RG-S2600E/P

RGOS 10.4(2b2)

Ὼ ʌ ©2000-2011

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’Ą ий RGOS®10.4(2b2) Â

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' ⅋ ^ ⅋ ⅋ ╿ ~

[ ] ' [ ] ╿ ˘ ⅋ ┘ Â

{ x | y | … }' ÿ ч ┘ Â

[x | y | …]' ÿ ч ┘ a Â

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1 CLI

1.1

1.1.1 alias

ع ك ل ط ЮО alias ع Â ع no
ل ط ع ك ЮО ع ك Â

alias *mode command-alias original-command*

no alias *mode* [*original-command*]

mode	ك ع ع ع Â
command-alias	ع ك Â
original-command	ك ع ع Â

EXEC ЮО ك ع ك Â

ع

EXEC ЮО ع ك ي **h** ةp ةs ةu ةun ك ك ي **help** ةping ةshow ة **undebug** ة **undebug** Â

ع ك a **no alias exec** ع Â
ع ك ل ط ع ع Â ш ع ك ✕ ī

```
Ruijie# s?
*s=show  show  start-chat  start-terminal-service
```

EXEC

```
Ruijie# s?
*s=show  *sv="show version" show  start-chat
start-terminal-service
```

```
Ruijie# s?
show  start-chat  start-terminal-service
```

"ip address"

```
Ruijie(config-if)# ia ?
A.B.C.D  IP address
dhcp     IP Address via DHCP
Ruijie(config-if)# ip address
```

"**ip address**"

show aliases

"def-route"

"ip route 0.0.0.0 0.0.0.0 192.168.1.1"

```
Ruijie# configure terminal
Ruijie(config)# alias config def-route ip route 0.0.0.0 0.0.0.0
192.168.1.1
Ruijie(config)# def-route?
*def-route="ip route 0.0.0.0 0.0.0.0 192.168.1.1"
Ruijie(config)# def-route?
% Unrecognized command.
Ruijie(config)# end
Ruijie# show aliases config
globle configure mode alias:
def-route          ip route 0.0.0.0 0.0.0.0 192.168.1.1
```

show aliases	

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˘ ⅃ Л∪ Ю **privilege** ⅋ Â
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ommand-string

mand-string

⅋ CLI ⅋ Â
⅋ ⅋ ˘ ⅃ ѝ ⅃ Â
⅋ ⅋ ˘ 0-15 Â
⅋ ѝ Â
⅋ Â

⅃ CLI ⅋ ˘ a ⅃ ˘ ⅃ ˘ Ю˝ ⅃ Л∪ **privilege ?**

0.0.2 294.68 -139.2 -19.1Hp

```
Ruijie(config)# enable secret level 1 0 test
Ruijie(config)# privilege exec level 1 reload
```

1 CLI reload

```
Ruijie> reload ?
<cr>
```

reload 1 all

```
Ruijie(config)# privilege exec all level 1 reload
```

1 CLI reload

```
Ruijie> reload ?
at                  reload at a specific time/date
cancel              cancel pending reload scheme
in                  reload after a time interval
<cr>
```

enable secret	CLI

ЛЬЮ ˘ EXEC Ю ३ ⅃'

```
Ruijie# show aliases exec
exec mode alias:
h                   help
p                   ping
s                   show
u                   undebug
un                  undebug
```

2

2.1

2.1.1 disable

ЮЎ æ ˘ ч disable Â

disable [*privilege-level*]

privilege-level	

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disable ч Л Â

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```
Ruijie# disable 10
```

enable	ÿ ˘ Â

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2.1.2 enable

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2.1.3 enable password

a ৶ ৡˇ ৡ **enable password** Â ৡ **no** ৡ Â

enable password [**level** *level*] {*password* | [**0** | **7**] *encrypted-password*}**no enable password**

Password	EXEC ৡ Â
Level	Â
0|7	ৡ ╗ ˇ 0 ╗ ˇ 7 ╗ Â
encrypted-password	ৡ Â

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1 26 Â
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~	╗ ˇ Л ϡˇ ‡ a EXEC Â a ╗ ϡ Â ↓ ϡ Â

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```
Ruijie(config)# enable password pw10
```

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enable secret	ϡ Â

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2.1.4 enable secret

a ↓ ϡˇ ϡ **enable secret** Â ϡ **no** ϡ Â

enable secret [**level** *level*] {*secret* | [**0 | 5**] *encrypted-secret*}

no enable secret

Secret	EXEC ϡ Â
Level	Â
0|5	ϡ ╗ ˇ 0 ╗ ˇ 5 ╗ Â
encrypted-password	ϡ Â

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ʒ б Â **no enable service** ʒ Â

Ю ʒ’ enable service ssh-sesrver, SSH Server ╖ '

```
Ruijie(Config˜ # enable service ssh-sesrver
```

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Telnet

```
configure terminal
line tty 1 16
```

enable Â

Web Â **no ip http authentication**
Â

Web local

```
Ruijie(config)# ip http authentication local
```


enable service

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2.1.9 ip telnet source-interface

Э IP й Telnet ˘ Ю˘ ʅ Л∪ **ip telnet source-interface** ʒ'

ip telnet source-interface *interface-name*

interface-name	Э IP й Telnet Â

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ʒ Э IP й Telnet Â telnet ʒ ʅ Telnet ┗ Ą˘ й ˘ Â **no ip telnet source-interface** ʒ й Â

Ю ʒ˘ Loopback 1 Э IP й Telnet '

```
Ruijie(config)# ip telnet source-interface Loopback 1
```

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telnet	ʅ Telnet ┗ Â

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10.4(2)	ʒ

2.1.10 lock

Э EXEC **lock**Â

lock

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lock

lockable

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```
Ruijie(config-line)# lockable
Ruijie(config-line)# end
Ruijie# lock
Password: <password>
Again: <password>
Locked
Password: <password>
```

lockable	Э в Â

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2.1.11 lockable

Э **lock** ˇ Л Ц line Ю **lockable** ˇ
Ю a **lock** Â **no** л Â

lockable

no lockable

-	-

line

Э в ˇ в Л Ц EXEC Ю
lock Â

Ю ⁸ Л Э в ˇ в ⁸ Л'

```
Ruijie(config)# line console 0
Ruijie(config-line)# lockable
Ruijie(config-line)# end
Ruijie# lock
Password: <password>
Again: <password>
Locked
Password: <password>
```

lock	в Â

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login

no login

-	-

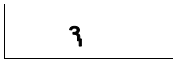
line

AAA VTY console

Ю VTY Э

```
Ruijie(config)# no aaa new-model
Ruijie(config)# line vty 0
Ruijie(config-line)# password 0 normatest
Ruijie(config-line)# login
```

password	line



line

username ʒ Â

Ю VTY Э Â

```
Ruijie(config)# no aaa new-model
Ruijie(config)# username  test password 0 test
Ruijie(config)# line vty 0
Ruijie(config-line)# login local
```

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username	Â

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2.1.15 privilege mode

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2.1.16 password

line ˇ line **password** **no** line

password {*password* | [*0*|*7*] *encrypted-password*}

no password

password	line

service password-encryption

interface *interface-name*	Telnet
/vrf *vrf-name*	VRF

~	**/ipv6** IPV6

1' Ю ˘ telnet IPV4 й 192.168.1.1˘ ˘ й vlan 1˘ VRF й vpn1'

```
Ruijie# telnet 192.168.1.1 /source interface vlan 1 /vrf vpn1
```

2' Ю ˘ telnet IPV6 й 2AAA:BBBB::CCCC'

```
Ruijie# telnet 2AAA:BBBB::CCCC
```

ip telnet source-interface	Э IP й Telnet '
show session	TTY '
exit	'

-	-

2.1.19 username

password	Â
0|7	Â
encrypted-password	Â
privilege-level	Â

message	

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Ю '

```
Ruijie(config)
Ruijie(config)# banner login $ enter your password $
```

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2.2.2 banner motd

ˇ Ю ʮ **banner motd** Â ˇ **no banner motd** ʮ Â

banner motd *c message c*

c	ˇ a
message	

ʮ ˇ ˇ Â

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```
Ruijie#show boot system
system boot file: flash:/rgos.bin

Ruijie#dir
Directory of flash:/
   11015744 2008-01-01 08:00:46  rgos.bin
   12019754 2008-02-01 08:00:46  s5750_10_4.bin
       399 2006-01-01 08:01:37  config.text
33,030,144 bytes total. (10,590,592 bytes free)

Ruijie(config)# boot system s5750_10_4.bin
Ruijie(config)# show boot system
system boot file: flash:/ s5750_10_4.bin
```

╠ Ą˘ s5750_10_4.bin Â

show boot system	Â

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2.2.4 clock set

˘ л Л **clock set** ч '

clock set *hh:mm:ss month day year*

hh:mm:ss	˘ й ^ 24 ⁸˜ : ↑ :
day	^ 1-31˜ ˘ Â
month	^ 1-12˜ ˘
year	Ω ^ 1993-2035˜ ˘ а Â

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˘ clock set Э

˘ Ю ˅˘ Â

Ю й 2003 3 17 Э ' 10 20† 30 '

```
Ruijie# clock set 10:20:30 3 17 2003
Ruijie# show clock
clock: 2003-3-17 10:20:32
```

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show clock	

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2.2.5 clock update-calendar

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clock update-calendar

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```
Ruijie# clock update-calendar
```

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Ю 10† ΠΥ ϻ '

```
Ruijie# reload in 10
Router will reload in 600 seconds.
```

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2.2.10 session-timeout

LINE Э ˘ **session-timeout** ϡ Â
no session-timeout ϡ˘ ϟ LINE Ю ˘ a Â

session-timeout *minutes* [**output**]

no session-timeout

minutes	† '
output	≠ й ˘ '

й 0 min Â

ϡ LINE

˘ ÿ LINE Э ˘
˘ ˘ LINE й ϟ Â

Ю line vty 0 й 5† 30 '

Ruijie(config-line)# **exec-timeout** *5 30*

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/ϡ	
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2.2.11 speed

ˇ ЮЎ ϡ **speed** *speed* Â
ˇ **no speed** ϡ Â

speed *speed*

Speed	ˇ Æ bps Â ˇ ˬ ѝ 9600 ă19200 ă38400 ă57600 ă 115200 ˇ 9600 Â

9600

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ϡ Â

ЮЎ ѝ 57600 bps'

```
Ruijie(config)# line console 0
Ruijie(config-line)# speed 57600
```

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[Failed]
The device [usb1] does not exist, write to the default config file [/config.text]? [no] **yes**
Write to the default config file: [/config.text]
[OK]

boot config	╟ ┘
copy	8
show running-config	

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2.3

2.3.1 show clock

˘ **show clock** Â

show clock

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Ю **show clock**

```
Ruijie# show clock
clock: 2003-3-17 10:27:21
```

clock set	

-	-

2.3.2 show line

show line [**console** *line-num* **| aux** *line-num* **| vty** *line-num* **| *line-num*]

console	
aux	aux
vty	vty
line-num	line

console

```
Ruijie# show line console 0
CON     Type    speed   Overruns
* 0     CON     9600    45927
Line 0, Location: "", Type: "vt100"
Length: 24 lines, Width: 79 columns
Special Chars: Escape  Disconnect  Activation
               ^^x     none        ^M
Timeouts:      Idle EXEC    Idle Session
               never        never
History is enabled, history size is 10.
```

Total input: 53564 bytes
Total output: 395756 bytes
Data overflow: 27697 bytes
stop rx interrupt: 0 times

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2.3.3 show reload

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show reload

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Ruijie# **show reload**
Reload scheduled in 595 seconds.
At 2003-12-29 11:37:42
Reload reason: test.

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2.3.4 show running-config

show running-config

show running-config

-	-

-	-

```
By Ruijie Network
System start time: 1970-6-14 11:49:53
System uptime: 3:17:1:17
System hardware version: 2.0
System software version: RGOS 10.3.00(4), Release(34679)
System boot version: 10.2.34077
System CTRL version: 10.2.24136
System serial number: 1234942570001
```

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3 LINE

3.1 LINE

3.1.1 access-class

Line ÞO ACLˆ ¸ ~ Â **access-class** *acl-no* { **in | out** } ¾
Line ÞO ¸ Â no **access-class** *access-list-number* {**in | out**} ¾ ¼
LINE ÞO ACL Â

[**no**] **access-class** *access-list-number* {**in | out**}

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3.1.2 line

LINE ˘ ЛЬЮ ¾'

line [**aux** | **console** | **tty** | **vty**] *first-line* [*last-line*]

aux	˘ Э
console	8
tty	˘ Э
vty	˘ telnet/ssh
First-line	first-line Л
Last-line	last-line Л

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LINE Â

LINE VTY 1 3 LINE '

```
Ruijie(config)# line vty 1 3
```

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3.1.3 line vty

٪ ٦ Л٥ ╗ ٦ Л٥ VTY Â ٪ **no** ٦ Л٥ ٦ Л٥ VTY Â

line vty *line-number*

no line vty *line-number*

-	-

Ю˝ ٦ VTY й 5˝ Л й 0--4 Â

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╗ ٦ VTY ˇ ٦ Л٥ Э ٪ Â

1' ٦ VTY ╗ 20˝ ٦ VTY Л й 0--19 Â

```
Ruijie(config)# line vty 19
```

2' ٦ VTY 10˝ ٦ VTY Л й 0—9 Â

```
Ruijie(config)# line vty 10
```

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3.1.4 transport input

Line Ю ٦ Л٥ ˇ **transport input** ٪ Line Ю ٦ Л٥ Â **default transport input** й LINE Ю й Â

transport input {**all | ssh | telnet | none**}

default transport input

all	Line Ю˝ Â
ssh	Line Ю˝ ٦ SSH Â

telnet	Line Ю˘ ¬ Telnet Â
none	Line Ю˘ a Â

˘ VTY Â è TTY ¤ NONE˘ a
Â ¬Л∪ Л˘ ¬Л∪ **default transport input**
¾ ¤ Â

¾ Line

¾ Line Ю ÂVTY Ю˘ Â
Л˘ ¬ ¬Л∪ VTY Э ╖ Â **show**
running ¾ Line Ю Â

d**efault transport input** ¾ Â**no transport input** ¾˘ LINE Ю Â б **transport input none** ¬ Â

line vty 0 4 Ю˘ ¬ telnet '

```
Ruijie# configure terminal
Ruijie(config)# line vty 0 4
Ruijie(config-line)# transport input telnet
```

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show running	Â

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4

4.1

4.1.1 ping

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ping [**vrf** *vrf-name*] [**ip**] [*ip-address* [**length** *length*] [**ntimes** *times*] [**timeout** *seconds*] [**data** *data*] [**source** *source*] [**df-bit**] [**validate**]]

é DNS ¦ Â

1' ping '

```
Ruijie# ping 192.168.5.1
Sending 5, 100-byte ICMP Echoes to 192.168.5.1, timeout is 2 seconds:
  < press Ctrl+C to break >
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/10
ms
```

2' ping '

```
Ruijie# ping 192.168.5.197 length 1500 ntimes 100 timeout 3 data ffff
source 192.168.4.10
 Sending 100, 1000-byte ICMP Echoes to 192.168.5.197, timeout is 3
seconds:
  < press Ctrl+C to break >
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 2/2/3
ms
```

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4.1.2 ping ipv6

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ping [**ipv6**] [*ip-address* [**length** *length*] [**ntimes** *times*] [**timeout** *seconds*] [**data** *data*] [**source** *source*]]

ip-address	IPv6 Â

length	
times	
seconds	
data	ٰl
source	IPv6 Â è ˘ ˆ ::1˜ a ѝ Â

ˆ ѝ 2 ˜ ˘ 5 ѝ 100Byte IP Â

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Ping ipv6 ٶ Ю˝ Ю˝ ۷
ping ipv6 ╖ ˘ Ю˝ ‡ ۶Л ping ipv6 ╖ Â
ping ipv6 ╖ ˘ ۶Л Ю ˘ ˆ
ѝ 2 ˜ ˘ 5 ѝ 100Byte IP ˘ ˘ ‡
‘!ᵖ ˘ ‡ ‘.ᵖ б a ٦ ˘
‡ a ‘Cᵖ Л Â ping ipv6 ╖ ˘ ۷ Ю
˘ ping ˘ ۶Л à ˘ ˘
ping ipv6 ╖ ˘ Л ≠ Â ╖

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ϻ	ϡ	ipv6 Э Â

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	-	-

4.1.3 traceroute

traceroute ϡ˘ ϟ Ϡυ ÿ .

traceroute [**vrf**] [*vrf-name*] [**ip** *ip-address*][*ip-adress* [**probe** *number*] [**source** *source*] [**timeout** *seconds*] [**ttl** *minimum maximum*]]

vrf-name	VRF ϳ
Ip-address	IPv4 Â
number	
source	IPv4 Â ὲ ˘ ˆ 127.0.0.1˜ a ὶ Â
seconds	
minimum maximum	

```
2     192.168.9.2     4 msec  4 msec 4 msec
3     192.168.9.1     8 msec  8 msec  4 msec
4     192.168.0.10    4 msec  28 msec  12 msec
5     202.101.143.130     4 msec  16 msec  8 msec
6     202.101.143.154    12 msec  8 msec  24 msec
7     61.154.22.36    12 msec  8 msec  22 msec
ÿ Э       ˘  ˩Л         ˘  ÿ            IP     й 61.154.22.36   ў  ˘
                  ˆ 1˙  6˜ ˘  ˩                                  ˘
ǀ   ˘            Â
  2'              a      traceroute     '
Ruijie# traceroute 202.108.37.42
< press Ctrl+C to break >
Tracing the route to 202.108.37.42
1     192.168.12.1    0 msec  0 msec  0 msec
2     192.168.9.2       0 msec  4 msec 4 msec
3     192.168.110.1    16 msec  12 msec  16 msec
4     *  *  *
5     61.154.8.129     12 msec  28 msec  12 msec
6     61.154.8.17       8 msec  12 msec  16 msec
7     61.154.8.250     12 msec  12 msec  12 msec
8     218.85.157.222   12 msec  12 msec  12 msec
9     218.85.157.130   16 msec  16 msec  16 msec
10     218.85.157.77   16 msec  48 msec  16 msec
11     202.97.40.65    76 msec  24 msec  24 msec
12     202.97.37.65    32 msec  24 msec  24 msec
13     202.97.38.162   52 msec  52 msec  224 msec
14     202.96.12.38     84 msec  52 msec  52 msec
15     202.106.192.226   88 msec  52 msec  52 msec
16     202.106.192.174   52 msec  52 msec  88 msec
17     210.74.176.158   100 msec  52 msec  84 msec
18     202.108.37.42    48 msec  48 msec  52 msec
ÿ Э       ˘  ˩Л         ˘  ÿ            IP     й 202.108.37.42   ў  ˘
                    ˆ 1˙  17˜ ˘    з     4          Â
Ruijie# traceroute www.ietf.org
Translating " www.ietf.org "...[OK]
< press Ctrl+C to break >
Tracing the route to 64.170.98.32
1     192.168.217.1   0 msec  0 msec  0 msec
2     10.10.25.1        0 msec  0 msec  0 msec
```

```
3     10.10.24.1        0 msec  0 msec  0 msec
4     10.10.30.1        10 msec 0 msec  0 msec
5     218.5.3.254       0 msec  0 msec  0 msec
6     61.154.8.49       10 msec 0 msec  0 msec
7     202.109.204.210    0 msec  0 msec  0 msec
8     202.97.41.69      20 msec 10 msec 20 msec
9     202.97.34.65      40 msec 40 msec 50 msec
10    202.97.57.222     50 msec 40 msec 40 msec
11    219.141.130.122    40 msec 50 msec 40 msec
12    219.142.11.10     40 msec 50 msec 30 msec
13    211.157.37.14     50 msec 40 msec 50 msec
14    222.35.65.1       40 msec 50 msec 40 msec
15    222.35.65.18      40 msec 40 msec 40 msec
16    222.35.15.109     50 msec 50 msec 50 msec
17    *      *      *
18   64.170.98.32     40 msec 40 msec 40 msec
```

¾	
-	-

Ñ
-

¾	
Ñ	
-	-

4.1.4 traceroute ipv6

traceroute ipv6 ¾˘ ˩ Ո ÿ
Â

traceroute [**ipv6** *ip-address*][[**probe** *number*] [**timeout** *seconds*] [**ttl** *minimum maximum*]]

Ip-address	IPv6 ˩ Â
number	
seconds	
minimum maximum	TTL

ʒ

Traceroute ipv6 ʒ ў ˘ ˘ Æ
Æ Â ˩ ˥ ˘ ‡ ″I ˩ ˩ ˘ é DNS
ˆ Â

ЛЬЮ й traceroute ipv6 ч ˘ й ˘ й
a Â

1' traceroute ipv6 '

```
Ruijie# traceroute ipv6 3004::1
 < press Ctrl+C to break >
Tracing the route to 3004::1
1     3000::1        0 msec  0 msec  0 msec
2     3001::1        4 msec  4 msec 4 msec
3     3002::1        8 msec  8 msec  4 msec
4     3004::1        4 msec  28 msec  12 msec
```

ў Э ˩Л ˘ ў IP й *3004::1* ў ˘
ˆ 1 4˜ ˘ ˩ ˘ ˆ ˘
Â

2' a traceroute ipv6 '

```
Ruijie# traceroute ipv6 3004::1
 < press Ctrl+C to break >
Tracing the route to 3004::1
1     3000::1        0 msec  0 msec  0 msec
2     3001::1        4 msec  4 msec 4 msec
3     3002::1        8 msec  8 msec  4 msec
4     * * *
5     3004::1        4 msec  28 msec  12 msec
```

ў Э ˩Л ˘ ў IP й *3004::1* ў ˘
ˆ 1 5˜ ˘ з 4 Â

ʒ

ʒ	
-	-

˩

/\	

¾

- -

5

5.1

5.1.1 carrier-delay

Ю ҕ **carrier-delay** ˘ ҕ **no**
Â

carrier-delay [*seconds*]

no carrier-delay

seconds	↓ ˘ Л∪ й Æ˘ 1 60 Â

2 Â

ҕ Â

/ DCD ÿ Down Up ˘
DCD ↓ ˘ ѫ ↓ a Э
Â
DCD ˘ ѫ ˘ ↓Л ╗ ˘ Л∪
↓Л Â √˘ DCD ˘ ѫ
˘ Л∪ Â

-	-

5.1.2 clear counters

clear counters [*interface-id*]

interface-id	ʌ Â

Â

ʒ

ɻ ɅU ʒ **show interfaces** ˘ Ю **clear counters** ʒ˘ ɻ ɅU Â a ˘ ‡ Â

```
Ruijie# clear counters gigabitethernet 1/1
```

ʒ	
show interfaces	Â

ʌ

ʌ	
-	-

5.1.3 clear interface

Æ

clear interface *interface-id*

interface-id	ʌ Â

ʒ

ʒ ˇ Switch Port,L2 Aggregrate port ,Routed port,L3 Aggregate port Â ʒ **shutdown** **no shutdown** ʒ Â

```
Ruijie# clear interface gigabitethernet 1/1
```

ʒ	
shutdown	

ˇ

ˇ	
-	-

5.1.4 descriptioin

ˌ Â ʒ no Â

description *string*

no description

string	ˌ Â

ˌ Â

ʒ

show interfaces ʒ ˘ ˌ Â

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# description GBIC-1
```

ʒ	
show interfaces	Â

ʃ

ʒ	ʃ
-	-

5.1.5 duplex

Ю ʒ ʅ Â ʒ **no** й Â

duplex {**auto** | **full** | **half**}

no duplex

auto	ʅ ʅ Â
full	ʅ Â
half	ʅ Â

ʅ ʅ Â

ʒ

ʅ б Â ʅ Л **show interfaces** ʒ ʅ Â

```
Ruijie(config-if)# duplex full
```

ʒ	

ϡ ⁸ Â ϡ no ѝ Â

flowcontrol {**auto** | **off** | **on**}

no flowcontrol

auto	⁸ Â
off	⁸ Â
on	⁸ Â

⁸ Â

ϡ

show interfaces ⁸ ⁸ Â

ˆl Ո 1/1 ⁸'

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# flowcontrol on
```

ϡ	
show interfaces	Â

ʎ

ʎ	
-	-

5.1.7 interface aggregateport

ϡ ϡˇ … ˇ Â ϡ no Â

interface aggregateport *port-number*

port-number	Aggregate port ʎˇ ¤ Â

ꢀ ꢀ˘ … ⊩ ˆ

```
start cable-diagnoses,please wait...
cable-daignoses end!this is result:
4 pairs
pair state     length(meters)
---- ---------- --------------
A    Ok        1
pair state     length(meters)
---- ---------- --------------
B    Ok        2
pair state     length(meters)
---- ---------- --------------
C    Short     1
pair state     length(meters)
---- ---------- --------------
D    Short     1
```

pairs	˘ ↰ Â
state	˘ Ь ' OK˜ ~ ˘ Short˜ ~ ˘ Open ˆ ~ Â Ю˜ ”I ↰ A à B ч й OK˜ C à D ч й Short Â ”I ↰ A à B à C à D й OK Â
length	˘ æ й Â↰ state й OK Â↰ ˘ ↰ ˘ Л↻ ↰ Â й Short Open length Â

-

mtuˆ ˜ Â ˇ Â

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# mtu 9216
```

ʒ	
show interfaces	Â

ˇ

clear interface	Æ Â
show interfaces	Â

-	-

5.1.15 snmp trap link-status

LinkTrap Link SNMP LinkTrap, **no** SNMP a LinkTrap Â

snmp trap link-status

no snmp trap link-status

Link SNMP LinkTrap

Ruijie(config-if)# **snmp trap link-status** link trap

switchport trunk {**allowed vlan** {**all |** [**add | remove | except**] *vlan-list* }**| native vlan** *vlan-id*}

no switchport trunk {**allowed vlan | native vlan**}

allowed vlan *vlan-list*	Trunk ˩ VLAN Â vlan-list ˩ Л∪ VLAN˝ ≠ ˩ Л∪ VLAN˝ Л∪ VLAN ID ˇ Л∪ VLAN ID ˇ ˆ -˜ /ˈ Â ' 10-20 Â ˩ Л∪ ˆ ,˜ /ˈ ˇ ' 1-10,20-25,30,33 all ₩ ˩ VLAN VLAN˝ add VLAN ╗ ˩ VLAN ' remove VLAN ÿ ˩ VLAN , except VLAN VLAN ╗ ˩ VLAN '
native vlan *vlan-id*	Native VLAN Â

˩ VLAN allˇ Native VLAN ‡ VLAN 1

```
Acsess vlan is 1,Native vlan is 1
Protected is disabled
Vlan lists is
1,3-4094
```

ϡ	
show interfaces	Â
switchport access	ѝ statics accessportʹ ѝ VLAN Â

⁄ı
-

⁄ı	
-	-

5.2

5.2.1 show interfaces

ˇ ⎍ ʺI Â

show interfaces [*interface-id*] [**counters | description | status | switchport | trunk | transceiver [alarm | diagnosis]]**

interface-id	ˆ ⎍ à aggregateport à SVI à loopback ˜ Â
counters	Â
description	ˇ link Â
status	γ ˇ à ˧ Â
switchport	γ ˇ ˧ γ Â
trunk	trunking port ˇ à Aggregate port Â
transceiver	ʺI Â
alarm	ʺI ˇ ľ None Ŀ Â

	diagnosis	¨I	Â

Â

ϡ

a ╗ ˘ ‡ Â

Ruijie# **show interfacesgigabitEthernet**

6 Aggregate Port

6.1

6.1.1 aggregateport load-balance

AP Â ҳ no й Â

aggregateport load-balance {**dst-mac** | **src-mac** | **src-dst-mac** | **dst-ip** | **src-ip** | **src-dst-ip** }

no aggregateport load-balance

dst-mac	MAC ↑ Â AP ˘ MAC ↓ ↓ ˘ MAC a ↓ ↑ a ↓ Â
src-mac	MAC ↑ Â AP ˘ a ↓ MAC ↑ a ↓ ˘ ↓ MAC ↓ Â
src-dst-ip	IP б IP ↑ Â a ↓ IP—— IP a ↓ ˘ ↓ IP—— IP ↓ Â Ь Ю Â
dst-ip	IP ↑ Â AP ˘ IP ↓ ↓ ˘ IP a ↓ ↑ a ↓ Â
src-ip	IP ↑ Â AP ˘ a ↓ IP ↑ a ↓ ˘ ↓ IP ↓ Â
src-dst-mac	MAC б MAC ↑ Â a ↓ MAC—— MAC a ↓ ˘ ↓ MAC—— MAC ↓ Â

MAC ↑ Â

ҳ Â

show aggregateport load-balance ¾ Â

```
Ruijie(config)# aggregateport load-balance dst-mac
```

¾	
show aggregateport load-balance	aggregateport Â

/I
-

6.1.2 port-group

ѝ Aggregate Port Â ¾ no Aggregate Port Â

port-group *port-group-number*

no port-group

port-group-number	Aggregate Port /I˘ Aggregate Port /I Â

a Aggregate Port Â

Â

AP ˩ VLAN ˘ trunk port Â a ˩ native VLAN a AP

Ю Л 1/3 AP 3 '

```
Ruijie(config)# interface gigabitethernet 1/3
Ruijie(config-if)# port-group 3
```

¾	
-	-

/¼	
-	-

6.2

6.2.1 show aggregateport

aggregateport Â

aggregate-port-number	Aggregate Port /¼ Â
load-balance	aggregaye port Â
summary	aggregate port Â

¾

aggregate port /¼˘ ‡ aggregate port Â

```
Ruijie# show aggregateport 1 summary
AggregatePort  MaxPorts       SwitchPort Mode   Ports
-------------  --------       --------------   ------
Ag1              8                Enabled     ACCESS
```

¾	
aggregateport load-balance	AP Â

/¼	
-	-

7 VLAN

7.1

7.1.1 name

VLAN ¼ Â ¾ **no** Â

name *vlan-name*

no name

vlan-name	VLAN ¼

VLAN ¼ ¸ VLAN¯ VLAN ID˘ VLAN 2 ¼ ¸ ”VLAN0002”

¾ VLAN

show vlan ¾ vlan

```
Ruijie(config)# vlan 10
Ruijie(config-vlan)# name vlan10
```

¾	
show vlan	VLAN Â

¼

¼	
-	-

7.1.2 switchport access

¾ ¸ access port˘ ¸ VLAN Â

¾ **no** VLAN Â

switchport access vlan *vlan-id*

no switchport access vlan

access	switch port ù access portÂ
trunk	switch port ù trunk portÂ
hybrid	switch port ù hybrid portÂ

no switchport trunk {**allowed vlan** | **native vlan** }

allowed vlan *vlan-list*	Trunk ٦ VLAN Â vlan-list ٦ Л Ъ VLAN˘ ≠ ٦ Л Ъ VLAN˘ Л Ъ VLAN ID ˘ Л Ъ VLAN ID ˘ ˆ -˜ Л Â ' 10-20 Â ٦ Л Ъ ˆ ,˜ Л ˘ ' 1-10,20-25,30,33 all Н Ѫ ٦ VLAN VLAN˝ add VLAN ╗ ٦ VLAN ' remove VLAN ÿ ٦ VLAN ' except VLAN VLAN ╗ ٦ VLAN '
native vlan *vlan-id*	Native VLAN Â

٦ VLAN all˝ Native VLAN ‡ VLAN 1

٪

Native VLAN˝

й Trunk˘ native VLAN Â native VLAN˘ Э
UNTAG ˘ й VLAN Â ˘ VLAN ID
ˆ IEEE 802.1Q PVID˜ native VLAN VLAN ID Â ٫ ˘ Trunk Э
native VLAN ˘ ‡ UNTAG Â

٫ VLAN '

Trunk Л Ъ VLAN˘ 1˙ 4094˜ Â ˘ ≠ Л Ъ
Trunk ٦ VLAN ⁸ VLAN a Trunk Â

show interfaces switchport ٪ Â

Ю VLAN 2 ÿ 1/15 '

```
Ruijie(config)# interface fastethernet 1/15
Ruijie(config-if)# switchport trunk allowed vlan remove 2
Ruijie(config-if)# end
Ruijie# show interfaces fastethernet1/15 switchport
Interface  Switchport Mode  Access Native Protected VLAN lists
--------- --------- --------- --------- --------- --------
FigabitEthernet 1/15  enabled  TRUNK  1   1   Disabled  1,3-4094
```

३	

-	-

7.2

7.2.1 show vlan

VLAN Â

show vlan [**id** *vlan-id*]

vlan-id	VLAN ID /I Â

¾

˘ **end** ¾˘ **Ctrl+C** Â

˘ **exit** ¾

```
Ruijie# show vlan id 1
VLAN Name                            Status    Ports
---------- ------------ ------------ ---------- ----------
   1 VLAN0001                        STATIC    Fa0/1, Fa0/2
```

¾	
name	VLAN ⅃ Â
switchport access	╗ Vlan Â

¾

/I	
-	-

8 Super-vlan

8.1

8.1.1 subvlan

¸ super vlan subvlan subvlan Â

subvlan *vlan-id-list*

no subvlan [*vlan-id-list*]

Vlan-id-list	VLAN subvlan ID, ¸ vlan

¸ VLAN

no subvlan supevlan subvlan

```
Ruijie(config)# vlan 3
Ruijie(config-vlan)# supervlan
Ruijie(config-vlan)# subvlan 5
Ruijie(config-vlan)# subvlan 7-19
```

¸	
show supervlan	supervlan Â

¸

¸	
-	-

8.1.2 subvlan-address-range

¾ subvlan ip Â

subvlan-address-range *start-ip end-ip*

no subvlan-address-range

start-ip	SubVLAN IP
end-ip	SubVLAN IP

¾ VLAN

end ¾ **Ctrl+C** Â
exit ¾

```
Ruijie(config)# vlan 3
Ruijie(config-vlan)# supervlan
```

¾	
show supervlan	supervlan

/

/	
-	-

8.1.4 proxy-arp

¾ VLAN ARP ¾ ¶ Â

proxy-arp

no proxy-arp

-	-

¾ VLAN

˘ **end** ¾˘ **Ctrl+C** Â
˘ **exit** ¾

```
Ruijie(config)# vlan 3
Ruijie(config-vlan)# proxy-arp
```

¾	

	show supervlan	supervlan Â

Super-vlan ३

9 Private VLAN

9.1

9.1.1 private-vlan association

secondary VLAN primary VLAN

private-vlan association {*svlist* | **add** *svlist* | **remove** *svlist*}

no private-vlan association

private-vlan mapping {*svlist* | **add** *svlist* | **remove** *svlist*}

no private-vlan mapping

svlist	secondary VLAN list
no	

ʒ Primary VLAN

```
Ruijie(config)# interface vlan 22
Ruijie(config-if)# private-vlan mapping add 24-26
```

ʒ	
show vlan private-vlan	-

RGOS10.1 Л Э

Л	
-	-

9.1.3 private-vlan type

VLAN й VLAN

private-vlan {*community* | *isolated* | *primary*}

no private-vlan {*community* | *isolated* | *primary*}

community	й community VLAN
isolated	й isolated VLAN
primary	й primary VLAN
no	VLAN

VLAN

؟ VLAN

```
Ruijie(config)# vlan 22
Ruijie(config-vlan)# private-vlan primary
```

؟	

३	
show vlan private-vlan	-

RGOS10.1 Л Э

Л	
-	-

9.1.5 switchport private-vlan host-association

private VLAN ў primary VLAN secondary VLAN

switchport private-vlan host-association *p_vid s_vid*

no switchport private-vlan host-association

p_vid	… primary VID
s_vid	… secondary VID
no	ÿ VLAN ў

```
Ruijie(config)# interface gigabitEthernet 0/1
Ruijie(config-if)# switchport mode private-vlan host
Ruijie(config-if)# switchport private-vlan host-association 22 23
```

OS 1 1.006 T0 1.994.02 0 0 10.0 2 439.32 12541 60 1 Tf1198 -0.

