DES-7200
System Management Command Reference Guide
Version 10.4(3)

DES-7200 CLI Reference Guide

Revision No.: Version 10.4(3)
Date:

Preface

Version Description

This manual matches the firmware version 10.4(3).

Target Readers

This manual is intended for the following readers:

- Network engineers
- Technical salespersons
- Network administrators

Conventions in this Document

1. Universal Format Convention

Arial: Arial with the point size 10 is used for the body.

Note: A line is added respectively above and below the prompts such as caution and note to separate them from the body.

Format of information displayed on the terminal: Courier New, point size 8, indicating the screen output. User's entries among the information shall be indicated with bolded characters.

2. Command Line Format Convention

Arial is used as the font for the command line. The meanings of specific formats are described below:

Bold: Key words in the command line, which shall be entered exactly as they are displayed, shall be indicated with bolded characters.

Italic: Parameters in the command line, which must be replaced with actual values, shall be indicated with italic characters.

[ ]: The part enclosed with [ ] means optional in the command.

{ x | y | ... }: It means one shall be selected among two or more options.

[x | y | ...]: It means one or none shall be selected among two or more options.

//:Lines starting with an exclamation mark "//" are annotated.

3. Signs

Various striking identifiers are adopted in this manual to indicate the matters that special attention should be paid in the operation, as detailed below:

Warning, danger or alert in the operation.

Caution

Note

Descript, prompt, tip or any other necessary supplement or explanation for the operation.

Note

The port types mentioned in the examples of this manual may not be consistent with the actual ones. In real network environments, you need configure port types according to the support on various products.

The display information of some examples in this manual may include the information on other series products, like model and description. The details are subject to the used equipments.

1 File System Configuration Commands

1.1 Configuration Related Commands

1.1.1 cd

Use this command to set the present directory for the filesystem.

cd [*filesystem:*][*directory*]

Parameter description

Parameter	Description
filesystem:	Specified file system. This parameter must be carried with ":".
directory	Specified directory

Default

The default directory is the flash root directory.

Command mode

Privileged EXEC mode.

Usage guidelines

Change the above parameter to the directory you want to enter. Use the **pwd** command to view the present directory.

Examples

The following example sets usb0 root directory as the present directory:

```
DES-7200# cd usb0:/
```

The following example sets sd root directory as the present directory:

```
DES-7200# cd sd0:/
```

Related

Command	Description

commands	**pwd**	Show the present word directory.

1.1.2 copy

Use this command to copy a file from the specified source directory to the specified destination directory.

copy *source-url destination-url*

Parameter description

Parameter	Description
source-url	Source file URL, which can be local or remote.
destination-url	Destination file URL, which can be local or remote.

Default N/A.

Command mode Privileged EXEC mode.

Usage guidelines

This command is used to copy the files among various storage media in the local and to transmit the files between the network servers:

The following table lists the URL prefix for the specified file system:

Prefix	Description
flash:	Flash storage media. This prefix can be used in all devices. The default is flash if the prefix is not used for the URL. In general, the bootstrap main program is stored in the flash.
tftp:	TFTP network server
xmodem:	Use the xmodem protocol to transmit the file to the network device.
slave:	Flash on the slave board from the chassis device.
usb0:	The first USB device.
usb1:	The second USB device.
sd0:	The first SD card.

sw1-m1-disk0:	Management board on the M1 slot of the chassis with switch id 1, in the VSU mode.
sw1-m2-disk0:	Management board on the M2 slot of the chassis with switch id 1, in the VSU mode.
sw2-m1-disk0:	Management board on the M1 slot of the chassis with switch id 2, in the VSU mode.
sw2-m2-disk0:	Management board on the M2 slot of the chassis with switch id 2, in the VSU mode.

Caution

This command does not support the wildcard.

Note

Without the specified URL prefix configured, it refers to the current file system.

Examples

Example 1: Download the file from the tftp server:

```
DES-7200# copy tftp://192.168.201.54/firmware.bin
flash:/
```

Example 2: Upload the file to the tftp server:

```
DES-7200# copy flash:/firmware.bin
tftp://192.168.201.54/firmware.bin
```

Example 3: Use the xmodem protocol to download the file:

```
DES-7200# copy xmodem: flash:/config.text
```

Example 4: Copy the file to the U disk:

```
DES-7200#copy flash:/config.text usb0:/config.text
```

Example 5: Copy the file to the slave management board:

```
DES-7200#copy flash:/config.text slave:/config.text
```

Example 6: Copy the file from the flash to the SD card:

	`DES-7200#copy flash:/firmware.bin sd0:/firmware.bin`
	
	Example 7: Copy the file from the U disk to the SD card:
	`DES-7200#copy usb0:/config.text sd0:/config.text`
	
	Example 8: Copy the file from the SD card to the U disk:
	`DES-7200#copy sd0:/config.text usb0:/config.text`

Related commands

Command	Description
delete	Delete the file.
rename	Rename the file.
dir	Show the file list of the specified directory.

1.1.3 delete

Use this command to delete the files in the present directory.

delete *url*

Parameter description

Parameter	Description
url	The URL for the file to be deleted.

Default	N/A.
Command mode	Privileged EXEC mode.
Usage guidelines	This command is used to delete the specified file in the URL. This command supports deleting the files stores in the local storage media, i.e., the URL must be one of the flash:/ usb0:/ or usb1:/ slave:/. If the prefix is not specified in the URL, it indicates to delete the file in the system. This command does not support wildcard.
Examples	Example 1: Delete the `tmpfile` from the present directory: `DES-7200# delete tmpfile` Example 2: Delete the `firmware.bin.bak` from the

secondary board:

```
DES-7200# delete slave:/firmware.bin.bak
```

Example 3: Delete the `aaa.bin` form the SD card:

```
DES-7200# delete sd0:/aaa.bin
```

Related commands

Command	Description
copy	Copy the file.
dir	Show the file list of the specified directory.

1.1.4 dir

Use this command to show the files in the present directory.

dir [*filesystem:*][*directory*]

Parameter description

Parameter	Description
filesystem	Set the filesystem for the file to be displayed. This parameter must carry with ":".
directory	Set the directory for the file to be displayed.

Default

By default, only the information under the present working path is shown.

Command mode

Privileged EXEC mode.

Usage guidelines

Enter the specified directory to show the information of all the files in that directory. If no parameter is specified, the information of the files in the present directory is shown by default.

This command does not support wildcard.

Examples

Example 1: Show the file information of the root directory in the slave board:

```
DES-7200# dir slave0:/
Directory of slave:/
```

```
   Mode Link     Size             MTime Name
--------      ----      ---------      -------------------
------------------
          1  10838016 2008-01-01 00:01:53 firmware.bin
          1      399 2008-01-01 00:01:37 config.text
          1      399 2008-01-01 00:17:58 cfg.txt
------------------------------------------------------------
----
3 Files (Total size 11210782 Bytes), 0 Directories.
Total 33030144 bytes (31MB) in this device, 20463616 bytes
(19MB) available.
```

Example 2: Show the information of all the files in the present directory:

```
DES-7200# dir
Directory of temp:/
   Mode Link     Size             MTime Name
--------      ----      ---------      -------------------
------------------
          1      399 2008-01-01 00:17:58 a.dat
------------------------------------------------------------
----
1 Files (Total size 399 Bytes), 0 Directories.
Total 33030144 bytes (31MB) in this device, 20463616 bytes
(19MB) available.
```

Related commands

Command	Description
pwd	Show the present directory.
cd	Set the present directory of the filesystem.

1.1.5 mkdir

Use this command to create a directory.

mkdir directory

Parameter description

Parameter	Description
directory	Name of the directory to be created.

Default N/A.

Command mode	Privileged EXEC mode.
Usage guidelines	Simply enter the name of the directory you want to create (including the path). Note: If the created file has been existed, the creation will fail. If the upper-level for the directory to be created is inexistent, it fails to create the specified directory. For example, if the directory of flash:/backup is inexistent, the creation of the directory of flash:/backup/temp will fail. The solution is that the directory of flash:/backup shall be created before the creation of the directory of flash:/backup/temp.

Examples	Example 1: Create the test directory at the root directory:
	`DES-7200# **mkdir** *test*`
	
	Example 2: Create the test2 directory at the root directory of the SD card:
	`DES-7200# **mkdir** *sd0:/test2*`

Related commands

Command	Description
rmdir	Delete the directory.
pwd	Show the present directory.

1.1.6 rename

Use this command to move or rename the specified file.

rename *url1 url2*

Parameter description

Parameter	Description
url1	The source file URL to move.
url2	The URL of the destination file or directory.

Default	N/A.

Command mode	Privileged EXEC mode.
Usage guidelines	This command only supports to move the local file, but not to transfer the file to the server using the protocol. The supported prefixes are: usb0/1, flash and slave.

