

sFlow

sFlow is a feature for the xStack DGS-3600 Series that allows users to monitor network traffic running through the switch to identify network problems through packet sampling and packet counter information of the Switch. The Switch itself is the sFlow agent where packet data is retrieved and sent to an sFlow Analyzer where it can be scrutinized and utilized to resolve the problem.

The Switch can configure the settings for the sFlow Analyzer but the remote sFlow Analyzer device must have an sFlow utility running on it to retrieve and analyze the data it receives from the sFlow agent.

The Switch itself will collect three types of packet data:

1. It will take sample packets from the normal running traffic of the Switch based on a sampling interval configured by the user.
2. The Switch will take a poll of the IF counters located on the switch.
3. The Switch will also take a part of the packet header. The length of the packet header can also be determined by the user.

Once this information has been gathered by the switch, it is packaged into a packet called an sFlow datagram, which is then sent to the sFlow Analyzer for analysis.

For a better understanding of the sFlow feature of this Switch, refer to the adjacent diagram.

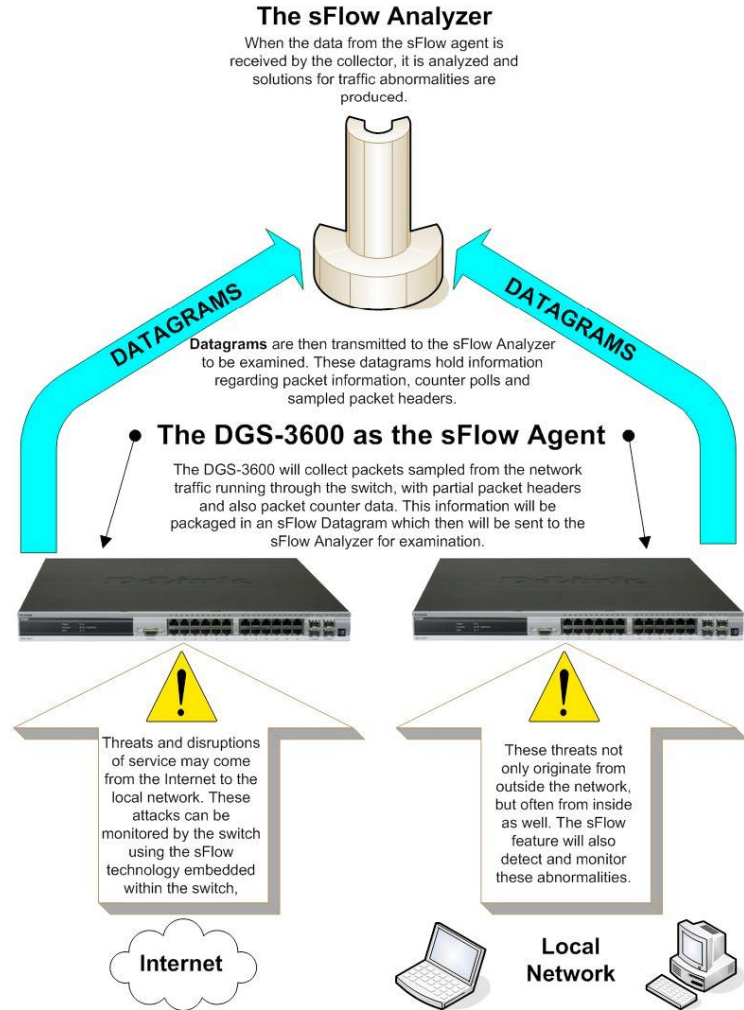


Figure 6- 53. sFlow Basic Setup

sFlow Global Settings

The following window is used to globally enable the sFlow feature for the Switch. Simply use the pull-down menu and click **Apply** to enable or disable sFlow. This window will also display the sFlow version currently being utilized by the Switch, along with the sFlow Address which is the Switch's IP address.

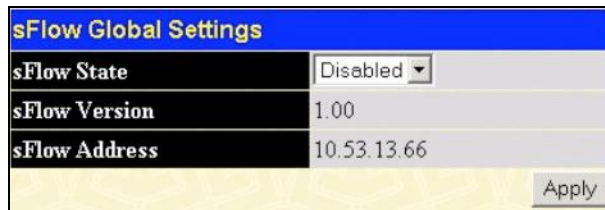


Figure 6- 54. sFlow Global Settings window

sFlow Analyzer Settings

The following windows are used to configure the parameters for the remote sFlow Analyzer (collector) that will be used to gather and analyze sFlow Datagrams that originate from the Switch. Users must have the proper sFlow software set on the Analyzer in order to receive datagrams from the switch to be analyzed, and to analyze these datagrams. Users may specify up to four unique analyzers to receive datagrams, yet the virtual port used must be unique to each entry.