- -

show vlan private-vlan [**community** | **primary** | **isolated**]

primary	primary VLAN
community	community VLAN
isolated	isolated VLAN

private VLAN

ʒ

Ruijie# **show vlan private-vlan**

ʒ	
-	-

RGOS10.1 Л Э

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-	-

9.3 Hybrid

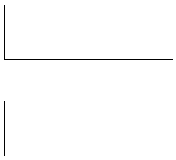
9.3.1 switchport hybrid allowed vlan

switchport hybrid allowed vlan[[**add**][**tagged** | **untagged**] | **remove**] *vlist*

no switchport hybrid allowed vlan

hybrid ‡

no	hybrid ‡



३	/I	
	-	-

9.3.3 switchport mode hybrid

10 QinQ

10.1

10.1.1 frame-tag tpid tpid

tpid

frame-tag tpid <*tpid*>

no frame-tag tpid

no	↓ tpid

३ (5760 ↓ Ю)

Ю tpid ѝ 0x9100

```
ruijie(config)# interface g 0/3
ruijie(config-if)# frame-tag tpid 0x9100
ruijie(config-if)# end
ruijie# show frame-tag tpid
Ports   tpid
------  ---------
Gi0/3    0x9100
```

३	
show frame-tag tpid	-

↓ RGOS10.1 Л Э

३	Л	

-	-

10.1.2 inner-priority-trust enable

/ ৸ tag ″l tag ⁸

inner-priority-trust enable

no inner-priority-trust enable

no	৸ tag ″l tag ⁸

ৡ

no mac-address-mapping x destination-vlan dst-vlan-id source-vlan src-vlan-list

no

٦

Ю й dot1q-tunnel

```
ruijie(config)# interface gigabitEthernet 0/1
ruijie(config-if)# switchport mode dot1q-tunnel
ruijie(config)# end
```

٦

٦	
show vlan	-

٨ RGOS10.1 Л Э

٦

٨	
-	-

10.1.5 switchport mode uplink

й uplink

switchport mode uplink

no switchport mode

no	٧ uplink

uplink

٦

Ю й uplink

```
ruijie(config)#interface gigabitEthernet 0/1
ruijie(config-if)#switchport mode uplink
ruijie(config)#end
```

٦	
show vlan	-

RGOS10.1 Л Э

/I	
-	-

10.1.6 switchport dot1q-tunnel allowed vlan

dot1q-tunnel ٦ vlan

switchport dot1q-tunnel allowed vlan [**add**] {**tagged|untagged**} *v_list*

switchport dot1q-tunnel allowed vlan remove *v_list*

no switchport dot1q-tunnel allowed vlan

tagged	tag
untagged	a tag
v_list	vlan id
no	٦

٦ vlan 1˜ untagged

٦

Ю dot1q-tunnel vlan 3-6 й ٦ vlan˜ tag

```
ruijie(config)#interface gigabitEthernet 0/1
ruijie(config-if)#switchport dot1q-tunnel allowed vlan tagged 3-6
ruijie(config)#end
```

٦	

٣	/ا	
	-	-

10.1.7 switchport dot1q-tunnel native vlan

dot1q-tunnel vlan id

switchport dot1q-tunnel native vlan *vid*

no switchport dot1q-tunnel native vlan

vid	vlan id
no	vlan ѝ 1

vlan ѝ 1

٣

Ю dot1q-tunnel vid ѝ 8

```
ruijie(config)# interface gigabitEthernet 0/1
ruijie(config-if)# switchport dot1q-tunnel native vlan 8
ruijie(config)#end
```

٣

٣	
show interface dot1q-tunnel	-

ا RGOS10.3 Лъ Э

٣	/ا	
	-	-

10.1.8 l2protocol-tunnel

dot1q-tunnel γ

l2protocol-tunnel {**stp|gvrp**}

no l2protocol-tunnel {**stp|gvrp**}

stp	stp
gvrp	gvrp
no	٧

٣

Ю γ gvrp stp ٦ll

```
ruijie#configure
ruijie(config)# l2protocol-tunnel stp
ruijie(config)# l2protocol-tunnel gvrp
ruijie(config)#end
```

٣

٣	
show l2protocol-tunnel {**gvrp|stp**}	-

٧ RGOS10.3 Л Э

٣

/١	
-	-

10.1.9 l2protocol-tunnel *proto-type* enable

γ ٦ll

l2protocol-tunnel { **stp|gvrp** } **enable**

no l2protocol-tunnel { **stp|gvrp** } **enable**

stp	stp
gvrp	gvrp

no	

Ю Э У Ш

```
ruijie# configure
ruijie(config)# interface fa 0/1
ruijie(config-if)# l2protocol-tunnel gvrp enable
ruijie(config-if)# end
```

show l2protocol-tunnel { **gvrp|stp** }	-

RGOS10.3 Л Э

-	-

10.1.10 l2protocol-tunnel *proto-type* tunnel-dmac *mac-address*

l2protocol-tunnel { **stp|gvrp** } **tunnel-dmac** *mac-address*

no l2protocol-tunnel { **stp|gvrp** } **tunnel-dmac** *mac-address*

stp	stp
gvrp	gvrp
no	й

	-	-

show inner-priority-trust

-	-

a 8

ৡ

```
ruijie# show inner-priority-trust
Ports  inner-priority-trust
----   ----------
Gi0/1   enable
```

```
ruijie# show interface dot1q-tunnel
Interface: Gi0/3
Native vlan: 10
Allowed vlan list: 4-6˜ 10˜ 30-60
Tagged vlan list: 4˜ 6˜ 30-60
```

३	
-	-

RGOS10.3 ЛЬЭ

३	
-	-

10.2.5 show interface intf-name remark

˝l

show interface intf-name remark

-	-

a

```
Ruijie# show interface intf-name remark
Ports         Type         From value  To value
------------ ----------- ----------- --------
Gi0/1         Cos-To-Cos  3           5
```

३	
-	-

RGOS10.1 ЛЬЭ

-	-

10.2.6 show interface mac-address-mapping x

MAC

show mac-address-mapping *x*

-	-

a

```
ruijie# show mac-address-mapping 1
Ports        Destination-VID  Source-VID-list
```

intf-id	

```
ruijie# show registration-table
Ports        Outer-VID  Inner-VID-list
------------ ---------- ------------------
Gi0/7        5          7-10,15,20-30
```

-	-

RGOS10.3

-	-

10.2.8 show traffic-redirect

vid

show traffic-redirect [**interface** *intf-id*]

intf-id	

```
ruijie# show traffic-redirect
Ports          Type           VID   Match-filter
```

```
------------ ---------- ---- ------------
Gi0/3        Mod-outer   23   11
Gi0/3        Mod-outer   3    4
Gi0/3        Mod-outer   6    5
Gi0/3        Mod-inner   8    inner-to-8
Gi0/6        Mod-inner   9    100
Gi0/7        Nested-vid  13   nest-13
```

-	-

RGOS10.3

-	-

10.2.9 show translation-table

access,trunk,hybrid vid

show translation-table [**interface** *intf-id*]

intf-id	

-	-

ʃ RGOS10.3 Л Э

ʒ	
ʃ	
-	-

10.2.10 show l2protocol-tunnel

γ

show l2protocol-tunnel{**gvrp**|**stp**}

gvrp	gvrp
stp	stp

ʒ

```
ruijie# show l2protocol-tunnel stp
Destination mac      : 01d0f8000005
L2protocol-tunnel : Stp Enable
ruijie# show l2protocol-tunnel gvrp
Destination mac      : 01d0f8000006
L2protocol-tunnel : gvrp Disable
```

ʒ	
-	-

ʃ RGOS10.3 Л Э

ʒ	
ʃ	
-	-

11 Share VLAN

11.1

11.1.1 share

¾ share vlan Â

-	-

¾ vlan

ˬ share vlan **no share** ¾ Â

˘ **end** ¾˘ Ctrl+C Â

˘ **exit** ¾ Â

```
Ruijie(config)#vlan 2
Ruijie(config-vlan)#share
```

¾	
-	-

ˬ

ˬ	
-	-

11.2

11.2.1 show mac-address-table share

ৡ ˘ Status original ‡ ’
Status duplicated ‡ ⁸ ’ Status
ѝ ˘ ‡ share vlan Â

-	-

ৡ

˘ **end** ৡ˘ Ctrl+C Â
˘ **exit** ৡ

```
Ruijie# show mac-address-table share
Vlan  MAC Address     Type    Interface   Status
----  --------------- ------- ----------- ----------
   1   0040.4650.1e1e DYNAMIC Gigabit 0/1 original
   2   0040.4650.1e1e DYNAMIC Gigabit 0/1 duplicated
```

ৡ	
-	-

ৡ

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12 MAC

12.1

/

address-bind install

no address-bind install

IP MAC ˘ ‡ IP ѝ IP
˘ MAC a ѝ IP MAC ˘
Â

Ю ip ѝ 3.3.3.3 mac 00d0.f811.1112

```
Ruijie(config)# address-bind 3.3.3.3 00d0.f811.1112
```

show address-bind	

	Ipv4 ‡
ш	৲ IPV4+MAC Â
	৲ IPV4+MAC Â
	৲ IPV4+MAC Â

	IPV6 ‡	
ш	a ipv6 ˆ ˜ Â	
	IPV6 Â	
	৲ MAC ঌ MAC IPV6 Â	

˘ IP ঌ 192.168.5.2 ঌ 00d0.f822.33aa˘
IPV6 Â

```
Ruijie# configure t
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# address-bind 00d0.f822.33aa ip 192.168.5.2
Ruijie(config)# address-bind ipv6-mode compatible
```

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-	-

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৸	
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ৡ

IP MAC ˘ ‡ IP ѝ IP
˘ MAC a ѝ IP MAC ˘
˘ ѝ ˘ з (address-bind install)

Ruijie# **clear mac-address-table dynamic**

show mac-address-table dynamic	Â

-

12.1.7 clear mac-address-table filtering

Â

clear mac-address-table filtering [**address** *mac-addr*][**vlan** *vlan-id*]

filtering	Â
address *mac-addr*	Â
vlan *vlan-id*	VLAN

show mac-address-table filtering Â

00d0.f800.0c0c

Ruijie# **clear mac-address-table filtering address** *00d0.f800.0c0c*

mac-address-table filtering	Â
show mac-address-table filtering	Â

/I	

no mac-address-table aging-time

seconds	╟ ˇ Л∪ ѝ Æ Â ᾱ Â

300 Â

ৡ

show mac-address-table aging-time ৡ Â

show mac-address-table dynamic ৡ ╟ Â

```
Ruijie(config)# mac-address-table aging-time 150
```

ৡ	

a ѝ Â **show mac-address-table filtering** ৡ
Â

```
Ruijie(config)# mac-address-table filtering 00d0f8000000 vlan 1
```

ৡ	
clear mac-address-table filtering	Â
show mac-address-table filtering	Â

/ſ	
-	-

12.1.11 mac-address-table notification

MAC ╖ Â ৡ **no** ╖ Â

mac-address-table notification [**interval** *value* | **history-size** *value*]

no mac-address-table notification [

snmp-server enable traps	trap Â
show mac-address-table notification	MAC

show mac-address-table static	Â
clear mac-address-table static	Â

-	-

12.1.13 snmp trap mac-notification

MAC Â **no** Â

snmp trap mac-notification {**added** | **removed**}

no snmp trap mac-notification {**added** | **removed**}

added	Â
removed	Â

Â

show mac-address-table notification *interface* Â

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# snmp trap mac-notification added
```

-	

-	

12.1.14 mac-address-learning

/

mac-address-learning

a MAC a

1'

Ruijie(config-if)# no mac-address-learning

12.2

12.2.1 show address-bind

Â

show address-bind


```
Ruijie# show address-bind
IP Address     Binding MAC Addr
-----------    -----------------
3.3.3.3        00d0.f811.1112
3.3.3.4        00d0.f811.1117
```

address-bind	Â

-	-

12.2.2 show address-bind uplink

Â

show address-bind uplink


```
Ruijie# show address-bind uplink
Ports        State
------------ ------
Fa0/1        Disabled
Fa0/2        Disabled
```

.....

address-bind uplink	

-	-

12.2.3 show mac-address-table address

show mac-address-table interface	Â
show mac-address-table vlan	VLAN
show mac-address-table count	Â
show mac-address-table static	Â
show mac-address-table filtering	Â

-	-

12.2.5 show mac-address-table count

Â

show mac-address-table count

-	-

¾

¾

```
Ruijie# show mac-address-table count
Dynamic Address Count  : 51
Static  Address Count  : 0
Filter  Address Count  : 0
Total Mac Addresses    : 51
Total Mac Address Space Available: 8139
```

¾

¾	
show mac-address-table static	Â
show mac-address-table filtering	Â
show mac-address-table dynamic	╟ Â
show mac-address-table address	
show mac-address-table interface	
show mac-address-table vlan	VLAN Â

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¼	
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12.2.7 show mac-address-table filtering

show mac-address-table static [**addr** *mac-addr*] [**vlan** *vlan-id*]

mac-addr

interface *interface-id*	/I Â Э MAC ╖ Â
history	MAC Â

MAC ╖ Â

¾

```
Ruijie# show mac-address-table notification interface
Interface        MAC Added Trap  MAC Removed Trap
---------         --------------      --------------
GigabitEthernet1/14   Disabled       Disabled
Ruijie# show mac-address-table notification
MAC Notification Feature :  Disabled
Interval between Notification Traps : 1 secs
Maximum Number of entries configured in History Table :1
Current History Table Length : 0
Ruijie# show mac-address-table notification history
History Index : 0
MAC Changed Message :
Operation:ADD Vlan : 1 MAC Addr: 00f8.d012.3456 GigabitEthernet 3/1
```

¾	
mac-address-table notification	MAC ╖ Â
snmp trap mac-notification	MAC ╖ Â

/I

/I	
-	-

12.2.10 show mac-address-table static

Â

show mac-address-table static [**addr** *mac-addr*] [**interface** *interface-id*] [**vlan** *vlan-id*]

mac-addr	MAC Â
vlan-id	VLAN Â
interface-id	(⅃ Ⅱ AggregatePort)

৲

৲

'

```
Ruijie# show mac-address-table static
Vlan    MAC Address     Type        Interface
-----  -----------    --------  ------------------
1    00d0.f800.1001    STATIC   gigabitethernet 1/1
1    00d0.f800.1002    STATIC   gigabitethernet 1/1
1    00d0.f800.1003    STATIC   gigabitethernet 1/1
```

৲	
mac-address-table static	Â
clear mac-address-table static	Â

৲

/ſ	
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12.2.11 show mac-address-table vlan

VLAN Â

show mac-address-table vlan [*vlan-id*]

vlan-id	VLAN ID Â

```
Ruijie# show mac-address-table vlan 1
Vlan    MAC Address      Type       Interface
-----  -------------   -------  ------------------
1    00d0.f800.1001   STATIC   gigabitethernet 1/1
1    00d0.f800.1002   STATIC   gigabitethernet 1/1
1    00d0.f800.1003   STATIC   gigabitethernet 1/1
```

show mac-address-table static	Â
show mac-address-table filtering	Â
show mac-address-table dynamic	Â
show mac-address-table address	Â
show mac-address-table interface	Â
show mac-address-table count	Â

1

13 DHCP Snooping

13.1 DHCP snooping

13.1.1 ip dhcp snooping

DHCP Snooping ¶ ˘ ЮО ¾ Â ¾ no ˘ DHCP Snooping ¶ Â

[**no**] **ip dhcp snooping**

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DHCP Snooping ¶ Л˘ ЛЪ **show ip dhcp snooping** ¾ DHCP snooping ¶ Â

~ DHCP Snooping б Private VLAN ¶ a Â

ЮО DHCP snooping ¶ '

```
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping
Ruijie(config)# end
Ruijie# show ip dhcp snooping
Switch DHCP snooping status ' ENABLE
```

show ip dhcp snooping	DHCP snooping Â

¾	
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13.1.2 ip dhcp snooping bootp-bind

DHCP Snooping Bootp ˇ ÞO ¾ Â
¾ no ˇ DHCP snooping Bootp Â

[**no**] **ip dhcp snooping bootp-bind**

-	-

Â

¾ Â

ÞO DHCP Snooping Bootp Â ˇ DHCP Snooping Bootp Â Bootp ˇ DHCP Snooping Bootp Â

ÞO DHCP Snooping Bootp '

```
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping bootp-bind
Ruijie(config)# end
Ruijie# show ip dhcp snooping
Switch DHCP snooping status ' ENABLE
Verification of hwaddr field status ' DISABLE
DHCP snooping database write-delay time: 0 seconds
DHCP snooping option 82 status: ENABLE
DHCP snooping Support Bootp bind status: ENABLE
Interface            Trusted       Rate limit (pps)
-----------------------  -------    ------------
```

- - - -

-	-

13.1.5 ip dhcp snooping information option

DHCP ╗ option82 ╗ ˘ ЮО ¾ Â
¾ no ˘ ╗ Â

[**no**] **ip dhcp snooping information option**

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╗ Â

¾

¾˘ DHCP ╗ option82 ˘ DHCP Ł option82
ˇ Â

ЮО DHCP ╗ option82 ╗ '

```
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping information option
Ruijie(config)# end
Ruijie# show ip dhcp snooping
Switch DHCP snooping status ' ENABLE
Verification of hwaddr field status ' DISABLE
DHCP snooping database write-delay time: 0 seconds
DHCP snooping option 82 status: ENABLE
DHCP snooping Support Bootp bind status: ENABLE
Interface                Trusted    Rate limit (pps)
-----------------------  -------    ------------
```

¾	
show ip dhcp snooping	DHCP snooping Â

Ñ

¾	Ñ

DHCP ˘ Ю ֳ Â ֳ
no ˘ ↓ ⁸ Â

[**no**] **ip dhcp snooping limit rate** *rate-value*

rate-value	˘ PPS[Packet Per Second]

⁸

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ֳ ̀ ֳ Â
Ⅱ DHCP Snooping ⁸ VLAN ˘ Â
ǂ Э˘ CPP[CPU Protect Protocol]Ⅱ Â CPP DHCP
⁸˘ CPP ″I DHCP Snooping ⁸Ⅱ Â
CPP ǂ ˘ έ Â
↓Л **show ip dhcp snooping** ֳ˘ Э ⁸ Â

Ю 1 ⁸ ̀ 100pps'

```
Ruijie# configure terminal
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ip dhcp snooping limit rate 100
Ruijie(config-if)# end
Ruijie# show ip dhcp snooping
Switch DHCP snooping status ' ENABLE
Verification of hwaddr field status ' DISABLE
DHCP snooping database write-delay time: 0 seconds
DHCP snooping option 82 status: ENABLE
DHCP snooping Support Bootp bind status: ENABLE
Interface                Trusted    Rate limit (pps)
-----------------------  -------    ------------
FastEthernet0/1           NO         100
```

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ֳ	
show ip dhcp snooping	DHCP snooping Â

↓

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13.2.2 ip dhcp snooping suppression

ŭ suppression ˘ ЮО ٣ Â ٣ no ˘
ŭ no suppression Â

[**no**] **ip dhcp snooping suppression**

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٦	Â
٣	Â
	٣˘ ٧ ЮО DHCP ˘ ЮО DHCP Â

ЮО **fastethernet** *0/2* ŭ suppression '

```
Ruijie# configure terminal
Ruijie(config)# interface fastethernet 0/2
Ruijie(config-if)# ip dhcp snooping suppression
Ruijie(config-if)# end
```

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13.2.3 ip dhcp snooping trust

DHCP snooping ù TRUST ˘ Ю ¾ Â
¾ no ˘ ù UNTRUST Â

[**no**] **ip dhcp snooping trust**

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Ю˘ ù UNTRUST Â

¾ Â

¾˘ DHCP Ł ù TRUST ÂTRUST
DHCP ˘ UNTRUST DHCP Â

Ю **fastethernet** 0/1 ù TRUST '

```
Ruijie# configure terminal
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ip dhcp snooping trust
Ruijie(config-if)# end
Ruijie# show ip dhcp snooping
Switch DHCP snooping status ' ENABLE
Verification of hwaddr field status ' DISABLE
DHCP snooping database write-delay time: 0 seconds
DHCP snooping option 82 status: ENABLE
DHCP snooping Support Bootp bind status: ENABLE
Interface                Trusted    Rate limit (pps)
-----------------------  -------    ------------
FastEthernet0/1           YES         unlimited
```

13.3 DHCP snooping

13.3.1 show ip dhcp snooping

DHCP Snooping ˘ Ю ¾ Â

show ip dhcp snooping

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¾˘ ┘Л DHCP Snooping Â

Ю DHCP Snooping '

```
Ruijie# show ip dhcp snooping
Switch DHCP snooping status ' ENABLE
Verification of hwaddr field status ' DISABLE
DHCP snooping database write-delay time: 0 seconds
DHCP snooping option 82 status: ENABLE
DHCP snooping Support Bootp bind status: ENABLE
Interface                Trusted    Rate limit (pps)
------------------------ -------    ------------
```

¾	
ip dhcp snooping	DHCP snooping Â
ip dhcp snooping verify mac-address	DHCP snooping mac Â
ip dhcp snooping write-delay	flash Â
Ip dhcp snooping information option	DHCP ╗ option82 Â
ip dhcp snooping bootp-bind	DHCP Snooping Bootp ╗ Â
ip dhcp snooping trust	и DHCP snooping trust Â

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13.3.2 show ip dhcp snooping binding

DHCP Snooping ˇ Ю ३ Â

show ip dhcp snooping binding

-	-

३

३ˇ ᐯ Л∪ DHCP Snooping Â

13.4 DHCP snooping

13.4.1 clear ip dhcp snooping binding

DHCP Snooping ╠ ˘ Ю ३ Â

clear ip dhcp snooping binding

-	-

३

३˘ ┘Л DHCP snooping ╠ Â

Ю DHCP snooping ╠ '

```
Ruijie# clear ip dhcp snooping binding
Ruijie# show ip dhcp snooping binding
Total number of bindings: 0
MacAddress IpAddress Lease(sec) Type VLAN Interface
-------  ---  ----------  ---------  ----  ---------
```

३	
show ip dhcp snooping binding	DHCP snooping Â

┘

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13.4.2 debug ip dhcp snooping

Э DHCP Snooping ╖ ˘ Ю ३ Â

debug ip dhcp snooping {**event** | **packet**}

-	-

¾

¾˘ DHCP snooping ¶ Â

ÞO DHCP snooping '

```
Ruijie# debug ip dhcp snooping event
Ruijie# debug ip dhcp snooping packet
```

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14 IGMP Snooping

14.1

14.1.1 deny

profile ˘ profile Ю ٣ deny Â

deny

deny	profile

profile deny Â

٣ profile Â

″I profile Ю range ٣ Â٨ ˘ и profile ˘ profile Э Â

Ю … 224.2.2.2 profile '

```
Ruijie(config)# ip igmp profile 1
Ruijie(config-profile)# range 224.2.2.2
Ruijie(config-profile)# deny
```

٣	
ip igmp profile	… profile
range	

٨

٨	
-	-

14.1.2 permit

profile ˘ profile Ю ٪ permiť profile
٨ Â

permit

permit	profile Â

profile deny Â

٪ profile Â

″I profile Ю range ٪ Â٨ ˘ и profile ˘
profile ٪ Э Â

Ю … ٨ 224.2.2.2 profile '

```
Ruijie(config)# ip igmp profile 1
Ruijie(config-profile)# range 224.2.2.2
Ruijie(config-profile)# permit
```

٪	
ip igmp profile	… profile
range	

٨

٨	
-	-

14.1.3 range

profile ˘ profile Ю ٪ rangeˇ ٦ Л∪
˘ ≠ ٦ Л∪ Â ٪ no Â

range *low-ip-address* [*high-ip-address*]

no range *low-ip-address* [*high-ip-address*]

low-ip-address	

high-ip-address	

Â

३ profile Â

ʌ˘ ù˘ profile ù deny Â ʌ ˘ ù profile ˘ profile Э Â

Ю … ù 224.2.2.2~224.2.2.244 profile '

```
Ruijie(config)# ip igmp profile 1
Ruijie(config-profile)# range 224.2.2.2 224.2.2.244
```

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३	
ip igmp profile	… profile
deny	profile ù ù deny
permit	profile ù ù permit

ʌ

३

ʌ	
-	-

14.1.4 ip igmp profile

IGMP profile ⁸ Â profile ˘ ˝I Ю profile Â ३ ३˘ profile-number˘ igmp profile Â

ip igmp profile *profile-number*

no ip igmp profile *profile-number*

profile-number	profile ʌ˘ 1-65535

Â

३ Â

IGMP Profiles Э ˘ ľ SVGL Ł à ľ Ł à ľ IGMP Filtering Ł ╖ Â ˘ ŕ profile ˘ profile ╖ Â

Ю … /ŕ ŕ 1 profile profile Â

```
Ruijie(config)# ip igmp profile 1
Ruijie(config-profile)#
```

٪

٪	
range	profile Â
permit	profile ŕ ŕ permit
deny	profile ŕ ŕ deny

ٸ

٪

/ŕ	
-	-

14.1.5 ip igmp snooping ivgl

igmp snooping ivgl ˘ ٪ **ip igmp snooping ivgl** Â ٪ no igmp snooping Â

ip igmp snooping ivgl

no ip igmp snooping

-	-

disable Â

٪ Â

Ю˝ VLAN Â ў ٸ б ٸ VLAN , VLAN ˘ ٸ ٸ VLAN Â

pim snooping igmp snooping IVGL IVGL-SVGL
˘ no ip igmp snooping igmp snooping ╖ ˘
~ pim snooping ‡ ″I pim snooping˘ ȝ
a ╖ Â

Ю Э igmp snooping ivgl '
Ruijie(config)# **ip igmp snooping ivgl**

ৡ	
ip igmp snooping svgl	igmp snooping svgl Â
ip igmp snooping ivgl-svgl	igmp snooping Â

ᴎ

ᴎ	
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14.1.6 ip igmp snooping vlan

vlan Э igmp snooping ivgl ˘ ৡ **ip igmp snooping vlan** Â ৡ no igmp snooping Â

ip igmp snooping vlan vid

no ip igmp snooping vlan vid

vid	vlan id

disable Â

ৡ Â

Ю˝ vlan Э ╟ IGMP Snooping ╖ ˘
ৡ Â

vlan Э pim snooping igmp snooping ˘
~ no ip igmp snooping vlan vlan Э igmp snooping ╖ ˘
pim snooping VLAN ‡ ″I pim snooping˘
ȝ a ╖ Â

Ю vlan 2 Э igmp snooping'

```
Ruijie(config)# ip igmp snooping vlan 2
```

¾	
ip igmp snooping ivgl	igmp snooping ivgl Â
ip igmp snooping ivgl-svgl	igmp snooping Â

/I

/I

؟	/!	
	-	-

14.1.8 ip igmp snooping svgl profile

profile SVGL ˘ ﻟﺦ ﻱ ﺀ Â

	ﻗ7 lD806 Td( )TJC Td(8.796 1 Tf-E3>]TJTT<350E2CD516JTT1 1 Tf0 Tr 4.01JC)5fb1G4jv 14018 Tc 5.2390
	Â@ç47…ØþÞBÿU6

ЮЈ NJ À Ò ª ﻣﺰ ﺡ

no ip igmp snooping dyn-mr-aging-time

time	╠ ⌐ ; ˇ ٧ <1-3600> Â

300s

٣ Â

╠ è IGMP PIM
Hello ˇ ÿ Â ╠ ⌐
Ю˘ ٦ Л∪ ٣ ╠ ˇ ˇ
٦ ╗ Â

Ю ╠ ⌐ и 100s'
`Ruijie(config)# ` **`ip igmp snooping dyn-mr-aging-time`** *`100`*

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14.1.10 ip igmp snooping fast-leave enable

igmp snooping ╗ ˇ ٣ **ip igmp snooping fast-leave enable** Â ٣ no igmp snooping fast-leave Â

ip igmp snooping fast-leave enable

no ip igmp snooping fast-leave enable

-	-

disable Â

٣ Â

ÿ ў IP IGMP
˘ ÿ Â Л˘
IP IGMP ˘ a ЎĄ Â Э˘
Ю ↓ ˘ ‡ ↓ Л‰

Ю ╟ ˉ й 100s

```
Ruijie(config)# ip igmp snooping query-max-response-time 100
```

ip igmp snooping limit-ipmc	ip

IP

no IP Â

address **server** *saddress*

vid **address** **server**

vid	ip vlan id Â

(

ৡ	/I	
	-	-

14.1.14 ip igmp snooping source-check port

8 ৲ Â igmp snooping

ℸ ˘ ৡ **ip igmp snooping source-check port** Â ৡ no

14.1.15 ip igmp snooping suppression enable

igmp snooping Report ⁸ ╖ ˘ ৡ **ip igmp snooping suppression enable** Â ৡ no igmp snooping suppression Â

ip igmp snooping suppression enable

no ip igmp snooping suppression enable

-	-

disable Â

ৡ Â

IGMP ⁸ ╖ ⁄˘ ৸

vlan IGMP Report ˘ ⁄

IGMP Report su76.84 5n 0 Tc 0 Tw 12.166 0 Td <01C81B5B11DA>6<03E13A534AD43C3>6

vid	vlan id Â
interface-id	id

Â

٩ Â

ل Л Э ى ˘ ÿ Э IP
ل Л Â Ю˝ ل ÿ
˘ è Â
╟ ˝ ╖ Ю˝ ل Л Â

Ю
Ruijie(config)# **ip igmp snooping vlan** *1* **mrouter interface fastEthernet** *0/1*

٩	
ip igmp snooping source-check port	

ل

٩	
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14.1.18 ip igmp snooping vlan mrouter learn pim-dvmrp

╟ IGMP Query/Dvmrp/PIM Hellp ˘ Л ╟ ˘
٩ **ip igmp snooping vlan mrouter learn** Â ٩ no ل ╟
˝ Â

ip igmp snooping vlan *vid* **mrouter learn pim-dvmrp**

no ip igmp snooping vlan *vid* **mrouter learn pim-dvmrp**

vid	vlan id Â

╖ Â

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б è Â ЮЎ
VLAN ╟ ⌐ ˘ ┘Л VLAN ╟
⌐ ╥ ˘ no ֽ ╟ ⌐ ˘ ╟ ⌐ Â
˘ ┘ ÿ
ЎĄ ' ÿ ў ˘ Â
╥ ЮЎ ╟ ⌐ ˘ ┘Л igmp snooping
Â

Ю vlan 1 ╟ ⌐ ╥ '

```
Ruijie(config)# ip igmp snooping vlan 1 mrouter learn pim-dvmrp
```

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ip igmp snooping mrouter learn pim-dvmrp	╟ ⌐ ╥

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14.1.19 ip igmp snooping vlan static interface

igmp snooping ЮЎ ˘ ‡ a ┘
IGMP Â ֽ **ip igmp snooping vlan static interface** Â
ֽ no Â

ip igmp snooping vlan *vid* **static** *ip-addr* **interface** *interface-id*

no ip igmp snooping vlan *vid* **static** *ip-addr* **interface** *interface-id*

vid	vlan id
ip-addr	
interface-id	id

Â

ֽ Â

˩ Л∪ й Â

Ю Э '

```
Ruijie(config)# ip igmp snooping vlan 1 static 224.0.0.2 interface
fastEthernet 0/1
```

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ֽ	
ip igmp snooping vlan mrouter interface	

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14.1.20 ip igmp snooping filter

˩ ˘ Ю ֽ

profile Â ֽ no profile Â

ip igmp snooping filter *profile-number*

no ip igmp snooping filter *profile-number*

profile-number	profile ʌ˘ ˩ <1-65536>

Â

ֽ Â

IGMP Profile Ю˘ IGMP Report ˘ ‡

╗ IGMP Profile Â ˘ ‡ ╗ ˘

ʌ ʌ Â ″I … profile˘ ʌ filter Â

Ю ″I 0/1 Э profile 1'

```
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ip igmp snooping filter 1
```

३	

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14.2

14.2.1 show ip igmp snooping

igmp snooping Â

Show ip igmp snooping [**gda-table** | **interfaces** | **mrouter**| **statistics** [**vlan** *vlan-id*]]

	igmp snooping ╗ Â
gda-table	‡ Â
interfaces	igmp snooping filtring Â
mrouter	Â
statistics [**vlan** *vlan-id*]	snooping Â
vlan	vlan ŀO snooping

३ EXEC

	IGMP Snooping
event	IGMP Snooping Y
packet	IGMP Snooping
msf	IGMP Snooping б
warning	IGMP Snooping

३ EXEC

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15 MSTP

15.1

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forward-time à hello-time à max-age Ь ˘ è

è ч Â Ь ⁸ '

2*(Hello Time+1.0snd) <= Max-Age Time <= 2*(Forward-Delay – 1.0snd)

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# spanning-tree autoedge disabled
```

¾	
show spanning-tree interface	STP Â

-	-

15.1.6 spanning-tree bpduguard

BPDU Guard Â ⅃Ո ৡ enabled disabled
BPDU Guard Â

spanning-tree bpduguard [**enabled** | **disabled**]

enabled	BPDU Guard Â
disabled	BPDU Guard Â

Â

ৡ Â

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# spanning-tree bpduguard enable
```

ৡ	
show spanning-tree interface	STP Â

Ⅰ	
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15.1.7 spanning-tree compatible enable

MSTI ˇ Ո б è
Â

spanning-tree compatible enable

no spanning-tree compatible enable

-	-

?

Ruijie(config-if)#**spanning-tree compatible enable**

?	

-	-

root guard Â ¾ no root guard Â root guard ¶
˘ Æ ˩ Â

spanning-tree guard root

no spanning-tree guard root

-	-

root guard ¶ Â

¾ Â

Ruijie(config)# **interface gigabitethernet** *1/1*
Ruijie(config-if)# **spanning-tree link-type point-to-point**

¾	
show spanning-tree interface	STP

/I	
-	-

15.1.12 spanning-tree loopguard default

loop guard Â ¾ no loop guard Â loop guard ¶
˘ a bpdu ¬ Â

spanning-tree loopguard default

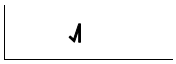
no spanning-tree loopguard default

-	-

loop guard ¶ Â

Ruijie(config)# **spanning-tree loopguard default**

¾



instance vlan Vlan Instance 0 Â
name ù Â
revision ù 0 Â

¾ .

˘ end ¾˘ Ctrl+C Â
˘ exit ¾ Â
MST ʌ˘ ˩ ʃʊ ʃʊЮ ¾ '
instance *instance-id* v**lan** *vlan-range*' MST ˩ ˘ ' ˩ ʃʊ ˩ ʃʊ 32 Â ˩ ʃª no name Vlan ¶ MST Instance instance-id ù 0¨ 64 Âvlan è Â
revision *version*' MST ˘ 0¨ 65535 Â ˩ ʃʊ no revision è Â
show' MST region Â

Ю MST ˘ VLAN 3, 5-10 MST Instance 1.

```
Ruijie(config)# spanning-tree mst configuration
Ruijie(config-mst)# instance 1 vlan 3˘ 5-10
Ruijie(config-mst)# name region 1
Ruijie(config-mst)# revision 1
Ruijie(config-mst)# show
MST configuration
Name [region1]
Revision 1
Instance  Vlans Mapped
----------  --------------------
0       1-2,4,11-4094
1       3,5-10
---------------------------------
Ruijie(config-mst)# exit
Ruijie(config)#
```

VLAN 3 ÿ Instance 1 ˘ ѫ MST ⁄˘ Ю

```
Ruijie(config-mst)# no instance 1 vlan 3
```

Instance 1 ˘ Ю'

```
Ruijie(config-mst)# no instance 1
```

⌟⎍ MST ৡ show Э Â

ৡ

ৡ	
show spanning-tree mst	MST region
instance instance-id vlan vlan-range	Vlan ╗ MST Instance
name	MST ⌡
revision	MST ⁄
show	MST Ю MST

⁄

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-	-

MSTP

Region ˘ ˮI ˮI Â ˮI ⅃ ˘ Ⅱ
/I Â

Ю Instance 20 Gigabitethernet 1/1 ˮI ѝ 10ʹ

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# spanning-tree mst 20 port-priority 0
```

⅃Ⅱ **show spanning-tree mst instance interface** *interface-id* ৡ Э
Â

ৡ	
show spanning-tree mst	MSTP Â

.

