QASA CLI GUIDE

Mirroring Configuration

Contents

1.Commands for Mirroring Configuration

monitor session source interface

Command	**monitor session <session> source {interface <interface-list> | cpu} {rx|** **tx| both}** **no monitor session <session> source {interface <interface-list> | cpu}**
Parameter	**session**: is the session number for the mirror. Currently only 1 is supported. **interface-list:** is the list of source interfaces of the mirror which can be separated by "-" and ";". **cpu:** means the CPU on the board to be the source of the mirror for debugging. Datagram received by or sent by the CPU. **rx:** means to filter the datagram received by the interface. **tx:** for the datagram sent out. **both:** means both of income and outcome datagram.
Default	Default does not match any mirror source port.
Mode	Global mode.
Usage	This command is used to configure the source interfaces for the mirror. It is not restricted the source interface of the mirror on the switch. The source can be one interface, or can be multiple interfaces. Both of the income and outcome datagram can be mirrored, or they can be mirrored selectively. If no [rx | tx | both] is specified, both are made to be the default. When multiple interfaces are mirrored, the direction of the mirror can be different, but they should be configured separately.
Example	To configure to mirror the datagram sent out by interface 1/0/1-4 and to mirror the datagram received by interface1/0/5. **Switch(config)#monitor session 1 source interface ethernet 1/0/1-4 tx** **Switch(config)#monitor session 1 source interface ethernet1/0/5 rx**

monitor session source interface access-list

Command	**monitor session <session> source {interface <interface-list>} access-list <num> {rx|tx|both}** **no monitor session <session> source {interface <interface-list>} access-list** **<num>**
Parameter	**session**: is the session number for the mirror. Currently only 1 is supported. **interface-list:** is the list of source interfaces of the mirror which can be separated by '-' and ';' **num:** is the number of the access list. **rx:** means to filter the datagram received by the interface. **tx:** for the datagram sent out. **both:** means both of income and outcome datagram
Default	Default not configured.
Mode	Global mode.
Usage	This command is used to configure the source interfaces for the mirror. It is not restricted the source interface of the mirror on the switch. The source can be one interface, or can be multiple interfaces. For flow mirror, only datagram received can be mirrored. The parameters can be rx, tx, both. The related access list should be prepared before this command is issued. For how to configure the access list, please refer to ACL configuration. The mirror can only be created after the destination interface of the corresponding session has been configured. In the moment, the command only IP ACL and MAC ACL.
Example	To configure the mirror interface 1/0/6 to filter with access list 120 in session 1. **Switch(config)#monitor session 1 source interface 1/0/6 access-list 120 rx**

monitor session destination interface

Command	**monitor session <session> destination interface <interface-number>** **no monitor session <session> destination interface <interface-number>**
Parameter	**session**: is the session number of the mirror, which is currently limited to 1-4. **interface-number:** is the destination interface of the mirror.
Default	Default does not match mirror destination port.
Mode	Global mode.
Usage	Only four destination mirror interface is supported on the switch. To be mentioned, The interface which is configured as the destination of the mirror should not be configured as the member of the interface trunk. And the maximum throughput of the interface is recommended to be larger than the total throughput of the interfaces to be mirrored. If the destination is removed, the mirror path configured will be removed at the same time. And if the destination interface is reconfigured, the interface, CPU mirror path will be recovered. To be mentioned, the flow mirror can only be recovered after the destination of the interface is re-configured.
Example	To configure interface 1/0/7 as the destination of the mirror. **Switch(config)#monitor session 1 destination interface ethernet 1/0/7**

show monitor

Command	**show monitor**
Parameter	**-**
Default	-
Mode	Admin mode.
Usage	This command is used to display the source and destination ports for the configured mirror sessions. For port mirroring, CPU mirroring, and flow mirroring, the mirror mode of the source can be displayed.
Example	View configuration information for the current image. **Switch#show monitor**

mirror sample rate

Command	**monitor session <session> sample rate <num>** **no monitor session <session> sample rate**
Parameter	**session:** is mirror session value, and it supports 1 to 4 at moment. **num:** is sampled value, and ranges from 0 to 65535
Default	Default Unconfigured Sampling Rate.
Mode	Global mode.
Usage	It represents how many packets mirror to destination port and it ranges from 0 to 65535, such as, when rate value equals 100, the first, 101, 201 packets can mirror destination port, when rate value equal 0, it does not configure sampling rate, the default is not configure sampling rate.
Example	The sampling rate for configuring mirror session 1 is 100. **switch(config)#monitor session 1 sample rate 100**