To configure the settings for the sFlow analyzer, click the **Administration** link, open the **sFlow** folder and click **sFlow Analyzer Settings**, which will produce the following window, displaying the parameters for the sFlow Analyzer.

sFlow Analyzer Settings								
Server ID	Owner	Timeout (sec)	Countdown Time	Address	Port	Max Datagram Size	Modify	Delete
1	Darren	1	1	10.1.1.2	6343	300	Modify	X
Total Entries: 1								

Figure 6- 55. sFlow Analyzer Settings window

The following fields are displayed:

Parameter	Description
Server ID	This field denotes the ID of the Analyzer Server that has been added to the sFlow settings. Up to four entries can be added, but each entry must have its own unique UDP Port.
Owner	Displays the owner of the entry made here. The user that added this sFlow analyzer configured this name.
Timeout	Displays the configured time, in seconds, after which the Analyzer server will time out. When the server times out, all sFlow samples and counter polls associated with this server will be deleted.
Countdown Time	Displays the current time remaining before this Analyzer server times out. When the server times out, all sFlow samples and counter polls associated with this server will be deleted.
Address	Displays the IP address of the sFlow Analyzer Server. This IP address is where sFlow datagrams will be sent for analysis.
Port	Displays the previously configured UDP port where sFlow datagrams will be sent for analysis. Only one Analyzer Address can be set for one UDP Analyzer Port.
Max Datagram Size	This field displays the maximum number of data bytes in a single sFlow datagram that will be sent to this sFlow Analyzer Server.
Modify	Click the Modify button to display the sFlow Counter Analyzer Edit window, so that users may edit the settings for this server.
Delete	Click the X of the corresponding entry to be deleted.

To add a new sFlow Analyzer, click the **Add** button in the previous window that will display the following window to be configured:

sFlow Counter Analyzer Add	
Analyzer Server (1-4)	1
Owner	Darren
Timeout (1-2000000 sec)	1
Collector Address	0.0.0.0
Collector Port (1-65535)	1
Max Datagram Size (300-1400)	300
Apply	

Figure 6- 56. sFlow Counter Analyzer – Add window

The following fields can be set or modified:

Parameter	Description
Analyzer Server	Enter an integer from 1 to 4 to denote the sFlow Analyzer to be added. Up to four entries can be added, but each entry must have its own unique Collector Port.
Owner	Users may enter an alphanumeric string of up to 16 characters to define the owner of this entry. Users are encouraged to give this field a name that will help them identify this entry. When an entry is made in this field, the following Timeout field is automatically set to 400 seconds, unless the user alters the Timeout field.
Timeout	This field is used to specify the timeout for the Analyzer server. When the server times out, all sFlow samples and counter polls associated with this server will be deleted. The user may set a time between 1 and 2000000 seconds with a default setting of 400 seconds.
Collector Address	The IP address of the sFlow Analyzer Server. If this field is not specified, the entry will become 0.0.0.0 and therefore the entry will be inactive. Users must set this field.
Collector Port	The destination UDP port where sFlow datagrams will be sent. The default setting for this field is 6343. Only one Analyzer Server address can be set for one UDP Collector Port.
Max Datagram Size	This field will specify the maximum number of data bytes that can be packaged into a single sFlow datagram. Users may select a value between 300 and 1400 bytes with a default setting of 1400 bytes.

Click **Apply** to save changes made.

To edit an entry that has already been configured, click the **Modify** button of an entry in the **sFlow Analyzer Settings** window which will produce the following window for the user to configure. This window holds the same information as the previous **Add** window and therefore, the previous descriptions of the parameters remain valid here. Click **Apply** to save changes made to this window.

sFlow Counter Analyzer Edit	
Analyzer Server (1-4)	1
Owner	Darren
Timeout (1-2000000 sec)	1
Collector Address	10.1.1.2
Collector Port (1-65535)	6343
Max Datagram Size (300-1400)	300
Apply	

Figure 6- 57. sFlow Counter Analyzer – Edit window

sFlow Sampler Settings

The **sFlow Sampler Settings** window will allow users to configure the Switch’s settings for taking sample packets from the network, including the sampling rate and the amount of the packet header to be extracted. To configure the settings for the sFlow Sampler, click the **Administration** link, open the **sFlow** folder and click **sFlow Sampler Settings**, which will produce the following window, displaying the parameters for the sFlow Sampler.

sFlow Sampler Settings						
Port	Analyzer Server ID	Configured Rate	Active Rate	Max Header Size	Modify	Delete
1	1	2000	0	18	Modify	X
2	1	2000	0	18	Modify	X
3	1	2000	0	18	Modify	X
4	1	2000	0	18	Modify	X
5	1	2000	0	18	Modify	X

Total Entries: 5

Figure 6- 58. sFlow Sampler Settings window

The following fields are displayed:

Parameter	Description
Port	Displays the port from which packet samples are being extracted.
Analyzer Server ID	Displays the ID of the Analyzer Server where datagrams, containing the packet sampling information taken using this sampling mechanism, will be sent.
Configured rate	Displays the configured rate of packet sampling for this port based on a multiple of 256. For example, if a figure of 20 is in this field, the switch will sample one out of every 5120 packets (20 x 256 = 5120) that pass through the individual port.
Active Rate	Displays the current rate of packet sampling being performed by the Switch for this port, based on a multiple of 256. For example, if a figure of 20 is in this field, the switch will sample one out of every 5120 packets (20 x 256 = 5120) that pass through the individual port.
Max Header Size	Displays the number of leading bytes of the sampled packet header. This sampled header will be encapsulated with the datagram to be forwarded to the Analyzer Server.
Modify	Click this button to modify the settings for this entry. The sFlow Sampler Settings Edit window will be produced for the user to configure.
Delete	Click the X of the corresponding entry to be deleted.

