's base station. Your ISP should provide the dial string.<br><br>By default, *99# is the dial string for GSM-based networks and #777 is the dial string for CDMA-based networks. |
| Nailed-Up | Select **Nailed-Up** if you do not want the connection to time out. |
| Idle Timeout | This specifies the time (from 0 to 9999) in seconds that elapses before the selected device automatically disconnects from the ISP. |
| WAN IP Address Assignment | |
| Get automatically from ISP | Select this option if your ISP did not assign you a fixed IP address. This is the default selection. |
| Use Fixed IP Address | Select this option if the ISP assigned a fixed IP address. |
| My WAN IP Address | Enter your WAN IP address in this field if you selected **Use Fixed IP Address**. |

**Table 25** Device Configuration > WAN > 3G(WAN2) (continued)

| LABEL | DESCRIPTION |
|---|---|
| Advanced Setup | |
| Enable NAT (Network Address Translation) | Network Address Translation (NAT) allows the translation of an Internet protocol address used within one network (for example a private IP address used in a local network) to a different IP address known within another network (for example a public IP address used on the Internet).<br><br>Select this checkbox to enable NAT. |
| Enable Multicast | Select this check box to turn on IGMP (Internet Group Multicast Protocol). IGMP is a network-layer protocol used to establish membership in a Multicast group - it is not used to carry user data. |
| Multicast Version | Choose **None** (default), **IGMP-V1** or **IGMP-V2**. IGMP (Internet Group Multicast Protocol) is a session-layer protocol used to establish membership in a Multicast group – it is not used to carry user data. IGMP version 2 (RFC 2236) is an improvement over version 1 (RFC 1112) but IGMP version 1 is still in wide use. If you would like to read more detailed information about interoperability between IGMP version 2 and version 1, please see sections 4 and 5 of RFC 2236. |
| Enable Budget Control | Select this check box to set a monthly limit for the user account of the installed 3G card. You must insert a 3G card before you enable budget control on the selected device.<br><br>You can set a limit on the total traffic and/or call time. The selected device takes the actions you specified when a limit is exceeded during the month. |
| Time Budget | Select this check box and specify the amount of time (in hours) that the 3G connection can be used within one month.<br><br>If you change the value after you configure and enable budget control, the selected device resets the statistics. |
| Data Budget | Select this check box and specify how much downstream and/or upstream data (in Mbytes) can be transmitted via the 3G connection within one month.<br><br>Select **Download** to set a limit on the downstream traffic (from the ISP to the selected device).<br><br>Select **Upload** to set a limit on the upstream traffic (from the selected device to the ISP).<br><br>Select **Download/Upload** to set a limit on the total traffic in both directions.<br><br>If you change the value after you configure and enable budget control, the selected device resets the statistics. |
| Reset time and data budget counters on | Select the date on which the selected device resets the budget every month. If the date you selected is not available in a month, such as 30th or 31th, the selected device resets the budget on the last day of the month. |

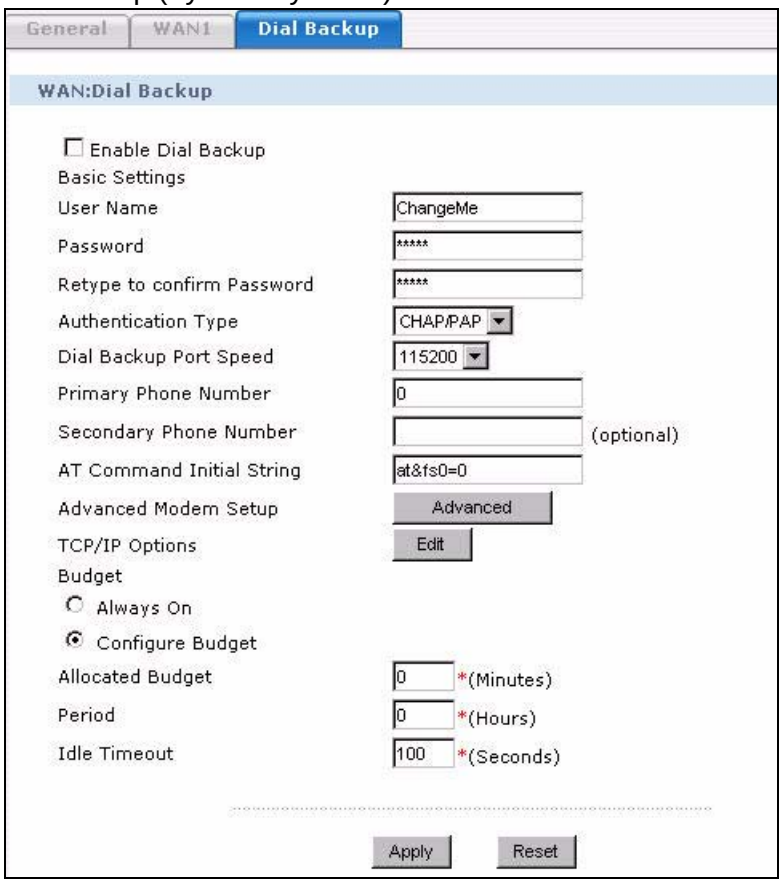
**Table 25** Device Configuration > WAN > 3G(WAN2) (continued)

| LABEL | DESCRIPTION |
|---|---|
| Reset time and data budget counters | This button is available only when you enable budget control in this screen.<br><br>Click this button to reset the time and data budgets immediately. The count starts over with the 3G connection's full configured monthly time and data budgets. This does not affect the normal monthly budget restart. |
| Actions when over budget | Specify the actions the selected device takes when the time or data limit is exceeded.<br><br>Select **Log** to create a log.<br><br>Select **Alert** to create an alert. This option is available only when you select **Log**.<br><br>If you select **Log**, you can also select **recurring every** to have the selected device send a log (and alert if selected) for this event periodically. Specify how often (from 1 to 65535 minutes) to send the log (and alert if selected).<br><br>Select **Allow** to permit new 3G connections or **Disallow** to drop/block new 3G connections.<br><br>Select **Keep** to maintain the existing 3G connection or **Drop** to disconnect it.<br><br>You cannot select **Allow** and **Drop** at the same time.<br><br>If you select **Disallow** and **Keep**, the selected device allows you to transmit data using the current connection, but you cannot build a new connection if the existing connection is disconnected. |
| Actions when over % of time budget or % of data budget | Specify the actions the selected device takes when the specified percentage of time budget or data limit is exceeded. Enter a number from 1 to 99 in the percentage fields. If you change the value after you configure and enable budget control, the selected device resets the statistics.<br><br>Select **Log** to create a log.<br><br>Select **Alert** to create an alert. This option is available only when you select **Log**.<br><br>If you select **Log**, you can also select **recurring every** to have the selected device send a log (and alert if selected) for this event periodically. Specify how often (from 1 to 65535 minutes) to send the log (and alert if selected). |
| Apply | Click this to save your changes back to the Vantage CNM. |
| Reset | Click this to begin configuring this screen afresh. |

## 5.3.4 Dial Backup (ZyNOS ZyWALL)

Vantage CNM can communicate with the device using Dial Backup if the main WAN connection goes down. Use this screen to configure Dial Backup on the device.

**Figure 40** Device Operation > Device Configuration > Network > WAN > Dial Backup (ZyNOS ZyWALL)




The following table describes the labels in this screen.

**Table 26** Device Operation > Device Configuration > Network > WAN > Dial Backup (ZyNOS ZyWALL)

| LABEL | DESCRIPTION |
|---|---|
| Enable Dial Backup | Select this check box to turn on dial backup. |
| Basic Settings | |
| User Name | Type the user name assigned by your ISP. |
| Password | Type the password assigned by your ISP. |
| Retype to confirm Password | Type your password again to make sure that you have entered it correctly. |

**Table 26** Device Operation > Device Configuration > Network > WAN > Dial Backup (ZyNOS ZyWALL) (continued)

| LABEL | DESCRIPTION |
|---|---|
| Authentication Type | Use the drop-down list box to select an authentication protocol for outgoing calls. Options are:<br>**CHAP/PAP** - The device accepts either CHAP or PAP when requested by this remote node.<br>**CHAP** - The device accepts CHAP only.<br>**PAP** - The device accept PAP only. |
| Dial Backup Port Speed | Use the drop-down list box to select the speed of the connection between the Dial Backup port and the external device. Available speeds are: 9600, 19200, 38400, 57600, 115200 or 230400 bps. |
| Primary/Secondary Phone Number | Type the first (primary) phone number from the ISP for this remote node. If the Primary Phone number is busy or does not answer, the device dials the Secondary Phone number if available. Some areas require dialing the pound sign # before the phone number for local calls. Include a # symbol at the beginning of the phone numbers as required. |
| AT Command Initial String | Type the AT command string to initialize the WAN device. Consult the manual of your WAN device connected to your Dial Backup port for specific AT commands. |
| Advanced Modem Setup | Click **Advanced** to display the **WAN:Advanced Modem Setup** screen and edit the details of your dial backup setup. |
| TCP/IP Options | Click **Edit** to display the **WAN:Dial Backup TCP/IP Options** screen. |
| Budget | Select **Always On** to have the dial backup connection on all of the time.<br>Select **Configure Budget** to have the dial backup connection on during the time that you select. |
| Allocated Budget | Type the amount of time (in minutes) that the dial backup connection can be used during the time configured in the **Period** field. Set an amount that is less than the time period configured in the **Period** field. |
| Period | Type the time period (in hours) for how often the budget should be reset. For example, to allow calls to this remote node for a maximum of 10 minutes every hour, set the **Allocated Budget** to 10 (minutes) and the **Period** to 1 (hour). |
| Idle Timeout | Type the number of seconds of idle time (when there is no traffic from the device to the remote node) for the device to wait before it automatically disconnects the dial backup connection. This option applies only when the device initiates the call. The dial backup connection never times out if you set this field to "0" (it is the same as selecting **Always On**). |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

## 5.3.5 Advanced Modem Setup (ZyNOS ZyWALL)

### 5.3.5.1 AT Command Strings

For regular telephone lines, the default Dial string tells the modem that the line uses tone dialing. ATDT is the command for a switch that requires tone dialing. If your switch requires pulse dialing, change the string to ATDP.

For ISDN lines, there are many more protocols and operational modes. Please consult the documentation of your TA. You may need additional commands in both Dial and Init strings.

#### *5.3.5.1.1 DTR Signal*

The majority of WAN devices default to hanging up the current call when the DTR (Data Terminal Ready) signal is dropped by the DTE. When the Drop DTR When Hang Up check box is selected, the device uses this hardware signal to force the WAN device to hang up, in addition to issuing the drop command ATH.

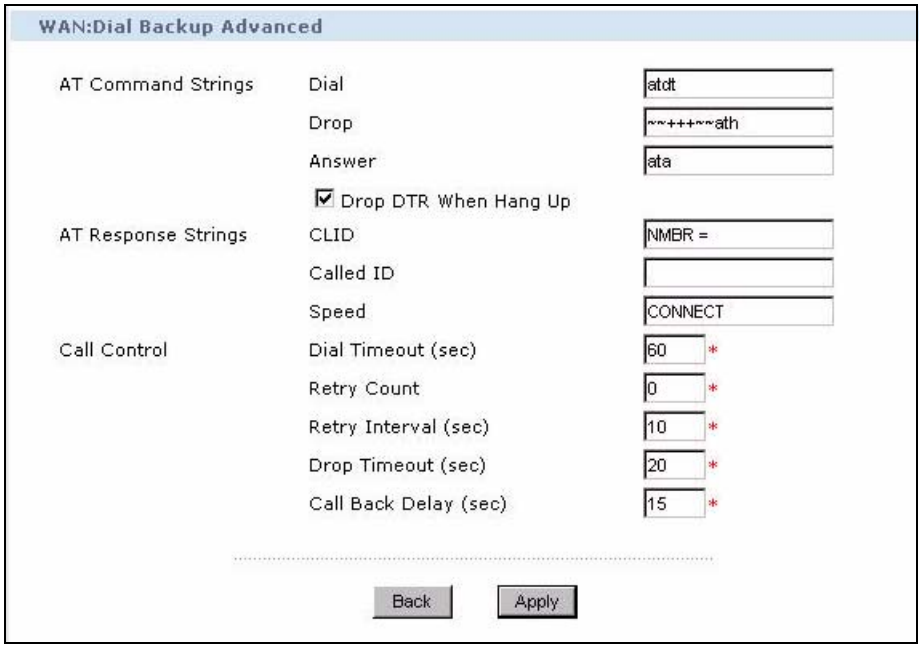
#### *5.3.5.1.2 Response Strings*

The response strings tell the device the tags, or labels, immediately preceding the various call parameters sent from the WAN device. The response strings have not been standardized; please consult the documentation of your WAN device to find the correct tags.

Click the **Advanced** button in the **Advanced Modem Setup** in the **Dial Backup** screen to display the **Dial Backup Advanced** screen shown next.

Note: Consult the manual of your WAN device connected to your dial backup port for specific AT commands.

**Figure 41** Device Operation > Device Configuration > Network > WAN > Dial Backup > Advanced (ZyNOS ZyWALL)




The following table describes the labels in this screen.

**Table 27** Device Operation > Device Configuration > Network > WAN > Dial Backup > Advanced (ZyNOS ZyWALL)

| LABEL | DESCRIPTION | EXAMPLE |
|---|---|---|
| AT Command Strings | | |
| Dial | Type the AT Command string to make a call. | atdt |
| Drop | Type the AT Command string to drop a call. "~" represents a one second wait, for example, "~~~+++~~ath" can be used if your modem has a slow response time. | ~~+++~~ ath |
| Answer | Type the AT Command string to answer a call. | ata |
| Drop DTR When Hang Up | Select this check box to have the device drop the DTR (Data Terminal Ready) signal after the "AT Command String: Drop" is sent out. | |
| AT Response Strings | | |
| CLID | Type the keyword that precedes the CLID (Calling Line Identification) in the AT response string. This lets the device capture the CLID in the AT response string that comes from the WAN device. CLID is required for CLID authentication. | NMBR |
| Called ID | Type the keyword preceding the dialed number. | |
| Speed | Type the keyword preceding the connection speed. | CONNECT |
| Call Control | | |

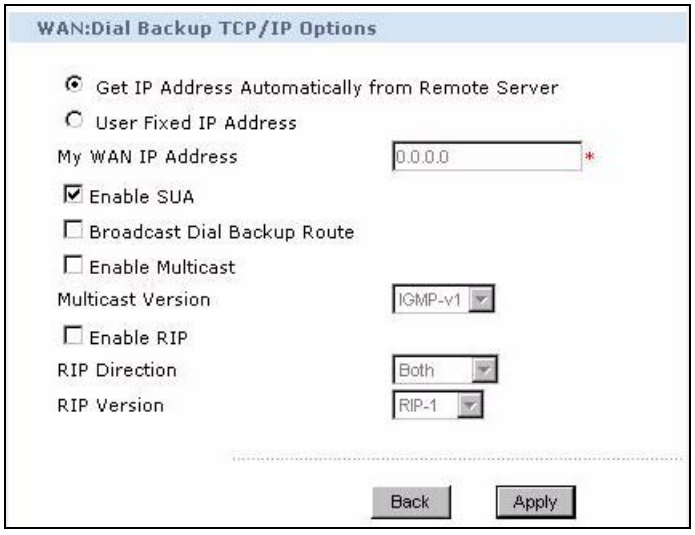
**Table 27** Device Operation > Device Configuration > Network > WAN > Dial Backup > Advanced (ZyNOS ZyWALL) (continued)

| LABEL | DESCRIPTION | EXAMPLE |
|---|---|---|
| Dial Timeout (sec) | Type a number of seconds for the device to try to set up an outgoing call before timing out (stopping). | 60 |
| Retry Count | Type a number of times for the device to retry a busy or no-answer phone number before blacklisting the number. | 0 |
| Retry Interval (sec) | Type a number of seconds for the device to wait before trying another call after a call has failed. This applies before a phone number is blacklisted. | 10 |
| Drop Timeout (sec) | Type the number of seconds for the device to wait before dropping the DTR signal if it does not receive a positive disconnect confirmation. | 20 |
| Call Back Delay (sec) | Type a number of seconds for the device to wait between dropping a callback request call and dialing the corresponding callback call. | 15 |
| Back | Click this to return to the previous screen. | |
| Apply | Click this to save your changes back to the device. | |

## 5.3.6 Edit Dial Backup (ZyNOS ZyWALL)

Click **Edit** in the **TCP/IP Options** field in the screen shown in Figure 40 on page 96 to display the next screen.4

**Figure 42** Device Operation > Device Configuration > Network > WAN > Dial Backup > Edit (ZyNOS ZyWALL)



The following table describes the fields in this screen.

**Table 28** Device Operation > Device Configuration > Network > WAN > Dial Backup > Edit – ZyNOS ZyWALL

| LABEL | DESCRIPTION |
|---|---|
| Get IP Address Automatically from Remote Server | Type the login name assigned by your ISP for this remote node. |
| Use Fixed IP Address | Select this check box if your ISP assigned you a fixed IP address, and then enter the IP address in the following field. |
| My WAN IP Address | Leave the field set to 0.0.0.0 (default) to have the ISP or other remote router dynamically (automatically) assign your WAN IP address if you do not know it. Type your WAN IP address here if you know it (static). This is the address assigned to your local device, not the remote router. |
| Enable SUA | Network Address Translation (NAT) allows the translation of an Internet protocol address used within one network to a different IP address known within another network.<br><br>**SUA** (Single User Account) is a subset of NAT that supports two types of mapping: Many-to-One and Server. When you select this option the device will use Address Mapping Set 255 in the SMT (see the section on menu 15.1 for more information).<br><br>Select the check box to enable SUA. Clear the check box to disable SUA so the device does not perform any NAT mapping for the dial backup connection. |
| Broadcast Dial Backup Route | Select this check box to forward the backup route broadcasts to the WAN. |
| Enable Multicast | Select this check box to turn on IGMP (Internet Group Multicast Protocol). IGMP is a network-layer protocol used to establish membership in a Multicast group - it is not used to carry user data. |
| Multicast Version | Select **IGMP-v1** or **IGMP-v2**. IGMP version 2 (RFC 2236) is an improvement over version 1 (RFC 1112) but IGMP version 1 is still in wide use. If you would like to read more detailed information about inter operability between IGMP version 2 and version 1, please see *sections 4* and *5* of *RFC 2236*. |
| Enable RIP | Select this check box to turn on RIP (Routing Information Protocol), which allows a router to exchange routing information with other routers. |
| RIP Direction | RIP (Routing Information Protocol, RFC1058 and RFC 1389) allows a router to exchange routing information with other routers. The **RIP Direction** field controls the sending and receiving of RIP packets. Select the RIP direction from **Both**/**In Only**/**Out Only**/**None**. When set to **Both** or **Out Only**, the device broadcasts its routing table periodically. When set to **Both** or **In Only**, it incorporates the RIP information that it receives; when set to **None**, it does not send any RIP packets and ignores any RIP packets received. **Both** is the default. |

**Table 28** Device Operation > Device Configuration > Network > WAN > Dial Backup > Edit – ZyNOS ZyWALL (continued)

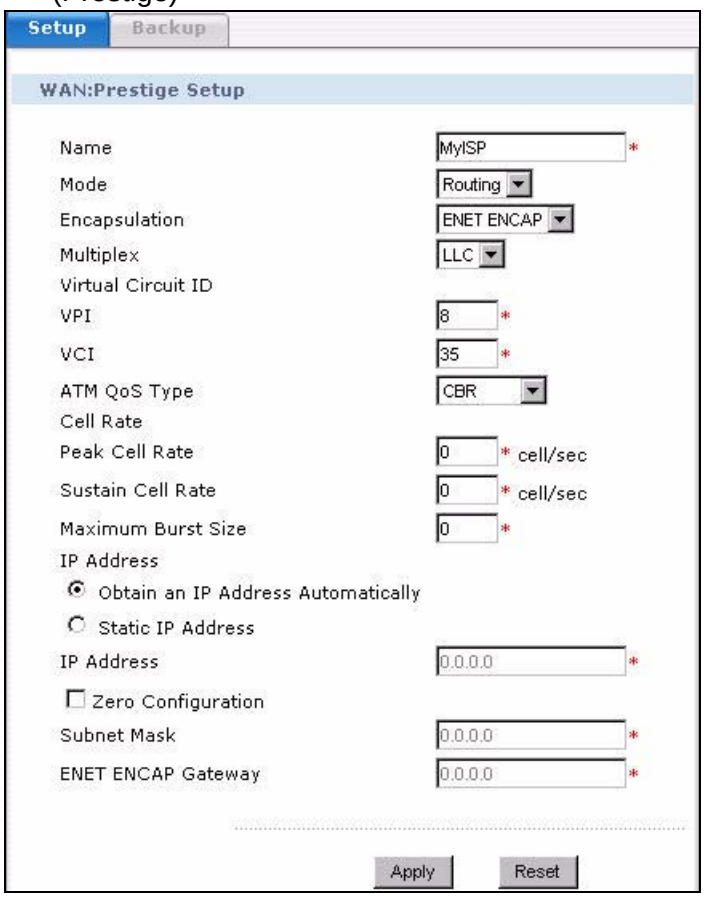
| LABEL | DESCRIPTION |
|---|---|
| RIP Version | The **RIP Version** field controls the format and the broadcasting method of the RIP packets that the device sends (it recognizes both formats when receiving). **RIP-1** is universally supported but RIP-2 carries more information. **RIP-1** is probably adequate for most networks, unless you have an unusual network topology. Both **RIP-2B** and **RIP-2M** sends the routing data in RIP-2 format; the difference being that **RIP-2B** uses subnet broadcasting while **RIP-2M** uses multicasting. Multicasting can reduce the load on non-router machines since they generally do not listen to the RIP multicast address and so will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting, also. By default, RIP direction is set to **Both** and the **Version** set to **RIP-1**. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

## 5.3.7 WAN Setup (Prestige)

The fields in this screen vary depending on device mode and the encapsulation you select. To open this screen, select a device, click **Device Operation** in the

menu bar and then click **Device Configuration > Network > WAN > Setup** in the navigation panel.

**Figure 43** Device Operation > Device Configuration > Network > WAN > Setup (Prestige)




The following table describes the fields in this screen.

**Table 29** Device Operation > Device Configuration > Network > WAN > Setup (Prestige)

| LABEL | DESCRIPTION |
|---|---|
| Name | Enter the name of your Internet Service Provider, for example, MyISP. This information is for identification purposes only. |
| Mode | Select **Routing** from the drop-down list box if your ISP allows multiple computers to share an Internet account. Otherwise select **Bridge**. |
| Encapsulation | Select the method of encapsulation used by your ISP from the drop-down list box. Choices vary depending on the mode you select in the **Mode** field.<br><br>If you select **Bridge** in the **Mode** field, select either **PPPoA** or **RFC 1483**.<br><br>If you select **Routing** in the **Mode** field, select **PPPoA**, **RFC 1483**, **ENET ENCAP** or **PPPoE**. |

**Table 29** Device Operation > Device Configuration > Network > WAN > Setup (Prestige) (continued)

| LABEL | DESCRIPTION |
|---|---|
| Multiplex | Select the method of multiplexing used by your ISP from the drop-down list. Choices are **VC** or **LLC**. |
| Virtual Circuit ID | VPI (Virtual Path Identifier) and VCI (Virtual Channel Identifier) define a virtual circuit. Refer to the appendix for more information. |
| VPI | The valid range for the VPI is 0 to 255. Enter the VPI assigned to you. |
| VCI | The valid range for the VCI is 32 to 65535 (0 to 31 is reserved for local management of ATM traffic). Enter the VCI assigned to you. |
| ATM QoS Type | Select **CBR** (Constant Bit Rate) to specify fixed (always-on) bandwidth for voice or data traffic. Select **UBR** (Unspecified Bit Rate) for applications that are non-time sensitive, such as e-mail. Select **VBR** (Variable Bit Rate) for bursty traffic and bandwidth sharing with other applications. |
| Cell Rate | Cell rate configuration often helps eliminate traffic congestion that slows transmission of real time data such as audio and video connections. |
| Peak Cell Rate | Divide the DSL line rate (bps) by 424 (the size of an ATM cell) to find the Peak Cell Rate (PCR). This is the maximum rate at which the sender can send cells. Type the PCR here. |
| Sustain Cell Rate | The Sustain Cell Rate (SCR) sets the average cell rate (long-term) that can be transmitted. Type the SCR, which must be less than the PCR. Note that system default is 0 cells/sec. |
| Maximum Burst Size | Maximum Burst Size (MBS) refers to the maximum number of cells that can be sent at the peak rate. Type the MBS, which is less than 65535. |
| Login Information | (PPPoA and PPPoE encapsulation only) |
| Service Name<br><br>(Appears when you use PPPoE encapsulation) | This field is only available when **PPPoE** encapsulation is selected. Type the **PPPoE** service name provided to you. **PPPoE** uses a service name to identify and reach the **PPPoE** server. |
| PPPoE + PPPoE_Client_PC (Appears when you use PPPoE encapsulation) | This field is only available when **PPPoE** encapsulation is selected.<br><br>Select the check box to enable PPPoE pass through. In addition to the device's built-in PPPoE client, you can enable PPPoE pass through to allow up to ten hosts on the LAN to use PPPoE client software on their computers to connect to the ISP via the device. Each host can have a separate account and a public WAN IP address. PPPoE pass through is an alternative to NAT for application where NAT is not appropriate. Disable PPPoE pass through if you do not need to allow hosts on the LAN to use PPPoE client software on their computers to connect to the ISP. |
| User Name | Enter the user name exactly as your ISP assigned. If assigned a name in the form user@domain where domain identifies a service name, then enter both components exactly as given. |
| Password | Enter the password associated with the user name above. |

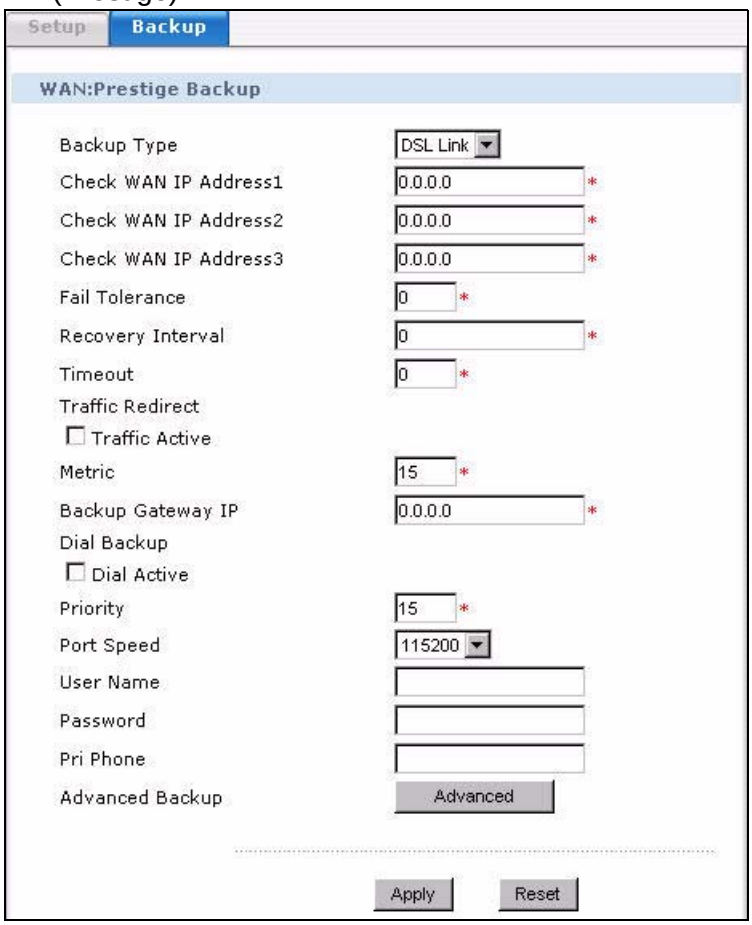
**Table 29** Device Operation > Device Configuration > Network > WAN > Setup (Prestige) (continued)

| LABEL | DESCRIPTION |
|---|---|
| IP Address | This option is available if you select **Routing** in the **Mode** field.<br><br>A static IP address is a fixed IP that your ISP gives you. A dynamic IP address is not fixed; the ISP assigns you a different one each time you connect to the Internet. The Single User Account feature can be used with either a dynamic or static IP address.<br><br>Select **Obtain an IP Address Automatically** if you have a dynamic IP address; otherwise select **Static IP Address** and type your ISP assigned IP address in the **IP Address** field below. |
| Connection<br><br>(Appears when you use PPPoA and PPPoE encapsulation) | The schedule rule(s) in SMT menu 26 have priority over your **Connection** settings. |
| Nailed-Up Connection (Appears when you use PPPoA and PPPoE encapsulation) | Select **Nailed-Up Connection** when you want your connection up all the time. The device will try to bring up the connection automatically if it is disconnected. |
| Connect on Demand (Appears when you use PPPoA and PPPoE encapsulation) | Select **Connect on Demand** when you don't want the connection up all the time and specify an idle time-out in the **Max Idle Timeout** field. |
| Max Idle Timeout (Appears when you use PPPoA and PPPoE encapsulation) | Specify an idle time-out in the **Max Idle Timeout** field when you select **Connect on Demand**. The default setting is 0, which means the Internet session will not timeout. |
| Zero Configuration | Select this if you want the device to automatically try to configure the Internet connection. See the device's User's Guide for more information. |
| Subnet Mask (Appears when you use ENET ENCAP encapsulation) | Enter the subnet mask provided by your ISP. |
| ENET ENCAP Gateway (Appears when you use ENET ENCAP encapsulation) | Enter the IP address of the gateway provided by your ISP. |
| Apply | Click this to save the changes. |
| Reset | Click this to begin configuring this screen afresh. |

## 5.3.8 WAN Backup (Prestige)

Use this screen to change your device's WAN backup settings. To open this screen, select a device, click **Device Operation** in the menu bar and then click **Device Configuration > Network > WAN > Backup** in the navigation panel.

**Figure 44** Device Operation > Device Configuration > Network > WAN > Backup (Prestige)



The following table describes the fields in this screen.

**Table 30** Device Operation > Device Configuration > Network > WAN > Backup (Prestige)

| LABEL | DESCRIPTION |
|---|---|
| Backup Type | Select the method that the device uses to check the DSL connection.<br><br>Select **DSL Link** to have the device check if the connection to the DSLAM is up. Select **ICMP** to have the device periodically ping the IP addresses configured in the **Check WAN IP Address** type fields. |
| Check WAN IP Address1-3 | Configure this field to test your device's WAN accessibility. Type the IP address of a reliable nearby computer (for example, your ISP's DNS server address).<br><br>If you activate either traffic redirect or dial backup, you must configure at least one IP address here.<br><br>When using a WAN backup connection, the device periodically pings the addresses configured here and uses the other WAN backup connection (if configured) if there is no response. |
| Fail Tolerance | Type the number of times (2 recommended) that your device may ping the IP addresses configured in the **Check WAN IP Address** field without getting a response before switching to a WAN backup connection (or a different WAN backup connection). |
| Recovery Interval | When the device is using a lower priority connection (usually a WAN backup connection), it periodically checks to whether or not it can use a higher priority connection.<br><br>Type the number of seconds (30 recommended) for the device to wait between checks. Allow more time if your destination IP address handles lots of traffic. |
| Timeout | Type the number of seconds (3 recommended) for your device to wait for a ping response from one of the IP addresses in the **Check WAN IP Address** field before timing out the request. The WAN connection is considered "down" after the device times out the number of times specified in the **Fail Tolerance** field. Use a higher value in this field if your network is busy or congested. |
| Traffic Redirect | |
| Traffic Active | Select this check box to have the device use traffic redirect if the normal WAN connection goes down.<br><br>If you activate traffic redirect, you must configure at least one Check WAN IP Address. |
| Metric | This field sets this route's priority among the routes the device uses.<br><br>The metric represents the "cost of transmission". A router determines the best route for transmission by choosing a path with the lowest "cost". RIP routing uses hop count as the measurement of cost, with a minimum of "1" for directly connected networks. The number must be between "1" and "15"; a number greater than "15" means the link is down. The smaller the number, the lower the "cost". |

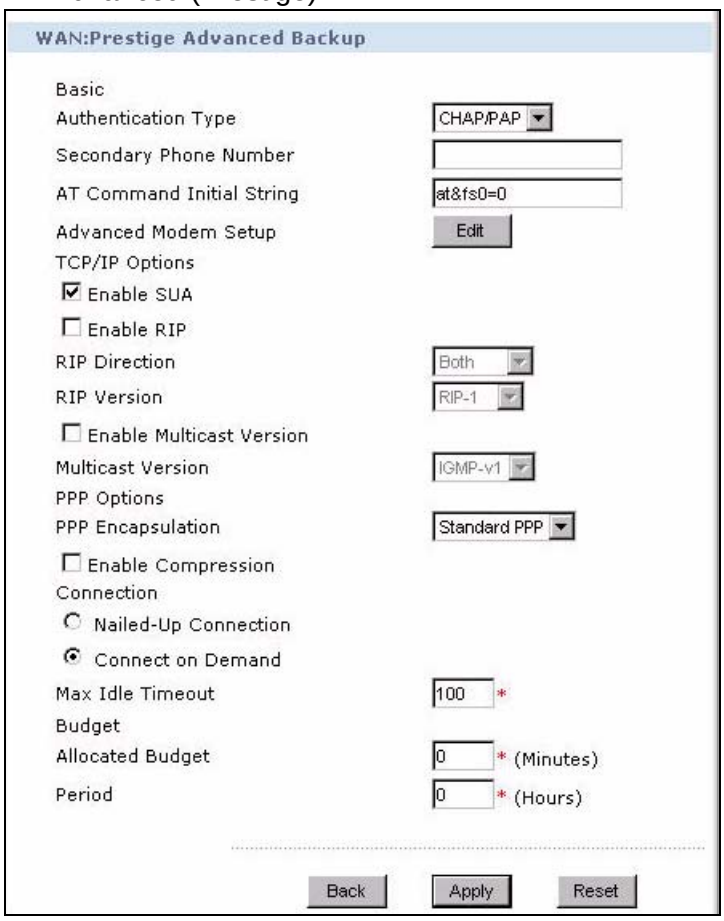
**Table 30** Device Operation > Device Configuration > Network > WAN > Backup (Prestige) (continued)

| LABEL | DESCRIPTION |
|---|---|
| Backup Gateway IP | Type the IP address of your backup gateway in dotted decimal notation. The device automatically forwards traffic to this IP address if the device's Internet connection terminates. |
| Dial Backup | |
| Dial Active | Select this check box to turn on dial backup.<br><br>If you activate dial backup, you must configure at least one Check WAN IP Address. |
| Priority | This field sets this route's priority among the three routes the device uses (normal, traffic redirect and dial backup). Type a number (1 to 15) to set the priority of the dial backup route for data transmission. The smaller the number, the higher the priority.<br><br>If the three routes have the same metrics, the priority of the routes is as follows: **WAN**, **Traffic Redirect**, **Dial Backup**. |
| Port Speed | Use the drop-down list box to select the speed of the connection between the dial backup port and the external device. Available speeds are: **9600**, **19200**, **38400**, **57600**, **115200** or **230400** bps. |
| User Name | Type the login name assigned by your ISP. |
| Password | Type the password assigned by your ISP. |
| Pri Phone | Type the first (primary) phone number from the ISP for this remote node. Some areas require dialing the pound sign # before the phone number for local calls. Include a # symbol at the beginning of the phone numbers as required. |
| Advanced Backup | Click this button to display the **WAN:Prestige Advanced Backup** screen and edit more details of your WAN backup setup. |
| Apply | Click this to save the changes. |
| Reset | Click this to begin configuring this screen afresh. |

## 5.3.9 Advanced WAN Backup (Prestige)

Use this screen to edit your device's advanced WAN backup settings. To open this screen, select a device, click **Advanced** in the **Device Operation** > **Device Configuration > Network > WAN > Backup** screen.

**Figure 45** Device Operation > Device Configuration > Network > WAN > Backup > Advanced (Prestige)




The following table describes the fields in this screen.

**Table 31** Device Operation > Device Configuration > Network > WAN Backup > Advanced (Prestige)

| LABEL | DESCRIPTION |
|---|---|
| Basic | |
| Authentication Type | Use the drop-down list box to select an authentication protocol for outgoing calls. Options are:<br>**CHAP/PAP** - Your device accepts either CHAP or PAP when requested by this remote node.<br>**CHAP** - Your device accepts CHAP only.<br>**PAP** - Your device accept PAP only. |

**Table 31** Device Operation > Device Configuration > Network > WAN Backup > Advanced (Prestige) (continued)

| LABEL | DESCRIPTION |
|---|---|
| Primary/ Secondary Phone Number | Type the first (primary) phone number from the ISP for this remote node. If the primary phone number is busy or does not answer, your device dials the secondary phone number if available. Some areas require dialing the pound sign # before the phone number for local calls. Include a # symbol at the beginning of the phone numbers as required. |
| AT Command Initial String | Type the AT command string to initialize the WAN device. Consult the manual of your WAN device connected to your dial backup port for specific AT commands. |
| Advanced Modem Setup | Click the **Edit** button to display the **Advanced Modem Setup** screen and edit the details of your dial backup setup. |
| TCP/IP Options | |
| Enable SUA | Network Address Translation (NAT) allows the translation of an Internet protocol address used within one network to a different IP address known within another network.<br><br>SUA (Single User Account) is a subset of NAT that supports two types of mapping: Many-to-One and Server. When you select this option the device will use Address Mapping Set 255 in the SMT. |
| Enable RIP | Select this check box to turn on RIP (Routing Information Protocol), which allows a router to exchange routing information with other routers. |
| RIP Direction | RIP (Routing Information Protocol) allows a router to exchange routing information with other routers. The **RIP Direction** field controls the sending and receiving of RIP packets.<br><br>Choose **Both**, **In Only** or **Out Only**.<br><br>When set to **Both** or **Out Only**, the device will broadcast its routing table periodically.<br><br>When set to **Both** or **In Only**, the device will incorporate RIP information that it receives. |
| RIP Version | The **RIP Version** field controls the format and the broadcasting method of the RIP packets that the device sends (it recognizes both formats when receiving).<br><br>Choose **RIP-1**, **RIP-2B** or **RIP-2M**.<br><br>**RIP-1** is universally supported; but **RIP-2** carries more information. RIP-1 is probably adequate for most networks, unless you have an unusual network topology. Both **RIP-2B** and **RIP-2M** sends the routing data in RIP-2 format; the difference being that RIP-2B uses subnet broadcasting while RIP-2M uses multicasting. Multicasting can reduce the load on non-router machines since they generally do not listen to the RIP multicast address and so will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting, also. |
| Enable Multicast Version | Select this check box to turn on IGMP (Internet Group Multicast Protocol). IGMP is a network-layer protocol used to establish membership in a Multicast group - it is not used to carry user data. |

**Table 31** Device Operation > Device Configuration > Network > WAN Backup > Advanced (Prestige) (continued)

| LABEL | DESCRIPTION |
|---|---|
| Multicast Version | Select **IGMP-v1** or **IGMP-v2**. IGMP version 2 (RFC 2236) is an improvement over version 1 (RFC 1112) but IGMP version 1 is still in wide use. If you would like to read more detailed information about inter operability between IGMP version 2 and version 1, please see *sections 4* and *5* of *RFC 2236*. |
| PPP Options | |
| PPP Encapsulation | Select **CISCO PPP** from the drop-down list box if your backup WAN device uses **Cisco PPP** encapsulation; otherwise select **Standard PPP**. |
| Enable Compression | Select this check box to enable stac compression. |
| Connection | |
| Nailed-Up Connection | Select **Nailed-Up Connection** when you want your connection up all the time. The device will try to bring up the connection automatically if it is disconnected. |
| Connect on Demand | Select **Connect on Demand** when you don't want the connection up all the time and specify an idle time-out in the **Max Idle Timeout** field. |
| Max Idle Timeout | Specify an idle time-out in the **Max Idle Timeout** field when you select **Connect on Demand**. The default setting is 0, which means the Internet session will not timeout. |
| Budget | The configuration in the Budget fields has priority over your Connection settings. |
| Allocated Budget | Type the amount of time (in minutes) that the dial backup connection can be used during the time configured in the **Period** field. Set an amount that is less than the time period configured in the **Period** field. If you set the **Allocated Budget** to 0, you will not be able to use the dial backup connection. |
| Period | Type the time period (in hours) for how often the budget should be reset. For example, to allow calls to this remote node for a maximum of 10 minutes every hour, set the **Allocated Budget** to 10 (minutes) and the **Period** to 1 (hour). If you set the **Period** to 0, there is no budget control and the device uses the **Connection** settings. |
| Back | Click this to return to the previous screen. |
| Apply | Click this to save the changes. |
| Reset | Click this to begin configuring this screen afresh. |

## 5.3.10 Advanced Modem Setup (Prestige)

Click **Edit** in the **Advanced Modem Setup** field. See Section 5.3.5 on page 98 for the configuration of this screen.

# 5.4 Wireless Card

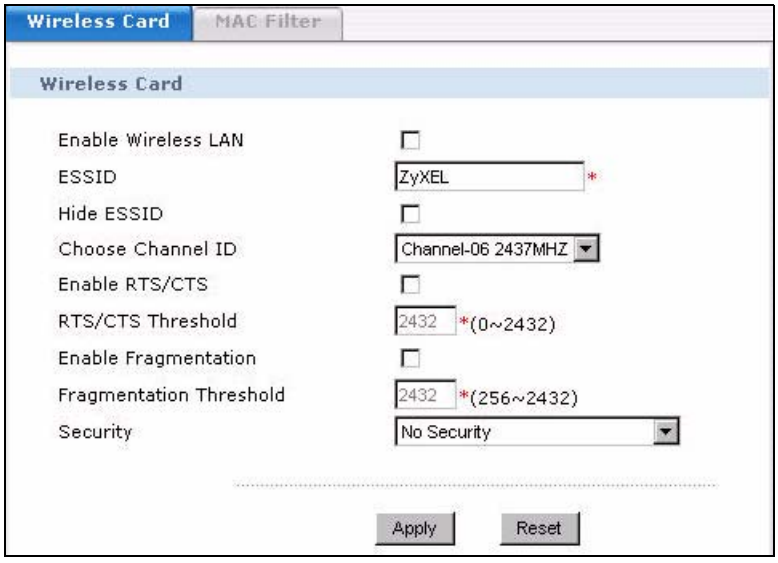
This section shows you how to configure the **Wireless Card** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

## 5.4.1 Wireless and Wireless Security Settings

This screen depends on the device type and firmware version.

Use this screen to configure wireless and wireless security settings. To open this screen, click **Device Operation > Device Configuration > Network > Wireless Card > Wireless Card**.

**Figure 46** Device Operation > Device Configuration > Network > Wireless Card > Wireless Card




The following table describes the fields in this screen.

**Table 32** Device Operation > Device Configuration > Network > Wireless Card > Wireless Card

| LABEL | DESCRIPTION |
|---|---|
| Enable Wireless LAN | You should configure some wireless security when you enable the wireless LAN. Select the check box to enable the wireless LAN. |
| ESSID | The ESSID (Extended Service Set IDentification) is a unique name to identify the device in the wireless LAN. Wireless stations associating to the device must have the same ESSID.<br><br>Enter a descriptive name of up to 32 printable characters (including spaces; alphabetic characters are case-sensitive). |

**Table 32** Device Operation > Device Configuration > Network > Wireless Card > Wireless Card (continued)

| LABEL | DESCRIPTION |
|---|---|
| Hide ESSID | Select this check box to hide the ESSID in so a station cannot obtain the ESSID through AP scanning. Or don't select this to make the ESSID visible so a station can obtain the ESSID through AP scanning. |
| Choose Channel ID | The radio frequency used by IEEE 802.11a, b or g wireless devices is called a channel. Select a channel from the drop-down list box. |
| Enable RTS/ CTS | Select this check box to enable RTS (Request To Send) and CTS (Clear To Send) to reduce data collisions on the wireless network if you have wireless clients that are associated with the same AP but out of range of one another.. |
| RTS/CTS Threshold | The RTS threshold (number of bytes) is for enabling RTS/CTS. Data with its frame size larger than this value will perform the RTS/CTS handshake. A wireless client sends an RTS for all packets larger than the number (of bytes) that you enter here. Set the RTS/CTS equal to or higher than the fragmentation threshold to turn RTS/CTS off.<br><br>Select **Enable RTS/CTS** to change the default value and enter a new value between 0 and 2432. |
| Enable Fragmentation | Select this check box to enable fragmentation on a packet if it is over the frame size defined in the **Fragmentation Threshold** field. |
| Fragmentation Threshold | This is the threshold (number of bytes) for the fragmentation boundary for directed messages. It is the maximum data fragment size that can be sent.<br><br>Select the check box to change the default value and enter a value between 256 and 2432. |

**Table 32** Device Operation > Device Configuration > Network > Wireless Card > Wireless Card (continued)

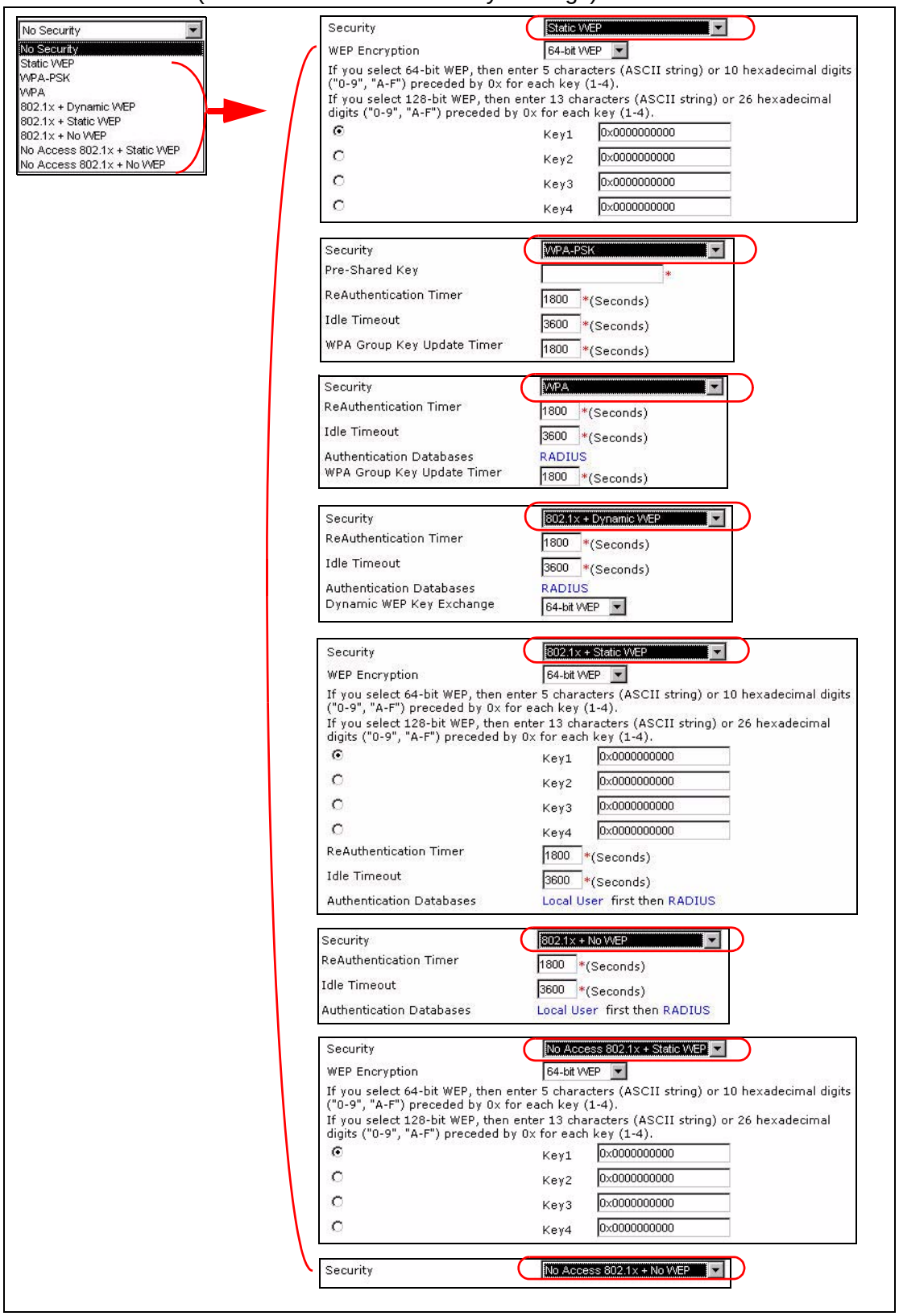
| LABEL | DESCRIPTION |
|---|---|
| Security | Select one of the security settings.<br>**No Security**<br>**Static WEP**<br>**WPA-PSK**<br>**WPA**<br>**802.1x + Dynamic WEP**<br>**802.1x + Static WEP**<br>**802.1x + No WEP**<br>**No Access 802.1x + Static WEP**<br>**No Access 802.1x + No WEP**<br>Select **No Security** to allow wireless stations to communicate with the access points without any data encryption. Otherwise, select the security you need and see the following sections for more information.<br>Note: The installed ZyXEL wireless card may not support all of the wireless security features you can configure in the Vantage CNM.<br>Please see the product specifications appendix for a table of compatible ZyXEL wireless cards and the wireless security features each card supports. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

## 5.4.2 Advanced Wireless Security Settings

Use these screens to configure wireless security settings. To see these settings, select any option from the **Security** field in the **Device Operation > Device Configuration > Network > Wireless Card > Wireless Card** screen.

**Figure 47** Device Operation > Device Configuration > Network > Wireless Card >

## Wireless Card (Advanced Wireless Security Settings)



The following table describes the fields in these settings.

**Table 33** Wireless Card: Static WEP

| LABEL | DESCRIPTION |
|---|---|
| Security | Select **Static WEP** from the drop-down list. |
| WEP Encryption | WEP (Wired Equivalent Privacy) provides data encryption to prevent unauthorized wireless stations from accessing data transmitted over the wireless network.<br>Select **64-bit WEP** or **128-bit WEP** to enable data encryption. |
| Key 1 to Key 4 | If you chose **64-bit WEP** in the **WEP Encryption** field, then enter any 5 characters (ASCII string) or 10 hexadecimal characters ("0-9", "A-F") preceded by 0x for each key.<br>If you chose **128-bit WEP** in the **WEP Encryption** field, then enter 13 characters (ASCII string) or 26 hexadecimal characters ("0-9", "A-F") preceded by 0x for each key.<br><br>There are four data encryption keys to secure your data from eavesdropping by unauthorized wireless users. The values for the keys must be set up exactly the same on the access points as they are on the wireless stations. |

**Table 34** Wireless Card: WPA-PSK

| LABEL | DESCRIPTION |
|---|---|
| Security | Select **WPA-PSK** from the drop-down list. |
| Pre-Shared Key | The encryption mechanisms used for **WPA** and **WPA-PSK** are the same. The only difference between the two is that **WPA-PSK** uses a simple common password, instead of user-specific credentials.<br><br>Type a pre-shared key from 8 to 63 case-sensitive ASCII characters (including spaces and symbols). |
| ReAuthentication Timer (Seconds) | Specify how often wireless stations have to resend user names and passwords in order to stay connected. Enter a time interval between 10 and 65535 seconds.<br><br>If wireless station authentication is done using a RADIUS server, the reauthentication timer on the RADIUS server has priority. |

**Table 34** Wireless Card: WPA-PSK (continued)

| LABEL | DESCRIPTION |
|---|---|
| Idle Timeout (Seconds) | The Vantage CNM automatically disconnects a wireless station from the wireless network after a period of inactivity. The wireless station needs to send the username and password again before it can use the wireless network again. Some wireless clients may prompt users for a username and password; other clients may use saved login credentials. In either case, there is usually a short delay while the wireless client logs in to the wireless network again.<br><br>This value is usually smaller when the wireless network is keeping track of how much time each wireless station is connected to the wireless network (for example, using an authentication server). If the wireless network is not keeping track of this information, you can usually set this value higher to reduce the number of delays caused by logging in again. |
| WPA Group Key Update Timer (Seconds) | The **WPA Group Key Update Timer** is the rate at which the AP (if using **WPA-PSK** key management) or RADIUS server (if using **WPA** key management) sends a new group key out to all clients. The re-keying process is the WPA equivalent of automatically changing the WEP key for an AP and all stations in a WLAN on a periodic basis. Setting of the **WPA Group Key Update Timer** is also supported in **WPA-PSK** mode. |

**Table 35** Wireless Card: WPA

| LABEL | DESCRIPTION |
|---|---|
| Security | Select **WPA** from the drop-down list. |
| ReAuthentication Timer (Seconds) | Specify how often wireless stations have to resend user names and passwords in order to stay connected. Enter a time interval between 10 and 65535 seconds.<br><br>If wireless station authentication is done using a RADIUS server, the reauthentication timer on the RADIUS server has priority. |
| Idle Timeout (Seconds) | The Vantage CNM automatically disconnects a wireless station from the wireless network after a period of inactivity. The wireless station needs to send the username and password again before it can use the wireless network again. Some wireless clients may prompt users for a username and password; other clients may use saved login credentials. In either case, there is usually a short delay while the wireless client logs in to the wireless network again.<br><br>This value is usually smaller when the wireless network is keeping track of how much time each wireless station is connected to the wireless network (for example, using an authentication server). If the wireless network is not keeping track of this information, you can usually set this value higher to reduce the number of delays caused by logging in again. |
| Authentication Databases | Click **RADIUS** to go to the **RADIUS** screen where you can configure the Vantage CNM to check an external RADIUS server. |
| WPA Group Key Update Timer (Seconds) | The **WPA Group Key Update Timer** is the rate at which the AP (if using **WPA-PSK** key management) or RADIUS server (if using **WPA** key management) sends a new group key out to all clients. The re-keying process is the WPA equivalent of automatically changing the WEP key for an AP and all stations in a WLAN on a periodic basis. Setting of the **WPA Group Key Update Timer** is also supported in **WPA-PSK** mode. |

**Table 36** Wireless Card: 802.1x + Dynamic WEP

| LABEL | DESCRIPTION |
|---|---|
| Security | Select **802.1x + Dynamic WEP** from the drop-down list. |
| ReAuthentication Timer (Seconds) | Specify how often wireless stations have to resend user names and passwords in order to stay connected. Enter a time interval between 10 and 65535 seconds.<br><br>If wireless station authentication is done using a RADIUS server, the reauthentication timer on the RADIUS server has priority. |
| Idle Timeout (Seconds) | The Vantage CNM automatically disconnects a wireless station from the wireless network after a period of inactivity. The wireless station needs to send the username and password again before it can use the wireless network again. Some wireless clients may prompt users for a username and password; other clients may use saved login credentials. In either case, there is usually a short delay while the wireless client logs in to the wireless network again.<br><br>This value is usually smaller when the wireless network is keeping track of how much time each wireless station is connected to the wireless network (for example, using an authentication server). If the wireless network is not keeping track of this information, you can usually set this value higher to reduce the number of delays caused by logging in again. |
| Authentication Databases | Click **RADIUS** to go to the **RADIUS** screen where you can configure the Vantage CNM to check an external RADIUS server. |
| Dynamic WEP Key Exchange | Select **64-bit WEP** or **128-bit WEP** to enable data encryption. |

**Table 37** Wireless Card: 802.1x + Static WEP

| LABEL | DESCRIPTION |
|---|---|
| Security | Select **802.1x + Static WEP** from the drop-down list. |
| WEP Encryption | WEP (Wired Equivalent Privacy) provides data encryption to prevent unauthorized wireless stations from accessing data transmitted over the wireless network.<br>Select **64-bit WEP** or **128-bit WEP** to enable data encryption. |
| Key 1 to Key 4 | If you chose **64-bit WEP** in the **WEP Encryption** field, then enter any 5 characters (ASCII string) or 10 hexadecimal characters ("0-9", "A-F") preceded by 0x for each key.<br>If you chose **128-bit WEP** in the **WEP Encryption** field, then enter 13 characters (ASCII string) or 26 hexadecimal characters ("0-9", "A-F") preceded by 0x for each key.<br><br>There are four data encryption keys to secure your data from eavesdropping by unauthorized wireless users. The values for the keys must be set up exactly the same on the access points as they are on the wireless stations. |

**Table 37** Wireless Card: 802.1x + Static WEP (continued)

| LABEL | DESCRIPTION |
|---|---|
| ReAuthentication Timer (Seconds) | Specify how often wireless stations have to resend user names and passwords in order to stay connected. Enter a time interval between 10 and 65535 seconds.<br><br>If wireless station authentication is done using a RADIUS server, the reauthentication timer on the RADIUS server has priority. |
| Idle Timeout (Seconds) | The Vantage CNM automatically disconnects a wireless station from the wireless network after a period of inactivity. The wireless station needs to send the username and password again before it can use the wireless network again. Some wireless clients may prompt users for a username and password; other clients may use saved login credentials. In either case, there is usually a short delay while the wireless client logs in to the wireless network again.<br><br>This value is usually smaller when the wireless network is keeping track of how much time each wireless station is connected to the wireless network (for example, using an authentication server). If the wireless network is not keeping track of this information, you can usually set this value higher to reduce the number of delays caused by logging in again. |
| Authentication Databases | Click **Local User** to go to the **Local User Database** screen where you can view and/or edit the list of users and passwords. Click **RADIUS** to go to the **RADIUS** screen where you can configure the Vantage CNM to check an external RADIUS server. |

**Table 38** Wireless Card: 802.1x + No WEP

| LABEL | DESCRIPTION |
|---|---|
| Security | Select **802.1x + No WEP** from the drop-down list. |
| ReAuthentication Timer (Seconds) | Specify how often wireless stations have to resend user names and passwords in order to stay connected. Enter a time interval between 10 and 65535 seconds.<br><br>If wireless station authentication is done using a RADIUS server, the reauthentication timer on the RADIUS server has priority. |
| Idle Timeout (Seconds) | The Vantage CNM automatically disconnects a wireless station from the wireless network after a period of inactivity. The wireless station needs to send the username and password again before it can use the wireless network again. Some wireless clients may prompt users for a username and password; other clients may use saved login credentials. In either case, there is usually a short delay while the wireless client logs in to the wireless network again.<br><br>This value is usually smaller when the wireless network is keeping track of how much time each wireless station is connected to the wireless network (for example, using an authentication server). If the wireless network is not keeping track of this information, you can usually set this value higher to reduce the number of delays caused by logging in again. |
| Authentication Databases | Click **Local User** to go to the **Local User Database** screen where you can view and/or edit the list of users and passwords. Click **RADIUS** to go to the **RADIUS** screen where you can configure the Vantage CNM to check an external RADIUS server. |

**Table 39** Wireless Card: No Access 802.1x + Static WEP

| LABEL | DESCRIPTION |
|---|---|
| Security | Select **No Access 802.1x + Static WEP** from the drop-down list. |
| WEP Encryption | WEP (Wired Equivalent Privacy) provides data encryption to prevent unauthorized wireless stations from accessing data transmitted over the wireless network.<br>Select **64-bit WEP** or **128-bit WEP** to enable data encryption. |
| Key 1 to Key 4 | If you chose **64-bit WEP** in the **WEP Encryption** field, then enter any 5 characters (ASCII string) or 10 hexadecimal characters ("0-9", "A-F") preceded by 0x for each key.<br>If you chose **128-bit WEP** in the **WEP Encryption** field, then enter 13 characters (ASCII string) or 26 hexadecimal characters ("0-9", "A-F") preceded by 0x for each key.<br>There are four data encryption keys to secure your data from eavesdropping by unauthorized wireless users. The values for the keys must be set up exactly the same on the access points as they are on the wireless stations. |

**Table 40** Wireless Card: No Access 802.1x + No WEP

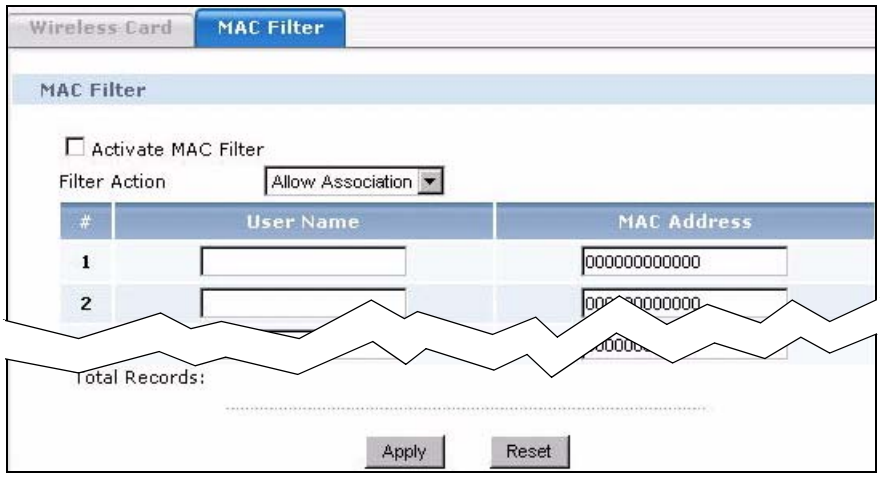
| LABEL | DESCRIPTION |
|---|---|
| Security | Select **No Access 802.1x + No WEP** from the drop-down list to deny all wireless stations access to your wired network and block all wireless stations from communicating with the Vantage CNM. |

## 5.4.3 MAC Filter

Every Ethernet device has a unique MAC (Media Access Control) address. The MAC address is assigned at the factory and consists of six pairs of hexadecimal characters, for example, 00:A0:C5:00:00:02. You need to know the MAC addresses of the devices to configure this screen. To change your device's MAC filter settings, select a device and then click **Device Operation > Device Configuration > Network > Wireless Card** > **MAC Filter**. The screen appears as shown.

Note: Be careful not to list your computer's MAC address and set the **Action** field to **Deny Association** when managing the device via a wireless connection. This would lock you out.

**Figure 48** Device Operation > Device Configuration > Network > Wireless Card > MAC Filter




The following table describes the fields in this screen.

**Table 41** Device Operation > Device Configuration > Network > Wireless Card > MAC Filter

| LABEL | DESCRIPTION |
|---|---|
| Activate MAC Filter | Select this to enable MAC address filtering. |
| Filter Action | Define the filter action for the list of MAC addresses in the **MAC Address** table.<br><br>Select **Deny Association** to block access to the router, MAC addresses not listed will be allowed to access the device. Select **Allow Association** to permit access to the router, MAC addresses not listed will be denied access to the device. |
| Index | This is the index number of the MAC address. |
| User Name | Enter a descriptive name for the MAC address. |
| MAC Address | Enter the MAC addresses in a valid MAC address format, that is, six hexadecimal character pairs, for example, 12:34:56:78:9a:bc of the wireless stations that are allowed or denied access to the device in these address fields. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

# 6

# Device Security Settings

The screens explained device security settings such as firewall, VPN, anti-virus, anti-spam, IDP, signature update, content filter and X-auth.

## 6.1 Firewall

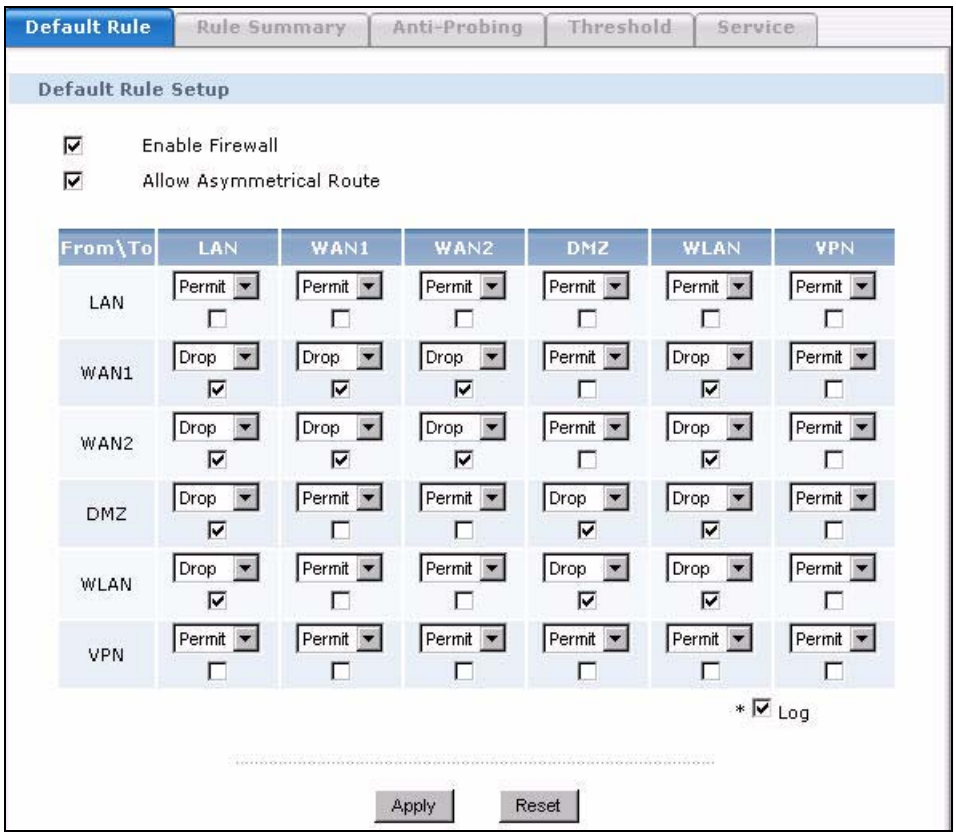
This section shows you how to configure the **Firewall** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

### 6.1.1 Default Rule

Use this screen to configure global settings for the firewall and to set the default rules for packets in each direction. You can also configure the default rules in the **Rule Summary** screen for each direction.

To open this screen, click **Device Operation** in the menu bar and then click **Device Configuration** > **Security** > **Firewall > Default Rule** in the navigation panel.

**Figure 49** Device Operation > Device Configuration > Security > Firewall > Default Rule




The following table describes the labels in this screen.

**Table 42** Device Operation > Device Configuration > Security > Firewall > Default Rule

| LABEL | DESCRIPTION |
|---|---|
| Default Rule Setup | |
| Enable Firewall | Select this check box to activate the firewall. The device performs access control and protects against Denial of Service (DoS) attacks when the firewall is activated. |
| Allow Asymmetrical Route | Select this check box to have the device firewall ignore the use of triangle route topology on the network. See the device's User's Guide for more on triangle route topology. |

**Table 42** Device Operation > Device Configuration > Security > Firewall > Default Rule (continued)

| LABEL | DESCRIPTION |
|---|---|
| From, To | Set the firewall's default actions based on the direction of travel of packets. Here are some example descriptions of the directions of travel.<br><br>**From LAN To LAN** means packets traveling from a computer on one LAN subnet to a computer on another LAN subnet on the LAN interface of the device or the device itself. The device does not apply the firewall to packets traveling from a LAN computer to another LAN computer on the same subnet.<br><br>**From VPN** means traffic that came into the device through a VPN tunnel and is going to the selected "to" interface. For example, **From VPN To LAN** specifies the VPN traffic that is going to the LAN. The device applies the firewall to the traffic after decrypting it.<br><br>**To VPN** is traffic that comes in through the selected "from" interface and goes out through any VPN tunnel. For example, **From LAN To VPN** specifies the traffic that is coming from the LAN and going out through a VPN tunnel. The device applies the firewall to the traffic before encrypting it.<br><br>**From VPN To VPN** means traffic that comes in through a VPN tunnel and goes out through (another) VPN tunnel or terminates at the device. This is the case when the device is the hub in a hub-and-spoke VPN. This is also the case if you allow someone to use a service (like Telnet or HTTP) through a VPN tunnel to manage the device. The device applies the firewall to the traffic after decrypting it.<br><br>Note: The VPN connection directions apply to the traffic going to or from the device's VPN tunnels. They do not apply to other VPN traffic for which the device is not one of the gateways (VPN pass-through traffic).<br><br>Here are the default actions from which you can select.<br><br>Select **Drop** to silently discard the packets without sending a TCP reset packet or an ICMP destination-unreachable message to the sender.<br><br>Select **Reject** to deny the packets and send a TCP reset packet (for a TCP packet) or an ICMP destination-unreachable message (for a UDP packet) to the sender.<br><br>Select **Permit** to allow the passage of the packets.<br><br>The firewall rules for the WAN port with a higher route priority also apply to the dial backup connection. |
| Log | Select the check box next to a direction of packet travel to create a log when the above action is taken for packets that are traveling in that direction and do not match any of your customized rules. |

**Table 42** Device Operation > Device Configuration > Security > Firewall > Default Rule (continued)

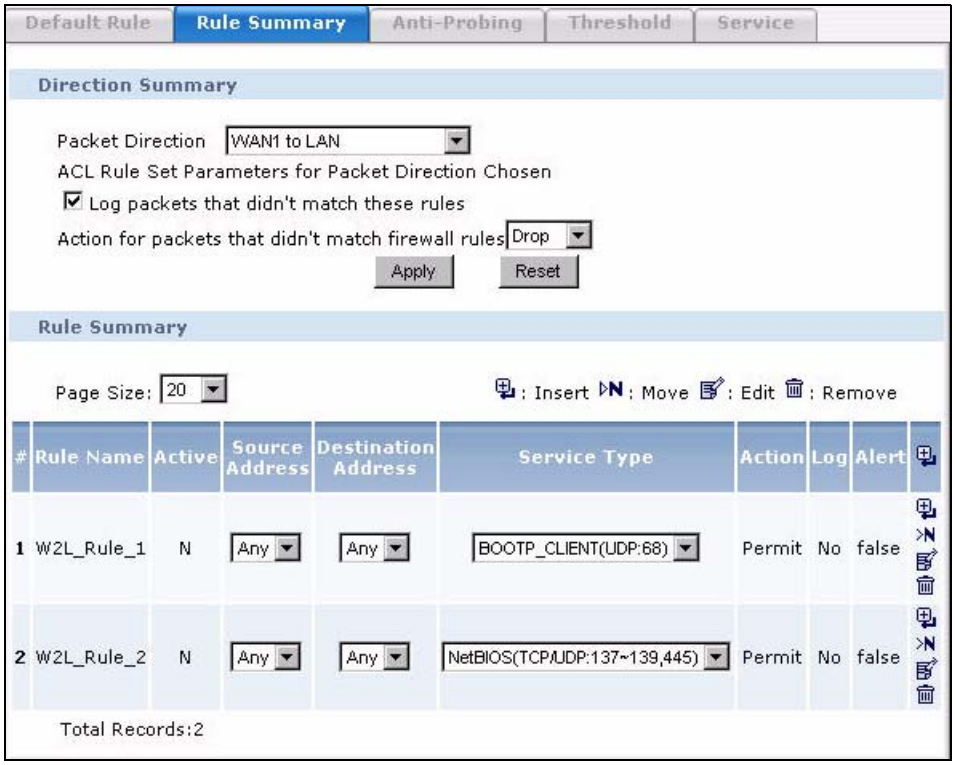
| LABEL | DESCRIPTION |
|---|---|
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to reset this screen to its last saved values. |

## 6.1.2 Rule Summary

Use the **Insert** button to add a new rule before an existing rule. Use **Move** to put an existing rule in a different place.

Select a device, click **Device Operation** in the menu bar and then click **Device Configuration** > **Security > Firewall > Rule Summary** in the navigation panel.

**Figure 50** Device Operation > Device Configuration > Security > Firewall > Rule Summary



The following table describes the labels in this screen.

**Table 43** Device Operation > Device Configuration > Security > Firewall > Rule Summary

| LABEL | DESCRIPTION |
|---|---|
| Direction Summary | Firewall rules are grouped based on the direction of travel of packets to which they apply. Select a direction from the drop-down list box. |
| Packet Direction | Use the drop-down list box to select a direction of travel of packets for which you want to configure firewall rules. |
| ACL Rule Set Parameters for Packet Direction Chosen | |
| Log packets that don't match these rules. | Select the check box to create a log (when the above action is taken) for packets that are traveling in the selected direction and do not match any of the rules below. |
| Action for packets that don't match firewall rules | Select what action the device should take for packets that don't match any of the firewall rules you configured.<br>Select **Drop** to silently discard the packets without sending a TCP reset packet or an ICMP destination-unreachable message to the sender.<br>Select **Reject** to deny the packets and send a TCP reset packet (for a TCP packet) or an ICMP destination-unreachable message (for a UDP packet) to the sender.<br>Select **Permit** to allow the passage of the packets. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to reset this screen to its last saved values. |
| Rule Summary | The following fields summarize the rules you have created that apply to traffic traveling in the selected packet direction. The firewall rules that you configure (summarized below) take priority over the general firewall action settings above. Select an ACL hyperlink to edit that ACL rule. |
| # | This is your firewall rule number. Select a rule hyperlink to edit that rule. The ordering of your rules is important as rules are applied in turn. The **Move** field below allows you to reorder your rules. |
| Rule Name | This is the name of the firewall rule. |
| Active | This field displays whether a firewall is turned on (**true**) or not (**false**). |
| Source Address | This field lists the source IP address of the incoming packet. Click the list box to see all source address configured for the firewall rule. |
| Destination Address | This field lists the destination IP address of the outgoing packet. Click the list box to see all destination address configured for the firewall rule. |
| Service Type | This field displays the services to which this firewall rule applies. Click the list box to see all service type configured for the firewall rule. See Figure 51 on page 129 for more information. |

**Table 43** Device Operation > Device Configuration > Security > Firewall > Rule Summary (continued)

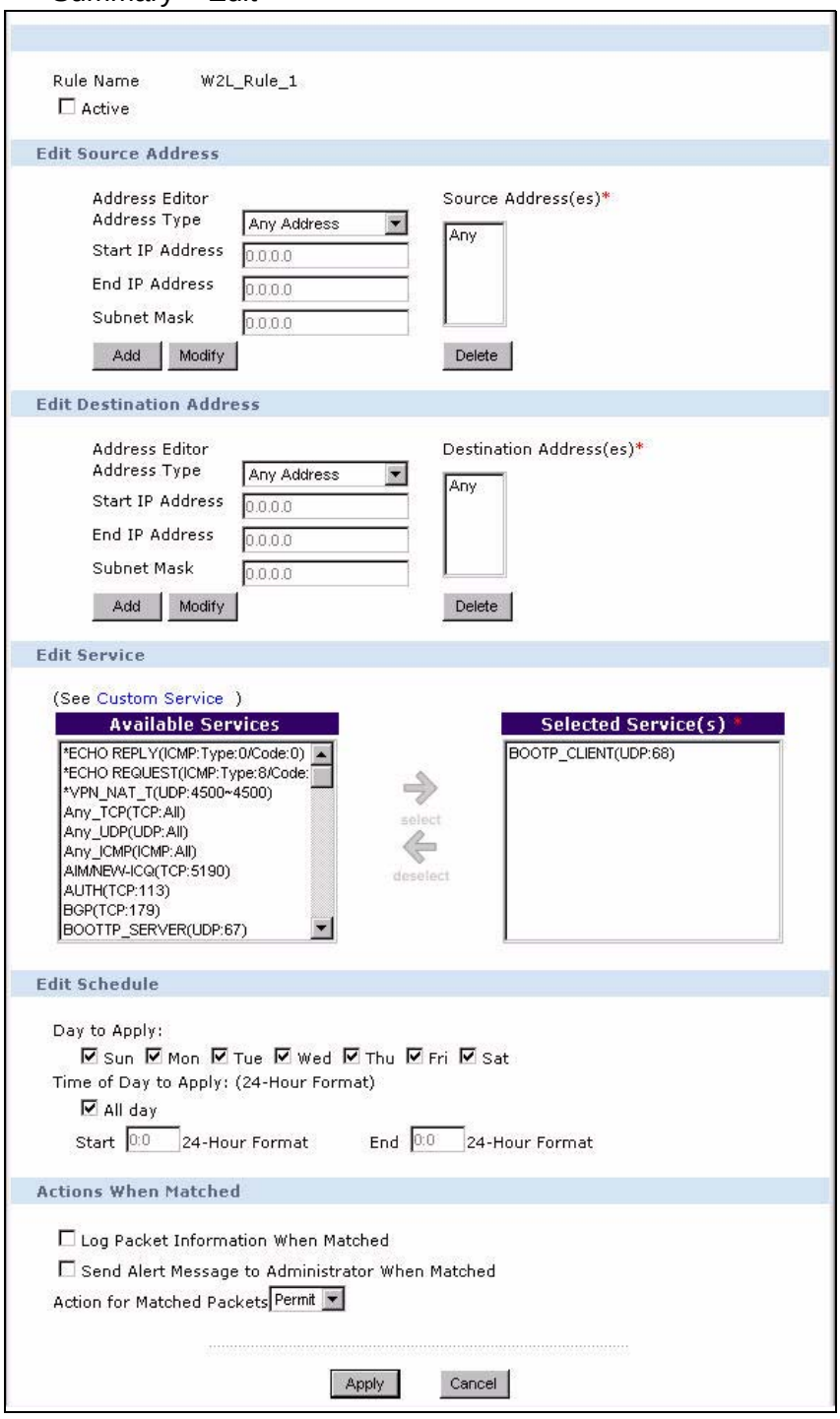
| LABEL | DESCRIPTION |
|---|---|
| Action | This field displays whether the firewall silently discards packets (**Drop**), discards packets and sends a TCP reset packet or an ICMP destination-unreachable message to the sender (**Reject**) or allows the passage of packets (**Permit**). |
| Log | This field shows you whether a log is created when packets match this rule (**Yes**) or not (**No**). |
| Alert | This field tells you whether this rule generates an alert (**true**) or not (**false**) when the rule is matched. |
| Insert | Click the insert icon to display the screen where you can configure a new firewall rule. The insert icon at the top of the row creates the new firewall rule before the others. The individual firewall rule insert icons create a new firewall rule after the row's firewall rule. |
| Move | Click **Move** to display the screen where you can move the rule to the number that you typed. The ordering of your rules is important as they are applied in order of their numbering. |
| Edit | Click this to modify a firewall rule. |
| Remove | Click this to delete an existing firewall rule. Note that subsequent firewall rules move up by one when you take this action. |

## 6.1.3 Add/Edit a Rule

Each device has a different number of rules and custom ports; see the device User Guide for more details.

In Figure 50 on page 126, click **Edit** to modify an existing firewall rule or click **Insert** to create a new firewall rule.

**Figure 51** Device Operation > Device Configuration > Security > Firewall > Rule Summary > Edit



The following table describes the labels in this screen.

**Table 44** Device Operation > Device Configuration > Security > Firewall > Rule Summary > Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| Rule Name | Enter a descriptive name of up to 31 printable ASCII characters (except Extended ASCII characters) for the firewall rule. Spaces are allowed. |
| Active | Select this to turn this rule on. Clear this to turn this rule off. |
| Edit Source/Destination Address | |
| Address Type | Do you want your rule to apply to packets with a particular (single) IP, a range of IP addresses (for example 192.168.1.10 to 192.169.1.50), a subnet or any IP address? Select an option from the drop-down list box that includes: **Single Address**, **Range Address**, **Subnet Address** and **Any Address**. |
| Start IP Address | Enter the single IP address or the starting IP address in a range here. |
| End IP Address | Enter the ending IP address in a range here. |
| Subnet Mask | Enter the subnet mask here, if applicable. |
| Add | Click **Add** to add a new address to the **Source** or **Destination Address(es)** box. You can add multiple addresses, ranges of addresses, and/or subnets. |
| Modify | To edit an existing source or destination address, select it from the box and click **Modify**. |
| Delete | Highlight an existing source or destination address from the **Source** or **Destination Address(es)** box above and click **Delete** to remove it. |
| Edit Service | |
| Available/ Selected Services | Highlight a service from the **Available Services** box on the left, then click the select icon to add it to the **Selected Service(s)** box on the right. To remove a service, highlight it in the **Selected Service(s)** box on the right, then click the deselect icon.<br><br>Next to the name of a service, two fields appear in brackets. The first field indicates the IP protocol type (TCP, UDP, or ICMP). The second field indicates the IP port number that defines the service. (Note that there may be more than one IP protocol type). For example, look at the DNS entry, (UDP/TCP:53) means UDP port 53 and TCP port 53. Click the **Custom Service** link to go to the **Service** screen where you can configure custom service ports. See the device User's Guide for a list of commonly used services and port numbers.<br><br>You can use the [CTRL] key and select multiple services at one time. |
| Edit Schedule | |
| Day to Apply | Select everyday or the day(s) of the week to apply the rule. |
| Time of Day to Apply (24-Hour Format) | Select **All Day** or enter the start and end times in the hour-minute format to apply the rule. |
| Actions When Matched | |

**Table 44** Device Operation > Device Configuration > Security > Firewall > Rule Summary > Add/Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Log Packet Information When Matched | This field determines if a log for packets that match the rule is created (**Yes**) or not (**No**). Go to **Device Operation** > **Device Configuration** > **Device Log** > **Log** and select the **Access Control** log category to have the device record these logs. |
| Send Alert Message to Administrator When Matched | Select the check box to have the device generate an alert when the rule is matched. |
| Action for Matched Packets | Use the drop-down list box to select what the firewall is to do with packets that match this rule.<br>Select **Drop** to silently discard the packets without sending a TCP reset packet or an ICMP destination-unreachable message to the sender.<br>Select **Reject** to deny the packets and send a TCP reset packet (for a TCP packet) or an ICMP destination-unreachable message (for a UDP packet) to the sender.<br>Select **Permit** to allow the passage of the packets.<br>Note: You also need to configure NAT port forwarding (or full featured NAT address mapping rules) if you want to allow computers on the WAN to access devices on the LAN.<br>Note: You may also need to configure the remote management settings if you want to allow a WAN computer to manage the device or restrict management from the LAN. |
| Apply | Click this to save your customized settings and exit this screen. |
| Cancel | Click this to exit this screen without saving. |

## 6.1.4 Anti-Probing

Click **Device Operation** in the menu bar and then click **Device Configuration** > **Security** > **Firewall > Anti-Probing** in the navigation panel to open the following screen. Configure this screen to help keep the device hidden from probing attempts. You can specify which of the device's interfaces will respond to

Ping requests and whether or not the device is to respond to probing for unused ports.

**Figure 52** Device Operation > Device Configuration > Security > Firewall > Anti-Probing

The following table describes the labels in this screen.

**Table 45** Device Operation > Device Configuration > Security > Firewall > Anti-Probing

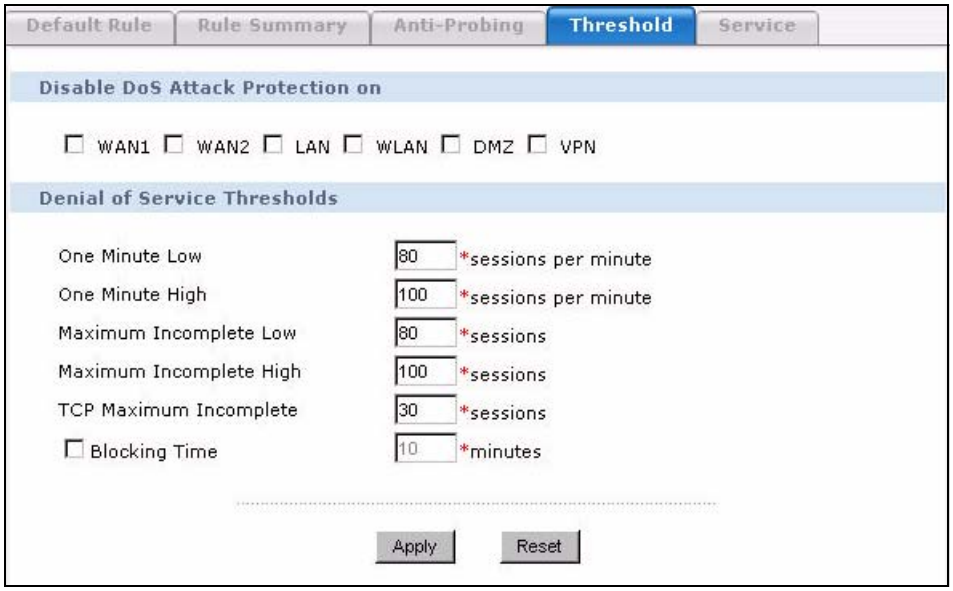
| LABEL | DESCRIPTION |
|---|---|
| Respond to PING on | Select the interfaces on which you want the device to reply to incoming Ping requests. |
| Do not respond to requests for unauthorized services. | Select this option to prevent hackers from finding the device by probing for unused ports. If you select this option, the device will not respond to port request(s) for unused ports, thus leaving the unused ports and the device unseen. If this option is not selected, the device will reply with an ICMP port unreachable packet for a port probe on its unused UDP ports and a TCP reset packet for a port probe on its unused TCP ports.<br><br>Note that the probing packets must first traverse the device's firewall rule checks before reaching this anti-probing mechanism. Therefore if a firewall rule stops a probing packet, the device reacts based on the firewall rule to either send a TCP reset packet for a blocked TCP packet (or an ICMP port-unreachable packet for a blocked UDP packets) or just drop the packets without sending a response packet. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

## 6.1.5 Threshold

Click **Device Operation** in the menu bar and then click **Device Configuration** > **Security** > **Firewall > Threshold** in the navigation panel to bring up the next

screen. The global values specified for the threshold and timeout apply to all TCP connections.

**Figure 53** Device Operation > Device Configuration > Security > Firewall > Threshold




The following table describes the labels in this screen.

**Table 46** Device Operation > Device Configuration > Security > Firewall > Threshold

| LABEL | DESCRIPTION |
|---|---|
| Disable DoS Attack Protection on | Select the interface(s) (or VPN tunnels) for which you want the device to not use the Denial of Service protection thresholds. This disables DoS protection on the selected interface (or all VPN tunnels).<br><br>You may want to disable DoS protection for an interface if the device is treating valid traffic as DoS attacks. Another option would be to raise the thresholds. |
| Denial of Service Thresholds | The device measures both the total number of existing half-open sessions and the rate of session establishment attempts. Both TCP and UDP half-open sessions are counted in the total number and rate measurements. Measurements are made once a minute. |
| One Minute Low | This is the rate of new half-open sessions per minute that causes the firewall to stop deleting half-open sessions. The device continues to delete half-open sessions as necessary, until the rate of new connection attempts drops below this number. |

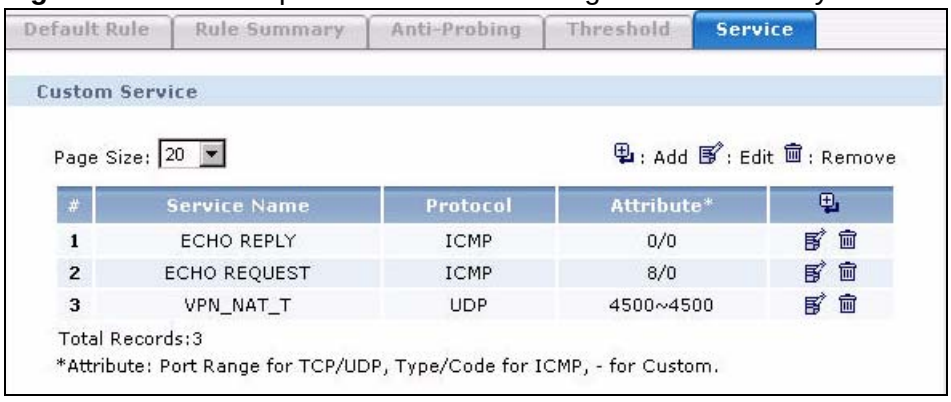
**Table 46** Device Operation > Device Configuration > Security > Firewall > Threshold (continued)

| LABEL | DESCRIPTION |
|---|---|
| One Minute High | This is the rate of new half-open sessions per minute that causes the firewall to start deleting half-open sessions. When the rate of new connection attempts rises above this number, the device deletes half-open sessions as required to accommodate new connection attempts.<br><br>For example, if you set the one minute high to 100, the device starts deleting half-open sessions when more than 100 session establishment attempts have been detected in the last minute. It stops deleting half-open sessions when the number of session establishment attempts detected in a minute goes below the number set as the one minute low. |
| Maximum Incomplete Low | This is the number of existing half-open sessions that causes the firewall to stop deleting half-open sessions. The device continues to delete half-open requests as necessary, until the number of existing half-open sessions drops below this number. |
| Maximum Incomplete High | This is the number of existing half-open sessions that causes the firewall to start deleting half-open sessions. When the number of existing half-open sessions rises above this number, the device deletes half-open sessions as required to accommodate new connection requests. Do not set **Maximum Incomplete High** to lower than the current **Maximum Incomplete Low** number.<br><br>For example, if you set the maximum incomplete high to 100, the device starts deleting half-open sessions when the number of existing half-open sessions rises above 100. It stops deleting half-open sessions when the number of existing half-open sessions drops below the number set as the maximum incomplete low. |
| TCP Maximum Incomplete | An unusually high number of half-open sessions with the same destination host address could indicate that a DoS attack is being launched against the host.<br><br>Specify the number of existing half-open TCP sessions with the same destination host IP address that causes the firewall to start dropping half-open sessions to that same destination host IP address. Enter a number between 1 and 256. As a general rule, you should choose a smaller number for a smaller network, a slower system or limited bandwidth. The device sends alerts whenever the **TCP Maximum Incomplete** is exceeded. |
| Blocking Time | Select the action that the device takes when the TCP maximum incomplete threshold is reached.<br><br>Select the check box if you want the device to deny new connection requests for the number of minutes that you specify (between 1 and 255).<br><br>Clear the check box if you want the device to delete the oldest half open session when a new connection request comes. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

## 6.1.6 Service

Click **Device Operation** in the menu bar and then click **Device Configuration** > **Security > Firewall > Service** in the navigation panel to open the screen as shown next. Use this screen to configure custom services for use in firewall rules or view the services that are predefined in the device.

**Figure 54** Device Operation > Device Configuration > Security > Firewall > Service




The following table describes the labels in this screen.

**Table 47** Device Operation > Device Configuration > Security > Firewall > Service

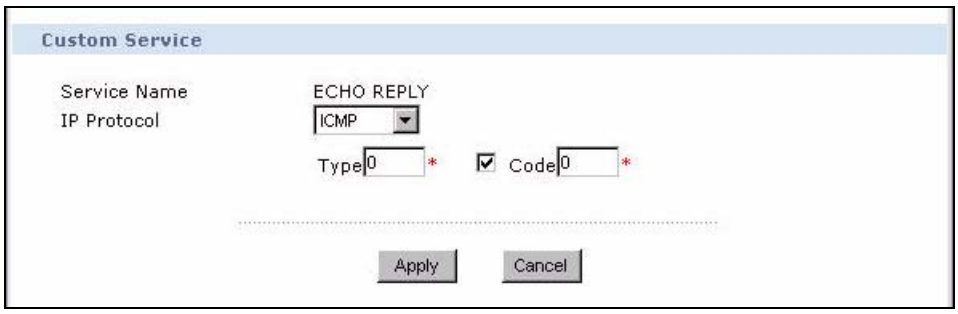
| LABEL | DESCRIPTION |
|---|---|
| Custom Service | This table shows all configured custom services. |
| # | This is the index number of the custom service. Click the number to go to the screen where you can edit the service. |
| Service Name | This is the name of the service. |
| Protocol | This is the IP protocol type.<br><br>If you selected **Custom**, this is the IP protocol value you entered. |
| Attribute | This field displays the IP port number(s) or ICMP type and code that defines the service. |
| Add | Click this button to bring up the screen that you use to configure a new custom service that is not in the predefined list of services. |
| Delete | Click the delete icon to remove an existing service. |

## 6.1.7 Add/Edit Service

Click **Add** or **Edit** on an existing service record in the **Device Operation > Device Configuration > Security > Firewall > Service** screen to open the

screen as shown next. Use this screen to configure a custom service entry not is not predefined in the device.

**Figure 55** Device Operation > Device Configuration > Security > Firewall > Service > Add/Edit




The following table describes the labels in this screen.

**Table 48** Device Operation > Device Configuration > Security > Firewall > Service > Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| Service Name | Enter a descriptive name of up to 31 printable ASCII characters (except Extended ASCII characters) for the custom service. You cannot use the left parentheses "(". Spaces are allowed. |
| IP Protocol | Choose the IP protocol (**TCP**, **UDP**, **TCP/UDP**, **ICMP** or **Custom**) that defines your customized service from the drop down list box.<br><br>If you select **Custom**, specify the protocol's number. For example, ICMP is 1, TCP is 6, UDP is 17 and so on. |
| Port Range | This field is available only when you select **TCP/UDP**, **TCP**, or **UDP** in the **IP Protocol** field.<br><br>Enter the port number (from 1 to 255) that defines the customized service<br><br>To specify one port only, enter the port number in the **From** field and enter it again in the **To** field.<br><br>To specify a span of ports, enter the first port in the **From** field and enter the last port in the **To** field. |
| Type/Code | This field is available only when you select **ICMP** in the **IP Protocol** field.<br><br>The ICMP messages are identified by their types and in some cases codes.<br><br>Enter the type number in the **Type** field and select the **Code** radio button and enter the code number if any. |
| Custom Protocol | This field is available only when you select **Custom** in the **IP Protocol** field.<br><br>Specify the protocol's number. For example, ICMP is 1, TCP is 6, UDP is 17 and so on. |
| Apply | Click this to save your customized settings and exit this screen. |
| Cancel | Click this to exit this screen without saving. |

# 6.2 VPN

This section shows you how to configure the **VPN** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

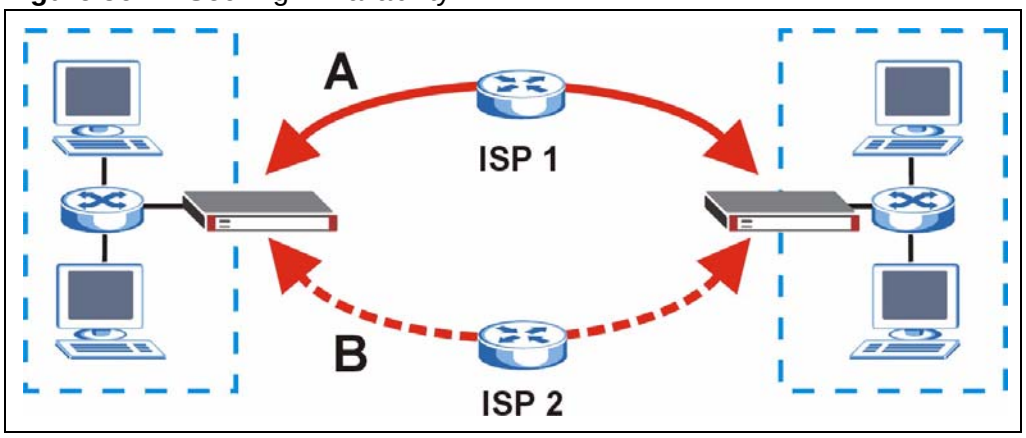
There are two sets of **VPN** screens, VPN version 1.0 and VPN version 1.1. The version depends on the device's type and firmware version.

# 6.3 IPSec High Availability

IPSec high availability (also known as VPN high availability) allows you to use a redundant (backup) VPN connection to another WAN interface on the remote IPSec router if the primary (regular) VPN connection goes down.

In the following figure, if the primary VPN tunnel (A) goes down, the device uses the redundant VPN tunnel (B).

**Figure 56** IPSec High Availability




When setting up a IPSec high availability VPN tunnel, the remote IPSec router:

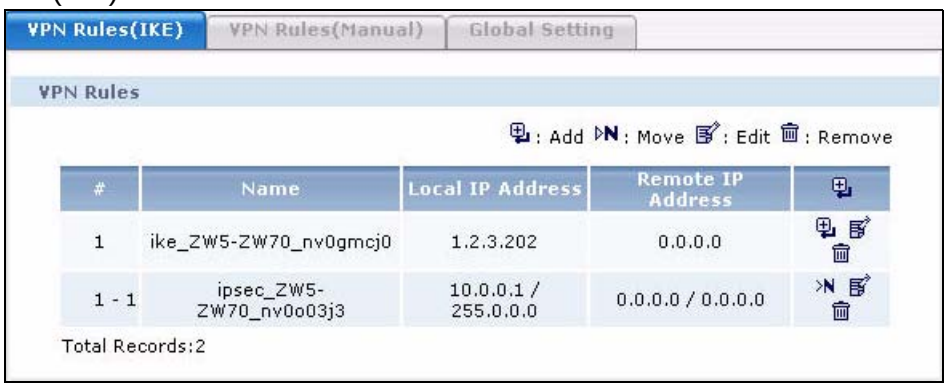
- Must have multiple WAN connections
- Only needs the configure one corresponding IPSec rule
- Should only have IPSec high availability settings in its corresponding IPSec rule if your device has multiple WAN connections
- Should ideally identify itself by a domain name or dynamic domain name (it must otherwise have My Address set to 0.0.0.0)
- Should use a WAN connectivity check to this device's WAN IP address

If the remote IPSec router is not a device, you may also want to avoid setting the IPSec rule to nailed up.

## 6.3.1 VPN Rules (IKE)

To open this screen, select a device, click **Device Operation** in the menu bar and then click **Device Operation** > **Device Configuration** > **Security** > **VPN** in the navigation panel.

**Figure 57** Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE)




The following table describes the labels in this screen.

**Table 49** Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE)

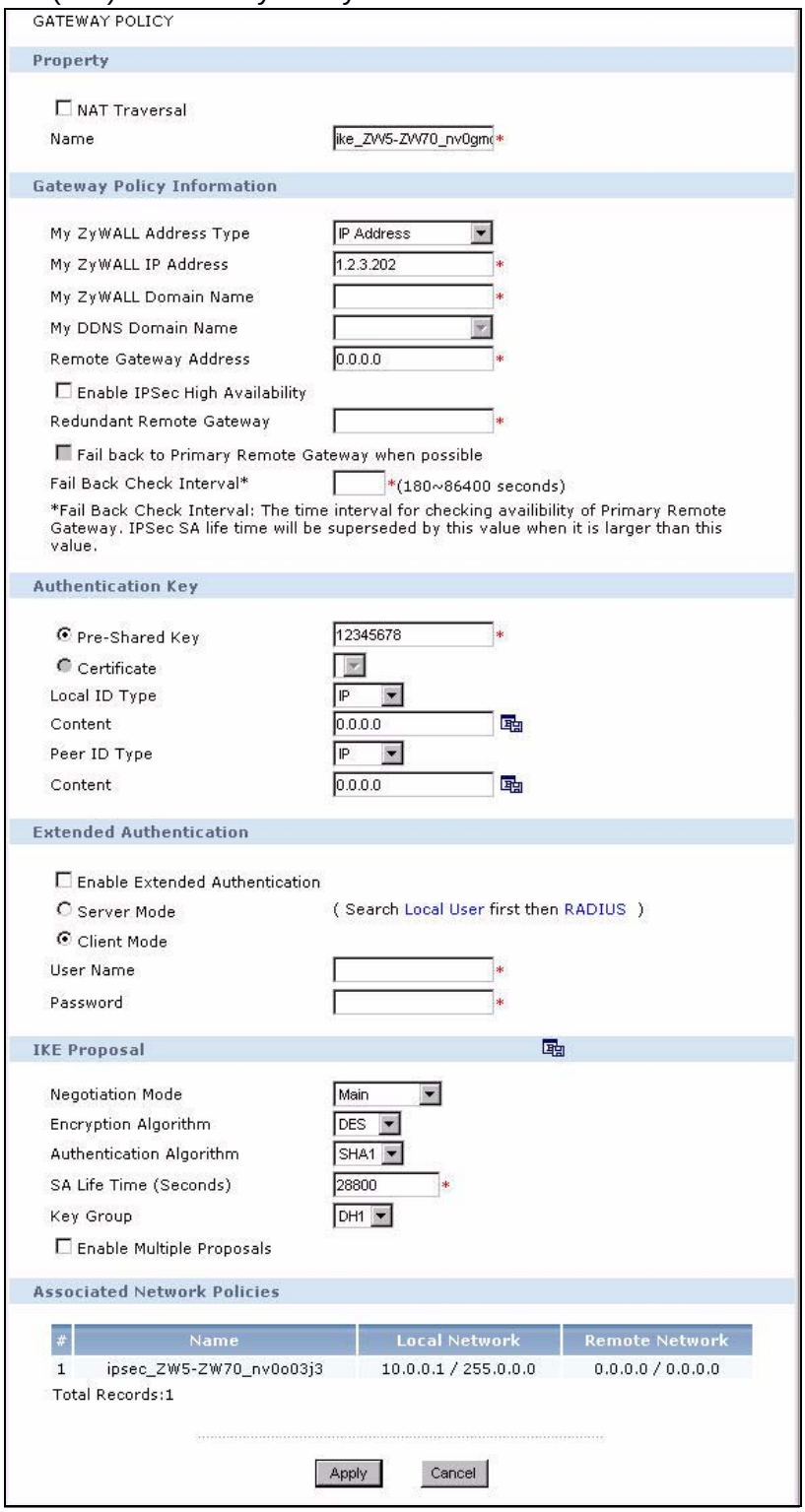
| LABEL | Description |
|---|---|
| # | This is the VPN policy index number. |
| Name | This field displays the identification name for this VPN policy. |
| Local IP Address | This field displays the IP address(es) of the network behind the device. |
| Remote IP Address | This field displays the IP address(es) of the network behind the remote device. |
| Add | Click **Add** to create a new VPN tunnel. |
| Edit | Click this to modify an existing VPN rule. |
| Move | Click **Move** to display a screen in which you can associate a network policy to a gateway policy or move it to the recycle bin. |
| Remove | Click this to delete a VPN rule. |

## 6.3.2 Add/Edit an IKE Gateway Policy

In the **VPN Rule (IKE)** screen, click **Add** in the top of the column or click **Edit** from a existing gateway policy to display the **Gateway Policy** screen.

**Figure 58** Device Operation > Device Configuration > Security > VPN > VPN Rules

(IKE) > Gateway Policy Add/Edit



The following table describes the labels in this screen.

**Table 50** Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Gateway Policy Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| Property | |
| NAT Traversal | Select this check box to enable NAT traversal. NAT traversal allows you to set up a VPN connection when there are NAT routers between the two IPSec routers.<br><br>Note: The remote IPSec router must also have NAT traversal enabled.<br><br>You can use NAT traversal with **ESP** protocol using **Transport** or **Tunnel** mode, but not with **AH** protocol nor with manual key management. In order for an IPSec router behind a NAT router to receive an initiating IPSec packet, set the NAT router to forward UDP port 500 to the IPSec router behind the NAT router. |
| Name | Type up to 32 characters to identify this VPN gateway policy. You may use any character, including spaces, but the device drops trailing spaces. |
| Gateway Policy Information | |
| My ZyWALL Address Type | This field specifies how the IP address of the device is specified.<br><br>**IP Address**: The device's IP address is a static IP address.<br><br>**Domain Name**: The device's IP address is the IP address mapped to a specified domain name.<br><br>**DDNS Domain Name**: The device's IP address is the IP address mapped to a specified DDNS domain name.<br><br>The VPN tunnel has to be rebuilt if the device's IP address changes after setup. |
| My ZyWALL IP Address | This field is enabled if **My ZyWALL Address Type** is **IP Address**.<br><br>Enter the device's static WAN IP address or leave the field set to 0.0.0.0. The following applies if this field is configured as **0.0.0.0**:<br><br>• When the WAN port operation mode is set to **Active / Passive**, the device uses the IP address (static or dynamic) of the WAN port that is in use.<br>• When the WAN port operation mode is set to **Active / Active**, the device uses the IP address (static or dynamic) of the primary (highest priority) WAN port to set up the VPN tunnel as long as the corresponding WAN1 or WAN2 connection is up. If the corresponding WAN1 or WAN2 connection goes down, the device uses the IP address of the other WAN port.<br>• If both WAN connections go down, the device uses the dial backup IP address for the VPN tunnel when using dial backup or the LAN IP address when using traffic redirect. See the chapter on WAN for details on dial backup and traffic redirect. |
| My ZyWALL Domain Name | This field is enabled if **My ZyWALL Address Type** is **IP Address**.<br><br>Enter the domain name associated with the device in the VPN tunnel. |

**Table 50** Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Gateway Policy Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| My DDNS Domain Name | This field is enabled if **My ZyWALL Address Type** is **IP Address**.<br><br>Select the DDNS domain name associated with the device in the VPN tunnel. Use the **DDNS** screens to configure these domain names. |
| Remote Gateway Address | Type the WAN IP address or the domain name (up to 31 characters) of the IPSec router with which you're making the VPN connection. Set this field to **0.0.0.0** if the remote IPSec router has a dynamic WAN IP address.<br><br>In order to have more than one active rule with the **Remote Gateway Address** field set to **0.0.0.0**, the ranges of the local IP addresses cannot overlap between rules.<br><br>If you configure an active rule with **0.0.0.0** in the **Remote Gateway Address** field and the LAN's full IP address range as the local IP address, then you cannot configure any other active rules with the **Remote Gateway Address** field set to **0.0.0.0**. |
| Enable IPSec High Availability | Turn on the high availability feature to use a redundant (backup) VPN connection to another WAN interface on the remote IPSec router if the primary (regular) VPN connection goes down. The remote IPSec router must have a second WAN connection in order for you to use this.<br><br>To use this, you must identify both the primary and the redundant remote IPSec routers by WAN IP address or domain name (you cannot set either to **0.0.0.0**). |
| Redundant Remote Gateway | Type the WAN IP address or the domain name (up to 31 characters) of the backup IPSec router to use when the device cannot not connect to the primary remote gateway. |
| Fail back to Primary Remote Gateway when possible | Select this to have the device change back to using the primary remote gateway if the connection becomes available again. |
| Fail Back Check Interval* | Set how often the device should check the connection to the primary remote gateway while connected to the redundant remote gateway.<br><br>Each gateway policy uses one or more network policies. If the fall back check interval is shorter than a network policy's SA life time, the fall back check interval is used as the check interval and network policy SA life time. If the fall back check interval is longer than a network policy's SA life time, the SA lifetime is used as the check interval and network policy SA life time. |
| Authentication Key | |

**Table 50** Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Gateway Policy Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| Pre-Shared Key | Select the **Pre-Shared Key** radio button and type your pre-shared key in this field. A pre-shared key identifies a communicating party during a phase 1 IKE negotiation. It is called "pre-shared" because you have to share it with another party before you can communicate with them over a secure connection.<br><br>Type from 8 to 31 case-sensitive ASCII characters or from 16 to 62 hexadecimal ("0-9", "A-F") characters. You must precede a hexadecimal key with a "0x (zero x), which is not counted as part of the 16 to 62 character range for the key. For example, in "0x0123456789ABCDEF", 0x denotes that the key is hexadecimal and 0123456789ABCDEF is the key itself.<br><br>Both ends of the VPN tunnel must use the same pre-shared key. You will receive a PYLD_MALFORMED (payload malformed) packet if the same pre-shared key is not used on both ends. |
| Certificate | Select the **Certificate** radio button to identify the device by a certificate.<br><br>Use the drop-down list box to select the certificate to use for this VPN tunnel. You must have certificates already configured in the **My Certificates** screen. Click **My Certificates** to go to the **My Certificates** screen where you can view the device's list of certificates. |
| Local ID Type | Select **IP** to identify this device by its IP address.<br><br>Select **DNS** to identify this device by a domain name.<br><br>Select **E-mail** to identify this device by an e-mail address.<br><br>You do not configure the local ID type and content when you set **Authentication Key** to **Certificate**. The device takes them from the certificate you select. |
| Content | When you select **IP** in the **Local ID Type** field, type the IP address of your computer in the local **Content** field. The device automatically uses the IP address in the **My ZyWALL** field (refer to the **My ZyWALL** field description) if you configure the local **Content** field to **0.0.0.0** or leave it blank.<br><br>It is recommended that you type an IP address other than **0.0.0.0** in the local **Content** field or use the **DNS** or **E-mail** ID type in the following situations.<br><br>• When there is a NAT router between the two IPSec routers.<br>• When you want the remote IPSec router to be able to distinguish between VPN connection requests that come in from IPSec routers with dynamic WAN IP addresses.<br><br>When you select **DNS** or **E-mail** in the **Local ID Type** field, type a domain name or e-mail address by which to identify this device in the local **Content** field. Use up to 31 ASCII characters including spaces, although trailing spaces are truncated. The domain name or e-mail address is for identification purposes only and can be any string. |

**Table 50** Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Gateway Policy Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| Peer ID Type | Select from the following when you set **Authentication Key** to **Pre-shared Key**.<br>• Select **IP** to identify the remote IPSec router by its IP address.<br>• Select **DNS** to identify the remote IPSec router by a domain name.<br>• Select **E-mail** to identify the remote IPSec router by an e-mail address.<br>Select from the following when you set **Authentication Key** to **Certificate**.<br>• Select **IP** to identify the remote IPSec router by the IP address in the subject alternative name field of the certificate it uses for this VPN connection.<br>• Select **DNS** to identify the remote IPSec router by the domain name in the subject alternative name field of the certificate it uses for this VPN connection.<br>• Select **E-mail** to identify the remote IPSec router by the e-mail address in the subject alternative name field of the certificate it uses for this VPN connection.<br>• Select **Subject Name** to identify the remote IPSec router by the subject name of the certificate it uses for this VPN connection.<br>• Select **Any** to have the device not check the remote IPSec router's ID. |

**Table 50** Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Gateway Policy Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| Content | The configuration of the peer content depends on the peer ID type.<br><br>Do the following when you set **Authentication Key** to **Pre-shared Key**.<br><br>• For **IP**, type the IP address of the computer with which you will make the VPN connection. If you configure this field to **0.0.0.0** or leave it blank, the device will use the address in the **Remote Gateway Address** field (refer to the **Remote Gateway Address** field description).<br>• For **DNS** or **E-mail**, type a domain name or e-mail address by which to identify the remote IPSec router. Use up to 31 ASCII characters including spaces, although trailing spaces are truncated. The domain name or e-mail address is for identification purposes only and can be any string.<br><br>It is recommended that you type an IP address other than **0.0.0.0** or use the **DNS** or **E-mail** ID type in the following situations:<br><br>• When there is a NAT router between the two IPSec routers.<br>• When you want the device to distinguish between VPN connection requests that come in from remote IPSec routers with dynamic WAN IP addresses.<br><br>Do the following when you set **Authentication Key** to **Certificate**.<br><br>• For **IP**, type the IP address from the subject alternative name field of the certificate the remote IPSec router will use for this VPN connection. If you configure this field to **0.0.0.0** or leave it blank, the device will use the address in the **Remote Gateway Address** field (refer to the **Remote Gateway Address** field description).<br>• For **DNS** or **E-mail**, type the domain name or e-mail address from the subject alternative name field of the certificate the remote IPSec router will use for this VPN connection.<br>• For **Subject Name**, type the subject name of the certificate the remote IPSec router will use for this VPN connection. Use up to255 ASCII characters including spaces.<br>• For **Any**, the peer **Content** field is not available.<br>• Regardless of how you configure the **ID Type** and **Content** fields, two active SAs cannot have both the local and remote IP address ranges overlap between rules. |
| Extended Authentication | |
| Enable Extended Authentication | Select this check box to activate extended authentication. |

**Table 50** Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Gateway Policy Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| Server Mode | Select **Server Mode** to have this device authenticate extended authentication clients that request this VPN connection.<br><br>You must also configure the extended authentication clients' usernames and passwords in the authentication server's local user database or a RADIUS server.<br><br>Click **Local User** to go to the **Local User Database** screen where you can view and/or edit the list of user names and passwords. Click **RADIUS** to go to the **RADIUS** screen where you can configure the device to check an external RADIUS server.<br><br>During authentication, if the device (in server mode) does not find the extended authentication clients' user name in its internal user database and an external RADIUS server has been enabled, it attempts to authenticate the client through the RADIUS server. |
| Client Mode | Select **Client Mode** to have your device use a username and password when initiating this VPN connection to the extended authentication server device. Only a VPN extended authentication client can initiate this VPN connection. |
| User Name | Enter a user name for your device to be authenticated by the VPN peer (in server mode). The user name can be up to 31 case-sensitive ASCII characters, but spaces are not allowed. You must enter a user name and password when you select client mode. |
| Password | Enter the corresponding password for the above user name. The password can be up to 31 case-sensitive ASCII characters, but spaces are not allowed. |
| IKE Proposal | |
| Negotiation Mode | Select **Main** or **Aggressive** from the drop-down list box. Multiple SAs connecting through a secure gateway must have the same negotiation mode. |
| Encryption Algorithm | Select which key size and encryption algorithm to use in the IKE SA. Choices are:<br><br>**DES** - a 56-bit key with the DES encryption algorithm<br><br>**3DES** - a 168-bit key with the DES encryption algorithm<br><br>**AES128/AES192/AES256** - a 128/192/256-bit key with the AES encryption algorithm<br><br>The selected and the remote IPSec router must use the same algorithms and<br><br>keys. Longer keys require more processing power, resulting in increased latency and decreased throughput. |
| Authentication Algorithm | Select **SHA1** or **MD5** from the drop-down list box. **MD5** (Message Digest 5) and **SHA1** (Secure Hash Algorithm) are hash algorithms used to authenticate packet data. The **SHA1** algorithm is generally considered stronger than **MD5**, but is slower. Select **MD5** for minimal security and **SHA-1** for maximum security. |

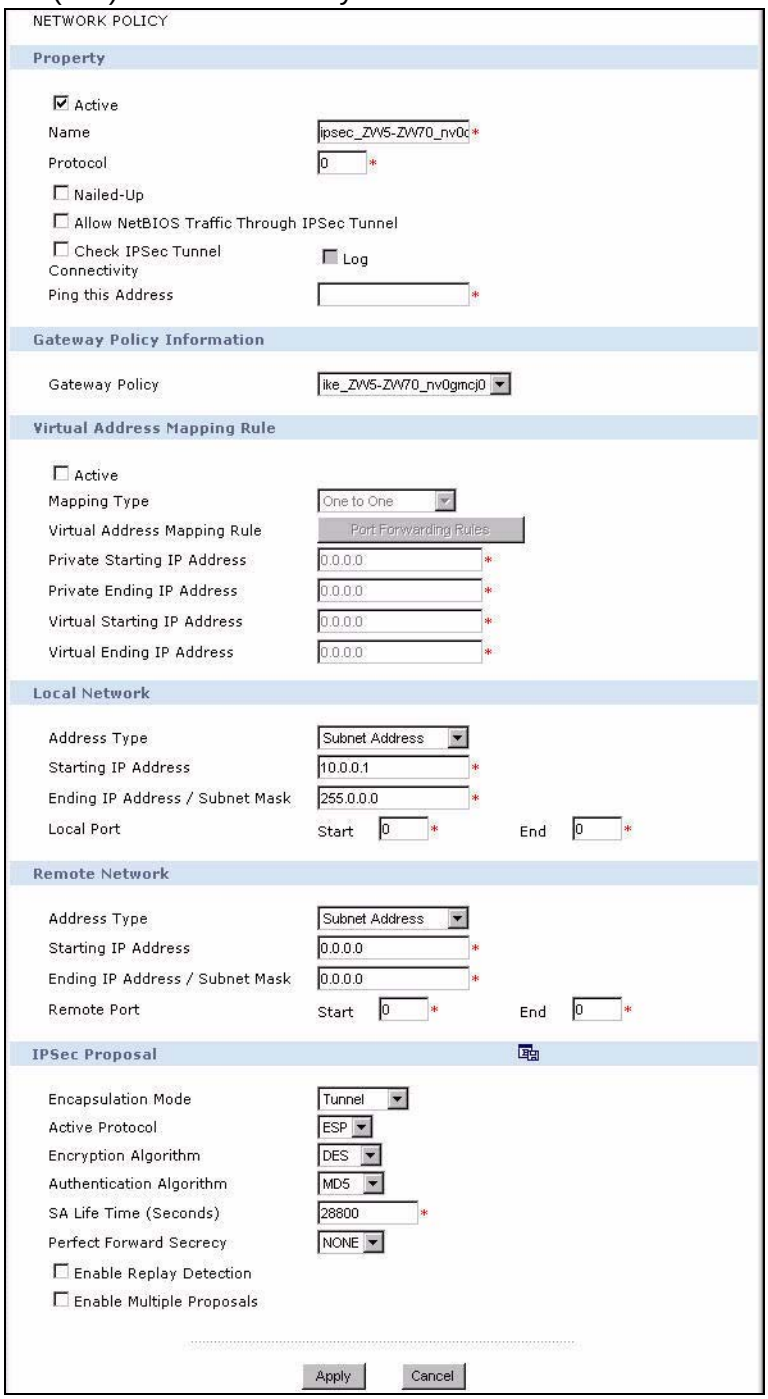
**Table 50** Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Gateway Policy Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| SA Life Time (Seconds) | Define the length of time before an IKE SA automatically renegotiates in this field. It may range from 180 to 3,000,000 seconds (almost 35 days).<br><br>A short SA Life Time increases security by forcing the two VPN gateways to update the encryption and authentication keys. However, every time the VPN tunnel renegotiates, all users accessing remote resources are temporarily disconnected. |
| Key Group | Select which Diffie-Hellman key group (DH*x*) you want to use for encryption keys. Choices are:<br><br>**DH1** - use a 768-bit random number<br><br>**DH2** - use a 1024-bit random number<br><br>**DH5** - use a 1536-bit random number.<br><br>The longer the key, the more secure the encryption, but also the longer it takes to encrypt and decrypt information. Both routers must use the same DH key group. |
| Enable Multiple Proposals | Select this check box to allow the device to use any of its phase 1 or phase 2 encryption and authentication algorithms when negotiating an IPSec SA.<br><br>When you enable multiple proposals, the device allows the remote IPSec router to select which encryption and authentication algorithms to use for the VPN tunnel, even if they are less secure than the ones you configure for the VPN rule.<br><br>Clear this check box to have the device use only the phase 1 or phase 2 encryption and authentication algorithms configured below when negotiating an IPSec SA. |
| Apply | Click this to save your changes back to the device. |
| Cancel | Click this to exit this screen without saving. |

## 6.3.3 Add/Edit an IKE Network Policy

In the **VPN Rule (IKE)** screen, click the **Add** icon from a gateway policy or click **Edit** from an existing network policy to display the **Network Policy** screen.

**Figure 59** Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Network Policy Add/Edit



The following table describes the labels in this screen.

**Table 51** Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Network Policy Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| Active | If the **Active** check box is selected, packets for the tunnel trigger the device to build the tunnel.<br><br>Clear the **Active** check box to turn the network policy off. The device does not apply the policy. Packets for the tunnel do not trigger the tunnel.<br><br>If you clear the **Active** check box while the tunnel is up (and click **Apply**), you turn off the network policy and the tunnel goes down. |
| Name | Type a name to identify this VPN network policy. You may use any character, including spaces, but the device drops trailing spaces. |
| Protocol | Enter 1 for ICMP, 6 for TCP, 17 for UDP, etc. 0 is the default and signifies any protocol. |
| Nailed-Up | Select this check box to turn on the nailed up feature for this SA.<br><br>Turn on nailed up to have the device automatically reinitiate the SA after the SA lifetime times out, even if there is no traffic. The device also reinitiates the SA when it restarts.<br><br>The device also rebuilds the tunnel if it was disconnected due to the output or input idle timer. |
| Allow NetBIOS Traffic Through IPSec Tunnel | NetBIOS (Network Basic Input/Output System) are TCP or UDP packets that enable a computer to connect to and communicate with a LAN. It may sometimes be necessary to allow NetBIOS packets to pass through VPN tunnels in order to allow local computers to find computers on the remote network and vice versa.<br><br>Select this check box to send NetBIOS packets through the VPN connection. |
| Check IPSec Tunnel Connectivity | Select the check box and configure an IP address in the **Ping this Address** field to have the device periodically test the VPN tunnel to the remote IPSec router.<br><br>The device pings the IP address every minute. The device starts the IPSec connection idle timeout timer when it sends the ping packet. If there is no traffic from the remote IPSec router by the time the timeout period expires, the device disconnects the VPN tunnel. |
| Log | Select this check box to set the device to create logs when it cannot ping the remote device. |
| Ping this Address | If you select **Check IPSec Tunnel Connectivity**, enter the IP address of a computer at the remote IPSec network. The computer's IP address must be in this IP policy's remote range (see the **Remote Network** fields). |
| Gateway Policy Information | |
| Gateway Policy | Select the gateway policy with which you want to use the VPN policy. |
| Virtual Address Mapping Rule | Virtual address mapping over VPN is available with the routing and zero configuration modes. |

**Table 51** Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Network Policy Add/Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Active | Enable this feature to have the device use virtual (translated) IP addresses for the local network for the VPN connection. You do not configure the **Local Network** fields when you enable virtual address mapping.<br><br>Virtual address mapping allows local and remote networks to have overlapping IP addresses. Virtual address mapping (NAT over IPSec) translates the source IP addresses of computers on your local network to other (virtual) IP addresses before sending the packets to the remote IPSec router. This translation hides the source IP addresses of computers in the local network. |
| Mapping Type | Select **One-to-One** to translate a single (static) IP address on your LAN to a single virtual IP address.<br><br>Select **Many-to-One** to translate a range of (static) IP addresses on your LAN to a single virtual IP address. Many-to-one rules are for traffic going out from your LAN, through the VPN tunnel, to the remote network. Use port forwarding rules to allow incoming traffic from the remote network.<br><br>Select **Many One-to-One** to translate a range of (static) IP addresses on your LAN to a range of virtual IP addresses. |
| Virtual Address Mapping Rule | If you are configuring a **Many-to-One** rule, click this button to go to a screen where you can configure port forwarding for your VPN tunnels. The VPN network policy port forwarding rules let the device forward traffic coming in through the VPN tunnel to the appropriate IP address. |
| Private Starting IP Address | Specify the IP addresses of the devices behind the device that can use the VPN tunnel.<br><br>When you select **One-to-One** in the **Type** field, enter the (static) IP address of a computer on the LAN behind your device.<br><br>When you select **Many-to-One** or **Many One-to-One** in the **Type** field, enter the beginning (static) IP address in a range of computers on the LAN behind your device. |
| Private Ending IP Address | When you select **Many-to-One** or **Many One-to-One** in the **Type** field, enter the ending (static) IP address in a range of computers on the LAN behind your device. |
| Virtual Starting IP Address | Enter the (static) IP addresses that represent the translated private IP addresses. These must correspond to the remote IPSec router's configured remote IP addresses.<br><br>When you select **One-to-One** or **Many-to-One** in the **Type** field, enter an IP address as the translated IP address. Many-to-one rules are only for traffic going to the remote network. Use port forwarding rules to allow incoming traffic from the remote network.<br><br>When you select **Many One-to-One** in the **Type** field, enter the beginning IP address of a range of translated IP addresses. |

**Table 51** Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Network Policy Add/Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Virtual Ending IP Address | When you select **Many One-to-One** in the **Type** field, enter the ending (static) IP address of a range of translated IP addresses.<br><br>The size of the private address range must be equal to the size of the translated virtual address range. |
| Local Network | Local IP addresses must be static and correspond to the remote IPSec router's configured remote IP addresses.<br><br>Two active SAs cannot have the local and remote IP address(es) both the same. Two active SAs can have the same local or remote IP address, but not both. You can configure multiple SAs between the same local and remote IP addresses, as long as only one is active at any time. |
| Address Type | Use the drop-down list box to choose **Single Address**, **Range Address**, or **Subnet Address**. Select **Single Address** for a single IP address. Select **Range Address** for a specific range of IP addresses. Select **Subnet Address** to specify IP addresses on a network by their subnet mask. |
| Starting IP Address | When the **Address Type** field is configured to **Single Address**, enter a (static) IP address on the LAN behind your device. When the **Address Type** field is configured to **Range Address**, enter the beginning (static) IP address, in a range of computers on the LAN behind your device. When the **Address Type** field is configured to **Subnet Address**, this is a (static) IP address on the LAN behind your device. |
| Ending IP Address/Subnet Mask | When the **Address Type** field is configured to **Single Address**, this field is N/A. When the **Address Type** field is configured to **Range Address**, enter the end (static) IP address, in a range of computers on the LAN behind your device. When the **Address Type** field is configured to **Subnet Address**, this is a subnet mask on the LAN behind your device. |
| Local Port | 0 is the default and signifies any port. Type a port number from 0 to 65535 in the **Start** and **End** fields. Some of the most common IP ports are: 21, FTP; 53, DNS; 23, Telnet; 80, HTTP; 25, SMTP; 110, POP3. |
| Remote Network | Remote IP addresses must be static and correspond to the remote IPSec router's configured local IP addresses.<br><br>Two active SAs cannot have the local and remote IP address(es) both the same. Two active SAs can have the same local or remote IP address, but not both. You can configure multiple SAs between the same local and remote IP addresses, as long as only one is active at any time. |
| Address Type | Use the drop-down list box to choose **Single Address**, **Range Address**, or **Subnet Address**. Select **Single Address** with a single IP address. Select **Range Address** for a specific range of IP addresses. Select **Subnet Address** to specify IP addresses on a network by their subnet mask. |

**Table 51** Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Network Policy Add/Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Starting IP Address | When the **Address Type** field is configured to **Single Address**, enter a (static) IP address on the network behind the remote IPSec router. When the Addr Type field is configured to **Range Address**, enter the beginning (static) IP address, in a range of computers on the network behind the remote IPSec router. When the **Address Type** field is configured to **Subnet Address**, enter a (static) IP address on the network behind the remote IPSec router. |
| Ending IP Address/Subnet Mask | When the **Address Type** field is configured to **Single Address**, this field is N/A. When the **Address Type** field is configured to **Range Address**, enter the end (static) IP address, in a range of computers on the network behind the remote IPSec router. When the **Address Type** field is configured to **Subnet Address**, enter a subnet mask on the network behind the remote IPSec router. |
| Remote Port | 0 is the default and signifies any port. Type a port number from 0 to 65535 in the **Start** and **End** fields. Some of the most common IP ports are: 21, FTP; 53, DNS; 23, Telnet; 80, HTTP; 25, SMTP; 110, POP3. |
| IPSec Proposal | |
| Encapsulation Mode | Select **Tunnel** mode or **Transport** mode. |
| Active Protocol | Select the security protocols used for an SA.<br>Both **AH** and **ESP** increase the device's processing requirements and communications latency (delay). |
| Encryption Algorithm | Select which key size and encryption algorithm to use in the IPSec SA. Choices<br>are:<br>**DES** - a 56-bit key with the DES encryption algorithm<br>**3DES** - a 168-bit key with the DES encryption algorithm<br>**AES128**/**AES192**/**AES256** - a 128/192/256-bit key with the AES encryption algorithm<br>**NULL** - no encryption key or algorithm<br>The selected device and the remote IPSec router must use the same algorithms and keys. Longer keys require more processing power, resulting in increased latency and decreased throughput. |
| Authentication Algorithm | **MD5** (Message Digest 5) and **SHA1** (Secure Hash Algorithm) are hash algorithms used to authenticate packet data. The **SHA1** algorithm is generally considered stronger than **MD5**, but is slower. Select **MD5** for minimal security and **SHA-1** for maximum security. |
| SA Life Time (Seconds) | Define the length of time before an IPSec SA automatically renegotiates in this field. The minimum value is 180 seconds.<br>A short SA Life Time increases security by forcing the two VPN gateways to update the encryption and authentication keys. However, every time the VPN tunnel renegotiates, all users accessing remote resources are temporarily disconnected. |

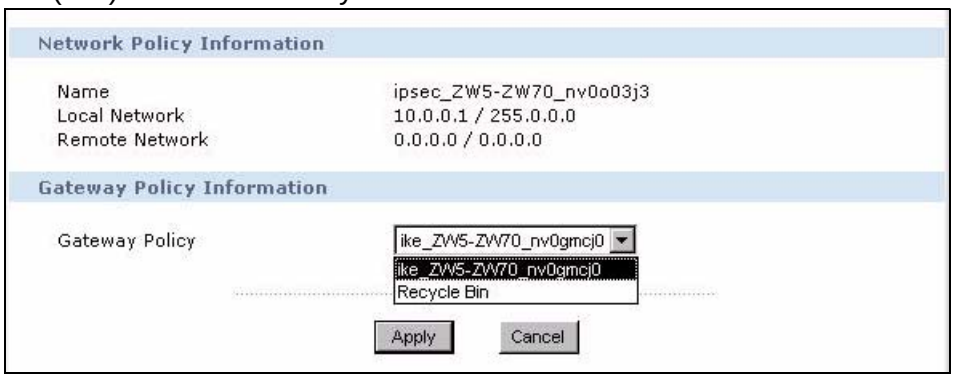
**Table 51** Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Network Policy Add/Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Perfect Forward Secret (PFS) | Select whether or not you want to enable Perfect Forward Secrecy (PFS) and, if<br>you do, which Diffie-Hellman key group to use for encryption. Choices are:<br>**NONE** - disable PFS<br>**DH1** - enable PFS and use a 768-bit random number<br>**DH2** - enable PFS and use a 1024-bit random number<br>**DH5** - enable PFS and use a 1536-bit random number<br>PFS changes the root key that is used to generate encryption keys for each<br>IPSec SA. The longer the key, the more secure the encryption, but also the<br>longer it takes to encrypt and decrypt information. Both routers must use the<br>same DH key group. |
| Enable Replay Detection | As a VPN setup is processing intensive, the system is vulnerable to Denial of Service (DOS) attacks. The IPSec receiver can detect and reject old or duplicate packets to protect against replay attacks. Enable replay detection by selecting this check box. |
| Enable Multiple Proposals | Select this check box to allow the device to use any of its phase 1 or phase 2 encryption and authentication algorithms when negotiating an IPSec SA.<br>When you enable multiple proposals, the device allows the remote IPSec router to select which encryption and authentication algorithms to use for the VPN tunnel, even if they are less secure than the ones you configure for the VPN rule.<br>Clear this check box to have the device use only the phase 1 or phase 2 encryption and authentication algorithms configured below when negotiating an IPSec SA. |
| Apply | Click this to save the changes. |
| Cancel | Click this to discard all changes and return to the main VPN screen. |

## 6.3.4 Move an IKE Network Policy

In the **VPN Rule (IKE)** screen, click the move icon to display the screen shown next.Use this screen to associate a network policy to a gateway policy.

**Figure 60** Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Network Policy Move




The following table describes the labels in this screen.

**Table 52** Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Network Policy Move

| LABEL | DESCRIPTION |
|---|---|
| Network Policy Information | The following fields display the general network settings of this VPN policy. |
| Name | This field displays the policy name. |
| Local Network | This field displays one or a range of IP address(es) of the computer(s) behind the Vantage CNM. |
| Remote Network | This field displays one or a range of IP address(es) of the remote network behind the remote IPsec router. |
| Gateway Policy Information | |
| Gateway Policy | Select the name of a VPN rule (or gateway policy) to which you want to associate this VPN network policy.<br><br>If you do not want to associate a network policy to any gateway policy, select **Recycle Bin** from the drop-down list box. The **Recycle Bin** gateway policy is a virtual placeholder for any network policy(ies) without an associated gateway policy. When there is a network policy in **Recycle Bin**, the **Recycle Bin** gateway policy automatically displays in the **VPN Rules (IKE)** screen. |
| Apply | Click this to save the changes. |
| Cancel | Click this to discard all changes and return to the main VPN screen. |

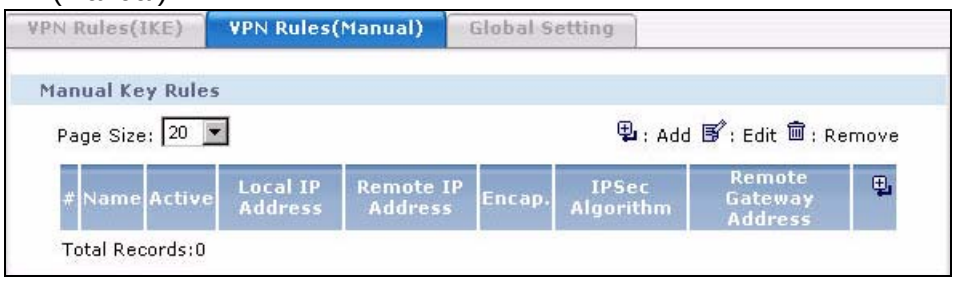
## 6.3.5 VPN Rules (Manual)

Select a device, click **Device Operation** in the menu bar and then click **Device Configuration** > **Security** > **VPN** > **VPN Rules (Manual)** tab to open the VPN

Rules screen. This is a read-only menu of your IPSec rules (tunnels). Edit an IPSec rule by clicking the edit icon to configure the associated submenus.

You may want to configure a VPN rule that uses manual key management if you are having problems with IKE key management.

**Figure 61** Device Operation > Device Configuration > Security > VPN > VPN Rules (Manual)




The following table describes the labels in this screen.

**Table 53** Device Operation > Device Configuration > Security > VPN > VPN Rules (Manual)

| LABEL | DESCRIPTION |
|---|---|
| # | This is the VPN policy index number. |
| Name | This field displays the identification name for this VPN policy. Click the hyperlink to edit the VPN policy. |
| Active | This field displays whether the VPN policy is active or not. A **true** signifies that this VPN policy is active; **false** signifies that this VPN policy is not active. |
| Local IP Address | This is the IP address(es) of computer(s) on your local network behind your device.<br><br>The same (static) IP address is displayed twice when the **Local Network Address Type** field in the **VPN - Manual Key - Edit** screen is configured to **Single Address**.<br><br>The beginning and ending (static) IP addresses, in a range of computers are displayed when the **Local Network Address Type** field in the **VPN - Manual Key - Edit** screen is configured to **Range Address**.<br><br>A (static) IP address and a subnet mask are displayed when the **Local Network Address Type** field in the **VPN - Manual Key - Edit** screen is configured to **Subnet Address**. |

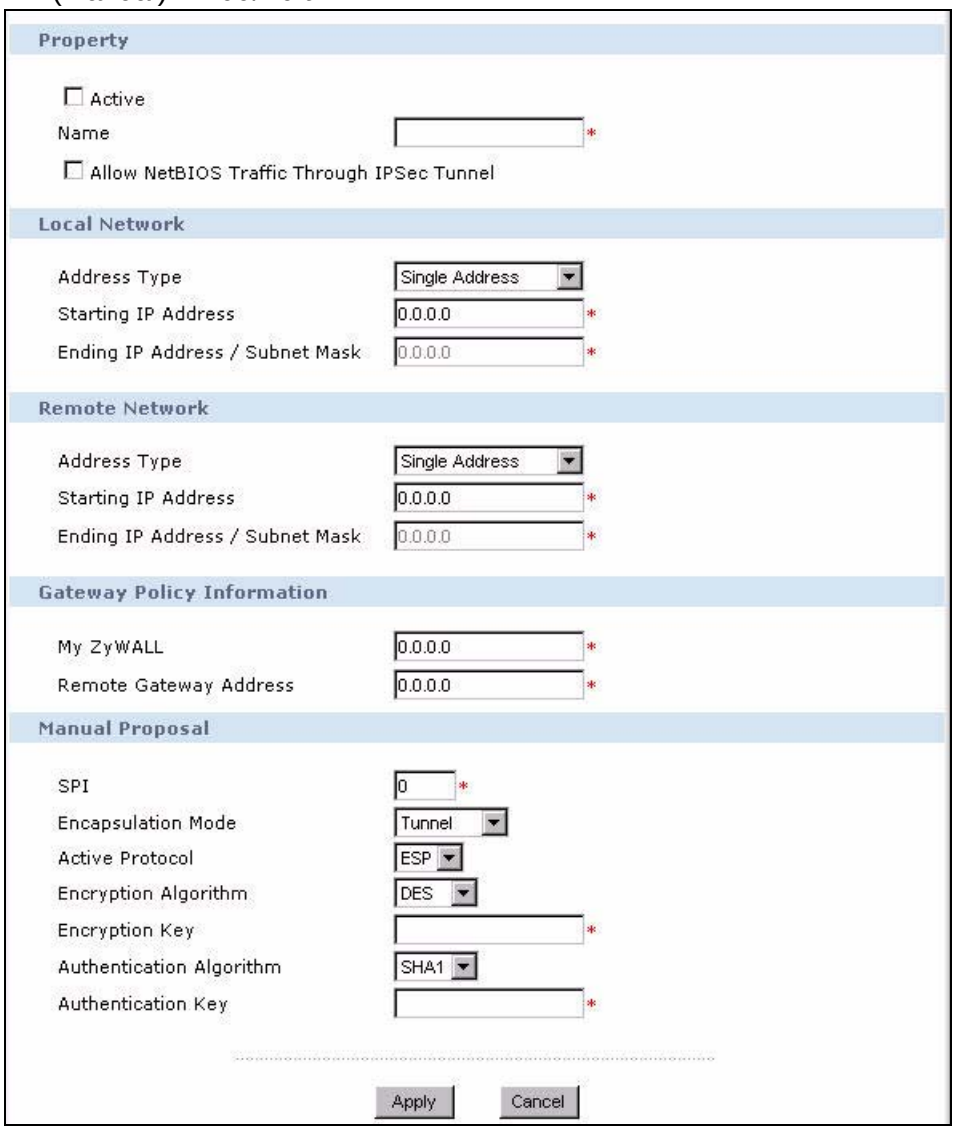
**Table 53** Device Operation > Device Configuration > Security > VPN > VPN Rules (Manual)

| LABEL | DESCRIPTION |
|---|---|
| Remote IP Address | This is the IP address(es) of computer(s) on the remote network behind the remote IPSec router.<br><br>This field displays **N/A** when the **Remote Gateway Address** field displays **0.0.0.0**. In this case only the remote IPSec router can initiate the VPN.<br><br>The same (static) IP address is displayed twice when the **Remote Network Address Type** field in the **VPN - Manual Key - Edit** screen is configured to **Single Address**.<br><br>The beginning and ending (static) IP addresses, in a range of computers are displayed when the **Remote Network Address Type** field in the **VPN - Manual Key - Edit** screen is configured to **Range Address**.<br><br>A (static) IP address and a subnet mask are displayed when the **Remote Network Address Type** field in the **VPN - Manual Key - Edit** screen is configured to **Subnet Address**. |
| Encap. | This field displays **Tunnel** or **Transport** mode (**Tunnel** is the default selection). |
| IPSec Algorithm | This field displays the security protocols used for an SA.<br><br>Both **AH** and **ESP** increase device processing requirements and communications latency (delay). |
| Remote Gateway Address | This is the static WAN IP address or domain name of the remote IPSec router. |
| Add | Click **Add** to add a new VPN policy. |
| Edit | Click this to modify an existing VPN policy. |
| Remove | Select a policy and click **Remove** to delete the VPN policy. A window displays asking you to confirm that you want to delete the VPN rule. When a VPN policy is deleted, subsequent policies move up in the page list. |

## 6.3.6 Add/Edit an Manual VPN Rule

To open this screen, click **Add** or **Edit** in the **Device Operation** > **Device Configuration** > **Security** > **VPN** > **VPN Rules (Manual)** screen. Use this screen to configure a new or an existing manual VPN rule.

**Figure 62** Device Operation > Device Configuration > Security > VPN > VPN Rules (Manual) > Add/Edit




The following table describes the labels in this screen.

**Table 54** Device Operation > Device Configuration > Security > VPN > VPN Rules (Manual) > Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| Property | |
| Active | Select this check box to activate this VPN policy. |

**Table 54** Device Operation > Device Configuration > Security > VPN > VPN Rules (Manual) > Add/Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Name | Type up to 32 characters to identify this VPN policy. You may use any character, including spaces, but the Vantage CNM drops trailing spaces. |
| Allow NetBIOS Traffic Through IPSec Tunnel | NetBIOS (Network Basic Input/Output System) are TCP or UDP packets that enable a computer to find other computers. It may sometimes be necessary to allow NetBIOS packets to pass through VPN tunnels in order to allow local computers to find computers on the remote network and vice versa.<br><br>Select this check box to send NetBIOS packets through the VPN connection. |
| Local / Remote Network | Local / Remote IP addresses must be static and correspond to the remote IPSec router's configured remote IP addresses.<br><br>Two active SAs cannot have the local and remote IP address(es) both the same. Two active SAs can have the same local or remote IP address, but not both. You can configure multiple SAs between the same local and remote IP addresses, as long as only one is active at any time. |
| Starting Address | When the **Address Type** field is configured to **Single**, enter a (static) IP address on the LAN behind the device. When the **Address Type** field is configured to **Range**, enter the beginning (static) IP address, in a range of computers on the LAN behind the device. When the **Address Type** field is configured to **Subnet**, this is a (static) IP address on the LAN behind the device. |
| Ending Address/Subnet Mask | When the **Address Type** field is configured to **Single**, this field is N/A. When the **Address Type** field is configured to **Range**, enter the end (static) IP address, in a range of computers on the LAN behind the device. When the **Address Type** field is configured to **Subnet**, this is a subnet mask on the LAN behind the device. |
| Gateway Policy Information | |
| My ZyWALL | This is the IP address of the local and remote computer(s) of the VPN tunnel. |
| Remote Gateway Address | Type the IP address of the computer with which you will make the VPN connection or leave the field blank to have the device automatically use the address in the **Secure Gateway** field. |
| Manual Proposal | |
| SPI | Type a number (base 10) from 1 to 999999 for the Security Parameter Index. |
| Encapsulation Mode | Select **Tunnel** mode or **Transport** mode from the drop-down list box. |

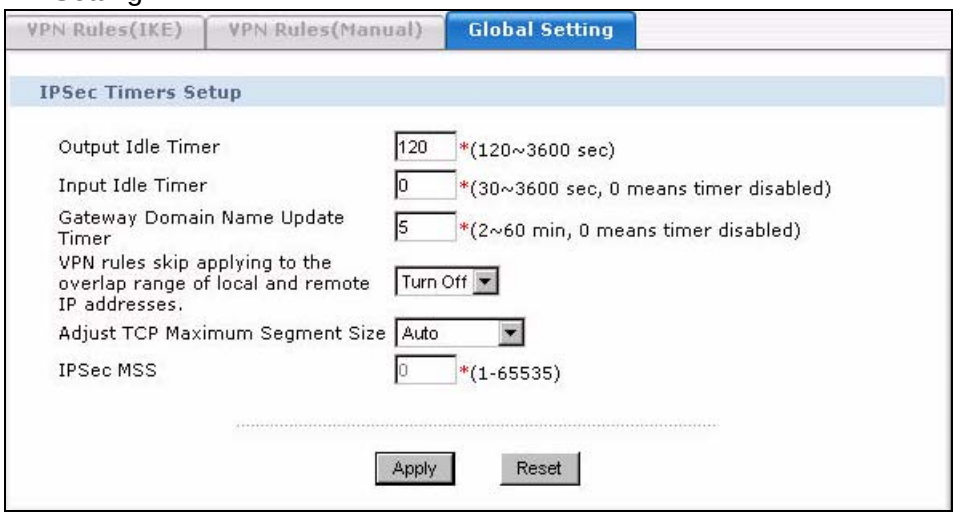
**Table 54** Device Operation > Device Configuration > Security > VPN > VPN Rules (Manual) > Add/Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Active Protocol | Select **ESP** if you want to use ESP (Encapsulation Security Payload). The ESP protocol (RFC 2406) provides encryption as well as some of the services offered by AH. If you select **ESP** here, you must select options from the **Encryption Algorithm** and **Authentication Algorithm** fields.<br><br>Select **AH** if you want to use AH (Authentication Header Protocol). The AH protocol (RFC 2402) was designed for integrity, authentication, sequence integrity (replay resistance), and non-repudiation but not for confidentiality, for which the ESP was designed. If you select **AH** here, you must select options from the **Authentication Algorithm** field. |
| Encryption Algorithm | Select **DES**, **3DES** or **NULL** from the drop-down list box.<br><br>When you use **DES** or **3DES**, both sender and receiver must know the **Encryption Key**, which can be used to encrypt and decrypt the messages. The DES encryption algorithm uses a 56-bit key. Triple DES (**3DES**) is a variation on DES that uses a 168-bit key. As a result, **3DES** is more secure than **DES**. It also requires more processing power, resulting in increased latency and decreased throughput. Select **NULL** to set up a tunnel without encryption. When you select **NULL**, you do not enter an encryption key. |
| Authentication Algorithm | When you use **SHA1** or **MD5**, both sender and receiver must know the **Authentication Key**, which can be used to generate and verify a message authentication code. Select **SHA1** or **MD5** from the drop-down list box. **MD5** (Message Digest 5) and **SHA1** (Secure Hash Algorithm) are hash algorithms used to authenticate packet data. The **SHA1** algorithm is generally considered stronger than **MD5**, but is slower. Select **MD5** for minimal security and **SHA-1** for maximum security. |
| Encryption Key | This field only applies when you select **ESP**. With **DES**, type a unique key 8 ASCII characters long. With **3DES**, type a unique key 24 ASCII characters long. Any characters may be used, including spaces, but trailing spaces are truncated. |
| Authentication Key | Type a unique authentication key to be used by IPSec if applicable. Enter 16 characters for **MD5** authentication or 20 characters for **SHA-1** authentication. Any characters may be used, including spaces, but trailing spaces are truncated. |
| Apply | Click this to save your changes back to the device. |
| Cancel | Click this to begin configuring this screen afresh. |

## 6.3.7 VPN Global Setting

Select a device, click **Device Operation** > **Device Configuration** > **Security** > **VPN** > **Global Setting** tab to open the screen shown next. Use this screen to change your device's global settings.

**Figure 63** Device Operation > Device Configuration > Security > VPN > Global Setting




The following table describes the labels in this screen.