Ю Instance 20 ″I й 8192″

```
Ruijie(config-if)# spanning-tree mst 20 priority 8192
```

ㅓЛЪ **show spanning-tree mst instance interface interface-id** ३ Э Â

३	
show spanning-tree mst	MSTP Â
spanning-tree mst cost	Â
spanning-tree mst port-priority	a ㅓ Instance ″I Â

ㅅ

/I	
-	-

15.1.19 spanning-tree pathcost method

Â ३ no Â

spanning-tree pathcost method [**long** | **short**]

no spanning-tree pathcost method

long	802.1t path-cost Â
short	802.1d path-cost Â

802.1T Path-cost Â

Â

```
Ruijie(config-if)# spanning-tree pathcost method  long
```

३	

show spanning-tree interface	STP Â

¼

¾	
¼	
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15.1.20 spanning-tree portfast

Portfast Â ¼Ú ¾ disabled Portfast Â

spanning-tree portfast [**disabled**]

disabled	Portfast Â

Â

¾ Â

-

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# spanning-tree portfast
```

¾	
show spanning-tree interface	STP Â

¼

¾	
¼	
-	-

15.1.21 spanning-tree portfast bpdufilter default

BPDU filter Â ¼Ú ¾ no BPDU filter Â

spanning-tree portfast bpdufilter default

no spanning-tree portfast bpdufilter default

-	-

BPDU filter

३ Â

```
Ruijie(config)# spanning-tree portfast bpduguard default
```

show spanning-tree interface	STP

ă…	ő Ń

15.1.24 spanning-tree reset

spanning-tree

३

Ruijie(config-if)# **spanning-tree tc-guard**

३	
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✓

/1	
-	-

15.1.26 spanning-tree tc-protection

tc- protection Â ३ no tc- protection Â

spanning-tree tc- protection

no spanning-tree tc- protection

-	-

tc- protection Â

३ Â

Ruijie(config)# **spanning-tree tc- protection**

३	
-	-

✓

¾	/¼	
	-	-

15.1.27 spanning-tree tc-protection tc-guard

tc- guard Â ¾ no tc- guard Â tc-guard ¶¶ ˘ tc Â

spanning-tree tc-protection tc-guard

no spanning-tree tc-protection tc-guard

	-	-

tc- guard Â

¾ Â

Ruijie(config)# **spanning-tree tc-protection tc-guard**

¾	¾	
	-	-

¼

¾	/¼	
	-	-

15.1.28 spanning-tree tx-hold-count

STP TxHoldCount ˘ BPDU Â ¾ no Â

spanning-tree tx-hold-count *tx-hold-count*

no spanning-tree tx-hold-count

tx-hold-count	TxHoldCount Â ÿ 1 10 Â

3 Â

¾ Â

```
Ruijie(config)# spanning-tree tx-hold-count 5
```

¾	

show spanning-tree

tx-hold-count	TxHoldCount Â
pathcost method	Â

¾ Â

Ruijie# **show spanning-tree hello-time**

¾	
spanningtree pathcost method	
spanning-tree forward-time	BridgeForwardDelay Â
spanning-tree hello-time	BridgeHelloTime Â
spanning-tree max-age	BridgeMaxAge Â
spanning-tree max-hops	instance
spanning-tree tx-hold-count	TxHoldCount Â

¾

/I	
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15.2.2 show spanning-tree interface

STP Â ¬ Â

show spanning-tree interface *interface-id* [{**bpdufilter** | **portfast** | **bpduguard** | **link-type** }]

interface-id	/I
bpdufilter	bpdufilter Â
portfast	portfast Â
bpduguard	bpduguard Â

link-type	linktype

5

Ruijie# **show spanning-tree mst configuration**

spanning-tree mst configuration	MST region
spanning-tree mst cost	instance
spanning-tree mst max-hops	instance
spanning-tree mst priority	instance ″I
spanning-tree mst port-priority	instance ″I

-	-

16 SPAN

16.1

16.1.1 monitor session

… SPAN ˆ ˜ ˆ ˜ . ¾ no
Â

monitor session *session_number* {**source interface** *interface-id* [**both** | **rx** | **tx**] | **destination interface** *interface-id* **switch** | [**acl**

SPAN 3

¾

Ю **show monitor** ¾ SPAN 1

```
Ruijie# show monitor session 1
sess-num: 1
src-intf:
GigabitEthernet 3/1 frame-type Both
dest-intf:
GigabitEthernet 3/8
```

¾

¾	
monitor session	… SPAN ˆ ~ ˆ ~ Â

Ñ

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17

1/2 //a ¬

```
Ruijie(config)# monitor session 2 destination remote vlan 7
interface gigabitEthernet 1/3 switch //  ¬
Ruijie(config)# monitor session 2 destination remote vlan 7
reflector-port interface gigabitEthernet 1/1 switch
  2'
Ruijie(config)# monitor session 2 remote-destination
Ruijie(config)# monitor session 2 destination remote vlan 7
interface gigabitEthernet 1/1 switch
```

¾

¾	
show monitor	Â

¬ a ¬ reflector-port Â

¾

¬	
-	-

17.1.2 remote-span

¾ RSPAN VLAN

[**no**] **remote-span**

-	-

¾ VLAN

˘ **end** ¾˘ Ctrl+C Â

˘ **exit** ¾

```
Ruijie(config)# vlan 5
Ruijie(config)# remote-span
```

¾

¾	

	show vlan	Vlan Â

³	/I	
	-	-

18 IP

18.1

18.1.1 ip address

३ IP ˇ ⊿ Л∪ no

C Â ч ˘ Лъ IP Â
γ ˘ ĭ Â IP ┘Лъ
˘ IP Â ˘ IP Â
ч ⁄ ˘ ┘Лъ… ˘
IP ˘ Â a ч ч
Лъ Э Â

Р

ЛъЮ ˘ ў IP й 10.10.10.1˘ й 255.255.255.0 Â

```
ip address 10.10.10.1 255.255.255.0
```

show interface	Â

Â ٨ ˘ ЛЬЮ ⁸'
Л∪ a ٨ Â
SLIP àHDLC àPPP àLAPB àFrame-relay ˘ ٦ Л∪ ٨ Â
˘ ٦ ٨ Â X.25 a
٨ Â
a ping ٶ ٨ ˘ ѝ ٨ IP Â
SNMP ٦ Л∪ ٨ Â
a ٨ ╟ Â

ЛЬЮ ˘ ѝ ٨ ˘ ѝ FastEthernet 0/1 Â
IP Â

```
ip unnumbered fastEthernet 0/1
```

ٶ	
show interface	Â

٦

٨	
-	-

18.2

18.2.1 arp

ٶ˘ ٦ Л∪ ARP ă ╗ IP MAC Â ٶ no ٦ Л∪ MAC Â

arp [**vrf** *name*] *ip-address MAC-address type*

no arp [**vrf** *name*] *ip-address*

vrf *name*	VRF ˘ name VRF ٫ Â

ARP ă Â

३ Â

RGOS ARP ă ˘ 32 Æ IP 48 Æ MAC Â
ў ╟ ARP ˘ Л υ a ARP Â **clear** 2

1' ЛЬЮ ˘ SVI 1 ARP Â

```
Ruijie(config)# interface vlan 1
Ruijie(config-if)# arp gratuitous-send interval 1
```

2' ЛЬЮ ˘ SVI 1 ARP

```
Ruijie(config)# interface vlan 1
Ruijie(config-if)# no arp gratuitous-send
```

¾	

	Arp retry times *number*	ARP

ʒ˘ ˩ Л∪ ARP Â ʒ no ˩ Л∪ 8192 Â

arp unresolve *number*

no arp unresolve

number	ARP ˘ ˩ ѝ < 1-8192 > Â ѝ 8192

ARP ă ˩ Л∪ 8192 Â

ʒ Â

ARP ˘ з л ˘ ˩ Л∪ ʒ 8 Â

ЛЮ ˘ ѝ 500 Â

```
arp unresolved 500
```

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18.2.7 ip proxy-arp

Э ʒ ARP ╖ ˘ ˩ Л∪ **ip proxy-arp** ʒ Â ʒ no ˩ Л∪ ʒ ARP ╖ Â

ip proxy-arp

no ip proxy-arp

-	-

10.2(3) ﾉ(10.2(3)) ˘ Ь ֽ ARP˝ ֽ
ARP Â

ֽ Â

ֽ ARP ╖ ┘Л ╠ ў ˘ è IP MAC
Â ARP ˘ ARP IP б IP a
┘ ˘ IP ˘ ARP ˘
MAC ѝ Л MAC Â Л Э ֽ ARP ╖ Â

ЛЮ ˘ Л FastEthernet 0/1 ֽ ARP ╖ Â

```
interface fastEthernet 0/1
no switchport
ip proxy-arp
```

ֽ

mask ѝ ˘ ARP ˘

mask

vrf *vrf_name*	VRF ˘ VRF ARP Â
trusted	˩ ARP ˘ ˩ VRF ˩ ARP Â
ip	IP ˘ IP ARP ' ***trusted*** ˘ ‡ ˩ ˩ ARP ˘ ‡ ˩ ARP Â
mask	IP ARP ; trusted ˘ ‡ ˩ ˩ ARP ˘ ‡ ˩ ARP Â
static	arp Â
mac-address	mac ARP Â
complete	╟ arp Â
incomplete	╟ arp Â
oob	(interface of mgmt) ARP Â

ʒ Â

1' ЛьЮ ѝ show arp '

```
Ruijie# show arp
Total Numbers of Arp: 7
Protocol  Address         Age(min)  Hardware
Type   Interface
Internet  192.168.195.68   0         0013.20a5.7a5f  arpa   VLAN 1
Internet  192.168.195.67   0         001a.a0b5.378d  arpa   VLAN 1
Internet  192.168.195.65   0         0018.8b7b.713e  arpa   VLAN 1
Internet  192.168.195.64   0         0018.8b7b.9106  arpa   VLAN 1
Internet  192.168.195.63   0         001a.a0b5.3990  arpa   VLAN 1
Internet  192.168.195.62   0         001a.a0b5.0b25  arpa   VLAN 1
Internet  192.168.195.5    --        00d0.f822.33b1  arpa   VLAN 1
```

ARP ă Ђѫ Ю'

Protocol	˘ ѝ Internet Â
Address	б IP Â

Age (min)	ARP ă ˘ Лў Â ˘ “-” Â
Hardware	б IP Â
Type	˘ Л ù ARPA Â
Interface	б IP Â

2' ЛЬЮ show arp 192.168.195.68

```
Ruijie# show arp 192.168.195.68
Protocol  Address   Age(min)  Hardware       Type   Interface
Internet  192.168.195.68   1   0013.20a5.7a5f  arpa   VLAN 1
```

3' ЛЬЮ **show arp** 192.168.195.0 255.255.255.0

```
Ruijie# show arp 192.168.195.0 255.255.255.0
Protocol  Address   Age(min)  Hardware   Type   Interface
Internet  192.168.195.64   0   0018.8b7b.9106  arpa   VLAN 1
Internet  192.168.195.2    1   00d0.f8ff.f00e  arpa   VLAN 1
Internet  192.168.195.5    --   00d0.f822.33b1  arpa   VLAN 1
Internet  192.168.195.1    0   00d0.f8a6.5af7  arpa   VLAN 1
Internet  192.168.195.51   1   0018.8b82.8691  arpa   VLAN 1
```

4' ЛЬЮ **show arp** *001a.a0b5.378d*

```
Ruijie# show arp 001a.a0b5.378d
Protocol  Address  Age(min)  Hardware  Type   Interface
Internet  192.168.195.67   4   001a.a0b5.378d  arpa   VLAN 1
```

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18.3.3 show arp counter

ARP arp Â

show arp counter

-	-

ЛЬЮ й **show arp counter**

```
Ruijie# show arp counter
The Arp Entry counter:0
The Unresolve Arp Entry:0
```

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18.3.4 show arp detail

ARP Â

show arp detail [*interface-type interface-number*| *ip* [*mask*] | *mac-address* | **static** | **complete** | **incomplete**]

interface-type interface-number	Ь γ ARP
ip	ip ˘ ip ARP
ip mask	ip mask ARP
mac-address	mac ARP
static	arp
complete	╟ arp
incomplete	╟ arp

ꝛ

ARP ˘ ARP ˆ ╟ à à à ↓ ˜ à
γ ˘ ↓ Л∪ ꝛ Â

Л∪Ю ѝ **show arp detail** '

```
Ruijie# show arp detail
```

IP Address	MAC Address	Type	Age(min)	Interface	Port
20.1.1.1	000f.e200.0001	Static	--	--	--
20.1.1.1	000f.e200.0001	Static	--	Vl3	--
20.1.1.1	000f.e200.0001	Static	--	Vl3	Gi2/0/1
193.1.1.70	00e0.fe50.6503	Dynamic	1	Vl3	Gi2/0/1
192.168.0.1	0012.a990.2241	Dynamic	10	Gi2/0/3	Gi2/0/3
192.168.0.1	0012.a990.2241	Dynamic	20	Ag1	Ag1
192.168.0.1	0012.a990.2241	Dynamic	30	Vl2	Ag2
192.168.0.39	0012.a990.2241	Local	--	Vl3	--
192.168.0.39	0012.a990.2241	Local	--	Gi2/0/3	--
192.168.0.1	0012.a990.2241	Local	--	Vl3	--
192.168.0.1	0012.a990.2241	Local	--	Gi2/3/2	--

ARP ă Ьѫ Ю'

IP Address	б IP Â
MAC Address	б IP Â
Type	ARP ˘ à ╟ à ↓ à Â
Age	ARP ⌐ ˘ Æ Â
Interface	б IP Ь Â
Port	б ARP γ Â

-	-

18.3.6 show ip arp

ˆ ARP˜ ğ ˘ ع Â

show ip arp

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ع

ЛЬЮ й **show ip arp** '

```
Ruijie# show ip arp
Protocol Address      Age(min)Hardware       Type
Interface
Internet 192.168.7.233  23   0007.e9d9.0488  ARPA FastEthernet 0/0
Internet 192.168.7.112  10   0050.eb08.6617  ARPA FastEthernet 0/0
Internet 192.168.7.79   12   00d0.f808.3d5c  ARPA FastEthernet 0/0
Internet 192.168.7.1    50   00d0.f84e.1c7f  ARPA FastEthernet 0/0
Internet 192.168.7.215  36   00d0.f80d.1090  ARPA FastEthernet 0/0
Internet 192.168.7.127  0    0060.97bd.ebee  ARPA FastEthernet 0/0
Internet 192.168.7.195  57   0060.97bd.ef2d  ARPA FastEthernet 0/0
Internet 192.168.7.183  --   00d0.f8fb.108b  ARPA FastEthernet 0/0
```

ARP ğ ЬЖ ЮЎ

Protocol	˘ й Internet Â
Address	б IP Â
Age (min)	ARP ğ ˘ Лў Â ˘ “-” Â
Hardware	б IP Â
Type	˘ Лъ й ARPA Â
Interface	б IP Â

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18.3.7 show ip interface

ꝛ ꓘ ꓛU IP Â ꝛ ЮՎ

show ip interface [*interface-type interface-number*]

Interface-type	
Interface-number	ꓥ

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ꓘ ˘ RGOS … Â ꓘ
RGOS ꓘ ꓛU Â ÿ ꓘ ꓘ й a ꓘ ˘ RGOS
ÿ Â
ꓘ ˘ ꓘ ˘ Ի UP Ŀ’
ꓘ ˘ Ի UP Ŀ Â
a ꓘ ˘ ꓘ a ˘ й Â

ꓛUЮ й **show ip interface** Â

```
Ruijie# show ip interface FastEthernet 0/1
IP interface state is: UP
IP interface type is: BROADCAST
IP interface metric is: 0
IP interface MTU is: 1500
IP address is:
192.168.5.133/24 (primary)
IP address negotiate is: OFF
```

```
Forward direct-boardcast is: ON
ICMP mask reply is: ON
Send ICMP redirect is: ON
Send ICMP unreachabled is: ON
DHCP relay is: OFF
Fast switch is: ON
```

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18.4

18.4.1 ip default-gateway

γ Э ˘ ٦ **ip default-gateway** Â ٦ no Â

ip default-gateway

no ip default-gateway

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19 DHCP Relay

19.1

19.1.1 ip dhcp relay check server-id

DHCP Relay check server-id ╖ ˘ ┘ Л∪ ৡ Â ৡ no
DHCP Relay check server-id ╖ Â

[**no**] **ip dhcp relay check server-id**

-	-

ৡ

D H ৡ˘ C P i a y

DHCP Relay option dot1x ╖ ˘ ⅃Л Ъ ⅋ Â ⅋ no ╖ Â

[**no**] **ip dhcp relay information option dot1x**

-	-

⅋

⅋ ″I DHCP ╖ ˘ ⅄ 802.1x Â

ЛЪЮ ˘ DHCP Э option dot1x ╖ Â

```
Ruijie# configure terminal
Ruijie(config)# ip dhcp relay information option dot1x
```

⅋	
service dhcp	DHCP
ip dhcp relay information option dot1x access-group *acl-name*	option dot1x acl

⅄

⅄	
-	-

19.1.3 ip dhcp relay information option dot1x access-group

DHCP Relay option dot1x ACL˘ ⅃Л Ъ ⅋ Â ⅋ no DHCP Relay option dot1x ACL Â

[**no**] **ip dhcp relay information option dot1x access-group** *acl-name*

-	-

a ACL

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ٹ ACL б Э ACL ACE a ٦ ŏ Â

ЛЬЮ ˘ dhcp option dot1x acl Â

```
Ruijie#
```

	ip dhcp relay information option dot1x	DHCP option dot1x ╖

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19.1.4 ip dhcp relay information option82

DHCP Relay option82 ╖ ˘ ┘Л¾ Â ¾ no ╖ Â

[**no**] **ip dhcp relay information option82**

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¾

╖ б option dot1x ╖ ˘ a ┘ ┘ Â

ЛЬЮ ˘ DHCP Э˘ opion82 ╖ '

```
Ruijie# configure terminal
Ruijie(config)# Ip dhcp relay information option82
```

¾	**Service dhcp**	DHCP ¾
	ip dhcp relay information option dot1x	DHCP option dot1x ╖

¾	-	-

19.1.5 ip dhcp relay information option vpn

DHCP Relay DHCP Relay Aware VRF ╖ ˘ ┘Ո ৡ Â
ৡ no ╖ Â

Э DHCP

1 Э DHCP relay

```
Ruijie# configure terminal
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ip dhcp relay suppression
Ruijie(config-if)# exit
Ruijie(config)#
```

service dhcp	DHCP

ЛЬЮ ˘ ч Ь '

1¨ Ь 192.168.1.1’

2˙ vrf й dep1 Ь 192.168.2.1’

```
Ruijie# configure terminal
Ruijie(config)# ip helper-address 192.168.1.1
Ruijie(config)# ip helper-address vrf dep1 192.168.2.1
```


-	-

20 DNS

20.1

20.1.1 ip domain-lookup

╟ DNS ┘ Â ٩ no ‡ DNS ┘ ╖ Â

ip domain-lookup

no ip domain-lookup

-	-

й DNS ┘ ╖ Â

٩

٩ й DNS ┘ ╖ ˘ ٩˘ ‡ ╟ DNS ┘ Â

Ю DNS ┘ ╖ '

```
Ruijie(config)# ip domain-lookup
```

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٩	
show hosts	DNS Â

ﾉ

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-	-

20.1.2 ip name-server

٩ ┘ ┺ IP/IPv6 Â ﾉ ┘ ┺ ╟ ┘ Â

٩ ,Ӿ

ip name-server {*ip-address* | *ipv6-address*}

no ip name-server [*ip-address* | *ipv6-address*]

ip-address	⅃ ⊧ IP
ipv6-address	⅃ ⊧ IPV6

⅃ ⊧ Â

ৡ Â

╗ DNS Server IP/IPv6 Â ৡˇ ╗ DNS Server Â
ÿ Server ↓ ⅃ ˇ ⅄ Server DNS ˇ
ŕ Â
6 ⊧ Â DNS Server ˇ ip-address ipv6-address
ˇ ‡ ↓ ⊧ ˇ ‡ DNS ⊧ Â

```
Ruijie(config)# ip name-server 192.168.5.134
Ruijie(config)# ip name-server
2001:0DB8::250:8bff:fee8:f800 2001:0DB8:0:f004::1
```

ৡ	
show hosts	DNS Â

⅄

⅄	
-	-

ip-address	IP

ৡ

ў ˘ ˩ʃ∪ **no ip host host-name ip-address** ৡ Â

```
Ruijie(config)# ip host switch 192.168.5.243
```

ৡ

ৡ	
show hosts	DNS Â

ʃ

ৡ

ʃ	
-	-

20.1.4 ipv6 host

ৡ ў ˩ IPV6 Â ৡ no ў Â

Ipv6 host *host-name ipv6-address*

no ipv6 host *host-name ipv6-address*

host-name	ў ˩
Ipv6-address	IPV6

ৡ

ў ˘ ˩ʃ∪ **no ipv6 host host-name ipv6-address** ৡ Â

```
Ruijie(config)# ipv6 host ruijie 2001:0DB8:700:20:1::12
```

ٹ

ٹ	
show hosts	DNS Â

ل

ٹ

ل	
-	-

20.2

20.2.1 clear host

╟ ў ɹ ă ˘ ل Л℧ ٹ Â

clear host [*host-name*]

host-name	ل Л℧ ╟ ў ɹ ă Â“*” ٹ ╟ ў ɹ ă Â

ٹ

ў ɹ ă ˘ ч ' 1˜ ip host ipv6 host '
2˜ DNS ╟ ˜ Â ٹ˘ DNS ╟ ˜ ў ɹ Â

ЛЬЮ ˘ ў ɹ -IP ă ╟ ˜ Â
`clear host *`

ٹ

ٹ	
show hosts	ў ɹ ă Â

ل

ٹ

ل	
-	-

20.2.2 show hosts

DNS Â

show hosts [*hostname*]

-	-

?

DNS Â

```
Ruijie# show hosts
Name servers are:
static
host           type        address
switch         static      192.168.5.243
www.ruijie.com   dynamic     192.168.5.123
```

?	
ip host	ÿ ˛ IP
Ipv6 host	ÿ ˛ IPV6
ip name-server	DNS ˩

?

?	
-	-

21 SNTP

21.1

21.1.1 sntp enable

ৡ SNTP ╗ ˘ ৡ **no** ѝ —Disable Â

[**no**] **sntp enable**

-	-

SNTP Disable

ৡ

show sntp ৡ SNTP

```
Ruijie(config)# sntp enable
```

ৡ	
show sntp	SNTP
clock update-calendar	⅃
clock set	

ৡ

⅄ RGOS10.0 ΛЪЭ

⅄	
-	-

21.1.2 sntp interval

ৡ SNTP Client NTP/SNTP Server ⅃ Â

sntp interval *seconds*

show sntp SNTP

```
Ruijie(config)# sntp server 192.168.4.12
```

show sntp	SNTP
sntp enable	SNTP

RGOS10.0

३	
sntp enable	SNTP
show sntp	SNTP

RGOS10.0 Л Э

Л	
-	-

22 NTP

22.1 NTP

22.1.1 no ntp

ntp ⅄ Ⅎˇ б Ⅎ ⅄ ˇ ntp Â

no ntp

-	-

Ю NTP Ⅎ Â

३ Â

Ю NTP ╖ ˇ ⅄ NTP Ⅎ NTP ˇ
NTP ╖ Â

ЛЬЮ ˇ NTP Ⅎ Â
no ntp

३	
ntp server	NTP Ⅎ

⅄

⅄	
-	-

22.1.2 ntp access-group

NTP Ⅎ ˇ ३ no ⅄ Â

ntp access-group { **peer** | **serve** | **serve-only** | **query-only** }*access-list-number* | *access-list-name*

no ntp access-group{**peer** | **serve** | **serve-only** | **query-only**}*access-list-number* | *access-list-name*

peer	NTP Ь ⁸ ˘ ≠ б ˩ ˆ ˜ Â
serve	NTP Ь ⁸ ˘ а б ˩ Â
serve-only	NTP Ь Â
query-only	NTP Ь ⁸ Â
access-list-number	IP ⁸ Л’ ѝ 1 99 1300 1999
access-list-name	IP ⁸ ˩ Â

Ю NTP ⁸ ‡ Â

ʒ Â

NTP Ь ⁸ Â ˘
NTP ⁸ Â
˘ NTP Ь ÿ ⁸ ⁸ ┐
‡˘ Лυ ┐ ‡ ѝ Â ┐ ѝ peer à serve à serve-only à query-only Â

~	⁸ ╖ Â Э ‡ ┐ ˘ б ⁸ Â
	⁸ ‡˘ ‡ Â ⁸ ‡˘ ‡ ‡ Â

ЛυЮ 1 Л à ⁸ ˩ ’ ⁸ 2 Л Â

```
Ruijie(config)# ntp access-group peer 1
Ruijie(config)# ntp access-group serve-only 2
```

ʒ

ʒ	
ip access-list	… IP ⁸ Â

˩

ৡ	/I	
	-	-

22.1.3 ntp authenticate

NTP ┺ NTP ⁸ Â

ntp authenticate

no ntp authenticate

	-	-

	Ю NTP ⁸ Â
ৡ	Â

⁸˘ ‡ a ⅄ ╗ Â ⁸˘

⅄ è ˘ ⅄ ┺ ╗ Â

ntp authentication-key à **ntp trusted-key** Â

ѝ NTP Ŀ NTP Â

ntp authentication-key *key-id* **md5** *key-string* [*enc-type*]

no ntp authentication-key *key-id* **md5** *key-string* [*enc-type*]

key-id	ID’
key-string	’
enc-type	ˆ ˧ ˜ ╗ ˇ 0

	-	-

! Ю ل لم

ৡ Â

╟ ⅄ ˘ ⅄ ˘ ‡ ⅄Ո ٦ Â

ՈЮ ˘ NTP ⅄ Â

```
Ntp synchronize
```

٦	
ntp server	NTP Ŀ ⅄

⅄

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-	-

22.1.9 ntp trusted-key

ID й

ntp trusted-key *key-id*

no ntp trusted-key *key-id*

key-id	ID Â

Ю Â

Â

NTP ⅂ ⅄ ˘ ID ˘ a
˘ Ո '

ՈЮ ˘ й Ŀ Â

```
ntp authentication-key 6 md5 wooooop
ntp trusted-key 6
ntp server 192.168.210.222 key 6
```

٦	٦	

¾	/I	
	-	-

22.2

22.2.1 debug ntp

NTP Â

debug ntp

no debug ntp

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¾ Â

NTP ╖ ˘ ┘Л ¾ ˘ Â

ЛЬЮ ˘ NTP Â

```
debug ntp
```

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	-	-

22.2.2 show ntp status

NTP Â

show ntp status

23 FTP Server

23.1

23.1.1 debug ftpserver

FTP ┗ ˘ ३ no Â

debug ftpserver

no debug ftpserver

-	-

Â

३ Â

debug ftpserver ३ ┘ЛU FTP ┗ Â

1' ЛUЮ ┗ '

```
Ruijie# debug ftpserver
FTPSRV_DEBUG:(RECV)   SYST
FTPSRV_DEBUG:(REPLY)  215 RGOS Type: L8
FTPSRV_DEBUG:(RECV)   PORT 192,167,201,82,7,120
FTPSRV_DEBUG:(REPLY)  200 PORT Command okay.
```

2' ЛUЮ ┗ '

```
Ruijie# no debug ftpserver
```

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23.1.2 ftp-server enable

FTP Ł ˘ ३ no FTP Ł Â

ftp-server enable

no ftp-server enable

-	-

й Â

३ Â

FTP Ł ˘ FTP ┘Л Ъ б ˘ Э Ю Â

┘ ३ **ftp-server topdir** ३ FTP

!60B FTP Ł Э Â

ftp-server password [*type*] *password*

no ftp-server password

type	Ⱨ ╗ ' 0 7Â0 ঳ ╗ ˆ ~ ' 7 ঳ ѝ ╗ Â
password	Ŀ

Â

঳ Â

FTP Ŀ ɻ Ʌ ˘ ˬ Â

˘ ɻ ˬ Ʌ ˘ ' ѝ ⁞ Â

ѝ 1 à ѝ 25 ' ѝ 4 à ѝ 52 Â

~ FTP Ŀ a ˘ Ŀ Â

1' ɅЦЮ ѝ pass'

```
Ruijie(config)# ftp-server password pass
 '
Ruijie(config)# ftp-server password 0 pass
```

2' ɅЦЮ ѝ 8001'

```
Ruijie(config)# ftp-server password 7 8001
```

3' ɅЦЮ ˬ '

```
Ruijie(config)# no ftp-server password
```

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-	-

ˬ

঳

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-	-

23.1.4 ftp-server topdir

8 FTP Â ৡ no
FTP Ł Э Â

ftp-server topdir *directory*

no ftp-server topdir

directory	FTP

ˆ a ˜ Â

ৡ

ৡ Â

FTP ┺ ¥ K€

24 UDP-Helper

24.1

24.1.1 ip forward-protocol

¾ UDP Â ¾ **no** ‡ ↓ UDP
¶ Â

ip forward-protocol udp [*port* | **tftp | domain | time | netbios-ns | netbios-dgm | tacacs**]

no ip forward-protocol udp [*port* |

```
Ruijie(config)# ip forward-protocol udp 134
```

udp-helper enable	UDP
ip forward-protocol	UD_6j9(134)Tj/TT290 Tc 0

-	-

24.1.3 udp-helper enable

udp-helper enable UDP **no udp-helper enable** UDP UDP

udp-helper enable

no udp-helper enable

-	-

UDP

UDP-Helper

SNMP 3

no snmp

	Â

	SNMP

aclnumber	/ˆ 1-99˜ ˇ ˇ MIB ipv4 NMS Â
aclname	˛ ˇ ˇ MIB ipv4 NMS Â
ipv6_aclname	ipv6 ˛ ˇ ˇ MIB

text	

ѝ Â

३

Ю SNMP ѝ i-net800@i-net.com.cn '

```
Ruijie(config)# snmp-server contact
```

	ipv6_aclname	ipv6 ˇ ˇ MIB ipv6 NMS Â

port-num	snmp ў
notification-type	ў ╟ ˘ snmp Â

ЮЎ SNMP ў Â
˘ ‡ Â

٣

٣ б ٣ **snmp-server enable traps** ˘ ў ╟ NMS
Â
ل Л∪ a ل SNMP ў ˘ ў ل Л∪ a ل
˘ a ل ˘ a ل vrf ˘ ل ў [ل à ل vrf] ˙ Л
˘ ل ў a ل ˘ ل Л∪ a
ل ˘ Â

Ю SNMP ў ˘ SNMP Y '

```
Ruijie(config)# snmp-server host 192.168.12.219 public snmp
```

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٣	
snmp-server enable traps	

Л

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Л	
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25.1.8 snmp-server location

SNMP Æ ˘ ٣ **snmp-server location** Â ٣ no
ل SNMP Æ Â

snmp-server location *text*

no snmp-server location

text	Â

и

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Ruijie(config)# **snmp-server location** start-technology-city 4F of A Buliding

¾

¾	
snmp-sever contact	SNMP

¼

¾

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25.1.9 snmp-server packetsiz

8 SNMP ˘ ¾ **snmp-sever packetsize** Â ¾ no Â

snmp-server packetsize *byte-count*

no snmp-server packetsize

byte-count	˘ ÿ 484 17876 Â

1500

¾

Ю SNMP й 1492'

Ruijie(config)# **snmp-server packetsize** *1492*

¾

¾	

snmp-server queue-length	SNMP

-

-

SNMP ˘ ֽ **snmp-server system-shutdown** Â
ֽ no ˬ SNMP Â

snmp-server system-shutdown

no snmp-server system-shutdown

-	-

SNMP

ֽ

SNMP ˘ RGOS reload/reboot Л NMS
Â

Ю SNMP '

```
Ruijie(config)# snmp-server system-shutdown
```

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25.1.12 snmp-server trap-source

SNMP ˘ ֽ **snmp-server trap-source** Â ֽ no
Â

snmp-server trap-source *interface*

no snmp-server trap-source

interface	й SNMP

SNMP ÿ ˘ IP й Â

٪

Ю˝ SNMP ÿ ˘ IP й ˘ й
˘ ↓Л IP й SNMP Â

Ю Л 0 IP й SNMP '

```
Ruijie(config)# snmp-server trap-source fastethernet 0
```

٪	
snmp-server enable traps	ў ╟
snmp-server enable host	NMS ў

↓

Л	
-	-

25.1.13 snmp-server trap-timeout

Ня ˘ ٪ **snmp-server trap-timeout** Â ٪ no Â

snmp-server trap-timeout *seconds*

no snmp-server trap-timeout

seconds	˘ Æ й ˘ ↓ ' 1 – 1000 Â

30

٪

٪	
snmp-server queue-length	
snmp-server enable host	NMS ў

٨

٪	٨	
	-	-

25.1.14 snmp-server user

SNMP ˘ ٪ **snmp-server user** Â ٪ no Â

snmp-server user *username groupname* {**v1** | **v2** | **v3** [**encrypted**] [**auth** {**md5** | **sha**} *auth-password*] [priv des56 priv-password]}[access {[ipv6 ipv6_aclname] [aclnum | aclname]}]

no snmp-server user *username groupname* {**v1** | **v2c** | **v3** }

username	٨ Â
groupname	٨
v1	**v2**	**v3**	SNMP Â ٧ v3 ٨ Â
encrypted	ٸ Â ‡˘ Л Â Л ˘ ‡ 16 [8] Â MD5 ٸ 16 ˘ SHA ٸ 20 ÂЛ ч Â ╗ Â
auth	Â

SHA

default ˘ MIB Â

¾

Ю ˘ MIB-2 ˆ oid ѝ 1.3.6.1˜ '

```
Ruijie(config)# snmp-server view mib2 1.3.6.1 include
```

¾	
show snmp view	SNMP

Л

Л	
-	-

25.1.16 snmp trap link-status

ê ¾ Ì Â

25.2

25.2.1 show snmp

SNMP ˘ ¾ **show snmp** Â

show snmp [**mib** | **user** | **view** | **group| host**]

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¾

show snmp ¾ SNMP '

show snmp mib snmp mib '

show snmp user snmp '

show snmp view snmp '

show snmp group snmp '

show snmp host '

IO SNMP '

```
Ruijie# show snmp
Chassis: 60FF60
0 SNMP packets input
0 Bad SNMP version errors
0 Unknown community name
0 Illegal operation for community name supplied
0 Encoding errors
0 Number of requested variables
0 Number of altered variables
0 Get-request PDUs
0 Get-next PDUs
0 Set-request PDUs
0 SNMP packets output
0 Too big errors (Maximum packet size 1500)
0 No such name errors
0 Bad values errors
0 General errors
0 Response PDUs
0 Trap PDUs
SNMP global trap: disabled
SNMP logging: disabled
SNMP agent: enabled
```

?

?	
snmp-server *chassis-id*	SNMP /I

/I

?

/I	
-	-

26 RMON

26.1

26.1.1 rmon alarm

MIB ٧ ٪ Â no ٧ Â

rmon alarm *number variable interval* {**absolute** | **delta** } **rising-threshold** *value* [*event-number*] **falling-threshold** *value* [*event-number*] [**owner** *ownername*]

no rmon alarm *number*

-	-

٪

RGOS ˘ Л∪ ˘ variable à absolute/delta à owner à interval à rising-threadhold/falling-threadhold è event ˘ a ˘ Ю Y Ą˘ ’

Л∪Ю ˘ MIB ٧ ifInNUcastPkts.6 Â

```
Ruijie(config)# rmon alarm 10 1.3.6.1.2.1.2.2.1.12.6 30 delta
rising-threshold 20 1 falling-threshold 10 1 owner zhangsan
```

٪	
rmon event *number* [**log**] [**trap** *community*] [*description-string*]	╗ Y Ⱶ

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26.1.2 rmon collection history

Л∪ ৡ Â **no** ৸ Â

rmon collection history *index* [**owner** *ownername*] [**buckets** *bucket-number*] [**interval** *seconds*]

no rmon collection history *index*

-	-

३

ЛЬЮ ˘ ┘Л Л 1 ђ Ð

ЛЬЮ ˘ ЊЖ Y ╟ ' Y à trap Â

```
Ruijie(config)# rmon event
```

```
Event type : log-and-trap
Community : public
Last time sent : 0d:0h:0m:0s
Owner : zhangsan
Log : 1
Log time : 0d:0h:37m:47s
```

```
Ruijie#  show rmon event
Alarm : 1
Interval : 1
Variable : 1.3.6.1.2.1.4.2.0
Sample type : absolute
Last value : 64
Startup alarm : 3
Rising threshold : 10
Falling threshold : 22
Rising event : 0
Falling event : 0
Owner : zhangsan
```


rmon event *number* [**log**] [

```
Ruijie#  show rmon history
Entry : 1
Data source : Gi1/1
Buckets requested : 65535
Buckets granted : 10
Interval : 1
Owner : zhangsan
Sample : 198
Interval start : 0d:0h:15m:0s
DropEvents : 0
Octets : 67988
Pkts : 726
BroadcastPkts : 502
MulticastPkts : 189
CRCAlignErrors : 0
UndersizePkts : 0
OversizePkts : 0
Fragments : 0
Jabbers : 0
Collisions : 0
Utilization : 0
```

rmon collection history *index* [**owner** *ownername*] [**buckets** *bucket-number*] [**interval** *seconds*]	8

-	-

ЛЬЮ

```
Ruijie# show rmon statistics
Statistics : 1
Data source : Gi1/1
DropEvents : 0
Octets : 1884085
Pkts : 3096
BroadcastPkts : 161
MulticastPkts : 97
CRCAlignErrors : 0
UndersizePkts : 0
OversizePkts : 1200
Fragments : 0
Jabbers : 0
Collisions : 0
Pkts64Octets : 128
Pkts65to127Octets : 336
Pkts128to255Octets : 229
Pkts256to511Octets : 3
Pkts512to1023Octets : 0
Pkts1024to1518Octets : 1200
Owner : zhangsan
```

rmon collection stats *index* [**owner** *owner-string*]	╕

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	-	-

IPv6 ३

IPV6 … ɜ й UP ж й ╟
Â
IPv6 ≠ ┘Л ⁸ Â ὲ ⁸ IPv6 = Ľ Ŀ +
Ľ Ŀ + Ľ ў Ŀ Â ┘Л **ipv6 general-prefix** ʒ ˘ ≠ ┘
DHCPv6 PD˜ ˜ ╗ ˝ ˆ Ľ DHCPv6 Ŀ˜ Â Ľ
Ŀ + Ľ ў Ŀ ʒ *sub-bits/prefix-length* Â
no ipv6 address a έ ˘ ж Â
no ipv6 address *ipv6-prefix/prefix-length* **eui-64** ┘Л ʒ **ipv6 address** *ipv6-prefix/prefix-length* **eui-64** Â

1' Ю IPv6 Â

