



How-to Guide for Configuring Port Mirroring/SPAN Ports

Introduction

Port mirroring (or SPAN) is a method used on modern network switches to send a copy of network traffic (packets) for further analysis in various applications including performance monitoring and security. One of the most common configurations would be to select one or more source ports (the traffic that the user wants to analyze) to be mirrored to a single destination port (where duplicate of traffic is sent). Switches that support port mirroring (SPAN) are typically capable of supporting multiple mirror sessions with little or no affect on their performance. *This guide captures the steps required to configure port mirroring on select models of network switches available on the market today such as Cisco, Netgear, Juniper, D-link, Dell Power Connect, Linksys etc.*

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“This is a sample guide for port mirroring some of the popular switches in the market. This is not an exhaustive list. If you have difficulty configuring your switch for port mirroring please contact us via email support@sparrowiq.com , or you can call us at 1-888-345-1288”

CISCO Catalyst

Most CISCO catalyst switches such as 2940, 2950, 2955, 2960, 3550 or 3750 series switches support SPAN and have the same configuration commands.

First it is necessary to delete any SPAN session which is not in use and wish to use that session for new configuration.

- This example shows how to set up SPAN session 1 for monitoring source port traffic to a destination port. First, any existing SPAN configuration for session 1 is deleted, and then bidirectional traffic is mirrored from source Gigabit Ethernet port 1 to destination Gigabit Ethernet port 2, retaining the encapsulation method.

```
Switch(config)# no monitor session 1
```

```
Switch(config)# monitor session 1 source interface gigabitethernet0/1
```

```
Switch(config)# monitor session 1 destination interface gigabitethernet0/2 encapsulation replicate
```

Note: Switches 2940, 2950, 2955, 3550 use "dot1q" in place of "replicate"

```
Switch(config)# end
```

- This example shows how to remove port 1 as a SPAN source for SPAN session 1:

```
Switch(config)# no monitor session 1 source interface gigabitethernet0/1
```

```
Switch(config)# end
```

- This example shows how to disable received traffic monitoring on port 1, which was configured for bidirectional monitoring:

```
Switch(config)# no monitor session 1 source interface gigabitethernet0/1 rx
```

The monitoring of traffic received on port 1 is disabled, but traffic sent from this port continues to be monitored.

- This example shows how to remove any existing configuration on a 2960 switch SPAN session 2, configure SPAN session 2 to monitor received traffic on all ports belonging to VLANs 1 through 3, and send it to destination Gigabit Ethernet port 2. The configuration is then modified to also monitor all traffic on all ports belonging to VLAN 10.

```
2960(config)# no monitor session 2
```



```
Switch(config)# monitor session 2 source vlan 1 - 3 rx
```

```
Switch(config)# monitor session 2 destination interface gigabitethernet0/2
```

```
Switch(config)# monitor session 2 source vlan 10
```

```
Switch(config)# end
```

Reference: <http://www.cisco.com/c/en/us/support/docs/switches/catalyst-6500-series-switches/10570-41.html#anc44>

CISCO 300 Series Switches (Menu driven Console port)

The console port which is meant to allow root access to the router is menu-driven for Cisco 300 series switches. Please refer to your user manual on how to start the Web-based Configuration Utility and then follow the steps below to configure SPAN.

Step 1: Click **Administration** > **Diagnostics** > **Port and VLAN Mirroring**. The port and VLAN mirroring page opens.

This page displays the following fields **Destination port**, **Source Interface**, **Type** and **Status**.

Step 2: Click **Add** to add a port to be mirrored. The **Add Port/VLAN Mirroring** page opens.

Step 3: Enter the parameters:

Destination Port: Select the port where your machine running Sparrow^{IQ} is connected.

Source Interface: Select the port which you want the Sparrow^{IQ} to monitor.

Type: Select whether incoming, outgoing, or both types of traffic are mirrored to the destination port.

Step 4: Click **Apply**. Port mirroring is added and the switch is updated.

