BasicConfigurationCommands

TableofContents

1 SystemManagementCommands

1.1 ConfiguringFileManagementCommands

Filemanagementcommandsincludethefollowingones:

- copy

- delete

- dir

- more

1.1.1 copy

YoucanaccesstheTFTPservertoreadthefilefromtherouterbyrunningthe**copy**command
andwriteafileinthefilesystemoftherroutertotheTFTPserver.

YoualsocanreadafileintheUdiskonarouteroraTFTPserverandwriteafileinthefilesystemo
ftheTFTPserverorroutertotheUdisk

Copy {tftp<:filename>| **flash**<:filename>**} {flash** <:filename>| **tftp**<:filename>**}** <blksize>

Copy{flash<:filename>|**usb**<:filename>**} {usb**<:filename>|**flash**<:filename>**}**

Copy {tftp<:filename> | **usb**<:filename>**} {usb**<:filename> | **tftp**<:filename>**}** <blksize>

Parameter

Parameter	Description
tftp<:filename>	When itis usedas thefirst parameterin theprevious command sentences,itmeanstoreadafileontheTFTPserver.Whenitisuse as thesecond one, itmeans towrite afile tothe TFTPserver **Filename**indicatesthecorrespondingfilename.Ifthefilenameisnotspecified, youwill benotifiedtoenterafilenameafterrunningthe**copy**command.
flash<:filename>	Whenitisusedasthefirstparameterinthepreviouscommansentences,itmea nstoreadafileintheflashoftherouter.Whenitiusedasthesecondone,itmeanst owriteafiletotheflashofthrouter.**Filename**indicatesthecorrespondingfilena me.Ifthefilenam isnotspecified,youwillbenotifiedtoenterafilenameafterrunnin the**copy**command.
usb<:filename>	Whenitiusedasthefirstparameterinthepreviouscommansentences,itmea nstoreadafileontheUdisk.Whenitisusedasthsecondone,itmeanstowriteafil etotheUdisk.**Filename**indicate thecorrespondingfilename.Ifthefilenameisnotspecified,youwillbnotifiedtoe nterafilenameafterrunningthe**copy**command.
blksize	SpecifiestheblocksizeintheTFTPtransmission.

Default

None

Commandmode

EXEC

Explanation

Ifyou enterthe questionmarkbehind**flash:**,allthematchedfilenameswillbeshown.

For example:

Afteryouenterthequestionmarkbehind**copyflash:s**,allthefilenamesstartedwiththe**s**lette rinthecurrentdirectoryareshown.
flash：startup-configflash：sample

Youalsocanentertheall-pathorrelativepathofthe**usb**filebehind**usb:**tospecifytheto-be-copiedfile.

IfarouterhasonlyoneUSBcardandaUdiskontheUSBcard,theall-pathofthe
usbfileis**/usb0/path/filename**.

IfarouterhastwoUSBcardsandtwoUdisksonthetwoUSBcards,theUdiskatthesmaller-numberslot   islabeledas**usb0**andtheotheroneislabledas**usb1**.Theall-pathofthe**usb**fileislike**/usb0/path/filename**or**/usb1/path/filename**.

Example

Ifyourun**copyflash:startup-configtftp:config.txt600**,the**startup-config**filewillbecopiedfromtheflashtotheTFTPserverandnamedasconfig.txt.Atthesametim ethesizeofthetransmissionblockisspecifiedas600bytes.

Ifyourun**copyflash:router.binusb:/usb0/r.bin**,the**router.bin**fileintheflashwillbecopie dtotheUdiskatUSB0andlabeledasr.bin.

Ifyourun**copytftp:router.binusb:/usb1/r.bin2.2.2.21024**,the**router.bin**fileintheTFTP serverwillbecopiedtotheUdiskatUSB1andlabeledasr.bin.Meanwhile,theaddressoftheT FTPserverisspecifiedas2.2.2.2andthesizeofthetransmissionblockas1024bytes.

cd /usb0

copy flash:router.binusb:r.bin

Thepreviouscdcommandisusedtoswitchthecurrentdirectorytoasubdirectoryunderthe/u sb0directory.Therelativepathisusedtocopytherouter.binfileintheflashtotherootdirectory oftheUdiskatusb0,andthentherouter.binfileisnamedasr.bin.

Relatedcommand

None

1.1.2 delete

Itis usedtodeleteafile.

delete *file-name*

Parameter

Parameter	Description
file-name	Filenamewithupto20characters

Default

Ifthefilenameisnotentered,the**startup-config**fileis deletedbydefault.

Commandmode

Monitoringor Global mode

Explanation

None

Relatedcommand

None

1.1.3 dir

Itisusedtodisplaythe fileandthedirectoryname.

dirfile-name

Parameter

Parameter	Description
file-name	Filenamewithupto20characters

Default

None

Commandmode

Monitoring or Global mode

Explanation

None

Relatedcommand

None

1.1.4 more

Itisusedtodisplaythefilecontent

more file-name

Parameter

Parameter	Description

file-name	Filenamewithupto20characters

Default

None

Commandmode

Monitoringor Global mode

Explanation

Allthefilesarecomposedofdisplayingcharacters,usetheASCIIcodetodisplaythem;other wise,usethebinarysystemtodisplaythem.

Relatedcommand

None

1.2 System Management Commands

Basic system management commands include:

- boot flash
- cd
- date
- md
- pwd
- rd
- rename
- reboot
- alias
- boot system flash
- help
- history
- job
- debug job
- jobd
- show alias
- show tech-support
- switch-mode

1.2.1 bootflash

Itis usedinmonitormodetostartupatthespecifiedfilemanually.

bootflash*filename*

Parameter

Parameter	Description
Filename	Specifiesthefile name

Default

None

Command mode

Monitoringmode

Explanation

Afterthesystementersthemonitormode,thecommandisusedtostartupthesystem.

Example

monitor#boot flash router.bin

Related command

dir

1.2.2 cd

Itis usedinmonitormodetochangethecurrentdirectory.

cd   directory|..

Parameter

Parameter	Description
Directory	Directorynamewith upto 20characters
..	Upper-leveldirectory

Default

None

Commandmode

Monitoringmode

Explanation

None

Example

monitor#cdmy_dir

Relatedcommand

pwd

1.2.3 date

Itis usedtosetthe absolutesystematictime.

Parameter

None

Default

None

Commandmode

EXECorglobalconfigurationmode

Explanation

Routersneedtoresetthesystematictimeafterpoweringoff,thecommand,hence,isusedtosetthetimefortheserouters.Iftimeisnotright,youshouldreplacethebattery.

Example

Router_config#date

The current date is 2000-7-27 21:17:24
Enter the new date(yyyy-mm-dd):2000-7-27
Enter the new time(hh:mm:ss):21:17:00

Relatedcommand

None

1.2.4 md

Itis usedtocreateadirectory.

md directory

Parameter

Parameter	Description
Directory	Directorynamewith upto 20characters

Default

None

Commandmode

Monitoringmode

Explanation

None

Relatedcommand

None

1.2.5 pwd

Itis usedtodisplaythecurrentdirectory.

Parameter

None

Default

None

Commandmode

Monitoringmode

Explanation

None

Relatedcommand

None

1.2.6 rd

Itis usedtodeleteadirectory.

rddirectory

Parameter

Parameter	Description
Directory	Directorynamewith upto 20characters

Default

None

Commandmode

Monitoringmode

Explanation

Thesystemwillpromptyouwhetherthedirectoryexistsornot.Ifthe directorydoesnotexist,thesystemwillpromptthatthedirectorydoesnotexist.

Relatedcommand

None

Relatedcommand

None

1.2.7 rename

Itis usedtochangethefilename.

rename old_file_namenew_file_name

Parameter

Parameter	Description
old_file_name	Original file name
new_file_name	New file name

Default
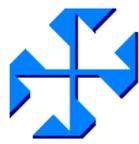
None

Commandmode

Monitoring or Configuration mode

Explanation

None

Relatedcommand

None

1.2.8 reboot

Itisusedtorestarttherouter.

Parameter

None

Default

None

Commandmode

Configuration mode

Explanation

None

Relatedcommand

None

1.2.9 alias

Itisusedtosetthealiasofthecommand.The"no"formofthecommandisusedtodeletethealia softhecommand.

[no]alias[alias_namecommand_line**]**

Parameter

Parameter	Description
alias_name	Aliasofthecommand,whichisusedtoreplacethecommand line
command_line	Commandlinewhichisreplacedbythe aliasofthecommand

Default

None

Commandmode

Configurationmode

Explanation

Ifyoucomplexcommandlinesarefrequentlyused,youcanusethecommandtospecifytheco mmandalias.

Example

Router_config#alias c copy tftp:router.binflash:router.bin 192.2.2.1

Relatedcommand

showalias

1.2.10   bootsystemflash

Itisusedtospecifythemirroringfileexecutedwhenthesystemisstarted.The"no"formofthec ommandisusedtodeletethepreviousconfiguration.

bootsystemflash*filename*

nobootsystemflash*filename*

Parameter

Parameter	Description
filename	Specified file name with up to 20 characters

Default

None

Commandmode

Globalconfigurationmode

Explanation

Ifthecommandisnotconfigured,thesystemwillrunthefirstsystematicmirroringfileinthefiles ystemintheflash.Ifmultiplecommandsareconfigured,thesystemwillrunthemirroringfilesi norder.Ifamirroringfiledoesnotexistorhasthechecksumerror,thenextmirroringfilewillberu n.Ifallmirroringfilesfailtoberun,thesystementersthemonitormode.

Example

Router_config#boot system flash router.bin

Relatedcommand

None

1.2.11   bootsystemcf

use **bootsystemcf**The command can specify the system image file to execute when the system starts，use**noboot system cf**Command to delete the previous configuration。

boot system cf*filename*

no boot system cf*filename*

Parameter

Parameter	Description
filename	Specified file name with up to 20 characters

Default

None

Commandmode

Globalconfigurationmode

Explanation

If the user has configured this command and the file stored in the cf card is valid, And not configured boot system flash Command, the system will start from the file specified by this command. However, if the user has configured the boot system flash command and the file in flash is valid, the command in flash will be used first, and the cf command will be ignored

Example

Router_config# boot system cfrouter.bin

Relatedcommand

None

1.2.12 help

Itis usedtodisplaythe helpsystemoftherouter.

help

Parameter

None

Default

None

Commandmode

EXEC

Explanation

None

Example

After yourunthecommand,thehelpsystemoftherouterisdisplayed.Router#help

Helpmayberequestedatanypointinacommandbyenteringaquestionmark'?',Ifnothing matches, thehelplistwillbeemptyandyoumust backup untilentering a'?'showstheavailableoptions.

Twostylesofhelpareprovided:

1. Full helpis availablewhen youare readyto entera commandargument(e.g.'show?')anddescribeseachpossibleargument.

2. Partialhelpisprovidedwhenanabbreviatedargumentisenteredandyouwanttoknowwhatargumentsmatchthe input(e.g.'interfacee?'.)

Relatedcommand

None

1.2.13 history

Itisusedtobrowsetheusedcommands.The"no"formofthecommandisusedtodeletethepre

viouslyusedcommands.

[**no**]**history[+**<count>|**-**<count>|**clear**]

Parameter

Parameter	Description
+<count>	**Displays 20historical commandsfrom beginningtoend.**
-<count>	**Displays 20 historical commands from end tobeginning.**

Default

Iftherearelessthan20historicalcommands,allcommandswillbedisplayed;iftherearemor ethan20historicalcommands,therecent20historicalcommandswillbedisplayedfrombegi nningtoend.

Commandmode

Anymode

Explanation

Routersofmodularseriescansaveupto20historicalcommands.Youcanusetheup/downar rowkeytofindthesecommandsoreditthem.

Example

Inthefollowingexamples,recentfivehistoricalcommandsaredisplayedfromendtobeginni ng.

Router#history - 5

    Config

    int G0/0

    no ipaddr

    ipaddr 192.2.2.49 255.255.255.0

    exit

Relatedcommand

None

1.2.14   quit

This command is used to exit the current command line mode

quit

Parameter

None

Default

None

Commandmode

Anymode

Explanation

You can use this command in any mode to return to the mode of the last command line

Relatedcommand

None

1.2.15　job

Itisusedtodefineajobandsetthescheduleofthejob.The"no"formofthecommandisusedtocancelthedefinedjob.

[no] job　　{[interval*fireinterval*|one-shot]|sleep*sleeptime*|stop*jobname*}

Parameter

Parameter	Description
exec jobname	Performs a job immediately.
jobname definaton	Defines a job.
restart jobname	Restarts a job.
schedule jobname	Sets a job if a schedule is performed.
at firsttime	Sets the first execution interval of a job after **jobd**is started.
interval fireinterval	Sets the interval between two job executions
one-shot	Sets a job to be performed once
sleep sleeptime	Sets the sleep time.
stop jobname	Stops the scheduled job.

Default

None

Commandmode

Globalconfigurationmode

Explanation

Jobherestandsforasegmentofscript, definingtheto-be-runcommandcombination,thetimetoperformthejobandtheintervaloftheoperation.

Example

Thefollowingexampleshowsthatjobsonallportsaredefinedtobeshutdown.

jobshutall"ints1/0;shut;ints1/1;shut;ints1/2;shut;ints1/3;shut"

Thefollowingexampleshowsthatjobsonallportsaredefinedtobe**noshutdown**.

jobnoshutall"ints1/0;noshut;ints1/1;noshut;ints01/2;noshut;ints1/3;noshut"

Thefollowingexampleshowsthatallportsperformthe**shutdown**operationandthe **noshutdown**operation.

jobscheduleshutallat100interval60

jobschedulenoshutallat130interval60

After100secondsofjobdstartup,**shutall**lajobandthejobwillberestarted every60seconds;After130secondsoftherouterstartup,**noshutallshutall**thejobandthejo bwillberestartedevery60seconds.〉

Toexecutetheorderofshutallornoshutall,defineandschedulelikethefollowing: jobreshut"jobexecshutall；jobexecnoshutall"

jobschedulereshutat100interval30

Iferroroccurswhenshutallisoperated,runthefollowingcommand(pausedbydefault):

jobshutallon-errornext

Torun**noshutall**,dothefollowing:(thejobcannotberecursivelycalled)jobshutallon-

errorexecnoshutall

Thefollowingexampleshowsthatajobispaused.jobstopshutall

Thefollowingexampleshowsthatapausedjobisrestarted.jobrestartshutall

Relatedcommand

jobd

showjob

debugjob

1.2.16 debug job

Itis usedtotracetheexecutionofajob.

Parameter

None

Commandmode

EXEC

Explanation

Afterthejobdebugginginformationisopened,theexecutionandscheduleofthejobisexported.

Example

Router_config#debug job

JOB：<showver> fired
JOB：job<showver>, cmd "show ver" is parsing

Relatedcommand :

job jobd

show job

1.2.17 jobd

It isused tostartupthe protectionprocessfor executingthejob. The"no"formof thecommandisusedtoterminatetheprotectionprocessofthejob.

[no]jobd

Parameter

None
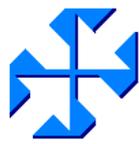
Default

None

Commandmode

Globalconfigurationmode

Explanation

Theexecutionofthejobneedbescheduledandexecutedby**jobd**.Theexecutiontimeofthejo btakesthestartuptimeof**jobd**asthebasis.Press**q**,**Q**or**Ctrl+Shift+6**toterminate**jobd**.