Examples	Example 1: Move the `log.txt` to the upper-level directory and rename it `config.txt`:
	`DES-7200# **rename** *tmp/log.txt ../config.txt*`
	
	Example 2: Move the `log.txt` in the slave board to the usb0 device:
	`DES-7200# **rename** slave:/log.txt usb0:/log.txt`
	
	Example 3: Rename the `log.txt` in the present directory as `log.txt.bak`:
	`DES-7200# **rename** log.txt log.txt.bak`
	
	Example 4: Move the `dnos.bin` in the SD card to the flash:
	`DES-7200# **rename** sd0:/dnos.bin flash:/dnos_bak.bin`
	
	Example 5: Move the `test.txt` in the U disk to the SD card:
	`DES-7200# **rename** usb0:/test.txt sd0:/test2.txt`

Related commands

Command	Description
delete	Delete the file.
copy	Copy the file.

1.1.7 rmdir

Use this command to delete an empty directory.

rmdir directory

Parameter description

Parameter	Description
directory	Name of the directory to be deleted, which must be empty

Default N/A.

Command mode	Privileged EXEC mode.
Usage guidelines	This command does not support the wildcards, and the directory to be deleted must be empty. Since this command supports abbreviations, you can also use the **rm** command to delete empty directories.

Examples	If there is tmp directory in the present directory and the directory does not contain any files:
	`DES-7200# rmdir tmp`
	`DES-7200# ls`

1.2 Showing Related Commands

1.2.1 pwd

Use this command to show the working path.

pwd

Default	N/A.
Command mode	Privileged EXEC mode.
Usage guidelines	This command shows the present working path

Examples	The following example shows the present working path.
	`DES-7200# pwd`
	`Flash:/`

Related commands

Command	Description
cd	Change the file system in the present directory.

1.2.2 show file systems

Use this command to show the file system information.

show file systems

Parameter description	N/A.
Default	N/A.
Command mode	Privileged EXEC mode.
Usage guidelines	Use this command to show the file systems supported in the present devices and the available space condition in the file system.
Examples	Show the file system information: `DES-7200# show file systems`

2 Configuration Commands of Configuration File Management

2.1 Configuration Related Command

2.1.1 archive

Use this command to switch to the archive configuration mode. The **no** form of this command can be used to restore all configurations in the archive configuration mode to the default state.

archive

no archive

Parameter description

Parameter	Description
-	-

Default -

Command mode Global configuration mode.

Usage guidelines

Use the **archive** command to switch to the archive configuration mode.

Use the **end** command or enter CTRL+C to return to the privileged mode.

Use the **exit** command to return to the global configuration mode.

Examples

The following example switches to the archive configuration mode:

```
DES-7200# configure terminal
Enter configuration commands, one per line.  End with
```

```
CNTL/Z.
DES-7200(config)# archive
```

Related commands

Command	Description
-	-

2.1.2 hidekeys

Use this command to prohibit showing the passwords in the configuration log. The **no** form of this command can be used to allow showing the passwords in the configuration log.

hidekeys

no hidekeys

Parameter description

Parameter	Description
-	-

Default

Allow showing the passwords in the configuration log by default.

Command mode

Archive log management configuration mode

Usage guidelines

N/A.

Examples

The following example prohibits showing the passwords in the configuration log:

```
DES-7200# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
DES-7200(config)# archive
DES-7200(config-archive)# log config
DES-7200(config-archive-log-config)# hidekeys
```

Related commands

Command	Description
archive	Enter the archive configuration mode.
log config	Enter the archive log management configuration mode.

	logging enable	Enable the function of logging the configuration change

2.1.3 log config

Use this command to switch to the archive log management configuation mode. The no form of this command is used to restore all configurations in this configuration mode to the default state.

log config

no log config

Parameter description

Parameter	Description
-	-

Default N/A.

Command mode Archive configuration mode

Usage guidelines

Use the **log config** command to switch to the archive log management configuration mode.

Use the **end** command or enter CTRL+C to return to the privileged mode.

Use the **exit** command to return to the archive configuration mode.

Examples

The following example switches to the archive log management configuration mode:

```
DES-7200# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
DES-7200(config)# archive
DES-7200(config-archive)# log config
```

Related commands

Command	Description
archive	Enter the archive configuration mode.

2.1.4 logging enable

Use this command to enable the function of logging the configuration change. The **no** form of this command is used to disable this function.

logging enable
no logging enable

Parameter description

Parameter	Description
-	-

Default Disabled

Command mode Archive log management configuration mode

Usage guidelines N/A

Examples

The following example enables the function of logging the configuration change:

```
DES-7200# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
DES-7200(config)# archive
DES-7200(config-archive)# log config
DES-7200(config-archive-log-config)# logging enable
```

Related commands

Command	Description
archive	Enter the archive configuration mode.
log config	Enter the archive log management configuration mode.

2.1.5 logging size

Use this commad to specify the maximum number of the entries saved in the configuration log. The **no** form of this command is used to restore it to the default value.

logging size *entries*
no logging size

Parameter description

Parameter	Description
entries	The maximum number of the entries saved in the configuration log, in the range of 1 to 1000.

Default 100

Command mode Archive log management configuration mode

Usage guidelines N/A

Examples

The following example specifies the maximum number of the entries saved in the configuration log as 50:

```
DES-7200# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
DES-7200(config)# archive
DES-7200(config-archive)# log config
DES-7200(config-archive-log-config)# logging size 50
```

Related commands

Command	Description
archive	Enter the archive configuration mode.
log config	Enter the archive log management configuration mode.

2.1.6 notify syslog

Use this command to allow sending the configuration change notification to the remote log server. The **no** form of this command can be used to prohibit sending the configuration change notification to the remote log server.

notify syslog

no notify syslog

Parameter description

Parameter	Description
-	-

Default	Prohibit sending the configuration notification to the remote log server by default.
Command mode	Archive log management configuration mode
Usage guidelines	N/A

Examples	The following example allows sending the configuration change notification to the remote log server:
	`DES-7200# configure terminal`
	`Enter configuration commands, one per line. End with CNTL/Z.`
	`DES-7200(config)# archive`
	`DES-7200(config-archive)# log config`
	`DES-7200(config-archive-log-config)# notify syslog`

Related commands

Command	Description
archive	Enter the archive configuration mode.
log config	Enter the archive log management configuration mode.
logging enable	Enable the function of logging the configuration change.

2.2 Showing and Monitoring Commands

2.2.1 show archive config differences

Use this command to compare the configurations in two specified configuration files line by line and output the configurations which are only existent in one of the configuration files.

show archive config differences [[*file1*] *file2*]

Parameter description

Parameter	Description
file1	The first configuration file name (including the path where the file is, it is optional)
file2	The second configuration file name (including the path where the file is, it is

	optional)

Default

If the *file1* and *file2* are both not specified, then assume the *file1* to the current configuration on the device and *file2* to the config.text file in the flash.

Command mode

Privileged mode.

Usage guidelines

By executing the **show archive config differences** command, users can see the configurations (the configurations here do not include the "!" in the configuration file) that only exist in one of the configuration files. The type of these configurations depends on the order of the specified configuration file. And in front of each configuration information, there is a identifier, which is used to identify the type of this configuraiton information. Compared with the *file1* , the identifiers and meanings are shown as below:

- With the "-" in front, the command does not exit in the *file2* but in the *file1*.
- With the "+" in front, the command exist in the *file2* but not in the *file1*.

Examples

The example following assumes that the content of the config_bak1.text and config_bak2.text are shown as below:

config_bak1.text	config_bak2.text
ip dhcp snooping verify mac-address ip dhcp snooping information option interface GigabitEthernet 0/3 ip dhcp snooping trust ip dhcp snooping suppression snmp-server host 1.1.1.1 traps public	ip dhcp snooping information option ip dhcp snooping bootp-bind interface GigabitEthernet 0/3 ip dhcp snooping trust ip dhcp snooping limit rate 1000 ip dhcp snooping

snmp-server enable traps	suppression snmp-server host 1.1.1.2 traps public snmp-server enable traps

The following example requires showing the configurations that exist in the config_bak2.text file but not in the config_bak1.text and the configurations that exist in the config_bak1.text file but not in the config_bak2.text.

```
DES-7200# show archive config differences flash:config_bak1.text flash:config_bak2.text
+ ip dhcp snooping bootp-bind
interface GigabitEthernet 0/3
 +ip dhcp snooping limit rate 1000
+snmp-server host 1.1.1.2 traps public
-ip dhcp snooping verify mac-address
-snmp-server host 1.1.1.1 traps public
```

Related commands

Command	Description
more *flash:config.text*	Show the content of the config.text file in the flash.
show archive config incremental-diffs	Show the entry list which is existent in the specified configuration file but not in the current configuration on the device.

2.2.2 show archive config incremental-diffs

Use this command to compare the configuration difference between the specified configuration file and the current device line by line, and output the configurations which is existent in the specified configuration file but not in the current device.

show archive config incremental-diffs [*file*]

Parameter description

Parameter	Description
file	Path and name of the specified configuration file.

Default

If the *file* is not specified, then assume it to the config.text file in the flash.

Command mode

Privileged mode.

