



RG-S2600E/P

RGOS 10.4(2b2)

©2000-2011



RGOS[®] 10.4(2b2)

1.

Courier New

5

2.

Arial

```
[]      []
```

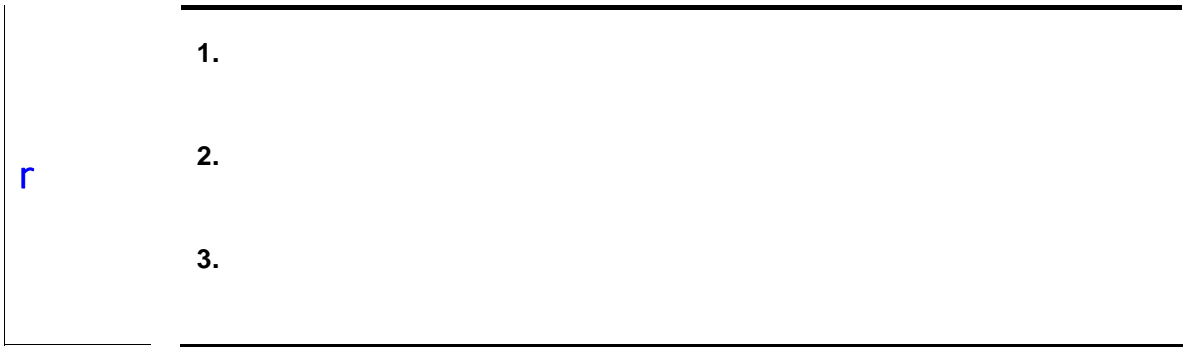
```
{x|y|...}
```

```
[x|y|...]
```

```
//
```

3.

r



1 CLI

1.1

1.1.1 alias

alias

no

alias *mode command-alias original-command*

no alias *mode [original-command]*

<i>mode</i>	
<i>command-alias</i>	
<i>original-command</i>	

EXEC

EXEC

h p s u un

help ping show

undebug undebug

no alias exec

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

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

```
Ruijie# s?
show start-chat start-terminal-service
"ip address" "ia"
```

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

show aliases

```
0.0.0.0 0.0.0.0 192.168.1.1" "def-route" "ip route
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
globe configure mode alias:
def-route ip route 0.0.0.0 0.0.0.0 192.168.1.1
```