2. Commands for sFlow

sflow agent-address

Command	**sflow agent-address <agent-address>** **no sflow agent-address**
Parameter	**agent-address**: is the sample proxy IP address which is shown in dotted decimal notation.
Default	None default value.
Mode	Global mode.
Usage	For configuring sflow proxy address, The proxy address is used to mark the sample proxy which is similar to OSPF or the Router ID in the BGP. However it is not necessary to make the sFlow sample proxy work properly.
Example	Sample the proxy address at global mode. **switch (config)#sflow agent-address 192.168.1.200**

sflow analyzer

Command	**sflow analyzer sflowtrend** **no sflow analyzer sflowtrend**
Parameter	**-**
Default	Do not configure.
Mode	Global mode.
Usage	This command is used to configure sFlow analyzer. no command disables the analyzer. Configure this command when using sFlowTrend.
Example	To enable sFlow analyzer. **Switch(config)#sflow analyzer sflowtrend**

sflow counter-interval

Command	**sflow counter-interval <interval-value>** **no sflow counter-interval**
Parameter	**interval-value:** is the value of the interval with a valid range of 20~120 and shown in second.
Default	No default value.
Mode	Global mode.
Usage	If no statistic sampling interval is configured, there will not be any statistic sampling on the interface.
Example	Set the statistic sampling interval on the interface e1/0/1 to 20 seconds. **Switch(Config-If-Ethernet1/0/1)#sflow counter-interval 20**

sflow data-len

Command	**sflow data-len<length-value>** **no sflow data-len**
Parameter	**length-value**: is the value of the length with a value range of 500-1470
Default	The value is 1400 by default.
Mode	Global mode.
Usage	For configuring sflow packet length. When combining several samples to a sFlow group to be sent, the length of the group excluding the MAC head and IP head parts should not exceed the configured value.
Example	To configure the max length of the sFlow packet data to 1000. **switch (Config-If-Ethernet1/0/2)#sflow data-len 1000**

sflow destination

Command	**sflow destination <collector-address> [<collector-port>]** **no sflow destination**
Parameter	**collector-address**: is the IP address of the analyzer, shown in dotted decimal notation. **collector-port:** is the destination port of the sent sFlow packets.
Default	The destination port of the sFlow packet is defaulted at 6343, and the analyzer has no default address.
Mode	Global Mode and Port Mode.
Usage	If the analyzer address is configured at Port Mode, this IP address and port configured at Port Mode will be applied when sending the sample packet. Or else the address and port configured at global mode will be applied. The analyzer address should be configured to let the sFlow sample proxy work properly.
Example	Configure the analyzer address and port at global mode. **switch (config)#sflow destination 192.168.1.200 1025**

sflow header-len

Command	**sflow header-len<length-value>** **no sflow header-len**
Parameter	**length-value**: is the value of the length with a valid range of 32-256.
Default	128 by default.
Mode	Port Mode.
Usage	To configure the length of header packets copied in sFlow data sampling. "no" form reduction default value for this command. If the packet sample cannot be identified whether it is IPv4 or IPv6 when sent to the CPU, certain length of the head of the group has to be copied to the sFlow packet and sent out. The length of the copied content is configured by this command.
Example	Configure the length of the packet data head copied in the sFlow data sampling to 50. **Switch(Config-If-Ethernet1/0/2)#sflow header-len 50**

sflow priority

Command	**sflow priority <priority-value>** **no sflow priority**
Parameter	**priority-value**: is the priority value with a valid range of 0-3.
Default	The default value is 0.
Mode	Global Mode.
Usage	This command is used to set the priority of the sample message. When sample packet is sent to the CPU, it is recommended not to assign high priority for the packet so that regular receiving and sending of other protocol packet will not be interfered. The higher the priority value is set, the higher its priority will be.
Example	To onfigure the priority when sFlow receives packet from the hardware at global mode. **switch (config)#sflow priority 1**

sflow rate

Command	**sflow rate { input<input-rate> | output <output-rate >}** **no sflow rate [input | output]**
Parameter	**input-rate**: is the rate of ingress group sampling, the valid range is 1000~16383500. **output-rate:** is the rate of egress group sampling, the valid range is 1000~16383500
Default	No default value.
Mode	Global Mode.
Usage	The traffic sampling will not be performed if the sampling rate is not configured on the port. And if the ingress group sampling rate is set to 10000, this indicates there will be one group be sampled every 10000 ingress groups.
Example	To configure the ingress sample rate on port e1/0/1 to 10000 and the egress sample rate to 20000. **Switch(Config-If-Ethernet1/0/1)#sflow rate input 10000** **Switch(Config-If-Ethernet1/0/1)#sflow rate output 20000**

show sflow

<table>
<tr><td>Command</td><td>show sflow</td></tr>
<tr><td>Parameter</td><td>input-rate: is the rate of ingress group sampling, the valid range is 1000~16383500.
output-rate: is the rate of egress group sampling, the valid range is 1000~16383500</td></tr>
<tr><td>Default</td><td>No default value.</td></tr>
<tr><td>Mode</td><td>All Modes.</td></tr>
<tr><td>Usage</td><td>This command is used to acknowledge the operation state of sFlow.</td></tr>
<tr><td>Example</td><td>View sFlow configuration information.
Switch#showsflow

