Content

Chapter 1 Overview

1.1 Basic Concepts

The information center is a set of mechanisms that outputs system information (hereafter referred to as the information source).

Users need to configure for the output direction, and enable the corresponding output direction, and set matching information conditions to output the desired log information, the configuration process is simple and flexible.

1.2 Information sources

There are eight levels of severity for information sources.

Table 1-1

Grade num	Grade name	Description
1	emergencies	Fatal error
2	alerts	Errors to be corrected immediately
3	critical	Critical Error
4	errors	Concerned but not critical errors
5	warnings	Warning, there may be some error
6	notifications	Note the information
7	informational	General information
8	debugging	Debugging information

1.3 Output direction

Currently, 16 output directions are supported, as shown in Table 1-2:

Table 1-2

Output direction	Description
console	Control panel
monitor	monitor terminal
loghost <1-8>	Log host
trapbuffer	Alarm buffer

logbuffer	Log buffer
logfile <1-4>	Log file

The Settings for the output directions are independent of each other, but the information center needs to be opened before the settings take effect.

1.4 Source information format

The format of the source information is as follows：

<priority>timestamp sysname module/level/digest:content

The angle brackets (<>), spaces, slashes (/), and colon (:) are required in the above format when configuring the log prefix; where angle brackets are valid only when the output direction is the log host.

An example of the log format to be output to the log host is shown below:

<188>Sep 28 15:33:46:235 2005 MyDevice SHELL/5/LOGIN: Console login from con0

Another example of the log format without prefix is shown below:

Console login from con0

Each field is described in detail below:
1) Priority

The priority is calculated as follows: facility*8+severity-1。

Facility can be local0 ~ local7, default is local7. The value is 16-23.

Severity ranges from 1 to 8. For more information about severity, refer to Table 1-1.

There is no character between the priority and the timestamp. The priority is valid only when the information is sent to the log host.

The origin of facililty is worth mentioning. Facility is a unique attribute when information is output to the log host, and has no meaning for other output directions. Its value local0 ~ local7 comes from the log type which the early syslog protocol defined for the UNIX log host. All types are as follows:

Table 1-3

facility	code
kernel messages	0
user-level messages	1
mail system	2

system daemons	3
security/authorization messages (note 1)	4
messages generated internally by syslogd	5
line printer subsystem	6
network news subsystem	7
UUCP subsystem	8
clock daemon (note 2)	9
security/authorization messages (note 1)	10
FTP daemon	11
NTP subsystem	12
log audit (note 1)	13
log alert (note 1)	14
clock daemon (note 2)	15
local use 0 (local0)	16
local use 1 (local1)	17
local use 2 (local2)	18
local use 3 (local3)	19
local use 4 (local4)	20
local use 5 (local5)	21
local use 6 (local6)	22
local use 7 (local7)	23

As you can see, local0 ~ local7 is reserved for local users, the value is 16 to 23.

2) Timestamp

The timestamp records the time when the system information is generated, making it easy for the user to view and locate system events. The timestamp and host name are separated by a space.

Date mode

mmm + space + dd + space + hh + colon +mm +   colon + ss + colon + sss+ space+ yyyy

mmm = Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec Indicates month

dd =   1~31, Indicates the date, if the value is 1 to 9, 0 should be added in front of the number. For example, 1 to be converted to "01".

hh = 0 ~ 23, Indicates hours

mm = 0 ~ 59, Indicates minutes

ss = 0 ~ 59 Indicates seconds

sss = 0 ~ 999 Indicates milliseconds

yyyy = 1970 ~ 9999 Indicates year

3) Sysname

The sysname is the system name of the machine.

The sysname and module name are separated by a space.

4) module

This field indicates the name of the module that generated the message.

The module and the level are separated by a slash (/).

5) Severity

System information is divided into three categories: log, debug and alarm. According to the urgency, each type of information is divided into eight levels. The smaller information level value, the higher urgency level.

