

Syslog Function Configuration

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Chapter 1 Syslog Function Configuration

1.1 Syslog Introduction

As the information center of the system, the Syslog processes and outputs information in a unified manner.

Other modules in the system send information to be outputted to the Syslog. The Syslog determines the output format based on user configurations and outputs information to the specified display device based on information output functions and filtering rules in user configurations.

Syslog information producers (modules outputting information) only need to output information to the Syslog, without concerning whether information needs to be outputted to the console, telnet terminal, or log host (Syslog server). Information consumers (the console, telnet terminal, history buffer, log host, and SNMP agent) can select the desired information and discard the unwanted information based on their demands, on condition that proper filtering rules are configured.

1.1 Syslog Function Configuration

1.1.1 Syslog Function Configuration List

Table 1-1 Syslog function configuration list

Configuration Task	Description	Detailed Configuration
Enabling/Disabling the Syslog function for the equipment	Mandatory	1.2.2
Configuring the function of displaying the sequence number in Syslog outputs	Mandatory	1.2.3
Configuring the time stamp type in Syslog outputs	Mandatory	1.2.4
Configuring the function of outputting Syslog information to terminals	Mandatory	1.2.5
Configuring the function of outputting Syslog information to the history buffer	Mandatory	1.2.6
Configuring the function of outputting Syslog information to the flash storage	Mandatory	1.2.7
Configuring the function of outputting Syslog information to the log host	Mandatory	1.2.8

Configuring the function of outputting Syslog information to the SNMP agent	Mandatory	1.2.9
Configuring the module debugging function	Mandatory	1.2.10

1.1.2 Enabling/Disabling the Syslog Function for the Equipment

In global configuration mode, enable or disable the Syslog function. When the Syslog function is disabled, no information is outputted. By default, the logging function is enabled on the equipment.

Table 1-2 Enabling/Disabling the Syslog function for the equipment

Operation	Command	Remarks
Enter the global configuration mode.	configure terminal	N/A
Enable the log output function of the system.	logging	Optional
Disable the log output function of the system.	no logging	Optional
Display log configurations of the system.	show logging	This command can be run in all modes.

1.1.3 Configuring the Function of Displaying the Sequence Number in Syslog Outputs

In global configuration mode, set to or not to display the global sequence number in Syslog outputs.

Table 1-3 Configuring the function of displaying the sequence number in Syslog outputs

Operation	Command	Remarks
Enter the global configuration mode.	configure terminal	N/A
Enable the function of displaying log sequence numbers.	logging sequence-numbers	Optional When the function of displaying log sequence numbers is enabled, the output logs are sorted by sequence number.
Disable the function of displaying log sequence numbers.	no logging sequence-numbers	Optional

1.1.4 Configuring the Time Stamp Type in Syslog Outputs

In global configuration mode, configure the time stamp type in Syslog outputs. The time stamp type can be set to **notime**, **uptime**, or **datetime**.

The default value is **uptime**.

Table 1-4 Configuring the time stamp type in Syslog outputs

Operation	Command	Remarks
Enter the global configuration mode.	configure terminal	N/A
Enable the function of displaying the time stamp of logs and configure the time display format.	logging timestamps { notime uptime datetime }	Optional
Restore the default setting of displaying the time stamp of logs.	no logging timestamps	Optional

1.1.5 Configuring the Function of Outputting Syslog Information to

Terminals

In global configuration mode, configure the information output function, information display function, and filtering rules for outputting Syslog information to terminals. By default, Syslog information is outputted only to the buffer and not outputted to the console or terminal.

Table 1-5 Configuring the function of outputting Syslog information to terminals

Operation	Command	Remarks
Enter the global configuration mode.	configure terminal	-
Enable the log output function and output logs to the specified terminal. When monitor-num is set to 0 , logs are outputted to the console. When monitor-num is set to 1–5, logs are outputted to telnet terminals.	logging monitor { all monitor-num }	Optional
Disable the function of outputting logs to a or all terminals. When monitor-num is set to 0 , logs are outputted to the console. When monitor-num is set to 1–5, logs are outputted to telnet terminals.	no logging monitor { all monitor-num }	Optional
Return to the privileged mode.	exit	-
Enable the function of displaying system	terminal monitor	Optional (enabled by default)The setting

