Using Ping and Traceroute on the SG550XG and SG350XG

Objective

The SG550XG and SG350XG includes built-in ping and traceroute tools, which can be used to test the switch's network communications. Ping uses ICMP (Internet Control Message Protocol) echo packets to test the reachability of a host on the network, and returns information such as round-trip time and packet status. Traceroute displays the route and time a packet takes when traveling to a network host.

The objective of this document is to show you how to use ping and traceroute on the SG550XG and SG350XG.

Applicable Devices

- SG550XG

- SG350XG

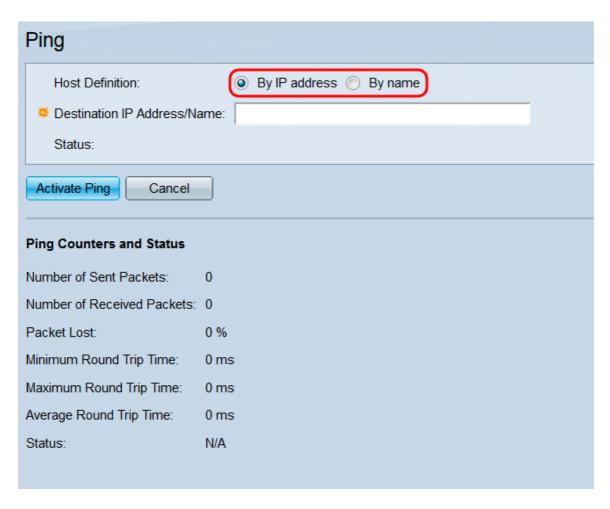## Software Version

- v2.0.0.73

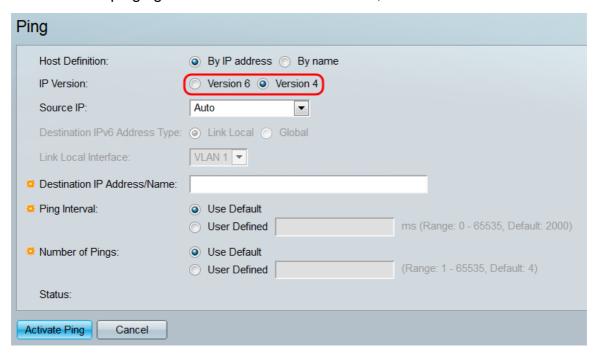## Using the Ping and Traceroute Tools

Ping

Step 1. Log in to the web configuration utility and choose **Administration > Ping**. The *Ping* page opens.

Ping

Host Definition:	⦿ By IP address ○ By name
✳ Destination IP Address/Name:	
Status:	

[Activate Ping] [Cancel]

Ping Counters and Status

Number of Sent Packets: 0

Number of Received Packets: 0

Packet Lost: 0 %

Minimum Round Trip Time: 0 ms

Maximum Round Trip Time: 0 ms

Average Round Trip Time: 0 ms
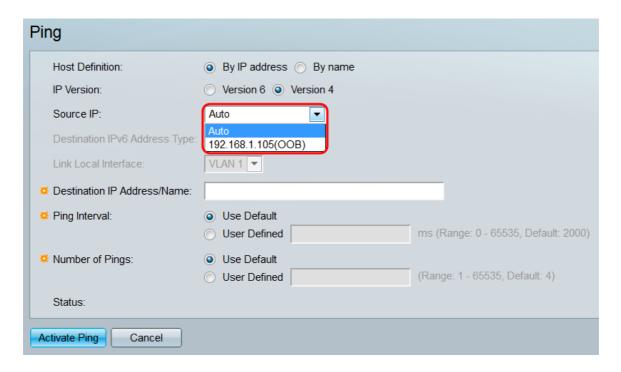
Status: N/A

Step 2. In the *Host Definition* field, select a radio button to specify how the remote host will be identified. Select **By IP address** to designate the host by its IP address. Select **By name** to designate the host by its hostname. If you are on the Basic display mode, skip to Step 7 (the *Display Mode* can be changed with the drop-down list in the top-right corner of the web configuration utility).
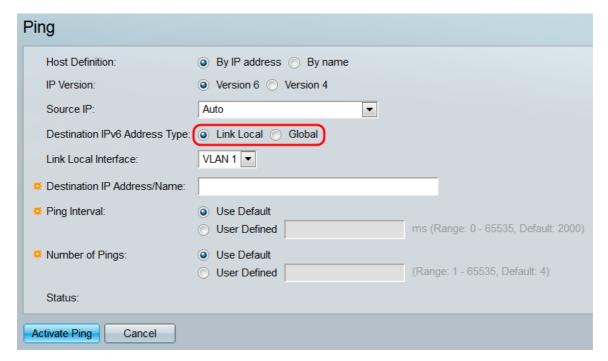
Step 3. If you are viewing the *Ping* page in Advanced display mode, several more fields are available. In the *IP Version* field, select a radio button to choose what IP version the switch will use when pinging. Select **Version 4** to use IPv4, and **Version 6** to use IPv6.