**Table 55** Device Operation > Device Configuration > Security > VPN > Global Setting

| LABEL | DESCRIPTION |
|---|---|
| Output Idle Timer | When traffic is sent to a remote IPSec router from which no reply is received after the specified time period, the device checks the VPN connectivity. If the remote IPSec router does not reply, the device automatically disconnects the VPN tunnel.<br><br>Enter the time period (between 30 and 3600 seconds) to wait before the device checks all of the VPN connections to remote IPSec routers.<br><br>Enter **0** to disable this feature. |
| Input Idle Timer | When no traffic is received from a remote IPSec router after the specified time period, the device checks the VPN connectivity. If the remote IPSec router does not reply, the device automatically disconnects the VPN tunnel.<br><br>Enter the time period (between 30 and 3600 seconds) to wait before the device checks all of the VPN connections to remote IPSec routers.<br><br>Enter **0** to disable this feature. |

**Table 55** Device Operation > Device Configuration > Security > VPN > Global Setting (continued)

| LABEL | DESCRIPTION |
|---|---|
| Gateway Domain Name Update Timer | This field is applicable when you enter a domain name to identify the device and/or the remote secure gateway.<br><br>Enter the time period (between 2 and 60 minutes) to wait before the device updates the domain name and IP address mapping through a DNS server. The device rebuilds the VPN tunnel if it finds that the domain name is now using a different IP address (any users of the VPN tunnel will be temporarily disconnected).<br><br>Enter **0** to disable this feature. |
| VPN rules skip applying to the overlap range of local and remote IP addresses | When you configure a VPN rule, the device checks to make sure that the IP addresses in the local and remote networks do not overlap. Select **Turn Off** box to disable the check if you need to configure a VPN policy with overlapping local and remote IP addresses.<br><br>Note: If a VPN policy's local and remote IP addresses overlap, you may not be able to access the device on your LAN because the device automatically triggers a VPN tunnel to the remote device with the same IP address. |
| Adjust TCP Maximum Segment Size | The TCP packets are larger after the device encrypts them for VPN. The device fragments packets that are larger than a connection's MTU (Maximum Transmit Unit).<br><br>In most cases you should leave this set to **Auto**. The device automatically sets the Maximum Segment Size (MSS) of the TCP packets that are to be encrypted by VPN based on the encapsulation type.<br><br>Select **Off** to not adjust the MSS for the encrypted TCP packets.<br><br>If your network environment causes fragmentation issues that are affecting your throughput performance, you can manually set a smaller MSS for the TCP packets that are to be encrypted by VPN. Select **User Define**, and specify a size in the **IPSec MSS** field. |
| IPSec MSS | This field is enabled if **Adjust TCP Maximum Segment Size** is **User Define**.<br><br>Specify the Maximum Segment Size (MSS) for the TCP packets that are to be encrypted by VPN. Specify a size from 0~1460 bytes. 0 has the device use the auto setting. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

# 6.4 Anti-Virus

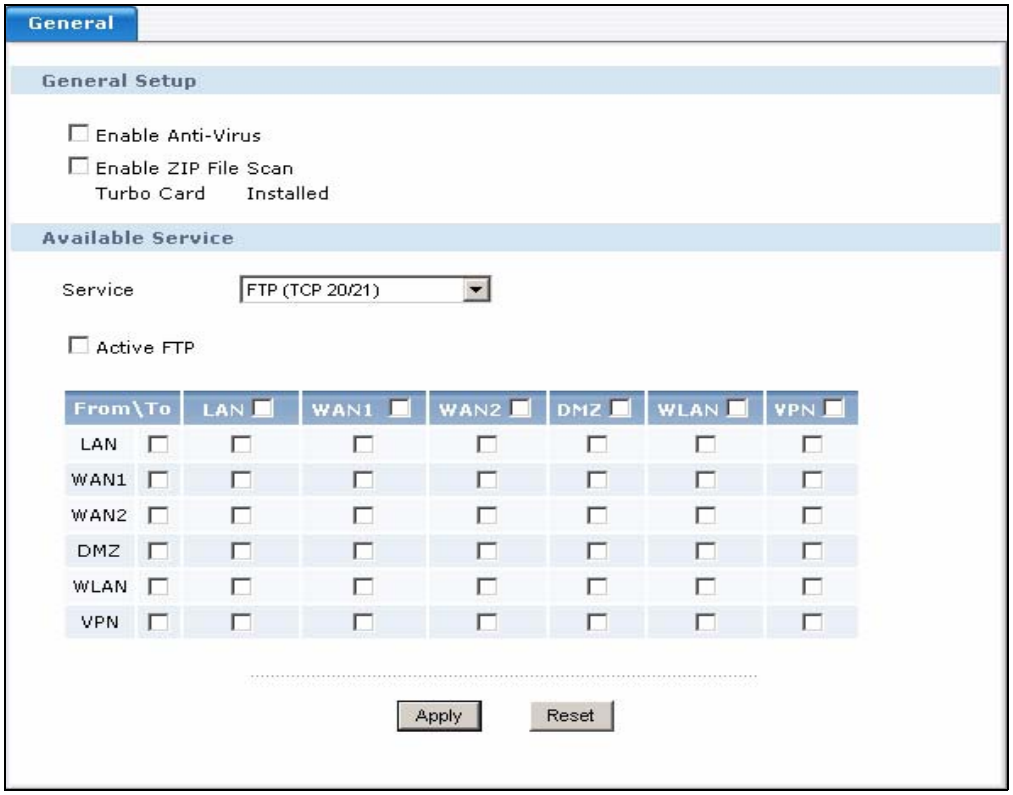
This section shows you how to configure the **Anti-Virus** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

## 6.4.1 General Anti-Virus Setup

Click **Device Operation** in the menu bar and then click **Device Configuration** > **Security** > **Anti-Virus > General** in the navigation panel to display the configuration screen shown next.

Note: Before you use the anti-virus feature, you must register for the service (refer to the chapter on registration for more information).

**Figure 64** Device Operation > Device Configuration > Security > Anti-Virus > General



The following table describes the labels in this screen.

**Table 56** Device Operation > Device Configuration > Security > Anti-Virus > General

| LABEL | DESCRIPTION |
|---|---|
| General Setup | |
| Enable Anti-Virus | Select this check box to check traffic for viruses. The anti-virus scanner works on the following.<br>FTP traffic using TCP ports 20 and 21<br>HTTP traffic using TCP ports 80, 8080 and 3128<br>POP3 traffic using TCP port 110<br>SMTP traffic using TCP port 25 |
| Enable ZIP File Scan | Select this check box to have the device scan a ZIP file (with the “zip”, “gzip” or “gz” file extension). The device first decompresses the ZIP file and then scans the contents for viruses.<br>Note: The device decompresses a ZIP file once. The device does NOT decompress any ZIP file(s) within the ZIP file. |
| Turbo Card | This field displays whether or not a device Turbo Card is installed.<br>Note: You cannot configure and save the IDP and Anti-Virus screens if the device Turbo Card is not installed. |
| Available Service | |
| Service | This field displays the service names and standard port numbers that identify them. Select a service to display and configure anti-virus settings for it. |
| Active | Select **Active** to enable the anti-virus scanner for the selected service. |

**Table 56** Device Operation > Device Configuration > Security > Anti-Virus > General (continued)

| LABEL | DESCRIPTION |
|---|---|
| From, To | Select the directions of travel of packets that you want to check. Select or clear a row or column's first check box (with the interface label) to select or clear the interface's whole row or column.<br><br>For example, **From LAN To LAN** means packets traveling from a computer on one LAN subnet to a computer on another LAN subnet on the LAN interface of the device or the device itself. The device does not check packets traveling from a LAN computer to another LAN computer on the same subnet.<br><br>**From VPN** means traffic that came into the device through a VPN tunnel and is going to the selected "to" interface. For example, **From VPN To LAN** specifies the VPN traffic that is going to the LAN or terminating at the device's LAN interface. The device checks the traffic after decrypting it.<br><br>**To VPN** is traffic that comes in through the selected "from" interface and goes out through any VPN tunnel. For example, **From LAN To VPN** specifies the traffic that is coming from the LAN and going out through a VPN tunnel. The device checks the traffic before encrypting it.<br><br>**From VPN To VPN** means traffic that comes in through a VPN tunnel and goes out through (another) VPN tunnel or terminates at the device. This is the case when the device is the hub in a hub-and-spoke VPN. This is also the case if you allow someone to use a service (like Telnet or HTTP) through a VPN tunnel to manage the device. The device checks the traffic after decrypting it (before encrypting it again).<br><br>Note: The VPN connection directions apply to the traffic going to or from the device's VPN tunnels. They do not apply to other VPN traffic for which the device is not one of the gateways (VPN pass-through traffic). |
| Apply | Click this to save your changes. |
| Reset | Click this to start configuring this screen again. |

# 6.5 Anti-Spam

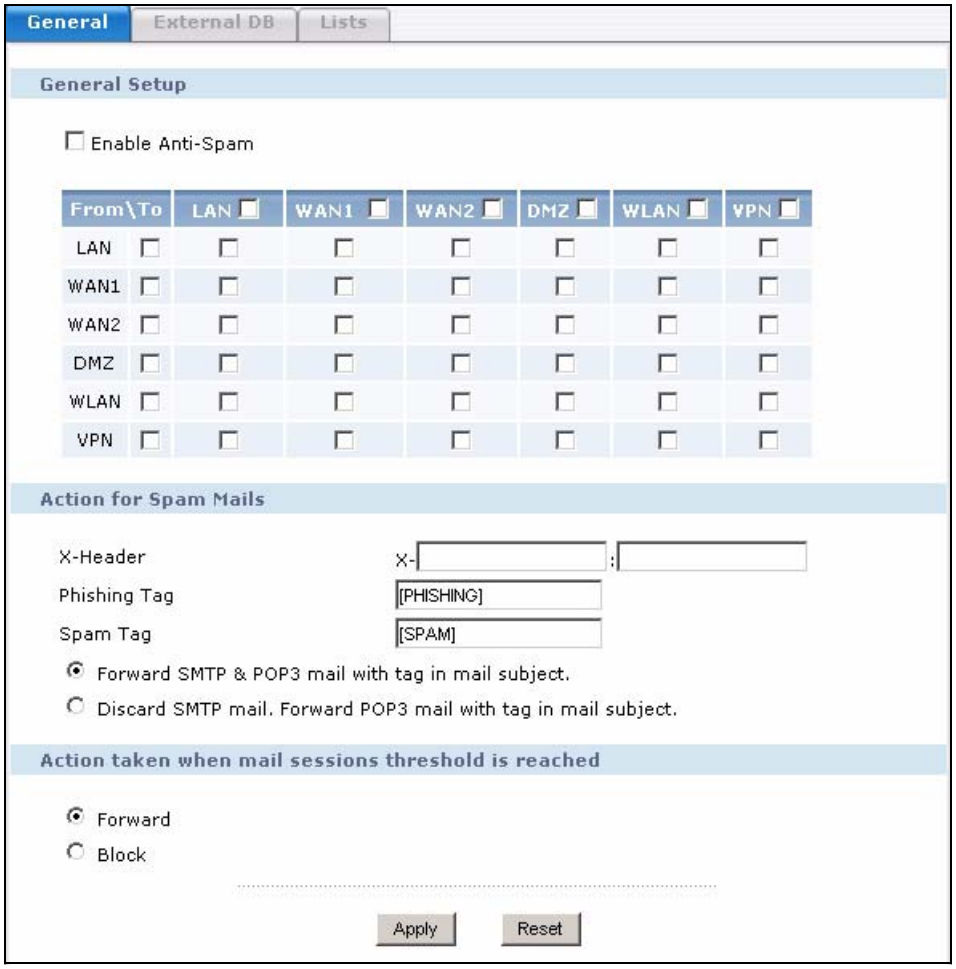
This section shows you how to configure the **Anti-Spam** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

## 6.5.1 Anti-Spam General Screen

Click **Device Operation** in the menu bar and then click **Device Configuration** > **Security > Anti-Spam > General** in the navigation panel to open the **Anti-**

**Spam General** screen. Use this screen to turn the anti-spam feature on or off and set how the device treats spam.

**Figure 65** Device Operation > Device Configuration > Security > Anti-Spam > General




The following table describes the labels in this screen.

**Table 57** Device Operation > Device Configuration > Security > Anti-Spam > General

| LABEL | DESCRIPTION |
|---|---|
| General Setup | |
| Enable Anti-Spam | Select this check box to check traffic for spam SMTP (TCP port 25 and POP3 (TCP port 110) e-mail. |

**Table 57** Device Operation > Device Configuration > Security > Anti-Spam > General (continued)

| LABEL | DESCRIPTION |
|---|---|
| From, To | Select the directions of travel of packets that you want to check. Select or clear a row or column's first check box (with the interface label) to select or clear the interface's whole row or column.<br><br>For example, **From LAN To LAN** means packets traveling from a computer on one LAN subnet to a computer on another LAN subnet on the LAN interface of the device or the device itself. The device does not check packets traveling from a LAN computer to another LAN computer on the same subnet.<br><br>**From VPN** means traffic that came into the device through a VPN tunnel and is going to the selected "to" interface. For example, **From VPN To LAN** specifies the VPN traffic that is going to the LAN or terminating at the device's LAN interface. The device checks the traffic after decrypting it.<br><br>**To VPN** is traffic that comes in through the selected "from" interface and goes out through any VPN tunnel. For example, **From LAN To VPN** specifies the traffic that is coming from the LAN and going out through a VPN tunnel. The device checks the traffic before encrypting it.<br><br>**From VPN To VPN** means traffic that comes in through a VPN tunnel and goes out through (another) VPN tunnel or terminates at the device. This is the case when the device is the hub in a hub-and-spoke VPN. This is also the case if you allow someone to use a service (like Telnet or HTTP) through a VPN tunnel to manage the device. The device checks the traffic after decrypting it (before encrypting it again).<br><br>Note: The VPN connection directions apply to the traffic going to or from the device's VPN tunnels. They do not apply to other VPN traffic for which the device is not one of the gateways (VPN pass-through traffic). |
| Action for Spam Mails | Use this section to set how the device is to handle spam mail. |
| X-Header | An X-Header is a line (preceded by "X-") in the SMTP mail header.<br><br>Enter an X-tag to insert into the X-header of mails that match a black list or are identified as spam by the anti-spam external database. You can enter up to 30 ASCII characters before the colon (:) and up to 47 ASCII characters after the colon (:).<br><br>You can put any information as an X-tag or use "%status" and/or "%score".<br><br>For example, if you enter "Mail status: %status %score", you may see "Mail status: SPAM 25" in the mail header. That means the mail is classified as spam and the spam score is 25. |

**Table 57** Device Operation > Device Configuration > Security > Anti-Spam > General (continued)

| LABEL | DESCRIPTION |
|---|---|
| Phishing Tag | Enter a message or label (up to 16 ASCII characters) to add to the mail subject of e-mails that the anti-spam external database classifies as phishing.<br><br>Note: You must register for and enable the anti-spam external database feature in order for the device to use this tag (see the chapter on registration for details). |
| Spam Tag | Enter a message or label (up to 16 ASCII characters) to add to the mail subject of e-mails that the device classifies as spam. |
| Forward SMTP & POP3 mail with tag in mail subject | Select this radio button to have the device forward spam e-mail with the tag that you define.<br><br>Even if you plan to use the discard option, you may want to use this initially as a test to check how accurate your anti-spam settings are. Check the e-mail the device forwards to you to make sure that unwanted e-mail is marked as spam and legitimate e-mail is not marked as spam. |
| Discard SMTP mail. Forward POP3 mail with tag in mail subject | Select this radio button to have the device discard spam SMTP e-mail. The device will still forward spam POP3 e-mail with the tag that you define. |
| Action taken when mail sessions threshold is reached | The anti-spam feature limits the number of concurrent e-mail sessions. An e-mail session is when an e-mail client and e-mail server (or two e-mail servers) connect through the device. Use this section to configure what the device does when the number of concurrent e-mail sessions goes over the threshold (see the appendix of product specifications for the threshold).<br><br>Select **Forward** to have the device allow the excess e-mail sessions without any spam filtering.<br><br>Select **Block** to have the device drop mail connections to stop the excess e-mail sessions. The e-mail client or server will have to attempt to send or receive e-mail later when the number of e-mail sessions is under the threshold. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

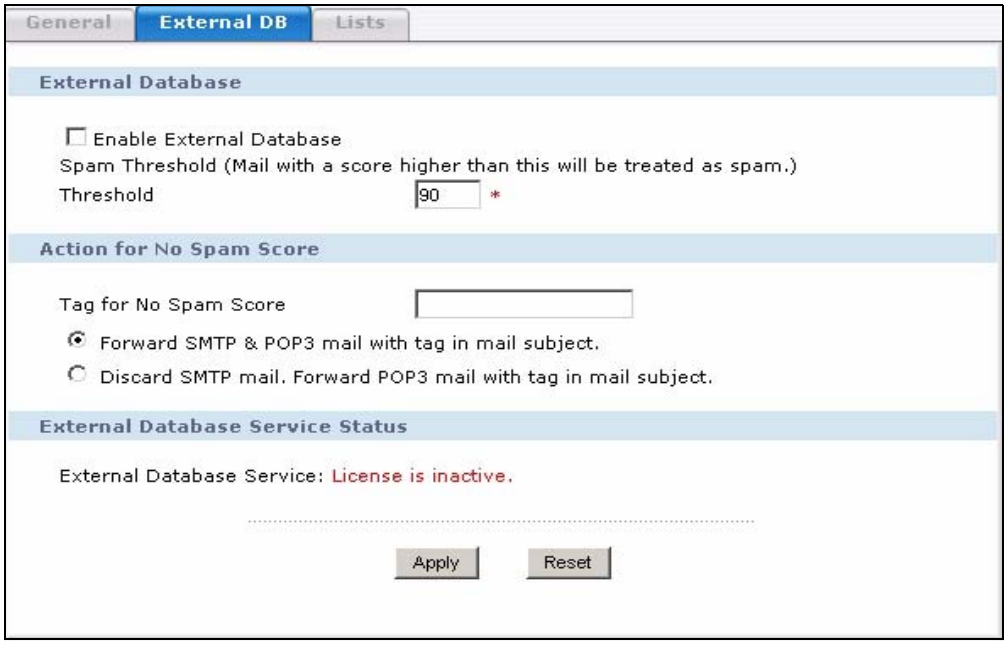
## 6.5.2 Anti-Spam External DB Screen

Click **Device Operation > Device Configuration > Security > Anti-Spam > External DB** to display the **Anti-Spam External DB** screen.

Use this screen to enable or disable the use of the anti-spam external database. You can also configure the spam threshold and what to do when no valid spam

score is received. You must register for this service before you can use it (see the chapter on registration for details).

**Figure 66** Device Operation > Device Configuration > Security > Anti-Spam > External DB




The following table describes the labels in this screen.

**Table 58** Device Operation > Device Configuration > Security > Anti-Spam > External DB

| LABEL | DESCRIPTION |
|---|---|
| External Database | |
| Enable External Database | Enable the anti-spam external database feature to have the device calculate a digest of an e-mail and send it to an anti-spam external database.<br><br>The anti-spam external database sends a spam score for the e-mail back to the device. |
| Spam Threshold | The anti-spam external database checks an e-mail's digest and sends back a score that rates how likely the e-mail is to be spam. The possible range for the spam score is 0~100. The closer the score is to 100, the more likely the e-mail is to be spam.<br><br>Set the spam threshold (from 0 to 100) for considering an e-mail to be spam. The device classifies any e-mail with a spam score greater than or equal to the threshold as spam. It classifies any e-mail with a spam score less than the threshold as not being spam.<br><br>A lower threshold catches more spam e-mails, but may also classify more legitimate e-mail as spam.<br><br>A higher threshold lessens the chance of classifying legitimate e-mail as spam, but may allow more spam to get through. |

**Table 58** Device Operation > Device Configuration > Security > Anti-Spam > External DB (continued)

| LABEL | DESCRIPTION |
|---|---|
| Action for No Spam Score | Use this field to configure what the device does if it does not receive a valid response from the anti-spam external database.<br><br>If the device does not receive a response within seven seconds, it sends the e-mail digest a second time. If the device still does not receive a response after another seven seconds, it takes the action that you configure here. The device also takes this action if it receives an invalid response.<br><br>Here are possible reasons that would cause the device to take this action:<br><br>1. The device was not able to connect to the anti-spam external database.<br><br>2. The device connected to the anti-spam external database, but there was no HTTP response within seven seconds.<br><br>3. The device received an error code from the anti-spam external database.<br><br>4. The device received an invalid spam score (for example a number higher than 100).<br><br>5. The device received an unknown response to the anti-spam query. |
| Tag for No Spam Score | Enter a message or label (up to 16 ASCII characters) to add to the mail subject of e-mails that it forwards if a valid spam score was not received within ten seconds. |
| Forward SMTP & POP3 mail with tag in mail subject | Select this radio button to have the device forward mail with the tag that you define. |
| Discard SMTP mail. Forward POP3 mail with tag in mail subject | Select this radio button to have the device discard SMTP mail. The device will still forward POP3 mail with the tag that you define. |
| External Database Service Status | This read-only field displays the status of your anti-spam external database service registration and activation.<br><br>**License Inactive** displays if you have not successfully registered and activated the anti-spam external database service.<br><br>**License Inactive** and the date your subscription expired display if your subscription to the anti-spam external database service has expired.<br><br>**License Active** and the subscription expiration date display if you have successfully registered the device and activated the anti-spam external database service.<br><br>**Trial Active** and the trial subscription expiration date display if you have successfully registered the device and activated the anti-spam external database service trial subscription. |

**Table 58** Device Operation > Device Configuration > Security > Anti-Spam > External DB (continued)

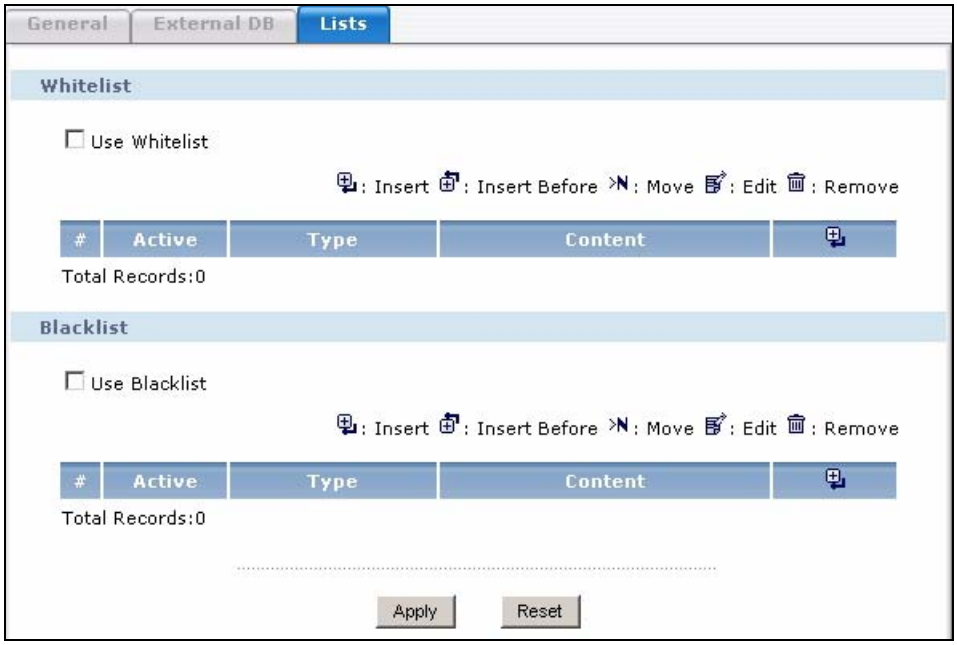
| LABEL | DESCRIPTION |
|---|---|
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

# 6.6 Anti-Spam Lists Screen

Click **Device Operation > Device Configuration > Security > Anti-Spam > Lists** to display the **Anti-Spam Lists** screen.

Configure the whitelist to identify legitimate e-mail. Configure the blacklist to identify spam e-mail. You can create whitelist or blacklist entries based on the sender's IP address or e-mail address. You can also create entries that check for particular MIME headers, MIME header values or specific subject text.

**Figure 67** Device Operation > Device Configuration > Security > Anti-Spam > Lists




The following table describes the labels in this screen.

**Table 59** Device Operation > Device Configuration > Security > Anti-Spam > Lists

| LABEL | DESCRIPTION |
|---|---|
| Whitelist | |
| Use Whitelist | Select this check box to have the device forward e-mail that matches a whitelist entry without doing any more anti-spam checking on that individual e-mail. |
| # | This field shows the index number of the entry. |

**Table 59** Device Operation > Device Configuration > Security > Anti-Spam > Lists

| LABEL | DESCRIPTION |
|---|---|
| Active | This field shows whether or not an entry is turned on. |
| Type | This field displays whether the entry is based on the e-mail's source IP address, source e-mail address, an MIME header or the e-mail's subject. |
| Content | This field displays the source IP address, source e-mail address, MIME header or subject content for which the entry checks. |
| Modify | Click the **Edit** icon to change the entry. Click the **Remove** icon to delete the entry. Click the **Move** icon to change the entry's position in the list. |
| Delete | Select the radio button next to an entry, and click **Delete** to remove the entry. |
| Insert | Type the index number where you want to put an entry. For example, if you type 6, your new entry becomes number 6 and the previous entry 6 (if there is one) becomes entry 7.<br>Click **Insert** to display the screen where you edit an entry. |
| Blacklist | |
| Use Blacklist | Select this check box to have the device treat e-mail that matches a blacklist entry as spam. |
| # | This field shows the index number of the entry. |
| Active | This field shows whether or not an entry is turned on. |
| Type | This field displays whether the entry is based on the e-mail's source IP address, source e-mail address, an MIME header or the e-mail's subject. |
| Content | This field displays the source IP address, source e-mail address, MIME header or subject content for which the entry checks. |
| Modify | Click the **Edit** icon to change the entry. Click the **Remove** icon to delete the entry. Click the **Move** icon to change the entry's position in the list. |
| Delete | Select the radio button next to an entry, and click **Delete** to remove the entry. |
| Insert | Type the index number where you want to put an entry. For example, if you type 6, your new entry becomes number 6 and the previous entry 6 (if there is one) becomes entry 7.<br>Click **Insert** to display the screen where you edit an entry. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

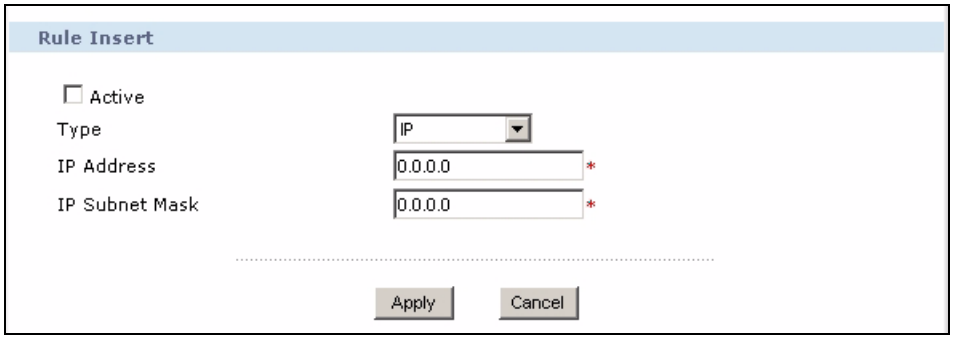
## 6.6.1 Anti-Spam Lists Edit Screen

To open this screen, click **Insert** or **Edit** in the **Device Operation** > **Device Configuration > Security > Anti-Spam** > **Lists** screen.

Use this screen to configure an anti-spam whitelist entry to identify legitimate e-mail or a blacklist entry to identify spam e-mail. You can create entries based on

the sender's IP address or e-mail address. You can also create entries that check for particular MIME headers, MIME header values or specific subject text.

**Figure 68** Device Operation > Device Configuration > Security > Anti-Spam > Lists > Add/Edit




The following table describes the labels in this screen.

**Table 60** Device Operation > Device Configuration > Security > Anti-Spam > Lists > Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| Rule Edit | |
| Active | Turn this entry on to have the device use it as part of the whitelist or blacklist. You must also turn on the use of the corresponding list (in the **Anti-Spam Customization** screen) and the anti-spam feature (in the **Anti-Spam General** screen). |
| Type | Use this field to base the entry on the e-mail's source IP address, source e-mail address or an MIME header.<br><br>Select **IP** to have the device check e-mail for a specific source IP address.<br><br>You can create whitelist IP address entries for e-mail servers on your LAN or DMZ to speed up the device's processing of your outgoing e-mail.<br><br>Select **E-Mail** to have the device check e-mail for a specific source e-mail address or domain name.<br><br>You can create a whitelist entry for your company's domain name (or e-mail accounts) to speed up the device's processing of e-mail sent by your company's employees.<br><br>Select **MIME Header** to have the device check e-mail for specific MIME headers or values.<br><br>Configure blacklist MIME header entries to check for e-mail from bulk mail programs or that have content that are commonly used in spam. You can also configure whitelist MIME header entries to allow certain MIME headers or values that identify the e-mail as being from a trusted source.<br><br>Select **Subject** to have the device check e-mail for specific content in the subject line. |

**Table 60** Device Operation > Device Configuration > Security > Anti-Spam > Lists > Add/Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| IP Address | This field displays when you select the **IP** type. Enter an IP address in dotted decimal notation. |
| IP Subnet Mask | This field displays when you select the **IP** type. Enter the subnet mask here, if applicable. |
| E-Mail Address | This field displays when you select the **E-Mail** type. Enter an e-mail address or domain name (up to 63 ASCII characters).<br><br>You can enter an individual e-mail address like abc@def.com.<br><br>If you enter a domain name, the device searches the source e-mail address string after the "@" symbol to see if it matches the domain name. For example, you configure a entry with "def.com" as the domain name. E-mails sent from def.com e-mail addresses such as "abc@def.com" match the entry. E-mails sent from mail.def.com, such as abc@mail.def.com do not match the entry since "mail.def.com" does not match "def.com".<br><br>You can also use a wildcard (*). For example, if you configure *def.com, any e-mail address that ends in def.com matches. So "mail.def.com" matches.<br><br>The wildcard can be anywhere in the text string and you can use more than one wildcard. You cannot use two wildcards side by side, there must be other characters between them.<br><br>The device can check up to the first 63 characters of an e-mail's address. The whitelist or blacklist check fails for addresses over 63 characters. However, a whitelist or blacklist entry that uses some text followed by a wildcard only requires the device to check the number of characters before the wildcard. So the check would still work for addresses longer than 63 characters. For example, if you used "abc*", the device would only check up to the first three characters of the e-mail address. |
| Header | This field displays when you select the **MIME Header** type.<br><br>Type the header part of an MIME header (up to 63 ASCII characters).<br><br>In an MIME header, the header is the part that comes before the colon (:).<br><br>For example, if you want the whitelist or blacklist entry to check for the MIME header "X-MSMail-Priority: Normal", enter "X-MSMail-Priority" here as the MIME header. |
| Value | This field displays when you select the **MIME Header** type.<br><br>Type the value part of an MIME header (up to 63 ASCII characters).<br><br>In an MIME header, the part that comes after the colon is the value.<br><br>For example, if you want the whitelist or blacklist entry to check for the MIME header "X-MSMail-Priority: Normal", enter "Normal" here as the MIME value. |

**Table 60** Device Operation > Device Configuration > Security > Anti-Spam > Lists > Add/Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Subject | This field displays when you select the **Subject** type. Enter up to 63 ASCII characters of text to check for in the e-mail headers. Spaces are allowed.<br><br>You can use a wildcard (*). For example, if you configure "*good", any e-mail subject that ends in "good" matches. So "this is very good" and "this is not so good" both match.<br><br>The wildcard can be anywhere in the text string and you can use more than one wildcard. You cannot use two wildcards side by side, there must be other characters between them.<br><br>The device can check up to the first 63 characters of an e-mail's subject. The whitelist or blacklist check fails for subjects over 63 characters. However, a whitelist or blacklist entry that uses some text followed by a wildcard only requires the device to check the number of characters before the wildcard. So the check would still work for subjects longer than 63 characters. For example, if you used "abc*", the device would only check up to the first three characters of the e-mail subject. |
| Apply | Click this to save your settings and exit this screen. |
| Cancel | Click this to exit this screen without saving. |

# 6.7 IDP

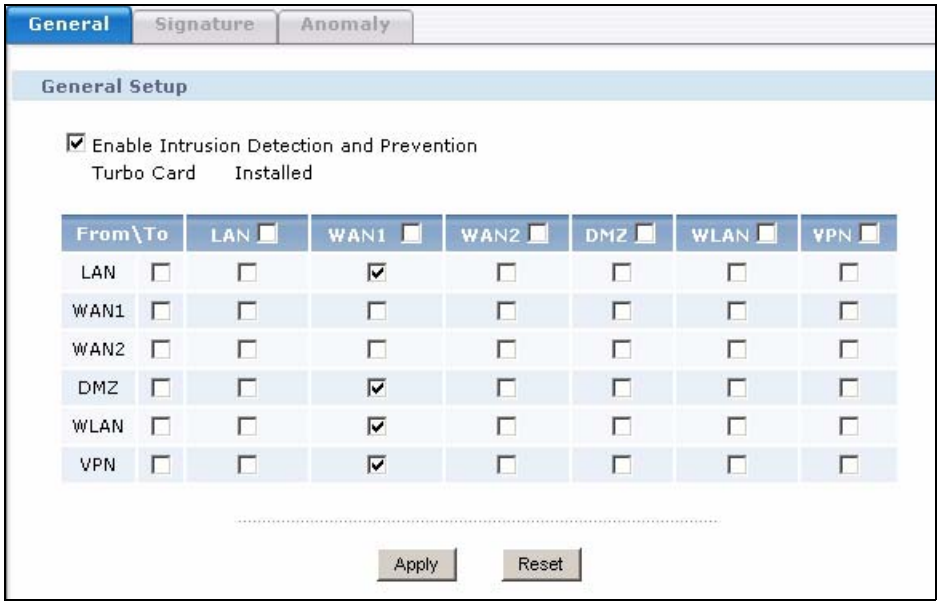
This section shows you how to configure the **IDP** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

# 6.8 General Setup

Use this screen to enable IDP on the device and choose what interface(s) you want to protect from intrusions. To open this screen, click a device, click **Device**

**Operation** in the menu bar and then click **Device Configuration** > **Security** > **IDP** > **General** in the navigation panel.

**Figure 69** Device Operation > Device Configuration > Security > IDP > General




The following table describes the labels in this screen.

**Table 61** Device Operation > Device Configuration > Security > IDP > General

| LABEL | DESCRIPTION |
|---|---|
| General Setup | |
| Enable Intrusion Detection and Prevention | Select this check box to enable IDP on the device. When this check box is cleared the device is in IDP "bypass" mode and no IDP checking is done. |
| Turbo Card | This field displays whether or not a device's Turbo Card is installed.<br><br>Note: You cannot configure and save the IDP or Anti-Virus screens if the device's Turbo Card is not installed. |

**Table 61** Device Operation > Device Configuration > Security > IDP > General

| LABEL | DESCRIPTION |
|---|---|
| From, To | Select the check box to apply IDP to packets based on the direction of travel. Select or clear a row or column's first check box (with the interface label) to select or clear the interface's whole row or column.<br><br>For example, **From LAN To LAN** means packets traveling from a computer on one LAN subnet to a computer on another LAN subnet on the LAN interface of the device or the device itself. The device does not check packets traveling from a LAN computer to another LAN computer on the same subnet.<br><br>**From VPN** means traffic that came into the device through a VPN tunnel and is going to the selected "to" interface. For example, **From VPN To LAN** specifies the VPN traffic that is going to the LAN or terminating at the device's LAN interface. The device checks the traffic after decrypting it.<br><br>**To VPN** is traffic that comes in through the selected "from" interface and goes out through any VPN tunnel. For example, **From LAN To VPN** specifies the traffic that is coming from the LAN and going out through a VPN tunnel. The device checks the traffic before encrypting it.<br><br>**From VPN To VPN** means traffic that comes in through a VPN tunnel and goes out through (another) VPN tunnel or terminates at the device. This is the case when the device is the hub in a hub-and-spoke VPN. This is also the case if you allow someone to use a service (like Telnet or HTTP) through a VPN tunnel to manage the device. The device checks the traffic after decrypting it (before encrypting it again).<br><br>Note: The VPN connection directions apply to the traffic going to or from the device's VPN tunnels. They do not apply to other VPN traffic for which the device is not one of the gateways (VPN pass-through traffic). |
| Apply | Click this button to save your changes back to the device. |
| Reset | Click this button to begin configuring this screen afresh. |

# 6.9 IDP Signatures

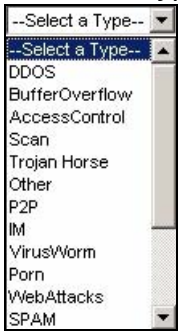
The rules that define how to identify and respond to intrusions are called "signatures". Click **Device Operation** > **Device Configuration > Security > IDP** > **Signature** to see the device's signatures.

## 6.9.1 Attack Types

In the **Device Operation** > **Configuration > Security > IDP** > **Signature** screen, the **Attack Type** list box displays all intrusion types supported by the device. **Other** covers all intrusion types not covered by other types listed.

To see signatures for a specific intrusion type, select that type from the **Attack Type** list box.

**Figure 70** Device Operation > Device Configuration > Security > IDP > Signature > Attack Types




The following table describes each attack type.

**Table 62** Device Operation > Device Configuration > Security > IDP > Signature > Attack Types

| TYPE | DESCRIPTION |
|---|---|
| DDoS | The goal of Denial of Service (DoS) attacks is not to steal information, but to disable a device or network on the Internet. A distributed denial-of-service (DDoS) attack is one in which multiple compromised systems attack a single target, thereby causing denial of service for users of the targeted system. |
| BufferOverflow | A buffer overflow occurs when a program or process tries to store more data in a buffer (temporary data storage area) than it was intended to hold. The excess information can overflow into adjacent buffers, corrupting or overwriting the valid data held in them.<br><br>Intruders could run codes in the overflow buffer region to obtain control of the system, install a backdoor or use the victim to launch attacks on other devices. |
| AccessControl | Access control refers to procedures and controls that limit or detect access. Access control is used typically to control user access to network resources such as servers, directories, and files. |
| Scan | Scan refers to all port, IP or vulnerability scans. Hackers scan ports to find targets. They may use a TCP connect() call, SYN scanning (half-open scanning), Nmap etc. After a target has been found, a vulnerability scanner can be used to exploit exposures. |
| TrojanHorse | A Trojan horse is a harmful program that's hidden inside apparently harmless programs or data. It could be used to steal information or remotely control a device. |
| Other | This category refers to signatures for attacks that do not fall into the previously mentioned categories. |
| P2P | Peer-to-peer (P2P) is where computing devices link directly to each other and can directly initiate communication with each other; they do not need an intermediary. A device can be both the client and the server. In the device, P2P refers to peer-to-peer applications such as eMule, eDonkey, BitTorrent, iMesh etc. |

**Table 62** Device Operation > Device Configuration > Security > IDP > Signature > Attack Types (continued)

| TYPE | DESCRIPTION |
|---|---|
| IM | IM (Instant Messaging) refers to chat applications. Chat is real-time communication between two or more users via networks-connected computers. After you enter a chat (or chat room), any member can type a message that will appear on the monitors of all the other participants. |
| VirusWorm | A computer virus is a small program designed to corrupt and/or alter the operation of other legitimate programs. A worm is a program that is designed to copy itself from one computer to another on a network. A worm's uncontrolled replication consumes system resources thus slowing or stopping other tasks.<br><br>The IDP VirusWorm category refers to network-based viruses and worms. The Anti-Virus (AV) screen refers to file-based viruses and worms. Refer to the anti-virus chapter for additional information on file-based anti-virus scanning in the device. |
| Porn | The device can block web sites if their URLs contain certain pornographic words. It cannot block web pages containing those words if the associated URL does not. |
| WebAttacks | Web attack signatures refer to attacks on web servers such as IIS (Internet Information Services). |
| SPAM | Spam is unsolicited "junk" e-mail sent to large numbers of people to promote products or services. Refer to the anti-spam chapter for more detailed information. |

## 6.9.2 Intrusion Severity

Intrusions are assigned a severity level based on the following table. The intrusion severity level then determines the default signature action.

**Table 63** Device Operation > Device Configuration > Security > IDP > Signature > Intrusion Severity

| SEVERITY | DESCRIPTION |
|---|---|
| Severe | These are intrusions that try to run arbitrary code or gain system privileges. |
| High | These are known serious vulnerabilities or intrusions that are probably not false alarms. |
| Medium | These are medium threats, access control intrusions or intrusions that could be false alarms. |
| Low | These are mild threats or intrusions that could be false alarms. |
| Very Low | These are possible intrusions caused by traffic such as Ping, trace route, ICMP queries etc. |

## 6.9.3 Signature Actions

You can enable/disable individual signatures. You can log and/or have an alert sent when traffic meets a signature criteria. You can also change the default action

to be taken when a packet or stream matches a signature. The following figure and table describes these actions. Note that in addition to these actions, a log may be generated or an alert sent, if those check boxes are selected and the signature is enabled.

**Figure 71** Device Operation > Device Configuration > Security > IDP > Signature > Actions

The following table describes signature actions.

**Table 64** Device Operation > Device Configuration > Security > IDP > Signature > Actions

| ACTION | DESCRIPTION |
|---|---|
| No Action | The intrusion is detected but no action is taken. |
| Drop Packet | The packet is silently discarded. |
| Drop Session | When the firewall is enabled, subsequent TCP/IP packets belonging to the same connection are dropped. Neither sender nor receiver are sent TCP RST packets. If the firewall is not enabled only the packet that matched the signature is dropped. |
| Reset Sender | When the firewall is enabled, the TCP/IP connection is silently torn down. Just the sender is sent TCP RST packets. If the firewall is not enabled only the packet that matched the signature is dropped. |
| Reset Receiver | When the firewall is enabled, the TCP/IP connection is silently torn down. Just the receiver is sent TCP RST packets. If the firewall is not enabled only the packet that matched the signature is dropped. |
| Reset Both | When the firewall is enabled, the TCP/IP connection is silently torn down. Both sender and receiver are sent TCP RST packets. If the firewall is not enabled only the packet that matched the signature is dropped. |

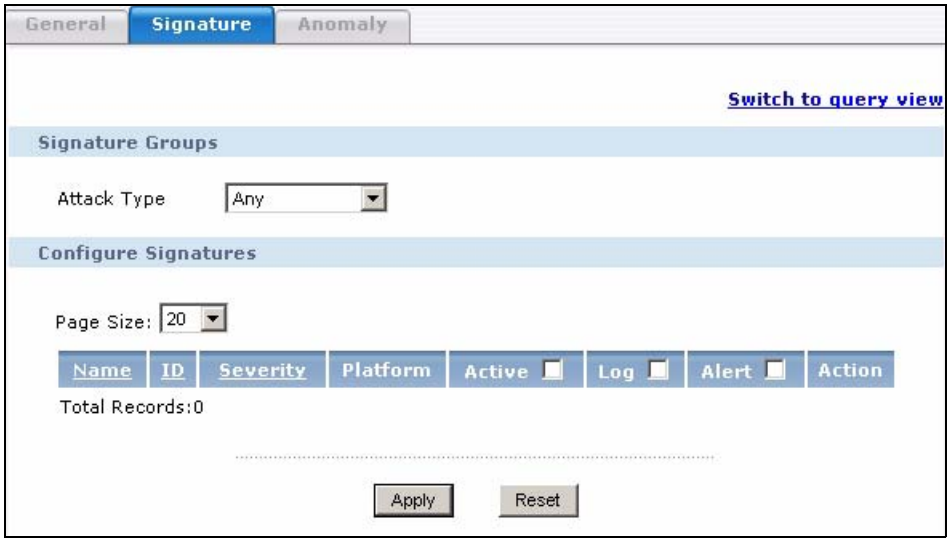
## 6.9.4 Configuring IDP Signatures

Use this screen to see the device's "group view" signature screen where you can view signatures by attack type. To search for signatures based on other criteria such as signature name or ID, then click the **Switch to query view** link to go to the "query view" screen.

You can take actions on these signatures as described in Section 6.9.3 on page 178. To revert to the default actions or to save sets of actions, go to the **Device**

**Operation > Configuration Management > Signature Profile Management > Reset to Factory** or **Backup & Restore** screen.

**Figure 72** Device Operation > Device Configuration > Security > IDP > Signature




The following table describes the labels in this screen.

**Table 65** Device Operation > Device Configuration > Security > IDP > Signature

| LABEL | DESCRIPTION |
|---|---|
| Switch to query view | Click this hyperlink to go to a screen where you can search for signatures based on criteria other than attack type. |
| Attack Type | Select the type of signatures you want to view from the list box. See Section 6.9.1 on page 176 for information on types of signatures.<br><br>The table displays the signatures of the type that you selected. Click a column's header to sort the entries by that attribute. |
| Name | The (read-only) signature name identifies a specific signature targeted at a specific intrusion. Click the hyperlink for more detailed information on the intrusion. |
| ID | Each intrusion has a unique identification number. This number may be searched at myZyXEL.com for more detailed information. |
| Severity | This field displays the level of threat that the intrusion may pose. See Table 63 on page 178 for more information on intrusion severity. |
| Platform | This field displays the computer or network device operating system that the intrusion targets or is vulnerable to the intrusion. These icons represent a Windows operating system, a UNIX-based operating system and a network device, respectively.<br> |

**Table 65** Device Operation > Device Configuration > Security > IDP > Signature

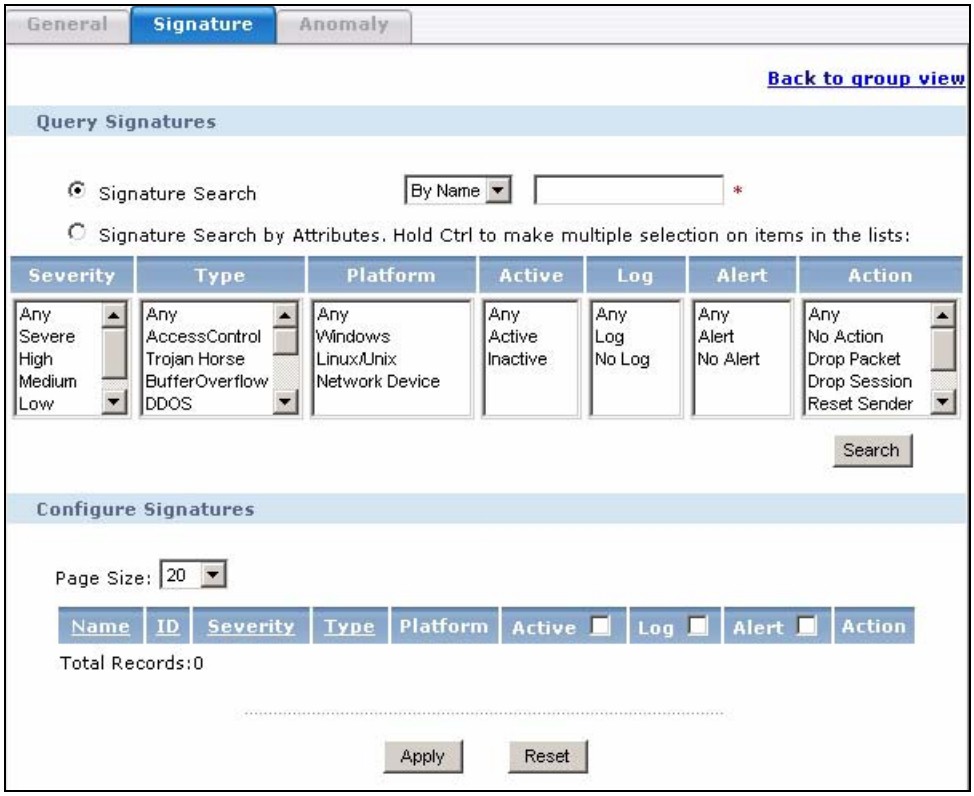
| LABEL | DESCRIPTION |
|---|---|
| Active | Select the check box in the heading row to automatically select all check boxes and enable all signatures.<br><br>Clear it to clear all entries and disable all signatures on the current page. For example, you could clear all check boxes for signatures that targets operating systems not in your network. This would speed up the IDP signature checking process.<br><br>Alternatively, you may select or clear individual entries. The check box becomes gray when you select the check box.<br><br>If you edited any of the check boxes in this column on the current page, use the check box in the heading row to switch between the settings (last partial edited, all selected and all cleared). |
| Log | Select this check box to have a log generated when a match is found for a signature.<br><br>Select the check box in the heading row to automatically select all check boxes or clear it to clear all entries on the current page.<br><br>Alternatively, you may select or clear individual entries. The check box becomes gray when you select the check box.<br><br>If you edited any of the check boxes in this column on the current page, use the check box in the heading row to switch between the settings (last partial edited, all selected and all cleared). |
| Alert | You can only edit the **Alert** check box when the corresponding **Log** check box is selected.<br><br>Select this check box to have an e-mail sent when a match is found for a signature.<br><br>Select the check box in the heading row to automatically select all check boxes or clear it to clear all entries on the current page.<br><br>Alternatively, you may select or clear individual entries. The check box becomes gray when you select the check box.<br><br>If you edited any of the check boxes in this column on the current page, use the check box in the heading row to switch between the settings (last partial edited, all selected and all cleared). |
| Action | You can change the default signature action here. See Table 64 on page 179 for more details on actions. |
| Apply | Click this button to save your changes back to the device. |
| Reset | Click this button to begin configuring this screen afresh. |

## 6.9.5 Query View

Use this screen to see the device's "group view" signature screen, then click the **Switch to query view** link to go to this 'query view" screen.

Use this screen to search for signatures by criteria such as name, ID, severity, attack type, vulnerable attack platforms, whether or not they are active, log options, alert options or actions.

**Figure 73** Device Operation > Device Configuration > Security > IDP > Signature (Query View)




The following table describes the fields in this screen.

**Table 66** Device Operation > Device Configuration > Security > IDP > Signature (Query View)

| LABEL | DESCRIPTION |
|---|---|
| Back to group view | Click this button to go to the IDP group view screen where IDP signatures are grouped by attack type. |
| Signature Search | Select this to search for a specific signature name or ID (that you already know). Then select whether to search the signatures by name or ID. Then enter the name (or part of the name) or the complete ID number of the signature(s) that you want to find.<br><br>Note: A partial name may be searched but a complete ID number must be entered before a match can be found. |
| Signature Search by Attributes | Select this to search for signatures that match the criteria that you specify. Then select the criteria to search for. Hold down the [Ctrl] key if you want to make multiple selections from a list of attributes. |
| Severity | Search for signatures by severity level(s) (see Table 63 on page 178). |

**Table 66** Device Operation > Device Configuration > Security > IDP > Signature (Query View) (continued)

| LABEL | DESCRIPTION |
|---|---|
| Type | Search for signatures by attack type(s) (see Table 62 on page 177). Attack types are known as policy types in the group view screen. |
| Platform | Search for signatures created to prevent intrusions targeting specific operating system(s). |
| Active | Search for enabled and/or disabled signatures here. |
| Log | Search for signatures by log option here. |
| Alert | Search for signatures by alert option here. |
| Action | Search for signatures by the response the device takes when a packet matches a signature. See Table 64 on page 179 for action details. |
| Search | Click this button to begin the search. The results display at the bottom of the screen. Results may be spread over several pages depending on how broad the search criteria selected were. The tighter the criteria selected, the fewer the signatures returned. |
| Configure Signatures | The results display in a table showing the criteria as selected in the search. Click a column's header to sort the entries by that attribute. |
| Name | The (read-only) signature name identifies a specific signature targeted at a specific intrusion. Click the hyperlink for more detailed information on the intrusion. |
| ID | Each intrusion has a unique identification number. This number may be searched at myZyXEL.com for more detailed information. |
| Severity | This field displays the level of threat that the intrusion may pose. See Table 63 on page 178 for more information on intrusion severity. |
| Type | This field displays the what type of signature each one is. See Section 6.9.1 on page 176 for information on types of signatures. |
| Platform | This field displays the computer or network device operating system that the intrusion targets or is vulnerable to the intrusion. These icons represent a Windows operating system, a UNIX-based operating system and a network device, respectively. |
| Active | Select the check box in the heading row to automatically select all check boxes and enable all signatures.<br><br>Clear it to clear all entries and disable all signatures on the current page. For example, you could clear all check boxes for signatures that targets operating systems not in your network. This would speed up the IDP signature checking process.<br><br>Alternatively, you may select or clear individual entries. The check box becomes gray when you select the check box.<br><br>If you edited any of the check boxes in this column on the current page, use the check box in the heading row to switch between the settings (last partial edited, all selected and all cleared). |

**Table 66** Device Operation > Device Configuration > Security > IDP > Signature (Query View) (continued)

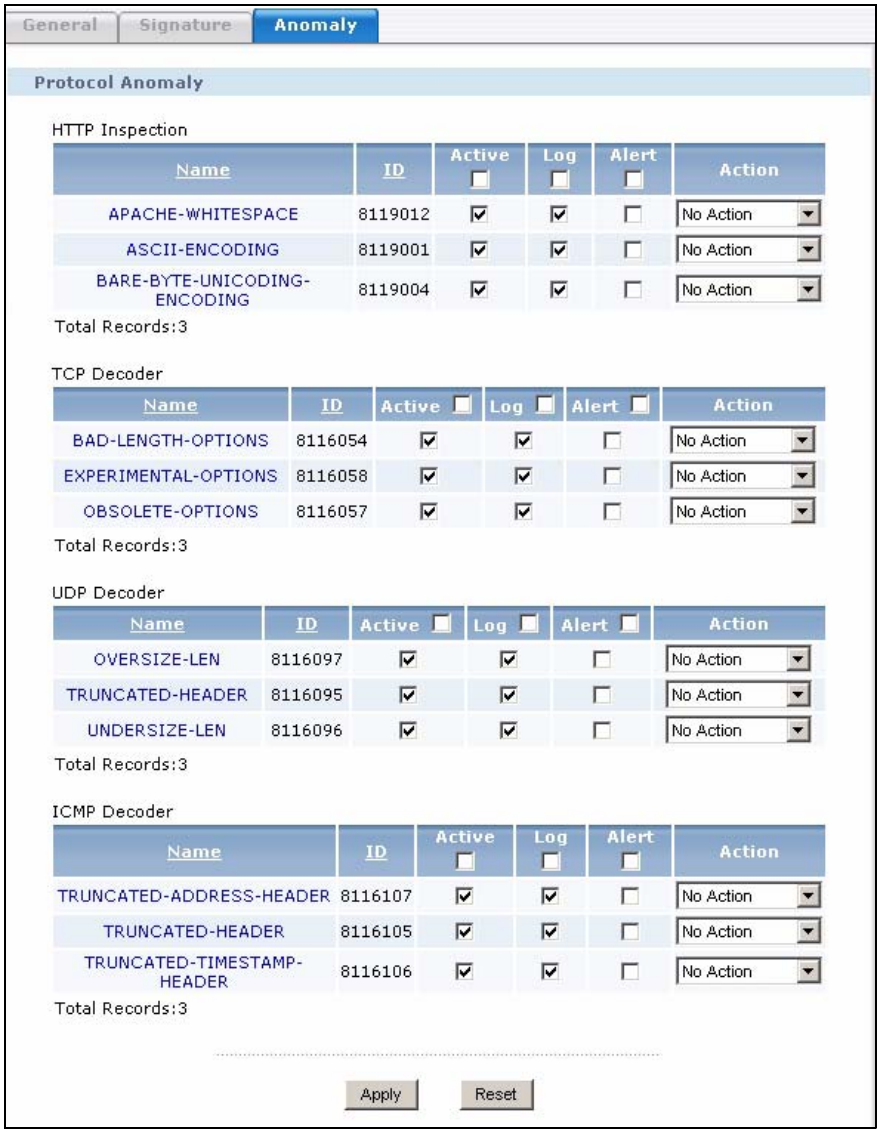
| LABEL | DESCRIPTION |
|---|---|
| Log | Select this check box to have a log generated when a match is found for a signature.<br><br>Select the check box in the heading row to automatically select all check boxes or clear it to clear all entries on the current page.<br><br>Alternatively, you may select or clear individual entries. The check box becomes gray when you select the check box.<br><br>If you edited any of the check boxes in this column on the current page, use the check box in the heading row to switch between the settings (last partial edited, all selected and all cleared). |
| Alert | You can only edit the **Alert** check box when the corresponding **Log** check box is selected.<br><br>Select this check box to have an e-mail sent when a match is found for a signature.<br><br>Select the check box in the heading row to automatically select all check boxes or clear it to clear all entries on the current page.<br><br>Alternatively, you may select or clear individual entries. The check box becomes gray when you select the check box.<br><br>If you edited any of the check boxes in this column on the current page, use the check box in the heading row to switch between the settings (last partial edited, all selected and all cleared). |
| Action | You can change the default signature action here. See Table 64 on page 179 for more details on actions. |
| Apply | Click this button to save your changes back to the device. |
| Reset | Click this button to begin configuring this screen afresh. |

## 6.9.6 Protocol Anomaly

This section introduces ADP (Anomaly Detection and Prevention). An ADP system protects against anomalies based on violations of protocol standards (RFCs – Requests for Comments) and abnormal flows such as port scans. Protocol anomaly detection includes HTTP Inspection, TCP Decoder, UDP Decoder and ICMP Decoder. Protocol anomaly rules may be updated when you upload new firmware.

To open this screen, click **Device Operation** in the menu bar, select a device, then click **Device Configuration > Security > IDP > Anomaly**.

**Figure 74** Device Operation > Device Configuration > Security > IDP > Anomaly




The following table describes the labels in this screen.

**Table 67** Device Operation > Device Configuration > Security > IDP > Anomaly

| TYPE | DESCRIPTION |
|---|---|
| HTTP Inspection/TCP Decoder/UDP Decoder/ICMP Decoder | |
| Name | This is the name of the protocol anomaly rule. Click a name to display more detailed information on a rule. |
| ID | This is the unique identifying number for the anomaly rule. |
| Active | Select the head of the **Active** column to activate all rules for an anomaly detection method, or select **Active** for an individual rule to make it active. |

**Table 67** Device Operation > Device Configuration > Security > IDP > Anomaly

| TYPE | DESCRIPTION |
|---|---|
| Log | Select the head of the **Log** column to generate logs for all rules included in an anomaly detection method. Select **Log** to generate a log when a match is found for the corresponding rule. |
| Alert | Select the head of the **Alert** column to activate the alert for all rules in an anomaly detection method. Select **Alert** to generate an alert log when a match is found for the corresponding rule. |
| Action | Select what the selected device should do when a packet matches a rule.<br><br>**No Action**: The selected device takes no action when a packet matches the signature(s).<br><br>**Drop Packet**: The packet is silently discarded.<br><br>**Drop Session**: When the firewall is enabled, subsequent TCP/IP packets belonging to the same connection are dropped. Neither sender nor receiver are sent TCP RST packets. If the firewall is not enabled only the packet that matched the signature is dropped.<br><br>**Reset Sender**: When the firewall is enabled, the TCP/IP connection is silently torn down. Just the sender is sent TCP RST packets. If the firewall is not enabled only the packet that matched the signature is dropped.<br><br>**Reset Receiver**: When the firewall is enabled, the TCP/IP connection is silently torn down. Just the receiver is sent TCP RST packets. If the firewall is not enabled only the packet that matched the signature is dropped.<br><br>**Reset Both**: When the firewall is enabled, the TCP/IP connection is silently torn down. Both sender and receiver are sent TCP RST packets. If the firewall is not enabled only the packet that matched the signature is dropped. |
| Apply | Click this button to save your changes back to the device. |
| Reset | Click this button to begin configuring this screen afresh. |

# 6.10 Signature Update

The device comes with built-in signatures created by the ZyXEL Security Response Team (ZSRT). These are regularly updated as new intrusions evolve. Use the **Update** screen to immediately download or schedule new signature downloads.

Note: You should have already registered the device at myZyXEL.com (http://www.myzyxel.com/myzyxel/) and also have either activated the trial license or standard license (iCard). If your license has expired, you will have to renew it before updates are allowed.

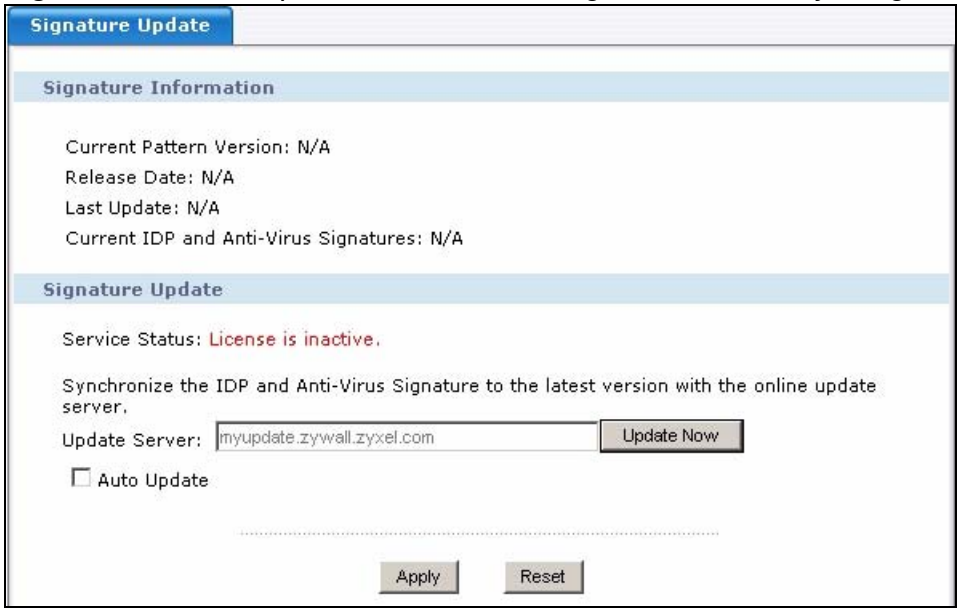
When scheduling signature updates, you should choose a day and time when your network is least busy so as to minimize disruption to your network. Your custom signature configurations are not over-written when you download new signatures.

File-based anti-virus signatures (see the anti-virus chapter) are included with IDP signatures. When you download new signatures using the anti-virus **Update** screen, IDP signatures are also downloaded. The version number changes both in the anti-virus **Update** screen and this screen. Both screens also share the same **Auto-Update** schedule. Changes made to the schedule in one screen are reflected in the other.

Note: The device does not have to reboot when you upload new signatures.

To open this screen, click **Device Operation** in the menu bar and then click **Device Configuration > Security > Signature Update** in the configuration panel.

**Figure 75** Device Operation > Device Configuration > Security > Signature Update




The following table describes the labels in this screen.

**Table 68** Device Operation > Device Configuration > Security > Signature Update

| LABEL | DESCRIPTION |
|---|---|
| Signature Information | |
| Current Pattern Version | This field displays the signatures version number currently used by the device. This number is defined by the ZyXEL Security Response Team (ZSRT) who maintain and update them.<br><br>This number increments as new signatures are added, so you should refer to this number regularly. Go to https://mysecurity.zyxel.com/mysecurity/ to see what the latest version number is. You can also subscribe to signature update e-mail notifications. |

**Table 68** Device Operation > Device Configuration > Security > Signature Update

| LABEL | DESCRIPTION |
|---|---|
| Release Date | This field displays the time (hour, minutes second) and date (month, date, year) that the above signature set was created. |
| Last Update | This field displays the last date and time you downloaded new signatures to the device. It displays **N/A** if you have not downloaded any new signatures yet. |
| Current IDP Signatures | This field displays the number of IDP-related signatures. |
| Signature Update | |
| Service Status | This field displays **License Inactive** if you have not yet activated your trial or iCard license at myZyXEL.com.<br><br>It displays **License Inactive** and an expiration date if your trial or iCard license has expired (the expiration date is the date it expired).<br><br>It displays **Trial Active** and an expiration date when you have activated your trial license.<br><br>It displays **License Active** and an expiration date when you have activated your iCard license (the expiration date is the date it will expire). |
| Update Server | This is the URL of the signature server from which you download signatures. |
| Update Now | Click this button to begin downloading signatures from the **Update Server** immediately. |
| Auto Update | Select the check box to configure a schedule for automatic signature updates. The **Hourly**, **Daily** and **Weekly** fields display when the check box is selected. The device then automatically downloads signatures from the **Update Server** regularly at the time and/or day you specify. |
| Hourly | Select this option to have the device check the update server for new signatures every hour. This may be advisable when new intrusions are currently spreading throughout the Internet. |
| Daily | Select this option to have the device check the update server for new signatures every day at the hour you select from the list box. The device uses a 24-hour clock. For example, choose **15** from the list box to have the device check the update server for new signatures at 3 PM every day. |
| Weekly | Select this option to have the device check the update server for new signatures once a week on the day and hour you select from the list boxes. The device uses a 24-hour clock, so for example, choose **Wednesday** and **15** from the respective list boxes to have the device check the update server for new signatures at 3PM every Wednesday. |
| Apply | Click this button to save your changes back to the device. |
| Reset | Click this button to close this screen without saving any changes. |

# 6.11 Content Filter

This section shows you how to configure the **Content Filter** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

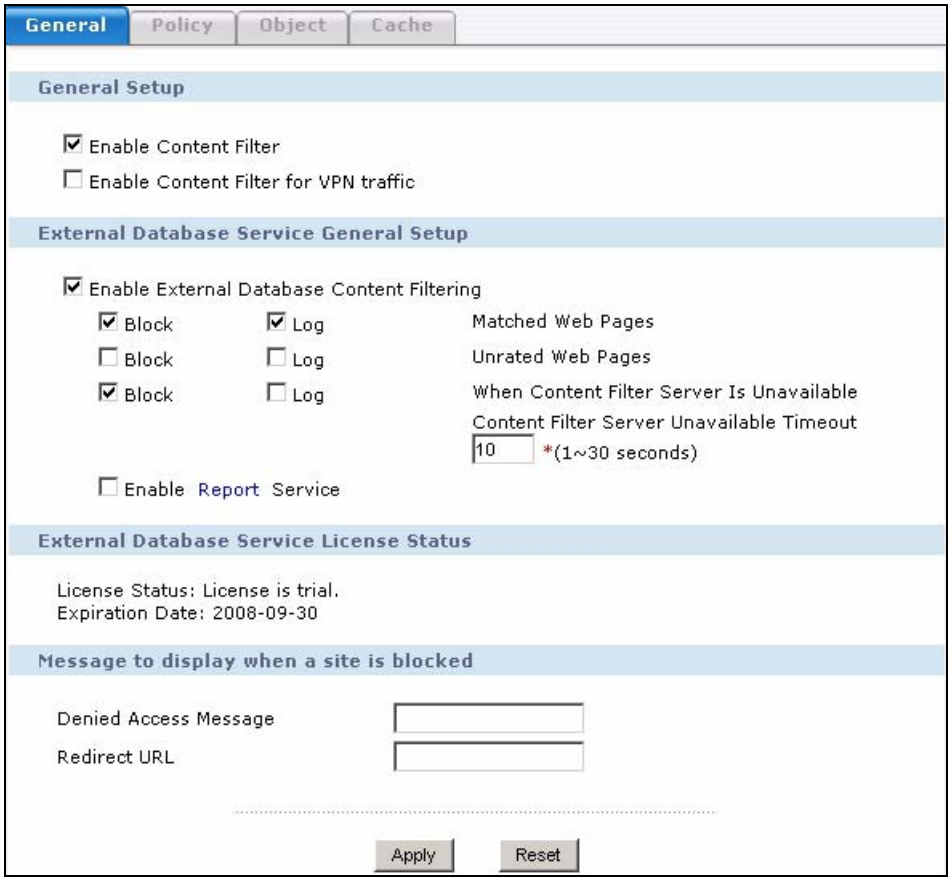
# 6.12 Content Filter General Screen

Click **Device Operation** in the menu bar and then click **Device Configuration > Security > Content Filter > General** in the navigation panel to open the **General** screen.

Content filtering allows you to block certain web features, such as Cookies, and/or block access to specific websites.

Use this screen to enable content filtering, configure a schedule, and create a denial message. You can also choose specific computers to be included in or excluded from the content filtering configuration.

**Figure 76** Device Operation > Device Configuration > Security > Content Filter > General




The following table describes the labels in this screen.

**Table 69** Device Operation > Device Configuration > Security > Content Filter > General

| LABEL | DESCRIPTION |
|---|---|
| General Setup | |
| Enable Content Filter | Select this check box to enable the content filter. Content filtering works on HTTP traffic that is using TCP ports 80, 119, 3128 or 8080. |

**Table 69** Device Operation > Device Configuration > Security > Content Filter > General (continued)

| LABEL | DESCRIPTION |
|---|---|
| Enable Content Filter for VPN traffic | Select this check box to have the content filter apply to traffic that the device sends out through a VPN tunnel or receives through a VPN tunnel. The device applies the content filter to the traffic before encrypting it or after decrypting it.<br><br>Note: The device can apply content filtering on the traffic going to or from the device's VPN tunnels. It does not apply to other VPN traffic for which the device is not one of the gateways (VPN pass-through traffic). |
| External Database Service General Setup | The external database content filtering service has the Vantage CNM check an external database to find to which category a requested web page belongs. |
| Enable External Database Content Filtering | Turn on external database content filtering to have the Vantage CNM block or forward access to web pages depending on the Vantage CNM's external database content filtering settings. |
| Matched Web Pages | Select **Block** to prevent users from accessing web pages that match the categories that you select below.<br><br>When external database content filtering blocks access to a web page, it displays the denied access message that you configured in the **CONTENT FILTER General** screen along with the category of the blocked web page.<br><br>Select **Log** to record attempts to access prohibited web pages. |
| Unrated Web Pages | Select **Block** to prevent users from accessing web pages that the external database content filtering has not categorized.<br><br>When the external database content filtering blocks access to a web page, it displays the denied access message that you configured in the **CONTENT FILTER General** screen along with the category of the blocked web page.<br><br>Select **Log** to record attempts to access web pages that are not categorized. |
| When Content Filter Server Is Unavailable | Select **Block** to block access to any requested web page if the external content filtering database is unavailable. The following are possible causes:<br><br>There is no response from the external content filtering server within the time period specified in the **Content Filter Server Unavailable Timeout** field.<br><br>The Vantage CNM is not able to resolve the domain name of the external content filtering database.<br><br>There is an error response from the external content filtering database. This can be caused by an expired content filtering registration (External content filtering's license key is invalid").<br><br>Select **Log** to record attempts to access web pages that occur when the external content filtering database is unavailable. |

**Table 69** Device Operation > Device Configuration > Security > Content Filter > General (continued)

| LABEL | DESCRIPTION |
|---|---|
| Content Filter Server Unavailable Timeout | Specify a number of seconds (1 to 30) for the Vantage CNM to wait for a response from the external content filtering server. If there is still no response by the time this period expires, the Vantage CNM blocks or allows access to the requested web page based on the setting in the **Block When Content Filter Server Is Unavailable** field. |
| Enable Report Service | Select this option to record content filtering reports on myZyXEL.com. These reports consist of generated statistics and charts of access attempts to web sites belonging to the categories you selected in your content filter configuration. Click **Report** to go to myZyXEL.com. Then do the following to view the content filtering reports.<br>1. Log into myZyXEL.com and click your device's link to open it's **Service Management** screen.<br>2. Click **Content Filter** in the **Service Name** field to open the Blue Coat login screen.<br>3. Enter your Vantage CNM's MAC address (in lower case) in the **Name** field. You can find this MAC address in the **Service Management** screen. Type your myZyXEL.com account password in the **Password** field and click **Submit**. |
| External Database Service License Status | |
| License Status | This read-only field displays the status of your category-based content filtering (using an external database) service subscription.<br>**License Inactive** displays if you have not registered and activated the category-based content filtering service.<br>**License Active** and the subscription expiration date display if you have registered the Vantage CNM and activated the category-based content filtering service.<br>**Trial Active** and the trial subscription expiration date display if you have registered the Vantage CNM and activated the category-based content filtering service.<br>**License Inactive** and the date your subscription expired display if your subscription to the category-based content filtering service has expired.<br>Note: After you register for content filtering, you need to wait up to five minutes for content filtering to be activated. |
| Message to display when a site is blocked | |
| Denied Access Message | Enter a message to be displayed when a user tries to access a restricted web site. The default message is "Please contact your network administrator!". |

**Table 69** Device Operation > Device Configuration > Security > Content Filter > General (continued)

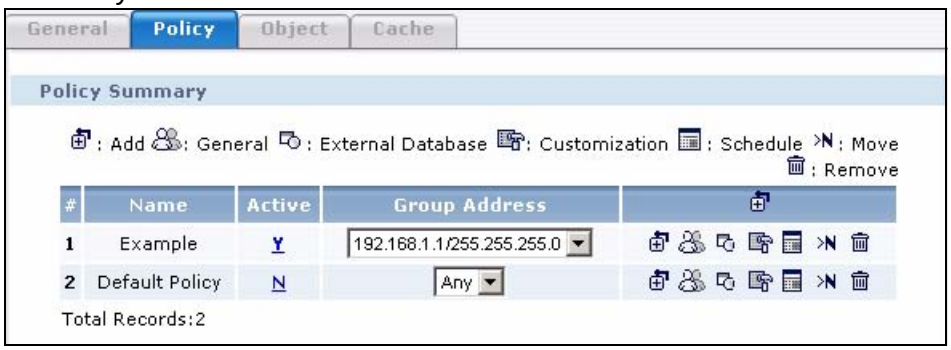
| LABEL | DESCRIPTION |
|---|---|
| Redirect URL | Enter the URL of the web page to which you want to send users when their web access is blocked by content filtering. The web page you specify here opens in a new frame below the denied access message.<br><br>Use “http://” followed by up to 120 ASCII characters. For example, http://192.168.1.17/blocked access.<br><br>If you do not specify a URL and a user tries to access a web page containing a forbidden object, a blocking page displays on the forbidden object. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

# 6.13 Content Filter Policy

This screen lists groups of content filtering settings called policies. Content filtering policies allow you to have different content filtering settings for different users or groups of users. For example, you may want to block most employees from accessing finance or stock websites, but allow the finance department to access these. You can set the selected device to use external database content filtering and select which web site categories to block and/or log.

To open this screen, click a device, click **Device Operation** in the menu bar and then click **Device Configuration > Content Filter** > **Policy** in the navigation panel.

**Figure 77** Device Operation > Device Configuration > Security > Content Filter > Policy



The following table describes the labels in this screen.

**Table 70** Device Operation > Device Configuration > Security > Content Filter > Policy

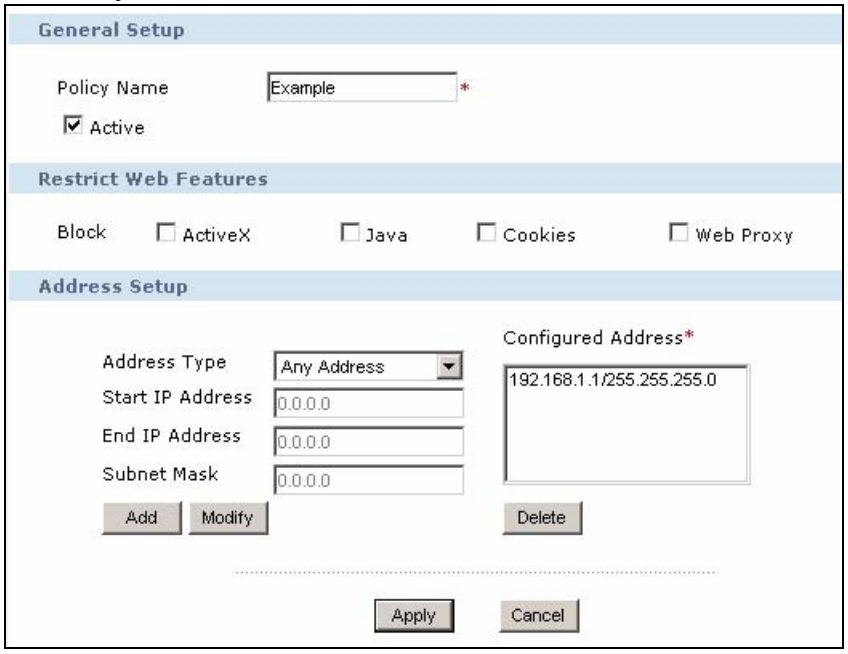
| LABEL | DESCRIPTION |
|---|---|
| # | This is the index number of the entry. |
| Name | This is the name of the content filter policy. |
| Active | This field displays whether a content filter policy is turned on (**Y**) or not (**N**). Click the setting to change it. |
| Global Address | This drop-down list box displays the source (user) addresses or ranges of addresses to which the content filter policy applies. Please note that a blank source or destination address is equivalent to **Any**. |
| Add | Click this to add a new content filtering policy. |
| General | Click the general icon to edit the source (user) addresses or ranges of addresses to which the content filter policy applies. You cannot edit this for the default policy. |
| External Database | Click the external database icon to edit which web features and content categories the content filter policy blocks. |
| Customization | Click the customization icon to configure the policy's list of good (allowed) web site addresses and a list of bad (blocked) web site addresses. You can also block web sites based on whether the web site's address contains a keyword. |
| Schedule | Click the schedule icon to set for which days and times the policy applies. Click the delete icon to remove the content filter policy. You cannot delete the default policy. A window display asking you to confirm that you want to delete the policy. Note that subsequent policies move up by one when you take this action. |
| Move | Click **Move** and type the content filter policy's index number for where you want to put that policy. The ordering of your policies is important as they are applied in order of their numbering. |
| Remove | Click the delete icon to remove the content filter policy. You cannot delete the default policy. A window display asking you to confirm that you want to delete the policy. Note that subsequent policies move up by one when you take this action. |

## 6.13.1 Content Filter Policy: General

To open this screen, click **Add** or a policy's general icon in the **Device Operation** > **Device Configuration** > **Security** > **Content Filter** > **Policy** screen. Use this

screen to restrict web features and edit the source (user) addresses or ranges of addresses to which the content filter policy applies.

**Figure 78** Device Operation > Device Configuration > Security > Content Filter > Policy > Add/General




The following table describes the labels in this screen.

**Table 71** Device Operation > Device Configuration > Security > Content Filter > Policy > Add/General

| LABEL | DESCRIPTION |
|---|---|
| Policy Name | Enter a descriptive name of up to 31 printable ASCII characters (except Extended ASCII characters) for the content filter policy. Spaces are allowed. |
| Active | Select this option to turn on the content filter policy. |

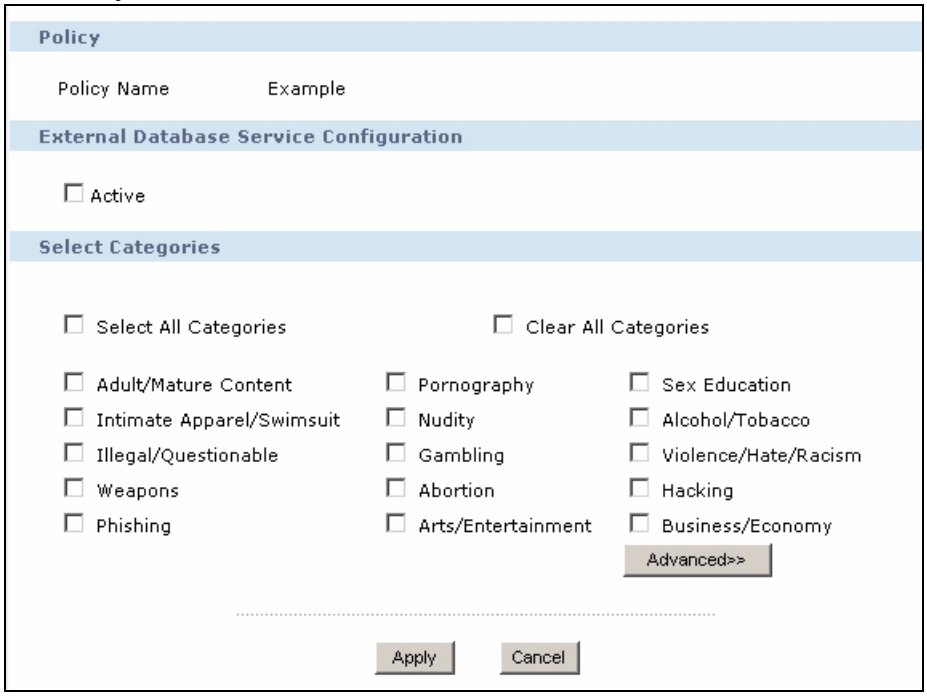
**Table 71** Device Operation > Device Configuration > Security > Content Filter > Policy > Add/General

| LABEL | DESCRIPTION |
|---|---|
| Restrict Web Features | Select the check box(es) to restrict a feature. When you try to access a page containing a restricted feature, the whole page will be blocked or the restricted feature part of the web page will appear blank or grayed out. You will also see the message and URL you configured in the **Denied Access Message** and **Redirect URL** fields. ActiveX is a tool for building dynamic and active web pages and distributed object applications. When you visit an ActiveX web site,<br><br>**ActiveX** controls are downloaded to your browser, where they remain in case you visit the site again.<br><br>**Java** is a programming language and development environment for building downloadable Web components or Internet and intranet business applications of all kinds.<br><br>**Cookies** are files stored on a compute's hard drive. Some web servers use them to track usage and provide service based on ID.<br><br>**Web Proxy** is a server that acts as an intermediary between a user and the Internet to provide security, administrative control, and caching service. When a proxy server is located on the WAN it is possible for LAN users to circumvent content filtering by pointing to this proxy server. |
| Address Setup | |
| Address Type | Do you want the policy to apply to packets from a particular (single) IP, a range of IP addresses (for example 192.168.1.10 to 192.169.1.50), a subnet or any IP address? Select an option from the drop-down list box that includes: **Single Address**, **Range Address**, **Subnet Address** and<br><br>**Any Address**. |
| Start IP Address | Enter the single IP address or the starting IP address in a range here. |
| End IP Address | Enter the ending IP address in a range here. |
| Subnet Mask | Enter the subnet mask here, if applicable. |
| Add | Click Add to add a new address to the **Configured Address** box. You can add multiple addresses, ranges of addresses, and/or subnets. |
| Modify | To edit an existing source or destination address, select it from the box and click **Modify**. |
| Delete | Highlight an existing source or destination address from the<br><br>**Configured Address** box and click **Delete** to remove it. |
| Apply | Click this to save your customized settings and exit this screen. |
| Cancel | Click this to exit this screen without saving. |

## 6.13.2 Content Filter Policy: External Database

To open this screen, click a policy's external database icon in the **Device Operation** > **Device Configuration** > **Security** > **Content Filter** > **Policy** screen. Use this screen to edit which content categories the content filter policy blocks.

**Figure 79** Device Operation > Device Configuration > Security > Content Filter > Policy > External Databasel




The following table describes the labels in this screen.

**Table 72** Device Operation > Device Configuration > Security > Content Filter > Policy > External Database

| LABEL | DESCRIPTION |
|---|---|
| Policy Name | This is the name of the content filter policy that you are configuring. |
| Active | Select this option to apply category based content filtering for this policy. |
| Select Categories | These are the categories available at the time of writing.<br><br>Note: If you chose to record attempts to access the restricted pages and a web page matches more than one category you selected, you will see a log showing this page matches one category (the first matched one) only. |
| Select All Categories | Select this check box to restrict access to all site categories listed below. |
| Clear All Categories | Select this check box to clear the selected categories below. |

**Table 72** Device Operation > Device Configuration > Security > Content Filter > Policy > External Database

| LABEL | DESCRIPTION |
|---|---|
| Adult/Mature Content | Selecting this category excludes pages that contain material of adult nature that does not necessarily contain excessive violence, sexual content, or nudity. These pages include very profane or vulgar content and pages that are not appropriate for children. |
| Pornography | Selecting this category excludes pages that contain sexually explicit material for the purpose of arousing a sexual or prurient interest. |
| Sex Education | Selecting this category excludes pages that provide graphic information (sometimes graphic) on reproduction, sexual development, safe sex practices, sexuality, birth control, and sexual development. It also includes pages that offer tips for better sex as well as products used for sexual enhancement. |
| Intimate Apparel/ Swimsuit | Selecting this category excludes pages that contain images or offer the sale of swimsuits or intimate apparel or other types of suggestive clothing. It does not include pages selling undergarments as a subsection of other products offered. |
| Nudity | Selecting this category excludes pages containing nude or seminude depictions of the human body. These depictions are not necessarily sexual in intent or effect, but may include pages containing nude paintings or photo galleries of artistic nature. This category also includes nudist or naturist pages that contain pictures of nude individuals. |
| Alcohol/Tobacco | Selecting this category excludes pages that promote or offer the sale alcohol/tobacco products, or provide the means to create them. It also includes pages that glorify, tout, or otherwise encourage the consumption of alcohol/tobacco. It does not include pages that sell alcohol or tobacco as a subset of other products. |
| Illegal/Questionable | Selecting this category excludes pages that advocate or give advice on performing illegal acts such as service theft, evading law enforcement, fraud, burglary techniques and plagiarism. It also includes pages that provide or sell questionable educational materials, such as term papers.<br><br>Note: This category includes sites identified as being malicious in any way (such as having viruses, spyware and etc.). |
| Gambling | Selecting this category excludes pages where a user can place a bet or participate in a betting pool (including lotteries) online. It also includes pages that provide information, assistance, recommendations, or training on placing bets or participating in games of chance. It does not include pages that sell gambling related products or machines. It also does not include pages for offline casinos and hotels (as long as those pages do not meet one of the above requirements). |

**Table 72** Device Operation > Device Configuration > Security > Content Filter > Policy > External Database

| LABEL | DESCRIPTION |
|---|---|
| Violence/Hate/Racism | Selecting this category excludes pages that depict extreme physical harm to people or property, or that advocate or provide instructions on how to cause such harm. It also includes pages that advocate, depict hostility or aggression toward, or denigrate an individual or group on the basis of race, religion, gender, nationality, ethnic origin, or other characteristics. |
| Weapons | Selecting this category excludes pages that sell, review, or describe weapons such as guns, knives or martial arts devices, or provide information on their use, accessories, or other modifications. It does not include pages that promote collecting weapons, or groups that either support or oppose weapons use. |
| Abortion | Selecting this category excludes pages that provide information or arguments in favor of or against abortion, describe abortion procedures, offer help in obtaining or avoiding abortion, or provide information on the effects, or lack thereof, of abortion. |
| Hacking | Selecting this category excludes pages that distribute, promote, or provide hacking tools and/or information which may help gain unauthorized access to computer systems and/or computerized communication systems. Hacking encompasses instructions on illegal or questionable tactics, such as creating viruses, distributing cracked or pirated software, or distributing other protected intellectual property. |
| Phishing | Selecting this category excludes pages that are designed to appear as a legitimate bank or retailer with the intent to fraudulently capture sensitive data (i.e. credit card numbers, pin numbers). |
| Arts/Entertainment | Selecting this category excludes pages that promote and provide information about motion pictures, videos, television, music and programming guides, books, comics, movie theatres, galleries, artists or reviews on entertainment. |
| Business/Economy | Selecting this category excludes pages devoted to business firms, business information, economics, marketing, business management and entrepreneurship. This does not include pages that perform services that are defined in another category (such as Information Technology companies, or companies that sell travel services). |
| Alternative Spirituality/ Occult | Selecting this category excludes pages that promote and provide information on religions such as Wicca, Witchcraft or Satanism. Occult practices, atheistic views, voodoo rituals or any other form of mysticism are represented here. Includes sites that endorse or offer methods, means of instruction, or other resources to affect or influence real events through the use of spells, incantations, curses and magic powers. This category includes sites which discuss or deal with paranormal or unexplained events. |
| Illegal Drugs | Selecting this category excludes pages that promote, offer, sell, supply, encourage or otherwise advocate the illegal use, cultivation, manufacture, or distribution of drugs, pharmaceuticals, intoxicating plants or chemicals and their related paraphernalia. |

**Table 72** Device Operation > Device Configuration > Security > Content Filter > Policy > External Database

| LABEL | DESCRIPTION |
|---|---|
| Education | Selecting this category excludes pages that offer educational information, distance learning and trade school information or programs. It also includes pages that are sponsored by schools, educational facilities, faculty, or alumni groups. |
| Cultural/Charitable Organization | Selecting this category excludes pages that nurture cultural understanding and foster volunteerism such as 4H, the Lions and Rotary Clubs. Also encompasses non-profit associations that cultivate philanthropic or relief efforts. Sites that provide a learning environment or cultural refinement/awareness outside of the strictures of formalized education such as museums and planetariums are included under this heading. |
| Financial Services | Selecting this category excludes pages that provide or advertise banking services (online or offline) or other types of financial information, such as loans. It does not include pages that offer market information, brokerage or trading services. |
| Brokerage/Trading | Selecting this category excludes pages that provide or advertise trading of securities and management of investment assets (online or offline). It also includes insurance pages, as well as pages that offer financial investment strategies, quotes, and news. |
| Online Games | Selecting this category excludes pages that provide information and support game playing or downloading, video games, computer games, electronic games, tips, and advice on games or how to obtain cheat codes. It also includes pages dedicated to selling board games as well as journals and magazines dedicated to game playing. It includes pages that support or host online sweepstakes and giveaways. |
| Government/Legal | Selecting this category excludes pages sponsored by or which provide information on government, government agencies and government services such as taxation and emergency services. It also includes pages that discuss or explain laws of various governmental entities. |
| Military | Selecting this category excludes pages that promote or provide information on military branches or armed services. |
| Political/Activist Groups | Selecting this category excludes pages sponsored by or which provide information on political parties, special interest groups, or any organization that promotes change or reform in public policy, public opinion, social practice, or economic activities. |
| Health | Selecting this category excludes pages that provide advice and information on general health such as fitness and well-being, personal health or medical services, drugs, alternative and complimentary therapies, medical information about ailments, dentistry, optometry, general psychiatry, self-help, and support organizations dedicated to a disease or condition. |
| Computers/Internet | Selecting this category excludes pages that sponsor or provide information on computers, technology, the Internet and technology-related organizations and companies. |
| Search Engines/Portals | Selecting this category excludes pages that support searching the Internet, indices, and directories. |

**Table 72** Device Operation > Device Configuration > Security > Content Filter > Policy > External Database

| LABEL | DESCRIPTION |
|---|---|
| Spyware/Malware Sources | Selecting this category excludes pages which distribute spyware and other malware. Spyware is defined as software which takes control of your computer, modifies computer settings, collects or reports personal information, or misrepresents itself by tricking users to install, download, or enter personal information. This includes drive-by downloads; browser hijackers; dialers; intrusive advertising; any program which modifies your homepage, bookmarks, or security settings; and keyloggers. It also includes any software which bundles spyware (as defined above) as part of its offering. Information collected or reported is "personal" if it contains uniquely identifying data, such as e-mail addresses, name, social security number, IP address, etc. A site is not classified as spyware if the user is reasonably notified that the software will perform these actions (that is, it alerts that it will send personal information, be installed, or that it will log keystrokes). Note: Sites rated as spyware should have a second category assigned with them. |
| Spyware Effects/ Privacy Concerns | Selecting this category excludes pages to which spyware (as defined in the Spyware/Malware Sources category) reports its findings or from which it alone downloads advertisements. Also includes sites that contain serious privacy issues, such as “phone home” sites to which software can connect and send user info; sites that make extensive use of tracking cookies without a posted privacy statement; and sites to which browser hijackers redirect users. Usually does not include sites that can be marked as Spyware/Malware. Note: Sites rated as spyware effects typically have a second category assigned with them. |
| Job Search/Careers | Selecting this category excludes pages that provide assistance in finding employment, and tools for locating prospective employers. |
| News/Media | Selecting this category excludes pages that primarily report information or comments on current events or contemporary issues of the day. It also includes radio stations and magazines. It does not include pages that can be rated in other categories. |
| Personals/Dating | Selecting this category excludes pages that promote interpersonal relationships. |
| Reference | Selecting this category excludes pages containing personal, professional, or educational reference, including online dictionaries, maps, census, almanacs, library catalogues, genealogy-related pages and scientific information. |
| Open Image/Media Search | Selecting this category excludes pages with image or video search capabilities which return graphical results (i.e. thumbnail pictures) that include potentially pornographic content along with non-pornographic content (as defined in the Pornography category). Sites that explicitly exclude offensive content are not included in this category. |
| Chat/Instant Messaging | Selecting this category excludes pages that provide chat or instant messaging capabilities or client downloads. |

**Table 72** Device Operation > Device Configuration > Security > Content Filter > Policy > External Database

| LABEL | DESCRIPTION |
|---|---|
| Email | Selecting this category excludes pages offering web-based e-mail services, such as online e-mail reading, e-cards, and mailing list services. |
| Blogs/Newsgroups | Selecting this category excludes pages that offer access to Usenet news groups or other messaging or bulletin board systems. Also, blog specific sites or an individual with his own blog. This does not include social networking communities with blogs. |
| Religion | Selecting this category excludes pages that promote and provide information on conventional or unconventional religious or quasi-religious subjects, as well as churches, synagogues, or other houses of worship. It does not include pages containing alternative religions such as Wicca or witchcraft (Cult/Occult) or atheist beliefs (Political/Activist Groups). |
| Social Networking | Selecting this category excludes pages that enable people to connect with others to form an online community. Typically members describe themselves in personal web page policies and form interactive networks, linking them with other members based on common interests or acquaintances. Instant messaging, file sharing and web logs (blogs) are common features of Social Networking sites. Note: These sites may contain offensive material in the community-created content. Sites in this category are also referred to as "virtual communities" or "online communities". This category does not include more narrowly focused sites, like those that specifically match descriptions for Personals/Dating sites or Business sites. |
| Online Storage | Selecting this category excludes pages that provide a secure, encrypted, off-site backup and restoration of personal data. These online repositories are typically used to store, organize and share videos, music, movies, photos, documents and other electronically formatted information. Sites that fit this criteria essentially act as your personal hard drive on the Internet. |
| Remote Access Tools | Selecting this category excludes pages that primarily focus on providing information about and/or methods that enables authorized access to and use of a desktop computer or private network remotely. |
| Shopping | Selecting this category excludes pages that provide or advertise the means to obtain goods or services. It does not include pages that can be classified in other categories (such as vehicles or weapons). |
| Auctions | Selecting this category excludes pages that support the offering and purchasing of goods between individuals. This does not include classified advertisements. |
| Real Estate | Selecting this category excludes pages that provide information on renting, buying, or selling real estate or properties. |
| Society/Lifestyle | Selecting this category excludes pages providing information on matters of daily life. This does not include pages relating to entertainment, sports, jobs, sex or pages promoting alternative lifestyles such as homosexuality. Personal homepages fall within this category if they cannot be classified in another category. |

**Table 72** Device Operation > Device Configuration > Security > Content Filter > Policy > External Database

| LABEL | DESCRIPTION |
|---|---|
| Sexuality/Alternative Lifestyles | Selecting this category excludes pages that provide information, promote, or cater to gays, lesbians, swingers, other sexual orientations or practices, or a particular fetish. This category does not include sites that are sexually gratuitous in nature which would typically fall under the Pornography category. |
| Restaurants/Dining/ Food | Selecting this category excludes pages that list, review, discuss, advertise and promote food, catering, dining services, cooking and recipes. |
| Sports/Recreation/ Hobbies | Selecting this category excludes pages that promote or provide information about spectator sports, recreational activities, or hobbies. This includes pages that discuss or promote camping, gardening, and collecting. |
| Travel | Selecting this category excludes pages that promote or provide opportunity for travel planning, including finding and making travel reservations, vehicle rentals, descriptions of travel destinations, or promotions for hotels or casinos. |
| Vehicles | Selecting this category excludes pages that provide information on or promote vehicles, boats, or aircraft, including pages that support online purchase of vehicles or parts. |
| Humor/Jokes | Selecting this category excludes pages that primarily focus on comedy, jokes, fun, etc. This may include pages containing jokes of adult or mature nature. Pages containing humorous Adult/Mature content also have an Adult/Mature category rating. |
| Software Downloads | Selecting this category excludes pages that are dedicated to the electronic download of software packages, whether for payment or at no charge. |
| Pay to Surf | Selecting this category excludes pages that pay users in the form of cash or prizes, for clicking on or reading specific links, e-mail, or web pages. |
| Peer-to-Peer | Selecting this category excludes pages that distribute software to facilitate the direct exchange of files between users, including software that enables file search and sharing across a network without dependence on a central server. |
| Streaming Media/MP3s | Selecting this category excludes pages that sell, deliver, or stream music or video content in any format, including sites that provide downloads for such viewers. |
| Proxy Avoidance | Selecting this category excludes pages that provide information on how to bypass proxy server/appliance features or gain access to URLs in any way that bypasses the proxy server/ appliance. It also includes any service that will allow a person to bypass the content filtering feature, such as anonymous surfing services. |
| For Kids | Selecting this category excludes pages designed specifically for children. |
| Web Advertisements | Selecting this category excludes pages that provide online advertisements or banners. This does not include advertising servers that serve adult-oriented advertisements. |

**Table 72** Device Operation > Device Configuration > Security > Content Filter > Policy > External Database

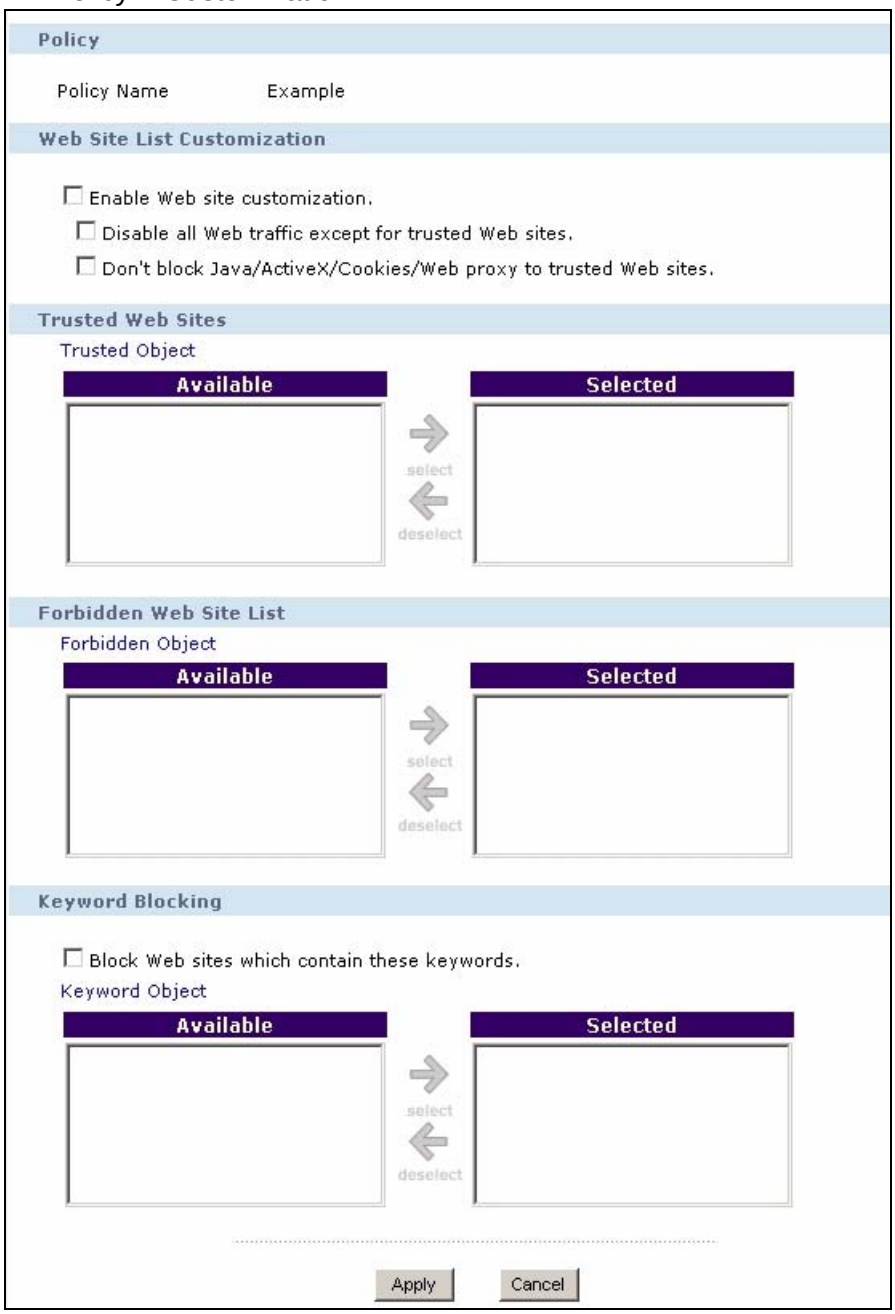
| LABEL | DESCRIPTION |
|---|---|
| Web Hosting | Selecting this category excludes pages of organizations that provide top-level domain pages, as well as web communities or hosting services. |
| Apply | Click this to save your settings and exit this screen. |
| Cancel | Click this to exit this screen without saving. |

## 6.13.3 Content Filter Policy: Customization

To open this screen, click a policy's customization icon in the **Device Operation** > **Device Configuration** > **Security** > **Content Filter** > **Policy** screen. Use this screen to select good (allowed) web site addresses for this policy and bad (blocked) web site addresses. You can also block web sites based on whether the web site's address contains a keyword. Use this screen to add or remove specific sites or keywords from the filter list.

Note: Use the **Device Operation** > **Device Configuration** > **Security** > **Content Filter** > **Object** screen (see Section 6.14 on page 208) to first configure the master lists of trusted (allowed) web sites,forbidden (blocked) web sites, and keywords.

**Figure 80** Device Operation > Device Configuration > Security > Content Filter > Policy > Customizationl



The following table describes the labels in this screen.

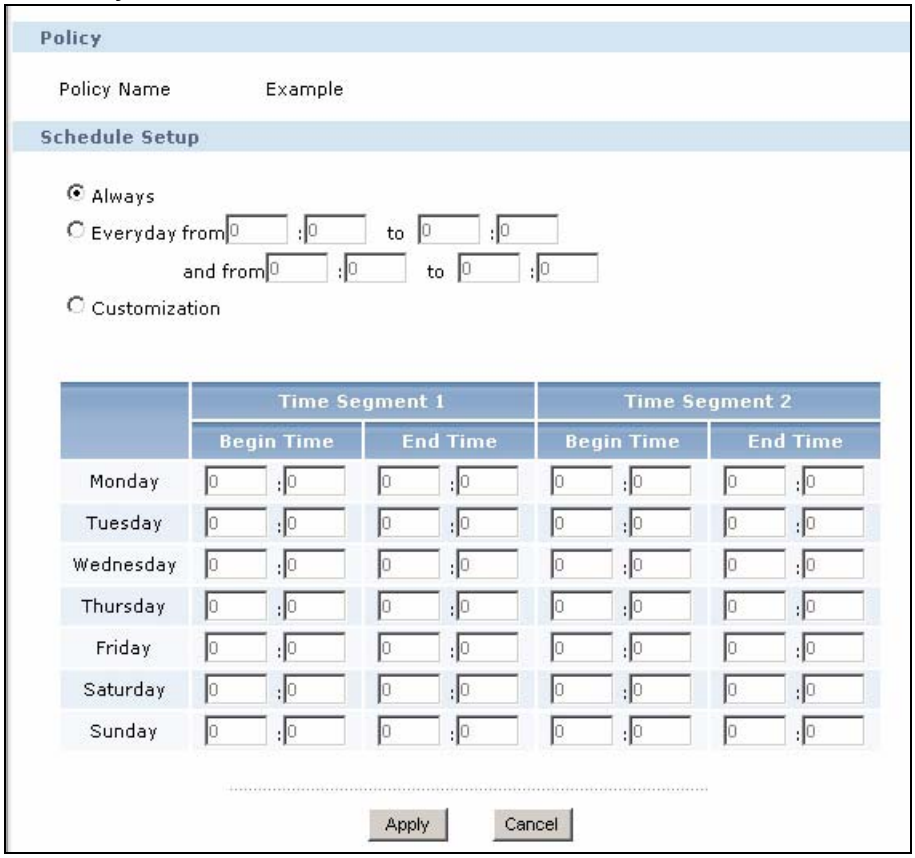
**Table 73** Device Operation > Device Configuration > Security > Content Filter > Policy > Customization

| LABEL | DESCRIPTION |
|---|---|
| Policy Name | This is the name of the content filter policy that you are configuring. |
| Web Site List Customization | |
| Enable Web site customization | Select this check box to allow trusted web sites and block forbidden web sites. Content filter list customization may be enabled and disabled without re-entering these site names. |
| Disable all Web traffic except for trusted Web sites | When this box is selected, the Vantage CNM only allows Web access to sites on the **Trusted Web Site** list. If they are chosen carefully, this is the most effective way to block objectionable material. |
| Don't block Java/ ActiveX/Cookies/Web proxy to trusted Web sites | When this box is selected, the Vantage CNM will permit Java, ActiveX and Cookies from sites on the **Trusted Web Site** list to the LAN. In certain cases, it may be desirable to allow Java, ActiveX or Cookies from sites that are known and trusted. |
| Trusted Object | Click **Trusted Object** to go to **Device Operation** > **Device Configuration** > **Security** > **Content Filter** > **Object** screen where displays the trusted host names you configured.<br><br>Select the ones to which you want to allow access in the **Available** list and use the arrow **select** button to move them to the **Selected** list. Select an entry in the **Selected** list and use the arrow **dselect** button to remove it from the list. |
| Forbidden Object | Click **Forbidden Object** to go to **Device Operation** > **Device Configuration** > **Security** > **Content Filter** > **Object** screen where displays the forbidden host names you configured.<br><br>Select the ones to which you want this policy to block in the **Available** list and use the arrow **select** button to move them to the **Selected** list. Select an entry in the **Selected** list and use the arrow **dselect** button to remove it from the list. |
| Block Web sites which contain these keywords. | Select this check box to enable keyword blocking. |
| Keyword Object | Click **Keyword Object** to go to **Device Operation** > **Device Configuration** > **Security** > **Content Filter** > **Object** screen where allows you to block websites with URLs that contain certain keywords in the domain name or IP address.<br><br>Select the ones to which you want this policy to block in the **Available** list and use the arrow **select** button to move them to the **Selected** list. Select an entry in the **Selected** list and use the arrow **dselect** button to remove it from the list. |
| Apply | Click this to save your settings and exit this screen. |
| Cancel | Click this to exit this screen without saving. |

## 6.13.4 Content Filter Policy: Schedule

To open this screen, click a policy's schedule icon in the **Device Operation** > **Device Configuration** > **Security** > **Content Filter** > **Policy** screen. Use this screen to set for which days and times the policy applies.

**Figure 81** Device Operation > Device Configuration > Security > Content Filter > Policy > Schedulel




The following table describes the labels in this screen.

**Table 74** Device Operation > Device Configuration > Security > Content Filter > Policy > Schedule

| LABEL | DESCRIPTION |
|---|---|
| Policy Name | This is the name of the content filter policy that you are configuring. |
| Schedule Setup | Content filtering scheduling applies to the filter list, customized sites and keywords. Restricted web server data, such as ActiveX, Java, Cookies and Web Proxy are not affected. |
| Always | Select this option to have content filtering active all the time. |
| Everyday from/to | Select this option to have content filtering active during the specified time interval(s) of each day. In the **from** and **to** fields, enter the time period(s), in 24-hour format, during which content filtering will be enforced. |

**Table 74** Device Operation > Device Configuration > Security > Content Filter > Policy > Schedule

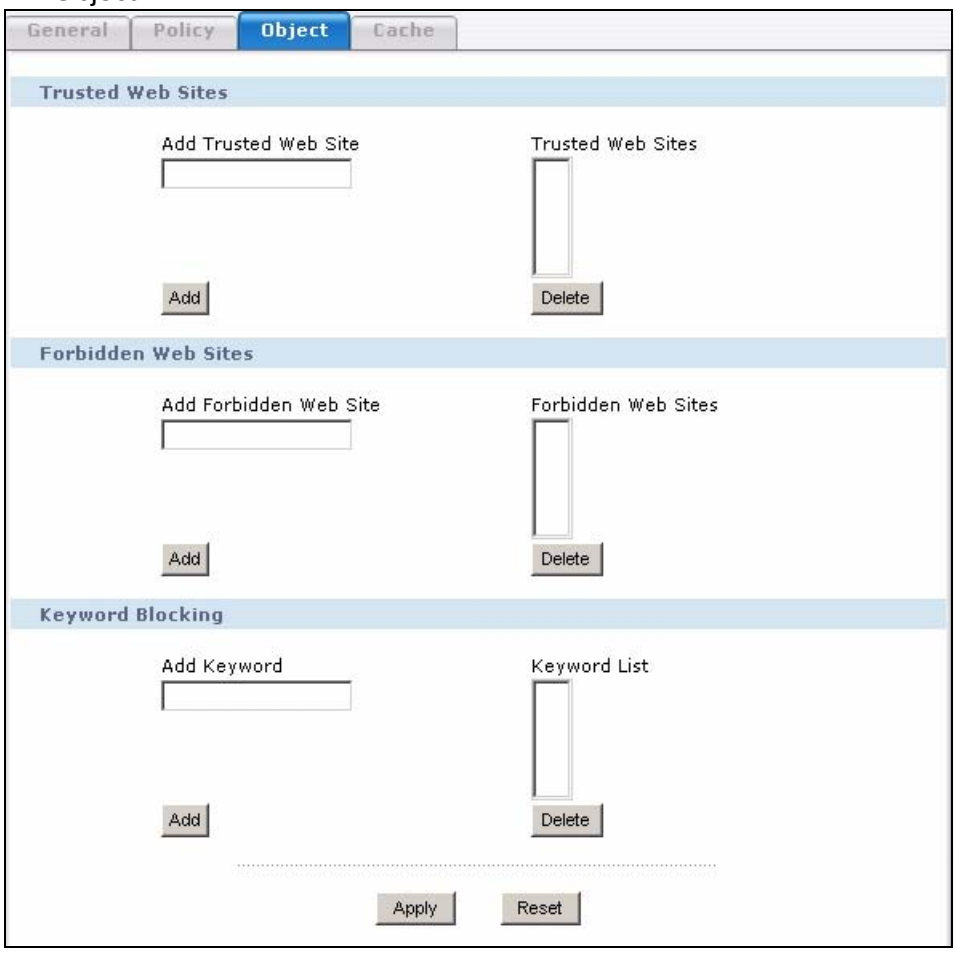
| LABEL | DESCRIPTION |
|---|---|
| Customization | Select this option to have content filtering only active during the specified time interval(s) of the specified day(s). In the **Begin Time** and **End Time** fields, enter the time period(s), in 24-hour format, for individual day(s) of the week. |
| Apply | Click this to save your settings and exit this screen. |
| Cancel | Click this to exit this screen without saving. |

# 6.14 Content Filter Objects

Use this screen to create a list of good (allowed) web site addresses, a list of bad (blocked) web site addresses, or block web sites based on whether the web site's address contains a keyword.. To open this screen, click a device, click **Device Operation** in the menu bar and then click **Device Configuration > Security > Content Filter** > **Object** in the navigation panel.

Note: To use this screens settings in content filtering, you must use the **Device Operation** > **Device Configuration** > **Security > Content Filter > Policy > Customization** screen to set individual policies to add or remove specific sites or keywords for individual policies.

**Figure 82** Device Operation > Device Configuration > Security > Content Filter > Object




The following table describes the labels in this screen.

**Table 75** Device Operation > Device Configuration > Security > Content Filter > Object

| LABEL | DESCRIPTION |
|---|---|
| Trusted Web Sites | These are sites that you want to allow access to, regardless of their content rating, can be allowed by adding them to this list. You can enter up to 32 entries. |
| Add Trusted Web Site | Enter host names such as www.good-site.com into this text field. Do not enter the complete URL of the site – that is, do not include “http://”. All subdomains are allowed. For example, entering “zyxel.com” also allows “www.zyxel.com”, “partner.zyxel.com”, “press.zyxel.com”, etc. |
| Trusted Web Sites | This list displays the trusted web sites already added. |

**Table 75** Device Operation > Device Configuration > Security > Content Filter > Object

| LABEL | DESCRIPTION |
|---|---|
| Add | Click this button when you have finished adding the host name in the text field above. |
| Delete | Select a web site name from the **Trusted Web Site List**, and then click this button to delete it from that list. |
| Forbidden Web Site List | Sites that you want to block access to, regardless of their content rating, can be allowed by adding them to this list. You can enter up to 32 entries. |
| Add Forbidden Web Site | Enter host names such as www.bad-site.com into this text field. Do not enter the complete URL of the site – that is, do not include “http://”. All subdomains are blocked. For example, entering “bad-site.com” also blocks “www.bad-site.com”, “partner.bad-site.com”, “press.bad-site.com”, etc. |
| Forbidden Web Sites | This list displays the forbidden web sites already added. |
| Add | Click this button when you have finished adding the host name in the text field above. |
| Delete | Select a web site name from the **Forbidden Web Site List**, and then click this button to delete it from that list. |
| Keyword Blocking | **Keyword Blocking** allows you to block websites with URLs that contain certain keywords in the domain name or IP address. |
| Add Keyword | Enter a keyword (up to 31 printable ASCII characters) to block. You can also enter a numerical IP address. |
| Keyword List | This list displays the keywords already added. |
| Add | Click this button when you have finished adding the key words field above. |
| Delete | Select a keyword from the **Keyword List**, and then click this button to delete it from that list. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

# 6.15 Content Filtering Cache

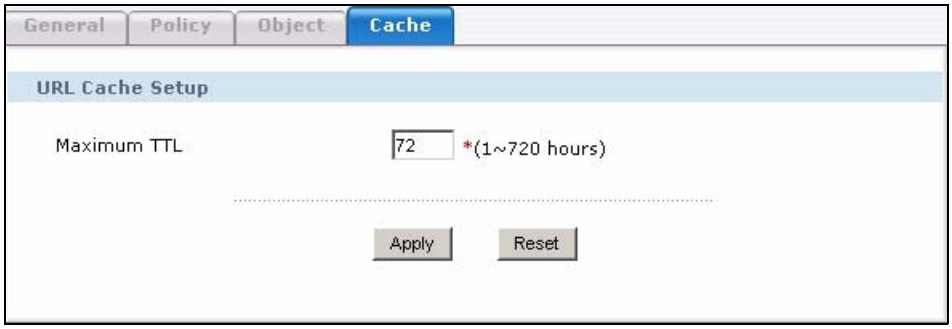
To open this screen, click a device, click **Device Operation** in the menu bar and then click **Device Configuration > Security > Content Filter** > **Cache** in the navigation panel.

Use this screen to view and configure your device’s URL caching. You can also configure how long a categorized web site address remains in the cache as well as view those web site addresses to which access has been allowed or blocked based on the responses from the external content filtering server. The device only queries the external content filtering database for sites not found in the cache.

You can remove individual entries from the cache. When you do this, the device queries the external content filtering database the next time someone tries to access that web site. This allows you to check whether a web site's category has been changed.

Please see the device's User's Guide for how to submit a web site that has been incorrectly categorized.

**Figure 83** Device Operation > Device Configuration > Security > Content Filter > Cache




The following table describes the labels in this screen.

**Table 76** Device Operation > Device Configuration > Security > Content Filter > Cache

| LABEL | DESCRIPTION |
|---|---|
| Maximum TTL | Type the maximum time to live (TTL) (1 to 720 hours). This sets how long the device is to allow an entry to remain in the URL cache before discarding it. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

# 6.16 X Auth

This section shows you how to configure the user authentication screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

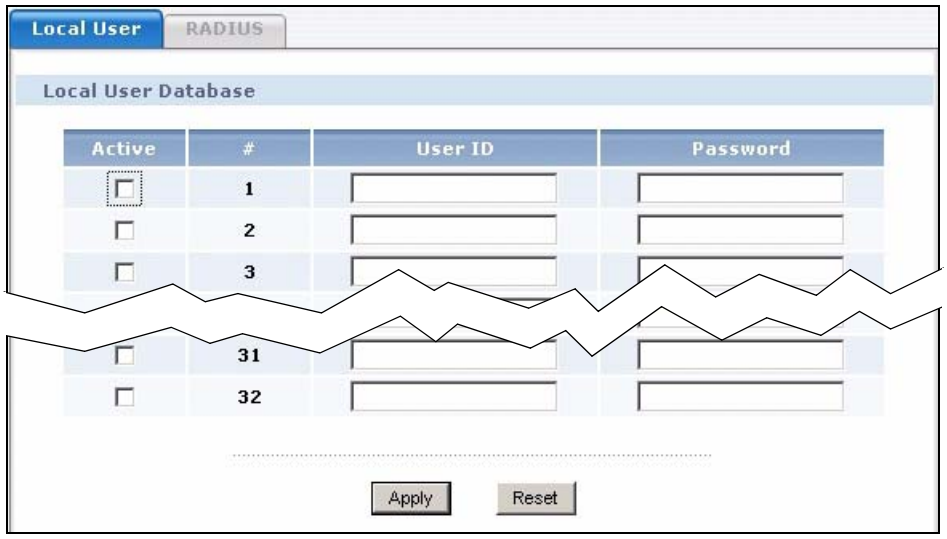
## 6.16.1 Local User Database

Use this screen if you want to use a device local user database to perform user authentication.

By storing user profiles locally, your device is able to authenticate wireless users without interacting with a network RADIUS server. However, there is a limit on the number of users you may authenticate in this way.

To open this screen, click a device, click **Device Operation** in the menu bar and then click **Device Configuration > X Auth** > **Local User** in the navigation panel.

**Figure 84** Device Operation > Device Configuration > Security > X Auth > Local User




The following table describes the labels in this screen.

**Table 77** Device Operation > Device Configuration > Security > X Auth > Local User

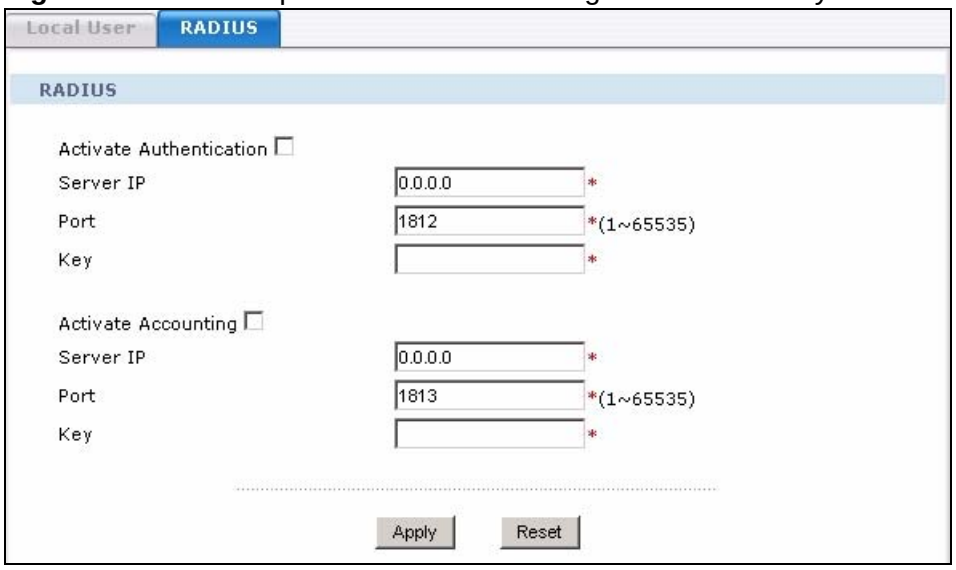
| LABEL | DESCRIPTION |
|---|---|
| Active | Select this check box to enable the user profile. |
| # | This is the local user index number. |
| User ID | Enter the user name of the user profile. |
| Password | Enter a password up to 31 characters long for this user profile. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

## 6.16.2 RADIUS

Use this screen if you want to use an external server to perform authentication.

To open this screen, click a device, click **Device Operation** in the menu bar and then click **Device Configuration > Security > X Auth** > **RADIUS** in the navigation panel.

**Figure 85** Device Operation > Device Configuration > Security > X Auth > RADIUS




The following table describes the fields in this screen.

**Table 78** Device Operation > Device Configuration > Security > X Auth > RADIUS

| LABEL | DESCRIPTION |
|---|---|
| Activate Authentication | Enable this feature to have the device use an external authentication server in performing user authentication.<br><br>Disable this feature if you will not use an external authentication server. If you disable this feature, you can still set the device to perform user authentication using the local user database. |
| Server IP | Enter the IP address of the external authentication server in dotted decimal notation. |
| Port | The default port of the RADIUS server for authentication is **1812**.<br><br>You need not change this value unless your network administrator instructs you to do so with additional information. |
| Key | Enter a password (up to 31 alphanumeric characters) as the key to be shared between the external authentication server and the access points.<br><br>The key is not sent over the network. This key must be the same on the external authentication server and device. |
| Activate Accounting | Enable this feature to do user accounting through an external authentication server. |
| Server IP | Enter the IP address of the external accounting server in dotted decimal notation. |

**Table 78** Device Operation > Device Configuration > Security > X Auth > RADIUS

| LABEL | DESCRIPTION |
|---|---|
| Port | The default port of the RADIUS server for accounting is **1813**.<br><br>You need not change this value unless your network administrator instructs you to do so with additional information. |
| Key | Enter a password (up to 31 alphanumeric characters) as the key to be shared between the external accounting server and the access points.<br><br>The key is not sent over the network. This key must be the same on the external accounting server and device. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

# 7

# Device Advanced Settings

Use these screens to configure device advanced settings such as NAT, Static Route, DNS and  Remote Management.

### 7.0.1 NAT

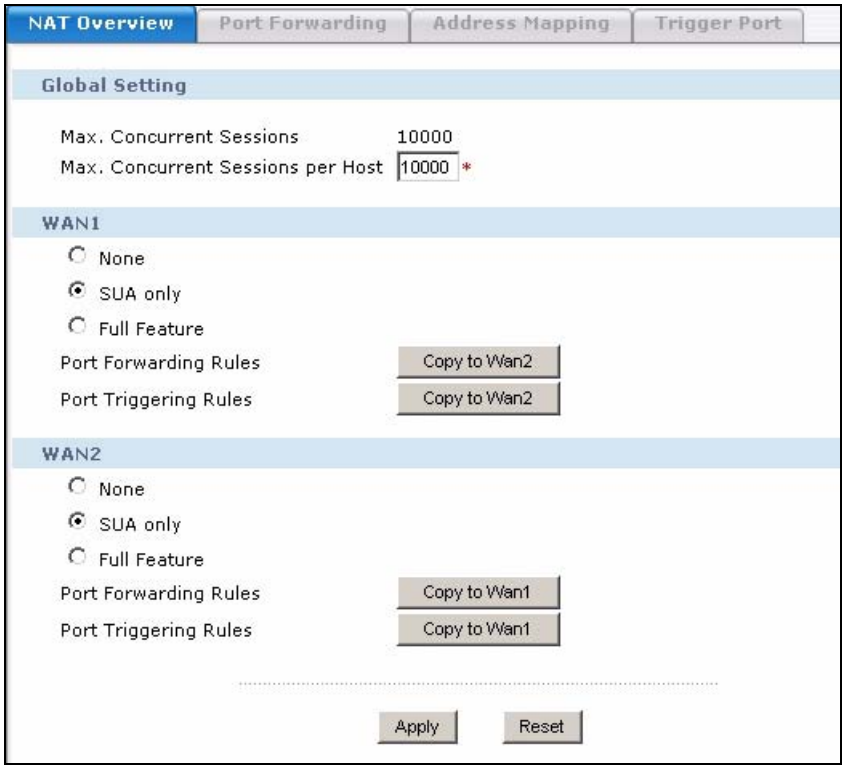
This section shows you how to configure the **NAT** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

## 7.1 NAT

Use this screen to specify what type of NAT the device should use and to configure any global NAT settings. To open this screen, click a device, click **Device**

**Operation** in the menu bar, and then click **Device Configuration** > **Advanced** > **NAT** > **NAT Overview** in the navigation panel.

**Figure 86** Device Operation > Device Configuration > Advanced > NAT > NAT Overview




The following table describes the fields in this screen.

**Table 79** Device Operation > Device Configuration > Advanced > NAT > NAT Overview

| LABEL | DESCRIPTION |
|---|---|
| Global Setting | |
| Max. Concurrent Sessions | This read-only field displays the highest number of NAT sessions that the device will permit at one time. |
| Max. Concurrent Sessions Per Host | Use this field to set the highest number of NAT sessions that the device will permit a host to have at one time. |
| WAN1/WAN2 | Use this section to select what kind of NAT the device should use for WAN1 and WAN2 ports. In some cases, the device might be able to use different kinds of NAT on different ports. |
| None | Select **None** to disable NAT on the device. |
| SUA Only | Select **SUA Only** to apply many-to-one mapping only (sufficient if the device has only one public IP address). |
| Full Feature | Select **Full Feature** to avail of multiple mapping types. |

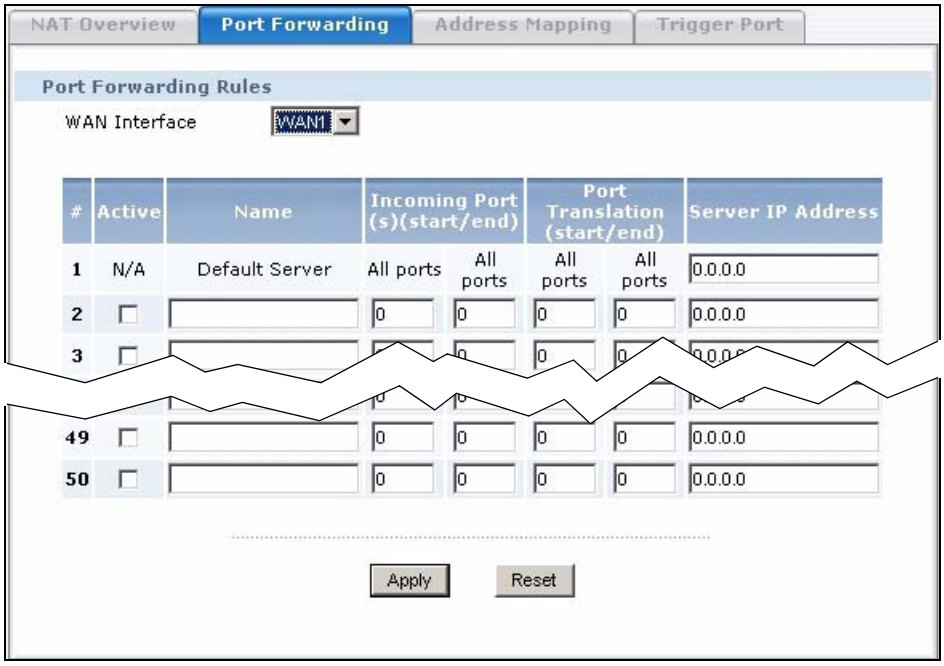
**Table 79** Device Operation > Device Configuration > Advanced > NAT > NAT Overview (continued)

| LABEL | DESCRIPTION |
|---|---|
| Port Forwarding Rules | Click **Copy to WAN 2** (or **Copy to WAN 1**) to duplicate this WAN port's NAT port forwarding rules on the other WAN port.<br><br>Note: Using the copy button overwrites the other WAN port's existing rules.<br><br>The copy button is best suited for initial NAT configuration where you have configured NAT port forwarding rules for one port and want to use similar rules for the other WAN port. You can use the other NAT screens to edit the NAT rules after you copy them from one WAN port to the other. |
| Port Triggering Rules | Click **Copy to WAN 2** (or **Copy to WAN 1**) to duplicate this WAN port's NAT trigger port rules on the other WAN port.<br><br>Note: Using the copy button overwrites the other WAN port's existing rules.<br><br>The copy button is best suited for initial NAT configuration where you have configured NAT trigger port rules for one port and want to use similar rules for the other WAN port. You can use the other NAT screens to edit the NAT rules after you copy them from one WAN port to the other. |
| Edit | Click this to advance to the selected feature. |
| Apply | Click this to begin configuring this screen afresh. |

# 7.2 Port Forwarding

Use this screen to configure port forwarding on the device. To open this screen, click a device, click **Device Operation** in the menu bar, and then click **Device Configuration > Advanced > NAT > Port Forwarding** in the navigation panel.

**Figure 87** Device Operation > Device Configuration > Advanced > NAT > Port Forwarding




The following table describes the labels in this screen.

**Table 80** Device Operation > Device Configuration > Advanced > NAT > Port Fowarding

| LABEL | DESCRIPTION |
|---|---|
| WAN Interface | Select the WAN port to use the port forwarding rules. |
| # | This is the number of an individual entry. |
| Active | Select this check box to enable the port forwarding entry. Clear this check box to disallow forwarding of these ports to an inside server without having to delete the entry. |
| Name | Type a name to identify this port-forwarding rule. To delete a port forwarding entry, erase the name, and click **Apply**. |
| Default Server<br><br>All Ports | In addition to the servers for specified services, NAT supports a default server. A default server receives packets from ports that are not specified in this screen. If you do not assign a default server IP address, then all packets received for ports not specified in this screen or remote management will be discarded. |
| Incoming Port(s) (start/ end) | Enter a port number here. To forward only one port, enter it again in the second field. To specify a range of ports, enter the last port to be forwarded in the second field. |

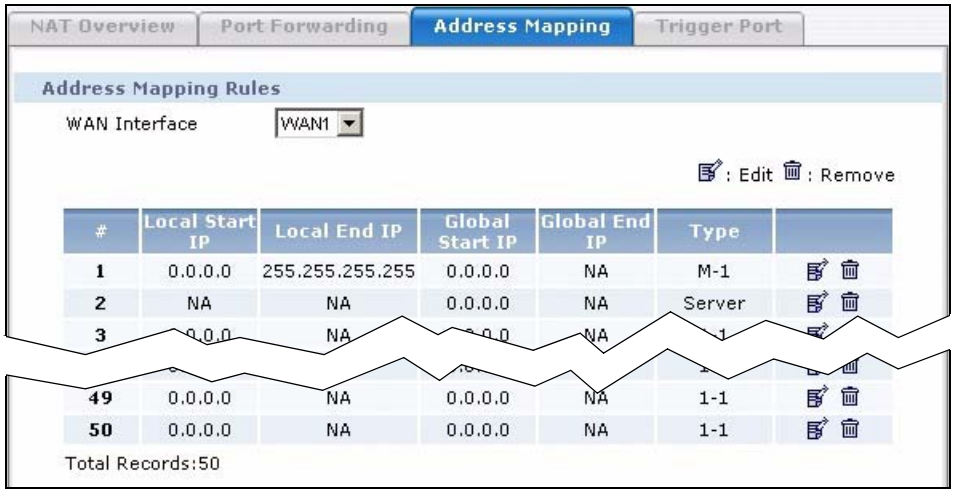
**Table 80** Device Operation > Device Configuration > Advanced > NAT > Port Fowarding (continued)

| LABEL | DESCRIPTION |
|---|---|
| Port Translation (start/end) | Enter the port number here to which you want the device to translate the incoming port. For a range of ports, you only need to enter the first number of the range to which you want the incoming ports translated, the device automatically calculates the last port of the translated port range. |
| Server IP Address | Type the IP address of the inside server. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

# 7.3 Address Mapping

Use this screen to configure various types of network address translation (NAT) on the device. To open this screen, click a device, click **Device Operation** in the menu bar, and then click **Device Configuration** > **Advanced** > **NAT** > **Address Mapping** in the navigation panel.

**Figure 88** Device Operation > Device Configuration > Advanced > NAT > Address Mapping




The following table describes the labels in this screen.

**Table 81** Device Operation > Device Configuration > Advanced > NAT > Address Mapping

| LABEL | DESCRIPTION |
|---|---|
| WAN Interface | Select the WAN port to use the address mapping rules. |
| # | This is the number of an individual entry. |

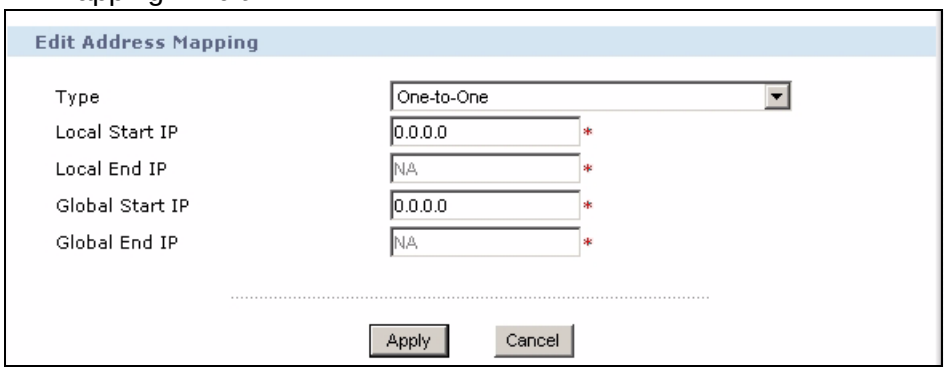
**Table 81** Device Operation > Device Configuration > Advanced > NAT > Address Mapping (continued)

| LABEL | DESCRIPTION |
|---|---|
| Local Start IP | This refers to the Inside Local Address (ILA), which is the starting local IP address. Local IP addresses are **N/A** for **Server** port mapping. |
| Local End IP | This is the end Inside Local Address (ILA). If the rule is for all local IP addresses, then this field displays 0.0.0.0 and 255.255.255.255 as the **Local End IP** address. This field is **N/A** for **One-to-One** and **Server** mapping types. |
| Global Start IP | This refers to the Inside Global IP Address (IGA). 0.0.0.0 is for a dynamic IP address from your ISP with **Many-to-One** and **Server** mapping types. |
| Global End IP | This is the ending Inside Global Address (IGA), which is the starting global IP address. This field is **N/A** for **One-to-One**, **Many-to-One** and **Server** mapping types. |
| Type | 1. **One-to-One** mode maps one local IP address to one global IP address. Note that port numbers do not change for the One-to-one NAT mapping type.<br>2. **Many-to-One** mode maps multiple local IP addresses to one global IP address. This is equivalent to SUA (in other words, PAT, or port address translation), ZyXEL's Single User Account feature that previous routers supported only.<br>3. **Many-to-Many Overload** mode maps multiple local IP addresses to shared global IP addresses.<br>4. **Many One-to-One** mode maps each local IP address to unique global IP addresses.<br>5. **Server** allows you to specify inside servers of different services behind the NAT to be accessible to the outside world. |
| Edit | Click this to add or modify an address-mapping rule. |
| Remove | Click this to delete the address-mapping rule. |
| Apply | Click this to save your changes back to the device. |
| Cancel | Click this to close this screen without applying any changes. |

## 7.3.1 Edit an Address Mapping Rule

Use this screen to edit an address mapping rule on the device. To open this screen, click **Edit** for a rule in the **Device Operation** > **Device Configuration** > **Advanced** > **NAT** > **Address Mapping** screen.

**Figure 89** Device Operation > Device Configuration > Advanced > NAT > Address Mapping > Edit




The following table describes the labels in this screen.

**Table 82** Device Operation > Device Configuration > Advanced > NAT > Address Mapping > Edit

| LABEL | DESCRIPTION |
|---|---|
| Type | When you select **Type** you can choose a server mapping set. Choose the port mapping type from one of the following.<br><br>1. **One-to-One**: One-to-one mode maps one local IP address to one global IP address. Note that port numbers do not change for One-to-one NAT mapping type.<br><br>2. **Many-to-One**: Many-to-One mode maps multiple local IP addresses to one global IP address. This is equivalent to SUA (in other words, PAT, or port address translation), ZyXEL's Single User Account feature.<br><br>3. **Many-to-Many Ov** (Overload): Many-to-Many Overload mode maps multiple local IP addresses to shared global IP addresses.<br><br>4. **Many One-to-One**: Many One-to-one mode maps each local IP address to unique global IP addresses.<br><br>5. **Server**: This type allows you to specify inside servers of different services behind the NAT to be accessible to the outside world. |
| Local Start IP | This is the starting Inside Local IP Address (ILA). Local IP addresses are **N/A** for **Server** port mapping. |
| Local End IP | This is the end Inside Local IP Address (ILA). If your rule is for all local IP addresses, then enter 0.0.0.0 as the **Local Start IP** address and 255.255.255.255 as the **Local End IP** address.<br><br>This field is **N/A** for **One-to-One** and **Server** mapping types. |
| Global Start IP | This is the starting Inside Global IP Address (IGA). Enter 0.0.0.0 here if you have a dynamic IP address from your ISP. |

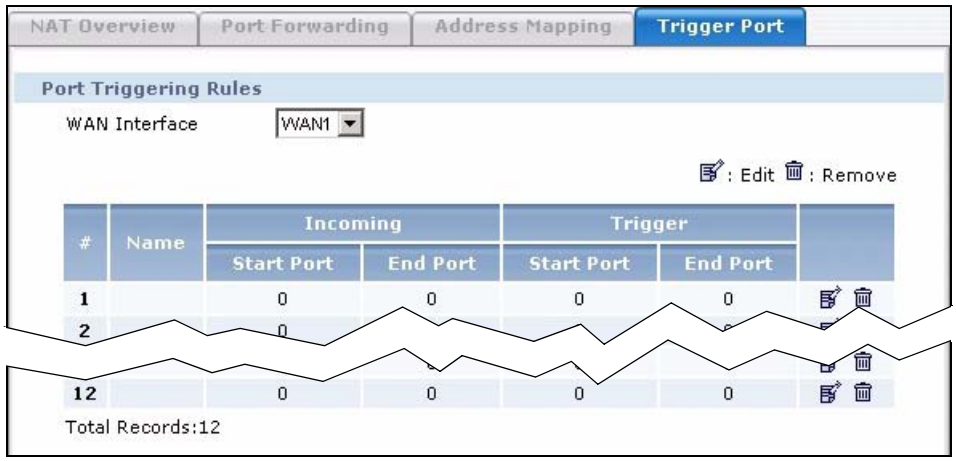
**Table 82** Device Operation > Device Configuration > Advanced > NAT > Address Mapping > Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Global End IP | This is the ending Inside Global IP Address (IGA). This field is **N/A** for **One-to-One**, **Many-to-One** and **Server** mapping types. |
| Apply | Click this to save your changes back to the device. |
| Cancel | Click this to return to the previous screen. |

# 7.4 Trigger Port

Use this screen to configure trigger port forwarding on the device. To open this screen, click a device, click **Device Operation** in the menu bar and then click **Device Configuration > Advanced > NAT** > **Trigger Port** in the navigation panel.

**Figure 90** Device Operation > Device Configuration > Advanced > NAT > Trigger Port




The following table describes the labels in this screen.

**Table 83** Device Operation > Device Configuration > Advanced > NAT > Trigger Port

| LABEL | DESCRIPTION |
|---|---|
| WAN Interface | Select a WAN port to use the port triggering rule. |
| # | This is the number of an individual entry. |
| Name | This field displays a unique name (up to 15 characters) for identification purposes. |
| Incoming | Incoming is a port (or a range of ports) that a server on the WAN uses when it sends out a particular service. The device forwards the traffic with this port (or range of ports) to the client computer on the LAN that requested the service. |

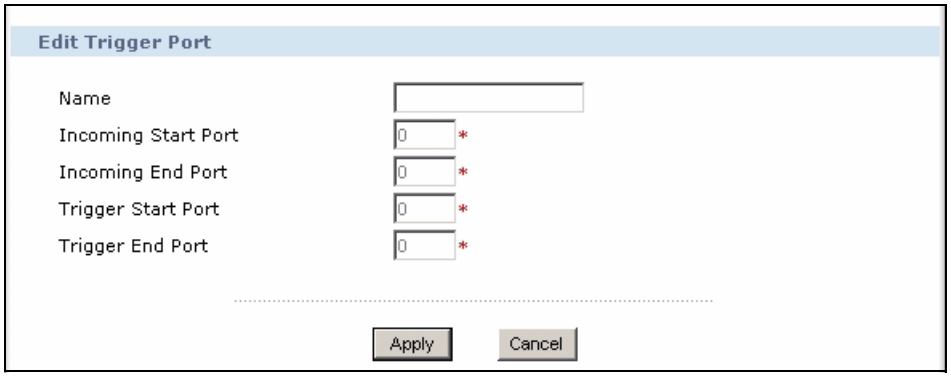
**Table 83** Device Operation > Device Configuration > Advanced > NAT > Trigger Port (continued)

| LABEL | DESCRIPTION |
|---|---|
| Start Port | This field displays a port number or the starting port number in a range of port numbers. |
| End Port | This field displays a port number or the ending port number in a range of port numbers. |
| Trigger | The trigger port is a port (or a range of ports) that causes (or triggers) the device to record the IP address of the LAN computer that sent the traffic to a server on the WAN. |
| Start Port | This field displays a port number or the starting port number in a range of port numbers. |
| End Port | This field displays a port number or the ending port number in a range of port numbers. |
| Edit | Click this to add or modify a trigger port rule. |
| Remove | Click this to delete a trigger port rule. |
| Apply | Click this to save your changes back to the device. |
| Cancel | This field displays a port number or the ending port number in a range of port numbers. |

## 7.4.1 Edit a Trigger Port Rule

Use this screen to edit a trigger port forwarding rule on the device. To open this screen, click **Configuration > NAT**, select **SUA Only** or **Full Feature**, click **Edit**, select **Trigger Port**, and click the **Index** field for the rule.

**Figure 91** Device Operation > Device Configuration > Advanced > NAT > Trigger Port > Edit



The following table describes the labels in this screen.

**Table 84** Device Operation > Device Configuration > Advanced > NAT > Trigger Port > Edit

| LABEL | DESCRIPTION |
|---|---|
| Name | Type a unique name (up to 15 characters) for identification purposes. All characters are permitted - including spaces. |
| Incoming Start Port | Incoming is a port (or a range of ports) that a server on the WAN uses when it sends out a particular service. The device forwards the traffic with this port (or range of ports) to the client computer on the LAN that requested the service.<br>Type a port number or the starting port number in a range of port numbers. |
| Incoming End Port | Type a port number or the ending port number in a range of port numbers. |
| Trigger Start Port | The trigger port is a port (or a range of ports) that causes (or triggers) the device to record the IP address of the LAN computer that sent the traffic to a server on the WAN.<br>Type a port number or the starting port number in a range of port numbers. |
| Trigger End Port | Type a port number or the ending port number in a range of port numbers. |
| Apply | Click this to save your changes back to the device. |
| Cancel | Click this to return to the previous screen. |

# 7.5 Static Route

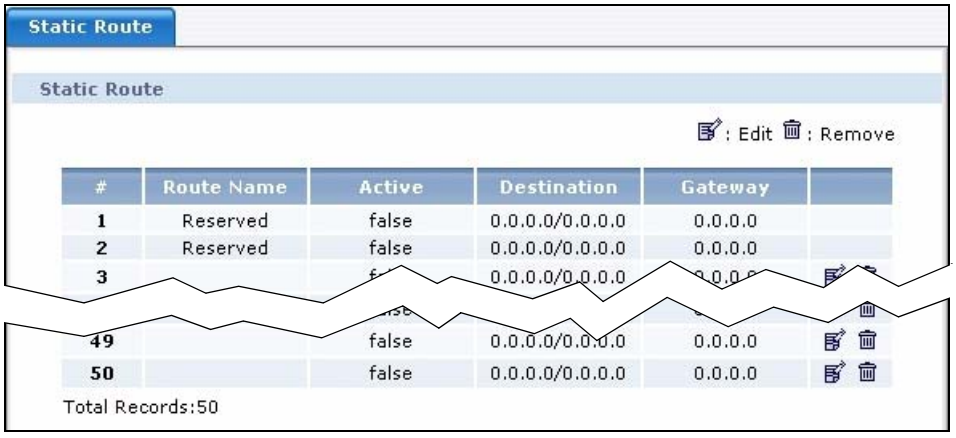
This section shows you how to configure the **Static Route** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

# 7.6 Static Route

Use this screen to tell the device about networks that are not directly connected to the device. To open this screen, click a device, click **Device Operation** in the

menu bar and then click **Device Configuration > Advanced > Static Route** in the navigation panel.

**Figure 92** Device Operation > Device Configuration > Advanced > Static Route




The following table describes the labels in this screen.

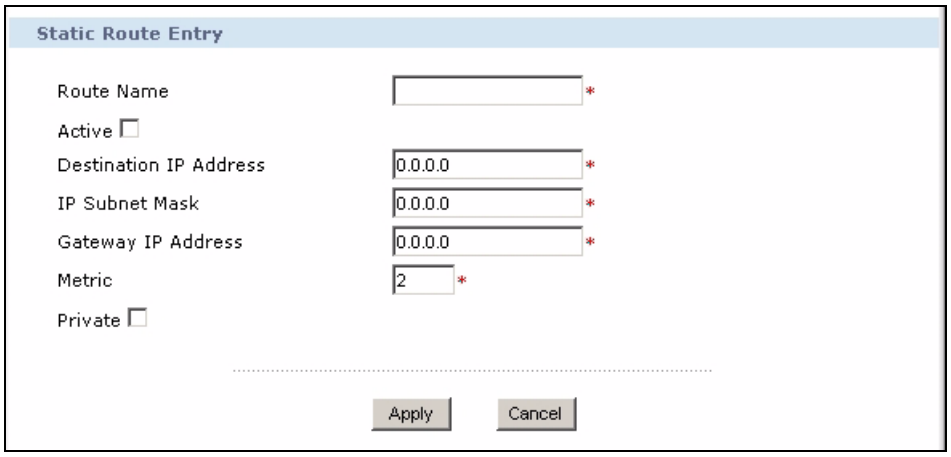
**Table 85** Device Operation > Device Configuration > Advanced > Static Route

| LABEL | DESCRIPTION |
|---|---|
| # | This is the number of an individual entry. |
| Route Name | This is the name that describes or identifies this route. To delete a static route, erase the name and then click **Apply**. |
| Active | This field shows whether this static route is active or not. |
| Destination | This parameter specifies the IP network address of the final destination. Routing is always based on network number. |
| Gateway | This is the IP address of the gateway. The gateway is an immediate neighbor of the device that will forward the packet to the destination. On the LAN, the gateway must be a router on the same segment as the device; over the WAN, the gateway must be the IP address of one of the remote nodes. |
| Edit | Click this to set up a static route on the device. |
| Remove | Click this to delete a static route. |

## 7.6.1 Edit a Static Route

Use this screen to edit a static route in the device. To open this screen, select a static route, and click **Edit** in the **Device Operation** > **Device Configuration > Advanced > Static Route** screen.