show aliases	

privilege

ommand-string

mand-string

CLI

0-15

CLI

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>

```

secret	CLI

EXEC

```
Ruijie# show aliases exec
```

```
exec mode alias:
```

```
h             help  
p             ping  
s             show  
u             undebug  
un           undebug
```



2 础

2.1

2.1.1 disable

disable

disable [*privilege-level*]

	<i>privilege-level</i>	

|

|

|

disable

Ruijie# **disable 10**

	enable	

	-	-

2.1.2 enable

enable

	-	-

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	-	-

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	-	-

2.1.3 enable password

enable password

no

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

<i>Password</i>	EXEC	
<i>Level</i>		
0 7	0	7
<i>encrypted-password</i>		

1 26

r EXEC

pw10

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

enable secret	

-	-

2.1.4 enable secret

enable secret **no**

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

no enable secret

<i>Secret</i>	EXEC
<i>Level</i>	
0 5	0 5
<i>encrypted-password</i>	

|

|

|

|

no enable service

enable service ssh-sesrver, SSH Server

Ruijie(Config # **enable service ssh-sesrver**



Telnet

configure terminal

line tty 1 16

enable

Web

no ip http authentication

Web

local

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

enable service

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2.1.9 ip telnet source-interface

IP Telnet ip
telnet source-interface

ip telnet source-interface *interface-name*

┌

<i>interface-name</i>	IP Telnet

┌

┌

┌

IP Telnet telnet
 Telnet
no ip telnet source-interface

┌

Loopback 1 IP Telnet
 Ruijie(config)# **ip telnet source-interface** *Loopback 1*

┌

telnet	Telnet

┌

┌

10.4(2)	

2.1.10 lock

EXEC

lock

lock

-	-

|

|

lock

Locked

line

lockable

line

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

lockable	

|

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2.1.11 lockable

lock lock line lockable

lock no

lockable
no lockable

	-	-

|

|

line

|

lock

EXEC

|

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

|

lock		

login

no login

	-	-

|

|

line

|

AAA
VTY console

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

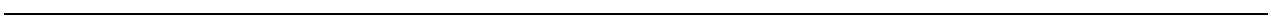
|

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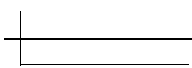
password

line

-



line



username

VTY

Ruijie(config)# **no aaa new-model**

Ruijie(config)# **username test password 0 test**

Ruijie(config)# **line vty 0**

Ruijie(config-line)# **login local**

username	

-	-

2.1.15 privilege mode

CLI

-	-

CLI

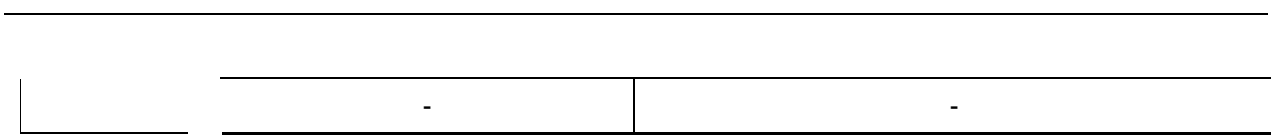
CLI

CLI

CLI

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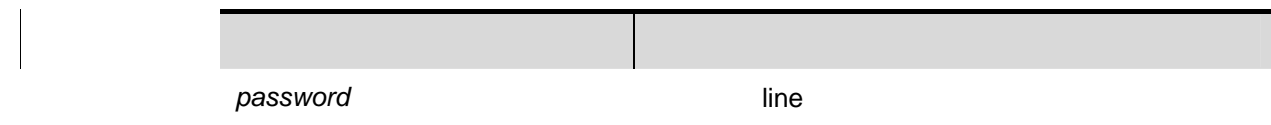


2.1.16 password

line line **password** **no** line

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

no password



service password-encryption



interface <i>interface-name</i>	Telnet
lrf <i>vrf-name</i>	VRF

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telnet		
r	/ipv6	IPV6

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```

1          telnet          IPV4          192.168.1.1
          vlan 1          VRF          vpn1
Ruijie# telnet 192.168.1.1 /source interface vlan 1 /vrf vpn1
2          telnet          IPV6          2AAA:BBBB::CCCC
Ruijie# telnet 2AAA:BBBB::CCCC

```

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ip telnet source-interface		IP	Telnet
show session		TTY	
exit			

┌

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2.1.19 username

<i>password</i>	
07	0 7
<i>encrypted-password</i>	
<i>privilege-level</i>	

	<i>message</i>	
	Ruijie(config) Ruijie(config)# banner login \$ <i>enter your password</i> \$	
	-	-
	-	-

2.2.2 banner motd

	no banner motd	banner motd
	banner motd <i>c message c</i>	
	<i>c</i>	
	<i>message</i>	

```

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
                        s5750_10_4.bin

```

show boot system	

-

-	-

2.2.4 clock set

clock set

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

<i>hh:mm:ss</i>	24 : :
<i>day</i>	1-31
<i>month</i>	1-12
<i>year</i>	1993-2035

|

|

|

clock set

|

2003 3 17 10 20 30

Ruijie# **clock set** 10:20:30 3 17 2003

Ruijie# **show clock**

clock: 2003-3-17 10:20:32

|

show clock	

|

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2.2.5 clock update-calendar

clock update-calendar

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calendar

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



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|

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

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-	-

2.2.10 session-timeout

LINE
no session-timeout

LINE

session-timeout

session-timeout *minutes* [output]

no session-timeout

|

<i>minutes</i>	
output	

|

0 min

|

LINE

|

LINE
LINE

|

line vty 0

5 30

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

-	-

-	-

2.2.11 speed

speed speed

no speed

speed speed

<i>Speed</i>	bps 9600 19200 38400 57600 115200 9600

9600

57600 bps

```
Ruijie(config)# line console 0
```

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

-	-

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2.2.12 write

running-config

write [memory | network | terminal]

memory	NVRAM copy running-config startup-config
network	TFTP copy running-config tftp
terminal	show running-config

1 **boot config**

Ruijie# **write**

Building configuration...