Usage guidelines

By executing the **show archive config incremental-diffs** command, users can see the configurations (the configurations here do not include the "!" in the configuration file) that only exist in the specified configuration file but not in the current device.

Examples

The following example assumes that the configurations of the config_bak1.text file and current device are shown as below:

config_bak1.text	Configurations on current device
ip dhcp snooping information option ip dhcp snooping bootp-bind interface GigabitEthernet 0/3 ip dhcp snooping trust ip dhcp snooping limit rate 1000 ip dhcp snooping suppression snmp-server host 1.1.1.2 traps public snmp-server enable traps	ip dhcp snooping verify mac-address ip dhcp snooping information option interface GigabitEthernet 0/3 ip dhcp snooping trust ip dhcp snooping suppression snmp-server host 1.1.1.1 traps public snmp-server enable traps

The following example requires showing the configurations that exist in the config_bak1.text file but not in current device.

```
DES-7200# show archive config incremental-diffs config_bak1.text
ip dhcp snooping bootp-bind
interface GigabitEthernet 0/3
 ip dhcp snooping limit rate 1000
snmp-server host 1.1.1.2 traps public
```

	Command	Description
Related commands	**more** *flash:config.text*	Show the content of the config.text file in the flash.
	show archive config differences	Show the configuration differences between two specified configuration files.

2.2.3 show archive log config

Use this command to show the entry information of the configuraiton log.

show archive log config {{**all** | *start-num* [*end-num*]} [**provisioning** | **contenttype** [**plaintext**]] | **statistics**}

	Parameter	Description
Parameter description	**all**	Show all entry information of the configuration log.
	start-num [*end-num*]	Specifying the *start-num* means showing all configuration logs starting with this record. If the end-num is specified at the same time, it will show the configuration logs with the record number between the *start-num* and *end-num*. if the *start-num* is 0, it will show the configuration logs from the first entry. If the end-num is 0, it will show all configuration logs starting with the *start-num*. The *start-num* and *end-num* are both in the range of 0 to 2147483647.
	provisioning	Show the configuration logs in the format shown in the configuration file.
	contenttype	Specify the showing format of the configuration logs.
	plaintext	Specify the configuration logs to be shown in the ordinary text format.
	statistics	Show the memory usage of the configuration log.

Default	N/A.

Command mode

Privileged mode.

Usage guidelines

The *start-num* patameter must be specified when showing the configuration logs without the **all** specified. Use the *end-num* parameter to specify the range of the configuration logs to be viewed. When the configuration log entry that corresponding to the specified *end-num* is not existent, show all configuration logs from the *start-num* to the record number that is less than the *end-num*.(if the *end-num* is specified to 0, show all configuration logs starting with the *start-num*). On condition that the configuration log entry that corresponding to the specified *start-num* is not existent, show the configuration logs starting with the record number that is larger than the *start-num*. If the provisioning is specified, show the configuraitons in the format that is in the configuration files.

Examples

The following example shows the configuration logs numbered 1 to 2:

```
DES-7200# show archive log config 1 2
idx sess  user@line    datetime     logged command
1   1  unknown@console  Mar 21 09:57:22  | logging enable
2   1  unknown@console  Mar 21 09:57:46  | logging size 50
```

Field	Description
idx	The record number of the configuration log entry.
sess	Session number related to this configuration log entry.
user@line	Username and line name of generating this configuration log entry.
datetime	Time of generating this configuration log entry.
logged command	Executed configuration command.

The following example shows all configuration logs in the format of configurations shown in the configuration file.

```
DES-7200# show archive log config all provisioning
archive
 log config
  logging enable
  logging size 50
```

The following example shows the memory usage of the configuration log.

```
DES-7200# show archive log config statistics
Config Log Session Info:
  Number of sessions being tracked: 1
  Memory being held: 1270 bytes
  Total memory allocated for session tracking: 1270 bytes
  Total memory freed from session tracking: 0 bytes
Config Log log-queue Info:
 Number of entries in the log-queue: 3
  Memory being held in the log-queue: 671 bytes
  Total memory allocated for log entries: 671 bytes
  Total memory freed from log entries:: 0 bytes
```

Related commands

Command	Description
-	-

3 CPU-LOG Configuration Commands

3.1 Related System Management commands

3.1.1 show cpu

Use this command to show the CPU utilization information.

show cpu

Command mode	Privileged EXEC mode.
Usage guidelines	Use this command to show the system CPU utilization information in 5sec, 1 min and 5 min, and the CPU utilization of every task in 5sec, 1 min and 5 min.

Examples

```
DES-7200# show cpu
=====================================
    CPU Using Rate Information
CPU utilization in five seconds: 25%
CPU utilization in one minute  : 20%
CPU utilization in five minutes: 10%
  NO   5Sec   1Min   5Min   Process
  0     0%     0%     0%    LISR INT
  1     7%     2%     1%    HISR INT
  2     0%     0%     0%    ktimer
  3     0%     0%     0%    atimer
  4     0%     0%     0%    printk_task
  5     0%     0%     0%    waitqueue_process
  6     0%     0%     0%    tasklet_task
  7     0%     0%     0%    kevents
  8     0%     0%     0%    snmpd
  9     0%     0%     0%    snmp_trapd
 10     0%     0%     0%    mtdblock
 11     0%     0%     0%    gc_task
 12     0%     0%     0%    Context
```

```
13    0%    0%    0%    kswapd
14    0%    0%    0%    bdflush
15    0%    0%    0%    kupdate
16    0%    3%    1%    ll_mt
17    0%    0%    0%    ll main process
18    0%    0%    0%    bridge_relay
19    0%    0%    0%    d1x_task
20    0%    0%    0%    secu_policy_task
21    0%    0%    0%    dhcpa_task
22    0%    0%    0%    dhcpsnp_task
23    0%    0%    0%    igmp_snp
24    0%    0%    0%    mstp_event
25    0%    0%    0%    GVRP_EVENT
26    0%    0%    0%    rldp_task
27    0%    2%    1%    rerp_task
28    0%    0%    0%    reup_event_handler
29    0%    0%    0%    tpp_task
30    0%    0%    0%    ip6timer
31    0%    0%    0%    rtadvd
32    0%    0%    0%    tnet6
33    2%    0%    0%    tnet
34    0%    0%    0%    Tarptime
35    0%    0%    0%    gra_arp
36    0%    0%    0%    Ttcptimer
37    8%    1%    0%    ef_res
38    0%    0%    0%    ef_rcv_msg
39    0%    0%    0%    ef_inconsistent_daemon
40    0%    0%    0%    ip6_tunnel_rcv_pkt
41    0%    0%    0%    res6t
42    0%    0%    0%    tunrt6
43    0%    0%    0%    ef6_rcv_msg
44    0%    0%    0%    ef6_inconsistent_daemon
45    0%    0%    0%    imid
46    0%    0%    0%    nsmd
47    0%    0%    0%    ripd
48    0%    0%    0%    ripngd
49    0%    0%    0%    ospfd
50    0%    0%    0%    ospf6d
51    0%    0%    0%    bgpd
52    0%    0%    0%    pimd
53    0%    0%    0%    pim6d
54    0%    0%    0%    pdmd
55    0%    0%    0%    dvmrpd
56    0%    0%    0%    vty_connect
```

```
  57    0%    0%    0%   aaa_task
  58    0%    0%    0%   Tlogtrap
  59    0%    0%    0%   dhcp6c
  60    0%    0%    0%   sntp_recv_task
  61    0%    0%    0%   ntp_task
  62    0%    0%    0%   sla_deamon
  63    0%    3%    1%   track_daemon
  64    0%    0%    0%   pbr_guard
  65    0%    0%    0%   vrrpd
  66    0%    0%    0%   psnpd
  67    0%    0%    0%   igsnpd
  68    0%    0%    0%   coa_recv
  69    0%    0%    0%   co_oper
  70    0%    0%    0%   co_mac
  71    0%    0%    0%   radius_task
  72    0%    0%    0%   tac+_acct_task
  73    0%    0%    0%   tac+_task
  74    0%    0%    0%   dhcpd_task
  75    0%    0%    0%   dhcps_task
  76    0%    0%    0%   dhcpping_task
  77    0%    0%    0%   dhcpc_task
  78    0%    0%    0%   uart_debug_file_task
  79    0%    0%    0%   ssp_init_task
  80    0%    0%    0%   rl_listen
  81    0%    0%    0%   ikl_msg_operate_thread
  82    0%    0%    0%   bcmDPC
  83    0%    0%    0%   bcmL2X.0
  84    3%    3%    3%   bcmL2X.0
  85    0%    0%    0%   bcmCNTR.0
  86    0%    0%    0%   bcmTX
  87    0%    0%    0%   bcmXGS3AsyncTX
  88    0%    2%    1%   bcmLINK.0
  89    0%    0%    0%   bcmRX
  90    0%    0%    0%   mngpkt_rcv_thread
  91    0%    0%    0%   mngpkt_recycle_thread
  92    0%    0%    0%   stack_task
  93    0%    0%    0%   stack_disc_task
  94    0%    0%    0%   redun_sync_task
  95    0%    0%    0%   conf_dispatch_task
  96    0%    0%    0%   devprob_task
  97    0%    0%    0%   rdp_snd_thread
  98    0%    0%    0%   rdp_rcv_thread
  99    0%    0%    0%   rdp_slot_change_thread
 100    4%    2%    1%   datapkt_rcv_thread
```

```
101     0%     0%     0%    keepalive_link_notify
102     0%     0%     0%    rerp_msg_recv_thread
103     0%     0%     0%    ip_scan_guard_task
104     0%     0%     0%    ssp_ipmc_hit_task
105     0%     0%     0%    ssp_ipmc_trap_task
106     0%     0%     0%    hw_err_snd_task
107     0%     0%     0%    rerp_packet_send_task
108     0%     0%     0%    idle_vlan_proc_thread
109     0%     0%     0%    cmic_pause_detect
110     1%     1%     1%    stat_get_and_send
111     0%     1%     0%    rl_con
112    75%    80%    90%    idle
```