Repeat the above procedure for all the ports that you would like to monitor.

Reference: http://www.cisco.com/en/US/docs/switches/lan/csbms/sf30x_sg30x/administration_guide/78-19308-01.pdf

Alcatel-Lucent switches

The port mirroring sessions for Alcatel-Lucent is very similar to the Cisco switches with some minor differences. These commands and procedure for port mirroring are supported in the following switches Omni Switch 6400,6800,6850,6855, and 9000. In all of the devices only two sessions will be supported per standalone switch and stack. For the Omni Switch 6800, port mirroring supported are

24 ports to one port. For Omni Switch 6400, 6850, 6855 and 9000 there will be 128 ports to one port that will be supported for port mirroring. The following was taken from Alcatel-Lucent's user manual.

Steps to Configure Port Monitoring

Step 1: To create a port monitoring session, use the `port monitoring source` command by entering port monitoring, followed by the port monitoring session ID, source, and the slot and the port number of the port to be monitored. For example:

-> `port monitoring 6 source 2/3`

Step 2: Enable the port monitoring session by entering port monitoring, followed by the port monitoring session ID, source, the slot and port number of the port to be monitored, and enable. For example:

-> `port monitoring 6 source 2/3 enable`

Step 3: Configure optional parameters. For example to create a file called "monitor1" for port monitoring session 6 on port 2/3, enter:

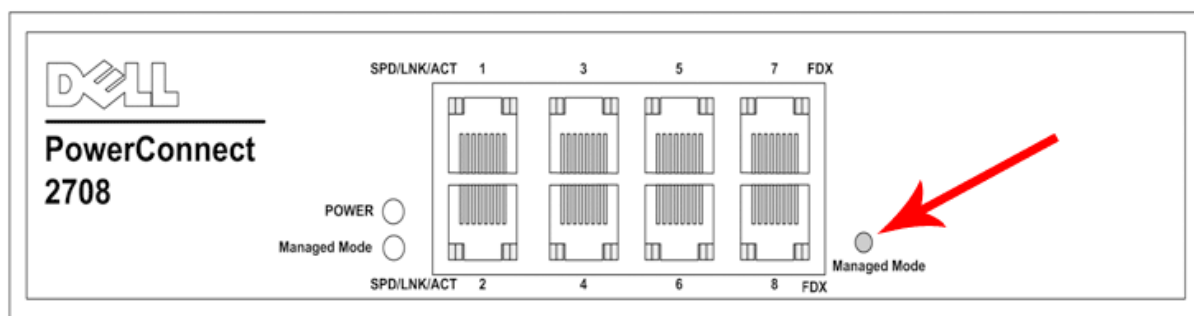
-> `port monitoring 6 source 2/3 file monitor1`

If you want to verify the port monitoring configurations then type in the command `show port monitoring status`

Reference: <http://enterprise.alcatel-lucent.com/?product=OmniSwitch6850&page=documents>

Dell Power Connect 2700 Series

Dell Power Connect 2700 Series switches are delivered from the factory in Unmanaged Mode. The device must be changed to Managed Mode before it can be configured for port mirroring. To change to Managed Mode, the device must be fully operational in Unmanaged Mode (Managed Mode LED has stopped blinking and is off).



Once the Managed Mode LED has stopped blinking, press the Managed Mode button. The switch reboots and the Managed Mode LED blinks for approximately 90 seconds and stays lit. When the Managed Mode LED stays lit, the switch is ready to be configured. The default IP address is 192.168.2.1, the default User Name is 'admin', and the default password is left blank.

- Open a Web browser on your computer.
- Enter the Ethernet Switch IP address (the default IP address is 192.168.2.1)

The following login screen is displayed when the device is first connected:

Log In
Type in Username and Password, then click OK

User Name

Password

The default User Name is 'admin', and the default password is left blank.

Click on [Port Mirroring](#) in the tree view.