[OK]

2 **boot config** U

U **write**

Ruijie(config)# **boot config /mnt/usb1/config.text**

Ruijie# **write**

Building configuration...

Write to boot config file: [/mnt/usb1/config.text]

[OK]

Ruijie# **usb remove 1**

0:1:1:38 Ruijie: USB-5-USB_DISK_REMOVED: USB Device <USB Mass Storage Device> Removed!

Ruijie# **write**

Building configuration...

Write to boot config file: [/mnt/usb1/config.text]

```

[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	
show running-config	

-	-

2.3

2.3.1 show clock

show clock

show clock

-	-

detail

show clock

```

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

```

	clock set	
	-	-

2.3.2 show line

show line

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

console	
aux	aux
vty	vty
<i>line-num</i>	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

show reload

show reload

-	-

```
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

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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 ACL **access-class** *acl-no* { **in** | **out** }
Line no **access-class** *access-list-number* { **in** | **out** }
LINE ACL
[no] **access-class** *access-list-number* { **in** | **out** }

LINE

	-	-

3.1.2 line

LINE

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

aux		
console		
tty		
vty		telnet/ssh
<i>First-line</i>		first-line
<i>Last-line</i>		last-line

|

|

|

LINE

|

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

|

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|

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3.1.3 line vty

VTY

no

VTY

line vty *line-number*

no line vty *line-number*

-	-

VTY 5 0--4

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VTY

1 VTY 20 VTY 0--19

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

2 VTY 10 VTY 0—9

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

-	-

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3.1.4 transport input

Line **transport input** Line

default transport input LINE

transport input {all | ssh | telnet | none}

default transport input

all	Line
ssh	Line SSH

LINE

telnet	Line	Telnet
none	Line	

VTY TTY NONE
default transport input

Line

Line VTY VTY **show**
running Line
input default transport input no transport
transport input none

```

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

```

show running	
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RGOS10.1

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4

4.1

4.1.1 ping

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



DNS

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

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

ip-address	IPv6

<i>length</i>	
<i>times</i>	
<i>seconds</i>	
<i>data</i>	
<i>source</i>	IPv6 ::1

2 5 100Byte IP

```

Ping ipv6
  ping ipv6
  ping ipv6
    2            5            100Byte            IP
    '!'                    ':'
      'C'
      ping
ping ipv6
  
```

	-	-
	ipv6	
	-	-

4.1.3 traceroute

traceroute

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

<i>vrf-name</i>	VRF
<i>ip-address</i>	IPv4
<i>number</i>	
<i>source</i>	IPv4 127.0.0.1
<i>seconds</i>	
<i>minimum maximum</i>	

```

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
                                     IP      61.154.22.36
1 6

```

2 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
                                     IP      202.108.37.42
1 17
4

```