In the list above, the first 3 lines indicates the system CPU utilization in 5sec, 1min and 5min, including LISR, HISR and task. Then, it describes the detailed CPU utilization distribution:

- No：Sequence number
- 5Sec：CPU utilization of the tasks in 5sec.
- 1Min：CPU utilization of the tasks in 1min.
- 5Min：CPU utilization of the tasks in 5min.

The first 2 lines in the list above indicate the CPU utilization of all LISRs and HISRs. From the 3rd line, it begins to refer to the CPU utilization of the tasks. The last line refers to the CPU utilization of the idle task, which is the same as the "System Idle Porcess" in the Windows. In the example above, CPU utilization of idle task within 5s is 75%, indicating that 75% CPU is idle.

3.1.2 cpu-log

Use this command to configure the low and high threshold of the cpu log utilization limit manually.

cpu-log *log-limit low_num high_num*

Parameter description

Parameter	Description
log-limit	The command descriptor prompting the log limit.
low_num	Set the low threshold of the cpu log utilization limit.
high_num	Set the high threshold of the cpu log utilization limit.

Default	By default, the high and low threshold of the cpu log utilization limit are 100% and 90%.
Command mode	Global configuration mode.
Usage guidelines	Use this command to configure the low and high threshold of the cpu log utilization limit manually. When the CPU using rate is more than the high threshold, it prompts the message; but if the CPU using rate exceeds the high threshold continuously, it only prompts the message for one time. When the CPU using rate is less than the low threshold, it prompts the message and advertises that the current CPU using rate has been down only when the CPU high and low threshold switches over.

Examples	This example shows how to set the low and high threshold of the cpu log utilization limit to 70% and 80% respectively.
	`DES-7200(config)# **cpu-log log-limit** *70 80*`
	The console prompts as follows when the CPU utilization rate is more than 80%:
	`Oct 20 15:47:01 %SYSCHECK-5-CPU_USING_RATE: CPU utilization in one minute : 95% , Using most cpu's task is ktimer : 94%`
	The console prompts as follows when the CPU utilization rate is less than 70%:
	`Oct 20 15:47:01 %SYSCHECK-5-CPU_USING_RATE: CPU utilization in one minute :68% , Using most cpu's task is ktimer : 60%`
	`Oct 20 15:47:01 %SYSCHECK-5-CPU_USING_RATE: The CPU using rate has down!`

4 Memory Configuration Commands

4.1 Configuration Related Commands

4.1.1 memory-lack exit-policy

Use this command to set the exit-policy of the upper routing protocol when the memory reaches the lower threshold. The upper routing protocol includes BGP, OSPF, RIP and PIM-SM.

memory-lack exit-policy {**bgp** | **ospf** | **pim-sm** | **rip**}

no memory-lack exit-policy

Parameter description

Parameter	Description
bgp|ospf|pim-sm|rip	Specify the routing protocol: BGP, OSPF, PIM or RIP.
no	Restore to the default action.

Defaults

Exit from the routing protocol which occupies the largest memory.

Command mode

Global configuration mode.

Usage guidelines

When the memory size reaches the lower threshold (use the **show memory** command to show the lower threshold value), a routing protocol will be disabled to release the memory resources to ensure the operation of other protocols.

The user shall know that what routing protocols support the major services in the network. When the memory lacks, the user is able to disable the least important protocol to ensure the operation of major services.

For example, in a user network, BGP route is irrelevant to the network core services. The user can configure the BGP exit-policy when the memory lacks.

Specifying the disabled routing protocol to take precedence to exit the policy can not help the system obtain enough memory resources.

Note The exit-policy is used to protect the important network services to some degree when the system memory lacks. All routing protocols will exit and stop running if more memory resources are exhausted. 2 minutes later, the routing protocol will be attempting to restart.

Examples

This example shows how to enable the BGP to exit from the policy prior to other protocols:

```
DES-7200(config)# memory-lack exit-policy bgp
```

Related commands

Command	Description
show memory	Show the current memory usage information.

4.1.2 show memory

Use this command to show the current memory usage information.

show memory

Command mode

Privileged EXEC mode.

Usage guidelines

Use this command to view the current system memory state and usage information, including the system physical memory amount, the number of free pages in the current system, the free memory statistics.

Examples

This example shows the running result of the command **show memory**.

```
DES-7200#show memory
System Memory Statistic:
  Free pages: 1079
  watermarks : min 379, lower 758, low 1137, high 1516
  System Total Memory : 128MB, Current Free Memory : 5283KB
  Used Rate : 96%
```

The above information includes the following parts:

1. Free pages: the memory size of one free page is about 4k;
2. Watermarks(see the following table)

Parameter	Description
min	The memory resources are extremely insufficient. It can only keep the kernel running. All application modules fails to run if the minimum watermark has been reached.
lower	The memory resources are severely insufficient. One routing protocol will auto-exit and release the memory if the lower watermark has been reached. For the details, see the **memory-lack exit-policy** command.
low	The memory resources are insufficient. The routing protocol will be in OVERFLOW state if the low watermark has been reached. In the overflow state, the routers do not learn new routes any more. The commands are not allowed to be executed when the memory lacks.
high	The memory resources are sufficient. Each routing protocol attempts to restore the state from OVERFLOW to normal.

3. System total memory, current free memory and used rate.

4.1.3 show memory protocols

Use this command to display the usage of the memory for the routing protocols.

show memory protocols

Parameter description

Parameter	Description
None	-

Command mode

Privileged EXEC mode.

Usage guidelines

Use this command to display the usage of the memory for the routing protocols.

Note	Different switches and versions support different routing protocols. The main routing protocols are BGP, OSPF, RIP, LDP, PIM, ISIS, and ect.

Examples

This example shows the result of the command **show memory protocols**:

```
DES-7200(config)# show memory protocols
=================================================
protocol      |memory(byte)
BGP            102000000
OSPF            24000000
RIP             10000000
PIM             50000000
LDP             20000000
Total          206000000
```

Related commands

Command	Description
show memory	Show the current memory usage information.

5 POE Management Configuration Commands

5.1 Configurtion Related Command

POE configuration management includes the following related commands:

5.1.1 poe disconnect-mode mode

Use this command to set the disconnection detection mode. Use the **no** form of this command to restore to the default value.

poe disconnect-mode mode

no poe disconnect-mode

Parameter description	**Parameter**	**Description**
	mode	Disconnection detection mode, within the range of [ac/dc]

Command mode	Global configuration mode.
Usage guidelines	This command is used to set the disconnection detection mode.

Examples	Set the disconnect detection mode of the current POE system as **dc**:
	`DES-7200# configure`
	`DES-7200(config)# poe disconnect-mode dc`
	`DES-7200(config)# end`

5.1.2 poe enable

Use this command to enable the POE(Power-over-Ethernet) function on the interface. Use the **no** form of this command to disable this function.

poe enable
no poe enable

Command mode	Global configuration mode.
Usage guidelines	Use this command to enable the POE function on the interface.
Examples	DES-7200(config-if)# DES-7200(config-if)# **poe enable** DES-7200(config-if)# **no poe enable** DES-7200(config-if)#

5.1.3 poe-power lower

Use this command to set the minimum allowed voltage. Use the **no** form of this command to restore to the default value.
poe-power lower *lower*
no poe-power lower

Parameter description	**Parameter**	**Description**
	lower	Minimum allowed voltage, within the range [45000 to 47000] mv.

Command mode	Global configuration mode.
Usage guidelines	This command is used to set the minimum allowed voltage.
Examples	The following example sets the minimum allowed voltage of the current POE system as 46000 mv. DES-7200# **configure** DES-7200(config)# **poe-power lower** *46000* DES-7200(config)# **end**

5.1.4 poe-power upper *upper*

Use this command to set the maximum allowed voltage. Use the **no** form of this command to restore to the default value.
poe-power upper *upper*
no poe-power upper

Parameter description

Parameter	Description
upper	Maximum allowed voltage, within the range [55000 to 57000] mv.