Example

Thefollowingexampleshowshow**jobd**isstarted:

Router_config#jobd

Jobdaemonstarted.Nocommandscanbeentered.Endwithq,Q

Relatedcommand

Debug job

showjob

1.2.18   showalias

Itis usedtodisplayallaliasesorspecifiedaliases.

Showalias[<*aliasname*>]

Parameter

Parameter	Description
aliasname	Aliasofacommand

Default

Allaliasesaredisplayedaccordingtotheformula"aliasname=commandline".

Commandmode

EXECmodeorconfigurationmode

Explanation

None

Example

Inthefollowingexample,allaliasesinthecurrentsystemaredisplayed:

```
Router_config# show alias
hualab=date
router=snmp
```

Relatedcommand

Alias

1.2.19   show privilege

This command is used to display the priority of the current login user。

Showprivilege

Parameter

None

Default

None

Commandmode

Management status

Explanation

None

Example

For example, radius server sets the priority of aaa user to 10, and then the user logs in and executes

Router#show privilege

Current privilege level is 10

Related command

privilege

1.2.20 show version

This command is used to display the version information of the current device.
showversion

Parameter

None

Default

None

Commandmode

Management status or configuration status

Explanation

This command will not only display system information, but also display board information

Example

Router#show version

SWITCH Software Version V200R102 Build 21509, RELEASE SOFTWARE

Copyright (c) 2023
Compiled: 2022-05-05 14:55:30 by SYS_21509, Image text-base: 0x108000
Hardware Version 0.3.5
BIOS Version: 0.01
Serial num:002687, ID num:002687
System image file is "router.bin"
SWITCHCaviumCN
System Memory: 2097152K bytes
Flash Memory 12288K bytes
Router uptime is 2:07:50:44, The current time: 2031-01-12 23:48:51
Slot 0: Standard Port Slot
  Port 0: 1Gbps full-duplex Ethernet
  Port 1: 1Gbps full-duplex Ethernet
  Port 2: 1Gbps full-duplex Ethernet
  Port 3: 1Gbps full-duplex Ethernet
  Port 4: 1Gbps full-duplex Ethernet
  Port 5: 1Gbps full-duplex Ethernet
  Port 6: 1Gbps full-duplex Ethernet
  Port 7: 1Gbps full-duplex Ethernet

Related command

privilege

1.2.21   showtech–support

Itisusedtodisplaysomeimportantinformationaboutthesystem.

show tech – support

Parameter

None

Default

None

Commandmode

EXECmodeorconfigurationmode

Explanation

The command is used to display some important information about the system,
which is required by technical support.

1.2.22   Privilege

This command is used to set the priority of the command.

Privilege {config | exec | interface} {default |<0-15>} {commandstring}

Parameter

Parameter	Parameter Description
Config	Set command priority in configuration mode
Exec	Set command priority in global mode
Interface	Set command priority in port mode
Default	Default priority of restore command
<0-15>	Set the current priority value of the command
Command string	Specific commands requiring priority setting, including main commands and sub-commands

Default

None

Commandmode

Configuration status

Explanation

In order to let users control the use level of the command, you can use this command:

For example, privilege config 10 ip

Because the default priority of IP in config mode is 15, if the user logs in with a priority lower than 15, the command cannot be executed However, if the command priority is set, it can still be executed even if the user logs in with a priority of 10 or above.

The commands in different modes are set separately,

For example, privilege config 10 ip and privilege interface ip 12 are the priority of two different commands.

In addition, if the priority of the sub-command is set, the sub-command can still be executed even if the priority of the main command is higher than the sub-command, and the priority of the current login user is lower than the main command, but higher than the sub-command.

For example,privilege config 8 ipicmp

The user logs in with priority 8. Although the default priority of IP is 15, the ipicmp can still be executed. However, if the privilege config 10 ip is set and the user logs in with priority 8, the ip and all commands under the ip cannot be executed.

1.2.23   switch-mode

This command is used to configure the device switch board (the device with the switch board is required).

switch-mode

Parameter

None

Default

None

Command mode

Management status

Explanation

Configure the device switch board. Enter the switch board configuration mode after the command is entered

1.3 HTTP Configuration Commands

HTTP configuration commands include:

- iphttpport

- iphttpserver

1.3.1 iphttpport

Itis usedtospecifythenumberofthe HTTPport.

iphttpport*number*

Parameter

Parameter	Description
Number	PortnumberoftheHTTPservice

Default

Port80istakenbythebrowserasthedefaultportnumberoftheHTTPservice.

Commandmode

Globalconfigurationmode

Explanation

Afterthecommandisrun,ifthehttpserviceisenabled,shutdowntheoriginallisteningporta
ndthenusethespecifiedport(thespecifiedportisavailable)toreceivetherequestofthehttp
service;ifthehttpserviceisnotenabled,thecommandhasnoeffectonthehttpservicerequ
esttemporarily.

Example

Thefollowingexampleshowsthenumberofthehttpportischangedfrom80to90.

Router_config# ip http server

Router_config# ip http port 90

Relatedcommand

iphttpserver

1.3.2 iphttpserver

Itis usedtoenablethehttpservice.

iphttpservernoi

phttpserver

Parameter

None

Commandmode

Globalconfigurationmode

Explanation

Youcanusethecommandtospecifyaportoftheroutertoacceptthehttprequest,handlethe requestandtoreturntheresulttothebrowser.

Example

Router_config# ip http server

Relatedcommand

iphttpport

2 Terminal Service ConfigurationCommands

2.1 Telnet Configuration Commands

Telnet configuration commands include:

- telnet

- iptelnet

- cleartelnet

- showtelnet

- debugtelnet

2.1.1 telnet

Thecommandlineforestablishingthetelnetsessionisshowninthefollowing:

telnet_server-ip-addr/server-host-name_[**/port**_port_][**/source-interface**_interface_][**/local**_local-ip-addr_][**/debug**][**echo/noecho**][**/script**_scriptname_][**/ts-block**|**/ts-discard**][**/info**_information_][**/source-port**_sourceport_]

Parameter

Parameter	Description
server-ip-addr	Dotted-decimalIPaddress oftheremoteserver
server-host-name	Hostnameoftheremoteserver,whichneedbeconfiguredby the**iphost**command
Port	Portofthetelnetserviceprovided bytheremoteserver
Interface	Localinterfacewhichtriggersthetelnetconnection
local-ip-addr	LocalIPaddresswhichtriggersthetelnetconnection
/debug	Opensthedebugswitchattheclientandprintsthenegotiation processduringtheconnection.
echo/noecho	Opensandshutsdownthelocalecho.Theechoisnotenabled bydefault.
Scriptname	Nameofthescriptwhichisusedfor automaticlogging
/ts-block	Sets toblock thelocal telnetconnection whenit isat thebackground.
/ts-discard	Setsthetelnetmessagetobedroppedwhenthelocaltelnetconnectioni s atthe background.
/info	Setsrelatedprintinginformationbeforethetelnetconnection.

/source-port	Sets the local port for the telnet connection
/router-id	Authenticates the router ID.

Default

The default value of the port is 23, while the interface has no default value.

Command mode

EXEC

Explanation

You can use the following command line for remote login.

telnet server-ip-addr/server-host-name

In this case, the application program will directly send the request for creating a telnet link to port 23 of the remote server. The adopted local IP address is the one nearest to the peer which is found by the routing table.

telnet server-ip-addr/server-host-name /port port

The application program sends the request for creating a telnet link to the peer port. telnet

server-ip-addr/server-host-name /source-interface interface

The application program takes the IP address on the interface as the local address. telnet

server-ip-addr/server-host-name /debug

The application program enables the **debug** router and exports the connection negotiation information on the client.

telnet server-ip-addr/server-host-name /echo/noecho

The application program enables/disables the local echo. In general, the local echo is disabled. The echo process is performed by the server. Only when the server does not echo is the switch of the local echo enabled.

telnet server-ip-addr/server-host-name /script scriptname

The automatic login command for running the script need be configured by the **ip telnet script** command.

In some print-screen applications, corresponding **router as** software is not installed on the server. When the local telnet connection is at the background and is set with the parameter **/ts-block** or **/ts-discard**, if there is data from the server, the router can temporarily save 4000-bytes data for the telnet connection. As for the later data, the router will take the following two strategies:

If the **/ts-block** parameter is set, the server will be blocked from transmitting the data to the local computer until the telnet connection is at the front workstation.

telnet server-ip-addr/server-host-name /info information

Inthiscase,theapplicationprogramwillprinttheconfigurationinformationoutandthensend
stherequestforcreatingtelnetlinktotheremoteserver.
telnet server-ip-addr/server-host-name /source-port sourceport

Inthiscase,theapplicationprogramsendsarequestforcreatingtelnetlinktoport23oftherem
oteserver.TheusedlocalTCPportistheconfiguredsourceport.

Thecommandsandparametersabovecanbeusedtogether.

Duringthesessionbetweenremoteserverandclient,youcanpress**Q**toexitthesession.Ifyo
udoesnotexitthesessionmanually,thesessionwillbeoverafter10seconds.

Example

SupposeyoutelnettheremoteserverwhoseIPaddressis192.168.20.124andthetelnetser
viceportsoftheserverareport23andport2323.Therearetwolocalports**e1/1(192.168.20.2
40)**and**s1/0(202.96.124.240)**.Youcanusethefollowingcommandlinesforremotelogin:

telnet 192.168.20.124 /port 2323

Afteryouperformthepreviouscommandline,atelnetconnectionwillbeestablishedbetwee
n
port2323ofhost192.168.20.124andhost192.168.20.240.ThelocalIPaddressseenonthe
peeris192.168.20.240.

telnet 192.168.20.124 /source-interface s1/0

Afteryouperformthepreviouscommandline,atelnetconnectionwillbeestablishedbetwee
nport23ofhost192.168.20.124andhost192.168.20.240.ThelocalIPaddressseenonthep
eeris202.96.124.240.

telnet 192.168.20.124 /local 192.168.20.240

Afteryouperformthepreviouscommandline,atelnetconnectionwillbeestablishedbetwee
nport23ofhost192.168.20.124andhost192.168.20.240.ThelocalIPaddressseenonthep
eeris192.168.20.240.

telnet 192.168.20.124 /debug

Afteryouperformthepreviouscommandline,informationaboutthenegotiationprocessofth
etelnetconnectionwiththepeerport23isprintedout.

telnet 192.168.20.124 /echo

Thelocalechoswitchisopened.Iftheechoalsooccursontheserver,allenteredinformationw
illbeechoedtwice.

telnet 192.168.20.124 /script s1

Thes1loginscriptwillbeusedforautomaticlogin.

telnet192.168.20.124/infoadmin

Afteryourunthepreviouscommandline,theinformation"admin"willbefirstprintedout.

telnet192.168.20.124/source-port601

Afteryouperformthepreviouscommandline,atelnetconnectionwillbeestablishedbetwee
nport23andlocalmachine.Thelocaltcpportisport601.

telnet192.168.20.124/router-id/p10000

Atelnetconnectionwillbeestablishedbetweenport1000andlocalmachine.TherouterIDau
thenticationwill
beperformedafterwards.YouneedconfigurecorrespondingrouterIDauthenticationonthe
peer.

2.1.2 ip telnet

The format of the configuration command for the telnet session is as follows:

iptelnetsource-interface_interface_

iptelnetaccess-class_accesslist_

ip telnet listen-port start-_port [end-port]_

ip telnet script scriptname'user_prompt'user_answer 'pwd_prompt'pwd_answer

ip telnet server-port_server-port_

ip telnet attack-defense _[detection times] [silence period]_

ip telnet max-user _[nums]_

Parameter

Parameter	Parameter Description
Interface	The interface that initiates telnet locally.
Accesslist	The name of the access list that restricts the source address when accepting connections locally.
start-port	The user specifies the starting port number of the listening port area
end-port	The end port number of the listening port area specified by the user
Scriptname	Login script name
user_prompt	User name prompt sent back by telnet server
user_answer	User name response information submitted by the client
pwd_prompt	User password prompt sent back by telnet server
pwd_answer	Password response information submitted by the client
detection times	Anti-attack detection times (5 times by default)
silence period	Prohibit connection time length (60 seconds by default)

Nums	Maximum number of connections allowed

Default

None

Command mode

Global configuration status

Explanation

The user can use the following command to configure the interface for local telnet connection.
ip telnet source-interface*interface*

In this case, all initiated telnet connections thereafter use this interface. This configuration command is similar to the telnet source-interface interfac command, but it is not necessary to carry interface parameters after the telnet command. When both the interface is configured and the interface parameters are included in the telnet command, the latter shall prevail.

The user can use the following command to configure the list name that restricts access to the local accepted telnet connection.
ip telnet access-class*accesslist*

In this case, when the server accepts all telnet connections, it must check the access list first. Users can use the following command to configure to receive telnet connections on ports other than the default port number (23).
ip telnet listen-port*start-port [end-port]*

Note: If the end port number is not specified, listen on a specific port. The number of specified listening ports cannot exceed 16, and the number of ports is limited to 3001 - 3999.

The user can use the following command to configure the telnet login script.

ip telnet script s1 'login:'router 'Password:'test
Note:

When configuring the script, the user name prompt, response, password prompt and response must match exactly, especially the prompt information is case-sensitive, and the prompt information must be enclosed with single quotation marks ("). If any of them is configured incorrectly, automatic login will not be possible.

Be careful:
The No prefix can be used to cancel the settings for the above four commands.
The user can use the following command to modify the listening port of telnet
ip telnet server-port*serverport*

Note:

Use this command to change the listening port of telnet to a non-23 port.

be careful:

1) This command will delete all telnet connections of the original listening port while modifying the listening port;
2) Use the corresponding default command to restore the telnet listening port to port 23;
3) Using the corresponding no command will make telnet not listen to any port, that is, the router will lose the telnet server function.

The user can use the following command to configure the anti-attack function of the telnet server.
ip telnet attack-defense [detection times] [Silence period]
Note:

Use this command to check the number of times the user enters the wrong user name and password (3 times by default). If the connection fails three times, it will enter the connection silence period (60 seconds by default). During this period, the newly established connection is prohibited from accessing;

The user can use the following command to configure the maximum accessuser allowed by telnet

ip telnet max-user [nums]

Example

(1) iptelnetsource-interfaceG0/0
     In this case, all initiated telnet connections thereafter use the G0/0 interface.
(2) iptelnetaccess-class abc
     In this case, all accepted telnet connections will use the list abc to check the access list.
(3) ip telnet listen-port 3001 3010
     In addition to port 23, you can also receive telnet connections on all ports between 3001 and 3010.
(4) ip telnet scripts1 'login:'router 'Password:'test
     Configure the login script named s1. The user name prompt is login:, the answer is router, and the password prompt isPassword:, the answer is test。
(5) ip telnet attack-defense 4 120

     In this case, when the user logs in to telnet for four times and fails to connect successfully, a 120-second silent period will be entered, during which new access is prohibited.