You should see a page similar to the screen-shot below:

Dell OpenManage Switch Administrator Support Help About Log Out

DELL PowerConnect 2748

176.210.11.22 Port Mirroring

Switch Status
IP Addressing
Dynamic Address Table
Interface Configuration
Jumbo Frames
VLAN Membership
VLAN Interface Settings
LAG Membership
File Download
File Upload
Copy Files
Local User Database
Integrated Cable Test
Optical Transceiver Diagnostics
Port Mirroring
Storm Control
CoS Settings
CoS to Queue
DSCP to Queue
RMON Statistics
Reset

Port Mirroring

Destination Port

Source Ports

| Source Port | Type | Status | Remove |
|-------------|-----------|--------------------------|--------------------------|
| 1 | Tx and Rx | <input type="checkbox"/> | <input type="checkbox"/> |

Configure Port Mirroring according to following instructions:

Destination Port: Should be a port, where Sparrow^{IQ} is connected to.

Source Ports: Add here the ports that you are interested in port mirroring to the destination.

Save the changes by clicking the "Apply Changes".

Reference:

ftp://ftp.dell.com/Manuals/all-products/esuprt_ser_stor_net/esuprt_powerconnect/powerconnect-2708_Setup%20Guide_en-us.pdf

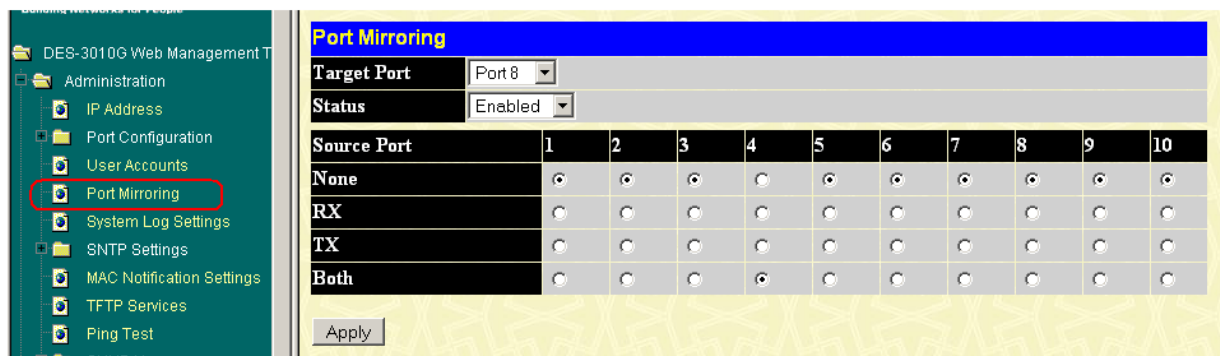
D-Link DES-3010

You can set up Port Mirroring on the D-Link DES-3010 using its D-Link Embedded Web Interface.

When you login on to Web Interface, go to **Administration->Port Mirroring**.

In some models when you login go to **System > Diagnostics > Port Mirroring**

You should see a page similar to this screen-shot below:



Configure Port Mirroring according to the following instructions:

Target Port should be a **port**, where the Sparrow^{IQ} is installed on a machine.

Status should be **enabled**.

Source Port should be ports that you would like to monitor the traffic from. Enable both if you want to see the bidirectional traffic.

Save changes on that page (click 'Apply' button).

Click 'Save Changes' to write the configuration into NV-RAM. If you do not do this last step, then all changes will be lost after reboot of the switch.

Reference:

http://www.dlink.com/us/en/support/product-/media/Business_Products/DES/DES%203010FA/manual/DES%203010FA_Manual_EN_US.pdf

Juniper switches

Port mirroring in Juniper Switches can be configured using CLI just like CISCO Catalyst Switches.

