

# S5900-24S4T2Q Switch sFlow Configuration Guide

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Models: S5900-24S4T2Q

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# 1. sFlow Configuration

## 1.1 sFlow Overview

the sFlow (sampled Flow, sample stream) is a technique using a sampling technique to monitor traffic on a data network device for network traffic statistical analysis.

The sFlow monitoring system consists of an sFlow Agent embedded in the device and a remote sFlow Collector. The sFlow Agent is used to monitor the data flow information and port statistics on the port on the device, and assemble them into sFlow packets to send to the sFlow Collector. The sFlow Collector analyzes these sFlow packets and displays the results.

sFlow uses two sampling mechanisms:

- 1) Flow sampling based on exchanged data packets: Sampling data packets through the device port to obtain information about the data flow;
- 2) Sampling of time-based port statistics: Periodically query ports with sFlow enabled to obtain statistics on each port;

sFlow has the following advantages:

- 1) Accurately monitor network traffic at gigabit and higher network speeds.
- 2) One sFlow Collector can monitor multiple sFlow Agents.
- 3) Very low sFlow Agent execution cost;

The sFlow system also defines the sFlow MIB, which supports monitoring and configuration of the sFlow agent through SNMP.

The sFlow system on the switch is mainly composed of four parts: agent, sampler, poller and receiver.

**A**gent representative of the entire switch, specify a local ip address it;

**S**ampler and packets flows associated port, used to collect the sample packets. Each port can be configured with two samplers (that is, ingress / egress sampler) according to the direction of the flow. Each sampler represents an Instance. Among them, the instance value of the ingress sampler is 1; the instance value of the egress sampler is 2;

**P**oller and port-related statistics, the port used to collect statistics. Each port can be configured with a poller, each poller represents an Instance, and the Instance value is 1.

**R** & **I**t receiver distal end and is associated collector {ip address + port} combination, used to encode the sampled packet to the UDP packet, and transmits the UDP packet to the collector. Each sampler and poller must specify a receiver. The current device supports a maximum of three receivers.

## 1.2 sFlow Configuration Task List

configuration sflow agent 's ip address

configuration sflow collector 's ip address and port number

Configure the maximum packet header length for sampling packets

Configure the maximum interval for sending port statistics

Specify sflow version information

enable sflow, arranged sflow entering port / out sample flow direction

display configuration information sflow

displays information about the sampler

displays information about the poller

## 1.3 sFlow Configuration Tasks

### 1.3.1 Configure the IP Address of the Sflow Agent

To send sFlow packets, you must first configure the IP address of the agent . Use the following command to configure the IP address for the sFlow agent :

Step	Command	Purpose
<b>Step1</b>	<b>Config</b>	Enter GLOBAL configuration mode
<b>Step2</b>	<b>Sflow agent ip</b> <i>A.B.C.D</i>	IP address of sflow agent is not configured by default

You can enter **no sflow agent ip** to delete the sflow agent 's IP address.

### 1.3.2 Configuring the IP Address and Port Number of the sFlow Collector

Starting from privileged mode, configure the IP address and port number of the sFlow collector :

Step	Command	Purpose
<b>Step1</b>	<b>Config</b>	Enter GLOBAL configuration mode
<b>Step2</b>	<b>Sflow collector ip</b> <i>A.B.C.D port</i>	Specify the IP address of the " system " sflow collector . Not configured by default.

You can enter **no sflow collector ip** to restore the default configuration. There is always a collector called " system " in the Sflow system. The IP and port number of the collector are specified by command input . You cannot make any changes to this collector through SNMP . Note: The collector and agent cannot be configured with the same IP address.

### 1.3.3 Configuring the Maximum Packet Header Length for Sampling Packet

In the following command mode, you can configure the maximum packet header length for sampling packets:

Step	Command	Purpose
<b>Step1</b>	<b>Config</b>	Enter GLOBAL configuration mode
<b>Step2</b>	<b>Sflow headersize</b> <i>size</i>	Configure the maximum length of the packets intercepted from the sampled packets. The value ranges from 16 to 256 , and the default value is 128 bytes.