(6) ip telnet max-user 3
     In this case, the maximum number of connections allowed by the telnet server is 3, and the fourth connection will be rejected

2.1.3 cleartelnet

Runthefollowingcommandtoremovethetelnetsessionontheserver.

cleartelnet*no*

Parameter

Parameter	Description

No	Serial numberof thetelnet sessiondisplayed bythe **showtelnet** command

Default

None

Commandmode

EXEC

Explanation

Youcanrunthecommandtoremovethetelnetsessionontheserver.

Example

1. clear telnet 1

Thetelnetsession(192.168.20.220:1097)whoseserialnumberis1isdeleted.

2.1.4 showtelnet

Runthefollowingcommandtodisplaythetelnetsessionontheserver.

showtelnet

Parameter

None

Default

None

Commandmode

Allmodesexcepttheusermode

Explanation

Youcanrunthecommandtoremovethetelnetsessionontheserver.Thedisplayedinformationincludestheserialnumber,peeraddress,peerport, local addressandlocalport.

Example

1.show telnet

Afterthepreviouscommandisrun,thefollowinginformationisshown:

NO.	RemoteAddr	RemotePort	LocalAddr	LocalPort
1	192.168.20.220	1097	192.168.20.240	23
2	192.168.20.180	14034	192.168.20.240	23

2.1.5 debugtelnet

Thefollowingcommandisusedtodebugthetelnetsession:

 debugtelnet

Parameter

None

Default

None

Commandmode

EXEC

Explanation

Youcanrunthecommandtoopenthedebuggingswitchofthetelnetsession.

Afteryourunthecommand,thenegotiationprocessesofalltheincomingtelnetsessionsares hownonthedebuggingoutputwindow.The**debugtelnet**commandisdifferentfromthe**teln et[/debug]**command.Theformerisusedtoexportthedebugginginformationabouttheinco mingconnectionsontheserver,whilethelatterisused toexportthedebugginginformationaboutthetelnetsessionstriggerby theclient.

Example

debug telnet

Therouterofthedebuggingserverwhichthetelnetsessionconnectsisopened.

2.2 Terminal Configuration Commands

Terminal configuration commands include:

- attach-port

- autocommand

- clearline

- connect

- disconnect

- exec-timeout

- length

- line

- location

- loginauthentication

- monitor

- nodebugall

- password

- resume

- scriptactivation

- scriptcallback

- scriptconnection

- scriptdialer

- scriptreset

- scriptstartup

- sequence-char

- showdebug

- showline

- showtty-status

- switchkey

- switchmsg

- terminal-type

- terminalmonitor

- terminalwidth

- terminallength

- where

- width

2.2.1 attach-port

Thefollowingcommandisusedtobindthelisteningtelnetporttothe**linevty**number,enabli
ngthetelnet   connectiononaspecific
porttogeneratevtyaccordingtothespecifiedsequenceorder.

[no]attach-port*PORT*

Parameter

Parameter	Description
Port	Numberofthelisteningportofthetelnet server(3001-3999)

Default

None

Commandmode

Lineconfigurationmode

Example

Thefollowingexampleshowsthatthelisteningport,3001,isboundtolinevty23.

Router_config# line vty 2 3
Router_config_line#attach-port 3001

2.2.2 autocommand

It isusedtosettheauto-runcommandwhenthe userlogsonto the
terminal.Afterthecommandisrun,theconnectionisdisconnected.

autocommand*LINE*

noautocommand

Parameter

Parameter	Description
LINE	Commandwhichwill berun

Commandmode

Lineconfigurationmode

Example

Router_conf#linevty 1
Router_conf_line#autocommand pad 123456

Aftersuccessfullogin,thesystempadsthattheaddressofX.121ishost123456.

2.2.3 clearline

Itis usedtoremovethespecifiedline.

clearline[**aux**|**tty**|**vty**][*number*]

Parameter

Sameasthe**line**command

Commandmode

EXEC

Example

Router#clear line vty 0

2.2.4 connect

Itis usedtoconnectthetelnetserver.

connect *server-ip-addr/server-host-name* {[/port *port*][/source-interface
interface][/local*local-ip-addr*][/ts-block|/ts-discard]}

Parameter

Parameter	Description
server-ip-addr/server-host-name	IPaddress oftheserveror thehostnameoftheserver

Port	Portnumber
Interface	Nameoftheinterfacewheretheconnectionistriggered
local-ip-addr	LocalIPaddresswheretheconnectionistriggered
/ts-block	Sets toblock thelocal telnetconnection whenit isat thebackground.
/ts-discard	Setsthetelnetmessagetobedroppedwhenthelocaltelnetconnectioni satthe background.

Commandmode

Allconfigurationmodes

Example

Router#connect 192.168.20.1

Explanation

Fortheparameters**/ts-block**and**/ts-discard**,seethe**telnet**command.

2.2.5 disconnect

Itisusedtocancelthemountedtelnetsession.

disconnect*N*

Parameter

Parameter	Description
N	Numberofthemountedtelnetsession

Commandmode

Allconfigurationmodes

Example

Router#disconnect 1

2.2.6 exec-timeout

Itis usedtosetthemaximumfreetimeofthe terminal.

[no]exec-timeout[*time*]

Parameter
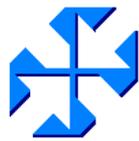
Parameter	Description
Time	Freetime whoseunitissecond

Default

0

Commandmode

Lineconfigurationmode

Example

Thefollowingexampleshowsthefreetimeofalineissetto3600seconds(onehour).

Router_config_line#exec-timeout 3600

2.2.7 length

Itis usedtosetthe linenumberonthescreenoftheterminal.

[**no**]**length**[*value*]

Parameter

Parameter	Description
Value	Valuebetween0 and512Thevalue**0**meansthereisnopause.

Default

24

Commandmode

Lineconfigurationmode

2.2.8 line

Itisusedtoenterthelineconfigurationmode.

line[aux|console|tty|vty][*number*]

Parameter

Parameter	Description
aux|console| tty|vty	All are the line types. **AUX** stands for the auxiliary line; **consol** stands for the monitoring line; **tty** for asynchronous line and **vt** for the virtue lines such as Telnet, PAD and Rlogin.
Number	Number of the line of the type For console and aux, only the number **0** is used for numbering.

Command mode

Global configuration mode

Example

The following example shows that the configuration states of No.0 line to No.10 line after the system enters VTY.

Router_config#linevty 0 10

2.2.9 location

It is used to record the description of the current line.

location[*LINE*]

nolocation

Parameter

Parameter	Description
LINE	Description about the current line

Command mode

Line configuration mode

2.2.10   loginauthentication

It is used to set the authentication parameter about line login.

[no]lineloginauthentication[default|*WORD*]

Parameter

Parameter	Description
Default	Default authentication mode
WORD	Name of the authentication list

Command mode

Lineconfigurationmode

Example

Router_conf_line#login authentication test

Theauthenticationlistofthelineissetto**test**.

2.2.11   monitor

Itis usedtoexporttheloganddebugginginformationtotheline.

[no]monitor

Parameter

None

Commandmode

Lineconfigurationmode

Example

Router_config_line#monitor

2.2.12   nodebugall

Itis usedtoshutdownall debuggingoutputofthecurrentVTYline.

nodebugall

Parameter

None

Commandmode

EXEC

Example

Router#no debug all

2.2.13 password

Itis usedtosettheterminalpassword.

password{*password*|[encryption-type]*encrypted-password*}

nopassword

defaultpassword

Parameter

Parameter	Description
Password	Password configured on the line It is entered in a way of the plain text and its length can be over 30 digits.
[encryption-type] encrypted-password	**encryption-type** means the type of password encryption Currently only two types, 0 and 7, are supported. 0 means that the data isnot encrypted. The plain textof thepassword i directly entered for the parameter **encrypted-password**, which has the same result as the password is directly entered without adding the encryption-type. 7 means that an algorithm defined used for encryption. For the encrypted-password parameter the **encrypted-password** textneed beentered, whichcan be copied from the configuration file of other routers.

Foranyproblemaboutthepassword,seethedescriptionofthecommands**service password-encryption**and**enablepassword**.

Commandmode

Lineconfigurationmode

Example

Router_conf#linevty 1
Router_conf_line#password test
Inthisexample,theloginpasswordofVTY1issetto**test**.

Explanation

Theparameter**nopassword**meansthatthepasswordisnotrequired. Afteryouconfigurethelineauthenticationmodeunder**aaa**,directlylogontothelineorentert heEXECmode.

Defaultpasswordmeastoresumethe   defaultconfiguration,that is,nopasswordexists.Afteryouconfigurethelineauthenticationmodeunder**aaa**,youcan notlogontothelineorenterthe EXECmode.

2.2.14 resume

Itisusedtoresumethemountedtelnetsession.

resume*N*
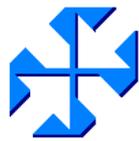
Parameter

Parameter	Description
N	Numberofthemountedtelnetsession

Commandmode

Allconfigurationmodes

Example

Router#resume 1

2.2.15 scriptactivation

Configuretheactivationscriptoftheline.

scriptactivation*WORD*

Parameter

Parameter	Description
WORD	Nameofthescript

Commandmode

Lineconfigurationmode

Example

Settheactivationscriptofthelineto**script1**.

Router_config_line#script activation script1

2.2.16 scriptcallback

Configurethescriptfordial-back.

scriptcallback*WORD*

Parameter

Parameter	Description
WORD	Nameofthescript

Commandmode

Lineconfigurationmode

Example

Settheactivationscriptofthelineto**script1**.

Router_config_line#script callback script1

2.2.17　　scriptconnection

Configurethescriptforcreatingconnection.

scriptconnection*WORD*

Parameter

Parameter	Description
WORD	Nameofthescript

2.2.18　　script dialer

Configurethescriptfordial-out.

scriptdialer*WORD*

Parameter

Parameter	Description
WORD	Nameofthescript

Commandmode

Lineconfigurationmode

Example

Inthefollowingexample,thescriptfordial-outisconfigured.

Router_config_line#script dialer script1

2.2.19　　script reset

Itis usedtoconfigurethescriptforportresetting.

scriptreset*WORD*

Parameter

Parameter	Description
WORD	Nameofthescript

Commandmode

Lineconfigurationmode

Example

Inthefollowingexample,thescriptforportresettingissetto**script1**.

Router_config_line#script reset script1

2.2.20   scriptstartup

Itisusedtoconfigurethestartupscript.

scriptstartup*WORD*

Parameter

Parameter	Description
WORD	Nameofthescript

Commandmode

Lineconfigurationmode

Example

In the following example, the startup script is set to script1.

Router_config_line#script startup script1

2.2.21   showdebug

ItisusedtodisplayallcurrentdebugginginformationopenedbyVTY.

showdebug

Parameter

None

Commandmode

EXECorglobalconfigurationmode

Example

Router#show debug

GenericIP:

IPpacketdebuggingison

FrameRelay:

Lmidebuggingison

2.2.22 showline

Itisusedtodisplaythecurrentlyeffectivelinestate.

showline{[console|aux|tty|vty][*number*]}

Parameter

Ifthereisnoparameterfollowed,allcurrentlyeffectivelinestatesaredisplayed.Thedefiniti

onsofotherparametersareinlinewiththatofthe**line**command.

Commandmode

Allmodesexcepttheusermode

2.2.23 showtty-status

ItisusedtodisplaytheconfigurationstateoftheportcorrespondedbyTTY.

showtty-status*N*

Parameter

Parameter	Description
N	Sequencenumber ofthelineTTY

Default

None
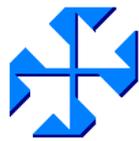
Commandmode

Allmodesexcepttheusermode

Example

Theconfigurationstateoftheport correspondedbyTTY1isdisplayedinthefollowingexample.

Router_config# show tty-status 1

2.2.24   switchmsg

It isusedto configurewhether thepromptinformationisdisplayed atterminalswitchover.

switchmsg*enable*

switchmsg*disable*

Parameter

Parameter	Description
Enable	Displays theprompt informationat theswitchover ofthe terminal.
Disable	Forbidstodisplaythepromptinformationattheswitchoverofthetermi nal.

Default

Disable

Commandmode

Line Command mode

2.2.25   terminallength

Itisusedtomodifythenumberoflinesdisplayedonthecurrentterminal,whichcanbeobtain edbytheremotehost.The**rlogin**protocolusestheparametertonotifytheUNIXhost.Youca nrun**noterminallength**toresumethedefaultvalue.

terminallength*length*

noterminallength

Parameter

Parameter	Description
Length	Numberoflinesdisplayed oneach screen

Default

Thelinespausestobedisplayedafter24linesaredisplayed.

Commandmode

Globalconfigurationmode

Explanation

Itisvalidforthecurrentterminal.Afterthesessiontriggeredbythecommandiscomplete,theterminalattributesaregone.

Example

Router# terminal length 40

Relatedcommand

line

2.2.26   terminal monitor

Display debugging output and system error information on the current terminal, and use the terminal monitor command. With this commandTurn off monitoring in the form of no.

terminal monitor

no terminal monitor

Parameter

None

Default

The system monitoring interface (console) is open by default, and other terminals are closed by default.

Command mode

Global configuration status

Explanation

This command is only valid for the current terminal. When the dialog ends, the terminal properties will also be lost.

Example

Router# terminal monitor

Related command

line debug

2.2.27   terminalwidth

Therouterexports80characterseachlinebydefault.Ifthe terminalwidthcannotsatisfythe demandsoftheterminal,youcanresetit.Theparametercanbeobtainedbytheremotehost .Youcanrun**terminalwidth**tosetthenumberofcharactersofeachline.Youcanrun**noter minallength**toresumethedefaultvalue.

terminalwidth*number*

noterminalwidth

Parameter

Parameter	Description
Number	Numberofcharactersin eachline

Default

80characterseachline

Commandmode

Globalconfigurationmode

Explanation

Itisvalidforthecurrentterminal.Afterthesessiontriggeredbythecommandiscomplete,th eterminalattributesaregone.

Example

Router#terminal width 40

Related command

line

2.2.28　terminal-type

It is used to set the terminal type.

[no]terminal-type[*name*]

Parameter

Parameter	Description
Name	TerminalnameTheterminaltypessupportedcurrentlyinclude VT100,ANSIandVT100J.

Default

ANSI

Command mode

Lineconfigurationmode

2.2.29　where

Itisusedtocheckthecurrentlymountedoutgoingtelnetsessionattheclient.

where

Parameter

None

Command mode

Allconfigurationmodes

Example

Router#where

2.2.30　width

It is usedtosetthe terminalwidthoftheline.

[**no**]**width**[*value*]

Parameter

Parameter	Description
Value	Valuebetween0and 256，0 Indicates no line folding。

Default

80

Commandmode

Lineconfigurationmode

2.2.31   debugline

Itisusedtoexportthedebugginginformationabouttheline.[**no**]**de**

bugline*line[lineno]*

Parameter

Parameter	Description
Line	Linetype:aux/console/tty/vty/tty2console
Lineno	Sequencenumber oftheline

Default

Thedebuggingisshutdown.

Commandmode

EXEC

Explanation

debuglineaux/console/vty/tty2console,thedebugginginformationofthecorrespondingli neisprintedontheconsoleport.Ifyourun **debuglinetty***lineno*,the**ttylineno**debugginginformationisprintedonVTY.