**Figure 93** Device Operation > Device Configuration > Advanced > Static Route > Edit




The following table describes the labels in this screen.

**Table 86** Device Operation > Device Configuration > Advanced > Static Route > Edit

| LABEL | DESCRIPTION |
|---|---|
| Route Name | Enter the name of the IP static route. Leave this field blank to delete this static route. |
| Active | This check box allows you to activate/deactivate this static route. |
| Destination IP Address | This parameter specifies the IP network address of the final destination. Routing is always based on network number. If you need to specify a route to a single host, use a subnet mask of 255.255.255.255 in the subnet mask field to force the network number to be identical to the host ID. |
| IP Subnet Mask | Enter the IP subnet mask here. |
| Gateway IP Address | Enter the IP address of the gateway. The gateway is an immediate neighbor of the device that will forward the packet to the destination. On the LAN, the gateway must be a router on the same segment as the device; over the WAN, the gateway must be the IP address of one of the Remote Nodes. |
| Metric | Metric represents the cost of transmission for routing purposes. IP routing uses hop count as the measurement of cost, with a minimum of 1 for directly connected networks. Enter a number that approximates the cost for this link. The number need not be precise, but it must be between 1 and 15. In practice, 2 or 3 is usually a good number. |

**Table 86** Device Operation > Device Configuration > Advanced > Static Route > Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Private | This parameter determines if the device will include this route to a remote node in its RIP broadcasts.<br><br>Select this check box to keep this route private and not included in RIP broadcasts. Clear this check box to propagate this route to other hosts through RIP broadcasts. |
| Apply | Click this to save your changes back to the device. |
| Cancel | Click this to return to the previous screen. |

# 7.7 DNS

This section shows you how to configure the **DNS** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

# 7.8 Address Record

Use this screen to map a fully-qualified domain name (FQDN) to an IP address. To open this screen, click a device, click **Device Operation** in the menu bar and then click **Device Configuration > Advanced > DNS > Address Record** in the navigation panel.

**Figure 94** Device Operation > Device Configuration > Advanced > DNS > Address Record

The following table describes the labels in this screen.

**Table 87** Device Operation > Device Configuration > Advanced > DNS > Address Record

| LABEL | DESCRIPTION |
|---|---|
| # | This is the number of an individual entry. |
| FQDN | This is a host's fully qualified domain name. |

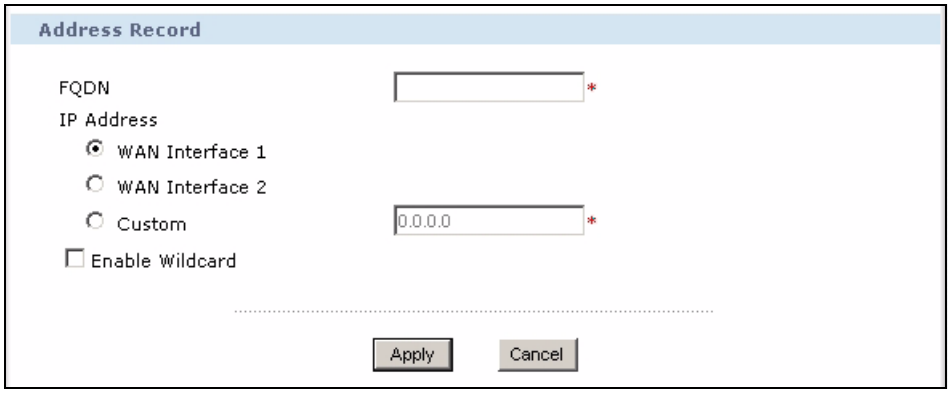
**Table 87** Device Operation > Device Configuration > Advanced > DNS > Address Record (continued)

| LABEL | DESCRIPTION |
|---|---|
| Wildcard | This column displays whether or not the DNS wildcard feature is enabled for this domain name. |
| IP Address | This is the IP address of a host. |
| Add | Click the **Add** button to open a screen where you can add a new address record. |
| Edit | Click this to modify an address record for the device. |
| Remove | Click this to delete an existing record. A window display asking you to confirm that you want to delete the record. Note that subsequent records move up by one when you take this action. |

## 7.8.1 Add/Edit an Address Record

Use this screen to create or edit an address record.

**Figure 95** Device Operation > Device Configuration > Advanced > DNS > Address Record > Add/Edit




The following table describes the labels in this screen.

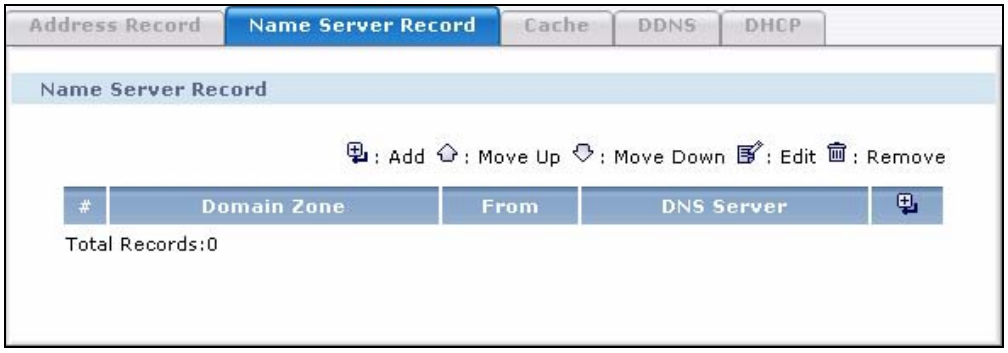
**Table 88** Device Operation > Device Configuration > Advanced > DNS > Address Record > Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| FQDN | Type a fully qualified domain name (FQDN) of a server. An FQDN starts with a host name and continues all the way up to the top-level domain name. For example, www.zyxel.com.tw is a fully qualified domain name, where “www” is the host, “zyxel” is the second-level domain, and “com.tw” is the top level domain. |
| IP Address | If this entry is for one of the WAN ports, select the WAN port.<br>For entries that are not for one of the WAN ports, select **Custom** and enter the IP address of the host in dotted decimal notation. |
| Enable Wildcard | Select the check box to enable DNS wildcard. |
| Apply | Click this to save your changes back to the device. |
| Cancel | Click this to exit this screen without saving. |

# 7.9 Name Server Record

Use this screen to specify the IP address of a DNS server that the device can query to resolve domain names for features like VPN, DDNS, and the time server. To open this screen, click a device, click **Device Operation** in the menu bar and then click **Device Configuration > Advanced > DNS > Name Server Record** in the navigation panel.

**Figure 96** Device Operation > Device Configuration > Advanced > DNS > Name Server Record




The following table describes the labels in this screen.

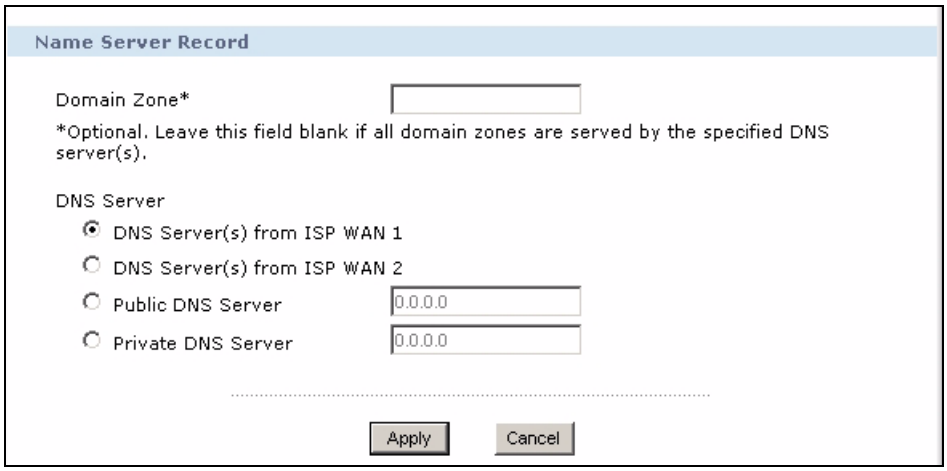
**Table 89** Device Operation > Device Configuration > Advanced > DNS > Name Server Record

| LABEL | DESCRIPTION |
|---|---|
| # | This is the number of an individual entry. |
| Domain Zone | A domain zone is a fully qualified domain name without the host. For example, zyxel.com.tw is the domain zone for the www.zyxel.com.tw fully qualified domain name. |
| From | This field displays whether the IP address of a DNS server is from a WAN interface (and which it is) or specified by the user. |
| DNS Server | This is the IP address of a DNS server. |
| Add | Click **Add** to display a screen where you can create a name server record. |
| Move Up | Click the icon to move the record up in the list. |
| Move Down | Click the icon to move the record down in the list. |
| Add Before Record No. | Enter the index number of the entry before which you want to insert a new entry. Click **Add** to create the entry. |
| Remove | Click this to delete an existing record. A window display asking you to confirm that you want to delete the record. Note that subsequent records move up by one when you take this action. |

## 7.9.1 Add/Edit a Name Server Record

Use this screen to create or edit a name server record.

**Figure 97** Device Operation > Device Configuration > Advanced > DNS > Name Server Record > Add/Edit



The following table describes the labels in this screen.

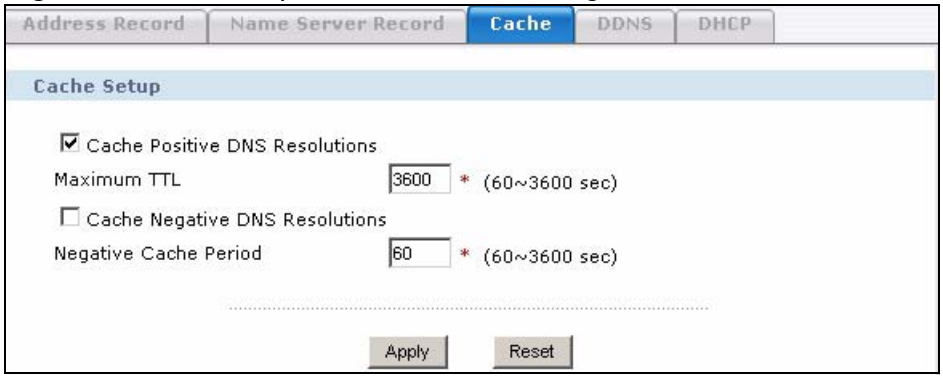
**Table 90** Device Operation > Device Configuration > Advanced > DNS > Name Server Record > Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| Domain Zone | This field is optional.<br><br>A domain zone is a fully qualified domain name without the host. For example, zyxel.com.tw is the domain zone for the www.zyxel.com.tw fully qualified domain name. For example, whenever the device receives needs to resolve a zyxel.com.tw domain name, it can send a query to the recorded name server IP address.<br><br>Leave this field blank if all domain zones are served by the specified DNS server(s). |
| DNS Server | Select the **DNS Server(s) from ISP WAN 1** or **DNS Server(s) from ISP WAN 2** radio button if your ISP dynamically assigns DNS server information. The fields below display the (read-only) DNS server IP address(es) that the ISP assigns. **N/A** displays for any DNS server IP address fields for which the ISP does not assign an IP address. **N/A** displays for all of the DNS server IP address fields if the device has a fixed WAN IP address.<br><br>Select **Public DNS Server** if you have the IP address of a DNS server. The IP address must be public or a private address on your local LAN. Enter the DNS server's IP address in the field to the right.<br><br>**Public DNS Server** entries with the IP address set to 0.0.0.0 are not allowed.<br><br>Select **Private DNS Server** if the DNS server has a private IP address and is located behind a VPN peer. Enter the DNS server's IP address in the field to the right.<br><br>With a private DNS server, you must also configure the first DNS server entry in the **DNS LAN** screen to use **DNS Relay**.<br><br>You must also configure a VPN rule since the device uses a VPN tunnel when it relays DNS queries to the private DNS server. The rule must include the LAN IP address of the device as a local IP address and the IP address of the DNS server as a remote IP address.<br><br>**Private DNS Server** entries with the IP address set to 0.0.0.0 are not allowed. |
| Apply | Click this to save your changes back to the device. |
| Cancel | Click this to exit this screen without saving. |

# 7.10 Cache

Use this screen to configure a device's DNS caching. To open this screen, click a device, click **Device Operation** and then click **Device Configuration > Advanced > DNS** > **Cache** in the navigation panel.

**Figure 98** Device Operation > Device Configuration > Advanced > DNS > Cache




The following table describes the labels in this screen.

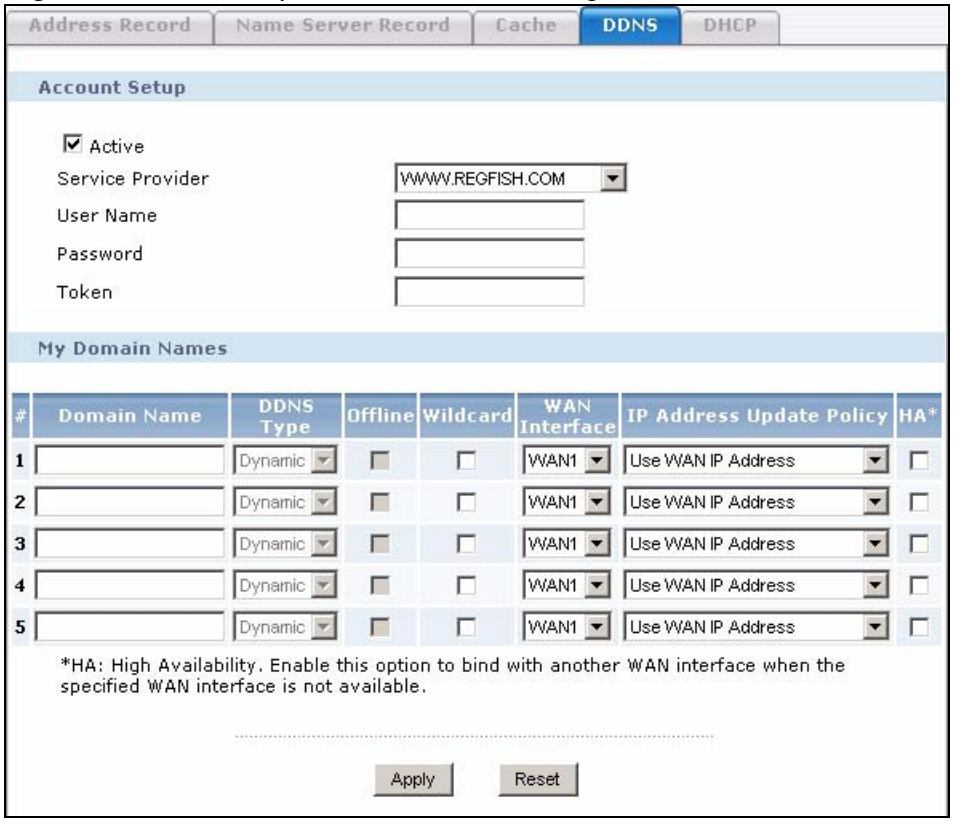
**Table 91** Device Operation > Device Configuration > Advanced > DNS > Cache

| LABEL | DESCRIPTION |
|---|---|
| Cache Setup | |
| Cache Positive DNS Resolutions | Select the check box to record the positive DNS resolutions in the cache. Caching positive DNS resolutions helps speed up the device's processing of commonly queried domain names and reduces the amount of traffic that the device sends out to the WAN. |
| Maximum TTL | Type the maximum time to live (TTL) (60 to 3600 seconds). This sets how long the device is to allow a positive resolution entry to remain in the DNS cache before discarding it. |
| Cache Negative DNS Resolutions | Caching negative DNS resolutions helps speed up the device's processing of commonly queried domain names (for which DNS resolution has failed) and reduces the amount of traffic that the device sends out to the WAN. |
| Negative Cache Period | Type the time (60 to 3600 seconds) that the device is to allow a negative resolution entry to remain in the DNS cache before discarding it. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

# 7.11 DDNS

Use this screen to configure your Dynamic DNS (DDNS) on the device. To open this screen, click a device, click **Device Operation** in the menu bar and then click **Device Configuration > Advanced > DNS > DDNS**.

**Figure 99** Device Operation > Device Configuration > Advanced > DNS > DDNS




The following table describes the labels in this screen.

**Table 92** Device Operation > Device Configuration > Advanced > DNS > DDNS

| LABEL | DESCRIPTION |
|---|---|
| Account Setup | |
| Active | Select this check box to use dynamic DNS. |
| User Name | Enter your user name. You can use up to 31 alphanumeric characters (and the underscore). Spaces are not allowed. |
| Password | Enter the password associated with the user name above. You can use up to 31 alphanumeric characters (and the underscore). Spaces are not allowed. |
| Token | If you have selected **WWW.REGFISH.COM** as your DNS service provider, you can use a token instead of a user name and password. This token is provided automatically for a domain when activating DynDNS with RegFish. |
| My Domain Names | |

**Table 92** Device Operation > Device Configuration > Advanced > DNS > DDNS

| LABEL | DESCRIPTION |
|---|---|
| # | This is the number of an individual entry. |
| Domain Name | Enter the host names in these fields. |
| DDNS Type | Select the type of service that you are registered for from your Dynamic DNS service provider.<br><br>Select **Dynamic** if you have the Dynamic DNS service.<br><br>Select **Static** if you have the Static DNS service.<br><br>Select **Custom** if you have the Custom DNS service. |
| Offline | This option is available when **Custom** is selected in the **DDNS Type** field. Check with your Dynamic DNS service provider to have traffic redirected to a URL (that you can specify) while you are off line. |
| Wildcard | Select the check box to enable DYNDNS Wildcard. |
| WAN Interface | Select the WAN port to use for updating the IP address of the domain name. |
| IP Address Update Policy | Select **Use WAN IP Address** to have the device update the domain name with the WAN port's IP address.<br><br>Select **Use User-Defined** and enter the IP address if you have a static IP address.<br><br>Select **Let DDNS Server Auto Detect** only when there are one or more NAT routers between the device and the DDNS server. This feature has the DDNS server automatically detect and use the IP address of the NAT router that has a public IP address.<br><br>Note: The DDNS server may not be able to detect the proper IP address if there is an HTTP proxy server between the device and the DDNS server. |
| HA | Select this check box to enable the high availability (HA) feature. High availability has the device update a domain name with another port's IP address when the normal WAN port does not have a connection.<br><br>If the WAN port specified in the **WAN Interface** field does not have a connection, the device will attempt to use the IP address of another WAN port to update the domain name.<br><br>When the WAN ports are in the active/passive operating mode, the device will update the domain name with the IP address of whichever WAN port has a connection, regardless of the setting in the **WAN Interface** field.<br><br>Disable this feature and the device will only update the domain name with an IP address of the WAN port specified in the **WAN Interface** field. If that WAN port does not have a connection, the device will not update the domain name with another port's IP address.<br><br>Note: If you enable high availability, DDNS can also function when the device uses the dial backup port. DDNS does not function when the device uses traffic redirect. |

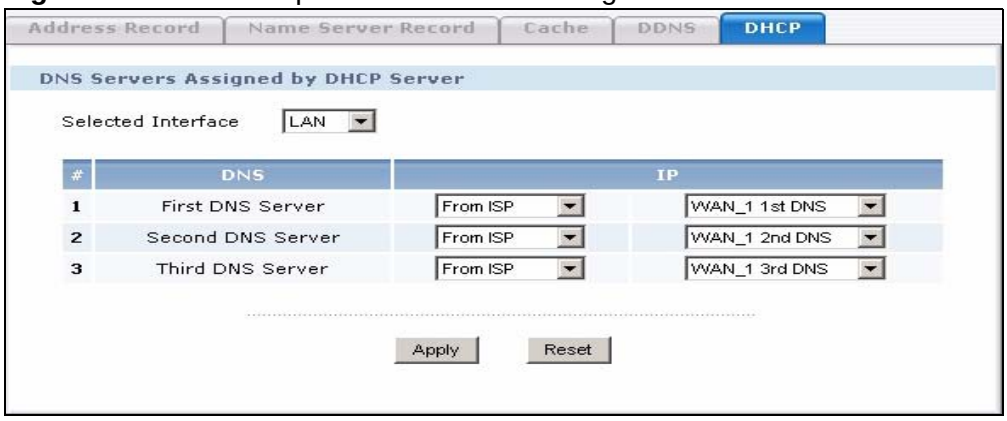
**Table 92** Device Operation > Device Configuration > Advanced > DNS > DDNS

| LABEL | DESCRIPTION |
|---|---|
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

# 7.12 DHCP

Use this screen to configure the DNS server information that the device sends to DHCP clients on the LAN, DMZ or WLAN. To open this screen, click a device, click **Device Operation** in the menu bar and then click **Device Configuration > Advanced > DNS > DHCP** in the navigation panel.

**Figure 100** Device Operation > Device Configuration > Advanced > DNS > DHCP




The following table describes the labels in this screen.

**Table 93** Device Operation > Device Configuration > Advanced > DNS > DHCP

| LABEL | DESCRIPTION |
|---|---|
| DNS Servers Assigned by DHCP Server | The device passes a DNS (Domain Name System) server IP address to the DHCP clients. |
| Selected Interface | Select an interface from the drop-down list box to configure the DNS servers for the specified interface. |
| # | This is the number of an individual entry. |
| DNS | These read-only labels represent the DNS servers. |

**Table 93** Device Operation > Device Configuration > Advanced > DNS > DHCP

| LABEL | DESCRIPTION |
|---|---|
| IP | Select **From ISP** if your ISP dynamically assigns DNS server information (and the device's WAN IP address). Use the drop-down list box to select a DNS server IP address that the ISP assigns in the field to the right.<br><br>Select **User-Defined** if you have the IP address of a DNS server. Enter the DNS server's IP address in the field to the right. If you chose **User-Defined**, but leave the IP address set to 0.0.0.0, **User-Defined** changes to **None** after you click **Apply**. If you set a second choice to **User-Defined**, and enter the same IP address, the second **User-Defined** changes to **None** after you click **Apply**.<br><br>Select **DNS Relay** to have the device act as a DNS proxy. The device's LAN, DMZ or WLAN IP address displays in the field to the right (read-only). The device tells the DHCP clients on the LAN, DMZ or WLAN that the device itself is the DNS server. When a computer on the LAN, DMZ or WLAN sends a DNS query to the device, the device forwards the query to the device's system DNS server (configured in the **DNS System** screen) and relays the response back to the computer. You can only select **DNS Relay** for one of the three servers; if you select DNS Relay for a second or third DNS server, that choice changes to **None** after you click **Apply**.<br><br>Select **None** if you do not want to configure DNS servers. You must have another DHCP sever on your LAN, or else the computers must have their DNS server addresses manually configured. If you do not configure a DNS server, you must know the IP address of a computer in order to access it. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

# 7.13 Remote MGMT

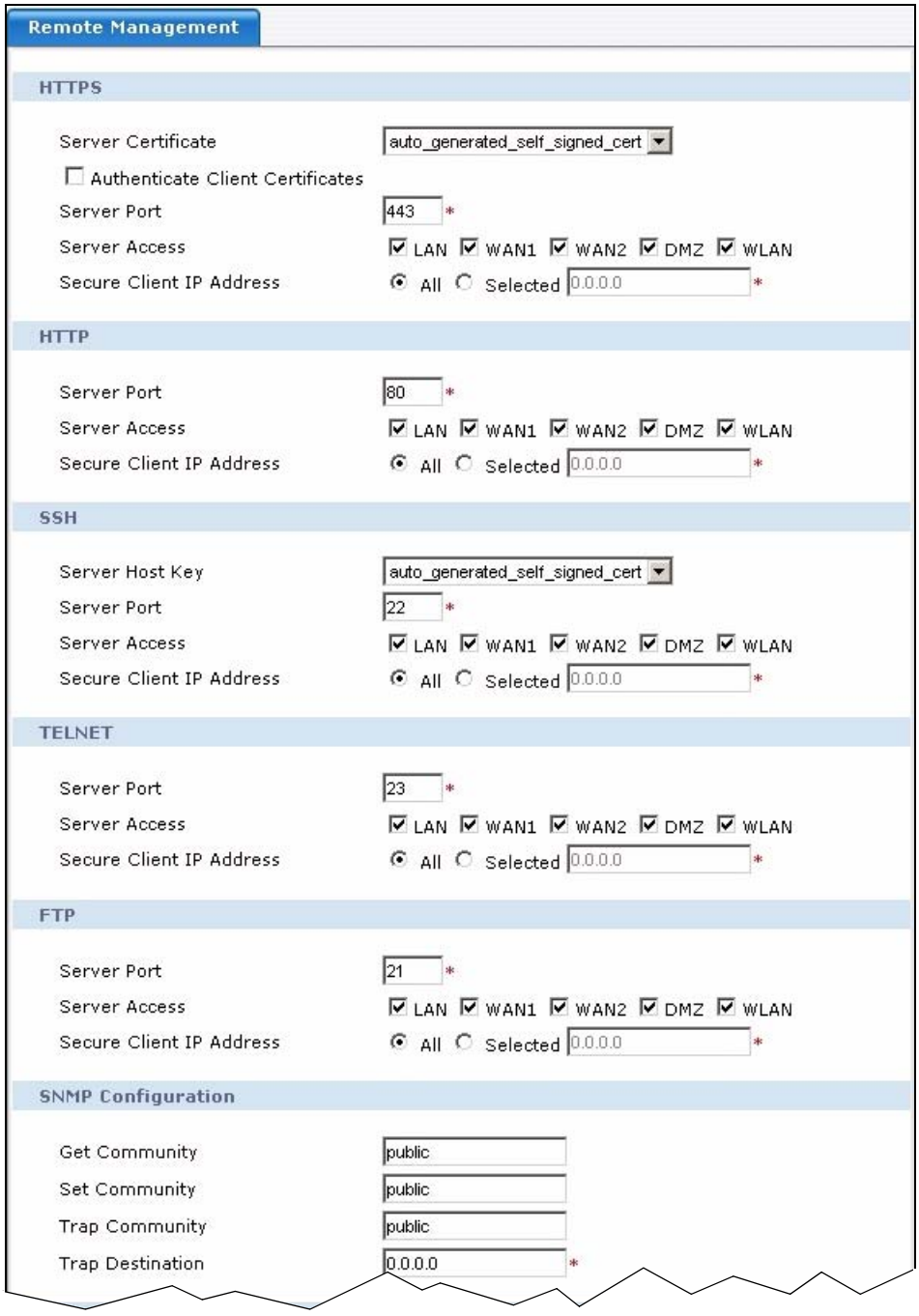
This section shows you how to configure the **Remote MGMT** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

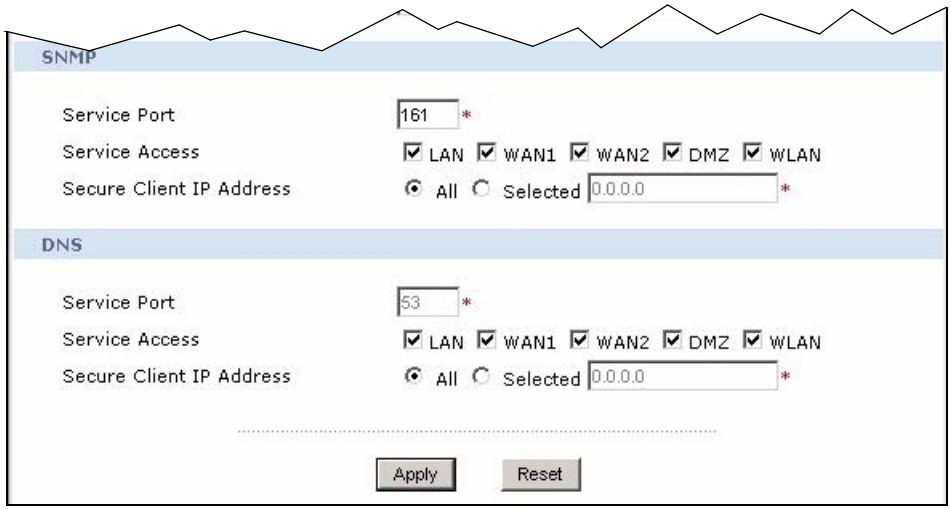
# 7.14 Remote MGMT

Use this screen to configure the device's remote management settings. To open this screen, click a device, click **Device Operation** and then click **Device Configuration > Advanced > Remote Management** in the navigation panel.

Note: It is recommended that you disable Telnet and FTP when you configure SSH for secure connections.

**Figure 101** Device Operation > Device Configuration > Advanced > Remote Management






The following table describes the labels in this screen.

**Table 94** Device Operation > Device Configuration > Advanced > Remote Management

| LABEL | DESCRIPTION |
|---|---|
| HTTPS | |
| Server Certificate | Select the **Server Certificate** that the device will use to identify itself. The device is the SSL server and must always authenticate itself to the SSL client (the computer which requests the HTTPS connection with the device). |
| Authenticate Client Certificates | Select **Authenticate Client Certificates** (optional) to require the SSL client to authenticate itself to the device by sending the device a certificate. To do that the SSL client must have a CA-signed certificate from a CA that has been imported as a trusted CA on the device. |
| Server Port | The HTTPS proxy server listens on port 443 by default. If you change the HTTPS proxy server port to a different number on the device, for example 8443, then you must notify people who need to access the device web configurator to use “https://device IP Address:**8443**” as the URL. |
| Server Access | Select the interface(s) through which a computer may access the device using this service.<br><br>You can allow only secure web configurator access by setting the **HTTP Server Access** field to **Disable** and setting the **HTTPS Server Access** field to an interface(s). |
| Secure Client IP Address | A secure client is a “trusted” computer that is allowed to communicate with the device using this service.<br><br>Select **All** to allow any computer to access the device using this service.<br><br>Choose **Selected** to just allow the computer with the IP address that you specify to access the device using this service. |
| HTTP | |

**Table 94** Device Operation > Device Configuration > Advanced > Remote Management (continued)

| LABEL | DESCRIPTION |
|---|---|
| Server Port | You may change the server port number for a service if needed, however you must use the same port number in order to use that service for remote management. |
| Server Access | Select the interface(s) through which a computer may access the device using this service. |
| Secure Client IP Address | A secure client is a “trusted” computer that is allowed to communicate with the device using this service.<br>Select **All** to allow any computer to access the device using this service.<br>Choose **Selected** to just allow the computer with the IP address that you specify to access the device using this service. |
| SSH | |
| Server Host Key | Select the certificate whose corresponding private key is to be used to identify the device for SSH connections. You must have certificates already configured in the **My Certificates** screen. |
| Server Port | You may change the server port number for a service if needed, however you must use the same port number in order to use that service for remote management. |
| Server Access | Select the interface(s) through which a computer may access the device using this service. |
| Secure Client IP Address | A secure client is a “trusted” computer that is allowed to communicate with the device using this service.<br>Select **All** to allow any computer to access the device using this service.<br>Choose **Selected** to just allow the computer with the IP address that you specify to access the device using this service. |
| TELNET | |
| Server Port | You may change the server port number for a service if needed, however you must use the same port number in order to use that service for remote management. |
| Server Access | Select the interface(s) through which a computer may access the device using this service. |
| Secure Client IP Address | A secure client is a “trusted” computer that is allowed to communicate with the device using this service.<br>Select **All** to allow any computer to access the device using this service.<br>Choose **Selected** to just allow the computer with the IP address that you specify to access the device using this service. |
| FTP | |
| Server Port | You may change the server port number for a service if needed, however you must use the same port number in order to use that service for remote management. |
| Server Access | Select the interface(s) through which a computer may access the device using this service. |

**Table 94** Device Operation > Device Configuration > Advanced > Remote Management (continued)

| LABEL | DESCRIPTION |
|---|---|
| Secure Client IP Address | A secure client is a “trusted” computer that is allowed to communicate with the device using this service.<br>Select **All** to allow any computer to access the device using this service.<br>Choose **Selected** to just allow the computer with the IP address that you specify to access the device using this service. |
| SNMP Configuration | |
| Get Community | Enter the **Get Community**, which is the password for the incoming Get and GetNext requests from the management station. The default is public and allows all requests. |
| Set Community | Enter the **Set community**, which is the password for incoming Set requests from the management station. The default is public and allows all requests. |
| Trap Community | Type the trap community, which is the password sent with each trap to the SNMP manager. The default is public and allows all requests. |
| Trap Destination | Type the IP address of the station to send your SNMP traps to. |
| SNMP | |
| Service Port | You may change the server port number for a service if needed, however you must use the same port number in order to use that service for remote management. |
| Service Access | Select the interface(s) through which a computer may access the device using this service. |
| Secure Client IP Address | A secure client is a “trusted” computer that is allowed to communicate with the device using this service.<br>Select **All** to allow any computer to access the device using this service.<br>Choose **Selected** to just allow the computer with the IP address that you specify to access the device using this service. |
| DNS | |
| Server Port | The DNS service port number is 53 and cannot be changed here. |
| Service Access | Select the interface(s) through which a computer may send DNS queries to the device. |
| Secure Client IP Address | A secure client is a “trusted” computer that is allowed to send DNS queries to the device.<br>Select **All** to allow any computer to send DNS queries to the device.<br>Choose **Selected** to just allow the computer with the IP address that you specify to send DNS queries to the device. |
| Apply | Click this to save your customized settings and exit this screen. |
| Reset | Click this to begin configuring this screen afresh. |

# 8

# Device Log

This section shows you how to configure the **Device Log** screen. This screen may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

## 8.1 Device Log

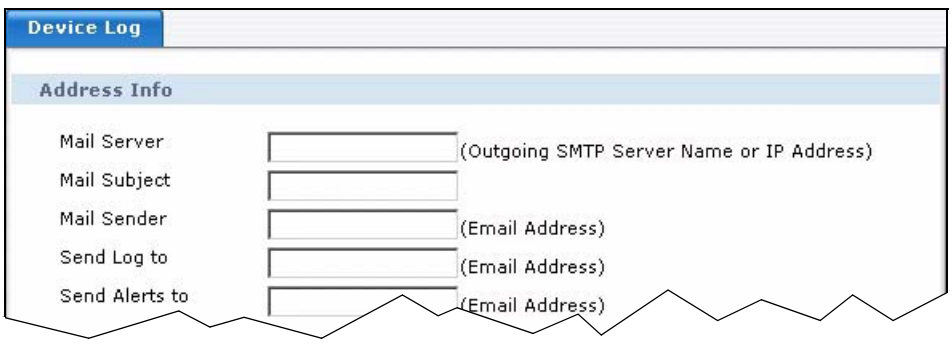
Use the **Logging Options** screen to configure to where the device is to send logs; the schedule for when the device is to send the logs and which logs and/or immediate alerts the device is to send.

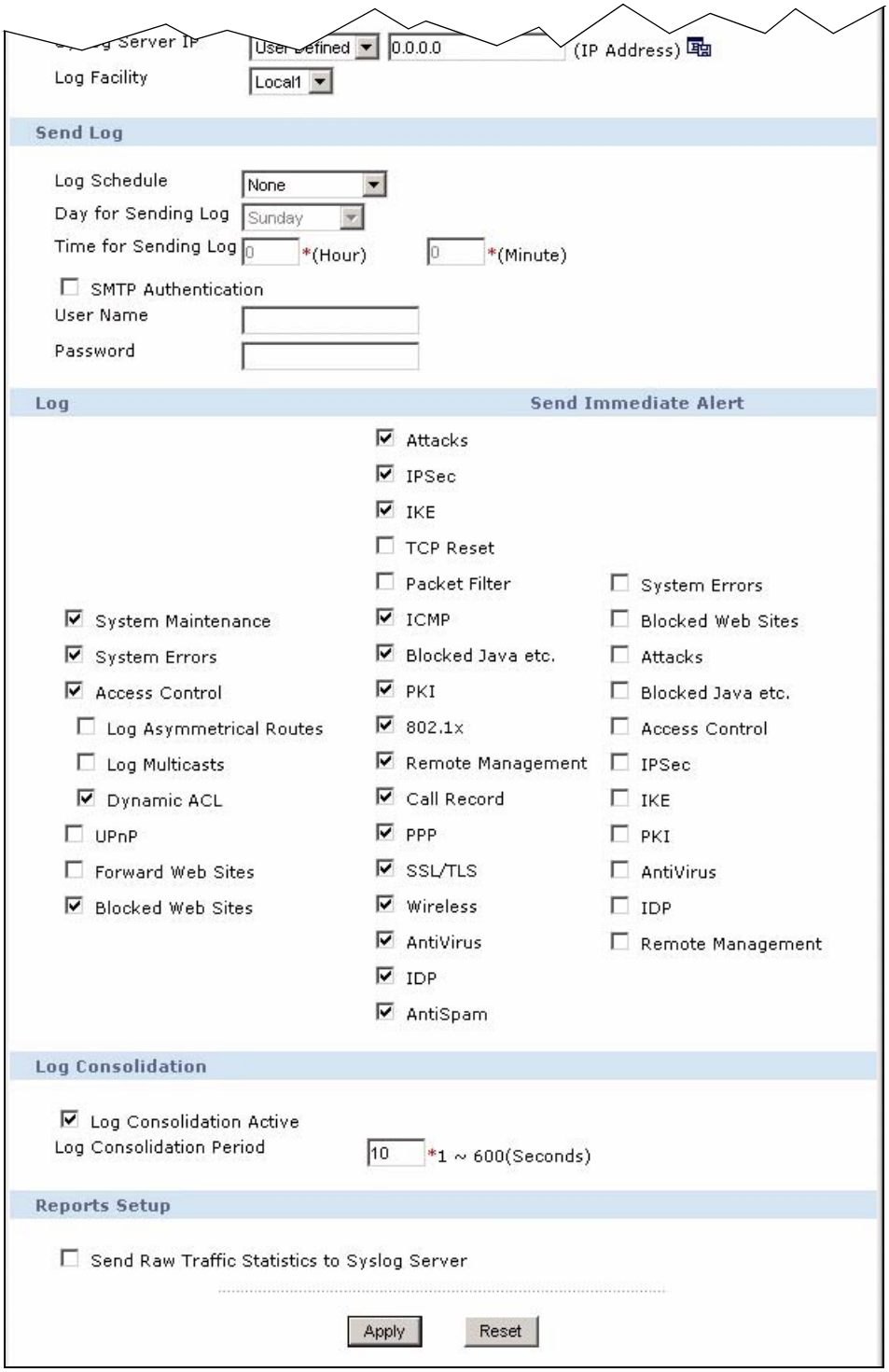
An alert is a type of log that warrants more serious attention. They include system errors, attacks (access control) and attempted access to blocked web sites or web sites with restricted web features such as cookies, active X and so on. Some categories such as **System Errors** consist of both logs and alerts. You may differentiate them by their color in the **Device** screen. Alerts display in red and logs display in black.

Alerts are e-mailed as soon as they happen. Logs may be e-mailed as soon as the log is full (see Log Schedule). Selecting many alert and/or log categories (especially Access Control) may result in many e-mails being sent.

To change a device's log settings, select a device, click **Device Operation** in the menu bar and then click **Device Configuration > Device Log** in the navigation panel. The screen appears as shown next.

**Figure 102** Device Operation > Device Configuration > Device Log




Server IP
User Defined
0.0.0.0
(IP Address)
Log Facility
Local1
Send Log
Log Schedule
None
Day for Sending Log
Sunday
Time for Sending Log
0
*(Hour)
0
*(Minute)
SMTP Authentication
User Name
Password
Log
Send Immediate Alert
System Maintenance
System Errors
Access Control
Log Asymmetrical Routes
Log Multicasts
Dynamic ACL
UPnP
Forward Web Sites
Blocked Web Sites
Attacks
IPSec
IKE
TCP Reset
Packet Filter
ICMP
Blocked Java etc.
PKI
802.1x
Remote Management
Call Record
PPP
SSL/TLS
Wireless
AntiVirus
IDP
AntiSpam
System Errors
Blocked Web Sites
Attacks
Blocked Java etc.
Access Control
IPSec
IKE
PKI
AntiVirus
IDP
Remote Management
Log Consolidation
Log Consolidation Active
Log Consolidation Period
10
*1 ~ 600(Seconds)
Reports Setup
Send Raw Traffic Statistics to Syslog Server
Apply
Reset

The following table describes the labels in this screen.

**Table 95** Device Operation > Device Configuration > Device Log

| LABEL | DESCRIPTION |
|---|---|
| Address Info | |
| Mail Server | Enter the server name or the IP address of the mail server for the e-mail addresses specified below. If this field is left blank, logs and alert messages will not be sent via e-mail. |
| Mail Subject | Type a title that you want to be in the subject line of the log e-mail message that the device sends. |
| Mail Sender | Enter the e-mail address that you want to be in the from/sender line of the log e-mail message that the device sends. If you activate SMTP authentication, the e-mail address must be able to be authenticated by the mail server as well. |
| Send Log To | Logs are sent to the e-mail address specified in this field. If this field is left blank, logs will not be sent via e-mail. |
| Send Alerts To | Alerts are sent to the e-mail address specified in this field. If this field is left blank, alerts will not be sent via e-mail. |
| Syslog Logging | Syslog logging sends a log to Vantage Report or to an external syslog server used to store logs. |
| Active | Click **Active** to enable syslog logging. |
| Syslog Server IP Address | Select an instance of Vantage Report (see Section 30.6 on page 571) or select **User Define** and enter the server IP address of the syslog server that will log the selected categories of logs. |
| Log Facility | Select a location from the drop down list box. The log facility allows you to log the messages to different files in the syslog server. Refer to the documentation of your syslog program for more details. |
| Send Log | |
| Log Schedule | This drop-down menu is used to configure the frequency of log messages being sent as E-mail:<br>• Daily<br>• Weekly<br>• Hourly<br>• When Log is Full<br>• None.<br>If you select **Weekly** or **Daily**, specify a time of day when the E-mail should be sent. If you select **Weekly**, then also specify which day of the week the E-mail should be sent. If you select **When Log is Full**, an alert is sent when the log fills up. If you select **None**, no log messages are sent |
| Day for Sending Log | Use the drop down list box to select which day of the week to send the logs. |
| Time for Sending Log | Enter the time of the day in 24-hour format (for example 23:00 equals 11:00 pm) to send the logs. |

**Table 95** Device Operation > Device Configuration > Device Log (continued)

| LABEL | DESCRIPTION |
|---|---|
| SMTP Authentication | SMTP (Simple Mail Transfer Protocol) is the message-exchange standard for the Internet. SMTP enables you to move messages from one e-mail server to another.<br><br>Select the check box to activate SMTP authentication. If mail server authentication is needed but this feature is disabled, you will not receive the e-mail logs. |
| User Name | Enter the user name (up to 31 characters) (usually the user name of a mail account). |
| Password | Enter the password associated with the user name above. |
| Log | Select the categories of logs that you want to record. Logs include alerts. |
| Send Immediate Alert | Select the categories of alerts for which you want the device to instantly e-mail alerts to the e-mail address specified in the **Send Alerts To** field. |
| Log Consolidation | |
| Log Consolidation Active | Some logs (such as the Attacks logs) may be so numerous that it becomes easy to ignore other important log messages. Select this check box to merge logs with identical messages into one log. |
| Log Consolidation Period | Specify the time interval during which the device merges logs with identical messages into one log. |
| Reports Setup | |
| Send Raw Traffic Statistics to Syslog Server | Select the check box if you want the device to send traffic logs to Vantage Report or the specified syslog server. The device generates a traffic log when a "session" is terminated. A traffic log summarizes the session's type, when it started and stopped the amount of traffic that was sent and received and so on. An external log analyzer can reconstruct and analyze the traffic flowing through the device after collecting the traffic logs.<br><br>Select this to view device's traffic report. |
| Apply | Click this to save your customized settings and exit this screen. |
| Reset | Click this to begin configuring this screen afresh. |

# PART III
# Device Configuration (ZLD)

Note: This menu only appears when you select a ZLD-based device and the device status is on. See Device Configuration (ZyNOS and Prestige) for ZyNOS devices.

Note: The menus and screens may vary depending on the device model you select. See Table 8 on page 38 for the device model and the corresponding firmware version CNM supports.

Note: The examples in this section use one of the most comprehensive examples of each screen, not every variation for each device type and firmware version. If you are unable to find a specific screen or field in this User's Guide, please see the User's Guide for the device for more information.

Device Network Settings (247)

Firewall (315)

IPSec VPN (323)

Object (357)

Maintenance (405)

# 9

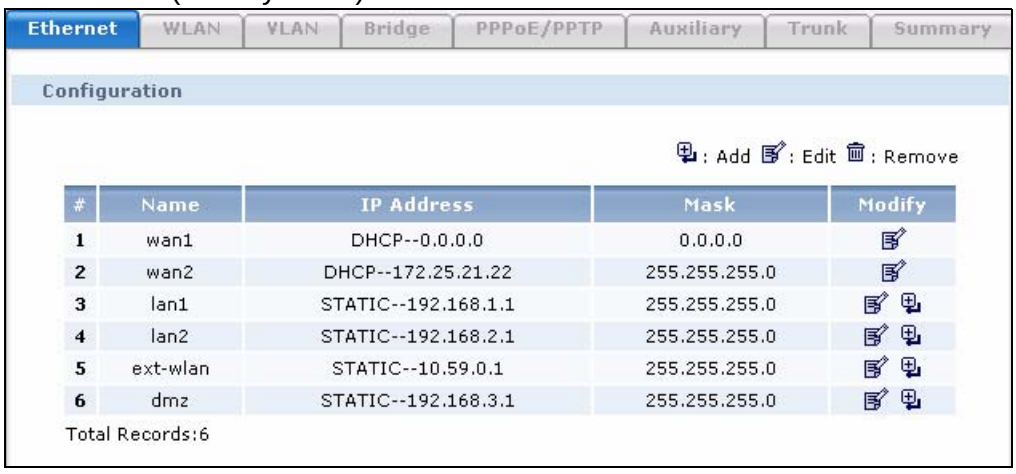
# Device Network Settings

The screens explained network settings such as Interface and Routing for ZLD-based ZyWALLs. The menus and screens may vary depending on your device model.

## 9.1 Ethernet (ZLD ZyWALL)

This screen lists every Ethernet interface and virtual interface created on top of Ethernet interfaces. To open this screen, click **Device Operation** in the menu bar, and then click **Device Configuration > Network > Interface > Ethernet**.

**Figure 103** Device Operation > Device Configuration > Network > Interface > Ethernet (ZLD ZyWALL)




The following table describes the fields in this screen.

**Table 96** Device Operation > Device Configuration > Network > Interface > Ethernet (ZLD ZyWALL)

| LABEL | DESCRIPTION |
|---|---|
| # | This field is a sequential value, and it is not associated with any interface. |
| Name | This field displays the name of the interface. |

**Table 96** Device Operation > Device Configuration > Network > Interface > Ethernet (ZLD ZyWALL) (continued)

| LABEL | DESCRIPTION |
|---|---|
| IP Address | This field displays the current IP address of the interface. If the IP address is 0.0.0.0, the interface does not have an IP address yet.<br><br>This screen also shows whether the IP address is a static IP address (**STATIC**) or dynamically assigned (**DHCP**). IP addresses are always static in virtual interfaces. |
| Mask | This field displays the interface's subnet mask in dot decimal notation. |
| Modify | This column lets you create, edit, or remove interfaces. You cannot add or remove Ethernet interfaces, however.<br><br>To create a virtual Ethernet interface, click the **Add** icon next to the corresponding Ethernet interface.<br><br>To edit an interface, click the **Edit** icon next to it.<br><br>To remove a virtual interface, click the **Remove** icon next to it. The ZyWALL confirms you want to remove it before doing so.<br><br>Make sure you click **Apply** to save and apply the change. |

## 9.1.1 Ethernet Edit

Use this screen to configure IP address assignment, interface parameters, RIP settings, OSPF settings, DHCP settings, and connectivity check settings. To access this screen, click an **Edit** icon next to an interface in the **Device Operation > Device Configuration > Network > Interface > Ethernet** screen.

The screen for each interface may vary depending on your device model and the interface's role.

**Figure 104** Device Operation > Device Configuration > Network > Interface > Ethernet > Edit (WAN)

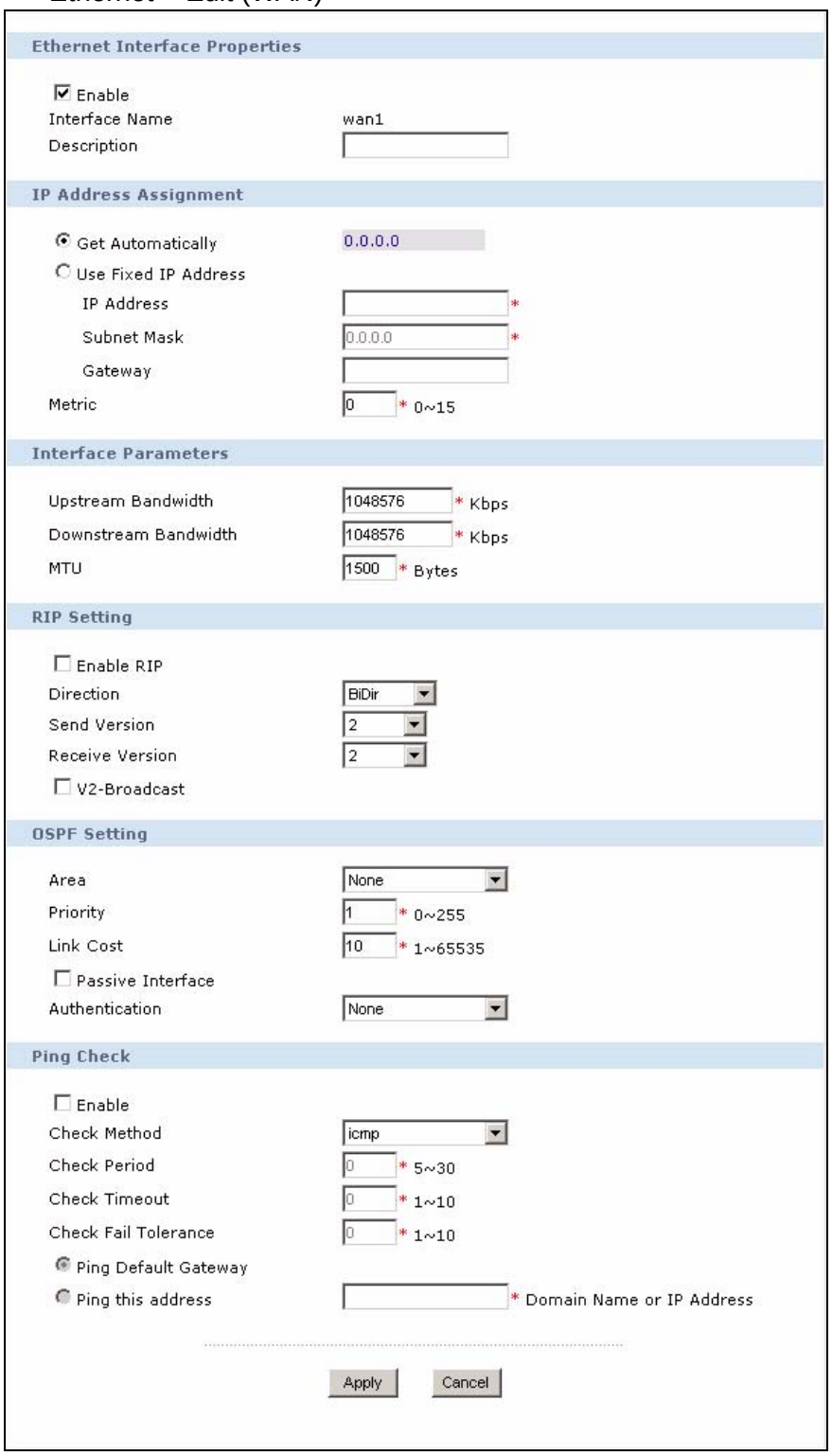
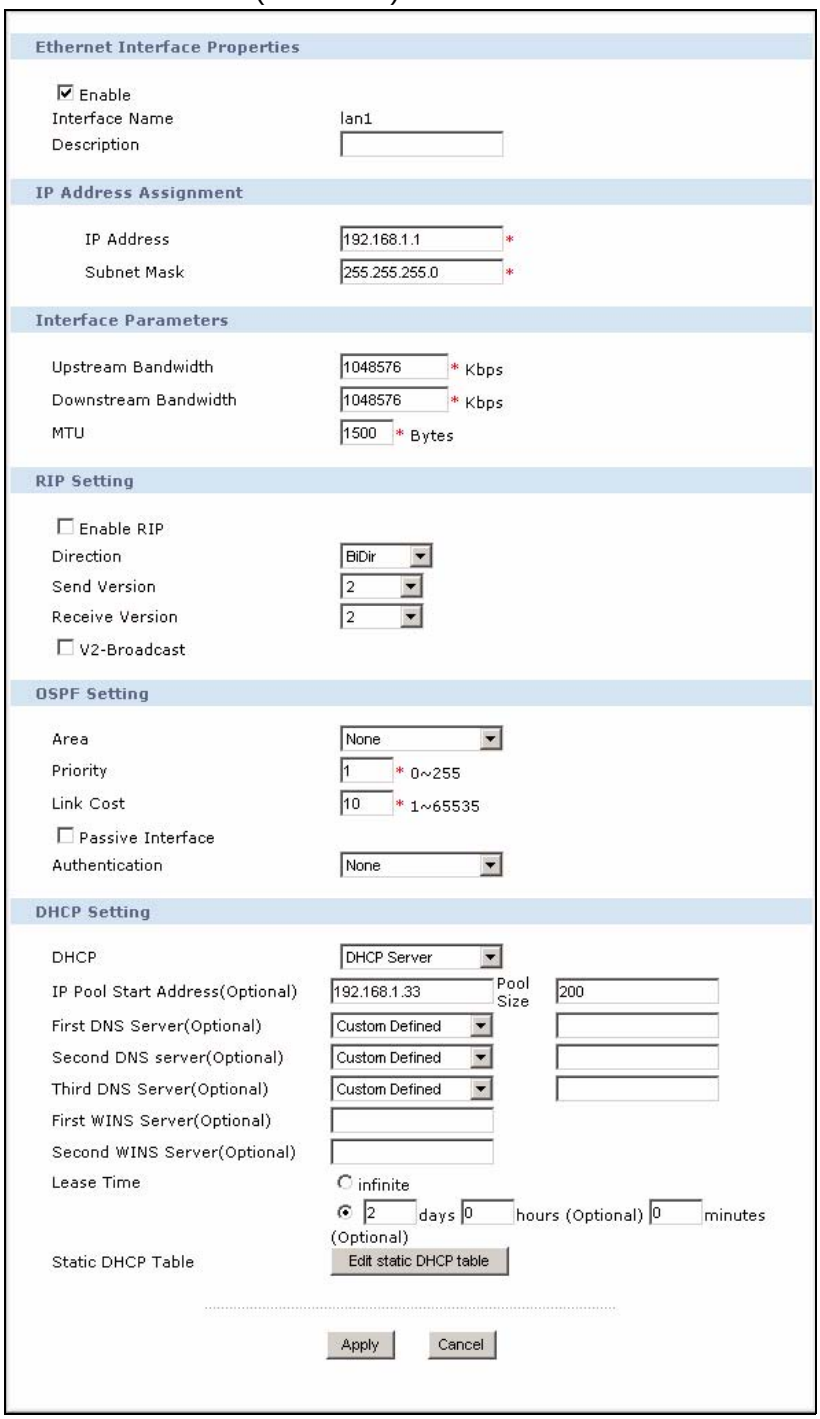


**Figure 105** Device Operation > Device Configuration > Network > Interface > Ethernet > Edit (non-WAN)



The following table describes the fields in this screen.

**Table 97** Device Operation > Device Configuration > Network > Interface > Ethernet > Edit

| LABEL | DESCRIPTION |
|---|---|
| Ethernet Interface Properties | |
| Enable | Select this to enable this interface. Clear this to disable this interface. |
| Interface Name | This field is read-only. This is the name of the Ethernet interface. |
| Description | Enter a description of this interface. It is not used elsewhere. You can use alphanumeric and ( )+/:=?!*#@$_%- characters, and it can be up to 60 characters long. |
| IP Address Assignment | These IP address fields configure an IP address on the interface itself. If you change this IP address on the interface, you may also need to change a related address object for the network connected to the interface. For example, if you use this screen to change the IP address of your LAN interface, you should also change the corresponding LAN subnet address object. |
| Get Automatically | Select this to make the interface a DHCP client and automatically get the IP address, subnet mask, and gateway address from a DHCP server.<br><br>You should not select this if the interface is assigned to a VRRP group. See Chapter 36 on page 595. |
| Use Fixed IP Address | Select this if you want to specify the IP address, subnet mask, and gateway manually. |
| IP Address | This field is enabled if you select **Use Fixed IP Address**.<br><br>Enter the IP address for this interface. |
| Subnet Mask | This field is enabled if you select **Use Fixed IP Address**.<br><br>Enter the subnet mask of this interface in dot decimal notation. The subnet mask indicates what part of the IP address is the same for all computers in the network. |
| Gateway | This field is enabled if you select **Use Fixed IP Address**.<br><br>Enter the IP address of the gateway. The ZyWALL sends packets to the gateway when it does not know how to route the packet to its destination. The gateway should be on the same network as the interface. |
| Metric | Enter the priority of the gateway (if any) on this interface. The ZyWALL decides which gateway to use based on this priority. The lower the number, the higher the priority. If two or more gateways have the same priority, the ZyWALL uses the one that was configured first. |
| Interface Parameters | |
| Upstream Bandwidth | Enter the maximum amount of traffic, in kilobits per second, the ZyWALL can send through the interface to the network. Allowed values are 0 - 1048576. |

**Table 97** Device Operation > Device Configuration > Network > Interface > Ethernet > Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Downstream Bandwidth | This is reserved for future use.<br>Enter the maximum amount of traffic, in kilobits per second, the ZyWALL can receive from the network through the interface. Allowed values are 0 - 1048576. |
| MTU | Maximum Transmission Unit. Type the maximum size of each data packet, in bytes, that can move through this interface. If a larger packet arrives, the ZyWALL divides it into smaller fragments. Allowed values are 576 - 1500. Usually, this value is 1500. |
| RIP Setting | |
| Enable RIP | Select this to enable RIP in this interface. |
| Direction | This field is effective when RIP is enabled. Select the RIP direction from the drop-down list box.<br>**BiDir** - This interface sends and receives routing information.<br>**In-Only** - This interface receives routing information.<br>**Out-Only** - This interface sends routing information. |
| Send Version | This field is effective when RIP is enabled. Select the RIP version(s) used for sending RIP packets. Choices are **1**, **2**, and **1 and 2**. |
| Receive Version | This field is effective when RIP is enabled. Select the RIP version(s) used for receiving RIP packets. Choices are **1**, **2**, and **1 and 2**. |
| V2-Broadcast | This field is effective when RIP is enabled. Select this to send RIP-2 packets using subnet broadcasting; otherwise, the ZyWALL uses multicasting. |
| OSPF Setting | |
| Area | Select the area in which this interface belongs. Select **None** to disable OSPF in this interface. |
| Priority | Enter the priority (between 0 and 255) of this interface when the area is looking for a Designated Router (DR) or Backup Designated Router (BDR). The highest-priority interface identifies the DR, and the second-highest-priority interface identifies the BDR. Set the priority to zero if the interface can not be the DR or BDR. |
| Link Cost | Enter the cost (between 1 and 65,535) to route packets through this interface. |
| Passive Interface | Select this to stop forwarding OSPF routing information from the selected interface. As a result, this interface only receives routing information. |

**Table 97** Device Operation > Device Configuration > Network > Interface > Ethernet > Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Authentication | Select an authentication method, or disable authentication. To exchange OSPF routing information with peer border routers, you must use the same authentication method that they use. Choices are:<br>**Same-as-Area** - use the default authentication method in the area<br>**None** - disable authentication<br>**Text** - authenticate OSPF routing information using a plain-text password<br>**MD5** - authenticate OSPF routing information using MD5 encryption |
| Ping Check | The interface can regularly check the connection to the gateway you specified to make sure it is still available. You specify how often the interface checks the connection, how long to wait for a response before the attempt is a failure, and how many consecutive failures are required before the ZyWALL stops routing to the gateway. The ZyWALL resumes routing to the gateway the first time the gateway passes the connectivity check. |
| Enable | Select this to turn on the connection check. |
| Check Method | Select the method that the gateway allows.<br>Select **icmp** to have the ZyWALL regularly ping the gateway you specify to make sure it is still available.<br>Select **tcp** to have the ZyWALL regularly perform a TCP handshake with the gateway you specify to make sure it is still available. |
| Check Period | Enter the number of seconds between connection check attempts. |
| Check Timeout | Enter the number of seconds to wait for a response before the attempt is a failure. |
| Check Fail Tolerance | Enter the number of consecutive failures before the ZyWALL stops routing through the gateway. |
| Ping Default Gateway | Select this to use the default gateway for the connectivity check. |
| Ping this address | Select this to specify a domain name or IP address for the connectivity check. Enter that domain name or IP address in the field next to it. |
| DHCP Setting | |
| DHCP | Select what type of DHCP service the ZyWALL provides to the network. Choices are:<br>**None** - the ZyWALL does not provide any DHCP services. There is already a DHCP server on the network.<br>**DHCP Relay** - the ZyWALL routes DHCP requests to one or more DHCP servers you specify. The DHCP server(s) may be on another network.<br>**DHCP Server** - the ZyWALL assigns IP addresses and provides subnet mask, gateway, and DNS server information to the network. The ZyWALL is the DHCP server for the network. |
| | These fields appear if the ZyWALL is a **DHCP Relay**. |

**Table 97** Device Operation > Device Configuration > Network > Interface > Ethernet > Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Relay Server 1 | Enter the IP address of a DHCP server for the network. |
| Relay Server 2 | This field is optional. Enter the IP address of another DHCP server for the network. |
| | These fields appear if the ZyWALL is a **DHCP Server**. |
| IP Pool Start Address (Optional) | Enter the IP address from which the ZyWALL begins allocating IP addresses. If you want to assign a static IP address to a specific computer, click **Edit static DHCP table**.<br><br>If this field is blank, the **Pool Size** must also be blank. In this case, the ZyWALL can assign every IP address allowed by the interface's IP address and subnet mask, except for the first address (network address), last address (broadcast address) and the interface's IP address. |
| Pool Size | Enter the number of IP addresses to allocate. This number must be at least one and is limited by the interface's **Subnet Mask**. For example, if the **Subnet Mask** is 255.255.255.0 and **IP Pool Start Address** is 10.10.10.10, the ZyWALL can allocate 10.10.10.10 to 10.10.10.254, or 245 IP addresses.<br><br>If this field is blank, the **IP Pool Start Address** must also be blank. In this case, the ZyWALL can assign every IP address allowed by the interface's IP address and subnet mask, except for the first address (network address), last address (broadcast address) and the interface's IP address. |
| First DNS Server (Optional), Second DNS Server (Optional), Third DNS Server (Optional) | Specify the IP addresses up to three DNS servers for the DHCP clients to use. Use one of the following ways to specify these IP addresses.<br><br>**Custom Defined** - enter a static IP address.<br><br>**From ISP** - select the DNS server that another interface received from its DHCP server.<br><br>**ZyWALL** - the DHCP clients use the IP address of this interface and the ZyWALL works as a DNS relay. |
| First WINS Server (Optional), Second WINS Server (Optional) | Type the IP address of the WINS (Windows Internet Naming Service) server that you want to send to the DHCP clients. The WINS server keeps a mapping table of the computer names on your network and the IP addresses that they are currently using. |
| Lease time | Specify how long each computer can use the information (especially the IP address) before it has to request the information again. Choices are:<br><br>**infinite** - select this if IP addresses never expire.<br><br>**days, hours, and minutes** - select this to enter how long IP addresses are valid. |
| Static DHCP Table | Click this to configure static IP addresses for the ZyWALL to assign to computers connected to this interface. |
| Apply | Click this to save your changes back to the device. |
| Cancel | Click this to exit this screen without saving. |

## 9.1.2 Adding Virtual Interfaces

This screen lets you configure IP address assignment and interface parameters for virtual interfaces. To access this screen, click an **Add** icon next to an Ethernet interface, VLAN interface, or bridge interface in the respective interface summary screen.

**Figure 106** Device Operation > Device Configuration > Network > Interface > Ethernet > Add

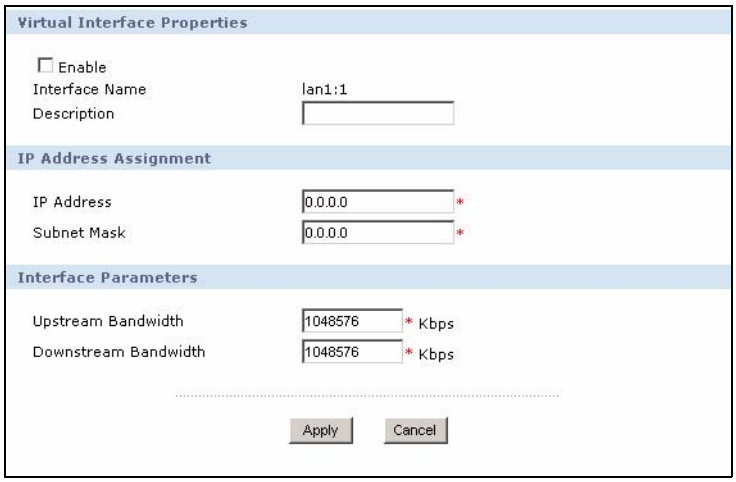
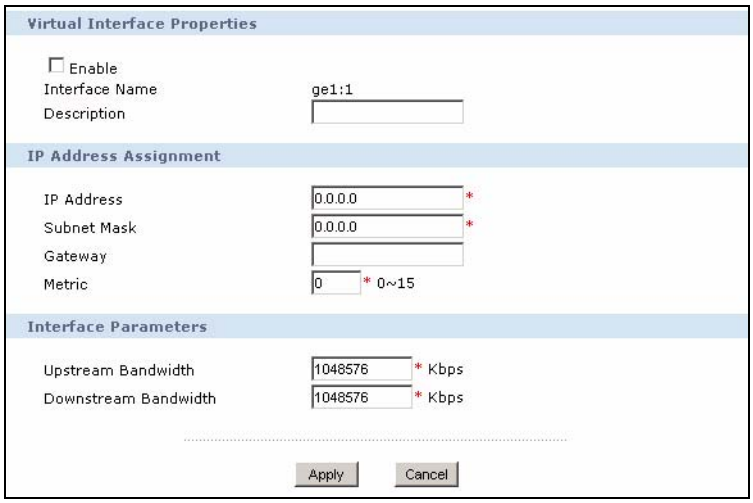



**Figure 107** Device Operation > Device Configuration > Network > Interface > Ethernet > Add




Each field is described in the table below.

**Table 98** Device Operation > Device Configuration > Network > Interface > Ethernet > Add

| LABEL | DESCRIPTION |
|---|---|
| Virtual Interface Properties | |
| Enable | Select this to enable this virtual interface. Clear this to disable this virtual interface. |

**Table 98** Device Operation > Device Configuration > Network > Interface > Ethernet > Add (continued)

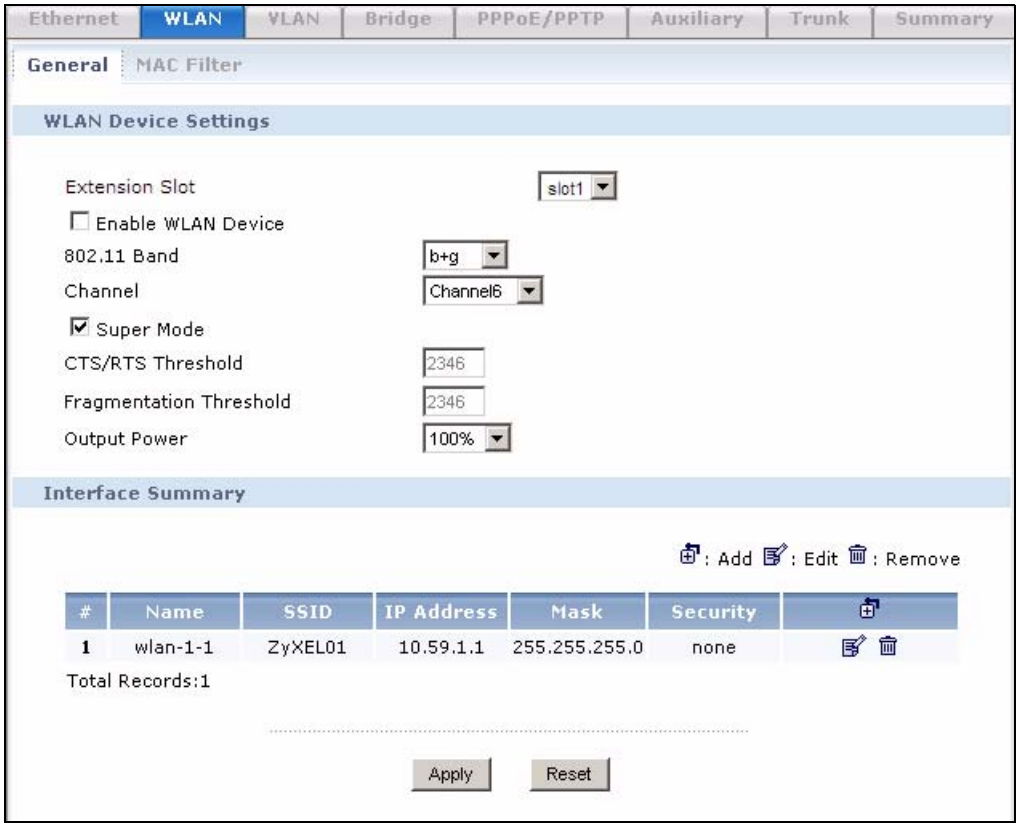
| LABEL | DESCRIPTION |
|---|---|
| Interface Name | This field is read-only. It displays the name of the virtual interface, which is automatically derived from the underlying Ethernet interface, VLAN interface, or bridge interface. |
| Description | Enter a description of this interface. It is not used elsewhere. You can use alphanumeric and ( )+/:=?!*#@$_%- characters, and it can be up to 60 characters long. |
| IP Address Assignment | |
| IP Address | Enter the IP address for this interface. |
| Subnet Mask | Enter the subnet mask of this interface in dot decimal notation. The subnet mask indicates what part of the IP address is the same for all computers in the network. |
| Gateway | This field is not available for all ZyWALL models. Enter the IP address of the gateway. The ZyWALL sends packets to the gateway when it does not know how to route the packet to its destination. The gateway should be on the same network as the interface. |
| Metric | Enter the priority of the gateway (the ISP) on this interface. The ZyWALL decides which gateway to use based on this priority. The lower the number, the higher the priority. If two or more gateways have the same priority, the ZyWALL uses the one that was configured first. |
| Interface Parameters | |
| Upstream Bandwidth | Enter the maximum amount of traffic, in kilobits per second, the ZyWALL can send through the interface to the network. Allowed values are 0 - 1048576. |
| Downstream Bandwidth | This is reserved for future use.<br><br>Enter the maximum amount of traffic, in kilobits per second, the ZyWALL can receive from the network through the interface. Allowed values are 0 - 1048576. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Cancel | Click **Cancel** to exit this screen without saving. |

# 9.2 WLAN General

Use this screen to configure basic settings for a wireless network. To open this screen, click **Device Operation** > **Device Configuration > Network > Interface > WLAN > General**.

Note: This screen is only available on ZyWALLs that support WLAN.

**Figure 108** Device Operation > Device Configuration > Network > Interface > WLAN > General




The following table describes the fields in this screen.

**Table 99** Device Operation > Device Configuration > Network > Interface > WLAN > General

| LABEL | DESCRIPTION |
|---|---|
| WLAN Device Settings | |
| Extension Slot | Select the location where the IEEE 802.11b/g is located.<br><br>Note: The number of available slots in this field may vary depending on your device model. |
| Enable WLAN Device | Select this option to turn on the wireless LAN card. It is recommended that you configure the wireless security settings before you use this option to turn on a wireless LAN card. |

**Table 99** Device Operation > Device Configuration > Network > Interface > WLAN > General (continued)

| LABEL | DESCRIPTION |
|---|---|
| 802.11 Band | Select whether you will let wireless clients connect to the ZyWALL using IEEE 802.11b, IEEE 802.11g, or both.<br><br>Select **b Only** to allow only IEEE 802.11b compliant WLAN devices to associate with the ZyWALL.<br><br>Select **g Only** to allow only IEEE 802.11g compliant WLAN devices to associate with the ZyWALL.<br><br>Select **b+g** to allow both IEEE802.11b and IEEE802.11g compliant WLAN devices to associate with the ZyWALL. The transmission rate of your ZyWALL might be reduced. |
| Channel | This allows you to set the operating channel depending on your particular region. Select a channel from the drop-down list box. |
| Super Mode | Select this to improve data throughput on the WLAN by enabling fast frame and packet bursting. |
| CTS/RTS Threshold | Use CTS/RTS to reduce data collisions on the wireless network if you have wireless clients that are associated with the same AP but out of range of one another. When enabled, a wireless client sends an RTS (Request To Send) and then waits for a CTS (Clear To Send) before it transmits. This stops wireless clients from transmitting packets at the same time (and causing data collisions).<br><br>A wireless client sends an RTS for all packets larger than the number (of bytes) that you enter here. Set the RTS/CTS equal to or higher than the fragmentation threshold to turn RTS/CTS off. |
| Fragmentation Threshold | This is the threshold (number of bytes) for the fragmentation boundary for directed messages. It is the maximum data fragment size that can be sent. |
| Output Power | Set the output power of the ZyWALL in this field. If there is a high density of APs in the area, decrease the output power of the ZyWALL to reduce interference with other APs. Select one of the following **100%**, **50%**, **25%**, **12.5%** or **Minimum**. See the product specifications for more information on your ZyWALL's output power. |
| # | This field is a sequential value, and it is not associated with any interface. |
| Name | This field displays the name of the WLAN interface. |
| SSID | This is the SSID (Service Set IDentity) of the WLAN interface. |
| IP Address | This field displays the current IP address of the WLAN interface. If the IP address is 0.0.0.0, the interface does not have an IP address yet.<br><br>This screen also shows whether the IP address is a static IP address (**STATIC**) or dynamically assigned (**DHCP**). IP addresses are always static in virtual interfaces. |
| Mask | This field displays the interface's subnet mask in dot decimal notation. |
| Security | This field displays what type of security the WLAN interface uses. |

**Table 99** Device Operation > Device Configuration > Network > Interface > WLAN > General (continued)

| LABEL | DESCRIPTION |
|---|---|
| Add icon | This column lets you create, edit, remove, activate, and deactivate WLAN interfaces.<br><br>To create an interface, click the **Add** icon at the top of the column.<br><br>To activate or deactivate an interface, click the **Active** icon next to it. Make sure you click **Apply** to save and apply the change.<br><br>To edit an interface, click the **Edit** icon next to it. The edit screen appears.<br><br>To remove an interface, click the **Remove** icon next to it. The ZyWALL confirms you want to remove it before doing so.<br><br>To connect or disconnect an interface, click the **Connect** icon next to it. You might use this icon to test the interface or to manually establish the connection. |
| Apply | Click this to save your changes back to the device. |
| Reset | Click this to begin configuring this screen afresh. |

## 9.2.1 WLAN Add/Edit Screen

Use the strongest security that every wireless client in the wireless network supports.

**Table 100** Wireless Security Levels

| SECURITY LEVEL | SECURITY TYPE |
|---|---|
| Weakest | No Security |
| | MAC Address Filtering |
| ↓ | WEP Encryption |
| | IEEE 802.1x EAP with RADIUS Server Authentication |
| | WPA-PSK (Wi-Fi Protected Access Pre-Shared Key) |
| | WPA (Wi-Fi Protected Access) |
| | WPA-PSK2 |
| Strongest | WPA2 |

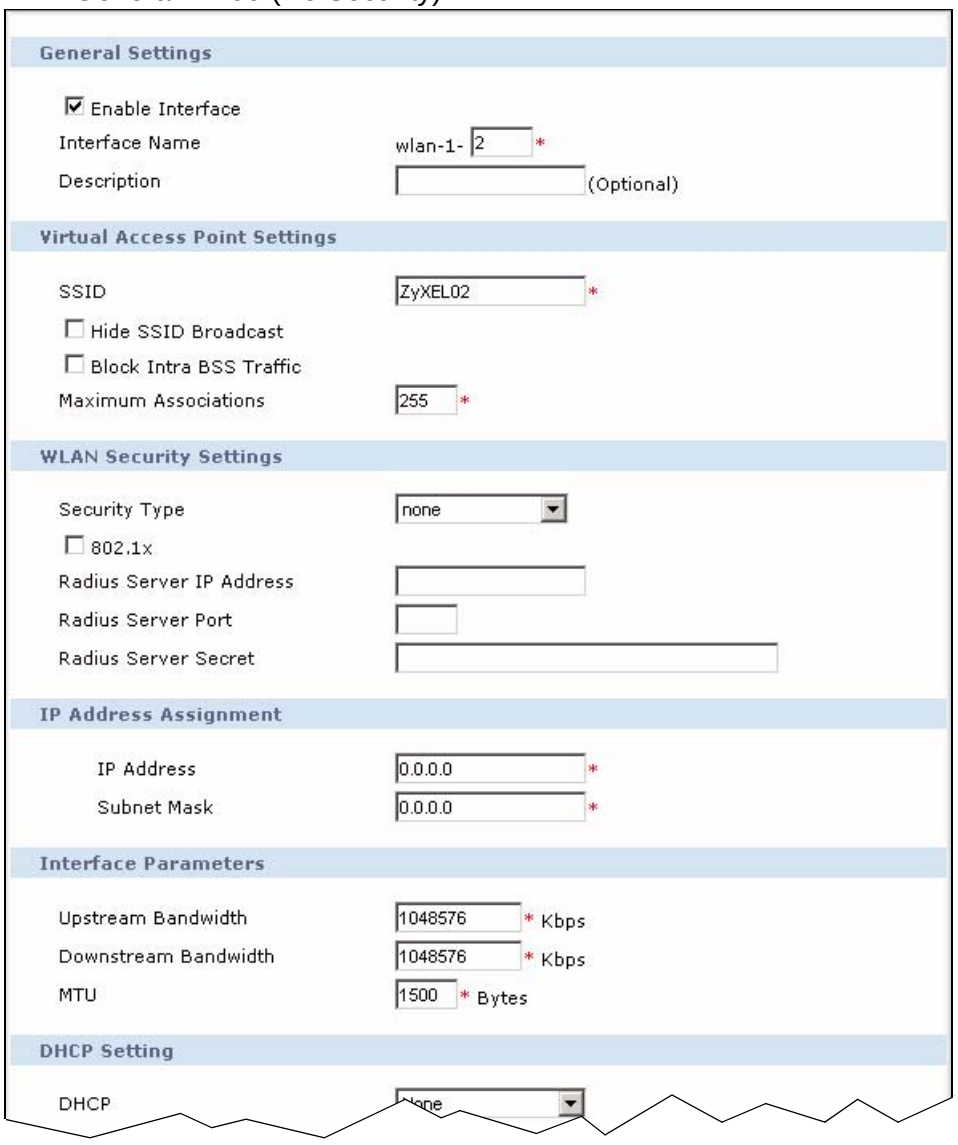
Note: WPA2 or WPA2-PSK security is recommended.

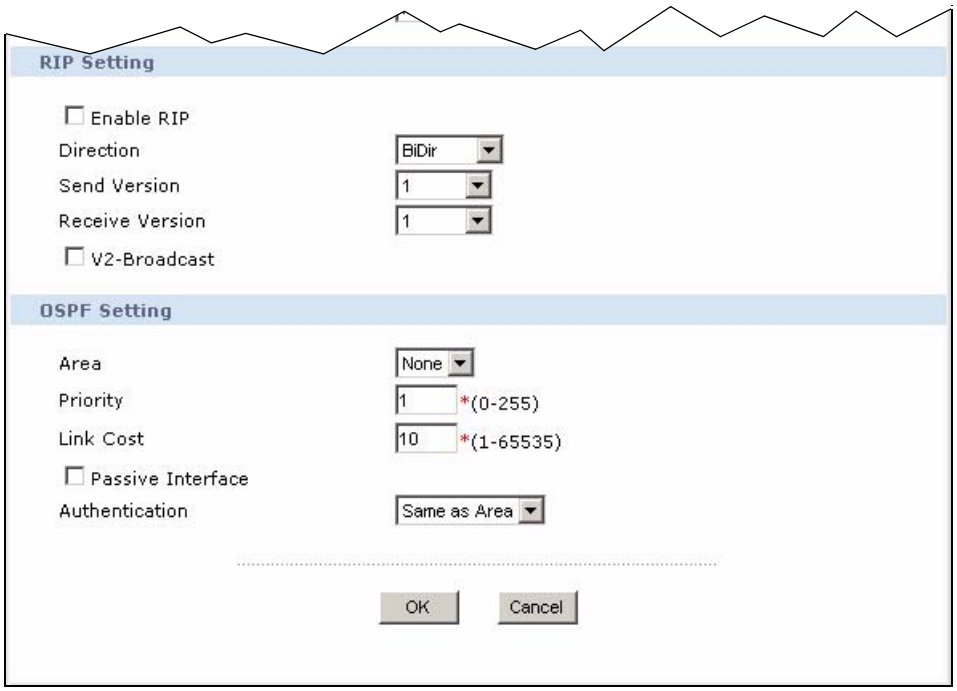
- You can use the ZyWALL's local user database to use WPA or WPA2 without using an external RADIUS server. With WPA or WPA2, users have to log into the wireless network before using it. This is called user authentication. WPA and WPA2 are also called the enterprise version of WPA).

- WPA2-PSK and WPA-PSK do not employ user authentication and are known as the personal version of WPA.
- WEP is better than no security, but it is still possible for unauthorized devices to figure out the original information pretty quickly.

Click the **Add** (or **Edit**) icon next to a wireless interface in the **Device Operation** > **Device Configuration > Network > Interface > WLAN > General** to open the **WLAN Edit** screen. The screen varies according to the security features you select. It displays as shown next when you set the **Security Type** to **none**.

**Figure 109** Device Operation > Device Configuration > Network > Interface > WLAN > General > Add (No Security)






The following table describes the general wireless LAN labels.

**Table 101** Network > Interface > WLAN > Add (No Security)

| LABEL | DESCRIPTION |
|---|---|
| General Settings | |
| Enable Interface | Select this option to turn on the wireless LAN interface. |
| Interface Name | Specify a number from 1~8 to complete the name for this wireless LAN interface. |
| Description | Enter a description of this interface. It is not used elsewhere. You can use alphanumeric and ()+/:=?!*#@$_%- characters, and it can be up to 60 characters long. |
| Virtual Access Point Settings | |
| SSID | (Service Set IDentity) The SSID identifies the Service Set with which a wireless station is associated. Wireless stations associating to the access point (AP) must have the same SSID. Enter a descriptive name (up to 32 printable 7-bit ASCII characters) for the wireless LAN. To make your wireless network more secure, change the default SSID to something that is difficult to guess. |
| Hide SSID Broadcast | Select to hide the SSID in the outgoing beacon frame so a station cannot obtain the SSID through scanning. |
| Block Intra-BSS Traffic | Select this to prevent wireless clients in this profile's BSS from communicating with one another. |
| Maximum Associations | Specify the highest number of wireless clients that are allowed to connect to the wireless interface at the same time. |
| WLAN Security Settings | |

**Table 101** Network > Interface > WLAN > Add (No Security) (continued)

| LABEL | DESCRIPTION |
|---|---|
| Security Type | Use this field to select the type of security to use for this wireless LAN interface. Select **none** to not use any security. See the following sections for details on the other security types. |
| 802.1x | Authentication server (IEEE 802.1x) settings are available when you use no security or WEP security.<br><br>Select the check box to enable wireless user authentication through an external authentication server. |
| Radius Server IP Address | Enter the IP address of the external authentication server in dotted decimal notation. |
| Radius Server Port | Enter the RADIUS server's listening port number (the default is **1812**). |
| Radius Server Secret | Enter a password (up to 31 alphanumeric characters) as the key to be shared between the external authentication server and the ZyWALL. The key is not sent over the network. This key must be the same on the external authentication server and ZyWALL. |
| IP Address Assignment | |
| IP Address | Enter the IP address for this interface. |
| Subnet Mask | Enter the subnet mask of this interface in dot decimal notation. The subnet mask indicates what part of the IP address is the same for all computers in the network. |
| Interface Parameters | |
| Upstream Bandwidth | Enter the maximum amount of traffic, in kilobits per second, the ZyWALL can send through the interface to the network. Allowed values are 0 - 1048576. This setting is used in WAN load balancing and bandwidth management. |
| Downstream Bandwidth | This is reserved for future use.<br><br>Enter the maximum amount of traffic, in kilobits per second, the ZyWALL can receive from the network through the interface. Allowed values are 0 - 1048576. |
| MTU | Maximum Transmission Unit. Type the maximum size of each data packet, in bytes, that can move through this interface. If a larger packet arrives, the ZyWALL divides it into smaller fragments. Allowed values are 576 - 1500. Usually, this value is 1500. |
| DHCP Settings | |
| DHCP | Select what type of DHCP service the ZyWALL provides to the wireless network. Choices are:<br><br>**None** - the ZyWALL does not provide any DHCP services. There is already a DHCP server on the network.<br><br>**DHCP Relay** - the ZyWALL routes DHCP requests to one or more DHCP servers you specify. The DHCP server(s) may be on another network.<br><br>**DHCP Server** - the ZyWALL assigns IP addresses and provides subnet mask, gateway, and DNS server information to the network. The ZyWALL is the DHCP server for the network. |
| | These fields appear if the ZyWALL is a **DHCP Relay**. |

**Table 101** Network > Interface > WLAN > Add (No Security) (continued)

| LABEL | DESCRIPTION |
|---|---|
| Relay Server 1 | Enter the IP address of a DHCP server for the network. |
| Relay Server 2 | This field is optional. Enter the IP address of another DHCP server for the network. |
| | These fields appear if the ZyWALL is a **DHCP Server**. |
| IP Pool Start Address | Enter the IP address from which the ZyWALL begins allocating IP addresses.<br><br>If this field is blank, the ZyWALL assigns every IP address allowed by the interface's IP address, subnet mask, and pool size; except for the first address (network address), last address (broadcast address) and the interface's IP address. |
| Pool Size | Enter the number of IP addresses to allocate. This number must be at least one and is limited by the interface's **Subnet Mask**. For example, if the **Subnet Mask** is 255.255.255.0 and **IP Pool Start Address** is 10.10.10.10, the ZyWALL can allocate 10.10.10.10 to 10.10.10.254, or 245 IP addresses.<br><br>If this field is blank, the ZyWALL can assign every IP address allowed by the interface's IP address, subnet mask, and **IP Pool Start Address**; except for the first address (network address), last address (broadcast address) and the interface's IP address. |
| First DNS Server<br>Second DNS Server<br>Third DNS Server | Specify the IP addresses of a maximum of three DNS servers that the network can use. The ZyWALL provides these IP addresses to DHCP clients. Use one of the following ways to specify these IP addresses.<br><br>**Custom Defined** - enter a static IP address.<br><br>**From ISP** - select the DNS server that another interface received from its DHCP server.<br><br>**ZyWALL** - the ZyWALL uses the IP address of this interface and works as a DNS relay. |
| First WINS Server,<br>Second WINS Server | Type the IP address of the WINS (Windows Internet Naming Service) server that you want to send to the DHCP clients. The WINS server keeps a mapping table of the computer names on your network and the IP addresses that they are currently using. |
| Lease time | Specify how long each computer can use the information (especially the IP address) before it has to request the information again. Choices are:<br><br>**infinite** - select this if IP addresses never expire.<br><br>**days, hours, and minutes** - select this to enter how long IP addresses are valid. |
| Static DHCP Table | Click **Edit static DHCP table** this to configure static IP addresses for the ZyWALL to assign to computers connected to this interface. |
| RIP Setting | |
| Enable RIP | Select this to enable RIP in this interface. |

**Table 101** Network > Interface > WLAN > Add (No Security) (continued)

| LABEL | DESCRIPTION |
|---|---|
| Direction | This field is effective when RIP is enabled. Select the RIP direction from the drop-down list box.<br>**BiDir** - This interface sends and receives routing information.<br>**In-Only** - This interface receives routing information.<br>**Out-Only** - This interface sends routing information. |
| Send Version | This field is effective when RIP is enabled. Select the RIP version(s) used for sending RIP packets. Choices are **1**, **2**, and **1 and 2**. |
| Receive Version | This field is effective when RIP is enabled. Select the RIP version(s) used for receiving RIP packets. Choices are **1**, **2**, and **1 and 2**. |
| V2-Broadcast | This field is effective when RIP is enabled. Select this to send RIP-2 packets using subnet broadcasting; otherwise, the ZyWALL uses multicasting. |
| OSPF Setting | |
| Area | Select the area in which this interface belongs. Select **None** to disable OSPF in this interface. |
| Priority | Enter the priority (between 0 and 255) of this interface when the area is looking for a Designated Router (DR) or Backup Designated Router (BDR). The highest-priority interface identifies the DR, and the second-highest-priority interface identifies the BDR. Set the priority to zero if the interface can not be the DR or BDR. |
| Link Cost | Enter the cost (between 1 and 65,535) to route packets through this interface. |
| Passive Interface | Select this to stop forwarding OSPF routing information from the selected interface. As a result, this interface only receives routing information. |
| Authentication | Select an authentication method, or disable authentication. To exchange OSPF routing information with peer border routers, you must use the same authentication method that they use. Choices are:<br>**Same-as-Area** - use the default authentication method in the area<br>**None** - disable authentication<br>**Text** - authenticate OSPF routing information using a plain-text password<br>**MD5** - authenticate OSPF routing information using MD5 encryption |
| Text Authentication Key | This field is available if the **Authentication** is **Text**. Type the password for text authentication. The key can consist of alphanumeric characters and the underscore, and it can be up to eight characters long. |
| MD5 Authentication ID | This field is available if the **Authentication** is **MD5**. Type the ID for MD5 authentication. The ID can be between 1 and 255. |
| MD5 Authentication Key | This field is available if the **Authentication** is **MD5**. Type the password for MD5 authentication. The password can consist of alphanumeric characters and the underscore, and it can be up to 16 characters long. |

**Table 101** Network > Interface > WLAN > Add (No Security) (continued)

| LABEL | DESCRIPTION |
|---|---|
| OK | Click **OK** to save your changes back to the ZyWALL. |
| Cancel | Click **Cancel** to exit this screen without saving. |

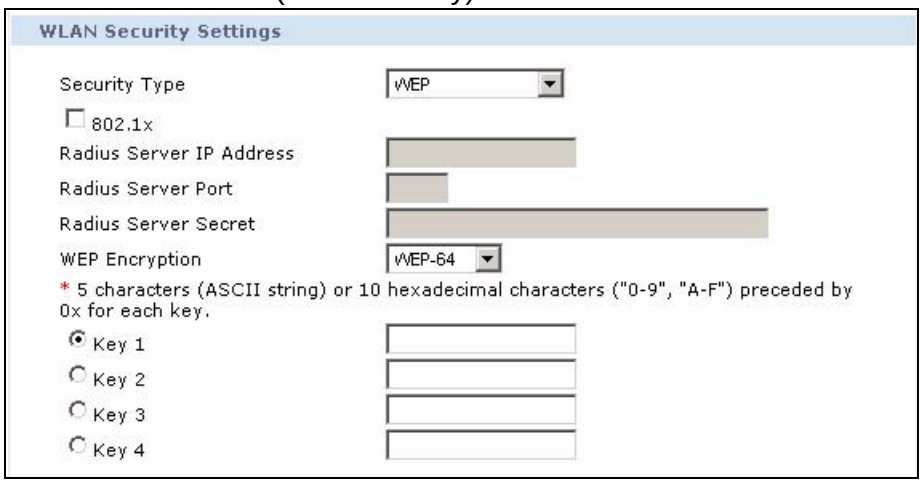
## 9.2.2 WLAN Add/Edit: WEP Security

WEP provides a mechanism for encrypting data using encryption keys. Both the ZyWALL and the wireless stations must use the same WEP key to encrypt and decrypt data. Your ZyWALL allows you to configure up to four 64-bit or 128-bit WEP keys, but only one key can be used at any one time.

Note: WEP is extremely insecure. Its encryption can be broken by an attacker, using widely-available software. It is strongly recommended that you use a more effective security mechanism. Use the strongest security mechanism that all the wireless devices in your network support. For example, use WPA-PSK or WPA2-PSK or WPA or WPA2 if your wireless devices support it. If your wireless devices support nothing stronger than WEP, use the highest encryption level available.

To configure and enable WEP encryption, click the **Add** (or **Edit**) icon next to a wireless interface in the **Device Operation** > **Device Configuration > Network > Interface > WLAN > General** to open the **WLAN Edit** screen. Select **WEP** as the **Security Type**. The following screen shows the WEP security fields.

**Figure 110** Device Operation > Device Configuration > Network > Interface > WLAN > General > Add (WEP Security)



The following table describes the WEP-related wireless LAN security labels. See Table 101 on page 261 for information on the 802.1x fields.

**Table 102** Device Operation > Device Configuration > Network > Interface > WLAN > General > Add (WEP Security)

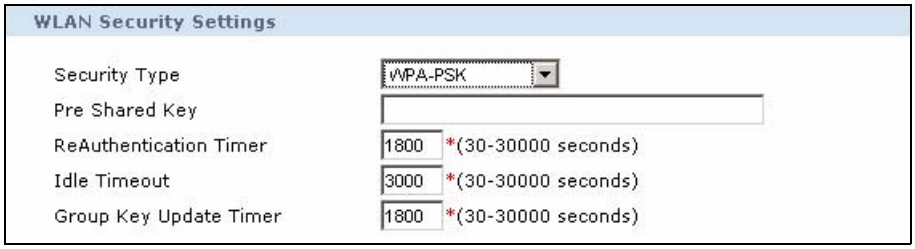
| LABEL | DESCRIPTION |
|---|---|
| WEP Encryption | WEP (Wired Equivalent Privacy) provides data encryption to prevent unauthorized wireless stations from accessing data transmitted over the wireless network.<br>Select **64-bit WEP** or **128-bit WEP** to enable data encryption. |
| Key 1 to Key 4 | If you chose **64-bit WEP** in the **WEP Encryption** field, then enter any 5 characters (ASCII string) or 5 pairs of hexadecimal characters ("0-9", "A-F") preceded by 0x for each key.<br>If you chose **128-bit WEP** in the **WEP Encryption** field, then enter 13 characters (ASCII string) or 13 pairs of hexadecimal characters ("0-9", "A-F") preceded by 0x for each key.<br><br>There are four data encryption keys to secure your data from eavesdropping by unauthorized wireless users. The values for the keys must be set up exactly the same on the access points as they are on the wireless stations. |

## 9.2.3 WLAN Add/Edit: WPA-PSK/WPA2-PSK Security

WPA-PSK or WPA2-PSK security has all of the WLAN interface's users share the same password (pre-shared key).

To configure and enable WPA-PSK or WPA2-PSK security, click the **Add** (or **Edit**) icon next to a wireless interface in the **Device Operation** > **Device Configuration > Network > Interface > WLAN > General** to open the **WLAN Edit** screen. Select **WPA-PSK** or **WPA2-PSK** as the **Security Type**. The following screen shows the security fields.

**Figure 111** Device Operation > Device Configuration > Network > Interface > WLAN > General > Add (WPA-PSK/WPA2-PSK Security)



The following table describes the WPA-PSK/WPA2-PSK-related wireless LAN security labels.

**Table 103** Device Operation > Device Configuration > Network > Interface > WLAN > General > Add (WPA-PSK/WPA2-PSK Security)

| LABEL | DESCRIPTION |
|---|---|
| Pre-Shared Key | The encryption mechanisms used for **WPA** and **WPA-PSK** are the same. The only difference between the two is that **WPA-PSK** uses a simple common password, instead of user-specific credentials.<br><br>Type a pre-shared key from 8 to 63 case-sensitive ASCII characters (including spaces and symbols). |
| ReAuthentication Timer | Specify how often wireless stations have to resend usernames and passwords in order to stay connected.<br><br>Note: If a RADIUS server authenticates wireless stations, the reauthentication timer on the RADIUS server has priority. |
| Idle Timeout | The ZyWALL automatically disconnects a wireless station from the wired network after a period of inactivity. The wireless station needs to enter the username and password again before access to the wired network is allowed. |
| Group Key Update Timer | The **Group Key Update Timer** is the rate at which the AP sends a new group key out to all clients. The re-keying process is the WPA equivalent of automatically changing the group key for an AP and all stations in a WLAN on a periodic basis. Setting of the **Group Key Update Timer** is also supported in WPA-PSK mode. |

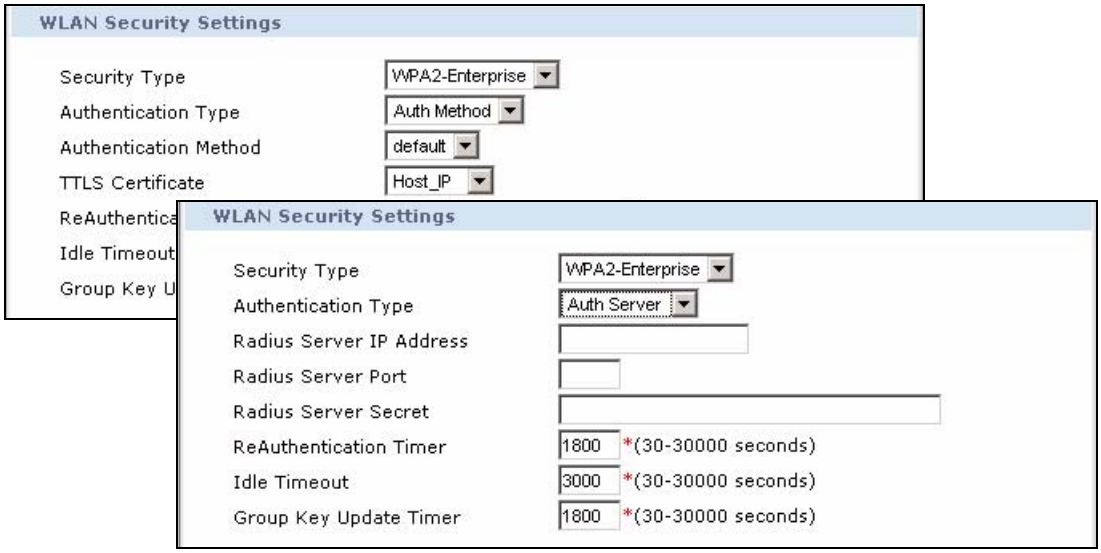
## 9.2.4 WLAN Add/Edit: WPA/WPA2 Security

With WPA or WPA2 security, each user can have a separate user name and password. The ZyWALL uses an external RADIUS server or the ZyWALL's internal user account list to authenticate the user names and passwords.

To configure and enable WPA or WPA2 security, click the **Add** (or **Edit**) icon next to a wireless interface in the **Device Operation** > **Device Configuration > Network > Interface > WLAN > General** to open the **WLAN Edit** screen.

Select **WPA-Enterprise** or **WPA2-Enterprise** as the **Security Type**. The following figure shows the security fields.

**Figure 112** Device Operation > Device Configuration > Network > Interface > WLAN > General > Add (WPA/WPA2 Security)




The following table describes the WPA/WPA2-related wireless LAN security labels.

**Table 104** Device Operation > Device Configuration > Network > Interface > WLAN > General > Add (WPA/WPA2 Security)

| LABEL | DESCRIPTION |
|---|---|
| Authentication Type | Select what the ZyWALL uses to authenticate the wireless clients.<br><br>Select **Auth Method** to be able to specify an authentication method object that you have already configured. The authentication method can have the ZyWALL check a user's user name and password against the ZyWALL's local database, a remote LDAP, RADIUS, a Active Directory server, or more than one of these. See Chapter 42 on page 661 for how to create authentication method objects.<br><br>Select **Auth Server** to be able to manually specify a RADIUS server's settings in this screen instead of using an authentication method object. |
| Authentication Method | This field displays if you set the **Authentication Type** field to **Auth Method**.<br><br>Select an authentication method object that defines how the ZyWALL authenticates a wireless user. The ZyWALL's default configuration also includes an authentication method object named "default" that you can use. You can configure the "default" authentication method object, but it's default configuration uses the ZyWALL's local database for authentication. |

**Table 104** Device Operation > Device Configuration > Network > Interface > WLAN > General > Add (WPA/WPA2 Security) (continued)

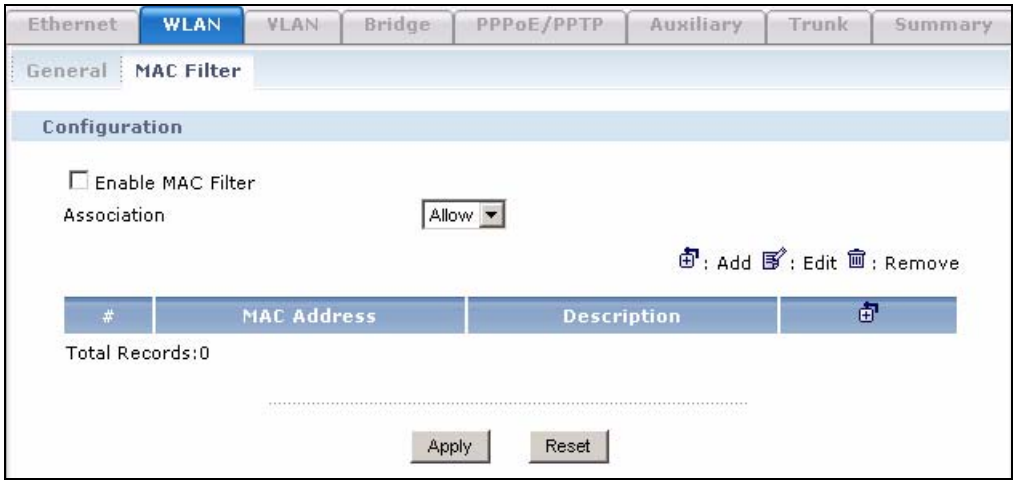
| LABEL | DESCRIPTION |
|---|---|
| TTLS Certificate | This field displays if you select **Authentication Method**. Select the certificate the ZyWALL uses to authenticate itself to the wireless clients. The certificates you can select from are the ones already configured in the **My Certificates** screen.<br><br>EAP-TTLS (Tunneled Transport Layer Service) is an extension of the EAP-TLS authentication that uses certificates for only the server-side authentications to establish a secure connection.<br><br>The wireless clients must use TTLS authentication protocol and PAP inside the TTLS secure tunnel. |
| | The following RADIUS setting related fields display if you set the **Authentication Type** field to **Auth Server**. |
| Radius Server IP Address | Enter the IP address of the external authentication server in dotted decimal notation. |
| Radius Server Port | Enter the RADIUS server's listening port number (the default is **1812**). |
| Radius Server Secret | Enter a password (up to 31 alphanumeric characters) as the key to be shared between the external authentication server and the ZyWALL. The key is not sent over the network. This key must be the same on the external authentication server and ZyWALL. |
| ReAuthentication Timer | Specify how often wireless stations have to resend user names and passwords in order to stay connected.<br><br>Note: If wireless station authentication is done using a RADIUS server, the reauthentication timer on the RADIUS server has priority. |
| Idle Timeout | The ZyWALL automatically disconnects a wireless station from the wired network after a period of inactivity. The wireless station needs to enter the user name and password again before access to the wired network is allowed. |
| Group Key Update Timer | The **Group Key Update Timer** is the rate at which the AP sends a new group key out to all clients. The re-keying process is the WPA equivalent of automatically changing the group key for an AP and all stations in a WLAN on a periodic basis. Setting of the **Group Key Update Timer** is also supported in WPA-PSK mode. |

## 9.2.5 WLAN Interface MAC Filter

The MAC filter allows you to give specific wireless clients exclusive access to the ZyWALL (allow association) or block specific devices from accessing the ZyWALL (deny association) based on the devices' MAC addresses.

To display your ZyWALL's MAC filter settings, click **Device Operation** > **Device Configuration > Network > Interface > WLAN** > **MAC Filter**. The screen appears as shown.

**Figure 113** Device Operation > Device Configuration > Network > Interface > WLAN > MAC Filter




The following table describes the labels in this screen.

**Table 105** Device Operation > Device Configuration > Network > Interface > WLAN > MAC Filter

| LABEL | DESCRIPTION |
|---|---|
| Enable MAC Filter | Select or clear the check box to enable or disable MAC address filtering.<br><br>Enable MAC address filtering to have the router allow or deny access to wireless stations based on MAC addresses. Disable MAC address filtering to have the router not perform MAC filtering on the wireless stations. |
| Association | Define the filter action for the list of MAC addresses in the MAC address filter table.<br><br>Select **Deny** to block access to the router, MAC addresses not listed will be allowed to access the router. Select **Allow** to permit access to the router, MAC addresses not listed will be denied access to the router. |
| # | This is the index number of the MAC address. |
| MAC Address | This displays the MAC address (in XX:XX:XX:XX:XX:XX format) of the wireless station that is allowed or denied access to the ZyWALL. |
| Description | This field displays a descriptive name for the MAC address entry. |
| Add icon | This column lets you create, edit, or remove MAC filter entries.<br><br>To create an entry, click the **Add** icon at the top of the column. The edit screen appears.<br><br>To edit an entry, click the **Edit** icon next to it. The edit screen appears.<br><br>To remove an entry, click the **Remove** icon next to it. The ZyWALL confirms you want to remove it before doing so. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Reset | Click **Reset** to begin configuring this screen afresh. |

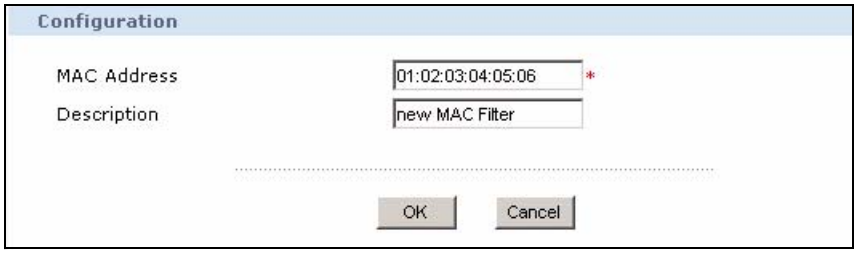
## 9.2.6 MAC Filter Add/Edit Screen

Every IEEE 802.11b or IEEE 802.11g device has a unique MAC (Media Access Control) address. The MAC address is assigned at the factory and consists of six pairs of hexadecimal characters, for example, 00:A0:C5:00:00:02. You need to know the MAC addresses of the devices to configure this screen.

If you set the filter to deny access and add the MAC address of a connected device, the ZyWALL drops the device's connection immediately. However, if you set the filter to allow only the specified MAC addresses, the ZyWALL does not immediately disconnect all connected wireless clients.

To change your ZyWALL's MAC filter settings, click **Device Operation** > **Device Configuration > Network > Interface > WLAN** > **MAC Filter > Add** (or **Edit**). The screen appears as shown when you click **Add**. You cannot edit the MAC address if you click **Edit**.

**Figure 114** Device Operation > Device Configuration > Network > Interface > WLAN > MAC Filter > Add




The following table describes the labels in this menu.

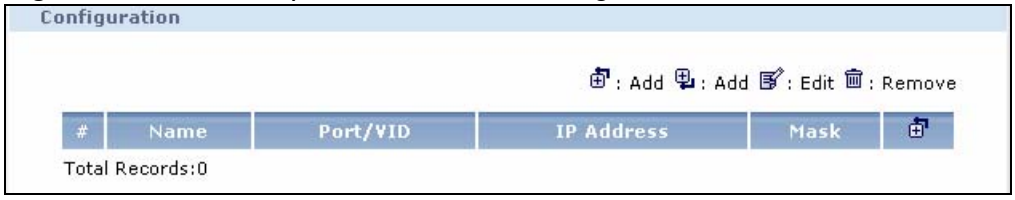
**Table 106** Device Operation > Device Configuration > Network > Interface > WLAN > MAC Filter > Add

| LABEL | DESCRIPTION |
|---|---|
| MAC Address | Enter the MAC address (in XX:XX:XX:XX:XX:XX format) of the wireless station that is to be allowed or denied access to the ZyWALL. |
| Description | Enter a descriptive name for the MAC address entry. |
| OK | Click **OK** to save your changes back to the ZyWALL. |
| Cancel | Click **Cancel** to exit this screen without saving. |

# 9.3 VLAN Summary Screen

This screen lists every VLAN interface and virtual interface created on top of VLAN interfaces. To access this screen, click **Device Operation** > **Device Configuration > Network** > **Interface** > **VLAN**.

**Figure 115** Device Operation > Device Configuration > Network > Interface > VLAN




Each field is explained in the following table.

**Table 107** Device Operation > Device Configuration > Network > Interface > VLAN

| LABEL | DESCRIPTION |
|---|---|
| # | This field is a sequential value, and it is not associated with any interface. |
| Name | This field displays the name of the interface. |
| Port/VID | For VLAN interfaces, this field displays<br>• the Ethernet interface on which the VLAN interface is created<br>• the VLAN ID<br>For virtual interfaces, this field is blank. |
| IP Address | This field displays the current IP address of the interface. If the IP address is 0.0.0.0, the interface does not have an IP address yet.<br>This screen also shows whether the IP address is a static IP address (**STATIC**) or dynamically assigned (**DHCP**). IP addresses are always static in virtual interfaces. |
| Mask | This field displays the interface's subnet mask in dot decimal notation. |
| Add icon | This column lets you create, edit, remove, activate, and deactivate interfaces.<br>To create a VLAN interface, click the **Add** icon at the top of the column.<br>To create a virtual VLAN interface, click the **Add** icon next to the corresponding VLAN interface.<br>To edit an interface, click the **Edit** icon next to it.<br>To remove an interface, click the **Remove** icon next to it. The Vantage CNM confirms you want to remove it before doing so. |

## 9.3.1 VLAN Add/Edit

This screen lets you configure IP address assignment, interface bandwidth parameters, DHCP settings, and connectivity check for each VLAN interface. To access this screen, click the **Add** icon at the top of the **Add** column or click an

**Edit** icon next to a VLAN interface in the **Device Operation** > **Device Configuration** > **Network** > **Interface** > **VLAN** screen. The following screen appears.

**Figure 116** Device Operation > Device Configuration > Network > Interface > VLAN > Add/Edit

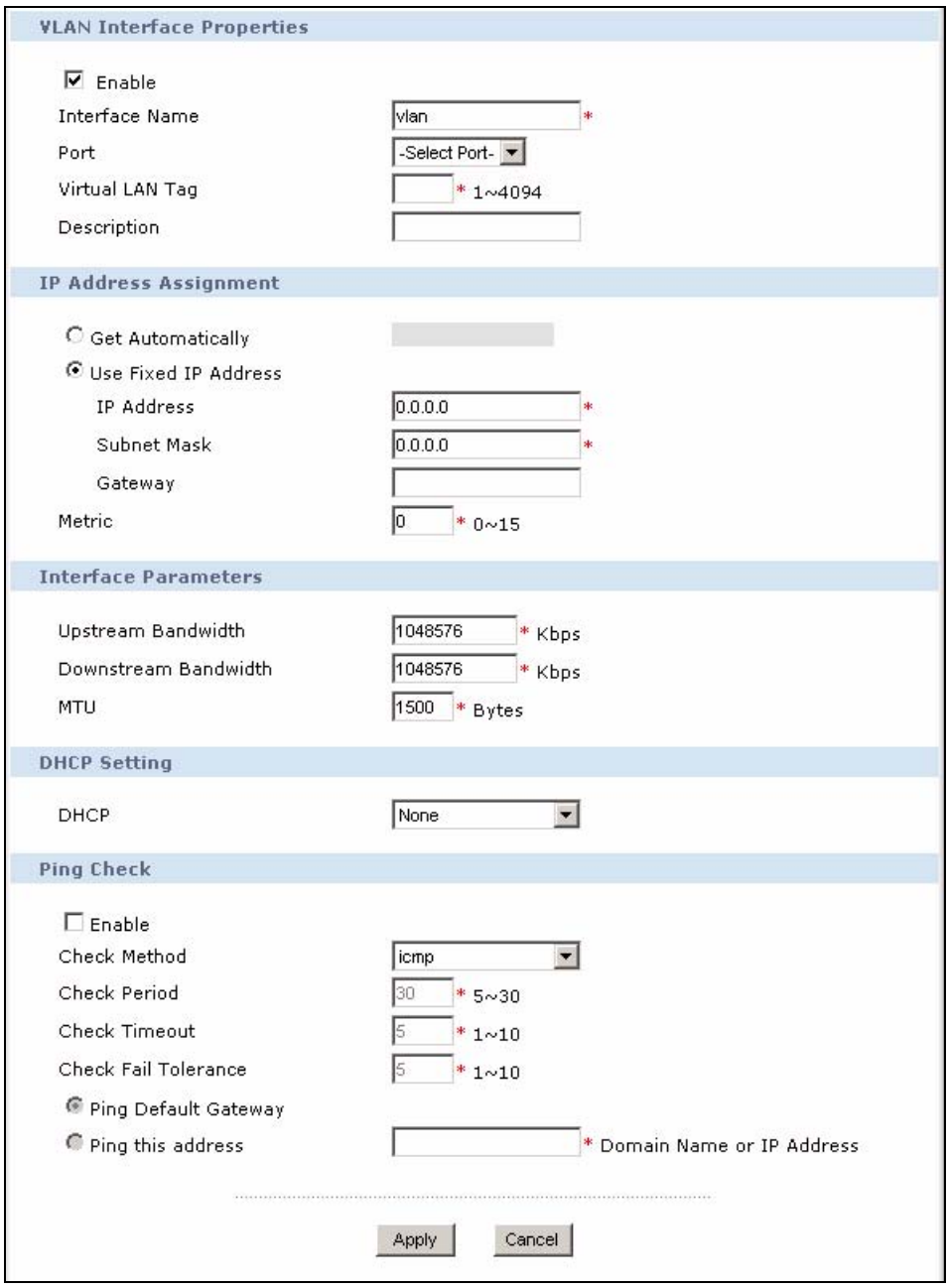


**Figure 117** Device Operation > Device Configuration > Network > Interface > VLAN > Add/Edit - DHCP Server Settings

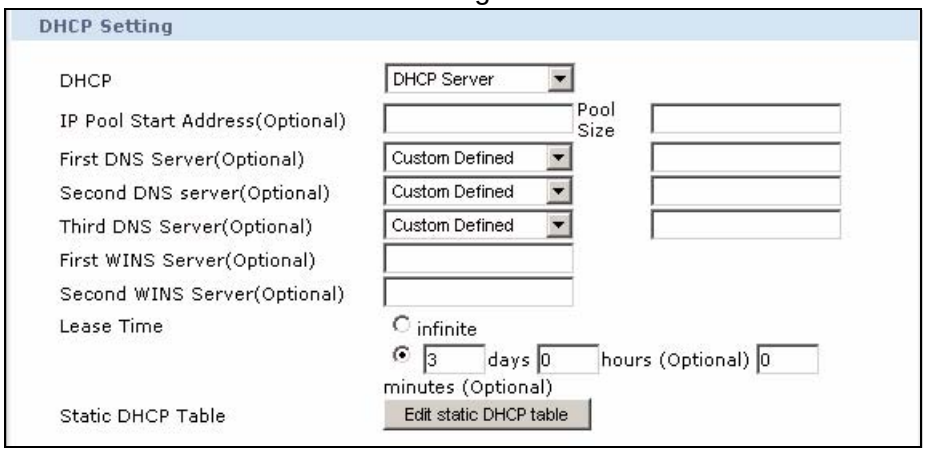
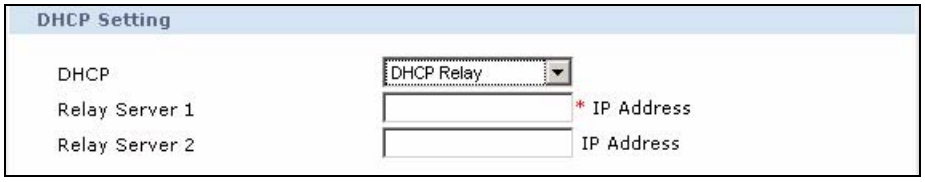



**Figure 118** Device Operation > Device Configuration > Network > Interface > VLAN > Add/Edit - DHCP Relay Settings




Each field is explained in the following table.

**Table 108** Device Operation > Device Configuration > Network > Interface > VLAN > Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| VLAN Interface Properties | |
| Enable | Select this to turn this interface on. Clear this to disable this interface. |
| Interface Name | This field is read-only if you are editing an existing VLAN interface. Enter the number of the VLAN interface. You can use a number from 0~4094. |
| Port | Select the Ethernet interface on which the VLAN interface runs. |
| Virtual LAN Tag | Enter the VLAN ID. This 12-bit number uniquely identifies each VLAN. Allowed values are 1 - 4094. (0 and 4095 are reserved.) |
| Description | Enter a description of this interface. It is not used elsewhere. You can use alphanumeric and ( )+/:=?!*#@$_%- characters, and it can be up to 60 characters long. |
| IP Address Assignment | |
| Get Automatically | Select this if this interface is a DHCP client. In this case, the DHCP server configures the IP address, subnet mask, and gateway automatically.<br><br>You should not select this if the interface is assigned to a VRRP group. |
| Use Fixed IP Address | Select this if you want to specify the IP address, subnet mask, and gateway manually. |

**Table 108** Device Operation > Device Configuration > Network > Interface > VLAN > Add/Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| IP Address | This field is enabled if you select **Use Fixed IP Address**.<br><br>Enter the IP address for this interface. |
| Subnet Mask | This field is enabled if you select **Use Fixed IP Address**.<br><br>Enter the subnet mask of this interface in dot decimal notation. The subnet mask indicates what part of the IP address is the same for all computers in the network. |
| Gateway | This field is enabled if you select **Use Fixed IP Address**.<br><br>Enter the IP address of the gateway. The ZyWALL sends packets to the gateway when it does not know how to route the packet to its destination. The gateway should be on the same network as the interface. |
| Metric | Enter the priority of the gateway (the ISP) on this interface. The ZyWALL decides which gateway to use based on this priority. The lower the number, the higher the priority. If two or more gateways have the same priority, the ZyWALL uses the one that was configured first. |
| Interface Parameters | |
| Upstream Bandwidth | Enter the maximum amount of traffic, in kilobits per second, the ZyWALL can send through the interface to the network. Allowed values are 0 - 1048576. |
| Downstream Bandwidth | This is reserved for future use.<br><br>Enter the maximum amount of traffic, in kilobits per second, the ZyWALL can receive from the network through the interface. Allowed values are 0 - 1048576. |
| MTU | Maximum Transmission Unit. Type the maximum size of each data packet, in bytes, that can move through this interface. If a larger packet arrives, the ZyWALL divides it into smaller fragments. Allowed values are 576 - 1500. Usually, this value is 1500. |
| DHCP Setting | The DHCP settings are available for the OPT, LAN and DMZ interfaces. |
| DHCP | Select what type of DHCP service the ZyWALL provides to the network. Choices are:<br><br>**None** - the ZyWALL does not provide any DHCP services. There is already a DHCP server on the network.<br><br>**DHCP Relay** - the ZyWALL routes DHCP requests to one or more DHCP servers you specify. The DHCP server(s) may be on another network.<br><br>**DHCP Server** - the ZyWALL assigns IP addresses and provides subnet mask, gateway, and DNS server information to the network. The ZyWALL is the DHCP server for the network. |
| | These fields appear if the ZyWALL is a **DHCP Relay**. |
| Relay Server 1 | Enter the IP address of a DHCP server for the network. |
| Relay Server 2 | This field is optional. Enter the IP address of another DHCP server for the network. |

**Table 108** Device Operation > Device Configuration > Network > Interface > VLAN > Add/Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| | These fields appear if the ZyWALL is a **DHCP Server**. |
| IP Pool Start Address | Enter the IP address from which the ZyWALL begins allocating IP addresses. If you want to assign a static IP address to a specific computer, click **Add Static DHCP**.<br><br>If this field is blank, the **Pool Size** must also be blank. In this case, the ZyWALL can assign every IP address allowed by the interface's IP address and subnet mask, except for the first address (network address), last address (broadcast address) and the interface's IP address. |
| Pool Size | Enter the number of IP addresses to allocate. This number must be at least one and is limited by the interface's **Subnet Mask**. For example, if the **Subnet Mask** is 255.255.255.0 and **IP Pool Start Address** is 10.10.10.10, the ZyWALL can allocate 10.10.10.10 to 10.10.10.254, or 245 IP addresses.<br><br>If this field is blank, the **IP Pool Start Address** must also be blank. In this case, the ZyWALL can assign every IP address allowed by the interface's IP address and subnet mask, except for the first address (network address), last address (broadcast address) and the interface's IP address. |
| First DNS Server<br>Second DNS Server<br>Third DNS Server | Specify the IP addresses up to three DNS servers for the DHCP clients to use. Use one of the following ways to specify these IP addresses.<br><br>**Custom Defined** - enter a static IP address.<br><br>**From ISP** - select the DNS server that another interface received from its DHCP server.<br><br>**ZyWALL** - the DHCP clients use the IP address of this interface and the ZyWALL works as a DNS relay. |
| First WINS Server, Second WINS Server | Type the IP address of the WINS (Windows Internet Naming Service) server that you want to send to the DHCP clients. The WINS server keeps a mapping table of the computer names on your network and the IP addresses that they are currently using. |
| Lease time | Specify how long each computer can use the information (especially the IP address) before it has to request the information again. Choices are:<br><br>**infinite** - select this if IP addresses never expire<br><br>**days**, **hours**, and **minutes** - select this to enter how long IP addresses are valid. |
| Static DHCP Table | Click **Edit static DHCP table** to configure static IP addresses for the ZyWALL to assign to computers connected to this interface. |
| Ping Check | The ZyWALL can regularly check the connection to the gateway you specified to make sure it is still available. You specify how often to check the connection, how long to wait for a response before the attempt is a failure, and how many consecutive failures are required before the ZyWALL stops routing to the gateway. The ZyWALL resumes routing to the gateway the first time the gateway passes the connectivity check. |

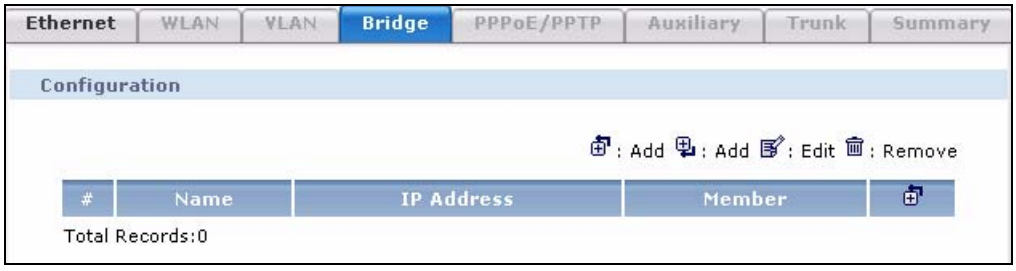
**Table 108** Device Operation > Device Configuration > Network > Interface > VLAN > Add/Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Enable | Select this to turn on the connection check. |
| Check Method | Select the method that the gateway allows.<br>Select **icmp** to have the ZyWALL regularly ping the gateway you specify to make sure it is still available.<br>Select **tcp** to have the ZyWALL regularly perform a TCP handshake with the gateway you specify to make sure it is still available. |
| Check Period | Enter the number of seconds between connection check attempts. |
| Check Timeout | Enter the number of seconds to wait for a response before the attempt is a failure. |
| Check Fail Tolerance | Enter the number of consecutive failures before the ZyWALL stops routing through the gateway. |
| Ping Default Gateway | Select this to use the default gateway for the connectivity check. |
| Ping this address | Select this to specify a domain name or IP address for the connectivity check. Enter that domain name or IP address in the field next to it. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Cancel | Click **Cancel** to exit this screen without saving. |

# 9.4 Bridge Summary

This screen lists every bridge interface and virtual interface created on top of bridge interfaces. To access this screen, click **Device Operation** > **Device Configuration > Network** > **Interface** > **Bridge**.

**Figure 119** Device Operation > Device Configuration > Network > Interface > Bridge




Each field is described in the following table.

**Table 109** Device Operation > Device Configuration > Network > Interface > Bridge

| LABEL | DESCRIPTION |
|---|---|
| # | This field is a sequential value, and it is not associated with any interface. |
| Name | This field displays the name of the interface. |

**Table 109** Device Operation > Device Configuration > Network > Interface > Bridge

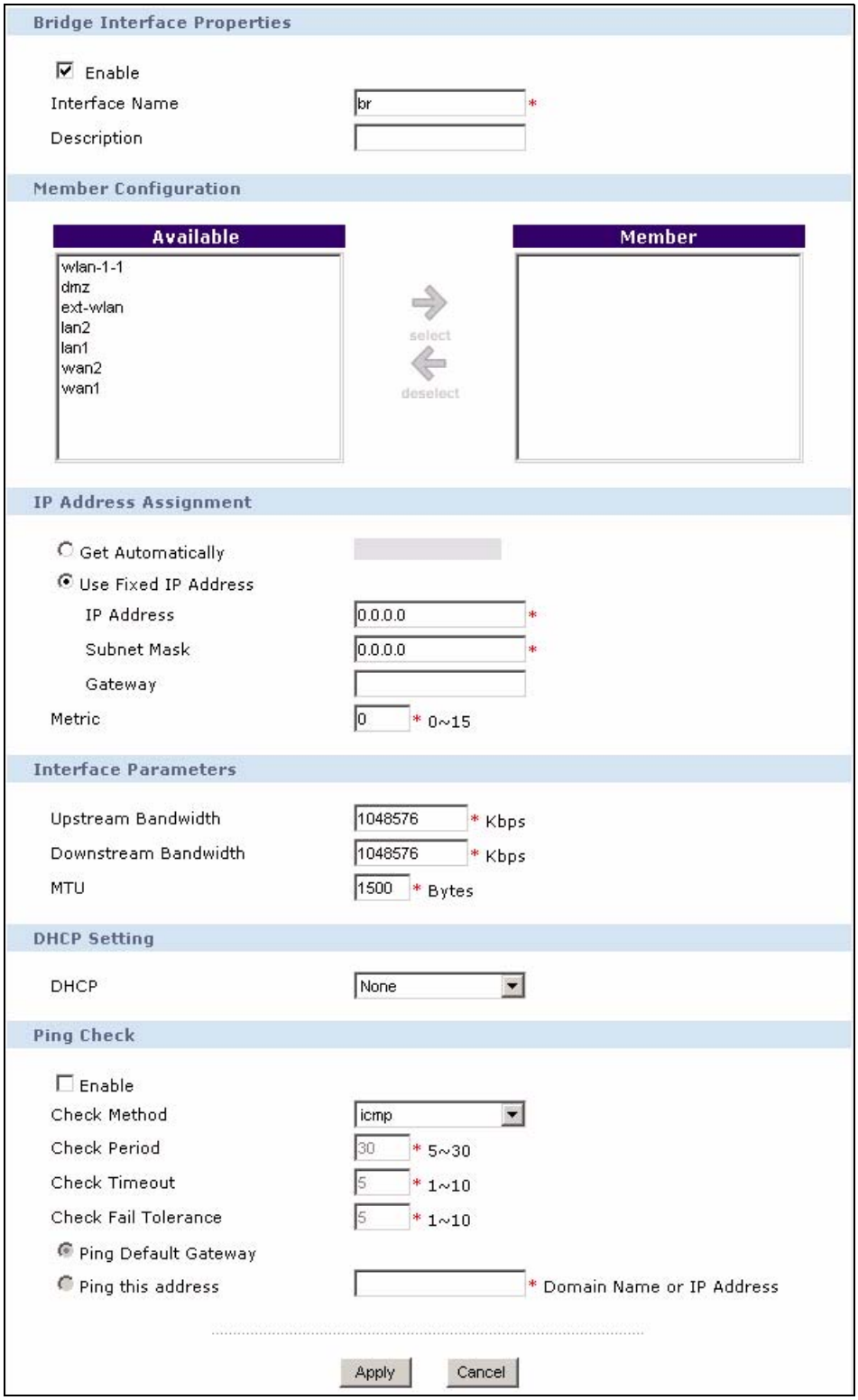
| LABEL | DESCRIPTION |
|---|---|
| IP Address | This field displays the current IP address of the interface. If the IP address is 0.0.0.0, the interface does not have an IP address yet.<br><br>This screen also shows whether the IP address is a static IP address (**STATIC**) or dynamically assigned (**DHCP**). IP addresses are always static in virtual interfaces. |
| Member | This field displays the Ethernet interfaces and VLAN interfaces in the bridge interface. It is blank for virtual interfaces. |
| Add icon | This column lets you create, edit, remove, activate, and deactivate interfaces.<br><br>To create a bridge interface, click the **Add** icon at the top of the column.<br><br>To create a virtual interface, click the **Add** icon next to the corresponding bridge interface.<br><br>To edit an interface, click the **Edit** icon next to it.<br><br>To remove an interface, click the **Remove** icon next to it. The Vantage CNM confirms you want to remove it before doing so. |

## 9.4.1 Bridge Add/Edit

This screen lets you configure IP address assignment, interface bandwidth parameters, DHCP settings, and connectivity check for each bridge interface. To access this screen, click the **Add** icon at the top of the **Add** column or click an

**Edit** icon in the **Device Operation** > **Device Configuration > Network** > **Interface** > **Bridge** screen. The following screen appears.

**Figure 120** Device Operation > Device Configuration > Network > Interface > Bridge > Add/Edit



Each field is described in the table below.

**Table 110** Device Operation > Device Configuration > Network > Interface > Bridge > Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| Bridge Interface Properties | |
| Enable | Select this to enable or clear this to disable this interface. |
| Interface Name | This field is read-only if you are editing the interface. Enter the name of the bridge interface. The format is br*x*, where *x* is 0 - 11. For example, br0, br3, and so on. |
| Description | Enter a description of this interface. It is not used elsewhere. You can use alphanumeric and ( )+/:=?!*#@$_%- characters, and it can be up to 60 characters long. |
| Member Configuration | |
| Available | This field displays Ethernet interfaces and VLAN interfaces that can become part of the bridge interface. An interface is not available in the following situations:<br>• There is a virtual interface on top of it<br>• It is already used in a different bridge interface<br>Select one, and click the **select** arrow to add it to the bridge interface. Each bridge interface can only have one VLAN interface. |
| Member | This field displays the interfaces that are part of the bridge interface. Select one, and click the **deselect** arrow to remove it from the bridge interface. |
| IP Address Assignment | |
| Get Automatically | Select this if this interface is a DHCP client. In this case, the DHCP server configures the IP address, subnet mask, and gateway automatically. |
| Use Fixed IP Address | Select this if you want to specify the IP address, subnet mask, and gateway manually. |
| IP Address | This field is enabled if you select **Use Fixed IP Address**.<br>Enter the IP address for this interface. |
| Subnet Mask | This field is enabled if you select **Use Fixed IP Address**.<br>Enter the subnet mask of this interface in dot decimal notation. The subnet mask indicates what part of the IP address is the same for all computers in the network. |
| Gateway | This field is enabled if you select **Use Fixed IP Address**.<br>Enter the IP address of the gateway. The ZyWALL sends packets to the gateway when it does not know how to route the packet to its destination. The gateway should be on the same network as the interface. |
| Metric | Enter the priority of the gateway (the ISP) on this interface. The ZyWALL decides which gateway to use based on this priority. The lower the number, the higher the priority. If two or more gateways have the same priority, the ZyWALL uses the one that was configured first. |
| Interface Parameters | |

**Table 110** Device Operation > Device Configuration > Network > Interface > Bridge > Add/Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Upstream Bandwidth | Enter the maximum amount of traffic, in kilobits per second, the ZyWALL can send through the interface to the network. Allowed values are 0 - 1048576. |
| Downstream Bandwidth | This is reserved for future use.<br>Enter the maximum amount of traffic, in kilobits per second, the ZyWALL can receive from the network through the interface. Allowed values are 0 - 1048576. |
| MTU | Maximum Transmission Unit. Type the maximum size of each data packet, in bytes, that can move through this interface. If a larger packet arrives, the ZyWALL divides it into smaller fragments. Allowed values are 576 - 1500. Usually, this value is 1500. |
| DHCP Setting | |
| DHCP | Select what type of DHCP service the ZyWALL provides to the network. Choices are:<br>**None** - the ZyWALL does not provide any DHCP services. There is already a DHCP server on the network.<br>**DHCP Relay** - the ZyWALL routes DHCP requests to one or more DHCP servers you specify. The DHCP server(s) may be on another network.<br>**DHCP Server** - the ZyWALL assigns IP addresses and provides subnet mask, gateway, and DNS server information to the network. The ZyWALL is the DHCP server for the network. |
| | These fields appear if the ZyWALL is a **DHCP Relay**. |
| Relay Server 1 | Enter the IP address of a DHCP server for the network. |
| Relay Server 2 | This field is optional. Enter the IP address of another DHCP server for the network. |
| | These fields appear if the ZyWALL is a **DHCP Server**. |
| IP Pool Start Address | Enter the IP address from which the ZyWALL begins allocating IP addresses. If you want to assign a static IP address to a specific computer, click **Add Static DHCP**.<br>If this field is blank, the **Pool Size** must also be blank. In this case, the ZyWALL can assign every IP address allowed by the interface's IP address and subnet mask, except for the first address (network address), last address (broadcast address) and the interface's IP address. |
| Pool Size | Enter the number of IP addresses to allocate. This number must be at least one and is limited by the interface's **Subnet Mask**. For example, if the **Subnet Mask** is 255.255.255.0 and **IP Pool Start Address** is 10.10.10.10, the ZyWALL can allocate 10.10.10.10 to 10.10.10.254, or 245 IP addresses.<br>If this field is blank, the **IP Pool Start Address** must also be blank. In this case, the ZyWALL can assign every IP address allowed by the interface's IP address and subnet mask, except for the first address (network address), last address (broadcast address) and the interface's IP address. |

**Table 110** Device Operation > Device Configuration > Network > Interface > Bridge > Add/Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| First DNS Server<br>Second DNS Server<br>Third DNS Server | Specify the IP addresses up to three DNS servers for the DHCP clients to use. Use one of the following ways to specify these IP addresses.<br>**Custom Defined** - enter a static IP address.<br>**From ISP** - select the DNS server that another interface received from its DHCP server.<br>**ZyWALL** - the DHCP clients use the IP address of this interface and the ZyWALL works as a DNS relay. |
| First WINS Server, Second WINS Server | Type the IP address of the WINS (Windows Internet Naming Service) server that you want to send to the DHCP clients. The WINS server keeps a mapping table of the computer names on your network and the IP addresses that they are currently using. |
| Lease time | Specify how long each computer can use the information (especially the IP address) before it has to request the information again. Choices are:<br>**infinite** - select this if IP addresses never expire<br>**days, hours, and minutes** - select this to enter how long IP addresses are valid. |
| Static DHCP Table | Click **Edit static DHCP table** to configure static IP addresses for the ZyWALL to assign to computers connected to this interface. |
| Ping Check | The interface can regularly check the connection to the gateway you specified to make sure it is still available. You specify how often the interface checks the connection, how long to wait for a response before the attempt is a failure, and how many consecutive failures are required before the ZyWALL stops routing to the gateway. The ZyWALL resumes routing to the gateway the first time the gateway passes the connectivity check. |
| Enable | Select this to turn on the connection check. |
| Check Method | Select the method that the gateway allows.<br>Select **icmp** to have the ZyWALL regularly ping the gateway you specify to make sure it is still available.<br>Select **tcp** to have the ZyWALL regularly perform a TCP handshake with the gateway you specify to make sure it is still available. |
| Check Period | Enter the number of seconds between connection check attempts. |
| Check Timeout | Enter the number of seconds to wait for a response before the attempt is a failure. |
| Check Fail Tolerance | Enter the number of consecutive failures before the ZyWALL stops routing through the gateway. |
| Ping Default Gateway | Select this to use the default gateway for the connectivity check. |
| Ping this address | Select this to specify a domain name or IP address for the connectivity check. Enter that domain name or IP address in the field next to it. |

**Table 110** Device Operation > Device Configuration > Network > Interface > Bridge > Add/Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Cancel | Click **Cancel** to exit this screen without saving. |

# 9.5 PPPoE/PPTP Interface Summary

Note: You must set up an ISP account before you create a PPPoE/PPTP interface.

This screen lists every PPPoE/PPTP interface. To access this screen, click **Device Operation** > **Device Configuration > Network** > **Interface** > **PPPoE/PPTP**.

**Figure 121** Device Operation > Device Configuration > Network > Interface > PPPoE/PPTP

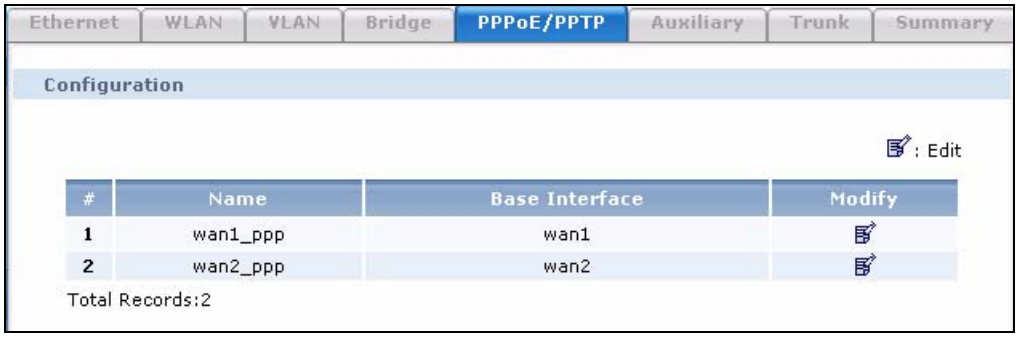
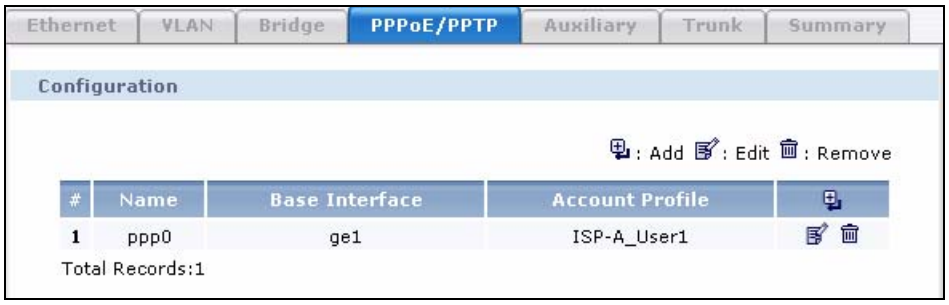



**Figure 122** Device Operation > Device Configuration > Network > Interface > PPPoE/PPTP




Each field is described in the table below.

**Table 111** Device Operation > Device Configuration > Network > Interface > PPPoE/PPTP

| LABEL | DESCRIPTION |
|---|---|
| # | This field is a sequential value, and it is not associated with any interface. |
| Name | This field displays the name of the interface. |

**Table 111** Device Operation > Device Configuration > Network > Interface > PPPoE/PPTP (continued)

| LABEL | DESCRIPTION |
|---|---|
| Base Interface | This field displays the interface on the top of which the PPPoE/PPTP interface is. |
| Account Profile | This field is not available for all ZLD-based ZyWALL. This field displays the ISP account used by this PPPoE/PPTP interface. |
| Add | Click this to create a new PPPoE/PPTP interface. |
| Edit | Click the **Edit** icon next to an interface to edit it. |
| Remove | Click this next to an interface to remove it. The Vantage CNM confirms you want to remove it before doing so. |

## 9.5.1 PPPoE/PPTP Interface Edit

This screen lets you configure a PPPoE or PPTP interface. To access this screen, click an **Edit** icon in the **Device Operation** > **Device Configuration > Network** > **Interface** > **PPPoE/PPTP** screen. The PPP interface **Edit > Configuration** screen is shown here as an example. You can click the Wizard tab instead to configure just the key settings.

Note: Fields may vary in this screen depending on different ZyWALL models.

**Figure 123** Device Operation > Device Configuration > Network > Interface > PPPoE/PPTP > Edit

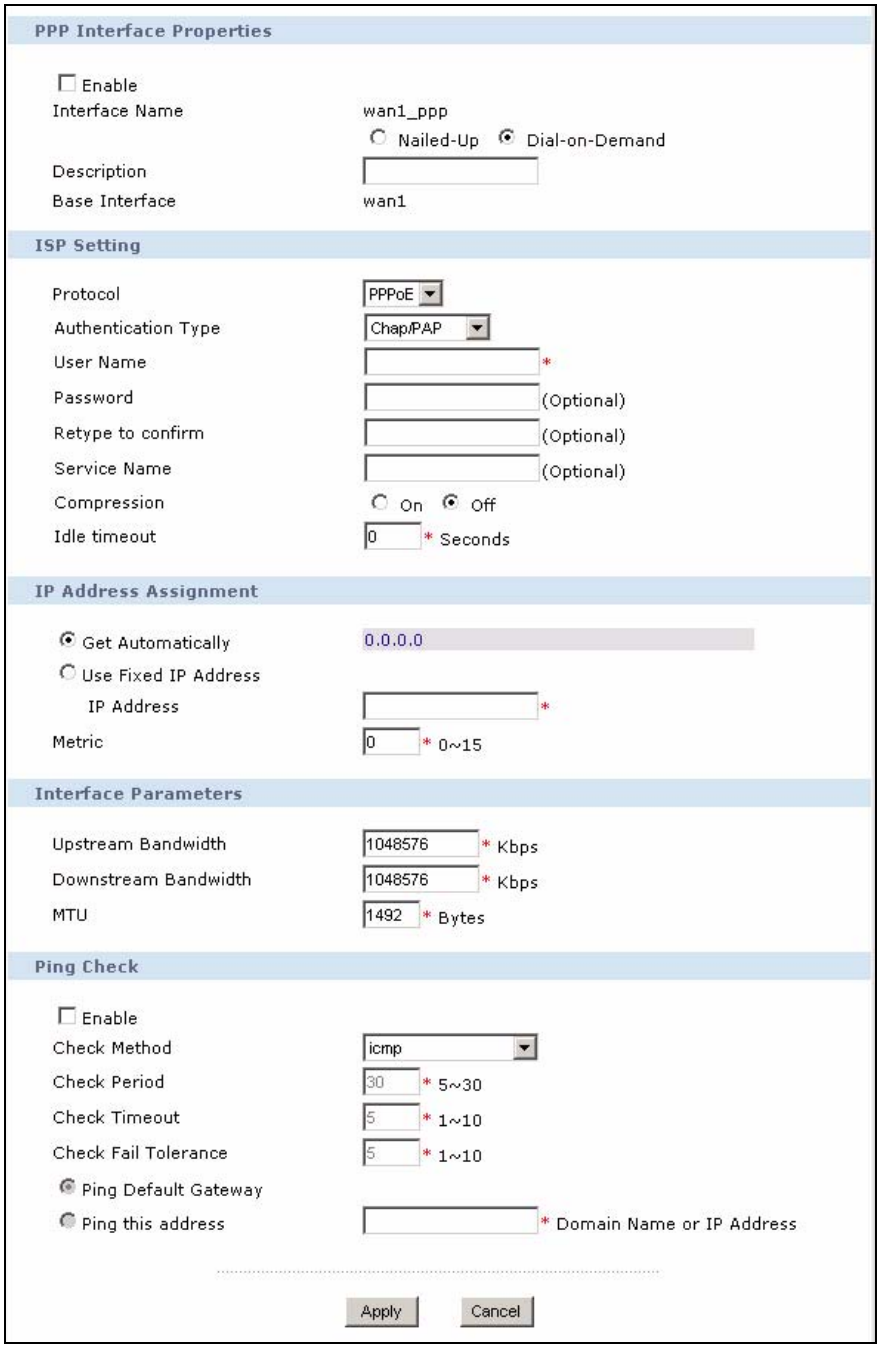
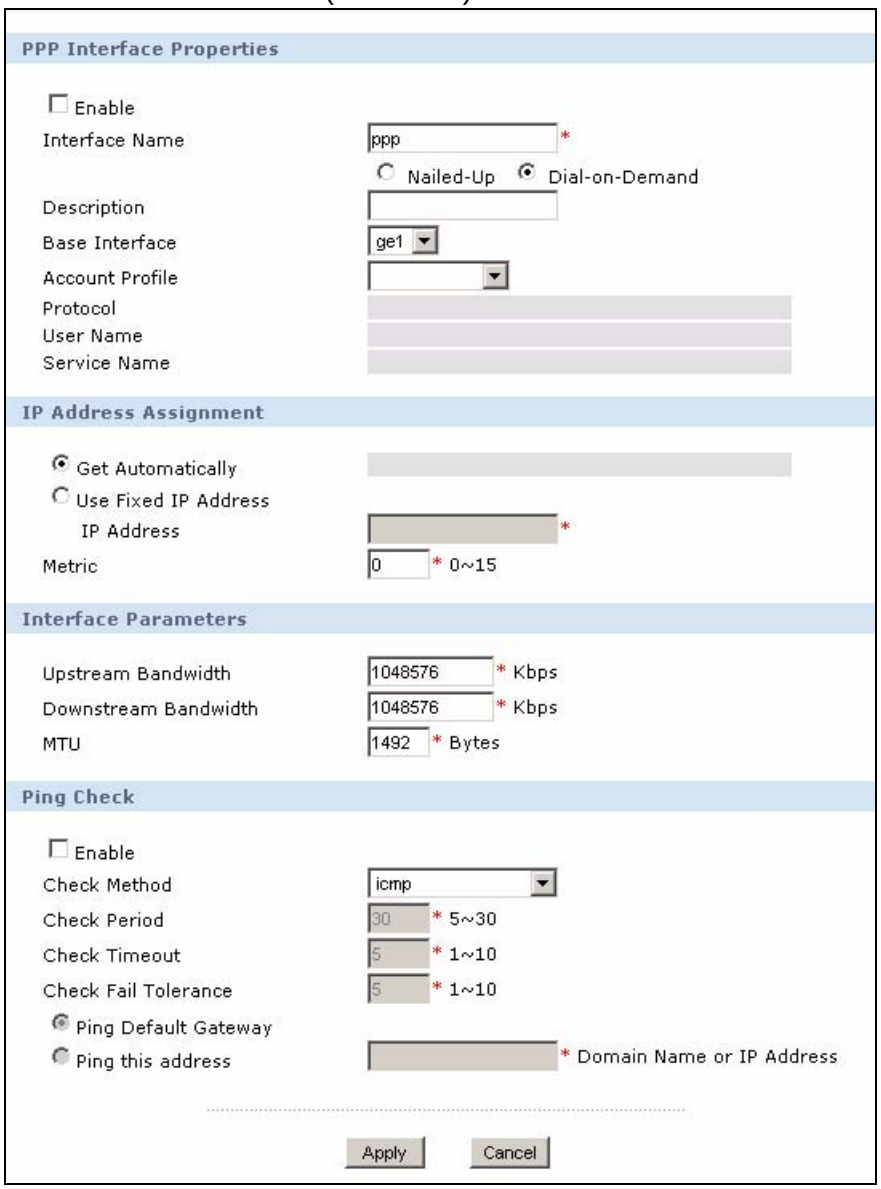


**Figure 124** Device Operation > Device Configuration > Network > Interface > PPPoE/PPTP > Add (USG1000)




Each field is explained in the following table.