```
Ruijie(config-if)# ipv6 address 2001:1::1/64
Ruijie(config-if)# no ipv6 address 2001:1::1/64
Ruijie(config-if)# ipv6 address 2002:1::/64 eui-64
Ruijie(config-if)# no ipv6 address 2002:1::/64 eui-64
```

2˝ Ю Â

```
Ruijie(config-if)# ipv6 address my-prefix 0:0:0:7272::72/64
```

my-prefix 2001:1111:2222::/48˝ ж IPv6

default	┘ Â Э ˘ ѫ ╟ ˘ Â ┘ ┘ Ь **default** Â

ঽ

╟ RA^ Ѽ ˜ ˘ ┘ Л∪ RA
╟ EUI-64 Â
RA Ґ è Ŀ ˘ ѫ DHCPv6 ┘
Ґ è Ŀ Â Ґ è Ŀ DNS Ŀ IPv6 à NTP Ŀ IPv6
Â
no ipv6 address autoconfig ঽ Э IPv6 Â

```
Ruijie(config-if)# ipv6 address autoconfig default
Ruijie(config-if)# no ipv6 address autoconfig
```

ঽ

ঽ	
ipv6 address *ipv6-prefix/prefix-length* [**eui-64**]	IPv6

┘ ┘ Â

ঽ

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RGOS10.4	ঽ ÿ RGOS10.4 Â

27.1.4 ipv6 enable

३

2 ⅃ Л Э IPv6 ╖ ˘ Ю **ipv6 enable** ३ , γ
Ю IPv6 Â

~ Э IPv6 ⁂ IPv6 ╖ ╟ ˘
no ipv6 enable ≠ a IPV6 ╖ Â

```
Ruijie(config-if)# ipv6 enable
```

३

३	
show ipv6 interface	

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३

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27.1.5 ipv6 general-prefix

IPv6 ˘ Ю **ipv6 general-prefix** ३ Â ३
Ю'

ipv6 general-prefix *prefix-name ipv6-prefix/prefix-length*

no ipv6 general-prefix *prefix-name ipv6-prefix/prefix-length*

prefix-name	⅃ Â
ipv6-prefix	Â RFC4291 /I Â
prefix-length	Â

३

⅃ Л /I Â й Ⱨ ˘

/ ˇ Ю Â

IPv6 Э Â

Ю my-prefix Â

```
Ruijie(config)# ipv6 general-prefix my-prefix 2001:1111:2222::/48
```

३	
ipv6 address prefix-name sub-bits/prefix-length	
show ipv6 general-prefix	

Â

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RGOS10.4	३ ÿ RGOS10.4 Â

27.1.6 ipv6 hop-limit

Ю ३ Â

ipv6 hop-limit value

no ipv6 hop-limit

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64 Â

ˇ Â

```
Ruijie(config)# ipv6 hop-limit 100
```

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✓		
३	✓	
	-	-

27.1.7 ipv6 nd dad attempts

३ Э й IPV6 ă (NS)
Â ३ no Â

३ ˘ ३ no ⊣ Л∪ Â

ipv6 neighbor *ipv6-address interface-id hardware-address*

no ipv6 neighbor *ipv6-address interface-id*

ipv6-address	IPV6 ˘ RFC4291 ₩ Â
interface-id	ˆ Routed Port,L3 AP SVI ˜ Â
hardware-address	˘ Л∪ XXXX.XXXX.XXXX 48 Æ MAC ˘ 'X' Ὼ ⁸ Â

Â

३ Â

३ ARP ३˘ ⊣ IPV6 Э˘
NDP ˘ ₪ ╟ ╟
й Â ˘ Reachble Â ˘
IPV6 ˘ б Э a ٦ ˆ a IPV6
˘ б ă ˜ ˘ a mac
Â ˘ inactive ˘ ⊣ Л∪ show ipv6 neighbor static ३
Â

clear ipv6 neighbors ३ ╟ (NDP) Â

show ipv6 neighbors ३ Â

```
Ruijie(conifg)# ipv6 neighbor 2001::1 vlan 1 00d0.f811.1111
```

३	
show ipv6 neighbors	
clear ipv6 neighbors	╟

⊿

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-	-

27.1.10 ipv6 ns-linklocal-src

٦˘ 8 ѝ Â ľ **no ipv6 ns-linklocal-srd**ľ˘ a 8 ѝ ˘ IPv6 RFC3484 Â

ipv6 ns-linklocal-src

no ipv6 ns-linklocal-src

-	-

˘ Л∪ ѝ Â

٦ Â

Ruijie(config)# **no ipv6 ns-linklocal-src**

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27.1.11 ipv6 route

٦ IPV6 ˘ ٦ no Â

ipv6 route *ipv6-prefix*/*prefix-length* {*ipv6-address* | *interface-id* [*ipv6-address*]}

no ipv6 route *ipv6-prefix*/*prefix-length* {*ipv6-address* | *interface-id* [*ipv6-address*]}

ipv6-prefix	IPV6 /I˘ RFC4291 Â
prefix-length	IPV6 ˘ ╗ Э'/'

ipv6-address	Ю ˘ RFC4291 ÂЮ ⅃Ⴎ Ю ⅃ Â Ю ˘ ѫ Â
interface-id	˘ Ю ˘ ѫ ѝ Э˘ Â Ю ˘ ѫ Â

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Ю ѫ ˘ з Ю ≠ ~ Â Ю a ˘ Ю ˘ ѫЮ ך Â	

```
Ruijie(config)# ipv6 route 2001::/64 vlan 1 2005::1
```

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ʒ	
show ipv6 route	IPV6

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⅄	
-	-

27.1.12 ipv6 source-route

ʒ IPv6 ˘ ʒ no
IPv6 Â

ipv6 source-route

no ipv6 source-route

-	-

IPv6 Â

ȝ Â

ѝ 0 ' ȷ Ь ˘ Л Ю
IPv6 ˘ Ў 0
IPv6 Â

```
Ruijie(conifg)# no ipv6 source-route
```

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27.2

27.2.1 clear ipv6 neighbors

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clrear ipv6 neighbors

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Ruijie# **clear ipv6 neighbors**

ʒ	
ipv6 neighbor	
show ipv6 neighbors	

/I	
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27.2.2 show ipv6 general-prefix

˘ **show ipv6 general-prefix** ʒ Â ʒ Ю'

show ipv6 general-prefix

-	-

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show ipv6 general-prefix ʒ Â ˘ б DHCPv6 ˘ Â

˘ Ю'

```
Ruijie# show ipv6 general-prefix
There is 1 general prefix.
IPv6 general prefix my-prefix, acquired via Manual configuration
       2001:1111:2222::/48
       2001:1111:3333::/48
```

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RGOS10.4	ৡ ÿ RGOS10.4 Â

27.2.3 show ipv6 interface

IPV6 Â

show ipv6 interface [*interface-id*] [**ra-info**]

interface-id	ˆ Л à aggregateport à SVI ˜
ra-info	Э RA Â

ৡ

ৡ ৸Л IPV6 Э à ND Л Â

```
Ruijie# show ipv6 interface vlan 1
Interface vlan 1 is Up, ifindex: 2001
address(es):
Mac Address: 00:00:00:00:00:01
INET6: fe80::200:ff:fe00:1 , subnet is fe80::/64
INET6: 2001::1 , subnet is 2001::/64 [TENTATIVE]
Joined group address(es):
ff01:1::1
ff02:1::1
ff02:1::2
ff02:1::1:ff00:1
MTU is 1500 bytes
ICMP error messages limited to one every 10 milliseconds
ICMP redirects are enabled
ND DAD is enabled, number of DAD attempts: 1
ND reachable time is 30000 milliseconds
ND advertised reachable time is 0 milliseconds
```

```
ND retransmit interval is 1000 milliseconds
ND advertised retransmit interval is 0 milliseconds
ND router advertisements are sent every 200 seconds<240--160>
ND router advertisements live for 1800 seconds
```

Э ⅃Л∪ INET6: 2001::1 , subnet is 2001::/64

[TENTATIVE] ˘ ' INET6 Л [] Æ ЊЖ Ю

ANYCAST	ѝ Â
TENTATIVE	ѝ ă (DAD)˘ Â
DUPLICATED	Â
DEPRECATED	˘ ⅃ ѝ a Â
NODAD	a ă Â
AUTOIFID	╟ ˘ EUI-64 Â
PRE	╟ Â
GEN	Â

```
Ruijie# show ipv6 interface vlan 1 ra-info
vlan 1: DOWN
RA timer is stopped
waits: 0, initcount: 3
statistics: RA(out/in/inconsistent): 4/0/0, RS(input): 0
Link-layer address: 00:00:00:00:00:01
Physical MTU: 1500
ND router advertisements live for 1800 seconds
ND router advertisements are sent every 200 seconds<240--160>
Flags: !M!O, Adv MTU: 1500
ND advertised reachable time is 0 milliseconds
ND advertised retransmit time is 0 milliseconds
ND advertised CurHopLimit is 64
Prefixes: (total: 1)
fec0:1:1:1::/64(Def,Auto,vltime:2592000,pltime:604800, flags: LA)
```

ra-info ăŐ = ľ

waits	ѝ è Â
initcount	RA ╟ Ὼ Â
RA(out/in/inconsistent)	Outʹ Ὼ Â inʹ Ὼ Â inconsistentʹ Ὼ Ὼ a Â
RS(input)	Â
Link-layer address	Â
Physical MTU	

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27.2.4 show ipv6 neighbors

IPV6 Â

show ipv6 neighbors { [**verbose**] [*interface-id*] [*ipv6-address*] | [**static**] }

verbose	
interface-id	Э
ipv6-addres	
static	

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1' SVI 1 Э

```
Ruijie# show ipv6 neighbors vlan 1
IPv6 Address Linklayer Addr   Interface
fa::1        00d0.0000.0002   vlan 1
fe80::200:ff:fe00:2  00d0.0000.0002  vlan 1
```

2'

```
Ruijie# show ipv6 neighbors verbose
IPv6 Address  Linklayer Addr Interface
2001::1      00d0.f800.0001 vlan 1
       State: Reach/H Age: - asked: 0
fe80::200:ff:fe00:1    00d0.f800.0001 vlan 1
       State: Reach/H Age: - asked: 0
```

IPv6 Address	IPV6

Linklayer Addr	Mac ˘ ‡ incomplete
Interface	
State	' state/H(R) STATE Ю' INCMP(Incomplete)— ˘ (NS) (NA) Â REACH(Reachable) — ÿ ˘ a ╟ Â STALE — ѝ ↓ ˘ a ╟ Э˘ ╟ NUD (Neighbor Unreachability Detection) Â DELAY— STALE ˘ STALE ѝ 5 T1 [<REACH>(R)a)5A(c)=3(ha)8.838

IPv6 Address	IPV6
Linklayer Addr	Mac
Interface	
State	STATE Ю' ACTIVE— ╟ INACTIVE— a ╟ ˘ IPV6 ˘ б Э a ┐ ^ a

```
Ruijie# show ipv6 route
Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP
       I1 - ISIS L1, I2 - ISIS L2, IA - IIS interarea
L    ::1/128
      via ::1, loopback 0
C    fa::/64
      via ::, vlan 1
L    fa::1/128
      via ::, loopback 0
C    2001::/64
      via ::, vlan 2
L    2001::1/128
      via ::, loopback 0
L    fe80::/10
      via ::1, Null0
C    fe80::/64
      via ::, vlan 1
L    fe80::200:ff:fe00:1/128
      via ::, loopback 0
C    fe80::/64
      via ::, vlan 2
```

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ৡ	
ipv6 route	

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27.2.6 show ipv6 router

IPv6 ˘ Ώ Â Ώ
˘ show ipv6 router ৡ Â è Юՙՙՙ

28 MLD Snooping

28.1

28.1.1 ipv6 mld profile

MLD profile ⁸ Â profile ˘ ˝I
ŀO profile Â ৡ ৡ˘ profile-numberˇ mld
profile Â

10.4	

28.1.3 deny

profile ˘ profile Ю ¾ deny Â

deny

profile deny Â

¾ profile Â

″I profile Ю range ¾ Â

Ю … FF77::100 profile :

```
Ruijie(config)# ipv6 mld profile 1
Ruijie(config-profile)# range FF77::100
Ruijie(config-profile)# deny
```

¾	
ipv6 mld profile	… profile
range	
permit	profile ѝ ѝ permit

¾

/I	
10.4	

28.1.4 permit

profile ˘ profile Ю ¾ permit Â

permit

٩

Ю˝ VLAN Â ў ٨ б ٫ VLAN
, VLAN ˘ ٨
٫ VLAN Â

Ю Э mld snooping ivgl '

```
Ruijie(config)# ipv6 mld snooping ivgl
```

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ipv6 mld snooping svgl	mld snooping svgl
ipv6 mld snooping ivgl-svgl	mld snooping

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10.4	

28.1.6 ipv6 mld snooping svgl profile

٫ Л∪ SVGL ˘ Ю ٩ **ipv6 mld snooping profile** *profile-number*, **no ipv6 mld snooping profile** ٨ Â

ipv6 mld snooping profile *profile-number*

no ipv6 mld snooping profile

profile-number	profile ٨˘ 1-1024

╟ mld snooping Â

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mld snooping й SVGL IVGL-SVGL ˘
й SVGL profile˘ ٫ Л∪ SVGL ˘
٫ Л∪ VLAN ˘ è
٫ VLAN Â Ю˝
profile˘ ‡ й ٫ Л∪ SVGL Â

Л	
10.4	

28.1.8 ipv6 mld snooping query-max-response-time

ipv6 mld snooping query-max-response-time *time* MLD

˘ **no ipv6 mld snooping query-max-response-time**

Â

ipv6 mld snooping query-max-response-time *time*

no ipv6 mld snooping query-max-response-time

time	MLD ˘ ы ий 1-65535˜ Æ ий

10s Â

¾

MLD Л˘ γ ˘ ий ˘ ий 0 ˘ ‡ ий a ¨Ą ˘ γ ÿ mld snooping Â

MLD Л˘ γ ╟ ˘ ий ˘ ий 0 ˘ ‡ ий a ¨Ą ˘ γ ÿ mld snooping Â

MLD ˘ a Â

Ю MLD ий 15s'

```
Ruijie(config)# ipv6 mld snooping query-max-response-time 15
```

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28.1.9 ipv6 mld snooping vlan

ipv6 mld snooping vlan *vid* vlan ╟ mld snooping ╖ ˘ **no ipv6 mld snooping vlan** *vid* vlan mld snooping ╖ Â

ipv6 mld snooping vlan *vid*

no ipv6 mld snooping vlan *vid*

vid	vlan id /ˇ ↓ и 1-4094

╟ mld snooping Ą˚ vlan ╟ mld snooping Â

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╟ mld snooping Ą˚ vlan ╟ mld snooping ' ┘Л vlan mld snooping ╖ Â

Ю VLAN 1 mld snooping ╖ '

```
Ruijie(config)# no ipv6 mld snooping vlan 1
```

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10.4	

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28.1.10 ipv6 mld snooping vlan mrouter learn

╟ MLD query PIM ˘ Л ╟ ˘ ֽ **ipv6 mld snooping vlan mrouter learn** Â ֽ no ↓ ╟ ˉ Â

ipv6 mld snooping vlan *vid* **mrouter learn**

no ipv6 mld snooping vlan *vid* **mrouter learn**

MLD Snooping

10.4	

28.1.15 ipv6 mld source-check port

ipv6 mld snooping source-check port

no ipv6 mld snooping source-check port

mld snooping MLD mld snooping

Ю mld snooping

```
Ruijie(config)# ipv6 mld snooping source-check port
```


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	10.4

28.1.16 ipv6 mld snooping filter

ˬ ˇ ЮО ¾
profile Â ¾ no profile Â

ipv6 mld snooping filter *profile-number*

no ipv6 mld snooping filter *profile-number*

profile-num	profile Ñ

¾

ˬ ЛЦ MLD Profile ЮЎ MLD Report ˇ ‡
Ў ╗ MLD Profile Â
ˇ ‡ ╗ ˇ Ѓ Ѓ Â ″I … profileˇ Ѓ filter
Â

ЮО ″I 0/1 Э profile 1'

```
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ipv6 mld snooping filter 1
```

¾ –	¾
ipv6 mld profile	… profile

╠ ╗ , ٦ **ipv6 mld snooping max-groups** ٦ Â ٦ no ٧ ⁸ Â

ipv6 mld snooping max-groups *number*

no ipv6 mld snooping max-groups

Number	и 0 – 1024

1024

٦

˘ ‡ Э˘ ˘ a ¨Ą
ầ MLD Report Â

Ю ¨I 0/1 Э ٧ 100 '

```
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ipv6 mld snooping max-group 100
```

٦	
ipv6 mld snooping filter	

٧

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10.4	

28.1.18 clear ipv6 mld snooping gda-table

╠ ˗ , ٦ **clear ipv6 mld snooping gda-table** ٦ Â

clear ipv6 mld snooping gda-table

Ruijie# **clear ipv6 mld snooping gda-table**

10.4	

28.1.19 debug mld-snp

mld , **debug mld-snp**

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	10.4	

28.2

28.2.1 show ipv6 mld snooping

mld snooping Â

Show ipv6 mld snooping [**gda-table** | **interfaces** | **mrouter**| **statistics** [**vlan** *vlan-id*]]

	mld snooping ¶
gda-table	‡
interfaces	mld snooping Filtering
mrouter	Â
statistics [**vlan** *vlan-id*]	snooping

¾ Â

mld snooping

1' **show ipv6 mld snooping** ¾ mld snooping '

```
Ruijie# show ipv6 mld snooping
MLD-snooping mode      : IVGL
SVGL vlan-id           : 1
SVGL profile number    : 0
Source check port      : Disabled
Query max respone time : 10(Seconds)Â
```

2' **show ipv6 mld snooping statistics** ¾ mld snooping '

```
Ruijie# show ipv6 mld snooping statistics
GROUP    Interface    Last report       Last leave     Last
                         time          time         reporter
```

```
-------------- ----------- ------------  -------------   -
FF88::1 VL1:Gi4/2   0d:0h:0m:7s     ----    2003::1111
                        Report pkts: 1          Leave pkts: 0
```

3' **show ipv6 mld snooping mrouter** ৡ mld snooping

'

```
Ruijie# show ipv6 mld snooping mrouter
Vlan   Interface       State     MLD profile number
----     --------         -------     -------------------
1   GigabitEthernet 0/7   static       1
1   GigabitEthernet 0/12  dynamic      0
```

4' **show ipv6 mld snooping gda-table** GDA Л

'

```
Ruijie# show ipv6 mld snooping gda-table
Abbr: M - mrouter
     D - dynamic
     S - static
VLAN  Address            Member ports
------------------------------------------------------------
1      FF88::1          GigabitEthernet 0/7(S)
```

5' show ipv6 mld snooping interface mld snooping Filtering

'

```
Ruijie# show ipv6 mld snooping interface GigabitEthernet 0/7
Interface         Filter Profile number     max-groups
----------       ----------------------    -----------
GigabitEthernet 0/7          1              4294967294
```

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10.4	

28.2.2 show ipv6 mld profile

MLD profile Â

show ipv6 mld profile [*profile-number*]

	profile
profile-number	profile

¾ Â

mld profile

1' **show ipv6 mld profile** ¾ MLD profile '

```
Ruijie# show ipv6 mld profile 1
MLD Profile 1
permit
range FF77::1 FF77::100
range FF88::123
```

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29

29.1

29.1.1 strom-control

[illegible] **no** [illegible]

storm-control {**broadcast** | **multicast** | **unicast**} [{**level** *percent* | **pps** *packets* | *rate-bps*}]

no storm-control {**broadcast** | **multicast** | **unicast**} [{**level** *percent* | **pps** *packets* | *rate-bps*}]

broadcast	[illegible]
multicast	[illegible]
unicast	[illegible]
percent	[illegible] 20 20%
packets	[illegible] pps [illegible] packets per second
Rate-bps	[illegible]
64k-2M	[illegible] 64k [illegible]
2-100M	[illegible] 1M [illegible]
100M [illegible]	[illegible] 8M [illegible]

[illegible]

[illegible]

[illegible]

show storm-control [illegible]

Ю GigabitEthernet 1/1 Э 8 ˘ 3

й 4M Â

```
Ruijie# configure terminal
Ruijie(config)# interface GigabitEthernet 1/1
Ruijie(config-if)# storm-control multicast 4096
Ruijie(config-if)# end
```

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29.1.3 switchport port-security

˝ Â ३ no ˘
Â

switchport port-security [**violation** {**protect** | **restrict** | **shutdown**}]

no switchport port-security [**violation**]

port-security	
violation protect	˘ ‡ Â
violation restrict	˘ ‡ з trap Â
violation shutdown	˘ ‡ à Trap з Â

Â

३

˘ ⅃ Л Ъ 8 Э MAC Л Ъ IP(⅃
) ш 8 Â й (˝)
⁄˘ ‡ й ˘ a è Â
˘ ⅃ Л Ъ 8 Э ˘ й 1
з й ˘ ‡ ^ è й M ~
Â

Ю Gigabitethernet 1/1 Э ˝ ˘ й
shutdown'

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# switchport port-security
Ruijie(config-if)# switchport port-security violation shutdown
```

३	३	

show port-security

	show port-security	Â
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switchport port-security	
switchport port-security binding interface	Ю
Switchport port-security mac-address	
switchport port-security aging	
show port-security	

/I	
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29.1.6 switchport port-security binding interface

Ю ˇ ┘Л IP+ MAC IP ˇ
/ˇ ┘Л ˇ a
Â no ┘ '

[**no**] **switchport port-security binding interface** i*nterface-id mac-address* **vlan** *vlan_id ipv4-address* | *ipv6-address*

[**no**] **switchport port-security binding interface** i*nterface-id ipv4-address* | *ipv6-address*

i*nterface-id*	ID
mac-address	MAC
Vlan_id	MAC VID
Ipv4-address	Ipv4 Ip
Ipv6-address	Ipv6 Ip

1' 192.168.1.100 10'

```
Ruijie(config)# switchport port-security binding interface g0/10
192.168.1.100
```

2' 192.168.1.100 MAC 00d0.f800.5555, VID= 1 10'

```
Ruijie(config)# switchport port-security binding interface g0/10 00d0.f800.5555
vlan 1 192.168.1.100
```

३	
switchport port-security	
switchport port-security binding	IO
Switchport port-security mac-address	
switchport port-security aging	
show port-security	

/I

/I

1' TRUNK 10

8 3

1' TRUNK 10 00d0.f800.5555 VID=2'

```
Ruijie(config)# switchport port-security interface g0/10
mac-address 00d0.f800.5555 vlan 2
```

```
Interface Broadcast Control Multicast Control Unicast Control
---------------------------------------- ---------------
Gi1/1 Disabled Disabled Disabled
```

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storm-control	8 Â

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Â
Â

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switchport port-security	Ⅱ Â
switchport port-security aging	ѝ Э Â
switchport port-security mac-address	Â

/I	
-	-

30 802.1X

30.1 dot1x

30.1.1 dot1x auto-req

802.1X ў ╠ ╥ ˘ ৡ **dot1x auto-req** Â ৡ **no** ৸ ў ╠ ╥ Â

[**no**] **dot1x auto-req**

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30.1.3 dot1x auto-req req-interval

ў ╟ ˘ **no** й

dot1x auto-req req-interval *interval*

no dot1x auto-req req-interval

interval	ў ╟ ˘ Æ s

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ў ╟ ˘ ┘ Л∪ **show dot1x auto-req** ৡ ℸ Â

Ю 802.1x й 60s '

30.1.4 dot1x auto-req user-detect

ў ╟ ˘ no й Â

dot1x auto-req user-detect

no dot1x auto-req user-detect

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ў ╟ ˘ ┘Л **show dot1x auto-req** ٣ ╖ Â

Ю ў Э Л '

```
Ruijie# configure terminal
Ruijie(config)# dot1x auto-req user-detect
Ruijie(config)# end
Ruijie# show dot1x auto-req
Auto-Req: Enabled
User-Detect : Enabled
Packet-Num  : 0
Req-Interval: 60 Second
```

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show dot1x auto-req	ў ╟ Â

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30.2 dot1x

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show dot1x	802.1x Â

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30.2.2 dot1x timeout re-authperiod

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Â ৡ **no** и Â

dot1x timeout re-authperiod *seconds*

no dot1x timeout re-authperiod

seconds	Â 0 65535 Â Æ s Â

3600

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ৡ Л Ъ **show dot1x** ৡ 802.1x Â

Ю и 1000s'

```
Ruijie# configure terminal
Ruijie(config)# dot1x timeout re-authperiod 1000
Ruijie(config)# end
Ruijie# show dot1x
802.1X Status:       Enabled
Authentication Mode:  EAP-MD5
Authed User Number:   0
Re-authen Enabled:    Disabled
Re-authen Period:     1000 sec
Quiet Timer Period:   1000 sec
Tx Timer Period:      3 sec
```

```
Supplicant Timeout:   3 sec
Server Timeout:      5 sec
Re-authen Max:       3 times
Maximum 2Request:     3 times
Filter Non-RG Supp:   Disabled
Client Oline Probe:   Disabled
Eapol Tag Enable:    Disabled
Authorization Mode:   Group Server
```

show dot1x	802.1x

-	-

30.2.3 dot1x timeout server-timeout

no

dot1x timeout server-timeout *seconds*

no dot1x timeout server-timeout

seconds	0 65535

5

show dot1x 802.1x

```
Ruijie# configure terminal
```

```
Ruijie(config)# dot1x timeout server-timeout 10
Ruijie(config)# end
Ruijie# show dot1x
802.1X Status:       Enabled
Authentication Mode:  EAP-MD5
Authed User Number:   0
Re-authen Enabled:    Disabled
Re-authen Period:     1000 sec
Quiet Timer Period:   1000 sec
Tx Timer Period:      3 sec
Supplicant Timeout:   3 sec
Server Timeout:       10 sec
Re-authen Max:        3 times
Maximum Request:      3 times
Filter Non-RG Supp:   Disabled
Client Oline Probe:   Disabled
Eapol Tag Enable:     Disabled
Authorization Mode:   Group Server
```

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show dot1x	802.1x

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30.2.4 dot1x timeout supp-timeout

ৡ Â ৡ no ঌ
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dot1x timeout supp-timeout *seconds*

no dot1x timeout supp-timeout

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30.2.5 dot1x timeout tx-period

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ৡ no ѝ Â

dot1x timeout tx-period *seconds*

no dot1x timeout tx-period

seconds	Â 0 65535 Â

3 Â

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ЛЛ **show dot1x** ৡ 802.1x Â

Ю ѝ 10s'

```
Ruijie# configure terminal
Ruijie(config)# dot1x timeout tx-period 10
Ruijie(config)# end
Ruijie# show dot1x
802.1X Status:       Enabled
Authentication Mode:  EAP-MD5
Authed User Number:   0
Re-authen Enabled:    Disabled
Re-authen Period:     1000 sec
Quiet Timer Period:   1000 sec
Tx Timer Period:      10 sec
Supplicant Timeout:   10 sec
Server Timeout:       10 sec
Re-authen Max:        3 times
Maximum Request:      3 times
Filter Non-RG Supp:   Disabled
Client Oline Probe:   Disabled
Eapol Tag Enable:     Disabled
Authorization Mode:   Group Server
```

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show dot1x	802.1x Â

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30.3 dot1x

30.3.1 dot1x re-authentication

३ Â ३ no
Â

[**no**] **dot1x re-authentication**

```
Tx Timer Period:      10 sec
Supplicant Timeout:   10 sec
Server Timeout:       10 sec
Re-authen Max:        3 times
Maximum Request:      3 times
Filter Non-RG Supp:   Disabled
Client Oline Probe:   Disabled
Eapol Tag Enable:     Disabled
Authorization Mode:   Group Server
```

show dot1x	802.1x Â

-	-

```
Ruijie(config)# end
Ruijie# show dot1x
802.1X Status:       Enabled
Authentication Mode:  EAP-MD5
Authed User Number:   0
Re-authen Enabled:    Enabled
Re-authen Period:     1000 sec
Quiet Timer Period:   1000 sec
Tx Timer Period:      10 sec
Supplicant Timeout:   10 sec
Server Timeout:       10 sec
Re-authen Max:        5 times
Maximum Request:      3 times
Filter Non-RG Supp:   Disabled
Client Oline Probe:   Disabled
Eapol Tag Enable:     Disabled
Authorization Mode:   Group Server
```

¾

¾	
show dot1x	802.1x Â

¼

¾

¼	
-	-

30.4 dot1x

30.4.1 dot1x probe-timer

.

dot1x probe-timer{**interval** | **alive**}*interval*

no dot1x probe-timer

no	

interval	hello
alive	
interval	

Hello ѝ 20 ’
ѝ 250 Â

ৡ Â

˘ ⊿ Л᧙ **show dot1x** ৡ 802.1x Â

hello ѝ 30 , ѝ 120 ’

```
Ruijie# configure terminal
Ruijie(config)# dot1x probe-timer interval 30
Ruijie(config)# dot1x probe-timer alive 120
Ruijie(config)# end
Ruijie# show dot1x probe-timer
Hello Interval: 30 Seconds
Hello Alive: 120 Seconds
```

ৡ	
Show dot1x probe-timer	Â

⊿

⁄	
-	-

30.4.2 dot1x client-probe enable

Ⅶ

[**no**] **dot1x client-probe enable**

-	-

Â

Â

```
Ruijie# configure terminal
Ruijie(config)# dot1x client-probe enable
Ruijie(config)# end
Ruijie# show dot1x
802.1X Status:       Enabled
Authentication Mode:  EAP-MD5
Authed User Number:   0
Client Oline Probe:   Enabled
Eapol Tag Enable:     Disabled
Authorization Mode:   Group Server
```

show dot1x	dot1x Â

-

30.5.1 dot1x authentication

AAA Ю˘ AAA Ь ˘ ৡ
Â ৡ **no** Â

dot1x authentication {**default** | *list-name*}

no dot1x authentication {**default** | *list-name*}

default	♩ Â
list-name	♩ ♩ Â

AAA ˘ ‡ AAA Ь Â

ৡ Â

AAA Ь˘ ‡ ৡ dot1x ⁸ Â

Ю Э group radius Â

```
Ruijie# configure terminal
Ruijie(config)# aaa new-model
Ruijie(config)# aaa authentication dot1x default group radius
Ruijie(config)# interface fastEthernet0/1
Ruijie(config-if)# dot1x authentication default
Ruijie(config-if)# end
```

ৡ	
aaa new-model	AAA Ь
aaa authentication dot1x	

♩

/ſ	
-	-

30.5.2 dot1x auth-address-table

ৡ 802.1X Â ৡ **no** ৶ Â

dot1x auth-address-table address *mac-addr* **interface** *interface*

no dot1x auth-address-table address *mac-addr* **interface** *interface*

mac-addr	৶ Â
Interface	৵ Â

৶ Â

ৡ Â

৶ 802.1X Â **show dot1x auth-address table** ৡ Â

Ю Э ╗ Â

```
Ruijie# configure terminal
Ruijie(config)# dot1x auth-address-table address
00d0f8000000 interface ehternet 1/1
Ruijie(config)# end
Ruijie#
```

ৡ	
show dot1x auth-address-table	802.1X Â

num	VLAN , 1-3

3

ৡ Â

ᆀᄁ **show dot1x** ৡ Â

Ю VLAN '

```
Ruijie# configure terminal
Ruijie(config)# dot1x auth-fail max-attempt E9Bù
```

ㅓ ᄁ **show dot1x interface** ৡ Â

Ю 802.1x vlan '

```
Ruijie# configure terminal
Ruijie(config)# interface fa 0/1
Ruijie(config-if)# dot1x auth-fail vlan 2
Ruijie(config-if)# end
Ruijie#write
```

ৡ

ৡ	
show dot1x interface	802.1x Â

ㅓ

ৡ

ㅓ	
10.3(5)	ৡ

30.5.5 dot1x auth-mode

802.1x Â

dot1x auth-mode {**eap-md5** | **chap** | **pap**}

no dot1x auth-mode

eap-md5	802.1x EAP-MD5 Â
chap	802.1x CHAP Â
pap	802.1x PAP Â

EAP-MD5

ৡ Â

ㅓ ᄁ **show dot1x** ৡ 802.1x Â

Ю 802.1x '

```
Ruijie# configure terminal
Ruijie(config)# dot1x auth-mode chap
Ruijie(config)# end
Ruijie#
```

¾	
show dot1x	802.1x Â

/I	
-	-

30.5.6 dot1x default

802.1x ¦ Â

dot1x default

-	-

¾ Â

┘Л **show dot1x** ¾ 802.1x Â

Ю 802.1x

```
Ruijie# configure terminal
Ruijie(config)# dot1x default
Ruijie(config)# end
Ruijie# end
```

¾	
show dot1x	802.1x Â

-	-

30.5.7 dot1x dynamic-vlan enable

vlan **no**

dot1x dynamic-vlan enable

no dot1x dynamic-vlan enable

-	-

show dot1x dynamic-vlan 802.1x

802.1x vlan

```
Ruijie# configure terminal
Ruijie(config)# dot1x dynamic-vlan enable
Ruijie(config)# end
Ruijie#
```

show dot1x	802.1x

-	-

30.5.8 dot1x guest-vlan

guest vlan **no**

-	-

ы

٦ Â

ЛЧ **show dot1x** ٦ 802.1x Â

Ю 802.1X tag '

```
Ruijie# configure terminal
Ruijie(config)# dot1x eapol-tag
Ruijie(config)# end
Ruijie#
```

٦

٦	
show dot1x	802.1x Â

Ы

٦

Ы	
-	-

30.5.10 dot1x mac-auth-bypass

MAC Â

dot1x mac-auth-bypass

no dot1x mac-auth-bypass

a MAC

٦ Â

ЛЧ **show dot1x port-control interface** ٦ Â

Ю 802.1x MAC '

```
Ruijie# configure terminal
Ruijie(config)# interface fa 0/1
Ruijie(config-if)# dot1x mac-auth-bypass
Ruijie(config-if)# end
Ruijie#write
```

ৡ

ৡ	
show dot1x port-control interface	802.1x Â

ৰ

ৡ

ৰ	
10.3(5)	ৡ

30.5.11 dot1x mac-auth-bypass timeout-activity

802.1x MAC Â

dot1x mac-auth-bypass timeout-activity *value*

no dot1x mac-auth-bypass timeout-activity

value	˘ Л υ й æ , 1-65535

˘ a

ৡ Â

৶ Л υ **show run** ৡ 802.1x Â

Ю 802.1x MAC '

```
Ruijie# configure terminal
Ruijie(config)# interface fa 0/1
Ruijie(config-if)# dot1x mac-auth-bypass timeout-activity 3600
Ruijie(config-if)# end
Ruijie#write
```

৲	
show dot1x port-control interface	802.1x Â

/ſ	
10.3(5)	৲

30.5.12 dot1x mac-auth-bypass violation

802.1x MAC Â

dot1x mac-auth-bypass violation

no dot1x mac-auth-bypass violation

Â

˩ʃʊ **show run** ৲ 802.1x Â

Ю 802.1x MAC '

```
Ruijie# configure terminal
Ruijie(config)# interface fa 0/1
Ruijie(config-if)# dot1x mac-auth-bypass violation
Ruijie(config-if)# end
Ruijie#write
```

৲	
show dot1x port-control interface	802.1x Â

¶	
10.3(5)	¶

30.5.13 dot1x max-req

DOT1X Ł ˘ DOT1X Ł ˘ ‡
DOT1X ¨Ą Ł Â ¶ Ł Â
¶ **no** Â

dot1x max-req *count*

no dot1x max-req

count	Â

й 3 Â

¶ Â

┘Л **show dot1x** ¶ 802.1x Â

Ю 802.1x 7 '

```
Ruijie# configure terminal
Ruijie(config)# dot1x max-req 7
Ruijie(config)# end
Ruijie#
```

¶	
show dot1x	802.1x Â

┘

¶	
-	-

30.5.14 dot1x private-supplicant-only

˘ ৸ ˘ **no** Â

a ╗ 802.1x Â

⅋

ㄴЛυ **show dot1x** ⅋ 802.1x Â

Ю 802.1x б '

```
Ruijie# configure terminal
Ruijie(config)# interface g0/1
Ruijie(config-if)# dot1x port-control auto
Ruijie(config-if)# end
Ruijie#
```

⅋

⅋	
show dot1x	802.1x Â

ㄴ

⅋

ㄲ	
-	-

30.5.16 dot1x port-control-mode

802.1x ⁸ Ю MAC ⁸ ˘ ㄴ
˘ è ㄴ ˘ ⁸
˘ ㄴ ˘ Ю
Â ⁸ ˘ Ю ㄴ ˘
ㄴ ˘ Â ⁸ Ю˘ ㄴ й
˘ è ˘ ‡ Ю ˘ Â
⅋ Ю'

dot1x port-control-mode {**mac-based** | {**port-based** [**mac-basedE> {Æ§Ø25aP?►GBb)gCA**

single-host	802.1x [8]

й mac-based [8]

