

Mirror

GS1900 Series

Support Note

Version 2.00 Nov. 2022

Overview of Mirror

Port mirroring is used on a network switch to send a copy of network packets seen on one switch port (or an entire VLAN) to a network monitoring connection on another switch port. This is commonly used for network applications that require monitoring of network traffic and troubleshooting.

General Operation

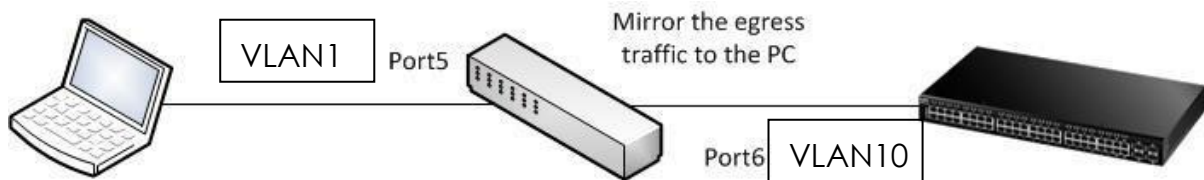
Port-based mirror mentions that the mirrored port can be one or many ports. Based on the mirrored traffic, the traffic can be divided into three types.

Ingress – Copy the incoming traffic to the specific port on the switch.

Egress – Copy the outgoing traffic from the specific port on the switch.

Both – Copy both incoming and outgoing traffic of the specific port on the switch.

Scenario



PC connects to port 5 of the GS1900-8HP and port 6 of the GS1900-8HP connects to the third switch. We would like to capture the egress tagged out traffic from GS1900-8HP to the third switch.

Thus, we enable the egress mirror port on port 6 and the monitor port on port 5 using the following configuration in the web GUI.

Web GUI configuration

Step 1. Setup VLAN 10.

ZYXEL GS1900-8HP

The screenshot shows the ZYXEL GS1900-8HP web GUI. On the left, the 'Menu' is visible with 'Configuration' highlighted. Under 'Configuration', 'VLAN' is selected. The main area shows the 'VLAN' configuration page. The 'VLAN List' table has two rows: 'VLAN 10' and 'VLAN Name Prefix'. The 'VLAN Name Prefix' is set to 'VLAN10'. The 'Apply' button is highlighted.

VLAN	Port	VLAN Port
VLAN List	10	
VLAN Name Prefix	VLAN10	

Apply **Cancel**

Step 2. Configure PVID for port 5 and port 6.

ZYXEL GS1900-8HP

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 - Voice VLAN
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 - Loop Guard
 - Mirror
 - Time Range Group
 Multicast
 - Spanning Tree
 - LLDP
 QoS
 Security
 AAA
 Management

Port						VLAN	Port	VLAN Port
	Port	PVID	Accept Frame Type	Ingress Check	VLAN Trunk			
<input type="checkbox"/>	1	1	ALL	Disable	Disable			
<input type="checkbox"/>	2	1	ALL	Disable	Disable			
<input type="checkbox"/>	3	1	ALL	Disable	Disable			
<input type="checkbox"/>	4	1	ALL	Disable	Disable			
<input checked="" type="checkbox"/>	5	1	ALL	Disable	Disable			
<input type="checkbox"/>	6	1	ALL	Disable	Disable			
<input type="checkbox"/>	7	1	ALL	Disable	Disable			
<input type="checkbox"/>	8	1	ALL	Disable	Disable			
<input type="checkbox"/>	LAG1	1	ALL	Disable	Disable			
<input type="checkbox"/>	LAG2	1	ALL	Disable	Disable			
<input type="checkbox"/>	LAG3	1	ALL	Disable	Disable			
<input type="checkbox"/>	LAG4	1	ALL	Disable	Disable			
<input type="checkbox"/>	LAG5	1	ALL	Disable	Disable			
<input type="checkbox"/>	LAG6	1	ALL	Disable	Disable			
<input type="checkbox"/>	LAG7	1	ALL	Disable	Disable			
<input type="checkbox"/>	LAG8	1	ALL	Disable	Disable			

Edit Cancel

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 - Voice VLAN

Port		VLAN	Port	VLAN Port
Port Select	5			
PVID	10 (Range: 1 - 4094)			
Accepted Type	<input checked="" type="radio"/> All <input type="radio"/> Tag Only <input type="radio"/> Untag Only			
Ingress Filtering	<input type="radio"/> Enable <input checked="" type="radio"/> Disable			
VLAN Trunk	<input type="radio"/> Enable <input checked="" type="radio"/> Disable			