Command mode Global configuration mode。

Usage guidelines This command is used to set the maximum allowed voltage.

Examples The following example sets the maximum allowed voltage of the current POE system as 56000 mv.

```
DES-7200# configure
DES-7200(config)# poe-power upeer 56000
DES-7200(config)# end
```

5.2 Show Related Command

5.2.1 show poe interface(s)

Use this command to view the POE status of the interface.

show poe interface(s) [*interface-id*]

Command mode Privileged EXEC mode.

Usage guidelines This command is used to view the POE status of the specified interface or all interfaces.

Examples

```
DES-7200# show poe interface gigabitethernet 0/2
Interface : Gi0/2
Port power enabled : ENABLE
Port connect status : OFF
Port PD Class : no PD devices
Port max power : 15400 mW
Port current power : 0 mW
Port peak power : 0 mW
Port current : 0 mA
```

```
Port voltage : 48082 mV
Port trouble cause : normal


DES-7200# show poe interfaces
Interface  Power   Link    Max   Curr   Peak   Curr   Trouble
Pd     Port
      Control  Status  Power  Power  Power  Icut   Cause
Class  Voltage
-----------------------------------------------------------
------------
Gi0/1     Disable  OFF     0.0W   0.0W   0.0W   0mA    normal
0      0.0V
Gi0/2     Disable  OFF     0.0W   0.0W   0.0W   0mA    normal
0      0.0V
Gi0/3     Disable  OFF     0.0W   0.0W   0.0W   0mA    normal
0      0.0V
Gi0/4     Disable  OFF     0.0W   0.0W   0.0W   0mA    normal
0      0.0V
Gi0/5     Disable  OFF     0.0W   0.0W   0.0W   0mA    normal
0      0.0V
Gi0/6     Disable  OFF     0.0W   0.0W   0.0W   0mA    normal
0      0.0V
Gi0/7     Disable  OFF     0.0W   0.0W   0.0W   0mA    normal
0      0.0V
Gi0/8     Disable  OFF     0.0W   0.0W   0.0W   0mA    normal
0      0.0V
Gi0/9     Disable  OFF     0.0W   0.0W   0.0W   0mA    normal
0      0.0V
Gi0/10    Disable  OFF     0.0W   0.0W   0.0W   0mA    normal
0      0.0V
Gi0/11    Disable  OFF     0.0W   0.0W   0.0W   0mA    normal
0      0.0V
Gi0/12    Disable  OFF     0.0W   0.0W   0.0W   0mA    normal
0      0.0V
```

5.2.2 show poe powersupply

Use this command to view the POE power supply status.

show poe powersupply

Command mode	Privileged EXEC mode.

Usage guidelines	This command is used to view the POE power supply status.
Examples	DES-7200# **show poe powersupply** PSE Total Power : 379971 mW PSE Total Power Consumption : 0 mW PSE Available Power : 379971 mW PSE Peak Value : 0 mW PSE Min Allow Voltage : 45000 mV PSE Max Allow Voltage : 57000 mV PSE Disconnect Sense Mode : ac

6 Syslog Configuration Commands

6.1 Related Configuration Commands

6.1.1 clear logging

Use this command to clear the logs from the buffer.

clear logging

Command mode	Privileged EXEC mode.
Usage guidelines	This command clears the log packets from the memory buffer. You cannot clear the statistics of the log packets.
Examples	The following example clears the log packets from the memory buffer. `DES-7200# clear logging`

Related commands

Command	Function
logging on	Record logs on different devices.
show logging	Show the logs in the buffer.
logging buffered	Record the logs to the memory buffer.

6.1.2 logging buffered

Use this command to set the memory buffer parameters (log severity, buffer size) for logs. The **no** form of the command disables recording logs in memory buffer. The **default** form of this command restores the memory buffer size to the default value.

logging buffered [*buffer-size* | *level*]

no logging buffered

default logging buffered

Parameter description

Parameter	Description
buffer-size	Size of the buffer is related to the specific device: For the kernel / aggregation switches, 4K to 10M bytes. For the access switches, 4K to 1M. For other devices, 4K to 128K Bytes.
level	Severity of logs, 0 to 7. The name of the severity or the numeral can be used.

Default configuration

The buffer size is related to the specific device type.

1. kernel switches: 1M Bytes;
2. aggregation switches: 256K Bytes;
3. access switches: 128K Bytes;
4. other devices: 4K Bytes

The log severity is 7.

Command mode

Global configuration mode.

Usage guidelines

The memory buffer for log is used in recycled manner. That is, when it is full, the oldest information will be overwritten. To show the log information in the memory buffer, run **show logging** at the privileged user level.

The logs in the memory buffer are temporary, and will be cleared in case of device restart or the execution of command **clear logging** by privileged user. To trace a problem, it is required to record logs in flash or send them to Syslog Server.

The log information of the DES-7200 is classified into the following 8 levels:

Table-1

Keyword	Level	Description
Emergencies	0	Emergency case, system cannot run normally
Alerts	1	Problems that need immediate remedy

Critical	2	Critical conditions
Errors	3	Error message
warnings	4	Alarm information
Notifications	5	Information that is normal but needs attention
informational	6	Descriptive information
Debugging	7	Debugging messages

Lower value indicates higher level. That is, level 0 indicates the information of the highest level.

When the level of log information to be displayed on specified device, the log information is at or below the set level will not be displayed.

Caution

After running the system for a long time, modifying the log buffer size especially in condition of large buffer may fails due to the insufficent availble continuous memory. The failure message will be shown. It is recommended to modify the log buffer size as soon as the system starts.

Examples

The configuration example below allows logs at and below severity 6 to be recorded in the memory buffer sized 10,000 bytes.

```
DES-7200(config)# logging buffered 10000 6
```

Related commands

Command	Description
logging on	Record logs on different devices.
show logging	Show the logs in the buffer.
clear logging	Clear the logs in the log buffer.

6.1.3 logging console

Use this command to set the severity of logs that are allowed to be displayed on the console. The **no** format of the command disables displaying the logs on the console.

logging console *level*

no logging console

Parameter description

Parameter	Description
level	Severity of log messages, 0 to 7. The name of the severity or the numeral can be used. For the details of log severity, see table 60-1.

Default configuration Debugging (7).

Command mode Global configuration mode.

Usage guidelines

When a log severity is set here, the log messages at or below that severity will be displayed on the console.

The **show logging** command displays the related setting parameters and statistics of the log.

Examples

The example below sets the severity of log that is allowed to be displayed on the console as 6:

```
DES-7200(config)# logging console informational
```

Related commands

Command	Description
logging on	Record logs on different devices.
show logging	Show the logs and related log configuration parameters in the buffer.

6.1.4 logging count

Use this command to enable the log statistics function. The **no** format of the command deletes the log statistics and disables the statistics function.

logging count

no logging count

Parameter description N/A.

Default configuration Disabled.

Command mode Global configuration mode.

Usage guidelines	This command enables the log statistics function. The statistics begins when the function is enabled. If you run **no logging count**, the statistics function is disabled and the statistics data is deleted.
Examples	Enable the log statistics function: `DES-7200(config)# logging count`

Related commands

Command	Description
show logging count	Show the log statistics.
show logging	Show the logs and related log configuration parameters in the buffer.

6.1.5 logging facility

Use this command to configure the log device. The **no** format of the command restores it to the default device value (23).

logging facility *facility-type*

no logging facility

Parameter description

Parameter	Description
facility-type	Syslog device value. For detailed configuration value, refer to the usage guidelines.

Default configuration	Local7(23).
Command mode	Global configuration mode.

Usage guidelines

The following table (Table-2) is the possible device value of Syslog:

Table-2

Numerical Code	Facility
0 (kern)	Kernel messages

1 (user)	User-level messages
2 (mail)	Mail system
3 (daemon)	System daemons
4 (auth1)	security/authorization message
5 (syslog)	Messages generated internally by syslogd
6 (lpr)	Line printer system
7 (news)	USENET news
8 (uucp)	Unix-to-Unix copy system
9 (clock1)	Clock daemon
10 (auth2)	security/authorization message
11 (ftp)	FTP daemon
12 (ntp)	NTP daemon
13 (logaudit)	Log audit
14 (logalert)	Log alert
15 (clock2)	Clock daemon
16 (local0)	Local use
17 (local1)	Local use
18 (local2)	Local use
19 (local3)	Local use
20 (local4)	Local use
21 (local5)	Local use
22 (local6)	Local use
23 (local7)	Local use

The default device value of DES-7200 is 23 (local 7).

Examples

Following is to set the device value of **Syslog** as **kernel**:

```
DES-7200(config)# logging facility kern
```

Related commands

Command	Description
logging console	Set the severity of logs that are allowed to be displayed on the console.