**Table 112** Device Operation > Device Configuration > Network > Interface > PPP > Edit > Configuration

| LABEL | DESCRIPTION |
|---|---|
| PPP Interface Properties | |
| Enable | Select this to enable this interface. Clear this to disable this interface. |
| Interface Name | This field is read-only and displays the name of the PPP interface. The format is the name of the physical port followed by “ppp”. For example, “wan1_pppoe”. |

**Table 112** Device Operation > Device Configuration > Network > Interface > PPP > Edit > Configuration (continued)

| LABEL | DESCRIPTION |
|---|---|
| Nailed-Up | Select this if the PPPoE/PPTP connection should always be up. Clear this to have the ZyWALL establish the PPPoE/PPTP connection only when there is traffic. You might use this option if a lot of traffic needs to go through the interface or it does not cost extra to keep the connection up all the time. |
| Dial-on-Demand | Select this to have the ZyWALL establish the PPPoE/PPTP connection only when there is traffic. You might use this option if there is little traffic through the interface or if it costs money to keep the connection available. |
| Description | Enter a description of this interface. It is not used elsewhere. You can use alphanumeric and ( )+/:=?!*#@$_%- characters, and it can be up to 60 characters long. |
| Base Interface | This field is read-only and displays the name of the interface upon which this PPP interface is built. |
| Account Profile | Select the ISP account that this PPPoE/PPTP interface uses. The dropdown box lists ISP accounts by name. You can configure ISP accounts in the **Device Operation** > **Device Configuration** > **Object** > **ISP Account** screen. |
| Protocol | This field is read-only. It displays the protocol specified in the ISP account. |
| User Name | This field is read-only. It displays the user name for the ISP account. |
| Service Name | This field is read-only. It displays the PPPoE service name specified in the ISP account. This field is blank if the ISP account uses PPTP. |
| ISP Setting | |
| Protocol | Select the protocol that your ISP uses for the account. Options are:<br>**pppoe** - This ISP account uses the PPPoE protocol.<br>**pptp** - This ISP account uses the PPTP protocol. |
| Authentication Type | Use the drop-down list box to select an authentication protocol for outgoing calls. Options are:<br>**Chap/PAP** - The ZyWALL accepts either CHAP or PAP when requested by this remote node.<br>**Chap** - The ZyWALL accepts CHAP only.<br>**PAP** - The ZyWALL accepts PAP only.<br>**MSCHAP** - The ZyWALL accepts MSCHAP only.<br>**MSCHAP-V2** - The ZyWALL accepts MSCHAP-V2 only. |
| User Name | This field is read-only. It displays the user name for the ISP account. |
| Password, Retype to Confirm | Type your password. Then re- to make sure that you have entered is correctly. |
| Service Name | This field is optional. It displays the PPPoE service name specified in the ISP account. This field is blank if the ISP account uses PPTP. |

**Table 112** Device Operation > Device Configuration > Network > Interface > PPP > Edit > Configuration (continued)

| LABEL | DESCRIPTION |
|---|---|
| Compression | Select **On** button to turn on stac compression, and select **Off** to turn off stac compression. Stac compression is a data compression technique capable of compressing data by a factor of about four. |
| Idle timeout | Type the number of seconds the ZyWALL should wait for traffic before it automatically disconnects the connection. Set this field to zero to disable the idle timeout. Allowed values are 0 - 360. |
| IP Address Assignment | Click **Advanced** to display more settings. Click **Basic** to display fewer settings. |
| Get Automatically | Select this if this interface is a DHCP client. In this case, the DHCP server configures the IP address automatically. The subnet mask and gateway are always defined automatically in PPPoE/PPTP interfaces. |
| Use Fixed IP Address | Select this if you want to specify the IP address manually. |
| IP Address | This field is enabled if you select **Use Fixed IP Address**.<br><br>Enter the IP address for this interface. |
| Metric | Enter the priority of the gateway (the ISP) on this interface. The ZyWALL decides which gateway to use based on this priority. The lower the number, the higher the priority. If two or more gateways have the same priority, the ZyWALL uses the one that was configured first. |
| Interface Parameters | |
| Upstream Bandwidth | Enter the maximum amount of traffic, in kilobits per second, the ZyWALL can send through the interface to the network. Allowed values are 0 - 1048576. |
| Downstream Bandwidth | This is reserved for future use.<br><br>Enter the maximum amount of traffic, in kilobits per second, the ZyWALL can receive from the network through the interface. Allowed values are 0 - 1048576. |
| MTU | Maximum Transmission Unit. Type the maximum size of each data packet, in bytes, that can move through this interface. If a larger packet arrives, the ZyWALL divides it into smaller fragments. Allowed values are 576 - 1492. Usually, this value is 1492. |
| Ping Check | The interface can regularly check the connection to the gateway you specified to make sure it is still available. You specify how often the interface checks the connection, how long to wait for a response before the attempt is a failure, and how many consecutive failures are required before the ZyWALL stops routing to the gateway. The ZyWALL resumes routing to the gateway the first time the gateway passes the connectivity check. |
| Enable | Select this to turn on the connection check. |
| Check Method | Select the method that the gateway allows.<br><br>Select **icmp** to have the ZyWALL regularly ping the gateway you specify to make sure it is still available.<br><br>Select **tcp** to have the ZyWALL regularly perform a TCP handshake with the gateway you specify to make sure it is still available. |

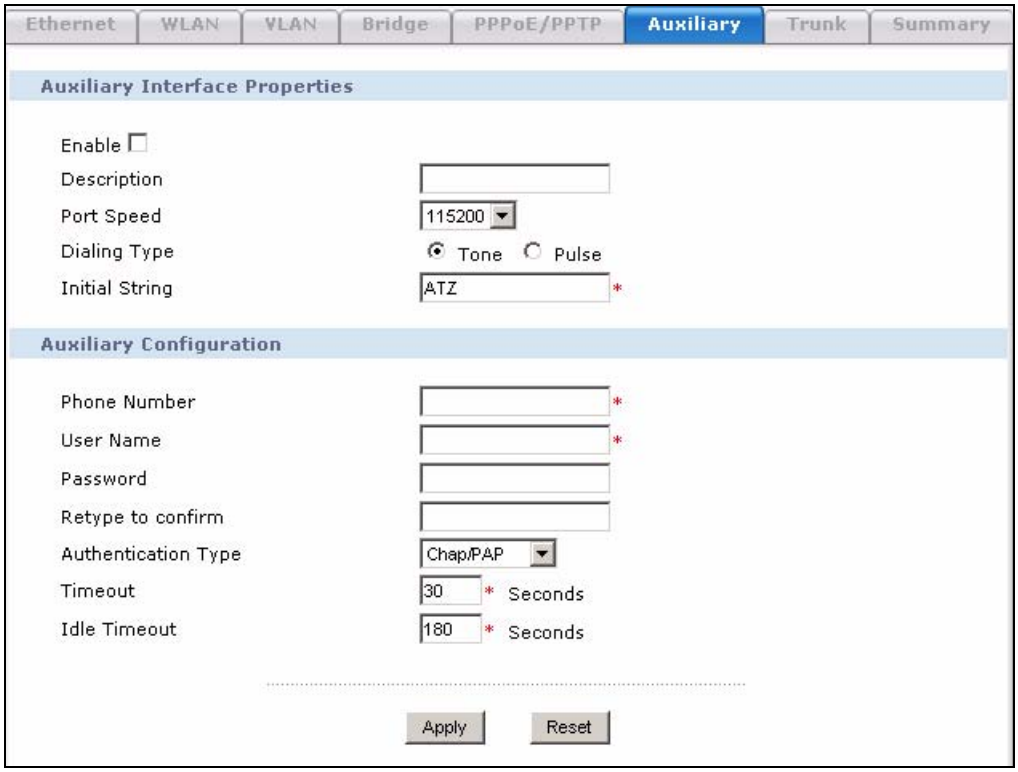
**Table 112** Device Operation > Device Configuration > Network > Interface > PPP > Edit > Configuration (continued)

| LABEL | DESCRIPTION |
|---|---|
| Check Period | Enter the number of seconds between connection check attempts. |
| Check Timeout | Enter the number of seconds to wait for a response before the attempt is a failure. |
| Check Fail Tolerance | Enter the number of consecutive failures before the ZyWALL stops routing through the gateway. |
| Ping Default Gateway | Select this to use the default gateway for the connectivity check. |
| Ping this address | Select this to specify a domain name or IP address for the connectivity check. Enter that domain name or IP address in the field next to it. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Cancel | Click **Cancel** to exit this screen without saving. |

# 9.6 Auxiliary Interface

Use the **Auxiliary** screen to configure the ZyWALL's auxiliary interface. Click **Device Operation** > **Device Configuration > Network** > **Interface** > **Auxiliary** to open it.

**Figure 125** Device Operation > Device Configuration > Network > Interface > Auxiliary




Each field is described in the table below.

**Table 113** Device Operation > Device Configuration > Network > Interface > Auxiliary

| LABEL | DESCRIPTION |
|---|---|
| Auxiliary Interface Properties | |
| Enable | Select this to turn on the auxiliary dial up interface. The interface does not dial out, however, unless it is part of a trunk and load-balancing conditions are satisfied. |
| Description | Enter a description of this interface. It is not used elsewhere. You can use alphanumeric and ( )+/:=?!*#@$_%- characters, and it can be up to 60 characters long. |
| Port Speed | Select the speed of the connection between the ZyWALL and external computer. |
| Dialing Type | **Tone** - select this if the telephone uses tone-based dialing.<br>**Pulse** - select this if the telephone uses pulse-based dialing. |

**Table 113** Device Operation > Device Configuration > Network > Interface > Auxiliary (continued)

| LABEL | DESCRIPTION |
|---|---|
| Initial String | Enter the AT command string to initialize the external modem. ATZ is the most common string, but you should check the manual for the external modem for additional commands. |
| Auxiliary Configuration | |
| Phone Number | Enter the phone number to dial here. You can use 1-20 numbers, commas (,), or plus signs (+). Use a comma to pause during dialing. Use a plus sign to tell the external modem to make an international call. |
| User Name | Enter the user name required for authentication. |
| Password | Enter the password required for authentication. |
| Retype to confirm | Enter the password again to make sure you have not typed it incorrectly. |
| Authentication Type | Select the authentication protocol to use for outgoing calls. Choices are:<br>**Chap/PAP** - The ZyWALL accepts either CHAP (Challenge Handshake Authentication Protocol) or PAP (Password Authentication Protocol), as requested by the computer you are dialing.<br>**Chap** - The ZyWALL accepts CHAP only.<br>**PAP** - The ZyWALL accepts PAP only.<br>**MSCHAP** - The ZyWALL accepts MSCHAP only.<br>**MSCHAP-V2** - The ZyWALL accepts MSCHAP-V2 only. |
| Timeout | Type the number of seconds the ZyWALL tries to set up a connection before it stops. Allowed values are 30 - 120. |
| Idle Timeout | Type the number of seconds the ZyWALL should wait for traffic before it automatically disconnects the connection. Set this field to zero to disable the idle timeout. Allowed values are 0 - 360. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Reset | Click **Reset** to begin configuring this screen afresh. |

# 9.7 The Trunk Summary Screen

Click **Device Operation** > **Device Configuration > Network** > **Interface** > **Trunk** to open the **Trunk** screen. This screen lists the configured trunks and the load balancing algorithm that each is configured to use.

**Figure 126** Device Operation > Device Configuration > Network > Interface > Trunk

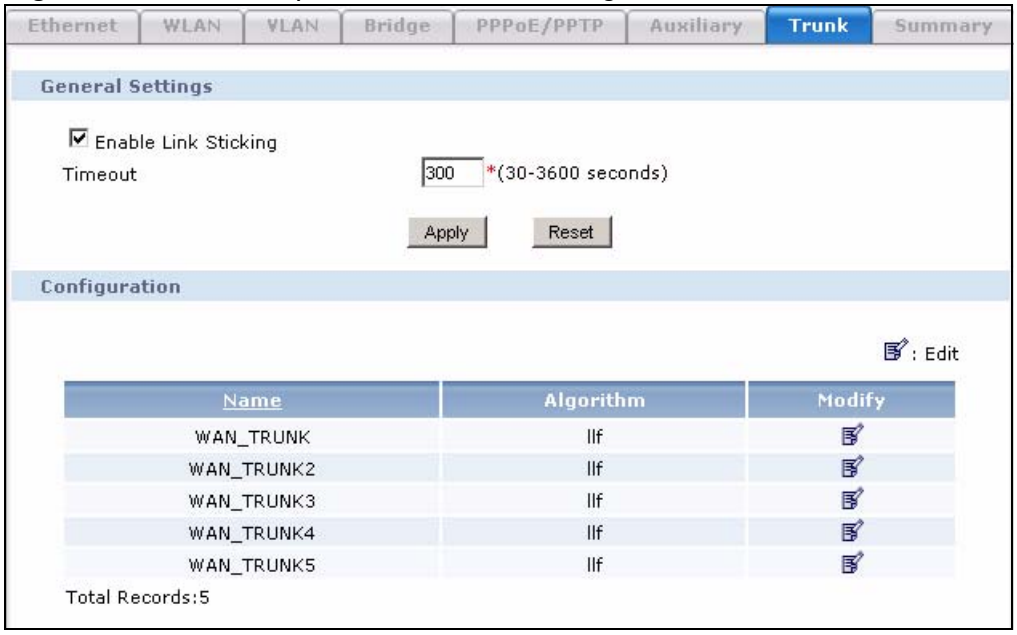
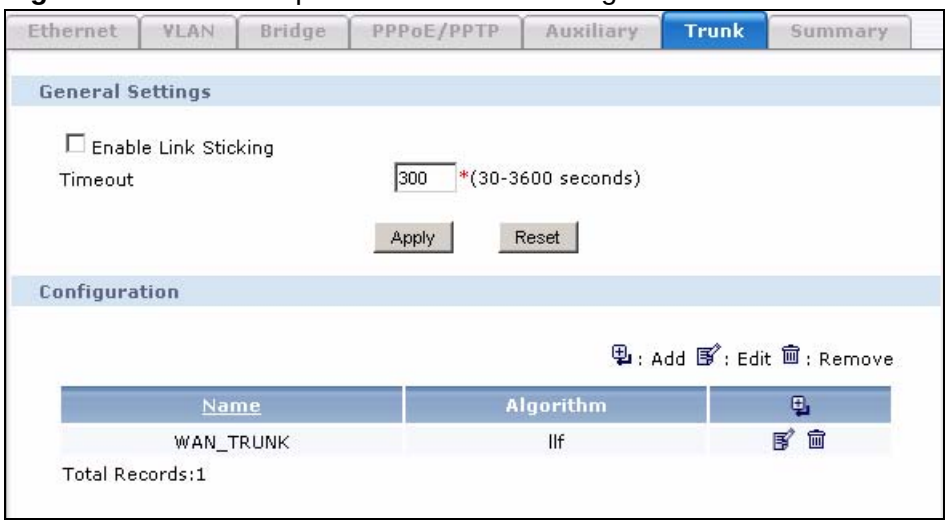



**Figure 127** Device Operation > Device Configuration > Network > Interface > Trunk



The following table describes the items in this screen.

**Table 114** Device Operation > Device Configuration > Network > Interface > Trunk

| LABEL | DESCRIPTION |
|---|---|
| Enable Link Sticking | Select this option to have the ZyWALL send all of each local computer's traffic through one WAN interface for the number of seconds that you specify.<br><br>This is useful when a redirect server forwards a local user's request for a file and informs the file server that a particular WAN IP address is requesting the file. If the user's subsequent sessions came from a different WAN IP address, the file server would deny the request.<br><br>This setting applies when you use load balancing and have multiple WAN interfaces set to active mode. |
| Timeout | Specify for how long the ZyWALL is to send all of each local computer's traffic through one WAN interface. |
| Apply | Click this button to save your changes to the ZyWALL. |
| Reset | Click this button to return the screen to its last-saved settings. |
| Name | This field displays the label that you specified to identify the trunk. |
| Algorithm | This field displays the load balancing method that the trunk is set to use. |
| Add | Click the **Add** icon to create a trunk. |
| Edit | Click the **Edit** icon next to a trunk to edit it. |
| Remove | Click the **Remove** icon next to a trunk to remove it. |

# 9.8 Configuring a Trunk

Click **Device Operation** > **Device Configuration** > **Network > Interface > Trunk** and then the **Edit** icon to open the **following** screen. Use this screen to configure load balancing settings for each interface.

**Figure 128** Device Operation > Device Configuration > Network > Interface > Trunk > Edit - Least Load First

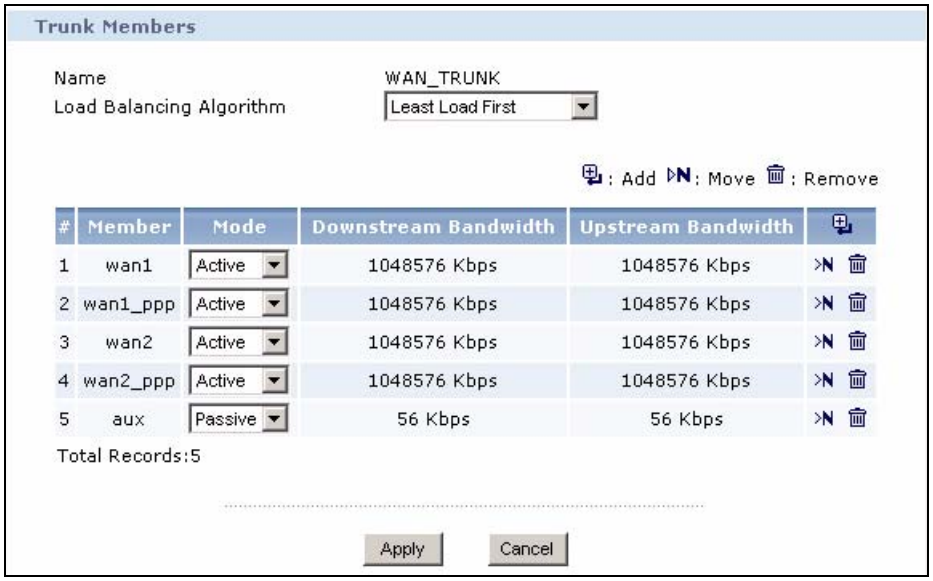



**Figure 129** Device Operation > Device Configuration > Network > Interface > Trunk > Edit - Weighted Round Robin

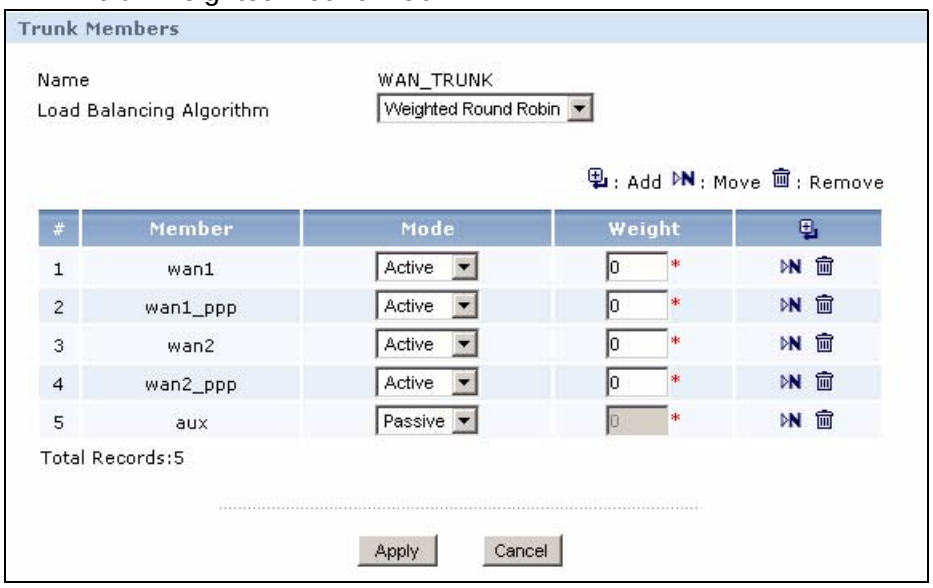
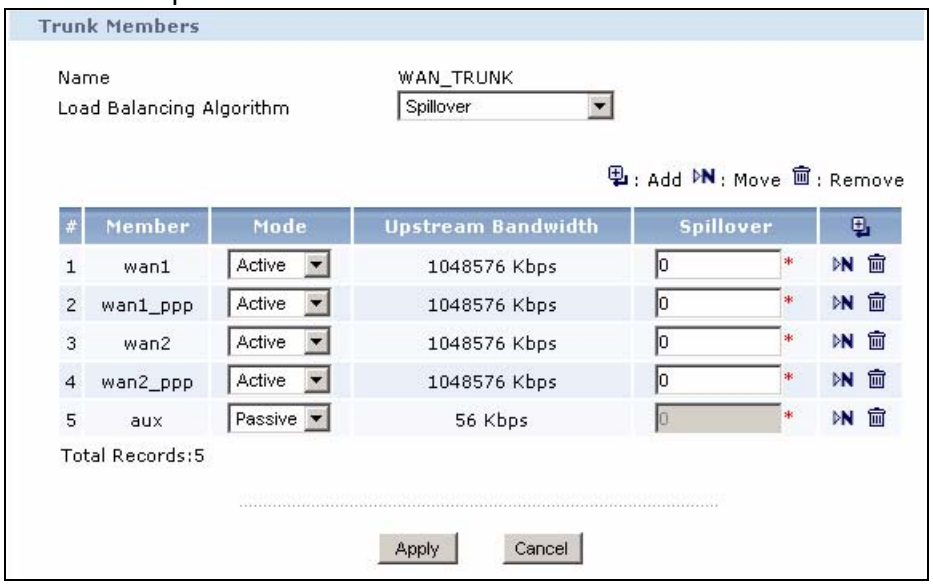



**Figure 130** Device Operation > Device Configuration > Network > Interface > Trunk

> Edit - Spillover




Each field is described in the table below.

**Table 115** Device Operation > Device Configuration > Network > Interface > Trunk > Edit

| LABEL | DESCRIPTION |
|---|---|
| Name | This is read-only if you are editing an existing trunk. When adding a new trunk, enter a descriptive name for this trunk. You may use 1-31 alphanumeric characters, underscores(_), or dashes (-), but the first character cannot be a number. This value is case-sensitive. This is the descriptive name for this trunk. |
| Load Balancing Algorithm | Select a load balancing method to use from the drop-down list box.<br>Select **Weighted Round Robin** to balance the traffic load between interfaces based on their respective weights. Weighted round robin is activated only when the first group member interface has more traffic than it can handle.<br>Select **Least Load First** to send new session traffic through the least utilized trunk member.<br>Select **Spillover** to send network traffic through the first interface in the group member list until there is enough traffic that the second interface needs to be used (and so on). |
| # | This column displays the priorities of the group's interfaces. The order of the interfaces in the list is important since they are used in the order they are listed. |
| Member | Click this icon to open a screen where you can select an interface to be a group member.<br>If you select an interface that is part of another Ethernet interface, the ZyWALL does not send traffic through the interface as part of the trunk. For example, if you have physical port 5 in the ge2 representative interface, you must select interface ge2 in order to send traffic through port 5 as part of the trunk. If you select interface ge5 as a member here, the ZyWALL will not send traffic through port 5 as part of the trunk. |

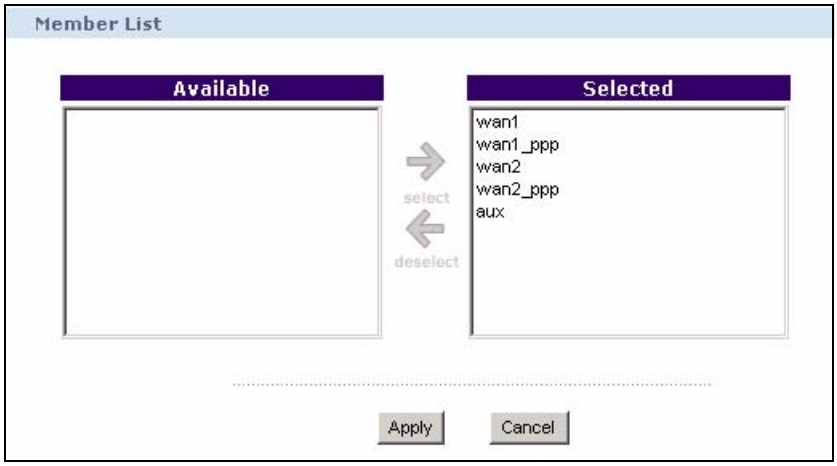
**Table 115** Device Operation > Device Configuration > Network > Interface > Trunk > Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Mode | Select **Active** to have the ZyWALL always attempt to use this connection.<br><br>Select **Passive** to have the ZyWALL only use this connection when all of the connections set to active are down. You can only set one of a group's interfaces to passive mode. |
| Weight | This field displays with the weighted round robin load balancing algorithm. Specify the weight (1~10) for the interface. The weights of the different member interfaces form a ratio. This ratio determines how much traffic the ZyWALL sends through each member interface. The higher an interface's weight is (relative to the weights of the interfaces), the more traffic the ZyWALL sends through that interface. |
| Downstream Bandwidth | This field displays with the least load first load balancing algorithm. It displays the maximum number of kilobits of data the ZyWALL is to allow to come in through the interface per second. |
| Upstream Bandwidth | This field displays with the least load first or spillover load balancing algorithm.It displays the maximum number of kilobits of data the ZyWALL is to send out through the interface per second. |
| Spillover | This field displays with the spillover load balancing algorithm. Specify the maximum bandwidth of traffic in kilobits per second (1~1048576) to send out through the interface before using another interface. When this spillover bandwidth limit is exceeded, the ZyWALL sends new session traffic through the next interface. The traffic of existing sessions still goes through the interface on which they started.<br><br>The ZyWALL uses the group member interfaces in the order that they are listed. |
| Add icon | This column lets you add, remove and move trunk members.<br><br>To add an interface to the trunk, click an **Add** icon.To remove an interface from a trunk, click the **Remove** icon next to it. The Vantage CNM confirms you want to remove it before doing so.<br><br>To move an interface to a different number in the list, click the **Move** icon next to it. In the field that appears, specify the number to which you want to move the interface. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Cancel | Click **Cancel** to exit this screen without saving. |

## 9.8.1 The Trunk Member List Screen

Use this screen to add or remove interface(s) into or from the selected trunk. Click the **Add** icon in the **Device Operation** > **Device Configuration** > **Network** > **Interface** > **Trunk** > **Edit** sreen to open the following screen.

**Figure 131** Device Operation > Device Configuration > Network > Interface > Trunk > Edit > Add




Each field is described in the table below.

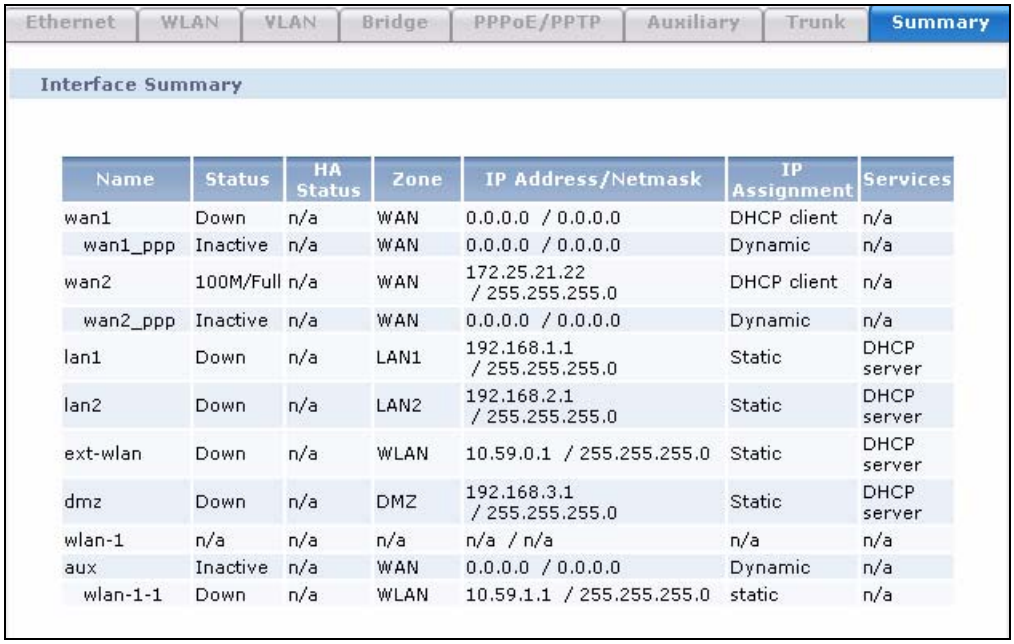
**Table 116** Device Operation > Device Configuration > Network > Interface > Trunk > Edit > Add

| LABEL | DESCRIPTION |
|---|---|
| Available | This field displays Ethernet interfaces and VLAN interfaces that can become part of the bridge interface. An interface is not available in the following situations:<br>• There is a virtual interface on top of it<br>• It is already used in a different bridge interface<br>Select one, and click the **select** arrow to add it to the bridge interface. Each bridge interface can only have one VLAN interface. |
| Member | This field displays the interfaces that are part of the bridge interface. Select one, and click the **deselect** arrow to remove it from the bridge interface. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Cancel | Click **Cancel** to exit this screen without saving. |

# 9.9 Interface Summary Screen

This screen lists all of the selected ZyWALL's interfaces and gives packet statistics for them. Click **Device Operation** > **Device Configuration > Network** > **Interface** > **Summary** to access this screen.

**Figure 132** Device Operation > Device Configuration > Network > Interface > Summary




| Name | Status | HA Status | Zone | IP Address/Netmask | IP Assignment | Services |
|---|---|---|---|---|---|---|
| wan1 | Down | n/a | WAN | 0.0.0.0 / 0.0.0.0 | DHCP client | n/a |
| wan1_ppp | Inactive | n/a | WAN | 0.0.0.0 / 0.0.0.0 | Dynamic | n/a |
| wan2 | 100M/Full | n/a | WAN | 172.25.21.22 / 255.255.255.0 | DHCP client | n/a |
| wan2_ppp | Inactive | n/a | WAN | 0.0.0.0 / 0.0.0.0 | Dynamic | n/a |
| lan1 | Down | n/a | LAN1 | 192.168.1.1 / 255.255.255.0 | Static | DHCP server |
| lan2 | Down | n/a | LAN2 | 192.168.2.1 / 255.255.255.0 | Static | DHCP server |
| ext-wlan | Down | n/a | WLAN | 10.59.0.1 / 255.255.255.0 | Static | DHCP server |
| dmz | Down | n/a | DMZ | 192.168.3.1 / 255.255.255.0 | Static | DHCP server |
| wlan-1 | n/a | n/a | n/a | n/a / n/a | n/a | n/a |
| aux | Inactive | n/a | WAN | 0.0.0.0 / 0.0.0.0 | Dynamic | n/a |
| wlan-1-1 | Down | n/a | WLAN | 10.59.1.1 / 255.255.255.0 | static | n/a |

Each field is described in the following table.

**Table 117** Device Operation > Device Configuration > Network > Interface > Summary

| LABEL | DESCRIPTION |
|---|---|
| Name | This field displays the name of each interface. If there is a **Expand** icon (plus-sign) next to the name, click this to look at the status of virtual interfaces on top of this interface. |
| Status | This field displays the current status of each interface. The possible values depend on what type of interface it is.<br><br>For Ethernet interfaces:<br><br>**Inactive** - The Ethernet interface is disabled.<br><br>**Down** - The Ethernet interface does not have any physical ports associated with it or the Ethernet interface is enabled but not connected.<br><br>**Speed / Duplex** - The Ethernet interface is enabled and connected. This field displays the port speed and duplex setting (**Full** or **Half**).<br><br>**Port Group Inactive** - The Ethernet interface does not have any physical ports associated with it.<br><br>**Port Group Up** - The Ethernet interface is part of a port group and is connected.<br><br>**Port Group Down** - The Ethernet interface is part of a port group and is not connected.<br><br>For the auxiliary interface:<br><br>**Inactive** - The auxiliary interface is disabled.<br><br>**Connected** - The auxiliary interface is enabled and connected.<br><br>**Disconnected** - The auxiliary interface is not connected.<br><br>For virtual interfaces, this field always displays **Up**. If the virtual interface is disabled, it does not appear in the list.<br><br>For VLAN and bridge interfaces, this field always displays **Up**. If the VLAN or bridge interface is disabled, it does not appear in the list.<br><br>For PPP interfaces:<br><br>**Connected** - The PPP interface is connected.<br><br>**Disconnected** - The PPP interface is not connected.<br><br>If the PPPP interface is disabled, it does not appear in the list.<br><br>For WLAN interfaces:<br><br>**Up** - The WLAN interface is enabled.<br><br>**Down** - The WLAN interface is disabled. |

**Table 117** Device Operation > Device Configuration > Network > Interface > Summary (continued)

| LABEL | DESCRIPTION |
|---|---|
| HA Status | This field displays the status of the interface in the virtual router.<br>**Active** - This interface is the master interface in the virtual router.<br>**Stand-By** - This interface is a backup interface in the virtual router.<br>**Fault** - This VRRP group is not functioning in the virtual router right now. For example, this might happen if the interface is down.<br>**n/a** - Device HA is not active on the interface. |
| Zone | This field displays the zone to which the interface is assigned. |
| IP Address/ Netmask | This field displays the current IP address and subnet mask assigned to the interface. If the IP address and subnet mask are 0.0.0.0, the interface is disabled or did not receive an IP address and subnet mask via DHCP.<br>If this interface is a member of an active virtual router, this field displays the IP address it is currently using. This is either the static IP address of the interface (if it is the master) or the management IP address (if it is a backup). |
| IP Assignment | This field displays how the interface gets its IP address.<br>**Static** - This interface has a static IP address.<br>**DHCP Client** - This interface gets its IP address from a DHCP server.<br>**Dynamic** - This is the auxiliary interface. |
| Services | This field lists which services the interface provides to the network. Examples include **DHCP relay**, **DHCP server**, **DDNS**, **RIP**, and **OSPF**. This field displays **n/a** if the interface does not provide any services to the network. |

# 9.10 Policy Route Screen

Click **Device Operation** > **Device Configuration > Network > Routing** to open the **Policy Route** screen. Use this screen to see the configured policy routes and turn policy routing based bandwidth management on or off.

A policy route defines the matching criteria and the action to take when a packet meets the criteria. The action is taken only when all the criteria are met. The criteria can include the user name, source address and incoming interface, destination address, schedule, IP protocol (ICMP, UDP, TCP, etc.) and port.

The actions that can be taken include:

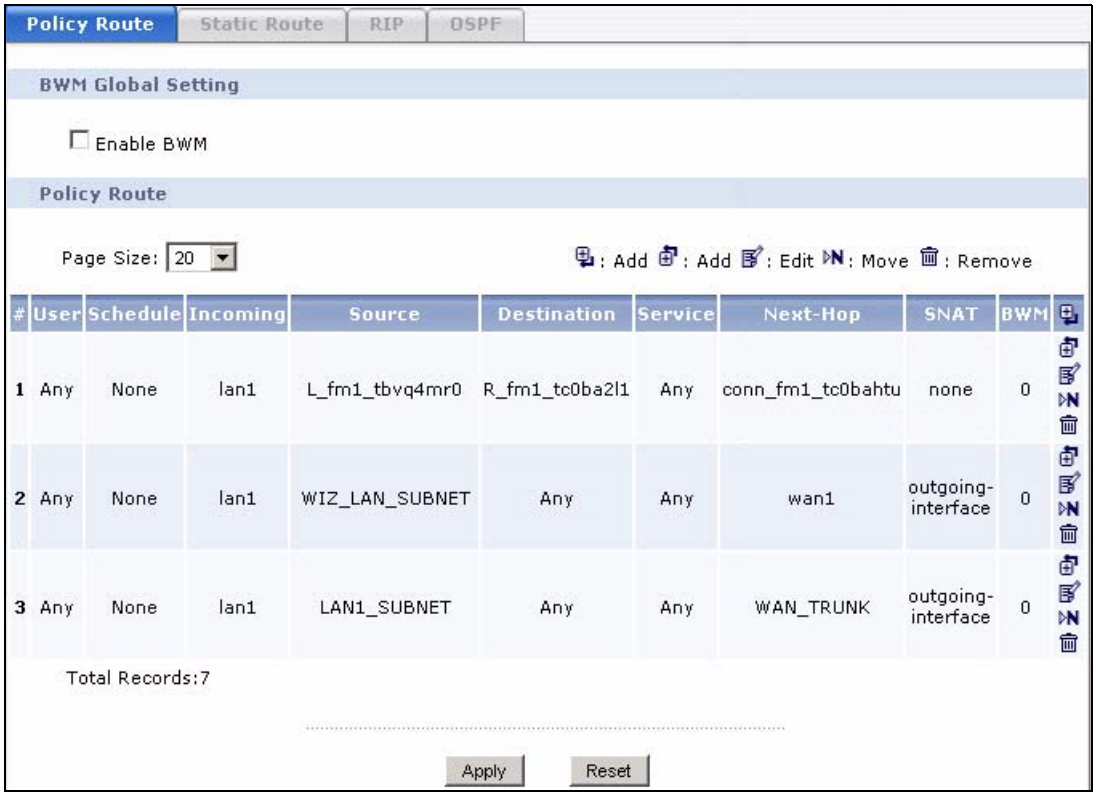
- Routing the packet to a different gateway, outgoing interface, VPN tunnel, or trunk.

• Limiting the amount of bandwidth available and setting a priority for traffic.

IPPR follows the existing packet filtering facility of RAS in style and in implementation.

Click a column's heading cell to sort the table entries by that column's criteria. Click the heading cell again to reverse the sort order.

**Figure 133** Device Operation > Device Configuration > Network > Routing > Policy Route




The following table describes the labels in this screen.

**Table 118** Device Operation > Device Configuration > Network > Routing > Policy Route

| LABEL | DESCRIPTION |
|---|---|
| Enable BWM | This is a global setting for enabling or disabling bandwidth management on the ZyWALL. You must enable this setting to have individual policy routes or application patrol policies apply bandwidth management.<br><br>This same setting also appears in the **AppPatrol > General** screen. Enabling or disabling it in one screen also enables or disables it in the other screen. |
| Page Size | Select how many entries you want to display on each page. |
| # | This is the number of an individual policy route. |
| User | This is the name of the user (group) object from which the packets are sent. **any** means all users. |

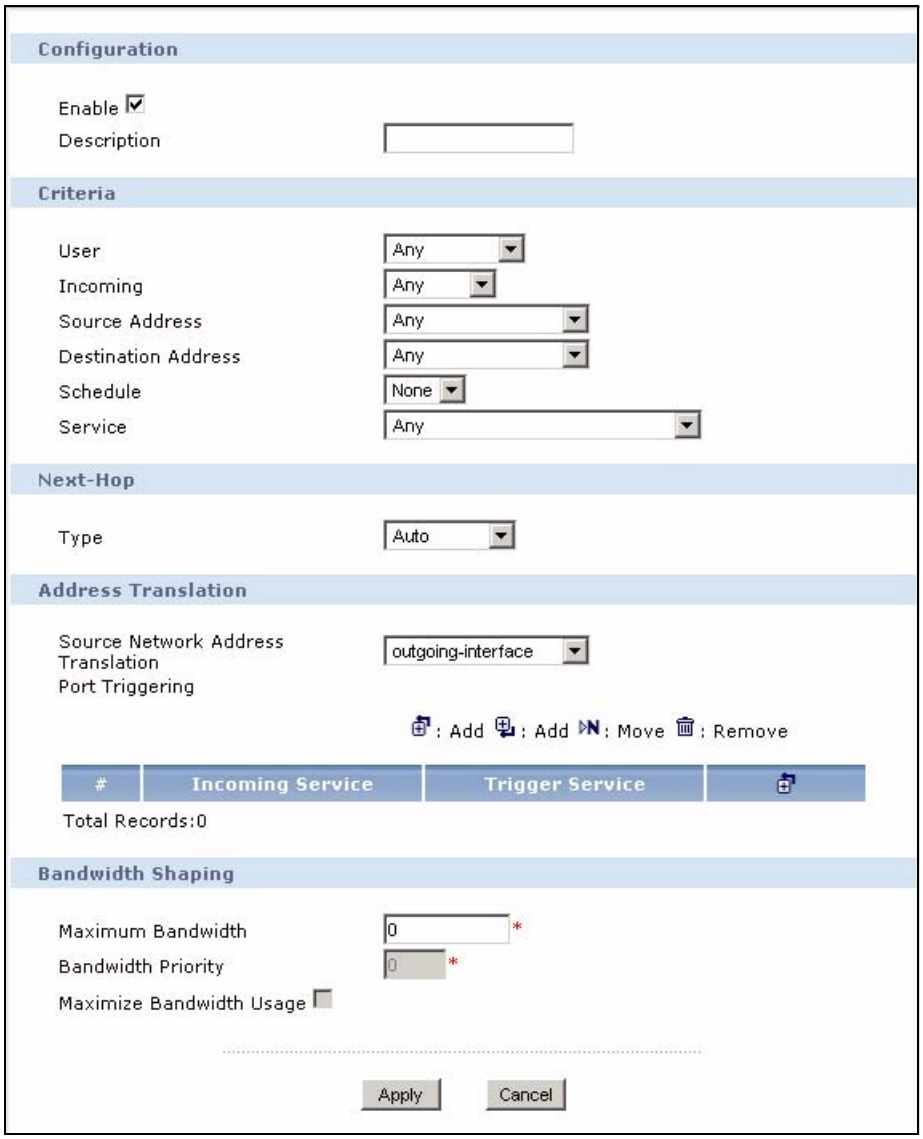
**Table 118** Device Operation > Device Configuration > Network > Routing > Policy Route (continued)

| LABEL | DESCRIPTION |
|---|---|
| Schedule | This is the name of the schedule object. **none** means the route is active at all times if enabled. |
| Incoming | This is the interface on which the packets are received. |
| Source | This is the name of the source IP address (group) object. **any** means all IP addresses. |
| Destination | This is the name of the destination IP address (group) object. **any** means all IP addresses. |
| Service | This is the name of the service object. **any** means all services. |
| Next-Hop | This is the next hop to which packets are directed. It helps forward packets to their destinations and can be a router, VPN tunnel, outgoing interface or trunk. |
| SNAT | This is the source IP address that the route uses.<br>It displays **none** if the ZyWALL does not perform NAT for this route. |
| BWM | This is the maximum bandwidth allotted to the policy. **0** means there is no bandwidth limitation for this route. |
| Add icon | Click the **Add** icon in the heading row to add a new first entry.<br>Click the **Edit** icon to go to the screen where you can edit the routing policy on the ZyWALL.<br>Click the **Add** icon in an entry to add a rule below the current entry.<br>Click the **Remove** icon to delete an existing routing policy from the ZyWALL. A window displays asking you to confirm that you want to delete the routing policy.<br>In a numbered list, click the **Move to N** icon to display a field to type a number for where you want to put that rule and press [ENTER] to move the rule to the number that you typed.<br>The ordering of your rules is important as they are applied in order of their numbering. |
| Total Records | This field displays the total number of policy routes. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Reset | Click **Reset** to begin configuring this screen afresh. |

## 9.10.1 Policy Route Edit Screen

Click the **Add** or **Edit** icon in the **Device Operation** > **Device Configuration > Network > Routing** to open the **Policy Route Edit** screen. Use this screen to configure or edit a policy route.

**Figure 134** Device Operation > Device Configuration > Network > Routing > Policy Route > Add/Edit




The following table describes the labels in this screen.

**Table 119** Device Operation > Device Configuration > Network > Routing > Policy Route > Edit

| LABEL | DESCRIPTION |
|---|---|
| Configuration | |
| Enable | Select this to activate the policy. |

**Table 119** Device Operation > Device Configuration > Network > Routing > Policy Route > Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Description | Enter a descriptive name of up to 31 printable ASCII characters for the policy. |
| Criteria | |
| User | Select a user name or user group from which the packets are sent. |
| Incoming | Select an interface or VPN tunnel through which the incoming packets are received. |
| Source Address | Select a source IP address object. |
| Destination Address | Select a destination IP address object. |
| Schedule | Select a schedule or select **Create Object** to configure a new one. **none** means the route is active at all times if enabled. |
| Service | Select a service or service group from the drop-down list box. |
| Next-Hop | |
| Type | Select **Auto** to have the ZyWALL use the routing table to find a next-hop and forward the matched packets automatically.<br><br>Select **Gateway** to route the matched packets to the next-hop router or switch you specified in the **Gateway** field. You have to set up the next-hop router or switch as a HOST address object first.<br><br>Select **VPN Tunnel** to route the matched packets via the specified VPN tunnel.<br><br>Select **Trunk** to route the matched packets through the interfaces in the trunk group based on the load balancing algorithm.<br><br>Select **Interface** to route the matched packets through the specified outgoing interface to a gateway (which is connected to the interface). |
| Gateway | This field displays when you select **Gateway** in the **Type** field. Select a HOST address object. The gateway is an immediate neighbor of your ZyWALL that will forward the packet to the destination. The gateway must be a router or switch on the same segment as your ZyWALL's interface(s). |
| VPN Tunnel | This field displays when you select **VPN Tunnel** in the **Type** field. Select a VPN tunnel through which the packets are sent to the remote network that is connected to the ZyWALL directly. |
| Trunk | This field displays when you select **Trunk** in the **Type** field. Select a trunk group to have the ZyWALL send the packets via the interfaces in the group. |
| Interface | This field displays when you select **Interface** in the **Type** field. Select an interface to have the ZyWALL send traffic that matches the policy route through the specified interface. |
| Address Translation | Use this section to configure NAT for the policy route. This section does not apply to policy routes that use a VPN tunnel as the next hop. |

**Table 119** Device Operation > Device Configuration > Network > Routing > Policy Route > Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Source Network Address Translation | Select **none** to not use NAT for the route.<br><br>Select **outgoing-interface** to use the IP address of the outgoing interface as the source IP address of the packets that matches this route. If you select **outgoing-interface**, you can also configure port trigger settings for this interface.<br><br>To use SNAT for a virtual interface that is in the same WAN trunk as the physical interface to which the virtual interface is bound, the virtual interface and physical interface must be in different subnets.<br><br>Otherwise, select a pre-defined address (group) to use as the source IP address(es) of the packets that match this route. |
| Port Triggering | Configure trigger port forwarding to allow computers on the LAN to dynamically take turns using a service that uses a dedicated range of ports on the client side and a dedicated range of ports on the server side.<br><br>Note: You need to create a firewall rule to allow an incoming service before using a port triggering rule. |
| # | This is the rule index number. |
| Incoming Service | Select the service that the client computer sends to a remote server.<br><br>The incoming service should have the same service or protocol type as what you configured in the **Service** field. |
| Trigger Service | Select a service that a remote server sends. It causes (triggers) the ZyWALL to forward the traffic (received on the **outgoing interface**) to the client computer that requested the service. |
| Add icon | Click the **Add** icon in the heading row to add a new first entry.<br><br>Click the **Add** icon in an entry to add a rule below the current entry.<br><br>Click the **Remove** icon to delete an existing rule from the ZyWALL. A window displays asking you to confirm that you want to delete the rule.<br><br>In a numbered list, click the **Move to N** icon to display a field to type a number for where you want to put that rule and press [ENTER] to move the rule to the number that you typed.<br><br>The ordering of your rules is important as they are applied in order of their numbering. |
| Total Records | This field displays the total number of trigger port forwarding entries. |
| Bandwidth Shaping | This allows you to allocate bandwidth to a route and prioritize traffic that matches the routing policy.<br><br>You must also enable bandwidth management in the main policy route screen (**Device Operation** > **Device Configuration** > **Network > Routing > Policy Route**) in order to apply bandwidth shaping. |

**Table 119** Device Operation > Device Configuration > Network > Routing > Policy Route > Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Maximum Bandwidth | Specify the maximum bandwidth (from 1 to 1048576) allowed for the route in kbps. If you enter **0** here, there is no bandwidth limitation for the route.<br><br>If the sum of the bandwidths for routes using the same next hop is higher than the actual transmission speed, lower priority traffic may not be sent if higher priority traffic uses all of the actual bandwidth.<br><br>To reserve bandwidth for traffic that does not match any of the policy routes, leave some of the interface's bandwidth unbudgeted and do not enable **Maximize Bandwidth Usage**. |
| Bandwidth Priority | Enter a number between 1 and 7 to set the priority for traffic. The smaller the number, the higher the priority. If you set the maximum bandwidth to **0**, the bandwidth priority will be changed to **0** after you click **Apply**. That means the route has the highest priority and will get all the bandwidth it needs up to the maximum available.<br><br>A route with higher priority is given bandwidth before a route with lower priority.<br><br>If you set routes to have the same priority, then bandwidth is divided equally amongst those routes. |
| Maximize Bandwidth Usage | Select this check box to have the ZyWALL divide up all of the interface's unallocated and/or unused bandwidth among the policy routes that require bandwidth. Do not select this if you want to reserve bandwidth for traffic that does not match any of the policy routes. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Cancel | Click **Cancel** to exit this screen without saving. |

# 9.11 IP Static Route Screen

Click **Device Operation** > **Device Configuration > Network > Routing > Static Route** to open the **Static Route** screen. This screen displays the configured static routes. Configure static routes to be able to use RIP or OSPF to propagate the routing information to other routers.

**Figure 135** Device Operation > Device Configuration > Network > Routing > Static Route

The following table describes the labels in this screen.

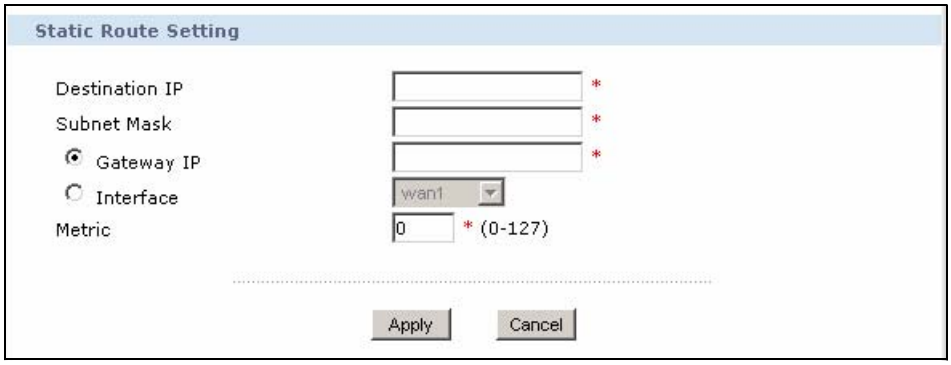
**Table 120** Device Operation > Device Configuration > Network > Routing > Static Route

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select how many entries you want to display on each page. |
| # | This is the number of an individual static route. |
| Destination | This is the destination IP address. |
| Subnet Mask | This is the IP subnet mask. |
| Next-Hop | This is the IP address of the next-hop gateway or the interface through which the traffic is routed. The gateway is a router or switch on the same segment as your ZyWALL's interface(s). The gateway helps forward packets to their destinations. |
| Metric | This is the route's priority among the ZyWALL's routes. The smaller the number, the higher priority the route has. |
| Add icon | Click the **Add** icon to go to the screen where you can set up a static route on the ZyWALL.<br>Click the **Edit** icon to go to the screen where you can edit the static route on the ZyWALL.<br>Click the **Remove** icon to delete an existing static route from the ZyWALL. A window displays asking you to confirm that you want to delete the routing policy. |
| Total Records | This is the total number of static routes. |

## 9.11.1 Static Route Add/Edit Screen

Select a static route index number and click **Add** or **Edit**. The screen shown next appears. Use this screen to configure the required information for a static route.

**Figure 136** Device Operation > Device Configuration > Network > Routing > Static Route > Add



The following table describes the labels in this screen.

**Table 121** Device Operation > Device Configuration > Network > Routing > Static Route > Add

| LABEL | DESCRIPTION |
|---|---|
| Destination IP | This parameter specifies the IP network address of the final destination. Routing is always based on network number. If you need to specify a route to a single host, use a subnet mask of 255.255.255.255 in the subnet mask field to force the network number to be identical to the host ID. |
| Subnet Mask | Enter the IP subnet mask here. |
| Gateway IP | Select the radio button and enter the IP address of the next-hop gateway. The gateway is a router or switch on the same segment as your ZyWALL's interface(s). The gateway helps forward packets to their destinations. |
| Interface | Select the radio button and a predefined interface through which the traffic is sent. |
| Metric | Metric represents the “cost” of transmission for routing purposes. IP routing uses hop count as the measurement of cost, with a minimum of 1 for directly connected networks. Enter a number that approximates the cost for this link. The number need not be precise, but it must be 0~127. In practice, 2 or 3 is usually a good number. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Cancel | Click **Cancel** to exit this screen without saving. |

# 9.12 The RIP Screen

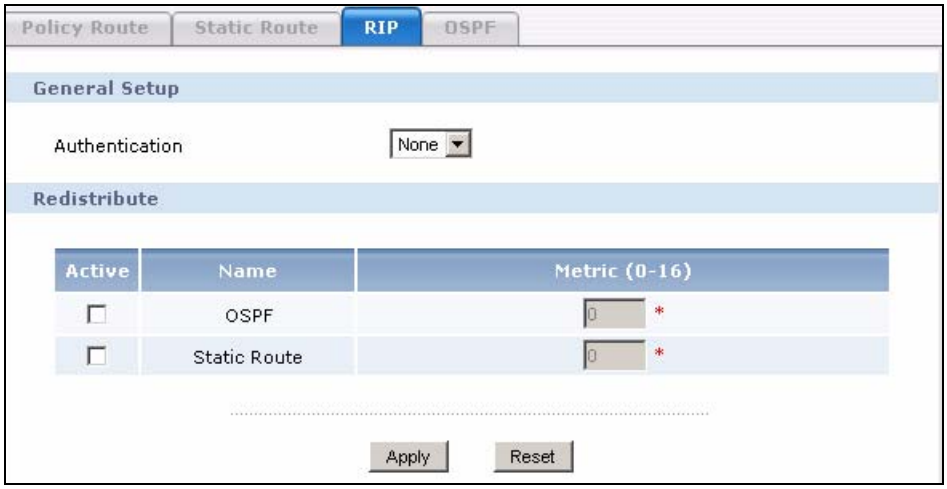
RIP (Routing Information Protocol, RFC 1058 and RFC 1389) allows a device to exchange routing information with other routers. Use the **RIP** screen to specify the authentication method and maintain the policies for redistribution.

First, the **Authentication** field specifies how to verify that the routing information that is received is the same routing information that is sent.

Second, the ZyWALL can also **redistribute** routing information from non-RIP networks, specifically OSPF networks and static routes, to the RIP network. Costs might be calculated differently, however, so you use the **Metric** field to specify the cost in RIP terms.

Click **Device Operation** > **Device Configuration > Network** > **Routing > RIP** to open the following screen.

**Figure 137** Device Operation > Device Configuration > Network > Routing > RIP




The following table describes the labels in this screen.

**Table 122** Device Operation > Device Configuration > Network > Routing Protocol > RIP

| LABEL | DESCRIPTION |
|---|---|
| General Setup | |
| Authentication | Select the authentication method used in the RIP network. This authentication protects the integrity, but not the confidentiality, of routing updates.<br>**None** uses no authentication.<br>**Text** uses a plain text password that is sent over the network (not very secure).<br>**MD5** uses an MD5 password and authentication ID (most secure). |
| Text Authentication Key | This field is available if the **Authentication** is **Text**. Type the password for text authentication. The key can consist of alphanumeric characters and the underscore, and it can be up to 8 characters long. |
| MD5 Authentication ID | This field is available if the **Authentication** is **MD5**. Type the ID for MD5 authentication. The ID can be between 1 and 255. |
| MD5 Authentication Key | This field is available if the **Authentication** is **MD5**. Type the password for MD5 authentication. The password can consist of alphanumeric characters and the underscore, and it can be up to 16 characters long. |
| Redistribute | |
| Active | Select this check box to advertise routes that were learned from the indicated **Name**. |
| Name | This field displays other sources of routing information that the ZyWALL can advertise in the RIP network. |

**Table 122** Device Operation > Device Configuration > Network > Routing Protocol > RIP (continued)

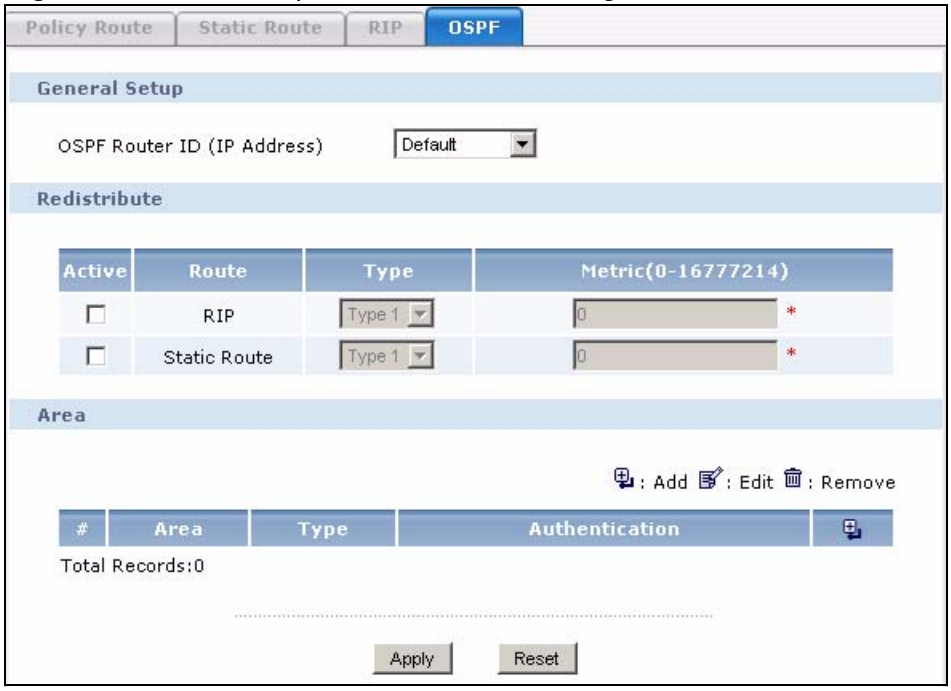
| LABEL | DESCRIPTION |
|---|---|
| Metric | Type the cost for routes provided by the indicated source. The metric represents the “cost” of transmission for routing purposes. RIP routing uses hop count as the measurement of cost, with 1 usually used for directly connected networks. The number does not have to be precise, but it must be between 0 and 16. In practice, 2 or 3 is usually used. |
| Apply | Click this button to save your changes to the ZyWALL. |
| Reset | Click this button to return the screen to its last-saved settings. |

# 9.13 The OSPF Screen

Use the first OSPF screen to specify the OSPF router the ZyWALL uses in the OSPF AS and maintain the policies for redistribution. In addition, it provides a summary of OSPF areas, allows you to remove them, and opens the **OSPF Add / Edit** screen to add or edit them.

Click **Device Operation** > **Device Configuration > Network** > **Routing > OSPF** to open the following screen.

**Figure 138** Device Operation > Device Configuration > Network > Routing > OSPF



The following table describes the labels in this screen. See Section 9.13.1 on page 312 for more information as well.

**Table 123** Device Operation > Device Configuration > Network > Routing Protocol > OSPF

| LABEL | DESCRIPTION |
|---|---|
| OSPF Router ID | Select the 32-bit ID the ZyWALL uses in the OSPF AS.<br><br>**Default** - the highest available IP address assigned to the interfaces is the ZyWALL's ID.<br><br>**User Define** - enter the ID (in IP address format) in the field that appears when you select **User Define**. |
| Redistribute | |
| Active | Select this check box to advertise routes that were learned from the indicated source.<br><br>• If you select this for RIP, the ZyWALL advertises routes learned from RIP to **Normal** and **NSSA** areas but not to **Stub** areas.<br>• If you select this for static routes, the ZyWALL advertises routes learned from static routes to all types of areas. |
| Route | This field displays other sources of routing information that the ZyWALL can advertise in the OSPF AS. |
| Type | Select how OSPF calculates the cost associated with routing information from the indicated source. Choices are: **Type 1** and **Type 2**.<br><br>**Type 1** - cost = OSPF AS cost + external cost (**Metric**)<br><br>**Type 2** - cost = external cost (**Metric**); the OSPF AS cost is ignored. |
| Metric | Type the external cost for routes provided by the indicated source. The metric represents the "cost" of transmission for routing purposes. The way this is used depends on the **Type** field. This value is usually the average cost in the OSPF AS, and it can be between 1 and 16777214. |
| Area | This section displays information about OSPF areas in the ZyWALL. |
| # | This field is a sequential value, and it is not associated with a specific area. |
| Area | This field displays the 32-bit ID for each area in IP address format. |
| Type | This field displays the type of area. This type is different from the **Type** field above. |
| Authentication | This field displays the default authentication method in the area. |
| Add icon | This column provides icons to add, edit, and remove areas.<br><br>To add an area, click the **Add** icon at the top of the column. The **OSPF Area Add/Edit** screen appears.<br><br>To edit an area, click the **Edit** icon next to the area. The **Area Add/Edit** screen appears.<br><br>To delete an area, click on the **Remove** icon next to the area. The Web Configurator confirms that you want to delete the area before doing so. |

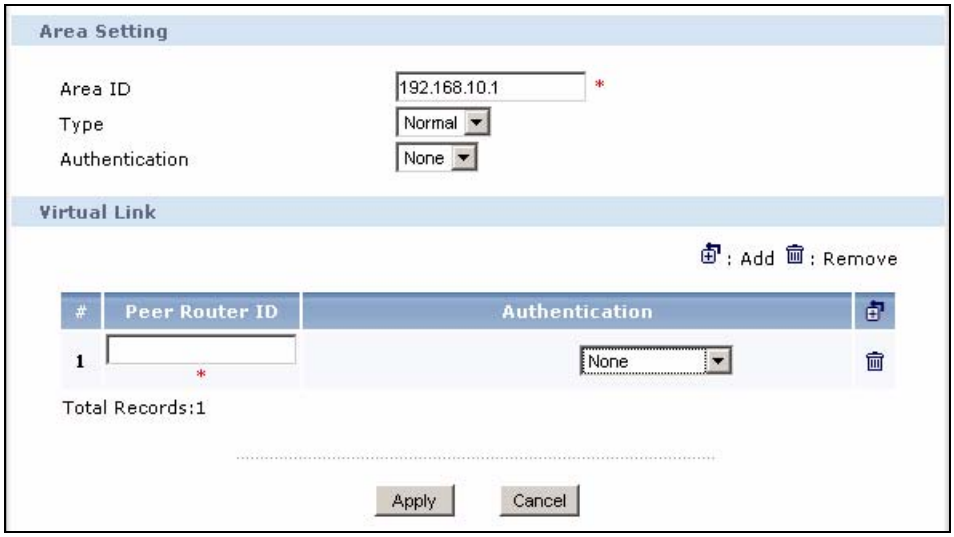
**Table 123** Device Operation > Device Configuration > Network > Routing Protocol > OSPF (continued)

| LABEL | DESCRIPTION |
|---|---|
| Apply | Click this button to save your changes to the ZyWALL. |
| Reset | Click this button to return the screen to its last-saved settings. |

## 9.13.1 The OSPF Area Add/Edit Screen

The **OSPF Area Add/Edit** screen allows you to create a new area or edit an existing one. To access this screen, go to the **OSPF** summary screen (see Section 9.13 on page 310), and click either the **Add** icon or an **Edit** icon.

**Figure 139** Device Operation > Device Configuration > Network > Routing > OSPF > Add/Edit




The following table describes the labels in this screen.

**Table 124** Device Operation > Device Configuration > Network > Routing > OSPF > Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| Area ID | Type the unique, 32-bit identifier for the area in IP address format. |
| Type | Select the type of area.<br><br>**Normal** - This area is a normal area. It has routing information about the OSPF AS and about networks outside the OSPF AS.<br><br>**Stub** - This area is an stub area. It has routing information about the OSPF AS but not about networks outside the OSPF AS. It depends on a default route to send information outside the OSPF AS.<br><br>**NSSA** - This area is a Not So Stubby Area (NSSA), per RFC 1587. It has routing information about the OSPF AS and networks that are outside the OSPF AS and are directly connected to the NSSA. It does not have information about other networks outside the OSPF AS. |

**Table 124** Device Operation > Device Configuration > Network > Routing > OSPF > Add/Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Authentication | Select the default authentication method used in the area. This authentication protects the integrity, but not the confidentiality, of routing updates.<br><br>**None** uses no authentication.<br><br>**Text** uses a plain text password that is sent over the network (not very secure).<br><br>**MD5** uses an MD5 password and authentication ID (most secure). |
| Text Authentication Key | This field is available if the **Authentication** is **Text**. Type the password for text authentication. The key can consist of alphanumeric characters and the underscore, and it can be up to 8 characters long. |
| MD5 Authentication ID | This field is available if the **Authentication** is **MD5**. Type the default ID for MD5 authentication in the area. The ID can be between 1 and 255. |
| MD5 Authentication Key | This field is available if the **Authentication** is **MD5**. Type the default password for MD5 authentication in the area. The password can consist of alphanumeric characters and the underscore, and it can be up to 16 characters long. |
| Virtual Link | This section is displayed if the **Type** is **Normal**. Create a virtual link if you want to connect a different area (that does not have a direct connection to the backbone) to the backbone. You should set up the virtual link on the ABR that is connected to the other area and on the ABR that is connected to the backbone. |
| # | This field is a sequential value, and it is not associated with a specific area. |
| Peer Router ID | Type the 32-bit ID (in IP address format) of the other ABR in the virtual link. |
| Authentication | Select which authentication method to use in the virtual link. This authentication protects the integrity, but not the confidentiality, of routing updates.<br><br>**None** uses no authentication.<br><br>**Text** uses a plain text password that is sent over the network (not very secure).<br><br>**MD5** uses an MD5 password and authentication ID (most secure).<br><br>**Same as Area** has the virtual link also use the **Authentication** settings above. |
| Text Authentication Key | This field is available if the **Authentication** is **Text**. Type the password for text authentication. The key can consist of alphanumeric characters and the underscore, and it can be up to 8 characters long. |
| MD5 Authentication ID | This field is available if the **Authentication** is **MD5**. Type the default ID for MD5 authentication in the area. The ID can be between 1 and 255. |

**Table 124** Device Operation > Device Configuration > Network > Routing > OSPF > Add/Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| MD5 Authentication Key | This field is available if the **Authentication** is **MD5**. Type the default password for MD5 authentication in the area. The password can consist of alphanumeric characters and the underscore, and it can be up to 16 characters long. |
| Add icon | This column provides icons to add and remove virtual links.<br><br>To add a virtual link, click the **Add** icon at the top of the column. A new record appears in the virtual link list.<br><br>To delete a virtual link, click on the **Remove** icon next to the virtual link. The Web Configurator confirms that you want to delete the virtual link. |
| Total Records | This is the total number of virtual links. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Cancel | Click **Cancel** to exit this screen without saving. |

# 10

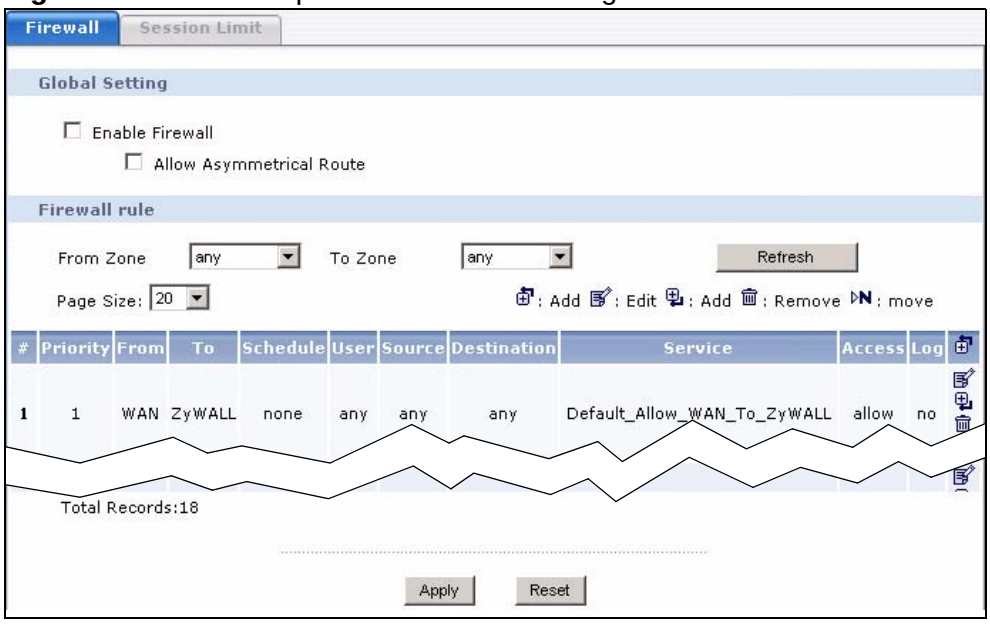
# Firewall

This section shows you how to configure the **Firewall** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

## 10.1 The Firewall Screen

Click **Device Operation** > **Device Cofniguration** > **Firewall** to open the **Firewall** screen. Use this screen to enable or disable the firewall and asymmetrical routes, set a maximum number of sessions per host, and display the configured firewall rules. Specify from which zone packets come and to which zone packets travel to display only the rules specific to the selected direction.

**Figure 140** Device Operation > Device Cofniguration > Firewall



The following table describes the labels in this screen.

**Table 125** Device Operation > Device Cofniguration > Firewall

| LABEL | DESCRIPTION |
|---|---|
| Global Setting | |
| Enable Firewall | Select this check box to activate the firewall. The ZyWALL performs access control when the firewall is activated. |
| Allow Asymmetrical Route | If an alternate gateway on the LAN has an IP address in the same subnet as the ZyWALL's LAN IP address, return traffic may not go through the ZyWALL. This is called an asymmetrical or "triangle" route. This causes the ZyWALL to reset the connection, as the connection has not been acknowledged.<br><br>Select this check box to have the ZyWALL permit the use of asymmetrical route topology on the network (not reset the connection).<br><br>Note: Allowing asymmetrical routes may let traffic from the WAN go directly to the LAN without passing through the ZyWALL. A better solution is to use virtual interfaces to put the ZyWALL and the backup gateway on separate subnets. |
| From Zone<br><br>To Zone | This is the direction of travel of packets. Select from which zone the packets come and to which zone they go.<br><br>Firewall rules are grouped based on the direction of travel of packets to which they apply. For example, from **LAN1** to **LAN1** means packets traveling from a computer or subnet on the LAN to either another computer or subnet on the LAN1.<br><br>From **any** displays all the firewall rules for traffic going to the selected **To Zone**.<br><br>To **any** displays all the firewall rules for traffic coming from the selected **From Zone**.<br><br>From **any** to **any** displays all of the firewall rules.<br><br>To **ZyWALL** rules are for traffic that is destined for the ZyWALL and control which computers can manage the ZyWALL. |
| Page Size | Select how many entries you want to display on each page. |
| The following read-only fields summarize the rules you have created that apply to traffic traveling in the selected packet direction. | |
| # | This is the index number of your firewall rule. It is not associated with a specific rule.<br><br>The entry with a hyphen (-) instead of a number is the default firewall behavior that the ZyWALL performs on traffic that does not match any other traffic direction. Only the access right and log alert are configurable for the default firewall rule. To apply other behavior, configure a firewall rule that traffic will match so the ZyWALL will not have to use its default behavior. |

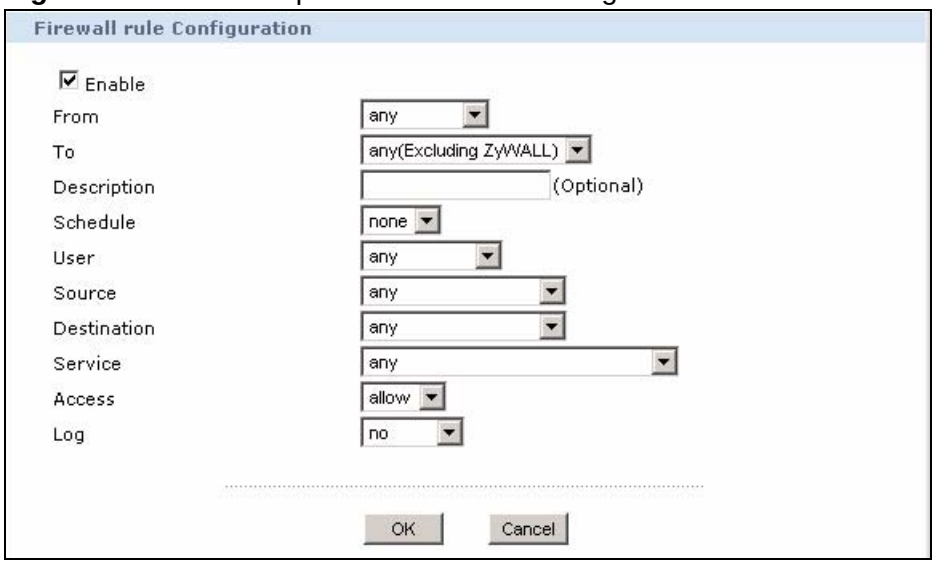
**Table 125** Device Operation > Device Cofniguration > Firewall (continued)

| LABEL | DESCRIPTION |
|---|---|
| Priority | This is the position of your firewall rule in the global rule list (including all through-ZyWALL and to-ZyWALL rules). The ordering of your rules is important as rules are applied in sequence. Default displays for the default firewall behavior that the ZyWALL performs on traffic that does not match any other traffic direction. The ZyWALL checks the traffic against any other applicable rules before applying this default behavior. |
| From | This field displays a zone from which packets come. |
| To | This field displays a zone to which packets go. |
| Schedule | This field tells you the schedule object that the rule uses. **none** means the rule is active at all times if enabled. |
| User | This is the user name or user group name to which this firewall rule applies. |
| Source | This displays the source address object to which this firewall rule applies. |
| Destination | This displays the destination address object to which this firewall rule applies. |
| Service | This displays the service object to which this firewall rule applies. |
| Access | This field displays whether the firewall silently discards packets (**deny**), discards packets and sends a TCP reset packet to the sender (**reject**) or permits the passage of packets (**allow**). |
| Log | This field shows you whether a log (and alert) is created when packets match this rule or not. |
| Add icon | Click the **Add** icon in the heading row to add a new first entry.<br>Click the **Edit** icon to go to the screen where you can edit the rule on the ZyWALL.<br>Click the **Add** icon in an entry to add a rule below the current entry.<br>Click the **Remove** icon to delete an existing rule from the ZyWALL. A window displays asking you to confirm that you want to delete the rule. Note that subsequent firewall rules move up by one when you take this action.<br>In a numbered list, click the **Move to N** icon to display a field to type an index number for where you want to put that rule and press [ENTER] to move the rule to the number that you typed. For example, if you type 6, the rule you are moving becomes number 6 and the previous rule 6 (if there is one) gets pushed up (or down) one.<br>The ordering of your rules is important as they are applied in order of their numbering. |
| Total Records | This field displays the total number of firewall rules. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Reset | Click **Reset** to begin configuring this screen afresh. |

## 10.1.1 The Firewall Edit Screen

In the **Device Operation** > **Device Cofniguration** > **Firewall** screen, click the **Edit** or **Add** icon to display the **Firewall Rule Edit** screen. Refer to the following table for information on the labels.

**Figure 141** Device Operation > Device Cofniguration > Firewall > Edit




The following table describes the labels in this screen.

**Table 126** Device Operation > Device Cofniguration > Firewall > Edit

| LABEL | DESCRIPTION |
|---|---|
| Enable | Select this check box to activate the firewall rule. |
| From<br><br>To | For through-ZyWALL rules, select the direction of travel of packets to which the rule applies.<br><br>**any** means all interfaces or VPN tunnels.<br><br>**ZyWALL** means packets destined for the ZyWALL itself. |
| Description | Enter a descriptive name of up to 60 printable ASCII characters for the firewall rule. Spaces are allowed. |
| Schedule | Select a schedule that defines when the rule applies or select **Create Object** to configure a new one. Otherwise, select **none** and the rule is always effective. |

**Table 126** Device Operation > Device Cofniguration > Firewall > Edit (continued)

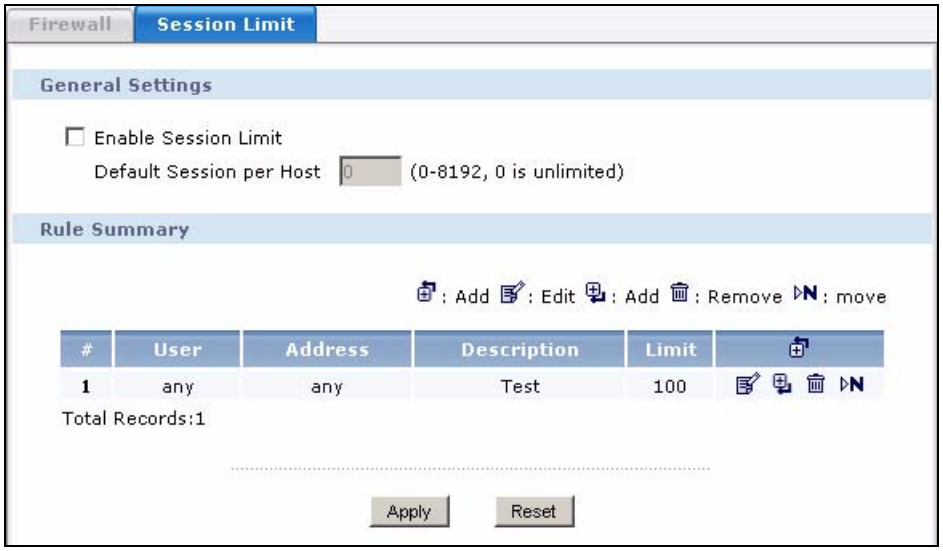
| LABEL | DESCRIPTION |
|---|---|
| User | This field is not available when you are configuring a to-ZyWALL rule.<br><br>Select a user name or user group to which to apply the rule. Select **Create Object** to configure a new user account. The firewall rule is activated only when the specified user logs into the system and the rule will be disabled when the user logs out.<br><br>Otherwise, select **any** and there is no need for user logging.<br><br>Note: If you specified a source IP address (group) instead of **any** in the field below, the user's IP address should be within the IP address range. |
| Source | Select a source address or address group for whom this rule applies. Select **Create Object** to configure a new one. Select **any** if the policy is effective for every source. |
| Destination | Select a destination address or address group for whom this rule applies. Select **Create Object** to configure a new one. Select **any** if the policy is effective for every destination. |
| Service | Select a service or service group from the drop-down list box. Select **Create Object** to add a new service. |
| Access | Use the drop-down list box to select what the firewall is to do with packets that match this rule.<br><br>Select **deny** to silently discard the packets without sending a TCP reset packet or an ICMP destination-unreachable message to the sender.<br><br>Select **reject** to deny the packets and send a TCP reset packet to the sender. Any UDP packets are dropped without sending a response packet.<br><br>Select **allow** to permit the passage of the packets. |
| Log | Select whether to have the ZyWALL generate a log (**log**), log and alert (**log alert**) or not (**no**) when the rule is matched. |
| OK | Click **OK** to save your customized settings and exit this screen. |
| Cancel | Click **Cancel** to exit this screen without saving. |

# 10.2 The Session Limit Screen

Click **Device Operation** > **Device Cofniguration** > **Firewall > Session Limit** to display the **Firewall Session Limit** screen. Use this screen to limit the number of concurrent NAT/firewall sessions a client can use. You can apply a default limit

for all users and individual limits for specific users, addresses, or both. The individual limit takes priority if you apply both.

**Figure 142** Device Operation > Device Cofniguration > Firewall > Session Limit




The following table describes the labels in this screen.

**Table 127** Device Operation > Device Cofniguration > Firewall > Session Limit

| LABEL | DESCRIPTION |
|---|---|
| General Settings | |
| Enable Session limit | Select this check box to control the number of concurrent sessions hosts can have. |
| Default Session per Host | Use this field to set a common limit to the number of concurrent NAT/ firewall sessions each client computer can have.<br><br>If only a few clients use peer to peer applications, you can raise this number to improve their performance. With heavy peer to peer application use, lower this number to ensure no single client uses too many of the available NAT sessions.<br><br>Create rules below to apply other limits for specific users or addresses. |
| Rule Summary | This table lists the rules for limiting the number of concurrent sessions hosts can have. |
| # | This is the index number of a session limit rule. It is not associated with a specific rule. |
| User | This is the user name or user group name to which this session limit rule applies. |
| Address | This is the address object to which this session limit rule applies. |
| Description | This is the descriptive information for this rule. |
| Limit | This is how many concurrent sessions this user or address is allowed to have. |

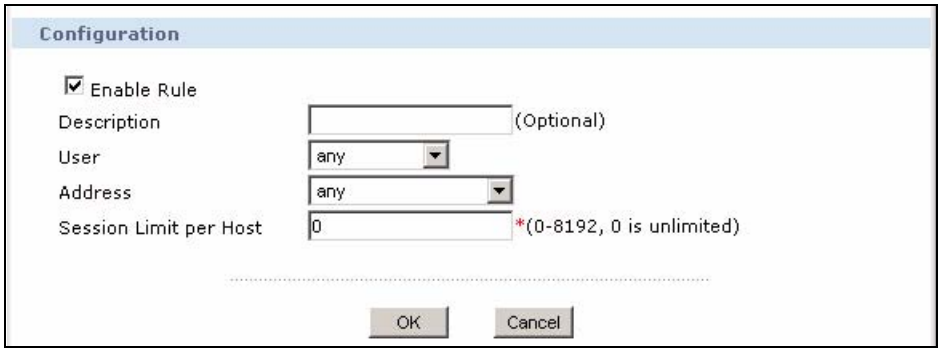
**Table 127** Device Operation > Device Cofniguration > Firewall > Session Limit

| LABEL | DESCRIPTION |
|---|---|
| Add icon | Click the **Add** icon in the heading row to add a new first entry.<br><br>Click the **Edit** icon to go to the screen where you can edit the rule on the ZyWALL.<br><br>Click the **Add** icon in an entry to add a rule below the current entry.<br><br>Click the **Remove** icon to delete an existing rule from the ZyWALL. A window displays asking you to confirm that you want to delete the rule. Note that subsequent rules move up by one when you take this action.<br><br>In a numbered list, click the **Move to N** icon to display a field to type an index number for where you want to put that rule and press [ENTER] to move the rule to the number that you typed. For example, if you type 6, the rule you are moving becomes number 6 and the previous rule 6 (if there is one) gets pushed up (or down) one.<br><br>The ordering of your rules is important as they are applied in order of their numbering. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Reset | Click **Reset** to begin configuring this screen afresh. |

## 10.2.1 The Session Limit Add/Edit Screen

Click **Device Operation** > **Device Cofniguration** > **Firewall > Session Limit** and the **Add** or **Edit** icon to display the **Firewall Session Limit Edit** screen. Use this screen to configure rules that define a session limit for specific users or addresses.

**Figure 143** Device Operation > Device Cofniguration > Firewall > Session Limit > Edit



The following table describes the labels in this screen.

**Table 128** Device Operation > Device Cofniguration > Firewall > Session Limit > Edit

| LABEL | DESCRIPTION |
|---|---|
| Enable Rule | Select this check box to turn on this session limit rule. |
| Description | Enter information to help you identify this rule. Use up to 64 printable ASCII characters. Spaces are allowed. |
| User | Select a user name or user group to which to apply the rule. Select **Create Object** to configure a new user account. The rule is activated only when the specified user logs into the system and the rule will be disabled when the user logs out.<br>Otherwise, select **any** and there is no need for user logging.<br>Note: If you specified an IP address (or address group) instead of **any** in the field below, the user's IP address should be within the IP address range. |
| Address | Select a source address or address group for whom this rule applies. Select **Create Object** to configure a new one. Select **any** if the policy is effective for every source address. |
| Session Limit per Host | Use this field to set a limit to the number of concurrent NAT/firewall sessions this rule's users or addresses can have.<br>For this rule's users and addresses, this setting overrides the **Default Session per Host** setting in the general **Firewall Session Limit** screen. |
| OK | Click **OK** to save your customized settings and exit this screen. |
| Cancel | Click **Cancel** to exit this screen without saving. |

# 11

# IPSec VPN

The screens explained device IPSec VPN settings.

## 11.1 The IPSec VPN Connection Screen

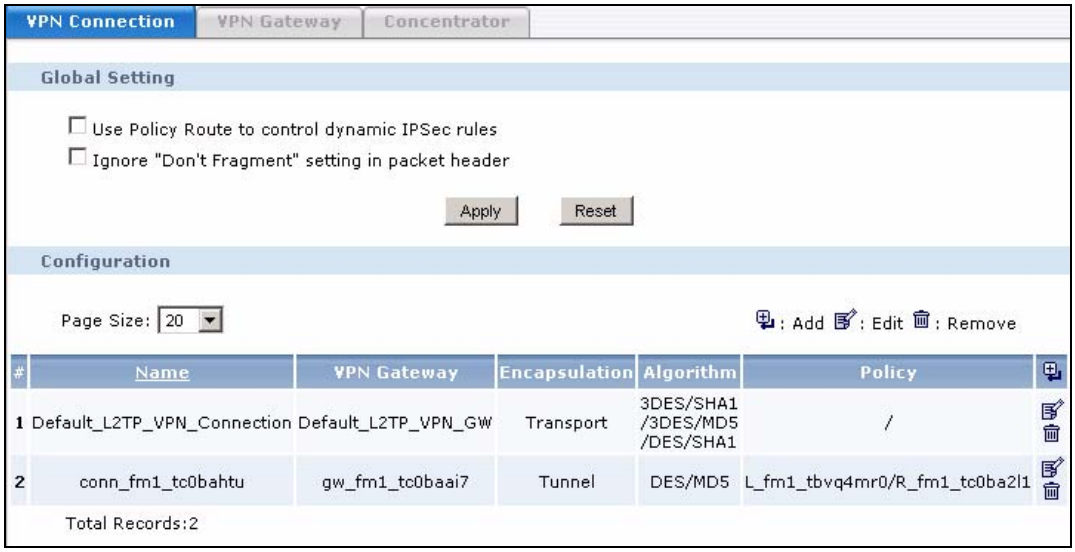
Click **Device Operation** > **Device Configuration** > **VPN** > **IPSec VPN** to open the **VPN Connection** screen. The **VPN Connection** screen lists the VPN connection policies and their associated VPN gateway(s), and various settings. In addition, it also lets you activate / deactivate and connect / disconnect each VPN connection (each IPSec SA). Click a column's heading cell to sort the table entries by that column's criteria. Click the heading cell again to reverse the sort order.

Note: Except for dynamic IPSec VPN rules, each VPN connection requires a corresponding policy route.

Dynamic IPSec VPN rules only require a corresponding policy route if you select **Use Policy Route to control dynamic IPSec rules**.

The VPN wizard automatically creates a corresponding policy route. If you create the VPN connection in the **VPN > IPSec VPN** screens, you need to manually create a corresponding policy route.

**Figure 144** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Connection




Each field is discussed in the following table.

**Table 129** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Connection

| LABEL | DESCRIPTION |
|---|---|
| Global Setting | |
| Use Policy Route to control dynamic IPSec rules | Leave this cleared to have the ZyWALL automatically obtain source and destination addresses for dynamic IPSec rules. When you leave this option's check box cleared, you do not need to configure policy routes for the dynamic IPSec tunnels.<br><br>Only select this if you want to use policy routes to manually specify the destination addresses of dynamic IPSec rules. You must configure a policy route for each dynamic IPSec tunnel. |
| Ignore ""Don't Fragment"" setting in packet header | Select this to fragment packets larger than the MTU (Maximum Transmission Unit) that have the "don't" fragment" bit in the header turned on. When you clear this the ZyWALL drops packets larger than the MTU that have the "don't" fragment" bit in the header turned on. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Reset | Click **Reset** to begin configuring this screen afresh. |
| Configuration | |
| Page Size | Select how many entries you want to display on each page. |
| # | This field is a sequential value, and it is not associated with a specific connection. |
| Name | This field displays the name of the IPSec SA. |

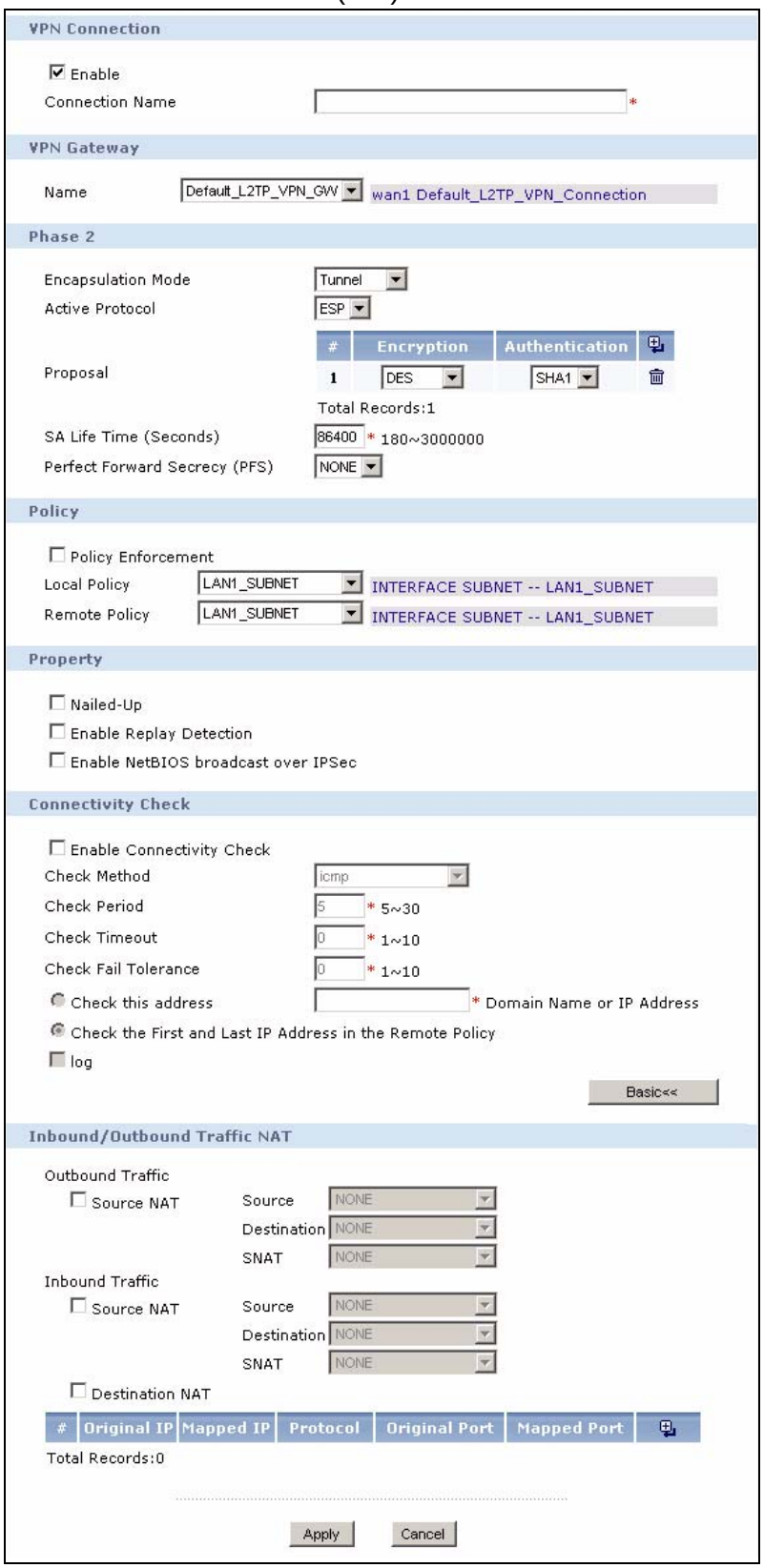
**Table 129** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Connection (continued)

| LABEL | DESCRIPTION |
|---|---|
| VPN Gateway | This field displays the associated VPN gateway(s). If there is no VPN gateway, this field displays “manual key”. |
| Encapsulation | This field displays what encapsulation the IPSec SA uses. |
| Algorithm | This field displays what encryption and authentication methods, respectively, the IPSec SA uses. |
| Policy | This field displays the local policy and the remote policy, respectively. |
| Add icon | This column provides icons to add, edit, and remove VPN connections.<br>To add a VPN connection, click the **Add** icon at the top of the column. The **VPN Connection Add/Edit Manual** screen appears.<br>To edit a VPN connection, click the **Edit** icon next to the connection. The **VPN Connection Add/Edit Manual** or **VPN Connection Add/Edit Gateway** screen appears accordingly.<br>To delete a VPN connection, click the **Remove** icon next to the connection. The Web Configurator confirms that you want to delete the VPN connection. |
| Total Records | This field displays the total number of VPN connection policies. |

## 11.1.1 The IPSec VPN Connection Add/Edit Screen

The **VPN Connection Add/Edit** screen allows you to create a new VPN connection policy or edit an existing one. To access this screen, go to the **VPN Connection** screen (see Section 11.1 on page 323), and click either the **Add** icon or an **Edit** icon. If you click the **Add** icon, you have to select a specific VPN gateway in the **VPN Gateway** field before the following screen appears.

**Figure 145** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Connection > Add/Edit (IKE)



Each field is described in the following table.

**Table 130** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Connection > Add/Edit (IKE)

| LABEL | DESCRIPTION |
|---|---|
| VPN Connection | |
| Enable | Select this to activate or clear this to deactivate this VPN rule. |
| Connection Name | Type the name used to identify this IPSec SA. You may use 1-31 alphanumeric characters, underscores(_), or dashes (-), but the first character cannot be a number. This value is case-sensitive. |
| VPN Gateway | |
| Name | Select the name of a VPN gateway rule this VPN connection is to use. Select **manual key** to configure a VPN connection policy that uses a manual key instead of IKE key management. This may be useful if you have problems with IKE key management. See Section 11.1.2 on page 331 for how to configure the manual key fields.<br><br>Note: Only use manual key as a temporary solution, because it is not as secure as a regular IPSec SA. |
| Phase 2 Settings | |
| Encapsulation Mode | Select which type of encapsulation the IPSec SA uses. Choices are<br><br>**Tunnel** - this mode encrypts the IP header information and the data.<br><br>**Transport** - this mode only encrypts the data.<br><br>The ZyWALL and remote IPSec router must use the same encapsulation. |
| Active Protocol | Select which protocol you want to use in the IPSec SA. Choices are:<br><br>**AH** (RFC 2402) - provides integrity, authentication, sequence integrity (replay resistance), and non-repudiation but not encryption. If you select **AH**, you must select an **Authentication** algorithm.<br><br>**ESP** (RFC 2406) - provides encryption and the same services offered by **AH**, but its authentication is weaker. If you select **ESP**, you must select an **Encryption** algorithm and **Authentication** algorithm.<br><br>Both **AH** and **ESP** increase processing requirements and latency (delay).<br><br>The ZyWALL and remote IPSec router must use the same active protocol. |
| Proposal | |
| # | This field is a sequential value, and it is not associated with a specific proposal. The sequence of proposals should not affect performance significantly. |

**Table 130** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Connection > Add/Edit (IKE) (continued)

| LABEL | DESCRIPTION |
|---|---|
| Encryption | This field is applicable when the **Active Protocol** is **ESP**. Select which key size and encryption algorithm to use in the IPSec SA. Choices are:<br>**NULL** - no encryption key or algorithm<br>**DES** - a 56-bit key with the DES encryption algorithm<br>**3DES** - a 168-bit key with the DES encryption algorithm<br>**AES128** - a 128-bit key with the AES encryption algorithm<br>**AES192** - a 192-bit key with the AES encryption algorithm<br>**AES256** - a 256-bit key with the AES encryption algorithm<br>The ZyWALL and the remote IPSec router must both have at least one proposal that uses use the same encryption and the same key.<br>Longer keys are more secure, but require more processing power, resulting in increased latency and decreased throughput. |
| Authentication | Select which hash algorithm to use to authenticate packet data in the IPSec SA. Choices are **SHA1** and **MD5**. **SHA1** is generally considered stronger than **MD5**, but it is also slower.<br>The ZyWALL and the remote IPSec router must both have a proposal that uses the same authentication algorithm. |
| Add icon | This column contains icons to add and remove proposals.<br>To add a proposal, click the **Add** icon at the top of the column.<br>To remove a proposal, click the **Remove** icon next to the proposal. The Vantage CNM confirms that you want to delete it before doing so. |
| Total Records | This field displays the total number of proposals to use in the IPSec SA. |
| SA Life Time | Type the maximum number of seconds the IPSec SA can last. Shorter life times provide better security. The ZyWALL automatically negotiates a new IPSec SA before the current one expires, if there are users who are accessing remote resources. |
| Perfect Forward Secrecy (PFS) | Select whether or not you want to enable Perfect Forward Secrecy (PFS) and, if you do, which Diffie-Hellman key group to use for encryption. Choices are:<br>**NONE** - disable PFS<br>**DH1** - enable PFS and use a 768-bit random number<br>**DH2** - enable PFS and use a 1024-bit random number<br>**DH5** - enable PFS and use a 1536-bit random number<br>PFS changes the root key that is used to generate encryption keys for each IPSec SA. The longer the key, the more secure the encryption, but also the longer it takes to encrypt and decrypt information. Both routers must use the same DH key group. |

**Table 130** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Connection > Add/Edit (IKE) (continued)

| LABEL | DESCRIPTION |
|---|---|
| Policy | Click **Advanced** to display more settings. Click **Basic** to display fewer settings. |
| Local Policy | Select the address or address group corresponding to the local network. Select **Create Object** to configure a new one. |
| Remote Policy | Select the address or address group corresponding to the remote network. Select **Create Object** to configure a new one. |
| Policy Enforcement | Clear this to allow traffic with source and destination IP addresses that do not match the local and remote policy to use the VPN tunnel. Leave this cleared for free access between the local and remote networks.<br><br>Note: Clear this to use the IPSec SA in a VPN concentrator.<br><br>Selecting this restricts who can use the VPN tunnel. The ZyWALL drops traffic with source and destination IP addresses that do not match the local and remote policy. |
| Property | |
| Nailed-Up | Select this if you want the ZyWALL to automatically renegotiate the IPSec SA when the SA life time expires. |
| Enable Replay Detection | Select this check box to detect and reject old or duplicate packets to protect against Denial-of-Service attacks. |
| Enable NetBIOS broadcast over IPSec | Select this check box if you the ZyWALL to send NetBIOS (Network Basic Input/Output System) packets through the IPSec SA.<br><br>NetBIOS packets are TCP or UDP packets that enable a computer to connect to and communicate with a LAN. It may sometimes be necessary to allow NetBIOS packets to pass through IPSec SAs in order to allow local computers to find computers on the remote network and vice versa. |
| Connectivity Check | The ZyWALL can regularly check the VPN connection to the gateway you specified to make sure it is still available. |
| Enable Connectivity Check | Select this to turn on the VPN connection check. |
| Check Method | Select how the ZyWALL checks the connection. The peer must be configured to respond to the method you select.<br><br>Select **icmp** to have the ZyWALL regularly ping the address you specify to make sure traffic can still go through the connection. You may need to configure the peer to respond to pings.<br><br>Select **tcp** to have the ZyWALL regularly perform a TCP handshake with the address you specify to make sure traffic can still go through the connection. You may need to configure the peer to accept the TCP connection. |
| Check Port | This field only displays when you select **tcp** in the **Check Method** field. Specify the port number to use for a TCP connectivity check. |
| Check Period | Enter the number of seconds between connection check attempts. |

**Table 130** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Connection > Add/Edit (IKE) (continued)

| LABEL | DESCRIPTION |
|---|---|
| Check Timeout | Enter the number of seconds to wait for a response before the attempt is a failure. |
| Check Fail Tolerance | Enter the number of consecutive failures allowed before the ZyWALL disconnects the VPN tunnel. The ZyWALL resumes using the first peer gateway address when the VPN connection passes the connectivity check. |
| Check this address | Select this to specify a domain name or IP address for the connectivity check. Enter that domain name or IP address in the field next to it. |
| Check the First and Last IP Address in the Remote Policy | Select this to have the ZyWALL check the connection to the first and last IP addresses in the connection's remote policy. Make sure one of these is the peer gateway's LAN IP address. |
| Log | Select this to have the ZyWALL generate a log every time it checks this VPN connection. |
| Advanced/Basic | Click this button to show or hide the **Inbound/Outbound traffic NAT** fields. |
| Inbound/Outbound traffic NAT | |
| Outbound Traffic | |
| Source NAT | This translation hides the source address of computers in the local network. It may also be necessary if you want the ZyWALL to route packets from computers outside the local network through the IPSec SA. |
| Source | Select the address object that represents the original source address (or select **Create Object** to configure a new one). This is the address object for the computer or network outside the local network. The size of the original source address range (**Source**) must be equal to the size of the translated source address range (**SNAT**). |
| Destination | Select the address object that represents the original destination address (or select **Create Object** to configure a new one). This is the address object for the remote network. |
| SNAT | Select the address object that represents the translated source address (or select **Create Object** to configure a new one). This is the address object for the local network. The size of the original source address range (**Source**) must be equal to the size of the translated source address range (**SNAT**). |
| Inbound Traffic | |
| Source NAT | This translation hides the source address of computers in the remote network. |
| Source | Select the address object that represents the original source address (or select **Create Object** to configure a new one). This is the address object for the remote network. The size of the original source address range (**Source**) must be equal to the size of the translated source address range (**SNAT**). |
| Destination | Select the address object that represents the original destination address (or select **Create Object** to configure a new one). This is the address object for the local network. |

**Table 130** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Connection > Add/Edit (IKE) (continued)

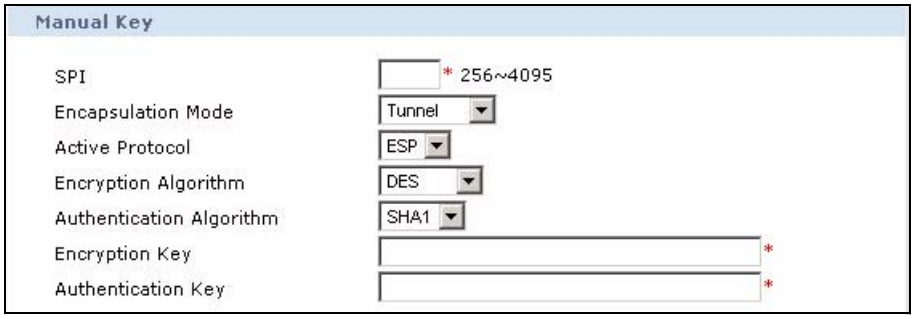
| LABEL | DESCRIPTION |
|---|---|
| SNAT | Select the address object that represents the translated source address (or select **Create Object** to configure a new one). This is the address that hides the original source address. The size of the original source address range (**Source**) must be equal to the size of the translated source address range (**SNAT**). |
| Destination NAT | This translation forwards packets (for example, mail) from the remote network to a specific computer (for example, the mail server) in the local network. |
| # | This field is a sequential value, and it is not associated with a specific NAT record. However, the order of records is the sequence in which conditions are checked and executed. |
| Original IP | Select the address object that represents the original destination address. This is the address object for the remote network. |
| Mapped IP | Select the address object that represents the desired destination address. For example, this is the address object for the mail server. |
| Protocol | Select the protocol required to use this translation. Choices are: **TCP**, **UDP**, or **All**. |
| Original Port | These fields are available if the protocol is **TCP** or **UDP**. Enter the original destination port or range of original destination ports. The size of the original port range must be the same size as the size of the mapped port range. |
| Mapped Port | These fields are available if the protocol is **TCP** or **UDP**. Enter the translated destination port or range of translated destination ports. The size of the original port range must be the same size as the size of the mapped port range. |
| Add icon | This column contains icons to add, move, and remove NAT records.<br>To add a NAT record, click the **Add** icon at the top of the column.<br>To move a NAT record, click the **Move to N** icon next to the record, and then type the row number to which you want to move it. The records are renumbered automatically.<br>To remove a NAT record, click the **Remove** icon next to the record. The Vantage CNM confirms that you want to delete the NAT record before doing so. |
| Total Records | This field displays the total number of NAT records in the table. |
| Apply | Click **Apply** to save the changes. |
| Cancel | Click **Cancel** to discard all changes and return to the main VPN screen. |

## 11.1.2 IPSec VPN Connection Add/Edit (Manual Key)

If you want to use a manual key instead of an IKE key, select **manual key in** the **VPN Connection Add/Edit** screen. This is useful if you have problems with IKE key management.

Note: Only use manual key as a temporary solution, because it is not as secure as a regular IPSec SA.

**Figure 146** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Connection > Add/Edit (Manual Key)




This table describes labels specific to manual key configuration. See Section 11.1 on page 323 for descriptions of the other fields.

**Table 131** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Connection > Add/Edit (Manual Key)

| LABEL | DESCRIPTION |
|---|---|
| Manual Key | |
| SPI | Type a unique **SPI** (Security Parameter Index) between 256 and 4095. The SPI is used to identify the ZyWALL during authentication.<br><br>The ZyWALL and remote IPSec router must use the same SPI. |
| Encapsulation Mode | Select which type of encapsulation the IPSec SA uses. Choices are<br><br>**Tunnel** - this mode encrypts the IP header information and the data<br><br>**Transport** - this mode only encrypts the data. You should only select this if the IPSec SA is used for communication between the ZyWALL and remote IPSec router.<br><br>If you select **Transport** mode, the ZyWALL automatically switches to **Tunnel** mode if the IPSec SA is not used for communication between the ZyWALL and remote IPSec router. In this case, the ZyWALL generates a log message for this change.<br><br>The ZyWALL and remote IPSec router must use the same encapsulation. |
| Active Protocol | Select which protocol you want to use in the IPSec SA. Choices are:<br><br>**AH** (RFC 2402) - provides integrity, authentication, sequence integrity (replay resistance), and non-repudiation but not encryption. If you select **AH**, you must select an **Authentication Algorithm**.<br><br>**ESP** (RFC 2406) - provides encryption and the same services offered by **AH**, but its authentication is weaker. If you select **ESP**, you must select an **Encryption Algorithm** and **Authentication Algorithm**.<br><br>The ZyWALL and remote IPSec router must use the same protocol. |

**Table 131** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Connection > Add/Edit (Manual Key) (continued)

| LABEL | DESCRIPTION |
|---|---|
| Encryption Algorithm | This field is applicable when the **Active Protocol** is **ESP**. Select which key size and encryption algorithm to use in the IPSec SA. Choices are:<br>**NULL** - no encryption key or algorithm<br>**DES** - a 56-bit key with the DES encryption algorithm<br>**3DES** - a 168-bit key with the DES encryption algorithm<br>**AES128** - a 128-bit key with the AES encryption algorithm<br>**AES192** - a 192-bit key with the AES encryption algorithm<br>**AES256** - a 256-bit key with the AES encryption algorithm<br>The ZyWALL and the remote IPSec router must use the same algorithm and key. Longer keys require more processing power, resulting in increased latency and decreased throughput. |
| Authentication Algorithm | Select which hash algorithm to use to authenticate packet data in the IPSec SA. Choices are **SHA1** and **MD5**. **SHA1** is generally considered stronger than **MD5**, but it is also slower.<br>The ZyWALL and remote IPSec router must use the same algorithm. |

**Table 131** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Connection > Add/Edit (Manual Key) (continued)

| LABEL | DESCRIPTION |
|---|---|
| Encryption Key | This field is applicable when you select an **Encryption Algorithm**. Enter the encryption key, which depends on the encryption algorithm.<br><br>**DES** - type a unique key 8-32 characters long<br><br>**3DES** - type a unique key 24-32 characters long<br><br>**AES128** - type a unique key 16-32 characters long<br><br>**AES192** - type a unique key 24-32 characters long<br><br>**AES256** - type a unique key 32 characters long<br><br>You can use any alphanumeric characters or ,;\|`~!@#$%^&*()_+\{}':./<>=-".<br><br>If you want to enter the key in hexadecimal, type “0x” at the beginning of the key. For example, "0x0123456789ABCDEF" is in hexadecimal format; in “0123456789ABCDEF” is in ASCII format. If you use hexadecimal, you must enter twice as many characters as listed above.<br><br>The remote IPSec router must have the same encryption key.<br><br>The ZyWALL ignores any characters above the minimum number of characters required by the algorithm. For example, if you enter 1234567890XYZ for a DES encryption key, the ZyWALL only uses 12345678. The ZyWALL still stores the longer key. |
| Authentication Key | Enter the authentication key, which depends on the authentication algorithm.<br><br>**MD5** - type a unique key 16-20 characters long<br><br>**SHA1** - type a unique key 20 characters long<br><br>You can use any alphanumeric characters or ,;\|`~!@#$%^&*()_+\{}':./<>=-". If you want to enter the key in hexadecimal, type “0x” at the beginning of the key. For example, "0x0123456789ABCDEF" is in hexadecimal format; in “0123456789ABCDEF” is in ASCII format. If you use hexadecimal, you must enter twice as many characters as listed above.<br><br>The remote IPSec router must have the same authentication key.<br><br>The ZyWALL ignores any characters above the minimum number of characters required by the algorithm. For example, if you enter 12345678901234567890 for a MD5 authentication key, the ZyWALL only uses 1234567890123456. The ZyWALL still stores the longer key. |

# 11.2 The VPN Gateway Screen

The **VPN Gateway** summary screen displays the IPSec VPN gateway policies in the ZyWALL, as well as the ZyWALL's address, remote IPSec router's address, and associated VPN connections for each one. In addition, it also lets you activate and deactivate each VPN gateway.

To access this screen, click **Device Operation** > **Device Configuration** > **VPN** > **IPSec VPN** > **VPN Gateway**. The following screen appears.

**Figure 147** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Gateway

Each field is discussed in the following table. See Section 11.2.1 on page 336 for more information.

**Table 132** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Gateway

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select how many entries you want to display on each page. |
| # | This field is a sequential value, and it is not associated with a specific VPN gateway. |
| Name | This field displays the name of the VPN gateway |
| My address | This field displays the interface or a domain name the ZyWALL uses for the VPN gateway. |
| Secure Gateway | This field displays the IP address(es) of the remote IPSec routers. |
| VPN Connection | This field displays VPN connections that use this VPN gateway. |

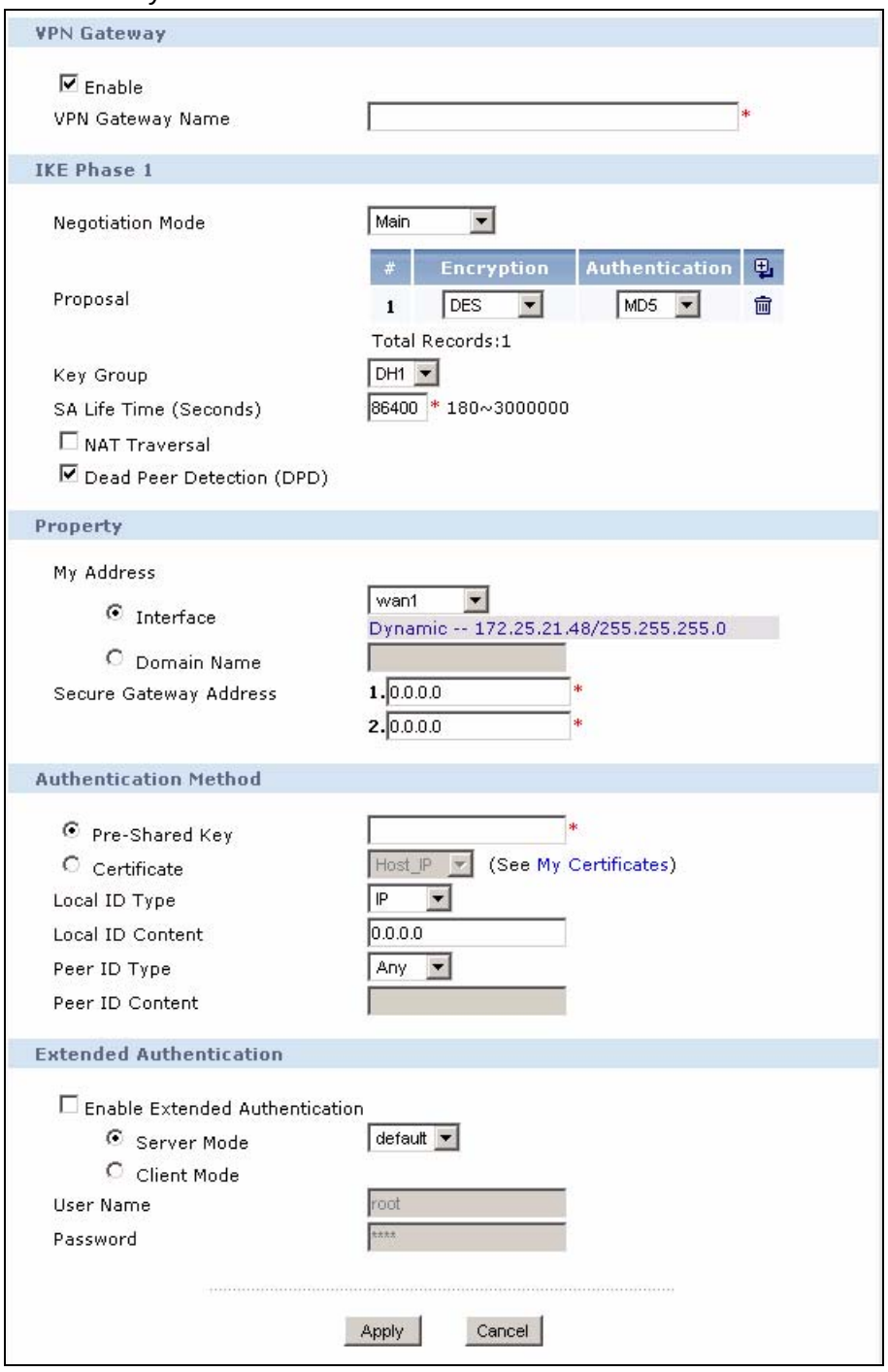
**Table 132** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Gateway (continued)

| LABEL | DESCRIPTION |
|---|---|
| Add icon | This column provides icons to add, edit, and remove VPN gateways.<br><br>To add a VPN gateway, click the **Add** icon at the top of the column. The **VPN Gateway Add/Edit** screen appears.<br><br>To edit a VPN gateway, click the **Edit** icon next to the gateway. The **VPN Gateway Add/Edit** screen appears accordingly.<br><br>To delete a VPN gateway, click on the **Remove** icon next to the gateway. The Web Configurator confirms that you want to delete the VPN gateway. |
| Total Records | This field displays the total number of VPN gateway policies. |

## 11.2.1 The VPN Gateway Add/Edit Screen

The **VPN Gateway Add/Edit** screen allows you to create a new VPN gateway policy or edit an existing one. To access this screen, go to the **VPN Gateway summary** screen (see Section 11.2 on page 335), and click either the **Add** icon or an **Edit** icon.

**Figure 148** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Gateway > Edit



Each field is described in the following table.

**Table 133** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Gateway > Edit

| LABEL | DESCRIPTION |
|---|---|
| VPN Gateway | |
| Enable | Select this to activate or clear this to deactivate this VPN gateway. |
| VPN Gateway Name | Type the name used to identify this VPN gateway. You may use 1-31 alphanumeric characters, underscores(_), or dashes (-), but the first character cannot be a number. This value is case-sensitive. |
| IKE Phase 1 | |
| Negotiation Mode | Select the negotiation mode to use to negotiate the IKE SA. Choices are<br>**Main** - this encrypts the ZyWALL's and remote IPSec router's identities but takes more time to establish the IKE SA<br>**Aggressive** - this is faster but does not encrypt the identities<br>The ZyWALL and the remote IPSec router must use the same negotiation mode. |
| Proposal | |
| # | This field is a sequential value, and it is not associated with a specific proposal. The sequence of proposals should not affect performance significantly. |
| Encryption | Select which key size and encryption algorithm to use in the IKE SA. Choices are:<br>**DES** - a 56-bit key with the DES encryption algorithm<br>**3DES** - a 168-bit key with the DES encryption algorithm<br>**AES128** - a 128-bit key with the AES encryption algorithm<br>**AES192** - a 192-bit key with the AES encryption algorithm<br>**AES256** - a 256-bit key with the AES encryption algorithm<br>The ZyWALL and the remote IPSec router must use the same key size and encryption algorithm. Longer keys require more processing power, resulting in increased latency and decreased throughput. |
| Authentication | Select which hash algorithm to use to authenticate packet data in the IPSec SA. Choices are **SHA1** and **MD5**. **SHA1** is generally considered stronger than **MD5**, but it is also slower.<br>The remote IPSec router must use the same authentication algorithm. |
| Add icon | This column contains icons to add and remove proposals.<br>To add a proposal, click the **Add** icon at the top of the column.<br>To remove a proposal, click the **Remove** icon next to the proposal. The Vantage CNM confirms that you want to delete the proposal before doing so. |

**Table 133** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Gateway > Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Key Group | Select which Diffie-Hellman key group (DH*x*) you want to use for encryption keys. Choices are:<br>**DH1** - use a 768-bit random number<br>**DH2** - use a 1024-bit random number<br>**DH5** - use a 1536-bit random number<br>The longer the key, the more secure the encryption, but also the longer it takes to encrypt and decrypt information. Both routers must use the same DH key group. |
| SA Life Time (Seconds) | Type the maximum number of seconds the IKE SA can last. When this time has passed, the ZyWALL and remote IPSec router have to update the encryption and authentication keys and re-negotiate the IKE SA. This does not affect any existing IPSec SAs, however. |
| NAT Traversal | Select this if any of these conditions are satisfied.<br>• This IKE SA might be used to negotiate IPSec SA that use active protocol AH.<br>• There are one or more NAT routers between the ZyWALL and remote IPSec router, and these routers do not support IPSec pass-thru or a similar feature.<br>The remote IPSec router must also enable NAT traversal, and the NAT routers have to forward packets with UDP port 500 and UDP 4500 headers unchanged. |
| Dead Peer Detection (DPD) | Select this check box if you want the ZyWALL to make sure the remote IPSec router is there before it transmits data through the IKE SA. The remote IPSec router must support DPD. If there has been no traffic for at least 15 seconds, the ZyWALL sends a message to the remote IPSec router. If the remote IPSec router responds, the ZyWALL transmits the data. If the remote IPSec router does not respond, the ZyWALL shuts down the IKE SA.<br>If the remote IPSec router does not support DPD, see if you can use the VPN connection connectivity check (see Section 11.1.1 on page 325). |
| Property | |
| My Address | Select how the IP address of the ZyWALL in the IKE SA is defined.<br>If you select **Interface**, select the Ethernet interface, VLAN interface, virtual Ethernet interface, virtual VLAN interface, PPPoE/PPTP interface, or auxiliary interface. The IP address of the ZyWALL in the IKE SA is the IP address of the interface.<br>If you select **Domain Name**, enter the domain name or the IP address of the ZyWALL. The IP address of the ZyWALL in the IKE SA is the specified IP address or the IP address corresponding to the domain name. 0.0.0.0 is invalid. |

**Table 133** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Gateway > Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Secure Gateway Address | Select how the IP address of the remote IPSec router in the IKE SA is defined.<br><br>Select **Static Address** to enter the domain name or the IP address of the remote IPSec router. You can provide a second IP address or domain name for the ZyWALL to try if it cannot establish an IKE SA with the first one.<br><br>Select **Dynamic Address** if the remote IPSec router has a dynamic IP address (and does not use DDNS). |
| Authentication Method | Note: The ZyWALL and remote IPSec router must use the same authentication method to establish the IKE SA. |
| Pre-Shared Key | Select this to have the ZyWALL and remote IPSec router use a pre-shared key (password) to identify each other when they negotiate the IKE SA. Type the pre-shared key in the field to the right. The pre-shared key can be<br><br>• 8 - 32 alphanumeric characters or ,;\|`~!@#$%^&*()_+\{}':./<>=-".<br>• 8 - 32 pairs of hexadecimal (0-9, A-F) characters, preceded by "0x".<br><br>If you want to enter the key in hexadecimal, type "0x" at the beginning of the key. For example, "0x0123456789ABCDEF" is in hexadecimal format; in "0123456789ABCDEF" is in ASCII format. If you use hexadecimal, you must enter twice as many characters since you need to enter pairs.<br><br>The ZyWALL and remote IPSec router must use the same pre-shared key. |
| Certificate | Select this to have the ZyWALL and remote IPSec router use certificates to authenticate each other when they negotiate the IKE SA. Then select the certificate the ZyWALL uses to identify itself to the remote IPsec router.<br><br>This certificate is one of the certificates in **My Certificates**. If this certificate is self-signed, import it into the remote IPsec router. If this certificate is signed by a CA, the remote IPsec router must trust that CA.<br><br>Note: The IPSec routers must trust each other's certificates.<br><br>The ZyWALL uses one of its **Trusted Certificates** to authenticate the remote IPSec router's certificate. The trusted certificate can be a self-signed certificate or that of a trusted CA that signed the remote IPSec router's certificate. |

**Table 133** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Gateway > Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Local ID Type | This field is read-only if the ZyWALL and remote IPSec router use certificates to identify each other. Select which type of identification is used to identify the ZyWALL during authentication. Choices are:<br>**IP** - the ZyWALL is identified by an IP address<br>**DNS** - the ZyWALL is identified by a domain name<br>**E-mail** - the ZyWALL is identified by an e-mail address |
| Local ID Content | This field is read-only if the ZyWALL and remote IPSec router use certificates to identify each other. Type the identity of the ZyWALL during authentication. The identity depends on the **Local ID Type**.<br>**IP** - type an IP address; if you type 0.0.0.0, the ZyWALL uses the IP address specified in the **My Address** field. This is not recommended in the following situations:<br>• There is a NAT router between the ZyWALL and remote IPSec router.<br>• You want the remote IPSec router to be able to distinguish between IPSec SA requests that come from IPSec routers with dynamic WAN IP addresses.<br>In these situations, use a different IP address, or use a different **Local ID Type**.<br>**DNS** - type the domain name; you can use up to 31 ASCII characters including spaces, although trailing spaces are truncated. This value is only used for identification and can be any string.<br>**E-mail** - the ZyWALL is identified by an e-mail address; you can use up to 31 ASCII characters including spaces, although trailing spaces are truncated. This value is only used for identification and can be any string. |
| Peer ID Type | Select which type of identification is used to identify the remote IPSec router during authentication. Choices are:<br>**IP** - the remote IPSec router is identified by an IP address<br>**DNS** - the remote IPSec router is identified by a domain name<br>**E-mail** - the remote IPSec router is identified by an e-mail address<br>**Any** - the ZyWALL does not check the identity of the remote IPSec router<br>If the ZyWALL and remote IPSec router use certificates, there is one more choice.<br>**Subject Name** - the remote IPSec router is identified by the subject name in the certificate |

**Table 133** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Gateway > Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Peer ID Content | This field is disabled if the **Peer ID Type** is **Any**. Type the identity of the remote IPSec router during authentication. The identity depends on the **Peer ID Type**.<br><br>If the ZyWALL and remote IPSec router do not use certificates,<br><br>**IP** - type an IP address; see the note at the end of this description.<br><br>**DNS** - type the domain name; you can use up to 31 ASCII characters including spaces, although trailing spaces are truncated. This value is only used for identification and can be any string.<br><br>**E-mail** - the ZyWALL is identified by an e-mail address; you can use up to 31 ASCII characters including spaces, although trailing spaces are truncated. This value is only used for identification and can be any string.<br><br>If the ZyWALL and remote IPSec router use certificates, type the following fields from the certificate used by the remote IPSec router.<br><br>**IP** - subject alternative name field; see the note at the end of this description.<br><br>**DNS** - subject alternative name field<br><br>**E-mail** - subject alternative name field<br><br>**Subject Name** - subject name (maximum 255 ASCII characters, including spaces)<br><br>Note: If **Peer ID Type** is **IP**, please read the rest of this section.<br><br>If you type 0.0.0.0, the ZyWALL uses the IP address specified in the **Secure Gateway Address** field. This is not recommended in the following situations:<br><br>• There is a NAT router between the ZyWALL and remote IPSec router.<br>• You want the remote IPSec router to be able to distinguish between IPSec SA requests that come from IPSec routers with dynamic WAN IP addresses.<br><br>In these situations, use a different IP address, or use a different **Peer ID Type**. |
| Extended Authentication | When multiple IPSec routers use the same VPN tunnel to connect to a single VPN tunnel (telecommuters sharing a tunnel for example), use extended authentication to enforce a user name and password check. This way even though they all know the VPN tunnel's security settings, each still has to provide a unique user name and password. |
| Enable Extended Authentication | Select this if one of the routers (the ZyWALL or the remote IPSec router) verifies a user name and password from the other router using the local user database and/or an external server. |
| Server Mode | Select this if the ZyWALL authenticates the user name and password from the remote IPSec router. You also have to select the authentication method, which specifies how the ZyWALL authenticates this information. |

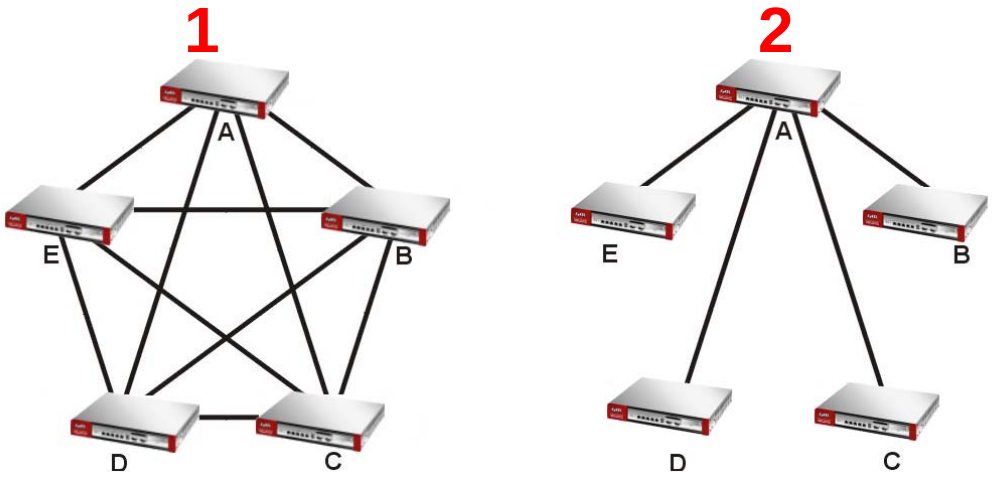
**Table 133** Device Operation > Device Configuration > VPN > IPSec VPN > VPN Gateway > Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Client Mode | Select this radio button if the ZyWALL provides a username and password to the remote IPSec router for authentication. You also have to provide the **User Name** and the **Password**. |
| User Name | This field is required if the ZyWALL is in **Client Mode** for extended authentication. Type the user name the ZyWALL sends to the remote IPSec router. The user name can be 1-31 ASCII characters. It is case-sensitive, but spaces are not allowed. |
| Password | This field is required if the ZyWALL is in **Client Mode** for extended authentication. Type the password the ZyWALL sends to the remote IPSec router. The password can be 1-31 ASCII characters. It is case-sensitive, but spaces are not allowed. |
| Apply | Click **Apply** to save your settings and exit this screen. |
| Cancel | Click **Cancel** to exit this screen without saving. |

# 11.3 The VPN Concentrator Screen

A VPN concentrator combines several IPSec VPN connections into one secure network.

**Figure 149** VPN Topologies (Fully Meshed and Hub and Spoke)




In a fully-meshed VPN topology (**1** in the figure), there is a VPN connection between every pair of routers. In a hub-and-spoke VPN topology (**2** in the figure), there is a VPN connection between each spoke router (**B**, **C**, **D**, and **E**) and the hub router (**A**), which uses the VPN concentrator. The VPN concentrator routes VPN traffic between the spoke routers and itself.

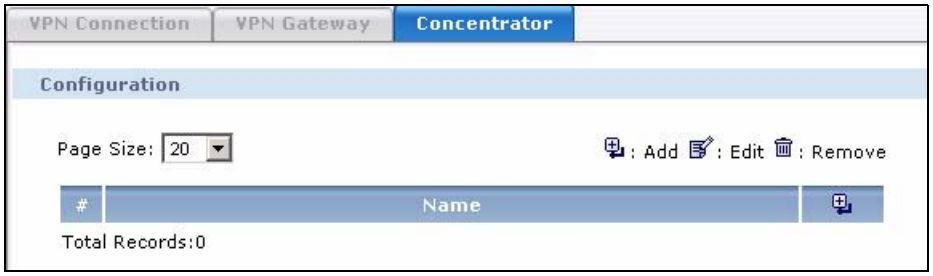
A VPN concentrator reduces the number of VPN connections that you have to set up and maintain in the network. You might also be able to consolidate the policy

routes in each spoke router, depending on the IP addresses and subnets of each spoke.

However a VPN concentrator is not for every situation. The hub router is a single failure point, so a VPN concentrator is not as appropriate if the connection between spoke routers cannot be down occasionally (maintenance, for example). There is also more burden on the hub router. It receives VPN traffic from one spoke, decrypts it, inspects it to find out to which spoke to route it, encrypts it, and sends it to the appropriate spoke. Therefore, a VPN concentrator is more suitable when there is a minimum amount of traffic between spoke routers.

The **VPN Concentrator** summary screen displays the VPN concentrators in the Vantage CNM. To access this screen, click **Device Operation** > **Device Configuration** > **VPN** > **IPSec VPN** > **Concentrator**. The following screen appears.

**Figure 150** Device Operation > Device Configuration > VPN > IPSec VPN > Concentrator




Each field is discussed in the following table. See Section 11.3.1 on page 345 for more information.

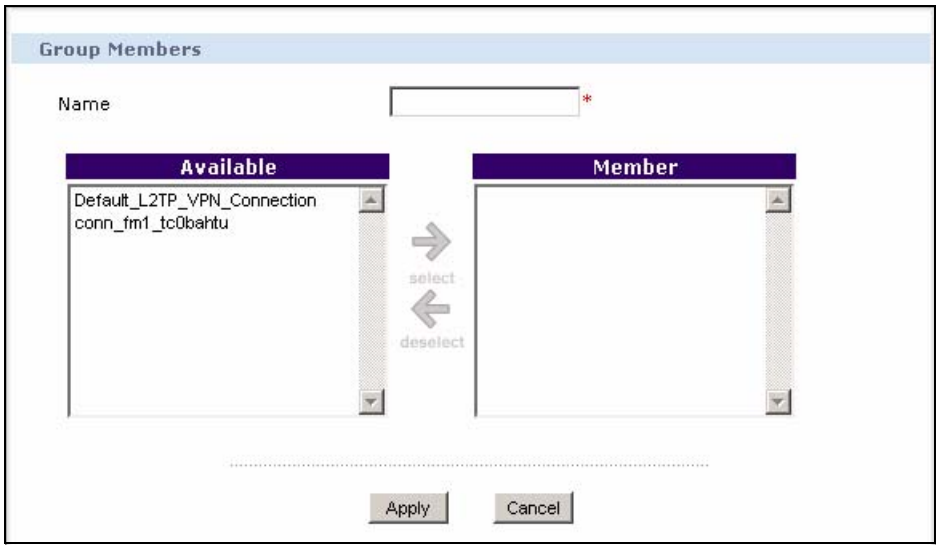
**Table 134** Device Operation > Device Configuration > VPN > IPSec VPN > Concentrator

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select how many entries you want to display on each page. |
| # | |
| Name | This field displays the name of the VPN concentrator. |
| Add icon | This column provides icons to add, edit, and remove VPN concentrators.<br><br>To add a VPN concentrator, click the **Add** icon at the top of the column. The **VPN Concentrator Add/Edit** screen appears.<br><br>To edit a VPN concentrator, click the **Edit** icon next to the concentrator. The **VPN Concentrator Add/Edit** screen appears accordingly.<br><br>To delete a VPN concentrator, click on the **Remove** icon next to the concentrator. The Web Configurator confirms that you want to delete the VPN concentrator. |

## 11.3.1 The VPN Concentrator Add/Edit Screen

The **VPN Concentrator Add/Edit** screen allows you to create a new VPN concentrator or edit an existing one. To access this screen, go to the **VPN Concentrator summary** screen (see Section 11.3 on page 343), and click either the **Add** icon or an **Edit** icon.

**Figure 151** Device Operation > Device Configuration > VPN > IPSec VPN > Concentrator > Edit




Each field is described in the following table.

**Table 135** Device Operation > Device Configuration > VPN > IPSec VPN > Concentrator > Edit

| LABEL | DESCRIPTION |
|---|---|
| Name | Enter the name of the concentrator. You may use 1-31 alphanumeric characters, underscores(_), or dashes (-), but the first character cannot be a number. This value is case-sensitive. |
| Available | IPSec VPN connection policies that do not belong to a VPN concentrator appear on the left. Select any VPN connection policies that you want to add to the VPN concentrator and click the **select** arrow to add them. |
| Member | This field displays the name of each member in the concentrator.<br><br>Note: You must disable policy enforcement in each member. See Section 11.1.1 on page 325.<br><br>The VPN concentrator's member VPN connections appear on the right. Select any VPN connections that you want to remove from the VPN concentrator, and click the **deselect** arrow to remove them. |
| Apply | Click **Apply** to save your changes in the ZyWALL. |
| Cancel | Click **Cancel** to exit this screen without saving. |

# 12

# SSL VPN

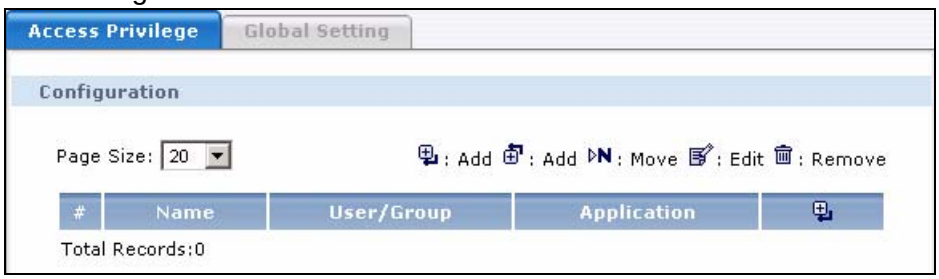
## 12.1 Overview

Use SSL VPN to allow users to use a web browser for secure remote user login (the remote users do not need a VPN router or VPN client software.

## 12.2 The SSL Access Privilege Screen

Click **Device Operation** > **Device Configuration** > **VPN > SSL VPN** to open the **Access Privilege** screen. This screen lists the configured SSL access policies.

**Figure 152** Device Operation > Device Configuration > VPN > SSL VPN > Access Privilege




The following table describes the labels in this screen.

**Table 136** Device Operation > Device Configuration > VPN > SSL VPN > Access Privilege

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select how many entries you want to display on each page. |
| # | This field displays the index number of the entry. |
| Name | This field displays the descriptive name of the SSL access policy for identification purposes. |
| User/Group | This field displays the user account or user group name(s) associated to an SSL access policy.<br><br>This field displays up to three names. |

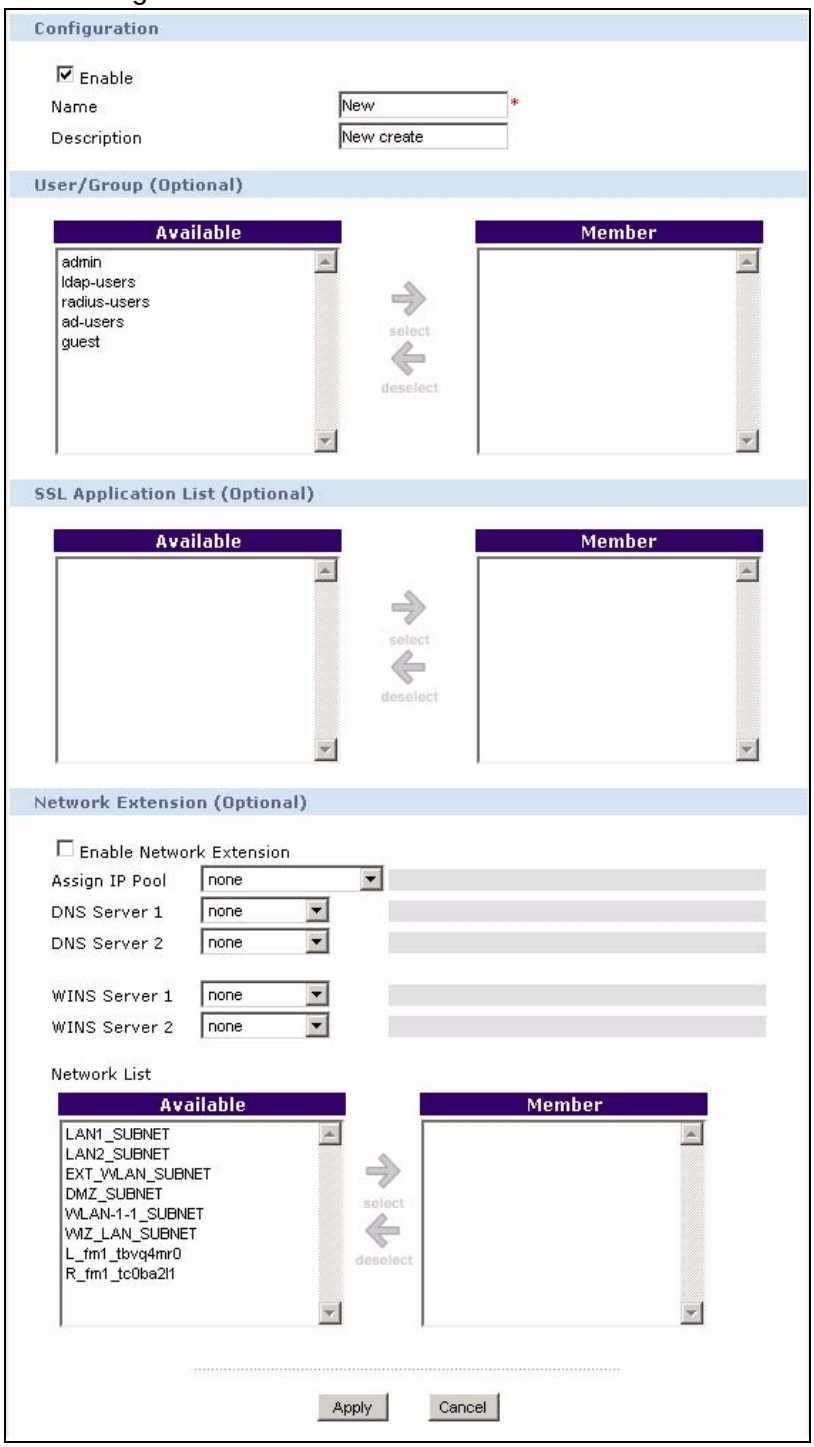
**Table 136** Device Operation > Device Configuration > VPN > SSL VPN > Access Privilege

| LABEL | DESCRIPTION |
|---|---|
| Application | This field displays the descriptive name of the SSL application object this policy uses. |
| Add icon | This column provides icons to add, edit, and remove policies.<br>To add a new policy, click the **Add** icon at the top of the column.<br>To edit a policy, click the **Edit** icon next to the policy.<br>To delete a policy, click the **Remove** icon next to the policy.<br>To rearrange a policy in the list, click the **Move to N** icon next to the policy. |

## 12.2.1 The SSL Access Policy Add/Edit Screen

To create a new or edit an existing SSL access policy, click the **Add** or **Edit** icon in the **Access Privilege** screen.

**Figure 153** Device Operation > Device Configuration > VPN > SSL VPN > Access Privilege > Add/Edit



The following table describes the labels in this screen.

**Table 137** Device Operation > Device Configuration > VPN > SSL VPN > Access Privilege > Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| Configuration | |
| Enable | Select this option to activate this SSL access policy. |
| Name | Enter a descriptive name to identify this policy. You can enter up to 15 characters (“a-z”, A-Z”, “0-9”) with no spaces allowed. |
| Description | Enter additional information about this SSL access policy. You can enter up to 31 characters (“0-9”, “a-z”, “A-Z”, “-” and “_”). |
| User/Group (Optional) | The **Available** list displays the name(s) of the user account and/or user group(s) to which you have not applied an SSL access policy yet.<br>To associate a user or user group to this SSL access policy, select a user account or user group and click the **select** arrow to add to the **Member** list. You can select more than one name.<br>To remove a user or user group, select the name(s) in the **Member** list and click the **deselect** arrow. |
| SSL Application List (Optional) | The **Available** list displays the name(s) of the SSL application(s) you can select for this SSL access policy.<br>To associate an SSL application to this SSL access policy, select a name and click the **select** arrow to add to the **Member** list. You can select more than one application.<br>To remove an SSL application, select the name(s) in the **Member** list and click the **deselect** arrow. |
| Network Extension (Optional) | |
| Enable Network Extension | Select this option to create a VPN tunnel between the authenticated users and the internal network. This allows the users to access the resources on the network as if they were on the same local network.<br>Clear this option to disable this feature. Users can only access the applications as defined by the selected SSL application settings and the remote user computers are not made to be a part of the local network. |
| Assign IP Pool | Define a separate pool of IP addresses to assign to the SSL users. Select it here.<br>The SSL VPN IP pool cannot overlap with IP addresses on the ZyWALL's local networks (LAN and DMZ for example), the SSL user's network, or the networks you specify in the SSL VPN **Network List**. |
| DNS/WINS Server 1..2 | Select the name of the DNS or WINS server whose information the ZyWALL sends to the remote users. This allows them to access devices on the local network using domain names instead of IP addresses. |
| Network List | To allow user access to local network(s), select a network name in the **Available** list and click the **select** arrow to add to the **Member** list. You can select more than one network.<br>To block access to a network, select the network name in the **Member** list and click the **deselect** arrow. |

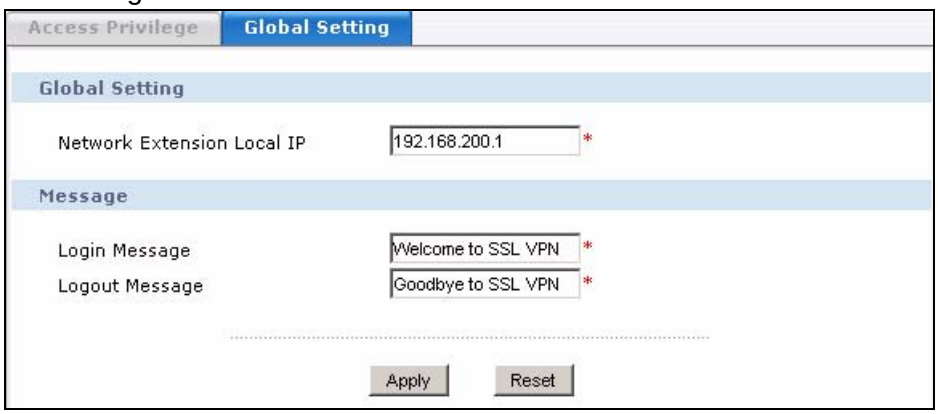
**Table 137** Device Operation > Device Configuration > VPN > SSL VPN > Access Privilege > Add/Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Apply | Click **Apply** to save the changes and return to the main **Access Privilege** screen. |
| Cancel | Click **Cancel** to discard all changes and return to the main **Access Privilege** screen. |

# 12.3 The SSL Global Setting Screen

Click **Device Operation** > **Device Configuration** > **VPN > SSL VPN** and click the **Global Setting** tab to display the following screen. Use this screen to set the IP address of the ZyWALL (or a gateway device) on your network for full tunnel mode access, enter access messages or upload a custom logo to be displayed on the remote user screen.