Step 4. In the *Source IP* drop-down list, select the IP address that the switch will send the ping from. The default is **Auto**, which tells the switch to compute the source address based on the destination address. If you selected **Version 6** in the IP Version field, continue to Step 5; otherwise, skip to Step 7.
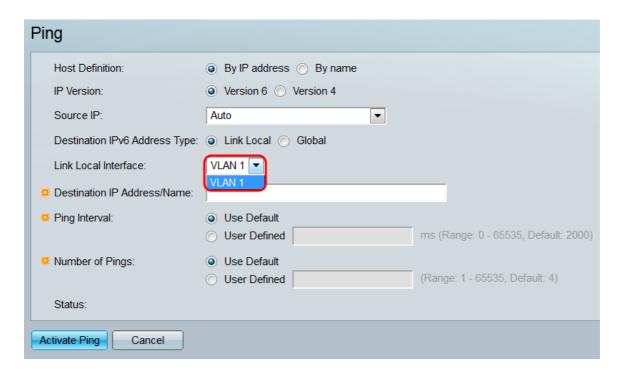
Step 5. In the *Destination IPv6 Address Type* field, select a radio button to indicate the type of the destination's IPv6 address.
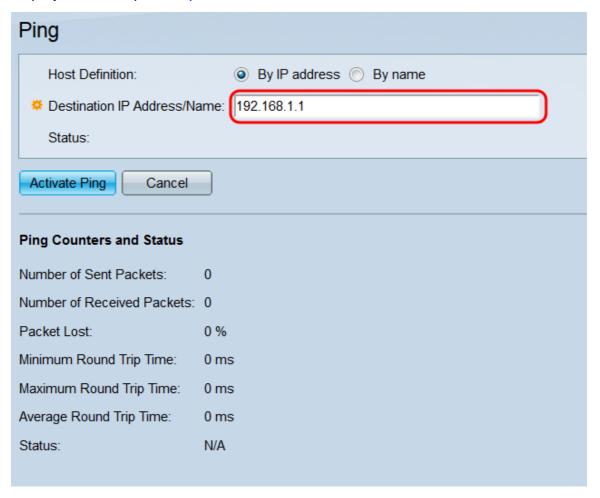

The options are:

• Link Local – The IP address uniquely identifies hosts on a single network link. A link local address has a prefix of FE80, is not routable, and can only be used for communication on the local network. If a link local address exists on the interface, this entry replaces the address in the configuration.

• Global – The address is a global unicast IPv6 address that is visible and reachable from other networks. If you select this option, skip to Step 7.
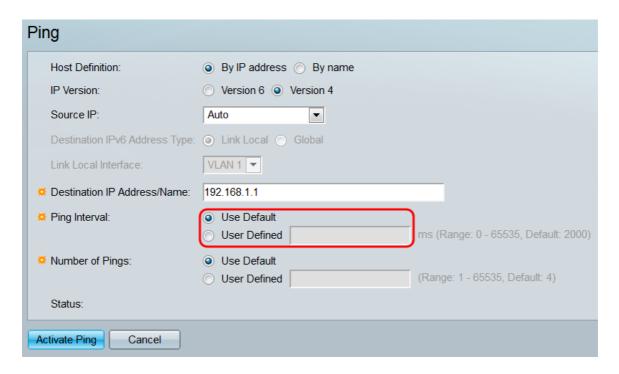
Step 6. If you selected **Link Local** from the *Destination IPv6 Address Type* field, choose a link local interface from the *Link Local Interface* drop-down list.
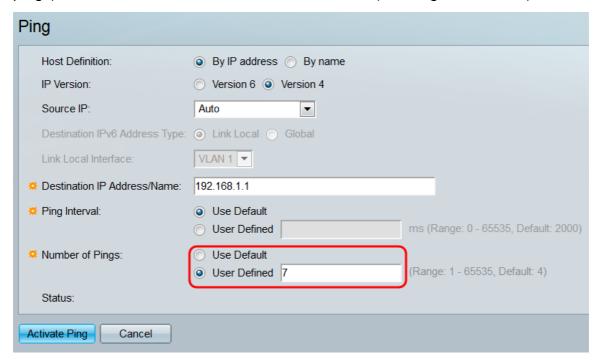
. In the *Destination IP Address/Name* field, enter the remote host's IP address or hostname, depending on your selection in the *Host Definition* field. If you are on the Basic display mode, skip to .
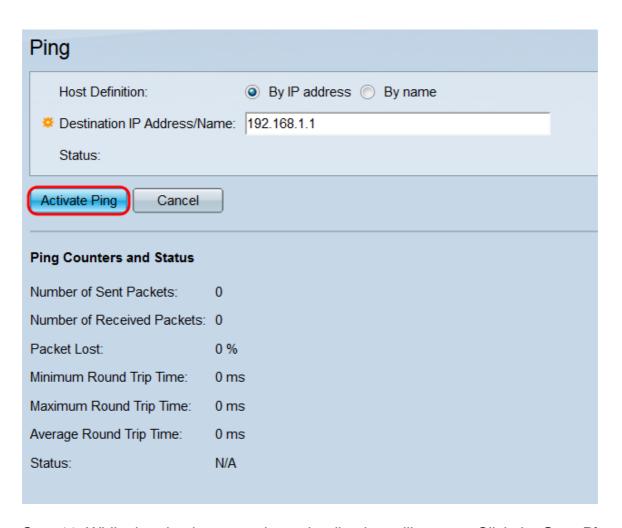