6.1.6 logging file flash

Use this command to record logs in the flash. The **no** format of the command disables the function.

logging file flash:*filename* [*max-file-size*] [*level*]

no logging file

Parameter description

Parameter	Description
filename	Name of the log file of txt type
max-file-size	Maximal size of the log file in the range 128K to 6M bytes, 128K bytes by default
level	The severity of logs recorded in the log files. The name of the severity or the numeral can be used. By default, the severity of logs recorded in the FLASH is 6. For the details of log severity, please see Table-1.

Default configuration

Logs are not recorded in the FLASH.

Command mode

Global configuration mode.

Usage guidelines

If no **Syslog Server** is specified or it is not desired to transfer logs in the network due to the consideration of security purpose, it is possible to save the logs directly in flash.

The extension of the log file is fixed as txt. Any configuration of extension for the filename will be refused.

To record the logs into the expansion FLASH, The expansion FLASH is required. If there is no expansion FLASH, the logging file flash will be hidden automatically and the related configuration will be denied.

Caution

Each syslog file has the limitation of the maximum length. Before writing a new syslog to a file, the followings help determine whether the maximum length of the file has been exceeded:

A new syslog file will be created if the

	maximum length has been exceeded; Add a number to the name of the new file based on the original filename, in the format of filename_number with the suffix txt. The maximum number is 15. The first file will be overwritten if the number reaches 15. Therefore, up to 16 files will be generated in the FLASH when configuring the command to write one syslog to the FLASH.

Examples	The example below records the logs into the expansion FLASH, with the name trace.txt, file size 128K and log severity 6. `DES-7200(config)# logging file flash:trace`

Related commands

Command	Description
logging on	Record logs on different devices.
show logging	Show the logs and related log configuration parameters in the buffer.
more flash	View the logs in the flash.

6.1.7 logging monitor

Use this command to set the severity of logs that are allowed to be displayed on the VTY window (telnet window, SSH window, etc.). The **no** format of the command disables displaying the logs on the VTY window.

logging monitor *level*

no logging monitor

Parameter description

Parameter	Description
level	Severity of the log message. The name of the severity or the numeral can be used. For the details of log severity, see Table 1.

Default configuration	Debugging (7).

Command mode	Global configuration mode.
Usage guidelines	To print log messages on the VTY window, execute first the privileged user command **terminal monitor**. The level of logs to be displayed is defined with **logging monitor**. The log level defined with "Logging monitor" is for all VTY windows.
Examples	The example below sets the severity of log that is allowed to be printed on the VTY window as 6: `DES-7200(config)# logging monitor informational`

Related commands

Command	Description
logging on	Record logs on different devices.
show logging	Show the logs and related log configuration parameters in the buffer.

6.1.8 logging on

Use this command to record logs on different devices. The **no** form of this command disables the fucntion.

logging on
no logging on

Parameter description	N/A
Default configuration	Logs are allowed to be displayed on different devices.
Command mode	Global configuration mode.
Usage guidelines	DES-7200 can not only show the log information in the Console window and VTY window, but also record it in different equipments such as the memory buffer, the FLASH and Syslog Server. This command is the total log switch. If this switch is turned off, no log will be displayed or recorded unless the severity level is greater than 1.

Examples	The following example disables the log switch in the equipment. `DES-7200(config)# no logging on`

Related commands	**Command**	**Description**
	logging buffered	Record the logs to an internal buffer.
	logging	Record logs to the Syslog server.
	logging file flash:	Record logs on the FLASH.
	logging console	Set the log level to be displayed on the console.
	logging monitor	Set the log level to be displayed on the VTY window (such as telnet window) .
	logging trap	Set the log level to be sent to the Syslog server.

6.1.9 logging rate-limit

Use this command to enable log rate limit function to limit the output logs in a second in the global configuration mode. The **no** form of this command disables log rate limit function.

logging rate-limit {*number* | **all** *number* | **console** {*number* | **all** *number*}} [**except** *severity*]

no logging rate-limit

Parameter description	**Parameter**	**Description**
	number	The number of logs processed in a second with the range from 1 to 10000.
	all	Set rate limit to all the logs with severity level 0-7.
	console	Set the amount of logs shown in the console in a second.
	except	By default, the severity level is error(3). The rate of the log whose severity level is less than or equal to this severity level is not controlled.
	severity	Log severity level with the range from 0 to 7. The lower the level is, the higher the severity is.

Default configuration	Disabled.
Command mode	Global configuration mode.
Usage guidelines	Use this command to control the syslog outpt to prevent the massive log output.
Examples	The example below sets the number of the logs (including debug) processed in a second as 10. However, the logs with warning or higher severity level are not controlled: `DES-7200(config)#logging rate-limit all 10 except warnings`

Related commands

Command	Description
show logging count	Show the log statistics.
show logging	Show the logs and related log configuration parameters in the buffer.

6.1.10 logging server

Use this command to record the logs in the specified Syslog sever. The **no** form of the command deletes the Syslog server with specified address from the Syslog server list.

logging server {*ip-address* [**vrf** *vrf-name*] | **ipv6** *ipv6-address*}

no logging server {*ip-address* [**vrf** *vrf-name*] | **ipv6** *ipv6-address*}

Parameter description

Parameter	Description
ip-address	Receive IP address of the log server.
vrf-name	Specify VRF (VPN device forwarding list) connecting to the log server.
ipv6-address	Specify IPV6 address of the log server.

Default configuration	By default, it does not send the logs to any syslog server.

Command mode	Global configuration mode.
Usage guidelines	This command specifies a Syslog server to receive the logs of the device. The DES-7200 allows the configuration of up to 5 Syslog Servers. The log information will be sent to all the configured Syslog Servers at the same time.

Examples	The example below specifies a syslog server at address 202.101.11.1:
	`DES-7200(config)# logging server 202.101.11.1`
	The example below specifies an ipv6 address as AAAA:BBBB:FFFF:
	`DES-7200(config)# logging server ipv6 AAAA:BBBB:FFFF`

Related commands

Command	Description
logging on	Record logs on different devices.
show logging	Show the logs and related log configuration parameters in the buffer.
logging trap	Set the level of logs to be sent to Syslog server.

6.1.11 logging source interface

Use this command to configure the source interface of logs. The **no** format of the command cancels the source interface setting for the specified log.

logging source interface *interface-type interface-number*

no logging source interface

Parameter description

Parameter	Description
interface-type	The type of interface
interface-number	The number of interface

Default configuration	N/A.
Command mode	Global configuration mode.

Usage guidelines	By default, the source address of the log messages sent to the syslog server is the address of the sending interface. For easy tracing and management, this command can be used to fix the source address of all log messages as an interface address, so that the administrator can identify which device is sending the message through the unique address. If no source interface of the device or no IP address of the source interface is configured, the source IP address of the log message is still that of the interface from which the message is sent.
Examples	The example below specifies loopback 0 as the source address of the syslog messages: `DES-7200(config)# logging source interface loopback 0`

Related commands

Command	Description
logging	Record logs to the Syslog server.

6.1.12 logging source ip| ipv6

Use this command to configure the source IP address of logs. The **no** format of the command cancels the source IP address setting for the specified log.

logging source {**ip** *ip-address* **| ipv6** *ipv6-address*}

no logging source {**ip | ipv6**}

Parameter description

Parameter	Description
ip-address	Specify the source IPV4 address sending the logs to IPV4 log server.
ipv6-address	Specify the source IPV6 address sending the logs to IPV6 log server.

Default configuration	N/A.
Command mode	Global configuration mode.

Usage guidelines	By default, the source address of the log messages sent to the syslog server is the address of the sending interface. For easy tracing and management, this command can be used to fix the source address of all log messages as an address, so that the administrator can identify which device is sending the message through the unique address. If no IP address is configured for the device, the source IP address of the log message is still that of the interface from which the message is sent.
Examples	The example below specifies the 192.168.1.1 as the source address of the syslog messages: `DES-7200(config)# logging source ip 192.168.1.1`

Related commands

Command	Description
logging	Record logs to the Syslog server.

6.1.13 logging synchronous

Use this command to enable synchronization function of user input and log output in the line configuration mode to prevent the user from interrupting when keying in the characters. The **no** form of this command disables this function.

logging synchronous

no logging synchronous

Parameter description	N/A.
Default configuration	Disabled.
Command mode	Line configuration mode.
Usage guidelines	This command enables synchronization function of user input and log output, preventing the user from interrupting when keying in the characters.
Examples	`DES-7200(config)#line console 0` `DES-7200(config-line)#logging synchronous`

	Print UP-DOWN logs on the port when keying in the command, the input command will be output again:
	`DES-7200#configure terminal`
	`Oct 9 23:40:55 %LINK-5-CHANGED: Interface GigabitEthernet 0/1, changed state to down`
	`Oct 9 23:40:55 %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet 0/1, changed state to DOWN`
	`DES-7200#configure terminal` ----the input command by the user is output again rather than being intererupted.

Related commands

Command	Description
show running-config	View the configuration.

6.1.14 logging trap

Use this command to set the severity of logs that are allowed to be sent to the syslog server. The **no** format of the command disables sending the logs to the syslog server.

logging trap *level*

no logging trap

Parameter description

Parameter	Description
level	Severity of the log message. The name of the severity or the numeral can be used. For the details of log severity, see Table 60-1.