**Figure 154** Device Operation > Device Configuration > VPN > SSL VPN > Global Setting




The following table describes the labels in this screen.

**Table 138** Device Operation > Device Configuration > VPN > SSL VPN > Global Setting

| LABEL | DESCRIPTION |
|---|---|
| Global Setting | |
| Network Extension Local IP | Specify the IP address of the ZyWALL (or a gateway device) for full tunnel mode SSL VPN access.<br><br>Leave this field to the default settings unless it conflicts with another interface. |
| Message | |
| Login Message | Specify a message to display on the screen when a user logs in and an SSL VPN connection is established successfully. You can enter up to 60 characters (“a-z”, A-Z”, “0-9”) with spaces allowed. |

**Table 138** Device Operation > Device Configuration > VPN > SSL VPN > Global Setting (continued)

| LABEL | DESCRIPTION |
|---|---|
| Logout Message | Specify a message to display on the screen when a user logs out and the SSL VPN connection is terminated successfully. You can enter up to 60 characters (“a-z”, A-Z”, “0-9”) with spaces allowed. |
| Apply | Click **Apply** to save the changes and/or start the logo file upload process. |
| Reset | Click **Reset** to start configuring this screen again. |

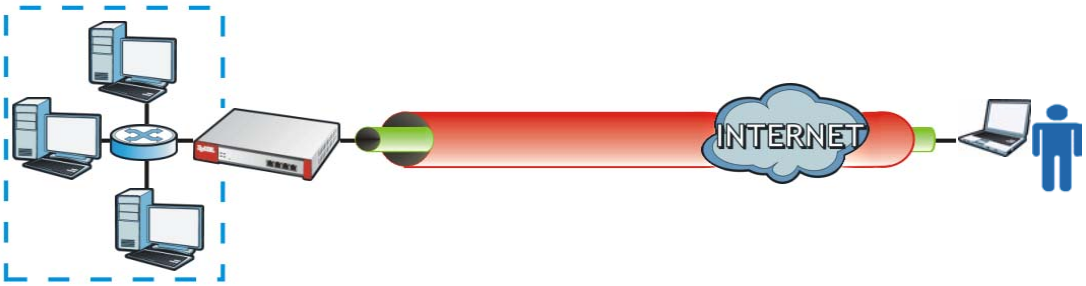
# 13

# L2TP VPN

## 13.1 Overview

L2TP VPN lets remote users use the L2TP and IPSec client software included with their computers' operating systems to securely connect to the network behind the ZyWALL. The remote users do not need their own IPSec gateways or VPN client software.

**Figure 155** L2TP VPN Overview

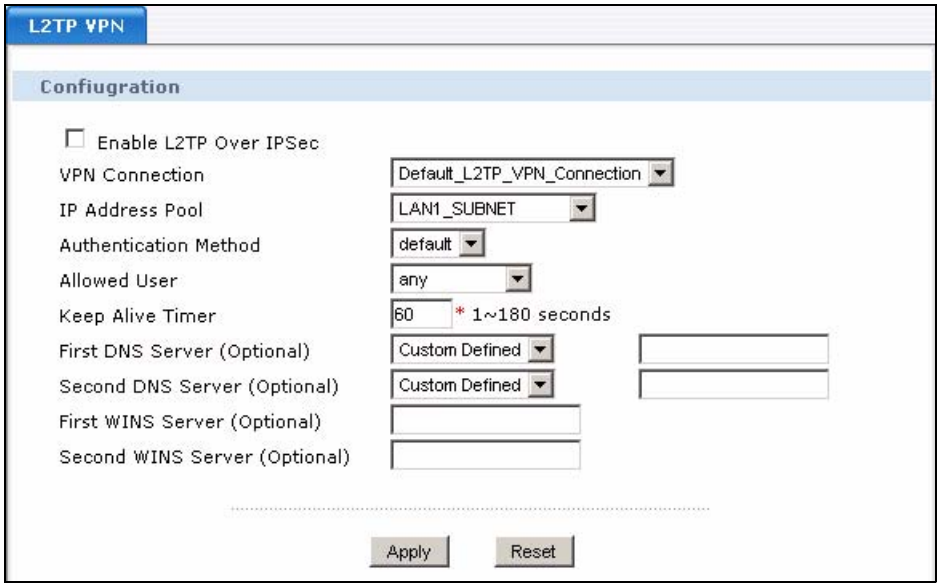



## 13.2 L2TP VPN Screen

Click **Device Operation** > **Device Configuration** > **VPN > L2TP VPN** to open the following screen. Use this screen to configure the selected ZyWALL's L2TP VPN settings on the Vantage CNM.

Note: Disconnect any existing L2TP VPN sessions before modifying L2TP VPN settings. The remote users must make any needed matching configuration changes and re-establish the sessions using the new settings.

**Figure 156** Device Operation > Device Configuration > VPN > L2TP VPN




The following table describes the fields in this screen.

**Table 139** Device Operation > Device Configuration > VPN > L2TP VPN

| LABEL | DESCRIPTION |
|---|---|
| Enable L2TP Over IPSec | Use this field to turn the ZyWALL's L2TP VPN function on or off. |
| VPN Connection | Select the IPSec VPN connection the ZyWALL uses for L2TP VPN.<br><br>Note: Modifying this VPN connection (or the VPN gateway that it uses) disconnects any existing L2TP VPN sessions. |
| IP Address Pool | Select the pool of IP addresses that the ZyWALL uses to assign to the L2TP VPN clients. Select **Create Object** to configure a new pool of IP addresses. |
| Authentication Method | Select how the ZyWALL authenticates a remote user before allowing access to the L2TP VPN tunnel.<br><br>The authentication method has the ZyWALL check a user's user name and password against the ZyWALL's local database, a remote LDAP, RADIUS, a Active Directory server, or more than one of these. |
| Allowed User | The remote user must log into the ZyWALL to use the L2TP VPN tunnel.<br><br>Select a user or user group that can use the L2TP VPN tunnel. Select **Create Object** to configure a new user account. Otherwise, select **any** to allow any user with a valid account and password on the ZyWALL to log in. |
| Keep Alive Timer | The ZyWALL sends a Hello message after waiting this long without receiving any traffic from the remote user. The ZyWALL disconnects the VPN tunnel if the remote user does not respond. |

**Table 139** Device Operation > Device Configuration > VPN > L2TP VPN (continued)

| LABEL | DESCRIPTION |
|---|---|
| First DNS Server (Optional), Second DNS Server (Optional) | Specify the IP addresses of DNS servers to assign to the remote users. You can specify these IP addresses two ways.<br>**Custom Defined** - enter a static IP address.<br>**From ISP** - use the IP address of a DNS server that another interface received from its DHCP server. |
| First WINS Server (Optional), Second WINS Server (Optional) | The WINS (Windows Internet Naming Service) server keeps a mapping table of the computer names on your network and the IP addresses that they are currently using.<br>Type the IP addresses of up to two WINS servers to assign to the remote users. You can specify these IP addresses two ways. |
| Apply | Click **Apply** to save your changes in the ZyWALL. |
| Reset | Click **Cancel** to start configuring this screen afresh. |

# 14

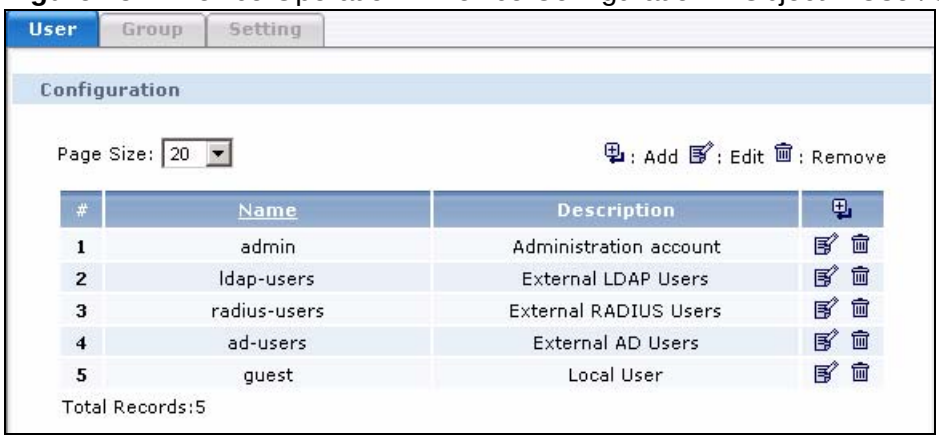
# Object

The screens explained settings about user/group, address, service, schedule, AAA server, authentication method, certificate and SSL application objects. The menus and screens may vary depending on your device model.

## 14.1 User Summary Screen

The **User** screen provides a summary of all user accounts. To access this screen, log into the Web Configurator, and click **Device Operation** > **Device Configuration** > **Object > User/Group**.

**Figure 157** Device Operation > Device Configuration > Object > User/Group




The following table describes the labels in this screen.

**Table 140** Device Operation > Device Configuration > Object > User/Group

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select how many entries you want to display on each page. |
| # | This field is a sequential value, and it is not associated with a specific user. |
| User Name | This field displays the user name of each user. |
| Description | This field displays the description for each user. |

**Table 140** Device Operation > Device Configuration > Object > User/Group

| LABEL | DESCRIPTION |
|---|---|
| Add icon | This column provides icons to add, edit, and remove users.<br>To add a user, click the **Add** icon at the top of the column. The **User Add/Edit** screen appears.<br>To edit a user, click the **Edit** icon next to the user. The **User Add/Edit** screen appears.<br>To delete a user, click the **Remove** icon next to the user. The Web Configurator confirms that you want to delete the user before doing so. |
| Total Records | This field displays the total number of user accounts. |

## 14.1.1 User Add/Edit Screen

The **User Add/Edit** screen allows you to create a new user account or edit an existing one.

### 14.1.1.1 Rules for User Names

Enter a user name from 1 to 31 characters.

The user name can only contain the following characters:

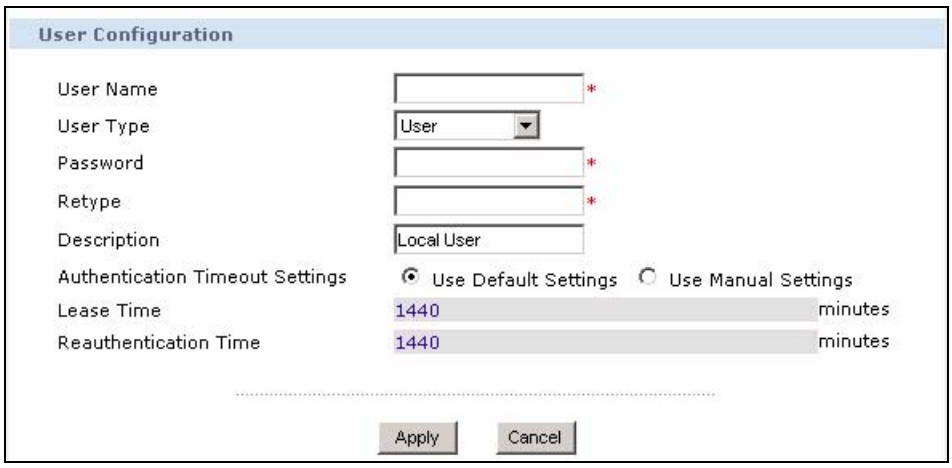
- Alphanumeric A-z 0-9 (there is no unicode support)
- _ [underscores]
- - [dashes]

The first character must be alphabetical (A-Z a-z), an underscore (_), or a dash (-). Other limitations on user names are:

- User names are case-sensitive. If you enter a user 'bob' but use 'BOB' when connecting via CIFS or FTP, it will use the account settings used for 'BOB' not ‘bob’.
- User names have to be different than user group names.
- Here are the reserved user names:
  - adm
  - admin
  - any
  - bin
  - daemon
  - debug
  - devicehaecived
  - ftp
  - games
  - halt
  - ldap-users
  - lp
  - mail
  - news
  - nobody
  - operator
  - radius-users
  - root
  - shutdown
  - sshd
  - sync
  - uucp
  - zyxel

To access this screen, go to the **User** screen (see Section 14.1 on page 357), and click either the **Add** icon or an **Edit** icon.

**Figure 158** Device Operation > Device Configuration > Object > User/Group > User > Add/Edit




The following table describes the labels in this screen.

**Table 141** Device Operation > Device Configuration > Object > User/Group > User > Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| User Name | Type the user name for this user account. You may use 1-31 alphanumeric characters, underscores(_), or dashes (-), but the first character cannot be a number. This value is case-sensitive. User names have to be different than user group names, and some words are reserved. See Section 14.1.1.1 on page 358. |
| User Type | Select what type of user this is. Choices are:<br>• **Admin** - this user can look at and change the configuration of the ZyWALL<br>• **Limited-Admin** - this user can look at the configuration of the ZyWALL but not to change it<br>• **User** - this user has access to the ZyWALL's services but cannot look at the configuration<br>• **Guest** - this user has access to the ZyWALL's services but cannot look at the configuration<br>• **Ext-User** - this user account is maintained in a remote server, such as RADIUS or LDAP. |
| Password | This field is not available if **you select the Ext-User user type**.<br>Enter the password of this user account. It can consist of 4 - 30 alphanumeric characters. |
| Retype | This field is not available if **you select the Ext-User user type**. Enter the password again. |
| Description | Enter the description of each user, if any. You can use up to 60 printable ASCII characters. Default descriptions are provided. |
| Authentication Timeout Settings | If you want to set authentication timeout to a value other than the default settings, select **Use Manual Settings** then fill your preferred values in the fields that follow. |

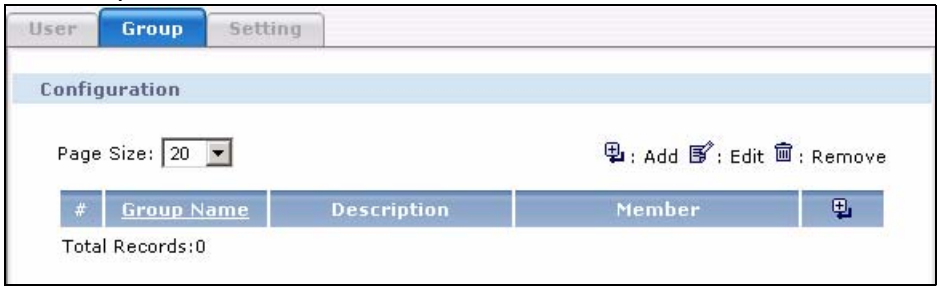
**Table 141** Device Operation > Device Configuration > Object > User/Group > User > Add/Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Lease Time | Enter the number of minutes this user has to renew the current session before the user is logged out. You can specify 1 to 1440 minutes. You can enter 0 to make the number of minutes unlimited. Admin users renew the session every time the main screen refreshes in the Web Configurator. Access users can renew the session by clicking the **Renew** button on their screen. If you allow access users to renew time automatically (see Section 14.3 on page 362), the users can select this check box on their screen as well. In this case, the session is automatically renewed before the lease time expires. |
| Reauthentication Time | Type the number of minutes this user can be logged into the ZyWALL in one session before the user has to log in again. You can specify 1 to 1440 minutes. You can enter 0 to make the number of minutes unlimited. Unlike **Lease Time**, the user has no opportunity to renew the session without logging out. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Cancel | Click **Cancel** to exit this screen without saving your changes. |

# 14.2 User Group Summary Screen

User groups consist of access users and other user groups. You cannot put admin users in user groups. The **Group** screen provides a summary of all user groups. In addition, this screen allows you to add, edit, and remove user groups. To access this screen, login to the Web Configurator, and click **Device Operation** > **Device Configuration** > **Object > User/Group > Group**.

**Figure 159** Device Operation > Device Configuration > Object > User/Group > Group



The following table describes the labels in this screen. See Section 14.2.1 on page 361 for more information as well.

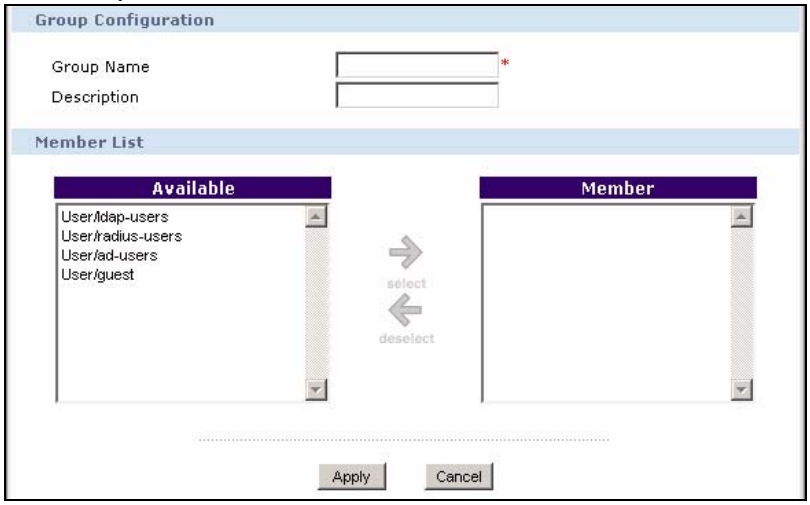
**Table 142** Device Operation > Device Configuration > Object > User/Group > Group

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select how many entries you want to display on each page. |
| # | This field is a sequential value, and it is not associated with a specific user group. |
| Group Name | This field displays the name of each user group. |
| Description | This field displays the description for each user group. |
| Member | This field lists the members in the user group. Each member is separated by a comma. |
| Add icon | This column provides icons to add, edit, and remove user groups.<br>To add a user group, click the **Add** icon at the top of the column.<br>To edit a user group, click the **Edit** icon next to the user group.<br>To delete a user group, click the **Remove** icon next to the user group. The Web Configurator confirms that you want to delete the user group before doing so. If you delete the group, you do not delete the users in the group. |
| Total Records | This field displays the total number of user accounts. |

## 14.2.1 Group Add/Edit Screen

The **Group Add/Edit** screen allows you to create a new user group or edit an existing one. To access this screen, go to the **Group** screen (see Section 14.2 on page 360), and click either the **Add** icon or an **Edit** icon.

**Figure 160** Device Operation > Device Configuration > Object > User/Group > Group > Add



The following table describes the labels in this screen.

**Table 143** Device Operation > Device Configuration > Object > User/Group > Group > Add

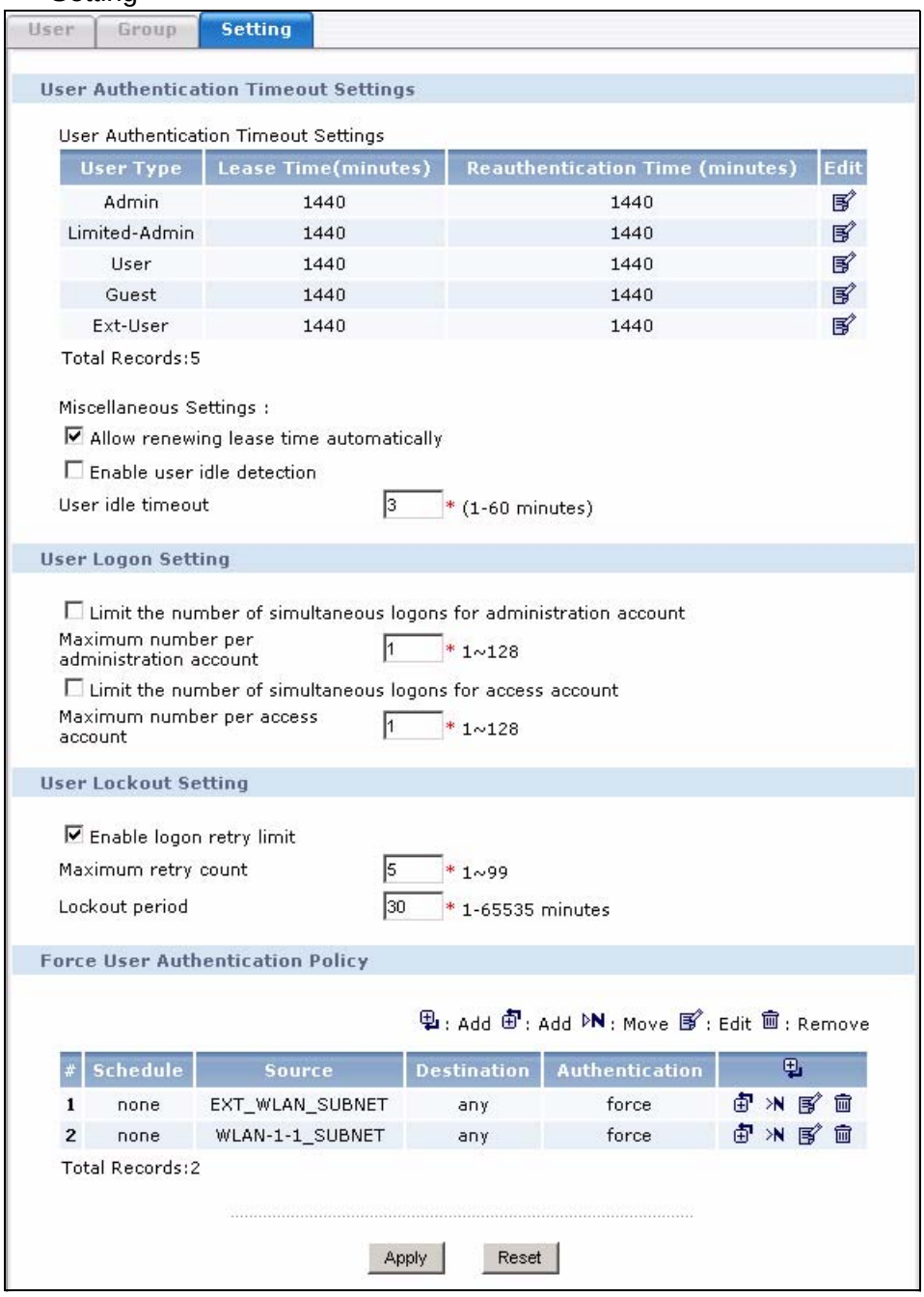
| LABEL | DESCRIPTION |
|---|---|
| Group Name | Type the name for this user group. You may use 1-31 alphanumeric characters, underscores(_), or dashes (-), but the first character cannot be a number. This value is case-sensitive. User group names have to be different than user names. |
| Description | Enter the description of the user group, if any. You can use up to 60 characters, punctuation marks, and spaces. |
| Available | This field displays the names of the users and user groups that can be added to the user group.<br><br>Select users and groups that you want to be members of this group and click the **select** arrow to add them to the member list. |
| Member | This field displays the names of the users and user groups that have been added to the user group. The order of members is not important. To remove members, select them and click the **deselect** arrow. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Cancel | Click **Cancel** to exit this screen without saving your changes. |

# 14.3 Setting Screen

The **Setting** screen controls default settings, login settings, lockout settings, and other user settings for the ZyWALL. You can also use this screen to specify when users must log in to the ZyWALL before it routes traffic for them.

To access this screen, login to the Web Configurator, and click **Device Operation** > **Device Configuration** > **Object** > **Object > User/Group > Setting**.

**Figure 161** Device Operation > Device Configuration > Object > User/Group > Setting



The following table describes the labels in this screen.

**Table 144** Device Operation > Device Configuration > Object > User/Group > Setting

| LABEL | DESCRIPTION |
|---|---|
| User Authentication Timeout Settings | |
| User Authentication Timeout Settings | This authentication timeout settings are used by default when you create a new user account. They also control the settings for any existing user accounts that are set to use the default settings. You can still manually configure any user account's authentication timeout settings. |
| User Type | These are the kinds of user account the ZyWALL supports.<br>**Admin** - this user can look at and change the configuration of the ZyWALL<br>**Limited-Admin** - this user can look at the configuration of the ZyWALL but not to change it<br>**User** - this user has access to the ZyWALL's services but cannot look at the configuration<br>**Guest** - this user has access to the ZyWALL's services but cannot look at the configuration<br>**Ext-User** - this user account is maintained in a remote server, such as RADIUS or LDAP. |
| Lease Time (minutes) | This is the default lease time for each type of user account. It defines the number of minutes the user has to renew the current session before the user is logged out.<br>Admin users renew the session every time the main screen refreshes in the web configurator. Access users can renew the session by clicking the **Renew** button on their screen. If you allow access users to renew time automatically (see Section 14.3 on page 362), the users can select this check box on their screen as well. In this case, the session is automatically renewed before the lease time expires. |
| Reauthentication Time (minutes) | This is the default reauthentication time for each type of user account. It defines the number of minutes the user can be logged into the ZyWALL in one session before having to log in again. Unlike **Lease Time**, the user has no opportunity to renew the session without logging out. |
| Edit | Click the icon to open a screen where you can edit the default settings for that type of user account. |
| Miscellaneous Settings | |
| Allow renewing lease time ... | Select this check box if access users can renew lease time automatically, as well as manually, simply by checking the **Updating lease time automatically** check box on their screen. |
| Enable user idle detection | This is applicable for access users.<br>Select this check box if you want the ZyWALL to monitor how long each access user is logged in and idle (in other words, there is no traffic for this access user). The ZyWALL automatically logs out the access user once the **User idle timeout** has been reached. |

**Table 144** Device Operation > Device Configuration > Object > User/Group > Setting (continued)

| LABEL | DESCRIPTION |
|---|---|
| User idle timeout | This is applicable for access users.<br>This field is effective when **Enable user idle detection** is checked. Type the number of minutes each access user can be logged in and idle before the ZyWALL automatically logs out the access user. |
| User Logon Setting | |
| Limit ... for administration account | Select this check box if you want to set a limit on the number of simultaneous logins by admin users. If you do not select this, admin users can login as many times as they want at the same time using the same or different IP addresses. |
| Maximum number per administration account | This field is effective when **Limit ... for administration account** is checked. Type the maximum number of simultaneous logins by each admin user. |
| Limit ... for access account | Select this check box if you want to set a limit on the number of simultaneous logins by non-admin users. If you do not select this, access users can login as many times as they want as long as they use different IP addresses. |
| Maximum number per access account | This field is effective when **Limit ... for access account** is checked. Type the maximum number of simultaneous logins by each access user. |
| User Lockout Setting | |
| Enable logon retry limit | Select this check box to set a limit on the number of times each user can login unsuccessfully (for example, wrong password) before the IP address is locked out for a specified amount of time. |
| Maximum retry count | This field is effective when **Enable logon retry limit** is checked. Type the maximum number of times each user can login unsuccessfully before the IP address is locked out for the specified **lockout period**. The number must be between 1 and 99. |
| Lockout period | This field is effective when **Enable logon retry limit** is checked. Type the number of minutes the user must wait to try to login again, if **logon retry limit** is enabled and the **maximum retry count** is reached. This number must be between 1 and 65,535 (about 45.5 days). |
| Force User Authentication Policy | Use this section to specify when users must log in to the ZyWALL before the ZyWALL routes HTTP traffic for them. Once users have logged in, the ZyWALL can enforce user-aware policies.<br>This section displays the conditions that are applied, in sequence, to decide what the appropriate action is.<br>By default, LAN users do not have to log into the ZyWALL.<br>Click a column's heading cell to sort the table entries by that column's criteria. Click the heading cell again to reverse the sort order. |
| # | This field is a sequential value, and it is not associated with a specific condition. |

**Table 144** Device Operation > Device Configuration > Object > User/Group > Setting (continued)

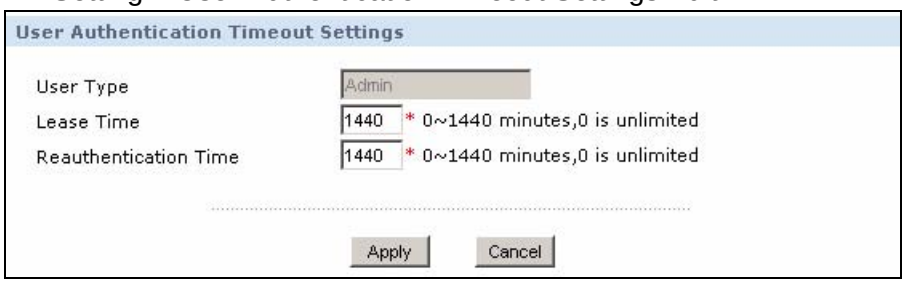
| LABEL | DESCRIPTION |
|---|---|
| Schedule | This field displays the schedule object that specifies when this condition applies. It displays **none** if this condition always applies. |
| Source | This field displays the source address object of traffic to which this condition applies. It displays **any** if this condition applies to traffic from all source addresses. |
| Destination | This field displays the destination address object of traffic to which this condition applies. It displays **any** if this condition applies to traffic from all destination addresses. |
| Authentication | This field displays whether users must log in (**force**) or whether users do not have to log in (**skip**) when this condition is checked and satisfied. |
| Add icon | This column provides icons to add, edit, move, and remove conditions.<br><br>To add a condition, click the **Add** icon at the top of the column or next to each condition. If you click the one at the top of the column, the new condition is first in the list. If you click the one next to a condition, the new condition appears right below this condition.<br><br>To edit a condition, click the **Edit** icon at the top of the column or next to each condition. The **Force User Authentication Policy Add / Edit** screen appears.<br><br>To remove a condition, click on the **Remove** icon next to the condition. The Web Configurator confirms that you want to delete the condition before doing so.<br><br>To move a condition up or down in the list, click on the **Move to N** icon next to the condition, and type the line number (**#** field) where you want to move this condition. The **#** field is updated accordingly. |
| Total Records | This is the total number of entries configured. |
| Apply | Click **Apply** to save the changes. |
| Reset | Click **Reset** to start configuring this screen again. |

## 14.3.1 Default User Authentication Timeout Settings Edit Screens

The **User Authentication Timeout Settings Edit** screen allows you to set the default authentication timeout settings for the selected type of user account. These default authentication timeout settings also control the settings for any existing user accounts that are set to use the default settings. You can still manually configure any user account's authentication timeout settings.

To access this screen, go to the **Device Operation** > **Device Configuration** > **Object > User/Group > Setting** screen (see Section 14.3 on page 362), and click one of the **User Authentication Timeout Settings** section's **Edit** icons.

**Figure 162** Device Operation > Device Configuration > Object > User/Group > Setting > User Authentication Timeout Settings Edit




The following table describes the labels in this screen.

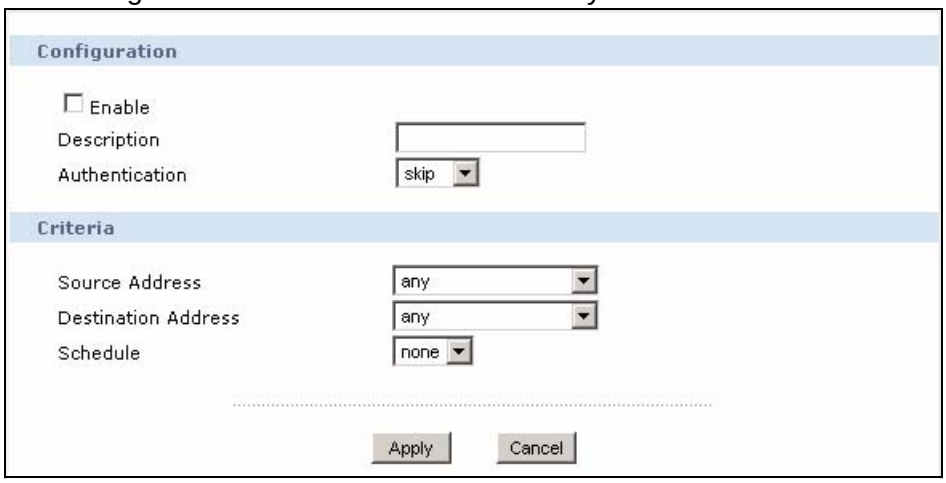
**Table 145** Device Operation > Device Configuration > Object > User/Group > Setting > User Authentication Timeout Settings Edit

| LABEL | DESCRIPTION |
|---|---|
| User Type | This read-only field identifies the type of user account for which you are configuring the default settings.<br>• **Admin** - this user can look at and change the configuration of the ZyWALL<br>• **Limited-Admin** - this user can look at the configuration of the ZyWALL but not to change it<br>• **User** - this user has access to the ZyWALL's services but cannot look at the configuration<br>• **Guest** - this user has access to the ZyWALL's services but cannot look at the configuration<br>• **Ext-User** - this user account is maintained in a remote server, such as RADIUS or LDAP. |
| Lease Time | Enter the number of minutes this type of user account has to renew the current session before the user is logged out. You can specify 1 to 1440 minutes. You can enter 0 to make the number of minutes unlimited.<br>Admin users renew the session every time the main screen refreshes in the web configurator. Access users can renew the session by clicking the **Renew** button on their screen. If you allow access users to renew time automatically (see Section 14.3 on page 362), the users can select this check box on their screen as well. In this case, the session is automatically renewed before the lease time expires. |
| Reauthentication Time | Type the number of minutes this type of user account can be logged into the ZyWALL in one session before the user has to log in again. You can specify 1 to 1440 minutes. You can enter 0 to make the number of minutes unlimited. Unlike **Lease Time**, the user has no opportunity to renew the session without logging out. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Cancel | Click **Cancel** to exit this screen without saving your changes. |

## 14.3.2 Force User Authentication Policy Add/Edit Screen

Use this screen to specify a condition when users must log in or do not have to log in to the ZyWALL before their HTTP traffic can pass through the ZyWALL.

**Figure 163** Device Operation > Device Configuration > Object > User/Group > Setting > Force User Authentication Policy Add/Edit




The following table describes the labels in this screen.

**Table 146** Device Operation > Device Configuration > Object > User/Group > Setting > Force User Authentication Policy Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| Enable | Select this if you want this condition to be active. |
| Description | Enter a description for this condition. It can be up to 60 printable ASCII characters long. |
| Authentication | Select whether users must log in (**force**) or whether users do not have to log in (**skip**) when this condition is checked and satisfied. |
| Source Address | Select a source IP address object or select **Create Object** to configure a new one.<br><br>Select **any** if this condition applies to traffic from all source addresses. |
| Destination Address | Select the destination address of traffic to which this condition applies or select **Create Object** to configure a new one. Select **any** if this condition applies to traffic from all destination addresses. |
| Schedule | Select the schedule object that specifies when this condition applies or select **Create Object** to configure a new one. Select **none** if this condition always applies. |
| Apply | Select this to save your changes and return to the previous screen. |
| Cancel | Select this to return to the previous screen without saving any changes. |

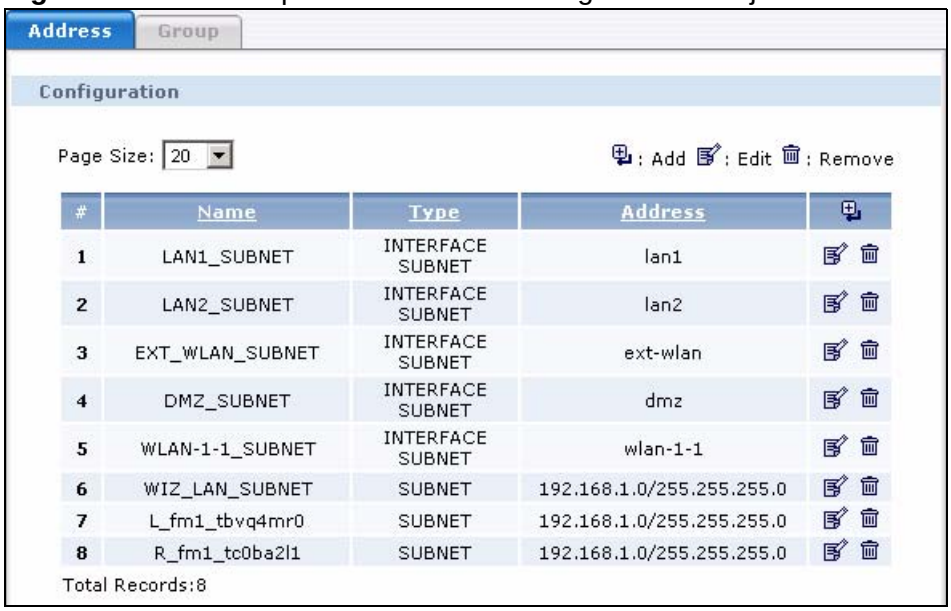
# 14.4 Address Summary Screen

The address screens are used to create, maintain, and remove addresses. There are the types of address objects.

- **HOST** - a host address is defined by an **IP Address**.
- **RANGE** - a range address is defined by a **Starting IP Address** and an **Ending IP Address**.
- **SUBNET** - a network address is defined by a **Network** IP address and **Netmask** subnet mask.

The **Address** screen provides a summary of all addresses in the ZyWALL. To access this screen, click **Device Operation** > **Device Configuration** > **Object** > **Address > Address**. Click a column's heading cell to sort the table entries by that column's criteria. Click the heading cell again to reverse the sort order.

**Figure 164** Device Operation > Device Configuration > Object > Address > Address




The following table describes the labels in this screen. See Section 14.4.1 on page 370 for more information as well.

**Table 147** Object > Address > Address

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select how many entries you want to display on each page. |
| # | This field is a sequential value, and it is not associated with a specific address. |
| Name | This field displays the configured name of each address object. |
| Type | This field displays the type of each address object. "**INTERFACE**" means the object uses the settings of one of the ZyWALL's interfaces. |

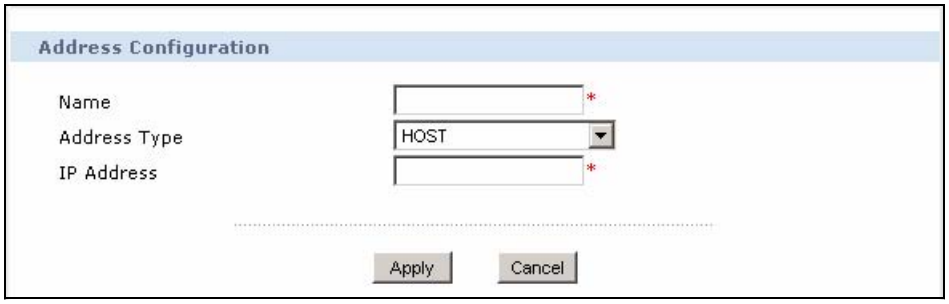
**Table 147** Object > Address > Address (continued)

| LABEL | DESCRIPTION |
|---|---|
| Address | This field displays the IP addresses represented by each address object. If the object's settings are based on one of the ZyWALL's interfaces, the name of the interface displays first followed by the object's current address settings. |
| Add icon | This column provides icons to add, edit, and remove addresses.<br><br>To add an address, click the **Add** icon at the top of the column. The **Address Add/Edit** screen appears.<br><br>To edit an address, click the **Edit** icon next to the address. The **Address Add/Edit** screen appears.<br><br>To delete an address, click on the **Remove** icon next to the address. The Web Configurator confirms that you want to delete the address before doing so. |
| Total Records | This field displays the total number of address entries. |

## 14.4.1 Address Add/Edit Screen

The **Address Add/Edit** screen allows you to create a new address or edit an existing one. To access this screen, go to the **Address** screen (see Section 14.4 on page 369), and click either the **Add** icon or an **Edit** icon.

**Figure 165** Device Operation > Device Configuration > Object > Address > Address > Add/Edit



The following table describes the labels in this screen.

**Table 148** Device Operation > Device Configuration > Object > Address > Address > Add/Edit

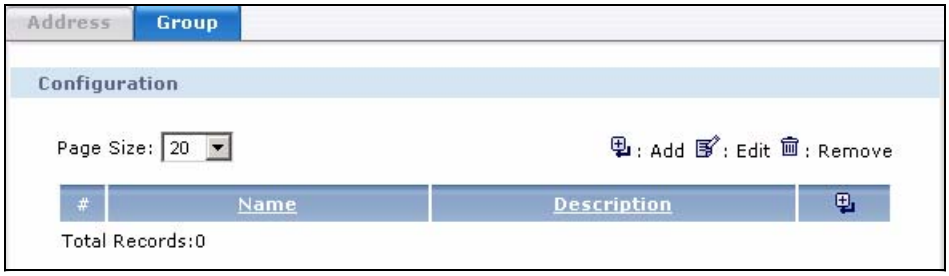
| LABEL | DESCRIPTION |
|---|---|
| Name | Type the name used to refer to the address. You may use 1-31 alphanumeric characters, underscores(_), or dashes (-), but the first character cannot be a number. This value is case-sensitive. |
| Address Type | Select the type of address you want to create. Choices are: **HOST**, **RANGE**, **SUBNET**, **INTERFACE IP**, **INTERFACE SUBNET**, and **INTERFACE GATEWAY**.<br><br>Note: The ZyWALL automatically updates address objects that are based on an interface's IP address, subnet, or gateway if the interface's IP address settings change. For example, if you change ge1's IP address, the ZyWALL automatically updates the corresponding interface-based, LAN subnet address object. |
| IP Address | This field is only available if the **Address Type** is **HOST**. This field cannot be blank. Enter the IP address that this address object represents. |
| Starting IP Address | This field is only available if the **Address Type** is **RANGE**. This field cannot be blank. Enter the beginning of the range of IP addresses that this address object represents. |
| Ending IP Address | This field is only available if the **Address Type** is **RANGE**. This field cannot be blank. Enter the end of the range of IP address that this address object represents. |
| Network | This field is only available if the **Address Type** is **SUBNET**, in which case this field cannot be blank. Enter the IP address of the network that this address object represents. |
| Netmask | This field is only available if the **Address Type** is **SUBNET**, in which case this field cannot be blank. Enter the subnet mask of the network that this address object represents. Use dotted decimal format. |
| Interface | If you selected **INTERFACE IP**, **INTERFACE SUBNET**, or **INTERFACE GATEWAY** as the **Address Type**, use this field to select the interface of the network that this address object represents. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Cancel | Click **Cancel** to exit this screen without saving your changes. |

## 14.4.2 Address Group Summary Screen

The **Address Group** screen provides a summary of all address groups. To access this screen, click **Device Operation** > **Device Configuration** > **Object** >

**Address > Group**. Click a column's heading cell to sort the table entries by that column's criteria. Click the heading cell again to reverse the sort order.

**Figure 166** Device Operation > Device Configuration > Object > Address > Group




The following table describes the labels in this screen. See Section 14.4.3 on page 373 for more information as well.

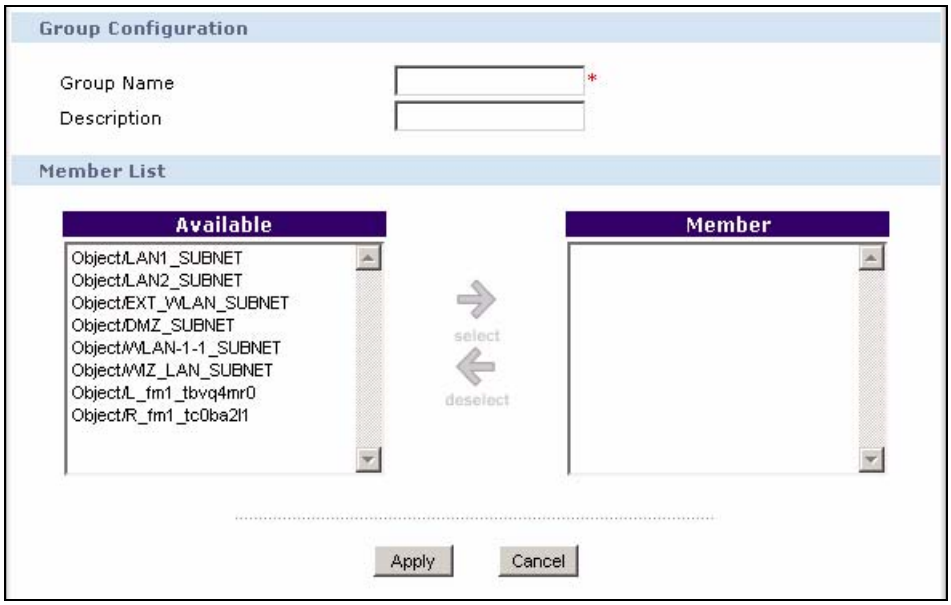
**Table 149** Device Operation > Device Configuration > Object > Address > Group

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select how many entries you want to display on each page. |
| # | This field is a sequential value, and it is not associated with a specific address group. |
| Name | This field displays the name of each address group. |
| Description | This field displays the description of each address group, if any. |
| Add icon | This column provides icons to add, edit, and remove address groups.<br>To add an address group, click the **Add** icon at the top of the column.<br>To edit an address group, click the **Edit** icon next to the address group.<br>To delete an address group, click on the **Remove** icon next to the address group. The Web Configurator confirms that you want to delete the address group. |
| Total Records | This field displays the total number of address group entries. |

## 14.4.3 Address Group Add/Edit Screen

The **Address Group Add/Edit** screen allows you to create a new address group or edit an existing one. To access this screen, go to the **Address Group** screen (see Section 14.4.2 on page 371), and click either the **Add** icon or an **Edit** icon.

**Figure 167** Device Operation > Device Configuration > Object > Address > Group > Add/Edit




The following table describes the labels in this screen.

**Table 150** Device Operation > Device Configuration > Object > Address > Group > Add/Edit

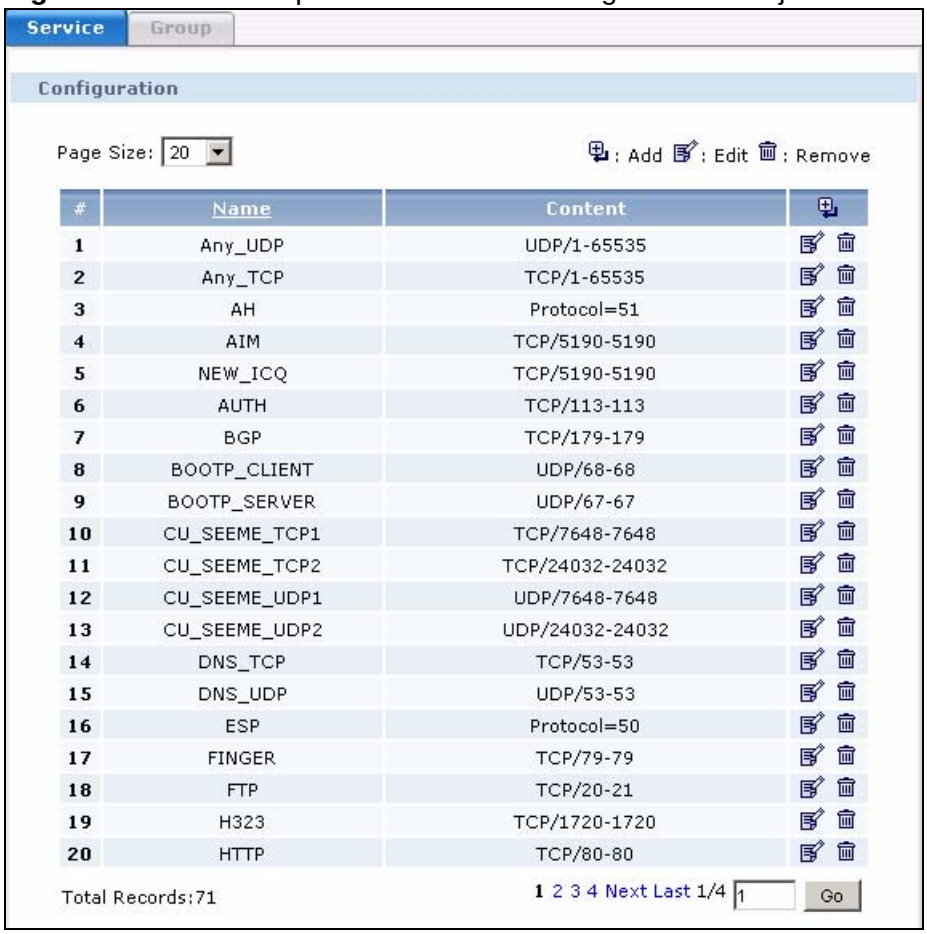
| LABEL | DESCRIPTION |
|---|---|
| Group Name | Enter a name for the address group. You may use 1-31 alphanumeric characters, underscores(_), or dashes (-), but the first character cannot be a number. This value is case-sensitive. |
| Description | This field displays the description of each address group, if any. You can use up to 60 characters, punctuation marks, and spaces. |
| Available | This field displays the names of the address and address group objects that can be added to the address group.<br><br>Select address and address group objects that you want to be members of this group and click the **select** arrow to add them to the member list. |
| Member | This field displays the names of the address and address group objects that have been added to the address group. The order of members is not important. To remove members, select them and click the **deselect** arrow. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Cancel | Click **Cancel** to exit this screen without saving your changes. |

# 14.5 The Service Summary Screen

The **Service** summary screen provides a summary of all services and their definitions. In addition, this screen allows you to add, edit, and remove services.

To access this screen, log in to the Web Configurator, and click **Device Operation** > **Device Configuration** > **Object > Service > Service**. Click a column's heading cell to sort the table entries by that column's criteria. Click the heading cell again to reverse the sort order.

**Figure 168** Device Operation > Device Configuration > Object > Service > Service




The following table describes the labels in this screen.

**Table 151** Device Operation > Device Configuration > Object > Service > Service

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select the number of services you want to appear per page here. |
| # | This field is a sequential value, and it is not associated with a specific service. |
| Name | This field displays the name of each service. |
| Content | This field displays a description of each service. |

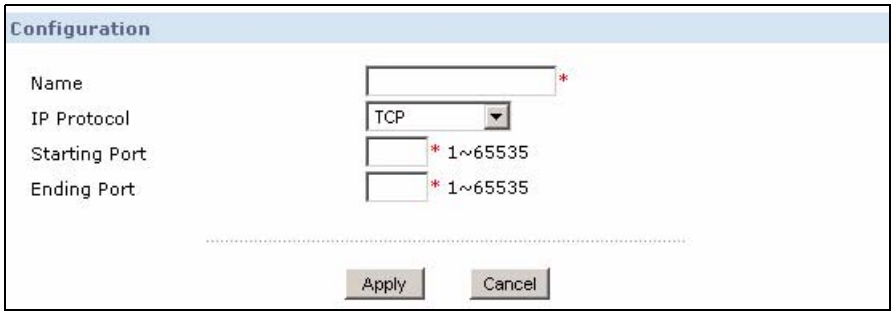
**Table 151** Device Operation > Device Configuration > Object > Service > Service

| LABEL | DESCRIPTION |
|---|---|
| Add icon | This column provides icons to add, edit, and remove services.<br><br>To add a service, click the **Add** icon at the top of the column. The **Service Add/Edit** screen appears.<br><br>To edit a service, click the **Edit** icon next to the service. The **Service Add/Edit** screen appears.<br><br>To delete a service, click the **Remove** icon next to the service. The Web Configurator confirms that you want to delete the service before doing so. |
| Total Records | This displays the total number of services configured on the ZyWALL. |
| 1 2 ... | These are the links to each page. Click one to view the table entries on that page. |
| Next | Click this link to view the next page of the table entries. |
| Last | Click this link to view the pervious page of the table entries. |
| x/x,<br><br>Go | This is the number of the page of entries currently displayed and the total number of pages of entries. Type a page number and click Go to go to the page of entries. |

## 14.5.1 The Service Add/Edit Screen

The **Service Add/Edit** screen allows you to create a new service or edit an existing one. To access this screen, go to the **Service** screen (see Section 14.5 on page 374), and click either the **Add** icon or an **Edit** icon.

**Figure 169** Device Operation > Device Configuration > Object > Service > Service > Add/Edit



The following table describes the labels in this screen.

**Table 152** Device Operation > Device Configuration > Object > Service > Service > Add/Edit

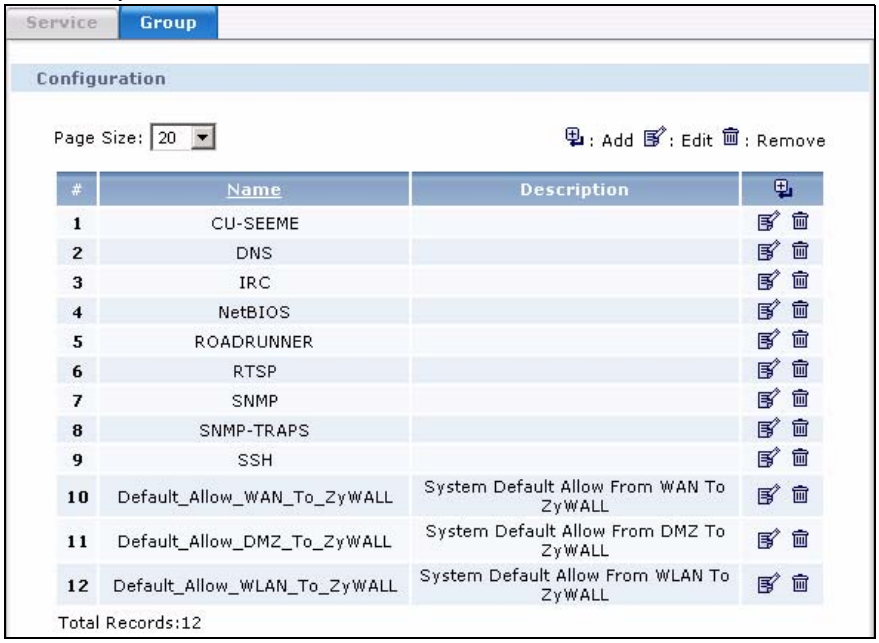
| LABEL | DESCRIPTION |
|---|---|
| Name | Type the name used to refer to the service. You may use 1-31 alphanumeric characters, underscores(_), or dashes (-), but the first character cannot be a number. This value is case-sensitive. |
| IP Protocol | Select the protocol the service uses. Choices are: **TCP**, **UDP**, **ICMP**, and **User Defined**. |
| Starting Port<br><br>Ending Port | This field appears if the **IP Protocol** is **TCP** or **UDP**. Specify the port number(s) used by this service. If you fill in one of these fields, the service uses that port. If you fill in both fields, the service uses the range of ports. |
| ICMP Type | This field appears if the **IP Protocol** is **ICMP Type**.<br><br>Select the ICMP message used by this service. This field displays the message text, not the message number. |
| IP Protocol Number | This field appears if the **IP Protocol** is **User Defined**.<br><br>Enter the number of the next-level protocol (IP protocol). Allowed values are 0 - 255. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Cancel | Click **Cancel** to exit this screen without saving your changes. |

# 14.6 The Service Group Summary Screen

The **Service Group** summary screen provides a summary of all service groups. In addition, this screen allows you to add, edit, and remove service groups.

To access this screen, log in to the Web Configurator, and click **Device Operation** > **Device Configuration** > **Object** > **Service** > **Service Group**.

**Figure 170** Device Operation > Device Configuration > Object > Service > Service Group




The following table describes the labels in this screen. See Section 14.6.1 on page 378 for more information as well.

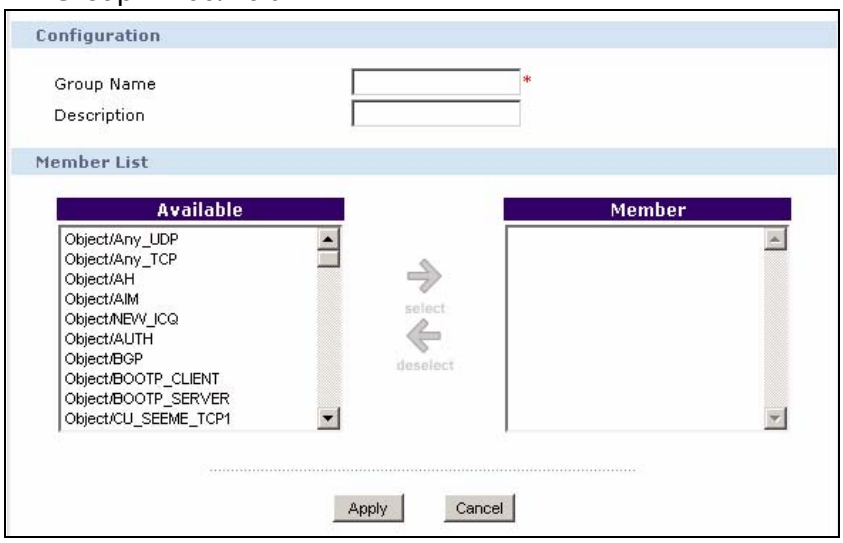
**Table 153** Device Operation > Device Configuration > Object > Service > Service Group

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select how many entries you want to display on each page. |
| # | This field is a sequential value, and it is not associated with a specific service group. |
| Name | This field displays the name of each service group.<br>By default, the ZyWALL uses services starting with “Default_Allow_” in the firewall rules to allow certain services to connect to the ZyWALL. |
| Description | This field displays the description of each service group, if any. |
| Add icon | This column provides icons to add, edit, and remove service groups.<br>To add a service group, click the **Add** icon at the top of the column.<br>To edit a service group, click the **Edit** icon next to the service group.<br>To delete a service group, click on the **Remove** icon next to the service group. The Web Configurator confirms that you want to delete the service group. |
| Total Records | This field displays the total number of service group entries. |

## 14.6.1 The Service Group Add/Edit Screen

The **Service Group Add/Edit** screen allows you to create a new service group or edit an existing one. To access this screen, go to the **Service Group** screen (see Section 14.6 on page 376), and click either the **Add** icon or an **Edit** icon.

**Figure 171** Device Operation > Device Configuration > Object > Service > Service Group > Add/Edit




The following table describes the labels in this screen.

**Table 154** Device Operation > Device Configuration > Object > Service > Service Group > Edit

| LABEL | DESCRIPTION |
|---|---|
| Group Name | Enter the name of the service group. You may use 1-31 alphanumeric characters, underscores(_), or dashes (-), but the first character cannot be a number. This value is case-sensitive. |
| Description | Enter a description of the service group, if any. You can use up to 60 printable ASCII characters. |
| Available | This field displays the names of the service and service group objects that can be added to the service group.<br><br>Select service and service group objects that you want to be members of this group and click the right arrow to add them to the member list. |
| Member | This field displays the names of the service and service group objects that have been added to the service group. The order of members is not important. To remove members, select them and click the left arrow. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Cancel | Click **Cancel** to exit this screen without saving your changes. |

# 14.7 The Schedule Summary Screen

The **Schedule** summary screen provides a summary of all schedules in the ZyWALL. To access this screen, click **Device Operation** > **Device Configuration** > **Object** > **Schedule**.

**Figure 172** Device Operation > Device Configuration > Object > Schedule

The following table describes the labels in this screen. See Section 14.7.1 on page 380 and Section 14.7.2 on page 381 for more information as well.

**Table 155** Device Operation > Device Configuration > Object > Schedule

| LABEL | DESCRIPTION |
|---|---|
| One Time | Use this section to configure schedules at specific times. For example, a schedule starts at 2009/7/20 23:00 and stops at 2009/7/20 23:30. |
| # | This field is a sequential value, and it is not associated with a specific schedule. |
| Name | This field displays the name of the schedule, which is used to refer to the schedule. |
| Start Day / Time | This field displays the date and time at which the schedule begins. |
| Stop Day / Time | This field displays the date and time at which the schedule ends. |
| Add icon | This column provides icons to add, edit, and remove schedules.<br><br>To add a schedule, click the **Add** icon at the top of the column. The **Schedule Add / Edit** screen appears.<br><br>To edit a schedule, click the **Edit** icon next to the schedule. The **Schedule Add / Edit** screen appears.<br><br>To delete a schedule, click the **Remove** icon next to the schedule. The Web Configurator confirms that you want to delete the schedule before doing so. |
| Total Records | This field displays the total number of one time schedule entries. |

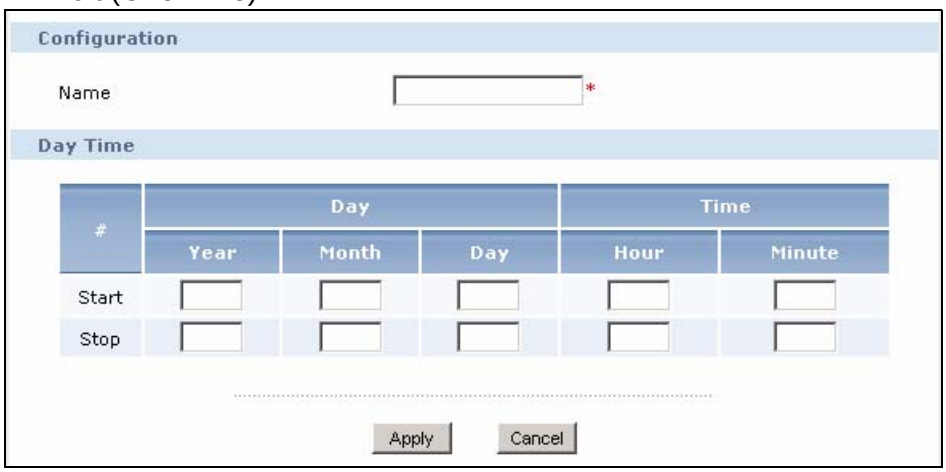
**Table 155** Device Operation > Device Configuration > Object > Schedule

| LABEL | DESCRIPTION |
|---|---|
| Recurring | Use this section to configure recurring schedules. For example, a schedule starts at 23:00 and stops at 23:30 on Mondays. |
| # | This field is a sequential value, and it is not associated with a specific schedule. |
| Name | This field displays the name of the schedule, which is used to refer to the schedule. |
| Start Time | This field displays the time at which the schedule begins. |
| Stop Time | This field displays the time at which the schedule ends. |
| Add icon | This column provides icons to add, edit, and remove schedules.<br>To add a schedule, click the **Add** icon at the top of the column. The **Schedule Add / Edit** screen appears.<br>To edit a schedule, click the **Edit** icon next to the schedule. The **Schedule Add / Edit** screen appears.<br>To delete a schedule, click the **Remove** icon next to the schedule. The Web Configurator confirms that you want to delete the schedule before doing so. |
| Total Records | This field displays the total number of recurring schedule entries. |

## 14.7.1 The One-Time Schedule Add/Edit Screen

The **One-Time Schedule Add / Edit** screen allows you to define a one-time schedule or edit an existing one. To access this screen, go to the **Schedule** screen (see Section 14.7 on page 379), and click either the **Add** icon or an **Edit** icon in the **One Time** section.

**Figure 173** Device Operation > Device Configuration > Object > Schedule > Add/ Edit (One Time)



The following table describes the labels in this screen.

**Table 156** Device Operation > Device Configuration > Object > Schedule > Add/Edit (One Time)

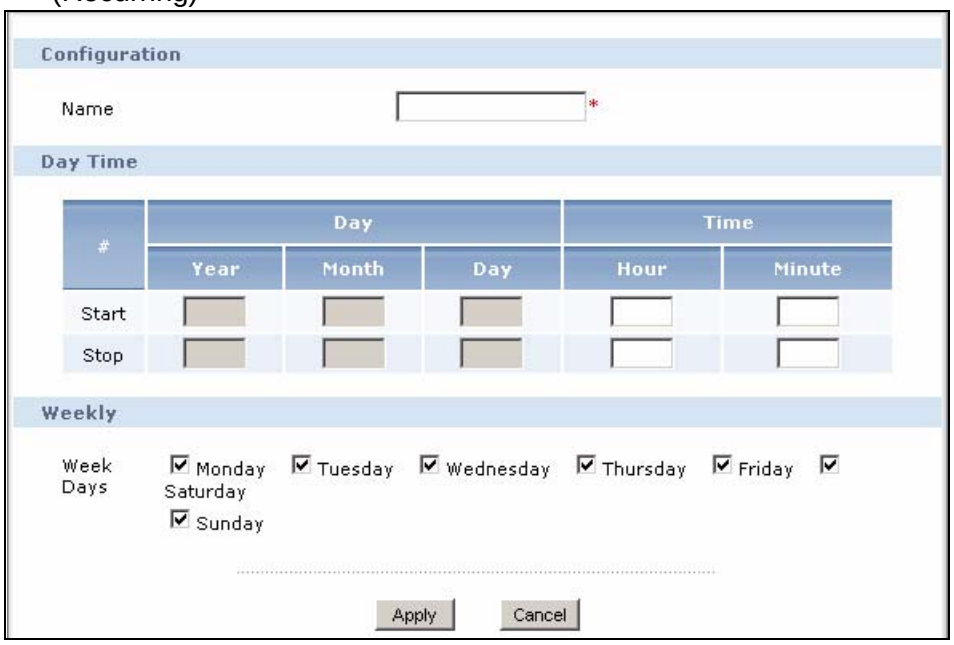
| LABEL | DESCRIPTION |
|---|---|
| Configuration | |
| Name | Type the name used to refer to the one-time schedule. You may use 1-31 alphanumeric characters, underscores(_), or dashes (-), but the first character cannot be a number. This value is case-sensitive. |
| Day Time | |
| Start | Type the year, month, day, hour, and minute when the schedule begins.<br>**Year** - 1900 - 2999<br>**Month** - 1 - 12<br>**Day** - 1 - 31 (it is not possible to specify illegal dates, such as February 31.)<br>**Hour** - 0 - 23<br>**Minute** - 0 - 59<br>All of these fields are required. |
| Stop | Type the year, month, day, hour, and minute when the schedule ends.<br>**Year** - 1900 - 2999<br>**Month** - 1 - 12<br>**Day** - 1 - 31 (it is not possible to specify illegal dates, such as February 31.)<br>**Hour** - 0 - 23<br>**Minute** - 0 - 59<br>All of these fields are required. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Cancel | Click **Cancel** to exit this screen without saving your changes. |

## 14.7.2 The Recurring Schedule Add/Edit Screen

The **Recurring Schedule Add/Edit** screen allows you to define a recurring schedule or edit an existing one. To access this screen, go to the **Schedule** screen

(see Section 14.7 on page 379), and click either the **Add** icon or an **Edit** icon in the **Recurring** section.

**Figure 174** Device Operation > Device Configuration > Object > Schedule > Edit (Recurring)




The **Year**, **Month**, and **Day** columns are not used in recurring schedules and are disabled in this screen. The following table describes the remaining labels in this screen.

**Table 157** Device Operation > Device Configuration > Object > Schedule > Edit (Recurring)

| LABEL | DESCRIPTION |
|---|---|
| Configuration | |
| Name | Type the name used to refer to the recurring schedule. You may use 1-31 alphanumeric characters, underscores(_), or dashes (-), but the first character cannot be a number. This value is case-sensitive. |
| Day Time | |
| Start | Type the hour and minute when the schedule begins each day.<br>**Year** - disabled<br>**Month** - disabled<br>**Day** - disabled<br>**Hour** - 0 - 23<br>**Minute** - 0 - 59<br>The **Hour** and **Minute** fields are both required.<br>To set all day (24 hours), configure the start hour and minute both to 0. |

**Table 157** Device Operation > Device Configuration > Object > Schedule > Edit (Recurring) (continued)

| LABEL | DESCRIPTION |
|---|---|
| Stop | Type the hour and minute when the schedule ends each day.<br>**Year** - disabled<br>**Month** - disabled<br>**Day** - disabled<br>**Hour** - 0 - 23<br>**Minute** - 0 - 59<br>The **Hour** and **Minute** fields are both required.<br>To set all day (24 hours), configure the stop hour to 23 and minute to 59. |
| Weekly | |
| Week Days | Select each day of the week the recurring schedule is effective. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. |
| Cancel | Click **Cancel** to exit this screen without saving your changes. |

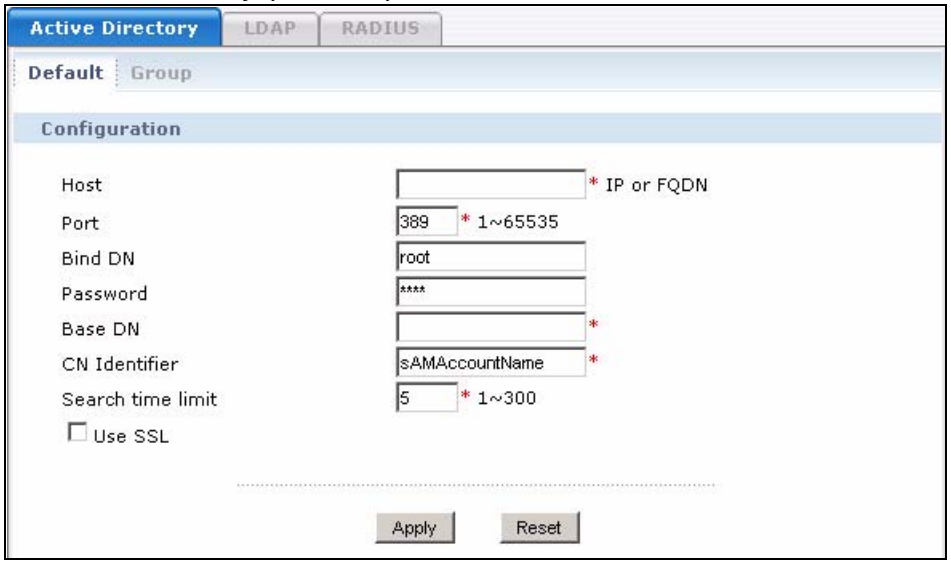
# 15

# AAA

## 15.1 Configuring Active Directory or LDAP Default Server Settings

Use this screen to configure the Active Directory or LDAP default server settings. To access this screen, click **Device Operation** > **Device Configuration** > **Object > AAA Server > Active Directory** (or **LDAP**).

**Figure 175** Device Operation > Device Configuration > Object > AAA Server > Active Directory (or LDAP) > Default




The following table describes the labels in this screen.

**Table 158** Device Operation > Device Configuration > Object > AAA Server > Active Directory (or LDAP) > Default

| LABEL | DESCRIPTION |
|---|---|
| Host | Enter the IP address (in dotted decimal notation) or the fully-qualified domain name (up to 63 alphanumerical characters) of an AD or LDAP server. |
| Port | Specify the port number on the AD or LDAP server to which the ZyWALL sends authentication requests. Enter a number between 1 and 65535. The default is **389**. |

**Table 158** Device Operation > Device Configuration > Object > AAA Server > Active Directory (or LDAP) > Default (continued)

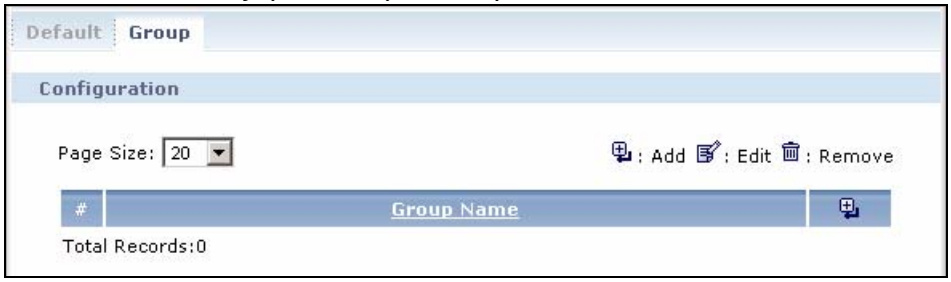
| LABEL | DESCRIPTION |
|---|---|
| Bind DN | Specify the bind DN for logging into the AD or LDAP server. Enter up to 127 alphanumerical characters.<br><br>For example, `cn=zywallAdmin` specifies `zywallAdmin` as the user name. |
| Password | If required, enter the password (up to 15 alphanumerical characters) for the ZyWALL to bind (or log in) to the AD or LDAP server. |
| Base DN | Specify the directory (up to 127 alphanumerical characters). For example, `o=ZyXEL, c=US`. |
| CN Identifier | Specify the unique common name that uniquely identifies a record in the AD or LDAP directory. Enter up to 127 alphanumerical characters. |
| Search time limit | Specify the timeout period (between 1 and 300 seconds) before the ZyWALL disconnects from the AD or LDAP server. In this case, user authentication fails.<br><br>The search timeout occurs when either the user information is not in the AD or LDAP server or the server is down. |
| Use SSL | Select **Use SSL** to establish a secure connection to the AD or LDAP server. |
| Apply | Click **Apply** to save the changes. |
| Reset | Click **Reset** to start configuring this screen again. |

# 15.2 Active Directory or LDAP Group Summary Screen

You can configure a group of AD or LDAP servers in the **Active Directory** (or **LDAP**) **> Group** screen. This is useful if you have more than one AD server or more than one LDAP server for user authentication in a network. You can create up to 16 AD server groups with up to four members in each group on the ZyWALL. You can also create up to 16 LDAP server groups with up to four members in each group on the ZyWALL.

Click **Device Operation** > **Device Configuration** > **Object** > **AAA Server** > **Active Directory** (or **LDAP**) > **Group** to display the screen as shown next.

**Figure 176** Device Operation > Device Configuration > Object > AAA Server > Active Directory (or LDAP) > Group




The following table describes the labels in this screen.

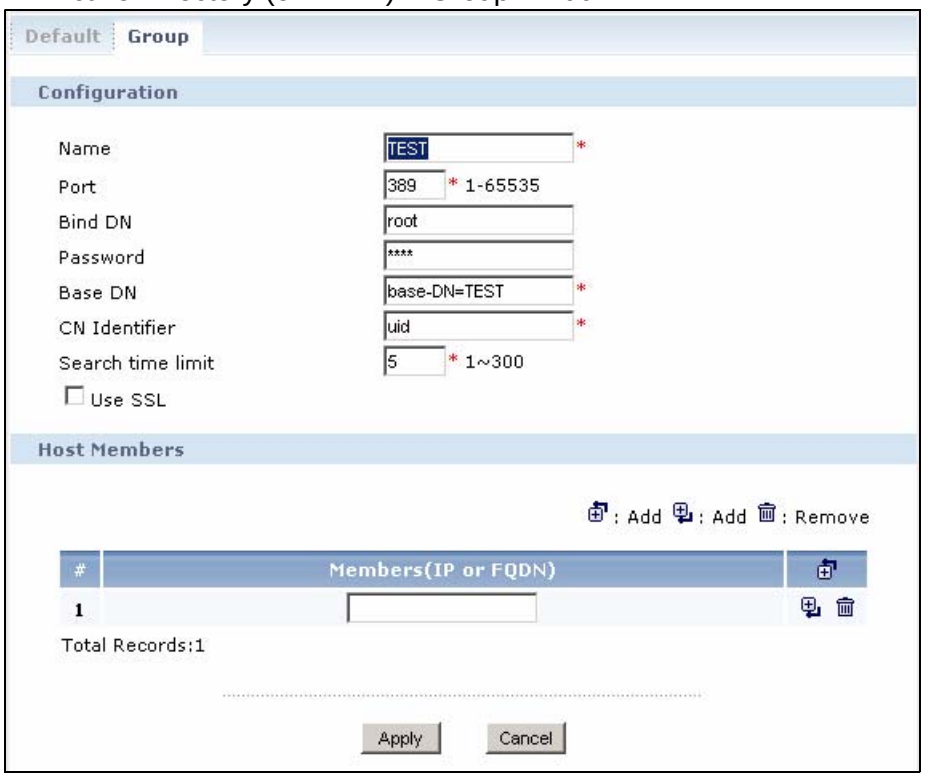
**Table 159** Device Operation > Device Configuration > Object > AAA Server > Active Directory (or LDAP) > Group

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select how many entries you want to display on each page. |
| # | This field displays the index number. |
| Group Name | This field displays the descriptive name for identification purposes. |
| Add icon | Click **Add** to add a new entry.<br>Click **Edit** to edit the settings of an entry.<br>Click **Remove** to remove an entry. |
| Total Records | This field displays the total number of group entries. |

## 15.2.1 Creating an Active Directory or LDAP Group

Use this screen to create an Active Directory or LDAP group. To access this screen, click an **Add** icon in the **Device Operation** > **Device Configuration** > **Object** > **AAA Server** > **Active Directory** (or **LDAP**) > **Group** screen.

**Figure 177** Device Operation > Device Configuration > Object > AAA Server > Active Directory (or LDAP) > Group > Add




The following table describes the labels in this screen.

**Table 160** Device Operation > Device Configuration > Object > AAA Server > Active Directory (or LDAP) > Group > Add

| LABEL | DESCRIPTION |
|---|---|
| Configuration | All AD or LDAP servers in a group share the same settings in the fields below. |
| Name | Enter a descriptive name (up to 63 alphanumerical characters). for identification purposes. |
| Port | Specify the port number on the AD or LDAP server(s) to which the ZyWALL sends authentication requests. Enter a number between 1 and 65535.<br><br>This port number should be the same on all AD or LDAP server(s) in this group. |

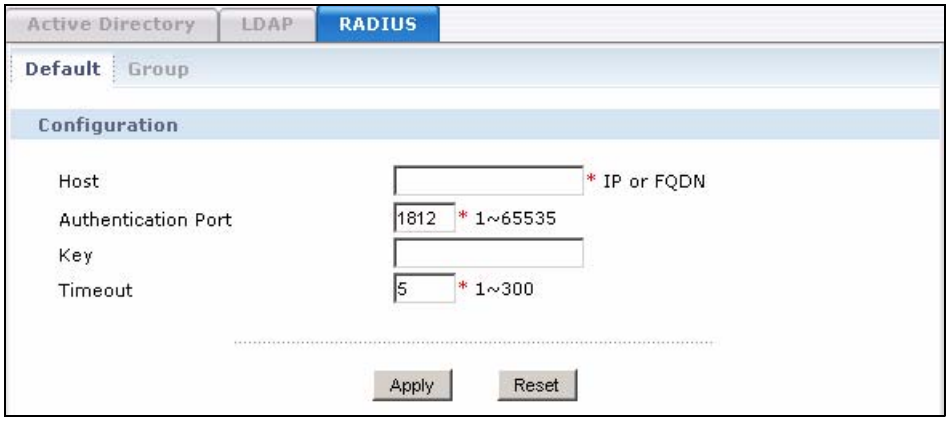
**Table 160** Device Operation > Device Configuration > Object > AAA Server > Active Directory (or LDAP) > Group > Add (continued)

| LABEL | DESCRIPTION |
|---|---|
| Bind DN | Specify the bind DN for logging into the AD or LDAP server. Enter up to 127 alphanumerical characters.<br><br>For example, `cn=zywallAdmin` specifies `zywallAdmin` as the user name. |
| Password | If required, enter the password (up to 15 alphanumerical characters) for the ZyWALL to bind (or log in) to the AD or LDAP server. |
| Base DN | Specify the directory (up to 127 alphanumerical characters). For example, `o=ZyXEL, c=US`. |
| CN Identifier | Specify the unique common name that uniquely identifies a record in the AD or LDAP directory. Enter up to 127 alphanumerical characters. |
| Search time limit | Specify the timeout period (between 1 and 300 seconds) before the ZyWALL disconnects from the AD or LDAP server. In this case, user authentication fails.<br><br>Search timeout occurs when either the user information is not in the AD or LDAP server(s) or the AD or LDAP server(s) is down. |
| Use SSL | Select **Use SSL** to establish a secure connection to the AD or LDAP server(s). |
| Host Members | The ordering of the LDAP servers is important as the ZyWALL uses the AD or LDAP servers for user authentication in the order they appear in this table. |
| # | This field displays the index number. |
| Members | Specify the URI (Uniform Resource Identifier) of an AD or LDAP server. You can enter the IP address (in dotted decimal notation) or the fully qualified domain name (FQDN; up to 63 alphanumerical characters) of the AD or LDAP server. |
| Add icon | Click **Add** to add a new AD or LDAP server. You can add up to four AD or LDAP member servers.<br><br>Click **Remove** to remove an AD or LDAP server. |
| Total Records | This field displays the total number of host member entries. |
| Apply | Click **Apply** to save the changes. |
| Cancel | Click **Cancel** to discard the changes. |

# 15.3 Configuring a Default RADIUS Server

User this screen to configure the default external RADIUS server to use for user authentication. Click **Device Operation** > **Device Configuration** > **Object > AAA Server > RADIUS** to display the screen as shown.

**Figure 178** Device Operation > Device Configuration > Object > AAA Server > RADIUS > Default




The following table describes the labels in this screen.

**Table 161** Device Operation > Device Configuration > Object > AAA Server > RADIUS > Default

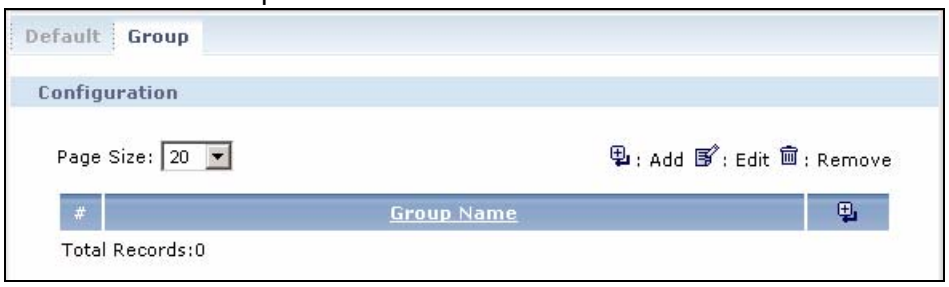
| LABEL | DESCRIPTION |
|---|---|
| Host | Enter the IP address (in dotted decimal notation) or the domain name (up to 63 alphanumeric characters) of a RADIUS server. |
| Authentication Port | The default port of the RADIUS server for authentication is **1812**.<br>You need not change this value unless your network administrator instructs you to do so with additional information. |
| Key | Enter a password (up to 15 alphanumeric characters) as the key to be shared between the external authentication server and the ZyWALL.<br>The key is not sent over the network. This key must be the same on the external authentication server and the ZyWALL. |
| Timeout | Specify the timeout period (between 1 and 300 seconds) before the ZyWALL disconnects from the RADIUS server. In this case, user authentication fails.<br>Search timeout occurs when either the user information is not in the RADIUS server or the RADIUS server is down. |
| Apply | Click **Apply** to save the changes. |
| Reset | Click **Reset** to start configuring this screen again. |

## 15.3.1 Configuring a Group of RADIUS Servers

You can configure a group of RADIUS servers in the **RADIUS > Group** screen. This is useful if you have more than one authentication server for user authentication in a network.

Click **Device Operation** > **Device Configuration** > **Object > AAA Server > RADIUS > Group** to display the screen as shown next.

**Figure 179** Device Operation > Device Configuration > Object > AAA Server > RADIUS > Group




The following table describes the labels in this screen.

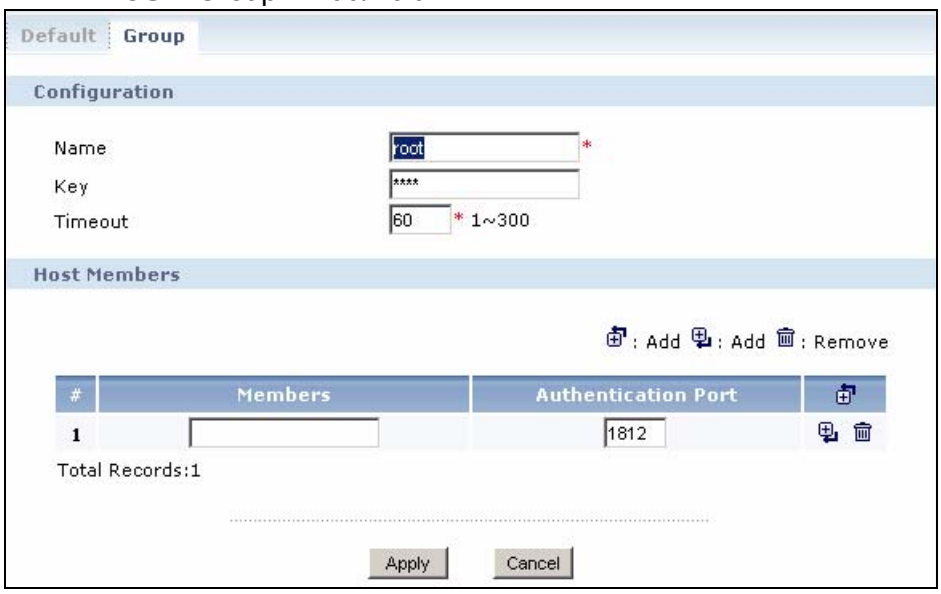
**Table 162** Device Operation > Device Configuration > Object > AAA Server > RADIUS > Group

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select how many entries you want to display on each page. |
| # | This field displays the index number. |
| Group Name | This field displays the descriptive name for identification purposes. |
| Add icon | Click **Add** to add a new entry.<br>Click **Edit** to edit the settings of an entry.<br>Click **Remove** to remove an entry. |
| Total Records | This field displays the total number of RADIUS group entries. |

## 15.3.2 Adding a RADIUS Server Member

Use this screen to create or edit a RADIUS server member. Click the **Add** icon or an **Edit** icon in the **Device Operation** > **Device Configuration** > **Object > AAA Server > RADIUS > Group** screen to display the screen as shown next.

**Figure 180** Device Operation > Device Configuration > Object > AAA Server > RADIUS > Group > Add/Edit




The following table describes the labels in this screen.

**Table 163** Device Operation > Device Configuration > Object > AAA Server > RADIUS > Group > Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| Configuration | All RADIUS servers in a group share the same settings in the fields below. |
| Name | Enter a descriptive name (up to 63 alphanumeric characters) for identification purposes. |
| Key | Enter a password (up to 15 alphanumeric characters) as the key to be shared between the external authentication server and the ZyWALL.<br>The key is not sent over the network. This key must be the same on the external authentication server and the ZyWALL. |
| Timeout | Specify the timeout period (between 1 and 300 seconds) before the ZyWALL disconnects from the RADIUS server. In this case, user authentication fails.<br>Search timeout occurs when either the user information is not in the RADIUS server or the RADIUS server is down. |
| Host Members | The ordering of the RADIUS servers is important as the ZyWALL uses the RADIUS servers for user authentication in the order they appear in this table. |
| # | This field displays the index number. |

**Table 163** Device Operation > Device Configuration > Object > AAA Server > RADIUS > Group > Add/Edit (continued)

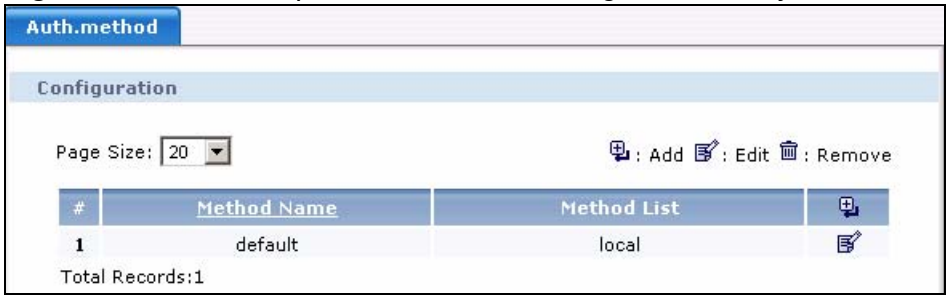
| LABEL | DESCRIPTION |
|---|---|
| Members | Enter the IP address (in dotted decimal notation) or the domain name (up to 63 alphanumeric characters) of a RADIUS server. |
| Authentication Port | The default port of the RADIUS server for authentication is **1812**.<br>You need not change this value unless your network administrator instructs you to do so with additional information. |
| Add icon | Click **Add** to add a new RADIUS server. You can add up to four RADIUS member servers.<br>Click **Delete** to remove a RADIUS server. |
| Total Records | This field displays the total number of host member entries. |
| Apply | Click **Apply** to save the changes. |
| Cancel | Click **Cancel** to discard the changes. |

# 15.4 Viewing Authentication Method Objects

Click **Device Operation** > **Device Configuration** > **Object > Auth. Method** to display the screen as shown.

Note: You can create up to 16 authentication method objects.

**Figure 181** Device Operation > Device Configuration > Object > Auth. Method




The following table describes the labels in this screen.

**Table 164** Device Operation > Device Configuration > Object > Auth. Method

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select how many entries you want to display on each page. |
| # | This field displays the index number. |
| Method Name | This field displays a descriptive name for identification purposes. |
| Method List | This field displays the authentication method(s) for this entry. |

**Table 164** Device Operation > Device Configuration > Object > Auth. Method

| LABEL | DESCRIPTION |
|---|---|
| Add icon | Click **Add** to add a new entry.<br>Click **Edit** to edit the settings of an entry.<br>Click **Remove** to remove an entry. |
| Total Records | This field displays the total number of authentication method entries. |

# 15.5 Creating an Authentication Method Object

Follow the steps below to create an authentication method object.

1 Click **Device Operation** > **Device Configuration** > **Object > Auth. Method**.

2 Click **Add**.

3 Specify a descriptive name for identification purposes in the **Name** field. You may use 1-31 alphanumeric characters, underscores(_), or dashes (-), but the first character cannot be a number. This value is case-sensitive. For example, “My_Device”.

4 Click **Add** to insert an authentication method in the table.

5 Select a server object from the **Method List** drop-down list box.

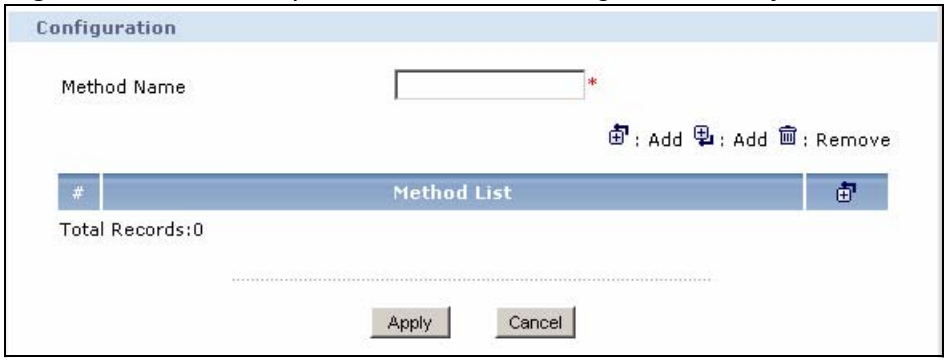
6 You can add up to four server objects to the table. The ordering of the **Method List** column is important. The ZyWALL authenticates the users using the databases (in the local user database or the external authentication server) in the order they appear in this screen.

If two accounts with the same username exist on two authentication servers you specify, the ZyWALL does not continue the search on the second authentication server when you enter the username and password that doesn’t match the one on the first authentication server.

Note: You can NOT select two server objects of the same type.

7 Click **OK** to save the settings or click **Cancel** to discard all changes and return to the previous screen.

**Figure 182** Device Operation > Device Configuration > Object > Auth. Method > Add




The following table describes the labels in this screen.

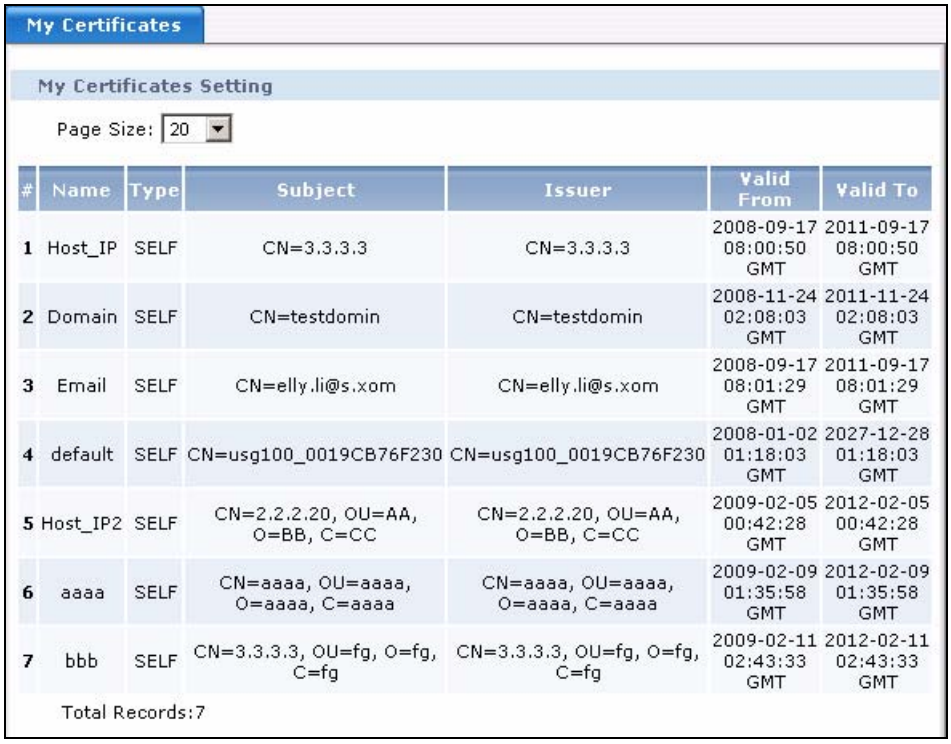
**Table 165** Device Operation > Device Configuration > Object > Auth. Method > Add

| LABEL | DESCRIPTION |
|---|---|
| Method Name | Specify a descriptive name for identification purposes.<br><br>You may use 1-31 alphanumeric characters, underscores(_), or dashes (-), but the first character cannot be a number. This value is case-sensitive. For example, “My_Device”. |
| # | This field displays the index number. |
| Method List | Select a server object from the drop-down list box. You can create a server object in the **Device Operation** > **Device Configuration** > **Object** > **AAA Server** group screens.<br><br>The ZyWALL authenticates the users using the databases (in the local user database or the external authentication server) in the order they appear in this screen.<br><br>If two accounts with the same username exist on two authentication servers you specify, the ZyWALL does not continue the search on the second authentication server when you enter the username and password that doesn’t match the one on the first authentication server. |
| Add icon | Click **Add** to add a new entry.<br><br>Click **Edit** to edit the settings of an entry.<br><br>Click **Remove** to delete an entry. |
| Total Records | This field displays the total number of address group entries. |
| Apply | Click **Apply** to save the changes. |
| Cancel | Click **Cancel** to discard the changes. |

# 15.6 The My Certificates Screen

Click **Device Operation** > **Device Configuration** > **Object > Certificate > My Certificates** to open the **My Certificates** screen. This is the ZyWALL's summary list of certificates and certification requests.

**Figure 183** Device Operation > Device Configuration > Object > Certificate > My Certificates




The following table describes the labels in this screen.

**Table 166** Device Operation > Device Configuration > Object > Certificate > My Certificates

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select how many entries you want to display on each page. |
| # | This field displays the certificate index number. The certificates are listed in alphabetical order. |
| Name | This field displays the name used to identify this certificate. It is recommended that you give each certificate a unique name. |
| Type | This field displays what kind of certificate this is.<br><br>**REQ** represents a certification request and is not yet a valid certificate. Send a certification request to a certification authority, which then issues a certificate. Use the **My Certificate Import** screen to import the certificate and replace the request.<br><br>**SELF** represents a self-signed certificate.<br><br>**CERT** represents a certificate issued by a certification authority. |

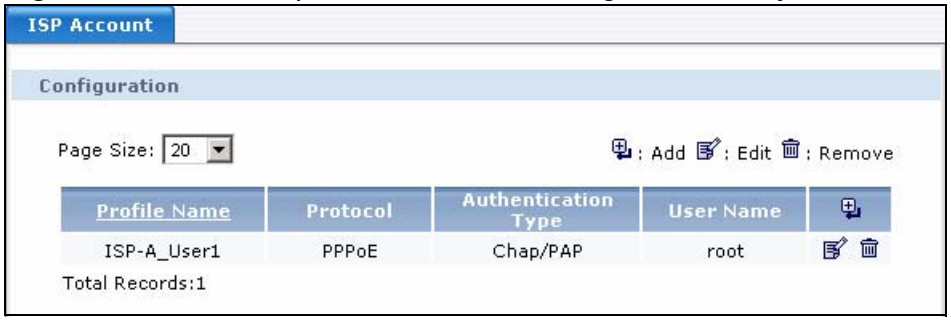
**Table 166** Device Operation > Device Configuration > Object > Certificate > My Certificates (continued)

| LABEL | DESCRIPTION |
|---|---|
| Subject | This field displays identifying information about the certificate's owner, such as CN (Common Name), OU (Organizational Unit or department), O (Organization or company) and C (Country). It is recommended that each certificate have unique subject information. |
| Issuer | This field displays identifying information about the certificate's issuing certification authority, such as a common name, organizational unit or department, organization or company and country. With self-signed certificates, this is the same information as in the **Subject** field. |
| Valid From | This field displays the date that the certificate becomes applicable. |
| Valid To | This field displays the date that the certificate expires. The text displays in red and includes an Expired! message if the certificate has expired. |
| Total Records | This field displays the total number of certificate entries. |

# 15.7 ISP Account Summary

This screen provides a summary of ISP accounts in the selected ZyWALL. To access this screen, click **Device Operation** > **Device Configuration** > **Object** > **ISP Account**.

**Figure 184** Device Operation > Device Configuration > Object > ISP Account




The following table describes the labels in this screen. See the ISP Account Edit section below for more information as well.

**Table 167** Device Operation > Device Configuration > Object > ISP Account

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select the number of ISP account entries to display on each page. |
| Profile Name | This field displays the profile name of the ISP account. This name is used to identify the ISP account. |
| Protocol | This field displays the protocol used by the ISP account. |
| Authentication Type | This field displays the authentication type used by the ISP account. |
| User Name | This field displays the user name of the ISP account. |

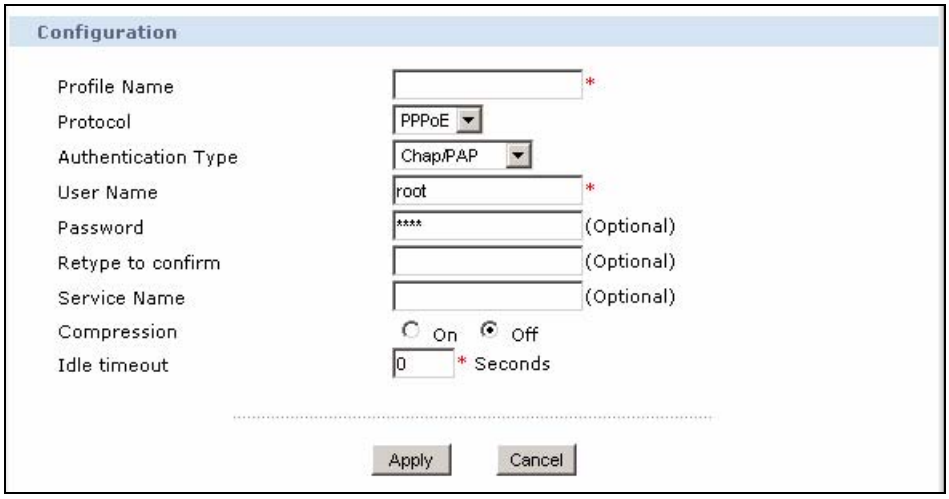
**Table 167** Device Operation > Device Configuration > Object > ISP Account

| LABEL | DESCRIPTION |
|---|---|
| Add icon | This column provides icons to add, edit, and remove ISP accounts.<br>To add information about a new ISP account, click the **Add** icon at the top of the column.<br>To edit information about an existing account, click the **Edit** icon next to the ISP account.<br>To remove information about an existing account, click the **Remove** icon next to the ISP account. The Web Configurator confirms that you want to delete the account before doing so. |
| Total Records | This field displays the total number of ISP account entries. |

## 15.7.1 ISP Account Edit

The **ISP Account Edit** screen lets you add information about new accounts and edit information about existing accounts. To open this window, open the **ISP Account** screen. (See Section 15.7 on page 397.) Then, click on an **Add** icon or **Edit** icon to open the **ISP Account Edit** screen below.

**Figure 185** Device Operation > Device Configuration > Object > ISP Account > Add/Edit



The following table describes the labels in this screen.

**Table 168** Device Operation > Device Configuration > Object > ISP Account > Add/ Edit

| LABEL | DESCRIPTION |
|---|---|
| Profile Name | This field is read-only if you are editing an existing account. Type in the profile name of the ISP account. The profile name is used to refer to the ISP account. You may use 1-31 alphanumeric characters, underscores(_), or dashes (-), but the first character cannot be a number. This value is case-sensitive. |
| Protocol | This field is read-only if you are editing an existing account. Select the protocol used by the ISP account. Options are:<br>**PPPoE** - This ISP account uses the PPPoE protocol.<br>**PPTP** - This ISP account uses the PPTP protocol. |
| Authentication Type | Use the drop-down list box to select an authentication protocol for outgoing calls. Options are:<br>**CHAP/PAP** - Your ZyWALL accepts either CHAP or PAP when requested by this remote node.<br>**CHAP** - Your ZyWALL accepts CHAP only.<br>**PAP** - Your ZyWALL accepts PAP only.<br>**MSCHAP** - Your ZyWALL accepts MSCHAP only.<br>**MSCHAP-V2** - Your ZyWALL accepts MSCHAP-V2 only. |
| Encryption Method | This field is available if this ISP account uses the **PPTP** protocol. Use the drop-down list box to select the type of Microsoft Point-to-Point Encryption (MPPE). Options are:<br>**nomppe** - This ISP account does not use MPPE.<br>**mppe-40** - This ISP account uses 40-bit MPPE.<br>**mppe-128** - This ISP account uses 128-bit MMPE. |
| User Name | Type the user name given to you by your ISP. |
| Password | Type the password associated with the user name above. The password can only consist of alphanumeric characters (A-Z, a-z, 0-9). This field can be blank. |
| Retype to confirm | Type your password again to make sure that you have entered is correctly. |
| Server IP | If this ISP account uses the PPPoE protocol, this field is not displayed.<br>If this ISP account uses the PPTP protocol, type the IP address of the PPTP server. |
| Connection ID | This field is available if this ISP account uses the **PPTP** protocol. Type your identification name for the PPTP server. This field can be blank. |
| Service Name | If this ISP account uses the PPPoE protocol, type the PPPoE service name to access. PPPoE uses the specified service name to identify and reach the PPPoE server. This field can be blank.<br>If this ISP account uses the PPTP protocol, this field is not displayed. |

**Table 168** Device Operation > Device Configuration > Object > ISP Account > Add/Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Compression | Select **On** button to turn on stac compression, and select **Off** to turn off stac compression. Stac compression is a data compression technique capable of compressing data by a factor of about four. |
| Idle timeout | This value specifies the number of seconds that must elapse without outbound traffic before the ZyWALL automatically disconnects from the PPPoE/PPTP server. This value must be an integer between 0 and 360. If this value is zero, this timeout is disabled. |
| Apply | Click **Apply** to save your changes back to the ZyWALL. If there are no errors, the program returns to the **ISP Account** screen. If there are errors, a message box explains the error, and the program stays in the **ISP Account Add/Edit** screen. |
| Cancel | Click **Cancel** to return to the **ISP Account** screen without creating the profile (if it is new) or saving any changes to the profile (if it already exists). |

# 15.8 The SSL Application Screen

The main **SSL Application** screen displays a list of the configured SSL application objects. Click **Device Operation** > **Device Configuration** > **Object > SSL Application** in the navigation panel.

**Figure 186** Device Operation > Device Configuration > Object > SSL Application

The following table describes the labels in this screen.

**Table 169** Device Operation > Device Configuration > Object > SSL Application

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select how many entries you want to display on each page. |
| # | This field displays the index number. |
| Name | This field displays the name of the object. |
| Address | This field displays the IP address/URL of the application server or the location of a file share. |

**Table 169** Device Operation > Device Configuration > Object > SSL Application

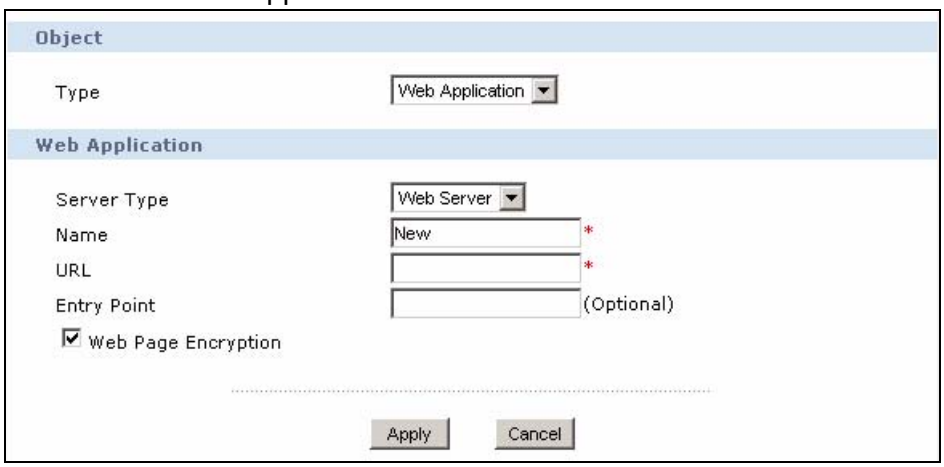
| LABEL | DESCRIPTION |
|---|---|
| Type | This field shows whether the object is a file-sharing, web-server, Outlook Web Access, Virtual Network Computing, or Remote Desktop Protocol SSL application. |
| Add icon | This column provides icons to add, edit, and remove SSL application objects.<br>To add an object, click the **Add** icon at the top of the column.<br>To edit an object, click the **Edit** icon next to the object.<br>To delete an object, click the **Remove** icon next to the object. |
| Total Records | This field displays the total number of SSL application entries. |

## 15.8.1 Creating/Editing a Web-based SSL Application Object

A web-based application allows remote users to access an application via standard web browsers.

To configure a web-based application, click the **Add** or **Edit** button in the **SSL Application** screen and select **Web Application** in the **Type** field to display the configuration screen as shown.

**Figure 187** Device Operation > Device Configuration > Object > SSL Application > Add/Edit: Web Application




The following table describes the labels in this screen.

**Table 170** Device Operation > Device Configuration > Object > SSL Application > Add/Edit: Web Application

| LABEL | DESCRIPTION |
|---|---|
| Object | |
| Type | Select **Web Application** from the drop-down list box. |
| Web Application | |

**Table 170** Device Operation > Device Configuration > Object > SSL Application > Add/Edit: Web Application

| LABEL | DESCRIPTION |
|---|---|
| Server Type | Specify the type of service for this SSL application.<br><br>Select **Web Server** to allow access to the specified web site hosted on the local network.<br><br>Select **OWA** (Outlook Web Access) to allow users to access e-mails, contacts, calenders via Microsoft Outlook-like interface using supported web browsers. The ZyWALL supports one OWA object.<br><br>Select **VNC** to allow users to manage LAN computers that have Virtual Network Computing remote desktop server software installed.<br><br>Select **RDP** to allow users to manage LAN computers that have Remote Desktop Protocol remote desktop server software installed. |
| Name | Enter a descriptive name to identify this object. You can enter up to 31 characters (“0-9”, “a-z”, “A-Z”, “-” and “_”). Spaces are not allowed. |
| URL | This field displays if the **Server Type** is set to **Web Server** or **OWA**.<br><br>Enter the Fully-Qualified Domain Name (FQDN) or IP address of the application server.<br><br>Note: You must enter the “http://” or “https://” prefix.<br><br>Remote users are restricted to access only files in this directory. For example, if you enter “\remote\” in this field, emote users can only access files in the “remote” directory.<br><br>If a link contains a file that is not within this domain, then remote users cannot access it. |
| Entry Point | This field displays if the **Server Type** is set to **Web Server** or **OWA**.<br><br>This field is optional. You only need to configure this field if you need to specify the name of the directory or file on the local server as the home page or home directory on the user screen. |
| Server Address(es) | This field displays if the **Server Type** is set to **RDP** or **VNC**.<br><br>Specify the IP address or Fully-Qualified Domain Name (FQDN) of the computer(s) that you want to allow the remote users to manage. |
| Starting Port<br><br>Ending Port | This field displays if the **Server Type** is set to **RDP** or **VNC**.<br><br>Specify the listening ports of the LAN computer(s) running remote desktop server software. The ZyWALL uses a port number from this range to send traffic to the LAN computer that is being remotely managed. |
| Program Path | This field displays if the **Server Type** is set to **RDP**.<br><br>You can specify an application to open when a remote user logs into the remote desktop application. |
| Web Page Encryption | Select this option to prevent users from saving the web content. |

**Table 170** Device Operation > Device Configuration > Object > SSL Application > Add/Edit: Web Application

| LABEL | DESCRIPTION |
|---|---|
| Apply | Click **Apply** to save the changes and return to the main **SSL Application Configuration** screen. |
| Cancel | Click **Cancel** to discard the changes and return to the main **SSL Application Configuration** screen. |

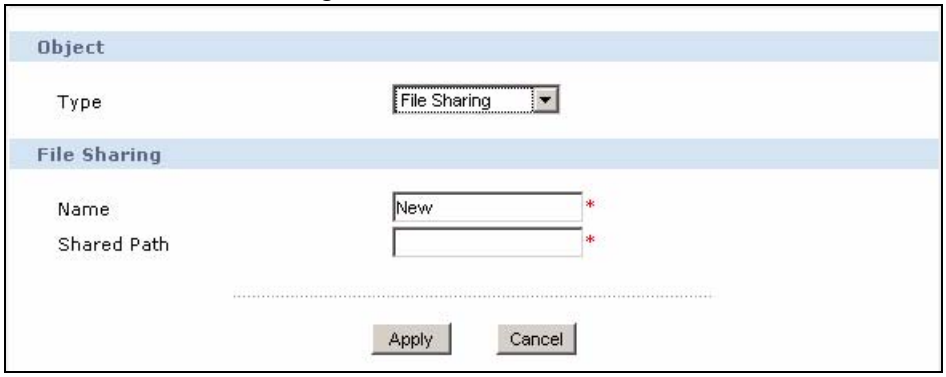
## 15.8.2 Creating/Editing a File Sharing SSL Application Object

You can specify the name of a folder on a file server (Linux or Windows) which remote users can access. Remote users can access files using a standard web browser and files are displayed as links on the screen.

To configure a file share, click the **Add** or **Edit** button in the **SSL Application** screen and select **File Sharing** in the **Type** field. The configuration screen displays as shown.

Note: You must also configure the shared folder on the file server for remote access. Refer to the document that comes with your file server.

**Figure 188** Device Operation > Device Configuration > Object > SSL Application > Add/Edit: File Sharing




The following table describes the labels in this screen.

**Table 171** Device Operation > Device Configuration > Object > SSL Application > Add/Edit: File Sharing

| LABEL | DESCRIPTION |
|---|---|
| Object | |
| Type | Select File Sharing to create a file share application for VPN SSL. |
| File Sharing | |
| Name | Enter a descriptive name to identify this object. You can enter up to 31 characters (“0-9”, “a-z”, “A-Z”, “-” and “_”). Spaces are not allowed. |

**Table 171** Device Operation > Device Configuration > Object > SSL Application > Add/Edit: File Sharing

| LABEL | DESCRIPTION |
|---|---|
| Shared Path | Specify the IP address, domain name or NetBIOS name (computer name) of the file server and the name of the share to which you want to allow user access. Enter the path in one of the following formats.<br>"\\<IP address>\<share name>"<br>"\\<domain name>\<share name>"<br>"\\<computer name>\<share name>"<br>For example, if you enter "\\my-server\Tmp", this allows remote users to access all files and/or folders in the "\Tmp" share on the "my-server" computer. |
| Apply | Click **Apply** to save the changes and return to the main **SSL Application Configuration** screen. |
| Cancel | Click **Cancel** to discard the changes and return to the main **SSL Application Configuration** screen. |

# 16

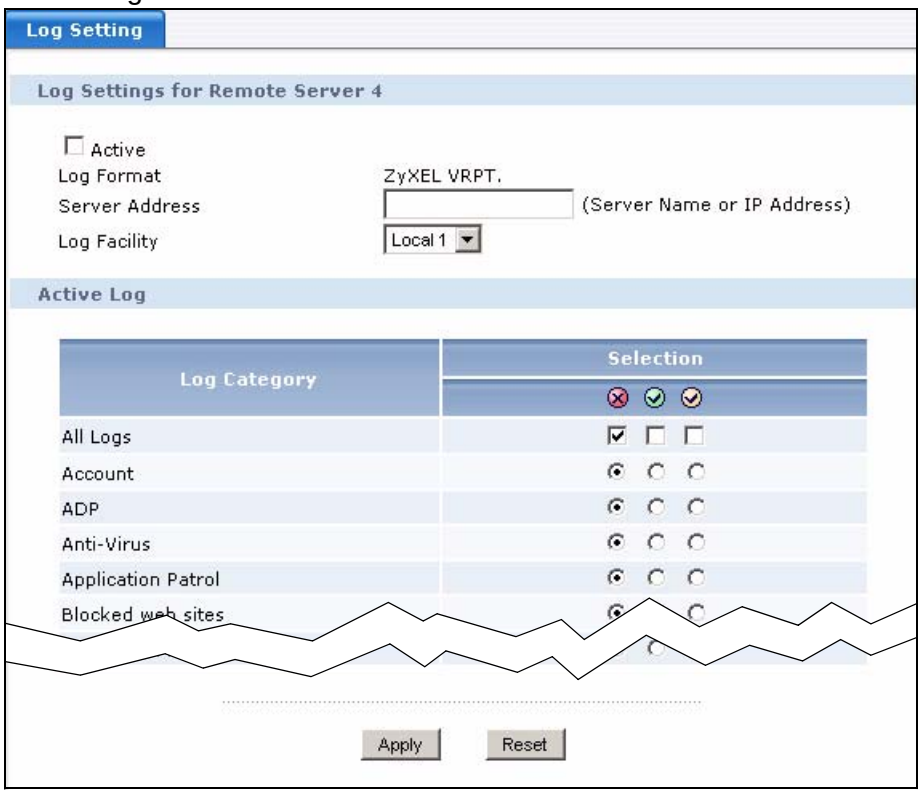
# Maintenance

This section shows you how to configure the **Device Log** screen. This screen may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

## 16.1 Edit Remote Server Log Settings

The **Log Settings Edit** screen controls the detailed settings for each log in the remote server (syslog). Click **Device Operation** > **Device Configuration** > **Maintenance** > **Log Setting** to open the screen as shown next.

**Figure 189** Device Operation > Device Configuration > Maintenance > Log > Log Setting



The following table describes the labels in this screen.

**Table 172** Maintenance > Log > Log Setting

| LABEL | DESCRIPTION |
|---|---|
| Log Settings for Remote Server X | |
| Active | Select this check box to send log information according to the information in this section. You specify what kinds of messages are included in log information in the **Active Log** section. |
| Log Format | This field displays the format of the log information. It is read-only.<br>**ZyXEL VRPT** - ZyXEL's Vantage Report, syslog-compatible format. |
| Server Address | Type the server name or the IP address of the syslog server to which to send log information. |
| Log Facility | Select a log facility. The log facility allows you to log the messages to different files in the syslog server. Please see the documentation for your syslog program for more information. |
| Active Log | |
| Log Category | This field displays each category of messages. It is the same value used in the **Display** and **Category** fields in the **View Log** tab. The **Default** category includes debugging messages generated by open source software. |
| Selection | Select what information you want to log from each **Log Category** (except **All Logs**; see below). Choices are:<br>**disable all logs** (red X) - do not log any information from this category<br>**enable normal logs** (green checkmark) - log regular information and alerts from this category<br>**enable normal logs and debug logs** (yellow checkmark) - log regular information, alerts, and debugging information from this category<br>If you check one of the check boxes for **All Logs**, it affects the settings for every category. |
| Apply | Click this to save your changes and return to the previous screen. |
| Reset | Click this to return to the previous screen without saving your changes. |

# PART IV
# Configuration, Firmware and Licence Management

Note: The examples in this section use one of the most comprehensive examples of each screen, not every variation for each device type and firmware version. If you are unable to find a specific screen or field in this User's Guide, please see the User's Guide for the device for more information.

Configuration Management (409)

Firmware Management (449)

License Management (457)

# 17

# Configuration Management

The screens explained synchronization settings between Vantage CNM and devices, backup/restore device configuration file, backup/restore anti-virus or IDP signature profiles, and manage building blocks.

## 17.1 Synchronization (Device)

Data inconsistencies may occur if device configurations are made directly to the device instead of in Vantage CNM. Use this screen to resolve any data inconsistencies between the selected device and Vantage CNM. To use this screen, select a device, click **Device Operation** in the menu bar and click **Configuration Management > Synchronize** in the navigation panel.

If you are not sure how to resolve inconsistencies between the device and Vantage CNM, you might access the device's web configurator and compare the settings in the web configurator to the settings in Vantage CNM before you use this function.

**Figure 190** Device Operation > Configuration Management > Synchronization

**Figure 191** Device Operation > Configuration Management > Synchronization (ZLD ZyWALL)

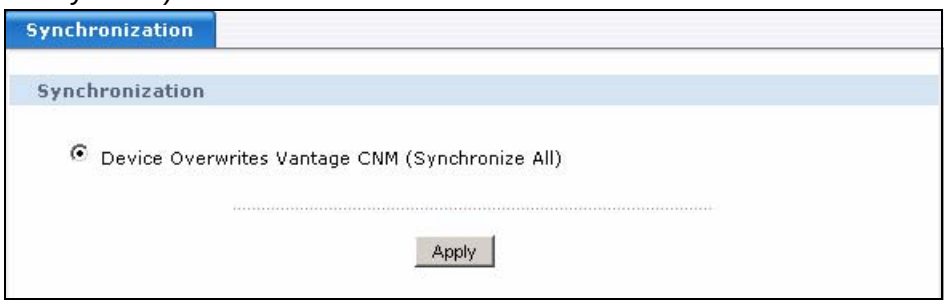
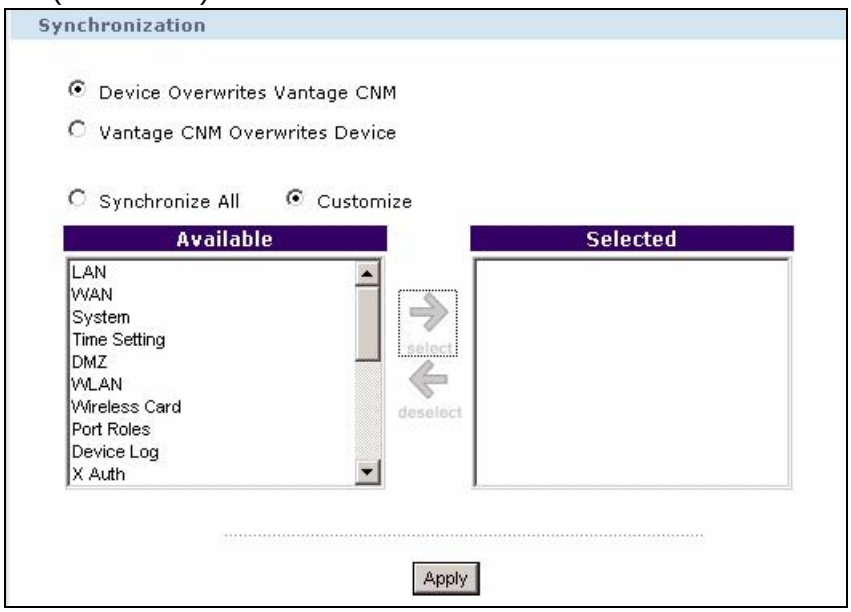



**Figure 192** Device Operation > Configuration Management > Synchronization (Customize)



The following table describes the fields in this screen.

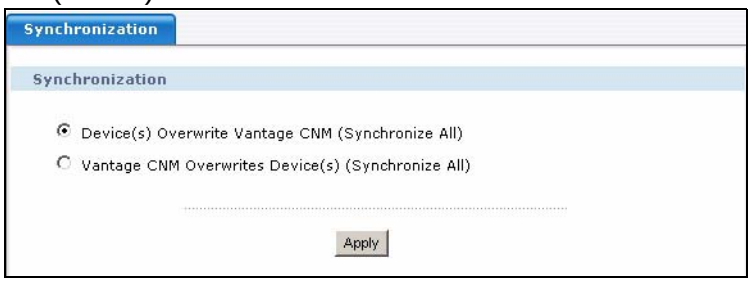
**Table 173** Device Operation > Configuration Management > Synchronization

| LABEL | DESCRIPTION |
|---|---|
| Device Overwrites Vantage CNM | Select this radio button to have Vantage CNM pull all current device configurations into Vantage CNM. The current device configuration "overwrites" Vantage CNM configurations. |
| Vantage CNM Overwrites Device | Select this radio button to have Vantage CNM push all current configurations from Vantage CNM to the device. The current device configuration is then reset to the configuration settings that Vantage CNM contains. |
| Synchronize All | Select this radio button to synchronize all settings between Vantage CNM and the device. |
| Customize | Select this radio button to display more fields you can specify which setting(s) to be synchronized. Select an item from the **Available** list box and click **select** to synchronize the setting. Select an item from the **Selected** list box and click **deselect** If you don't want to synchronize the setting. |
| Apply | Click this to save your settings in Vantage CNM. |

# 17.2 Synchronization (Folder)

Use this screen to resolve any data inconsistencies between the device(s) in the selected folder and Vantage CNM. To use this screen, select a folder, click **Device Operation** in the menu bar and click **Configuration Management > Synchronize** in the navigation panel.

**Figure 193** Device Operation > Configuration Management > Synchronization (Folder)



The following table describes the fields in this screen.

**Table 174** Device Operation > Configuration Management > Synchronization (Folder)

| LABEL | DESCRIPTION |
|---|---|
| Device(s) Overwrite Vantage CNM (Synchronize All) | Select this radio button to have Vantage CNM pull all current device configurations in the selected folder into Vantage CNM. The current devices' configurations "overwrite" Vantage CNM configurations. |
| Vantage CNM Overwrites Device(s) (Synchronize All) | Select this radio button to have Vantage CNM push all current configurations from Vantage CNM to the devices in the selected folder. The current devices' configurations are then reset to the configuration settings that Vantage CNM contains. |
| Apply | Click this and double confirm to start the configuration synchronization between devices and Vantage CNM. |

# 17.3 Configuration File Management

Once your device is configured and functioning properly, it is highly recommended that you back up your configuration file before making configuration changes. The backup configuration file will be useful in case you need to return to your previous settings.

Use this menu item to manage, back up and restore configuration files for specific devices or for multiple devices in a specific folder. If you back up multiple devices in a specific folder, you can manage and restore the configuration files at the folder level or individually by device.

You can back up configuration files to Vantage CNM or to your computer. If you back up a configuration file to Vantage CNM, you can only restore that configuration file to that device, even if other devices are the same model and are running the same firmware.

Note: Before you restore a configuration file, make sure the new configuration does not prevent you from managing the device remotely, unless that is desired.

**Make sure you restore a configuration file to an appropriate model. Otherwise, you may damage the device or lock yourself out.**

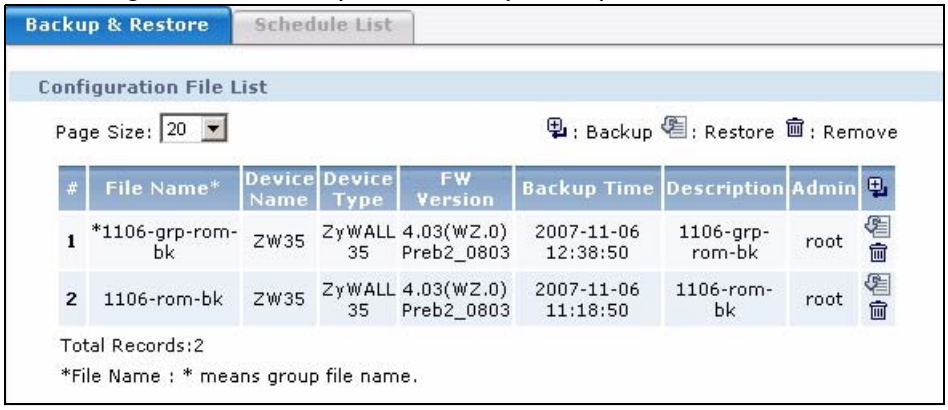
You can create your own configuration file alias in Vantage CNM. This may make it easier to distinguish between configuration files.

The menu item displays different screens depending on whether you selected a device or a folder before you clicked this menu item.

## 17.3.1 Backup & Restore (Device)

Use this screen to back up and restore configuration files for a specific device. The configuration files may be stored in the Vantage CNM server or on the computer from which you access Vantage CNM. To open this screen, select a device, click **Device Operation** in the menu bar and then click **Configuration Management > Configuration File Management > Backup & Restore** in the navigation panel.

**Figure 194** Device Operation > Configuration Management > Configuration File Management > Backup & Restore (Device)




The following table describes the fields in this screen.

**Table 175** Device Operation > Configuration Management > Configuration File > Backup & Restore (Device)

| TYPE | DESCRIPTION |
|---|---|
| Configuration File List | |
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| File Name | This displays the name of the configuration file. The name with * in the beginning means a related group backup (by selecting its folder) was performed. |
| Device Name | This displays the name of the device that was backed up. |
| Device Type | This displays the type of the device that was backed up. |
| FW Version | This displays the firmware version of the device when the configuration file was backed up. |
| Backup Time | This field displays the date of backup of the configuration file. |
| Description | This displays a description that was entered at the time of file backup. |
| Admin | This field displays the administrator who performed the backup of the configuration file. |
| Backup | Click **Backup** to display a screen where you can back up the configuration file for the device. |
| Restore | Click **Restore** to restore an existing configuration file to the device. |

**Table 175** Device Operation > Configuration Management > Configuration File > Backup & Restore (Device) (continued)

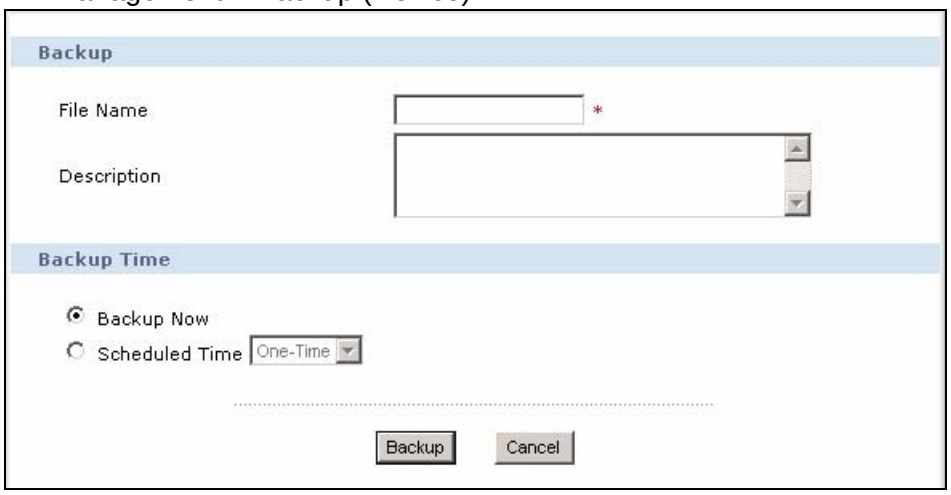
| TYPE | DESCRIPTION |
|---|---|
| Remove | Click this to remove an existing configuration file from the Vantage CNM server. |
| Total Records | This entry displays the total number of records on the current page of the file list. |

## 17.3.2 Backup a Device

Use this screen to manage configuration files uploaded to Vantage CNM for the selected device. After a backup task is applied, you can check the status in **Log & Report** > **Operation Report** > **Configuration File Backup & Restore Report**. To open this screen, click **Backup** in the **Device Operation** > **Configuration Management > Configuration File Management > Backup & Restore** screen.

Note: You can not apply the second scheduled backup to the device before its last scheduled backup is completed.

**Figure 195** Device Operation > Configuration Management > Configuration File Management > Backup (Device)




The following table describes the fields in this screen

**Table 176** Device Operation > Configuration Management > Configuration File Management > Backup & Restore > Backup (Device)

| TYPE | DESCRIPTION |
|---|---|
| Backup | |
| File Name | Type in the name of the configuration file you want to create. The name must be 1-20 characters long, and you cannot use spaces or the \ / : * ? < > \| " characters. Vantage CNM automatically appends a string of numbers followed by ".rom" to this name. |

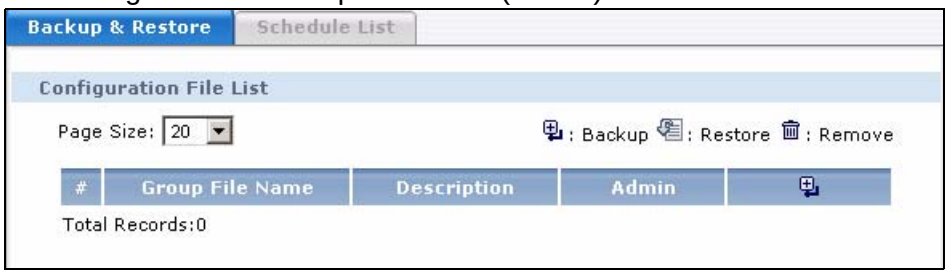
**Table 176** Device Operation > Configuration Management > Configuration File Management > Backup & Restore > Backup (Device) (continued)

| TYPE | DESCRIPTION |
|---|---|
| Description | Enter a descriptive note for the file. |
| Backup Time | |
| Backup Now | Select this radio box to perform the backup after you click **Backup**. |
| Scheduled Time | Select this radio box to define a time or a periodical time Vantage CNM server automatically perform backup for this device.<br>Select **One Time** from the list box if you want this backup schedule is applied one time, or select **Weekly** or **Monthly** to specify how often you want the backup schedule is applied periodically.<br>Select the calendar to specify a date for the backup schedule.<br>Select a time from **O'clock** to specify a time for the backup schedule. |
| Backup | Click this to back up the configuration file for the device. |
| Cancel | Click this to close this screen without applying any changes. |

## 17.3.3 Backup & Restore (Folder)

Use this screen to manage or restore configuration files uploaded to Vantage CNM for multiple devices in the selected folder. You cannot use this screen to manage or restore configuration files uploaded to Vantage CNM for a specific device (in other words, using Figure 195 on page 414), even if that device is in the folder. To open this screen, select an active folder, click **Device Operation** in the menu bar and click **Configuration Management > Configuration File Management** > **Backup & Restore** in the navigation panel.

**Figure 196** Device Operation > Configuration Management > Configuration File Management > Backup & Restore (Folder)




The following table describes the fields in this screen.

**Table 177** Device Operation > Configuration Management > Configuration File Management > Backup & Restore (Folder)

| TYPE | DESCRIPTION |
|---|---|
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |

**Table 177** Device Operation > Configuration Management > Configuration File Management > Backup & Restore (Folder) (continued)

| TYPE | DESCRIPTION |
|---|---|
| Group File Name | This displays the name of the set of configuration files. |
| Description | This field displays the description of the set of configuration files. |
| Admin | This field displays the administrator who performed the backup of the configuration files. |
| Backup | Click this to display a screen where you can perform device(s) configuration backup. |
| Restore | Click this to restore a configuration file to device(s). |
| Remove | Click this to remove the selected set(s) from the Vantage CNM server. |
| Total Records | This entry displays the total number of records on the current page of the file list. |

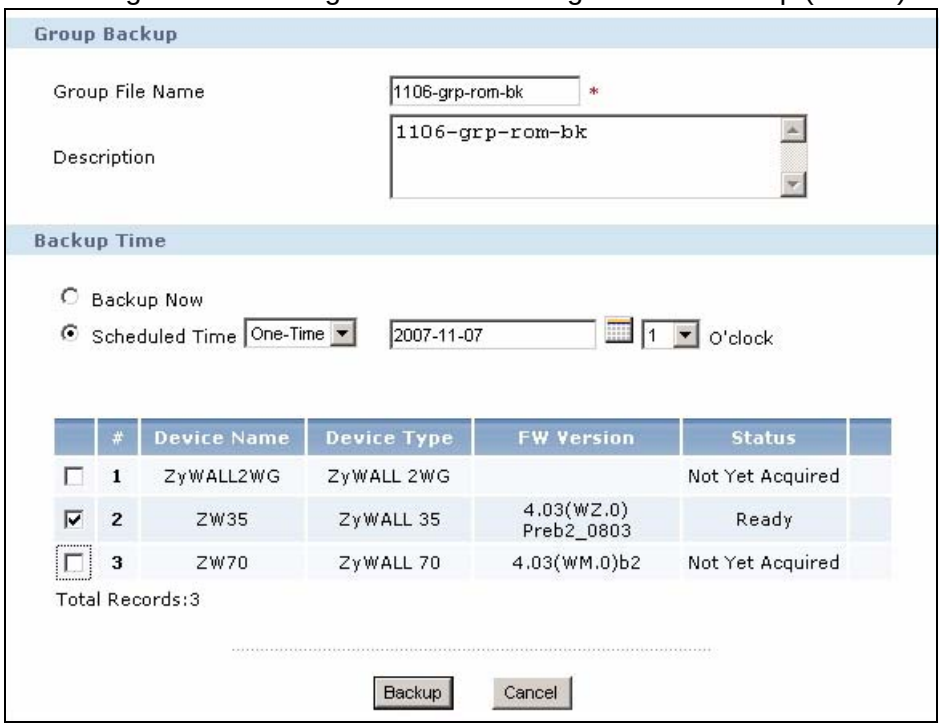
## 17.3.4 Group Backup (Folder)

Use this screen to backup configuration files for one or more devices in the selected set of configuration files. To open this screen, click the **Backup** icon in the **Device Operation** > **Configuration Management > Configuration File Management** screen for the selected folder.

Note: You have to select device(s) with **Ready** in the **Status** field before you can backup any configuration files.

Note: The backup takes some time depending on your network environment.

**Figure 197** Device Operation > Configuration Management >Configuration Management > Configuration File Management > Backup (Folder)




The following table describes the fields in this screen.

**Table 178** Device Operation > Configuration Management > Configuration File Management > Backup (Folder)

| TYPE | DESCRIPTION |
|---|---|
| Group Backup | |
| Group File Name | Enter the name of the set of configuration files. The name must be 1-20 characters long, and you cannot use spaces or the \ / : * ? < > \| " characters.<br><br>This name is also used in the name of each configuration file in the set, if you look at the configuration files for a specific device in the folder. Vantage CNM automatically appends a string of numbers followed by ".rom" to this name. |
| Description | Type a description of the file backup. |
| Backup Time | |
| Backup Now | Select this radio box to perform the backup after you click **Backup**. |

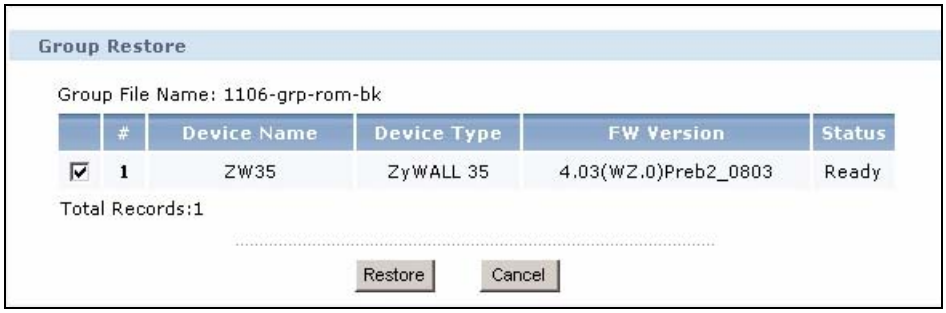
**Table 178** Device Operation > Configuration Management > Configuration File Management > Backup (Folder) (continued)

| TYPE | DESCRIPTION |
|---|---|
| Scheduled Time | Select this radio box to define a time or a periodical time Vantage CNM server automatically perform backup for the device(s).<br>Select **One Time** from the list box if you want this backup schedule is applied one time, or select **Weekly** or **Monthly** to specify how often you want the backup schedule is applied periodically.<br>Select the calendar to specify a date for the backup schedule.<br>Select a time from **O'clock** to specify a time for the backup schedule. |
| # | This is the number of an individual entry. |
| Device Name | This displays the name of the device. |
| Device Type | This displays the type of the device. |
| FW Version | This displays the firmware version of the device. |
| Status | This displays the current status of the device. You can only backup the configuration file of a device that is **Ready**. |
| Total Records | This entry displays the total number of records on the current page of the device list. |
| Backup | Select the check box next to one or more devices and click this to back up the configuration files for the selected devices. |
| Cancel | Click this to close this screen without applying any changes. |

## 17.3.5 Group Restore (Folder)

Use this screen to restore configuration files for one or more devices in the specified folder. The configuration files must be available in the Vantage CNM server. To open this screen, select an existing configuration file and click **Restore** in the **Device Operation** > **Configuration Management > Configuration File Management** screen.

**Figure 198** Device Operation > Configuration Management > Configuration File Management > Restore (Folder)



The following table describes the fields in this screen.

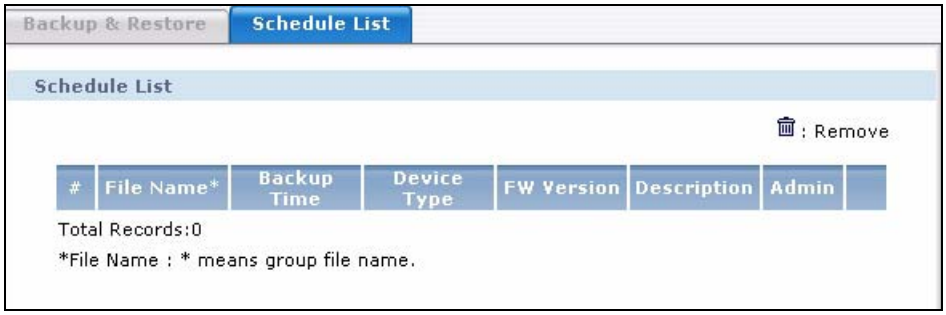
**Table 179** Device Operation > Configuration Management > Configuration File Management > Restore (Folder)

| TYPE | DESCRIPTION |
|---|---|
| Group Restore | |
| # | This is the number of an individual entry. |
| Device Name | This displays the name of the device that was backed up. |
| Device Type | This displays the type of the device that was backed up. |
| FW Version | This displays the firmware version of the device when the configuration file was backed up. |
| Status | This displays the current status of the device. You can only back up the configuration file of a device that is **Ready**. |
| Restore | Select the check box next to one or more devices and click this to restore the configuration files for the selected devices.<br><br>Note: You have to select a device with **Ready** status in the **Status** field before you can restore any configuration files. |
| Cancel | Click this to return to the previous screen without applying any changes. |

# 17.4 Schedule List (Device)

Use this screen to see or delete the scheduled configuration backups that have not performed yet. To open this screen, select a device, click **Device Operation** in menu bar and then click **Configuration Management > Configuration File Management > Schedule List**.

**Figure 199** Device Operation > Configuration Management > Configuration File Management > Schedule List (Device)



The following table describes the fields in this screen.

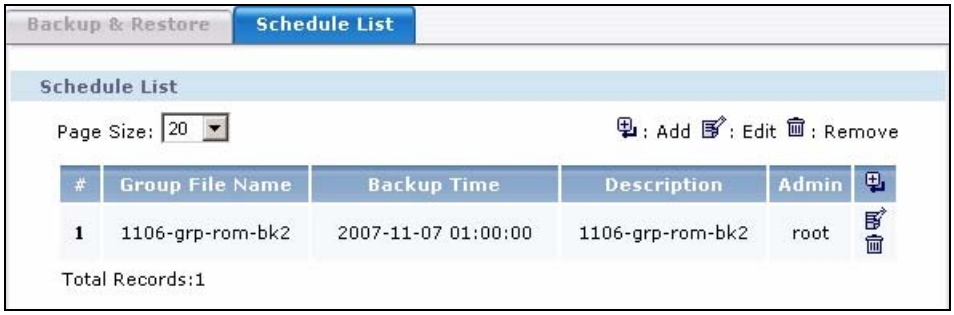
**Table 180** Device Operation > Configuration Management > Configuration File Management > Schedule List (Device)

| TYPE | DESCRIPTION |
|---|---|
| Schedule List | |
| # | This is the number of an individual entry. |
| File Name | This displays the name of the configuration file. |
| Device Name | This displays the name of the device that will be backed up. |
| Device Type | This displays the type of the device that will be backed up. |
| FW Version | This displays the firmware version of the device. |
| Description | This displays a description that was entered when the backup schedule was set. |
| Admin | This field displays the administrator who set the backup schedule. |
| Remove | Click this to remove a scheduled backup from the Vantage CNM server. |
| Total Records | This entry displays the total number of records on the current page of the file list. |

# 17.5 Schedule List (Folder)

Use this screen to see or delete the scheduled configuration backup for a group that has not performed yet. To open this screen, select a folder, and then click **Configuration Management > Configuration File Management > Schedule List**.

**Figure 200** Device Operation > Configuration Management > Configuration File Management > Schedule List (Folder)



The following table describes the fields in this screen.

**Table 181** Device Operation > Configuration Management > Configuration File Management > Schedule List (Folder)

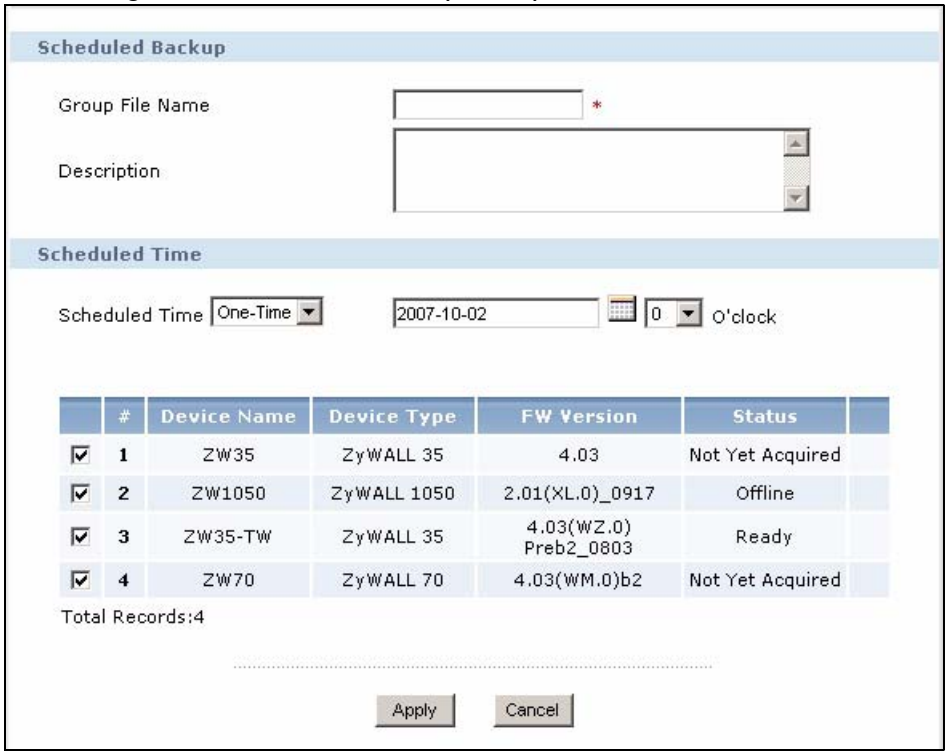
| TYPE | DESCRIPTION |
|---|---|
| Page Size | Select how many records you want to see in each page. |
| Schedule List | |
| # | This is the number of an individual entry. |
| Group File Name | This displays the name of the set of configuration files. |
| Backup Time | This displays the schedule when the backup will be performed. |
| Description | This displays a description that was entered when the backup schedule was set. |
| Admin | This field displays the administrator who set the backup schedule. |
| Add | Click this to add a backup schedule for this folder. |
| Edit | Click this to modify an existing backup schedule. |
| Remove | Click this to remove a scheduled backup from the Vantage CNM server. |
| Total Records | This entry displays the total number of records on the current page of the file list. |

## 17.5.1 Add/Edit Schedule List (Folder)

Use this screen to add or edit an backup schedule for one or more devices in the selected set of configuration files. To open this screen, select an active folder, click

**Configuration Management > Configuration File Management** > **Schedule List**, and then click **Add**.

**Figure 201** Device Operation > Configuration Management > Configuration File Management > Schedule List (Folder)




The following table describes the fields in this screen.

**Table 182** Device Operation > Configuration Management > Configuration File Management > Schedule List (Folder)

| TYPE | DESCRIPTION |
|---|---|
| Scheduled Backup | |
| Group File Name | Enter the name of the set of configuration files. The name must be 1-20 characters long, and you cannot use spaces or the \ / : * ? < > \| " characters.<br><br>This name is also used in the name of each configuration file in the set, if you look at the configuration files for a specific device in the folder. Vantage CNM automatically appends a string of numbers followed by ".rom" to this name. |
| Description | Type a descriptive note of the group file backup. |
| Scheduled Time | |

**Table 182** Device Operation > Configuration Management > Configuration File Management > Schedule List (Folder) (continued)

| TYPE | DESCRIPTION |
|---|---|
| Scheduled Time | Select this radio box to define a time or a periodical time Vantage CNM server automatically perform backup for the device(s).<br>Select **One Time** from the list box if you want this backup schedule is applied one time, or select **Weekly** or **Monthly** to specify how often you want the backup schedule is applied periodically.<br>Select the calendar to specify a date for the backup schedule.<br>Select a time from **O'clock** to specify a time for the backup schedule. |
| # | This is the number of an individual entry. |
| Device Name | This displays the name of the device. |
| Device Type | This displays the type of the device. |
| FW Version | This displays the firmware version of the device. |
| Status | This displays the current status of the device. You can only backup the configuration file of a device that is **Ready**.<br>Note: You have to select device(s) with **Ready** in the **Status** field before you can backup any configuration files. |
| Total Records | This entry displays the total number of records on the current page of the device list. |
| Apply | Select the check box next to one or more devices and click this to submit the backup schedule. |
| Cancel | Click this to close this screen without applying any changes. |

# 17.6 Signature Profile Management

Use this menu item to manage, back up and restore the configuration and signatures for services such as IDP and anti-virus. You can also use this menu item to reset the service configuration to its factory default settings. The menu item displays different screens depending on whether you selected a device or a folder before you clicked this menu item.