3 Network Management ConfigurationCommands

3.1 HTTP Configuration Commands

Telnetconfigurationcommandsinclude:

- snmp-servercommunity

- snmp-servercontact

- snmp-serverhost

- snmp-serverlocation

- snmp-serverpacketsize

- snmp-serverqueue-length

- snmp-servertrap-source

- snmp-servertrap-timeout

- snmp-serverview

- showsnmp

- debugsnmp

3.1.1 snmp-servercommunity

Itisusedtosetthecharacter stringofthecommunitySNMP access.Youcanrunthe"no"formofthecommandtodeletethespecifiedgroupcharacterstring.

snmp-servercommunity*string*[**view***view-name*][**ro**|**rw**][*word*]

nosnmp-servercommunity*string*

Parameter

Parameter	Description
String	CharacterstringofthecommunitySNMPaccess,similartothepassword
view*view-name*	Nameoftheviewpreviouslydefined,whichisanoptionalparameterThe viewdefinestheMIBobject whichisvalidtothecommunity.
Ro	An optionalparameter, whichspecifies theread-only permissionThe authorizedmanagement workstationcanonlyreadtheMIBobject.
Rw	Anoptional parameter,which specifiesthe read-writepermission Theauthorizedmanagement workstationcanreadandmodifytheMIBobject.
Word	Anoptionalparameter,whichspecifiestheIPACLnameforaccessingthe SNMPagentusingthecommunitycharacterstring
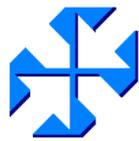
Default

ThecharacterstringofSNMPcommunityhastheread-onlypermissiontoallobjectsbydefault.

Commandmode

Globalconfigurationmode

Explanation

Ifnoparameterfollows,theconfigurationinformationaboutthecommunitycharacterstringislisted.

Example

ThefollowingexampleshowsthatthecomaccesscharacterstringisdistributedtotheSNMP,theread-onlypermissionisallowedandthecommunitycharacterstringoftheIPACLisspecified.

snmp-servercommunitycomaccessroallowed

Thefollowingexampleshowsthe**mgr**characterstring isdistributedtotheSNMPandtheobjectsinthe**restricted**viewareallowed.

snmp-servercommunitymgrviewrestrictedrw

Thefollowingexampleshowsthe**comaccess**communityisdeleted.

nosnmp-servercommunitycomaccess

Relatedcommand

access-list

snmp-serverview

3.1.2 snmp-servercontact

Itis   usedinglobal configurationmodetosetthecontact**(sysContact**)aboutthemanagementnode.Youcan usethe"no"formofthecommandtodeletethe**sysContact**parameterconfiguration.

snmp-servercontact*line*

no snmp-server contact

Parameter

Parameter	Description
line	Characterstringaboutthecontact

Default

Thecontactinformationaboutthenodeisnotset.

Commandmode

Globalconfigurationmode

Explanation

Itcorrespondstothe**sysContact**valueoftheMIBvariableinthe**system**group.

Example

Thefollowingexampleshowstheinformationaboutthecontactofthenode.

snmp-server contact Dial_System_Operator_at_beeper_#_27345

Relatedcommand

Youcanusethemainindexortheonlineinformationoftheindextolookuprelateddocuments.

3.1.3 snmp-serverhost

ItisusedinglobalconfigurationmodetospecifythereceiveroftheSNMPtrapoperation.Youcanrunthe"no"formofthecommandtodeletethespecifiedhost.

snmp-serverhosthostcommunity-string[trap-type]

nosnmp-serverhost*host*

Parameter

Parameter	Description
host	HostnameorInternetaddress
community-string	Community character string sent together with the trap operation,whichissimilartothepassword
trap-type	Anoptionalparameter Ifnotrapisspecified,alltrapsaresenttothehost.
authentication	Allowstosendthetrapabout the authenticationerror.
configure	Allowstosendthe**SNMP-configure**trap.
snmp	AllowstosendallSNMPtraps.

Default

Thecommandisinvalidbydefault.Notrapwillbesent.Ifacommandwithoutanykeywordisrun,alltypesof trapswillbesentbydefault.

Commandmode

Globalconfigurationmode

Explanation

Ifthe**snmp-server host**commandisnotrun,thetrapwillnotbesent.ToconfiguretheroutertosendtheSNMPtrap,youmustrunthe**snmp-serverhost**command.Ifthecommandwithoutthe**trap-type**keywordisentered,alltraptypesaboutthehostareactivated.Ifthecommandwiththe**trap-type**keywordisentered,thetraptyperelativewiththekeywordisactivated.Youcanspecify manytraptypesforeachhost.

Ifyouspecifymultiple**snmp-serverhost**commandsforasamehost,therouterwillfiltertheSNMPtrapinformationaccordingtothecommunitycharacterstringandthetraptype.Youcanonlyconfigureonetraptypeforasamehostandacommunitycharacterstring.

Theusabilityofthe**trap-type**optiondependsontheroutertype   and thecharacteristicsoftheroutingsoftware.

Example

ThefollowingexampleshowsthattheSNMPtrapdefinedbyRFC1157issenttothehostwhoseIPaddressis10.20.30.40.Thecommunitycharacterstringisdefinedas**comaccess**.

snmp-server host 10.20.30.40 comaccesssnmp

Thefollowingexampleshowshowtoenabletheroutertosendalltypesoftrapstohost10.20.30.40usingthecommunitycharacterstring**public**.

snmp-server host 10.20.30.40 public

Thefollowingexampleshowsthat   theeffective**authentication**trapwillbesenttohost**bob**.

snmp-server host bob public authentication

Relatedcommand

snmp-server queue-length

snmp-server trap-source

snmp-servertrap-timeout

3.1.4 snmp-serverlocation

Itisusedinglobalconfigurationmodetosetthecharacterstringforthelocationofthenode.Youcanrunthe"no"formofthecommandtodeletethelocationcharacterstring.

snmp-serverlocation*line*

nosnmp-serverlocation

Parameter

Parameter	Description
line	Characterstringdescribingthenode's location

Default

Thecharacterstringofthenode'slocationisnotset.

Commandmode

Globalconfigurationmode

Explanation

Itcorrespondsto**sysLocation**oftheMIBvariableinthe**system**group.

Example

Inthefollowingcommand,theactuallocationoftherouterisdefined.

snmp-server location Building_3/Room_214

Relatedcommand

snmp-server contact

3.1.5 snmp-serverpacketsize

ItisusedinglobalconfigurationmodetodefinethemaximumsizeoftheSNMPpacketwhen theSNMP serverreceives requestsor generatesresponse.

snmp-server packetsize*byte-count*

nosnmp-serverpacketsize
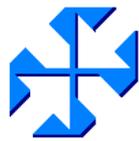
Parameter

Parameter	Description
byte-count	Integerbytefrom484to17940Itsdefault valueis 3000bytes.

Default

3000bytes

Command mode

Globalconfigurationmode

Explanation

Itcorrespondsto**sysLocation**oftheMIBvariableinthe**system**group.

Example

Thefollowingexampleshowsthatafilterwithamaximumpacketof1024bytesiscreated.

snmp-server packetsize 1024

Related command

snmp-server queue-length

3.1.6 snmp-serverqueue-length

Itisusedinglobalconfigurationmodetosetthe lengthforthemessagequeueofeachtraphost.

snmp-serverqueue-length*length*

Parameter

Parameter	Description
length	Numberoftrap eventsthat canbesavedinthe queue

Default

Tenevents

Commandmode

Globalconfigurationmode

Explanation

Thecommandis used todefinethelengthof eachmessagequeueforeachtrap host.Oncethetrapmessageissuccessfullytransmitted,therouterwillclearallqueues.

Example

Thefollowingexampleshowsthatamessagequeuewhichcancapturefourevents isestablished.

snmp-server queue-length 4

Relatedcommand

snmp-server packetsize

3.1.7 snmp-server trap-source

Use the global configuration mode command snmp-server trap-source to specify the source address of an interface for all traps. Use the no form of this command to remove such an interface.

snmp-server trap-source_interface_

no snmp-server trap-source

Parameter

Parameter	Parameter Description
interface	Interface where SNMP traps occur. Parameters include the interface type and number of the specific platform syntax pattern.

Default

Do not specify an interface

Command mode

Global configuration status

Explanation

When an SNMP trap is issued from an SNMP server, it has a trap address no matter which interface it is issued at that time. If you want to use the trap address

for tracking, you can use this command.

Example

The following example specifies the address of Ethernet interface 1/0 as the source address of all traps.
snmp-server trap-source ethernet 1/0

Related command

snmp-server queue-length

snmp-server host

3.1.8 snmp-servertrap-timeout

Itisusedinglobalconfigurationmodetodefinethetimeoutvalueforresendingthetrapinformation.

snmp-servertrap-timeout*seconds*

Parameter

Parameter	Description
seconds	Anintervalformessageresending,whichisanintegerbetween 1and1000 Itsunitissecond.

Default

30seconds

Commandmode

Globalconfigurationmode

Explanation

Beforetheroutertriestosendthetrap,itcanbeusedtofindtherouteof thedestinationaddress.Ifthereisnoroute,thetrapwillbesavedinthere-sentqueue.Thiscommanddecidestheintervalofmessageresending.

Example

Thefollowingexampleshowsanintervalof20secondsissetandthetrapmessagewillbere sentfromthere-sentqueue.

snmp-server trap-timeout 20

Relatedcommand

snmp-serverhost

snmp-serverqueue-length

3.1.9 snmp-serverview

ItisusedinglobalconfigurationmodetocreateorupdatetheMIBview.Youcanrunthe"no"fo
rmofthecommandtocancelaviewoftheSNMPserver.

snmp-serverview*view-*

nameword{included|excluded}nosnmp-serverview*view-*

name

Parameter

Parameter	Description
view-name	Tag of the view that is updated or created
word	Object identifier of the **ASN.1** sub-tree which is included o rejected in the viewIdentifier sub-tree can specify a characte string including numbers, for example, 1.3.6.2.4 or a sub-tre name **system**. Sub-tree names are names that can be found in all MIB trees.
included excluded	Type of the viewIt must be set to **included** or **excluded**.

Default

None

Commandmode

Globalconfigurationmode

Explanation

IfotherSNMPcommandsneedaviewtobetheirparameter,youcanusethecommandtocr
eateaviewfortheseSNMPcommands.Bydefault,theviewneednotbedefined.Youcanse
ealltheobjects(similartothe**everything**viewpredefinedbyCisco).Youcanusethecomm
andtodefineallobjectsthatcanbeseenfromtheview.

Example

ThefollowingexampleshowshowtocreateaviewintheMIB-IIsub-
treewhereallobjectscanbeseen.

snmp-server view mib2 mib-2 included

Thefollowingexampleshowshowtocreateaviewinthe**system**groupwhereallobjectsca

nbeseen.

snmp-server view phred system included

Thefollowingexampleshowsaviewwhereallobjectsinthe**system**groupcanbeseeniscreated.Theview,however,excludesallobjectsinsystem7(sysService.7)andinterface1.

snmp-server view agon system included

snmp-server view agon system.7 excluded

Relatedcommand

snmp-servercommunity

3.1.10   **snmp-server udp-port**

Use the global configuration mode command snmp-server udp-port to specify a port for the destination port of all traps. Use the no form of this command to remove such an interface.
snmp-server udp-port*UDP port*

no snmp-server udp-port

Parameter

Parameter	Parameter Description
udp-port	The destination port number of SNMP traps sent cannot be used.

Default

Default trap destination port, 162 port

Command mode

Global configuration status

Explanation

When issuing an SNMP trap from an SNMP server, you can use this command by specifying a special destination port number.

Example

The following example specifies the 1234 port to send the trap to the host

snmp-server udp-port 1234

snmp-serverhost

3.1.11 snmp-server source-addr

Use the global configuration mode command snmp-server source-addr to specify the source address of ansnmp message. Use the no form of this command to eliminate the specified function.

snmp-server source-addr*ipaddress*

no snmp-server source-addr

Parameter

Parameter	Parameter Description
ipaddress	Specify the source address of the SNMP generated message. The parameter is the IP address set by the device.

Default

Do not specify an interface

Command mode

Global configuration status

Explanation

Use this command to configure the source address of the SNMP message.

Example

The following example specifies the IP address of the Ethernet 1/0 interface as the source address of all SNMP messages.

snmp-server source-addr 192.168.213.15

Related command

None

3.1.12 snmp-server group

Use the global configuration mode command snmp-server group to create or update an SNMP group, and use the no form of the command to delete a group. The command format is as follows

snmp-server group[*groupname*{**v3 [auth |noauth|priv**]}][**read**
readview][**write** writeview] [**notify**notifyview] [**access**access-list]

Parameter

Parameter	Parameter Description
groupname	Name of the group created or modified
v3	The SNMP protocol version number of the group
auth|noauth|priv	Minimum security level for users in SNMPv3 group
readview	Access permissions for GET operations, defined in view form
writeview	Access permissions for SET class operations, defined in view form
notifyview	The access authority when sending Trap message is defined in view form
access-list	List of IP access allowed for users in this group

Default：

Readview allows all leaves under the internet subtree to be accessed by default

Command mode：

Global configuration status

Explanation：

SNMP group is used to specify the access rights of users in this group

Example：

The following command configures an SNMP group with the name of setter, uses the SNMP protocol version 3, the security level is authentication and encryption, and the set operation access view is v-write

snmp-server group setter v3 priv write v-write

Related command：

snmp-serverview

snmp-serveruser

3.1.13   snmp-server user

Use the global configuration mode command snmp-server user to create or update an SNMP user, and use the no form of the command to delete a user. Specifying remote means configuring a remote user; When configuring remote users, the SNMP engine ID corresponding to the IP address of the management station must already exist. The command format is as follows

snmp-server user *username groupname* **[v3   [encrypted]   [auth{md5 | sha}** *auth-password* **]**

Parameter

Parameter	Parameter Description
username	Name of the user created or modified
groupname	Group to which the user belongs
auth-password	The user's authentication password. After localization, the password is used as the authentication and encryption key of SNMPv3

Default：

None

Command mode：

Global configuration status

Explanation：

Used to set the user name and password.

Example：

The following command configures an SNMP user, whose name is set-user, belongs to group setter, uses SNMP version 3, security level is authentication, password is 12345678, and MD5 is used as hash algorithm

snmp-server user set-user setter v3 auth md5 12345678

Related command：

snmp-server view

snmp-server group

3.1.14   snmp-server necode

Use the global configuration mode command to set the network element code of

the snmp device. Use the no form of this command to remove the specified host.

The command format is snmp-server necode {word}

Parameter

Parameter	Parameter Description
word	character string

Default：

None

Command mode：

Global configuration status

Explanation：

Configure the network element code

Example：

Set the code to test

snmp-server necode test

Related command：

None

3.1.15   snmp-server keep-alive

Use the global configuration mode command to specify the sending period of SNMP heartbeat traps. The default is 5 minutes. Using this command Remove the specified host in the form of no.

Command format is**snmp-serverkeep-alive {** *time*<1-100000**> }**

Parameter

Parameter	Parameter Description
time	Unit: seconds, value range: 1-100000

Default：

The default is 5 minutes

Command mode：

Global configuration status

Explanation：

Used to detect the connectivity between the trap agent and the server

Example：

The following command configures the interval between sending heartbeat traps to be 1 minute:

snmp-server keep-alive 60

Related command：

None

3.1.16   snmp-server trap-add-hostname

Use the global configuration mode command to specify that the host name is bound to the trap value list issued for the device. Using this command Remove the specified host in the form of no.