Default configuration

Informational(6).

Command mode

Global configuration mode.

Usage guidelines

To send logs to the Syslog Server, execute first the global configuration command **logging** to configure the **Syslog Server**. Then, execute **logging trap** to specify the severity of logs to be sent.

The **show logging** command displays the related setting parameters and statistics of the log.

Examples

The example below enables logs at severity 6 to be sent to the Syslog Server at address 202.101.11.22:

```
DES-7200(config)# logging 202.101.11.22
DES-7200(config)# logging trap informational
```

Related commands

Command	Description
logging on	Reocrd logs on different devicds.
logging	Record logs to the Syslog server.
show logging	Show the logs and related log configuration parameters in the buffer.

6.1.15 more flash

Use this command to show the contents of the logs stored in the FLASH.

more flash:*filename*

Parameter description

Parameter	Description
filename	Log file name

Command mode

Privileged EXEC mode.

Usage guidelines

In the FLASH, the log file means the files with the prefix "//f2/", "//f3/'. This command only allows you to view the log files. You cannot use this command to view other non-log files.

Examples

The following example shows the results of the log files in the FLASH as you can see:

```
DES-7200# more flash://f2/log.txt
look up file in the extended flash://f2/log.txt
00004 2004-11-17 4:1:32 DES-7200: %5:Reload requested by Administrator. Reload Reason :Reload command
```

Related commands

Command	Function
logging file flash	Record the logs to the FLASH.

6.1.16 service sequence-numbers

Use this command to attach sequential numbers into the logs. The **no** format of the command removes the sequential numbers in the logs.

service sequence-numbers
no service sequence-numbers

Parameter description	N/A.
Default configuration	No sequential numbers are attached.
Command mode	Global configuration mode.
Usage guidelines	In addition to the timestamp, it is possible to add sequential numbers to the logs, numbering from 1. Then, it is clearly known whether the logs are lost or not and their sequence.
Examples	The example below adds sequential numbers to the logs. `DES-7200(config)# service sequence-numbers`

Related commands

Command	Description
logging on	Record logs on different devices.
service timestamps	Attach the timestamp to the logs

6.1.17 service sysname

Use this command to attach system name to logs. The **no** format of the command removes the system name from the logs.

service sysname
no service sysname

Parameter description	N/A.
Default configuration	No system name is attached.
Command mode	Global configuration mode.

Usage guidelines	This command allows you to decide whether to add system name in the log information.

Examples

Add system name in the log information:

```
Mar 22 15:28:02 %SYS-5-CONFIG: Configured from console by
console
DES-7200 #config terminal
Enter configuration commands, one per line. End with
CNTL/Z.
DES-7200 (config)#service sysname
DES-7200 (config)#end
DES-7200 #
```

Mar 22 15:35:57 DES-7200 %SYS-5-CONFIG: Configured from console by console

Related commands

Command	Function
show logging	Show the logs and related log configuration parameters in the buffer.

6.1.18 service timestamps

Use this command to attach timestamp into logs. The **no** format of the command removes the timestamp from the logs. The **default** format of this command restores the timestamp configuration to the defalt.

service timestamps [*message-type* [**uptime** | **datetime** [**msec** | **year**]]]

no service timestamps [*message-type*]

default service timestamps [*message-type*]

Parameter description

Parameter	Description
message-type	The type of log, including **Log** and **Debug**. The **log** type means the log information with severity levels of 0 to 6. The **debug** type means that with severity level 7.
uptime	Device start time in the format of *Day*Hour*Minute*Second, for example, 07:00:10:41
datetime	Current time of the device in the format of Month*Date*Hour*Minute*Second, for example, Jul 27 16:53:07

msec	Current time of the device in the format of Month*Date*Hour*Minute*Second*millisecond, for example, Jul 27 16:53:07.299
year	Current time of the device in the format of Year*Month*Date*Hour*Minute*Second, for example, 2007 Jul 27 16:53:07

Default configuration

The time stamp in the log information is the current time of the device. If the device has no RTC, the time stamp is automatically set to the device start time.

Command mode

Global configuration mode.

Usage guidelines

When the uptime option is used, the time format is the running period from the last start of the device to the present time, in seconds. When the datetime option is used, the time format is the date of the current device, in the format of YY-MM-DD, HH:MM:SS.

Examples

The example below enables the timestamp for **log** and **debug** information, in format of Datetime, supporting millisecond display.

```
DES-7200(config)# service timestamps debug datetime msec
DES-7200(config)# service timestamps log datetime msec
DES-7200(config)# end
DES-7200(config)# Oct 8 23:04:58.301 %SYS-5-CONFIG I:
configured from console by console
```

Related commands

Command	Description
logging on	Record logs on different devices.
service sequence-numbers	Attach sequential number to logs.

6.1.19 terminal monitor

Use this command to show logs on the current VTY. The **no** form of this command is used to disable the function.

terminal monitor

terminal no monitor

Default

By default, no logs are displayed on the VTY window.

configuration	
Command mode	Privileged EXEC mode.
Usage guidelines	This command only sets the temporary attributes of the current VTY. As the temporary attribute, it is not stored permanently. At the end of the VTY terminal session, the system will use the default setting, and the temporary setting is lost. This command can also be run on the console, but it does not take effect.
 **Note**	For easy management, the DES-7200 allows the use the command on the console. The **no** form of the command executed on the console allows only the emergent log messages with severities 0 and 1.

Examples	The example below allows log information to be printed on the current VTY window.
	`DES-7200# terminal monitor`
	`DES-7200#`

6.2 Showing Related Commands

6.2.1 show logging

Use this command to show parameters and statistics information about logs and the logs in the buffer.

show logging

Parameter description	N/A.
Command mode	Privileged EXEC mode.
Usage guidelines	N/A
Examples	The following command shows the result of the show logging command:

```
DES-7200# show logging
Syslog logging: enabled
  Console logging: level debugging, 15495 messages logged
  Monitor logging: level debugging, 0 messages logged
  Buffer logging: level debugging, 15496 messages logged
  Standard format: false
  Timestamp debug messages: datetime
  Timestamp log messages: datetime
  Sequence-number log messages: enable
  Sysname log messages: enable
  Count log messages: enable
  Trap logging: level informational, 15242 message lines logged,0 fail
    logging to  202.101.11.22
    logging to  192.168.200.112
Log Buffer (Total 131072 Bytes): have written 1336,
015487:  *Sep  19  02:46:13:  DES-7200  %LINK-3-UPDOWN: Interface FastEthernet 0/24, changed state to up.
015488: *Sep 19 02:46:13: DES-7200 %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet 0/24, changed state to up.
015489:  *Sep  19  02:46:26:  DES-7200  %LINK-3-UPDOWN: Interface FastEthernet 0/24, changed state to down.
015490: *Sep 19 02:46:26: DES-7200 %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet 0/24, changed state to down.
015491:  *Sep  19  02:46:28:  DES-7200  %LINK-3-UPDOWN: Interface FastEthernet 0/24, changed state to up.
015492: *Sep 19 02:46:28: DES-7200 %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet 0/24, changed state to up.
```

The log messages are described as below:

Field	Description
Syslog logging	Logging switch: enabled or disabled
Console logging	Level of the logs printed on the console, and statistics

Monitor logging	Level of the logs printed on the VTY window, and statistics
Buffer logging	Level of the logs recorded in the memory buffer, and statistics
Standard format	Standard log format
Timestamp debug messages	Timestamp format of the Debug messages
Timestamp log messages	Timestamp format of the Log messages
Sequence log messages	Sequence switch
Sysname log messages	System name added to the log messages
Count log messages	Log statistical function.
Trap logging	Level of the logs sent to the syslog server, and statistics
Log Buffer	Log files recorded in the memory buffer

Related commands

Command	Function
logging on	Record logs on different devices.
clear logging	Clear the logs in the buffer.

6.2.2 show logging count

Use this command to show the log statistics.

show logging count

Parameter description

N/A.

Command mode

Privileged EXEC mode.

Usage guidelines

To use the log packet statistics function, run **logging count** in the global configuration mode. The **show logging count** can show the information of a log, occurrence times, and the last occurrence time.

You can use **show logging** to check whether the log statistics function is enable.

Examples

The following is the execution result of **show logging count**:

```
DES-7200# show logging count
Module Name   Message Name Sev Occur     Last Time
SYS          CONFIG_I        5   1        Jul 6 10:29:57
SYS TOTAL                        1
```

Related commands

Command	Function
logging count	Enable the log statistics function.
show logging	Show the logs and related log configuration parameters in the buffer.
clear logging	Clear the logs in the buffer.

7 Module Hot-plugging/ unplugging Configuration Commands

7.1 Related Configuration Commands

7.1.1 install slot-num moduletype

Use this command to install the module driver manually.

install *slot-num moduletype*

Parameter description

Parameter	Description
slot-num	Slot number.
moduletype	Module type

Command mode

Global configuration mode.