To mirror interface traffic or VLAN traffic on the switch to an interface on the switch:

- Choose a name for the port mirroring configuration (session)—in this example, employee-monitor—and specify the input—in this example, packets entering ge-0/0/0 and ge-0/0/1: The input interfaces are the interfaces that you want to monitor the traffic from
user@switch# **set analyzer employee-monitor input ingress interface ge-0/0/0**
user@switch# **set analyzer employee-monitor input ingress interface ge-0/0/1.0**
- Optionally, you can specify a statistical sampling of the packets by setting a ratio:
[edit ethernet-switching-options]
user@switch# **set analyzer employee-monitor ratio 200**
- When the ratio is set to 200, 1 of every 200 packets is mirrored to the analyzer. You can use statistical sampling to reduce the volume of mirrored traffic, as a high volume of mirrored traffic can be performance intensive for the switch.
- Configure the destination interface for the mirrored packets:
user@switch# **set analyzer employee-monitor output interface ge-0/0/10.0**
- **commit**

For the above configuration we are monitoring interfaces 0/0/0.0 and 0/0/1.0 and mirroring the traffic to 0/0/10.0.

Reference: http://www.juniper.net/techpubs/en_US/junos9.3/topics/concept/firewall-filter-ex-series-overview.html

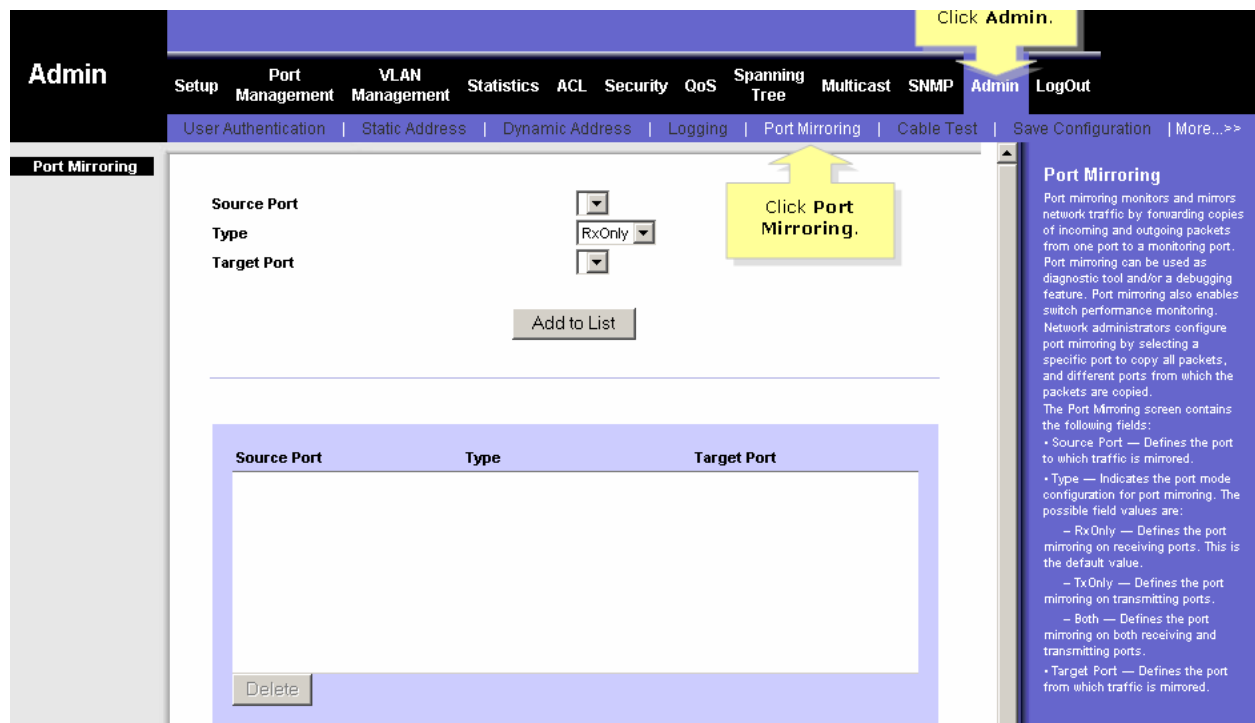
http://www.juniper.net/techpubs/en_US/junos9.3/topics/task/configuration/port-mirroring-cli.html

Linksys SRW224G4P

You can configure Port Mirroring on the Linksys SRW224G4P using the Linksys Web-Based Configuration Utility.