Command format is**snmp-server trap-add-hostname**

Parameter

None

Default：

The host name is not bound in the default trap value list

Command mode：

Global configuration status

Explanation：

Display the source device sending the trap more intuitively according to the host name

Example：

Bind host name on the Trap value list:

snmp-server trap-add-hostname

Related command：

Hostname

3.1.17   snmp-server set-snmp-dos-max

Use the global configuration mode command to set the maximum number of retries for snmp error requests in one minute. Use the command's no
Form to remove the specified host.

Command format is**snmp-serverset-snmp-dos-max {*times* <1-60>}**

Parameter

Parameter	Parameter Description
times	Unit: times, value range: 1-60

Default：

The default number of retries is 0

Command mode：

Global configuration status

Explanation：

None

Example：

Set the number of retransmissions to 50

snmp-server set-snmp-dos-max 50

Related command：

None

3.1.18   snmp-server trap-logs

Use the global configuration mode command to set snmp to save the logs sent by trap. Use the no form of this command to remove the specified host.

Command format is **snmp-server trap-logs**

Parameter

None

Default：

Default is not saved

Command mode：

Global configuration status

Explanation：

Save the trap sending log to facilitate the tracking and maintenance of the trap

Example：

Enable trap to send logs

snmp-server trap-logs

Related command：

snmp-server trap-add-hostname

3.1.19   snmp-server hostv6

Use the global configuration mode command to specify the receiver of the SNMP trap operation. Use the no form of this command to remove the specified host。

snmp-server hostv6 *hostv6 community-string [trap-type]*

Parameter

Parameter	Parameter Description
Hostv6	The name or Internet ipv6 address of the host.

community-string	A password-like community string sent with the trap operation.
trap-type	(Optional) If no traps are specified, send all generated traps to the host. Authentication: allows sending authentication error traps. Configure: Allows sending SNMP-configure traps. Snmp: Allows sending all SNMP type traps.

Default：

This command is invalid by default. Do not send any traps. If you do not enter any keyword commands, the default is to send all trap types.

Command mode：

Global configuration status

Explanation：

If you do not enter the snmp-server hostv6 command, no traps will be sent. To configure the switch to send SNMP traps,
You must use the snmp-server host command. If you enter a command without the keyword trap type, all trap types of the host will be activated. If you enter a command with the keyword trap-type, only the traps associated with the keyword will be activated

Well type. Can be used for each master
Machine specifies multiple trap types in the command.
When multiple snmp-server host commands are specified for the same host, the SNMP trap messages sent to the host will be filtered according to the community string and trap type in the command. (Only one trap type can be configured for the same host and community string)
The availability of the trap-type option depends on the switch type and the characteristics of the routing software supported by the switch.

Example：

Refer to the snmp-server host command. The snmp-server host command sets the address of the trap receiving host to ipv4Address, and the command uses an ipv6 address.

Related command：

snmp-serverhost

3.1.20   showsnmp

The**showsnmp**commandisusedtomonitortheinputandoutputSNMPstatistics,includingthecharacterstringitemsoftheillegalcommunity,errorandnumberoftherequestvariables.

Run**showsnmphost**todisplaytheinformationabouttheSNMPtraphost.

Run**showsnmpview**todisplaytheinformationabouttheSNMPview.

showsnmp[host|view | group | engineID | mibs | user]

Parameter

Parameter	Description
host	DisplaystheinformationabouttheSNMPtraphost.
view	DisplaystheinformationabouttheSNMPview.
group	show SNMP group information
engineID	show SNMP engine information
mibs	show SNMP mibs
user	show SNMP group information

Default

None

Commandmode

EXECorglobalconfigurationmode

Explanation

Tolistouttheoutput/inputSNMPstatistics,runthe**showsnmp**command.

TodisplaytheinformationabouttheSNMPtraphost,run**showsnmphost**.

TodisplaytheinformationabouttheSNMPview,run**showsnmpview**.

Example

Theinput/outputSNMPstatisticsislistedinthefollowing:

Router#showsnmp

37SNMPpacketsinput

0BadSNMPversionerrors

4Unknowncommunityname

0Illegaloperationforcommunitynamesupplied0Snmpencodingerrors

24Numberofrequestedvariables0Numberofalteredvariables

0Get-requestPDUs

28Get-nextPDUs

0Set-requestPDUs

78SNMPpacketsoutput

0Toobigerrors(Maximumpacketsize1500)0Nosuchnameerrors

0Badvalueserrors

0Generalerrors

24Get-responsePDUsPDUs13SNMPtrapPDUs

ThedomainsofthestatisticsinformationreceivedortransmittedbytheSNMPagentareshowninthefollowingtable:

Domain	Meaning
Unknowncommunity name	Communitynamethatcannot beidentified
Illegal operation for community name supplied	Incorrectoperation
Encoding errors	Incorrectencoding
Get-requestPDUs	Get-requestmessage
Get-nextPDUs	Get-nextmessage
Set-requestPDUs	Set-requestmessage
Toobigerrors	The response message is too big to be generated
Nosuchname errors	Thespecifiedinstance doesnotexist.
Badvalueserrors	Thevalueisincorrectlyset.
Generalerrors	Commonerrors
Get-responsePDUs	Get-responsemessage
TrapPDUs	SNMPtrapmessage

Inthefollowingexample,theinformationabouttheSNMPtraphostisshown.

Router#showsnmp host

Notificationhost:192.2.2.1   udp-port:162   type:trapuser:public

securitymodel:v1

ThefollowingexampleshowsthattheSNMPviewisdisplayed:

Router#showsnmpview

mib2   mib-2   -   included   permanent   active

snmp-serverhostsnmp-serverview

3.1.21 debugsnmp

ItisusedtodisplaytheSNMPevent,messagereceptionandtransmissionanderrorinformation.

debugsnmp[error|event|packet]

Run**nodebugsnmp**tostopdisplayingrelativeinformation.

Parameter

Parameter	Description
error	Enables the debugging switch of the SNMP incorrectinformation.
event	Enablesthedebuggingswitchof theSNMPevent.
packet	Enables thedebugging switchof SNMP theinput/outputmessage.

Commandmode

EXEC

Explanation

AftertheSNMPdebuggingswitchisenabled,theSNMPevent,messagetransmissionand receptionanderrorinformationareexported,whichhelpsyoutochecktheSNMPfault.

Example

ThefollowingexampleshowstheprocedureofreceivingandtransmittingtheSNMPmessage:

Router#debugsnmp packet

```
Received 49 bytes from 192.168.0.29:1433
0000: 30 82 002D 02 01 0004 0670 75 62 6C 69 63A0          0..-.....public.
0016: 82 00 1E 02 02 7D 0102 01 00 02 01 00 30 82 00      .....}.......0..
0032: 10 30 8200 0C 06 082B 06 0102 01 01 03 00 05        .0.....+........
0048:00                                        .
Sending 52 bytes to 192.168.0.29:1433
0000: 30 82 0030 02 010004 0670 75 62 6C 69 63A2          0..0.....public.
0016: 82 00 21 02 02 7D 0102 01 00 02 01 00 30 82 00      ..!..}.......0..
0032: 13 30 8200 0F06 082B 06 0102 01 01 03 00 43         .0.....+.......C
0048:0300F436                          ...6
```

Received 51 bytes from 1192.168.0.29:1434

0000: 30 82 00 2F 02 01 0004 06 70 75 62 6C 69 63A0		0../.....public.
0016: 82 00 2002 02 6B 84 02 0100 02 01 00 30 82 00		....k.......0..
0032: 12 30 8200 0E 06 0A2B 06 0102 01 02 02 01 02		.0.....+........
0048:010500		...

Sending 62 bytes to 192.168.0.29:1434

0000: 30 82 00 3A 02 01 0004 06 70 75 62 6C 69 63A2		0..:.....public.
0016: 82 00 2B02 02 6B 84 02 0100 02 01 00 30 82 00		..+..k.......0..
0032: 1D 30 82 00 19 06 0A2B 06 01 02 01 02 02 01 02		.0.....+........
0048: 01 04 0B 45 74 686572 6E 6574 30 2F 31		...Ethernet0/1

Domain	Description
Received	SNMPreceivingthemessage.
192.168.0.29	SourceIPaddress
1433	Portnumberofthesourceaddress
51bytes	Lengthforreceivingthemessage
30 8200 2D 02010004 0670 7562 6C6963A0 82001E02 027D 0102 01000201 00 308200 10 3082 00 0C0608 2B 06 01 0201 01 030005 00	Message encodedbySNMPASN
0..-.....public. .....}.......0.. .0.....+........ .	ASCII code presentation of message receiving.Thecontentwhichisnotinthe range ofthe ASCIIcode ispresented withdots.
sending	SNMPtransmitting message
192.168.0.29	DestinationIPaddress
1433	Portnumber of the destinationaddress
52bytes	Lengthfortransmittingthemessage
30 8200 30 02 0100 04 0670 7562 6C6963A2 82 0021 02 02 7D 0102 01 0002 01 003082 00 13 3082 00 0F 06082B 06 0102 01 0103 0043 0300F436	Message encodedbySNMPASN
0..0.....public. ..!..}.......0.. .0.....+.......C ...6	ASCII codepresentation of message transmitting.Thecontent whichisnotin the range of the ASCII code is presentedwithdots.

Thefollowingisan exampleofthedebuggingoftheSNMPevent:

Router#debugsnmp event

ReceivedSNMPpacket(s)from192.2.2.51

SNMP:GETNEXTrequest

    --ip.ipReasmFails.0SNMP:Response

    >>ip.ipFragOKs.0=1

ReceivedSNMPpacket(s)from192.2.2.51

SNMP:GETNEXTrequest

    --ip.ipFragOKs.0SNMP:Response

    >>ip.ipFragFails.0=0

ReceivedSNMPpacket(s)from192.2.2.51

SNMP:GETNEXTrequest

    --ip.ipFragFails.0SNMP:Response

    >>ip.ipFragCreates.0=2

Domain	Description
SNMP	The currentlydebugged protocolis theSNMPprotocol.
GETNEXTrequest	SNMPget nextrequest
RESPONSE	SNMPresponse
--	Receiving message
>>	Transmittingmessage
ip.ipReasmFails.0	MIBOIDwhichisrequiredtobe accessed
ip.ipFragOKs.0=1	AccessedMIBOIDandtheresponsevalue

3.2   RMON Configuration Commands

HTTP configuration commands include:

- rmonalarm

- rmonevent

- rmoncollectionstat

- rmoncollectionhistory

- showrmon

3.2.1 rmonalarm

Description

rmonalarm index *variable interval* {absolute |delta} rising-threshold *value* [*eventnumber*]falling-threshold*value*[*eventnumber*][owner*string*]

Itisusedtoconfigurean**rmon**alarmitem.

Parameter

Parameter	Description	Value Range
variable	Objectwhichwillbemonitored	OIDofthedetectedobject
interval	Samplinginterval	1~4294967295seconds
value	Alarmthreshold	-2147483648~2147483647
eventnumber	Indexoftheeventwhichistriggered afterthethresholdisreached	1~65535
string	Descriptionabouttheowner	Lengthofthecharacterstring:1~127

Default

The**eventnumber**parameterisnotset.

Note:

Thecommandisconfiguredinglobalconfigurationmode,usedtomonitorthevalueofthes pecifiedobjectandtriggersthespecifiedeventwhenthevaluereachesthethreshold.

Example

Inthefollowingexample,anrmonalarmitemisconfiguredandthemonitoredobjectissetto **ifInOctets.2**.Thesamplingintervalissetto10.Ifthevalue**15**isexceeded,event1istriggered.Ifthethresho ldisfalling by25,event2istriggered.

rmon alarm 1 1.3.6.1.2.1.2.2.1.10.2 10 absolute rising-threshold 15 1 falling-

threshold25 2 owner admin

3.2.2 rmonevent

Description

rmonevent *index*[**description** *des-string*] [*log*] [**owner** *owner-string*] [**trap***community*]

Itisusedtoconfigurean**rmon**event.

Parameter

Parameter	Description	Value Range
index	Indexof the eventlist	1-65535
des-string	Characterstringofeventdescription	1~127
owner-string	Characterstringof theowner	1~127
community	Community namewhen thetrap isgenerated	1~127

Default

None

Note:

Thecommandisusedtoconfigurean**rmon**eventforalarm.

Example

Inthefollowingexample,an**rmon**eventisset;theindexissetto**6**andthedescriptionstringis setto**example**.Iftheeventistriggered,itemswillbeaddedtothelogandthetrapisgenerate dwiththecommunityname**public**.

rmon event 6 log trap public description example owner admin

3.2.3 rmoncollectionstat

Description

rmoncollectionstat *index*[owner*string*]

Itisusedtoconfigurethermonstatisticsfunction.

Parameter

Parameter	Description	Value Range
index	Indexof the eventlist	1~65535
string	Characterstringof theowner	1~127

Default

None

Note:

Itisconfiguredininterfaceconfigurationmodeandusedtoenablethestatisticsfunctionoft heinterface.

The following example shows that the command is used to enable the statistics function of interface G0/0.

int g 0/0

  rmon collection stats 2 owner admin

3.2.4 rmon collection history

Description

rmon collection history *index* [buckets *bucket-number*] [interval *second*] [owner *owner-name*]

It is used to configure an history control list

Parameter

Parameter	Description	Value Range
index	Index	1-65535
bucket-number	Among all data collected in the history control list, the recent **bucket-number** items need be saved.	1~65535
second	Interval	1~3600
owner-name	Character string of the owner	1~127

Default

The value of the **bucket-number** parameter is 50 and the value of the **second** parameter is 1800.

Note:

The command is configured in interface configuration mode and used to add an item to the history control list.

Example

In the following example, a history control list is added to interface 8 of fast Ethernet; the statistics data during recent 20 intervals are saved and each interval is 20 seconds.

int G 0/0

  rmon collection history 2 buckets 20 interval 10 owner admin

  exit

3.2.5 showrmon

Description

showrmon[alarm][event][statistics][history]

Itisusedtoconfigurethermonconfiguration.

Parameter

None

Default

None

Note:

Thermonconfigurationisdisplayed.

3.3   PDP Configuration Commands

- pdpenable
- pdpholdtime
- pdptimer
- pdprun
- showpdptraffic
- Showpdpneighbor

3.3.1 pdp enable

Description

pdp enable

nopdpenable

Itis usedtostartupPDPontheinterface.

Parameter

None

Default

ThePDPisnotstartedonthe interface.

Note:

PDPisnotstartedinglobalconfigurationmodeorinterfaceconfigurationmode.Thecommandisvalidonlywhen PDPisstartedinglobalconfigurationmode.

Example

ThefollowingexampleshowshowtostartupPDPontheinterface.

int G0/1

pdp enable

3.3.2 pdpholdtime

Description

pdpholdtime*second*

nopdpholdtimes

ItisusedtoconfigurethetimeforPDPsavingtheneighborinformation.