The rule that the system uses to filter information is to prohibit the output of information whose information level is greater than threshold.

When the value of the information level is 1, the system will only output emergencies information;

When the value of the information level is 8, the system outputs all levels of information;

If the configuration filtering method is an exact match, the system only outputs information at the design level.

The level is separated from the digest by a slash (/).

6) digest

A message digest is a string of up to 32 characters that indicates the content of the message.

The digest is separated from the content by a colon (:).

7) content

The content indicates the specific contents of the system information.

Chapter 2   Configure Sequence

1. Set the global enable of the information center
2. Set the output direction of the information center to enable
3. Set the log information prefix switch
4. Set the log information matching conditions
5. Configure the IP and facility of the log host
6. Configure the number of log files and access path
7. Configure to record user operation commands
8. Delete logs recorded by logbuffer or trapbuffer
9. View the area that supports storing files
10. Configure onekey collection

1. Set the global enable of the information center

Command	Description
Global configuration mode	
info-center enable	Set the global enable of the information center
no info-center enable	Set the global disable of the information center

2. Set the output direction of the information center to enable

Command	Description
Global configuration mode	
info-center (console | logbuffer | monitor | trapbuffer) output-enable info-center (logfile <1-4> | loghost <1-8>) output-enable (member <1-4> |)	Set the output direction of the information center to enable
no info-center (console | logbuffer | monitor | trapbuffer) output-enable no info-center (logfile <1-4> | loghost <1-8>) output-enable (member <1-16> |)	Set the output direction of the information center to disable

3. Set the log information prefix switch

Command	Description
Global configuration mode	
info-center (console | logbuffer | monitor | trapbuffer) prefix	Set the log information prefix

(on|off)	switch
info-center (logfile <1-4> | loghost <1-8>) prefix (on|off) (member <1-16> |)	

4. Set the log information matching conditions

Command	Description
Global configuration mode	
info-center (console | logbuffer | monitor | trapbuffer) match level (emergencies | alerts | critical | errors | warnings | notifications | informational | debugging) (exact |) (keyword WORD |) info-center (logfile <1-4> | loghost <1-8>) match level (emergencies | alerts | critical | errors | warnings | notifications | informational | debugging) (exact |) (keyword WORD |) (member <1-16> |)	Set the log information matching conditions
no info-center (console | logbuffer | monitor | trapbuffer) match no info-center (logfile <1-4> | loghost <1-8>) match (member <1-16> |)	Delete the log information matching conditions

5. Configure the IP and facility of the log host

Command	Description
Global configuration mode	
info-center loghost <1-8> config (A.B.C.D | X:X::X:X) facility (local0|local1|local2|local3|local4|local5|local6|local7) (member <1-16> |)	Configure the IP and facility of the log host
no info-center loghost <1-8> config (member <1-16> |)	Delete the IP and facility of the log host

6. Configure the number of log files and access path

Command	Description
Global configuration mode	
info-center logfile <1-4> config count <1-40960> (flash|usb|nandflash) WORD (member <1-16> |)	Configure the number of log files and access path
no info-center logfile <1-4> config (member <1-16> |)	Delete the number of log files and access path

7. Configure to record user operation commands

Command	Description
Global configuration mode	
info-center (logbuffer | logfile <1-4> | loghost <1-8>) record-cmd	Configure to record user operation commands
no info-center (logbuffer | logfile <1-4> | loghost <1-8>) record-cmd	Delete to record user operation commands

8. Delete logs recorded by logbuffer or trapbuffer

Command	Description
Global configuration mode	
info-center clear trapbuffer	Delete logs recorded by trapbuffer
info-center clear logbuffer (member <1-16> |)	Delete logs recorded by logbuffer

9. View the area that supports storing files

Command	Description
Global configuration mode	
info-center list all disk	View the area that supports storing files

10. Configure onekey collection

Command	Description
Global configuration mode	
info-center save all (((flash|usb|nandflash) WORD)|)	Configure onekey collection

Chapter 3 Instructions

3.1 console output log

Example 1, configuring the console is allowed to output the logs with prefix, and matching level of debugging or above.