When you login to the Web Interface, go to [Admin->Port Mirroring](#).

You should see a page similar to the screenshot below:



Configure Port Mirroring according to the following instructions:

Source Port should be a port that you want to monitor the traffic from.

Type should be set to **Both**.

Target Port should be a port, where the machine running Sparrow^{IQ} is plugged in.

Click on **Add to List** button. The mirror session is displayed in the text box.

Reference:

http://www.cisco.com/en/US/docs/switches/lan/csbms/srw2048/administration/guide/SRW-US_v10_UG_A-Web.pdf

Netgear FS726T

In order to configure Port Mirroring, you will need to open the **Netgear Web-Based Management Interface**.

When you login to the Web Interface, go to setting **Switch->Monitor**.

You should see a page similar to the screenshot below:

Monitor Setting

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|--------------------------|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|----|----|----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Group 1 | Sniffer Mode | Disable ▾ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Sniffer Port | ▾ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Source Port | <table border="1"> <tr> <td>01</td><td>02</td><td>03</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>12</td><td>13</td> </tr> <tr> <td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td> </tr> <tr> <td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td> </tr> <tr> <td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td> </tr> </table> | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Apply Help

Configure Port Mirroring according to following instructions:

Sniffer Mode: should be set to both.

Sniffer Port: Is the destination port where the machine running Sparrow^{IQ} is connected to.

Source Port: Check those ports that you want the Sparrow^{IQ} to monitor.

Click [Apply](#) for the changes to take place.

Reference: http://www.downloads.netgear.com/files/FSxxxT_GSxxxT_smartswitch_UserManual.pdf

TP-LINK TL-SL2428WEB

This section contains instructions on how to configure Port Mirroring on TP-LINK TL-SL2428WEB switch.

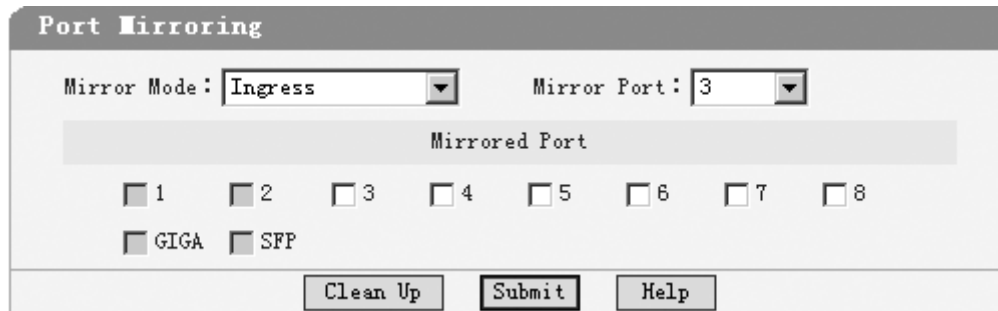
The instructions apply to other models from TP-LINK Web Smart Switches series:

TP-LINK TL-SG2109WEB, TP-LINK TL-SG2216WEB, TP-LINK TL-SG2224WEB, TP-LINK TL-SL2210WEB, TP-LINK TL-SL2218WEB, TP-LINK TL-SL2453WEB

You can configure port mirroring through **TP-LINK Web-Based Management Interface**.

When you login to the Web Interface, go to setting [Port Mirroring](#).

You should see a page similar to the screenshot below:



Configure Port Mirroring according to the following instructions:

[Mirror Mode](#) should be set to both.

[Mirror Port](#) is the destination port where machine running Sparrow^{IQ} is connected to.

[Mirrored Port](#) is the source port; check the ports that you want to be monitored by the destination port.

Click [Submit](#) to save the changes.



Reference: http://www.downloads.netgear.com/files/FSxxxT_GSxxxT_smartswitch_UserManual.pdf