Â

л Л∪ **show dot1x port-control** 802.1x Â

s26 Э˘ 802.1X a л ˘

Ю˘ 802.1X Э й Â

single-host 802.1x [8]˘ **show dot1x port-control** Э

й port-based˘ **show running-config** й **dot1x port-control-mode port-based single-host** Â

single-host л ˘ ╟ default-user-limit˘ single-host Â single-host л˘ Ю default-user-limit˘ single-host ˘ л Э Â

1' Ю 802.1x б '

```
Ruijie(config)# interface g 0/1
Ruijie(config-if)# dot1x port-control auto
Ruijie(config-if)# dot1x port-control-mode port-based
Ruijie(config-if)# end
Ruijie#
```

2' Ю 802.1x '

```
Ruijie(config)# interface g 0/1
Ruijie(config-if)# dot1x port-control auto
Ruijie(config-if)# dot1x port-control-mode port-based single-host
Ruijie(config-if)# end
Ruijie#
```

show dot1x port-control	802.1x Â
Show running-config	Â

л

л

30.5.17 dot1x stationarity enable

802.1x ⁸ Ю˘ Ю˘ ╟ ┘Л∪ ˘
Ю˘ й a ÿ 802.1X è ˘ ┘Л∪ Л∪Ю ϡ
Â

dot1x stationarity enable

no dot1x stationarity enable

-	-

й ╟ ┘Л∪ Â

ϡ Â

ϡ˘ ‡ Â

Ю 802.1x б '

```
Ruijie# configure terminal
Ruijie(config)# dot1x stationarity enable
Ruijie(config)# end
Ruijie#
```

ϡ	
-	-

ˇ ˇ ⁄ url urlÂ no ⌟Ծ ৡ

urlˈ

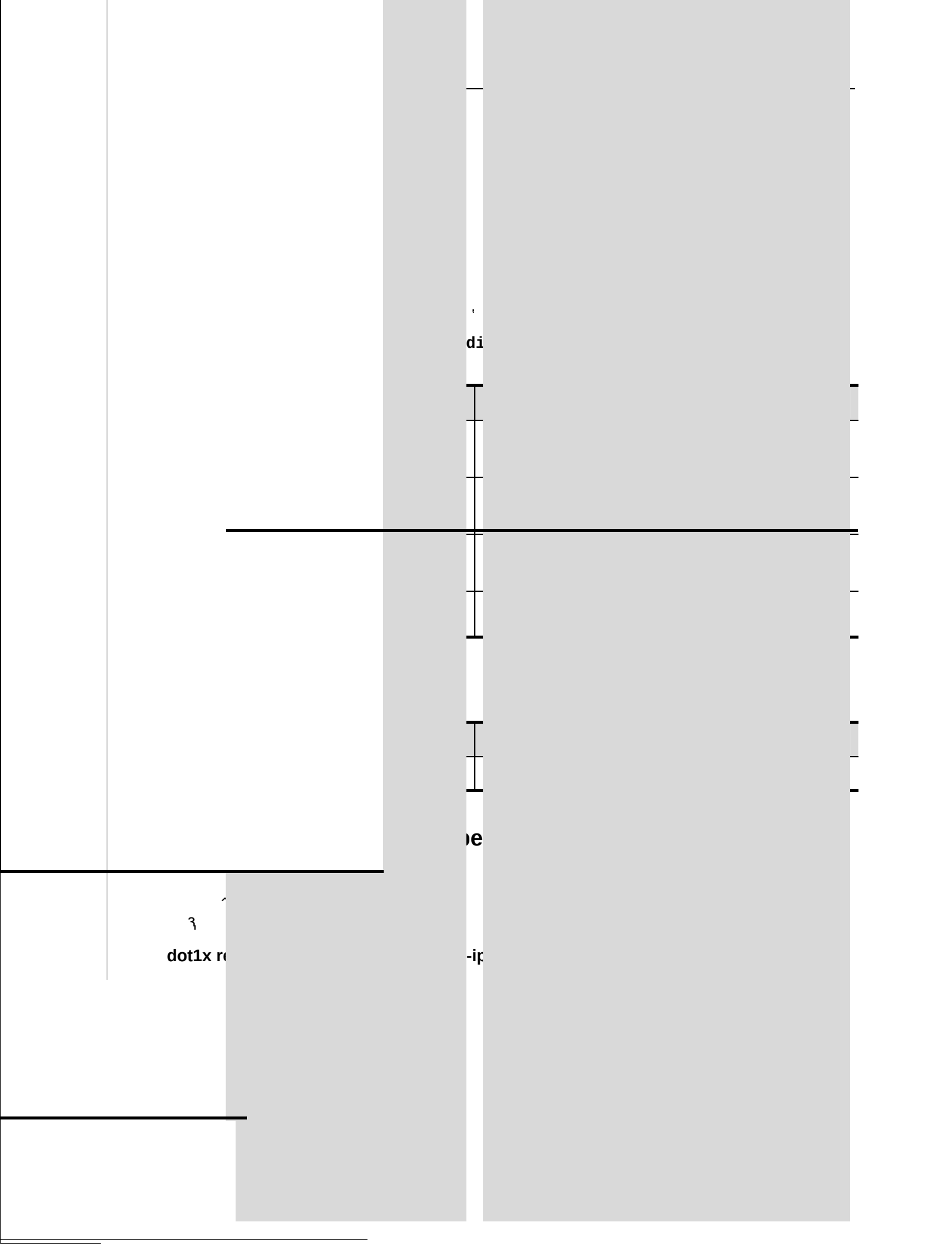
dot1x redirect url [*url-string*]

[**no**] **dot1x redirect url**

url-string	URL

ৡ

1' '


di
dot1x r
-ip

1' ѝ 3'

```
Ruijie(config)# dot1x redirect num for special source-ip 3
```

٦	
dot1x redirect url	
dot1x redirect for special tcp-destination port	ѝ ˘ ip ѝ ip web
dot1x redirect time-out	
show dot1x	dot1x

/\	
-	-

30.6 dot1x

30.6.1 show dot1x

802.1x Â

show dot1x

-	-

٦ Â

Ю '

```
Ruijie# show dot1x
802.1X Status:       Enabled
Authentication Mode:  EAP-MD5
Authed User Number:   0
Re-authen Enabled:    Disabled
Re-authen Period:     3600 sec
Quiet Timer Period:   10 sec
Tx Timer Period:      3 sec
Supplicant Timeout:   3 sec
Server Timeout:       5 sec
Re-authen Max:        3 times
Maximum Request:      3 times
Filter Non-RG Supp:   Disabled
Client Oline Probe:   Disabled
Eapol Tag Enable:     Disabled
Authorization Mode:   Group Server
Ruijie#
```

-	-

30.6.2 show dot1x auth-address-table

ৡ 802.1X Â

show dot1x auth-address-table[*addressmac-addr*][*interface interface*]

mac-addr	┘
interface	/\

ৡ Â

ЮO '

```
Ruijie# show dot1x auth-address-table
interface:g3/1
-----------------------------------
mac addr: 00D0.F800.0001
Ruijie#
```

ৡ	
dot1x auth-mode	802.1x Â
dot1x max-req	Â
dot1x port-control auto	╗ Â
dot1x reauth-max	

dot1x timeout supp-timeout	Â
dot1x timeout tx-period	Â

dot1x re-authentication	Â
dot1x timeout quiet-period	Â
dot1x timeout re-authperiod	Â
dot1x timeout server-timeout	Â
dot1x timeout supp-timeout	Â

dot1x auth-mode	802.1x Â
dot1x max-req	Â
dot1x port-control auto	╗ Â
dot1x reauth-max	
dot1x re-authentication	Â
dot1x timeout quiet-period	⁄ Â
dot1x timeout re-authperiod	Â
dot1x timeout server-timeout	╘ Â
dot1x timeout supp-timeout	Â
dot1x timeout tx-period	˘ Â

⁄

```
max-req: 2 times
Ruijie#
```

¶	
dot1x auth-mode	802.1x Â
dot1x max-req	Â
dot1x port-control auto	╗ Â
dot1x reauth-max	
dot1x re-authentication	Â
dot1x timeout quiet-period	⁄ Â
dot1x timeout re-authperiod	Â
dot1x timeout server-timeout	╘ Â
dot1x timeout supp-timeout	Â
dot1x timeout tx-period	˘ Â

⁄

¶	⁄	
	-	-

30.6.6 show dot1x port-control

б Â

show dot1x port-control [**interface** *interface*]

interface	

¶ Â

Ю

```
Ruijie# show dot1x port-control
interface dyn-user static-user max-user qos
ctrl-mode status
--------- -------- ----------- -------- ------- ------
Gi0/1     0        1           6000     dscp: 0 mac-base Authed
Ruijie#
```

dot1x auth-mode	802.1x Â
dot1x max-req	Â
dot1x port-control auto	╗ Â
dot1x reauth-max	
dot1x re-authentication	Â
dot1x timeout quiet-period	Â
dot1x timeout re-authperiod	Â
dot1x timeout server-timeout	Â
dot1x timeout supp-timeout	Â
dot1x timeout tx-period	Â

-	-

30.6.7 show dot1x probe-timer

show dot1x probe-timer

-	-

Â

Ю

```
Ruijie# show dot1x probe-timer
Hello Interval: 20 Seconds
Hello Alive: 250 Seconds
Ruijie#
```

dot1x auth-mode	802.1x Â
dot1x max-req	Â
dot1x port-control auto	╗ Â
dot1x reauth-max	
	Â

dot1x timeout quiet-period

30.6.8 show dot1x re-authentication

show dot1x re-authentication

-	-

ৡ Â

Ю '

```
Ruijie# show dot1x re-authentication
reauth-enabled: disabled
Ruijie#
```

ৡ	
dot1x auth-mode	802.1x Â
dot1x max-req	Â
dot1x port-control auto	╗ Â
dot1x reauth-max	ȯ ﻫ

-	-

30.6.9 show dot1x reauth-max

show dot1x reauth-max

-	-

Â

Â

```
Ruijie# show dot1x reauth-max
reauth-max: 2 times
Ruijie#
```

dot1x auth-mode	802.1x Â
dot1x max-req	Â
dot1x port-control auto	Â
dot1x reauth-max	
dot1x re-authentication	Â
dot1x timeout quiet-period	Â
dot1x timeout re-authperiod	Â
dot1x timeout server-timeout	Â

dot1x timeout supp-timeout	Â
dot1x timeout tx-period	Â

ৡ	
-	-

30.6.10 show dot1x summary

P Ĝ A ṅº / Ⱶ - ɑ ʀ _ ৡ

```
Mac address is 0013.2049.8272
Vlan id is 217
Access from port Gi0/13
User ip address is 192.168.217.64
Max user number on this port is 6000
COS on this port is 5
Up-bandwidth is 1024 kbps
Down-bandwidth is 1024 kbps
Authorization vlan is dep7
Authorization seesion time is 1000000 seconds
Authorization ip address is 192.168.217.64
Start accounting
Permit proxy user
Permit dial user
IP privilige is 2
```

¸

¸	
dot1x auth-mode	802.1x Â
dot1x max-req	Â
dot1x port-control auto	╗ Â
dot1x reauth-max	
dot1x re-authentication	Â
dot1x timeout quiet-period	⁄ Â
dot1x timeout re-authperiod	Â
dot1x timeout server-timeout	┴ Â
dot1x timeout supp-timeout	Â
dot1x timeout tx-period	˘ Â

⁄

¸

⁄	
-	-

30.6.12 show dot1x timeout

ৡ 802.1X

show dot1x timeout quiet-period

show dot1x timeout re-authperiod

show dot1x timeout server-timeout

show dot1x timeout supp-timeout

show dot1x timeout tx-period

-	-

ৡ

IO '

```
Ruijie# show dot1x timeout quiet-period
quiet-period: 60 sec
Ruijie#
```

ৡ	
dot1x auth-mode	802.1x Â
dot1x max-req	Â
dot1x port-control auto	╗ Â
dot1x reauth-max	
dot1x re-authentication	Â
dot1x timeout quiet-period	⁄ Â
dot1x timeout re-authperiod	Â
dot1x timeout server-timeout	╘ Â
dot1x timeout supp-timeout	Â

dot1x timeout tx-period	˘ Â

৶

৲	
⁄⁄	
-	-

30.7

30.7.1 dot1x redirect

ꞮO ℸ˘ ৲ **dot1x redirect** Â ৲ **no** ꞮO ℸ Â

dot1x redirect

no dot1x redirect

-	-

৲

ꞮO ꞮO ℸ '

```
Ruijie# configure terminal
Ruijie(config)# dot1x redirect
```

৲	

৶

ৡ	
10.2(5)	ৡ

30.7.2 http redirect

HTTP IP ╖ ˘ ৡ **http redirect** Â ৡ
no HTTP IP Â

http redirect *ip-address*

no http redirect

ip-address	HTTP IP

HTTP IP

ৡ

╖ ╟ ↓ ╖ ˘ HTTP IP Â
HTTP ˘
Ю ˘ Ю ˘ Ю ˘ Â

Ю Ю ╖ '
```
Ruijie# configure terminal
Ruijie(config)# http redirect 172.16.0.1
Ruijie(config)# end
```

ৡ	
show http redirect	HTTP
http redirect homepage	ў Â

↓

⁄	
10.2(5)	ৡ

30.7.3 http redirect direct-site

Â ৶ Ո ৡ **no**

Â

http redirect direct-site *ip-address* [*ip-mask]* [**arp**]

no http redirect direct-site *ip-address* [*ip-mask*] [**arp**]

http redirect homepage *url-string*

no http redirect homepage

url-string	Ю Ь ў ѝ *url-string*˘ Л

port-session-num	ˆ ˩ ˜ Ю HTTP ˘ ˬ 1-300 Â

HTTP й 255

ৡ

Â ѝ Ь ╖ ʌ˘ HTTP
GET/HEAD ˘ ʌ HTTP ʌ Â ⁸ ⅃Ω
a GET/HEAD ˘ ´ TCP Â

Ю ѝ 4'
```
Ruijie# configure terminal
Ruijie(config)# http redirect timeout 4
```

ৡ

ৡ	
show http redirect	HTTP

ʌ

ৡ

ʌ	
10.2(5)	ৡ

30.7.8 show http redirect

HTTP Â

show http redirect

-	-

ৡ

Ю HTTP '
```
Ruijie# show http redirect
HTTP redirection settings:
  server:         192.168.32.123
  port:           80  8000
  homepage: http://192.168.32.123:8888/ePortal/index.jsp
```

```
  session-limit: 10
  timeout:       5

Direct sites:
  Address          MASK             ARP Binding
  ---------------- ---------------- -----------
  61.233.3.215     255.255.255.255  On
  61.233.3.220     255.255.255.255  Off
  192.168.5.140    255.255.255.255  Off
  218.30.66.101    255.255.0.0      Off
  218.30.66.101    255.255.255.255  Off
```

http redirect	HTTP IP
http redirect direct-site	
http redirect homepage	Ю Ь ў
http redirect port	HTTP
http redirect session-limit	HTTP
http redirect timeout	

10.2(5)	

31 Web

31.1 Web

31.1.1 http redirect

HTTP

Â ٫Ɔ ٪ **no** Â

http redirect direct-site *ip-address* [*ip-mask*] [**arp**]

no http redirect direct-site *ip-address* [*ip-mask*]

ip-address	IP Â
ip-mask	IP Â
arp	ARP CHECK ˘ ˘ ARP ˘ **arp** Â

Â

٪ Â

╟ Web ˘ ˘ ≠ ٫Ɔ ˘ ٪ ٫Ɔ Â

50

1' IP й 172.16.0.1 й Â

```
Ruijie(config)# http redirect direct-site 172.16.0.1
```

٪	
show http redirect	HTTP Â

٫	
10.2(5)	٪

ў Â ٫Ɔ ٪ **no** ў Â

url-string	ў ˘ Л“http://” “https://” ˘ ‡ a ╖˘ и 255 Â

ў Â

٩ Â

╖ Web ╖ ˘ ў Â

1' ў и http://*www.web-auth.net/login* Â

```
Ruijie(config)#
http redirect homepage http://www.web-auth.net/login
```

٩	
show http redirect	HTTP Â
http redirect	┺ IP Â

٨

٨	
10.2(5)	٩

31.1.4 http redirect port

٨ HTTP WEB ˘ **http redirect port** ٩ Â ┘Л **no** ٩ ٨ HTTP WEB Â

http redirect port *port-num*

no http redirect port *port-num*

port-num	HTTP WEB ٨ Â

80 HTTP Â

¾ Â

˘ HTTP ˘
HTTP ˘ '
˘ ˘ Â
Ю˘ Л и 80 HTTP ˘
Â
Л HTTP ˘ ¾ Â
10 a ˩ Л˘ Л 80 ≠ Â

1' Л и 8080 HTTP WEB Â

```
Ruijie(config)# http redirect port 8080
```

1' a Л и 80 HTTP WEB Â

```
Ruijie(config)# no http redirect port 80
```

¾	
show http redirect	HTTP Â

˩

Л	
10.2(5)	¾

31.1.5 http redirect session-limit

˩ HTTP ˘ Ю HTTP
Â ˩Л¤ ¾ **no** HTTP Â

http redirect session-limit *session-num* [**port** *port-session-num*]

no http redirect session-limit

session-num	˩ HTTP ˘ ˩ 1-255 Â
port-session-num	^ ˩ ~ Ю HTTP ˘ ˩ 1-300 Â

HTTP ù 255˝ Ю
HTTP ù 300 Â

¾ Â

ù HTTP ˘ TCP ˘
Э 8 HTTP Â
˘ ´ HTTP ˘ è ≠ ┘ ´ HTTP
˘ a HTTP ù 1 Â

1' HTTP ù 4 Â

```
Ruijie(config)# http redirect session-limit 4
```

GET/HEAD ˘ ʌ HTTP ʌ Â ⁸ ˩ Ո
a GET/HEAD ˘ ´ TCP Â

1' ѝ 4 Â
Ruijie(config)# **http redirect timeout** *4*

٪	
show http redirect	HTTP Â

ʌ

ʌ	
10.2(5)	٪

31.1.7 web-auth allow-vlan

VLAN Web ╖ VLAN Â˩ Ո ٪ **no** ˬ Â

web-auth allow-vlan *list*

no web-auth allow-vlan [*list*]

list	VLAN web VLAN ѝ *list* Â

VLAN Web ╖ ˘ ≠ VLAN Â

٪ Â

VLAN ˘ ╟ ╟ VLAN ╖ Â
VLAN ˆ a VLAN˜ ˘ ‡ ╟ VLAN ╖ Â
VLAN ╖ ˘ ″l˘ Ю Э Web ╖ ’ è ˘ Ю TRUNK Â

1' VLAN ѝ VLAN1 à 2 à 3 à 5 Â
Ruijie(config)# **web-auth allow-vlan** *1-3,5*

ৡ	
show web-auth allow-vlan	VLAN Web VLAN Â

/I	
10.4(2b2)	ৡ

31.1.8 web-auth direct-host

IP Â ⅃Ⅱ ৡ **no** ⅃ Â

web-auth direct-host *ip-address* [*ip-mask*] [**port** *interface-name*] [**arp**]

no web-auth direct-host *ip-address*

ip-address	IP Â
ip-mask	IP Â
port *interface-name*	IP б Â
arp	ARP CHECK ╖ ˘ ж IP ARP ˘ **arp** Â

˘ ″I Web ˘ ⅃ Â

ৡ Â

ѝ ˘ ж a Web ˘ ≠ ⅃Ⅱ ⅃ Â
50 Â

1' IP ѝ 172.16.0.1 ѝ Â

```
Ruijie(config)# web-auth direct-host 172.16.0.1
```

ৡ	
show web-auth direct-host	web Â

10.2(5)	

31.1.9 web-auth offline-detect-mode flow

no

web-auth offline-detect-mode flow

no web-auth offline-detect-mode flow


```
Ruijie(config)# web-auth offline-detect-mode flow
```

/I	
10.2(5)	३
10.4(2b2)	╗ **ip-only-mode**

b-auth portal key

31.1.12 web-auth update-interval

Â

ৡ Â

Â

1' HTTP Â

```
Ruijie# show http redirect
HTTP redirection settings:
  server:         192.168.32.123
  port:           80  8000
  homepage:       http://192.168.32.123:8888/ePortal/index.jsp
  session-limit: 10
  timeout:        5

Direct sites:
  Address           MASK              ARP Binding
  ----------------- ----------------- -----------
  61.233.3.215     255.255.255.255    On
  61.233.3.220     255.255.255.255    Off
  192.168.5.140    255.255.255.255    Off
  218.30.66.101    255.255.0.0        Off
  218.30.66.101    255.255.255.255    Off

Direct hosts:
  Address           Mask              Port        ARP Binding
  ----------------- ----------------- ----------- ------------
  192.168.1.1       255.255.255.255   Fa0/1       On
```

'	
server	⊾ IP Â
port	HTTP Â
homepage	ў Â

Â

ৡ Â

Â

1' VLAN Web VLAN Â

```
Ruijie# show web-auth allow-vlan
  Allow-vlan list  :  1-3,5
```

-	-

ৡ	
web-auth allow-vlan	VLAN Web ℡ VLAN Â

ৠ

ৠ	
10.4(2b2)	ৡ

31.2.3 show web-auth direct-host

web Â

show web-auth direct-host

-	-

Â

ৡ Â

Â

1' Â

```
Ruijie# show web-auth direct-host
Direct hosts:
  Address          Mask             Port        ARP Binding
  ---------------- ---------------- ----------- ------------
  192.168.0.1      255.255.255.255  Fa0/2       On
  192.168.4.11     255.255.255.255  Fa0/10      On
  192.168.5.0      255.255.255.0    Fa0/16      Off
```

Address	IP Â
Mask	IP Â
Port	б IP Â
ARP Binding	ARP Â

৲	
web-auth direct-host	IP Â

/I	
10.2(5)	৲

31.2.4 show web-auth port-control

1' Э Â

```
Ruijie# show web-auth port-control
  Port                Control
  ----------------  ---------
  FastEthernet 0/1    On
  FastEthernet 0/2    On
  FastEthernet 0/3    Off
  ......
```

Port	Â
Control	Web Â

ৡ	
web-auth port-control	Э ╠ Web Â

/I	
10.2(5)	ৡ

31.2.5 show web-auth user

˘ IP à à Â

show web-auth user [*ip-address*]

ip-address	IP Â

Â

ৡ Â

Â

1' web Â

```
Ruijie# show web-auth user
  Current user num  :  4

Address          Online   Time Limit    Time Used    Status
---------------- -------  ------------ ------------- --------
192.168.0.11     On       0d 01:00:00   0d 00:15:10     Active
192.168.0.13     On       0             0d 00:00:59     Active
192.168.0.25     Off      0             0               Create
192.168.0.46     Off      0d 01:00:00   0d 01:00:00     Destroy

Ruijie# show web-auth user 192.168.0.11
 Address      :   192.168.0.11
 Mac          :   00d0.f800.2233
 Port         :   Fa0/2
 Online       :   On
 Time Limit   :   0d 01:00:00
 Time Used    :   0d 00:15:10
 Time Start   :   2009-02-22 20:05:10
 Status       :   Active
```

Address	IP Â
Mac	MAC Â
Port	Â
Online	Â
Time Limit	˩ ⁸˘ 0 ⁸ Â
Time Used	Â
Time Start	à Э Â
Status	˘ Active ˘ Create • … à ˘ Destroy • à Â

	10.2(5)	३

32 AAA

32.1

32.1.1 aaa authentication dot1x

AAA 802.1X ˘ ٪ **aaa authentication dot1x** 802.1X Â ٪ no 802.1X Â

aaa authentication dot1x {**default** | *list-name*} *method1* [*method2*...]

no aaa authentication dot1x {**default** | *list-name*}

default	˘ ‡ ⁄ Ⱨ ѝ 802.1X Â
list-name	Ⱨ 802.1X

-m f5_0hodf5_2f 0 Tc23 Tc 2.28 0 T2 [<13.891 66.84 ...]745.5 0 Tc -0.0018 Tw 1.12 0 T012 T-96m 94T-9re576.84 n

ʒ	
aaa new-model	AAA Ь
dot1x authentication	802.1X Э
username	Ьѫ

Л А ц ' Ѫ ₴ г - ѓ №

Ю HЖ AAA Enable Â ¨I RADIUS
Ł ˘ RADIUS Ł ˘ ‡
Â

```
Ruijie(config)# aaa authentication enable default group radius local
```

Â

AAA AAA Login Â
aa authentication login Login Â
Login Login a
Â

Ю list-1 AAA Login Â
RADIUS RADIUS
‡ Â

```
Ruijie(config)# aa authentication login list-1 group radius local
```

aa new-model	AAA
username	
login authentication	Login

local	¸
none	a
group	¸ ˘ RADIUS TACACS+ ¸

¾ Â

AAA PPP ¸˘ AAA PPP Â
aaa authentication ppp ¾ ¸ PPP Â
¸ ˘ ¸ Â

Ю Нж ¸ и rds_ppp AAA PPP Â ¨I
RADIUS ¸ ˘ RADIUS ¸
˘ ˘ ‡ Â

```
Ruijie(config)# aaa authentication ppp rds_ppp
```

default	˘ Login Â
list-name	ЊЖ Login Â

¦ Â

Login ˘ ╠ Э Â Э
Login ˘ ⅄ ¦ Â ЊЖ ˘ ‡
˘ Э Login a ˘ ЊЖ Login
Â

Ю ЊЖ ⅃ и list-1 AAA Login Â
Â ⅄ VTY 0 - 4 Э Â

```
Ruijie(config)# aaa authentication login list-1 local
Ruijie(config)# line vty 0 4
Ruijie(config-line)# login authentication list-1
```

¦	
aaa new-model	AAA Ł
username	ЊЖ
login authentication	Login

⅄

⅄	
-	-

32.2

32.2.1 aaa authorization commands

NAS CLI Э ˘ AAA ¦ ╖ ¦
˘ έ ¦ Â ¦ **aaa authorization commands** Â ¦ no AAA ¦ ╖ Â

aaa authorization commands *level* {**default** | *list-name*} *method1* [*method2*...]

no aaa authorization commands *level* {**default** | *list-name*}

level	ঽ ˘ 0~15˝ ā ঽ ʌ Â
default	˘ ‡ ʌ Ⱨ ’] Ư Ă –

32.2.2 aaa authorization config-commands

AAA ˆ è ˜ Ю ¾ ˇ
¾ **aaa authorization config-commands** Â ¾ no AAA Ю
¾ ¶ Â

aaa authorization config-commands

no aaa authorization config-commands

-	-

a ⁸ ⅄ ৡ Â

ৡ Â

RGOS Ш ⁸ ⅄ è ˘ ⅃ Л ⁸ ⅄ ˘
ৡ Â ⁸ ⅄ ৡ ℸ ˘ ‡ ⁸ ⅄
ৡ a Â

Ю ⁸ ⅄ ৡ ℸ '

```
Ruijie(config)# aaa authorization console
```

ৡ	
aaa new-model	AAA ⊾

AAA ३

default	' ˘ ‡ Л Нѫ й Network Â
method	Ľ none à group Ь ˘ 4
none	a
group	Ь ˘ RADIUS TACACS+ Ь

AAA Network ╗ Â

¾ Â

RGOS Ь PPP ãSLIP Â ˘ ‡ ╟ Â ┘Л∪ Ь a ┘ ˘ б ˘ ┘ ˘ Л ˘ ˘ ‡ a ¨Ą è Л Â RADIUS TACACS+ Ь Â Л∪ Э ˘ ┘ ┘ ┘ Â

Ю RADIUS Ь Ь '

```
Ruijie(config)# aaa authorization network default group radius
```

¾	
aaa new-model	AAA Ь
aaa accounting	Нѫ AAA
aaa authentication	Нѫ AAA

ঽ Э˘ ঽ **authorization commands** Â ঽ no ৸ Э ঽ ╖ Â

authorization commands *level* {**default** | *list-name*}

no authorization commands *level*

level	ঽ ˘ 0~15˜ ā ঽ ⅄ Â
default	˘ ঽ Â
list-name	⊮ ঽ Â

AAA ঽ ╖ Â

ঽ Â

ঽ ˘ ╟ Э Â Э ঽ ˘ ৸ ঽ Â ⊮ ˘ ‡ ˘ Э ঽ a ˘ ⊮ ঽ Â

Ю ⅄ ѝ cmd ঽ ˘ 15 ঽ ˘ TACACS+ ѝ Ь ˘ Ь none Â ⅄ VTY 0 – 4 Э'

```
Ruijie(config)# aaa authorization commands 15 cmd group tacacs+ none
Ruijie(config)# line vty 0 4
Ruijie(config-line)# authorization commands 15 cmd
```

ঽ	
aaa new-model	AAA Ь
aaa authorization commands	⊮ AAA ঽ

৸

⅄	
-	-

32.2.7 authorization exec

Exec Э˘ ¦ **authorization exec** Â
¦ no ¬ Э Exec ¶ Â

authorization exec {**default** | *list-name*}

no authorization exec

default	˘ Exec Â
list-name	ЊЖ Exec Â

AAA Exec ¶ Â

¦ Â

Exec ˘ ╟ Э Â Э
Exec ˘ ¬ ¦ Â ЊЖ ˘ ‡
˘ Э Exec a ˘ ЊЖ Exec
Â

Ю ¬ й exec-1 Exec ˘ RADIUS й Ь ˘
Ь none Â ¬ VTY 0 – 4 Э'

```
Ruijie(config)# aaa authorization exec exec-1 group radius none
Ruijie(config)# line vty 0 4
Ruijie(config-line)# authorization exec exec-1
```

¦	
aaa new-model	AAA Ь
aaa authorization commands	ЊЖ AAA Exec

¬

¬	
-	-

32.3

32.3.1 aaa accounting commands

╟˘ NAS Э ঽ ╟ ˘
ঽ **aaa accounting commands** Â ঽ no ↓ ঽ ╖ Â

aaa accounting commands *level* {**default** | *list-name*} **start-stop** *method1* [*method2*...]

no aaa accounting commands *level* {**default** | *list-name*}

level	ঽ ˘ 0~15˜ ā ঽ ˘ Â
default	˘ ‡ ∧ Ⱨ и ঽ Â
list-name	Ⱨ ঽ ˘ ↓ ∩ Â
method '	ľ **none à group** Ŀ ˘ 4 '
none	a
group	Ŀ ˘ TACACS+ Ŀ

╖

ঽ Â

RGOS ҿ ϽҊ ϶ ϽҊ ϽҊ

٪	
-	-

32.3.2 aaa accounting exec

╟˘ NAS ╟ ˘ ٪ **aaa accounting exec** Â ٪ no ٧ Exec ╖ Â

aaa accounting exec {**default** | *list-name*} **start-stop** *method1* [*method2*...]

no aaa accounting exec {**default** | *list-name*}

default	˘ ‡ ٨ Ⱨ٭ ٭ Exec Â
list-name	Ⱨ٭ Exec ˘ ٦ ٨
method	ľ **none à group** Ŀ ˘ 4
none	a
group	Ŀ ˘ RADIUS TACACS+ Ŀ

╖

٪ Â

RGOS ٧ ٨˘ Exec ╖ ˘ ٭ none˘ ‡ a Exec Â

╖ ٨˘ NAS CLI Ą˘ ˆ Start˜ Ŀ ˘ Ą˘ ˆ Stop˜ Ŀ Â Start ˘ ≠ a Stop Â Exec ٨˘ ε ٪ Э˘ ‡ a Â

Ю RADIUS NAS ╟ ˘

'

```
Ruijie(config)# aaa accounting exec default start-stop group radius
```

٪	٪	

aaa new-model	AAA ᒪ
aaa authentication	ᠻ AAA
accounting commands	Э Exec

ᑦ

ᑦ	
-	-

32.3.3 aaa accounting network

╟˘ ╟ ˘

ঽ **aaa accounting network** Â ঽ no ᑦ ╖ Â

aaa accounting network {**default** | *list-name*} **start-stop** *method1* [*method2*...]

no aaa accounting network {**default** | *list-name*}

default	˘ ‡ ᑦ ᠻ ᥇ Network Â
list-name	ᒧ Â
start-stop	╟ ˘ ╖ ˘ Â
method	Ю ˘ 4
none	a
group	ᒪ ˘ RADIUS TACACS+ ᒪ

╖

ঽ Â

RGOS ᒪ ╟ Â **start-stop**˘ ⁸ Â

Ю RADIUS ᒪ ˘

Ruijie(config)# **aaa accounting network default start-stop group radius**

aaa new-model	AAA
aaa authorization network	AAA
aaa authentication	AAA
username	

-	-

32.3.4 aaa accounting update

aaa accounting update

no aaa accounting update

-	-

AAA

Ruijie(config)# **aaa new-model**
Ruijie(config)#

aaa new-model	AAA
aaa accounting network	

-	-

32.3.6 accounting commands

accounting commands *level* {**default** | *list-name*}

no accounting commands *level*

level	0~15
default	
list-name	

Ю

```
Ruijie(config)# aaa accounting commands 15 cmd group tacacs+ none
Ruijie(config)# line vty 0 4
Ruijie(config-line)# accounting commands 15 cmd
```

aaa new-model	AAA
aaa accounting commands	AAA

ৡ	/ſ	
	-	-

32.3.7 accounting exec

Exec Э˘ ৡ **accounting exec** Â
ৡ no ৸ Э Exec ╖ Â

accounting exec {**default** | *list-name*}

no accounting exec

default	˘ Exec Â
list-name	ⱵѪ Exec Â

╖

ৡ Â

Exec ˘ ╟ Э Â Э
Exec ˘ ৸ ৡ Â ⱵѪ ˘ ‡
˘ Э Exec a ˘ ⱵѪ Exec
Â

Ю ɻ ѝ exec-1 Exec ˘ RADIUS ѝ Ł ˘
Ł none Â ɻ VTY 0 – 4 Э'

```
Ruijie(config)# aaa accounting exec exec-1 group radius none
Ruijie(config)# line vty 0 4
Ruijie(config-line)# accounting exec exec-1
```

ৡ	
aaa new-model	AAA Ł
aaa accounting commands	ⱵѪ AAA Exec

৸

ৡ	/ſ	

-	-

32.4 AAA

32.4.1 aaa domain

˘ Â ঽ no ৸ ঽ Â

aaa domain {**default** | *domain-name*}

no aaa domain {**default** | *domain-name*}

default	˘
domain-name	৶

Â

ঽ Â

৶ AAA ৮ Âdefault ৸ ˘ ≠ ˘
Â *domain-name* ৸ ৶ ˘ ৶˘ ‡
Â 32 Â

Ю ৶ '

```
Ruijie(config)# aaa domain ruijie.com
Ruijie(config-aaa-domain)#
```

ঽ	

32.4.2 aaa domain enable

ɹ AAA Ŀ ˘ Ю й Â Ạ˘ ˝I
ɹ AAA Ŀ Â ৡ no Â

aaa domain enable

no aaa domain enable

-	-

ɹ AAA Ŀ Â

ৡ Â

ɹ AAA Ŀ ˘ Â

ɹ AAA Ŀ '

```
Ruijie(config)# aaa domain enable
```

ৡ	
aaa new-model	AAA Ŀ
show aaa domain	

ৰ

ৰ	
-	-

32.4.3 access-limit

⁸˘ ৰ IEEE802.1x ' ৡ no ৰ ৡ Â

access-limit *num*

default Â

¾ Â

ù Network Â

Ю Network '

```
Ruijie(config)# aaa domain ruijie.com
Ruijie(config-aaa-domain)# accounting network default
```

¾

¾	
aaa new-model	AAA Ł
aaa domain enable	¿ AAA Ł
show aaa domain	

¼

¾

¼	
-	-

32.4.5 authentication dot1x

Ю IEEE802.1x ˘ ¾ no ¼ ¾ Â

authentication dot1x {**default** | *list-name*}

no authentication dot1x

default	˘
list-name	¿

˘ ˘ default Â

¾ Â

ѝ IEEE802.1x Â

```
Ruijie(config-aaa-domain)# authorization network default
```


aaa new-model	AAA
aaa domain enable	AAA
show aaa domain	

-

32.4.8 show aaa domain

Â

show aaa domain [**default**

aaa new-model	AAA ⊧
aaa domain enable	⊿ AAA ⊧

⊿

३	
-	-

32.4.9 username-format

Ю NAS б ⊧ ⊿ ˘ ३ no Â

username-format {**without-domain** | **with-domain**}

no08 154.38 1.5 r

¦	/I
	-

32.5 AAA

32.5.1 aaa group server

AAA ¦ Â ¦ no ¦ Â

aaa group server {**radius** | **tacacs+**} *name*

no aaa group server {**radius** | **tacacs+**} *name*

name	¦ ¬ ¬˘ a ¬ Ľ radius Ľ˘ Ľ tacacs+ Ľ˘ ¬ RADIUS TACACS+ ¦ ¬ Â

¦
Â

¦ AAA ¦ ˘ RADIUS TACACS+ ¦ Â

Ю Â
`Ruijie(config)# aaa group server radius ss`
`Ruijie(config-gs-radius)# end`
`Ruijie# show aaa group`
`Group Name: ss`
`Group Type: radius`
`Referred: 1`
`Server List:`

¦	
show aaa group	aaa ¦

¬

¾	/Ì	
	-	-

32.5.2 ip vrf forwarding

ý AAA Ł vrf no Â

ip vrf forwarding *vrf_name*

no ip vrf forwarding

	vrf_name	vrf ¸

¾	Ł Â
	ý Ł vrf Â

Ю Â

```
Ruijie(config)# aaa group server radius ss
Ruijie(config-gs-radius)# server 192.168.4.12
Ruijie(config-gs-radius)# server 192.168.4.13
Ruijie(config-gs-radius)# ip vrf forwarding vrf_name
Ruijie(config-gs-radius)# end
```

¾	¾	
	aaa group server	aaa Ł
	show aaa group	aaa Ł

¸Ì

¾	/Ì	
	-	-

32.5.3 server

¬ AAA ¦ ¦ ˘ no Â

server *ip-addr* [**authen-port** *port1*] [**acct-port** *port2*]

no server *ip-addr* [**authen-port** *port1*] [**acct-port** *port2*]

ip-addr	¦ ip
port1	¦ ˆ RADIUS ¦ ˜
port2	¦ ˆ RADIUS ¦ ˜

¦

¾ ¦ Â

¦ ¬ ¦ ˘ a Â

ÞO Â

```
Ruijie(config)# aaa group server radius ss
Ruijie(config-gs-radius)# server 192.168.4.12
acct-port 5 authen-port 6
Ruijie(config-gs-radius)# end
Ruijie# show aaa group
Group Name:  ss
Group Type:  radius
Referred:   2
Server List:
IP Address: 192.168.4.12
Authentication Port: 6
Accounting Port: 5
Referred:  1
```

¾	
aaa group server	aaa ¦
show aaa group	aaa ¦

¼

¾	¼

	-	-

32.5.4 show aaa group

AAA Ł Â

show aaa group

32.6.1 aaa local authentication attempts

login

aaa local authentication attempts *max-attempts*

max-attempts'	˘ ৸ 1~2147483647 Â

й 3

ৡ Â

ৡ Login

Ю '

```
Ruijie# configure terminal
Ruijie(config)# aaa local authentication attempts 6
```

ৡ	
Show running-config	
Show aaa lockout	login

৸

/ৗ	
-	-

32.6.2 aaa local authentication lockout-time

login ˘

aaa local authentication lockout-time *lockout-time*

lockout-time	ˆ Æ' ˜ ˘ ৸ 1~2147483647

й 15

¾ Â

login ˘

Ю '

```
Ruijie# configure terminal
Ruijie(config)# aaa local authentication lockout-time 5
```

¾	
Show running-config	
Show aaa lockout	login

¼

¼	
-	-

32.6.3 aaa new-model

RGOS AAA ┗╖ ˘ ¾ **aaa new-model** AAA Â
¾ **no** AAA ┗ Â

aaa new-model

no aaa new-model

-	-

AAA ┗

¾ Â

¾ AAA ¾˘ AAA ┗˘ **aaa new-model**
AAA ┗ Â AAA˘ ‡ AAA ¾ a ┘ Â

Ю AAA ┗ Â

```
Ruijie(config)# aaa new-model
```

aaa authentication	
aaa authorization	
aaa accounting	

-

32.6.4 clear aaa local user lockout

clear aaa local user lockout {**all** | **user-name** <*word*>}

<*word*> ID

3 ug aaa

AAA Â ¶ **no** Â

g aaa event

ebug aaa event

-	-

EXEC Â

¶	

¾ AAA Â

ÍO AAA Â

```
Ruijie# show aaa method-list
Authentication method-list
aaa authentication login default group radius
aaa authentication ppp default group radius
aaa authentication dot1x default group radius
aaa authentication dot1x san-f local  group angel group rain none
aaa authentication enable default group radius
Accounting method-list
aaa accounting network default start-stop group radius
Authorization method-list
aaa authorizating network default group radius
```

Acting9.