Parameter

Parameter	Description	Value Range
seconds	Preservationtime	10-255

Default

180

Note:

None

Example

Thevalueof**holdtime**issetto**90s**.

pdpholdtime 90

3.3.3 pdprun

Description

Itis usedtostartupthePDPfunctionontherouter.

pdprun

no pdp run

Parameter

None

Default

None

Example

YoucanrunthefollowingcommandstostartuporshutdownthePDPfunction.

pdp run

no pdp run

3.3.4 pdptimer

Description

ItisusedtoconfigurethetransmissionfrequencyofthePDPmessage.

pdptimer*seconds*

no pdp timer

Parameter

Parameter	Description	Value Range
seconds	Intervalfordatatransmission	5-254

Default

60seconds

Note:

Theshorterthetimeis,thehighertheupdatefrequencyoftheneighborinformation.

Example

Thefollowingexampleshowshowtosettheintervalofdatatransmissionto30seconds.

pdptimer 30

3.3.5 showpdptraffic

Description

ItisusedtodisplaythestatisticsinformationabouttransmissionandreceptionofthePDPdata.

showpdptraffic

Parameter

None

Default

None

Example

router#showpdp traffic

Packets output: 0, Input: 0

Hdr syntax: 0, Chksum error: 0

No memory: 0, Invalid packet: 0

3.3.6 showpdpneighbor

Description

Itisusedtodisplaytheinformationabouttheneighbor.

showpdpneighbor[detail]

Parameter

None

Default

None

Example

show pdp neighbor

CapabilityCodes:R-Router,T-TransBridge,B-SourceRouteBridgeS-Switch,H- Host,I-

IGMP,r-Repeater

Device-ID	Local-Intf	Hldtme	Port-ID	Platform	Capability

2610	Fas0/0	154	Eth0/0	cisco2610	RT
c25	Fas0/0	149	Eth0	cisco2509	R
GK-C36	Fas0/0	123	Fas1/0	cisco3640	R T
cMR	Fas0/0	167	Fas0/0	cisco2621	R T

show pdp neighbor detail

DeviceID:2610

Entryaddress(es):IPaddress:192.168.20.204

Platform:cisco2610,Capabilities:RouterTrans-

BridgeInterface:FastEthernet0/0,PortID(outgoingport):Ethernet0/0Holdtime:123sec

Version:

CiscoInternetworkOperatingSystemSoftware

IOS(tm)C2600Software(C2600-IS-M),Version12.2(7),RELEASESOFTWARE(fc1)

Copyright(c)1986-2002byciscoSystems,Inc.CompiledTue15-Jan-0223:58bypwade

advertisementversion:2

Duplex:half(00)

DeviceID:c25

Entryaddress(es):IPaddress:192.168.20.115Platform:cisco2509,Capabilities:Route

r

Interface:FastEthernet0/0,PortID(outgoingport):Ethernet0Holdtime:178sec

Version:

CiscoInternetworkOperatingSystemSoftware

IOS(tm)2500Software(C2500-I-L),Version11.2(4),RELEASESOFTWARE(fc1)

Copyright(c)1986-1997byciscoSystems,Inc.CompiledMon10-Feb-

9712:28byajchopra

DeviceID:GK-C36

Entryaddress(es):IPaddress:192.168.20.156Platform:cisco3640,Capabilities:Route

rTrans-Bridge

Interface:FastEthernet0/0,PortID(outgoingport):FastEthernet1/0

Holdtime:152sec

Version:

CiscoInternetworkOperatingSystemSoftware

IOS (tm) 3600Software (C3640-A3JS56I-M), Version12.1(3a)T1,
RELEASESOFTWARE(fc1)
Copyright(c)1986-2000byciscoSystems,Inc.CompiledSat29-Jul-0003:21byccai
advertisementversion:2

Duplex:half(00)

DeviceID:cMR

Entryaddress(es):IPaddress:192.168.20.22

Platform:cisco2621,Capabilities:RouterTrans-Bridge

Interface:FastEthernet0/0,PortID(outgoingport):FastEthernet0/0Holdtime:136sec

Version:

CiscoInternetworkOperatingSystemSoftware

IOS(tm) C2600 Software(C2600-A3JK9S-M), Version12.2(10a),
RELEASESOFTWARE(fc1)

Copyright(c)1986-2002byciscoSystems,Inc.CompiledTue21-May-0212:50bypwade

advertisementversion:2

Duplex:half(00)

4   Maintenance and DebuggingCommands

4.1   Network Testing Command

Networktestingcommandincludes:

- ping

4.1.1 ping

Itisusedinmonitoringmodetotestwhetherthehostcanbereachedandwhetherthenetworkcanbeconnected,bytransmittingtheICMPrequestmessagetotheto-be-testedpeerandthenwaitingfortheICMPresponsemessagefromthepeer.

pingip-address

Parameter

Parameter	Description
ip-address	DestinationIPaddress

Default

Non

Commandmode

Monitoringmode

Explanation

Afterthecommandisrun,fourpiecesof48-bytemessagewillbesenttothedestinationhost.Twosecondslater,timeoutoccursifnoresponsemessageisreceived.

Example

monitor#ping 192.168.0.100

Replyfrom192.168.0.100:data=48,time=10ms,ttl=128

Replyfrom192.168.0.100:data=48,time=10ms,ttl=128

Replyfrom192.168.0.100:data=48,time=10ms,ttl=128

Replyfrom192.168.0.100:data=48,time=10ms,ttl=1284

packetssent,4packetsreceivedround-tripmin/avg/max=0/2/10ms

Relatedcommand

ipaddress

4.2 Trouble Diagnosis Commands

Troublediagnosiscommandsinclude:

- Logging /syslog hostA.B.C.D

- Logging/syslog buffer

- Logging/syslog rate-limit

- logging/syslog facility

- logging/syslog terminal

- logging/syslog start

- logging/syslog stop

- clearlogging/syslog

- debug [host/file/terminal] [module] [flag]

- service timestamps

- showbreak

- showcontroller

- showdebug

- show logging/syslog

- show memory address

4.2.1 logging/syslog host A.B.C.D

Itis usedtorecordtheloginformationonthe **syslog**server.

logginghost*A.B.C.D*[vrf*vrfname*][proto][port][source-interface][rate-limit][class]
[format][level]

no logginghost *A.B.C.D*[vrf*vrfname*][proto][port][source-interface]

Parameter

Parameter	Description
A.B.C.D	IPaddressofthe**syslog**server
Vrfname	Nameof Vrf

Default

Itisnotrecordedontheserver.

Command mode

Globalconfigurationmode

Explanation

Itisusedtorecordtheloginformationonthe**syslog**server.Thecommandcanbeusedman ytimestospecifymultiplesyslogservers.

Example

logging host 192.168.1.1

logging host 192.168.1.1 vrfaaa

Relatedcommand

logging trap

4.2.2 logging/syslogbuffered

Itisusedtorecordtheloginformationtothememoryoftherouter.

logging buffer [*size | level |rate-limit | class | format*]

no logging buffer

Parameter

Parameter	Description
size	Sizeofthememorycache,rangingfrom4096bytesto2147483647bytes
level	Loginformationlevelrecordedtothememorycache
dump	Whensystematic troubleoccurs,theinformationin thecurrent memorwillbetemporarilysavedtotheflash.Thesystemwillberesumedaftere- startup.

Default

Itisnotrecordedtothememorycache.

Commandmode

Globalconfigurationmode

Explanation

The command is used to record the log information to the memory cache of the router. Because the memory cache is used in recycle, new information will replace old information after the memory cache is fully filled.

To display the log information recorded in the memory cache of the router, run **showlogging**.

Do not use too much memory because the memory is insufficient.

Table Level of the log record

	Level	Description	SyslogDefinition
emergencies	0	System unusable	LOG_EMERG
alerts	1	Immediate actionneeded	LOG_ALERT
critical	2	Critical conditions	LOG_CRIT
errors	3	Errorconditions	LOG_ERR
warnings	4	Warning conditions	LOG_WARNING
notifications	5	Normal butsignificantcondition	LOG_NOTICE
informational	6	Informational messagesonly	LOG_INFO
debugging	7	Debugging messages	LOG_DEBUG

Relatedcommand

clearlogging buffer

showlogging buffer

4.2.3 logging/syslograte-limit

Use the logging rate-limit command to record the log information in the router's memory。

loggingrate-limit [module] [rate-limit]

no loggingrate-limit [module]

Parameter

Parameter	Parameter Description
module	Module number.
rate-limit	Rate.

Default

No speed limit.

Command mode

Global configuration status

Explanation

This command will limit the corresponding module speed after configuration.

Related command

None

4.2.4 logging/syslogfacility

Toconfigurewhichkindoferrorinformationwillberecorded,run**loggingfacility**.Toresume**local7**,run**nologgingfacility**.

loggingfacility*facility-type*

nologgingfacility

Parameter

Parameter	Description
facility-type	Typeof thefacility

Default

local7

Commandmode

Globalconfigurationmode

Explanation

TableType offacility

Type	Description
auth	Authorizationsystem
cron	Cronfacility
daemon	Systemdaemon
kern	Kernel
local0-7	Reservedforlocallydefinedmessages
lpr	Lineprinter system
mail	Mailsystem

news	USENETnews
sys9	Systemuse
sys10	Systemuse
sys11	Systemuse
sys12	Systemuse
sys13	Systemuse
sys14	Systemuse
syslog	Systemlog
user	Userprocess
uucp	UNIX-to-UNIXcopysystem

Example

logging facility kern

Relatedcommand

4.2.5 logging/syslog terminal

Use the logging terminal command to control the amount of information displayed on the terminal line.
Use the no logging terminal command to prevent the log information from being displayed on the terminal line.

logging terminal [level | rate-limit | class | format]

no logging terminal

Parameter

Parameter	Parameter Description
level	Display the log information at the information level of the terminal line.

Default

debugging

Command mode

Global configuration status

Explanation

Table Logging Levels

	level	describe	Syslogdefinition
emergencies	0	System unusable	LOG_EMERG

alerts	1	Immediate action needed	LOG_ALERT
critical	2	Critical conditions	LOG_CRIT
errors	3	Errorconditions	LOG_ERR
warnings	4	Warning conditions	LOG_WARNING
notifications	5	Normal but significant condition	LOG_NOTICE
informational	6	Informational messages only	LOG_INFO
debugging	7	Debugging messages	LOG_DEBUG

Example

logging monitor errors

Related command

terminal monitor

4.2.6 logging/syslogstart

Use the logging start command to control the recording of error messages.
Use no logging start to disable all logging.

logging start

Parameter

None

Default

logging start

Command mode

Global configuration status

Example

Router_config# logging start

syslog stop

4.2.7 logging/syslog stop

Use the logging stop command to stop the amount of information logged to the syslog server.

Parameter

None

Default

None

Command mode

Global configuration status

Explanation

Table Logging Levels

	Level	describe	Syslog definition
emergencies	0	System unusable	LOG_EMERG
alerts	1	Immediate action needed	LOG_ALERT
critical	2	Critical conditions	LOG_CRIT
errors	3	Errorconditions	LOG_ERR
warnings	4	Warning conditions	LOG_WARNING
notifications	5	Normal but significant condition	LOG_NOTICE
informational	6	Informational messages only	LOG_INFO
debugging	7	Debugging messages	LOG_DEBUG

Example

syslog stop

Related command

logging

4.2.8 clear logging

Itisusedtocleartheloginformationrecordedinthememorycache.

clearlogging buffer

Parameter

None

Commandmode

EXEC

Relatedcommand

loggingbuffer

showlogging buffer

4.2.9 debug host/file/terminal [module] [flag]

Used to configure the debug flag bits of each module. After configuration, debug can be output to syslog.

Parameter

None

Default

By default, debug information is not output to syslog.

Command mode

Management status

Example

debug host 4 0xFFFFFFFF

Related command

None

4.2.10   showbreak

Itisusedtodisplaytheinformationabouttheabnormalinterruptionoftherouter.

showbreak[*map-filename*]

Parameter

Parameter	Description
map-filename	Specifiesthefile nameforthefunction mappingtable.

Default

None

Commandmode

EXEC

Explanation

The**showbreak**commandisusedtodisplaythecapturedinformationaboutabnormalinterruptionoftherouter.Thereasonofthefault,hence,willbefound.

Example

Router#show break

ExceptionType:1400-DataTLBerrorBreakNum:1sdate:2000-1-1 time:0:34:6

r0   r1   r2   r3   r4   r5   r6

00008538-01dbc970-0054ca18-00000003-80808080-fefefeff-01dbcca1-

r7   r8   r9   r10   r11   r12   r1300000000-

00009032-00000000-7fffff0-00008588-44444444-0054c190-

r14   r15   r16   r17   r18   r19   r20

000083f4-000083f4-00000000-00000000-00000000-00000000-00000000-

r21   r22   r23   r24   r25   r26   r27

00000000-0000000a-00000001-00000000-00000000-004d6ce8-01dbd15c-

r28   r29   r30   r31   spr8   spr9   ip

00000002-00467078-00010300-00000300-00000310-00008588-00000370-

Variables:

00008538-44444444-01dbd15c-01dbcaac-00000002-00000000-004d6ce8-

01dbca18-

 00008538--- do_chram_mem_sys_addr---bspcfg.o00001060c--- subcmd---

cmdparse.o---libcmd.a000083e4---   do_chram_mem_sys---bspcfg.o0000fb24---

lookupcmd---cmdparse.o---libcmd.a0000f05c--- cmdparse---cmdparse.o---

libcmd.a003e220c--- vty---vty.o---libvty.a

00499820--- pSOS_qcv_broadcast---ksppc.o---

os\libsys.aThedisplayedcontentisformedofsixparts:

(1)   ERROR:filefunction.map not found
       This prompt message indicates that the system has not loaded function.map,
       which does not affect the execution of the system.
       If the version number of function.map does not match the version number of the
       router, it will prompt that the version does not match.

(2)   ExceptionType—Hex code of exception+name of exception

(3)   BreakNum

       It represents the number of the current exception. It represents the number of
       exceptions that have occurred in the system since the last power up. The
       following is the time when the exception occurred.

(4)   The contents of registers lists the contents of common registers.

(5)   The variable area lists the contents of the stack.

(6)   Call relation of number

       If the system does not load the map file, only the function address is
       displayed. If the map file is loaded, the corresponding function name,. o file
       name, and. a file name will also be displayed.
       Their calling relationship is from bottom to top.

4.2.11   showcontroller

Todisplaytheinformationaboutthecontrolleroftherouter'sinterface,runthe**showcontro
ller**command.

showcontroller[*interface*]

Parameter

Parameter	Description
interface	Specifiesthenameoftheinterface.

Default

None

Commandmode

EXEC

Explanation

Theshowcontrollercommandisusedtothestateanditsconfigurationinformationoftheco ntrolleronthespecifiedinterface.Whentroubleoccurs,youcanfindthereasonofthetroubl ebyanalyzingrelativedata.