Step 8. In the *Ping Interval* field, choose a radio button to specify the length of time the switch waits in between sending packets. Select **Use Default** to use the default setting (2000 ms), or **User Defined** to enter a custom length of time (the range is 0-65535).
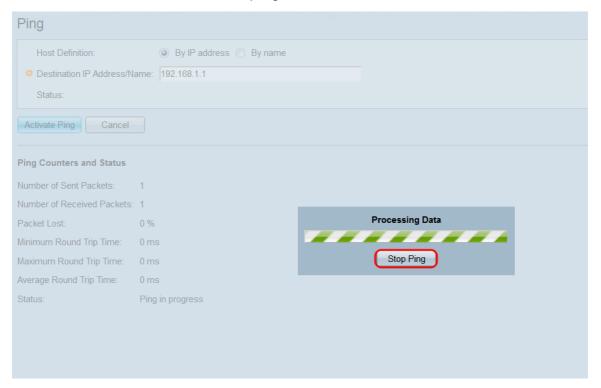
Step 9. In the *Number of Pings* field, choose a radio button to specify the number of pings the switch will send to the destination. Select **Use Default** to use the default setting (4 pings), or **User Defined** to enter a custom number (the range is 0-65535).
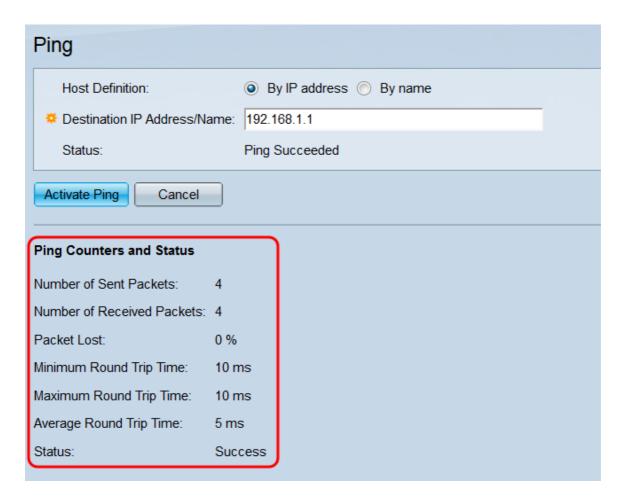

Step 10. Click **Activate Ping** to start the ping, or click **Cancel** to clear the settings.

Step 11. While the ping is processing, a loading bar will appear. Click the **Stop Ping** button underneath this bar to cancel the ping.

Step 12. When the ping finishes, several fields on the page will update with information.
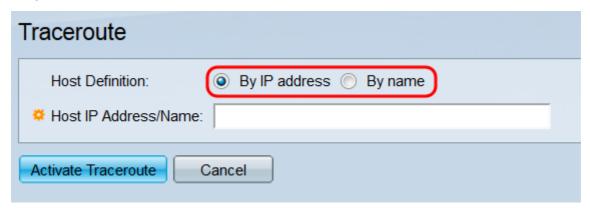
The fields are:

- Number of Sent Packets – Shows the total number of ICMP echo request packets sent to the remote host.

- Number of Received Packets – Shows the total number of ICMP echo reply packets received from the remote host.

- Packet Lost – Shows the percentage of echo request packets that never received a corresponding echo reply packet.

- Minimum Round Trip Time – Shows the quickest packet round-trip time out of all the packets sent.

- Maximum Round Trip Time – Shows the slowest packet round-trip time out of all the packets sent.

- Average Round Trip Time – Shows the average round-trip time out of all the packets sent.

- Status – Shows the return status of the ping.