To add a new sFlow Sampler setting, click the **Add** button in the previous window which will display the following window to be configured:

sFlow Sampler Add	
From	Port 1
To	Port 1
Analyzer Server ID (1-4)	1
Rate (0-65535)	0
Max Header Size (18-256)	18
Apply	

Figure 6- 59. sFlow Sampler – Add window

The following fields may be set:

Parameter	Description
From	Choose the beginning port of the range of ports to be configured for packet sampling.
To	Choose the ending port of the range of ports to be configured for packet sampling.
Analyzer Server ID	Enter the previously configured Analyzer Server ID to state the device that will be receiving datagrams from the Switch. These datagrams will include the sample packet information taken using the sampling mechanism configured here.
Rate	Users can set the rate of packet sampling here. The value entered here is to be multiplied by 256 to get the percentage of packets sampled. For example, if the user enters a figure of 20 into this field, the switch will sample one out of every 5120 packets ($20 \times 256 = 5120$) that pass through the individual port. Users may enter a value between 1 and 65535. An entry of 0 disables the packet sampling. Since this is the default setting, users are reminded to configure a rate here or this function will not function.
Max Header Size	This field will set the number of leading bytes of the sampled packet header. This sampled header will be encapsulated with the datagram to be forwarded to the Analyzer Server. The user may set a value between 18 and 256 bytes. The default setting is 128 bytes.

Click **Apply** to save changes made.

To edit an entry that has already been configured, click the **Modify** button of an entry in the **sFlow Sampler Settings** window which will produce the following window for the user to configure. This window holds the same information as the previous **Add** window and therefore, the previous descriptions of the parameters remain valid here. Click **Apply** to save changes made to this window.

Figure 6- 60. sFlow Sampler – Edit window

Please note that the Analyzer Server ID cannot be changed in this window. To change this setting, users must delete this entry and configure a new entry with a new Analyzer server ID.

sFlow Counter Poller Settings

The following windows will allow the user to configure the settings for the Switch’s counter poller. This mechanism will take a poll of the IF counters of the Switch and then package them with the other previously mentioned data into a datagram which will be sent to the sFlow Analyzer Server for examination. To configure the settings for the sFlow Counter Poller, click the **Administration** link, open the **sFlow** folder and click **sFlow Poller Settings**, which will produce the following window, displaying the parameters for the sFlow Counter Poller.

sFlow Counter Poller Settings				
Port	Analyzer Server ID	Polling Interval (sec)	Modify	Delete
1	1	60	Modify	X
2	1	60	Modify	X
3	1	60	Modify	X
4	1	60	Modify	X
5	1	60	Modify	X

Total Entries: 5

Figure 6- 61. sFlow Counter Poller Settings window

The following fields are displayed:

Parameter	Description
Port	Displays the port from which packet counter samples are being taken.
Analyzer Server ID	Displays the ID of the Analyzer Server where datagrams, containing the packet counter polling information taken using this polling mechanism, will be sent.
Polling Interval	The Polling Interval displayed here, is measured in seconds and will take a poll of the IF counters for the corresponding port, every time the interval reaches 0 seconds.
Modify	Click this button to modify the settings for this entry. The sFlow Sampler Settings Edit window will be produced for the user to configure.
Delete	Click the of the corresponding entry to be deleted.

To add a new sFlow Counter Poller setting, click the **Add** button in the previous window which will display the following window to be configured:

sFlow Counter Poller Add	
From	Port 1
To	Port 1
Analyzer Server ID (1-4)	0
Polling Interval (20-120 sec)	0 <input checked="" type="checkbox"/> Disabled
Apply	

Figure 6- 62. sFlow Counter Poller – Add window

The following fields may be set:

Parameter	Description
From	Choose the beginning port of the range of ports to be configured for counter polling.
To	Choose the ending port of the range of ports to be configured for counter polling.

Analyzer Server ID	Enter the previously configured Analyzer Server ID to state the device that will be receiving datagrams from the Switch. These datagrams will include the counter poller information taken using the polling mechanism configured here.
Polling Interval	Users may configure the Polling Interval here. The switch will take a poll of the IF counters every time this interval reaches 0, and this information will be included in the sFlow datagrams that will be sent to the sFlow Analyzer for examination. Checking the Disabled check box will disable the counter polling for this entry.

Click **Apply** to save changes made.

To edit an entry that has already been configured, click the **Modify** button of an entry in the **sFlow Sampler Settings** window which will produce the following window for the user to configure. This window holds the same information as the previous **Add** window and therefore, the previous descriptions of the parameters remain valid here. Click **Apply** to save changes made to this window.

Figure 6- 63. sFlow Counter Poller – Edit window

Please note that the Analyzer Server ID cannot be changed in this window. To change this setting, users must delete this entry and configure a new entry with a new Analyzer server ID.