## 17.6.1 Signature Profile Backup & Restore (Device)

Use this screen to manage sets of anti-virus or IDP configurations and signatures uploaded to Vantage CNM for the selected device. To open this screen, select the device, click **Device Operation** in the menu bar and then click **Configuration**

**Management > Signature Profile Management** > **Backup & Restore** in the navigation panel.

**Figure 202** Device Operation > Configuration Management > Signature Profile Management > Backup & Restore (ZyNOS ZyWALL)

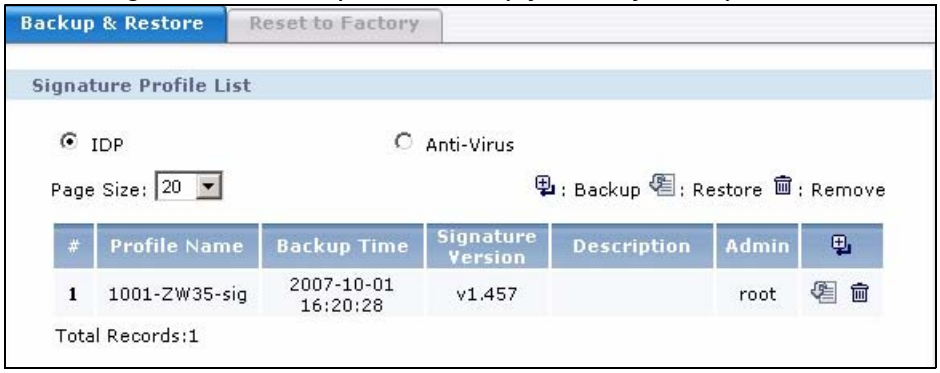
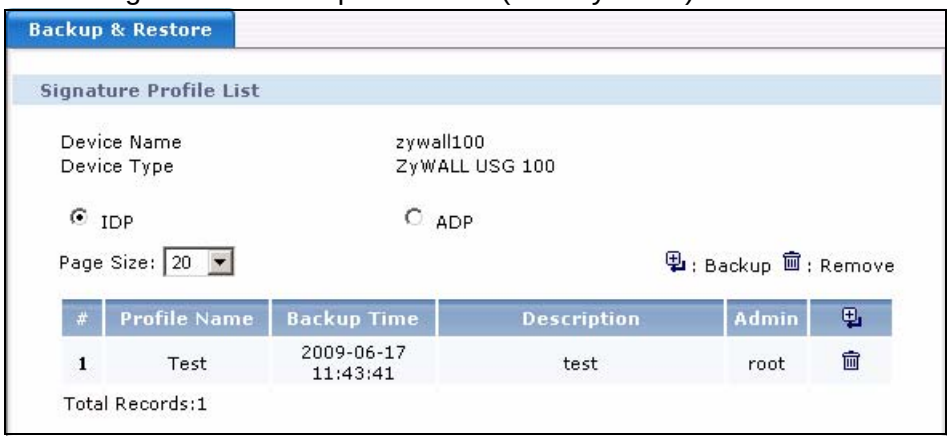



**Figure 203** Device Operation > Configuration Management > Signature Profile Management > Backup & Restore (ZLD ZyWALL)




The following table describes the fields in this screen.

**Table 183** Device Operation > Configuration Management > Signature Profile Management > Backup & Restore

| TYPE | DESCRIPTION |
|---|---|
| Device Name | This is the name of the selected device you configured when the device was added into Vantage CNM. |
| Device Type | This is the model type of the device. |
| IDP<br>Anti-Virus<br>ADP | Select the service whose configuration and signatures you want to manage. |
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| Profile Name | This field displays the name associated with the signature profile. |
| Backup Time | This field displays the date and time of backup of the signature profile. |

**Table 183** Device Operation > Configuration Management > Signature Profile Management > Backup & Restore (continued)

| TYPE | DESCRIPTION |
|---|---|
| Signature Version | This field displays the version of signature. |
| Description | This displays a description that was entered at the time of backup. |
| Admin | This field displays the administrator who performed the backup. |
| Backup | Click this to display a screen where you can perform a signature backup.<br><br>Note: This icon is available only when you select a device. |
| Restore | Click this to restore a signature profile to the device. |
| Remove | Click this to remove the selected profile from the Vantage CNM server. |
| Total Records | This entry displays the total number of records on the current page of the list. |

## 17.6.2 Signature Profile Backup & Restore (Folder)

Use this screen to search signature profile(s) by the platform of ZyWALL devices where the profiles are stored and by the service type of the profiles. Then you can not only view or remove the backed up profiles but also restore the profiles to device(s). To open this screen, select a folder, click **Device Operation** in the

menu bar and then click **Configuration Management > Signature Profile Management** > **Backup & Restore** in the navigation panel.

**Figure 204** Device Operation > Configuration Management > Signature Profile Management > Backup & Restore (Folder-ZLD)

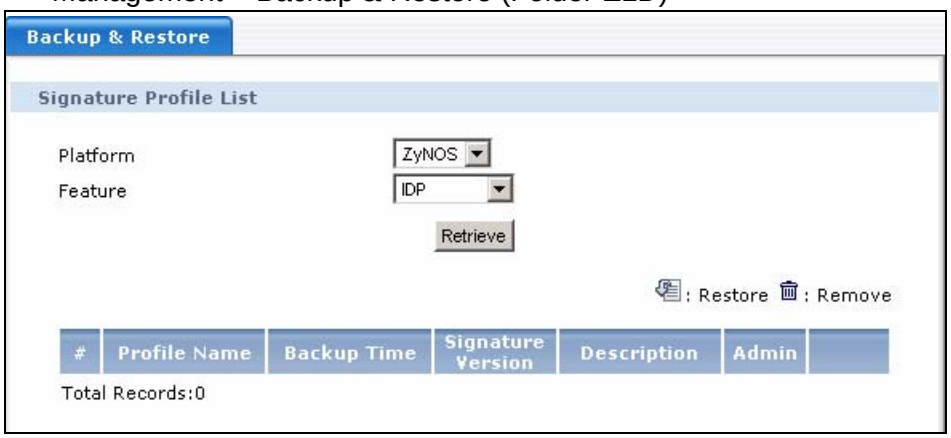
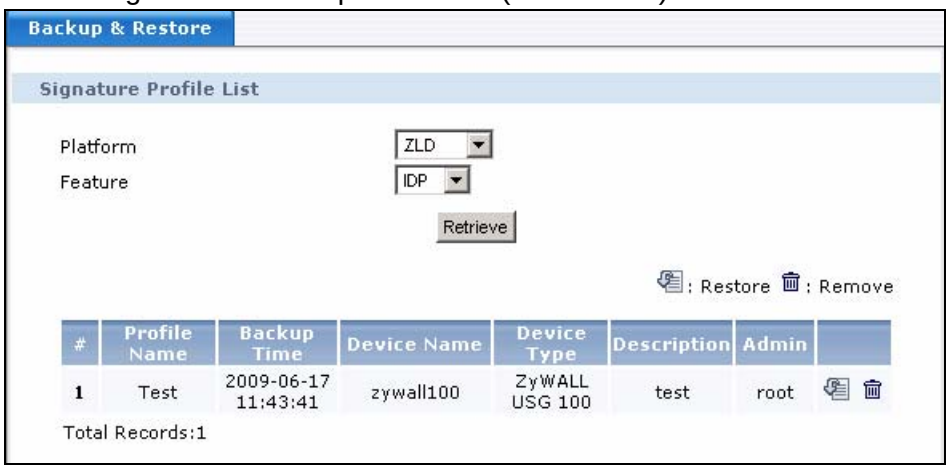



**Figure 205** Device Operation > Configuration Management > Signature Profile Management > Backup & Restore (Folder-ZLD)




The following table describes the fields in this screen.

**Table 184** Device Operation > Configuration Management > Signature Profile Management > Backup & Restore (Folder)

| TYPE | DESCRIPTION |
|---|---|
| Platform | Select the ZyWALL platform of signature profiles you want to manage. |
| Feature | Select the service type of signature profiles you want to manage. |
| Retrieve | Click this to display all available signature profiles in a table below. |
| # | This is the index number. |
| Profile Name | This is the name of a signature profile. |
| Backup Time | This is the date and time of backup of the signature profile. |
| Signature Version | This is the version of signature. |

**Table 184** Device Operation > Configuration Management > Signature Profile Management > Backup & Restore (Folder) (continued)

| TYPE | DESCRIPTION |
|---|---|
| Device Name | This is the name of the a device from which the signature profile was backed up. |
| Device Type | This is the model name of the device. |
| Description | This displays a description that was entered at the time of signature profile backup. |
| Admin | This field displays the name of an administrator who performed the backup of the signature profile. |
| Restore | Click this to restore a signature profile back to the device. |
| Remove | Click this to delete an existing signature profile from the Vantage CNM server. |

## 17.6.3 Signature Profile Restore (Folder)

Use this screen to restore a set of configuration files and signatures uploaded to Vantage CNM to one or more devices in the selected folder. You can track the status and look at the results of this operation in the Operation Report. See Section 27.6 on page 549. To open this screen, select an existing profile click

**Restore** in the **Device Operation** > **Configuration Management > Signature Profile Management > Backup & Restore** screen.

**Figure 206** Device Operation > Configuration Management > Signature Profile Management > Backup & Restore > Restore (Folder-ZyNOS)

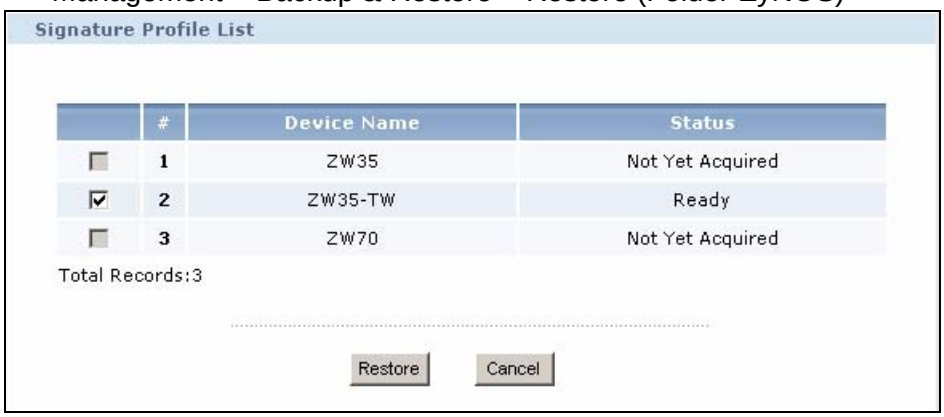
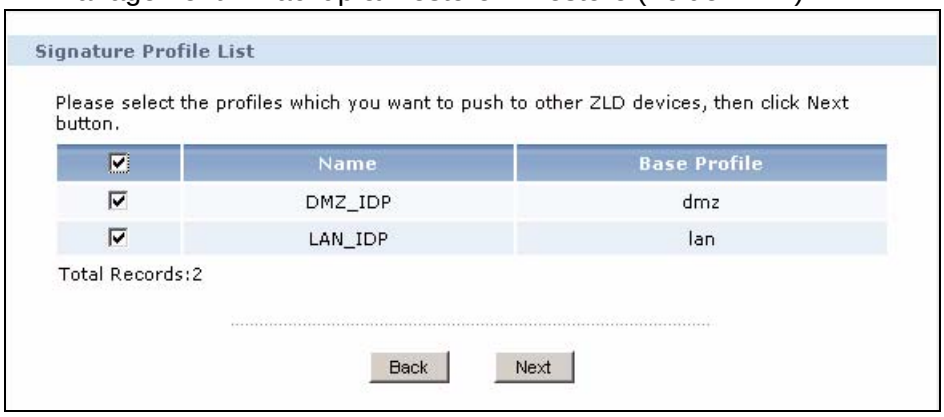



**Figure 207** Device Operation > Configuration Management > Signature Profile Management > Backup & Restore > Restore (Folder-ZLD)




The following table describes the fields in this screen.

**Table 185** Device Operation > Configuration Management > Signature Profile Management > Backup & Restore > Restore (Folder)

| TYPE | DESCRIPTION |
|---|---|
| # | This is the number of an individual entry. |
| Device Name | This field is available when you select a signature profile on a ZyNOS ZyWALL. This field displays the name of each device that is on in the folder. |
| Status | This field is available when you select a signature profile on a ZyNOS ZyWALL.<br><br>This displays the current status of the device. You can only restore the configuration file of a device that is **Ready**. |
| Name | This field is available when you select a signature profile on a ZLD-based ZyWALL.<br><br>This field displays the name of the profile you created. |

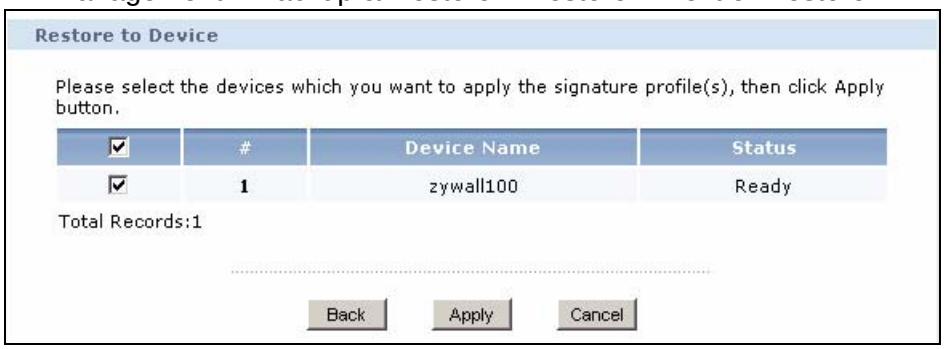
**Table 185** Device Operation > Configuration Management > Signature Profile Management > Backup & Restore > Restore (Folder) (continued)

| TYPE | DESCRIPTION |
|---|---|
| Base Profile | This field is available when you select a signature profile on a ZLD-based ZyWALL.<br>This field displays the base profile from which the profile was created. |
| Total Records | This entry displays the total number of records on the current page of the device list. |
| Restore | Select the check box next to one or more devices and click this to restore the specified configuration file and signatures to them. |
| Cancel | Click this to return to the previous screen without applying any changes. |
| Back | Click this to discard the changes and back to the previous screen. |
| Next | Click this to take you to a screen where you can confirm which device(s) to restore the signature profile(s). |

## 17.6.4 Restore to Device

Use this screen to specify device(s) in the selected folder to which you want to restore the selected signature profiles. To open this screen, select an existing profile and click **Next** or **Restore** in the **Device Operation** > **Configuration Management > Signature Profile Management > Backup & Restore** > **Restore** screen.

**Figure 208** Device Operation > Configuration Management > Signature Profile Management > Backup & Restore > Restore > Next or Restore




The following table describes the fields in this screen.

**Table 186** Device Operation > Configuration Management > Signature Profile Management > Backup & Restore > Restore > Next or Restore

| TYPE | DESCRIPTION |
|---|---|
| # | This is the number of an individual entry. |
| Device Name | This field displays the name of each device that is on in the folder. |
| Status | This displays the current status of the device. You can only restore the configuration file of a device that is **Ready**. |

**Table 186** Device Operation > Configuration Management > Signature Profile Management > Backup & Restore > Restore > Next or Restore (continued)

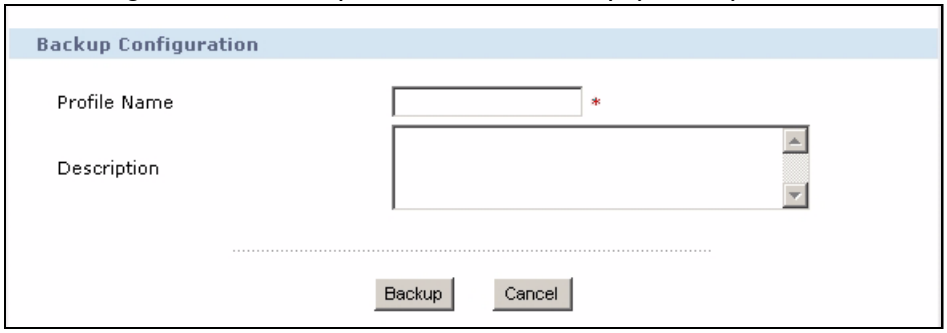
| TYPE | DESCRIPTION |
|---|---|
| Total Records | This entry displays the total number of records on the current page of the device list. |
| Back | Click this to discard the changes and back to the previous screen. |
| Apply | Select one or multiple device(s) and click this to perform signature profile restore to the selected device(s). |
| Cancel | Click this to discard the changes and back to the **Backup & Restore** screen. |

## 17.6.5 Signature Profile Backup (Device)

Use this screen to back up the anti-virus or IDP configuration and signatures for a specific device. The configuration may be stored in the Vantage CNM server or on the computer from which you access Vantage CNM. To open this screen, click **Backup** in the **Device Operation** > **Configuration Management > Signature Profile Management > Backup & Restore** screen.

Note: You cannot use this screen if the device's Turbo Card is not installed.

**Figure 209** Device Operation > Configuration Management > Signature Profile Management > Backup & Restore > Backup (Device)




The following table describes the fields in this screen

**Table 187** Device Operation > Configuration Management > Signature Profile Management > Backup & Restore > Backup (Device)

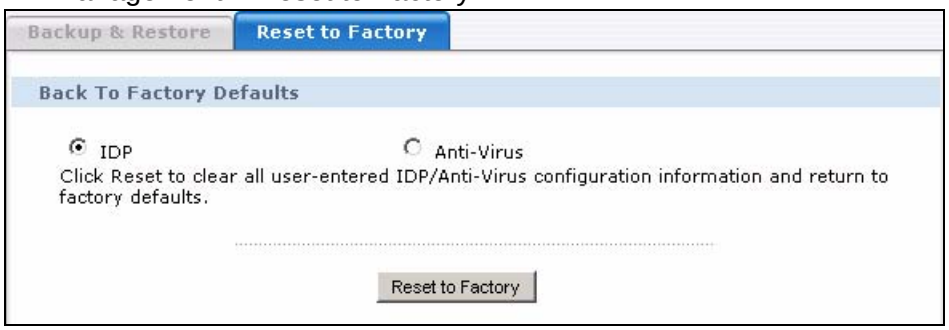
| TYPE | DESCRIPTION |
|---|---|
| Profile Name | This displays the name associated with the configuration file and signatures. |
| Description | This displays a description that was entered at the time of backup. |
| Backup | Click this to back up the signatures for the device and save it as the configured profile name. |
| Cancel | Click this to return to the previous screen without applying any changes. |

### 17.6.6 Reset to Factory

Use this screen to restore anti-virus or IDP configuration to factory default to a device. You can track the status and look at the results of this operation in the Operation Report. See Section 27.6 on page 549. To open this screen, select the device, click **Device Operation** in the menu bar and then click **Configuration Management > Signature Profile Management > Reset to Factory** in the navigation panel.

Note: At the time of writing, this screen is not available for ZLD-based ZyWALL.

**Figure 210** Device Operation > Configuration Management > Signature Profile Management > Reset to Factory




The following table describes the fields in this screen

**Table 188** Device Operation > Configuration Management > Signature Profile Management > Reset to Factory

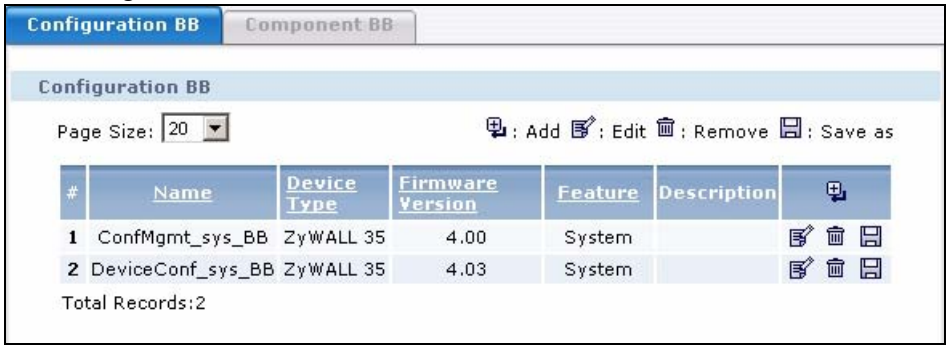
| TYPE | DESCRIPTION |
|---|---|
| IDP/Anti-Virus | Select the service whose configuration you want to manage. |
| Reset to Factory | Click this to reset the selected service configuration to factory default. |

## 17.7 Configuration Building Block

Use this menu item to manage building blocks to the selected device. To open this menu item, select the device, click the **Device Operation** in the menu bar and

then click **Configuration Management > Building Block > Configuration BB** in the navigation panel.

**Figure 211** Device Operation > Configuration Management > Building Block > Configuration BB




The following table describes the fields in this screen

**Table 189** Device Operation > Configuration Management > Building Block > Configuration BB

| TYPE | DESCRIPTION |
|---|---|
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| Name | This displays the name of the configuration BB. |
| Device Type | This displays the type of the device that the building block was associated to and entered when it is created. |
| Firmware Version | This displays the firmware version of the device that the building block was associated to and entered when the BB is created. |
| Feature | This displays the associated features of the BB. |
| Description | This displays a description that was entered at the time the BB is created. |
| Add | Click this to display a screen where you can add a configuration BB. |
| Edit | Click this to modify an existing configuration BB. |
| Remove | Click this to remove a configuration BB. |
| Save as | Click this to copy a configuration BB to another one. |
| Total Records | This entry displays the total number of records on the current page of the list. |

# 17.8 Add/Edit a Configuration BB

Use this menu item to manage building blocks to the selected device. To open this menu item, click **Add**, **Edit** or **Save as** in the **Device Operation** > **Configuration Management > Building Block > Configuration BB** screen.

**Figure 212** Device Operation > Configuration Management > Building Block > Configuration BB > Add

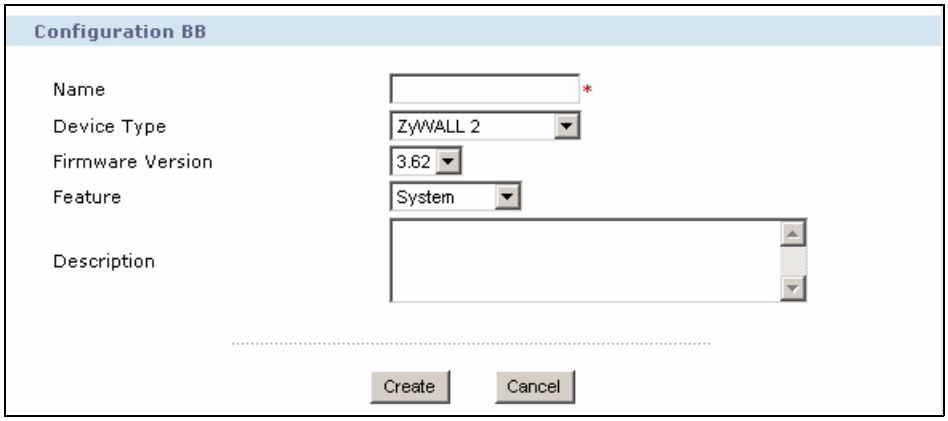



**Figure 213** Device Operation > Configuration Management > Building Block > Configuration BB > Edit

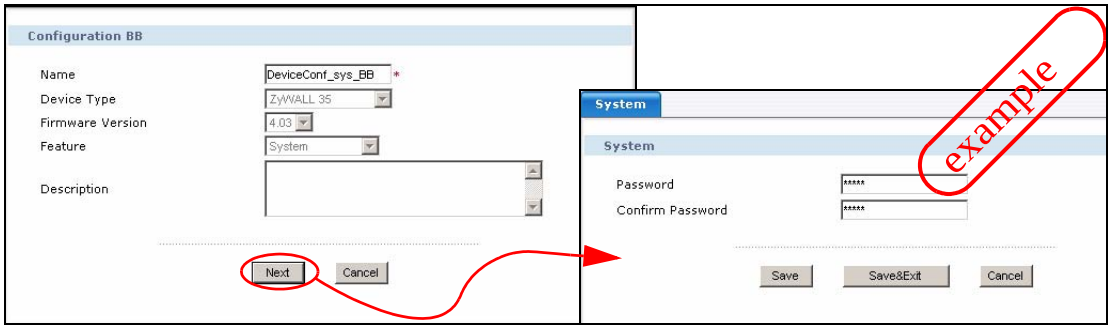
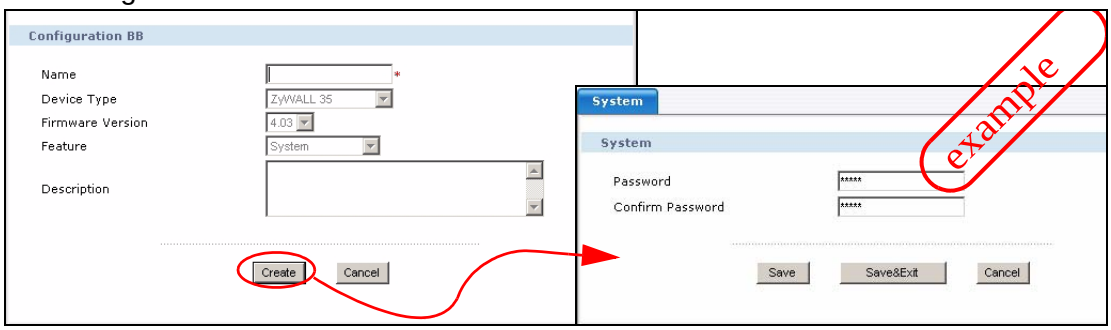



**Figure 214** Device Operation > Configuration Management > Building Block > Configuration BB > Save as



The following table describes the fields in this screen.

**Table 190** Device Operation > Configuration Management > Building Block > Configuration BB > Add/Edit/Save As

| TYPE | DESCRIPTION |
|---|---|
| Name | Enter a unique name for the building block. The name must be 1-32 alphanumeric characters, dashes (-) or underscores (_). It cannot include spaces. The name is case-sensitive. |
| Device Type | Select the type of device the building block is for. |
| Firmware Version | Select the firmware version the building block is for. |

**Table 190** Device Operation > Configuration Management > Building Block > Configuration BB > Add/Edit/Save As (continued)

| TYPE | DESCRIPTION |
|---|---|
| Feature | Select the menu item the building block is for, the corresponding screen (as the following screens) displays after you click **Create**.<br><br>Refer to **Device Operation** > **Device Configuration** > **General** > **System** (see Section 4.1 on page 51) if you select **System**.<br><br>Refer to **Device Operation** > **Device Configuration** > **General** > **Time Setting** (see Section 4.2 on page 52) if you select **Time Setting**.<br><br>Refer to **Device Log** -> **Device Operation** > **Device Configuration** > **Device Log** (see Section 8.1 on page 241) if you select **Device Log**.<br><br>Refer to **Device Operation** > **Device Configuration** > **Security** > **Firewall** (see Section 6.1 on page 123) if you select **Firewall**.<br><br>Refer to **Device Operation** > **Device Configuration** > **Security** > **Anti-Spam** (see Section 6.5 on page 164) if you select **Anit-Spam**.<br><br>Refer to **Device Operation** > **Device Configuration** > **Security** > **Anti-Virus** (see Section 6.4 on page 162) if you select **Anti-Virus**.<br><br>Refer to **Device Operation** > **Device Configuration** > **Security** > **IDP** (see Section 6.7 on page 174) if you select **IDP**.<br><br>Refer to **Device Operation** > **Device Configuration** > **Security** > **Signature Update** (see Section 6.10 on page 186) if you select **Signature Update**.<br><br>Refer to **Device Operation** > **Device Configuration** > **Security** > **Content Filter** (see Section 6.11 on page 189) if you select **Content Filter**.<br><br>Refer to **Device Operation** > **Device Configuration** > **Advanced** > **Remote Management** (see Section 7.13 on page 236) if you select **Remote MGMT**.<br><br>Refer to **Device Operation** > **Device Configuration** > **Security** > **VPN** (see Section 6.2 on page 137) if you select **VPN**.<br><br>Refer to **Device Operation** > **Device Configuration** > **Object** > **Schedule (One Time) > Add** (see Section 17.8.1 on page 436) if you select **ZLD Schedule**.<br><br>Refer to **Device Operation** > **Device Configuration** > **Object** > **User/Group > Add** (see Section 17.8.2 on page 437) if you select **ZLD User**.<br><br>Refer to **Device Operation** > **Device Configuration** > **Object** > **Address** > **Add** (see Section 17.8.3 on page 439) if you select **ZLD Address**.<br><br>Refer to **Device Operation** > **Device Configuration** > **Object** > **Service** > **Add** (see Section 17.8.4 on page 440) if you select **ZLD Service**. |
| Description | Enter a description of the building block. You can enter up to 256 printable ASCII characters and spaces. |

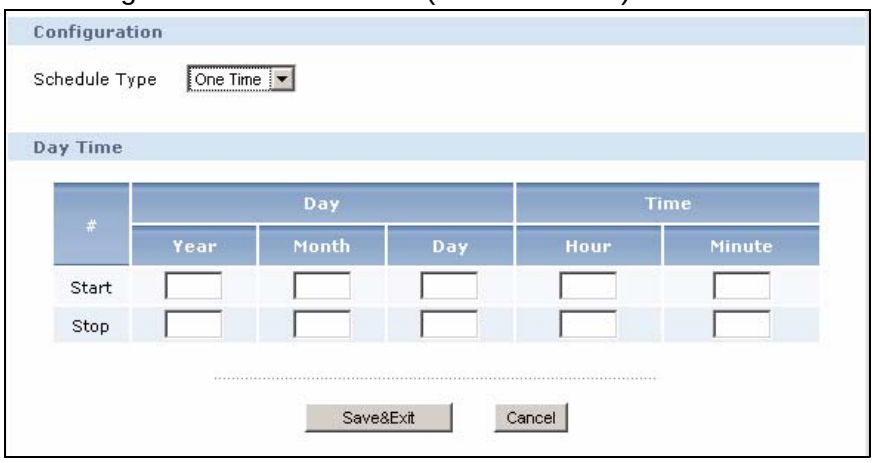
**Table 190** Device Operation > Configuration Management > Building Block > Configuration BB > Add/Edit/Save As (continued)

| TYPE | DESCRIPTION |
|---|---|
| Create | This is available when you add or copy a configuration BB using<br><br>save as. Click this to create the building block, if necessary, and edit the detailed configuration for the selected device type, firmware version, and menu item. Click this also displaying a screen you can continue the BB setting depending on the feature you selected. |
| Next | This is available when you edit a configuration BB. Click this to display a screen where you can continue the BB setting depending on the feature you selected. |
| Cancel | Click this to return to the previous screen without applying any changes. |

## 17.8.1 Create a Schedule Configuration BB (ZLD)

If you select a ZLD ZyWALL model and **ZLD Schedule** in the **Device Operation** > **Configuration Management > Building Block > Configuration BB** > **Add** or **Edit** screen, the following screen appears. Use this menu item to create a schedule configuration building block.

**Figure 215** Device Operation > Configuration Management > Building Block > Configuration BB > Add/Edit (ZLD Schedule) > Create



The following table describes the fields in this screen.

**Table 191** Device Operation > Configuration Management > Building Block > Configuration BB > Add/Edit (ZLD Schedule) > Create

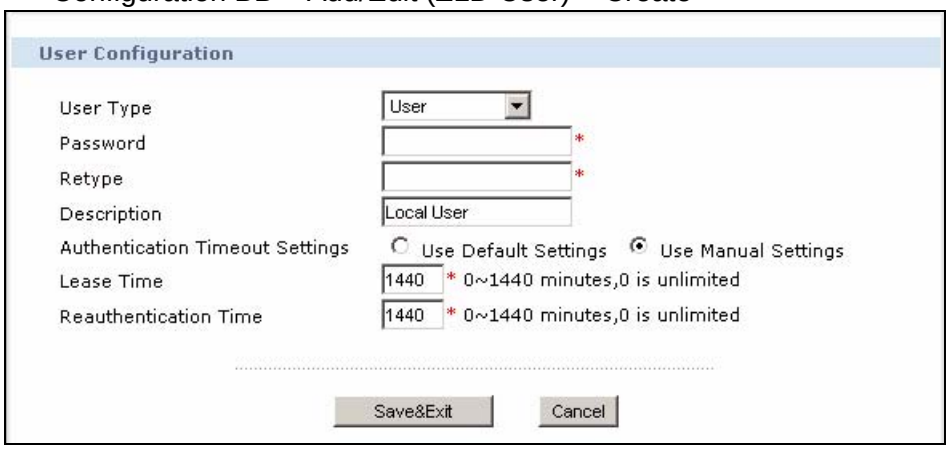
| TYPE | DESCRIPTION |
|---|---|
| Configuration | |
| Schedule Type | Select **One Time** to configure a schedule at a specific time. For example, a schedule starts at 2009/7/20 23:00 and stops at 2009/7/20 23:30.<br>Select **Recurring** to configure a recurring schedule. For example, a schedule starts at 23:00 and stops at 23:30 on Mondays. |
| Day Time | |
| Start | Type the year, month, day, hour, and minute when the schedule begins.<br>**Year** - 1900 - 2999<br>**Month** - 1 - 12<br>**Day** - 1 - 31 (it is not possible to specify illegal dates, such as February 31.)<br>**Hour** - 0 - 23<br>**Minute** - 0 - 59<br>All of these fields are required. |
| Stop | Type the year, month, day, hour, and minute when the schedule ends.<br>**Year** - 1900 - 2999<br>**Month** - 1 - 12<br>**Day** - 1 - 31 (it is not possible to specify illegal dates, such as February 31.)<br>**Hour** - 0 - 23<br>**Minute** - 0 - 59<br>All of these fields are required. |
| Weekly | This section is available when you select **Recurring** in the **Schedule Type** field. |
| Week Days | Select each day of the week the recurring schedule is effective. |
| Save&Exit | Click this to save your changes and back to the previous screen. |
| Cancel | Click this to exit this screen without saving your changes. |

## 17.8.2 Create a User Configuration BB (ZLD)

If you select a ZLD ZyWALL model and **ZLD User** in the **Device Operation** > **Configuration Management > Building Block > Configuration BB** > **Add** or

**Edit** screen, the following screen appears. Use this menu item to create a user configuration building block.

**Figure 216** Device Operation > Configuration Management > Building Block > Configuration BB > Add/Edit (ZLD User) > Create




The following table describes the fields in this screen.

**Table 192** Device Operation > Configuration Management > Building Block > Configuration BB > Add/Edit (ZLD User) > Create

| TYPE | DESCRIPTION |
|---|---|
| User Type | Select what type of user this is. Choices are:<br>• **Admin** - this user can look at and change the configuration of the ZyWALL<br>• **Limited-Admin** - this user can look at the configuration of the ZyWALL but not to change it<br>• **User** - this user has access to the ZyWALL's services but cannot look at the configuration<br>• **Guest** - this user has access to the ZyWALL's services but cannot look at the configuration<br>• **Ext-User** - this user account is maintained in a remote server, such as RADIUS or LDAP. |
| Password | This field is not available if you select the **Ext-User** user type.<br>Enter the password of this user account. It can consist of 4 - 30 alphanumeric characters. |
| Retype | This field is not available if you select the **Ext-User** user type. Enter the password again. |
| Description | Enter the description of each user, if any. You can use up to 60 printable ASCII characters. Default descriptions are provided. |
| Authentication Timeout Settings | If you want to set authentication timeout to a value other than the default settings, select **Use Manual Settings** then fill your preferred values in the fields that follow. |

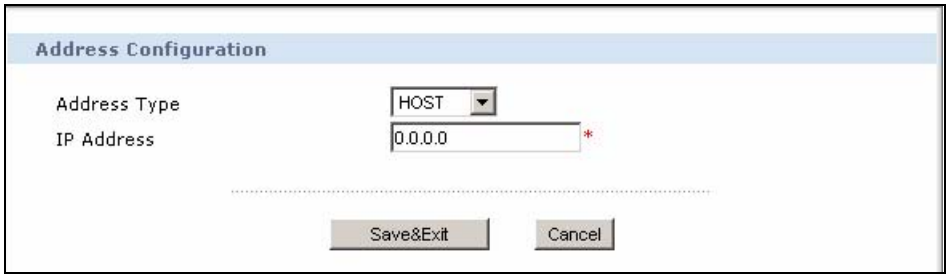
**Table 192** Device Operation > Configuration Management > Building Block > Configuration BB > Add/Edit (ZLD User) > Create (continued)

| TYPE | DESCRIPTION |
|---|---|
| Lease Time | Enter the number of minutes this user has to renew the current session before the user is logged out. You can specify 1 to 1440 minutes. You can enter 0 to make the number of minutes unlimited. Admin users renew the session every time the main screen refreshes in the Web Configurator. Access users can renew the session by clicking the **Renew** button on their screen. If you allow access users to renew time automatically (see Section 14.3 on page 362), the users can select this check box on their screen as well. In this case, the session is automatically renewed before the lease time expires. |
| Reauthentication Time | Type the number of minutes this user can be logged into the ZyWALL in one session before the user has to log in again. You can specify 1 to 1440 minutes. You can enter 0 to make the number of minutes unlimited. Unlike **Lease Time**, the user has no opportunity to renew the session without logging out. |
| Save&Exit | Click this to save your changes and back to the previous screen. |
| Cancel | Click this to exit this screen without saving your changes. |

## 17.8.3 Create an Address Configuration BB (ZLD)

If you select a ZLD ZyWALL model and **ZLD Address** in the **Device Operation** > **Configuration Management > Building Block > Configuration BB** > **Add** or **Edit** screen, the following screen appears. Use this menu item to create an address configuration building block.

**Figure 217** Device Operation > Configuration Management > Building Block > Configuration BB > Add/Edit (ZLD Address) > Create



The following table describes the fields in this screen.

**Table 193** Device Operation > Configuration Management > Building Block > Configuration BB > Add/Edit (ZLD Address) > Create

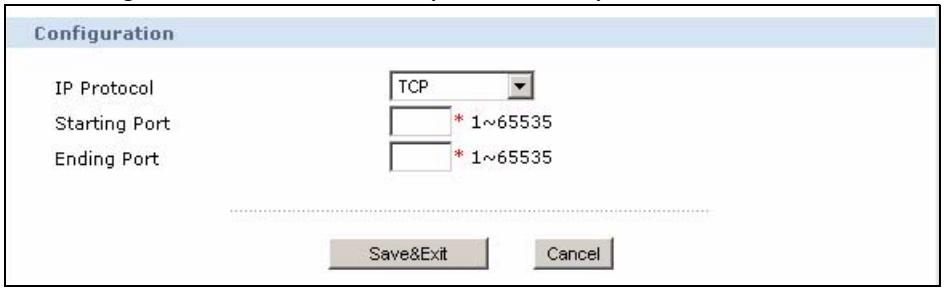
| TYPE | DESCRIPTION |
|---|---|
| Address Type | Select the type of address you want to create. Choices are: **HOST**, **RANGE**, **SUBNET**.<br><br>Note: The ZyWALL automatically updates address objects that are based on an interface's IP address, subnet, or gateway if the interface's IP address settings change. For example, if you change ge1's IP address, the ZyWALL automatically updates the corresponding interface-based, LAN subnet address object. |
| IP Address | This field is only available if the **Address Type** is **HOST**. This field cannot be blank. Enter the IP address that this address object represents. |
| Starting IP Address | This field is only available if the **Address Type** is **RANGE**. This field cannot be blank. Enter the beginning of the range of IP addresses that this address object represents. |
| Ending IP Address | This field is only available if the **Address Type** is **RANGE**. This field cannot be blank. Enter the end of the range of IP address that this address object represents. |
| Network | This field is only available if the **Address Type** is **SUBNET**, in which case this field cannot be blank. Enter the IP address of the network that this address object represents. |
| Netmask | This field is only available if the **Address Type** is **SUBNET**, in which case this field cannot be blank. Enter the subnet mask of the network that this address object represents. Use dotted decimal format. |
| Save&Exit | Click this to save your changes and back to the previous screen. |
| Cancel | Click this to exit this screen without saving your changes. |

## 17.8.4 Create a Service Configuration BB (ZLD)

If you select a ZLD ZyWALL model and **ZLD Service** in the **Device Operation** > **Configuration Management > Building Block > Configuration BB** > **Add** or

**Edit** screen, the following screen appears. Use this menu item to create a service configuration building block.

**Figure 218** Device Operation > Configuration Management > Building Block > Configuration BB > Add/Edit (ZLD Service) > Create




The following table describes the fields in this screen.

**Table 194** Device Operation > Configuration Management > Building Block > Configuration BB > Add/Edit (ZLD Service) > Create

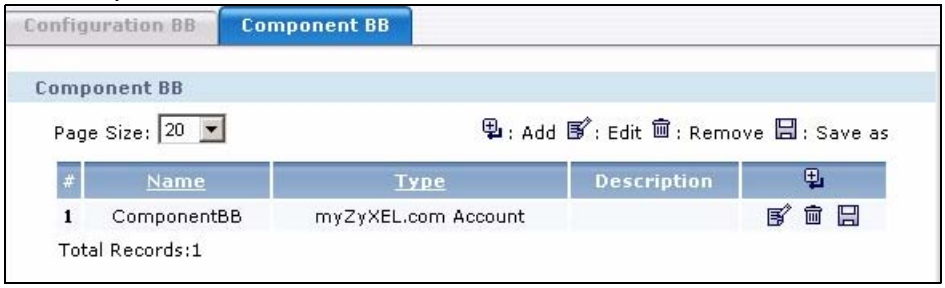
| TYPE | DESCRIPTION |
|---|---|
| IP Protocol | Select the protocol the service uses. Choices are: **TCP**, **UDP**, **ICMP**, and **User Defined**. |
| Starting Port<br><br>Ending Port | This field appears if the **IP Protocol** is **TCP** or **UDP**. Specify the port number(s) used by this service. If you fill in one of these fields, the service uses that port. If you fill in both fields, the service uses the range of ports. |
| ICMP Type | This field appears if the **IP Protocol** is **ICMP Type**.<br><br>Select the ICMP message used by this service. This field displays the message text, not the message number. |
| IP Protocol Number | This field appears if the **IP Protocol** is **User Defined**.<br><br>Enter the number of the next-level protocol (IP protocol). Allowed values are 0 - 255. |
| Save&Exit | Click this to save your changes and back to the previous screen. |
| Cancel | Click this to exit this screen without saving your changes. |

# 17.9 Component BB

Use this menu item to manage component building blocks to the selected device. A component BB is a part of setting such as a myZyXEL.com account, an IP address, an IKE phase 1 or phase2 setting. To open this menu item, select the

device, click **Device Operation** in the menu bar and then click **Configuration Management > Building Block > Component BB** in the navigation panel.

**Figure 219** Device Operation > Configuration Management > Building Block > Component BB




The following table describes the fields in this screen

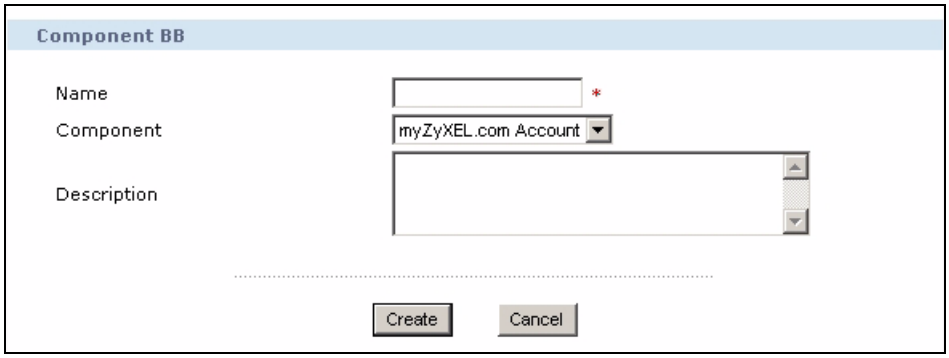
**Table 195** Device Operation > Configuration Management > Building Block > Component BB

| TYPE | DESCRIPTION |
|---|---|
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| Name | This displays the name of the BB. |
| Type | This displays the type of the BB selected when it was created. |
| Description | This displays a description that was entered at the time the BB is created. |
| Add | Click this to display a screen where you can add a BB. |
| Edit | Click this to modify an existing BB. |
| Remove | Click this to remove a BB. |
| Save as | Click this to copy a BB to another one. |
| Total Records | This entry displays the total number of records on the current page of the list. |

# 17.10 Add/Edit/Save as a Component BB

Use this menu item to add, edit, or copy a building block to the selected device. To open this menu item, click **Add**, **Edit**, or **Save as** in the **Device Operation** > **Configuration Management > Building Block > Component BB** screen.

**Figure 220** Device Operation > Configuration Management > Building Block > Component BB > Add/Edit/Save as




The following table describes the fields in this screen

**Table 196** Device Operation > Configuration Management > Building Block > Component BB > Add/Edit/Save as

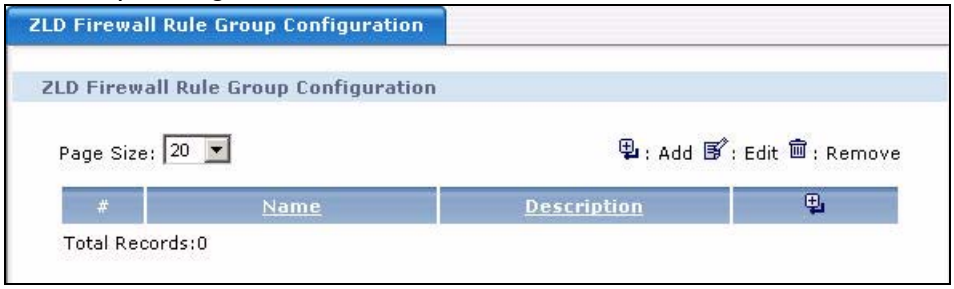
| TYPE | DESCRIPTION |
|---|---|
| Name | Enter a unique name for the building block. The name must be 1-32 alphanumeric characters or underscores (_). It cannot include spaces. The name is case-sensitive. |
| Component | Select the type of device the building block is for. |
| Description | Enter a description of the building block. You can enter up to 256 printable ASCII characters and spaces. |
| Create | Click this to create the building block. |
| Cancel | Click this to return to the previous screen without applying any changes. |

# 17.11 ZLD Firewall Rule Group Configuration

Use this menu item to list all configured firewall rule(s) that have applied to one or multiple ZLD-based ZyWALLs. To open this menu item, select the device, click

**Device Operation** in the menu bar and then click **Configuration Management > ZLD Firewall Rule Group Configuration** in the navigation panel.

**Figure 221** Device Operation > Configuration Management > ZLD Firewall Rule Group Configuration




The following table describes the fields in this screen.

**Table 197** Device Operation > Configuration Management > ZLD Firewall Rule Group Configuration

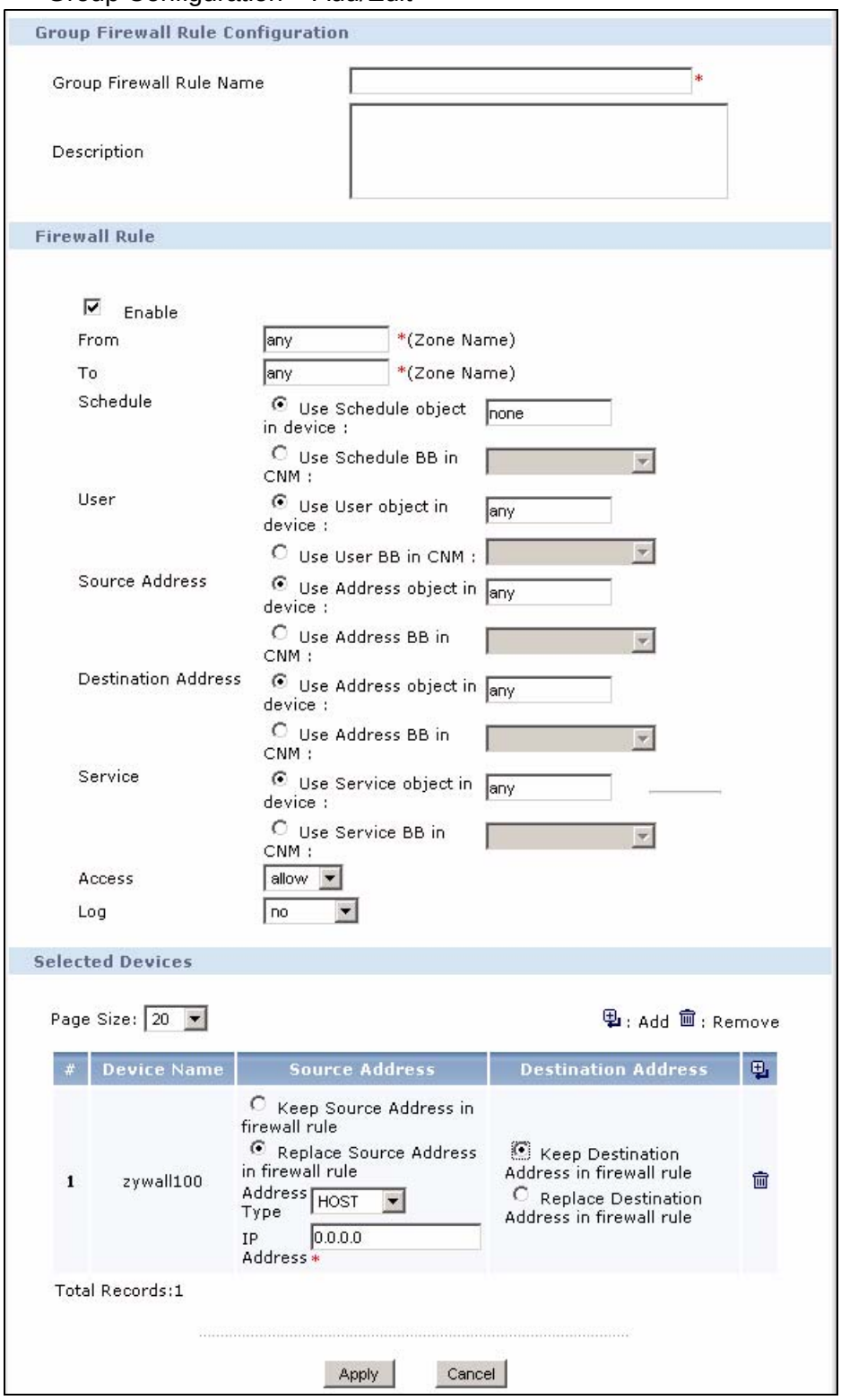
| TYPE | DESCRIPTION |
|---|---|
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| Name | This displays the name of a firewall rule. |
| Description | This displays a description that was entered at the time the firewall rule is created. |
| Add | Click this to display a screen where you can add a firewall rule. |
| Edit | Click this to modify an existing firewall rule. |
| Remove | Click this to remove a firewall rule. |
| Total Records | This displays the total number of firewall rules. |

# 17.12 Add/Edit a Firewall Rule Group

Use this menu item to add or edit a firewall rule and then apply it to one or multiple ZLD-based ZyWALL(s). To open this menu item, click **Add** or **Edit** in the

**Device Operation** > **Configuration Management > ZLD Firewall Rule Group Configuration** screen.

**Figure 222** Device Operation > Configuration Management > ZLD Firewall Rule Group Configuration > Add/Edit



The following table describes the fields in this screen

**Table 198** Device Operation > Configuration Management > ZLD Firewall Rule Group Configuration > Add/Edit

| TYPE | DESCRIPTION |
|---|---|
| Group Firewall Rule Configuration | |
| Group Firewall Rule Name | Enter a descriptive name of up to 32 characters for this firewall rule. You can use alphanumeric characters, underline (_) and hyphen (-). |
| Description | Enter a description for this firewall rule. You can enter up to 255 printable ASCII characters and spaces. |
| Firewall Rule | Configure the settings for this firewall rule in this section. |
| Enable | Select this check box to activate this firewall rule. |
| From<br>To | For through-ZyWALL rules, type a zone's name in the **From** field and another zone's name in the **To** field. These specify the direction of travel of packets to which the rule applies. |
| Schedule | Use this field to select a schedule that defines when the rule applies loaded from a schedule object or schedule BB.<br><br>If you want to use a user object that has been configured on the ZyWALL, select **Use Schedule object in device** and type the object's name.<br><br>If you want to use a schedule BB configured on Vantage CNM, select **Use Schedule BB in CNM** and select the BB. Select **Create Object** to configure a new one.<br><br>Otherwise, select **Use Schedule object in device** and type **none** if there is no need to apply a schedule. |
| User | Use this field to select a user name or user group to which to apply the rule loaded from a user object or user BB. The firewall rule is activated only when the specified user logs into the system and the rule will be disabled when the user logs out.<br><br>If you want to use a user object that has been configured on the ZyWALL, select **Use User object in device** and type the object's name (case sensitive).<br><br>If you want to use a user BB configured on Vantage CNM, select **Use User BB in CNM** and select the BB. Select **Create Object** to configure a new one.<br><br>Otherwise, select **Use User object in device** and type **any** if there is no need for user logging.<br><br>Note: If you specified a source IP address (group) instead of **any** in the field below, the user's IP address should be within the IP address range. |

**Table 198** Device Operation > Configuration Management > ZLD Firewall Rule Group Configuration > Add/Edit (continued)

| TYPE | DESCRIPTION |
|---|---|
| Source Address | Select a source address or address group for whom this rule applies.<br><br>If you want to use an address object hat has been configured on the ZyWALL, select **Use Address object in device** and type the object's name (case insensitive).<br><br>If you want to use an address BB configured on Vantage CNM, select **Use Address BB in CNM** and select the BB. Select **Create Object** to configure a new one.<br><br>Otherwise, Select **Use Address object in device** and type **any** if the policy is effective for every source. |
| Destination Address | Select a destination address or address group for whom this rule applies.<br><br>If you want to use an address object hat has been configured on the ZyWALL, select **Use Address object in device** to and type the object's name (case insensitive).<br><br>If you want to use an address BB configured on Vantage CNM, select **Use Address BB in CNM** and select the BB. Select **Create Object** to configure a new one.<br><br>Otherwise, Select **Use Address object in device** and type **any** if the rule is effective for every destination. |
| Service | Select a service or service group from the drop-down list box.<br><br>If you want to use a service object hat has been configured on the ZyWALL, select **Use Service object in device** to and type the object's name (case insensitive).<br><br>If you want to use a service BB configured on Vantage CNM, select **Use Service BB in CNM** to and select the service BB. Select **Create Object** to add a new service. See Chapter 39 on page 637 for more information.<br><br>Otherwise, Select **Use Service object in device** and type **any** if the rule is effective for every service. |
| Access | Use the drop-down list box to select what the firewall is to do with packets that match this rule.<br><br>Select **deny** to silently discard the packets without sending a TCP reset packet or an ICMP destination-unreachable message to the sender.<br><br>Select **reject** to deny the packets and send a TCP reset packet to the sender. Any UDP packets are dropped without sending a response packet.<br><br>Select **allow** to permit the passage of the packets. |
| Log | Select whether to have the Vantage CNM generate a log (**log**), log and alert (**log alert**) or not (**no**) when the rule is matched. See Chapter 48 on page 763 for more on logs. |
| Selected Devices | This section displays the device(s) to which this rule applies. |
| Page Size | Select how many records you want to see in each page. |

**Table 198** Device Operation > Configuration Management > ZLD Firewall Rule Group Configuration > Add/Edit (continued)

| TYPE | DESCRIPTION |
|---|---|
| # | This is the number of an individual entry. |
| Device Name | This field displays the name of ZLD-based ZyWALL(s) to which this rule applies. |
| Source Address | Use this field to select a source address setting to which the rule applies for the selected device.<br><br>Select **Keep Source Address in firewall rule** to use the source address setting configured in the **Firewall Rule** section above.<br><br>Select **Replace Source Address in firewall rule** to display additional fields that you can customize for this device. See Section 14.4.1 on page 370 for similar field description. |
| Destination Address | Use this field to select a destination address setting to which the rule applies for the selected device.<br><br>Select **Keep Destination Address in firewall rule** to use the destination address setting configured in the **Firewall Rule** section above.<br><br>Select **Replace Destination Address in firewall rule** to display additional fields that you can customize for this device. See Section 14.4.1 on page 370 for similar field description. |
| Add icon | This column provides icons to add, edit, and remove a device to which this firewall rule applies.<br><br>To add a device, click the **Add** icon at the top of the column.<br><br>To delete an existing device, click the **Remove** icon next to the device. The Web Configurator confirms that you want to delete the group before doing so. |
| Apply | Click this to save your changes back to the device. |
| Cancel | Click this to exit this screen without saving. |

# 18

# Firmware Management

## 18.1 Firmware List

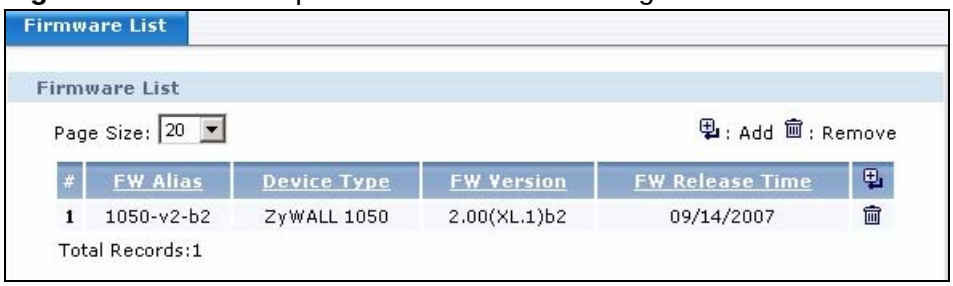
Use this screen to upload device firmware to Vantage CNM. It is recommended administrators subscribe to a ZyXEL mailing list to be regularly informed of new firmware versions.

All firmware files are downloaded to one repository within Vantage CNM. All firmware files are available to every administrator, regardless of domain.

After you upload a firmware file to Vantage CNM, you can use the **Device Operation > Firmware Management > Firmware List** menu item to upload it from Vantage CNM to one or more devices. See Section 18.3 on page 451.

Click **Device Operation** in the menu bar and then click **Firmware Management > Firmware List** to display the next screen.

**Figure 223** Device Operation > Firmware Management > Firmware List




The following table describes the fields in this screen.

**Table 199** Device Operation > Firmware Management > Firmware List

| TYPE | DESCRIPTION |
|---|---|
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| FW Alias | This is a descriptive name for the firmware. This is specified when the firmware is uploaded. See Section 18.1.1 on page 450. |
| Device Type | This field displays the model. You must upload firmware to the correct model. Vantage CNM should automatically detect firmware for the device selected. Uploading incorrect firmware may damage the device. |

**Table 199** Device Operation > Firmware Management > Firmware List (continued)

| TYPE | DESCRIPTION |
|---|---|
| FW Version | This field displays ZyXEL device firmware version. |
| FW Release Time | This field displays the date the firmware was created. |
| Add | Click **Add** to proceed to the next screen. |
| Remove | Click to delete a selected firmware from your Vantage CNM firmware management. |
| Total Records | This entry displays the total number of records on the current page of the list. |

## 18.1.1 Add Firmware

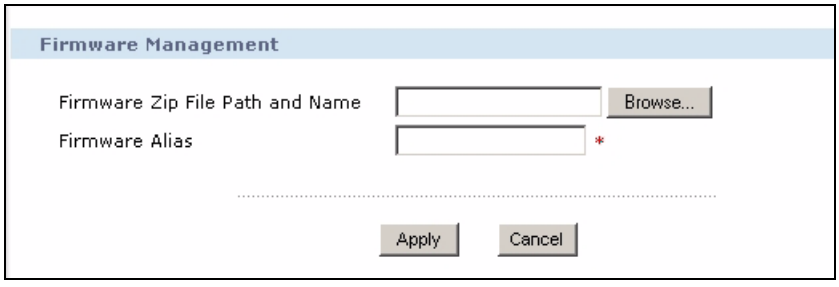
Use this screen to select the firmware you want to upload to Vantage CNM. To open this screen, click **Add** in the **Device Operation > Firmware Management > Firmware List** screen.

You must upload the whole firmware zip file, which contains the following:

- The device firmware (bin file extension). Only this firmware file is actually downloaded to the device.
- The device default configuration file (config file extension).
- Device firmware release notes (doc file extension) highlighting.
- Boot module with bm file extension.
- A file with XML file extension. Vantage CNM uses the XML file to gather the device type, firmware version and release date information.

Besides, you have to make sure the FTP information has been configurated properly in the **CNM System Setting** > **Configuration** > **Servers** > **Configuration**. See Section 30.1 on page 561.

**Figure 224** Device Operation > Firmware Management > Firmware List > Add




Type the file name and path of the firmware zip file, or click **Browse** to locate it. You may also create an alias that appears in the previous screen. Click **Apply** to load the firmware zip file to Vantage CNM. Then, click **Device Operation > Firmware Management > Firmware Upgrade** if you want to upload the firmware to one or more devices. See Section 18.3 on page 451.

# 18.2 Scheduler List

Use this screen to look at and maintain the list of scheduled firmware upgrades in Vantage CNM. Once an upgrade is completed, Vantage CNM removes the upgrade record from this screen and adds it to the **Log & Report** > **Operation Report** > **Firmware Upgrade Report**. See Section 27.1 on page 537. To open this screen, click a folder or a device, click **Device Operation** in the menu bar and then click **Firmware Management > Scheduler List**.

**Figure 225** Device Operation > Firmware Management > Scheduler List

The following table describes the fields in this screen.

**Table 200** Device Operation > Firmware Management > Scheduler List

| TYPE | DESCRIPTION |
|---|---|
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| FW Alias | This is a descriptive name for the firmware. This is specified when the firmware is uploaded. See Section 18.1.1 on page 450. |
| Upgrade Time | This field displays the time the upgrade is scheduled to occur. |
| Device Type | This field displays the type of device that is going to be upgraded. |
| Total Devices | This is available when you click a folder. This field displays the number of devices that are going to be upgraded. |
| Description | This field displays any additional information the administrator provided when setting up this upgrade. |
| Admin | This field displays the administrator who scheduled this upgrade. |
| Add | This is available if you click a folder. Click this to set up a firmware upgrade. Vantage CNM returns to the screen in Figure 226 on page 452. |
| Edit | This is available if you click a folder. Click this to modify a schedule. |
| Delete | Click to cancel or delete the selected upgrade(s) from Vantage CNM. |

# 18.3 Firmware Upgrade

Use this menu item to upload ZyXEL device firmware from Vantage CNM to one or more devices. You have to use the **Device Operation > Firmware**

**Management > Firmware List** menu item to upload firmware files from the ZyXEL FTP site (or other source) to Vantage CNM first. See Section 18.1 on page 449.

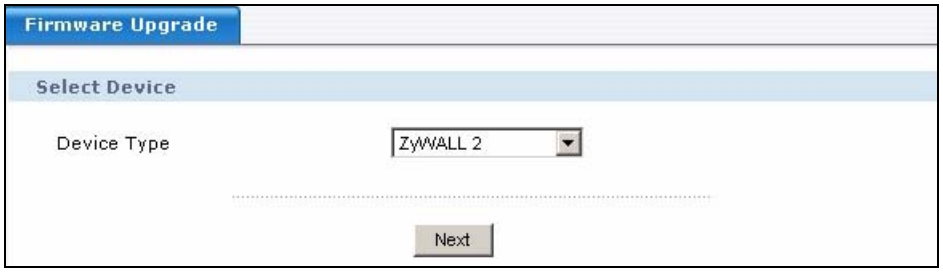
Consider the following when you decide to upgrade firmware.

- It is advisable to upgrade firmware during periods of low network activity, since each device must restart after firmware upload.
- You should also notify device owners before you begin the upload. See the **CNM System Setting > Configuration > Notification** screen.

## 18.3.1 Firmware Upgrade (Folder)

Use this screen to select what type of devices to which you want to upgrade firmware. To open this screen, select a folder in the device window, click **Device Operation** in the menu bar, and click **Firmware Management > Firmware Upgrade**.

**Figure 226** Device Operation > Firmware Management > Firmware Upgrade (Folder)

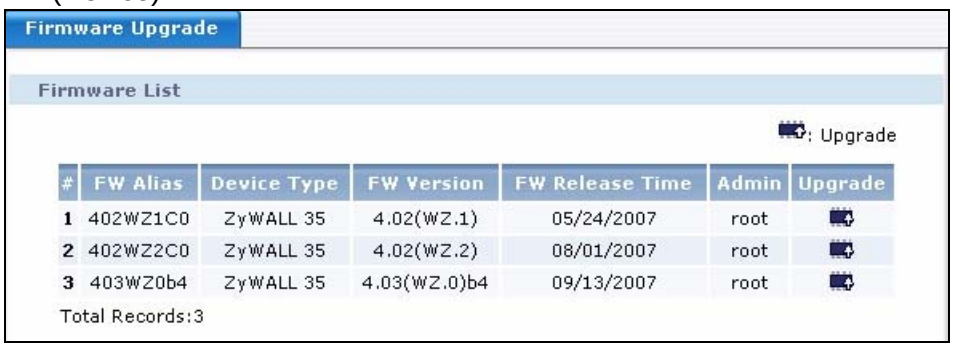



Pick a model name, and click **Next**. This opens a screen like the one in Section 18.3.2 on page 453.

## 18.3.2 Firmware Upgrade (Device)

Use this screen to upgrade a firmware to the selected device. To open this screen, select a device in the device window, click **Device Operation** in the menu bar, and then click **Firmware Management > Firmware Upgrade**.

**Figure 227** Device Operation > Firmware Management > Firmware Upgrade (Device)




The following table describes the fields in this screen.

**Table 201** Device Operation > Firmware Management > Firmware Upgrade (Device)

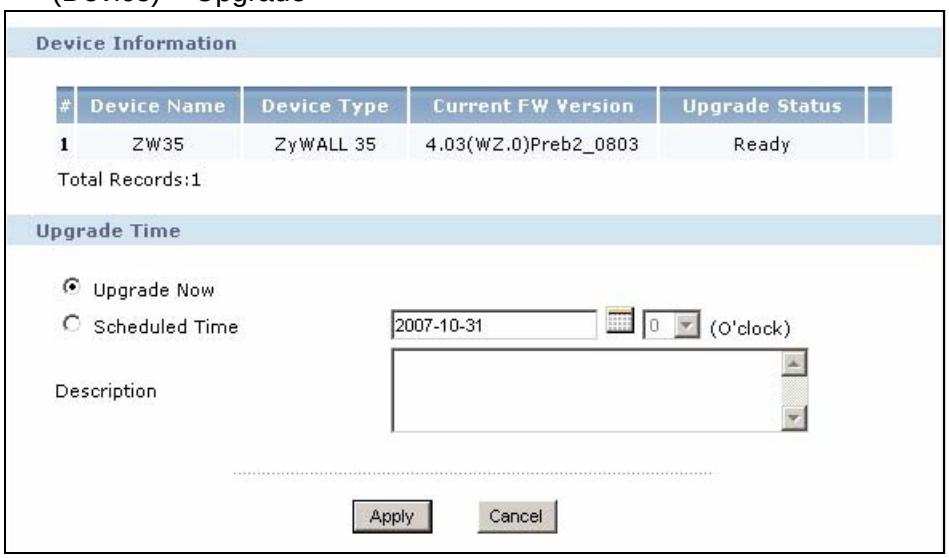
| TYPE | DESCRIPTION |
|---|---|
| # | This field displays the device number. |
| FW Alias | This is a descriptive name for the firmware. This is specified when the firmware is uploaded. See Section 18.1.1 on page 450. |
| Device Type | This field displays the model. You must upload firmware to the correct model. Vantage CNM should automatically detect firmware for the device selected. Uploading incorrect firmware may damage the device. |
| FW Version | This field displays ZyXEL device firmware version. It is blank if the device has not been registered. |
| FW Release Time | This field displays the date the firmware was created. |
| Admin | This field displays the administrator who downloaded this firmware file to Vantage CNM. |
| Upgrade | Click **Upgrade** to take you to a screen where you can upgrade the selected firmware to the device. |
| Total Records | This entry displays the total number of records on the current page of the list. |
| Back | Click this to return to the previous screen. |

## 18.3.3 Firmware Upgrade (Device) > Upgrade

Use this screen to perform the firmware upgrade to the selected device right away or define a schedule for it. To open this screen, click **Upgrade** on a firmware entry

in the **Device Operation > Firmware Management > Firmware Upgrade** screen (Refer to Figure 227 on page 453 ).

**Figure 228** Device Operation > Firmware Management > Firmware Upgrade (Device) > Upgrade




The following table describes the fields in this screen.

**Table 202** Device Operation > Firmware Management > Firmware Upgrade (Device) > Upgrade

| TYPE | DESCRIPTION |
|---|---|
| Device Information | This section displays the selected device(s) to which you will perform the firmware upgrade(s). |
| # | This is the number of an individual entry. |
| Device Name | This field displays the selected device name(s). |
| Device Type | This field displays the model. You must upload firmware to the correct model. Vantage CNM should automatically detect firmware for the device selected. Uploading incorrect firmware may damage the device. |
| Current FW Version | This field displays the firmware version the ZyXEL device is using. It is blank if the device has not been registered. |
| Upgrade Status | This field displays the device's current status. **Ready** means the device is ok to perform the firmware upgrade. **Offline** means the device is not currently connected to the Vantage CNM. **Not Yet Required** means the device has not connected to the Vantage CNM since it was added in the Vantage CNM. **Rom File Operating** means the device is busy for a configuration backup or restore. **Scheduled** means the device has been scheduled for a firmware upgrade. **Upgrading** means the device is processing a firmware upgrade.<br><br>You can perform the device firmware upgrade only when the status is **Ready**. |
| Total Records | This entry displays the total number of records on the current page of the list. |
| Upgrade Time | |

**Table 202** Device Operation > Firmware Management > Firmware Upgrade (Device) > Upgrade

| TYPE | DESCRIPTION |
|---|---|
| Upgrade Now | Select this if you want to perform the firmware upgrade right away. |
| Schedule Time | Select this radio box to define a time Vantage CNM server automatically perform upgrade for the device(s).<br><br>Select the calendar to specify a date for the upgrade schedule.<br><br>Select a time from **O'clock** to specify a time for the upgrade schedule.<br><br>After clicking **Apply**, you can see the scheduled firmware upgrade status in the **Device Operation > Firmware Management > Schedule List** before the upgrade is completed. |
| Description | Type the note for this firmware upgrade. |
| Apply | Click this to upload the firmware file for the device. |
| Cancel | Click this to close this screen without applying any changes. |

# 19

# License Management

## 19.1 Service Activation

Use this menu item to register the selected device and to activate subscription services.

Note: This menu item is available if you click a device.

### 19.1.1 Registration

Use this screen to register the selected device on www.myzyxel.com and to activate free trials for subscription services, such as IDP and content filtering. The Vantage CNM server must be connected to the Internet and have access to www.myzyxel.com. To open this screen, click **Device Operation** in the menu bar

and then click **License Management** > **Service Activation** > **Registration** in the navigation panel.

**Figure 229** Device Operation > License Management > Service Activation > Registration (ZyNOS ZyWALL)

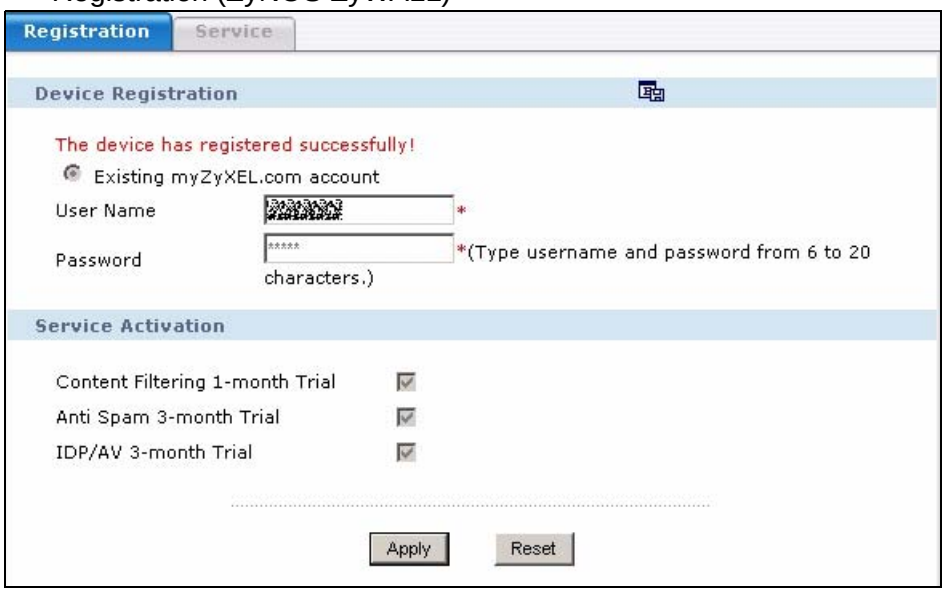
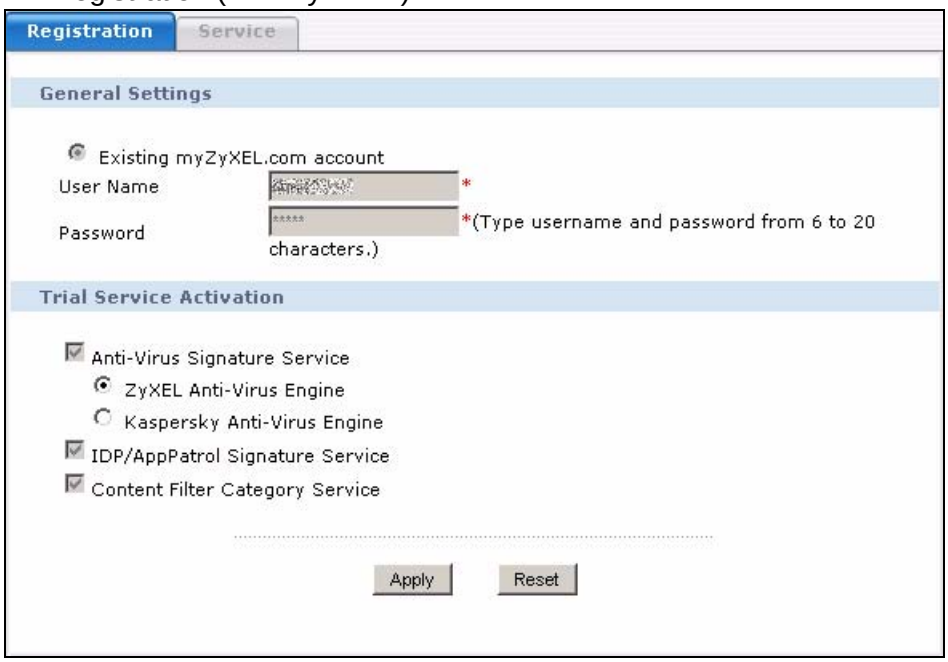
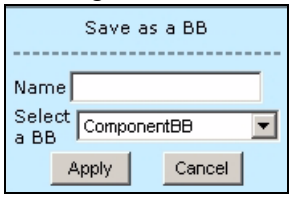



**Figure 230** Device Operation > License Management > Service Activation > Registration (ZLD ZyWALL)



Click the **Save as a BB** icon to save the current configuration of the selected device as a building block. The following pop-up screen appears.

**Figure 231** Device Operation > License Management > Service Activiation > Registration > Save as a BB




Enter the name of the new building block, and click **Apply**. The name must be 1-32 alphanumeric characters or underscores (_). It cannot include spaces. The name is case-sensitive.

The following table describes the labels in this screen.

**Table 203** Device Operation > License Management > Service Activation > Registration

| LABEL | DESCRIPTION |
|---|---|
| Device Registration / General Settings | If you select **Existing myZyXEL.com account**, only the **User Name** and **Password** fields are available. Click **Save as a BB** to save the current setting as a component building block. |
| New myZyXEL.com account | If you haven't created an account at myZyXEL.com, select this option and configure the following fields to create an account and register your device. |
| Existing myZyXEL.com account | If you already have an account at myZyXEL.com, select this option and enter your user name and password in the fields below to register your device. |
| User Name | Enter a user name for your myZyXEL.com account. The name should be from six to 20 alphanumeric characters (and the underscore). Spaces are not allowed. |
| Check | Click this button to check with the myZyXEL.com database to verify the user name you entered has not been used. |
| Password | Enter a password of between six and 20 alphanumeric characters (and the underscore). Spaces are not allowed. |
| Confirm Password | Enter the password again for confirmation. |
| E-Mail Address | Enter your e-mail address. You can use up to 80 alphanumeric characters (periods and the underscore are also allowed) without spaces. |
| Country | Select your country from the drop-down box list. |
| Service Activation / Trial Version Activation | These are trial service subscriptions. The trial period starts the day you activate the trial. After the trial expires, you can buy an iCard and enter the license key in the **Device Operation > License Management > Service Activation > Service** screen to extend the service. |
| Content Filtering 1-month Trial | Select the check box to activate a trial. The trial period starts the day you activate the trial. |

**Table 203** Device Operation > License Management > Service Activation > Registration (continued)

| LABEL | DESCRIPTION |
|---|---|
| Anti Spam 3-month Trial | Select the check box to activate a trial. The trial period starts the day you activate the trial. |
| IDP/AV 3-month Trial | Select the check box to activate a trial. The trial period starts the day you activate the trial. |
| Anti-Virus Signature Service | The Vantage CNM's anti-virus packet scanner uses the signature files on the Vantage CNM to detect virus files.<br><br>Select ZyXEL's anti-virus engine or the Kaspersky anti-virus engine. During the trial you can use these fields to change from one anti-virus engine to the other.<br><br>After the service is activated, the Vantage CNM can download the up-to-date signature files for the selected anti-virus engine from the update server (http://myupdate.zywall.zyxel.com). |
| IDP/AppPatrol Signature Service | The IDP and application patrol features use the IDP/AppPatrol signature files on the Vantage CNM. IDP detects malicious or suspicious packets and responds immediately. Application patrol conveniently manages the use of various applications on the network. After the service is activated, the Vantage CNM can download the up-to-date signature files from the update server (http://myupdate.zywall.zyxel.com).<br><br>You will get automatic e-mail notification of new signature releases from mySecurityZone after you activate the IDP/AppPatrol service. You can also check for new signatures at http://mysecurity.zyxel.com. |
| Content Filter Category Service | The content filter allows or blocks access to web sites. Subscribe to category-based content filtering to block access to categories of web sites based on content. Your Vantage CNM accesses an external database that has millions of web sites categorized based on content. You can have the Vantage CNM block, block and/or log access to web sites based on these categories. |
| Apply | Click this to save your changes. |
| Reset | Click this to begin configuring this screen afresh. |

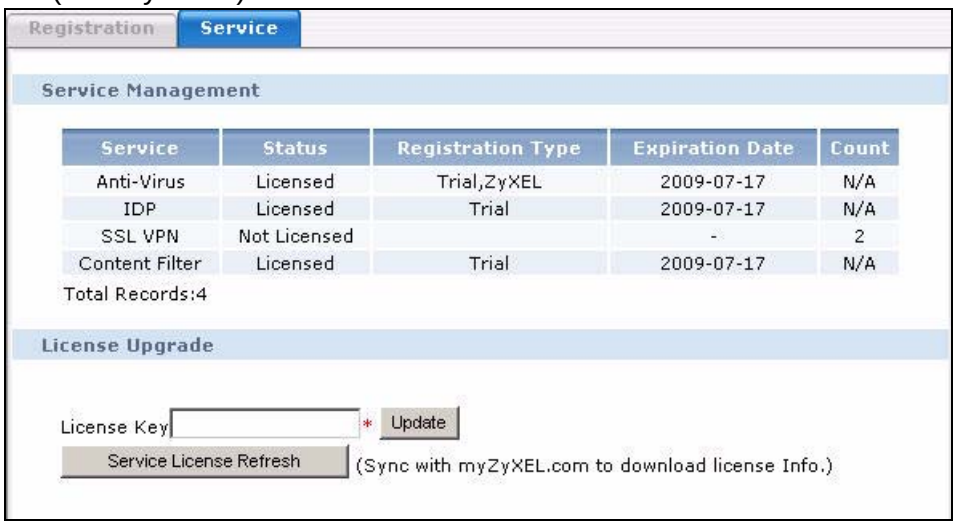
## 19.1.2 Service

Use this screen to look at or update the current status of subscription services, such as IDP and content filtering, in the selected device. The Vantage CNM server must be connected to the Internet and have access to www.myzyxel.com to update the current status. To open this screen, click a device, click **Device**

**Operation** in the menu bar and then click **License Management** > **Service Activation** > **Service** in the navigation panel

**Figure 232** Device Operation > License Management > Service Activation > Service (ZyNOS ZyWALL)

**Figure 233** Device Operation > License Management > Service Activation > Service (ZLD ZyWALL)




The following table describes the labels in this screen.

**Table 204** Device Operation > License Management > Service Activation > Service

| LABEL | DESCRIPTION |
|---|---|
| Service Management | |
| Service | This field displays the service name available on the device. |
| Status | This field displays whether a service is activated (**Active**) or not (**Inactive**) for a ZyNOS ZyWALL.<br><br>This field displays whether a service is activated (**Licensed**) or not (**Not Licensed**) or expired (**Expired**) for a ZLD-based ZyWALL. |

**Table 204** Device Operation > License Management > Service Activation > Service

| LABEL | DESCRIPTION |
|---|---|
| Registration Type | This field displays whether you applied for a trial application (**Trial**) or registered a service with your iCard's PIN number (**Standard**).<br><br>In addition for a ZLD-based ZyWALL, this field is blank when a service is not activated. For an anti-virus service subscription this field also displays the type of anti-virus engine. |
| Expiration Day / Expiration Date | This field displays the date your service expires.<br><br>In addition for a ZLD-based ZyWALL, you can continue to use IDP/ AppPatrol or Anti-Virus after the registration expires, you just won't receive updated signatures. |
| Count | This field is only available for a ZLD-based ZyWALL. This field displays how many VPN tunnels you can use with your current license. This field does not apply to the other services. |
| License Upgrade | |
| License Key | Enter your iCard's PIN number and click **Update** to activate or extend a standard service subscription.<br><br>If a standard service subscription runs out, you need to buy a new iCard (specific to your device) and enter the new PIN number to extend the service. |
| Service License Refresh | Click this button to renew service license information, such as the license key, registration status and expiration day. You might do this if you restore the device to the default configuration file or upload a different configuration file after you register the device on www.myzyxel.com. |

# 19.2 License Status

Use this screen to look at the current status of licenses for subscription services, such as IDP and content filtering. To open this screen, click a device, click **Device**

**Operation** in the menu bar and then click **License Management > License Status** in the navigation panel.

**Figure 234** Device Operation > License Management > License Status (ZyNOS ZyWALL)

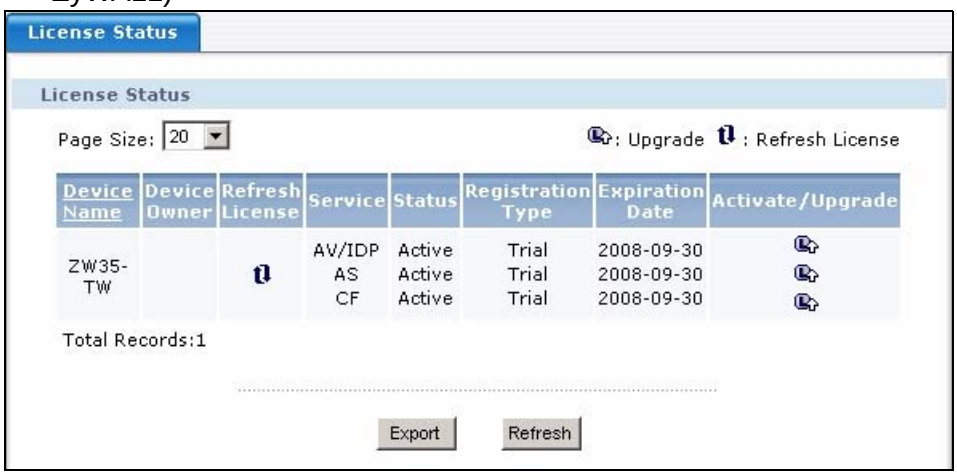
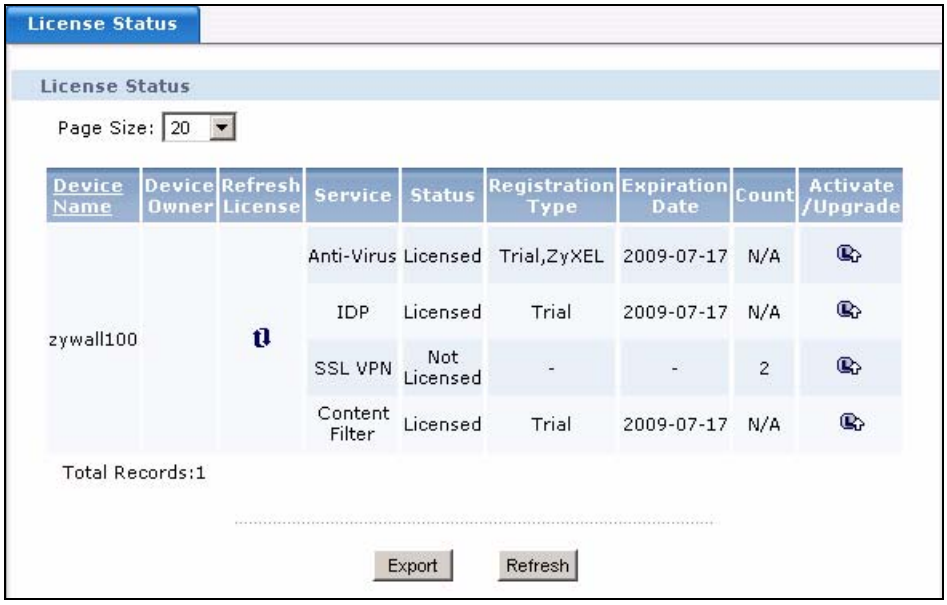



**Figure 235** Device Operation > License Management > License Status (ZLD ZyWALL)




The following table describes the labels in this screen.

**Table 205** Device Operation > License Management > License Status

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select how many records you want to see in each page. |
| Device Name | This field displays the name (and location in Vantage CNM) of the device. |
| Device Owner | This field displays owner's name of the device. |
| Refresh License | Click this to update the license status of the selected service(s) for the device. |

**Table 205** Device Operation > License Management > License Status (continued)

| LABEL | DESCRIPTION |
|---|---|
| Service | This field displays the name of the selected service(s). |
| Status | This field displays the current status of the license is available (**Active**) or not (**Inactive**) for this service on this device (for a ZyNOS ZyWALL).<br><br>This field displays whether a service is activated (**Licensed**) or not (**Not Licensed**) or expired (**Expired**) for a ZLD-based ZyWALL. |
| Registration Type | This field displays the type of license that is currently on the device. This is based on the last license that was set up on the device. For example, if you start with a trial version and upgrade to a standard license, this field shows the standard license.<br><br>In addition for a ZLD-based ZyWALL, this field is blank when a service is not activated. For an anti-virus service subscription this field also displays the type of anti-virus engine. |
| Expiration Date | This field displays the date the subscription is scheduled to expire or already expired on the device.<br><br>In addition for a ZLD-based ZyWALL, you can continue to use IDP/ AppPatrol or Anti-Virus after the registration expires, you just won't receive updated signatures. |
| Count | This field is only available for a ZLD-based ZyWALL. This field displays how many VPN tunnels you can use with your current license. This field does not apply to the other services. |
| Activate/ Upgrade | Click **Activate** to activate a trial version of the service or to apply a license for the service to the device.<br><br>Click **Upgrade** to apply a license for the service to the device. |
| Total Records | This entry displays the total number of records on the current page of the device list. |
| Export | Click this to export the license status to a DeviceLicense.csv file. |
| Resfresh | Click this to update the information in this screen. |

## 19.2.1 Activate/Upgrade License

Use this screen to activate a trial version of the service, if available, or to apply a license for the service to the device. To open this screen, click **Upgrade** in the **Device Operation > License Management > License Status** screen.

**Figure 236** Device Operation > License Management > License Status > Upgrade (ZyNOS ZyWALL)

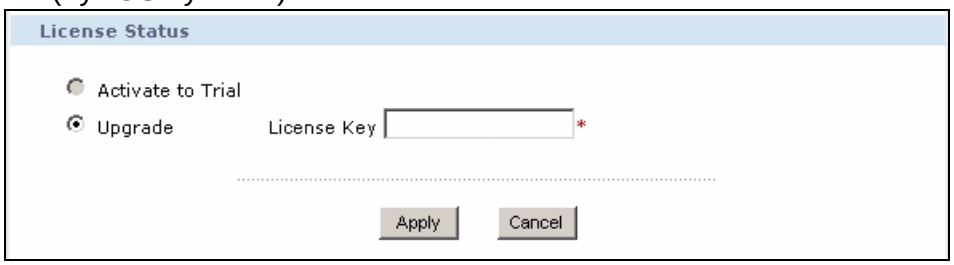
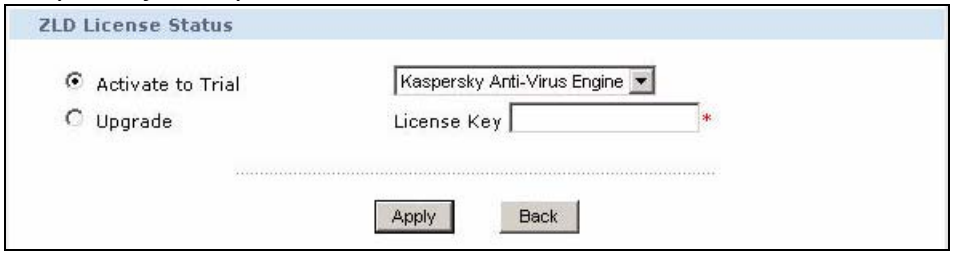



**Figure 237** Device Operation > License Management > License Status > Upgrade (ZLD ZyWALL)




The following table describes the labels in this screen.

**Table 206** Device Operation > License Management > License Status > Activate/ Upgrade

| LABEL | DESCRIPTION |
|---|---|
| Active to Trial | This field is available if a trial version of the service is available for the device.<br><br>Select this and click **Apply** to activate a trial version of the service for the device.<br><br>In addition for a ZLD-based ZyWALL, you have to select whether using ZyXEL's anti-virus engine or the one powered by Kaspersky.<br><br>Upgrading the ZLD-based ZyWALL to firmware version 2.11 and updating the anti-virus signatures automatically upgrades the ZyXEL anti-virus engine to v2.0. v2.0 has more virus signatures and offers improved non-executable file scan throughput. |
| Upgrade | Select this if you want to apply a license for the service to the device. |
| License Key | Enter your iCard's PIN number. If a standard service subscription runs out, you need to buy a new iCard (specific to your device) and enter the new PIN number to extend the service. |
| Apply | Click this to activate the trial version or apply the specified license to the device. |
| Cancel / Back | Click this to return to the previous screen without making any changes. |

# 19.3 License Status (Folder)

Use this screen to look at the license status for subscription service(s) on ZyWALLs under a folder that you selected. You can also search specific license information based on your input criteria. To open this screen, click a folder and then click **Device Operation** > **License Management > License Status**.

**Figure 238** Device Operation > License Management > License Status (Folder) > ZLD Series

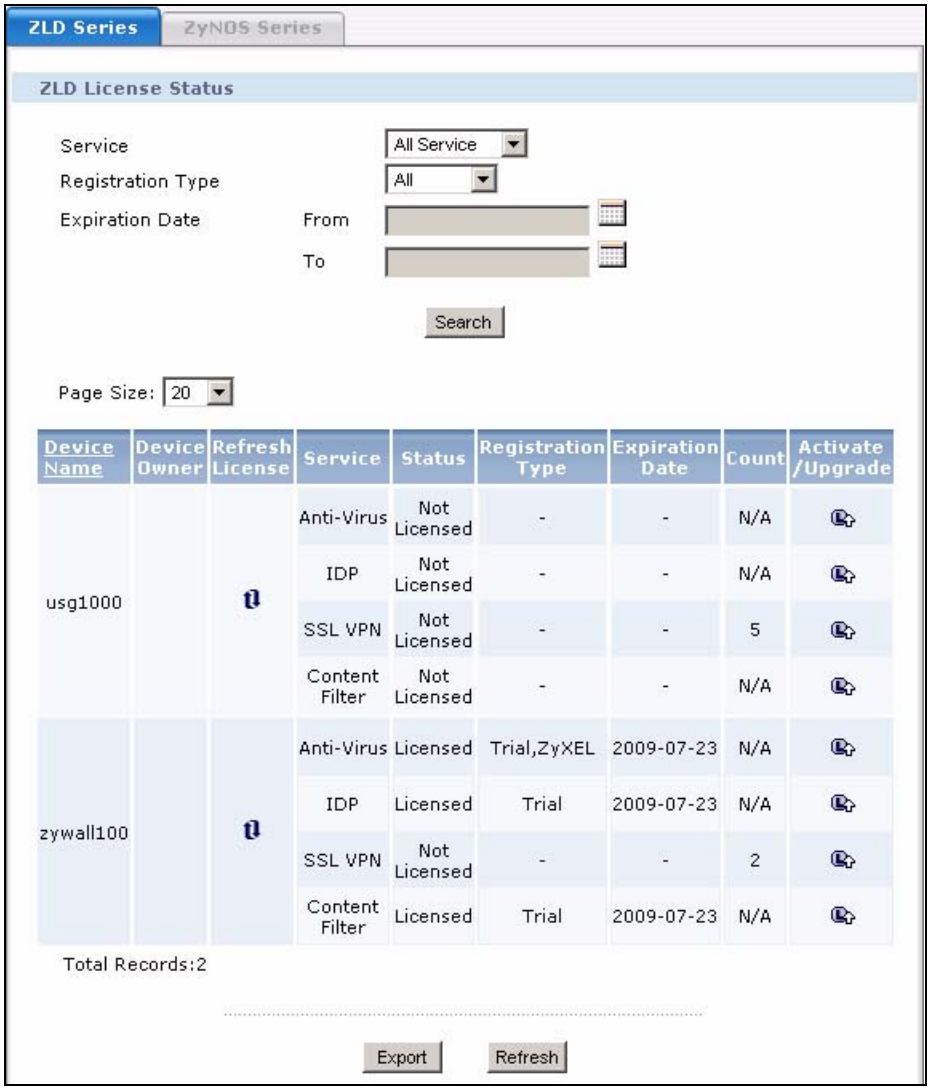
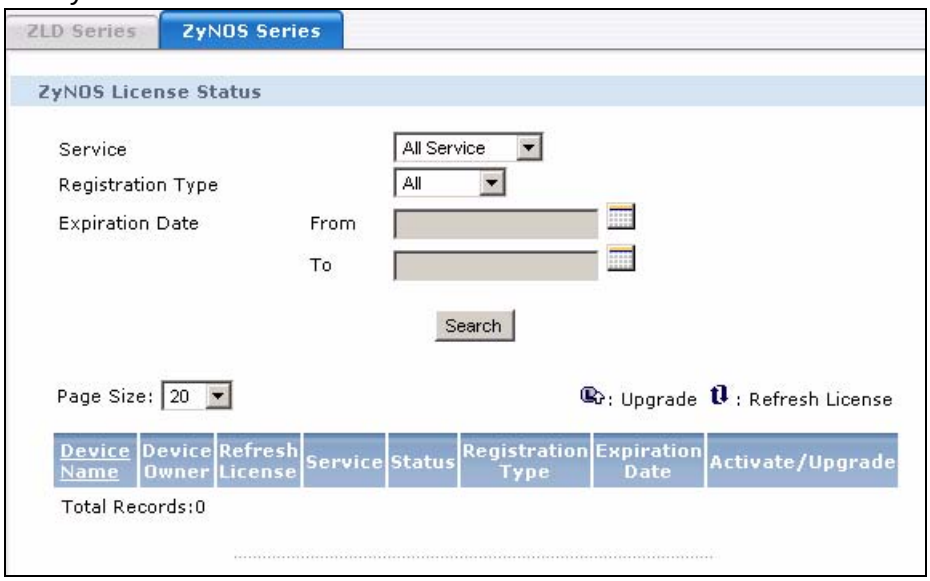


**Figure 239** Device Operation > License Management > License Status (Folder) > ZyNOS Series




The following table describes the labels in this screen.

**Table 207** Device Operation > License Management > License Status (Folder) > ZLD/ZyNOS Series

| LABEL | DESCRIPTION |
|---|---|
| Service | Select the name of a service or select **All Service** for the query criteria. |
| Registration Type | Select the type of license for the query criteria. |
| Expiration Date | Type the duration (in the **From** and **To** fields) within which the subscription is scheduled to expire or already expired on the device. You can also click the **calender** icon to specify a date. |
| Search | Click this to perform the search. |
| Page Size | Select how many records you want to see in each page. |
| Device Name | This field displays the name (and location in Vantage CNM) of the device. |
| Device Owner | This field displays owner's name of the device. |
| Refresh License | Click this to update the license status of the selected service(s) for the device. |
| Service | This field displays the name of the selected service(s). |
| Status | This field displays the current status of the license is available (**Active**) or not (**Inactive**) for this service on this device (for a ZyNOS ZyWALL).<br>This field displays whether a service is activated (**Licensed**) or not (**Not Licensed**) or expired (**Expired**) for a ZLD-based ZyWALL. |

**Table 207** Device Operation > License Management > License Status (Folder) > ZLD/ZyNOS Series (continued)

| LABEL | DESCRIPTION |
|---|---|
| Registration Type | This field displays the type of license that is currently on the device. This is based on the last license that was set up on the device. For example, if you start with a trial version and upgrade to a standard license, this field shows the standard license.<br><br>In addition for a ZLD-based ZyWALL, this field is blank when a service is not activated. For an anti-virus service subscription this field also displays the type of anti-virus engine. |
| Expiration Date | This field displays the date the subscription is scheduled to expire or already expired on the device.<br><br>In addition for a ZLD-based ZyWALL, you can continue to use IDP/ AppPatrol or Anti-Virus after the registration expires, you just won't receive updated signatures. |
| Count | This field is only available for a ZLD-based ZyWALL. This field displays how many VPN tunnels you can use with your current license. This field does not apply to the other services. |
| Activate/ Upgrade | Click **Activate** to activate a trial version of the service or to apply a license for the service to the device.<br><br>Click **Upgrade** to apply a license for the service to the device. |
| Total Records | This entry displays the total number of records on the current page of the device list. |
| Export | Click this to export the license status to a DeviceLicense.csv file. |
| Resfresh | Click this to update the information in this screen. |

# 19.4 Signature Status (Device)

Use this screen to look at the current status of signatures for subscription services, such as IDP and anti-virus. To open this screen, click **Device Operation** in the menu bar and then click **License Management > Signature Status**.

**Figure 240** Device Operation > License Management > Signature Status (ZyNOS ZyWALL)

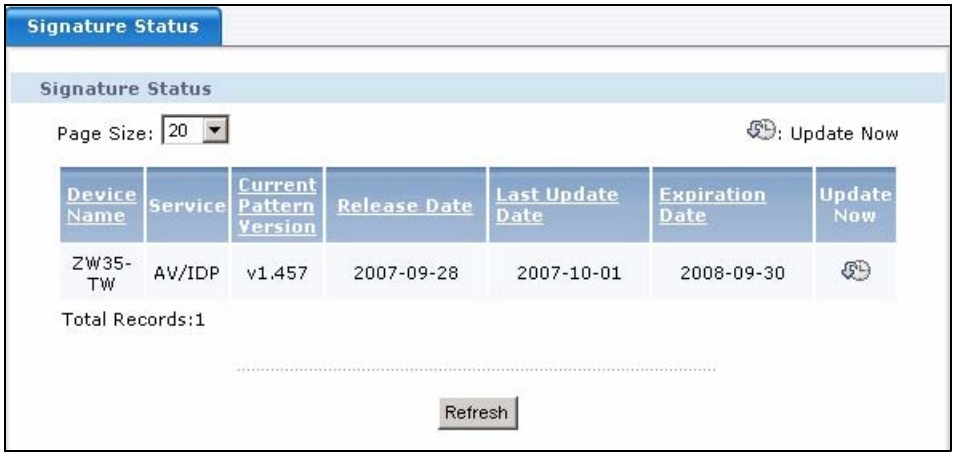
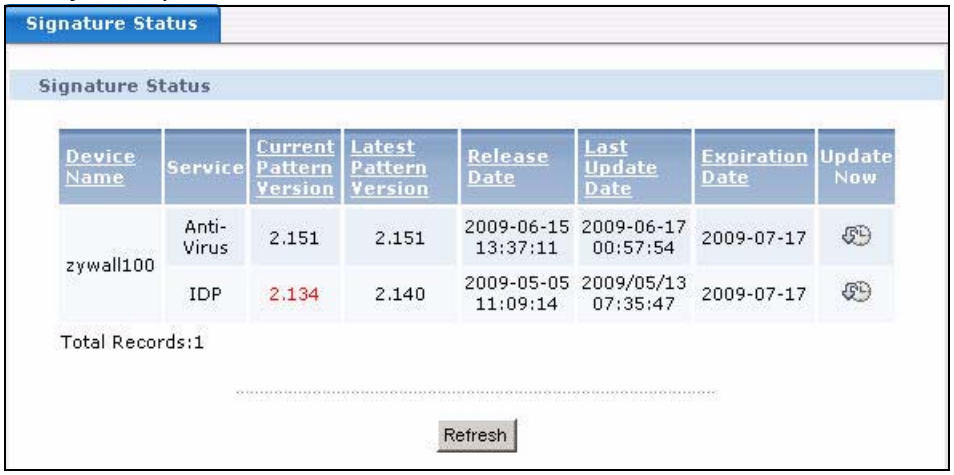



**Figure 241** Device Operation > License Management > Signature Status (ZLD ZyWALL)




The following table describes the labels in this screen.

**Table 208** Device Operation > License Management > Signature Status

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select how many records you want to see in each page. |
| Device Name | This field displays the name of the device. |
| Service | This field displays the name of the selected service(s). |

**Table 208** Device Operation > License Management > Signature Status (continued)

| LABEL | DESCRIPTION |
|---|---|
| Current Pattern Version | This field displays the signatures version number currently used by the device. This number is defined by the ZyXEL Security Response Team (ZSRT) who maintains and updates them.<br><br>This number increments as new signatures are added, so you should refer to this number regularly. Go to https://mysecurity.zyxel.com/mysecurity/jsp/download/download.jsp to see what the latest version number is. You can also subscribe to receive signature update e-mail notifications there. |
| Latest Pattern Version | This field is only available for a ZLD-based ZyWALL. This field displays the latest signatures version number currently available on https://mysecurity.zyxel.com/mysecurity/jsp/download/download.jsp. You can also subscribe to receive signature update e-mail notifications there. This number is defined by the ZyXEL Security Response Team (ZSRT) who maintains and updates them. |
| Release Date | This field displays the date (month, date, year) that the above signature set was created. |
| Last Update Date | This field displays the last date you downloaded new signatures to the device. |
| Expiration Date | This field displays the date the subscription is scheduled to expire. It displays **Inactive** if the service is not available on the device or has expired. |
| Update Now | Click this to begin downloading signatures immediately. |
| Total Records | This entry displays the total number of records on the current page of the device list. |
| Refresh | Click this to update the information in this screen. |

# 19.5 Signature Status (Folder)

Use this screen to look at the current status of signatures for subscription services on ZyWALLs under a folder that you selected. To open this screen, click on a folder and then click **Device Operation** > **License Management > Signature Status**.

**Figure 242** Device Operation > License Management > Signature Status (Folder) > ZLD Series

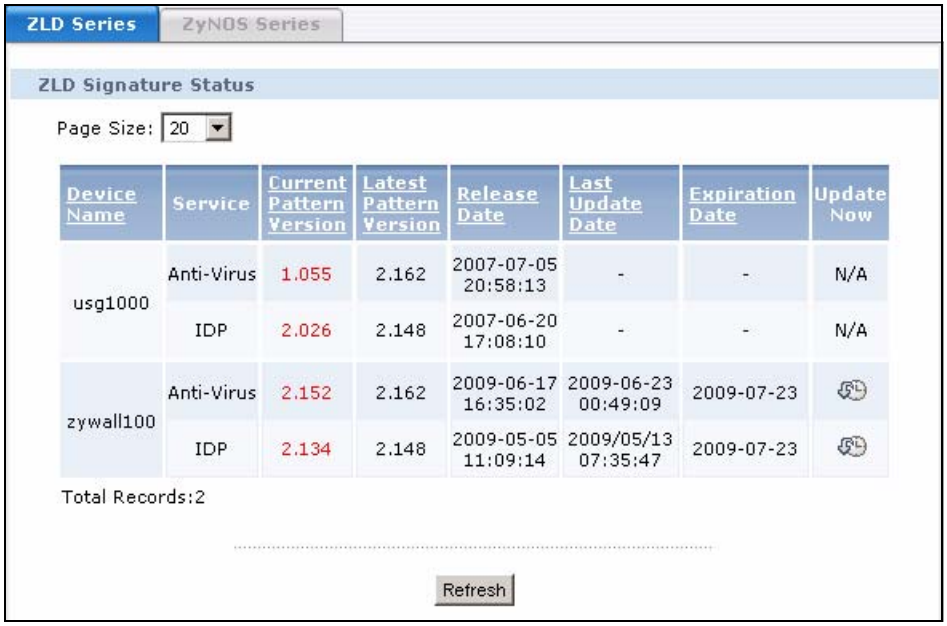
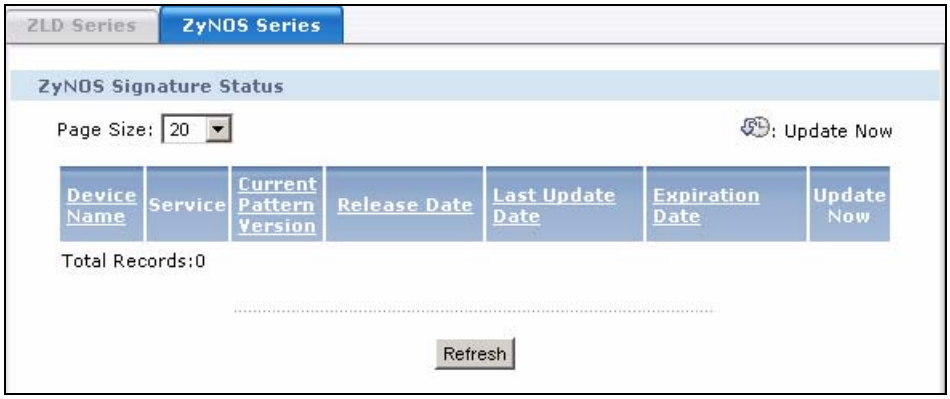



**Figure 243** Device Operation > License Management > Signature Status (Folder) > ZyNOS Series




The following table describes the labels in this screen.

**Table 209** Device Operation > License Management > Signature Status (Folder)

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select how many records you want to see in each page. |
| Device Name | This field displays the name of the device. |
| Service | This field displays the name of the selected service(s). |

**Table 209** Device Operation > License Management > Signature Status (Folder)

| LABEL | DESCRIPTION |
|---|---|
| Current Pattern Version | This field displays the signatures version number currently used by the device. This number is defined by the ZyXEL Security Response Team (ZSRT) who maintains and updates them.<br><br>This number increments as new signatures are added, so you should refer to this number regularly. Go to https://mysecurity.zyxel.com/mysecurity/jsp/download/download.jsp to see what the latest version number is. You can also subscribe to receive signature update e-mail notifications there. |
| Latest Pattern Version | This field is only available for a ZLD-based ZyWALL. This field displays the latest signatures version number currently available on https://mysecurity.zyxel.com/mysecurity/jsp/download/download.jsp. You can also subscribe to receive signature update e-mail notifications there. This number is defined by the ZyXEL Security Response Team (ZSRT) who maintains and updates them. |
| Release Date | This field displays the date (month, date, year) that the above signature set was created. |
| Last Update Date | This field displays the last date you downloaded new signatures to the device. |
| Expiration Date | This field displays the date the subscription is scheduled to expire. It displays **Inactive** if the service is not available on the device or has expired. |
| Update Now | Click this to begin downloading signatures immediately. |
| Total Records | This entry displays the total number of records on the current page of the device list. |
| Refresh | Click this to update the information in this screen. |

# PART V
# VPN Management

Note: The examples in this section use one of the most comprehensive examples of each screen, not every variation for each device type and firmware version. If you are unable to find a specific screen or field in this User's Guide, please see the User's Guide for the device for more information.

VPN Community (475)

Installation Report (483)

VPN Monitor (485)

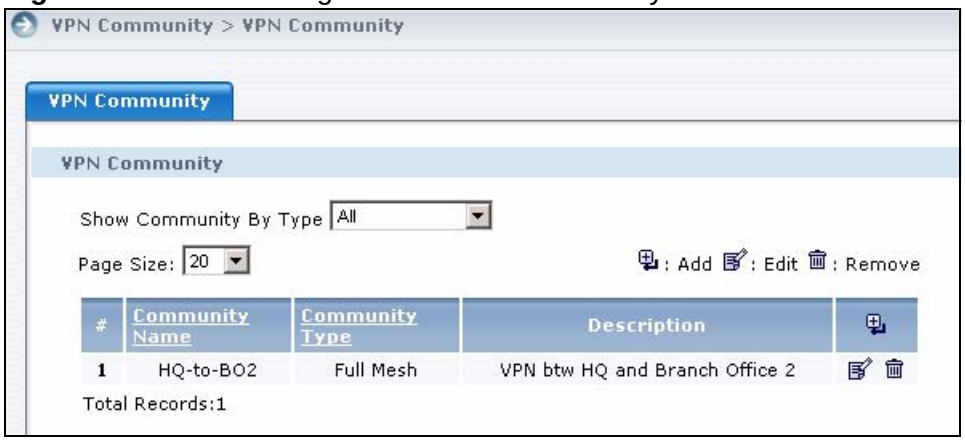
# 20

# VPN Community

## 20.1 VPN Community

Use this menu item to manage VPN configuration between or among ZyXEL devices. To open this menu item, select the device, click **VPN Management** in the menu bar and then click **VPN Community** in the navigation panel.

**Figure 244** VPN Management > VPN Community




The following table describes the fields in this screen.

**Table 210** VPN Management > VPN Community

| FIELD | DESCRIPTION |
|---|---|
| Show Community By Type | Select this from the list box to display which VPN community type you want to see in this screen. |
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| Community Name | This displays a name of the VPN community. |
| Community Type | This displays an VPN community type such as Full Mesh, Hub & Spoke, or Remote Access. |
| Description | This displays a description of the VPN community. |
| Add | Click this to display a screen where you can easily configure VPN settings among ZyXEL devices. |
| Edit | Click this to modify an existing VPN community setting. |

**Table 210** VPN Management > VPN Community (continued)

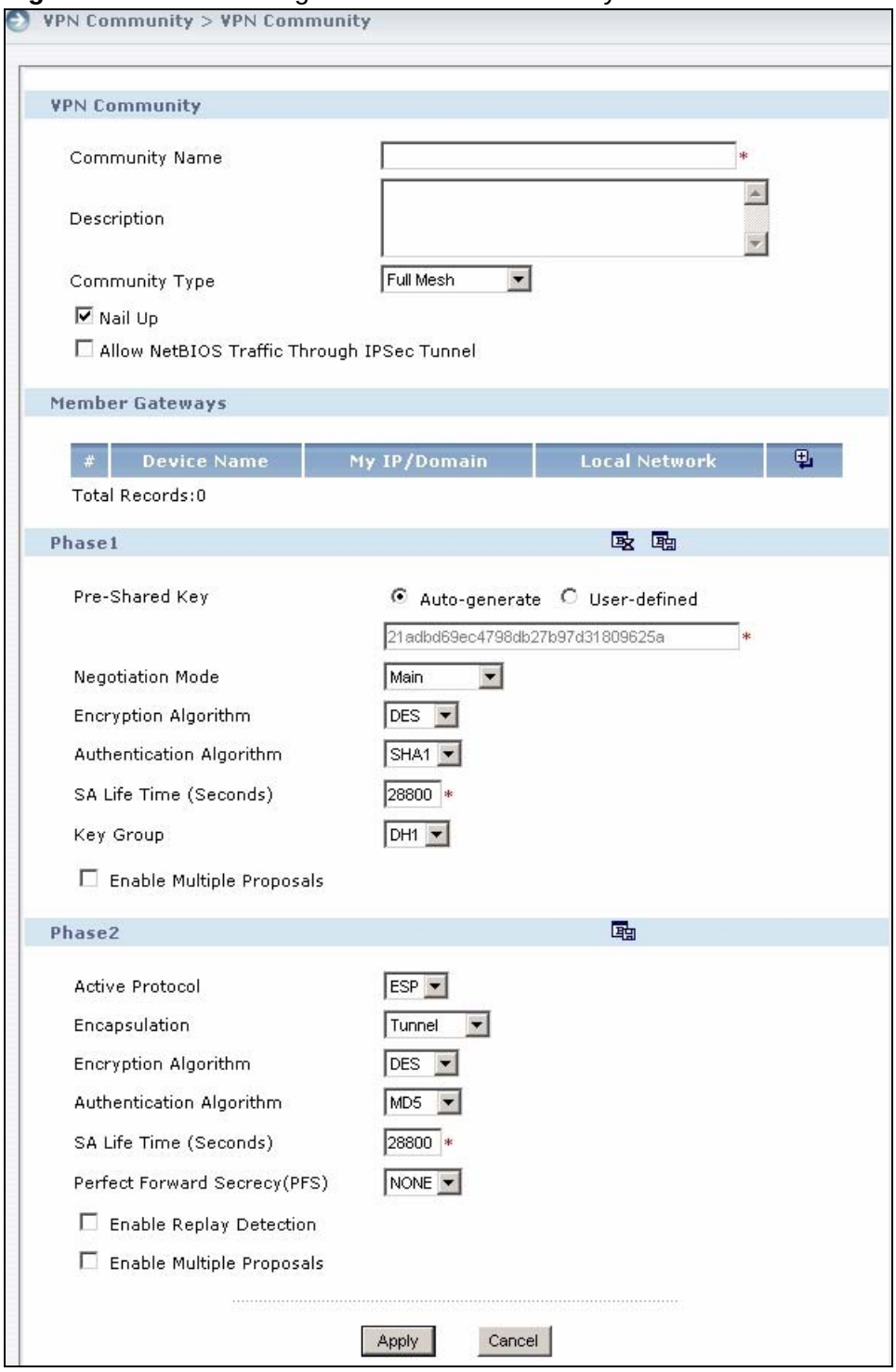
| FIELD | DESCRIPTION |
|---|---|
| Remove | Click this to delete a VPN community setting. |
| Total Records | This entry displays the total number of records on the current page of the list. |

## 20.1.1 Add/Edit a VPN Community

Use this scree to configure VPN configuration between or among ZyXEL devices. We know almost all VPN parameter values should be the same in peer VPN gateways. This screen helps you to easily configure VPN settings in one screen

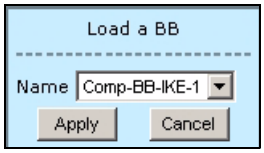
and applies it to devices in one time. To open this menu item, click **Add** or **Edit** in the **VPN Management** > **VPN Community** screen.

**Figure 245** VPN Management > VPN Community > Add/Edit



Click the **Load a BB** icon to use phase 1 or phase 2 setting from an existing building block. The following pop-up screen appears.

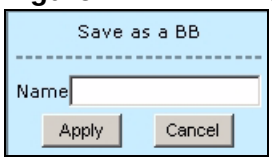
**Figure 246** VPN Management > VPN Community > Add/Edit > Load a BB




Select a building block from the list box, and click **Apply**. Or click **Cancel** to close the screen without applying any setting.

Click the **Save as a BB** icon to save the current phase 1 or phase 2 setting as a building block. The following pop-up screen appears.

**Figure 247** VPN Management > VPN Community > Add/Edit > Save as a BB

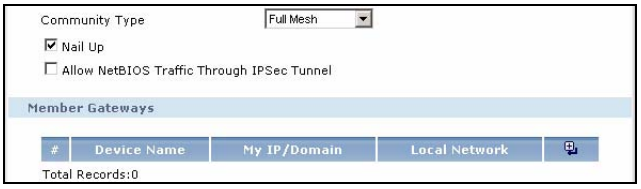



Enter the name of the new building block, and click **Apply**. The name must be 1-32 alphanumeric characters or underscores (_). It cannot include spaces. The name is case-sensitive.

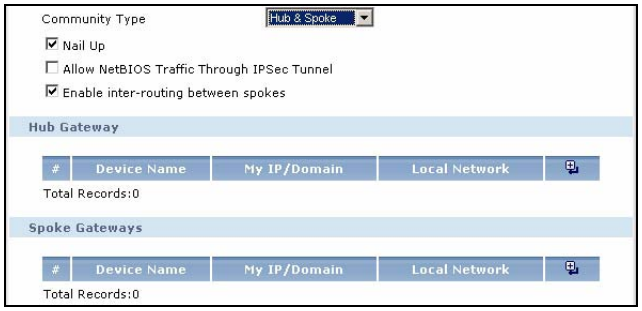
Some fields display vary depends on the community type you selected as shown next.

**Figure 248** VPN Community Types

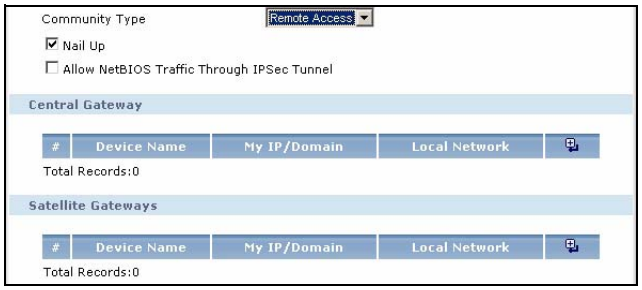
Full Mesh




Hub & Spoke




Remote Access




The following table describes the fields in this screen.

**Table 211** VPN Management > VPN Community > Add/Edit

| FIELD | DESCRIPTION |
|---|---|
| VPN Community | |
| Community Name | Type a name to identify this VPN community. |
| Description | Type a descriptive note for the VPN community. |
| Community Type | Select a VPN community type such as **Full Mesh**, **Hub & Spoke**, or **Remote Access**. |
| Nail Up | Select this check box to turn on the nailed up feature for this VPN community. |
| Allow NetBIOS Traffic Through IPSec Tunnel | Select this check box to allow NetBIOS packets sent through the VPN connection. |
| Enable inter-routing between spokes | This option is available if you select the **Hub & Spoke** community type. Select this to allow routing among spoke devices. |
| Member Gateways | This is avaialble if you select the **Full Mesh**.community type. You have to select at least two device in this section. |

**Table 211** VPN Management > VPN Community > Add/Edit (continued)

| FIELD | DESCRIPTION |
|---|---|
| Hub Gateway | This is avaialble if you select the **Hub & Spoke** community type. You have to select only one device in this section. |
| Spoke Gateways | This is avaialble if you select the **Hub & Spoke** community type. You have to select at least one device in this section. |
| Central Gateway | This is avaialble if you select the **Remote Access** community type. You have to select only one device in this section. |
| Satellite Gateways | This is avaialble if you select the **Remote Access** community type. You have to select at least one device in this section. |
| # | This is the number of an individual entry. |
| Device Name | This field displays the device name. |
| My IP/Domain | This field identifies the WAN IP address or domain name of the member gateway.<br><br>Note: When you select **Remote Access** for the community type, make sure the central gateway's **MyIP** is a fixed IP address. |
| Local Network | This is the network behind the member gateway. A network policy specifies which devices (behind the IPSec routers) can use the VPN tunnel. |
| Add | Click this to open the screen where you can select VPN gateways in this community. |
| Edit | Click this to edit the selected VPN gateway in this community. |
| Total Records | This entry displays the total number of records on the current page of the list. |
| Phase 1 | |
| Pre-Shared Key | Select **Auto-generate** the Vantage CNM generates a pre-shared key. Or select **User-defined** and type a key from 8 to 31 case-sensitive ASCII characters or from 16 to 62 hexadecimal ("0-9", "A-F") characters. You must precede a hexadecimal key with a "0x (zero x), which is not counted as part of the 16 to 62 character range for the key. For example, in "0x0123456789ABCDEF", 0x denotes that the key is hexadecimal and 0123456789ABCDEF is the key itself. |
| Negotiation Mode | Select **Main** or **Aggressive** from the drop-down list box. |
| Encryption Algorithm | Select which key size and encryption algorithm to use in the IKE SA. Choices are:<br><br>DES - a 56-bit key with the DES encryption algorithm<br><br>3DES - a 168-bit key with the DES encryption algorithm<br><br>AES - a 128-bit key with the AES encryption algorithm<br><br>The Vantage CNM and the remote IPSec router must use the same algorithms and keys. Longer keys require more processing power, resulting in increased latency and decreased throughput. |
| Authentication Algorithm | Select which hash algorithm to use to authenticate packet data in the IKE SA. Choices are **SHA1** and **MD5**. **SHA1** is generally considered stronger than **MD5**, but it is also slower. |

**Table 211** VPN Management > VPN Community > Add/Edit (continued)

| FIELD | DESCRIPTION |
|---|---|
| SA Life Time (Seconds) | Define the length of time before an IKE SA automatically renegotiates in this field. It may range from 180 to 3,000,000 seconds (almost 35 days). |
| Key Group | Select which Diffie-Hellman key group (DH*x*) you want to use for encryption keys. Choices are:<br>**DH1** - use a 768-bit random number<br>**DH2** - use a 1024-bit random number |
| Enable Multiple Proposals | Select this to allow the Vantage CNM to use any of its phase 1 key groups and encryption and authentication algorithms when negotiating an IKE SA.<br>When you enable multiple proposals, the Vantage CNM allows the remote IPSec router to select which phase 1 key groups and encryption and authentication algorithms to use for the IKE SA, even if they are less secure than the ones you configure for the VPN rule.<br>Clear this to have the Vantage CNM use only the configured phase 1 key groups and encryption and authentication algorithms when negotiating an IKE SA. |
| Phase 2 | |
| Active Protocol | Select the security protocols used for an SA.<br>Both **AH** and **ESP** increase processing requirements and communications latency (delay). |
| Encryption Algorithm | Select which key size and encryption algorithm to use in the IKE SA. Choices are:<br>**DES** - a 56-bit key with the DES encryption algorithm<br>**3DES** - a 168-bit key with the DES encryption algorithm<br>**NULL** - no encryption key or algorithm<br>**AES** - a 128-bit key with the AES encryption algorithm<br>The Vantage CNM and the remote IPSec router must use the same algorithms and keys. Longer keys require more processing power, resulting in increased latency and decreased throughput. |
| Authentication Algorithm | Select which hash algorithm to use to authenticate packet data in the IPSec SA. Choices are **SHA1** and **MD5**. **SHA1** is generally considered stronger than **MD5**, but it is also slower. |
| SA Life Time (Seconds) | Define the length of time before an IPSec SA automatically renegotiates in this field. The minimum value is 180 seconds.<br>A short SA Life Time increases security by forcing the two VPN gateways to update the encryption and authentication keys. However, every time the VPN tunnel renegotiates, all users accessing remote resources are temporarily disconnected. |

**Table 211** VPN Management > VPN Community > Add/Edit (continued)

| FIELD | DESCRIPTION |
|---|---|
| Perfect Forward Secret (PFS) | Select whether or not you want to enable Perfect Forward Secrecy (PFS) and, if you do, which Diffie-Hellman key group to use for encryption. Choices are:<br><br>**NONE** - disable PFS<br><br>**DH1** - enable PFS and use a 768-bit random number<br><br>**DH2** - enable PFS and use a 1024-bit random number<br><br>PFS changes the root key that is used to generate encryption keys for each IPSec SA. It is more secure but takes more time. |
| Enable Replay Detection | As a VPN setup is processing intensive, the system is vulnerable to Denial of Service (DOS) attacks. The IPSec receiver can detect and reject old or duplicate packets to protect against replay attacks. Enable replay detection by selecting this check box. |
| Enable Multiple Proposals | Select this to allow the Vantage CNM to use any of its phase 2 encryption and authentication algorithms when negotiating an IPSec SA.<br><br>When you enable multiple proposals, the Vantage CNM allows the remote IPSec router to select which phase 2 encryption and authentication algorithms to use for the IPSec SA, even if they are less secure than the ones you configure for the VPN rule.<br><br>Clear this to have the Vantage CNM use only the configured phase 2 encryption and authentication algorithms when negotiating an IPSec SA. |
| Apply | Click this to save the changes. |
| Cancel | Click this to discard all changes and return to the previous screen. |

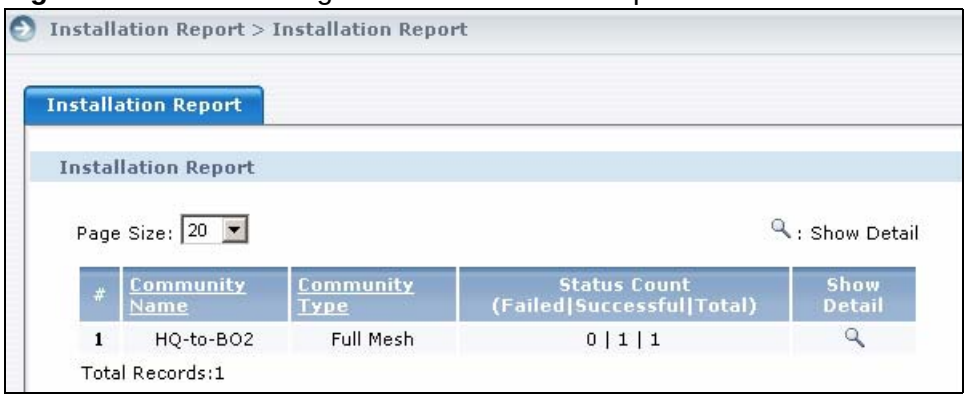
# 21

# Installation Report

## 21.1 Installation Report

Use this screen to view the VPN community status between or among the devices. To open this screen, click a device or a folder, and then click **VPN Management** from the menu bar and then click **Installation Report** in the navigation panel.

**Figure 249** VPN Management > Installation Report




The following table describes the fields in this screen.

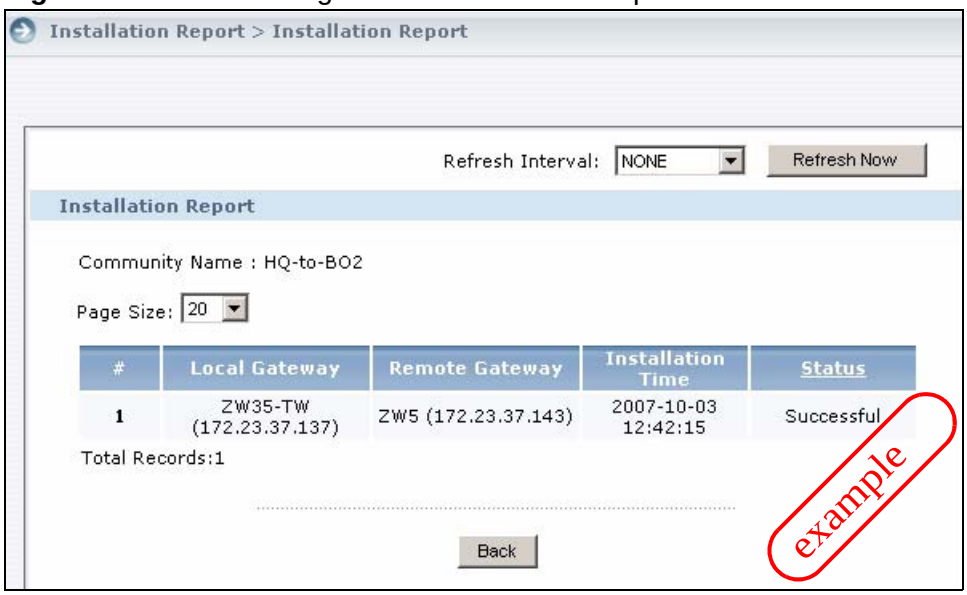
**Table 212** VPN Management > Installation Report

| FIELD | DESCRIPTION |
|---|---|
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| Community Name | This displays a name of the VPN community. |
| Community Type | This displays an VPN community type such as Full Mesh, Hub & Spoke, or Remote Access. |
| Status Count (Failed\|Successful\|Total) | This displays how many tunnels in total are configured in this VPN community. And how many tunnels were failed and successfully established. |
| Show Detail | Click this to display a screen where you can view detailed VPN settings among the devices. |
| Total Records | This entry displays the total number of records on the current page of the list. |

## 21.1.1 Show Detailed Installation Reportl

Use this screen to view whether the VPN communities have been applied successfully to all member gateways. To open this screen, click **Show Detail** in the **VPN Management > Installation Report** screen.

**Figure 250** VPN Management > Installation Report > Show Detail




The following table describes the fields in this screen.

**Table 213** VPN Management > Installation Report

| FIELD | DESCRIPTION |
|---|---|
| Refresh Interval | Set how often the Vantage CNM should update the information in this screen. Click **Refresh Now** to update the information right away. |
| Community Name | This field displays the name of the VPN community. |
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| Local Gateway | This displays the local VPN gateway name and IP address of this tunnel. |
| Remote Gateway | This displays the remote VPN gateway name and IP address of this tunnel. |
| Installation Time | This displays the date and time the VPN community is set to devices. |
| Status | This displays whether the VPN community has been successfully applied to all member gateways. |
| Total Records | This entry displays the total number of records on the current page of the list. |
| Back | Click this to return to the previous screen. |

# 22

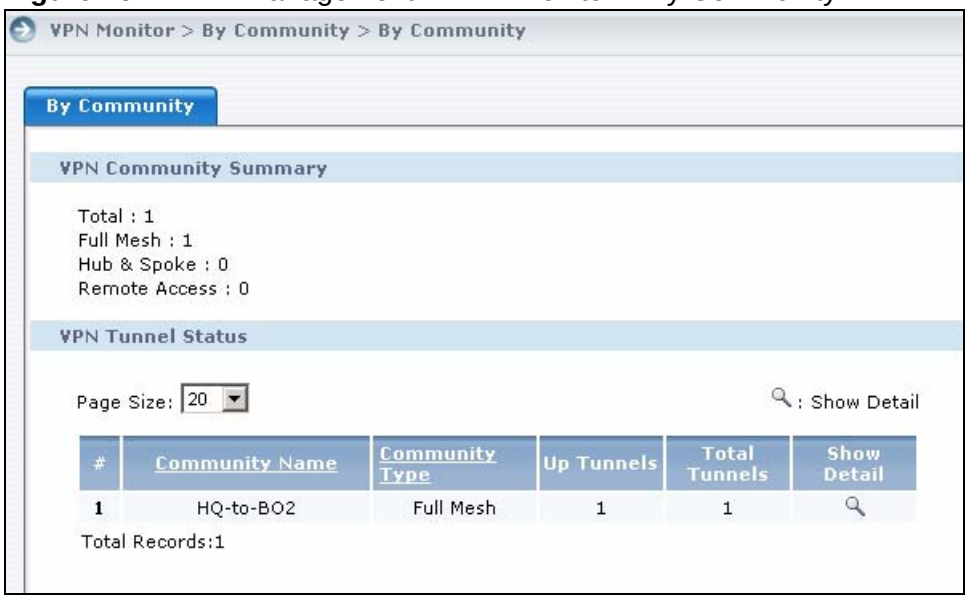
# VPN Monitor

Use this menu item to centrally and easily monitor all VPN community status among devices. You can check from a communities list (by community) or from a devices list (by device).

## 22.1 Monitor VPN by Community

Use this menu item to monitor all VPN community status. To open this screen, click a device or a folder, and then click **VPN Management** from the menu bar and click **VPN Monitor > By Community** in the navigation panel.

**Figure 251** VPN Management > VPN Monitor > By Community



The following table describes the fields in this screen.

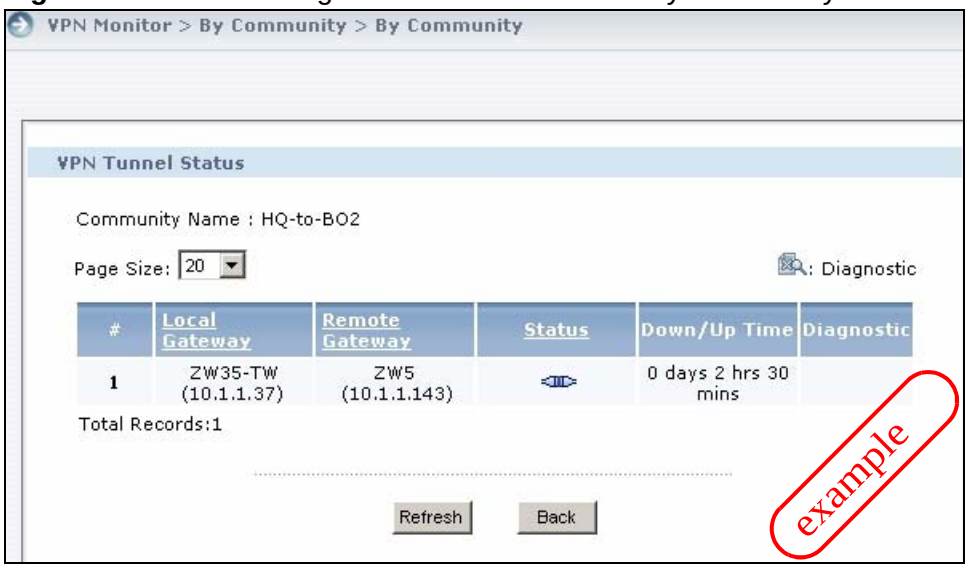
**Table 214** VPN Management > VPN Monitor > By Community

| LABEL | DESCRIPTION |
|---|---|
| VPN Community Summary | This section displays you how many VPN communities in total are available and how many tunnels in each community type such as Full Mesh, Hub & Spoke, Remote Access. |
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| Community Name | This displays a name of the VPN community. |
| Community Type | This displays an VPN community type such as **Full Mesh**, **Hub & Spoke**, or **Remote Access**. |
| Up Tunnels | This displays how many tunnels has been successfully established. |
| Total Tunnels | This displays how many tunnels in total are configured in this VPN community. |
| Show Detail | Click this to display a screen where you can view detailed VPN settings among the devices. |
| Total Records | This entry displays the total number of records on the current page of the list. |

## 22.1.1 Show Detailed VPN Community

Use this screen to monitor VPN tunnel status. To open this screen, click **Show Detail** in the **VPN Management > VPN Monitor > By Community** screen.

**Figure 252** VPN Management > VPN Monitor > By Community > Show Detail



The following table describes the fields in this screen.

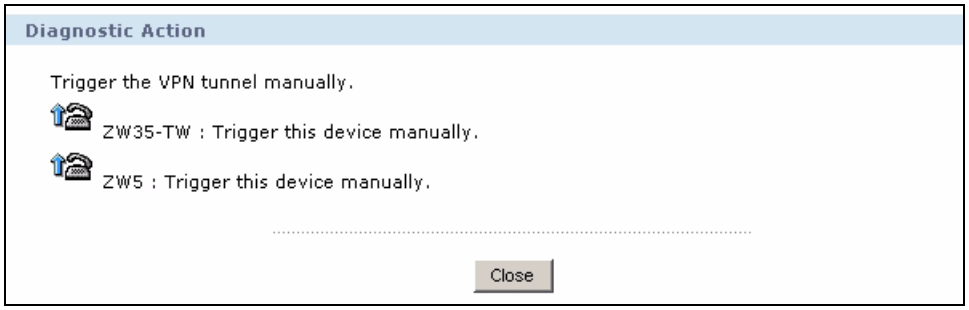
**Table 215** VPN Management > VPN Monitor > By Community > Show Detail

| LABEL | DESCRIPTION |
|---|---|
| Community Name | This field displays the name of the VPN community. |
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| Local Gateway | This field displays the local gateway name and IP address of this tunnel. |
| Remote Gateway | This field displays the remote gateway name and IP address of this tunnel. |
| Status | This field displays the VPN tunnel is on (connected icon) or off (disconnected icon). ***** display means it is a dynamic tunnel rule. **N/A** means the tunnel has not installed yet. |
| Down/Up Time | This displays the time duration the tunnel has been up or down. ***** display means it is a dynamic tunnel rule. **N/A** means the tunnel has not installed yet. |
| Diagnostic | This icon is available when the tunnel is disconnected. Click this to open a screen where you can perform diagnostic action. |
| Total Records | This entry displays the total number of records on the current page of the list. |
| Refresh | Click this to update the information in this screen. |
| Back | Click this to return to the previous screen. |

## 22.1.2 VPN Tunnel Diagnostics

Use this screen to perform diagnostic action for a disconnected tunnel. To open this screen, click Diagnostic in the **VPN Management > VPN Monitor > By Community** > **Show Detail** screen.

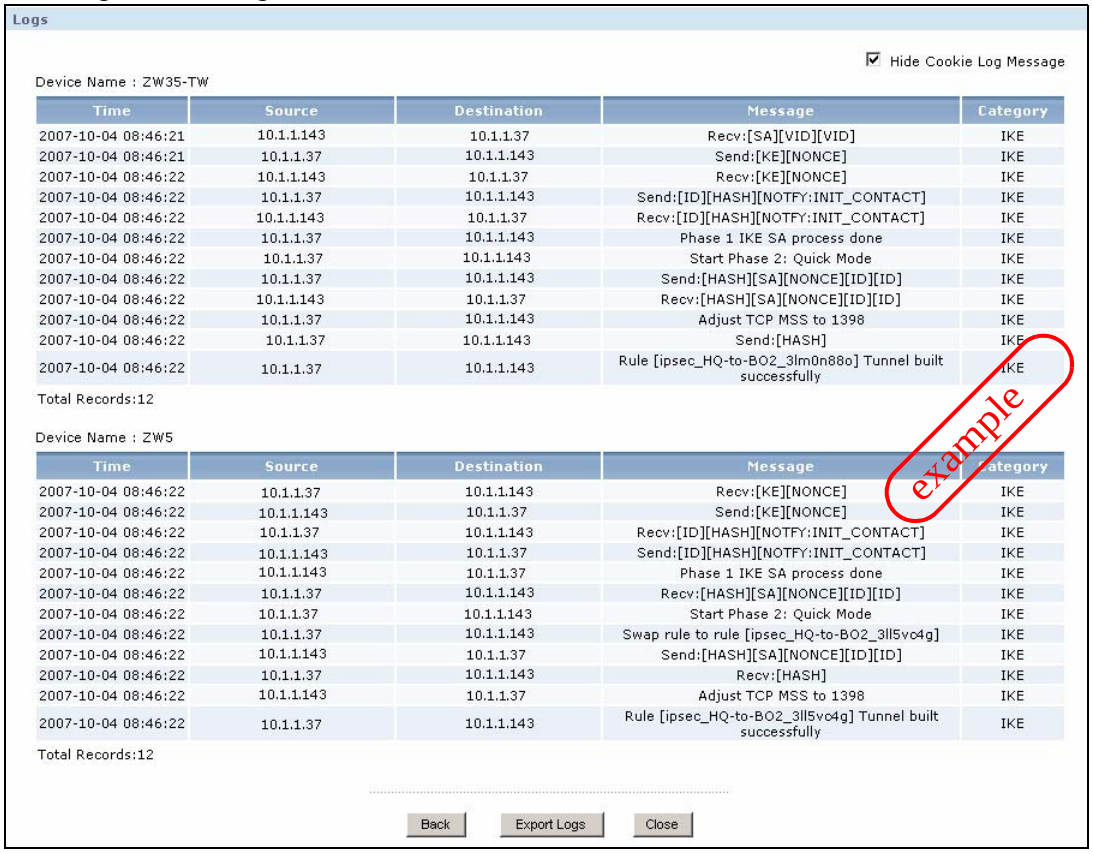
**Figure 253** VPN Management > VPN Monitor > By Community > Show Detail > Diagnostic




Click a **Trigger** icon to initial the VPN tunnel from the device. It takes a while depending on your network environment. A Logs screen displays then. Following is an example.

In this example, the **ZW35-TW**'s VPN is triggered manually. Then you can see both two devices' logs and finally they establish the VPN tunnel successfully.

**Figure 254** VPN Management > VPN Monitor > By Community > Show Detail > Diagnostic > Logs



Logs

Hide Cookie Log Message

Device Name : ZW35-TW

| Time | Source | Destination | Message | Category |
|---|---|---|---|---|
| 2007-10-04 08:46:21 | 10.1.1.143 | 10.1.1.37 | Recv:[SA][VID][VID] | IKE |
| 2007-10-04 08:46:21 | 10.1.1.37 | 10.1.1.143 | Send:[KE][NONCE] | IKE |
| 2007-10-04 08:46:22 | 10.1.1.143 | 10.1.1.37 | Recv:[KE][NONCE] | IKE |
| 2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Send:[ID][HASH][NOTFY:INIT_CONTACT] | IKE |
| 2007-10-04 08:46:22 | 10.1.1.143 | 10.1.1.37 | Recv:[ID][HASH][NOTFY:INIT_CONTACT] | IKE |
| 2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Phase 1 IKE SA process done | IKE |
| 2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Start Phase 2: Quick Mode | IKE |
| 2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Send:[HASH][SA][NONCE][ID][ID] | IKE |
| 2007-10-04 08:46:22 | 10.1.1.143 | 10.1.1.37 | Recv:[HASH][SA][NONCE][ID][ID] | IKE |
| 2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Adjust TCP MSS to 1398 | IKE |
| 2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Send:[HASH] | IKE |
| 2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Rule [ipsec_HQ-to-BO2_3lm0n88o] Tunnel built successfully | IKE |

Total Records:12

Device Name : ZW5

| Time | Source | Destination | Message | Category |
|---|---|---|---|---|
| 2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Recv:[KE][NONCE] | IKE |
| 2007-10-04 08:46:22 | 10.1.1.143 | 10.1.1.37 | Send:[KE][NONCE] | IKE |
| 2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Recv:[ID][HASH][NOTFY:INIT_CONTACT] | IKE |
| 2007-10-04 08:46:22 | 10.1.1.143 | 10.1.1.37 | Send:[ID][HASH][NOTFY:INIT_CONTACT] | IKE |
| 2007-10-04 08:46:22 | 10.1.1.143 | 10.1.1.37 | Phase 1 IKE SA process done | IKE |
| 2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Recv:[HASH][SA][NONCE][ID][ID] | IKE |
| 2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Start Phase 2: Quick Mode | IKE |
| 2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Swap rule to rule [ipsec_HQ-to-BO2_3ll5vc4g] | IKE |
| 2007-10-04 08:46:22 | 10.1.1.143 | 10.1.1.37 | Send:[HASH][SA][NONCE][ID][ID] | IKE |
| 2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Recv:[HASH] | IKE |
| 2007-10-04 08:46:22 | 10.1.1.143 | 10.1.1.37 | Adjust TCP MSS to 1398 | IKE |
| 2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Rule [ipsec_HQ-to-BO2_3ll5vc4g] Tunnel built successfully | IKE |

Total Records:12

example

Back Export Logs Close

The following table describes the fields in this screen.

**Table 216** VPN Management > VPN Monitor > By Community > Show Detail > Diagnostic > Logs

| LABEL | DESCRIPTION |
|---|---|
| Hide Cookie Log Message | Select this to hide the IKE cookie logs. |
| Device Name: | This field displays the device name for the following logs section. |
| Time | This field displays the time the log was recorded. |
| Message | This field states the reason for the log. Refer to the device User's Guide for log message descriptions and the device CLI Reference Guide for details on using the command line interpreter to display logs. |
| Source | This field lists the source IP address and the port number of the incoming packet. |
| Destination | This field lists the destination IP address and the port number of the incoming packet. |
| Category | This displays the category type of the logs. |

**Table 216** VPN Management > VPN Monitor > By Community > Show Detail > Diagnostic > Logs (continued)

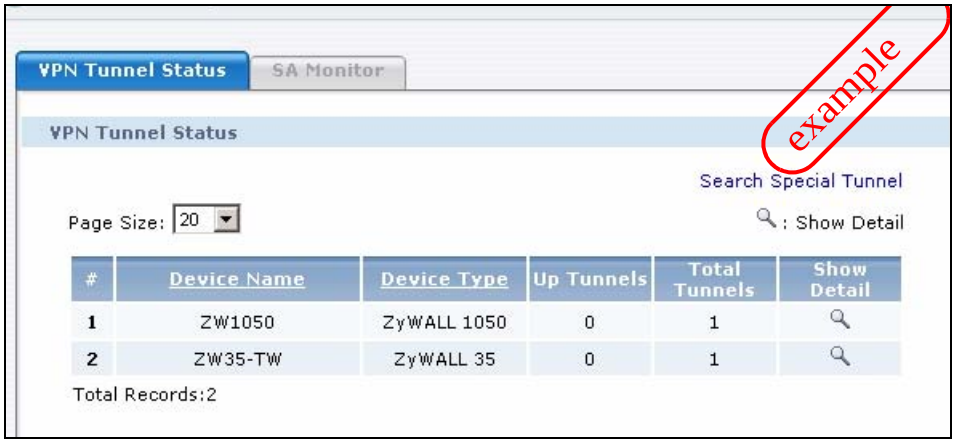
| LABEL | DESCRIPTION |
|---|---|
| Total Records | This entry displays the total number of records on the current page of the list. |
| Back | Click this to return to the previous screen. |
| Export Logs | Click this to export the current logs shown in this screen to a TriggerLogsStore.csv file. |
| Close | Click this to close the diagnostic screens and return to the **VPN Tunnel Status** Screen. |

# 22.2 Monitor VPN by Device

## 22.2.1 VPN Tunnel Status

Use this menu item to monitor all VPN tunnel status for devices. To open this screen, click a device or a folder, and then click **VPN Management** from the menu bar and click **VPN Monitor > By Device > VPN Tunnel Status** in the navigation panel.