˘ Л∪ Â

Ю '

```
Ruijie# show aaa user lockout all
```

३	
show running-config	
show aaa lockout	login

И

И	
-	-

33.1.2 radius attribute

radius ttribute{*<id>* | **down-rate-limit** | **dscp** | **mac-limit** | **up-rate-limit**} **vendor-type** *<type>*

no radius attribute {*<id>*|**down-rate-limit** | **dscp** | **mac-limit** | **up-rate-limit**} **vendor-type**

id	╖ id <1-255>
type	type

ɻ ʌ '

id	╖	type
1	max down-rate	1
2	qos	2
3	user ip	3
4	vlan id	4
5	version to client	5
6	net ip	6
7	user name	7
8	password	8
9	file-diractory	9
10	file-count	10
11	file-name-0	11
12	file-name-1	12
13	file-name-2	13
14	file-name-3	14
15	file-name-4	15
16	max up-rate	16
17	version to server	17
18	flux-max-high32	18
19	flux-max-low32	19
20	proxy-avoid	20
21	dailup-avoid	21
22	ip privilige	22

23	login privilige	42

id	٦	type
1	max down-rate	76
2	qos	77
3	user ip	3
4	vlan id	4
5	version to client	5
6	net ip	6
7	user name	7
8	password	8
9	file-diractory	9
10	file-count	10
11	file-name-0	11
12	file-name-1	12
13	file-name-2	13
14	file-name-3	14
15	file-name-4	15
16	max up-rate	75
17	version to server	17
18	flux-max-high32	18
19	flux-max-low32	19
20	proxy-avoid	20
21	dailup-avoid	21
22	ip privilige	22
23	login privilige	42
24	limit to user number	50

٦ Â

٦ Â

Ю max up-rate ٥

٦	
radius set qos cos	radius Ю qos й cos

٨

٦	
٨	
-	-

33.1.3 radius-server attribute 31

RADIUS Calling-Station-ID ^

10.3(5)	

33.1.4 radius-server deadtime

radius-server deadtime **no**

radius-server deadtime *minnutes*

no radius-server deadtime

minnutes	1-1000

5

radius-server host	RADIUS
radius-server retransmit	RADIUS
radius-server key	RADIUS
radius-server timeout	RADIUS

-	-

33.1.5 radius-server host

RADIUS ╘ ў ˘ ҄ **radius-server** Â ҄ **no** RADIUS

ipv4-address ╘ ў IPv4 Â	
ipv6-address ╘ ў IPv6 Â	
auth-port UDP Â	
port-number UDP /ˇ	ѝ Ơ ‡ ў a Â
acct-port UDP	
port-number UDP /ˇ	ѝ Ơ ‡ ў a Â

RADIUS ў Â

҄

RADIUS AAA ╘ˇ ҂RADIUS ╘ Â ┘ Л **radius-server** ҄ ҂ R

й RADIUS Ь ч Л∪ ˘

	seconds	ˆ Æ ù ˜ Â ˩ ù 1-1000 Â
	5	
٦	Â	
	٦ Â	
	Ю Ћ ù 10 ' Ruijie(config)# **radius-server timeout** *10*	

٦

US Ł ў	
US	
US ٦	

- 2!v6f(QT€6>dh4Á¼q

Ю '

```
Ruijie(config)# radius set qos cos
```

٦	
radius vendor-specific extend	Radius ѝ a ѡ id

٨

٨	
-	-

33.1.10 radius vendor-specific extend

ѝ a ѡ id Â

radius vendor-specific extend

no radius vendor-specific extend

-	-

٧ ٨ id

٦ Â

٦ ٧ id Â

Ю '

```
Ruijie(config)#
```

ৡ	/I	
	-	-

33.2 RADIUS

33.2.1 debug radius

RADIUS Â ৡ no RADIUS Â

debug radius [**event | detail**]

no debug radius [**event | detail**]

	-	-

ৡ	EXEC Â

ৡ	ৡ	
	-	-

৸

ৡ	/I	
	-	-

33.2.2 show radius parameter

RADIUS ৮ Â

show radius parameter

-	-

¾ Â

¾ radius ¨ Â

```
Ruijie# show radius parameter
Server Timout:   5 Seconds
Server Deadtime: 5 Minutes
Server Retries:  3
Server Key:      ******
```

¾	
radius-server host	¤¨ RADIUS ¨ ÿ
radius-server retransmit	¤¨ RADIUS
radius-server key	¤¨ RADIUS ¾
radius-server timeout	¤¨ RADIUS

¼

¼	
-	-

33.2.3 show radius server

RADIUS ¨ Â

show radius server

-	-

¾ Â

¸ radius Â

```
Ruijie# show radius server
server ip : 192.168.4.12
acct  port: 23
authen  port: 77
server state: ready
server ip : 192.168.4.13
acct  port: 45
authen  port: 74
server state: ready
```

¸	
radius-server host	RADIUS Â ÿ
radius-server retransmit	RADIUS
radius-server key	RADIUS ¸
radius-server timeout	RADIUS

¸

¸	
-	-

33.2.4 show radius vendor-specific

RADIUS Â

show radius vendor-specific

-	-

¸ Â

¸ radius Â

```
Ruijie# show radius vendor-specific
id    vendor-specific       type-value
----- -------------------- ----------
1     max down-rate         76
2     qos                   77
3     user ip               3
4     vlan id               4
5     version to client     5
6     net ip                6
7     user name             7
8     password              8
9     file-diractory        9
10    file-count            10
11    file-name-0           11
12    file-name-1           12
13    file-name-2           13
14    file-name-3           14
15    file-name-4           15
16    max up-rate           75
17    version to server     17
18    flux-max-high32       18
19    flux-max-low32        19
20    proxy-avoid           20
21    dailup-avoid          21
22    ip privilige          22
23    login privilige       42
24    limit to user number  50
```

৻	
radius-server host	ᵻ RADIUS ᵾ ў
radius-server retransmit	ᵻ RADIUS
radius-server key	ᵻ RADIUS ৻
radius-server timeout	ᵻ RADIUS e(1.B1D>T59.66 175 ref661

৻

	-	-

34 TACACS+

34.1 TACACS+

34.1.1 aaa group server tacacs+

৻ TACACS+ ┺ ˘ a ⅄ TACACS+ ┺ ˀ a ⅄ Â

aaa group server tacacs+ *group-name*

no aaa group server tacacs+ *group-name*

group-name	TACACS+ ┺ ⅄

TACACS+ ┺ Â

৻ Â

TACACS+ ┺ ˀ ˘ à à ⅄Ո a ⅄ ┺ Â

Ю ⅄ й tac1 TACACS+ ┺ ˘ з 1.1.1.1
TACACS+ ┺ '

```
Ruijie(config)# aaa group server tacacs+ tac1
Ruijie(config-gs-tacacs+)# server 1.1.1.1
```

৻	
server	TACACS+ ┺ server
ip vrf forwarding	TACACS+ ┺ VRF ⅄

⅄

⅄	
-	-

34.1.2 ip tacacs source-interface

¾ TACACS+ Â

ip tacacs source-interface *interface*

no ip tacacs source-interface

vrf-name	vrf ⊿

३

ȝ ˘ ȝ **aaa group server tacacs+** TACACS+ Â
TACACS+ Ł Ł ˘ Ю˘ **tacacs-server**
host ȝ Ł Â
Ł TACACS+ Ł ˘ Ł ˘ Ю Ł
Â

Ю ȷ ѝ tac1 TACACS+ Ł ˘ ȝ 1.1.1.1
TACACS+ Ł '

```
Ruijie(config)# aaa group server tacacs+ tac1
Ruijie(config-gs-tacacs+)# server 1.1.1.1
```

[redacted] 0 Td2 ercac(eracac)6(s+)]TJ/c(er+ 1

¾ Â

й TACACS+ AAA Ë IM TACACS+ Ë Â ¬ Л Ц
tacacs-server ¾ IM TACACS+ Ë Â

Ю IM TACACS+ Ë ў '
```
Ruijie(config)# tacacs-server host 192.168.12.1
Ruijie(config)# tacacs-server host 2001::1
```

¾	
aaa authentication	IM AAA
tacacs-server key	IM TACACS+ Ë ¾
tacacs-server timeout	IM TACACS+ Ë

¬

¬	
-	-

34.1.6 tacacs-server key

¾ TACACS+ Â

tacacs-server key [*0* | *7*] *string*

no tacacs-server key

string	¾

й Ь a ˩ ˘ host ʒ key ˘
˩ Л key Ь key Â

Ю Ьж TACACS+ Ь ʒ й aaa'
Ruijie(config)#**tacacs-server key** *aaa*

ʒ	
tacacs-server host	Ьж TACACS+ Ь ў
tacacs-server timeout	Ьж TACACS+

˩

Л	
-	-

34.1.7 tacacs-server timeout

ʒ б TACACS+ Ь ˘ Ь Â

tacacs-server timeout *seconds*

no tacacs-server timeout

seconds	ˆ Æ й ˜ Â ˩ й 1-1000 Â

5

Â

ʒ Â й Ь a ˩
˘ host ʒ timeout ˘ ˩ Л
timeout Ь timeout Â

Ю Ьж й 10 '
Ruijie(config)# **tacacs-server timeout** *10*

ʒ	ʒ	

tacacs-server host	ÞÆ TACACS+ Ł ÿ
tacacs-server key	ÞÆ TACACS+ ¾

¾	
-	-

34.2 TACACS+

34.2.1 debug tacacs+

TACACS+ Â ¾ no TACACS+ Â

debug tacacs+

no debug tacacs+

34.2.2 show tacacs

TACACS+ ¼ Â

show tacacs

-	-

¾ Â

¾ TACACS+ ¼ Â

```
Ruijie# show tacacs
Tacacs+ Server : 172.19.192.80/49
Socket Opens: 0
Socket Closes: 0
Total Packets Sent: 0
Total Packets Recv: 0
Reference Count: 0
```

¾	
tacacs-server host	¼ TACACS+ ¼ ¼ ÿ

¼

¼	
-	-

35 SSH

35.1 SSH

35.1.1 crypto key generate

Ł Ώ ˘ ЮЎ ¾'

crypto key generate {**rsa | dsa**}

rsa	RSA
dsa	DSA

Ю SSH Server Ώ Â

¾

SSH Server Ł ˘ ¾ SSH Ł Ώ Â ┘ **enable service ssh-server** ¾˘ SSH Server ╖ ÂSSH 1 RSA ' SSH 2 RSA DSA Â ˘ RSA ˘ ‡ SSH1 б SSH2 ┘ Л∪ ' DSA ˘ ‡ SSH2 ┘Л∪ Â

~ ˘ a ¾ **no crypto key generate**˘ ¾ **crypto key zeroize** ¾ Â

```
Ruijie# configure terminal
Ruijie(config)# crypto key generate rsa
```

-	-

35.1.2 crypto key zeroize

SSH Ł Ὼ ˘ ЮЎ ٪'

crypto key zeroize {**rsa** | **dsa**}

rsa	RSA
dsa	DSA

٪

٪ Ł Ὼ Â Л˘ SSH Server ѝ ѝ DISABLE Â SSH Serverў **no enable service ssh-server** ٪ Â

```
Ruijie# configure terminal
Ruijie(config)# crypto key zeroize rsa
```

٪	
show ip ssh	SSH Server Â
crypto key generate {**rsa|dsa**}	DSA б RSA Â

Л RGOS10.1 ЛЪЭ

Л	
-	-

35.1.3 ip ssh authentication-retries

SSH Server Â ٪ no ѝ Â

ip ssh authentication-retries *retry times*

no ip ssh authentication-retries

٪

٪ SSH Server Â ÿ ↓ ˘ 120s ╖ ˘ ‡ ѝ Â **show ip ssh** ٪ SSH server Â

ѝ 100s˙

```
Ruijie# configure terminal
Ruijie(config)# ip ssh time-out 100
```

٪

٪	
show ip ssh	ssh-server Â

↓ RGOS10.1 Л↻Э

٪

↓	
-	-

35.1.5 ip ssh version

SSH server Â ٪ no ѝ Â

ip ssh version {**1** | **2**}

no ip ssh version

1	SSH Server SSH1
2	SSH Server SSH2

Ю SSH 1 2Â Л˘ ↓ ↓ SSH Â **no ip ssh version** ٪ ≠ ↓Л↻ ѝ Â

ৰ 2

```
Ruijie# configure terminal
Ruijie(config)# ip ssh version 2
```

३	
show ip ssh	SSH Server Â

RGOS10.1 Л Э

Clear line vty *line_number*	VTY Â

RGOS10.1 Л Э

٦	
-	-

35.2.2 show crypto key mypubkey

SSH Server Ὼ Ὼ ᾽ Â

show crypto key mypubkey {***rsa*****|*****dsa***}

rsa	RSA Ὼ ᾽
dsa	DSA Ὼ ᾽

SSH Server Ὼ Ὼ ᾽ Â ' à ᾽ à Ὼ ᾽ Â

```
Ruijie# show crypto key mypubkey rsa
```

٦	
crypto key generate {**rsa	dsa**}	DSA б RSA Â

RGOS10.1 Л Э

٦	
-	-

35.2.3 show ip ssh

SSH Server Â

show ip ssh

-	-

¾

SSH Server Â ' à SSH Server à à Â

~ SSH ˘ Ь ˘ ÿ SSH й а ┘ Â

```
Ruijie# show ip ssh
```

¾	
Ip ssh version {**1**	**2**}	SSH Server Â
ip ssh time-out time	SSH Server Â
Ip ssh authentication-retries retry times	SSH Server Â

Л RGOS10.1 Л∪Э

Л	
-	-

35.2.4 show ssh

SSH Â

show ssh

-	-

36 CPU

36.1

36.1.1 cpu-protect type packet-type pps pps_value

CPU Â

cpu-protect type { **arp** | **bpdu** | **dhcp** | **ipv6mc** | **igmp** | **rip** | **ospf** | **vrrp** | **pim** | **ttl1** | **unknown-ipmc** | **dvmrp** | …} **pps** *pps_value*

CPU

Â

Â

ÍO S9610 CPU Â

```
Ruijie# show cpu-protect mboard
ype        Pps      Total    Drop
------------ --------- --------- ---------
arp         500       19       0
bpdu        200       24       0
dhcp        0         0        0
gvrp        0         0        0
ipv6-mc     0         0        0
dvmrp       0         0        0
igmp        0         0        0
ospf        0         0        0
pim         0         0        0
rip         0         0        0
vrrp        0         0        0
unknow-ipmc  0         0        0
ttl1        0         0        0
...
```

show cpu-protect slot *slot-num*	´ CPU Â

37 DoS

37.1

37.1.1 ip deny invalid-l4port

ৠ Â ৡ **no**

no ip deny invalid-tcp

1' Э Land ¶ '

```
Ruijie(config)# ip deny land
```

2' Э Land ¶ '

```
Ruijie(config)# no ip deny land
```

¾

¾	
show ip deny land	Land

¾

/¼	
-	-

37.2

37.2.1 show ip deny invalid-l4port

Â

show ip deny invalid-l4port

-	-

¾ Â

```
Ruijie# show ip deny invalid-l4port
 DoS Protection Mode                    State
-------------------------------        -----
 protect against invalid l4port attack  Off
```

¾

¾	
-	-

¼

³	/\	
	-	-

37.2.2 show ip deny invalid-tcp

TCP Â

show ip deny invalid-tcp

-	-

Â

```
Ruijie# show ip deny land
DoS Protection Mode              State
-------------------------------  -----
protect against land attack      On
```

(**no**) **ip deny land**	Land

-	-

38 GSN

38.1

38.1.1 security address-bind enable

¾ Â

security address-bind enable

no security address-bind enable

-	-

¾ ˘ Y ^ a AP AP ~ Â

¾ Â ‡ ˘ ¾ GSN Â

Y '

```
Ruijie(config-if)# security address-bind enable
```

¾	
security gsn enable	GSN

Ø RGOS10.1 Л Э Â

Ø	
-	-

38.1.2 security community

¾ smp Ł ¬ Â

security { [**v1 | v2**] **community** *community* | **v3 user** *username* }

no security { [**v1 | v2**] **community** *community* | **v3 user** *username* }

community	⅃ ⊦ *community* Â
username	v3 ⅃ Â

ৡ

⊦ Ạ˘ ⊦

⅃˘ v3˝ ‡ **snmp-server** ৡ ЮO v3 ⅃˘

έ SNMP ৡ Â

1' J/C2_ 1 Tf0 Tc 3.132 0 05272.987 0 0CC1>-6< 1 Tf1.252 0 T

5

¾

¾ Â **show security event interval** Â

Y '

```
Ruijie(config)# security event interval 10
```

¾	
show security event interval	Y Â

RGOS10.1 Л Э

Л	
-	-

38.1.4 security gsn enable

¾ 8 GSN

-	-

৶ RGOS10.1 Л৬Э

৲

⁄⁄	
-	-

38.1.5 smp-server host

৲ smp-server ip Â

smp-server host *ip-address*

no smp-server host

ip-address	smp server ip

smp server

৲

৲ Â **show smp-server** Â

Ruijie(config)#**smp-server host** *192.168.4.243*

৲

৲	
show smp-server	smp server

৶ RGOS10.1 Л৬Э

৲

⁄⁄	
-	-

38.2

38.2.1 show security evnet interval

Y Â

-	-

¾

Y Â

```
Ruijie# show security event interval
Event sending interval(Seconds):5
```

¾	
security event interval *interval*	Y Â

¼ RGOS10.1 Л Э Â

¼	
-	-

¾

38.2.2 show smp-server

smp server IP

-	-

¾

smp server IP Â

```
Ruijie# show smp-server
```

SMP-Server IP' 192.168.20.30

३	
smp-server host	smp server ip Â

RGOS10.1 ЛЬЭ Â

Л	
-	-

39 DAI

39.1 VLAN DAI

39.1.1 ip arp inspection vlan

ȝˇ ȷ Ƨ *vlan-id* VLAN DAI ╗ Â ȝ no ȷ Ƨ *vlan-id* VLAN DAI ╗ ˇ *vlan-idƭ* ‡ VLAN Э DAI ╗ Â

ip arp inspection vlan *vlan-id*

no ip arp inspection vlan [*vlan-id*]

vlan-id	vlan ƒ Â

VLAN Э DAI ╗ Â

ȝ Â

ȝ ˇ ″I DAI ╗ ˇ Э Â

ƧЬЮ ˇ ѝ VLAN 1 Э ARP Â

```
Ruijie(config)# ip arp inspection
Ruijie(config)# ip arp inspection vlan 1
```

ȝ	
show ip arp inspection vlan	VLAN DAI ╗ Â

ȷ Â

ƒ	
-	-

39.2

39.2.1 ip arp inspection trust

γ ˇ ३ **ip arp inspection trust** Â ३ **no** γ ѝ a Â

ip arp inspection trust

no ip arp inspection trust

-	-

a Â

३ Â

ARP DAI ˇ ˧Л ὲ ˧ ˇ a ARP ˇ Â

NFPP( ) ˇ ⁸ NFPP ˇ a ¨Ạ DAI ˇ ३ **show ip arp inspection interface** ˧ Â

ЛЬЮ ˇ gigabitEthernet 0/19 ˧ Â

```
Ruijie(config)# interface gigabitEthernet 0/19
Ruijie(config-if)# ip arp inspection trust
```

३	
show ip arp inspection interface	DAI ˇ Â

˧ Ь Â

/ˀ	
-	-

39.3 DHCP Snooping

Ş ، γ ‡ t ˘

40 arp

40.1 arp

40.1.1 anti-arp-spoofing ip

arp Â ¾ no Â

anti-arp-spoofing ip *ip-address*

no anti-arp-spoofing ip *ip-address*

Ip-address	IP

Ñ a

¾ Â

show anti-arp-spoofing ¾ Â

```
Ruijie(config)#interface fastEthernet 0/1
Ruijie(config-if)#anti-arp-spoofing ip 192.168.1.1
```

¾	
show anti-arp-spoofing	Ю arp

Ä

Ä	
-	-

40.2 arp

40.2.1 show anti-arp-spoofing

Ю arp Â

show anti-arp-spoofing

¾

Ruijie#**show** anti-arp-spoofing

port	ip
-------	----------
Fa0/1	192.168.1.1

¾	
anti-arp-spoofing ip	arp ¾

¼

¼	
-	-

41 IP Source Guard

41.1 IP Source Guard

41.1.1 ip source binding

IP ╗ ˘ **no** Â

[**no**] **ip source binding** *mac-address* **vlan** *vlan-id ip-address* **interface** *interface-id*

mac-address	╗ MAC ’
vlan-id	╗ vlan id’
ip-address	╗ IP ’
interface-id	╗ Â

╗ Â

¾ Â

¾ ┘Л IP Source Guard ˘ a DHCP ⁸ Â

Ю 1 ’

```
Ruijie# configure terminal
Ruijie(config)# ip source binding 0000.0000.0001 vlan 1 1.1.1.1
interface FastEthernet 0/1
Ruijie(config)# end
Ruijie# show ip source binding
MacAddress    IpAddress  Lease(sec)  Type    VLAN  Interface
------------- --------- ----------  ----    ----  ------------
0000.0000.0001 1.1.1.1   infinite   static   1  FastEthernet 0/1
Total number of bindings: 1
```

¾	¾	

show ip source binding	IP

¾	
-	-

41.2 IP Source Guard

41.2.1 ip verify source

Э IP Source Guard ╖ ˘ **no** ╖ Â

[**no**] **ip verify source** [**port-security**]

port-security	IP Source Guard ╖ IP+MAC Â

Â

Â

¾ IP Source Guard ╖ ˘ ┘Л IP ˘ IP+MAC ’

IP Source Guard ╖ DHCP Snooping Э ˘ ≠ ˘ Trust Л DHCP Snooping ⁸ Э IP Source Guard ╖ ˘ IP Source Guard ╖ a Â

Ю 1 Э IP Source Guard ╖ '

```
Ruijie# configure terminal
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ip verify source
Ruijie(config-if)# end
```

¾

¾	/I	
	-	-

41.3 IP Source Guard

41.3.1 show ip source binding

¾ IP Â

show ip source binding [*ip-address*] [*mac-address*] [**dhcp-snooping**] [**static**] [**vlan** *vlan-id*] [**interface** *interface-id*]

ip-address	ip '
mac-address	mac '
dhcp-snooping	╟ '
static	'
vlan-id	vlan '
interface-id	Â

Â

¾ Â

Â

Ю '

```
Ruijie# show ip source binding static
MacAddress    IpAddress  Lease(sec)   Type    VLAN  Interface
------------- --------- ----------   ----    ----  ------------
0000.0000.0001 1.0.0.1   infinite    static    1  FastEthernet 0/1
Total number of bindings: 1
```

¾	
ip source binding	IP Â

-	-

-	-

¾ ´ ¦ Â

cpu-protect sub-interface {*manage*|*protocol*|*route*} **percent** *percent_vaule*

percent_vaule	¦ ˘ ↓ 1 100

	pps	˘ Æ ˘ ৸ [1,9999] Â

IP MAC 8 ˘
200 Â

ৡ NFPP

a Â

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# arp-guard attack-threshold per-src-ip 2
Ruijie(config-nfpp)# arp-guard attack-threshold per-src-mac 3
Ruijie(config-nfpp)# arp-guard attack-threshold per-port 50
```

	ৡ	
	nfpp arp-guard policy	
ৡ	**show nfpp arp-guard summary**	
	show nfpp arp-guard hosts	৸ ў

Ruijie(config)# **nfpp**
Ruijie(config-nfpp)# **arp-guard enable**

٣	
nffp arp-guard enable	Э ARP ٦
show nfpp arp-guard summary	

/١	
-	-

42.3.3 arp-guard isolate-period

٣ Â

arp-guard isolate-period {*seconds* | **permanent**}

seconds	˘ Æ ˘ ٧ 0 [30, 86400] Â
permanent	

0ơ a Â

٣ NFPP

Ruijie(config)# **nfpp**
Ruijie(config-nfpp)# **arp-guard isolate-period** 180

٣	
nfpp arp-guard isolate-period	Э
show nfpp arp-guard summary	

/I	
-	-

42.3.4 arp-guard monitor-period

³ Â

arp-guard monitor-period *seconds*

seconds	˘ Æ ˘ ˬ [180, 86400] Â

,Xf©–B#< Xf@

42.3.5 arp-guard monitored-host-limit

ৡ ৶ ў Â

arp-guard monitored-host-limit *number*

number	৶ ў ˘ ৶ ѝ 1 4294967295

৶ ў ѝ 1000 Â

ৡ NFPP

৶ ў 1000 ˘ ৶ ў 1000ˆ a ৶ ў ˘ ľ %ERROR' The value that you configured is smaller than current monitored hosts 1000ˆ ৶ ў ~ ˘ please clear a part of monitored hosts. Ŀ ˘ ĭ ў Â

৶ ў ˘ ľ % NFPP_ARP_GUARD-4-SESSION_LIMIT: Attempt to exceed limit of 1000ˆ ৶ ў ~ monitored hosts. Ŀ Â

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# arp-guard monitored-host-limit 200
```

ৡ	
show nfpp arp-guard summary	

৶

/ſ	
-	-

ৡ

42.3.6 arp-guard rate-limit

Â

arp-guard rate-limit {per-src-ip | per-src-mac | per-port} *pps*

per-src-ip	IP
per-src-mac	MAC
per-port	
pps	˘ ¼ [1,9999] Â

IP MAC 4 ˘
100 Â

¾ NFPP

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# arp-guard rate-limit per-src-ip 2
Ruijie(config-nfpp)# arp-guard rate-limit per-src-mac 3
Ruijie(config-nfpp)# arp-guard rate-limit per-port 50
```

¾	
nfpp arp-guard policy	
show nfpp arp-guard summary	

¼

¼	
-	-

42.3.7 arp-guard scan-threshold

Â

arp-guard scan-threshold *pkt-cnt*

pkt-cnt	˘ ¼ [1,9999] Â

15˜ Æ 10 Â

٦ NFPP

10 15 ЛЪЭ ARP ˘ MAC IP ↓ ˘
MAC IP IP a ↓ ˘ и
Â

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# arp-guard scan-threshold 20
```

٦	
nfpp arp-guard scan-threshold	Э
show nfpp arp-guard summary	
show nfpp arp-guard scan	ARP
clear nfpp arp-guard scan	ARP

↓

/\	
-	-

42.3.8 clear nfpp arp-guard hosts

↓ ў ˘ ў ˘ Â

clear nfpp arp-guard hosts [**vlan** *vid*] [**interface** *interface-id*] [*ip-address* | *mac-address*]

vid

VLAN 1 g 0/1 ÿ Â

```
Ruijie# clear nfpp arp-guard hosts vlan 1 interface g0/1
```

-	-

42.3.10 nfpp arp-guard enable

seconds	˘ Æ ˘ ↓ 0 [30, 86400] 0 a Â
permanent	

˘ Â

¾

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp arp-guard isolate-period 180
```

¾	
arp-guard isolate-period	
show nfpp arp-guard summary	

¾

¼	
10.4	¾

42.3.12 nfpp arp-guard policy

Э Â

nfpp arp-guard policy {**per-src-ip** | **per-src-mac** | **per-port**} *rate-limit-pps attack-threshold-pps*

per-src-ip	IP Â
per-src-mac	MAC Â
per-port	Â
rate-limit-pps	˘ ↓ 1 9999 Â
attack-threshold-pps	˘ ↓ 1 9999 Â

˘ Â

NFPP

a Â

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp arp-guard policy per-src-ip 2 10
Ruijie(config-if)# nfpp arp-guard policy per-src-mac 3 10
Ruijie(config-if)# nfpp arp-guard policy per-port 50 100
```

arp-guard attack-threshold	
arp-guard rate-limit	
show nfpp arp-guard summary	
show nfpp arp-guard hosts	ǔ
clear nfpp arp-guard hosts	ǔ

Ruijie(config)# **interface** *G 0/1*
Ruijie(config-if)# **nfpp arp-guard scan-threshold** 20

ʒ	
arp-guard scan-threshold	
show nfpp arp-guard summary	
show nfpp arp-guard scan	ARP
clear nfpp arp-guard scan	ARP

/ʃ	
10.4	ʒ

42.4 DHCP

42.4.1 dhcp-guard attack-threshold

˘ Ą˘ ѝ ѝ Â

dhcp-guard attack-threshold { **per-src-mac** | **per-port**} *pps*

per-src-mac	MAC Â
per-port	Â
pps	˘ Æ ˘ ˬ [1,9999] Â

MAC 10 ˘ 300 Â

ʒ NFPP

Ruijie(config)# **nfpp**
Ruijie(config-nfpp)# **dhcp-guard attack-threshold per-src-mac** *15*
Ruijie(config-nfpp)# **dhcp-guard attack-threshold per-port** *200*

٦	
nfpp dhcp-guard policy	
show nfpp dhcp-guard summary	
show nfpp dhcp-guard hosts	↓ ў
clear nfpp dhcp-guard hosts	↓ ў

/I	
-	-

42.4.2 dhcp-guard enable

DHCP ╖ Â

dhcp-guard enable

-	-

DHCP ˘ Â

NFPP

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcp-guard enable
```

٦	
nffp dhcp-guard enable	Э DHCP ╖
show nfpp dhcp-guard summary	

/I	

	-	-

42.4.3 dhcp-guard isolate-period

¸ Â

dhcp-guard isolate-period {*seconds* | **permanent**}

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcp-guard rate-limit per-src-mac 8
Ruijie(config-nfpp)# dhcp-guard rate-limit per-port 100
```

¾	
nfpp dhcp-guard policy	
show nfpp dhcp-guard summary	

/I	
-	-

42.4.7 clear nfpp dhcp-guard hosts

˘ Â

clear nfpp dhcp-guard hosts [*vlan vid*] [**interface** *interface-id*] [*mac-address*]

vid	/I
interface-id	¸
mac-address	MAC - D2Df 0.48 ref341.6 3156(- D2Df 00.1 ref246.84 515.72

show nfpp dhcp-guard hosts	ў

٨
٣

٨	
-	-

42.4.8 nfpp dhcp-guard enable

٣ Э DHCP ٦ Â

nfpp dhcp-guard enable

-	-

DHCP ˘ Â

٣

DHCP ˝I DHCP Â

```
Ruijie(config)# interface G0/1
Ruijie(config-if)# nfpp dhcp-guard enable
```

٣	
dhcp-guard enable	DHCP ٦

show nfpp dhcp-guard summary

nfpp dhcp-guard isolate-period {*seconds* | **permanent**}

seconds	˘ Æ ˘ ˇ 0 [30, 86400] 0 a Â
permanent	

˘ Â

¾

Ruijie(config)# **interface** *G 0/1*
Ruijie(config-if)# **nfpp dhcp-guard isolate-period** 180

¾	
dhcp-guard isolate-period	
show nfpp dhcp-guard summary	

ˇ

/ˇ	
10.4	¾

42.4.10 nfpp dhcp-guard policy

Э Â

nfpp dhcp-guard policy { **per-src-mac** | **per-port**} *rate-limit-pps attack-threshold-pps*

per-src-mac	MAC Â
per-port	Â
rate-limit-pps	˘ ˇ 1 9999 Â
attack-threshold-pps	˘ ˇ 1 9999 Â

˘ Â

¾

a Â

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp dhcp-guard policy per-src-mac 3 10
Ruijie(config-if)# nfpp dhcp-guard policy per-port 50 100
```

¾

¾	
dhcp-guard attack-threshold	
dhcp-guard rate-limit	
show nfpp dhcp-guard summary	
show nfpp dhcp-guard hosts	↓ ў
clear nfpp dhcp-guard hosts	ў

↓

¾

Л	
10.4	¾

42.5 DHCPv6

42.5.1 dhcpv6-guard attack-threshold

˘ Ą˘ ѝ ѝ Â

dhcpv6-guard attack-threshold { **per-src-mac** | **per-port**} *pps*

per-src-mac	MAC Â
per-port	Â
pps	˘ Æ ˘ ↓ [1,9999] Â

MAC 10 ˘ 300 Â

¾ NFPP

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcpv6-guard attack-threshold per-src-mac 15
Ruijie(config-nfpp)# dhcpv6-guard attack-threshold per-port 200
```

nfpp dhcpv6-guard policy

nffp dhcpv6-guard enable	Э DHCPv6 ╖
show nfpp dhcpv6-guard summary	

✓

¾	
✓	
10.4	¾

42.5.3 dhcpv6-guard isolate-period

¾ Â

dhcpv6-guard isolate-period {*seconds* | **permanent**}

seconds	˘ Æ ˘ ✓ 0 [30, 86400]˝ 0 a Â
permanent	

0˝ a Â

¾ NFPP

ˆ ~ Â
˘ ˘ ¤ ' ‡˘
Â

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcpv6-guard isolate timeout 180
```

¾	
nfpp dhcpv6-guard isolate-period	Э
show nfpp dhcpv6-guard summary	

✓

¾	✓	

10.4	३

42.5.4 dhcpv6-guard monitor-period

३ Â

dhcpv6-guard monitor- period *seconds*

seconds	˘ Æ ˘ ५ [180, 86400] Â

5[illegible]

३ NFPP

Ą˘ ѝ Ơ ˘ ѝ

dhcpv6-guard monitored-host-limit *number*

number	↓ ў ˘ ↓ и 1 4294967295

↓ ў и 1000

३ NFPP

↓ ў 1000 ˘ ↓ ў
1000ˇ a ↓ ў ˘ l' %ERROR' The value that you configured is smaller than current monitored hosts 1000ˇ ↓ ў ~ ˘ please clear a part of monitored hosts. Ł ˘ †
ў Â
↓ ў ˘ l' % NFPP_DHCP_GUARD-4-SESSION_LIMIT: Attempt to exceed limit of 1000ˇ ↓ ў ~ monitored hosts. Ł Â

MAC 5 ˘ 150 Â

¾ NFPP

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcpv6-guard rate-limit per-src-mac 8
Ruijie(config-nfpp)# dhcpv6-guard rate-limit per-port 100
```