You can enter **no sflow headersize** to restore the default configuration. The value specified by this command is valid only for the sflow sampling point configured through the command line , but not for the sflow sampling point configured through SNMP .

### 1.3.4 Configuring the Maximum Interval for Sending Port Statistics

Use the following command to configure the maximum interval for sending port statistics:

Step	Command	Purpose
<b>Step1</b>	<b>Config</b>	Enter GLOBAL configuration mode
<b>Step2</b>	<b>Sflow interval</b> <i>time</i>	The value ranges from 0 to 65535 . By default, the maximum interval for sending port statistics is 20 seconds

You can enter **no sflow interval** to restore the default configuration. The value specified by this command is valid only for the sflow sampling point configured through the command line , but not for the sflow sampling point configured through SNMP .

### 1.3.5 Specifying sFlow Version Information

Configure sFlow version information in the following modes :

Step	Command	Purpose
<b>Step1</b>	<b>Config</b>	Enter GLOBAL configuration mode
<b>Step2</b>	<b>sflow version</b> <i>version</i>	Specify sflow version information V4 or V5 . Default is V5

You can enter **no sflow version** to restore the default configuration. Specifies the sflow packet format version. At the same time, the MIB of the corresponding version is also required for configuration through SNMP.

### 1.3.6 Enable sFlow , and Configure sFlow to Sample the Flow in/out of the Port

The following configuration can clear netflow packets and flow statistics:

Step	Command	Purpose
<b>Step1</b>	<b>Config</b>	Enter GLOBAL configuration mode
<b>Step2</b>	<b>Interface</b> <i>interface-name</i>	Enter interface configuration mode
<b>Step3</b>	<b>Sflow enable { ingress   egress } [ sampling-rate rate ]</b>	Enable the sflow sampling function for port in / out flow and specify the sampling rate. The sampling rate ranges from 0 to 16777216 . The default sampling rate is 500 .

You can enter **no sflow enable { ingress | egress }** to disable the sflow sampling function of the port in / out flow. When the set sampling rate is 0, it means that the sampling is turned off; when the set sampling rate is between 1-256, the actual sampling rate is 256; the chip will make appropriate adjustments to the user-set sampling rate, but not Will be too far from the value set by the user. When performing sampling configuration on a port, ensure that a stream is sampled only once. If a flow is sampled on the incoming port, then the outgoing port should not be sampled again; if it is sampled again on the outgoing port, the flow received by the sflow collector will not be accurate.

### 1.3.7 Display sFlow Configuration Information

Enter the following command in the management / global configuration mode to view the sflow configuration information:

Step	Command	Purpose
<b>Step1</b>	<b>Show sflow configure</b>	<b>View sflow configuration information</b>

### 1.3.8 Display Related Information of the Sampler

Enter the following command in the management / global configuration mode to view the related information of the sampler :

Step	Command	Purpose
Step1	Show sflow sampler	View information about the sampler

### 1.3.9 Displaying Information About Poller

Enter the following command in management / global configuration mode to view the relevant information of poller :

Step	Command	Purpose
Step1	Show sflow poller	View information about poller

## 1.4 Configuration Example

### 1.4.1 Network Environment Requirements

Equipment requirements:

1. a switch;
2. Two PCs and one server;
3. Several Ethernet straight-through and crossover cables;

The network environment is described as follows:

- 1 . PC1, PC2 and the remote server Server are connected to the Switch through ports G1 / 1 , G1 / 2 and G1 / 3 , respectively;
2. SFlow Collector is running on PC1 , the IP address is 90.0.0.56/16 , and the port of sFlow Collector is 6343 ;
- 3 . Port G1 / 1 belongs to VLAN1 , and the IP address of VLAN1 is 90.0.0.99/16 .

It is required to run the sFlow Agent on the Switch and enable the sFlow function on port G1 / 2 to enable the Agent to monitor the network traffic on the port. Switch the sFlow packet through the G1 / 1 is sent to PC1 , PC1 and then the sFlow packet is analyzed and displayed.