Operation	Command	Remarks
information.		affects only the current login of the current terminal and is invalid for other terminals or the next login of the current terminal.
Disable the function of displaying system information to prevent outputting any logs to the current terminal.	no terminal monitor	Optional The setting affects only the current login of the current terminal and is invalid for other terminals or the next login of the current terminal.
Configure the filtering rules of logs to be outputted to terminals. Specify the level and module whose logs are outputted to the specified terminal.	logging monitor { all monitor-no } { level none level-list { level [to level] } &<1-8> } [module { xxx ... } *]	Optional
Delete the filtering rules of logs to be outputted to the terminals in the system and restore the default configuration.	no logging monitor { all monitor-no } filter	Optional

Note: In **module { xxx | ... }**, **xxx** indicates the module name and **...** indicates that other module names are omitted.

1.1.6 Configuring the Function of Outputting Syslog Information to the History Buffer

In global configuration mode, configure the information output function and filtering rules for outputting Syslog information to the history buffer. By default, the function is enabled.

Table 1-6 Configuring the function of outputting Syslog information to the history buffer

Operation	Command	Remarks
Enter the global configuration mode.	configure terminal	N/A
Enable the function of outputting logs to the buffer.	logging buffered	Optional (enabled by default)

Disable the function of outputting logs to the buffer.	no logging buffered	Optional
Configure the filtering rules of logs to be outputted to the buffer. Specify the level and module whose logs are outputted to the buffer.	logging buffered { level none level-list { level [to level] } &<1-8> } [module { xxx ... } *]	Optional
Delete the filtering rules of logs to be outputted to the buffer in the system and restore the default configuration.	no logging buffered filter	Optional

Note: In **module { xxx | ... }**, **xxx** indicates the module name and **...** indicates that other module names are omitted.

1.1.7 Configuring the Function of Outputting Syslog Information to the Flash Storage

In global configuration mode, configure the information output function and filtering rules for outputting Syslog information to the flash storage. By default, Syslog information is not saved to the flash storage. In addition, the interval of saving Syslog information to the flash storage cannot be configured and the system saves Syslog information once every 30 minutes by default.

Table 1-7 Configuring the function of outputting Syslog information to the flash storage

Operation	Command	Remarks
Enter the global configuration mode.	configure terminal	N/A
Enable the function of outputting logs to the flash storage.	logging flash	Optional
Disable the function of outputting logs to the flash storage.	no logging flash	Optional (disabled by default)
Configure the filtering rules of logs to be outputted to the flash storage. Specify the level and module whose logs are outputted to the flash storage.	logging flash { level none level-list { level [to level] } &<1-8> } [module { xxx ... } *]	Optional
Delete the filtering rules of logs to be outputted to the flash storage in the system and restore the default configuration.	no logging flash filter	Optional

Note: In **module { xxx | ... }**, **xxx** indicates the module name and **...** indicates that other module

names are omitted.

1.1.8 Configuring the Function of Outputting Syslog Information to the Log Host

In global configuration mode, configure the server address, information output function, filtering rules, logging tool, and fixed source address for outputting Syslog information to the log host.

Table 1-8 Configuring the function of outputting Syslog information to the log host

Operation	Command	Remarks
Enter the global configuration mode.	configure terminal	N/A
Configure the IP address of the log host.	logging ip-address	Optional A maximum of 15 server IP addresses can be configured.
Delete the IP address configured for the log host.	no logging ip-address	Optional
Enable the function of outputting logs to the specified host.	logging host { all ip-address }	Optional
Disable the function of outputting logs to the specified host.	no logging host { all ip-address }	Optional
Configure the filtering rules of logs to be outputted to the host. Specify the level and module whose logs are outputted to the host.	logging host { all ip-address } { level none level-list { level [to level] &<1-8> } [module { xxx ... } *]	Optional
Delete the filtering rules of logs to be outputted to the host in the system and restore the default configuration.	no logging host { all ip-address } filter	Optional
Configure the logging tool of the system.	logging facility { xxx ... }	Optional
Delete the configured logging tool name and restore the original setting (localuse7).	no logging facility	Optional

Operation	Command	Remarks
Configure the fixed source address of log output. ip-address must be set to an interface address of the equipment.	logging source <i>ip-address</i>	Optional
Disable the function of outputting logs from the fixed source address.	no logging source	Optional After the function is disabled, logs will be externally sent through the existing IP interface addresses in the system.