Apply Cancel

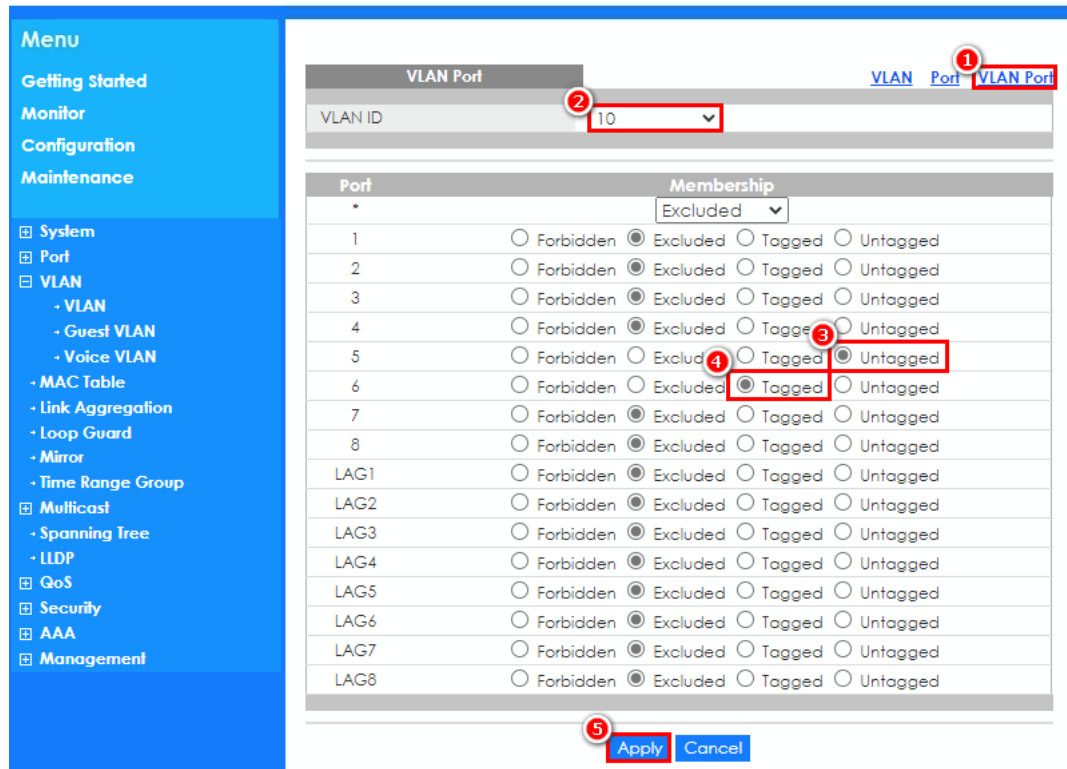
ZYXEL GS1900-8HP

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 - VLAN

Port						VLAN	Port	VLAN Port
	Port	PVID	Accept Frame Type	Ingress Check	VLAN Trunk			
<input type="checkbox"/>	1	1	ALL	Disable	Disable			
<input type="checkbox"/>	2	1	ALL	Disable	Disable			
<input type="checkbox"/>	3	1	ALL	Disable	Disable			
<input type="checkbox"/>	4	1	ALL	Disable	Disable			
<input type="checkbox"/>	5	10	ALL	Disable	Disable			
<input checked="" type="checkbox"/>	6	1 tagged, PVID=1	ALL	Disable	Disable			
<input type="checkbox"/>	7	1	ALL	Disable	Disable			
<input type="checkbox"/>	8	1	ALL	Disable	Disable			

Step 3. Set VLAN 10 members.

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VLAN Port

VLAN ID: 10

Port	Membership
1	<input type="radio"/> Forbidden <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged
2	<input type="radio"/> Forbidden <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged
3	<input type="radio"/> Forbidden <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged
4	<input type="radio"/> Forbidden <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged
5	<input type="radio"/> Forbidden <input type="radio"/> Excluded <input checked="" type="radio"/> Tagged <input type="radio"/> Untagged
6	<input type="radio"/> Forbidden <input type="radio"/> Excluded <input checked="" type="radio"/> Tagged <input type="radio"/> Untagged
7	<input type="radio"/> Forbidden <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged
8	<input type="radio"/> Forbidden <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged
LAG1	<input type="radio"/> Forbidden <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged
LAG2	<input type="radio"/> Forbidden <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged
LAG3	<input type="radio"/> Forbidden <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged
LAG4	<input type="radio"/> Forbidden <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged
LAG5	<input type="radio"/> Forbidden <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged
LAG6	<input type="radio"/> Forbidden <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged
LAG7	<input type="radio"/> Forbidden <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged
LAG8	<input type="radio"/> Forbidden <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged

Apply Cancel

Step 4. Setup mirrored port 6 and monitor port 5.