### 1.4.2 Network Topology Diagram

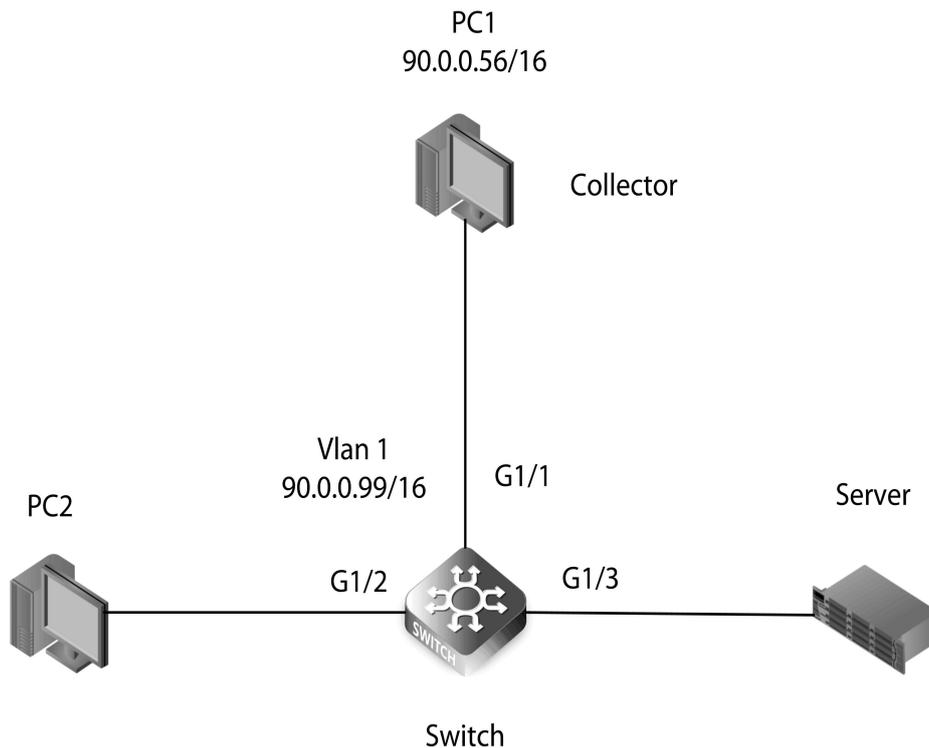


Figure 1 Network Topology

### 1.4.3 Configuration Steps

```

1 ) Connect the network according to the figure above;
2 ) Run sflow collector on PC1 ;
3 ) Configure the switch:
# Configure VLAN1 of ip address
Switch #
Switch # config
Switch_config # interface VLAN 1
Switch_config_v1 # ip address 90.0.0.99 255.255.0.0
Switch_config_v1 # qui
Switch_config #
# Configure sflow agent 's ip address
Switch_config # sflow agent ip 90.0.0.99
# Configure sflow collector 's ip address and port number
Switch_config # sflow collector ip 90.0.0.56 6343
# Configure packets Maximum sampling length of the head
Switch_config # sflow headersize 256
#Configure the maximum interval for sending port statistics
Switch_config # sflow interval 50
# Enable sflow packet out the port direction sampling

```

```
# GigaEthernet interface Switch_config . 1 / 2
Switch_config_g 1/2 # sflow enable ingress sampling-rate 1000
Switch_config_g 1/2 # sflow enable egress sampling-rate 1000
Switch_config_g 1/2 # qui
Switch_config #
# Display sflow configuration information
Switch_config # show sflow configure
sFlow Version: 5
sFlow Headersize: 256
sFlow Interval (s): 50
sFlow Global Information:
Agent IP: 90.0.0.99

Collector: 1 owner: system
Collector IP: 90.0.0.56 Port : 6343
Export 0 packets to collector 1

sFlow Port Information:
Interface Direction Status Rate
G . 1 / 2 the In / Out the Active   10 00 / 1000
# Display sampler information
Switch_config # show sflow sampler
sFlow Samplers Info:
Source Direc Rece ReRate Poll Samples
g 1/2 In   1   10 00   49 638 51
g 1/2 Out 1   1000 32791 31

sFlow Samplers number: 2
# Display poller information
Switch_config # show sflow poller
sFlow Pollers Info:
Source Rece Inte ReTi Status
g 1/2 1 50 6 enabled

sFlow pollers number: 1
```



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