Example

Router#show controller interface s1/0

InterfaceSerial1/0

HardwareisPowerQUICCMPC860TSCCRegisters:

 General[GSMR]=0x68034:0x22,Protocol-

 specific[PSMR]=0x3000Events[SCCE]=0,Mask[SCCM]=0xcf,Status[SCCS]=0x3T

 ransmitonDemand[TODR]=0,DataAsync[DSR]=0x7e7e

InterruptRegisters:

 [CICR]=00e49f80[CIPR]=4000c006[CIMR]=48000000,[CISR]=00000000

Commandregister[CR]=0x6c0

SICR=0900002c, BRG=00000000:00010288:00000000:00000000(aux=0)

Statistics:scc4,port3

 int751229bad_first0too_long0drop0

 tx_count1bk_count0h_Q81s_Q0

PortA[PADIR]=0000[PAPAR]=53c3[PAODR]=0000[PADAT]=fefe

PortB[PBDIR]=00021001[PBPAR]=00001020[PBODR]=0000[PBDAT]=0001e3beP

ortC[PCDIR]=0000[PCPAR]=0008[PCSO]=0438[PCDAT]=0fe7[PCINT]=0008

ReceiveRing

          rmd(fff02320):status=9000length=0000address=01155f58rmd(fff02328):st

          atus=9000length=0000address=01156c90rmd(fff02330):status=9000lengt

          h=0000address=01156b18rmd(fff02338):status=9000length=0000address

          =011569a0rmd(fff02340):status=9000length=0000address=01156828rmd(

          fff02348):status=9000length=0000address=011566b0rmd(fff02350):status

          =9000length=0000address=01156538rmd(fff02358):status=b000length=0

          000address=01156f80

TransmitRing

tmd(fff02360):status=0000length=0000address=00000000tmd(fff02368):status=0000length=0000address=00000000tmd(fff02370):status=0000length=0000address=00000000tmd(fff02378):status=0000length=0000address=00000000tmd(fff02380):status=0000length=0000address=00000000tmd(fff02388):status=9000length=0051address=01156df4tmd(fff02390):status=0000length=0000address=00000000tmd(fff02398):status=2000length=0000address=00000000

SCCGENERALPARAMETERRAM(at0xfff03f00)

RxBDBase[RBASE]=0x2320,

FnCode[RFCR]=0x15TxBDBase[TBASE]=0x2360,   FnCode[TFCR]=0x15

MaxRxBuffLen[MRBLR]=252

CurrentRx(2)State[RSTATE]=0x9000,   BDPtr[RBPTR]=0x1156b18

CurrentTx(5)State[TSTATE]=0x9000,

BDPtr[TBPTR]=0x1156df4SCCUARTPARAMETERRAM(at0xfff03f30)

Maximumidlecharacters1BreakCharacter1

ReceivedParityError58445

ReceivedFrameError65261

ReceivedNoiseError39256Numberofbreakconditions22595LastReceivedBreaklength1524uart163220uart21

TransmitOutofsequence0

cc[0]=4011cc[1]=4013cc[2]=8000cc[3]=4011cc[4]=4013cc[5]=8000cc[6]=9c80cc[7]=7051

rccm=c0ffrccr=bf28rlbc=a6feRxBufSiz254flow1

flag=00000120,size=00000008,X=11,Xoff=13

DCR_B3#

The displayed content is formed of the following parts: Name and type of the controller

The name is MPC860 and the type is SCC.

Running state of the controller

Information about interruption, error and reset Length of the queue

Configuration parameters of the controller:

Parameter of the register's content Partial parameters of the controller Parameter about the physical protocol

State of receiving and transmitting rt

The length, state and index of the RT are listed.

Location and state of the currently-receive dor-transmitted RT

4.2.12   showdebug

To display all opened invocation options of the router, run **showdebug**.

showdebug

Parameter

None

Commandmode

EXEC

Example

Router# show debug

CryptoSubsystem:

Crypto Ipsec debugging is on

Crypto Isakmp debugging is on

Crypto Packet debugging is on

Relatedcommand

debug

4.2.13   showlogging

To display the state of logging (syslog), run **showlogging**. **showlog**

ging[buffer | file | status]

Parameter

Parameter	Description
Buffer	Show log in buffer
File	Show log in file
Status	Show SYSLOG Config Status

Commandmode

EXEC

Explanation

Afteryourun**showlogging**,thestateofloggingisdisplayed,includingthelogginginformationaboutheconsoleport,monitorandsyslog.

Example

Router#showlogging buffer

Sysloglogging:enabled(0messagesdropped,0flushes,0overruns)Consolelogging:lev

eldebugging,12messageslogged

Monitorlogging:leveldebugging,0messageslogged

Bufferlogging:leveldebugging,4messageslogged

Traplogging:levelinformations,0messagelineslogged

LogBuffer(4096bytes):

2000-1-400:30:11Configuredfromconsole0byDEFAULT

2000-1-400:30:28UserDEFAULTenterprivilegemodefromconsole0,level=15

Relatedcommand

clearlogging buffer

5   SSH Configuration Commands

5.1.1 ipsshd enable

Commanddescription

ipsshdenable

noipsshdenable

Parameter

None

Default

1024bits

Instruction

Itisusedtogeneratethersaencryptionkeyandthenmonitortheconnectiontothesshserver.Theprocessofgeneratingencryptionkeyisaprocessofconsumingthecalculationtime.It takesoneortwominutes.

Commandmode

Globalconfigurationmode

Example

Inthefollowingexample,theSSHserviceisgenerated.

Router_config#ipsshd enable

5.1.2 ipsshdtimeout

Commanddescription

ipsshdtimout*time-length*

noiptimeout

Parameter

Parameter	Description
time-length	Maximumtimefromtheestablishmentofconnectiontotheauthentication approval Valuerange:60-65535

Default

180seconds

Instruction

Topreventtheillegaluserfromoccupyingtheconnectionresources,theconnectionsthata
renotapprovedwillbeshutdownafterthesetdurationisexceeded.

Commandmode

Globalconfigurationmode

Example

Inthefollowingexample,thetimeouttimeissetto360seconds:

Router_config# ipsshd timeout 360

5.1.3 ipsshdauth-method

Commanddescription

ipsshdauth-method*method*

nosshdauth-method

Parameter

Parameter	Description
method	Setsauthenticationmethod list.

Default

The**default**authenticationmethodlistisused.

Instruction

Thesshserverusestheauthenticationmethodlistofthelogintype.

Commandmode

Globalconfigurationmode

Example
None

5.1.4 ipsshdpwd-method

Commanddescription

ipsshdpwd-method authentication-list authentication-list

no ipsshdpwd-method authentication-list

ipsshdpwd-method authorization-list*authorization-list*

no ipsshdpwd-method authorization-list

Parameter

Parameter	Parameter Description
authentication-list	AAA Certification List
authorization-list	AAA Authorization List

Default

The certification list and the authorization list are the default

Explanation

This command configures the authentication and authorization list for ssh server, and only connections that meet the rules in the access list are authenticated and authorized.

Command mode

Global configuration mode

Example

The following command configure a list of authentication called ssh-authenlist and applies it to the ssh server:

Router_config# aaa authentication login ssh-authenlist local

Router_config# ipsshdpwd-method authentication-listssh-authenlist

5.1.5 ipsshdaccess-class

Commanddescription

ipsshdaccess-class*access-list*

noipsshdaccess-class

Parameter

Parameter	Description
access-list	StandardIPaccesslist

Default

Noaccesscontrollist

Instruction

Itisusedtoconfiguretheaccesscontrollistforthesshserver.Onlytheconnectionscomplyingwiththeregulationsintheaccesscontrollistcanbeapproved.

Commandmode

Globalconfigurationmode

Example

Inthefollowingexample,an**ssh-accesslist**accesscontrollistisconfiguredandappliedinthesshserver:

Router_config# ip access-list standard ssh-accesslist

Router_config_std_nacl#deny 192.168.20.40

Router_config#ipsshd access-class ssh-accesslist

5.1.6 ipsshddisable-aes

Commanddescription

ipsshddisable-aes

no ipsshddisable-aes

Parameter

None

Default

Aes encryption is not disabled

Explanation

None

Command mode

Global configuration mode

Example

The following command will disable aes encryption.
Router_config#ipsshddisable-aes

5.1.7 ipsshdauth-retries

Commanddescription

ipsshdauth-retries*times*

noipsshdauth-retries

Parameter

Parameter	Description

times	Maximumre-authenticationtimes Valuerange:0-65535

Default

3times

Instruction

Theconnectionwillbeshutdownwhenthere-authenticationtimesexceedsthesettimes.

Commandmode

Globalconfigurationmode

Example

Inthefollowingexample,themaximumre-

authenticationtimesissettofivetimes:Router_config#ipsshd auth-retries 5

5.1.8 ipsshdsilence-period

ipsshd silence-period *times*

no ipsshd silence-period

Parameter

Parameter	Parameter Description
times	Silent waiting time, values range from 0 to 3600.

Default

60 Seconds

Explanation

The connection is closed after the authentication failure exceeds the maximum number of attempts and can no longer log in within the times.

Command mode

Global configuration mode

Example

The following command sets the silent time to 30 seconds:

Router_config#ipsshd silence-period 30

5.1.9 ipsshdsftp-enable

ipsshd sftp-enable

no ipsshd sftp-enable

Parameter

None

Default

Sftp, the function is turned off

Explanation

Only open this command to make the sftp download.

Command mode

Global configuration mode

Example

The following command enables the sftp function:

Router_config#ipsshd sftp-enable

5.1.10   ipsshdmax-user

ipsshd max-user *nums*

no ipsshd max-user

Parameter

Parameter	Parameter Description
nums	Maximum number of users limit, value range 1-16.

Default

Number 10 users

Explanation

Maximum number of users limit, if the number of users exceeds the limit, will not be able to log in.

Command mode

Global configuration mode

Example

The following command configure the maximum number of users as 5:

Router_config#ipsshd max-user 5

5.1.11   ipsshdcompress-enable

ipsshd compress-enable

no ipsshdcompress-enable

Parameter

None

Default

The Ssh compression function is turned off

Explanation

Only open this command to compress the data.

Command mode

Global configuration mode

Example

The following command is to enable the ssh compression function:

Router_config#ipsshd compress-enable

5.1.12   ipsshdcompress-level

ipsshd compress-level *level*

no ipsshdcompress-level

Parameter

Parameter	Parameter Description
Level	Compression level, value range 0-9.

Default

The compression level is 6

Explanation

The larger the setting of level, the better the compression performance, but the longer the time consumed. Both time and performance are considered, and the value is 6.

Command mode

Global configuration mode

Example

The following command is for a compression level of 5:

Router_config#ipsshd compress-level 5

5.1.13   ipsshdclear

Commanddescription

ipsshdclear*ID*

Parameter

Parameter	Description
ID	NumberoftheSSHconnectiontothelocaldevice Value range:0-15

Default

N/A

Instruction

Itisusedtomandatorilyclosetheincomingsshconnectionwiththespecifiednumber.

Commandmode

Globalconfigurationmode

Example

Inthefollowingexample,theNo.0incomingconnectionismandatorilyclosed:Router_con

fig#ipsshd clear 0

5.1.14   ssh

Commanddescription

ssh–l*userid*–d*destIP*[-c{des|3des|blowfish}][-o*numberofpasswdprompts*][-p*port*]

Parameter

Parameter	Description
–luserid	Useraccount ontheserver
–ddestI	DestinationIPaddressinthedotted decimalsystem
-onumber of passwd prompts	Re-authenticationtimesafterthefirstauthenticationfails Actualre-authenticationtimesisthesetvalueplusthesmallestvaluesetontheserver.Itsdefaultvalueisthreetimes. Value range:0-65535

-**p**port	Portnumberthattheservermonitors
	Itsdefault valueis22.
	Valuerange:0-65535
-**c** **{des|3des|blowfis h}**	Encryptionalgorithmused duringcommunication
	Theencryptionalgorithm is3desbydefault.

Default

N/A

Instruction

Thecommandisusedtocreateaconnectionwiththeremotesshserver.

Commandmode

Privilegedmode

Example

Inthefollowingexample,aconnectionwiththesshserverwhoseIPaddressis192.168.20.41iscreated.Theaccountis**zmz**andtheencryptionalgorithmis**blowfish**:

Router# ssh -l zmz -d 192.168.20.41 -c blowfish

5.1.15   showssh

Commanddescription

showssh

Parameter

None

Default

N/A

Instruction

Itisusedtodisplaythe sessionsonthesshserver.

Commandmode

Privilegedmode

Example

Inthefollowingexample,thesessionsonthesshservraredisplayed:
Router#show ssh

5.1.16   showipsshd

Commanddescription

showipsshd

Parameter

None

Default

N/A

Instruction

Itis usedtodisplaythe currentstateofthesshserver.

Commandmode

Privilegedmode

Example

Inthefollowingexample,thecurrentstateofthesshserverisdisplayed:

Rouer#showipsshd

5.1.16.1 Boot check

<188>Jan 10 15:58:18 Router - 06BE7500 [Core 0]: init user

<188>Jan 10 15:58:18 Router - 06BE7500 [Core 0]: init user

<188>Jan 10 15:58:18 Router - 06BE7500 [Core 0]: init user

<188>Jan 10 15:58:18 Router - 06BE7500 [Core 0]: init user

<188>Jan 10 15:58:18 Router - 06BE7500 [Core 0]: init user

<188>Jan 10 15:58:18 Router - 06BE7500 [Core 0]: init user

<188>Jan 10 15:58:18 Router - 053687A0 [Core 0]: init user

<190>Jan 10 15:58:18 Router BSP 0531B5E0 [Core 0]: Channel 8 (Manage Port)

Link Up

<190>Jan 10 15:58:18 Router - 05A724E0 [Core 1]: c01 System started --

<190>Jan 10 15:58:18 Router - 05A724E0 [Core 2]: c02 System started --

<190>Jan 10 15:58:18 Router - 05A724E0 [Core 3]: c03 System started --

<188>Jan 10 15:58:18 Router - 050F76D0 [Core 0]: init user

<190>Jan 10 15:58:18 Router httpd 06114440 [Core 0]: !httpd:: open web server success

<188>Jan 10 15:58:18 Router - 05090D50 [Core 0]: init user

<190>Jan 10 15:58:18 Router - 05090D50 [Core 0]: User UNKNOWN logged in from onvty 0

<188>Jan 10 15:58:18 Router - 06114440 [Core 0]: init user

<190>Jan 10 15:58:18 Router - 050F76D0 [Core 0]: Router System started --

<190>Jan 10 15:58:18 Router - 050F76D0 [Core 0]: User NONE USER logouted on console 0

<mark><190>Jan 10 15:58:48 Router BSP 050107E0 [Core 0]: Reset Type Rebooted by Power-On</mark>

User Access Verification

Username:

Username:

Username:

Username: admin

Password:

Password is invalid or timeout.

New password requirements:

 non-user

New Password:

Input Again:

Password has been updated. Try to login with new password.