The configuration steps are as follows:

Switch(config)#info-center console output-enable

Switch(config)#info-center console prefix on

Switch(config)#info-center console match level debugging

3.2 monitor output log

Example 2, configuring the monitor is allowed to output the logs without prefix, and matching level of warnings only.

The configuration steps are as follows:

Switch(config)#info-center monitor output-enable

Switch(config)#info-center monitor prefix off

Switch(config)#info-center monitor match level warnings exact

3.3 logbuffer output log

Example 3, configuring the logbuffer is allowed to output the logs with prefix, and matching level of debugging or above, also matching regular expression DEVSM.

The configuration steps are as follows:

Switch(config)#info-center logbuffer output-enable

Switch(config)#info-center logbuffer prefix on

Switch(config)#info-center logbuffer match level debugging keyword DEVSM

3.4 trapbuffer output log

Example 4, configuring the trapbuffer is allowed to output the logs with prefix, and matching level of warnings only, also matching regular expression DEVSM.

The configuration steps are as follows:

Switch(config)#info-center trapbuffer output-enable

Switch(config)#info-center trapbuffer prefix on

Switch(config)#info-center trapbuffer match level warnings exact keyword DEVSM

3.5 loghost output log

Example 5, configuring the loghost 1 in member 1 is allowed to output the logs with prefix, and matching level of debugging or above, also the log host's IP is 192.168.1.11, facility is local0.

The configuration steps are as follows:

Switch(config)#info-center loghost 1 output-enable member 1

Switch(config)#info-center loghost 1 prefix on member 1

Switch(config)#info-center loghost 1 match level debugging member 1

Switch(config)#info-center loghost 1 config 192.168.1.11 facility local0 member 1

3.6 logfile output log

Example 6, configuring the logfile 1 in member 1 is allowed to output the logs with prefix, and matching level of debugging or above, also up to 2000 logs are allowed. The storage disk is flash, the file name is file1.log.

The configuration steps are as follows:

Switch(config)#info-center logfile 1 output-enable member 1

Switch(config)#info-center logfile 1 prefix on member 1

Switch(config)#info-center logfile 1 match level debugging member 1

Switch(config)#info-center logfile 1 config count 2000 flash file1.log member 1

3.7 record user operation commands

Example 7, configuring the logbuffer is allowed to record user operation commands.

The configuration steps are as follows:

Switch(config)#info-center logbuffer output-enable

Switch(config)#info-center logbuffer record-cmd

3.8 Delete logs recorded by logbuffer or trapbuffer

Example 8, delete logs recorded by logbuffer or trapbuffer.

The configuration steps are as follows:
Switch(config)#info-center clear logbuffer member 1
Switch(config)#info-center clear trapbuffer

3.9 View the area that supports storing files

Example 9, view the area that supports storing files.

The configuration steps are as follows:
Switch(config)#info-center list all disk
flash:
usb:
nandflash:

3.10 Configure onekey collection

Example 10, configure onekey collection.

The configuration steps are as follows:
Switch(config)#info-center list all disk
*****Now saving Master card(member 1)*****
Now saving infocenter all configuration, please wait..
Now saving infocenter logbuffer content, please wait..
Now saving infocenter trapbuffer content, please wait..
*****Master card(member 1) saving finished!*****

*****Now saving Slave card(member 2)*****
Now saving infocenter logbuffer content, please wait..
*****Slave card(member 2) saving finished!*****

Chapter 4 Erratum

➢ Configuring the matching level of log information is valid for subsequent logs, and the previously saved log information remains unchanged.

➢ Disk capacity is limited, and when the maximum number of logs in disk is reached, the new log information replaces the old log.

➢ The information center is globally enabled by default, and all current configurations of the information center can be displayed using the show info-center config command.