¾

¾	
nfpp dhcpv6-guard policy	
show nfpp dhcpv6-guard summary	

¼

¾

¼	
10.4	¾

42.5.7 clear nfpp dhcpv6-guard hosts

˘ Â

clear nfpp dhcpv6-guard hosts [*vlan vid*] [**interface** *interface-id*] [*mac-address*]

vid	¼
interface-id	¼
mac-address	MAC

¾

a ˘ Â

VLAN 1 g 0/1 Â

```
Ruijie# clear nfpp dhcpv6-guard hosts vlan 1 interface g0/1
```

٦	
dhcpv6-guard attack-threshold	
nfpp dhcpv6-guard policy	
show nfpp dhcpv6-guard hosts	ў

/I	
10.4	٦

42.5.8 nfpp dhcpv6-guard enable

٦ Э DHCPv6 ٣ Â

nfpp dhcpv6-guard enable

-	-

DHCPv6 ˘ Â

DHCPv6 ˝I DHCP Â

```
Ruijie(config)# interface G0/1
Ruijie(config-if)# nfpp dhcpv6-guard enable
```

٦	
dhcpv6-guard enable	DHCPv6 ٣
show nfpp dhcpv6-guard summary	

¶	
10.4	¶

42.5.9 nfpp dhcpv6-guard isolate-period

¶ Э Â

nfpp dhcpv6-guard isolate-period {*seconds* | **permanent**}

seconds	˘ Æ ˘ ¼ 0 [30, 86400]˜ 0 a Â
permanent	

˘ Â

¶

Ruijie(config)# **interface** *G 0/1*
Ruijie(config-if)# **nfpp dhcpv6-guard isolate-period** 180

¶	
¶ **dhcpv6-guard isolate-period**	

per-src-mac	MAC Â
per-port	Â
rate-limit-pps	˘ ↓ 1 9999 Â
attack-threshold-pps	˘ ↓ 1 9999 Â

˘ Â

ʒ

a Â

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp dhcpv6-guard policy per-src-mac 3 10
Ruijie(config-if)# nfpp dhcpv6-guard policy per-port 50 100
```

ʒ	
dhcpv6-guard attack-threshold	
dhcpv6-guard rate-limit	
show nfpp dhcpv6-guard summary	
show nfpp dhcpv6-guard hosts	↓ ў
clear nfpp dhcpv6-guard hosts	ў

ʒ

per-src-ip	IP

¾ NFPP

Ruijie(config)# **nfpp**
Ruijie(config-nfpp)# **icmp-guard enable**

¾	
nffp icmp-guard enable	Э ICMP ╖
show nfpp icmp-guard summary	

Ѝ

Ѝ	
-	-

42.6.3 icmp-guard isolate-period

¾ Â

icmp-guard isolate-period {*seconds* | **permanent**}

seconds	˘ Æ ˘ ↓ 0 [30, 86400]˜ 0 a Â
permanent	

0˝ a Â

¾ NFPP

ˆ ˜ Â
˘ ˘ ₭ ' ‡˘
Â

Ruijie(config)# **nfpp**
Ruijie(config-nfpp)# **icmp-guard isolate-period** *180*

42.6.6 icmp-guard rate-limit

Â

icmp-guard rate-limit { **per-src-ip** | **per-port**} *pps*

per-src-ip	IP
per-port	
pps	˘ ↓ [1,9999] Â

IP 900 ˘ 1000 Â

¾ NFPP

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# icmp-guard rate-limit per-src-ip 500
Ruijie(config-nfpp)# icmp-guard rate-limit per-port 800
```

¾	
nfpp icmp-guard policy	
show nfpp icmp-guard summary	

↓

/↑	
-	-

42.6.7 icmp-guard trusted-host

a ↓ ў Â

icmp-guard trusted-host *ip*!Ê

٣

a ˘ ў Â

VLAN 1 g 0/1 ٧ ў Â

```
Ruijie# clear nfpp icmp-guard hosts vlan 1 interface g 0/1
```

٣

٣	
icmp-guard attack-threshold	
nfpp icmp-guard policy	
show nfpp icmp-guard hosts	ў

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٣

٨	
-	-

42.6.9 nfpp icmp-guard enable

٣ Э ICMP ٦ Â

nfpp icmp-guard enable

-	-

ICMP ˘ Â

٣

ICMP ″I ICMP Â

```
Ruijie(config)# interface G0/1
Ruijie(config-if)# nfpp icmp-guard enable
```

٣

٣	
icmp-guard enable	ICMP ٦

show nfpp icmp-guard summary	

¼

¾	
10.4	¾

42.6.10 nfpp icmp-guard isolate-period

¾ Э Â

nfpp icmp-guard isolate-period {*seconds* | **permanent**}

seconds	˘ Æ ˘ ¼ 0 [30, 86400]˜ 0 a Â
permanent	

˘ Â

¾

Ruijie(config)# **interface** *G 0/1*
Ruijie(config-if)# **nfpp icmp-guard isolate-period** 180

¾	
icmp-guard isolate-period	
show nfpp icmp-guard summary	

¼

¾	
10.4	¾

42.6.11 nfpp icmp-guard policy

Э Â

nfpp icmp-guard policy { **per-src-ip** | **per-port**} *rate-limit-pps attack-threshold-pps*

per-src-ip	IP Â
per-port	Â
rate-limit-pps	˘ ↓ 1 9999 Â
attack-threshold-pps	˘ ↓ 1 9999 Â

˘ Â

٣

a Â

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp icmp-guard policy per-src-ip 5 10
Ruijie(config-if)# nfpp icmp-guard policy per-port 100 200
```

٣

٣	
icmp-guard attack-threshold	
icmp-guard rate-limit	
show nfpp icmp-guard summary	
show nfpp icmp-guard hosts	↓ ў
clear nfpp icmp-guard hosts	ў

↓

٣

/	
10.4	٣

42.7 ND

42.7.1 nd-guard attack-threshold

˘ Ą˘ и и Â

nd-guard attack-threshold per-port {**ns-na** | **rs** | **ra-redirect**} *pps*

ns-na	Ὼ
rs	
ra-redirect	Ὼ
pps	˘ Æ ˘ ৸ [1,9999] Â

/Ὼ 30 ˘
30 ˘ Ὼ / 30 Â

ৡ NFPP

৶

a Â

ıreshold per-port ns-na *20*
ıreshold per-port rs *10*
hreshold per-port ra-redir

nfpp nd-guard policy

ND ٦

٣ NFPP

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# nd-guard enable
```

٣

٣	
nffp nd-guard enable	Э ND ٦
show nfpp nd-guard summary	

٧

٣

٧	
10.4	٣

42.7.3 nd-guard rate-limit

Â

nd-guard rate-limit per-port {**ns-na** | **rs** | **ra-redirect**} *pps*

ns-na	Ώ
rs	
ra-redirect	Ώ
pps	˘ ٧ [1,9999] Â

/Ώ 15 ˘

15 ˘ Ώ / 15 Â

٣ NFPP

¾

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# nd-guard rate-limit per-port ns-na 10
Ruijie(config-nfpp)# nd-guard rate-limit per-port rs 5
Ruijie(config-nfpp)# nd-guard rate-limit per-port ra-redirect 5
```

¾

¾	
nfpp nd-guard policy	
show nfpp nd-guard summary	

¼

¾

¼	
10.4	¾

42.7.4 nfpp nd-guard enable

¾ Э ND ¶ Â

nfpp nd-guard enable

-	-

ND ˘ Â

¾

ND ¨I Â

```
Ruijie(config)# interface G0/1
Ruijie(config-if)# nfpp nd-guard enable
```

¾

¾	
nd-guard enable	ND ¶
show nfpp nd-guard summary	

¼

३	/I	
	10.4	३

42.7.5 nfpp nd-guard policy

Э Â

nfpp nd-guard policy per-port {**ns-na** | **rs** | **ra-redirect**} *rate-limit-pps attack-thresh old-pps*

	ns-na	Ω
	rs	

nd-guard attack-threshold	
nd-guard rate-limit	
show nfpp nd-guard summary	

ʆ

ȝ

ʆ	
10.4	ȝ

42.8 NFPP

42.8.1 clear nfpp log

NFPP ă ʊ Â

clear nfpp log

-	-

ȝ

S*Ø

42.8.2 log-buffer entries

NFPP ă ʁ Â

log-buffer entries *number*

number	ă ʁ ˘ Æ ˘ ˬ [0,1024]

ă ʁ ѝ 256 Â

ৡ NFPP

NFPP ă ʁ ѝ 50 Â

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# log-buffer entries 50
```

ৡ	
log-buffer logs number_of_message **interval** length_in_seconds	NFPP ÿ ă ʁ ˬ Â
show nfpp log	NFPP ă ʁ

ˬ

ʃ	
10.4	ৡ

42.8.3 log-buffer logs

NFPP ÿ ă ʁ ˬ Â

log-buffer logs *number_of_message* **interval** *length_in_seconds*

number_of_message	ѝ 0-1024˝ 0 ж ă ʁ˘ a Â

Â

٪ NFPP

٪ ٧ Л Ъ ˘ ٧ VLAN Â ч
˘ ٧ è ‡˘
ă ш Â

٧ VLAN 1 à VLAN 2 à VLAN 3 VLAN 5 ˘ Ю'

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# logging vlan 1-3,5
```

٧ G 0/1 ˘ Ю'

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# logging interface G 0/1
```

٪

٪	
show nfpp log summary	NFPP ă ш Â

٨

٪

٨	
10.4	٪

42.8.5 show nfpp log

NFPP Â

show nfpp log summary

NFPP ă ш Â

show nfpp log buffer [**statistics**]

statistics	NFPP ă ш

٪

ă ш ˘ ﾉ ˘ ﾉ ă ш

ѝ ”-” Â ╗ ă ш Â

ÿ ă ш ﾍ Y ˘ Ю '

%NFPP_ARP_GUARD-4-DOS_DETECTED: Host<IP=N/A,MAC=0000.0000.0004,por

Protocol ЛЬЮ ↓ '

ARP` ARP ~

IP` IP ~

ICMP` ICMP ~

DHCP` DHCP ~

DHCPv6` DHCPv6 ~

NS-NA` ND Ὼ ~

RS` ND ~

RA-REDIRECT` ND Ὼ ~

Reason ˘ 5 ↓ '

DoS ⊾

ISOLATED ℸ

ISOLATE_FAILED

SCAN

PORT_ATTACKED

ȝ	

interface-id	
ip-address	IP

ARP Â

show nfpp arp-guard scan [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-addres s*] [*mac-address*]]]

statistics	ARP
vid	/ì
interface-id	¸
ip-address	IP
mac-address	MAC

¾

```
Ruijie# show nfpp arp-guard scan statistics
ARP scan table has 4 record(s).
```

' Ï' ARP 4 Ł Â

```
Ruijie# show nfpp arp-guard scan
VLAN    interface   IP address   MAC address      timestamp
----    --------    ----------  -----------      ----------
1       Gi0/1       N/A         0000.0000.0001   2008-01-23
16:23:10
2       Gi0/2       1.1.1.1     0000.0000.0002   2008-01-23
16:24:10
3       Gi0/3       N/A         0000.0000.0003   2008-01-23
16:25:10
4       Gi0/4       N/A         0000.0000.0004   2008-01-23
16:26:10
Total' 4 record(s)
```

Ï' timestamp Ł ARP ˘ Ï' 2008-01-23 16:23:10 Ł 2008 1 23 16 23¦ 10 ARP Â

```
Ruijie# show nfpp arp-guard scan vlan 1 interface G 0/1
0000.0000.0001
```

```
VLAN    interface   IP address   MAC address      timestamp
----    --------    ----------    -----------      ----------
1       Gi0/1       N/A          0000.0000.0001   2008-01-23
16:23:10
Total' 1 record(s)
```

ৡ	
arp-guard scan-threshold	
nfpp arp-guard scan-threshold	
clear nfpp arp-guard scan	ARP

ৡ

ৡ

⁄	
-	-

42.9.3 show nfpp arp-guard summary

Â

show nfpp arp-guard summary

-	-

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ৡ ⁄ ⁄ Ù Â

Ruijie# **show nfpp arp-guard summary403 m( )J/C23 1 760006 d( )J-47D1D1702Z**

```
Maximum count of monitored hosts: 1000
Monitor period  300s
```

ˆ 1˜ Interface ѝ Global Â

ˆ 2˜ Status ╖ Â

ˆ 3˜ Rate-limit ѝˆ IP / MAC / ˜ ˇ Attack-threshold Â ľ - Ł Â

ʒ

ʒ	
arp-guard attack-threshold	
arp-guard enable	ARP ╖
arp-guard isolate-period	
arp-guard monitor-period	
arp-guard monitored-host-limit	↓ ў
arp-guard rate-limit	
arp-guard scan-threshold	
nfpp arp-guard enable	Э ARP ╖
nfpp arp-guard isolate-period	
nfpp arp-guard policy	
nfpp arp-guard scan-threshold	

↓

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-	-

42.10 DHCP

42.10.1 show nfpp dhcp-guard hosts

↓ ў Â

show nfpp dhcp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	٧ ў
vid	٨
interface-id	٤
mac-address	MAC

٣

٧ ў Â

Ruijie# **show nfpp dhcp-guard hosts statistics**

success fail total

------- ---- -----

100 20 120

120 ٨ ў ˘ è 100 ٨ ў ˘ 20 ٨ ў

ˆ a ˘ a ~ Â

٧ ў ˘ ľ remain-time(seconds) Ł Â

Ruijie# **show nfpp dhcp-guard hosts**

If column 1 shows '*', it means "hardware failed to isolate host".

VLAN interface MAC address remain-time(seconds)

---- --------- ----------- --------------------

1 gi0/2 0000.0000.0001 10

*2 gi0/1 0000.0000.0002 20

Total ľ 2 host(s)

٣

٣	
clear nfpp dhcp-guard hosts	٧ ў

٨

٨	

42.10.2 show nfpp dhcp-guard summary

Â

show nfpp dhcp-guard summary

-	-

ৡ

ৡ ৶ ৸ Â

```
Ruijie# show nfpp dhcp-guard summary
ˆ Format of column Rate-limit and  Attack-threshold is per-src-ip
/per-src-mac/per-port.˜
Interface  Status  Isolate-period Rate-limit Attack-threshold
Global     Enable  300            -/5/150    -/10/300
Gi 0/1      Enable  180            -/6/-      -/8/-
Gi 0/2      Disable 200            -/5/30     -/10/50

Maximum count of monitored hosts: 1000
Monitor period  300s
```

ˆ 1˜ Interface ӈ Global Â

ˆ 2˜ Status ৷ Â

ˆ 3˜ Rate-limit ӈ IP / MAC / ˜ ˇ Attack-threshold Â ৲ - Ł Â

dhcp-guard rate-limit	
nfpp dhcp-guard enable	Э DHCP ๗
nfpp dhcp-guard isolate-period	
nfpp dhcp-guard policy	

ฝ

३	ภ	
	10.4	३

42.11 DHCPv6

ˆ a ˇ a ˜ Â

৸ ў ˇ l' remain-time(seconds) Ł Â

Ruijie# **show nfpp dhcpv6-guard hosts**

If column 1 shows '*', it means "hardware failed to isolate host".

VLAN	interface	MAC address	remain-time(seconds)
1	gi0/2	0000.0000.0001	10
*2	gi0/1	0000.0000.0002	20

Total' 2 host(s)

ৡ

ৡ	
clear nfpp dhcpv6-guard hosts	৸ ў

৸

ৡ

/I	
10.4	ৡ

42.11.2 show nfpp dhcpv6-guard summary

Â

show nfpp dhcpv6-guard summary

-	-

ৡ

ৡ ৸ Л৬ Â

```
Ruijie# show nfpp dhcpv6-guard summary
ˆ Format of column Rate-limit and  Attack-threshold is per-src-ip
/per-src-mac/per-port.˜
Interface  Status  Isolate-period Rate-limit Attack-threshold
```

```
Global     Enable  300            -/5/150     -/10/300
Gi 0/1      Enable  180            -/6/-       -/8/-
Gi 0/2      Disable 200            -/5/30      -/10/50

Maximum count of monitored hosts: 1000
Monitor period: 300s
```

ˆ 1˜ Interface ѝ Global Â

ˆ 2˜ Status ™ Â

ˆ 3˜ Rate-limit ѝ IP / MAC / ˜ ˇ Attack-threshold Â ľ - Ł Â

¾	
dhcpv6-guard attack-threshold	
dhcpv6-guard enable	DHCPv6 ™
dhcpv6-guard isolate-period	
dhcpv6-guard monitor-period	<2Ø¼ŒÊ5B,¥93d€4

statistics	↓ ў
vid	∕
interface-id	↓
ip-address	IP

ȝ

Ruijie#**show nfpp icmp-guard hosts statistics**

success fail total

------- ---- -----

100 20 120

' ľ 120 ∕ ў ˘ è 100 ∕ ў ╖˘ 20 ∕ ў Ŀ Â

Ruijie# **show nfpp icmp-guard hosts**

If column 1 shows '*', it means "hardware failed to isolate host".

VLAN interface IP address remain-time(s)

---- -------- --------- -------------

1 Gi0/1 1.1.1.1 110

2 Gi0/2 1.1.2.1 61

Total' 2 host(s)

ȝ

ȝ	
clear nfpp icmp-guard hosts	↓ ў

∕

ȝ

∕	
10.4	ȝ

42.12.2 show nfpp icmp-guard summary

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show nfpp icmp-guard summary

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nfpp icmp-guard isolate-period	
nfpp icmp-guard policy	

¼

¾

¼	
10.4	¾

42.12.3 show nfpp icmp-guard trusted-host

a ¬ ÿ Â

show nfpp icmp-guard trusted-host

-	-

¾

¾

¬ ÿ Â

```
Ruijie# show nfpp icmp-guard trusted-host
IP address     mask
---------      ------
1.1.1.0        255.255.255.0
1.1.2.0        255.255.255.0
Total' 2 record(s)
```

¾	
icmp-guard trusted-host	a ¬ ÿ

¼

¾

¼	

ndfpp nd6(agu)y	G!5B ÂD_6" 4“ Ï 66“
nd-guard attack-threshold	
nd-guard enable	ND ℸ
nd-guard ra	%

43 ACL

ЛЬЮ ꝛ ⅃ ЛЬЮ ꝛ

id	/ⅵ Â ⅃ IP ACL' 1-99˝ 1300-1999 IP ACL' 100-199˝ 2000-2699 MAC ACL' 700–799 ж ACL' 2700–2899
name	ACL ⅄
sn	ACL /ⅵ (˝I)
start-sn	/ⅵ
inc-sn	/ⅵ
deny	ꓶ ˘ ‡
permit	ꓶ ˘ ‡
prot	/ⅵ˘ IPv6 ⅃ и ipv6˝ icmp˘ tcp˘ udp 0-255˝ IPv4ˇ ⅃ Л∪ eigrp˘ gre˘ ipinip˘ igmp˘ nos˘ ospf˝ icmp˘ udp˘ tcp˘ ip ˘ ≠ ⅃ Л∪ ꝛ IP 0-255 /ⅵ˘ icmp/tcp/udp
interface idx	ꓶ
src	ˆ ў ˜
src-wildcard	Â ⅃ Л∪ a ˘ 0.255.0.32
src-ipv6-pfix	IPv6
dst-ipv6-pfix	IPv6
pfix-len	Æ Æ
src-ipv6-addr	IPv6
dst-ipv6-addr	IPv6
dscp dscp	Ь , ˘ 0-63
flow-label flow-label	˘ 0-1048575
dst	ˆ ў ˜
dst-wildcard	Â ⅃ Л∪ a ˘ 0.255.0.32

precedence precedence	″I ˆ 0-7˜
range	/ﾊ
time-range tm-rng-name	ѡ˘ ɻ ѝ tm-rng-name
tos tos	Ь ˆ 0-15˜
cos cos	cos (0-7)
cos inner cos	tag cos
icmp-type	ICMP ˆ 0-255˜
icmp-code	ICMP ϗ ˆ 0-255˜
icmp-message	ICMP ɻ
operator port[port]	Operator ѝ ˆ lt- ˘ eq- ˘ gt- ˘ neq- a ˘ range- ˜ port /ﾊ˘ γ ч /ﾊ ˘ è ﾍ /ﾊ

	B	MAC	6	P	/I	35
	C		12	Q	IP	36
	D	VLAN tag	14	R	ip	38
	E	DSAP(⊾)	18	S	ip	42
	F	SSAP(⊾)	19	T	TCP	46
	G	Ctrl	20	U	TCP	48
	H	Org Code	21	V	/I	50
	I					

4) Expert ˆ 2700 - 2899˜

access-list *id* {**deny** | **permit**} [**protocol** | [*ethernet-type*][**cos** [*out*][**inner** *in*]]] [**VID** [*out*][**inner** *in*]] {*source source-wildcard* | **host** *source* | **any**} {**host** *source-mac-address* | **any**} {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**}][**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

Ʌυ Ethernet-type cos '

access-list *id* {**deny** | **permit**} {*ethernet-type*| **cos** [*out*][**inner** *in*]} [**VID** [*out*][**inner** *in*]] {**s***ource source-wildcard* | **host** *source* | **any**} {**host** *source-mac-address* | **any** } {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [**time-range** *time-range-name*]

Protocol '

access-list *id* {**deny** | **permit**} **protocol** [**VID** [*out*][**inner** *in*]] {*source source-wildcard* | **host** *source* | **any**} {**host** *source-mac-address* | **any** }{*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

Expert '

Internet Control Message Protocol (ICMP)'

access-list *id* {**deny** | **permit**} **icmp** [**VID** [*out*][**inner** *in*]] {*source source-wildcard* | **host** *source* | **any**} {**host** *source-mac-address* | **any** } {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)'

access-list *id* {**deny** | **permit**} **tcp** [**VID** [*out*][**inner** *in*]]{*source source-wildcard* | **host** *Source* | **any**} {**host** *source-mac-address* | **any** } [**operator** port [*port*]] {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [**operator port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag*]

User Datagram Protocol (UDP)'

access-list *id* {**deny** | **permit**} **udp**[**VID** [*out*][**inner** *in*]] {*source source –wildcard* | **host** *source* | **any**} {**host** *source-mac-address* | **any** } [**operator port** [*port*]] {*destination destination-wildcard* | **host** *destination* | **any**}{**host** *destination-mac-address* | **any**} [**operator port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

5)

access-list *list-remark text*

Id	⁄ Â ˩ ˆ 1-99˝ 100-199˝ 1300-1999˝ 2000-2699˝ 2700 – 2899˝ 700 - 799˜ Â
Deny	¬ ˘ ‡ Â
Permit	¬ ˘ ‡ Â
Source	ˆ ў ˜
source-wildcard	Â ˩ Л∪ a ˘ 0.255.0.32
protocol	IP ⁄˘ ˩ Л∪ EIGRP àGRE àIPINIP àIGMP à NOS à OSPF à ICMP à UDP à TCP à IP ˘ ≠ ˩ Л∪ ¾ IP 0-255 ⁄ Â ICMP/TCP/UDP Â
Destination	ˆ ў ˜
destination-wildcard	Â ˩ Л∪ a ˘ 0.255.0.32
fragments	↑

precedenoB/TT5 -0.0 Tc 0.98<01C3D9.4SPF ¸XE$

match-all	ৗ *tcp flag* Æ
tcp-flag	tcp flag

ACL

ৡ

ӣ ˘ ˮI ৡ **access-list** ⊮

‡ ৸ Â ৯ᑎ ɛ R a ৯ R ' ȯ B

dod-host-prohibited
dod-net-prohibited
echo
echo-reply
fragment-timcho

s(hi)solch
sprecede-pun-p
s6e-p
stpro
st-ho
sun-pn1( )856( )]TJ/C2_1 1 Tf0 Tc 0 Tw -0.742 -1.755 Td<0084>Tj/TT
-reply
-que-5
-reply 6256( )]TJ/C2_1 1 Tf0 Tc 0 Tw -0.742 -1.761 Td<0084>Tj/TT0 1 Tf0.0205
6256( )]TJ/C2_1 1 Tf0 Tc 0 Tw -0.742 -1.761 Td<0084>Tj/TT0 1 Tf0.0
ha-p
o

stpro
o
sunrea-p

rech
hi

ttl-exceeded

unreachable

Ю TCP ɻ ˘ TCP ɻ Ո ɻ Ո ɛ '

bgp

chargen

cmd

daytime

discard

domain

echo

exec

finger

ftp

ftp-data

gopher

hostname

ident

irc

klogin

kshell

login

nntp

pim-auto-rp

pop2

pop3

smtp

sunrpc

syslog

tacacs

talk

telnet

time

uucp

whois

www

Ю UDP ɻ ˘ UDP ɻ Ո ɻ Ո ɛ '

biff

bootpc

bootps
discard
dnsix
domain
echo
isakmp
mobile-ip
nameserver
netbios-dgm
netbios-ns
netbios-ss
ntp
pim-auto-rp
rip
snmp
snmptrap
sunrpc
syslog
tacacs
talk
tftp
time
who
xdmcp

Л Ethernet-type Ю'

aarp
arp
appletalk
decnet-iv
diagnostic
etype-6000
etype-8042
lat
lavc-sca
mop-console
mop-dump
mumps
netbios

vines-echo

xns-idp

1' IP

Ю IP й 192.168.1.64 - 192.168.1.127 ˘ è

'

```
Ruijie(config)# access-list 1 permit 192.168.1.64 0.0.0.63
```

2' IP

Ю IP DNS ICMP '

```
Ruijie(config)# access-list 102 permit tcp any any eq domain
Ruijie(config)# access-list 102 permit udp any any eq domain
Ruijie(config)# access-list 102 permit icmp any any echo
Ruijie(config)# access-list 102 permit icmp any any echo-reply
```

3' MAC

Ю ˘ MAC й 00d0f8000c0c ў й 100 Лu

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43.1.2 deny

6
(deny) Л∪ ᾱ Â

1˜ IP

[*sn*] **deny** {*source source-wildcard* 1

[*sn*] **d**{] [(s)-8(( )8(T(C2)]5-J0 0 1 T 3 0 0 0 1 Td (1)5 7 0 0 2 8 (1 P f 4 /C 2 6 3 7 .4 8 6 0 T j 3 4 1 p T 6 0 e 0 3 2 4 0

destination-wildcard | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [**time-range** *time-range-name*]

b) protocol

[*sn*] **deny protocol** [[**VID** [*out*][**inner** *in*]]] {*source source-wildcard* | **host** *source* | **any**} {**host** *source-mac-address* | **any** } {*destinationdestination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *name*]

c) expert

Internet Control Message Protocol (ICMP)

[*sn*] **deny icmp** [[**VID** [*out*][**inner** *in*]]] {*source source-wildcard* | **host** *source* | **any**} {**host** *source-mac-address* | **any**} {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**precedence**] [**tos** *tos*] [**frag-6( )]931 Tf0(upper)c 0 Tw 2.571 0 Td[(icmp-)-65 Tf2E3C02D6>TJTT0 1 Tf7**

[[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragments**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)

[*sn*] **deny tcp** {*source-ipv6-prefix / prefix-length* | **host***source-ipv6-address* | **any**}[*operator* **port**[*port*]] {*destination-ipv6-prefix /prefix-length* | **host** *destination-ipv6-address* | **any**} [*operator* **port** [*port*]] [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag*]

User Datagram Protocol (UDP)

[sn] **deny udp** {*source-ipv6-prefix/prefix-length* | **host** *source-ipv6-address* | **any**} [*operator* **port** [*port*]] {*destination-ipv6-prefix /prefix-length* | **host** *destination-ipv6-address* | **any**}[*operator* **port** [*port*]] [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

Sn	ACL /I
source-ipv6-prefix	IPv6 .
destination-ipv6-prefix	IPv6
prefix-length	Æ Æ
source-ipv6-address	IPv6
destination-ipv6-address	IPv6
dscp	Ł
dscp	˘ 0-63.
flow-label	
flow-label	˘ 0-1048575
protocol	IPV6 ˩ й IPV6 | icmp | tcp | udp <0-255>

1Â '

```
Ruijie(config)# ipv6 access-list extended v6-acl
Ruijie(config-ipv6-nacl)# 11 deny ipv6 host 192.168.4.12 any
Ruijie(config-ipv6-nacl)# show access-lists
ipv6 access-list extended v6-acl
11 deny ipv6 host 192.168.4.12 any
Ruijie(config-ipv6-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# ipv6 traffic-filter v6-acl in
```

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ʒ	
show access-lists	
ipv6 traffic-filter	Э IPV6
ip access-group	IP ACL
mac access-group	MAC ACL
ip access-list	IP ACL Ьѫ
mac access-list	MAC ACL Ьѫ
expert access-list	ж ACL Ьѫ
ipv6 access-list	IPV6 ACL Ьѫ
permit	Ьѫ ʒ

ʃ

ʒ

ʃ	
V10.0	V10.0 ЛЪЭ˜ arp V10.2(3) ЛЪЭ Â

43.1.3 expert access-group

EXPERT ACL Â ʒ **no** ʃ Â

expert access-group {*id* | *name*} {**in** | **out**}

no expert access-group {*id* | *name*} {**in** | **out**}

id	Expert ʃˆ 2700-2899˜
name	Expert ɹ

ACL ३

⅋ ⅃Ⅱ **show expert access-lists** ⅋ Â

1' … ж ACL'

```
Ruijie(config)# expert access-list extended exp-acl
Ruijie(config-exp-nacl)# show expert access-lists
expert access-list extended exp-acl
Ruijie(config-exp-nacl)#
```

2' … ж ACL'

```
Ruijie(config)# expert access-list extended 2704
Ruijie(config-exp-nacl)# show expert access-lists
expert access-list extended 2704
Ruijie(config-exp-nacl)#
```

⅋

⅋	
show expert access-lists	ж

⅄

⅋

⁄	
V10.0	V10.0 Ⅱ Э

43.1.5 ip access-group

é ˘ ⅋ **ip access-group** Â ⅋ no ⅄ Â

ip access-group {*id* | *name*} {**in** | **out**}

no ip access-group { *id* | *name*} {**in** | **out**}

id	IP ⁄ˆ 1-199˜ 1300-2699˜
name	IP ⅃
in	
out	ÿ

ACL

ip access-group

Ю fastEthernet0/0 Э 120

```
Ruijie(config)# interface fastEthernet 0/0
Ruijie(config-if)#ip access-group 120 in
```

access-list	
show access-lists	
show ip access-list	IP 1-199 1300 – 2699 3000 3199

1' ... ACL'

```
Ruijie(config)# ip access-list standard std-acl
Ruijie(config-std-nacl)# show ip access-lists
ip access-list standard std-acl
Ruijie(config-std-nacl)#
```

2 ' ... ACL'

```
Ruijie(config)# ip access-list extended 123
Ruijie(config-ext-nacl)# show ip access-lists
ip access-list extended 123
```


¾ ¬Л **show access-lists** ¾ Â

ACL '

```
Ruijie# show access-lists
ip access-list standard 1
10 permit host 192.168.4.12
20 deny any any
Ruijie# config
Ruijie(config)# ip access-list resequence 1 21 43
Ruijie(config)# exit
Ruijie# show access-lists
ip access-list standard 1
21 permit host 192.168.4.12
64 deny any any
```

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¾	
show access-lists	

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V10.0	V10.0 ЛЪЭ

43.1.8 ipv6 traffic-filter

IPV6 ACL Â ¾ no ¬ Â

ipv6 traffic-filter *name* {**in** | **out**}

no ipv6 traffic-filter *name* {**in** | **out**}

name	IPV6 ¬
in	
out	ÿ

IPV6 ACL

¾

ACL Э˘ ⁸ Â **show ipv6 traffic-filter** ¾

Ю access-list v6-acl Gigabit 1 Э'

```
Ruijie(config)# interface GigaEthernet 0/1
Ruijie(config-if)# ipv6 traffic-filter v6-acl in
```

¼

¾

¼	
V10.0	V10.0 ЛЪЭ Â

43.1.11 MAC access-group

MAC ACL Â ¾ **no** ¼ Â

mac access-group {*id* | *name*}{**in** | **out**}

no mac access-group {*id* | *name*} {**in** | **out**}

id	MAC /ˆ 700-799˜
name	MAC ¿
in	
out	ÿ

ACL

¾

¾ ¼Ъ **show running-config** ¾ Â

Ю access-list accept_00d0f8xxxxxx_only Gigabit 1 Э'

```
Ruijie(config)# interface GigaEthernet 1/1
Ruijie(config-if)# mac access-group accept_00d0f8xxxxxx_only in
```

¾

¾	
show access-group	Э ACL Â

¸… MAC ACL˘ Â ¸ **no** ACL

mac access-list extended {*id* | *name*}

no mac access-list extended {*id* | *name*}

1) IP

[*sn*] **permit** {*source source-wildcard* | **host** *source* | **any**}

2) IP

[*sn*] **permit protocol** *source source-wildcard destination destination-wildcard* [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

IP 8 '

Internet Control Message Protocol (ICMP)

[*sn*] **permit icmp** {*source source-wildcard* | **host** *source* | **any**} {*destination destination-wildcard* | **host** *destination* | **any**} [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)

[*sn*] **permit tcp** {*source source-wildcard* |

[*sn*] **permit protocol** [**VID** [*out]*[**inner** *in*]] {*source source-wildcard* | **host** *Source* | **any**} {**host** *source-mac-address* | **any** } {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

Expert '

Internet Control Message Protocol (ICMP)

[*sn*] **permit icmp** [**VID** [*out*][**inner** *in*]] {*source source-wildcard* | **host** *source* | **any**} {**host** *source-mac-address* | **any** } {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**}[*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)

[*sn*] **permit tcp** [**VID** [*out*][**inner** *in*]]{*source source-wildcard* | **host** *Source* | **any**} {**host** *source-mac-address* | **any** } [*operator* **port** [*port*]] {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [*operator* **port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag*]

User Datagram Protocol (UDP)

[*sn*] **permit udp** [**VID** [*out*][**inner** *in*]]{*source source –wildcard* | **host** *source* | **any**} {**host** *source-mac-address* | **any** } [*operator* **port** [*port*]] {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [*operator* **port** [*port*]] [**precedenceprecedence**] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

Address Resolution Protocol (ARP)

[*sn*] **permit arp** {**vid** *vlan-id***}** [**host** *source-mac-address* | **any**] [**host** *destination –mac-address* | **any**] {*sender-ip sender-ip–wildcard* | **host** *sender-ip* | **any**} {*sender-mac sender-mac-wildcard* | **host** *sender-mac* | **any**} {*target-ip target-ip–wildcard* | **host** *target-ip* | **any**}

5) IPV6

[*sn*] **permit protocol** {*source-ipv6-prefix* / *prefix-length* | **any** | **host** *source-ipv6-address*} {*destination-ipv6-prefix* / *prefix-length* | **any**| *hostdestination-ipv6-address*} [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

IPV6 8 '

Internet Control Message Protocol (ICMP)

[*sn*] **permit icmp** {*source-ipv6-prefix* / *prefix-length* | **any** *source-ipv6-address* | **host**} {*destination-ipv6-prefix* / *prefix-length*| **host** *destination-ipv6-address* | **any**} [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**dscp** *dscp*] [**flow-label** *flow-label*][**fragments**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)

[*sn*] **permit tcp** {*source-ipv6-prefix* / *prefix-length* | **host** *source-ipv6-address* | **any**} [*operator* **port** [*port*]] {*destination-ipv6-prefix* / *prefix-length* | **host** *destination-ipv6-address* | **any**} [*operator* **port** [*port*]] [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag*]

User Datagram Protocol (UDP)

[*sn*] **permit udp** {*source-ipv6-prefix* / *prefix-length* | **host** *source-ipv6-address* | **any**} [*operator* **port** [*port*]] {*destination-ipv6-prefix* / *prefix-length* | **host** *destination-ipv6-address* | **any**} [*operator* **port** [**port**]] [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# ip access-group 102 in
Ruijie(config-if)#
```

3' Ю MAC ACL ˘ MAC й 0013.0049.8272 ў й 100 Л∪ ˘ 1Â

```
Ruijie(config)# mac access-list extended 702
Ruijie(config-mac-nacl)# permit host 0013.0049.8272 any aarp
Ruijie(config-mac-nacl)# show access-lists
mac access-list extended
10 permit host 0013.0049.8272 any aarp702
Ruijie(config-mac-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# mac access-group 702 in
```

4' Ю ip ACL ˘ IP й 192.168.4.12 ў ˘ 1Â '