Note: In **module { xxx | ... }**, **xxx** indicates the module name and ... indicates that other module names are omitted.

In **facility { xxx | ... }**, **xxx** indicates the name of the logging tool and ... indicates that other tool names are omitted.

1.1.9 Configuring the Function of Outputting Syslog Information to the SNMP Agent

In global configuration mode, configure the information output function and filtering rules for outputting Syslog information to the SNMP agent.

To send Syslog information to the SNMP workstation as Trap packets, you must configure the Trap host address. For details, see SNMP configuration.

By default, the function is disabled.

Table 1-9 Configuring the function of outputting Syslog information to the SNMP agent

Operation	Command	Remarks
Enter the global configuration mode.	configure terminal	N/A
Enable the function of outputting logs to the SNMP agent.	logging snmp-agent	Optional
Disable the function of outputting logs to the SNMP agent.	no logging snmp-agent	Optional
Configure the filtering rules of logs to be outputted to the SNMP agent. Specify the level and	logging snmp-agent { level none level-list { level [to level] } &<1-8> } [module { xxx ... } *]	Optional

module whose logs are outputted to the SNMP agent.		
Delete the filtering rules of logs to be outputted to the SNMP agent in the system and restore the default configuration.	no logging snmp-agent filter	Optional

Note: In **module { xxx | ... }**, **xxx** indicates the module name and **...** indicates that other module names are omitted.

1.1.10 Configuring the Module Debugging Function

In global configuration mode, enable/disable the module debugging function. By default, the module debugging function is disabled.

Table 1-10 Configuring the module debugging function

Operation	Command	Remarks
Enter the global configuration mode.	configure terminal	N/A
Enable the function of outputting the debugging information about the specified module to logs.	debug { all { xxx ... } * }	Optional
Disable the function of outputting the debugging information about the specified module.	no debug { all { xxx ... } * }	Optional
Display the current configuration of the function of outputting debugging information.	show debug	This command can be run in all modes.

Note: **xxx** indicates the module name and **...** indicates that other module names are omitted.

1.2 Configuration Instance

If you need to:

Globally enable the function of outputting Syslog information to the console and terminal and display the logs of stp and device modules with the level ranging from 0 to 4.

Enable the function of displaying the log sequence number and the function of displaying logs by **datetime**.

Enable the function of synchronously outputting logs to the flash storage and set to display information about all modules whose level is 3 and 4 in the history buffer.

Enable the function of outputting logs to the host (192.168.1.3) and set the logging tool to **ftp** and the source address to **192.168.1.11**.

Enable the function of outputting logs to the SNMP agent and the function of outputting the debugging information about the stp and dot1x modules.

Run the following commands:

```
Switch(config)#logging
Switch(config)#logging monitor 0
Switch(config)#logging monitor 0 level-list 0 to 4 module stp device
Switch(config)#logging sequence-numbers
Switch(config)#logging timestamps datetime
Switch(config)#logging flash
Switch(config)#logging buffered level-list 3 4
Switch(config)#logging 192.168.1.3
Set ip address of syslog server successfully.
Switch(config)#logging host 192.168.1.3
Switch(config)#logging facility ftp
Switch(config)#logging source 192.168.1.11
The ip address does not belong to this device.
Switch(config)#vlan 2
Switch(config-if-vlan)#interface vlan-interface 2
Switch(config-if-vlanInterface-2)#ip address 192.168.1.11 255.255.255.0
Config ipaddress successfully!
Switch(config-if-vlanInterface-2)#exit
Switch(config)#logging source 192.168.1.11
Switch(config)#logging snmp-agent
Switch(config)#debug stp dot1x
Switch(config)#show logging
state: on;
logging sequence-numbers: on;
logging timestamps: datetime;
logging language: english
logging monitor:
Console: state: on; display: off; 96 logged; 0 lost; 0 overflow.
logging buffered: state: on; 249 logged; 0 lost; 0 overflow.
logging flash: state: on; 37 logged; 0 lost; 0 overflow.
logging loghost:
logging facility: ftp;logging source: 192.168.1.11
1.1.1.1: state: on; 23 logged; 0 lost; 0 overflow.
192.168.1.3: state: on; 12 logged; 0 lost; 0 overflow.
logging SNMP Agent: state: on; 0 logged; 0 lost; 0 overflow.
Switch(config)#
```