Traceroute

Step 1. Log in to the web configuration utility and choose **Administration > Traceroute**. The *Traceroute* page opens.
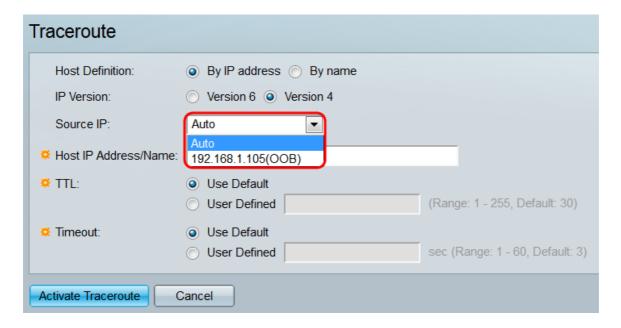
Step 2. In the *Host Definition* field, select a radio button to specify how the remote host will be identified. Select **By IP address** to designate the host by its IPv4 address. Select **By name** to designate the host by its hostname. If you are on the Basic display mode, skip to Step 5. If you selected **By name** in this field, and are in Advanced display mode, skip to Step 4.
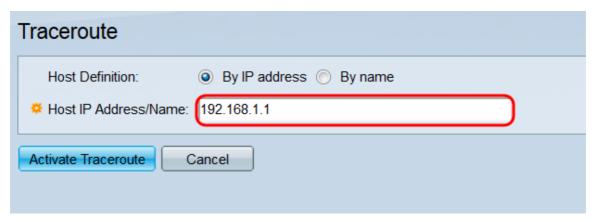

Step 3. If you are viewing the *Traceroute* page in Advanced display mode, several more fields are available (the *Display Mode* can be changed with the drop-down list in the top-right corner of the web configuration utility). In the *IP Version* field, select a radio button to choose what IP version the switch will use when running the traceroute. Select **Version 4** to use IPv4, and **Version 6** to use IPv6.

Step 4. In the *Source IP* drop-down list, select the IP address that the switch will send the traceroute from. The default is **Auto**, which tells the switch to compute the source address based on the destination address.

Step 5. In the *Host IP Address/Name* field, enter the remote host's IP address or hostname, depending on your selection in the *Host Definition* field. If you are on the Basic display mode, skip to Step 8.
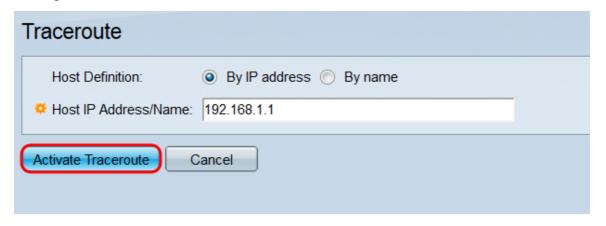

Step 6. In the *TTL* field, choose a radio button to specify the maximum number of hops that the traceroute will permit. The TTL (time-to-live) feature is used to prevent the packet from being stuck in an endless loop; if a packet exceeds its TTL value, the next router it arrives at will drop it and sends an ICMP Time Exceeded packet back to the switch. Select **Use Default** to use the default setting (30), or **User Defined** to enter a custom number (the range is 1-255).

Step 7. In the *Timeout* field, choose a radio button to specify the amount of time the switch will wait for a return packet before declaring it lost and moving on to the next packet. Select **Use Default** to use the default setting (3 ms), or **User Defined** to enter a custom number (the range is 1-60).

Step 8. Click **Activate Traceroute** to start the traceroute, or click **Cancel** to clear the settings.

Step 9. While the traceroute is processing, a loading bar will appear. Click the **Stop**

Traceroute button underneath this bar to cancel the traceroute.

Traceroute

Host Definition: ⊙ By IP address ○ By name

⚙ Host IP Address/Name: 192.168.1.1

Activate Traceroute | Cancel

Processing Data

Stop Traceroute

Step 10. When the traceroute completes, the *Traceroute Table* appears, which holds all of the information returned. Traceroute sends three packets to the remote host, and each packet's individual information is under each *Round Trip 1-3* field.

Traceroute

Status: Traceroute Complete

Traceroute Table

Index	Host	Round Trip 1		Round Trip 2		Round Trip 3	
		Time (ms)	Status	Time (ms)	Status	Time (ms)	Status
1	192.168.1.1	20	Succeeded	20	Succeeded	20	Succeeded

Back

The fields are:

- Index – Shows the number of the hop.

- Host – Shows the IP address of a stop on the route.

- Round Trip 1-3 – Shows each packet's traceroute information.

  – Time (ms) – Shows the round-trip time to the stop.

  – Status – Shows whether the packet successfully reached the stop.