Usage guidelines

This command is used to install the module driver manually. After the installation, all configurations for the slot will be done for the type of the installed module. Even if the module is unplugged, you can still configure it without loss of the configuration.

Examples

Install module 24SFP/12GT in slot 2

```
DES-7200# configure terminal
Enter configuration commands, one per line. End with
CNTL/Z.
DES-7200(config)# install 2 24SFP/12GT
2006-04-22 09:26:00  @5-CONFIG:Configured from outband
DES-7200(config)# end
DES-7200# show version module detail 2
Device  : 1
Slot    : 2
User Status  : installed
```

```
Software Status: none
Online Module :
Type  :
Ports   : 0
Version :
Configured Module :
Type  : M8606-24SFP/12GT
Ports   : 24
Version :
```

Related commands

Command	Description
no install slot-num	Uninstall the module in the slot.
show version module detail	Show the detailed information of a module.
show version slots	Show slot details

7.1.2 no install slot-num

Use this command to unistall the module manually.

no install *slot-num*

Parameter description

Parameter	Description
slot-num	Slot number.

Command mode

Global configuration mode.

Usage guidelines

Use this command to uninstall a module. Once uninstalled, all configurations for that module will be lost and the module will be deactivated, unless you manually install the driver for the module.

Examples

Uninstall module 24SFP/12GT in slot 2

```
DES-7200# configure terminal
Enter configuration commands, one per line. End with
CNTL/Z.
DES-7200(config)# no install 2
2006-04-22 09:26:00  @5-CONFIG:Configured from outband
DES-7200(config)#end
DES-7200# show version module detail 2
Device  : 1
Slot    : 2
```

```
User Status  : none
Software Status: none
Online Module :
Type  :
Ports   : 0
Version :
Configured Module :
Type  :
Ports   :
Version :
DES-7200#
```

Related commands

Command	Description
install slot-num *moduletype*	Install a module in the slot.
show version slots	Show slot details.

7.1.3 remove configuration module slot-num

Use this command to remove the module configurations.

remove configuration module *slot-num*

Parameter description

Parameter	Description
slot-num	Slot number.

Command mode

Global configuration mode.

Usage guidelines

Use this command to remove the module configurations. If there is a module inserted in the slot, this module will be reset.

Examples

```
DES-7200(config)# remove configure module 4
```

7.1.4 reset module slot-num

Use this command to reset a module.

reset module *slot-num*

Parameter description

Parameter	Description
slot-num	Slot number.

Command mode

Privileged EXEC mode

Usage guidelines

Use this command to reset a module.

Examples

```
DES-7200# reset module 4
```

7.2 Showing Related Command

7.2.1 show version module detail [*module-num*]

Use this command to show the details of the module.

show version module detail [*module-num*]

Parameter description

Parameter	Description
module-num	(Optional) Module number.

Command mode

Privileged EXEC mode.

Usage guidelines

Use this command to show details of the module

Examples

```
DES-7200# show version module detail 2
Device  : 1
Slot    : 2
User Status :    none
Software Status: none
Online Module :
Type  :
Ports   : 0
Version :
Configured Module :
Type  :
Ports   :
Version :
DES-7200#
```

Related commands	**Command**	**Description**
	show version slots	Show slot details.

7.2.2 show version slots [slot-num]

Use this command to view the details of the slot.

show version slots [*slot-num*]

Parameter description	**Parameter**	**Description**
	num	(Optional) Slot number.

Command mode	Privileged EXEC mode.

Examples

```
DES-7200# show version slots
Dev Slot  Configured Module Online Module  User Status
Software Status
--- ----  -----------------   -----  --------------
1 1    none         none
1 2 M8606-24SFP/12GT M8606-24SFP/12GT installed none
1 3 M8606-2XFP M8606-2XFP uninstalled  cannot startup
1 4 M8606-24GT/12SFP M8606-24GT/12SFP installed ok
1 M1 M8606-CM   M8606-CM              master
1   M2                                 none
```

Related commands	**Command**	**Description**
	show version moduel detail	Show the details of the module.

8 LCD Configuration Commands

8.1 Related Configuration Commands

8.1.1 lcd language

Use this command to configure the language displayed on the LCD . Use the **no** form of this command to restore the default value.

lcd language { **chinese** | **english** }

no lcd language

Parameter description

Parameter	Description
chinese	Set the language displayed on the LCD to Chinese.
english	Set the language displayed on the LCD to English.

Default configuration

The default displaying language is Chinese except for some customized products.

Command mode

Global configuration mode

Usage guidelines

Use this command to change the language displayed on the LCD.

Examples

The following example configures the language displayed on the LCD to English.

```
DES-7200(config)# lcd language english
```

Platform description

This command is supported on the DES-7200 series only.

8.1.2 lcd trap-number num

Use this command to configure the length of alarm messages. Use the **no** form of this command to restore the default value.

lcd trap-number *num*

no lcd rap-number

Parameter description

Parameter	Description
num	An integer in the range of 1 to1000.

Default configuration

The default value is 100.

Command mode

Global configuration mode

Usage guidelines

Use this command to view the recently generated alarms. By default, 100 latest alarms are displayed. You can use this command to change the number of the latest alarms displayed.

Examples

The following example shows 200 latest alarms.

```
lcd trap-num 200
```

8.1.3 memory-rate rising-threshold num

Use this command to set the value of memory-rate rising-threshold.

memory-rate rising-threshold *num*

Parameter description

Parameter	Description
num	An integer in the range of 1 to 100.

Default configuration

The default value is 80.

Command mode

Global configuration mode.

Usage guidelines

If the num is 80, the result of show running-config does not show the memory-rate rising-threshold *80.*

Examples

```
DES-7200(config)# memory-rate rising-threshold 60
```

Platform description

This command is supported on the DES-7200 series only.

9 USB/SD configuration Commands

9.1 Related Configuration Commands

The commands described here are used to query and remove USB/SD devices in the CLI environment in the main program.

9.1.1 show usb

Use this command to show the information about the inserted USB device in the system.

show usb

Default	N/A.
Command mode	Privileged EXEC mode.
Usage guidelines	Device information is displayed if there is a USB device. Otherwise, there is no output.

Examples	The following example shows the information about the USB device:
	`DES-7200# show usb`
	`Device: Mass Storage:`
	`ID: 0`
	`URL prefix: usb0`
	`Disk Partitions:`
	`usb0(type:FAT32)`
	
	`Size : 131,072,000B(125MB)`
	`Available size: 1,260,020B (1.2MB)`
	In above information, the Mass Storage Device is the name of the device.
	The meaning of the information is as below:

Table 1: the description of the field .

Field	Description
URL	Prefix used to access the USB device.
Size	Accessible size of the USB device.
Available size	Available size of the USB device.

9.1.2 show sd

Use this command to show the information about the inserted SD device in the system.

show sd

Default N/A.

Command mode Privileged EXEC mode.

Usage guidelines Device information is displayed if there is a SD device. Otherwise, there is no output.

Examples

The following example shows the information about the SD device:

```
DES-7200# show sd
          Device: Mass Storage:
          ID: 1
          URL prefix: sd0
          Disk Partitions:
          SD(type:FAT32)
          Size : 131,072,000B(125MB)
        Available size：  1,260,020B（1.2MB）
```

In above information, the Mass Storage Device is the name of the device.

The meaning of the information is as below:

Table 1: the description of the field .

URL	Prefix used to access the SD device.
Size	Accessible size of the SD device.

9.1.3 sd remove

sd remove *device_id*

Parameter description

Parameter	Description
device_id	Device ID of SD to be removed.

Default N/A.

Command mode Privileged EXEC mode.

Usage guidelines Before pulling out the SD device, you need to remove the device using a command, so as to prevent errors that may occur because the system is using the device. If the device is removed successfully, the system will show a prompt, when you can pull out the device. If the device cannot be pulled out, it indicates that the system is using this SD device, so you have to wait a moment before removing it again.

Examples The following example demonstrates how to remove the SD device mentioned in the example in the previous section.

```
DES-7200# sd remove 1

OK, now you can pull out the device 1.
```

At this moment, the SD card can be plugged out.

9.1.4 usb remove

usb remove *device_id*

Parameter description

Parameter	Description
device_id	Device ID of USB to be removed.

Default	N/A.
Command mode	Privileged EXEC mode.
Usage guidelines	Before pulling out the USB device, you need to remove the device using a command, so as to prevent errors that may occur because the system is using the device. If the device is removed successfully, the system will show a prompt, when you can pull out the device. If the device cannot be pulled out, it indicates that the system is using this USB device, so you have to wait a moment before removing it again.

Examples	The following example demonstrates how to remove the USB device mentioned in the example in the previous section.
	`DES-7200# usb remove 0`
	`OK, now you can pull out the device 0.`
	`*Jan 1 00:18:16: %USB-5-USB_DISK_REMOVED: USB Disk <Mass Storage> has been removed from USB port 0!`
	At this moment, the USB device can be plugged out.