**Figure 255** VPN Management > VPN Monitor > By Device > VPN Tunnel Status




The following table describes the fields in this screen.

**Table 217** VPN Management > VPN Monitor > By Device > VPN Tunnel Status

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select how many records you want to see in each page. |
| Search Special Tunnel | Click this link to display a screen where you can query and search |
| # | This is the number of an individual entry. |
| Community Name | This displays a name of the VPN community. |

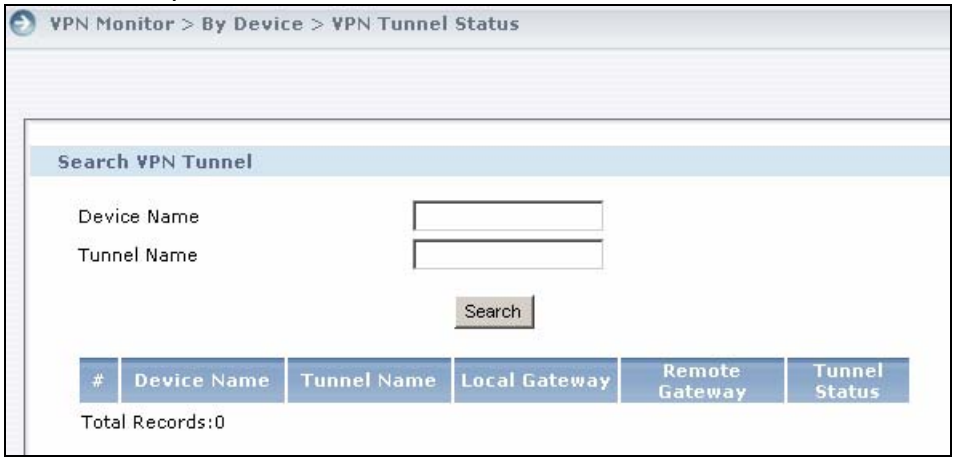
**Table 217** VPN Management > VPN Monitor > By Device > VPN Tunnel Status

| LABEL | DESCRIPTION |
|---|---|
| Community Type | This displays an VPN community type such as Full Mesh, Hub & Spoke, or Remote Access. |
| Up Tunnels | This displays how many tunnels has been successfully established. |
| Total Tunnels | This displays how many tunnels in total are configured in this VPN community. |
| Show Detail | Click this to display a screen where you can view detailed VPN settings among the devices. See Section 22.1.1 on page 486. |
| Total Records | This entry displays the total number of records on the current page of the list. |

## 22.2.2 Search VPN Tunnels

Use this screen to search one or some specific VPN tunnels by querying device name or tunnel name. To open this screen, click a device or a folder, and then click **VPN Management** from the menu bar and click **VPN Monitor > By Device** > **VPN Tunnel Status** in the navigation panel. Then click **Search Special Tunnel**.

**Figure 256** VPN Management > VPN Monitor > By Device > VPN Tunnel Status > Search Special Tunnel




The following table describes the fields in this screen.

**Table 218** VPN Management > VPN Monitor > By Device > VPN Tunnel Status > Search Special Tunnel

| LABEL | DESCRIPTION |
|---|---|
| Device Name | Type a partial of or a full case-insensitive device name. A blank of device name is equivalent to “any”. |
| Tunnel Name | Type a partial or a full case-sensitive tunnel name. A blank of tunnel name is equivalent to “any”. |
| Search | Click this to query device(s) or tunnel(s) according to the device name and tunnel name you input. Clicking this with both fields empty queries all configured VPN tunnels. |

**Table 218** VPN Management > VPN Monitor > By Device > VPN Tunnel Status > Search Special Tunnel

| LABEL | DESCRIPTION |
|---|---|
| # | This is the number of an individual entry. |
| Device Name | This displays the name of the device the VPN tunnel is configured for. |
| Tunnel Name | This displays the name of the tunnel. |
| Local Gateway | This displays the local VPN gateway IP address of this tunnel. |
| Remote Gateway | This displays the remote VPN gateway IP address of this tunnel. |
| Tunnel Status | This displays the current status of this tunnel |
| Total Records | This entry displays the total number of records on the current page of the list. |

## 22.2.3 SA Monitor

Use this menu item to monitor all VPN tunnel status for devices. To open this screen, click **VPN Management** from the menu bar and click **VPN Monitor > By Device > SA Monitor** in the navigation panel.

**Figure 257** VPN Management > VPN Monitor > By Device > SA Monitor

The following table describes the fields in this screen.

**Table 219** VPN Management > VPN Monitor > By Device > SA Monitor

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| Device Name | This displays the name of the device. |
| Device Type | This displays the model of the device. |
| Up Tunnels | This displays how many tunnels has been established. |
| Last Update Time | This displays when the information was last updated. |

**Table 219** VPN Management > VPN Monitor > By Device > SA Monitor

| LABEL | DESCRIPTION |
|---|---|
| Show Detail | Click this to see the detailed VPN settings of the device. See Section 22.1.1 on page 486. |
| Total Records | This entry displays the total number of records on the current page of the list. |

# PART VI
# Monitor

Device Status Monitor (495)

3G Monitor (497)

Device HA Status (527)

Device Alarm (529)

# 23

# Device Status Monitor

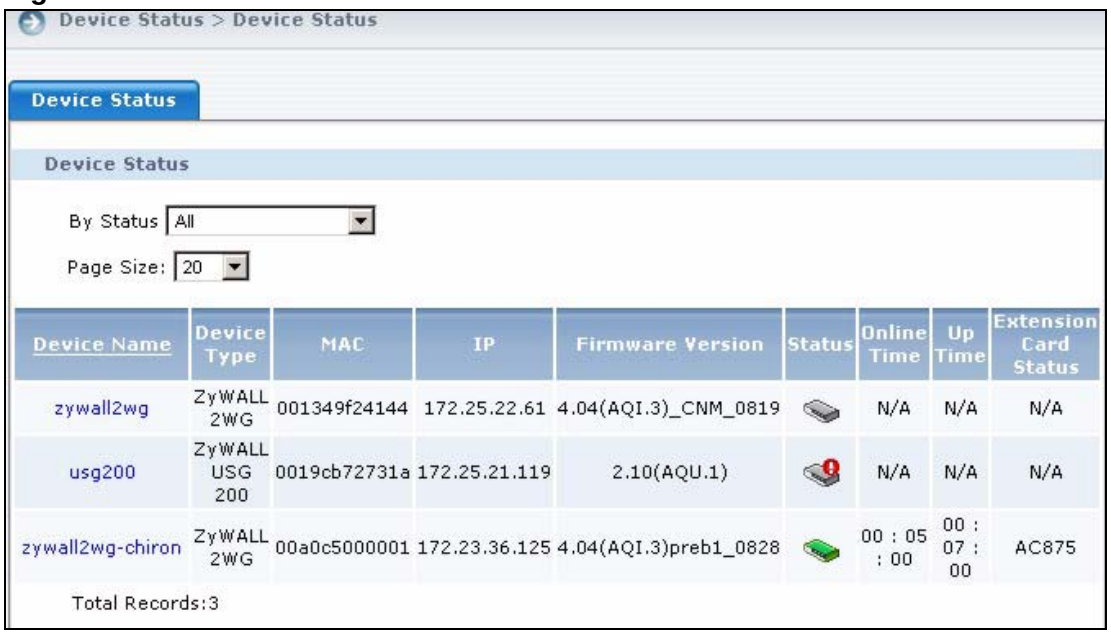
This chapter discusses how you can look at runtime and statistical information from Vantage CNM and its managed devices.

## 23.1 Device Status

This report shows a summary of the status of Vantage CNM and it's managed devices. Click **Monitor > Device Status**. The following screen displays.

Note: Right click on the screen and click **Refresh** to get latest device status.

**Figure 258** Monitor > Device Status



The following table describes the labels in this screen.

**Table 220** Monitor > Device Status

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select how many records you want to see in each page. |
| Device Name | This is the name of the device where the 3G card is installed. Click the device name to locate and highlight the device in the device window. |
| Device Type | This displays the administrator who performed the upgrade. |
| MAC | This displays the device's MAC address. |
| IP | This displays the IP address the device is using. |
| Firmware Version | This displays the firmware version number of the device. |
| Status | This displays an icon indicating the current status of the device. Refer to Section 2.3.1.2 on page 31 to see what the icons mean. |
| Online Time | This displays how long the device has registered and connected to the Vantage CNM server since last booted up. |
| Up Time | This displays how long the device has been on since last booted up. |
| Extension Card Status | If the device does not support 3G Monitor, but supports other 3G features and has a 3G card inserted, this field shows 3G Card. When the device is online, the 3G Card is a hyperlink.<br><br>If the device supports 3G monitor, and has a 3G card inserted, this field shows the 3G card model name. The 3G card model name is not a hyperlink. |

# 24

# 3G Monitor

This chapter discusses how you can look at read-only information related to the 3G (Third Generation) card(s) installed as LAN backup(s) on Vantage CNM's monitored device(s). Read more information about 3G wireless technology in Section 5.3.3 on page 87.

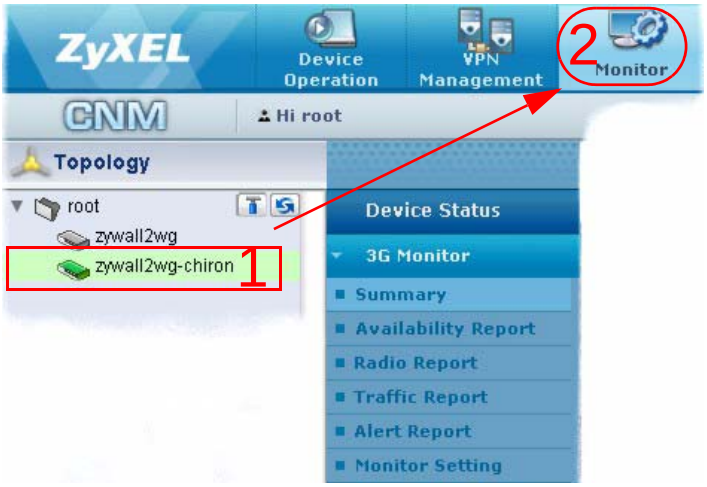
To look at reports for all devices in one screen, select **root** in the device window before accessing the **Monitor** menu as shown in the next figure.

**Figure 259** Viewing reports for all devices (Folder list)

To look at reports for a single device, select a particular device's name from the device window before accessing the **Monitor** menu as shown in the next figure.

Note that an additional item in the navigation panel called **Traffic Report** also appears.

**Figure 260** Viewing reports for a single device (Single device)




# 24.1 Summary

Use this screen to look at a summary of devices managed by Vantage CNM that support 3G monitoring.

Click **Monitor > 3G Monitor > Summary** to open the screen as shown next.

**Figure 261** Monitor > 3G Monitor > Summary

The following table describes the labels in this screen.

**Table 221** Monitor > 3G Monitor > Summary

| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select how many records you want to see in each page. |
| Show Details icon | This icon is present if the device is registered, currently online and has a 3G card installed. |
| Device Name | This is the device name. The device's full path shows up when you put your mouse over this text. |
| Internet Connection | This shows if the managed device is connected to the Internet through WAN (Ethernet) or WAN (3G). |
| Connection Status | This shows the 3G card's connection status, whether it is **Up**, **Down**, **Error** or **N/A**. |
| 3G Uptime / Downtime | This shows how long the 3G connection has been up (uptime) or down (downtime). Uptime is indicated by a green arrow pointing up while downtime is represented by a red arrow pointing down. The time is in XXhr(s) YYmin(s) ZZsec(s) format. |
| Signal Quality | This shows the signal quality of the 3G card if it is inserted in the device with no errors. This is represented by a bar graph in ascending height order. Depending on how many bars are lit green, the 3G connection can be:<br>• **No signal** - All bars are grayed out.<br>• **Very weak** - The smallest bar in the left is lit green.<br>• **Weak** - The two bars in the left are lit green.<br>• **Medium** - Three bars from the left are lit green.<br>• **Strong** - Four bars from the left are lit green.<br>• **Very strong** - All bars are lit green.<br>This is **N/A** if the device is offline or does not have a 3G card inserted. |
| 3G Tx Traffic | This shows the 3G outgoing traffic in Bytes/second.<br>This is **N/A** if the device is offline or does not have a 3G card inserted. |
| 3G Rx Traffic | This shows the 3G incoming traffic in Bytes/second.<br>This is **N/A** if the device is offline or does not have a 3G card inserted. |
| 3G Total Tx | This shows the total outgoing traffic bytes of the 3G connection. This value is cumulative from the day the device is registered to Vantage CNM. |
| 3G Total Rx | This shows the total incoming traffic bytes of the 3G connection. This value is cumulative from the day the device is registered to Vantage CNM. |
| Card Model | This shows the 3G card model.<br>It shows **Not Installed** if the 3G card is not installed. |

**Table 221** Monitor > 3G Monitor > Summary

| LABEL | DESCRIPTION |
|---|---|
| View | Click the “Show Detail” icon to view other information about the 3G card.<br><br>Refer to Section 24.1.1 on page 500 for the **Show Detail** screen. |
| Total Records | This shows how many records there are in all. |

## 24.1.1 Show Detail

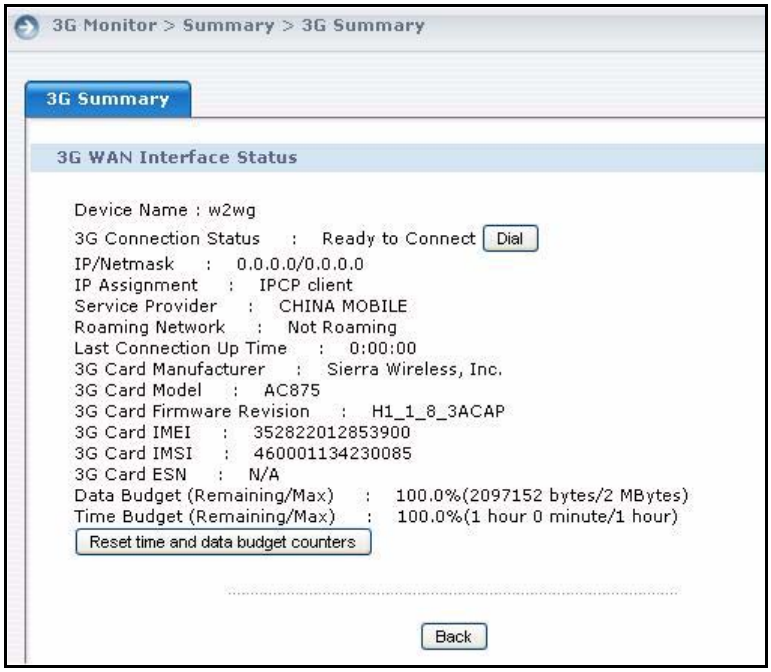
Use this screen to see further details about the 3G card(s) installed on Vantage CNM-managed device(s).

Click the **Show Detail** icon in **Monitor > 3G Monitor > Summary**. The resulting screen varies depending on how you configured your Vantage CNM, the condition of the 3G card and other factors stated below.

### 24.1.1.1 3G connection is down, Budget Control is enabled

The 3G connection is down and you enabled budget control in the **Device Configuration > Network > WAN > 3G(WAN 2)** screen (see Section 5.3.3 on page 87). The **Show Detail** screen displays as follows.

**Figure 262** Monitor > 3G Monitor > Show Details (3G down, Budget Control enabled)



The following table describes the labels in this screen.

**Table 222** Monitor > 3G Monitor > Show Details (3G down, Budget Control enabled)

| LABEL | DESCRIPTION |
|---|---|
| Device Name | This is the name of the device where the 3G card is installed. |
| 3G Connection Status | This displays **Down** when the 3G connection is down or not activated.<br><br>This displays **Initializing** when the selected device is configuring the 3G card with AT commands.<br><br>This displays **Ready to Connect** when the 3G connection is idle before the selected device triggers a call.<br><br>This displays **Connecting** when the 3G card is trying to connect to a network but has not received a response from the base station.<br><br>This displays **Connected** when the 3G connection is up.<br><br>This displays **Disconnecting** when the selected device is dropping the 3G connection. This field also displays whether the selected device is connected to a **UMTS/HSDPA** network or **GPRS/EDGE** network.<br><br>This field also displays the type of the network to which the selected device is connected. The network type varies depending on the 3G card you inserted and could be **UMTS**, **HSDPA**, **GPRS** or **EDGE** when you insert a GSM 3G card, or **1xRTT**, **EVDO Rev.0** or **EVDO Rev.A** when you insert a CDMA 3G card.<br><br>Click **Dial** to dial up the 3G WAN connection. |
| IP/Netmask | This shows the port's IP address and subnet mask. |
| IP Assignment | For the WAN, if the selected device gets its IP address automatically from an ISP, this displays **DHCP client** when you're using Ethernet encapsulation and **IPCP Client** when you're using PPPoE or PPTP encapsulation. **Static** displays if the WAN port is using a manually entered static (fixed) IP address.<br><br>For the LAN, WLAN or DMZ, **DHCP server** displays when the selected device is set to automatically give IP address information to the computers connected to the LAN. **DHCP relay** displays when the selected device is set to forward IP address assignment requests to another DHCP server. Static displays if the LAN port is using a manually entered static (fixed) IP address. In this case, you must have another DHCP server on your LAN, or else the computers must be manually configured. For the dial backup port, this shows **N/A** when dial backup is disabled and **IPCP client** when dial backup is enabled. |
| Service Provider | This displays the name of your network service provider or **Limited Service** when the signal strength is too low or the ISP is limiting your access. |
| Roaming Network | This field is available only when you insert a 3G card that supports the roaming feature.<br><br>This displays whether the card is able to connect to other ISPs' base stations. |
| Last Connection Up Time | This displays how long the 3G connection has been up. |

**Table 222** Monitor > 3G Monitor > Show Details (3G down, Budget Control enabled)

| LABEL | DESCRIPTION |
|---|---|
| 3G Card Manufacturer | This displays the manufacturer of your 3G card. |
| 3G Card Model | This displays the model name of your 3G card. |
| 3G Card Firmware Revision | This displays the version of the firmware currently used in the 3G card. |
| 3G Card IMEI | This field is available only when you insert a GSM (Global System for Mobile Communications) or UMTS (Universal Mobile Telecommunications System) 3G card.<br><br>This displays the International Mobile Equipment Identity (IMEI) which is the serial number of the GSM or UMTS 3G wireless card. The IMEI is a unique 15-digit number used to identify a mobile device. |
| 3G Card IMSI | This field is available only when you insert a GSM or UMTS 3G card.<br><br>This displays the International Mobile Subscriber Identity (IMSI) stored in the SIM (Subscriber Identity Module) card. The SIM card is installed in a mobile device and used for authenticating a customer to the carrier network. The IMSI is a unique 15-digit number used to identify a user on a network. |
| 3G Card ESN | This field is available only when you insert a CDMA (Code Division Multiple Access) 3G card.<br><br>This shows the ESN (Electronic Serial Number) of the inserted CDMA 3G card. The ESN is the serial number of a CDMA 3G card and is similar to the IMEI on a GSM or UMTS 3G card. |
| Back | Click this to return to the previous screen. |

### 24.1.1.2 3G connection is down, Budget Control is not enabled

The 3G connection is down and you did not enable budget control in the **Device Configuration > Network > WAN > 3G(WAN 2)** screen (see Section 5.3.3 on page 87). The **Show Detail** screen displays as follows.

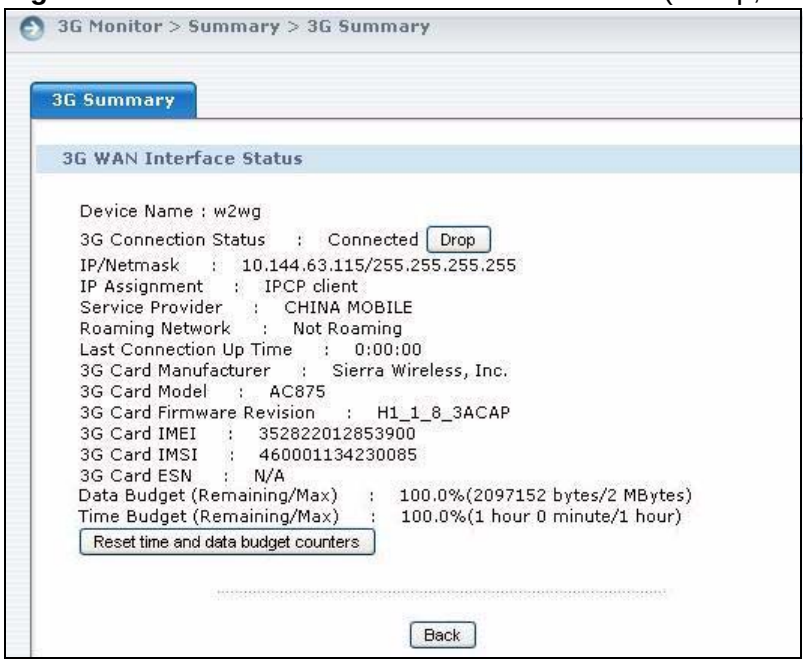
**Figure 263** Monitor > 3G Monitor > Show Details (3G down, Budget Control not enabled)

Refer to Table 222 on page 501 for descriptions of the other fields in this screen.

### 24.1.1.3 3G connection is up, Budget Control is enabled

The 3G connection is up and you enabled budget control in the **Device Configuration > Network > WAN > 3G(WAN 2)** screen (see Section 5.3.3 on page 87). The **Show Detail** screen displays as follows.

**Figure 264** Monitor > 3G Monitor > Show Details (3G up, Budget Control enabled)




The following table describes the labels in this screen.

**Table 223** Monitor > 3G Monitor > Show Details (3G up, Budget Control enabled)

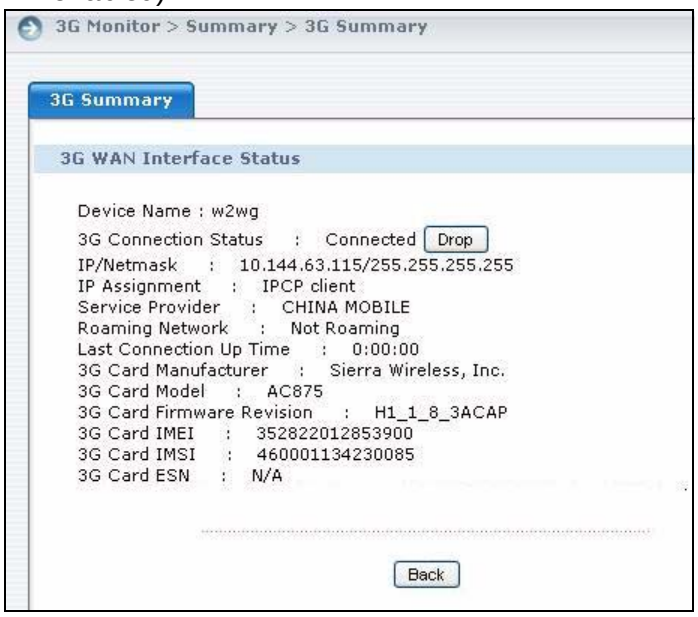
| LABEL | DESCRIPTION |
|---|---|
| Data Budget (Remaining/ Max) | This shows the status of the data budget you have set for the 3G connection and how much the current connection has used up. |
| Time Budget (Remaining/ Max | This shows the status of the time budget you have set for the 3G connection and how much the current connection has used up. |
| Reset time and data budget counters | Click this to reset the time and data budget you want to set for the 3G connection. |
| Back | Click this to return to the previous screen. |

Refer to Table 222 on page 501 for descriptions of the other fields in this screen.

### 24.1.1.4 3G connection is up, Budget Control is not enabled

The 3G connection is up and you did not enable budget control in the **Device Configuration > Network > WAN > 3G(WAN 2)** screen (see Section 5.3.3 on page 87). The **Show Detail** screen displays as follows.

**Figure 265** Monitor > 3G Monitor > Show Details (3G up, Budget Control not enabled)

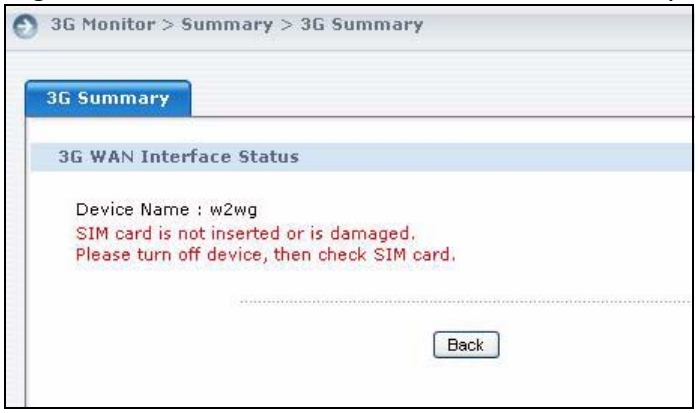



Refer to Table 222 on page 501 for descriptions of the other fields in this screen.

### 24.1.1.5 3G without SIM card inserted

The 3G card does not have a SIM (Subscriber Identity Module) inserted. The **Show Detail** screen displays as follows.

**Figure 266** Monitor > 3G Monitor > Show Details (3G card without SIM)

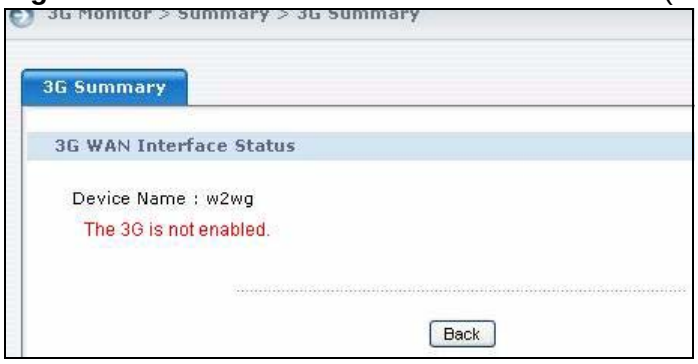



Click **Back** to return to the previous screen.

### 24.1.1.6 3G is not enabled in 3G(WAN) screen

There is a 3G card inserted in the device but the **3G(WAN 2)** option is not enabled in the **Device Configuration > Network > WAN > 3G(WAN 2)** screen (see Section 5.3.3 on page 87). The **Show Detail** screen displays as follows.

**Figure 267** Monitor > 3G Monitor > Show Details (3G disabled)

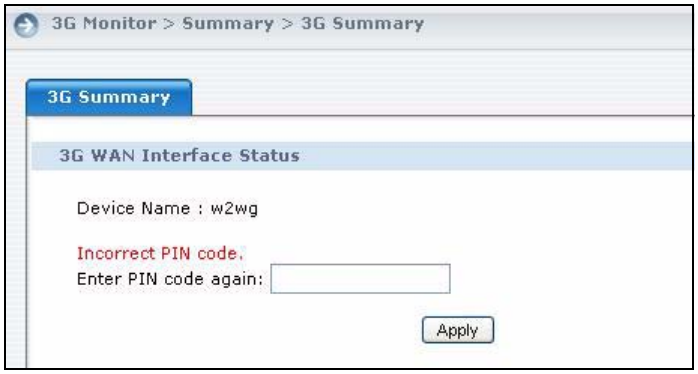



Click **Back** to return to the previous screen.

### 24.1.1.7 3G PIN code error

There is a 3G card inserted in the device but there is a PIN code error. The **Show Detail** screen displays as follows.

**Figure 268** Monitor > 3G Monitor > Show Details (Wrong PIN)

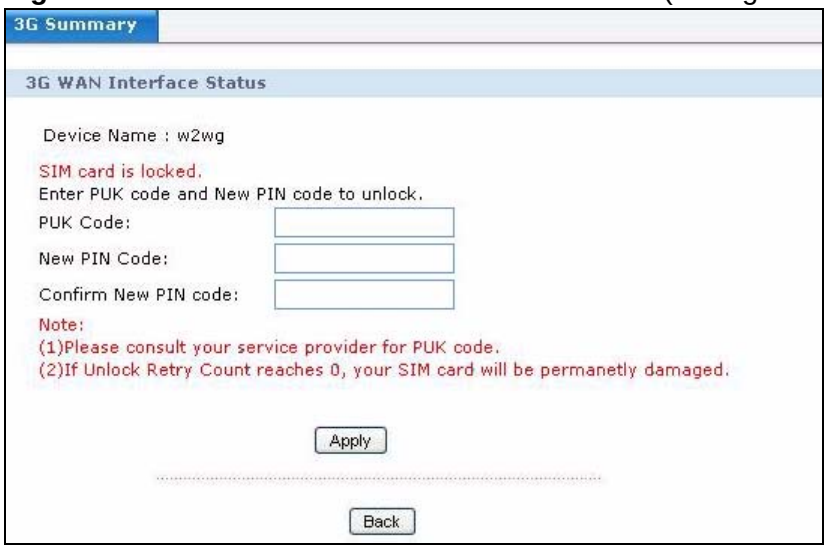



Enter the correct PIN code in the space provided and click **Apply**. Click **Back** to return to the previous screen.

#### *24.1.1.7.1 PIN error lockout*

There is PIN code error and you have entered the wrong PIN code three times. The **Show Detail** screen displays as follows.

**Figure 269** Monitor > 3G Monitor > Show Details (Wrong PIN entered thrice)




The following table describes the labels in this screen.

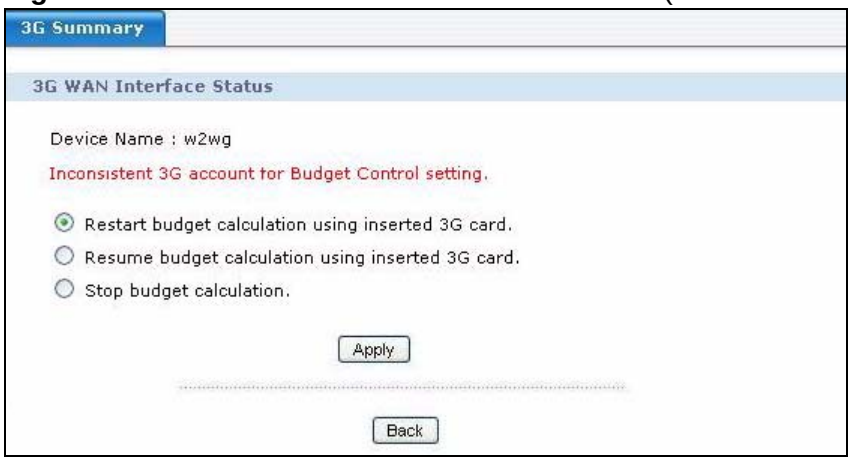
**Table 224** Monitor > 3G Monitor > Show Details (Wrong PIN entered thrice)

| LABEL | DESCRIPTION |
|---|---|
| PUK Code | Enter the PUK code to unlock the 3G card. |
| New PIN Code | Enter a new PIN code for your 3G card. |
| Confirm New Pin Code | Re-enter the new PIN code for your 3G card to ensure you have typed the correct number. |
| Apply | Click this to apply the changes you have made. |
| Back | Click this to return to the previous screen. |

#### *24.1.1.7.2 PUK code accepted*

You enter the correct PUK code (see Section 24.1.1.7.1 on page 507). The following screen appears.

**Figure 270** Monitor > 3G Monitor > Show Details (PUK code accepted)




The following table describes the labels in this screen.

**Table 225** Monitor > 3G Monitor > Show Details (PUK code accepted)

| LABEL | DESCRIPTION |
|---|---|
| Restart budget calculation using inserted 3G card | Click this if you want to set the data and time budget back to the full allocated value. |
| Resume budget calculation using inserted 3G card | Click this if you want to continue the data and time budget calculation from the last value before the SIM card got locked. |
| Stop budget calculation | Click this if you want to stop data and time budget calculation. |
| Apply | Click this to apply the changes you have made. |
| Back | Click this to return to the previous screen. |

### 24.1.1.8 CDMA card modem is not active

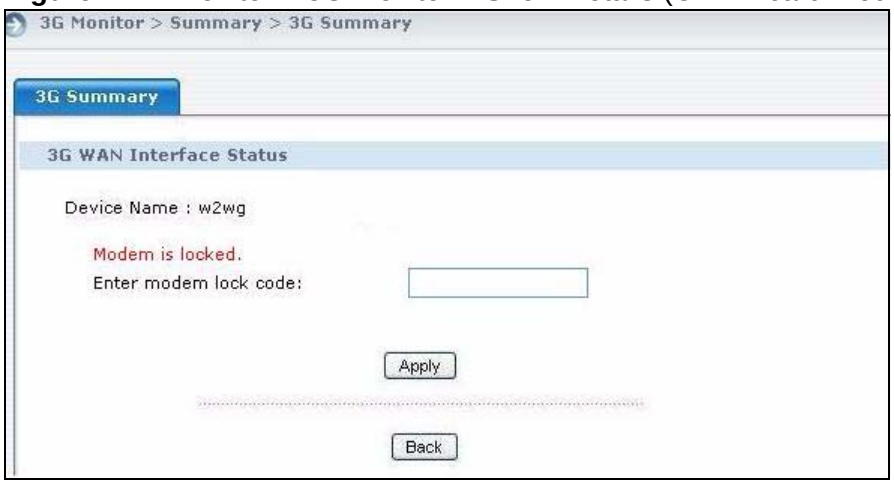
The Code Division Multiple Access (CDMA) card modem is not active. The **Show Detail** screen displays as follows.

**Figure 271** Monitor > 3G Monitor > Show Details (CDMA card modem is not active

### 24.1.1.9 CDMA card modem is locked

The CDMA card modem is locked. The **Show Detail** screen displays as follows.

**Figure 272** Monitor > 3G Monitor > Show Details (CDMA card modem is locked)




Enter the correct code to unlock the CDMA modem and click **Apply**. Click **Back** to return to the previous screen.

# 24.2 Availability Report

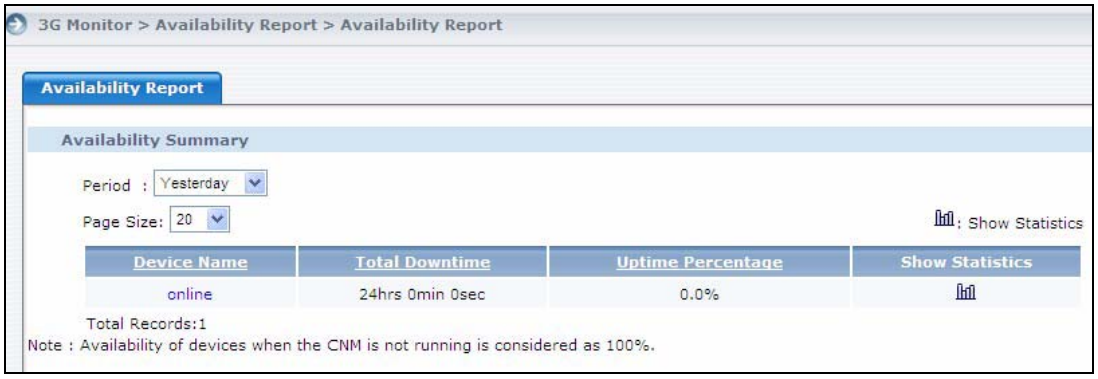
Use this screen to look at the 3G connection history of a Vantage CNM-managed device.

You can see the uptime percentage of a device's 3G connection from the current date, going as far back as the previous month. Vantage CNM stores two months of

data. You can also check the date and time when a 3G connection has been stopped.

Click **Monitor > 3G Monitor > Availability Report**. If you are viewing the reports for all devices (i.e., selecting **root** in the **Topology** navigation panel), the following screen displays.

**Figure 273** Monitor > 3G Monitor > Availability Report (Folder list)



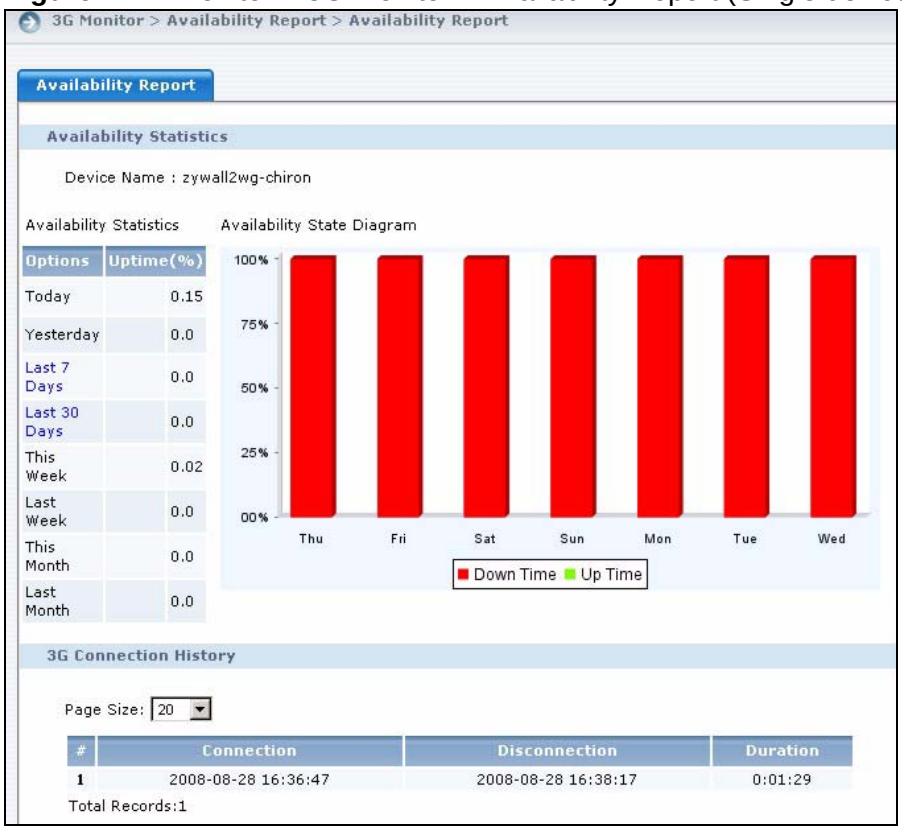

The following table describes the labels in this screen.

**Table 226** Monitor > 3G Monitor > Availability Report (Folder list)

| LABEL | DESCRIPTION |
|---|---|
| Period | Select reports from **Today**, **Yesterday** or the **Last 7 Days**. |
| Page Size | Select how many records you want to see in each page. |
| Device Name | This is the name of the device where the 3G card is installed. |
| Total Downtime | This is the total time period when the 3G connection of the device is stopped. This is in the XXhr(s) YYmin(s) ZZsec(s) format. |
| Uptime Percentage | This is the percentage of time when the 3G connection of the device is running. |
| Show Statistics | Click this icon to see a graph that shows the 3G connection uptime. See Figure 274 on page 511 or Figure 275 on page 513 to see this screen. |
| Total Records | This shows how many records there are in all. |

If you are viewing the report for a single device, the following screen displays.

**Figure 274** Monitor > 3G Monitor > Availability Report (Single device, 7 Days)




The following table describes the labels in this screen.

**Table 227** Monitor > 3G Monitor > Availability Report

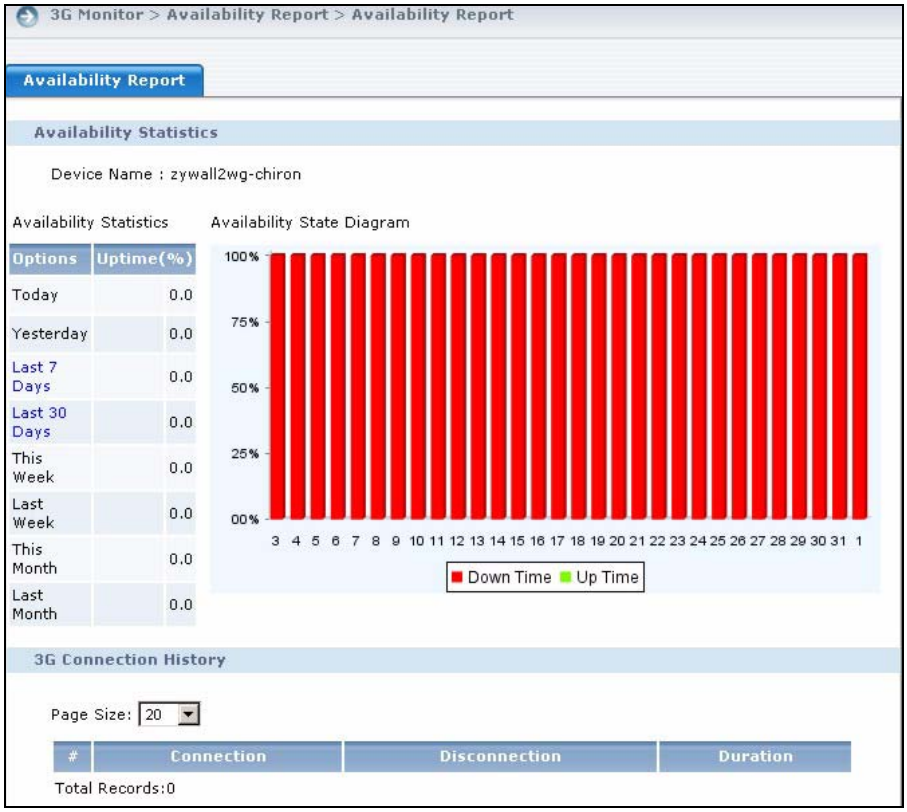
| LABEL | DESCRIPTION |
|---|---|
| Availability Statistics | |
| Device Name | This is the name of the device where the 3G card is installed. |
| Availability Statistics | This shows a table of uptime percentages of the 3G connection for a span of time, ranging from one day to one month. |
| Options | This column shows the day (**Today**, **Yesterday**) or range of days when the 3G connection uptime percentage is recorded. The **Last 7 Days** and **Last 30 Days** options are clickable and dictate the contents of the graph in the **Availability State Diagram**. Click the link of the day range for which you need to see the graph.<br><br>Vantage CNM stores two months of data. |
| Uptime (%) | This column shows the 3G connection uptime percentage for a particular day or day range. |

**Table 227** Monitor > 3G Monitor > Availability Report

| LABEL | DESCRIPTION |
|---|---|
| Availability State Diagram | This bar graph shows either the **Last 7 Days** (default view) or **Last 30 Days** of 3G connection uptime diagram. Choose what day range you want in the **Options** column of **Availability Statistics**.<br><br>See Figure 275 on page 513 for the **Last 30 Days** screen.<br><br>A **Red** bar indicates 3G connection downtime, while a **Green** bar indicates uptime. |
| 3G Connection History | |
| Page Size | Select how many records you want to see in each page. |
| # | This is the index number of the entry. |
| Connection | This is the date and time when the 3G connection is started.<br><br>The date is in Year:Month:Day format. The time is in XXhr(s) YYmin(s) ZZsec(s) format. |
| Disconnection | This is the date and time when the 3G connection is stopped.<br><br>The date is in Year:Month:Day format. The time is in XXhr(s) YYmin(s) ZZsec(s) format. |
| Duration | This shows how long the 3G connection on a managed device has been online before disconnection.<br><br>This shows a dash (-) if the 3G connection is up at the time of viewing this screen.<br><br>The newest 3G connection event is shown on top of the list. |
| Total Records | This shows how many records there are in all. |

If you want to see up time statistics for the last thirty days, click the **Last 30 Days** link in the Options column. The following screen displays.

**Figure 275** Monitor > 3G Monitor > Availability Report (Single device, 30 Days)



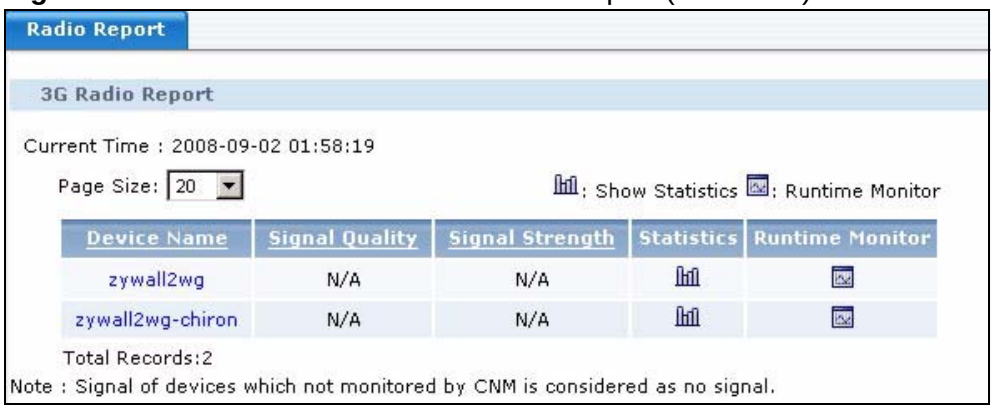

Refer to Figure 227 on page 511 to read the descriptions of the labels in this screen.

# 24.3 Radio Report

Use this screen to view the 3G connection signal strength and quality of a Vantage CNM-managed device.

Click **Monitor > 3G Monitor > Radio Report**. When viewing the records for all devices, the following screen displays.

**Figure 276** Monitor > 3G Monitor > Radio Report (Folder list)

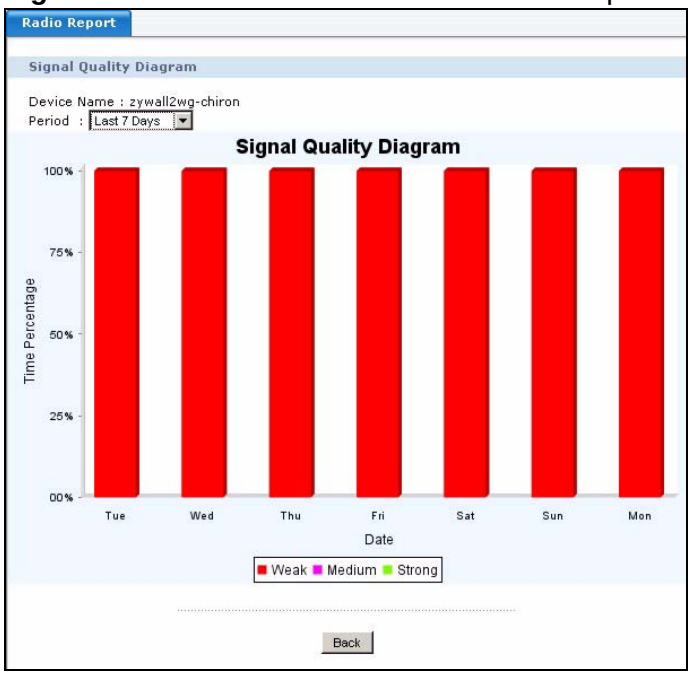


The following table describes the labels in this screen.

**Table 228** Monitor > 3G Monitor > Radio Report (Folder list)

| LABEL | DESCRIPTION |
|---|---|
| Current Time | This shows the date and time of viewing. The date is in Year:Month:Day format. The time is in XXhr(s) YYmin(s) ZZsec(s) format. |
| Page Size | Select how many records you want to see in each page. |
| Device Name | This is the name of the device where the 3G card is installed. |
| Signal Quality | This is the signal quality of the 3G card if it is up. This is represented by a bar graph in ascending height order. Depending on how many bars are lit green, the 3G connection can be:<br>• **No signal** - All bars are grayed out.<br>• **Very weak** - The smallest bar in the left is lit green.<br>• **Weak** - The two bars in the left are lit green.<br>• **Medium** - Three bars from the left are lit green.<br>• **Strong** - Four bars from the left are lit green.<br>• **Very strong** - All bars are lit green.<br>This is **N/A** if the device is offline. |
| Signal Strength | This is the signal strength of the 3G connection. The unit of measurement used is **dBm** (Decibels per milliwatt).<br>This is **N/A** if the device is offline. |
| Statistics | Click the “Show Statistics” icon to view a bar graph showing the 3G signal quality statistics.<br>Refer to Section Figure 277 on page 516 to view the diagram. |
| Runtime Monitor | Click the “Runtime Monitor” icon to view a line graph showing the 3G signal strength report.<br>Refer to Section Figure 278 on page 517 to view the diagram. |
| Total Records | This shows how many records there are in all. |

**Figure 277** Monitor > 3G Monitor > Radio Report > Statistics (Folder List)



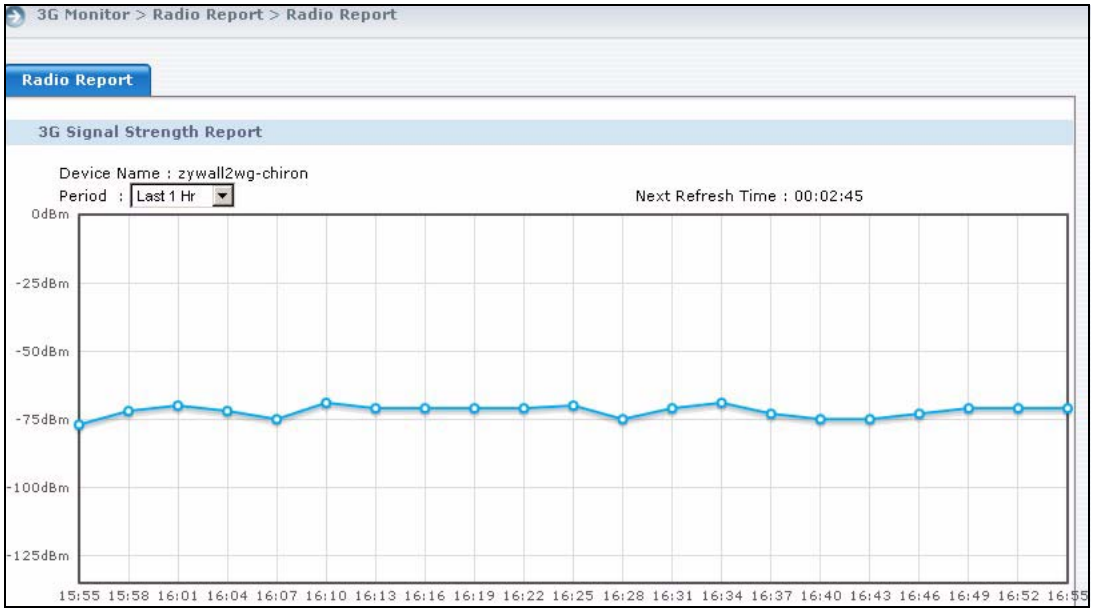

The following table describes the labels in this screen.

**Table 229** Monitor > 3G Monitor > Radio Report > Statistics (Folder List)

| LABEL | DESCRIPTION |
|---|---|
| Signal Quality Diagram | |
| Device Name | This is the name of the device where the 3G card is installed. |
| Period | Select the time period of the device's record of 3G connection signal strength and quality you want to view. Choose between **Last 7 Days** or **Last 30 Days**. |
| graph | The graph displays the report information visually.<br>It shows the signal quality of the 3G connection in a bar graph, indicated by the color of the bar:<br>• **Red** - No signal, very weak or weak signal quality<br>• **Pink** - Medium signal quality<br>• **Green** - Strong or very strong signal quality<br>The vertical axis of the bar graph shows what percent of time the signal quality persists. The horizontal axis gives the day (date) when the signal quality is recorded.<br>Time coverage can span seven days or thirty days, depending on the day range you choose. |
| Back | Click this to go back to the previous screen. |

When viewing the signal strength and quality report for a particular device, click **Monitor > 3G Monitor > Radio Report**. The following screen displays.

**Figure 278** Monitor > 3G Monitor > Radio Report (Single Device)




The following table describes the labels in this screen.

**Table 230** Monitor > 3G Monitor > Radio Report (Single Device)

| LABEL | DESCRIPTION |
|---|---|
| 3G Signal Strength Report | |
| Device Name | This is the name of the device where the 3G card is installed. |
| Period | Select the time period of the device's record of 3G connection signal strength and quality you want to view. Choose between **Last 1 Hr** or **Last 24 Hrs**. |
| Next Refresh Time | This shows the time until the next refresh happens or when the diagram will show the newest data. This is in XXhr(s) YYmin(s) ZZsec(s) format. |
| graph | The graph displays the report information visually. Move your mouse over a point in the graph to display its identification.<br><br>It shows the signal strength of the 3G connection in a line graph. The unit of measurement used is **dBm** (Decibels per milliwatt). The graph's time coverage can span one hour or one day, depending on the time range you choose. |

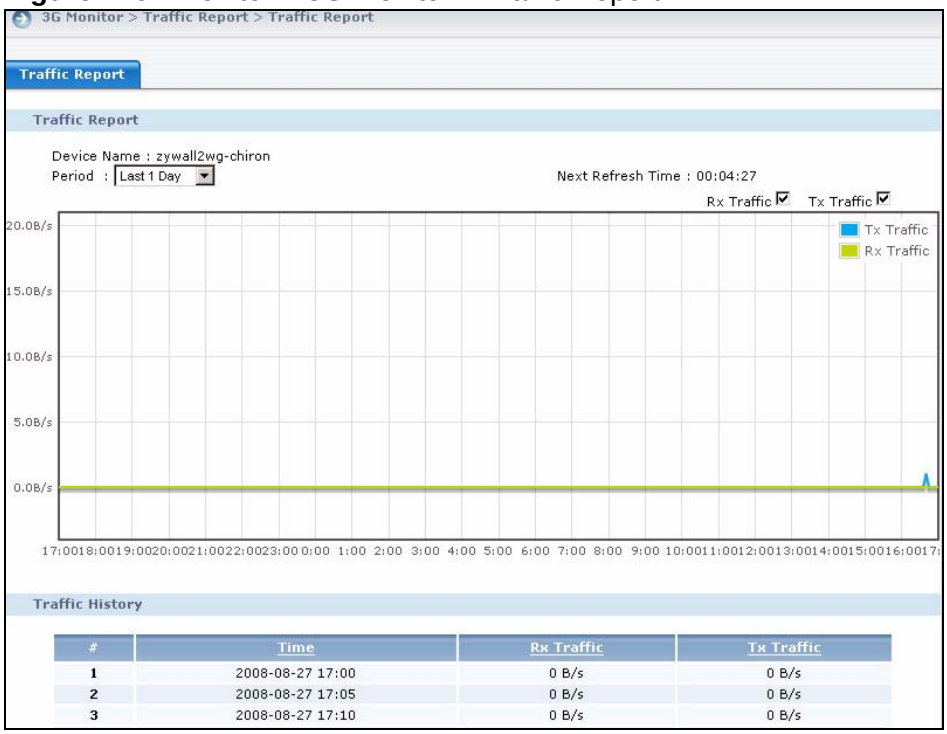
# 24.4 Traffic Report

Use this screen to view the 3G connection incoming or outgoing traffic for a Vantage CNM-managed device.

Note: This does not show up in the **3G Monitor** navigation panel when you are in the **root** profile in the device window. It is only available when you are viewing reports for a single device.

Click **Monitor > 3G Monitor > Traffic Report**. The following screen displays.

**Figure 279** Monitor > 3G Monitor > Traffic Report




The following table describes the labels in this screen.

**Table 231** Monitor > 3G Monitor > Traffic Report

| LABEL | DESCRIPTION |
|---|---|
| Traffic Report | |
| Device Name | This is the name of the device where the 3G card is installed. |
| Period | Select the time period of the device's record of 3G traffic you want to view. Choose between **Last 1 Day** or **Last 7 Days**. |
| Next Refresh Time | This shows the time until the next refresh happens or when the diagram will show the newest data. This is in XXhr(s) YYmin(s) ZZsec(s) format. |

**Table 231** Monitor > 3G Monitor > Traffic Report

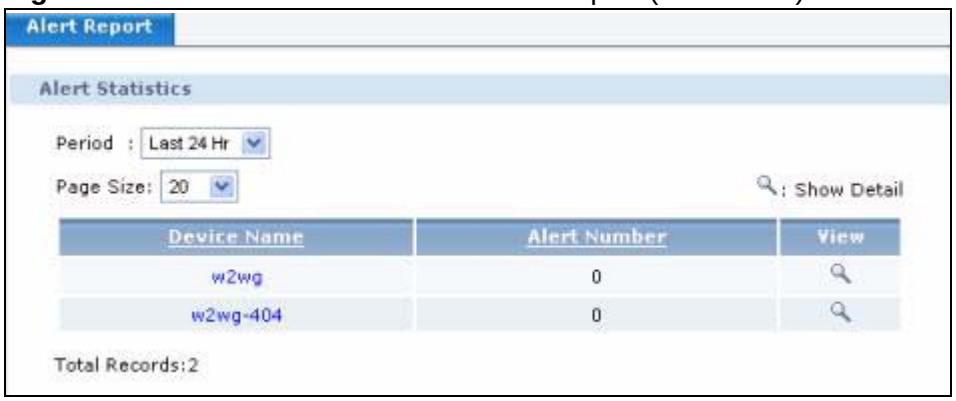
| LABEL | DESCRIPTION |
|---|---|
| graph | The graph displays the report information visually.<br>It shows the incoming/outgoing traffic of the 3G connection in a line graph. The unit of measurement used is **B/s** (Bytes per seconds). The graph's time coverage can span one day or seven days, depending on the day range you choose. |
| Traffic History | |
| # | This is the index number of the entry. |
| Time | This is the time when the entry is recorded by the Vantage CNM. |
| Rx Traffic | Click this checkbox to view the incoming traffic the device has received. |
| Tx Traffic | Click this checkbox to view the outgoing traffic the device has transmitted. |

# 24.5 Alert Report

Use this screen to see recorded events in devices with support for 3G monitor.

Click **Monitor > 3G Monitor > Alert Report**. When viewing the records for all devices, the following screen displays.

**Figure 280** Monitor > 3G Monitor > Alert Report (Folder List)




The following table describes the labels in this screen.

**Table 232** Monitor > 3G Monitor > Alert Report (Folder List)

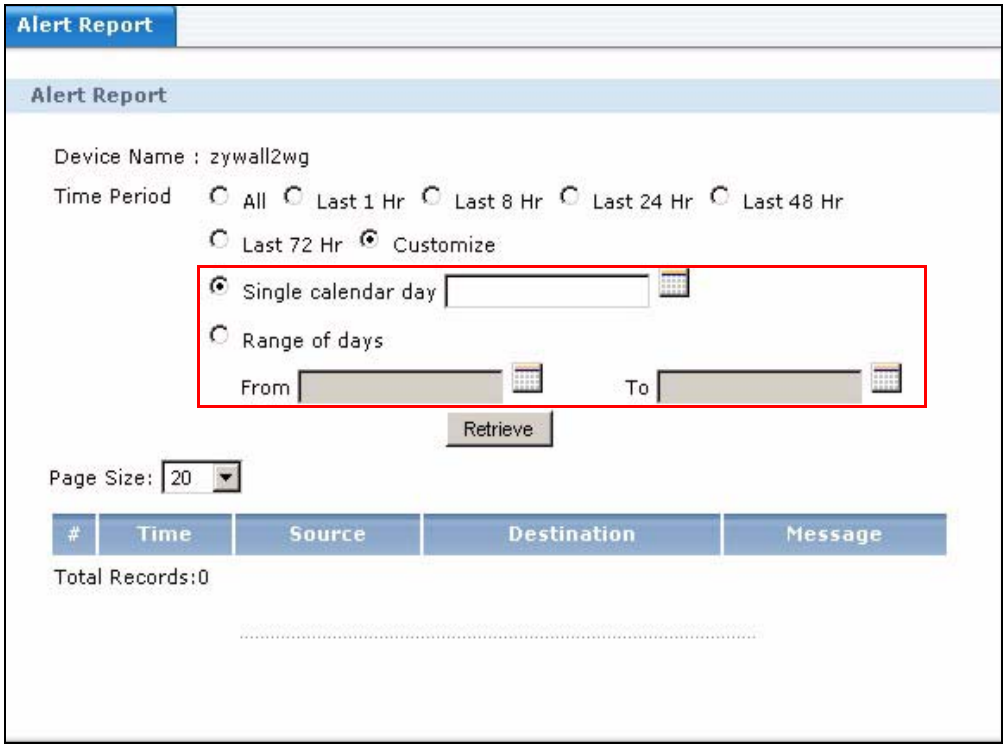
| LABEL | DESCRIPTION |
|---|---|
| Alert Statistics | |
| Period | Select the time period of the device's record of 3G traffic you want to view. Choose between **All, last 1 Hr**, **Last 8 Hr**, **Last 24 Hr** (default), **Last 48 Hr** or **Last 72 Hr**. |
| Page Size | Select how many records you want to see in each page. |

**Table 232** Monitor > 3G Monitor > Alert Report (Folder List)

| LABEL | DESCRIPTION |
|---|---|
| Device Name | This is the name of the device where the 3G card is installed. |
| Alert Number | This indicates how many alerts under the 3G category a device has generated. |
| View | Click the “Show Detail” icon to view information related to 3G alert.<br>Refer to Figure 281 on page 521 to view the details of this screen. |
| Total Records | This shows how many records there are in all. |

When viewing the alert report for a particular device, click **Monitor > 3G Monitor > Alert Report**. The following screen displays.

**Figure 281** Monitor > 3G Monitor > Alert Report (Single device)

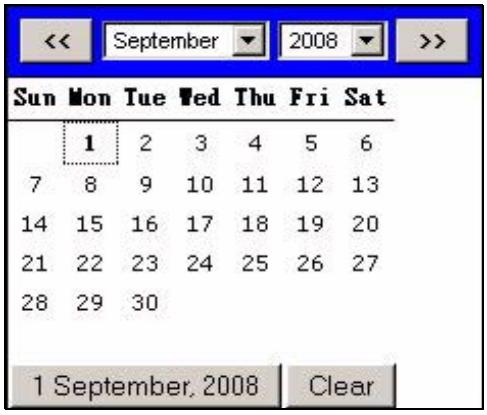



The following table describes the labels in this screen.

**Table 233** Monitor > 3G Monitor > Alert Report (Single Device)

| LABEL | DESCRIPTION |
|---|---|
| Alert Report | |
| Device Name | This is the name of the device where the 3G card is installed. |
| Time Period | **All** - Click this to see all the recorded events in the device.<br>**Last 1 Hr** - Click this to see recorded events in the last hour in the device.<br>**Last 8 Hr** - Click this to see all the recorded events during the last eight hours in the device.<br>**Last 24 Hr** - Click this to see all the recorded events during the last twenty-four hours in the device.<br>**Last 48 Hr** - Click this to see all the recorded events during the last forty-eight hours in the device.<br>**Last 72 Hr** - Click this to see all the recorded events during the last seventy-two hours in the device. |

**Table 233** Monitor > 3G Monitor > Alert Report (Single Device)

| LABEL | DESCRIPTION |
|---|---|
| Customize | Click this to see all the recorded events in the device. Additional fields (that is, the fields inside the box in Figure 281 on page 521) appear when this option is selected, as follows:<br>• **Single calendar day**<br>• **Range of day (From... To)**<br>For these fields, click the calendar icon. The calendar screen appears.<br>  <br><br>Select a specific date if you want to see events recorded on that day.<br>Select a date range if you want to see events recorded for a span of days. The date range can be up to 30 days long. Click the **(date)** button to confirm your selection, or click **Clear** to close this screen without any changes. |
| Retrieve | Click this to generate the list of alerts for the time range you selected. |
| Page Size | Select how many records you want to see in each page. |
| # | This is the index number of the entry. |
| Time | This is the time when the event is recorded by the Vantage CNM. |
| Source | This is the IP address of the device where the request is coming. |
| Destination | This is the IP address of the device where the request is directed. |
| Message | This is the message describing the event in the managed device. |
| Total Records | This shows how many records there are in all. |

# 24.6 Monitor Setting

Use these screens to set up e-mail notification settings when certain conditions are met by the managed devices and the Vantage CNM. You can customize who receives the e-mail messages, what events you are notified of, and what the e-mail message contains.

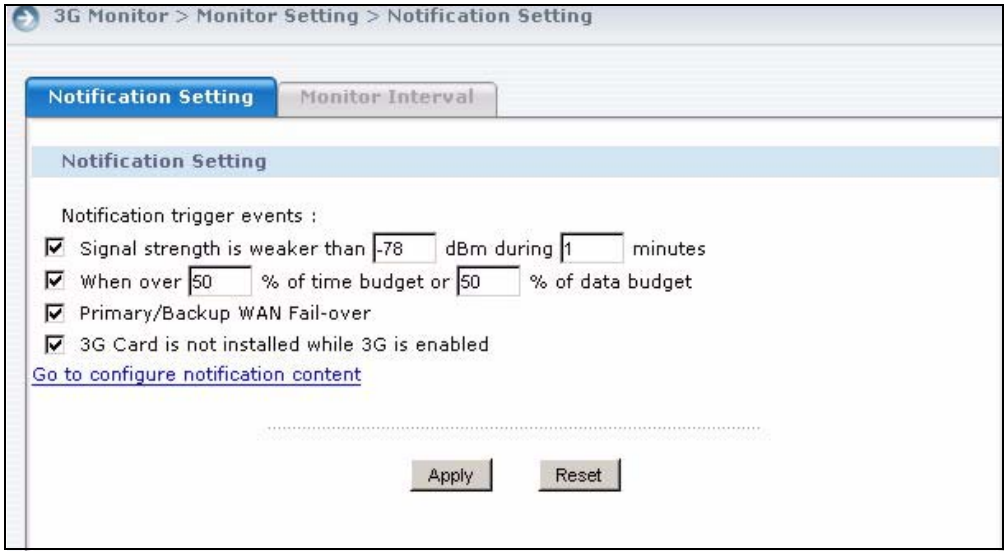
You can also set the time interval when your Vantage CNM monitors the managed devices.

## 24.6.1 Notification Setting

Use this screen to set up e-mail notifications when the Vantage CNM detects certain conditions on its managed devices.

Click **Monitor > 3G Monitor > Monitor Setting > Notification Setting**. The following screen displays.

**Figure 282** Monitor > 3G Monitor > Monitor Setting > Notification Setting



The following table describes the labels in this screen.

**Table 234** Monitor > 3G Monitor > Monitor Setting > Notification Setting

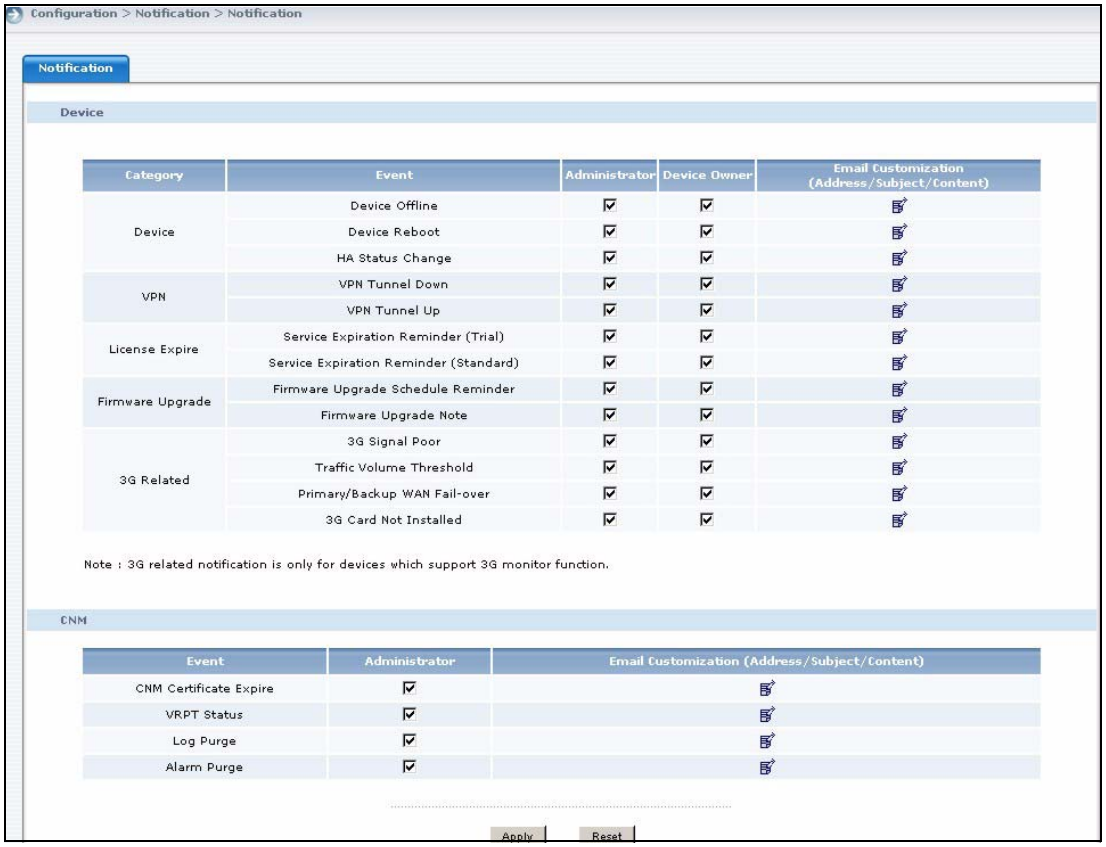
| LABEL | DESCRIPTION |
|---|---|
| Notification trigger events | Select the trigger events of which you want to be notified.<br>• Signal strength is weaker than (value) dBm during (value) minutes<br>• When over (value)% of time budget or (value)% of data budget Primary/Backup WAN Fail-over<br>• 3G Card is not installed while 3G is enabled<br>Note that you can customize the value for signal strength. Specify the dBm value and the length of time this state persists. The default values are -78 dBm and 1 minute.<br>You can also specify the time budget and data budget ratio. The default value for both is 50. |
| Go to configure notification content | Click this link to customize the notification message that you want to receive from Vantage CNM. |
| Apply | Click this to save your settings. |
| Reset | Click this to change the settings in this screen to the last-saved values. |

## 24.6.2 Notification

Use this screen to customize the notification message that you want to receive from Vantage CNM.

Click the **Go to configure notification content** link in **3G Monitor > Monitor Setting > Notification Setting**. The following screen displays.

**Figure 283** Monitor > 3G Monitor > Notification > Notification




Refer to Table 253 on page 567 for the descriptions of the fields in this screen.

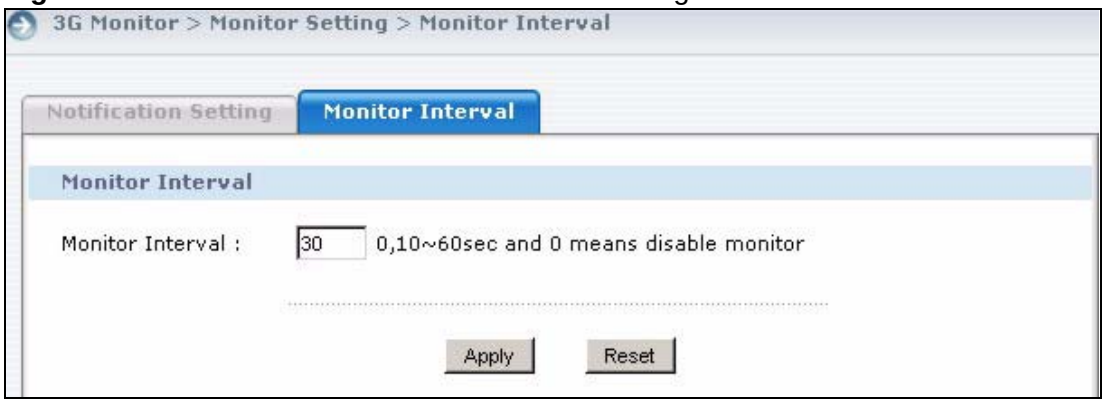
Go to Section 30.4 on page 566 for more details on Notifications in Vantage CNM, including customizing e-mail notification recipients and message details.

## 24.6.3 Monitor Interval

Use this screen to specify the time interval that the Vantage CNM accounts before updating its reports.

Click **Monitor > 3G Monitor > Monitor Setting > Monitor Interval**. The following screen displays.

**Figure 284** Monitor > 3G Monitor > Monitor Setting > Monitor Interval




The following table describes the labels in this screen.

**Table 235** Monitor > 3G Monitor > Monitor Setting > Monitor Interval

| LABEL | DESCRIPTION |
|---|---|
| Monitor Interval | Specify the time interval when the Vantage CNM checks for conditions. You can enter **0** if you want to disable this feature.<br><br>Enter a value from ten to sixty seconds. |
| Apply | Click this to save your settings. |
| Reset | Click this to change the settings in this screen to the last-saved values. |

# 25

# Device HA Status Monitor

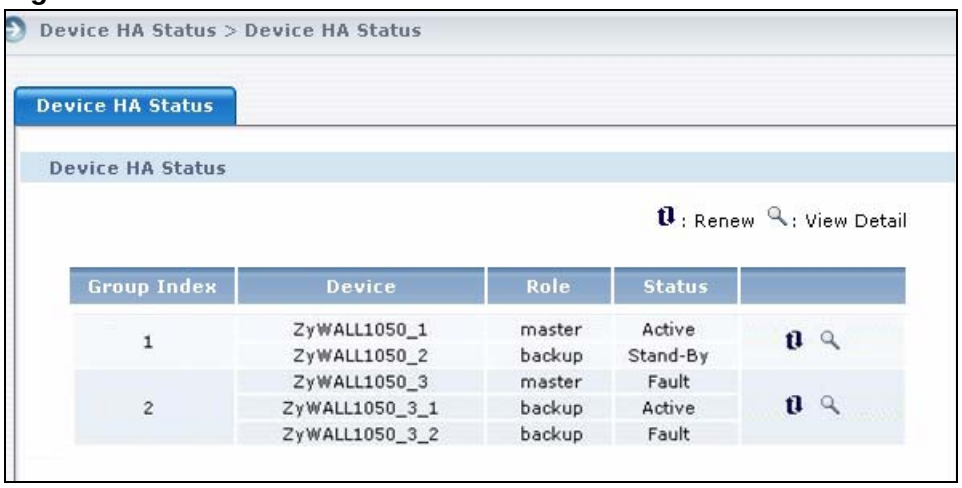
This chapter describes the monitor for device high availability (HA) status on ZLD ZyWALL device(s) such as ZyWALL 1050 or ZyWALL USG series.

## 25.1 Device HA Status

This report shows a summary of device status. To open this screen, select a ZLD device, click **Monitor** in the menu bar and then click **Device HA Status** in the navigation panel.

Note: You can see HA status in this screen only if you allow the Vantage CNM able to monitor the device HA status for the device. Refer to Figure 12 on page 33.

**Figure 285** Monitor > Device HA Status




The following table describes the labels in this screen.

**Table 236** Monitor > Device HA Status

| LABEL | DESCRIPTION |
|---|---|
| Group Index | This is the index number of the device HA group. |
| Device | This field displays the device name. |
| Role | This field displays the device HA role such as **master** or **backup**. |

**Table 236** Monitor > Device HA Status

| LABEL | DESCRIPTION |
|---|---|
| Status | This field displays the device's current HA status.<br>If the device is a master device, the possible status are:<br>• **Active**: All VRRP interfaces status on the device are active.<br>• **Fault**: One or more VRRP interfaces status on the device are inactive.<br>If the device is a backup device, the possible status are:<br>• **Active**: All VRRP interfaces status on the device are active.<br>• **Stand-By**: All VRRP interfaces status on the device are Stand-By.<br>• **Fault**: Other cases except the previous two. |
| Renew | Click this to get the latest device HA status on the Vantage CNM. |
| View Detail | Click this to display the screen where you can see detailed HA information for all HA interfaces on the device. |

# 26

# Device Alarm

## 26.1 Device Alarm Introduction

Alarms are time-critical information that the device automatically sends out at the time of occurrence. You may have administrators automatically e-mailed when an alarm occurs in the **CNM System Setting > Configuration > Notification** screen. See Section 30.4.1 on page 567.

### 26.1.1 Alarm Severity

There are four alarm severities and they are in an order. For example, a fatal alarm is severer than an major alarm.

**Table 237** Monitor > Device Alarm > Alarm Severity

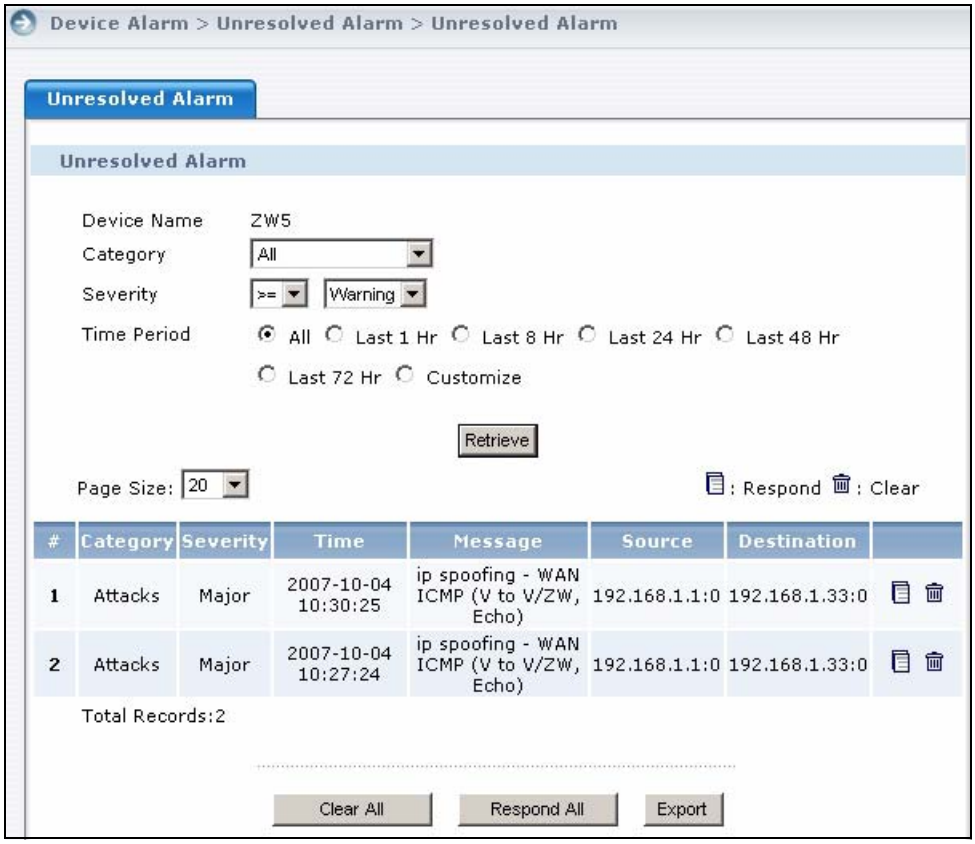
| SEVERITY LEVEL | DESCRIPTION |
|---|---|
| Fatal | This is an alarm such as unrecoverable hardware failure. |
| Major | This is an alarm such as an attack. |
| Minor | This is an alarm such as a recoverable hardware error. |
| Warning | This is an alarm such as an illegal Vantage CNM login attempt. |

### 26.1.2 Unresolved Alarms

View recent alarms and who has taken care of or is taking care of them in this screen. An alarm becomes historical after selecting **Clear**. To open this screen,

click a folder or a device, and then click **Monitor** in the menu bar, click **Device Alarm** > **Unresolved Alarm** in the navigation panel.

**Figure 286** Monitor > Device Alarm > Unresolved Alarm




The following table describes the fields in this screen.

**Table 238** Monitor > Device Alarm > Unresolved Alarm

| STATE | DESCRIPTION |
|---|---|
| Device Name/ Folder Name | This field displays the selected device or folder. |
| Platform | This is available if you select a folder. Select the platform you wish to view. |
| Category | Select the type of alarm you wish to view. |
| Severity | Select the severity of alarm you wish to view. See Section 26.1.1 on page 529 for more information. |
| Time Period | Select the time period for which you wish to view alarms. |
| Retrieve | Click this to update the list of alarms based on the specified criteria. |
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| Device Name | This field displays the name of the device that generated the alarm. |
| Category | This field displays the type of alarm. |

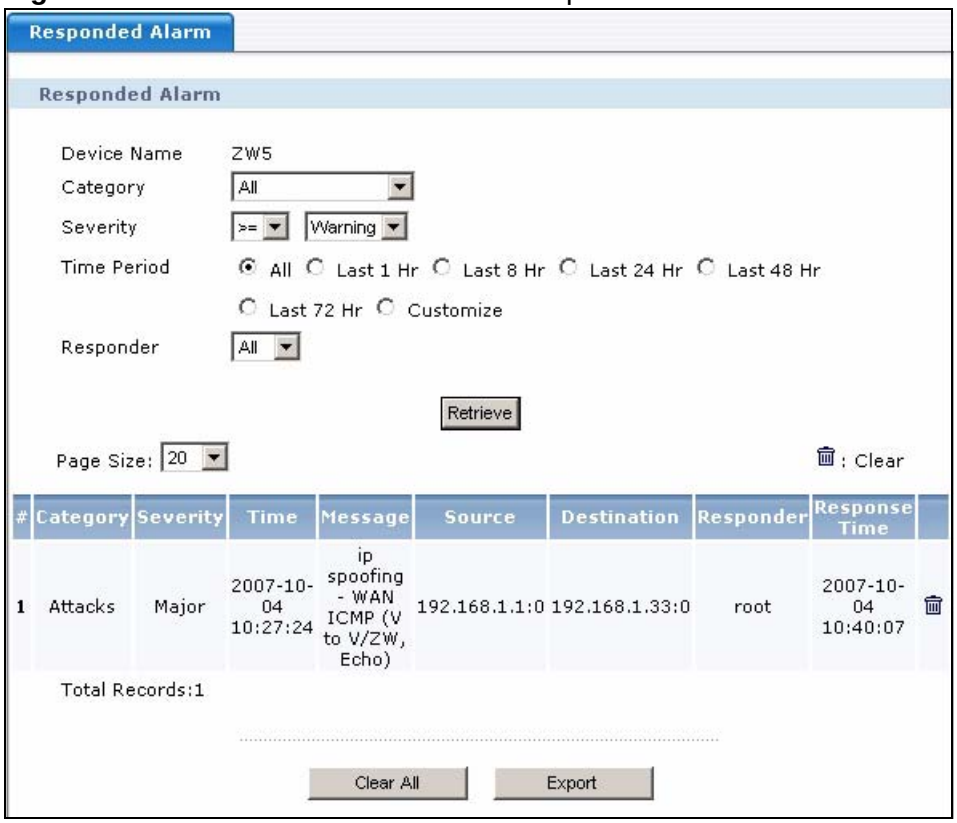
**Table 238** Monitor > Device Alarm > Unresolved Alarm (continued)

| STATE | DESCRIPTION |
|---|---|
| Severity | This field displays the alarm severity. See Section 26.1.1 on page 529 for more information. |
| Time | This field displays the time the alarm occurred. |
| Message | This field displays the reason the alarm occurred. |
| Source | This field lists the source IP address and the port number of the incoming packet. |
| Destination | This field lists the destination IP address and the port number of the incoming packet. |
| Respond | Click this to take responsibility for finding the cause of this alarm and move this record from this screen to the **Device Alarm** > **Responded Alarm** screen. |
| Clear | Click this to remove the alarm from the monitor. See Section 26.1.3 on page 532. |
| Total Records | This entry displays the total number of records on the current page of the list. |
| Clear All | Click this to remove all of the alarms in the list from the monitor. See Section 26.1.3 on page 532. |
| Respond All | Click this to respond to all of the alarms in the list. |
| Export | Click this to export the current information in this screen to an AlarmStore.csv file. |

## 26.1.3 Responded Alarm

Responded alarms are alarms that have been responded by an administrator.

**Figure 287** Monitor > Device Alarm > Responded Alarm




The following table describes the fields in this screen.

**Table 239** Monitor > Device Alarm > Responded Alarm

| STATE | DESCRIPTION |
|---|---|
| Device Name/ Folder Name | This field displays the selected device or folder. |
| Platform | This is available if you select a folder. Select the platform you wish to view. |
| Category | Select the type of alarm you wish to view. |
| Severity | Select the severity of alarm you wish to view. |
| Time Period | Select the time period for which you wish to view alarms. |
| Responder | Select alarms based on the administrator who is supposed to respond to them. |
| Retrieve | Click this to update the list of alarms based on the specified criteria. |
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| Category | This field displays the type of alarm. |
| Severity | This field displays the alarm severity. |

**Table 239** Monitor > Device Alarm > Responded Alarm (continued)

| STATE | DESCRIPTION |
|---|---|
| Time | This field displays the time the alarm occurred. |
| Message | This field displays the reason the alarm occurred. |
| Source | This field lists the source IP address and the port number of the incoming packet. |
| Destination | This field lists the destination IP address and the port number of the incoming packet. |
| Responder | This field displays the administrator who responded to the alarm. |
| Response Time | This field displays the time the alarm occurred. |
| Clear | Click this to remove the alarm from the monitor. See Section 26.1.3 on page 532. |
| Total Records | This entry displays the total number of records on the current page of the list. |
| Clear All | Click this to remove all of the alarms in the list from the monitor. See Section 26.1.3 on page 532. |
| Export | Click this to export the current information in this screen to an AlarmStore.csv file. |

# PART VII
# Log & Report

Device Operation Report (537)

CNM Logs (553)

VRPT (555)

# 27

# Device Operation Report

Use this menu items to see summary reports for the tasks you submit to the devices through Vantage CNM web configurator.

## 27.1 Firmware Upgrade Report

Firmware Upgrade means that Vantage CNM signals the device to request a firmware FTP upload from Vantage CNM. This report shows a summary of firmware upgrades. See Section 18.3 on page 451. To open this screen, click **Log & Report** in the menu bar and then click **Operation Report > Firmware Upgrade Report** in the navigation panel.

**Figure 288** Log & Report > Operation Report > Firmware Upgrade Report (Device)

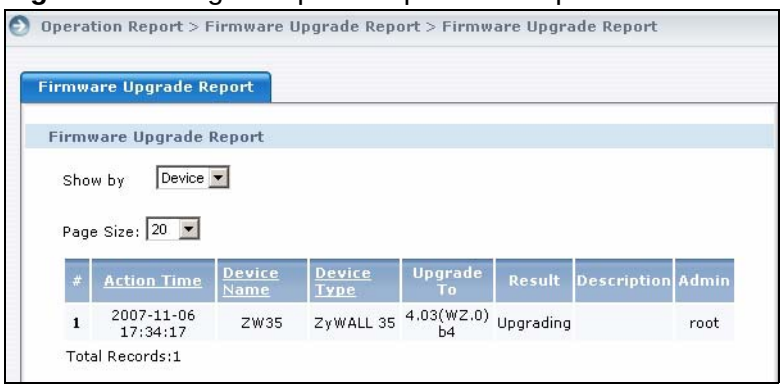
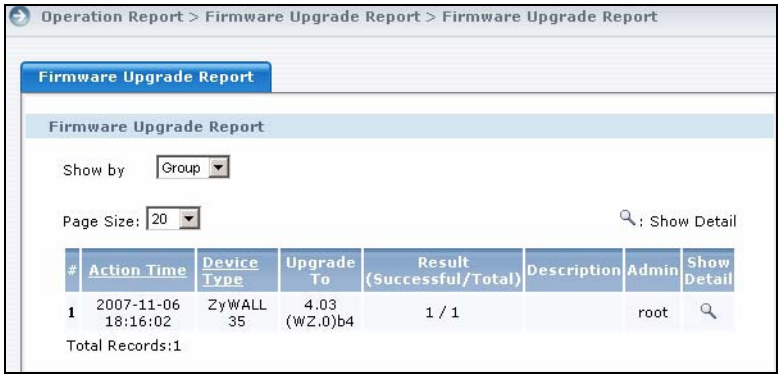



**Figure 289** Log & Report > Operation Report > Firmware Upgrade Report (Group)



The following table describes the labels in this screen.

**Table 240** Log & Report > Operation Report > Firmware Upgrade Report

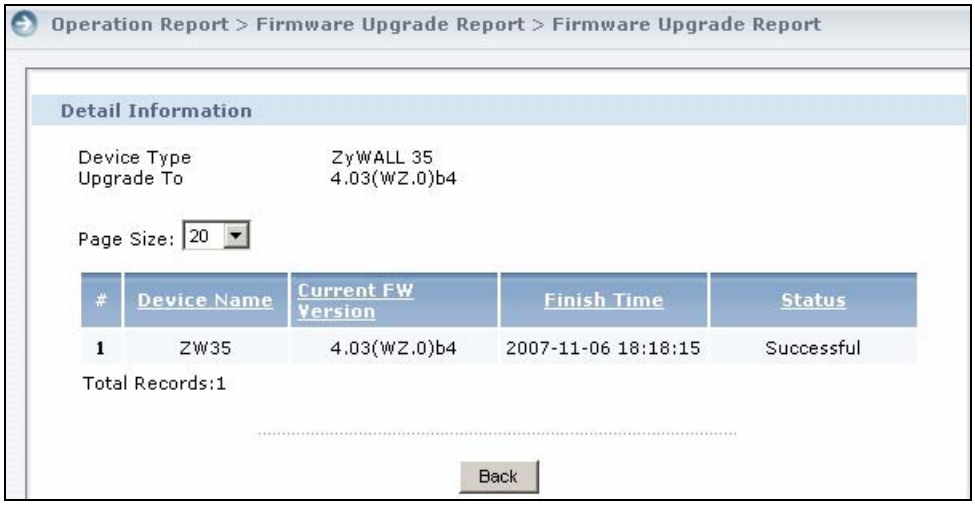
| LABEL | DESCRIPTION |
|---|---|
| Show by | Select this to display the firmware upgrade by devices or by groups. Select **device** or **group** if you want to see the device firmware upgrade records which were applied based on a device or a folder. |
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| Action Time | This displays the time at which the upgrade was performed. |
| Device Name | This is available if you select showing by device. This displays the device name. |
| Device Type | This displays the device type. |
| Upgrade To | This is the firmware version which the upgrade was upgraded to. |
| Result | This is available if you select showing by device. This shows the upgrade is performing (**Upgrading**) or was performed (**Successful** or **Failed**). |
| Result (Successful/ Total) | This is available if you select showing by group. This is the result that displays how many upgrades were requested and how many upgrades in them were successfully performed. |
| Description | This is addional note for this operation entered when this operation was created. |
| Admin | This displays the administrator who performed the upgrade. |
| Show Detail | This is available if you select showing by group. Click this to open a screen where you can see detailed firmware upgrade information. |
| Toal Records | This entry displays the total number of records on the current page of the list. |

## 27.1.1 Firmware Report Details

This report shows more information for each device firmware upgrade result performed in a group firmware upgrade. See Section 18.3 on page 451. To open

this report, click **Show Detail** in the **Log & Report > Operation Report > Firmware Upgrade Report** screen showing by group.

**Figure 290** Log & Report > Operation Report > Firmware Upgrade Report (Group) > Show Detail




The following table describes the labels in this screen.

**Table 241** Log & Report > Operation Report > Firmware Upgrade Report (Group) > Show Detail

| LABEL | DESCRIPTION |
|---|---|
| Device Type | This is the type for the device. |
| Upgrade To | This displays the firmware version the device was upgraded to. |
| Page Size | Select how many records you want to see in each page. |
| # | This field shows the index number of the entry. |
| Device Name | This field displays the name of each device that was upgraded. |
| Current FW Version | This field displays the firmware version number the device is currently using. |
| Finish Time | This field displays the time at which the upgrade was performed. |
| Status | This field displays whether the upgrade was successful, failed, or timed out. |
| Total Record | This entry displays the total number of records on the current page of the file list. |
| Back | Click this to return to the previous screen. |

# 27.2 Configuration Report

Use this screen to look at operation records for a device or groups. To open this screen, click **Log & Report > Operation Report > Configuration Report**.

**Figure 291** Log & Report > Operation Report > Configuration Report (Device)

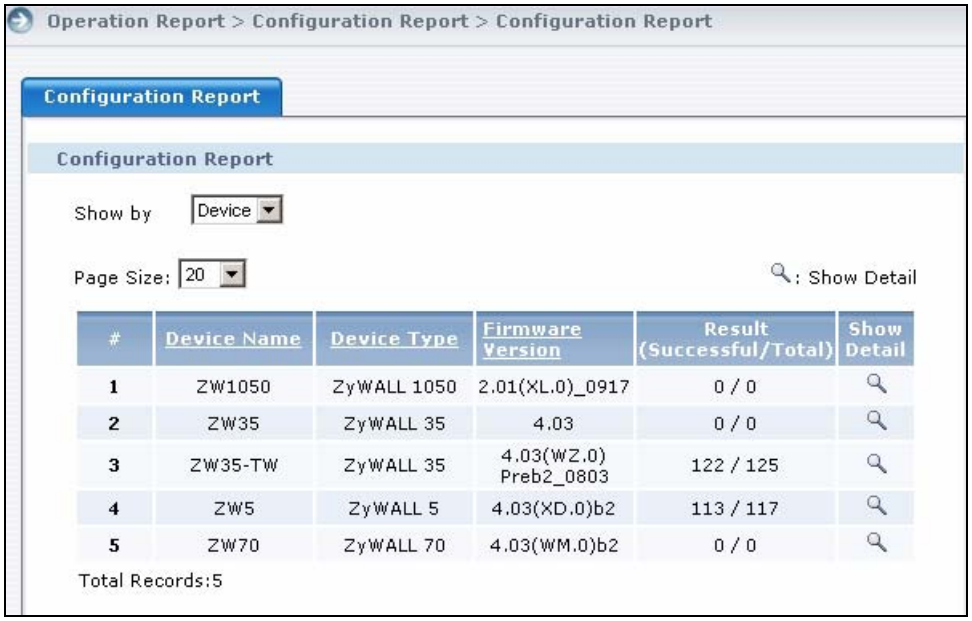
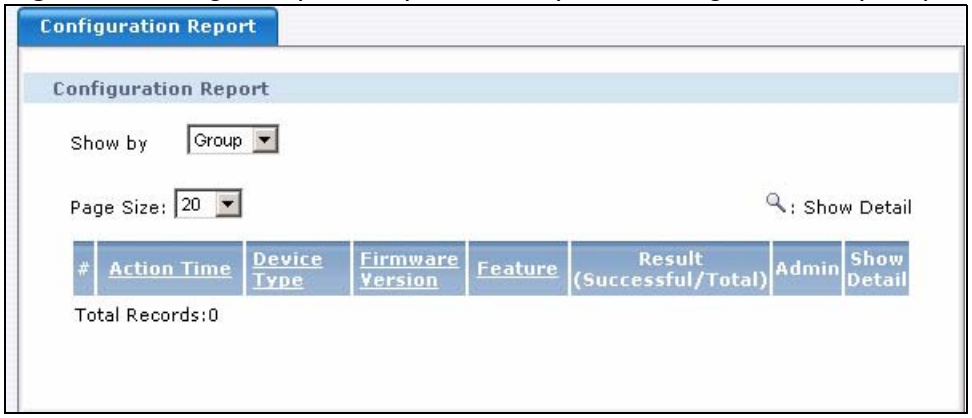



**Figure 292** Log & Report > Operation Report > Configuration Report (Group)




The following table describes the labels in this screen.

**Table 242** Log & Report > Operation Report > Configuration Report

| LABEL | DESCRIPTION |
|---|---|
| Show by | Select this to display the configuration operation list shown by devices or by groups. |
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| Device Name | This is available if you select showing by device. This displays the device name. You can click the label to sort by this column. |

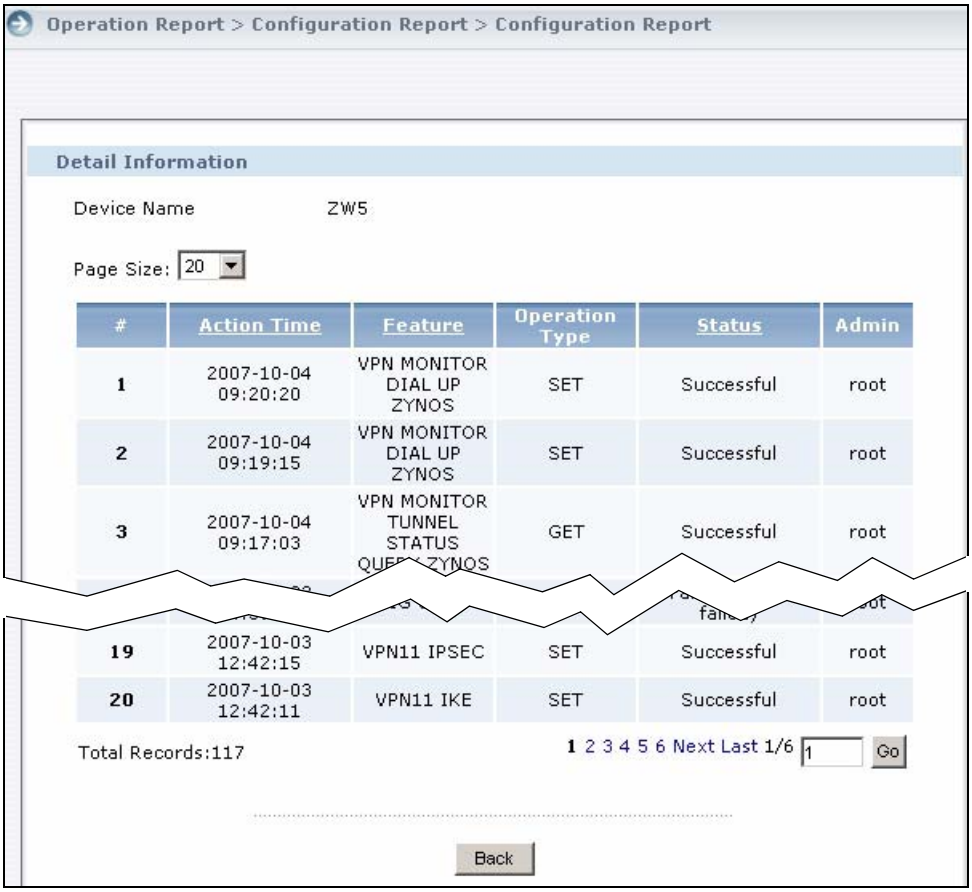
**Table 242** Log & Report > Operation Report > Configuration Report (continued)

| LABEL | DESCRIPTION |
|---|---|
| Action Time | This is available if you select showing by group. This field displays the date and time the operation was requested. |
| Device Type | This displays the device type. You can click the label to sort by this column. |
| Firmware Version | This displays the firmware version the device is using. |
| Feature | This is available if you select showing by group. This field displays the settings that are affected by the operation. |
| Result (Successful/ Total) | This is available if you select showing by group. This is the result that displays how many operation were requested in total and how many operation in them were successfully performed.<br><br>This field displays the total number of devices to which the operation was applied successfully. |
| Admin | This field displays the name of the administrator who performed the operation. |
| Show Detail | Click this to open a screen where you can see detailed information. |
| Toal Records | This entry displays the total number of records on the current page of the list. |

## 27.2.1 Configuration Report Details

Use this screen to look at the detailed status of an configuration operation. To open this screen, click **Log & Report > Operation Report > Configuration Report**, and then click **Show Details** next to the device.

**Figure 293** Log & Report > Operation Report > Configuration Report > Show Details




The following table describes the labels in this screen.

**Table 243** Log & Report > Operation Report > Configuration Report > Show Details

| LABEL | DESCRIPTION |
|---|---|
| Device Name | This field displays the device name of this report. |
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| Action Time | This field displays the date and time the operation was requested. You can click the label to sort by this column. |
| Feature | This field displays the settings that are affected by the operation. You can click the label to sort by this column. |

**Table 243** Log & Report > Operation Report > Configuration Report > Show Details

| LABEL | DESCRIPTION |
|---|---|
| Operation Type | This field displays the operation type of the configuration operation. **SET** display means this operation was performed from Vantage CNM to the device.<br><br>**GET** display means this operation was requested by Vantage CNM to get the information from the device. |
| Status | This field displays the status of the operation on the device such as **Succeed**, **Failed(time out)**, **Failed(device failed)** and **Pending**. You can click the label to sort by this column. |
| Admin | This field displays the name of the administrator who performed the operation. |
| Total Records | This field displays the total number of devices to which the operation is applied. |
| Back | Click this to return to the previous screen. |

# 27.3 Configuration File Backup Report

Use this screen to look at configuration file backup records for a device or groups. Refer to Section 17.3.1 on page 413. To open this screen, click **Log & Report** in

the menu bar and then **Operation Report > Configuration File Backup & Restore Report > Backup Report** in the navigation panel.

**Figure 294** Log & Report > Operation Report > Configuration File Backup & Restore Report > Backup Report (Device)

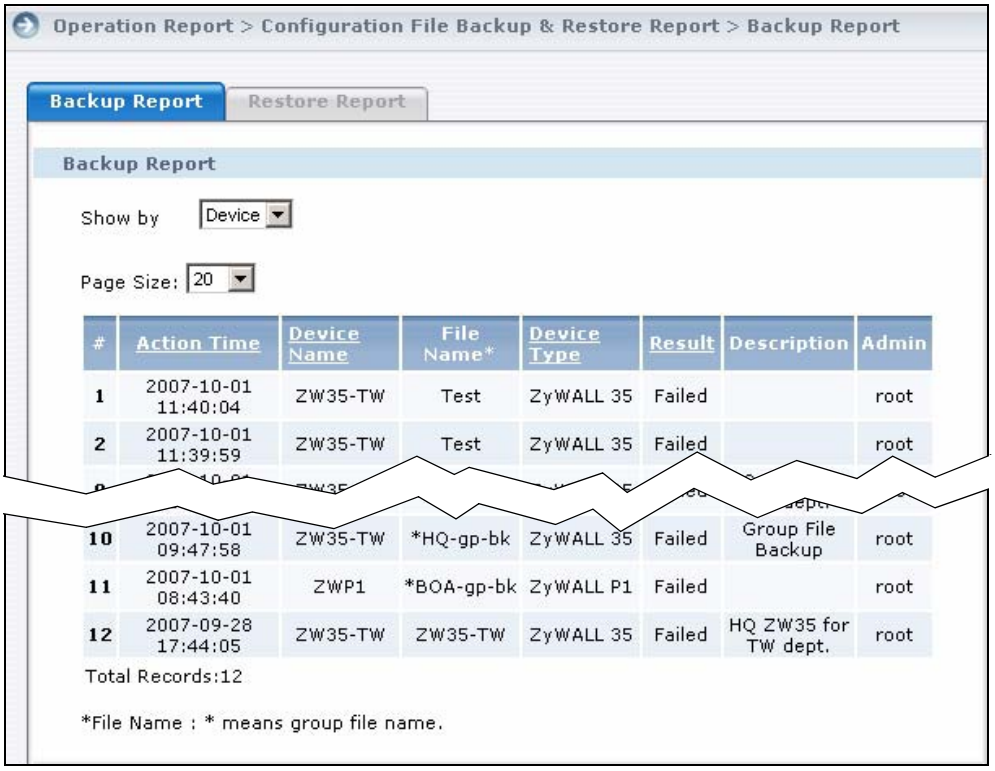
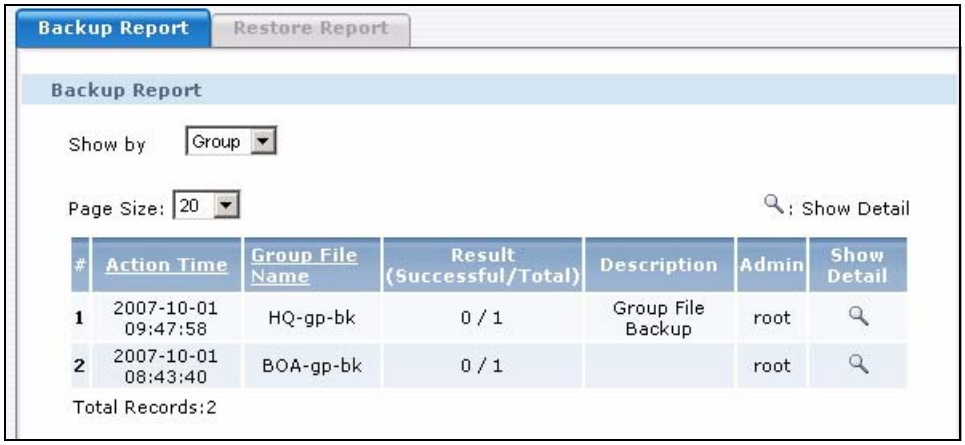



**Figure 295** Log & Report > Operation Report > Configuration File Backup & Restore Report > Backup Report (Group)



The following table describes the labels in this screen.

**Table 244** Log & Report > Operation Report > Configuration File Backup & Restore Report > Backup Report

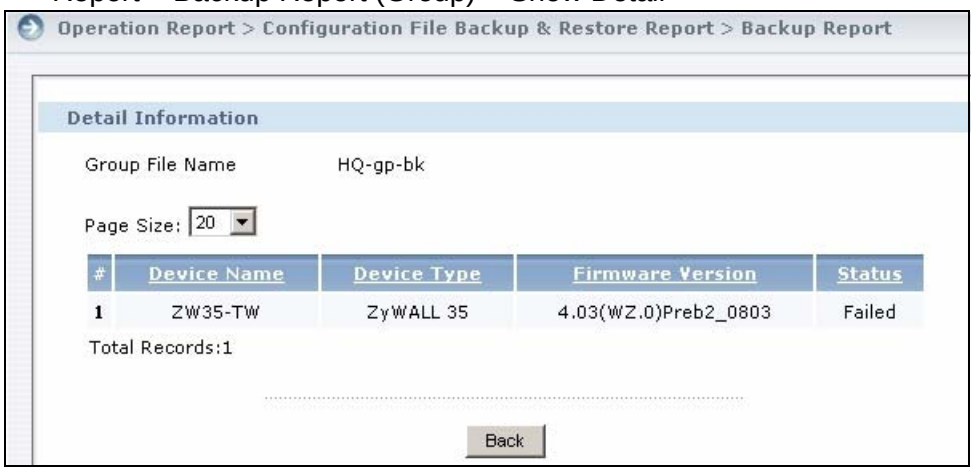
| LABEL | DESCRIPTION |
|---|---|
| Show by | Select this to display the configuration operation list shown by devices or by groups. |
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| Action Time | This is available if you select showing by group. This field displays the date and time the operation was requested. |
| Device Name | This is available if you select showing by device. This displays the device name for the configuration file backup. |
| File Name | This is available if you select showing by device. This displays the backup file name. |
| Group File Name | This is available if you select showing by group. This displays the group backup file name. |
| Device Type | This displays the device type. You can click the label to sort by this column. |
| Result | This is available if you select showing by device. This displays the result the operation was performed. |
| Result (Successful/ Total) | This is available if you select showing by group. This is the result that displays how many operation were requested in total and how many operation in them were successfully performed.<br>This field displays the total number of devices to which the operation was applied successfully. |
| Description | This is addional note for this operation entered when this operation was created. |
| Admin | This field displays the name of the administrator who performed the operation. |
| Show Detail | Click this to open a screen where you can see detailed information. |
| Toal Records | This entry displays the total number of records on the current page of the list. |

## 27.3.1 Configuration File Backup Report Details

Use this screen to look at the detailed status of an configuration operation. To open this screen, click **Show Detail** on a group backup record, click **Log &**

**Report** in the menu bar and then click **Operation Report > Configuration File Backup & Restore Report > Backup Report**.

**Figure 296** Log & Report > Operation Report > Configuration File Backup & Restore Report > Backup Report (Group) > Show Detail




The following table describes the labels in this screen.

**Table 245** Log & Report > Operation Report > Configuration File Backup & Restore Report > Backup Report (Group) > Show Detail

| LABEL | DESCRIPTION |
|---|---|
| Group File Name | This displays the group configuration backup file name for this report. |
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| Device Name | This field displays the device name of the operation. You can click the label to sort by this column. |
| Device Type | This field displays the device type of the operation. You can click the label to sort by this column. |
| Firmware Version | This field displays the firmware version of the device when this operation was performed. You can click the label to sort by this column. |
| Status | This field displays the status of the operation on the device such as **Succeed**, **Failed** and **Pending**. You can click the label to sort by this column. |
| Total Records | This field displays the total number of devices to which the operation is applied. |
| Back | Click this to return to the previous screen. |

# 27.4 Configuration File Restore Report

Use this screen to look at configuration file restore records for a device or groups. Refer to Section 17.3.1 on page 413. To open this screen, click **Log & Report** in

the menu bar and then click **Operation Report > Configuration File Backup & Restore Report > Restore Report** in the navigation panel.

**Figure 297** Log & Report > Operation Report > Configuration File Backup & Restore Report > Restore Report (Device)

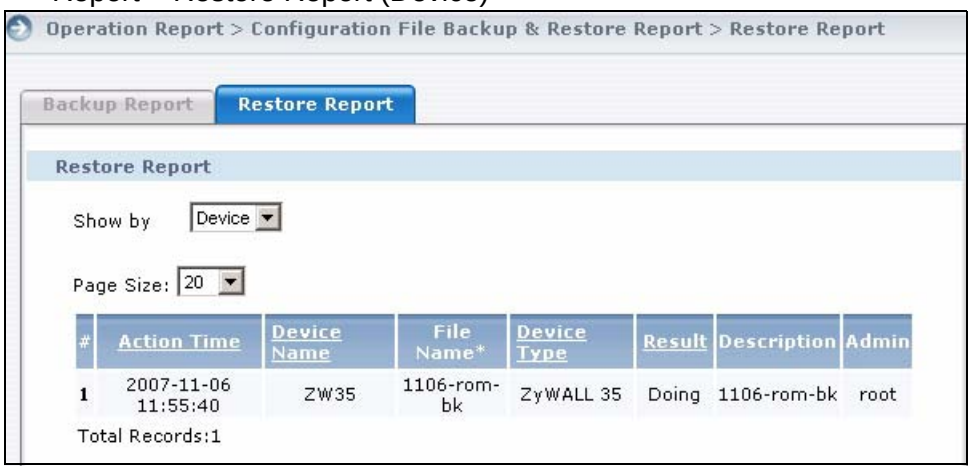
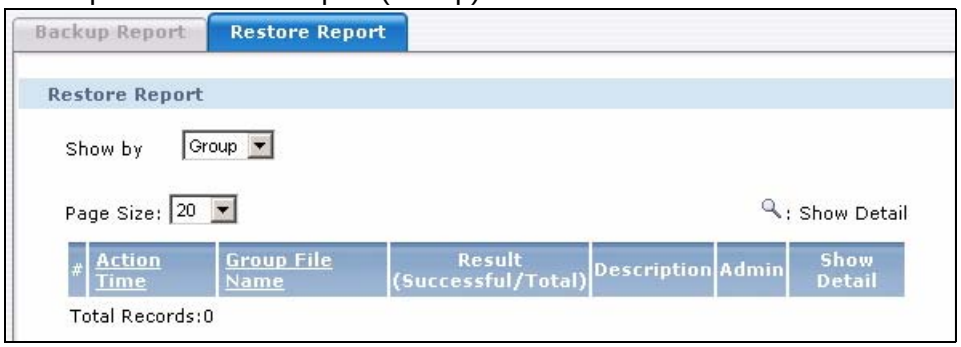



**Figure 298** Log & Report > Operation Report > Configuration File Backup & Restore Report > Restore Report (Group)




The following table describes the labels in this screen.

**Table 246** Log & Report > Operation Report > Configuration File Backup & Restore Report > Backup Report

| LABEL | DESCRIPTION |
|---|---|
| Show by | Select this to display the configuration operation list shown by devices or by groups. |
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| Action Time | This is available if you select showing by group. This field displays the date and time the operation was requested. |
| Device Name | This is available if you select showing by device. This displays the device name for the configuration file restore. |
| File Name | This is available if you select showing by device. This displays the restore file name. |
| Group File Name | This is available if you select showing by group. This displays the group restore file name. |

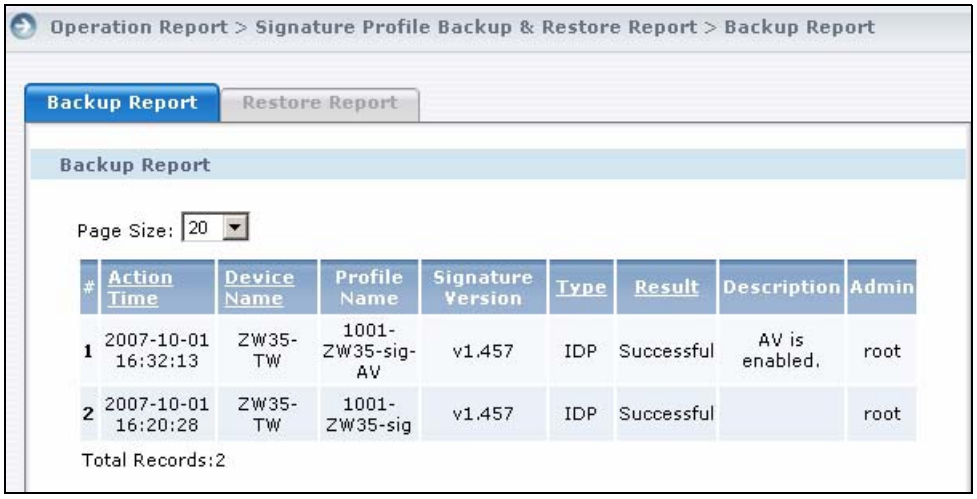
**Table 246** Log & Report > Operation Report > Configuration File Backup & Restore Report > Backup Report (continued)

| LABEL | DESCRIPTION |
|---|---|
| Device Type | This displays the device type. You can click the label to sort by this column. |
| Result | This is available if you select showing by device. This displays the result the operation is performing (**Doing**) or was performed (**Successful** or **Failed**). |
| Result (Successful/ Total) | This is available if you select showing by group. This is the result that displays how many operation has been successfully performed and the total operation requests. |
| Description | This is addional note for this operation entered when this operation was created. |
| Admin | This field displays the name of the administrator who performed the operation. |
| Show Detail | Click this to open a screen where you can see detailed information. |
| Toal Records | This entry displays the total number of records on the current page of the list. |

# 27.5 Signature Profile Backup Report

Use this screen to look at the backup records of device signature profile. Refer to Section 17.6.5 on page 430. To open this screen, click **Log & Report** in the menu bar and then click **Operation Report > Signature Profile Backup & Restore Report > Backup Report** in the navigation panel.

**Figure 299** Log & Report > Operation Report > Signature Profile Backup & Restore Report > Backup Report



The following table describes the labels in this screen.

**Table 247** Log & Report > Operation Report > Signature Profile Backup & Restore Report > Backup Report

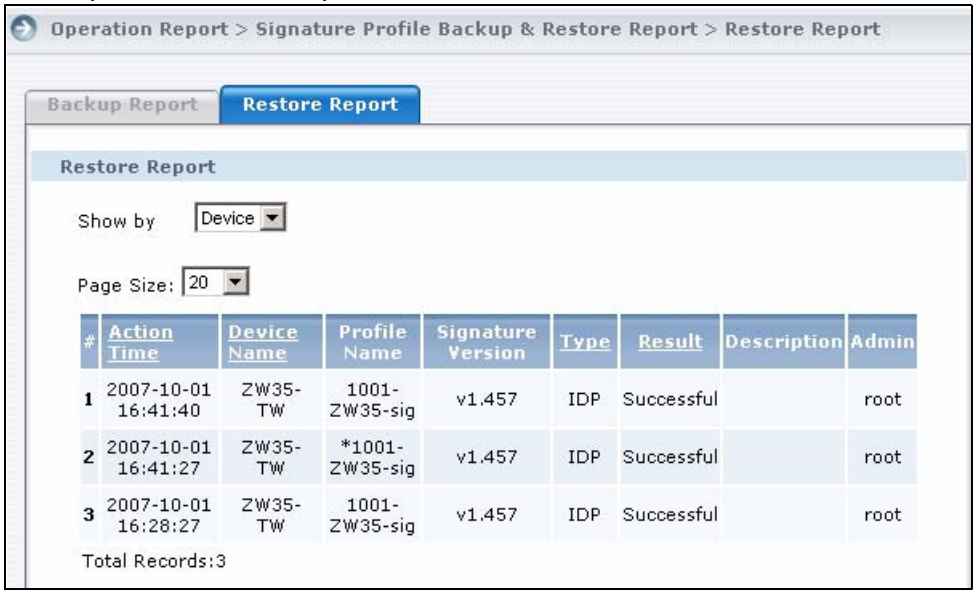
| LABEL | DESCRIPTION |
|---|---|
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| Action Time | This field displays the date and time the operation was requested. You can click the label to sort by this column. |
| Device Name | This displays the device name for the signature profile backup. You can click the label to sort by this column. |
| Profile Name | This displays the backup profile name. |
| Signature Version | This displays the signature version of the profile the backup was requested. |
| Type | This displays the signature profile type of the operation. You can click the label to sort by this column. |
| Result | This displays the result the operation was performed. You can click the label to sort by this column. |
| Description | This is addional note for this operation entered when this operation was created. |
| Admin | This field displays the name of the administrator who performed the operation. |
| Toal Records | This entry displays the total number of records on the current page of the list. |

# 27.6 Signature Profile Restore Report

Use this screen to look at the restore records of device signature profile. Refer to Section 17.6.3 on page 427. To open this screen, click **Log & Report** in the menu

bar and then click **Operation Report > Signature Profile Backup & Restore Report > Restore Report** in the navigation panel.

**Figure 300** Log & Report > Operation Report > Signature Profile Backup & Restore Report > Restore Report




The following table describes the labels in this screen.

**Table 248** Log & Report > Operation Report > Signature Profile Backup & Restore Report > Restore Report

| LABEL | DESCRIPTION |
|---|---|
| Show by | Select this to display the signature profile restore list shown by devices or by groups. |
| Page Size | Select how many records you want to see in each page. |
| # | This is the number of an individual entry. |
| Action Time | This field displays the date and time the operation was requested. You can click the label to sort by this column. |
| Device Name | This displays the device name for the signature profile restore. You can click the label to sort by this column. |
| Profile Name | This displays the restore profile name. |
| Signature Version | This displays the signature version of the profile the restore was requested. |
| Type | This displays the signature profile type of the operation. You can click the label to sort by this column. |
| Result | This displays the result the operation was performed. You can click the label to sort by this column. |
| Description | This is addional note for this operation entered when this operation was created. |

**Table 248** Log & Report > Operation Report > Signature Profile Backup & Restore Report > Restore Report (continued)

| LABEL | DESCRIPTION |
|---|---|
| Admin | This field displays the name of the administrator who performed the operation. |
| Toal Records | This entry displays the total number of records on the current page of the list. |

# 28

# CNM Logs

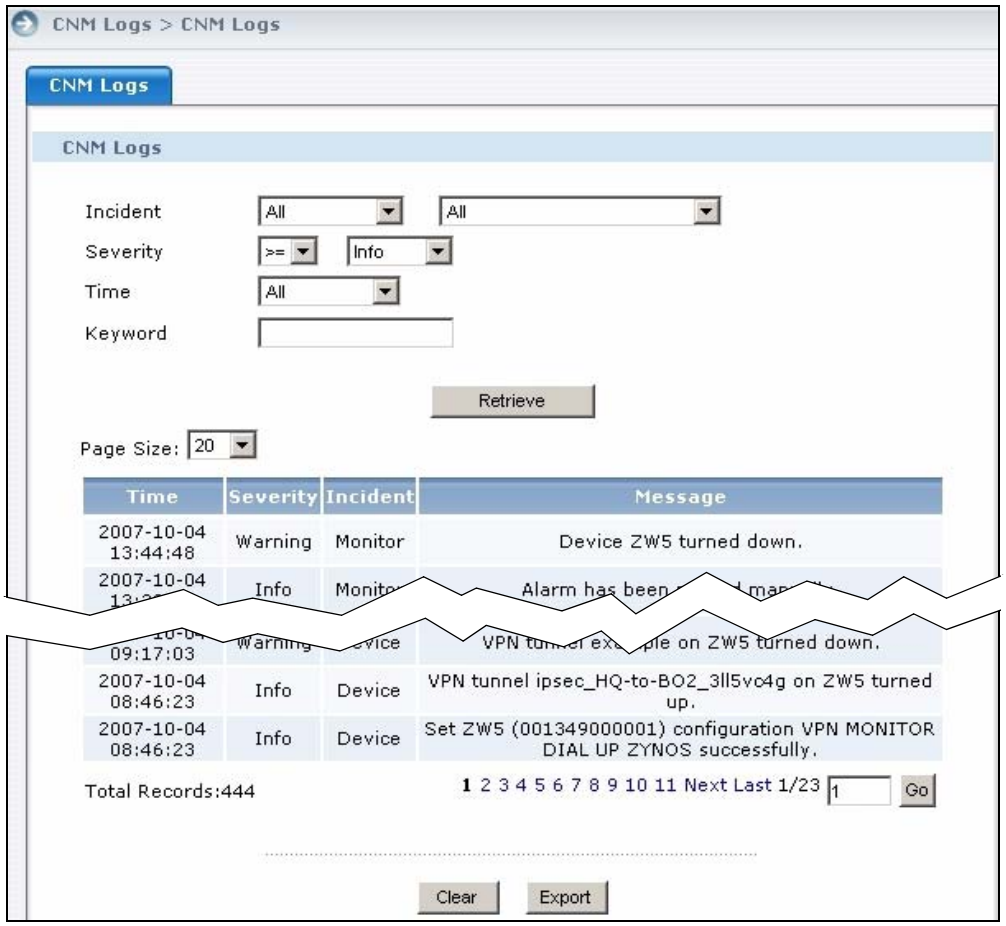
## 28.1 Vantage CNM Logs

Use these screens to view and configure Vantage CNM system log preferences.

### 28.1.1 CNM Logs

You can view system logs for previous day, the last two days or up to one week here. To open this screen, click **Log & Report** in the menu bar and then click **CNM Logs** in the navigation panel.

**Figure 301** Log & Report > CNM Logs



The following table describes the labels in this screen.

**Table 249** Log & Report > CNM Logs

| LABEL | DESCRIPTION |
|---|---|
| Incident | Select one of the general categories of events whose logs you want to view from the first list box. Select a more specific type of event whose logs you want to view from the second list box. |
| Severity | The log severity level from high to low are **Error > Warning > Info**. Use >=, =, or <= with a logs type to define the severity level you want to view Vantage CNM logs. |
| Time | Select the time period for which you want to view Vantage CNM logs |
| Keyword | Type a keyword of the message you want to view Vantage CNM logs. |
| Retrieve | Click **Retrieve** for Vantage CNM to pull the logs from the selected device. |
| Page Size | Select how many records you want to see in each page |
| Time | This field displays the date ane time the Vantage CNM log event occurred. |
| Severity | The log severity level from high to low are **Error > Warning > Info**. Use >=, =, or <= with a logs type to define the severity level you want to view Vantage CNM logs. |
| Incident | This field displays the general category of the event. |
| Message | This field states the reason for the log. |
| Total Records | This displays how many entries in total display in this list. |
| Clear | Click this to delete all logs after you double confirm the action. |
| Export | Click this to export the current information in this screen to a CnmLogStore.csv file. |

# 29

# VRPT

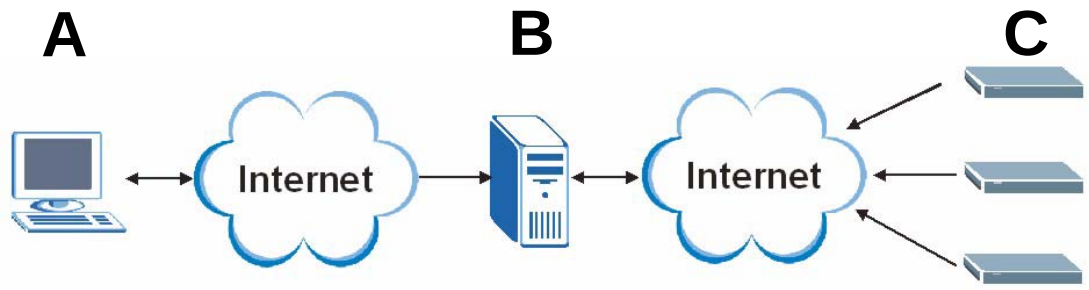
The **Report** menu activates Vantage Report. This chapter introduces Vantage Report and its role in Vantage CNM. Then, it explains how to set up and start Vantage Report. Please refer to the Vantage Report 3.1 User's Guide for more detailed information.

## 29.1 Vantage Report Overview

Note: This section introduces the standalone version of Vantage Report. See Section 29.2 on page 556 for more information about Vantage Report in Vantage CNM.

Vantage Report allows an administrator in any location to easily manage, monitor and gather statistics on devices located worldwide. With Vantage Report, you can monitor network access, enhance security, and anticipate future bandwidth needs. A typical application is illustrated in the following figure.

**Figure 302** Typical Vantage Report Application




In this example, you use the Vantage Report web configurator (**A**) to set up the Vantage Report server (**B**). You also configure the devices (**C**) to send their logs and traffic statistics to the Vantage Report Server. The Vantage Report server collects this information. Then, you can

- Monitor the whole network
- Look at historical reports about network performance and events
- Examine device logs

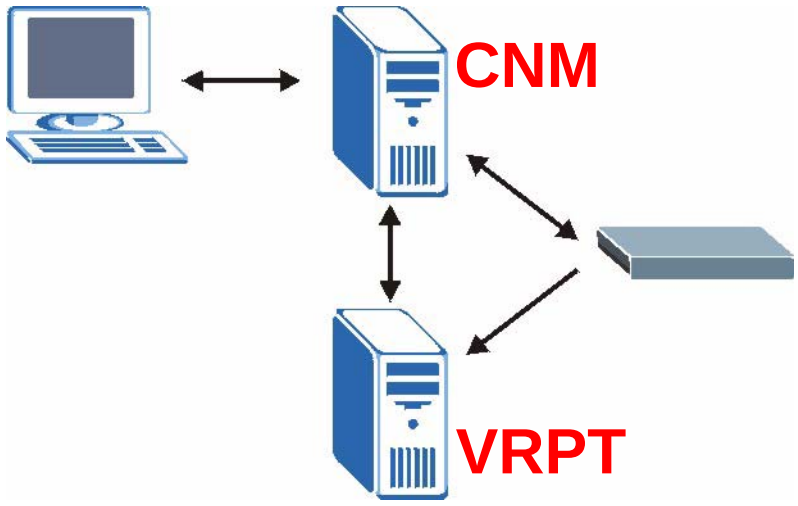
The Vantage Report server can also send statistical reports to you by e-mail.

# 29.2 Vantage Report in Vantage CNM

Vantage Report in Vantage CNM is a special release for Vantage CNM only. No additional license is required to use it. Vantage Report in Vantage CNM generally supports the capabilities available in the professional version of standalone Vantage Report, including drill-down reports, reverse DNS lookup, web usage by category, anti-virus, anti-spam, and HTML reports by e-mail. See Appendix A on page 611 for additional specifications.

Vantage Report in Vantage CNM does not have a separate web interface, so you have to use Vantage CNM to configure Vantage Report and to look at reports. This is illustrated below.

**Figure 303** Vantage Report and Vantage CNM Architecture




The Vantage Report server can be installed on the same machine as Vantage CNM or on a different machine. You can also set up multiple instances of Vantage Report in one instance of Vantage CNM (not shown in Figure 303 on page 556), but every instance of Vantage Report shares the same global configuration, SMTP settings, and list of customized services in Vantage CNM.

# 29.3 Setting Up Vantage Report in Vantage CNM

Follow these steps to set up each instance of Vantage Report and the devices that use it.

1 Install the Vantage Report server on a Windows or Linux system. The Vantage Report software for Vantage CNM is in the same package as the Vantage CNM software.

Note: Vantage Report has Standalone and Vantage CNM versions. Make sure you install the Vantage Report in Vantage CNM version which is in the same package of Vantage CNM. Vantage CNM cannot work with Vantage Report Standalone version.

2 Click **CNM System Setting > VRPT Management > Add**. Configure the Vantage Report instance in Vantage CNM, and select the devices that should send log messages to the Vantage Report instance. See Section 30.6 on page 571.

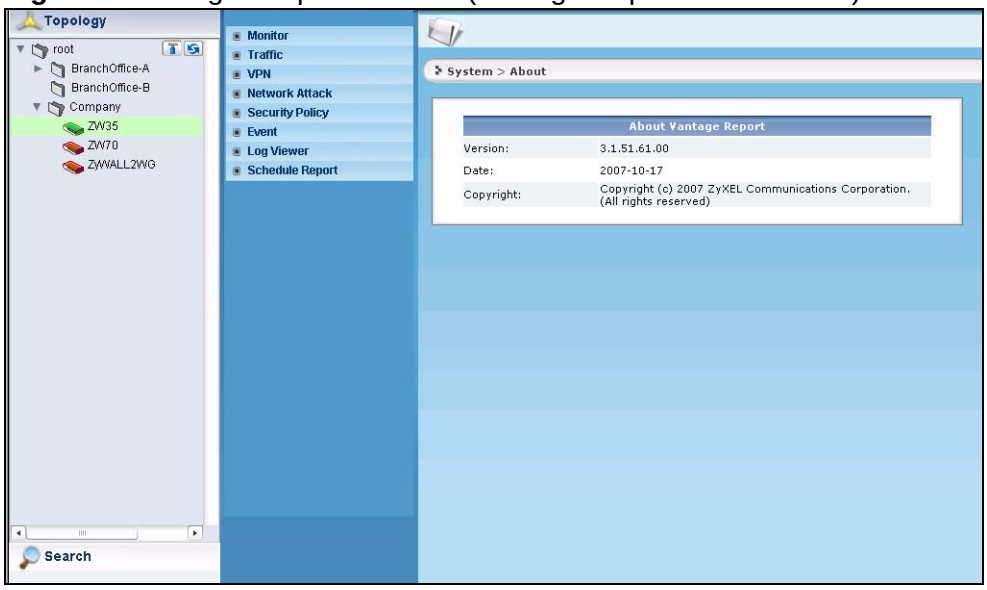
When you click **Apply**, Vantage CNM automatically configures the selected devices to send log messages to the specified Vantage Report instance. It does not change any settings for log categories or traffic statistics.

3 Click **CNM System Setting > Configuration > Log Setting** for each device. Make sure the desired log categories are selected and that traffic statistics are sent to the Vantage Report server. Refer to Vantage Report 3.1 User's Guide for more information.

# 29.4 Opening Vantage Report in Vantage CNM

After you set up a Vantage Report in Vantage CNM (see Section 29.3 on page 556), select a device that is managed by Vantage Report, and click **Log & Report > VRPT**. Then you can see the device's relative reports displayed via Vantage Report in the Vantage CNM as shown next. Refer to Vantage Report User's Guide for more detailed information.

**Figure 304** Log & Report > VRPT (Vantage Report Main Screen)



If the device is not managed by any Vantage Report instance yet, the Vantage Report window does not open, an error message appears to say this device is not associated with the Vantage Report.

Note: Refer to Vantage Report User's Guide for more detailed information.

# PART VIII
# CNM System Setting

CNM System Setting (561)

Maintenance (581)

Device Owner (585)

Vantage CNM Software Upgrade (587)

License (589)

About CNM (591)

# 30

# CNM System Setting

Use these screens to configure Vantage CNM server settings such as servers configuration, system maintenance, create and define device owner, software upgrade, license management, and about.

## 30.1 Servers Configuration

You can configure these servers as you install Vantage CNM (in the installation wizard) or after you install it in this screen.

Configure the Vantage CNM public IP server address, FTP server (for firmware upload), and mail server (for Vantage CNM notifications and reports) in this screen. These IP addresses will be the same as the Vantage CNM server computer if they are all on the same computer.

The FTP server is used for file transfers, such as firmware upgrade.

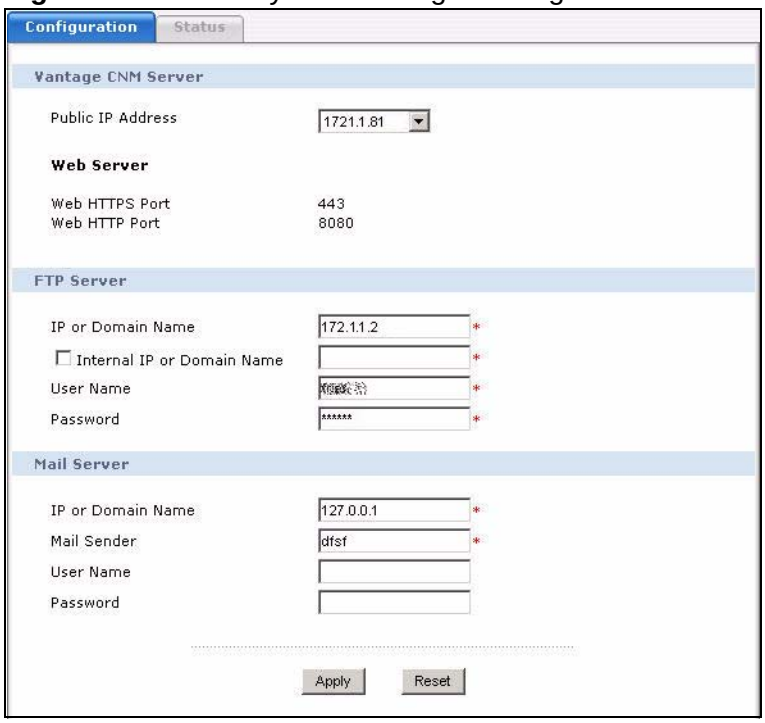
The SMTP server is used for e-mail notifications.

You should know each server's IP address, username and password. File transfers (FTP) and e-mail notifications (SMTP) will not work in Vantage CNM if these are incorrectly configured.

To open this screen, click **CNM System Setting** in the menu bar and then click **Configuration** > **Servers** > **Configuration** in the navigation panel.

Note: Make sure the FTP account's permission includes Files (read/write/delete), Directories (list/create/delete) and Sub-directories (inherit).

**Figure 305** CNM System Setting > Configuration > Servers > Configuration




The following table describes the fields in this screen.

**Table 250** CNM System Setting > Configuration > Servers > Configuration

| LABEL | DESCRIPTION |
|---|---|
| Vantage CNM Server | |
| Public IP Address | Select **User Defined** and type the public IP address the Vantage CNM server uses to communicate with managed devices. Or select the IP address which the Vantage CNM server currently uses from the list. See the procedure to change this IP address in the Section 30.1.1 on page 563.<br><br>Note: Make sure you configure a proper IP address in this field. A wrong IP address may cause inconsistent settings on the Vantage CNM and managed devices. |
| Web HTTPS Port | This field displays the port number the Vantage CNM server uses for HTTPS communication. |
| Web HTTP Port | This field displays the port number the Vantage CNM server uses for HTTP communication. |
| FTP Server | The FTP server is used for file uploads to and from Vantage CNM. |
| IP or Domain Name | Type the IP address or domain name of the FTP server. This should be a public IP address for managed devices to download firmware files remotely through the Internet. |

**Table 250** CNM System Setting > Configuration > Servers > Configuration

| LABEL | DESCRIPTION |
|---|---|
| Internal IP or Domain Name | If your FTP server is in the same private network as the Vantage CNM server, select this and type the IP address or domain name of the FTP server. Vantage CNM will then use this IP address for uploading firmware files to managed devices. |
| User Name | Type your login name to this FTP server. |
| Password | Type the FTP server password associated with the login name. |
| Mail Server | The mail (SMTP) server is used to send Vantage CNM notifications. |
| IP or Domain Name | Type the IP address or the domain name of the mail server here. |
| Mail Sender | Type a name to identify the mail server. |
| User Name | Type your login name to this mail server. |
| Password | Type the mail server password associated with the login name. |
| Apply | Click this to save your settings in Vantage CNM. |
| Reset | Click this to begin configuring the screen afresh. |

## 30.1.1 Vantage CNM Server Public IP Address

If you change the Vantage CNM server public IP address, then each (Vantage CNM-registered) device's Manager IP address must change too.

1. Go to the **CNM System Settings > Configuration > Servers > Configuration** screen.
2. Enter the new IP address in the **Public IP Address** field and **Apply**.
3. Change all registered devices' manager IP address to the new IP address, you must access each device's web interface or command line.
   - For ZyNOS ZyWALL, go to **ADVANCED** > **REMOTE MGMT** > **CNM** tab in the web interface. Enter the new Vantage CNM public IP address and then click **Apply**.
   - For ZLD ZyWALL, go to **System** > **Vantage CNM** in the web interface. Enter the new Vantage CNM public IP address and then click **Apply**.
   - For Prestige, go to command line and enter `cnm managerIp x.x.x.x` on the ZyXEL device where `x.x.x.x` is the public IP address of the Vantage CNM server.
4. Restart managed devices or restart Vantage CNM (see 4a and 4b) to reset the communication between Vantage CNM and devices. Wait about 5 minutes until the device is ready and registers with Vantage CNM. You don't have to restart the computer on which Vantage CNM is installed. See how to restart Vantage CNM as following.

**4a** Right-click the Vantage CNM icon in the system tray and select **STOP**.

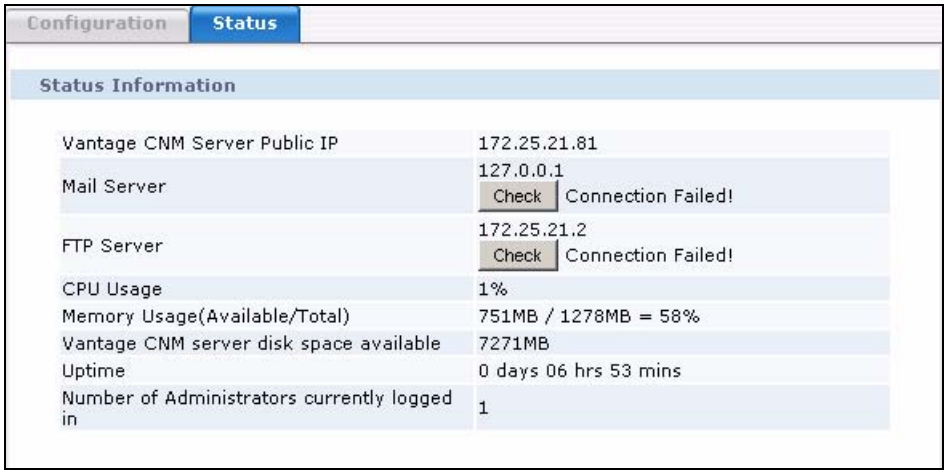
**4b** Right-click the icon again and select **START**.

When you register new devices with Vantage CNM, make sure the new device can ping the Vantage CNM server (the new **Vantage CNM Public IP** address) and then set the device's Manager IP address correspondingly.

# 30.2 Servers Status

Use this screen to view the current Vantage CNM system status. This is a read-only screen. To open this screen, click **CNM System Setting** in the menu bar and then click **Configuration** > **Servers > Status** in the navigation panel.

**Figure 306** CNM System Setting > Configuration > Servers > Status



The following table describes the fields in this screen.

**Table 251** CNM System Setting > Configuration > Servers > Status

| LABEL | DESCRIPTION |
|---|---|
| Vantage CNM Server public IP | This field displays the IP address of the communications server. If the COM server is on the same computer as Vantage CNM, then this address is the same IP address as that of the Vantage CNM server computer. You can change this value in **CNM System Setting > Configuration > Servers > Configuration**. See Section 30.1 on page 561. |
| Mail Server | This field displays the IP address of the Mail Server. You can change this value in **CNM System Setting > Configuration > Servers > Configuration**. See Section 30.1 on page 561. Click **Check** to test if the connection to the server is up. |
| FTP server | This field displays the IP address of the FTP server. You can change this value in **CNM System Setting > Configuration > Servers > Configuration**. See Section 30.1 on page 561. Click **Check** to test if the connection to the server is up. |
| CPU Usage | This field displays the Vantage CNM server CPU processing power usage. Heavy usage may necessitate upgrading to a more powerful CPU. |
| Memory Usage(Available/Total) | This field displays the Vantage CNM server memory usage. Heavy usage may necessitate installing more RAM. |
| Vantage CNM server disk space available | This field displays the Vantage CNM server computer hard drive free space. Heavy usage may necessitate buying another hard drive or purging old logs and alerts. |
| Uptime | This field displays how long Vantage CNM has been on since the last start up. |
| Number of Administrators currently logged in | This field displays the number of Administrators currently logged into Vantage CNM. |

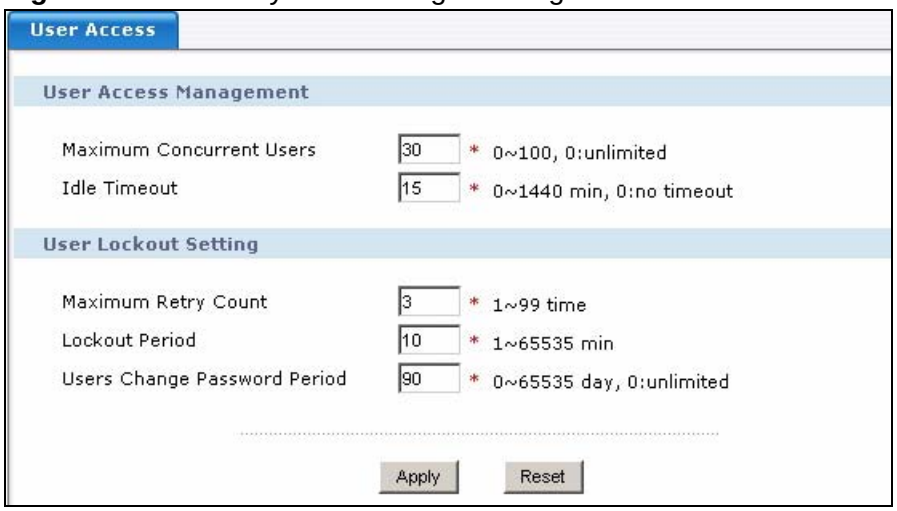
# 30.3 User Access

A User is an administrator. Set the maximum number of administrators allowed to log into Vantage CNM at one time, Vantage CNM idle time-out (so one administrator does not unwittingly hog resources by not logging out) and the user lockout mechanism in this screen.

User lockout is a protection mechanism to discourage brute-force password guessing attacks on a device's management interface. You can specify a lockout period that must expire before entering a fourth password after three incorrect passwords have been entered. You can also force all administrators to periodically change their passwords in this screen. To open this screen, click CNM System

Setting in the menu bar and then click Configuration > User Access in the navigation panel.

**Figure 307** CNM System Setting > Configuration > User Access




The following table describes the fields in this screen.

**Table 252** CNM System Setting > Configuration > User Access

| LABEL | DESCRIPTION |
|---|---|
| Maximum Concurrent Users | Type the maximum number of administrators allowed to log into Vantage CNM at any one time. |
| Idle Timeout | Select the check box next to this to activate the timeout, and type the length of time an Administrator can leave the Vantage CNM web configurator idle before he is automatically logged out. Clear the check box to disable the timeout. |
| Maximum Retry Count | Type the number of times an incorrect password may be entered before a login failure is returned. |
| Lockout Period | Type the wait time before allowing another login in after a login failure is returned. |
| Users Change Password Period | Type how often all Administrators must change their Vantage CNM login passwords. If an Administrator does not change her password within this time, then the old password expires. |
| Apply | Click this to save your settings in Vantage CNM. |
| Reset | Click this to begin configuring the screen afresh. |

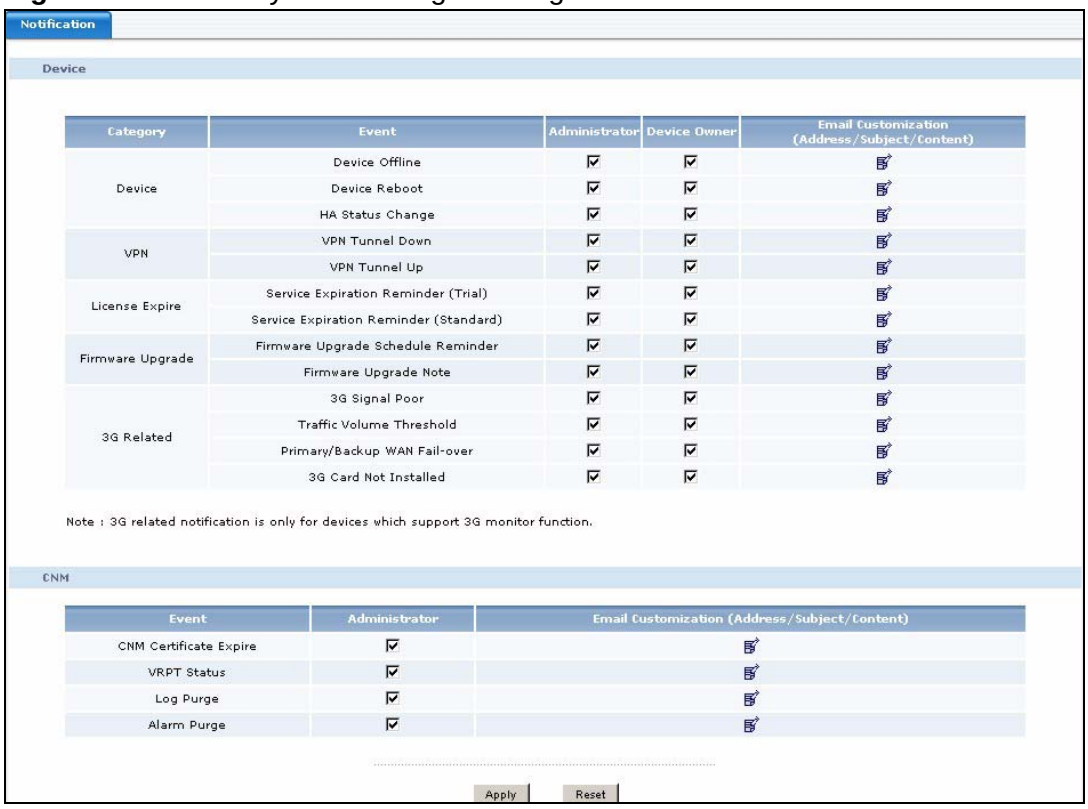
# 30.4 Notifications

Use this screen to decide who should receive e-mail for events that may warrant immediate attention such as firmware upgrade or device logs and/or alarms. **Device Owner** is a variable that refers to the e-mail address of the device owner (configured in the **Device Owner** screen).