Username: admin

Password:

       Welcome to Techroutes Multi-Protocol TSR 2900-40-2AC Series

Router><188>Jan 10 15:59:28 Router - 050F76D0 [Core 0]: init user

Router>ena

Router#<190>Jan 10 15:59:37 Router - 050F76D0 [Core 0]: User admin enter

privilege mode from console 0, level = 15

Router#

Router#sh version

Techroutes Network Pvt. Ltd Internetwork Operating System Software

TSR 2900-40-2AC Series Software, Version 8.1.1C (BASE) Build 11426,

RELEASE SOFTWARE

Copyright (C) by Techroutes Network Pvt. Ltd

Compiled: 2024-05-08 14:15:13 by SYS_11426, Image text-base: 0x108000

ROM: System Bootstrap, Version 0.0.7

Serial num:10035003123, ID num:003123

System image file is "Router.bin"

Techroutes-TSR 2900-40-2AC CaviumCN

processor with 1048576K bytes of memory, 28672K bytes of flash

Router uptime is 0:00:01:35, The current time: 2031-01-10 15:59:42

Slot 0: Standard Port Slot

  Port 0: 1Gbps full-duplex Ethernet

  Port 1: 1Gbps full-duplex Ethernet

  Port 2: 1Gbps full-duplex Ethernet

  Port 3: 1Gbps full-duplex Ethernet

  Port 4: 1Gbps full-duplex Ethernet

  Port 5: 1Gbps full-duplex Ethernet

  Port 6: 1Gbps full-duplex Ethernet

  Port 7: 1Gbps full-duplex Ethernet

Router#

Router#

Router#sho task

  task   -- Task usage information

Router#sho task

CPU utilization:

Rate(%)	1s	1m	5m	max
Global	1	1	1	24
Core0	2	1	1	96
Core1	1	1	1	2
Core2	1	1	1	2
Core3	1	1	1	2

Global CPU starvation:

Rate(%)	1s	1m	5m	max
spinlock	0	0	0	1
rw:read by write	0	0	0	1
rw:write by read	0	0	0	1
rw:write by write	0	0	0	1

Core0 CPU starvation:

Rate(%)	1s	1m	5m	max
spinlock	0	0	0	5
rw:read by write	0	0	0	5
rw:write by read	0	0	0	5
rw:write by write	0	0	0	5

Core1 CPU starvation:

Rate(%)	1s	1m	5m	max
spinlock	0	0	0	0
rw:read by write	0	0	0	0
rw:write by read	0	0	0	0
rw:write by write	0	0	0	0

Core2 CPU starvation:

Rate(%)	1s	1m	5m	max
spinlock	0	0	0	0
rw:read by write	0	0	0	0
rw:write by read	0	0	0	0
rw:write by write	0	0	0	0

Core3 CPU starvation:

Rate(%)	1s	1m	5m	max
spinlock	0	0	0	0
rw:read by write	0	0	0	0
rw:write by read	0	0	0	0
rw:write by write	0	0	0	0

P - Pending D - Delay   R - Ready   S - Suspend   E - Estimated

NAME ENTRY TID   PRI PC   StkPtr SPlmt   ERR.NO ST   CPU   invoked

----

IDLE dabca0 06bfae30 255 dabcb0 06bfade0 06bfaa40 000000 R   0.00E   44290

SMSN db4ad8 06bfa790 030 109de70 06bfa4d0 06beaa40 000000 P   0.00   5

tExc 1081090 06be98e0 000 1099f2c 06be9780 06be79b0 3d0001 P   0.00E   4

root 115ef8 06be7500 030 10a4e58 06be7470 06aa7510 000000 S 0.00E   3

_NTM da3fb8 06aa7200 128 10a4460 06aa6f70 06a9f4b0 000000 D 0.66

44204

MODP ce1b60 06a9ef60 128 109de70 06a9ebc0 06a95210 000000 P   0.00

1

LOGD dc1210 06a94cc0 128 109de70 06a949a0 06a7bf70 000004 P   0.00   6

IPFA 92cc78 06a7ba20 128 1099f2c 06a7b6d0 06a6bcd0 000000 P   0.00   2216

IPSL 92cdd0 06a6b780 128 1099f2c 06a6b430 06a5ba30 000000 P   0.00   887

```
MYIP 8f91f0 06a5b4e0 128 109de70 06a5b1d0 06a42790 000000 P   0.00       1
ip6t 3c7b78 06a42240 128 109de70 06a41f60 06a3e4f0 000000 P  0.00      1
PMIP 40cd38 06a35f20 128 1099f2c 06a35910 06a321d0 000000 P   0.00       1
NDTD a678b0 06a31c80 128 1099f2c 06a31960 06a2df30 000000 P   0.00       1
IPRT d65240 06a15860 128 1099f2c 06a15540 069fcb10 000000 P   0.06      663
RTTM d65340 069fc5c0 128 1099f2c 069fc2a0 069f2870 000000 P   0.00      216
RTSM d65158 069f2320 128 109de70 069f2010 069e85d0 000000 P   0.00       1
DHSC 2a92b8 069e0300 128 1099f2c 069dffe0 069dc5b0 000000 P   0.00       1
DHSS 2a9410 069d42e0 128 1099f2c 069d3fd0 069d0590 000000 P   0.00       1
NATD a2b3e0 069c7fc0 128 1099f2c 069c7c80 069c4270 000000 P   0.42      89
TUNL e13670 069bbfa0 128 1099f2c 069bbc90 069b4250 000000 P   0.00       1
MLMT ead7f0 06373c80 128 1099f2c 06373950 0636ff30 000000 P   0.00      10
MFMT ed25e0 0636f9e0 128 1099f2c 0636f680 0636bc90 000000 P   0.00       1
LDPT 10b9b80 0618b640 128 1099f2c 0618b2f0 06173250 000000 P   0.00       1
LDTT 10b9ba4 06172d00 128 1099f2c 06172990 0615a910 000000 P   0.00
1
RPTE ef6630 0615a3c0 128 1099f2c 0615a090 06156670 000000 P   0.00       2
MPTE ddf2c8 06156120 128 1099f2c 06155dc0 061515b0 000000 P   0.00       1
TAC+ dcfa48 06148fe0 128 1099f2c 06148cb0 06145290 000000 P   0.00       1
_USM e2dad8 0613ccc0 128 1099f2c 0613c980 06138f70 000000 P   0.00      14
RADU d16cf0 061309a0 128 1099f2c 06130680 0612cc50 000000 P   0.00       1
HOTF 343c38 0612c700 128 1099f2c 0612c390 061249b0 000000 P   0.00       1
DHCT 29e598 0611c6e0 128 1099f2c 0611c3b0 06114990 000000 P   0.00
444
HTTP 7d7938 06114440 128 1099f2c 06114120 060e26f0 000000 P   0.03       5
ARP  587c08 060e21a0 128 109de70 060e1eb0 060c9450 000000 P   0.00       1
_ETH 765f08 06078e80 128 109de70 06078bc0 06060130 000000 P   0.00       1
OSI  ae2778 06057b60 128 1099f2c 06057850 06053e10 000000 P   0.00       1
FR   788c60 060538c0 128 1099f2c 060535b0 06049b70 000000 P   0.00       1
PPP  cb1228 060415a0 128 109de70 060412d0 0603d850 000000 P   0.00       1
L2TP 9d62f8 0603d300 128 109de70 0603d050 060395b0 000000 P   0.00       1
```

PPTP ce4b68 060312e0 128 1099f2c 06030fc0 0602d590 000000 P 0.00   1

TSCR 70d9e4 06023440 128 1099f2c 06023120 060196f0 000000 P 0.00   1

DDRV 717f7c 060184a0 128 1099f2c 06018180 0600e750 000000 P 0.00   1

DLNK 713b08 0600e200 128 109de70 0600df00 060044b0 000000 P 0.00   1

PPPO cd6878 06003f60 128 109de70 06003ca0 06000210 000000 P 0.00   1

ISDN 969fa4 05ffa1c0 128 1099f2c 05ff9ea0 05ff0470 000000 P 0.05   444

HOST 9725dc 05feff20 128 1099f2c 05fefaa0 05fe61d0 000000 P 0.00   1

TCC_ 9ae6d8 05fe5c80 128 1099f2c 05fe58a0 05fdbf30 000000 P 0.00   1

T931 99d0e8 05fdb9e0 128 1099f2c 05fdb660 05fd1c90 000000 P 0.00   1

T921 9872f0 05fd1740 128 1099f2c 05fd1370 05fc79f0 000000 P 0.00   1

TME_ 98d578 05fc74a0 128 1099f2c 05fc70c0 05fbd750 000000 P 0.00   1

LAPD 9725fc 05fbd200 128 1099f2c 05fbce60 05fb34b0 000000 P 0.00   1

PKI c9b1f8 05fa72e0 128 1099f2c 05fa6fd0 05fa2590 000000 P 0.00   1

ike_ 4c6bd8 05f53d20 128 1099f2c 05f53a00 05f21fd0 3d0004 PD 0.00   46

ictl 558568 05ef8d00 128 1099f2c 05ef8910 05ef17b0 000000 P 0.00   90

CRY1 566ee0 05eca080 128 1099f2c 05ec9d50 05eba330 000000 P 0.00   1

sadb 52a838 05eb9cc0 128 109de70 05eb99a0 05ea9f70 000000 P 0.00   1

core 51fe90 05ea1900 128 1099f2c 05ea15f0 05e91bb0 000000 P 0.00   1

nhrp a76990 05e915c0 128 109de70 05e912e0 05e81870 000000 P 0.00   1

Rtv6 d973e0 05e79200 128 1099f2c 05e78ef0 05e604b0 000000 P 0.00   1

NAT6 a4cd00 05e5fde0 128 1099f2c 05e5fac0 05e58090 000000 P 0.00   90

RIPT d3c100 05e47920 128 1099f2c 05e47610 05e3b3d0 000000 P 0.00   1

RNGT d3cd40 05e32d60 128 1099f2c 05e329f0 05e26810 000000 P 0.00   1

_SPF ae8d48 05c8e120 128 1099f2c 05c8ddc0 05c843d0 000000 P 0.00   1

OSTM ae95d0 05c83e20 128 1099f2c 05c83af0 05c7a0d0 000000 P 0.00   1

SPF6 b723f0 05bd9a60 128 1099f2c 05bd96f0 05bc0d10 000000 P 0.00   1

BFDT 58ce90 05bb06e0 128 1099f2c 05bb0390 05ba6990 000000 P 0.00   1

BGPD 59cac0 05a162a0 128 1099f2c 05a15f30 05a09d50 000000 P 0.00   1

EIGP 745130 059f9620 128 1099f2c 059f92d0 059ef8d0 000000 P 0.00   1

EIGH 7450e0 059ef320 128 1099f2c 059ef010 059e55d0 000000 P 0.00 1

ISIS 435f68 0584cf20 128 1099f2c 0584cc10 0583e1d0 000000 P 0.00 1

ISHL 435dc0 0583dc20 128 1099f2c 0583d900 05838ed0 000000 P 0.00 1

_IGM 8cd818 05818860 128 1099f2c 05818550 05808b10 000000 P 0.00 1

MLDR 9f8898 057e84a0 128 1099f2c 057e81a0 057e4750 000000 P 0.00 3

TMRT 9fba28 057dc120 128 1099f2c 057dbe10 057d83d0 000000 P 0.00 1

TTMR a00778 057b7d60 128 1099f2c 057b7a00 057ae010 000000 P 0.00 1

TMRT a09138 057a59a0 128 1099f2c 057a5690 057a1c50 000000 P 0.00 1

PIMD bf4d40 056115e0 128 1099f2c 056112c0 05601890 000000 P 0.00 1

DMV6 724028 05471260 128 1099f2c 05470f40 0546d510 000000 P 0.00 1

PST_ c260a0 0544cea0 128 1099f2c 0544cb10 0543d150 000000 P 0.00 1

PS6T c57328 0541caa0 128 1099f2c 0541c6f0 05418d50 000000 P 0.00 1

MSDP a12f88 053f86e0 128 1099f2c 053f83b0 053f0990 000000 P 0.00 1

aclt 95be00 053f0360 128 109de70 053f0060 053d7610 000000 P 0.00 1

SLAT 4190f8 053cefa0 128 1099f2c 053ceca0 053c7250 000000 P 0.00 445

TWAM 1004110 053bec20 128 1099f2c 053bdc00 053a5ed0 000000 P 0.00

1

IPAT 13e8a8 0539d8a0 128 1099f2c 0539d590 05399b50 000000 P 0.00 8

NF_T edf920 053995a0 128 1099f2c 053992a0 05395850 000000 P 0.00 1

L7T1 4ba3b8 05388f20 128 10a4e58 05388920 053851d0 000000 S 0.00 440

L7T2 4ba968 05384c20 128 10a4e58 05384140 05380ed0 000000 S 0.00

440

SNMP f5901c 053687a0 128 10a4e58 053682b0 05348a50 000000 S 0.37

22142

NTP a87944 053484a0 128 1099f2c 05347d20 05344750 000000 P 0.00 1

TMRG 1000c70 0533c420 128 1099f2c 0533c120 053386d0 000000 P 0.00

1

TELD dfa7b0 05338120 128 1099f2c 05337da0 05333bd0 000000 P 0.00 1

SSHD fbc900 0532b5a0 128 1099f2c 0532b280 05321850 000000 P 0.00 1

BMMT 6213a8 05321260 128 10a4460 05321020 0531d510 000000 D 0.01

46

PIPO 62adb8 0531b5e0 128 10a4460 0531b530 053175f0 000000 D 0.00E

444

REBU 65bfb8 053171a0 128 109de70 05316c50 0530d450 000000 P   0.00   1

AGGR 495b70 05305120 128 1099f2c 05304e00 052f53d0 000000 P   0.00   1

DHSN 2ff40c 05244d60 128 1099f2c 05244a20 05235010 000000 P   0.00   8

GPLT 79e128 051fcd10 128 109de70 051fca60 051f2fc0 000000 P   0.00   1

IPOE 969558 051f2a70 128 1099f2c 051f2750 051eed20 000000 P   0.00   1

LLDP e80ea0 051c6750 128 1099f2c 051c6440 051c2a00 000000 P   0.00   45

RMON d4a908 051ba430 128 1099f2c 051ba130 051aa6e0 000000 P   0.00

1

TFTC ff2ab8 051aa190 128 1099f2c 051a9a00 051a6440 000000 P   0.00   1

TFTD ff3220 051a5ef0 128 1099f2c 051a5890 051a21a0 000000 P   0.00   1

WVPN 1005ab8 05141ad0 128 1099f2c 051417d0 0513dd80 000000 P   0.00

1

DNSR 122340 05135ab0 128 1099f2c 05135560 05131d60 000000 P   0.00

91

PH   1321a8 05131810 128 1099f2c 05130c70 0512cac0 000000 P   0.00   1

DD   138298 051244f0 128 1099f2c 051241b0 051207a0 000000 P   0.00   3

MCRM dbd06c 051181d0 128 10a4460 05117f50 05110480 000000 D 0.00

430

MCOE db7d00 05107eb0 128 1099f2c 05107ba0 05100160 000000 P   0.00

443

SNMK f60b78 050ffc10 128 10a4460 050ff9c0 050fbec0 000000 D 0.00   45

SNMT f60c18 050fb970 128 10a4460 050fb720 050f7c20 000000 D 0.00   15

tty0 e6ab40 050f76d0 128 db13e8 050f63b0 050cf980 3d0002 R   0.04   8682

MTTY e62f38 050c3630 060 109de70 050c3330 050bb8e0 000000 P   0.00   1

PROB 93c110 050b3310 128 1099f2c 050b3000 050a35c0 000000 P   0.00

442

DHCD 2d5558 050a3070 128 1099f2c 050a2d30 05099320 000000 P   0.00   8

HTTD 8b650c 0505bfb0 128 10a4e58 0505b8d0 05011260 000000 S 0.00

331

INTR 000000 03c7a120 000 000000 00000000 00000000 000000   0.00E   0

Router#