Sflow version 1.2
Agent address is 172.16.1.100
Collector address have not configured
Collector port is 6343
Sampler priority is 2
SflowDataSource: type 2, index 194(Ethernet1/0/2)
Collector address is 192.168.1.200
Collector port is 6343
Counter interval is 0
Sample rate is input 0, output 0
Sample packet max len is 1400
Sample header max len is 50
Sample version is 4

<table>
<tr><th>Display information</th><th>description</th></tr>
<tr><td>Sflow version 1.2</td><td>Indicates sFlow version 1.2</td></tr>
<tr><td>Agent address is 172.16.1.100</td><td>sFlow agent address :172.16.1.1100</td></tr>
<tr><td>Collector address is not configured</td><td>the sFlow global analyzer address is not configured</td></tr>
<tr><td>Collector port is 6343</td><td>the sFlow global destination port is the defaulted 6343</td></tr>
<tr><td>Sampler priority is 2</td><td>The priority of sFlow when receiving packets from the hardware is 2.</td></tr>
<tr><td>SflowDataSource: type 2, index 194(Ethernet1/0/1)</td><td>One sample proxy data source of the sFlow is the interface e1/0/1 and its type is 2 (Ethernet), the interface index is 194.</td></tr>
</table>
</td></tr>
</table>

	Collector address is 192.168.1.200	The analyzer address of the sampling address of the E1/0/1 interface is 192.168.1.200
	Collector port is 6343	Default value of the port on E1/0/1 interface sampling proxy is 6343.
	Counter interval is 20	The statistic sampling interval on e1/0/1 interface is 20 seconds
	Sample rate is input 10000, output 0	The ingress traffic rate of e1/0/1 interface sampling proxy is 10000 and no egress traffic sampling will be performed
	Sample packet max len is 1400	The length of the sFlow group data sent by the e1/0/1 interface should not exceed 1400 bytes.
	Sample header max len is 50	The length of the packet data head copied in the data sampling of the e1/0/1 interface sampling proxy is 50
	Sample version is 4	The datagram version of the sFlow group sent by the E1/0/1 interface sampling proxy is 4.

3. Commands for RSPAN Configuration

remote-span

Command	**remote-span** **no remote-span**
Parameter	**-**
Default	Not configured
Mode	VLAN Configuration Mode.
Usage	This command is used to configure the existing VLAN as RSPAN VLAN. Dedicated RSPAN VLAN should be configured before RSPAN can function. When configuring RSPAN VLAN, it should be made sure that specialized VLAN, such as the default VLAN, dynamic VLAN, private VLAN, multicast VLAN, and layer 3 interface enabled VLAN, should not be configured as RSPAN VLAN. If any existing sessions are still working when RSPAN is disabled, these sessions will be still working regardless the configuration change. However, if any layer 3 interface is configure in the VLAN after RSPAN is disable, the existing RSPAN session will be stopped.
Example	RSPAN VLAN. VLAN 5 configured. **Switch(Config-Vlan5)#remote-span**

monitor session remote vlan

Command	**monitor session <session> remote vlan<vid>** **no monitor session <session> remote vlan**
Parameter	**session:** session ID, range between 1~4 **vid:** The id of RSPAN VLAN
Default	Not configured.
Mode	Global Mode.
Usage	To configure local mirror session to RSPAN. The VLAN id is the RSPAN VLAN. The mirrored data grams will be attached with RSPAN tags.
Example	To configure the remote vlan of mirror session 1 to 5. **Switch(config)#monitor session 1 remote vlan 5**

monitor session reflector-port

Command	**monitor session <session> reflector-port <interface-number>** **no monitor session <session> reflector-port <interface-number>**
Parameter	**session:** session ID, range between 1~4 **interface-number**: Interface number
Default	Not configured.
Mode	Global Mode.
Usage	This command configures the reflector port for the destination of mirror data grams, and disables the MAC learning function of the specified port. The configuration of reflector port is to change the mode of the local port from the destination port mode to be the reflector mode. Hence, the configuration of reflector port and the destination port are exclusive. The no command is used to restore the reflector port to normal port. The source port, in access or trunk mode, should not be added to RSPAN VLAN. When the reflector port is configured as springboard of CPU TX direction mirroring, it must be configured as TRUNK port and allows the RSPAN VLAN data passing, the Native VLAN should not be configured as RSPAN VLAN. After configured RSPAN, the vlan tag will be added on the packet of the egress mirror. It will cause the abort error frame on the reflection port, so the default MTU value of the switch should be modified.
Example	To configure port 1/0/5 as a reflection port. **Switch(config)#monitor session 1 reflector-port ethernet1/0/5**