## 30.4.1 Notifications Settings

Use this screen to decide who should receive e-mail for device and CNM events that may warrant immediate attention such as a VPN tunnel down or a device reboot or a CNM log purge notification. **Device Owner** is a variable that refers to the e-mail address of the device owner (configured in the **Device Owner** screen). To open this screen, click **CNM System Setting** in the menu bar and then click **Configuration** > **Notification** in the navigation panel.

**Figure 308** CNM System Setting > Configuration > Notification




The following table describes the fields in this screen.

**Table 253** CNM System Setting > Configuration > Notification

| LABEL | DESCRIPTION |
|---|---|
| Category | This is the category for device notifications. |
| Event | This is the event the Vantage CNM generates notifications about. |
| Administrator | Select to have an e-mail automatically sent to the administrator. |
| Device Owner | Select to have an e-mail automatically sent to the selected device owner e-mail address (configured in **Device Owner**). |
| E-mail Customization (Address/ Subject/ Content) | Click the edit icon to configure the mail settings such as address, subject and content. |

**Table 253** CNM System Setting > Configuration > Notification (continued)

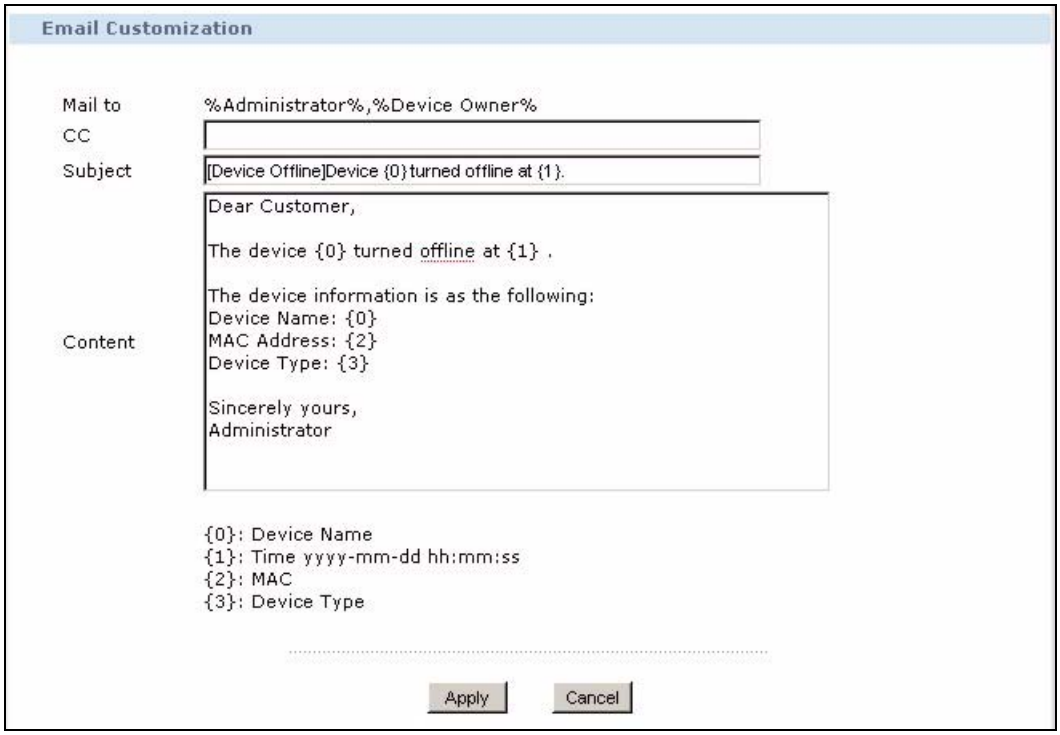
| LABEL | DESCRIPTION |
|---|---|
| Apply | Click this to save your settings in Vantage CNM. |
| Reset | Click this to begin configuring the screen afresh. |

### 30.4.1.1 Email Customization

Use this screen to customize the notification e-mail that Vantage CNM sends out.

Select the event for which you want to customize the e-mail message and click the icon in the **E-mail Customization** table column found in **CNM System Setting > Configuration > Notification**. The following screen displays.

**Figure 309** CNM System Setting > Configuration > Notification > Email Customization




The following table describes the labels in this screen.

**Table 254** CNM System Setting > Configuration > Notification > Email Customization

| LABEL | DESCRIPTION |
|---|---|
| Mail to | This shows the e-mail address(es) to which Vantage CNM sends email notificaions. |
| CC | This stands for Carbon Copy. Enter additional e-mail address that you want to receive the e-mail notification. |
| Subject | Enter the subject line in the e-mail message Vantage CNM sends. |
| Message | Enter the text you want to appear in the main body of the e-mail message Vantage CNM sends. |

**Table 254** CNM System Setting > Configuration > Notification > Email Customization

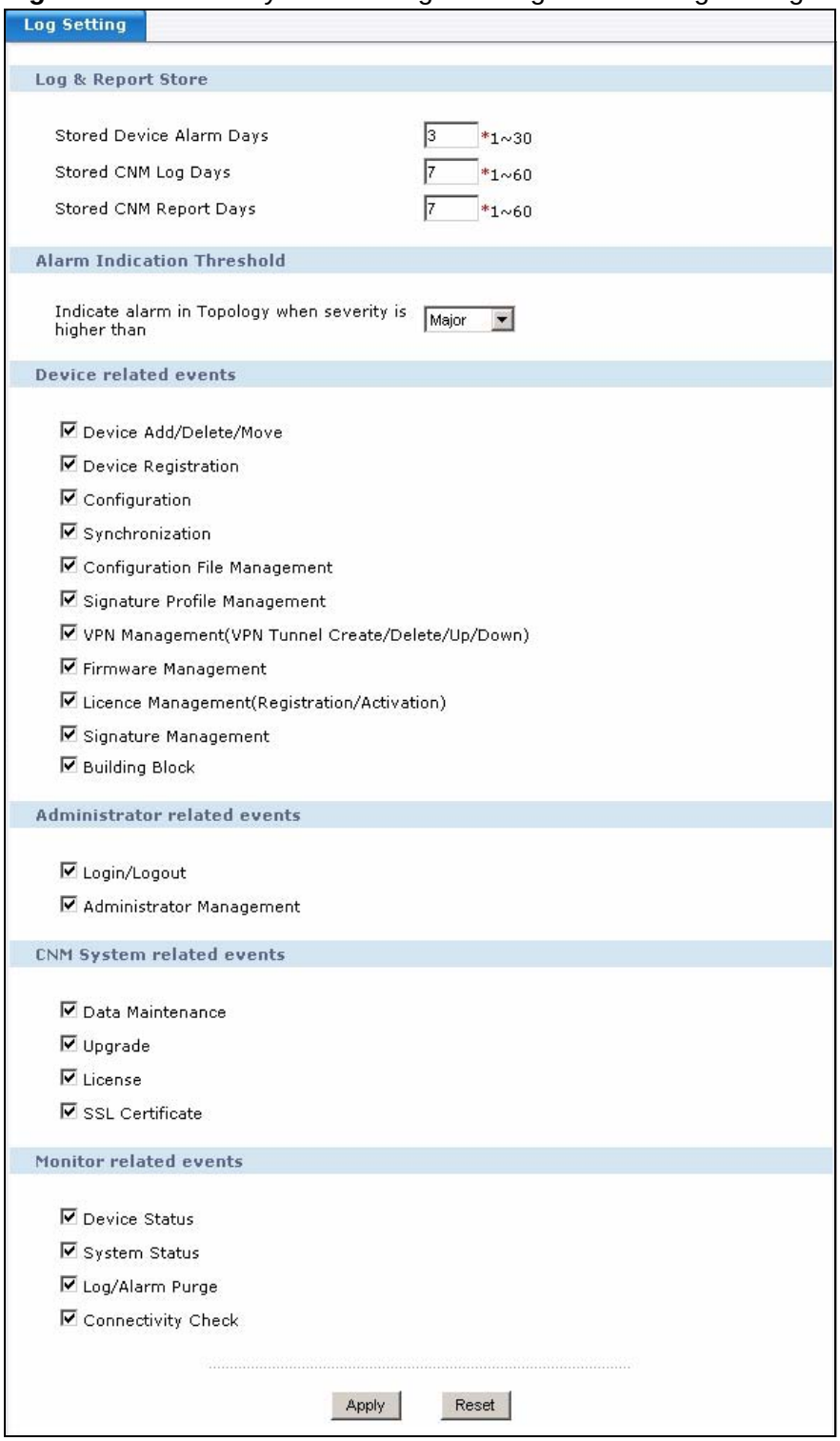
| LABEL | DESCRIPTION |
|---|---|
| variable legend | This is a list of the variables used in the e-mail message. |
| Apply | Click this to save your settings. |
| Cancel | Click this to clear the changes you have made and go back to the previous screen. |

# 30.5 Log Setting

Use this screen to set how long the Vantage CNM server stores logs and reports and which events the Vantage CNM records logs for. To open this screen, click

**CNM System Setting** in the menu bar and then click **Configuration** > **Log Setting** in the navigation panel.

**Figure 310** CNM System Setting > Configuration > Log Setting



The following table describes the labels in this screen.

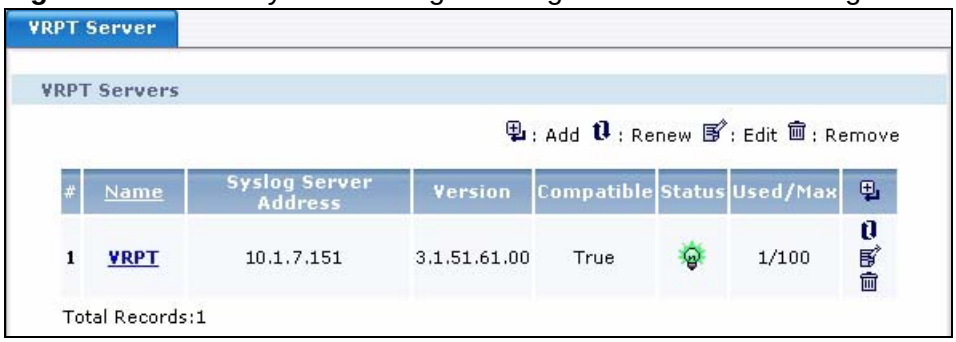
**Table 255** CNM System Setting > Configuration > Log Setting

| LABEL | DESCRIPTION |
|---|---|
| Log & Report Stores | Enter the maximum days the Vantage CNM stores device logs, CNM system logs, CNM reports. After the logs or reports expire, Vantage CNM removes them from the system. |
| Alarm Indication Threshold | Select a device alarm severity to define the threshold the Vantage CNM displays alarm status on a device in the device window if the device has an alarm and its severity is over it. See Section 26.1.1 on page 529 for more information. |
| Device related events<br><br>Administrator related events<br><br>CNM System related events<br><br>Monitor related events | Select what type of logs you wish to log as shown in these sections. |
| Apply | Click this to save your customized settings and exist this screen. |
| Reset | Click this to return to the values in this screen to their last-saved values. |

# 30.6 VRPT Management

Vantage CNM also includes Vantage Report. See Chapter 29 on page 555 for information about Vantage Report in Vantage CNM. Use this screen to manage the Vantage Report instances in Vantage CNM. To open this screen, click **CNM System Setting** in the menu bar and then click **Configuration > VRPT Management** in the navigation panel.

**Figure 311** CNM System Setting > Configuration > VRPT Management



The following table describes the labels in this screen.

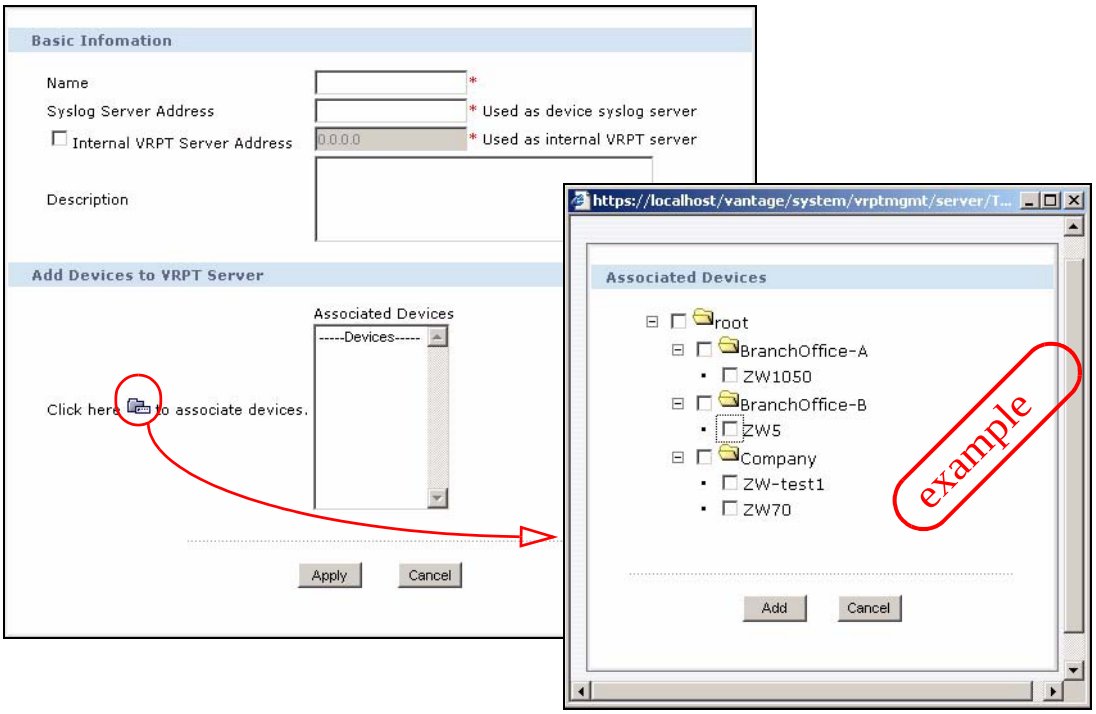
**Table 256** CNM System Setting > Configuration > VRPT Management

| LABEL | DESCRIPTION |
|---|---|
| # | This is the number of an individual entry. |
| Name | This field displays the name of the Vantage Report instance in Vantage CNM. Click the name to test whether the connection is ok. |
| Syslog Server Address | This field displays the IP address of the Vantage Report instance. |
| Version | This field displays the software version number of the Vantage Report instance. |
| Compatible | This field indicates if the connected device is compatible with Vantage CNM. |
| Status | This field displays the status of the Vantage Report instance. The bulb lights on when the Vantage CNM is able to connect to the Vantage Report server. Otherwise, the bulb is off. |
| Used/Max | Click this to look at the number of registered devices in the VRPT server and the maximum registered device number this VRPT server allows to add in. |
| Add | Click this to set up a new Vantage Report instance in Vantage CNM. |
| Renew | Click this to get the latest connection status between the Vantage Report instance and the Vantage CNM. |
| Edit | Click this to edit an existing Vantage Report instance in Vantage CNM. |
| Remove | Click this to remove one Vantage Report instance. |

## 30.6.1 Add/Edit VRPT Management

Use this screen to configure a VRPT server. To open this screen, click **Add** or **Edit** in the **CNM System Setting > Configuration > VRPT Management** screen.

**Figure 312** CNM System Setting > Configuration > VRPT Management > Add/Edit




The following table describes the labels in this screen.

**Table 257** CNM System Setting > Configuration > VRPT Management > Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| Name | Enter a descriptive name of the Vantage Report instance in Vantage CNM. You must use 3-28 alphanumeric characters, underscores (_), dashes (-), or periods (.). |
| Syslog Server Address | Enter the IP address of the Vantage Report server. This should be a public IP address if managed devices have to forward system logs to the Vantage Report server remotely through the Internet. |
| Internal VRPT Server Address | If both your Vantage CNM and Vantage Report servers are in the same private network, select this and type the IP address or domain name of the Vantage Report server used in the private network. |
| Description | Type a description, if desired, for the Vantage Report instance. You can use up to 255 printable ASCII characters. |

**Table 257** CNM System Setting > Configuration > VRPT Management > Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| Add Devices to VRPT Server | Click the icon and the associated devices screen appears where you can select associated device(s) to this VRPT server. Click **Add** to return to the previous screen and the selected device(s) display in the **Associated Devices** field. When you click **Apply**, Vantage CNM automatically configures these devices to send log messages to this Vantage Report. It does not change any settings for log categories or traffic statistics, so you might have to change these manually. See VRPT User's Guide for more information.<br><br>To unassociate a device to the VRPT server, click the icon and unselect the associated device from the list. Then click **Add**. When you click **Apply**, Vantage CNM automatically resets the syslog settings to their default values for devices that previously used the specified Vantage Report server. It does not change any settings for log categories or traffic statistics. |
| Apply | Click this to save these changes. |
| Cancel | Click this to return to the previous screen without saving changes. |

# 30.7 Certificate Management Overview

Some devices can provide certificates (also called digital IDs) for users to authenticate the device. Certificates are based on public-private key pairs. A certificate contains the certificate owner's identity and public key. Certificates provide a way to exchange public keys for use in authentication.

A Certification Authority (CA) issues certificates and guarantees the identity of each certificate owner. There are commercial certification authorities like CyberTrust or VeriSign and government certification authorities. You can use the device to generate certification requests that contain identifying information and public keys and then send the certification requests to a certification authority.

In public-key encryption and decryption, each host has two keys. One key is public and can be made openly available; the other key is private and must be kept secure. Public-key encryption in general works as follows.

1. Tim wants to send a private message to Jenny. Tim generates a public key pair. What is encrypted with one key can only be decrypted using the other.
2. Tim keeps the private key and makes the public key openly available.
3. Tim uses his private key to encrypt the message and sends it to Jenny.

4 Jenny receives the message and uses Tim's public key to decrypt it.

5 Additionally, Jenny uses her own private key to encrypt a message and Tim uses Jenny's public key to decrypt the message.

The device uses certificates based on public-key cryptology to authenticate users attempting to establish a connection, not to encrypt the data that you send after establishing a connection. The method used to secure the data that you send through an established connection depends on the type of connection. For example, a VPN tunnel might use the triple DES encryption algorithm.

The certification authority uses its private key to sign certificates. Anyone can then use the certification authority's public key to verify the certificates.

A certification path is the hierarchy of certification authority certificates that validate a certificate. The device does not trust a certificate if any certificate on its path has expired or been revoked.

Certification authorities maintain directory servers with databases of valid and revoked certificates. A directory of certificates that have been revoked before the scheduled expiration is called a CRL (Certificate Revocation List). The device can check a peer's certificate against a directory server's list of revoked certificates. The framework of servers, software, procedures and policies that handles keys is called PKI (public-key infrastructure).

## 30.7.1 Advantages of Certificates

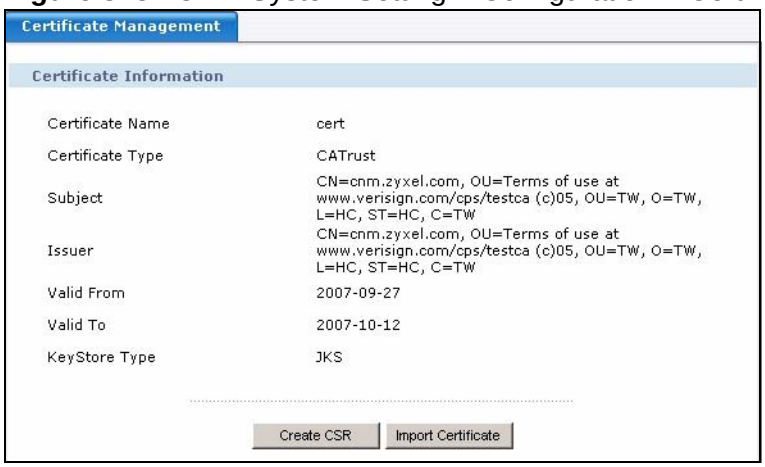
The device only has to store the certificates of the certification authorities that you decide to trust, no matter how many devices you need to authenticate.

Key distribution is simple and very secure since you can freely distribute public keys and you never need to transmit private keys.

## 30.7.2 Current Certificate Information

You can view your current certificate information in this screen, including certificate name, type, origin and duration of validity.

**Figure 313** CNM System Setting > Configuration > Certificate Management




The following table describes the labels in this screen.

**Table 258** CNM System Setting > Configuration > Certificate Management

| LABEL | DESCRIPTION |
|---|---|
| Certificate Name | This field displays the name used to identify this certificate. It is recommended that you give each certificate a unique name. |
| Certificate Type | This field displays what kind of certificate this is.<br><br>**REQ** represents a certification request and is not yet a valid certificate. Send a certification request to a certification authority, which then issues a certificate. Use the **My Certificate** Import screen to import the certificate and replace the request.<br><br>**SELF** represents a self-signed certificate.<br><br>***SELF** represents the default self-signed certificate, which the device uses to sign imported trusted remote host certificates.<br><br>**CERT** represents a certificate issued by a certification authority. |
| Subject | This field displays identifying information about the certificate's owner, such as CN (Common Name), OU (Organizational Unit or department), O (Organization or company) and C (Country). It is recommended that each certificate have unique subject information. |
| Issuer | This field displays identifying information about the certificate's issuing certification authority, such as a common name, organizational unit or department, organization or company and country. With self-signed certificates, this is the same information as in the **Subject** field. |

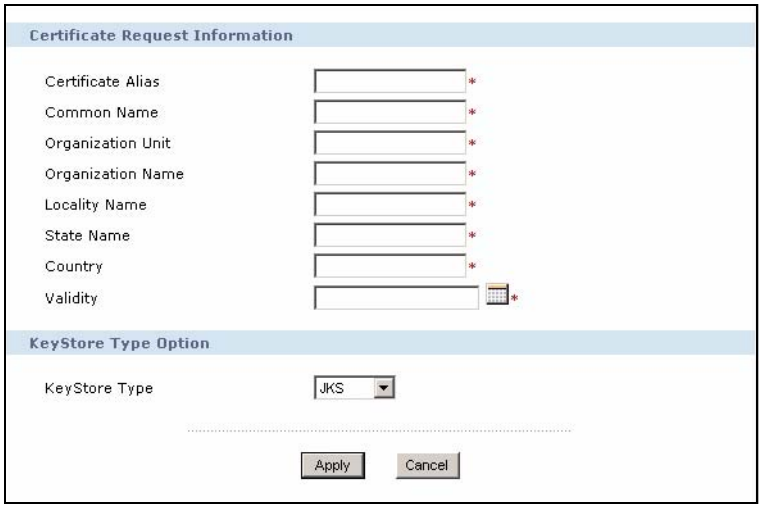
**Table 258** CNM System Setting > Configuration > Certificate Management

| LABEL | DESCRIPTION |
|---|---|
| Valid From | This field displays the date that the certificate becomes applicable. The text displays in red and includes a "Not Yet Valid!" message if the certificate has not yet become applicable. |
| Valid To | This field displays the date that the certificate expires. The text displays in red and includes an "Expiring!" or "Expired!" message if the certificate is about to expire or has already expired. |
| KeyStore Type | This field specifies the format of the certificate. Possible formats include PKCS #12 (**pkcs12**) and Java Key Store (**jks**) |
| Create CSR | Click **Create CSR** to create a certificate. |
| Import Certificate | Click **Import Certificate** to go to the Import Certificate screen. |

## 30.7.3 Create CSR

You can create certificates by entering the requested information into the fields below. Then click **Apply**.

**Figure 314** CNM System Setting > Configuration > Certificate Management > Create CSR




The following table describes the labels in this screen.

**Table 259** CNM System Setting > Configuration > Certificate Management > Create CSR

| LABEL | DESCRIPTION |
|---|---|
| Certificate Alias | Type a name to identify the certificate. You can use 1-32 alphanumeric characters, underscores (_), or dashes (-). |
| Common Name | Type the IP address or domain name used to identify the certificate's owner. You can use 1-32 printable ASCII characters. Spaces are not allowed. |

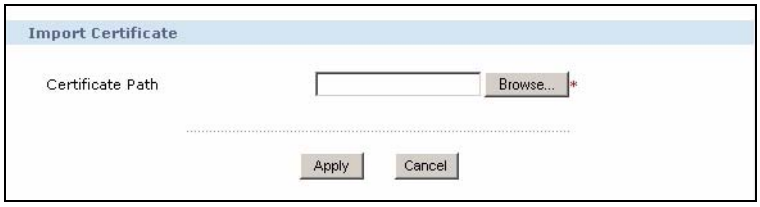
**Table 259** CNM System Setting > Configuration > Certificate Management > Create CSR (continued)

| LABEL | DESCRIPTION |
|---|---|
| Organization Unit | Type the organization unit (for example, department or division) in this field. You can use 1-32 alphanumeric characters, underscores (_), or dashes (-). |
| Organization Name | Type the name of the organization or company in this field. You can use 1-32 alphanumeric characters, underscores (_), or dashes (-). |
| Locality Name | Type the location (for example, city or town) of the organization or company; number, street etc. You can use 1-32 alphanumeric characters, underscores (_), or dashes (-). |
| State Name | Type the state or province where the organization or company is located. You can use 1-32 alphanumeric characters, underscores (_), or dashes (-). |
| Country | Type the country code where the organization or company is located. The country must be two letters long. |
| Validity | Type the date the certificate expires. This date cannot be in the past, and it cannot be more than fifty years from the current date. Use the specified format. |
| KeyStore Type | Select what type of keystore file to use. Choices are PKCS #12 (**PKCS12**) and Java Key Store (**JKS**). PKCS #12 is a common standard for X.509 certificates. Java Key Store may be used by standalone Java clients using SSL communication or WebLogic Server. |
| Apply | Click this to save these changes. |
| Cancel | Click this to return to the previous screen without saving any changes. |

## 30.7.4 Import Certificate

In this screen, you can **Browse** for a certificate that has already been downloaded to your computer. Select **Apply** to complete the certificate import.

**Figure 315** CNM System Setting > Configuration > Certificate Management > Import Certificate



The following table describes the labels in this screen.

**Table 260** CNM System Setting > Configuration > Certificate Management > Import Certificate

| LABEL | DESCRIPTION |
|---|---|
| Input Certificate | |
| Input Your Certificate Path | Type in the location of the certificate you want to upload in this field or click **Browse** ... to find it. |
| Back | Click this to return to the previous screen. |
| Apply | Click this to save these changes. |

# 31

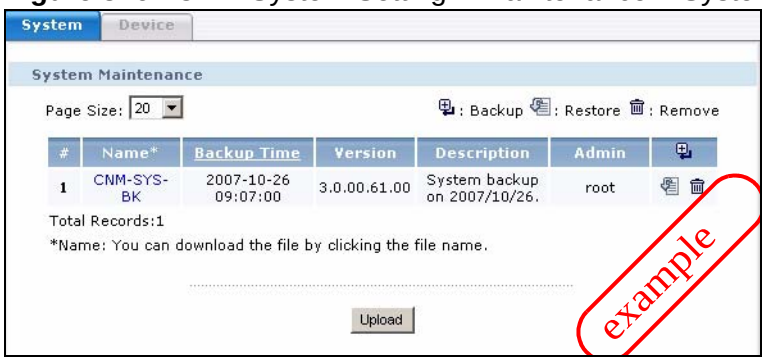
# Maintenance

Use the **Maintenance** screens to manage, back up and restore Vantage CNM system backup files. Data maintenance includes device firmware and configuration files you have uploaded to the Vantage CNM server. You can back up or restore to your computer or Vantage CNM. You can choose what domain to back up by selecting a folder in the object tree.

## 31.1 System Maintenance

Use this screen to delete previous (old) system backups.

**Figure 316** CNM System Setting > Maintenance > System




The following table describes the fields in this screen.

**Table 261** CNM System Setting > Maintenance > System

| LABEL | DESCRIPTION |
|---|---|
| # | This is the number of an individual entry. |
| Name | This field displays the system backup file name. You can click a file name to download the file from the Vantage CNM to your computer. |
| Backup Time | This field displays the date and time the system backup file was created. |
| Version | This field displays the Vantage CNM software version number when the system backup file was created. |
| Description | This field displays some extra description of the system backup file. |

**Table 261** CNM System Setting > Maintenance > System (continued)

| LABEL | DESCRIPTION |
|---|---|
| Admin | This field displays who created the system backup file. |
| Backup | Click this to create a system backup file. |
| Restore | Click this to restore a system backup file.<br><br>Note: System will kick out all on-line users before restoring a system backup file. After restoring, Vantage CNM shuts down automatically. Then you have to restart the Vantage CNM manually. |
| Remove | Click this to delete a backup file from the Vantage CNM. |
| Upload | Click this to upload a Vantage CNM system backup file from your computer to the Vantage CNM. |

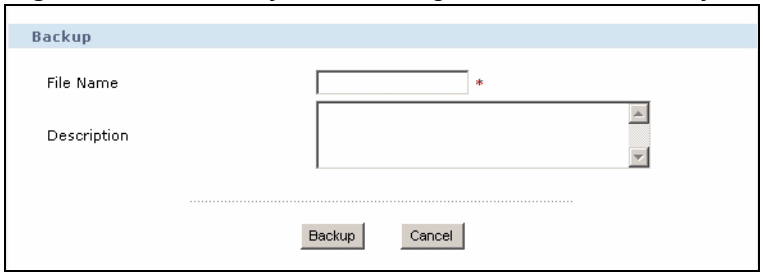
## 31.1.1 Backup

Use this screen to save your current Vantage CNM system to the Vantage CNM server or your computer. You can enter extra information on the file in the **Description** text box.

Backup configuration allows you to back up (save) the current configuration to a file on the Vantage CNM server. Once your device is configured and functioning properly, it is highly recommended that you back up your configuration file before making configuration changes. The backup configuration file will be useful in case you need to return to your previous settings. You should perform system backup before you upgrade Vantage CNM software.

Note: System kicks out all on-line users after you confirm a system backup. Choose a proper time and inform users the schedule before a system backup.

**Figure 317** CNM System Setting > Maintenance > System > Backup



The following table describes the fields in this screen.

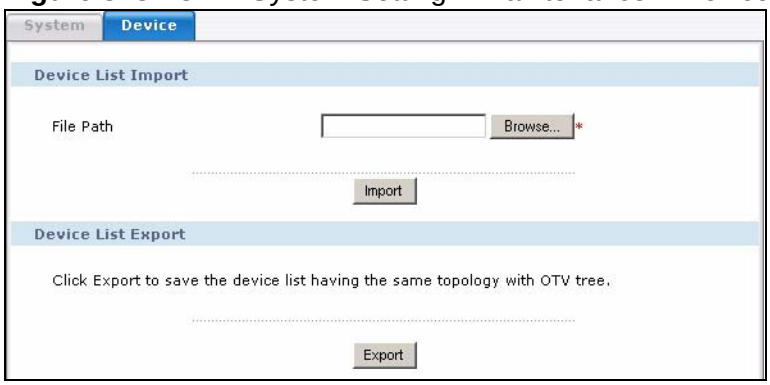
**Table 262** CNM System Setting > Maintenance > System > Backup

| LABEL | DESCRIPTION |
|---|---|
| File Name | Type up to 35 alphanumberic charactors for this backup file name. Space is not allowed. |
| Description | Type up to 255 charactors for the file backup description. |
| Backup | Click this button to perform the file backup. |
| Cancel | Click this to return to the previous screen without saving any changes. |

# 31.2 Device Maintenance

Use this screen to export or import a device list file from/to the Vantage CNM. It's convenient for you to rebuild the managed device information quickly at one time if you want to reinstall the Vantage CNM on the same or another computer.

**Figure 318** CNM System Setting > Maintenance > Device



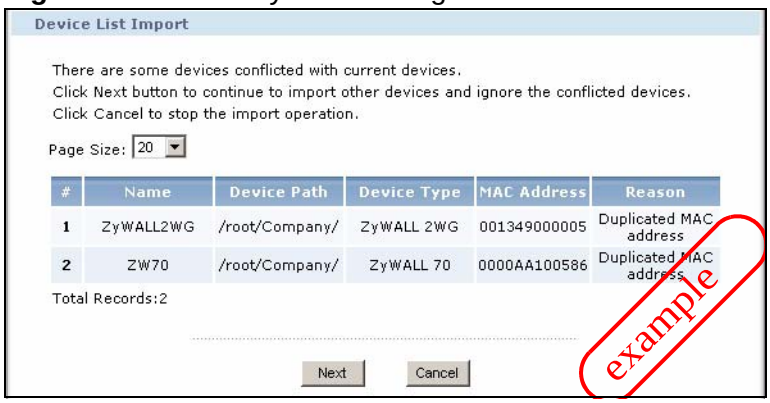

The following table describes the fields in this screen.

**Table 263** CNM System Setting > Maintenance > Device

| LABEL | DESCRIPTION |
|---|---|
| Device List Import | Use this section to import a device list file. Enter the path and file name, or click **Browse** to locate it, and then click **Import**.<br><br>Note: You have to import a .xml file. |
| Device List Export | Use this section to export current device list to your computer. Click **Export** and download a **DeviceList.xml** file to your computer. |

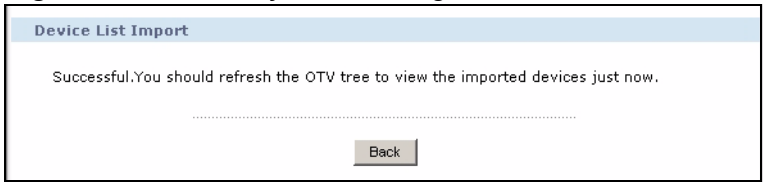
After click **Import**, you may get the following error message if any device(s) in the imported list have already existed in the Vantage CNM. You can edit the device list file, remove the duplicated device information and import again.

**Figure 319** CNM System Setting > Maintenance > Device List Import Conflict




If you receive the following successful message, click **Back** to go to the previous screen. You have to refresh the navigation panel to view the latest device list.

**Figure 320** CNM System Setting > Maintenance > Device List Import Successful



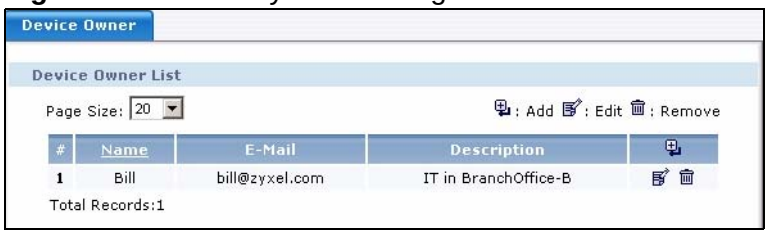
# 32

# Device Owner

## 32.1 Device Owner

This screen list the address book which is a list of personal details of people of device owners. You can add, edit or remove a device owner in this screen. To associate a device owner with a device, select the person's name in the **Device Owner** field when you add or edit a device (via right clicking your mouse) in the device window. Click **CNM System Setting** in the menu bar and then click **Device Owner** in the navigation panel to display the next screen.

**Figure 321** CNM System Setting > Device Owner




The following table describes the labels in this screen.

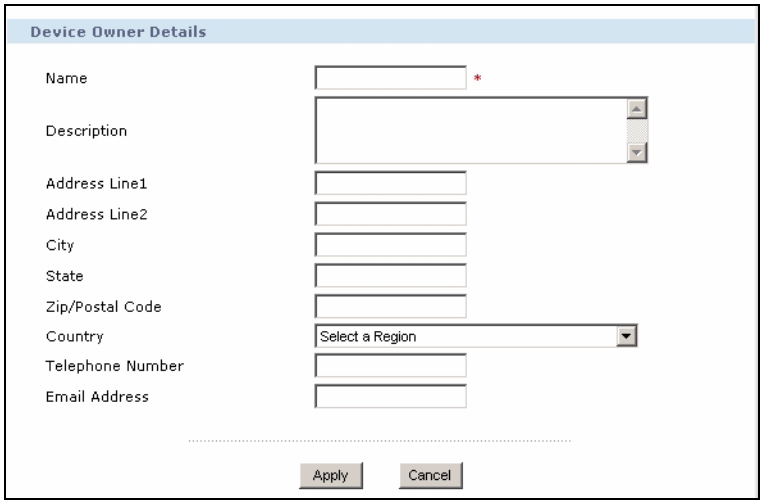
**Table 264** CNM System Setting > Device Owner

| LABEL | DESCRIPTION |
|---|---|
| # | This is the number of an individual entry. |
| Name | This field displays the person's name. |
| E-Mail | This field displays the person's e-mail address. |
| Description | This field displays some extra information about the person. |
| Add | Click this to create a new device owner. |
| Edit | Click this to modify a device owner's information. |
| Remove | Click this to remove a device owner from the Vantage CNM server. |

## 32.1.1 Add/Edit a Device Owner

Use this screen to add or edit an entry in the address book. To open this screen, click **Add** to create a new entry or click **Edit** to modify an existing entry on the **Device Owner** screen.

**Figure 322** CNM System setting > Device Owner > Add/Edit




The following table describes the labels in this screen.

**Table 265** CNM System Setting > Device Owner > Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| Name | Type the person's name. |
| Description | Type some extra information about the person. |
| Address Line1 | Type up to 64 charactors of a mailing address for this person. |
| Address Line2 | Type the additional address information if the **Address Line1** field is not long enough for the whole mailling address. |
| City | Type the city name where this person is located. |
| State | Type the state name where this person is located. |
| Zip/Postal Code | Type a postal code number for the mailing address. |
| Country | Select the country where this person is located. |
| Telephone Number | Type the complete telephone number including area codes for this person. |
| E-mail | Type the person's e-mail address. |
| Apply | Click this to create a new address book record. |
| Cancel | Click this to return to the previous screen. |

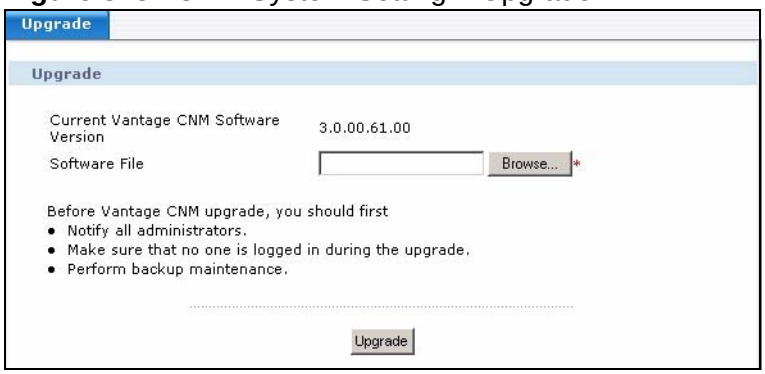
# 33

# Vantage CNM Software Upgrade

## 33.1 CNM Software Upgrade

Use this screen to view the current Vantage CNM software version or perform a software upgrade. Enter the full path of a software file in your computer or click **Browse...** to locate a software file. Click Upgrade to perform Vantage CNM software upgrade. To open this screen, click **CNM System Setting** in the menu bar and then click **Upgrade** in the navigation panel.

**Figure 323** CNM System Setting > Upgrade




The following table describes the labels in this screen.

**Table 266** CNM System Setting > Upgrade

| LABEL | DESCRIPTION |
|---|---|
| Software File... Browse | Click this to get the file from your computer. A dialog box appears asking you to specify the location of the file. |
| Upgrade | Click this to start the uprade process. Do not close or leave this screen until the upgrade is complete. |

# 34

# License

## 34.1 CNM Licence

Use this screen to renew a standard license key to continuely use Vantage CNM after the trial period or the old license key expires. Click **CNM System Setting** in the menu bar and then click **License** in the navigation panel to display the next screen.

**Figure 324** CNM System Setting > License

The following table describes the fields in this screen.

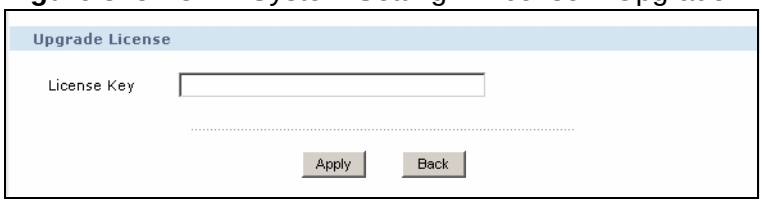
**Table 267** CNM System Setting > License

| LABEL | DESCRIPTION |
|---|---|
| License Type | This field displays if the Vantage CNM is in the trial period (Trial) or in the licensed period (Standard). |
| Account on myZyXEL.com | This is the account you used to register the Vantage CNM. |
| Authenitcation Code (AC) | This is an automatically generated code after you have installed Vantage CNM on the computer. |
| Managed/Maximum devices | This field displays the number of device the Vantage CNM currently manages and the maximum device number the Vantage CNM is allowed to manage.<br><br>Note: To increase the maximum managed device number, you have to buy an additional license key and click the **Upgrade** button to proceed the license upgrade. |
| Refresh | Click this to force this screen afresh and get the latest license status. |
| Upgrade | Click **Upgrade** to proceed to the next screen. |

## 34.1.1 License Upgrade

License key is a licence to manage a specific number of ZyXEL devices. It can be found in the iCard. Type a license key to the **License Key** field and click **Apply** to increase the maximum device number the Vantage CNM is allowed to manage. Click **Upgrade** in the **CNM System Setting > License** screen to display this screen.

**Figure 325** CNM System Setting > License > Upgrade




The following table describes the labels in this screen.

**Table 268** CNM System Setting > License > Upgrade

| LABEL | DESCRIPTION |
|---|---|
| License key | Type the licence key. |
| Apply | Click this to create a new address book record. |
| Back | Click this to return to the previous screen. |

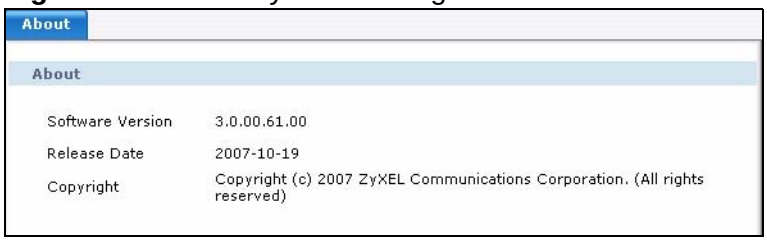
# 35

# About CNM

## 35.1 About CNM

Use this screen to see Vantage CNM's software version, release date and the copyright. To open this screen, click **CNM System Setting** in the menu bar and then click **About** in the navigation panel.

**Figure 326** CNM System Setting > About




The following table describes the labels in this screen.

**Table 269** CNM System Setting > About

| LABEL | DESCRIPTION |
|---|---|
| Software Version | This is the Vantage CNM's software version,. |
| Release Date | This is the release date of the said software version. |
| Copyright | This shows copyright information such as the year when the software was released and the name of the company that released it. |

# PART IX
# Account Management

User Group (595)

Account (599)

# 36

# User Group

Use these screens to manage Vantage CNM user groups. A group is associated with the privilege you defined and it is for one management domain. After you create a group, you can associate the user(s) with this group before the user(s) can perform any functions in Vantage CNM.

Note: The user is an administrator who uses one user account to login the Vantage CNM and perform tasks in Vantage CNM.

## 36.1 Group

A “user group” is a pre-defined set of administrator permissions. **Super** pre-defined permissions are not editable. Custom administrators have no predefined permissions. To open this screen, click **Account Management** in the menu bar and then click **Group** in the navigation panel.

Note: Administrators should periodically change their passwords.

**Figure 327** Account Management > Group

The following table describes the fields in this screen.

**Table 270** Account Management > Group

| LABEL | DESCRIPTION |
|---|---|
| # | This is the number of an individual entry. |
| Group Name | This field displays the group name. |
| Creator | This field displays the user name who created the group. |
| Description | This is the description for the group. |
| Add | Click this to create a new group. |

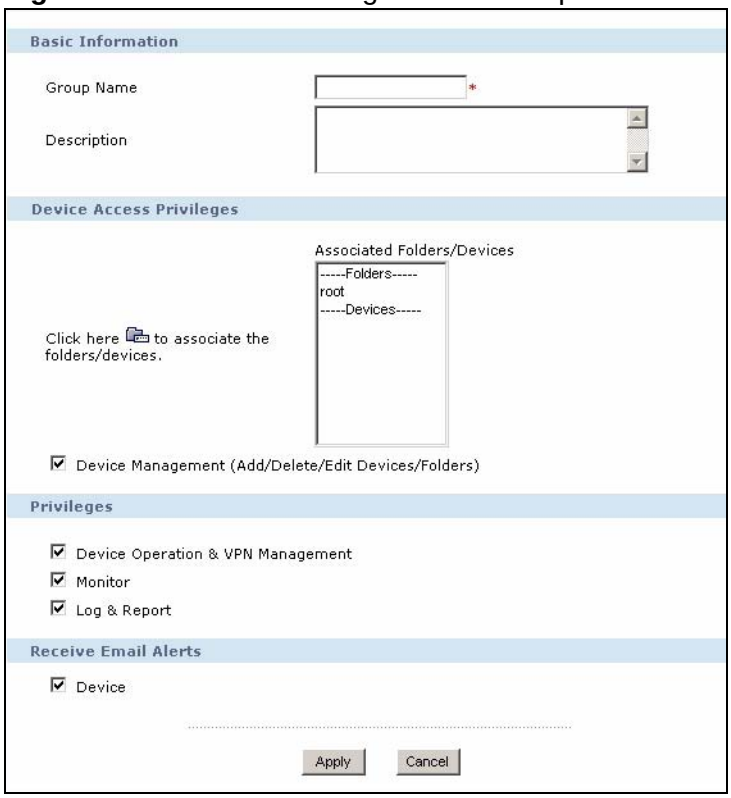
**Table 270** Account Management > Group (continued)

| LABEL | DESCRIPTION |
|---|---|
| Edit | Click this to modify an existing group. |
| Remove | Click this to delete a group.<br><br>Note: You cannot remove the **Super** group. |

## 36.1.1 Add User Group

Use this screen to create or edit a "user group" (administrator permission template). To open this screen, click **Add** or **Edit** in the **Account Management** > **Group** screen.

**Figure 328** Account Management > Group > Add




The following table describes the fields in this screen.

**Table 271** Account Management > Group > Add

| LABEL | DESCRIPTION |
|---|---|
| Basic Information | |
| Group Name | Type a group name for this temperlate. |
| Description | Type the description for the group. |

**Table 271** Account Management > Group > Add (continued)

| LABEL | DESCRIPTION |
|---|---|
| Device Access Privileges | Click the icon and the associated devices screen appears where you can select associated device(s) this user group is allowed to access to. Click **Add** to return to the previous screen and the selected device(s) display in the **Associated Folders/Devices** field.<br><br>To unassociate a device to the VRPT server, click the icon and unselect the associated device from the list. Then click **Add**. |
| Device Management (Add/Delete/Edit Devices/Folders) | Select this to allow this group adding, deleting, editing the selected devices and folders. |
| Privileges | |
| Device Operation & VPN Management | Select this to allow the administrator to access the functions associated to the **Device Operation** and **VPN Management** menus in the menu bar. |
| Monitor | Select this to allow the administrator to access the functions associated to the **Monitor** menu in the menu bar. |
| Log & Report | Select this to allow the administrator to access the functions associated to the **Log & Report** menu in the menu bar. |
| CNM System Setting | Select this to allow the administrator to access the functions associated to the **CNM System Setting** menu in the menu bar.<br><br>Only **Super** can do this option. |
| Account Management | Select this to allow the administrator to access the functions associated to the **Account Management** menu in the menu bar. |
| Receive Email Alerts | |
| Device | Select this to allow the administrator to receive mails about device alerts.<br><br>Note: It is recommended to select this for administrators (not for device owners) to receive device alerts by mail. |
| CNM | Select this to allow the administrator to receive mails about Vantage CNM alerts.<br><br>Only **Super** can do this option. |
| Apply | Click this to save your settings in Vantage CNM. |
| Cancel | Click this to begin configuring the screen afresh. |

# 37

# Account

An account is a user with permissions inherited from the associated group. “Root” is the predefined administrator belonging to the **Super** group. Only “root” or any accounts belonging to **Super** group can do everything including managing the Vantage CNM system. Custom administrators have no predefined permissions.

Administrators should periodically change their passwords. The “root” Administrator can also enforce periodic Administrator password changes in the **Users Change Password Period** field in the **CNM System Setting > User Access** screen.

## 37.1 “Root” Administrator

The default system name (and password) when you first log in is “root”. This is a default system Administrator account, which cannot be deleted by anyone from the system. root’s details are viewable by others, but not editable.

1 Only one root administrator can exist.

2 Only root can change his/her own personal information except for UID (User Identification).

3 Only “root” can see all other Administrators. Other Administrators can only see Administrators within their domain.

## 37.2 “Super” Administrators

“Super” Administrators are Administrators created using the “Super” User Group. They are the next most powerful type Administrator next to “root”.

1 Super users have all permissions except CNM System Setting.

2 Super permissions are pre-defined in Vantage CNM and are not editable by Vantage CNM Administrators.

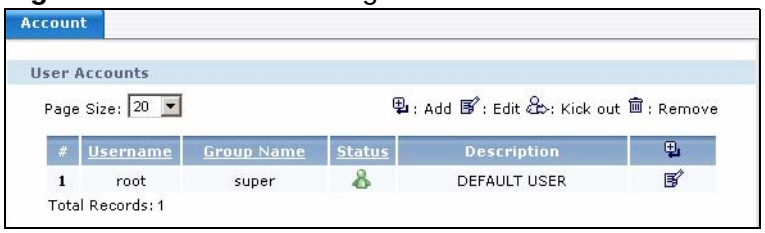
3 A “super” Administrator cannot edit any Vantage CNM system settings, but can view (read only) Vantage CNM system status and Vantage CNM logs (but cannot purge or change log options).

4 “Super” Administrators at same management level can't disassociate each other from that management level.

# 37.3 Account

Use this screen to display a list of all administrators and root. To open this screen, click **Account Management** in the menu bar and then click **Account** in the navigation panel.

**Figure 329** Account Management > Account




The following table describes the fields in this screen.

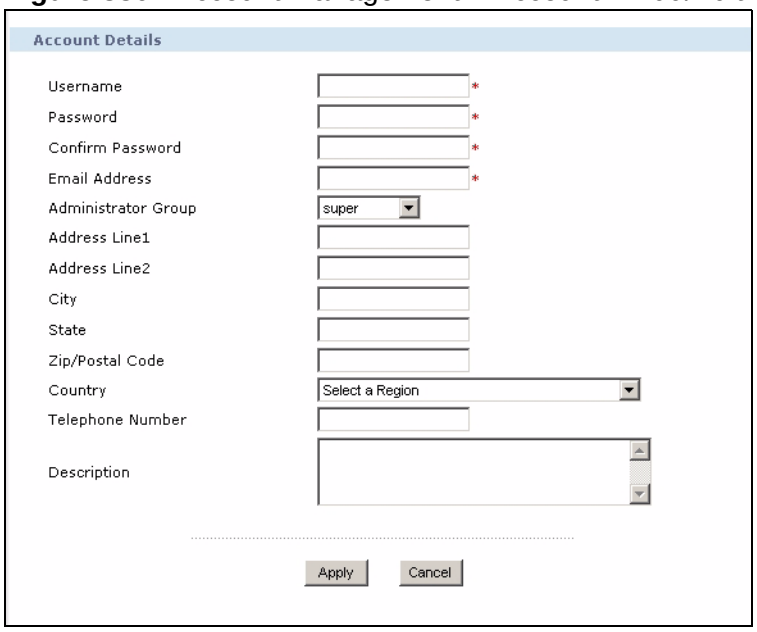
**Table 272** Account Management > Account

| LABEL | DESCRIPTION |
|---|---|
| # | This is the number of an individual entry. |
| Username | This is the administrator name for identification purposes. |
| Group Name | This is the group name the user belongs to. |
| Status | This field displays if this Administrator is currently logged in or not. |
| Description | This field displays extra information on this Administrator. |
| Add | Click **Add** to create a new Administrator if you have this permission. Only the “root” Administrator and “Super” Administrators can create (and manage) other Administrators within their domains. |
| Edit | Click this to modify an existing Administrator. |
| Kick out | Click this to disconnect an on-line user. |
| Remove | Click this to erase that Administrator account from Vantage CNM. You cannot delete an Administrator who is logged in or who has “child” Administrators. |

## 37.3.1 Add/Edit an Administrator Account

Click **Add** in the **Account Management** > **Account** screen to create a new Administrator account or click **Edit** to modify an existing Administrator account. Use this screen to edit the password, contact information or define the group for an Administrator. Administrators can edit their own password and contact information but not permissions.

**Figure 330** Account Management > Account > Add/Edit




The following table describes the fields in this screen.

**Table 273** Account Management > Account > Add/Edit

| LABEL | DESCRIPTION |
|---|---|
| Username | Type the administrator login name associated with the password that you log into Vantage CNM with. The username cannot be changed after an Administrator account is created but her name can be. |
| Password | Type a password associated with the **Username** above. |
| Confirm Password | Type the same password again here to make sure that the one you typed above was typed as intended. |
| E-mail Address | Type a valid e-mail address for this Administrator. |
| Administration Group | Select the group for this Administrator belongs to. |
| Address Line1 | Type up to 64 charactors of a mailing address for this person. |
| Address Line2 | Type the additional address information if the **Address Line1** field is not long enough for the whole mailling address. |
| City | Type the city name for this Administrator. |
| State | Type the state name for this Administrator. |
| Zip/Postal Code | Type a postal code number for the mailing address to this Administrator. |

**Table 273** Account Management > Account > Add/Edit (continued)

| LABEL | DESCRIPTION |
|---|---|
| Country | Select the country where this person is located. |
| Telephone Number | Type the complete telephone number including area codes for this Administrator. |
| Description | Type some extra information about the Administrator. |
| Apply | Click this to save your settings in Vantage CNM. |
| Cancel | Click this to go back to the previous screen without saving any changes. |

# PART X
# Troubleshooting

Troubleshooting (605)

# 38

# Troubleshooting

This chapter offers some suggestions to solve problems you might encounter. The potential problems are divided into following categories.

- Vantage CNM Access and Login
- Device Management
- Device Firmware Management
- Vantage Report

## 38.1 Vantage CNM Access and Login

See the Quick Start Guide for additional suggestions.

### I cannot see or access the **Login** screen in the web configurator.

1. Make sure your Internet browser does not block pop-up windows and has Java Scripts and Java enabled. See Appendix C on page 635.
2. Make sure you are using the correct IP address.
3. If the problem continues, contact your local vendor.

### I forgot the **root** password.

The default password is **root**. If you have changed it, contact your local vendor.

### I can see the **Login** screen, but I cannot log in to the Vantage CNM.

Make sure you have entered the user name and password correctly. The user name and password are case-sensitive, so make sure [Caps Lock] is not on. If this does not work, contact the network administrator or local vendor.

## 38.2 Device Management

### One device always keeps in On_Pending status in the device window. How can I do?

A devices with the On_Pending status means there are some pending tasks the Vantage CNM should set but has not set to the device. If the device keeps in the status for a long time (for example, over 30 minutes), this may cause inconsistency between the Vantage CNM and the device. Try to do the following.

1. Refresh the device window to get the latest device status. Make sure the connection between the device and the Vantage CNM is ok.
2. Make sure the Vantage CNM's public IP address is properly configured. (For example, you can not use 127.0.0.1.). And this IP address should match the one configured in the managed devices. If you need to change the Vantage CNM's public IP address, you have to restart the managed devices or Vantage CNM server to reset the connections. See the procedure to change this IP address in the Section 30.1.1 on page 563.
3. Device firmware backup/restore or configuration file backup/restore on the Vantage CNM has upload/download files on the FTP server. Make sure the FTP server is properly configured, the connection and the FTP account's permission are ok. See Section 30.2 on page 564.

## 38.3 Device Firmware Management

### Why do I always fail to upload a firmware file to the Vantage CNM?

1 Make sure if you have configured the FTP information properly in the **CNM System Setting** > **Configuration** > **Servers** > **Configuration**. You can use the **CNM System Setting** > **Configuration** > **Servers** > **Configuration > Status** screen to check if the connection is ok between the Vantage CNM and the FTP server.

2 Vantage CNM uses the FTP account you provided to ftp the server. And create a / vantage folder for the file upload/download under the account's directory. Therefore, make sure the FTP account's permission includes Files (read/write/ delete), Directories (list/create/delete) and Sub-directories (inherit).

## 38.4 Vantage Report

### There is no information in any report for my device.

1 If you just added the device, wait for at least 5 minutes for information to appear in each report.

2 Click **CNM System Setting > Configuration > VRPT Management**, Make sure the Vangtage Report server's status is on and your device has been successfully associated to it (click the edit icon and see if your device is in the **Associated Devices** list.

3 Check the amount of available disk space on the Vantage Report server. If it is less than the value in Appendix A on page 611, the Vantage Report server stops receiving log entries.

4 Make sure your devices support Vantage Report. Check the release notes for the current firmware version.

5 Check the connections between the devices and Vantage Report server.

6 If the problem continues, contact your local vendor.

### There is information in some reports, but there is no information in others.

1 Make sure your devices support these reports. Check the release notes for the current firmware version.

2 Make sure you have selected the associated devices in the **Associated Devices** in the **CNM System Setting > Configuration > VRPT Management** > **Edit** screen. See Section 30.6.1 on page 573.

3 Make sure there are log entries or traffic statistics for the report dates you selected. For example, if there were no attacks yesterday, yesterday's attack report is empty.

4 If the problem continues, contact your local vendor.

# PART XI
# Appendices and Index

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# A

# Product Specifications

This appendix summarizes Vantage CNM's and Vantage Report's specifications.

## Vantage CNM Specifications

This section summarizes Vantage CNM's specifications.

**Table 274** Firmware Specifications

| FEATURE | DESCRIPTION |
|---|---|
| Default User Name | root |
| Default Password | root |
| Object Tree View | Three defined views: Account, Type, and Main<br>Status icons |
| Device Registration | Manual or XML file |
| Building Blocks (BB) | Reusable configurations<br>BB repository |
| Domain Administration | One domain per administrator<br>Multiple administrators per domain<br>Different privileges for each administrator |
| Device Configuration | Vantage CNM's **Configuration** menu<br>Device's web configurator<br>Most device features, including  and UTM features |
| Synchronization | Copy device's configuration to Vantage CNM<br>Copy Vantage CNM's configuration to device |
| Configuration File Management | Back up, restore, and reset one or more devices |
| Firmware Upgrade | Upload firmware to one or more devices<br>Upgrade scheduler<br>Upgrade report |

**Table 274** Firmware Specifications (continued)

| FEATURE | DESCRIPTION |
|---|---|
| Monitoring and Notifications | Alarm monitor<br>Status monitor for urgent alerts<br>E-mail alerts |
| Logs | Vantage CNM logs<br>Vantage Report for device logs |
| Data Maintenance | Back up and restore entire Vantage CNM configuration |
| System Management | Vantage CNM server IP address<br>FTP server<br>Mail server<br>Idle timeout<br>Brute-force password protection<br>Notification recipients<br>Administrator privileges |

**Table 275** Feature Specifications

| FEATURE | DESCRIPTION |
|---|---|
| Number of Vantage CNM Log Entries | 1,000,000 |

**Table 276** ZyXEL Device and the Corresponding Firmware Version Vantage CNM Supports

| ZYXEL DEVICE | FIRMWARE VERSION |
|---|---|
| ZyNOS ZyWALL: ZyNOS (ZyXEL Networking Operation System) is a ZyXEL proprietary system. | |
| ZyWALL 2 | 3.62 |
| ZyWALL 5 / 35 / 70 / 2 Plus | 4.00 or later |
| ZyWALL 1WG / 2WG | 4.02 or later |
| ZLD ZyWALL: ZLD (ZyXEL Linux Distribution) is ZyXEL's platform based on Linux. | |
| ZyWALL 1050 | 2.01 or later |
| ZyWALL USG 100 / 200 / 2000 | 2.10 or later |
| ZyWALL USG 300 / 1000 | 2.01 or later |
| P-662H(W)-D1 / P-662H(W)-61 / P-662HW-63 / P-653HWI-17 | 3.40 |

**Table 277** Trusted CAs (Keystore type: jks, Keystore provider: SUN)

| CA | DATE | MD5 FINGERPRINT |
|---|---|---|
| equifaxsecureebusinessca1 | Jul 19, 2003 | 64:9C:EF:2E:44:FC:C6:8F:52:07:D0:51:73:8F:CB:3D |
| verisignclass1g3ca | Mar 26, 2004 | B1:47:BC:18:57:D1:18:A0:78:2D:EC:71:E8:2A:95:73 |

**Table 277** Trusted CAs (Keystore type: jks, Keystore provider: SUN) (continued)

| CA | DATE | MD5 FINGERPRINT |
|---|---|---|
| verisignclass2g2ca | Mar 26, 2004 | 2D:BB:E5:25:D3:D1:65:82:3A:B7:0E:FA:E6:EB:E2:E1 |
| verisignclass3g3ca | Mar 26, 2004 | CD:68:B6:A7:C7:C4:CE:75:E0:1D:4F:57:44:61:92:09 |
| godaddyclass2ca | Jan 12, 2005 | 91:DE:06:25:AB:DA:FD:32:17:0C:BB:25:17:2A:84:67 |
| entrustglobalclientca | Jan 9, 2003 | 9A:77:19:18:ED:96:CF:DF:1B:B7:0E:F5:8D:B9:88:2E |
| mykey | Nov 30, 2006 | 8D:E9:89:DB:7F:CC:5E:3B:FD:DE:2C:42:08:13:EF:43 |
| gtecybertrustglobalca | May 10, 2002 | CA:3D:D3:68:F1:03:5C:D0:32:FA:B8:2B:59:E8:5A:DB |
| entrustgsslca | Jan 9, 2003 | 9D:66:6A:CC:FF:D5:F5:43:B4:BF:8C:16:D1:2B:A8:99 |
| thawtepersonalbasicca | Feb 13, 1999 | E6:0B:D2:C9:CA:2D:88:DB:1A:71:0E:4B:78:EB:02:41 |
| verisignclass1ca | Mar 26, 2004 | 97:60:E8:57:5F:D3:50:47:E5:43:0C:94:36:8A:B0:62 |
| verisignclass1g2ca | Mar 26, 2004 | DB:23:3D:F9:69:FA:4B:B9:95:80:44:73:5E:7D:41:83 |
| entrustsslca | Jan 9, 2003 | DF:F2:80:73:CC:F1:E6:61:73:FC:F5:42:E9:C5:7C:EE |
| thawtepersonalfreemailca | Feb 13, 1999 | 1E:74:C3:86:3C:0C:35:C5:3E:C2:7F:EF:3C:AA:3C:D9 |
| verisignclass3ca | Oct 27, 2003 | 10:FC:63:5D:F6:26:3E:0D:F3:25:BE:5F:79:CD:67:67 |
| gtecybertrustca | May 10, 2002 | C4:D7:F0:B2:A3:C5:7D:61:67:F0:04:CD:43:D3:BA:58 |
| verisignclass2g3ca | Mar 26, 2004 | F8:BE:C4:63:22:C9:A8:46:74:8B:B8:1D:1E:4A:2B:F6 |
| thawteserverca | Feb 13, 1999 | C5:70:C4:A2:ED:53:78:0C:C8:10:53:81:64:CB:D0:1D |
| thawtepersonalpremiumca | Feb 13, 1999 | 3A:B2:DE:22:9A:20:93:49:F9:ED:C8:D2:8A:E7:68:0D |
| equifaxsecureca | Jul 19, 2003 | 67:CB:9D:C0:13:24:8A:82:9B:B2:17:1E:D1:1B:EC:D4 |
| verisignclass3g2ca | Mar 26, 2004 | A2:33:9B:4C:74:78:73:D4:6C:E7:C1:F3:8D:CB:5C:E9 |
| thawtepremiumserverca | Feb 13, 1999 | 06:9F:69:79:16:66:90:02:1B:8C:8C:A2:C3:07:6F:3A |
| entrust2048ca | Jan 9, 2003 | BA:21:EA:20:D6:DD:DB:8F:C1:57:8B:40:AD:A1:FC:FC |
| entrustclientca | Jan 9, 2003 | 0C:41:2F:13:5B:A0:54:F5:96:66:2D:7E:CD:0E:03:F4 |

**Table 277** Trusted CAs (Keystore type: jks, Keystore provider: SUN) (continued)

| CA | DATE | MD5 FINGERPRINT |
|---|---|---|
| verisignserverca | Jun 30, 1998 | 74:7B:82:03:43:F0:00:9E:6B:B3:EC:47:BF:85:A5:93 |
| baltimorecybertrustca | May 10, 2002 | AC:B6:94:A5:9C:17:E0:D7:91:52:9B:B1:97:06:A6:E4 |
| valicertclass2ca | Jan 12, 2005 | A9:23:75:9B:BA:49:36:6E:31:C2:DB:F2:E7:66:BA:87 |
| geotrustglobalca | Jul 19, 2003 | F7:75:AB:29:FB:51:4E:B7:77:5E:FF:05:3C:99:8E:F5 |
| gtecybertrust5ca | May 10, 2002 | 7D:6C:86:E4:FC:4D:D1:0B:00:BA:22:BB:4E:7C:6A:8E |
| starfieldclass2ca | Jan 12, 2005 | 32:4A:4B:BB:C8:63:69:9B:BE:74:9A:C6:DD:1D:46:24 |
| baltimorecodesigningca | May 10, 2002 | 90:F5:28:49:56:D1:5D:2C:B0:53:D4:4B:EF:6F:90:22 |
| equifaxsecureglobalebusinessca1 | Jul 19, 2003 | 8F:5D:77:06:27:C4:98:3C:5B:93:78:E7:D7:7D:9B:CC |
| equifaxsecureebusinessca2 | Jul 19, 2003 | AA:BF:BF:64:97:DA:98:1D:6F:C6:08:3A:95:70:33:CA |
| verisignclass2ca | Oct 27, 2003 | B3:9C:25:B1:C3:2E:32:53:80:15:30:9D:4D:02:77:3E |

# Vantage Report Specifications

This section summarizes Vantage Report's specifications.

**Table 278** Port Number Specifications

| FEATURE | SPECIFICATION |
|---|---|
| MySQL port number | 3316 |

**Table 279** System Notifications Specifications

| FEATURE | SPECIFICATION |
|---|---|
| Maximum number of records in any table in the database | 15,000,000 |
| Warning: Maximum number of records in any table in the database | 10,000,000 |
| Minimum amount of free disk space required to run Vantage Report | 600 MB |
| Warning: Minimum amount of free disk space required to run Vantage Report | per Low Free Disk Mark |

**Table 280** Feature Specifications

| FEATURE | SPECIFICATION |
|---|---|
| Number of supported devices | Up to 25 |
| Number of scheduled reports | 500 |

**Table 280** Feature Specifications (continued)

| FEATURE | SPECIFICATION |
|---|---|
| Maximum Number of Entries in the Table at the Bottom of Each Statistical Report | 10 |
| Log Consolidation Frequency | 4 minutes |

**Table 281** Default Access

| | |
|---|---|
| Administrator's username | root |
| Administrator's password | root |
| Configurator Access | https://{VRPT_public_IP}:8088/vrpt |

# B

# Setting up Your Computer's IP Address

All computers must have a 10M or 100M Ethernet adapter card and TCP/IP installed.

Windows 95/98/Me/NT/2000/XP, Macintosh OS 7 and later operating systems and all versions of UNIX/LINUX include the software components you need to install and use TCP/IP on your computer. Windows 3.1 requires the purchase of a third-party TCP/IP application package.

TCP/IP should already be installed on computers using Windows NT/2000/XP, Macintosh OS 7 and later operating systems.

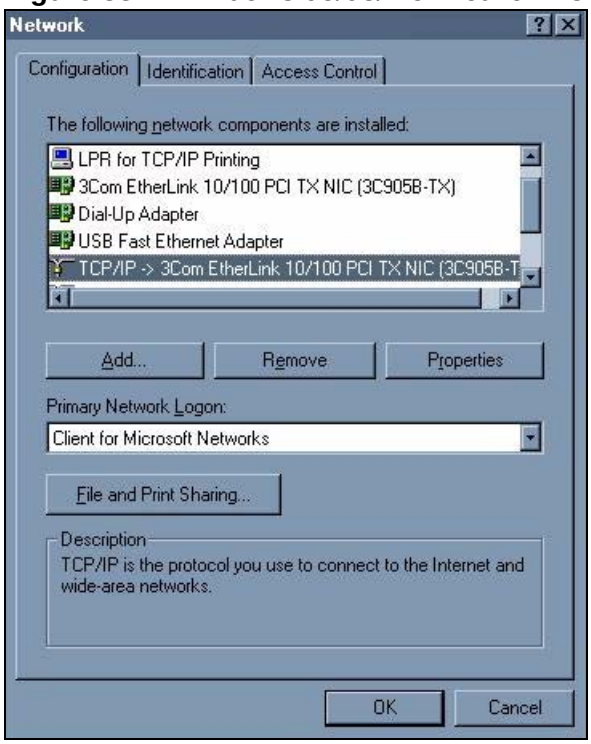
After the appropriate TCP/IP components are installed, configure the TCP/IP settings in order to "communicate" with your network.

If you manually assign IP information instead of using dynamic assignment, make sure that your computers have IP addresses that place them in the same subnet as the device's LAN port.

# Windows 95/98/Me

Click **Start**, **Settings**, **Control Panel** and double-click the **Network** icon to open the **Network** window.

**Figure 331** WIndows 95/98/Me: Network: Configuration




## Installing Components

The **Network** window **Configuration** tab displays a list of installed components. You need a network adapter, the TCP/IP protocol and Client for Microsoft Networks.

If you need the adapter:

1. In the **Network** window, click **Add**.
2. Select **Adapter** and then click **Add**.
3. Select the manufacturer and model of your network adapter and then click **OK**.

If you need TCP/IP:

1. In the **Network** window, click **Add**.
2. Select **Protocol** and then click **Add**.

3 Select **Microsoft** from the list of **manufacturers**.

4 Select **TCP/IP** from the list of network protocols and then click **OK**.

If you need Client for Microsoft Networks:

1 Click **Add**.

2 Select **Client** and then click **Add**.

3 Select **Microsoft** from the list of manufacturers.

4 Select **Client for Microsoft Networks** from the list of network clients and then click **OK**.

5 Restart your computer so the changes you made take effect.

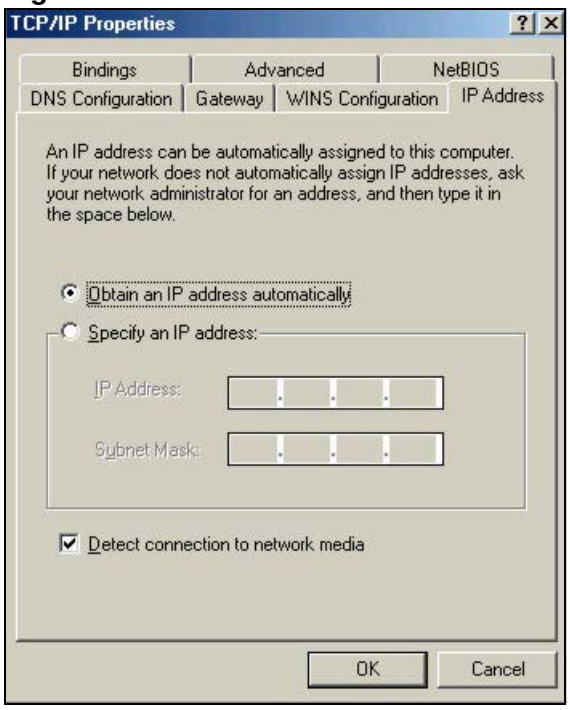
## Configuring

1 In the **Network** window **Configuration** tab, select your network adapter's TCP/IP entry and click **Properties**

2 Click the **IP Address** tab.

- If your IP address is dynamic, select **Obtain an IP address automatically**.
- If you have a static IP address, select **Specify an IP address** and type your information into the **IP Address** and **Subnet Mask** fields.

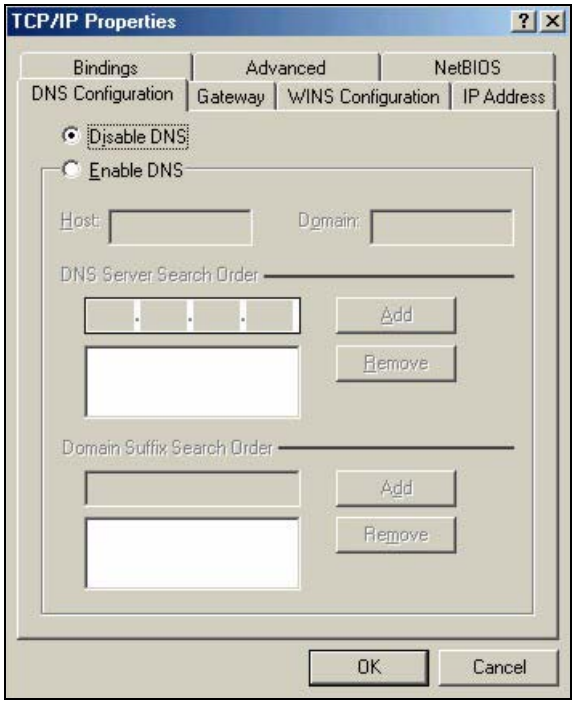
**Figure 332** Windows 95/98/Me: TCP/IP Properties: IP Address



3 Click the **DNS** Configuration tab.

- If you do not know your DNS information, select **Disable DNS**.
- If you know your DNS information, select **Enable DNS** and type the information in the fields below (you may not need to fill them all in).

**Figure 333** Windows 95/98/Me: TCP/IP Properties: DNS Configuration




4 Click the **Gateway** tab.

- If you do not know your gateway's IP address, remove previously installed gateways.
- If you have a gateway IP address, type it in the **New gateway field** and click **Add**.

5 Click **OK** to save and close the **TCP/IP Properties** window.

6 Click **OK** to close the **Network** window. Insert the Windows CD if prompted.

7 Turn on your device and restart your computer when prompted.

## Verifying Settings

1 Click **Start** and then **Run**.

2 In the **Run** window, type "winipcfg" and then click **OK** to open the **IP Configuration** window.

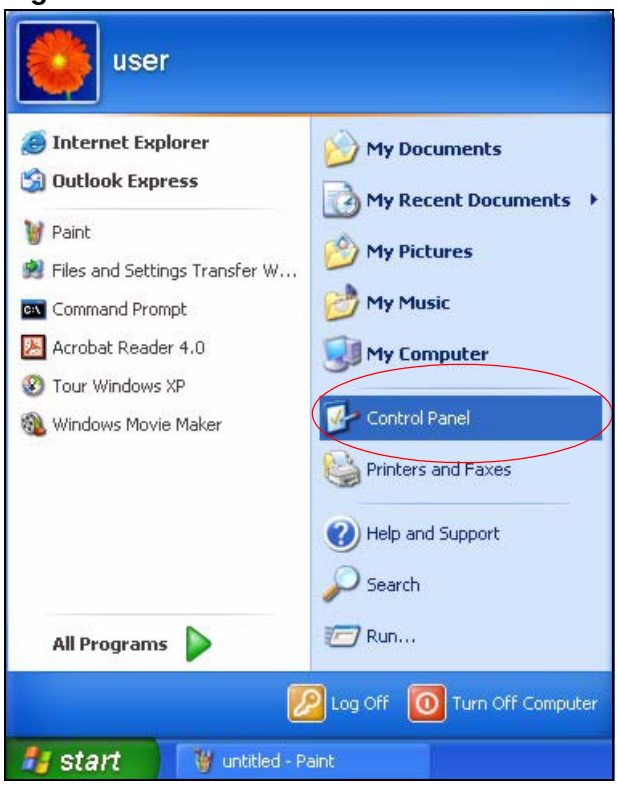
3 Select your network adapter. You should see your computer's IP address, subnet mask and default gateway.

# Windows 2000/NT/XP

The following example figures use the default Windows XP GUI theme.

1 Click **start** (**Start** in Windows 2000/NT), **Settings**, **Control Panel**.

**Figure 334** Windows XP: Start Menu




2 In the **Control Panel**, double-click **Network Connections** (**Network and Dial-up Connections** in Windows 2000/NT).

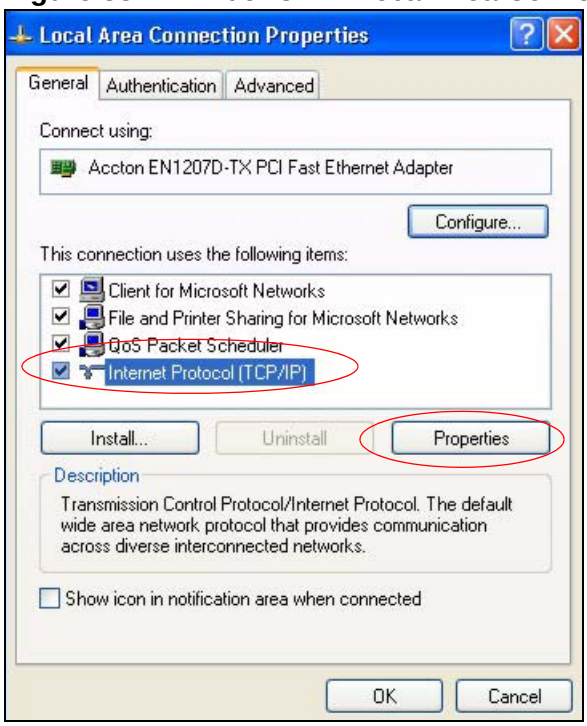
**Figure 335** Windows XP: Control Panel

3 Right-click **Local Area Connection** and then click **Properties**.

**Figure 336** Windows XP: Control Panel: Network Connections: Properties

4 Select **Internet Protocol (TCP/IP)** (under the **General** tab in Win XP) and then click **Properties**.

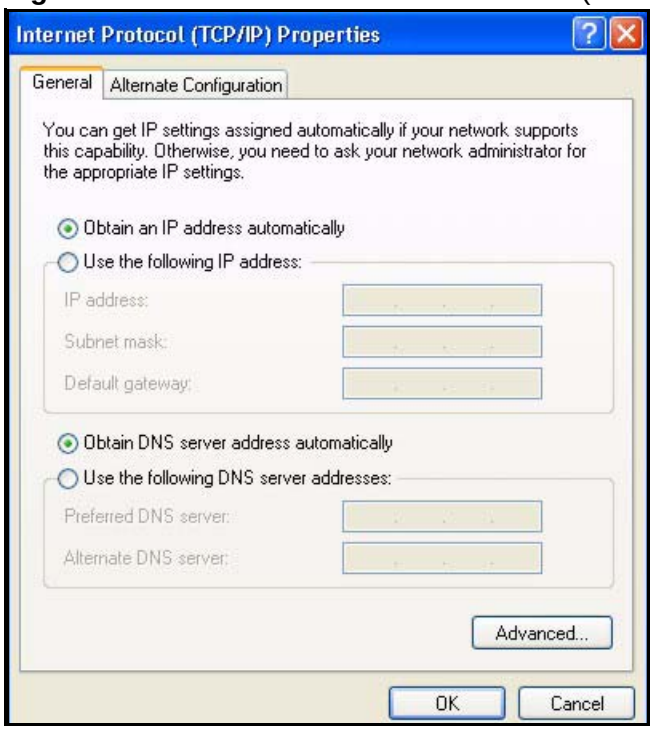
**Figure 337** Windows XP: Local Area Connection Properties




5 The **Internet Protocol TCP/IP Properties** window opens (the **General tab** in Windows XP).

- If you have a dynamic IP address click **Obtain an IP address automatically**.
- If you have a static IP address click **Use the following IP Address** and fill in the **IP address**, **Subnet mask**, and **Default gateway** fields.
- Click **Advanced**.

**Figure 338** Windows XP: Internet Protocol (TCP/IP) Properties



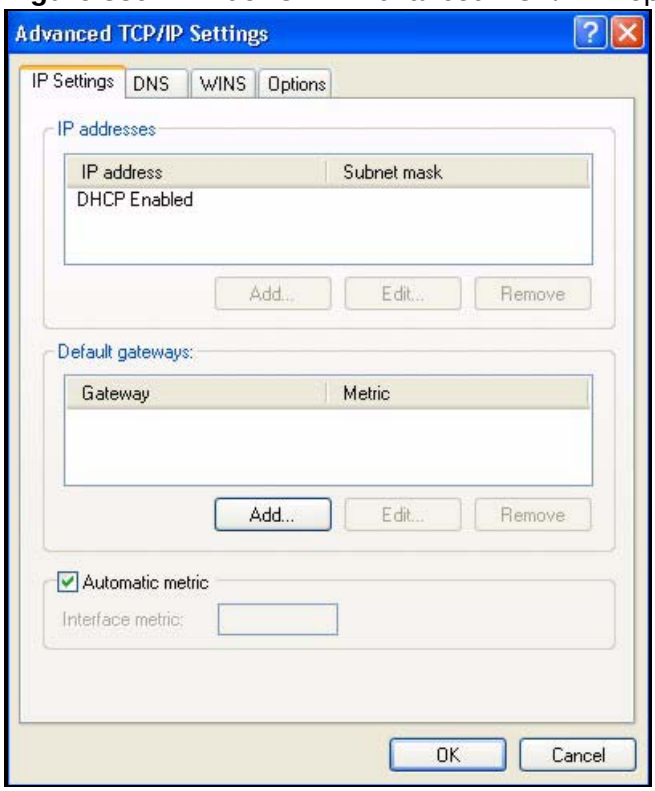

6 If you do not know your gateway's IP address, remove any previously installed gateways in the **IP Settings** tab and click **OK**.

Do one or more of the following if you want to configure additional IP addresses:

- In the **IP Settings** tab, in IP addresses, click **Add**.
- In **TCP/IP Address**, type an IP address in **IP address** and a subnet mask in **Subnet mask**, and then click **Add**.
- Repeat the above two steps for each IP address you want to add.
- Configure additional default gateways in the **IP Settings** tab by clicking **Add** in **Default gateways**.
- In **TCP/IP Gateway Address**, type the IP address of the default gateway in **Gateway**. To manually configure a default metric (the number of transmission hops), clear the **Automatic metric** check box and type a metric in **Metric**.
- Click **Add**.
- Repeat the previous three steps for each default gateway you want to add.

- Click **OK** when finished.

**Figure 339** Windows XP: Advanced TCP/IP Properties

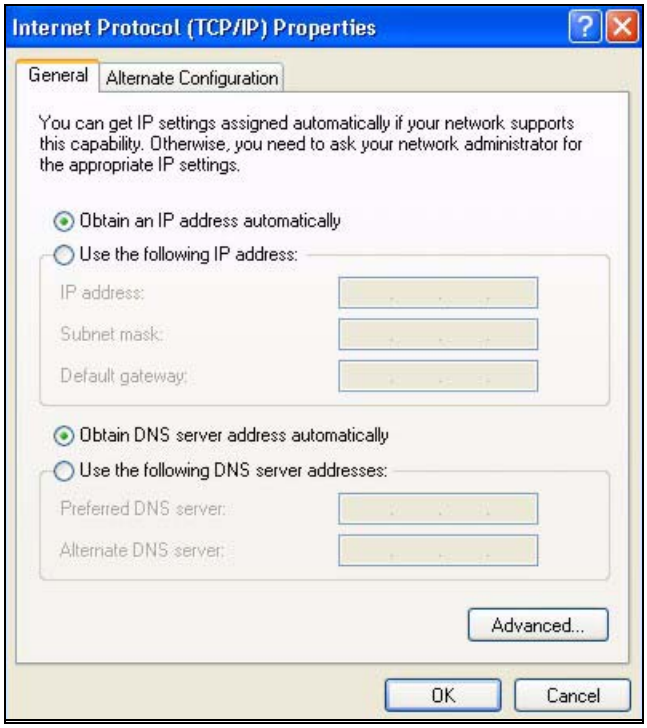



7 In the **Internet Protocol TCP/IP Properties** window (the **General** tab in Windows XP):

- Click **Obtain DNS server address automatically** if you do not know your DNS server IP address(es).
- If you know your DNS server IP address(es), click **Use the following DNS server addresses**, and type them in the **Preferred DNS server** and **Alternate DNS server** fields.

If you have previously configured DNS servers, click **Advanced** and then the **DNS** tab to order them.

**Figure 340** Windows XP: Internet Protocol (TCP/IP) Properties




8 Click **OK** to close the **Internet Protocol (TCP/IP) Properties** window.

9 Click **Close** (**OK** in Windows 2000/NT) to close the **Local Area Connection Properties** window.

10 Close the **Network Connections** window (**Network and Dial-up Connections** in Windows 2000/NT).

11 Turn on your device and restart your computer (if prompted).

## Verifying Settings

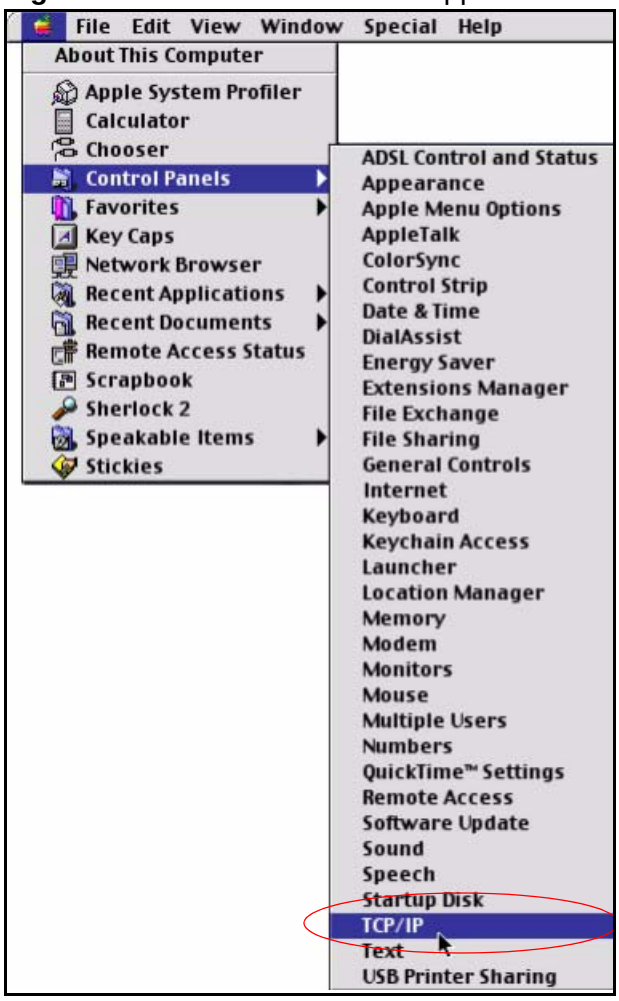
1 Click **Start**, **All Programs**, **Accessories** and then **Command Prompt**.

2 In the **Command Prompt** window, type "ipconfig" and then press [ENTER]. You can also open **Network Connections**, right-click a network connection, click **Status** and then click the **Support** tab.

# Macintosh OS 8/9

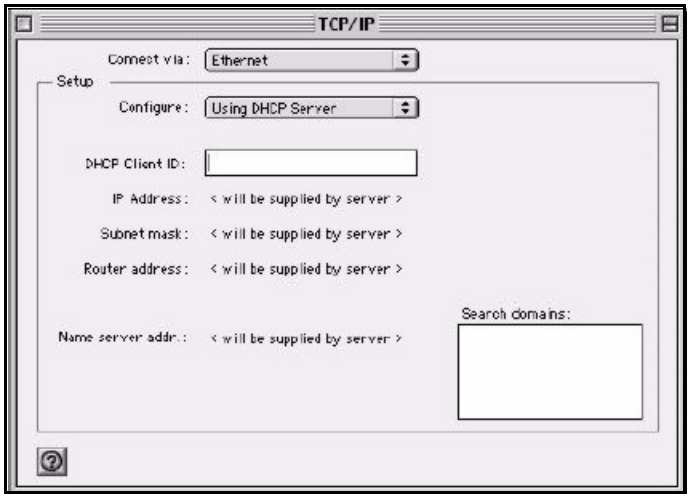
1 Click the **Apple** menu, **Control Panel** and double-click **TCP/IP** to open the **TCP/IP Control Panel**.

**Figure 341** Macintosh OS 8/9: Apple Menu



2 Select **Ethernet built-in** from the **Connect via** list.

**Figure 342** Macintosh OS 8/9: TCP/IP




3 For dynamically assigned settings, select **Using DHCP Server** from the **Configure:** list.

4 For statically assigned settings, do the following:

- From the **Configure** box, select **Manually**.
- Type your IP address in the **IP Address** box.
- Type your subnet mask in the **Subnet mask** box.
- Type the IP address of your device in the **Router address** box.

5 Close the **TCP / IP Control Panel**.

6 Click **Save** if prompted, to save changes to your configuration.

7 Turn on your device and restart your computer (if prompted).

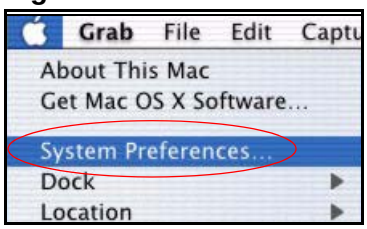
## Verifying Settings

Check your TCP/IP properties in the **TCP / IP Control Panel** window.

# Macintosh OS X

1 Click the **Apple** menu, and click **System Preferences** to open the **System Preferences** window.

**Figure 343** Macintosh OS X: Apple Menu

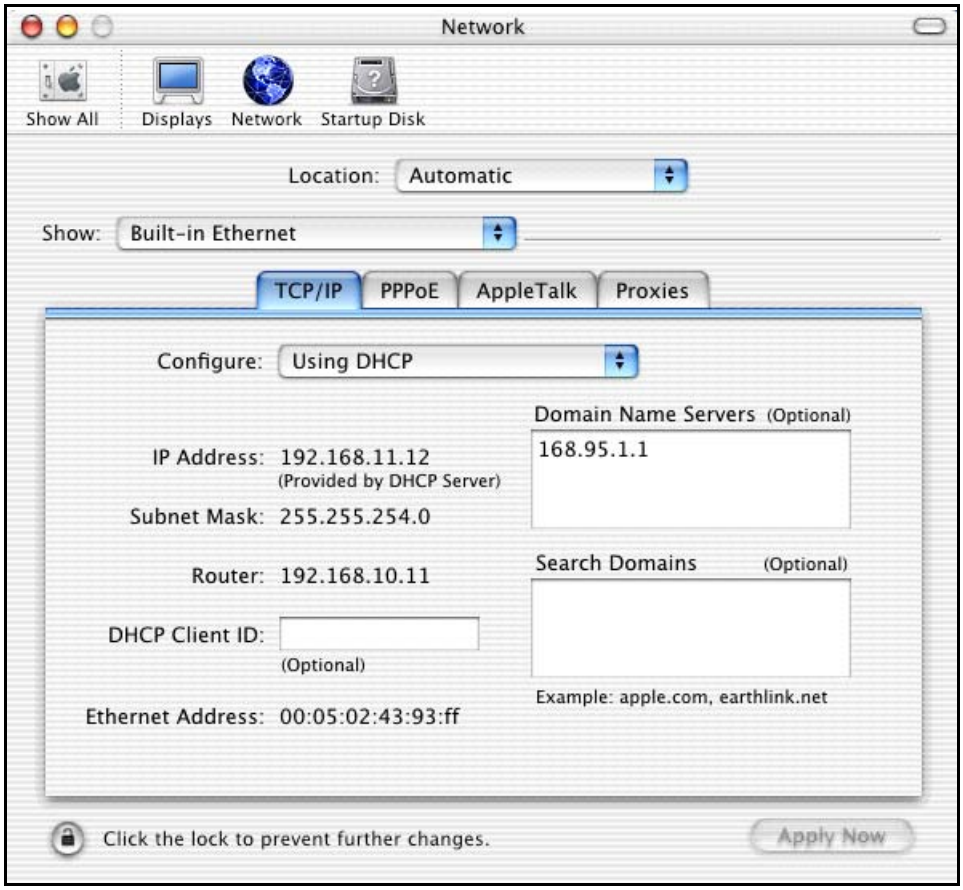



2 Click **Network** in the icon bar.

- Select **Automatic** from the **Location** list.
- Select **Built-in Ethernet** from the **Show** list.
- Click the **TCP/IP** tab.

3 For dynamically assigned settings, select **Using DHCP** from the **Configure** list.

**Figure 344** Macintosh OS X: Network




4 For statically assigned settings, do the following:

- From the **Configure** box, select **Manually**.
- Type your IP address in the **IP Address** box.
- Type your subnet mask in the **Subnet mask** box.
- Type the IP address of your device in the **Router address** box.

5 Click **Apply Now** and close the window.

6 Turn on your device and restart your computer (if prompted).

### Verifying Settings

Check your TCP/IP properties in the **Network** window.

## Linux

This section shows you how to configure your computer's TCP/IP settings in Red Hat Linux 9.0. Procedure, screens and file location may vary depending on your Linux distribution and release version.

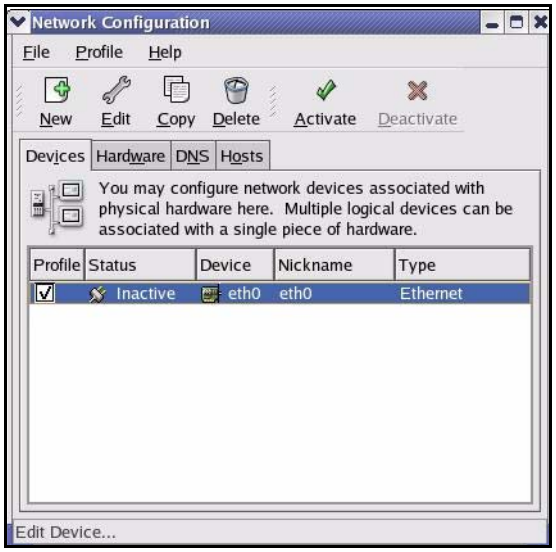
Note: Make sure you are logged in as the root administrator.

### Using the K Desktop Environment (KDE)

Follow the steps below to configure your computer IP address using the KDE.

1 Click the Red Hat button (located on the bottom left corner), select **System Setting** and click **Network**.

**Figure 345** Red Hat 9.0: KDE: Network Configuration: Devices



2 Double-click on the profile of the network card you wish to configure. The **Ethernet Device General** screen displays as shown.

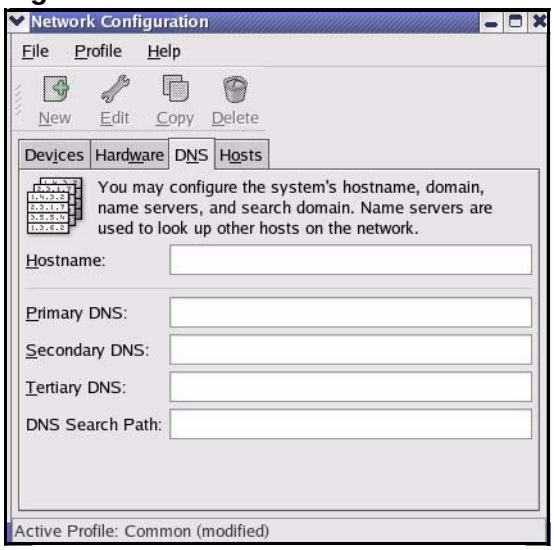
**Figure 346** Red Hat 9.0: KDE: Ethernet Device: General

- If you have a dynamic IP address, click **Automatically obtain IP address settings with** and select **dhcp** from the drop down list.
- If you have a static IP address, click **Statically set IP Addresses** and fill in the **Address**, **Subnet mask**, and **Default Gateway Address** fields.

3 Click **OK** to save the changes and close the **Ethernet Device General** screen.

4 If you know your DNS server IP address(es), click the **DNS** tab in the **Network Configuration** screen. Enter the DNS server information in the fields provided.

**Figure 347** Red Hat 9.0: KDE: Network Configuration: DNS




5 Click the **Devices** tab.

6 Click the **Activate** button to apply the changes. The following screen displays. Click **Yes to save the changes in all screens.**

**Figure 348** Red Hat 9.0: KDE: Network Configuration: Activate

7 After the network card restart process is complete, make sure the **Status** is **Active** in the **Network Configuration** screen.

## Using Configuration Files

Follow the steps below to edit the network configuration files and set your computer IP address.

1 Assuming that you have only one network card on the computer, locate the `ifconfig-eth0` configuration file (where `eth0` is the name of the Ethernet card). Open the configuration file with any plain text editor.

- If you have a dynamic IP address, enter **dhcp** in the `BOOTPROTO=` field. The following figure shows an example.

**Figure 349** Red Hat 9.0: Dynamic IP Address Setting in ifconfig-eth0

```
DEVICE=eth0
ONBOOT=yes
BOOTPROTO=dhcp
USERCTL=no
PEERDNS=yes
TYPE=Ethernet
```

- If you have a static IP address, enter **static** in the BOOTPROTO= field. Type IPADDR= followed by the IP address (in dotted decimal notation) and type NETMASK= followed by the subnet mask. The following example shows an example where the static IP address is 192.168.1.10 and the subnet mask is 255.255.255.0.

**Figure 350** Red Hat 9.0: Static IP Address Setting in ifconfig-eth0

```
DEVICE=eth0
ONBOOT=yes
BOOTPROTO=static
IPADDR=192.168.1.10
NETMASK=255.255.255.0
USERCTL=no
PEERDNS=yes
TYPE=Ethernet
```

2 If you know your DNS server IP address(es), enter the DNS server information in the resolv.conf file in the /etc directory. The following figure shows an example where two DNS server IP addresses are specified.

**Figure 351** Red Hat 9.0: DNS Settings in resolv.conf

```
nameserver 10.1.5.1
nameserver 10.1.5.2
```

3 After you edit and save the configuration files, you must restart the network card. Enter ./network restart in the /etc/rc.d/init.d directory. The following figure shows an example.

**Figure 352** Red Hat 9.0: Restart Ethernet Card

```
[root@localhost init.d]# network restart

Shutting down interface eth0:                [OK]
Shutting down loopback interface:            [OK]
Setting network parameters:                  [OK]
Bringing up loopback interface:              [OK]
Bringing up interface eth0:                  [OK]
```

## Verifying Settings

Enter `ifconfig` in a terminal screen to check your TCP/IP properties.

**Figure 353** Red Hat 9.0: Checking TCP/IP Properties

```
[root@localhost]# ifconfig
eth0      Link encap:Ethernet  HWaddr 00:50:BA:72:5B:44
          inet addr:10.1.19.129  Bcast:10.1.19.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:717 errors:0 dropped:0 overruns:0 frame:0
          TX packets:13 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:100
          RX bytes:730412 (713.2 Kb)  TX bytes:1570 (1.5 Kb)
          Interrupt:10 Base address:0x1000
[root@localhost]#
```

C

# Pop-up Windows, Java Scripts and Java Permissions

In order to use the web configurator you need to allow:

- Web browser pop-up windows from your device.
- Java Scripts (enabled by default).
- Java permissions (enabled by default).

Note: Internet Explorer 6 screens are used here. Screens for other Internet Explorer versions may vary.

## Internet Explorer Pop-up Blockers

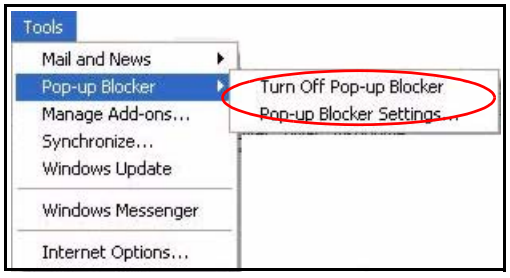
You may have to disable pop-up blocking to log into your device.

Either disable pop-up blocking (enabled by default in Windows XP SP (Service Pack) 2) or allow pop-up blocking and create an exception for your device's IP address.

### Disable pop-up Blockers

1 In Internet Explorer, select **Tools**, **Pop-up Blocker** and then select **Turn Off Pop-up Blocker**.

**Figure 354** Pop-up Blocker




You can also check if pop-up blocking is disabled in the **Pop-up Blocker** section in the **Privacy** tab.

1 In Internet Explorer, select **Tools**, **Internet Options**, **Privacy**.

2 Clear the **Block pop-ups** check box in the **Pop-up Blocker** section of the screen. This disables any web pop-up blockers you may have enabled.

**Figure 355** Internet Options: Privacy

3 Click **Apply** to save this setting.

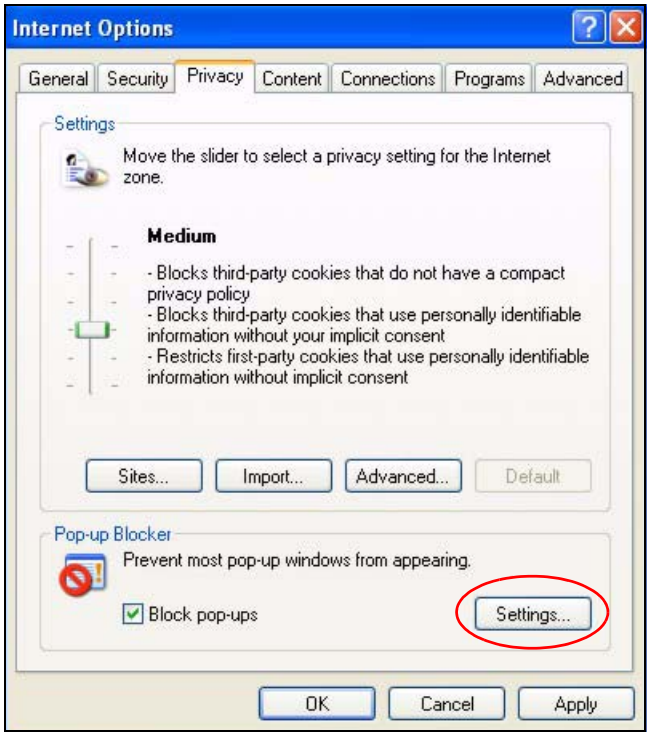
## Enable pop-up Blockers with Exceptions

Alternatively, if you only want to allow pop-up windows from your device, see the following steps.

1 In Internet Explorer, select **Tools**, **Internet Options** and then the **Privacy** tab.

2 Select **Settings...**to open the **Pop-up Blocker Settings** screen.

**Figure 356** Internet Options: Privacy




3 Type the IP address of your device (the web page that you do not want to have blocked) with the prefix “http://”. For example, http://192.168.167.1.

4 Click **Add** to move the IP address to the list of **Allowed sites**.

**Figure 357** Pop-up Blocker Settings

5 Click **Close** to return to the **Privacy** screen.

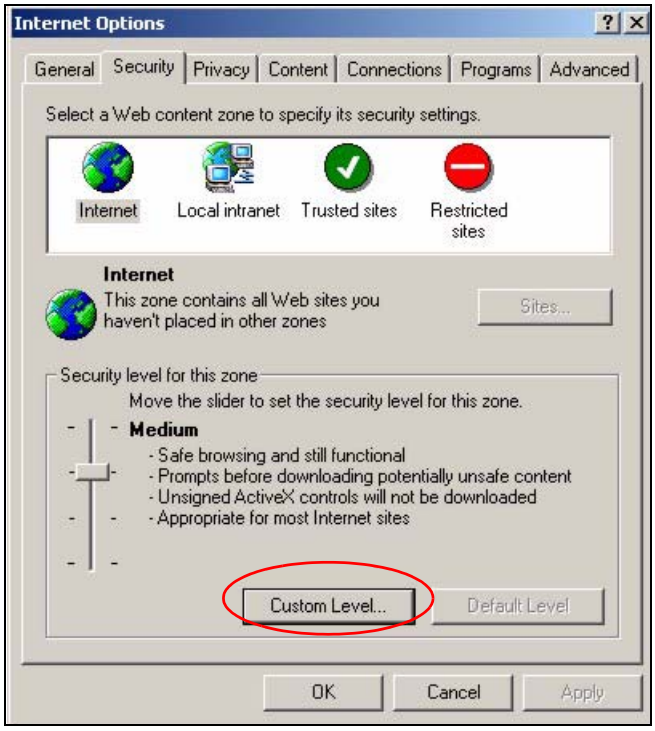
6 Click **Apply** to save this setting.

## Java Scripts

If pages of the web configurator do not display properly in Internet Explorer, check that Java Scripts are allowed.

1 In Internet Explorer, click **Tools**, **Internet Options** and then the **Security** tab.

**Figure 358** Internet Options: Security




2 Click the **Custom Level...** button.

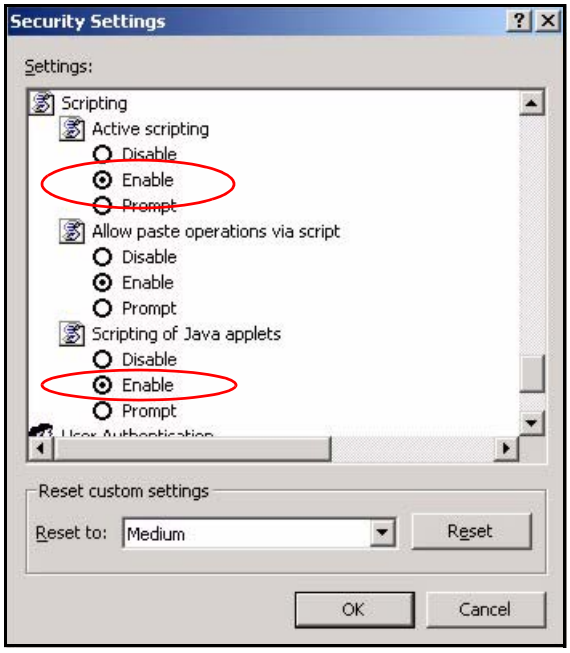
3 Scroll down to **Scripting**.

4 Under **Active scripting** make sure that **Enable** is selected (the default).

5 Under **Scripting of Java applets** make sure that **Enable** is selected (the default).

6 Click **OK** to close the window.

**Figure 359** Security Settings - Java Scripting




# Java Permissions

1 From Internet Explorer, click **Tools**, **Internet Options** and then the **Security** tab.

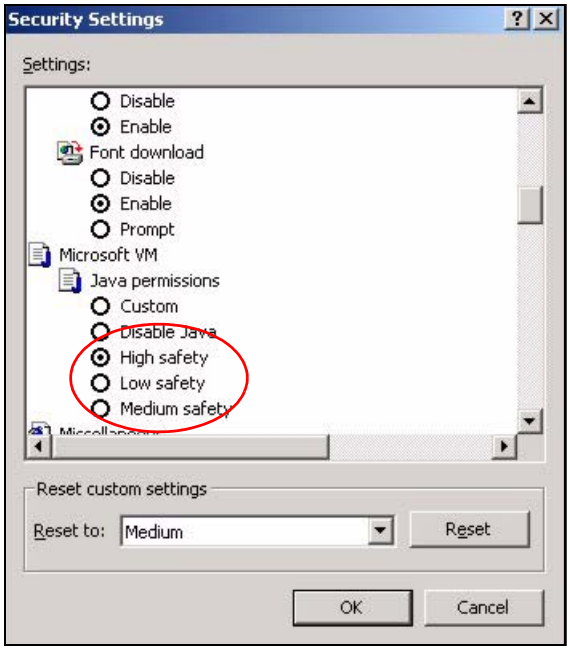
2 Click the **Custom Level...** button.

3 Scroll down to **Microsoft VM**.

4 Under **Java permissions** make sure that a safety level is selected.

5 Click **OK** to close the window.

**Figure 360** Security Settings - Java



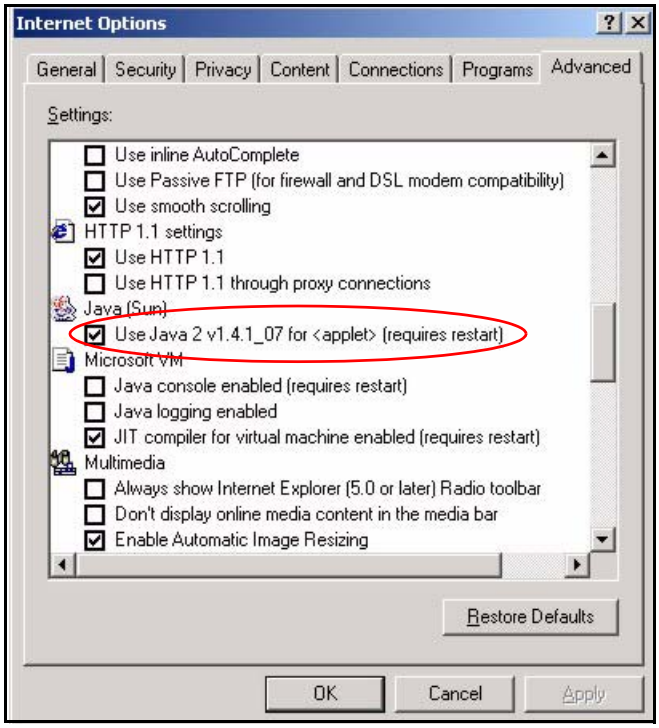

## JAVA (Sun)

1 From Internet Explorer, click **Tools**, **Internet Options** and then the **Advanced** tab.

2 Make sure that **Use Java 2 for <applet>** under **Java (Sun)** is selected.

3 Click **OK** to close the window.

**Figure 361** Java (Sun)



D

# IP Addresses and Subnetting

This appendix introduces IP addresses and subnet masks.

IP addresses identify individual devices on a network. Every networking device (including computers, servers, routers, printers, etc.) needs an IP address to communicate across the network. These networking devices are also known as hosts.

Subnet masks determine the maximum number of possible hosts on a network. You can also use subnet masks to divide one network into multiple sub-networks.

## Introduction to IP Addresses

One part of the IP address is the network number, and the other part is the host ID. In the same way that houses on a street share a common street name, the hosts on a network share a common network number. Similarly, as each house has its own house number, each host on the network has its own unique identifying number - the host ID. Routers use the network number to send packets to the correct network, while the host ID determines to which host on the network the packets are delivered.

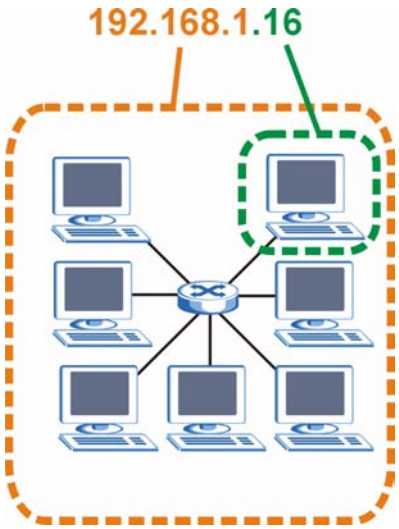
## Structure

An IP address is made up of four parts, written in dotted decimal notation (for example, 192.168.1.1). Each of these four parts is known as an octet. An octet is an eight-digit binary number (for example 11000000, which is 192 in decimal notation).

Therefore, each octet has a possible range of 00000000 to 11111111 in binary, or 0 to 255 in decimal.

The following figure shows an example IP address in which the first three octets (192.168.1) are the network number, and the fourth octet (16) is the host ID.

**Figure 362** Network Number and Host ID




How much of the IP address is the network number and how much is the host ID varies according to the subnet mask.

## Subnet Masks

A subnet mask is used to determine which bits are part of the network number, and which bits are part of the host ID (using a logical AND operation). The term “subnet” is short for “sub-network”.

A subnet mask has 32 bits. If a bit in the subnet mask is a “1” then the corresponding bit in the IP address is part of the network number. If a bit in the subnet mask is “0” then the corresponding bit in the IP address is part of the host ID.

The following example shows a subnet mask identifying the network number (in bold text) and host ID of an IP address (192.168.1.2 in decimal).

**Table 282** IP Address Network Number and Host ID Example

| | 1ST OCTET: (192) | 2ND OCTET: (168) | 3RD OCTET: (1) | 4TH OCTET (2) |
|---|---|---|---|---|
| IP Address (Binary) | 11000000 | 10101000 | 00000001 | 00000010 |
| Subnet Mask (Binary) | **11111111** | **11111111** | **11111111** | 00000000 |
| Network Number | **11000000** | **10101000** | **00000001** | |
| Host ID | | | | 00000010 |

By convention, subnet masks always consist of a continuous sequence of ones beginning from the leftmost bit of the mask, followed by a continuous sequence of zeros, for a total number of 32 bits.

Subnet masks can be referred to by the size of the network number part (the bits with a “1” value). For example, an “8-bit mask” means that the first 8 bits of the mask are ones and the remaining 24 bits are zeroes.

Subnet masks are expressed in dotted decimal notation just like IP addresses. The following examples show the binary and decimal notation for 8-bit, 16-bit, 24-bit and 29-bit subnet masks.

**Table 283** Subnet Masks

| | BINARY | | | | DECIMAL |
|---|---|---|---|---|---|
| | 1ST OCTET | 2ND OCTET | 3RD OCTET | 4TH OCTET | |
| 8-bit mask | 11111111 | 00000000 | 00000000 | 00000000 | 255.0.0.0 |
| 16-bit mask | 11111111 | 11111111 | 00000000 | 00000000 | 255.255.0.0 |
| 24-bit mask | 11111111 | 11111111 | 11111111 | 00000000 | 255.255.255.0 |
| 29-bit mask | 11111111 | 11111111 | 11111111 | 11111000 | 255.255.255.248 |

## Network Size

The size of the network number determines the maximum number of possible hosts you can have on your network. The larger the number of network number bits, the smaller the number of remaining host ID bits.

An IP address with host IDs of all zeros is the IP address of the network (192.168.1.0 with a 24-bit subnet mask, for example). An IP address with host IDs of all ones is the broadcast address for that network (192.168.1.255 with a 24-bit subnet mask, for example).

As these two IP addresses cannot be used for individual hosts, calculate the maximum number of possible hosts in a network as follows:

**Table 284** Maximum Host Numbers

| SUBNET MASK | | HOST ID SIZE | | MAXIMUM NUMBER OF HOSTS |
|---|---|---|---|---|
| 8 bits | 255.0.0.0 | 24 bits | $2^{24} – 2$ | 16777214 |
| 16 bits | 255.255.0.0 | 16 bits | $2^{16} – 2$ | 65534 |
| 24 bits | 255.255.255.0 | 8 bits | $2^{8} – 2$ | 254 |
| 29 bits | 255.255.255.248 | 3 bits | $2^{3} – 2$ | 6 |

## Notation

Since the mask is always a continuous number of ones beginning from the left, followed by a continuous number of zeros for the remainder of the 32 bit mask, you can simply specify the number of ones instead of writing the value of each octet. This is usually specified by writing a "/" followed by the number of bits in the mask after the address.

For example, 192.1.1.0 /25 is equivalent to saying 192.1.1.0 with subnet mask 255.255.255.128.

The following table shows some possible subnet masks using both notations.

**Table 285** Alternative Subnet Mask Notation

| SUBNET MASK | ALTERNATIVE NOTATION | LAST OCTET (BINARY) | LAST OCTET (DECIMAL) |
|---|---|---|---|
| 255.255.255.0 | /24 | 0000 0000 | 0 |
| 255.255.255.128 | /25 | 1000 0000 | 128 |
| 255.255.255.192 | /26 | 1100 0000 | 192 |
| 255.255.255.224 | /27 | 1110 0000 | 224 |
| 255.255.255.240 | /28 | 1111 0000 | 240 |
| 255.255.255.248 | /29 | 1111 1000 | 248 |
| 255.255.255.252 | /30 | 1111 1100 | 252 |

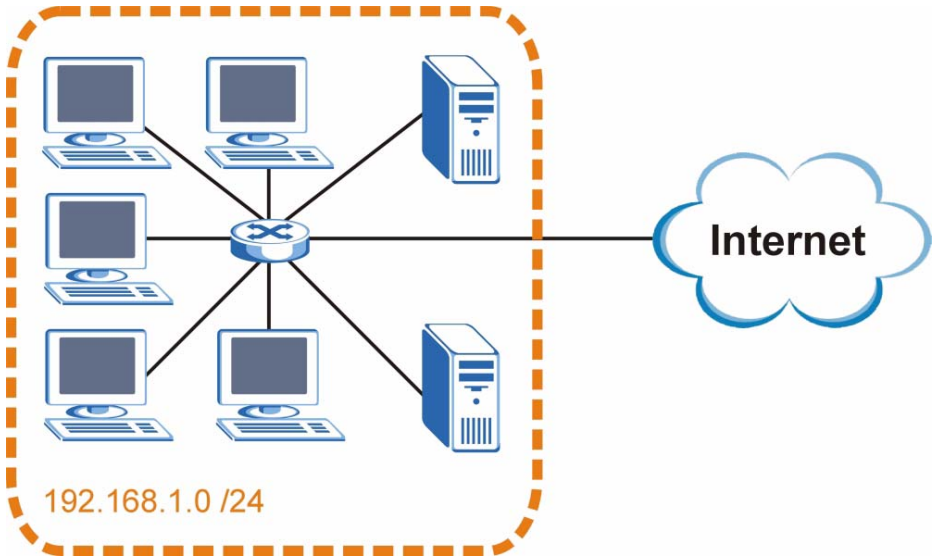
## Subnetting

You can use subnetting to divide one network into multiple sub-networks. In the following example a network administrator creates two sub-networks to isolate a group of servers from the rest of the company network for security reasons.

In this example, the company network address is 192.168.1.0. The first three octets of the address (192.168.1) are the network number, and the remaining octet is the host ID, allowing a maximum of $2^8$ – 2 or 254 possible hosts.

The following figure shows the company network before subnetting.

**Figure 363** Subnetting Example: Before Subnetting

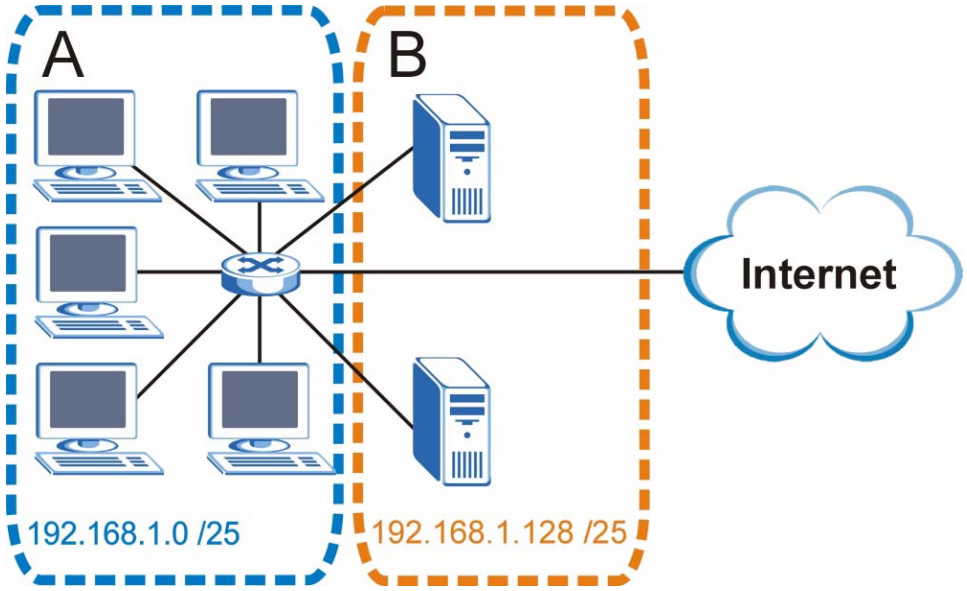



You can “borrow” one of the host ID bits to divide the network 192.168.1.0 into two separate sub-networks. The subnet mask is now 25 bits (255.255.255.128 or /25).

The “borrowed” host ID bit can have a value of either 0 or 1, allowing two subnets; 192.168.1.0 /25 and 192.168.1.128 /25.

The following figure shows the company network after subnetting. There are now two sub-networks, **A** and **B**.

**Figure 364** Subnetting Example: After Subnetting




In a 25-bit subnet the host ID has 7 bits, so each sub-network has a maximum of $2^7$ – 2 or 126 possible hosts (a host ID of all zeroes is the subnet's address itself, all ones is the subnet's broadcast address).

192.168.1.0 with mask 255.255.255.128 is subnet **A** itself, and 192.168.1.127 with mask 255.255.255.128 is its broadcast address. Therefore, the lowest IP address that can be assigned to an actual host for subnet **A** is 192.168.1.1 and the highest is 192.168.1.126.

Similarly, the host ID range for subnet **B** is 192.168.1.129 to 192.168.1.254.

## Example: Four Subnets

The previous example illustrated using a 25-bit subnet mask to divide a 24-bit address into two subnets. Similarly, to divide a 24-bit address into four subnets, you need to "borrow" two host ID bits to give four possible combinations (00, 01, 10 and 11). The subnet mask is 26 bits (11111111.11111111.11111111.**11**000000) or 255.255.255.192.

Each subnet contains 6 host ID bits, giving $2^6$ - 2 or 62 hosts for each subnet (a host ID of all zeroes is the subnet itself, all ones is the subnet's broadcast address).

**Table 286** Subnet 1

| IP/SUBNET MASK | NETWORK NUMBER | LAST OCTET BIT VALUE |
|---|---|---|
| IP Address (Decimal) | 192.168.1. | 0 |
| IP Address (Binary) | 11000000.10101000.00000001. | **00**000000 |
| Subnet Mask (Binary) | 11111111.11111111.11111111. | **11**000000 |
| Subnet Address: 192.168.1.0 | Lowest Host ID: 192.168.1.1 | |
| Broadcast Address: 192.168.1.63 | Highest Host ID: 192.168.1.62 | |

**Table 287** Subnet 2

| IP/SUBNET MASK | NETWORK NUMBER | LAST OCTET BIT VALUE |
|---|---|---|
| IP Address | 192.168.1. | 64 |
| IP Address (Binary) | 11000000.10101000.00000001. | **01**000000 |
| Subnet Mask (Binary) | 11111111.11111111.11111111. | **11**000000 |
| Subnet Address: 192.168.1.64 | Lowest Host ID: 192.168.1.65 | |
| Broadcast Address: 192.168.1.127 | Highest Host ID: 192.168.1.126 | |

**Table 288** Subnet 3

| IP/SUBNET MASK | NETWORK NUMBER | LAST OCTET BIT VALUE |
|---|---|---|
| IP Address | 192.168.1. | 128 |
| IP Address (Binary) | 11000000.10101000.00000001. | **10**000000 |
| Subnet Mask (Binary) | 11111111.11111111.11111111. | **11**000000 |
| Subnet Address: 192.168.1.128 | Lowest Host ID: 192.168.1.129 | |
| Broadcast Address: 192.168.1.191 | Highest Host ID: 192.168.1.190 | |

**Table 289** Subnet 4

| IP/SUBNET MASK | NETWORK NUMBER | LAST OCTET BIT VALUE |
|---|---|---|
| IP Address | 192.168.1. | 192 |
| IP Address (Binary) | 11000000.10101000.00000001. | **11**000000 |
| Subnet Mask (Binary) | 11111111.11111111.11111111. | **11**000000 |
| Subnet Address: 192.168.1.192 | Lowest Host ID: 192.168.1.193 | |
| Broadcast Address: 192.168.1.255 | Highest Host ID: 192.168.1.254 | |

## Example: Eight Subnets

Similarly, use a 27-bit mask to create eight subnets (000, 001, 010, 011, 100, 101, 110 and 111).

The following table shows IP address last octet values for each subnet.

**Table 290** Eight Subnets

| SUBNET | SUBNET ADDRESS | FIRST ADDRESS | LAST ADDRESS | BROADCAST ADDRESS |
|---|---|---|---|---|
| 1 | 0 | 1 | 30 | 31 |
| 2 | 32 | 33 | 62 | 63 |
| 3 | 64 | 65 | 94 | 95 |
| 4 | 96 | 97 | 126 | 127 |
| 5 | 128 | 129 | 158 | 159 |
| 6 | 160 | 161 | 190 | 191 |
| 7 | 192 | 193 | 222 | 223 |
| 8 | 224 | 225 | 254 | 255 |

## Subnet Planning

The following table is a summary for subnet planning on a network with a 24-bit network number.

**Table 291** 24-bit Network Number Subnet Planning

| NO. “BORROWED” HOST BITS | SUBNET MASK | NO. SUBNETS | NO. HOSTS PER SUBNET |
|---|---|---|---|
| 1 | 255.255.255.128 (/25) | 2 | 126 |
| 2 | 255.255.255.192 (/26) | 4 | 62 |
| 3 | 255.255.255.224 (/27) | 8 | 30 |
| 4 | 255.255.255.240 (/28) | 16 | 14 |
| 5 | 255.255.255.248 (/29) | 32 | 6 |
| 6 | 255.255.255.252 (/30) | 64 | 2 |
| 7 | 255.255.255.254 (/31) | 128 | 1 |

The following table is a summary for subnet planning on a network with a 16-bit network number.

**Table 292** 16-bit Network Number Subnet Planning

| NO. “BORROWED” HOST BITS | SUBNET MASK | NO. SUBNETS | NO. HOSTS PER SUBNET |
|---|---|---|---|
| 1 | 255.255.128.0 (/17) | 2 | 32766 |
| 2 | 255.255.192.0 (/18) | 4 | 16382 |

**Table 292** 16-bit Network Number Subnet Planning (continued)

| NO. "BORROWED" HOST BITS | SUBNET MASK | NO. SUBNETS | NO. HOSTS PER SUBNET |
|---|---|---|---|
| 3 | 255.255.224.0 (/19) | 8 | 8190 |
| 4 | 255.255.240.0 (/20) | 16 | 4094 |
| 5 | 255.255.248.0 (/21) | 32 | 2046 |
| 6 | 255.255.252.0 (/22) | 64 | 1022 |
| 7 | 255.255.254.0 (/23) | 128 | 510 |
| 8 | 255.255.255.0 (/24) | 256 | 254 |
| 9 | 255.255.255.128 (/25) | 512 | 126 |
| 10 | 255.255.255.192 (/26) | 1024 | 62 |
| 11 | 255.255.255.224 (/27) | 2048 | 30 |
| 12 | 255.255.255.240 (/28) | 4096 | 14 |
| 13 | 255.255.255.248 (/29) | 8192 | 6 |
| 14 | 255.255.255.252 (/30) | 16384 | 2 |
| 15 | 255.255.255.254 (/31) | 32768 | 1 |

# Configuring IP Addresses

Where you obtain your network number depends on your particular situation. If the ISP or your network administrator assigns you a block of registered IP addresses, follow their instructions in selecting the IP addresses and the subnet mask.

If the ISP did not explicitly give you an IP network number, then most likely you have a single user account and the ISP will assign you a dynamic IP address when the connection is established. If this is the case, it is recommended that you select a network number from 192.168.0.0 to 192.168.255.0. The Internet Assigned Number Authority (IANA) reserved this block of addresses specifically for private use; please do not use any other number unless you are told otherwise. You must also enable Network Address Translation (NAT) on the device.

Once you have decided on the network number, pick an IP address for your device that is easy to remember (for instance, 192.168.1.1) but make sure that no other device on your network is using that IP address.

The subnet mask specifies the network number portion of an IP address. Your device will compute the subnet mask automatically based on the IP address that you entered. You don't need to change the subnet mask computed by the device unless you are instructed to do otherwise.

## Private IP Addresses

Every machine on the Internet must have a unique address. If your networks are isolated from the Internet (running only between two branch offices, for example) you can assign any IP addresses to the hosts without problems. However, the Internet Assigned Numbers Authority (IANA) has reserved the following three blocks of IP addresses specifically for private networks:

- 10.0.0.0 — 10.255.255.255
- 172.16.0.0 — 172.31.255.255
- 192.168.0.0 — 192.168.255.255

You can obtain your IP address from the IANA, from an ISP, or it can be assigned from a private network. If you belong to a small organization and your Internet access is through an ISP, the ISP can provide you with the Internet addresses for your local networks. On the other hand, if you are part of a much larger organization, you should consult your network administrator for the appropriate IP addresses.

Regardless of your particular situation, do not create an arbitrary IP address; always follow the guidelines above. For more information on address assignment, please refer to RFC 1597, *Address Allocation for Private Internets* and RFC 1466, *Guidelines for Management of IP Address Space.*

# E

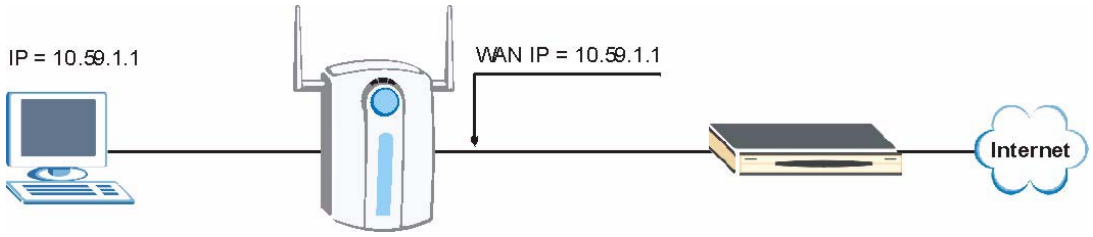
# IP Address Assignment Conflicts

This appendix describes situations where IP address conflicts may occur. Subscribers with duplicate IP addresses will not be able to access the Internet.

## Case A: The device is using the same LAN and WAN IP addresses

The following figure shows an example where the device is using a WAN IP address that is the same as the IP address of a computer on the LAN.

**Figure 365** IP Address Conflicts: Case A

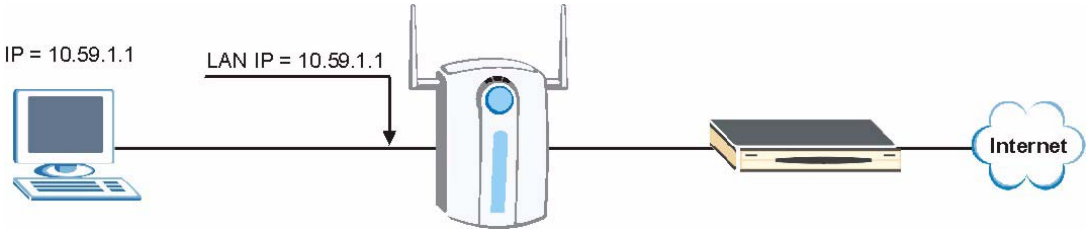



You must set the device to use different LAN and WAN IP addresses on different subnets if you enable DHCP server on the device. For example, you set the WAN IP address to 192.59.1.1 and the LAN IP address to 10.59.1.1. Otherwise, It is recommended the device use a public WAN IP address.

## Case B: The Device LAN IP address conflicts with the DHCP client IP address

In the following figure, the device is acting as a DHCP server. The device assigns an IP address, which is the same as its LAN port IP address, to a DHCP client attached to the LAN.

**Figure 366** IP Address Conflicts: Case B

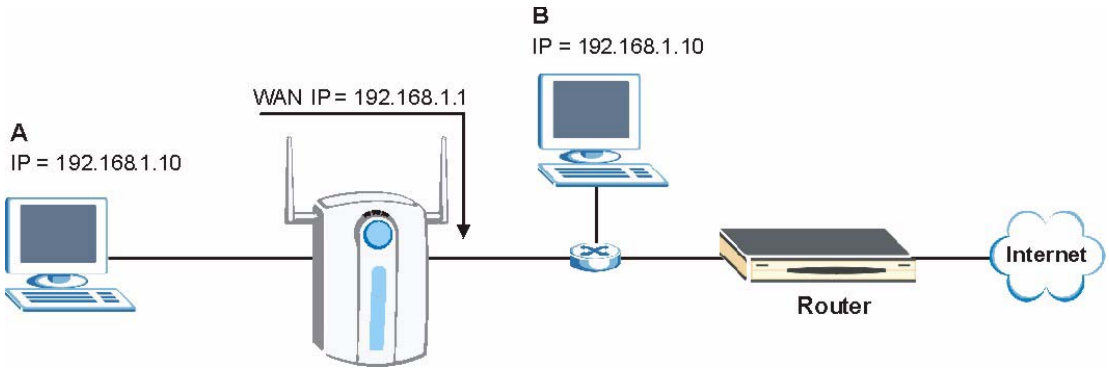



To solve this problem, make sure the device LAN IP address is not in the DHCP IP address pool.

## Case C: The Subscriber IP address is the same as the IP address of a network device

The following figure depicts an example where the subscriber IP address is the same as the IP address of a network device not attached to the device.

**Figure 367** IP Address Conflicts: Case C



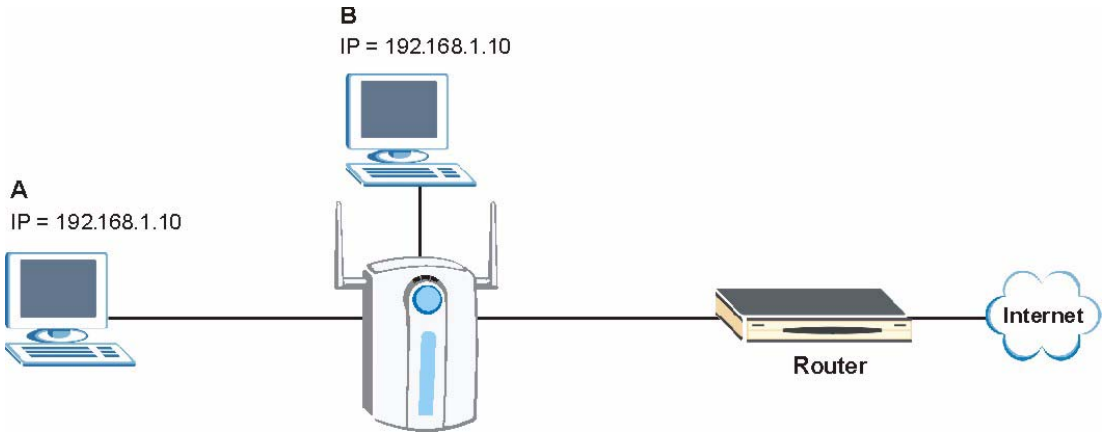

You must set the device to use different LAN and WAN IP addresses on different subnets if you enable DHCP server on the device. For example, you set the WAN IP address to 192.59.1.1 and the LAN IP address to 10.59.1.1. Otherwise, It is recommended the device uses a public WAN IP address.

# Case D: Two or more subscribers have the same IP address.

By converting all private IP addresses to the WAN IP address, the device allows subscribers with different network configurations to access the Internet. However, there are situations where two or more subscribers are using the same private IP address. This may happen when a subscriber is configured to use a static (or fixed) IP address that is the same as the IP address the device DHCP server assigns to another subscriber acting as a DHCP client.

In this case, the subscribers are not able to access the Internet.

**Figure 368** IP Address Conflicts: Case D




This problem can be solved by adding a VLAN-enabled switch or set the computers to obtain IP addresses dynamically.

# F

# Common Services

The following table lists some commonly-used services and their associated protocols and port numbers. For a comprehensive list of port numbers, ICMP type/code numbers and services, visit the IANA (Internet Assigned Number Authority) web site.

- **Name**: This is a short, descriptive name for the service. You can use this one or create a different one, if you like.
- **Protocol**: This is the type of IP protocol used by the service. If this is **TCP/UDP**, then the service uses the same port number with TCP and UDP. If this is **USER-DEFINED**, the **Port(s)** is the IP protocol number, not the port number.
- **Port(s)**: This value depends on the **Protocol**. Please refer to RFC 1700 for further information about port numbers.
  - If the **Protocol** is **TCP**, **UDP**, or **TCP/UDP**, this is the IP port number.
  - If the **Protocol** is **USER**, this is the IP protocol number.
- **Description**: This is a brief explanation of the applications that use this service or the situations in which this service is used.

**Table 293** Commonly Used Services

| NAME | PROTOCOL | PORT(S) | DESCRIPTION |
|---|---|---|---|
| AH (IPSEC_TUNNEL) | User-Defined | 51 | The IPSEC AH (Authentication Header) tunneling protocol uses this service. |
| AIM/New-ICQ | TCP | 5190 | AOL's Internet Messenger service. It is also used as a listening port by ICQ. |
| AUTH | TCP | 113 | Authentication protocol used by some servers. |
| BGP | TCP | 179 | Border Gateway Protocol. |
| BOOTP_CLIENT | UDP | 68 | DHCP Client. |
| BOOTP_SERVER | UDP | 67 | DHCP Server. |
| CU-SEEME | TCP<br>UDP | 7648<br>24032 | A popular videoconferencing solution from White Pines Software. |
| DNS | TCP/UDP | 53 | Domain Name Server, a service that matches web names (for example www.zyxel.com) to IP numbers. |

**Table 293** Commonly Used Services (continued)

| NAME | PROTOCOL | PORT(S) | DESCRIPTION |
|---|---|---|---|
| ESP (IPSEC_TUNNEL) | User-Defined | 50 | The IPSEC ESP (Encapsulation Security Protocol) tunneling protocol uses this service. |
| FINGER | TCP | 79 | Finger is a UNIX or Internet related command that can be used to find out if a user is logged on. |
| FTP | TCP<br>TCP | 20<br>21 | File Transfer Program, a program to enable fast transfer of files, including large files that may not be possible by e-mail. |
| H.323 | TCP | 1720 | NetMeeting uses this protocol. |
| HTTP | TCP | 80 | Hyper Text Transfer Protocol - a client/server protocol for the world wide web. |
| HTTPS | TCP | 443 | HTTPS is a secured http session often used in e-commerce. |
| ICMP | User-Defined | 1 | Internet Control Message Protocol is often used for diagnostic or routing purposes. |
| ICQ | UDP | 4000 | This is a popular Internet chat program. |
| IGMP (MULTICAST) | User-Defined | 2 | Internet Group Multicast Protocol is used when sending packets to a specific group of hosts. |
| IKE | UDP | 500 | The Internet Key Exchange algorithm is used for key distribution and management. |
| IRC | TCP/UDP | 6667 | This is another popular Internet chat program. |
| MSN Messenger | TCP | 1863 | Microsoft Networks' messenger service uses this protocol. |
| NEW-ICQ | TCP | 5190 | An Internet chat program. |
| NEWS | TCP | 144 | A protocol for news groups. |
| NFS | UDP | 2049 | Network File System - NFS is a client/server distributed file service that provides transparent file sharing for network environments. |
| NNTP | TCP | 119 | Network News Transport Protocol is the delivery mechanism for the USENET newsgroup service. |
| PING | User-Defined | 1 | Packet INternet Groper is a protocol that sends out ICMP echo requests to test whether or not a remote host is reachable. |
| POP3 | TCP | 110 | Post Office Protocol version 3 lets a client computer get e-mail from a POP3 server through a temporary connection (TCP/IP or other). |

**Table 293** Commonly Used Services (continued)

| NAME | PROTOCOL | PORT(S) | DESCRIPTION |
|---|---|---|---|
| PPTP | TCP | 1723 | Point-to-Point Tunneling Protocol enables secure transfer of data over public networks. This is the control channel. |
| PPTP_TUNNEL (GRE) | User-Defined | 47 | PPTP (Point-to-Point Tunneling Protocol) enables secure transfer of data over public networks. This is the data channel. |
| RCMD | TCP | 512 | Remote Command Service. |
| REAL_AUDIO | TCP | 7070 | A streaming audio service that enables real time sound over the web. |
| REXEC | TCP | 514 | Remote Execution Daemon. |
| RLOGIN | TCP | 513 | Remote Login. |
| RTELNET | TCP | 107 | Remote Telnet. |
| RTSP | TCP/UDP | 554 | The Real Time Streaming (media control) Protocol (RTSP) is a remote control for multimedia on the Internet. |
| SFTP | TCP | 115 | Simple File Transfer Protocol. |
| SMTP | TCP | 25 | Simple Mail Transfer Protocol is the message-exchange standard for the Internet. SMTP enables you to move messages from one e-mail server to another. |
| SNMP | TCP/UDP | 161 | Simple Network Management Program. |
| SNMP-TRAPS | TCP/UDP | 162 | Traps for use with the SNMP (RFC:1215). |
| SQL-NET | TCP | 1521 | Structured Query Language is an interface to access data on many different types of database systems, including mainframes, midrange systems, UNIX systems and network servers. |
| SSH | TCP/UDP | 22 | Secure Shell Remote Login Program. |
| STRM WORKS | UDP | 1558 | Stream Works Protocol. |
| SYSLOG | UDP | 514 | Syslog allows you to send system logs to a UNIX server. |
| TACACS | UDP | 49 | Login Host Protocol used for (Terminal Access Controller Access Control System). |
| TELNET | TCP | 23 | Telnet is the login and terminal emulation protocol common on the Internet and in UNIX environments. It operates over TCP/IP networks. Its primary function is to allow users to log into remote host systems. |

**Table 293** Commonly Used Services (continued)

| NAME | PROTOCOL | PORT(S) | DESCRIPTION |
|---|---|---|---|
| TFTP | UDP | 69 | Trivial File Transfer Protocol is an Internet file transfer protocol similar to FTP, but uses the UDP (User Datagram Protocol) rather than TCP (Transmission Control Protocol). |
| VDOLIVE | TCP | 7000 | Another videoconferencing solution. |

# G

# Importing Certificates

This appendix shows importing certificates examples using Netscape Navigator and Internet Explorer 5. This appendix uses the ZyWALL 70 as an example. Other models should be similar.

## Import Vantage CNM's Certificates into Netscape Navigator

In Netscape Navigator, you can permanently trust the Vantage CNM's server certificate by importing it into your operating system as a trusted certification authority.

Select **Accept This Certificate Permanently** in the following screen to do this.

**Figure 369** Security Certificate

## Importing the Vantage CNM's Certificate into Internet Explorer

For Internet Explorer to trust a self-signed certificate from the Vantage CNM, simply import the self-signed certificate into your operating system as a trusted certification authority.

To have Internet Explorer trust a Vantage CNM certificate issued by a certificate authority, import the certificate authority's certificate into your operating system as a trusted certification authority.

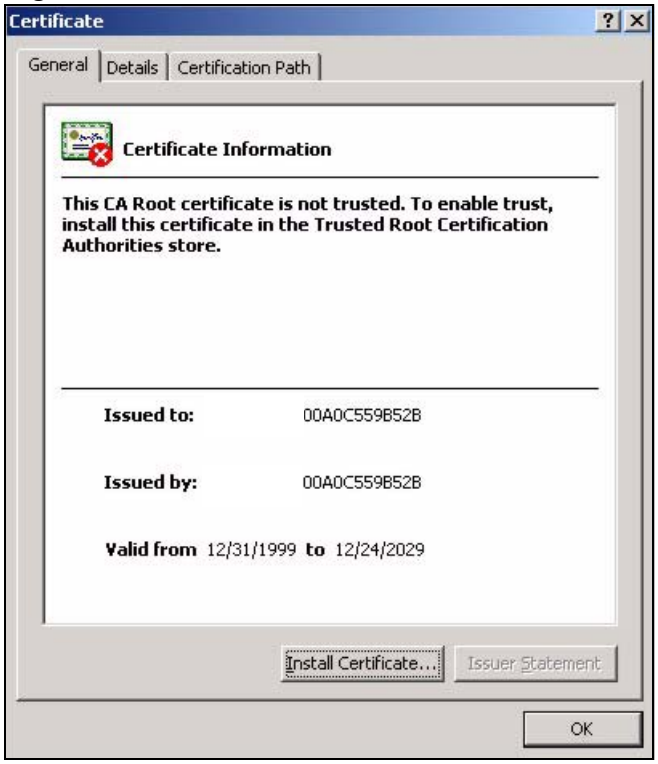
The following example procedure shows how to import the Vantage CNM's (self-signed) server certificate into your operating system as a trusted certification authority.

1 In Internet Explorer, double click the lock shown in the following screen.

**Figure 370** Login Screen

2 Click **Install Certificate** to open the **Install Certificate** wizard.

**Figure 371** Certificate General Information before Import



3 Click **Next** to begin the **Install Certificate** wizard.

**Figure 372** Certificate Import Wizard 1

4 Select where you would like to store the certificate and then click **Next**.

**Figure 373** Certificate Import Wizard 2

5 Click **Finish** to complete the **Import Certificate** wizard.

**Figure 374** Certificate Import Wizard 3

6 Click **Yes** to add the Vantage CNM certificate to the root store.

**Figure 375** Root Certificate Store

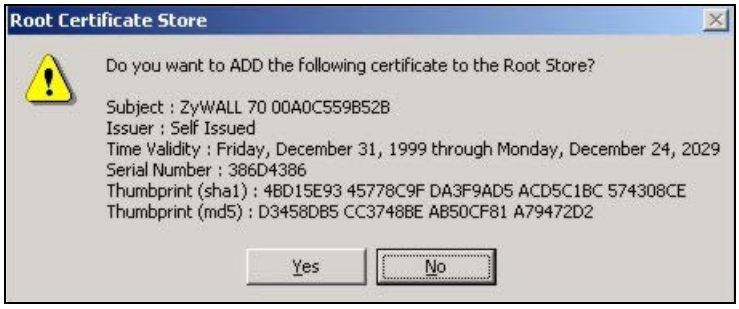



**Figure 376** Certificate General Information after Import

# H

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