```
Ruijie(config)# ip access-list standard std-acl
Ruijie(config-std-nacl)# permit host 192.168.4.12
Ruijie(config-std-nacl)# show access-lists
ip access-list standard std-acl
10 permit host 192.168.4.12
Ruijie(config-std-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# ip access-group std-acl in
```

5' Ю IPV6 ACL ˘ IP й 192.168.4.12 ў ˘ 1Â '

```
Ruijie(config)# ipv6 access-list extended v6-acl
Ruijie(config-ipv6-nacl)# 11 permit ipv6
host ::192.168.4.12 any
Ruijie(config-ipv6-nacl)# show access-lists
ipv6 access-list extended v6-acl
11 permit ipv6 host ::192.168.4.12 any 748013 .557 0 Td[<02D603DF>-94 0
```

ip access-group	IP ACL
mac access-group	MAC ACL
ip access-list	IP ACL Ьѫ
mac access-list	MAC ACL Ьѫ
expert access-list	ж ACL Ьѫ
ipv6 access-list	IPV6 ACL Ьѫ
deny	Ьѫ ACL

ʃ

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ʃ	
V10.0	V10.0 ЛЬЭ˘ arp V10.2(3) ЛЬЭ Â

43.2

43.2.1 show access-group

Э ACL

show access-group [**interface** <*interface*>]

<*interface*>	

ʒ

Э ACL˘ a Э ACL

```
Ruijie# show access-group
ip access-list standard ipstd3
Applied On interface GigabitEthernet 0/1.
ip access-list standard ipstd4
Applied On interface GigabitEthernet 0/2.
ip access-list extended 101
```

```
Applied On interface GigabitEthernet 0/3.
ip access-list extended 102
Applied On interface GigabitEthernet 0/8.
```

ip access-group	ip
mac access-group	MAC
expert access-group	Expert
ipv6 traffic-filter	IPV6

V10.0	V10.0

43.2.2 show access-lists

ACL ACL

show access-lists [*id* | *name*]

id	
name	

acl *id* *name* ACL

```
Ruijie# show access-lists n_acl
ip access-list standard n_acl
Ruijie# show access-lists 102
ip access-list extended 102
Ruijie# show access-lists
ip access-list standard n_acl
```

ACL ३

<interface>	

IPv6 ACL IPv6 ACL

```
Ruijie# show ipv6 traffic-filter interface gigabitethernet 0/4
ipv6 traffic-filter v6 in
Applied On interface GigabitEthernet 0/4.
```

ipv6 access-list	IPV6 ACL

V10.0	V10.0

43.2.6 show mac access-group

MAC

show mac access-group[**interface** <*interface*>]

<interface>	

MAC ACL MAC ACL

```
Ruijie# show mac access-group interface gigabitethernet 0/3
```

ACL 3

group mm in

interface GigabitEthernet 0/3.

3	
st	MAC ACL

V10.2	V10.2

43.3.2 security global access-group

security global access-group {*id*|*name*}

no security global access-group

id	ACL id
name	ACL

```
Ruijie(config)#security global access-group 1
```

show secu-acl	

```
Fa0/6     uplink    --
```

security global access-group	
security access-group	
security uplink enable	

V10.2	V10.2

44 QOS

44.1

QoS ˘ QoS ЛЬЮ '

1 policy-map'

policy-map ٦ Лъ class-map'

class-map 1 ACL˘ ACL ACE έ ٦

'

Э ACE ÿ “ ACL” ⁸ Â

Ю˘ QoS ╖ Â ٦ Â Policy Map

Э˘ ˘ QoS ╖ Â

QoS ╖ ˘ ¤ Policy Map ˘ й Off

٦ Â ЛЬЮ й QOS '

CoS	0
	8
	WRR
QueueWeight	1:1:1:1:1:1:1:1
WRR Weight Range	1:15
DRR Weight Range	1:15
	No Trust

Cos

CoS

CoS to DSCP

CoS	DSCP
0	0
1	8
2	16
3	24
4	32
5	40
6	48
7	56

IP-Precedence to DSCP

IP-Precedence to DSCP

IP-Precedence	DSCP
0	0
1	8
2	16
3	24
4	32
5	40
6	48
7	56

DSCP to CoS

DSCP to CoS

DSCP	CoS
0	0
8	1
16	2
24	3
32	4
40	5
48	6
56	7

44.2

44.2.1 class maps

… ACL'

ip access-list {**extended** | **standard**} { *acl-id* | *acl-name* }

mac access-list extended {*acl-id* | *acl-name*}

expert access-list extended {*acl-id* | *acl-name*}

ipv6 access-list extended *acl-name*

4' … class-map, cm

```
Ruijie(config)# class-map cm
```

5' ACL

```
Ruijie(config-cmap)# match access-group me
```

6' class-map

```
Ruijie(config-cmap)# exit
```

show mac access-lists	-
show ip access-lists	-
show class-map	-

-	-

44.2.2 drr-queue bandwidth

DRR

drr-queue bandwidth *weight1...weight8*

no drr-queue bandwidth

weight1...weight8	
no	

```
Ruijie(config)# drr-queue bandwidth 1 2 3 4 5 6 7 8
```


show mls qos queueing	-

-

-

44.2.4 mls qo

mls qos

no mls qo

gabitethernet *1/1*

os *7*

Tf0 Tc[(sho)18(w)-2501 6(Tf0 6(s rnet)Tj0 Td( )28 -0.012 T

dscp	४ a ४ a ४
no	

३

Ruijie(config)# **mls qo map cos-dscp** *8 10 16 18 24 26 32 34*

Ruijie(config)# **mls qos map dscp-cos** 8 10 16 18 to 0

-	-

show mls qos maps dscp-cos maps,dscp-cos maps ip-prec-dscp maps

-	-

44.2.7 mls qos map ip-prec-dscp

ippre DSCP

mls qos map ip-prec-dscp dscp1...dscp8

no mls qos map ip-prec-dscp

dscp	a a
no	

Ruijie(config)# **mls qo map ip-prec -dscp** *8 10 16 18 24 26 32 34*

show mls qos maps	dscp-cos maps,dscp-cos maps ip-prec-dscp maps

44.2.8 mls qos scheduler

mls qos scheduler [**sp** | **rr** | **wrr** | **drr**]

no mls qos scheduler

sp	″l
rr	
wrr	
drr	
no	

ѝ wrr

ৡ

Ruijie(config)# **mls qos scheduler sp**

ৡ

cos	Qos	ѝ CoS
dscp	Qos	ѝ DSCP
ip-precedence	Qos	ѝ IP-PRE
no		

a

٦

Ruijie(config)# **interface gigabitethernet** *1/1*
Ruijie(config-if)# **mls qos trust cos**

٦	

٦

no policy-map *policy-map-name*	policy map
class-map-name	… class map ৸
no class *class-map-name*	৲
new-dscp	DSCP ’ ৻ a ৸ a ৸
rate-bps	⁸ ˘ Æ kbps
burst-byte	⁸ ˘ Æ kbyte
drop	৲
dscp-value	৲ DSCP ৻ a ৸ a ৸

[redacted]

map po

ass cm

```
Ruijie(config-pmap-c)# set ip dscp 10
  4ৎ          ӥ 1M,        ӥ 4096k,   ╠  ӥ    dscp 16
Ruijie(config-pmap-c)# police 1000000 4096 exceed-action dscp 16
```

ৡ

priority-queue	ѝ SP
no priority-queue	ѝ WRR

ѝ WRR

৲

Ruijie(config)# **no priority-queue**

৲	
show mls qos queueing	-

৶

৶	
-	-

44.2.12 priority-queue cos-map

CoS

priority-queue cos-map *qid cos0* [*cos1* [*cos2* [*cos3* [*cos4* [*cos5* [*cos6* [*cos7*]]]]]]]

no priority-queue cos-map

qid	ѝ id
cos7	*cos0 ...* ' CoS
no	

৲

Ruijie(config)# **priority-queue cos-map** *1 0 1*

show mls qos queueing	-

a a

-	-

44.2.13 service-policy

policy map

service-policy {**input** | **output**} *policy-map-name*

no service-policy {**input** | **output**}

policy-map-name	… policymap
no	policy map

Ruijie(config)# **interface fastEthernet** *0/1*
Ruijie(config-if)# **service-policy input po**

show mls qos interface	-

-	-

44.2.14 wrr-queue bandwidth

WRR

wrr-queue bandwidth *weight1 ... weightn*

no wrr-queue bandwidth

weight1...weightn	ঌ n ˘ n ৸
no	

weight1: ...: weightn = 1:...:1

ৡ

Ruijie(config)# **wrr-queue bandwidth** *1 2 3 4 5 6 7 8*

ৡ	
show mls qos queueing	-

৸ a ৶ a ৶˘ Â

৸	
-	-

44.3

44.3.1 show class-map

class map

show class-map [*class-name*]

class-name	class map ৷

class map

Ruijie# **show class-map**

-	-

-	-

44.3.2 show policy-map

QoS policy map [class class-name]

show policy-map [*policy-name* [**class** *class-name*]]

policy-name	policy name
class-name	class map

policy name

Ruijie# **show policy-map**

-	-

ip-prec-dscp	ip-prec-dscp maps

dscp-cos maps dscp-cos maps ip-prec-dscp maps

ʒ

Ruijie# **show mls qos maps**

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-	-

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-	-

44.3.5 show mls qos queueing

QoS (cos-to-queue map,wrr weight,drr weight)

show mls qos queueing

-	-

ʒ

Ruijie# **show mls qos queueing**

ʒ	
-	-

-	-

44.3.6 show mls qos rate-limit

8

show mls qos rate-limit [**interface** *interface-id*]

interface	interface-id rate-limit

```
Ruijie# show mls qos rate-limit
```

Ruijie# **show mls qos scheduler**

-	-

-	-

45 Voice VLAN

45.1

45.1.1 voice vlan

Voice VLAN˘ VLAN ѝ Voice VLAN Â ˩ Л৬ ३ **no** Voice VLAN ╖ Â

voice vlan *vlan-id*

no voice vlan

vlan-id	Voice VLAN ID Â

Â

३

३ Voice VLAN ╖ ˘ ˩ Voice VLAN ID Â

1˜ Voice VLAN

~

show voice vlan

Voice VLAN б
Â 45-2

45.1.3 voice vlan cos

Voice VLAN CoS Â ┘Л∪ ३ **no**

Â

voice vlan cos *cos-value*

no voice vlan cos

cos-value	Voice VLAN CoS Â

cos-value ѝ 6Â

३

Voice VLAN CoS б DSCP ″I ˘

Â

1' Voice VLAN ″I ˘ CoS ѝ 5

```
Ruijie(config)# voice vlan cos 5
```

३	
show voice vlan	Voice VLAN б

Â cёh8bHT"ţ₧5P#3₧6APPBDrỳ₧@ğpmẽn

dscp-value	Voice VLAN DSCP Â

dscp-value ѝ 46 Â

¾

Voice VLAN CoS б DSCP ″I ˘ Â

1' Voice VLAN ″I ˘ DSCP ѝ 40 Â

```
Ruijie(config)# voice vlan dscp 40
```

¾	
show voice vlan	Voice VLAN б Â

1' OUI 0012.3400.0000 ѝ Voice VLAN ˘ ѝ Company A Â

```
Ruijie(config)# voice vlan mac-address 0012.3400.0000 mask
ffff.ff00.0000 description Company A
```

1˜ Voice VLAN ˘

╗ Voice VLAN˝ Voice VLAN ╖ Â

2˜ ╟ ˘ ѝ ╖ ˘ a

native VLAN ѝ Voice VLAN Â

3˜ Trunk Port/Hybrid Port ┘Л VLAN ˘

″I Voice VLAN ÿ VLAN ┘ ˘ Ѧ Voice

VLAN ╖ ˘ Л a ╗ Voice VLAN˝

a Âice VLAN

	⁄ MAC ˘ MAC ˙ Voice VLAN OUI ˘ Voice VLAN ˘ ‡ Â
	~ a Voice VLAN ˙ ⊧ Â ˘ Voice VLAN Â
	ЮЎ untagged Voice VLAN tag MAC ˘ è Voice VLAN tag ˘ VLAN ‡ ˘ a ˙ Voice VLAN / Â

1' Voice VLAN Â

```
Ruijie(config)# voice vlan security enable
```

ʔ	
show voice vlan	Voice VLAN б Â

⁄

¾

¾˘ ¬ Voice VLAN б ˘ Voice VLAN ╖
Â

1' Voice VLAN

```
Ruijie(config)# show voice vlan
Voice VLAN status: ENABLE            //Voice VLAN
Voice VLAN ID: 2                     //Voice VLAN ID
Voice VLAN security mode: Security   //
Voice VLAN aging time: 5 minutes     //
Voice VLAN cos: 6                    //      CoS
Voice VLAN dscp: 46                  //      DSCP
Current voice vlan enabled port mode: //    Voice VLAN      б
PORT                    MODE
--------------------------------------------------
Fa0/1                   Auto
```

¾

¾	
voice vlan *vlan-id*	Voice VLAN˘ VLAN ѝ Voice VLAN Â
voice vlan aging *minutes*	Voice VLAN Â
voice vlan cos *cos-value*	Voice VLAN CoS Â
voice vlan dscp *dscp-value*	Voice VLAN DSCP Â
voice vlan enable	Voice VLAN ╖ Â
voice vlan mode auto	Voice VLAN Â
voice vlan security enable	Voice VLAN Â

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10.4	¾

45.2.2 show voice vlan oui

OUI à OUI Â

show voice vlan oui

46

46.1

46.1.1 rgos-security compatible

Ю˘ ╖ й RGOS ˘ ३ **rgos-security compatible** ' RGOS ˘ no ३ '

rgos-security compatible

no rgos-security compatible

Ю˘ ╖ й RGOS

३

~ ३ Л˘

1' ╖ й RGOS '

```
Ruijie(config)#no gos-security compatible
```

३	

३

47 RLDP

47.1

47.1.1 rldp detect-interval

¶ RLDP Э Â

rldp detect-interval *interval*

no rldp detect-interval

interval	˘ ◊ й 2-15

3 Â

¶ Â

stp Ю˘ × Л stp Â

Ю й 5s :

```
Ruijie(config)# rldp detect-interval 5
```

¶	
rldp detect-max	

◊

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-	-

47.1.2 rldp detect-max

¶ RLDP Э ˘ ˘

Ў ˘ ‡ й Â

rldp detect-max *num*

no rldp detect-max

num	, ¼ ù 2-10

2

¦ Â

¦ ˘ Â

Ю ù 5 '

```
Ruijie(config)# rldp detect-max 5
```

¦	
rldp detect-interval	

¼

¦	
-	-

47.1.3 rldp enable

¦ ⁸ RLDP ¶ Â

rldp enable

no rldp enable

ऻ RLDP ˘ RLDP Â

Ю

```
Ruijie(config)# rldp enable
```

३	
rldp port	RLDP ╖

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-	-

47.1.4 rldp port

३ rldp ˘ ऻ Â

rldp port {**unidirection-detect | bidirection-detect | loop-detect** } {**warning | shutdown-svi | shutdown-port | block**}

no rldp port { **unidirection-detect | bidirection-detect | loop-detect** }

unidirection-detect	
bidirection-detect	ऻ
loop-detect	
warning	
shutdown-svi	shutdown svi
shutdown-port	shutdown
block	˗

Â

३ Â

ऻ RLDP Ю˘ RLDP Â

Ю fas 0/1 Э rldp ˘ ѝ ˘ ѝ

Â

```
Ruijie(config)# interface fas 0/1
Ruijie(config-if)# rldp port loop-detect block
```

¾	
rldp enable	rldp ¾

M

M	
-	-

47.1.5 rldp reset

¾ **rldp shutdown** **disable** rldp Â

rldp reset

-	-

¾ Â

Ю ¾

```
Ruijie# rldp reset
```

¾	
rldp enable	Rldp ¾

47.2

47.2.1 show rldp

rldp Â

show rldp [**interface** *interface-id*]

Interface-id	

३ EXEC

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-	-

/I

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/I	
-	-

47.2.2 debug rldp

rldp Ł Â ३ no Â

debug rldp [**packet | event | error**]

undebug rldp [**packet | event | error**]

packet	rldp Â
event	٦ Â
error	Â

EXEC

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-	-

48 TPP

48.1

48.1.1 topology guard

¾ Ю topology guard ¾ ¶ Â
¾ no ¶ Â

[**no**] **topology guard**

-	-

¶ й

¾ ¾

¶ ˘ ⅃Л ˘ Л ⅃
Â б ¾ **cpu topology-limit** Â

Ю ¶ '

```
Ruijie(config)# topology guard
Ruijie(config)# no topology guard
```

¾	
tp-guard port enable	¶ Â
cpu topology-limit	CPU Â

⅄

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-	-

48.1.2 tp-guard port enable

ৗ ˘ ৡ no ৗ Â

[**no**] **tp-guard port enable**

३ ३

३ tpp Â

Ю ℸ '

```
Ruijie# show tpp
```

३	
topology guard	ℸ

ℳ

ℳ	
-	-

49

49.1

49.1.1 cd

Â

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

49.1.2 copy

ÿ Â

copy *source-url destination-url*

source-url	URL Â Э Ю ╟ ˘ ┘ Л Â
destination-url	URL Â Э Ю ╟ ˘ ┘ Л Â

```
Ruijie#copy tftp://192.168.201.54/rgos.bin flash:/
  2' Э        tftp  Ł
Ruijie#copy flash:/rgos.bin tftp://192.168.201.54/rgos.bin
  3'      xmodem ЮO
Ruijie# copy xmodem: flash:/config.text
  4'             U
Ruijie#copy flash:/config.text usb0:/config.text
  5'             ÿ
Ruijie#copy flash:/config.text slave:/config.text
  6'        ÿ flash       sd´
Ruijie#copy flash:/rgos.bin sd0:/rgos.bin
  7'        ÿ U         sd´
Ruijie#copy usb0:/config.text sd0:/config.text
  8'        ÿ sd´       U
Ruijie#copy sd0:/config.text usb0:/config.text
```

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ȝ	
del	
rename	ɻ
dir	

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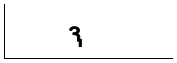
49.1.3 delete

Â

delete *url*

url	urlÂ



url Æ Â

Ю

ʒ

Ю ˘ Ю

Â

~ a .

1' ÿ Э

```
Ruijie# dir slave0:/
Directory of slave:/
   Mode Link     Size             MTime Name
-------- ---- --------- ------------------- ------------------
          1  10838016 2008-01-01 00:01:53 rgos.bin
```


49.1.5 mkdir

…

mkdir *directory*

directory	… ⅄

… ⅄ ⅃( )Â	
~	… ˘ ‡ … Â … Э a ˘ ‡ … Â ˘ … flash:/backup/temp ˘ flash:/backup a ˘ ‡ … Â ¤ ″I … flash:/bakcup ˘ ⅄ Ą… flash:/backup/temp

1' Ю… test '

```
Ruijie# mkdir test
```

2' sd´ Ю… test2

```
Ruijie# mkdir sd0:/test2
```

rmdir	
pwd	

49.1.6 rename

╟ ⅄

rename *url1 url2*

url1	╟ URL Â
url2	URL

ʒ

ʒ˘ ⅃Ո ⅄ Ю ⅄˘ ʒ a ⅄
╟ Â ʒ ╟ Â a
Ł Э Â ' usb0/1, flash, slave Â

1

Л	

49.1.7 rmdir

Â

rmdir *directory*

directory	ɻ , ѝ

a , ѝ Â

Ю tmp ˘ з Â

```
Ruijie# rmdir tmp
```

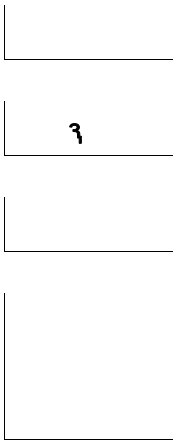
ʒ	
mkdir	…

Л	

49.2

49.2.1 pwd

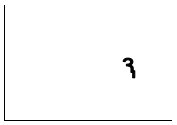
pwd



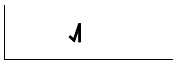
Â

1' Ю Â

```
Ruijie# pwd
flash:/
```



ϡ	
cd	



/ϡ	

49.2.2 show file systems

show file systems

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ʒˇ ˩Л Э ˇ Л
Э ˩ Â

1'

Ruijie#**show file systems**

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50

50.1 CPU

50.1.1 cpu-log

CPU , ㄴ ㄲ **cpu-log** Â

cpu-*log* *log-limit low_num high_num*

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-	-

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ᐧ	
-	-

50.1.2 show cpu

CPU ˘ ৲ **show cpu** Â

show cpu

-	-

৲ Â

৲ ᐧ Ո CPU ˘ 5 à 1ᚋ à 5 ᚋ CPU ˘ Ո ᒪᚋ 5 à 1ᚋ à 5 ᚋ CPU Â

ЮO **show cpu** Â

```
Ruijie# show cpu
=====================================
    CPU Using Rate Information
CPU utilization in five seconds: 25%
CPU utilization in one minute  : 20%
CPU utilization in five minutes: 10%
  NO   5Sec   1Min   5Min   Process
  0     0%     0%     0%    LISR INT
  1     7%     2%     1%    HISR INT
  2     0%     0%     0%    ktimer
  3     0%     0%     0%    atimer
  4     0%     0%     0%    printk_task
```

```
 5    0%    0%    0%   waitqueue_process
 6    0%    0%    0%   tasklet_task
 7    0%    0%    0%   kevents
 8    0%    0%    0%   snmpd
 9    0%    0%    0%   snmp_trapd
10    0%    0%    0%   mtdblock
11    0%    0%    0%   gc_task
12    0%    0%    0%   Context
13    0%    0%    0%   kswapd
14    0%    0%    0%   bdflush
15    0%    0%    0%   kupdate
16    0%    3%    1%   ll_mt
17    0%    0%    0%   ll main process
18    0%    0%    0%   bridge_relay
19    0%    0%    0%   d1x_task
20    0%    0%    0%   secu_policy_task
21    0%    0%    0%   dhcpa_task
22    0%    0%    0%   dhcpsnp_task
23    0%    0%    0%   igmp_snp
24    0%    0%    0%   mstp_event
25    0%    0%    0%   GVRP_EVENT
26    0%    0%    0%   rldp_task
27    0%    2%    1%   rerp_task
28    0%    0%    0%   reup_event_handler
29    0%    0%    0%   tpp_task
30    0%    0%    0%   ip6timer
31    0%    0%    0%   rtadvd
32    0%    0%    0%   tnet6
33    2%    0%    0%   tnet
34    0%    0%    0%   Tarptime
35    0%    0%    0%   gra_arp
36    0%    0%    0%   Ttcptimer
37    8%    1%    0%   ef_res
38    0%    0%    0%   ef_rcv_msg
39    0%    0%    0%   ef_inconsistent_daemon
40    0%    0%    0%   ip6_tunnel_rcv_pkt
41    0%    0%    0%   res6t
42    0%    0%    0%   tunrt6
43    0%    0%    0%   ef6_rcv_msg
```

```
44    0%    0%    0%    ef6_inconsistent_daemon
45    0%    0%    0%    imid
46    0%    0%    0%    nsmd
47    0%    0%    0%    ripd
48    0%    0%    0%    ripngd
49    0%    0%    0%    ospfd
50    0%    0%    0%    ospf6d
51    0%    0%    0%    bgpd
52    0%    0%    0%    pimd
53    0%    0%    0%    pim6d
54    0%    0%    0%    pdmd
55    0%    0%    0%    dvmrpd
56    0%    0%    0%    vty_connect
57    0%    0%    0%    aaa_task
58    0%    0%    0%    Tlogtrap
59    0%    0%    0%    dhcp6c
60    0%    0%    0%    sntp_recv_task
61    0%    0%    0%    ntp_task
62    0%    0%    0%    sla_deamon
63    0%    3%    1%    track_daemon
64    0%    0%    0%    pbr_guard
65    0%    0%    0%    vrrpd
66    0%    0%    0%    psnpd
67    0%    0%    0%    igsnpd
68    0%    0%    0%    coa_recv
69    0%    0%    0%    co_oper
70    0%    0%    0%    co_mac
71    0%    0%    0%    radius_task
72    0%    0%    0%    tac+_acct_task
73    0%    0%    0%    tac+_task
74    0%    0%    0%    dhcpd_task
75    0%    0%    0%    dhcps_task
76    0%    0%    0%    dhcpping_task
77    0%    0%    0%    dhcpc_task
78    0%    0%    0%    uart_debug_file_task
79    0%    0%    0%    ssp_init_task
80    0%    0%    0%    rl_listen
81    0%    0%    0%    ikl_msg_operate_thread
82    0%    0%    0%    bcmDPC
```

```
 83     0%     0%     0%    bcmL2X.0
 84     3%     3%     3%    bcmL2X.0
 85     0%     0%     0%    bcmCNTR.0
 86     0%     0%     0%    bcmTX
 87     0%     0%     0%    bcmXGS3AsyncTX
 88     0%     2%     1%    bcmLINK.0
 89     0%     0%     0%     bcmRX
 90     0%     0%     0%     mngpkt_rcv_thread
 91     0%     0%     0%     mngpkt_recycle_thread
 92     0%     0%     0%     stack_task
 93     0%     0%     0%     stack_disc_task
 94     0%     0%     0%     redun_sync_task
 95     0%     0%     0%     conf_dispatch_task
 96     0%     0%     0%     devprob_task
 97     0%     0%     0%     rdp_snd_thread
 98     0%     0%     0%     rdp_rcv_thread
 99     0%     0%     0%     rdp_slot_change_thread
100     4%     2%     1%     datapkt_rcv_thread
101     0%     0%     0%     keepalive_link_notify
102     0%     0%     0%     rerp_msg_recv_thread
103     0%     0%     0%     ip_scan_guard_task
104     0%     0%     0%     ssp_ipmc_hit_task
105     0%     0%     0%     ssp_ipmc_trap_task
106     0%     0%     0%     hw_err_snd_task
107     0%     0%     0%    rerp_packet_send_task
108     0%     0%     0%    idle_vlan_proc_thread
109     0%     0%     0%    cmic_pause_detect
110     1%     1%     1%    stat_get_and_send
111     0%     1%     0%    rl_con
112    75%    80%    90%     idle
```

Э ˘ 3 ↑ 5 à 1↑ à 5↑
CPU ^ LISR à HISR └˜ ÂЮ ‡ ε CPU ↑
Â ε ˘ ЊЖ Ю'

No	Л
5Sec	└ 5 CPU
1Min	└ 1↑ CPU
5Min	└ 5↑ CPU

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й bgp Â

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1' ЛЮ й BGP й ″I Â

```
Ruijie(config)# memory-lack exit-policy bgp
```

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ҁ	
show memory	

ð Л Ô

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10.3(4b3)	ҁ

50.2.2 show memory

˘ ҁ **show memory** Â

show memory

-	-

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Л à Â

Ю **show memory** Â

```
Ruijie#show memory
System Memory Statistic:
```

```
Free pages: 1079
  watermarks : min 379, lower 758, low 1137, high 1516
System Total Memory : 128MB, Current Free Memory : 5283KB
Used Rate : 96%
```

Э Ю

1. Â 4k Â

2. Ю Â

min	a Э a Â
lower	ш a Э Â **memory-lack exit-policy** Â
low	a Э OVERFLOW Ю a Â a Â
high	Э OVERFLOW Â

3. Â Â

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50.2.3 show memory protocols

Â

show memory protocols

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ò Ô

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BGP,OSPF,RIP,LDP,PIM,ISIS Â

ò Ô

1' Ю й show memory protocols

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

ò ʒ Ô

ʒ	
show memory	

ò ⊿ Ô

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ò ʒ Ô

⊿	
10.3(4b3)	ʒ

51

51.1

51.1.1 threshold set

˘ ˩ 3 ˘ ˦ ˥ CPU à
à Â CPU ˘ ÿ MIB ˩˘
CPU ˘ syslog Â ˘ ˘
˘ syslog Â

˩ **no**

ϡ Â

1' M1 Â

```
Ruijie(config)# threshold set memory M1 70 90
```

2' γ /ι CPU Â

```
Ruijie(config)# threshold set cpu member 2 70 90
```

ϡ

ϡ	
show threshold	ϡ

ϡ

/ι	
10.3(4b3)	ϡ

51.2

51.2.1 show threshold

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show threshold {cpu | memory | temperature} [M1 | M2 | slot *n* **| member** *n***]**

**cpu	memory	temperature**	˘ Ь ˘ **cpu** й CPU ˘ **memory** й ˘ **temperature** й
**M1	M2	slot** *n*	Æ˘ Э ˘ *n* й ´ /ι˘ ‡ Æ
member *n*	˘ Э ˘ *n* й /ι˘ ‡

ƺ Â

1' M1 CPU Â

```
Ruijie# show threshold cpu M1
```

2' Â

```
Ruijie# show threshold memory
```

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ƺ	
threshold set	ƺ

ƺ

ƺ	
10.3(4b3)	ƺ

52

52.1

52.1.1 clear logging

ă ʁ ˘ Ю ʒ Â

clear logging

-	-

more flash:filename

Filename '	ɻ

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FLASH ɻ ”//f2/˝ ”//f3/’ Â ϡ ϰ
˘ a ϡ è Â

Ю FLASH '

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

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logging file flash:	FLASH Э

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52.1.3 logging buffered

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ϡ Â ϡ no ă ʁ Â ϡ default
ă ʁ й Â

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

no logging buffered

default logging buffered

buffer-size	ă ʁ ˘ ϰ ÿ 4K 128K Bytes Â

level	ш ˘ ÿ 0 7 Â ⅃ Л∪ ⅄ ˘ ≠ ⅃ Л∪ Â

ă ʁ ὶ 4k Bytes Â
ш ὶ 7 Â

ʕ

ă ʁ ˘ ʁ ˘ ‡
Â ă ʁ ˘ ʕ **show logging Â**
ă ʁ ˘ ʕ clear logging˘
ă ʁ Â ˘ FLASH
Syslog Server Â
ʃ ὶ ЛЮ 8 '

Emergencies	0	˘ a
Alerts	1	⅄
Critical	2	
Errors	3	
warnings	4	
Notifications	5	˘ a
informational	6	
Debugging	7	

˘ ˘ 0 Â
Л∪ ⅄˘ æ
Â

Ю ⅄ ὶ 6 Л∪ æ 6 ὶ 10000
ă ʁ '

```
Ruijie(config)# logging buffered 10000 6
```

ʕ	
logging on	
show logging	ă ʁ
clear logging	ă ʁ

-	-

52.1.4 logging console

52.1.5 logging count

Ю Â

no Â

logging count

no logging count

-	-

no logging count

```
Ruijie(config)# logging count
```

show logging count	
show logging	б ă ш

-	-

52.1.6 logging facility

Ю Â no

й (23)

facility-type	Syslog ˘ ε Â

Local7(23)

Ю ˆ 2˜ Syslog ↓ '

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

ϋ (local7) 23 Â

Ю Syslog й kernel

```
Ruijie(config)# logging facility kern
```

logging console	8 Э

-	-

52.1.7 logging file flash

FLASH Ю Â FLASH no Â

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

no logging file

Filename	Â a й txt Â
max-file-size	Â ÿ 128K 6M bytes й 128K Â
level	Â FLASH й 6 Â 1 Â

a FLASH Â

Syslog Server a FLASH Â

FLASH FLASH logging file flash a Â

Ю FLASH ˇ ɻ ѝ trace.txt ѝ 64K,
ѝ 6 Â

```
Ruijie(config)# logging file flash:trace
```

ϡ	
logging on	
show logging	ă ѡ ˇ Ո
more flash	FLASH

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52.1.8 logging monitor

VTY ˆ telnet à SSH ˜ Э ˇ
Ю ϡ Â ϡ no VTY Э Â

logging monitor *level*

no logging monitor

level	ш Â ɻ Ո ɻ ˇ ≠ ɻ Ո Â ш ˇ 1 Â

Debugging (7)

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VTY Э ˇ ″I ϡ **terminal monitor**
VTY Â ‡ **logging monitor** Ⱨ Â
Logging monitor Ⱨ VTY Â

Ю VTY Э ѝ 6
```
Ruijie(config)# logging monitor informational
```

3	

-	-

52.1.13 logging source interface

Ю ʒ Â ʒ no

Â

logging source interface *interface-type interface-number*

no logging source interface

interface-type	
interface-number	°

ʒ

Â Ю Syslog Server IP IP

52.1.14 logging synchronous

б ⊿ ╖ ˘ ˘
Ю ϡ Â б ⊿ ╖ ˘ ϡ no Â

logging synchronous

no logging synchronous

-	-

Ю˘ б ⊿ ╖ Â

ϡ

ϡ б ⊿ ╖ ˘ ⊿Л Â

```
Ruijie(config)#line console 0
Ruijie(config-line)#logging synchronous
            ϡ ˘        UP-DOWN      ˘ ‡       ϡ       '
Ruijie#configue terminal
Oct  9 23:40:55 %LINK-5-CHANGED: Interface GigabitEthernet 0/1,
changed state to down
Oct  9 23:40:55 %LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet 0/1, changed state to DOWN
Ruijie# configue terminal       //          ϡ      ˘   a
```

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show running-config	

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52.1.15 logging trap

Syslog Server ˘ ЮO ¾ Â

¾ no Syslog Server Â **n** **o**

no service sequence-numbers

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╗ Э Ⴀ Ⴛ Ⴀˇ ⅃Ⴛ ˇ Ⴛ ″I Ⴁ Â

Ю ╗ Э Ⴀ'

```
Ruijie(config)# service sequence-numbers
```

ٶ	
logging on	
service timestamps	

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52.1.17 service sysname

╗ Э Ⴁˇ Ю ٶ Â ٶ no ⅆ
Ⴁ Â

service sysname

no service sysname

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Ю ╗ Э ˩'

	year	2007 Jul 27 16:53:07

RTC Â

Ю VTY Э a Â

Â VTY

Ю VTY Â

```
Ruijie# terminal monitor
```

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```
Ruijie# show logging
Syslog logging: enabled
Console logging: level debugging, 4 messages logged
Monitor logging: level informational, 0 messages logged
Buffer logging: level debugging, 6 messages logged
Timestamp debug messages: datetime
Timestamp log messages: disabled
Sequence log messages: enable
```

logging on	
clear logging	ă ʁ

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52.2.2 show logging count

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Ю Â

show logging count

-

-

	clear logging	ă ʁ

	-	-

53 POE

53.1

53.1.1 Poe disconnect-mode mode/no poe disconnect-mode

mode	ٸ ˘ [ac/dc]

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POE ٸ dc

```
Ruijie# configure
Ruijie(config)# poe disconnect-mode dc
Ruijie(config)# end
```

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53.1.2 Poe enable/no poe enable

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53.1.4 Poe-power upper lower/no poe-power upper

upper	ϧ ˇ [55000-57000] Â

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POE ϧ 56000

```
Ruijie# configure
Ruijie(config)# poe-power upper 56000
Ruijie(config)# end
```

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53.2

53.2.1 show poe interfaces

-	-

poe

```
Ruijie# show poe interface gigabitethernet 0/2
Interface : Gi0/2
Port power enabled : ENABLE
Port connect status : OFF
Port PD Class : no PD devices
Port max power : 15400 mW
Port current power : 0 mW
Port peak power : 0 mW
Port current : 0 mA
Port voltage : 48082 mV
Port trouble cause : normal
```

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53.2.2 show poe powersupply

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३ ⅃Ո POE Â

```
Ruijie# show poe powersupply
PSE Total Power : 379971 mW
PSE Total Power Consumption : 0 mW
PSE Available Power : 379971 mW
PSE Peak Value : 0 mW
PSE Min Allow Voltage : 45000 mV
PSE Max Allow Voltage : 57000 mV
PSE Disconnect Sense Mode : ac
```

54

54.1

54.1.1 device-priority

device-priority [*member*] *priority*

member	ID Â ˩ Л᧐ ˘ ‡ member 1
priority	˝I ˘ ˩ ѝ [1, 10]

˘ ѝ 1 Â

˩ write Â

2 ˝I ѝ 8

```
Ruijie(config)# device-priority 2 8
```

show member	Â

˩	
-	-

member *member*	ID Â ˙ Ʌ ˘ ‡ member 1 Â
description	˘ ѝ 31 Â

Â

˙ ˘ Ʌ write Â

2 Ʌ ѝ red-giant

```
Ruijie(config)# device-description member 2 red-giant
```

˙	
show member	Â

Ʌ

Ʌ	
-	-

54.2

54.2.1 show member

show member [*member*]

member	ID˘ ‡ Â

˙ Ʌ Â

```
Ruijie# show member
Member  Mac Address    Priority  Software Version
HardwareVersion  Description
------ ---------  -------  ---------- ---------   --------
1  00d0.f810.3323  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
2  00d0.f822.33aa  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
3  00d0.f822.33ae  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
4  00d0.f822.33b0  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
5  00d0.f822.33b2  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
6  00d0.f824.23b4  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
7  00d0.f833.44b4  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
8  00d0.f855.33ae  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
```

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