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Mirror

Mirroring: ☒ Enable ☐ Disable

Monitor Port: 5

Egress

Available: 8, LAG1, LAG2, LAG3, LAG4, LAG5, LAG6, LAG7

Acting: 5

Ingress

Available: 8, LAG1, LAG2, LAG3, LAG4, LAG5, LAG6, LAG7

Acting:

Apply **Cancel**

Red annotations: 1. Configuration; 2. Mirror; 3. Enable; 4. Add port 6 to Acting; 5. Apply

Verification:

By using Wireshark, we can capture the egress tagged out traffic from port 6 of the GS1900-8HP to the third switch.

No.	Time	Source	Destination	Protocol	Length	Info
13	4.99334900	RealtekS_00:00:00	WistronI_30:0e:a0	ARP	60	who has 192.168.1.100? Tell 192.168.1.10
14	4.99337300	WistronI_30:0e:a0	RealtekS_00:00:00	ARP	42	192.168.1.100 is at 3c:97:0e:30:0e:a0
15	8.08247600	WistronI_30:0e:a0	Broadcast	ARP	42	who has 192.168.1.20? Tell 192.168.1.100
16	8.08253800	WistronI_30:0e:a0	Broadcast	ARP	64	who has 192.168.1.20? Tell 192.168.1.100
17	8.09236400	ZyxeCom_00:02:02	WistronI_30:0e:a0	ARP	60	192.168.1.20 is at 00:19:cb:00:02:02
18	8.09239200	192.168.1.100	192.168.1.20	ICMP	74	Echo (ping) request id=0x0001, seq=200/51200, ttl=128
19	8.09254100	192.168.1.100	192.168.1.20	ICMP	78	Echo (ping) request id=0x0001, seq=200/51200, ttl=128
20	8.10777100	ZyxeCom_00:02:02	Broadcast	ARP	60	who has 192.168.1.100? Tell 192.168.1.20
21	8.10778000	WistronI_30:0e:a0	ZyxeCom_00:02:02	ARP	42	192.168.1.100 is at 3c:97:0e:30:0e:a0
22	8.10785300	WistronI_30:0e:a0	ZyxeCom_00:02:02	ARP	64	192.168.1.100 is at 3c:97:0e:30:0e:a0
23	8.10899700	192.168.1.100	192.168.1.100	ICMP	74	Echo (ping) reply id=0x0001, seq=200/51200, ttl=254
24	9.08579600	192.168.1.100	192.168.1.20	ICMP	74	Echo (ping) request id=0x0001, seq=201/51456, ttl=128
25	9.08650500	192.168.1.100	192.168.1.20	ICMP	78	Echo (ping) request id=0x0001, seq=201/51456, ttl=128
26	9.08750100	192.168.1.20	192.168.1.100	ICMP	74	Echo (ping) reply id=0x0001, seq=201/51456, ttl=254
27	10.08659500	192.168.1.100	192.168.1.20	ICMP	74	Echo (ping) request id=0x0001, seq=202/51712, ttl=128
28	10.08737500	192.168.1.100	192.168.1.20	ICMP	78	Echo (ping) request id=0x0001, seq=202/51712, ttl=128

Frame 25: 78 bytes on wire (624 bits), 78 bytes captured (624 bits) on interface 0
Ethernet II, Src: WistronI_30:0e:a0 (3c:97:0e:30:0e:a0), Dst: ZyxeCom_00:02:02 (00:19:cb:00:02:02)
802.1Q Virtual LAN, PRI: 0, CFI: 0, ID: 10
000. = Priority: Best Effort (default) (0)
...0 = CFI: Canonical (0)
.... 0000 0000 1010 = ID: 10 (VLAN10 tagged)
Type: IP (0x0800)
Internet Protocol Version 4, Src: 192.168.1.100 (192.168.1.100), Dst: 192.168.1.20 (192.168.1.20)
Internet Control Message Protocol