```

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

```

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4.1.4 traceroute ipv6

traceroute ipv6

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

<i>ip-address</i>	IPv6
<i>number</i>	
<i>seconds</i>	
<i>minimum maximum</i>	TTL

Traceroute ipv6

DNS

traceroute ipv6

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

IP 3004::1

1 4

2 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

IP 3004::1

1 5 4

-	-

--	--	--

- -

5

5.1

5.1.1 carrier-delay

carrier-delay

no

carrier-delay [*seconds*]

no carrier-delay

<i>seconds</i>		1 60

2



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5.1.2 clear counters

clear counters [*interface-id*]

	<i>interface-id</i>	

|

|

	show interfaces	clear
counters		

Ruijie# **clear counters gigabitethernet 1/1**

	show interfaces	

|

	-	-

5.1.3 clear interface

clear interface *interface-id*

	<i>interface-id</i>	

|

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┌

Switch Port,L2 Aggregate port ,Routed port,L3 Aggregate port
shutdown no shutdown

┌

Ruijie# **clear interface gigabitethernet 1/1**

┌

shutdown	

┌

┌

-	-

5.1.4 description

no

description *string*

no description

┌

<i>string</i>	

┌

┌

┌

show interfaces

┌

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

┌

show interfaces	

	-	-

5.1.5 duplex

no

duplex {auto | full | half}

no duplex

	auto	
	full	
	half	

|

|

|

show interfaces

|

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

--	--	--

no

flowcontrol {auto | off | on}

no flowcontrol

auto	
off	
on	

└───┘

└───┘

└───┘

show interfaces

└───┘

1/1

Ruijie(config)# **interface gigabitethernet 1/1**

Ruijie(config-if)# **flowcontrol on**

show interfaces	

└───┘

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5.1.7 interface aggregateport

no

interface aggregateport *port-number*

<i>port-number</i>	Aggregate port

└───┘

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	
state	OK Short Open A B OK C D Short A B C D OK
length	state OK Short Open length

--	--

mtu

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

show interfaces	

clear interface	
show interfaces	

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5.1.15 snmp trap link-status

LinkTrap SNMP LinkTrap, LinkTrap no SNMP Link

snmp trap link-status

no snmp trap link-status

Linkr /C2_C

Link SNMP LinkTrap SNMPZ@ ĝpmâ 5,G!5B

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}

	Trunk	VLAN	vlan-list
	VLAN		VLAN
	VLAN ID	VLAN ID	-
	10-20	,	
	1-10,20-25,30,33		
allowed vlan <i>vlan-list</i>	all	VLAN	VLAN
	add	VLAN	VLAN
	remove	VLAN	VLAN
	except	VLAN	VLAN
	VLAN		
native vlan <i>vlan-id</i>	Native VLAN		

VLAN all Native VLAN VLAN 1

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

show interfaces	
switchport access	accessport statics VLAN

-	-
---	---

5.2

5.2.1 show interfaces

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

<i>interface-id</i>	loopback aggregateport SVI
counters	
description	link
status	
switchport	
trunk	trunking port Aggregate port
transceiver	
alarm	None

diagnosis	
------------------	--

```
Ruijie# show interfacesgigabitEthernet 0/1 switchport
Interface Switchport ModeAccess Native Protected VLAN lists
-----
GigabitEthernet 0/1 enabled Access 11 Disabled ALL
```

duplex	
flowcontrol	
interface gigabitEthernet	
interface aggregateport	
interface vlan	switch virtual interface SVI
shutdown	
speed	
switchport priority	802.1q
switchport protected	

6 Aggregate Port

6.1

6.1.1 aggregateport load-balance

AP no

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

no aggregateport load-balance

dst-mac	MAC	MAC	AP
src-mac	MAC	MAC	AP
src-dst-ip	IP	IP	IP— IP—
dst-ip	IP	IP	AP
src-ip	IP	IP	AP
src-dst-mac	MAC—	MAC	MAC—

MAC

show aggregateport load-balance

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

show aggregateport load-balance	aggregateport

-	-

6.1.2 port-group

Aggregate Port

no

Aggregate Port

port-group *port-group-number*

no port-group

<i>port-group-number</i>	Aggregate Port Port Aggregate

Aggregate Port

AP VLAN trunk port native
 VLAN AP

1/3 AP 3

Ruijie(config)# **interface gigabitethernet 1/3**

Ruijie(config-if)# **port-group 3**

-	-

┌

┌

-	-

6.2

6.2.1 show aggregateport

aggregateport

┌

<i>aggregate-port-number</i>	Aggregate Port
load-balance	aggregaye port
summary	aggregate port

┌

┌

┌

aggregate port

aggregate port

┌

Ruijie# **show aggregateport 1 summary**

```
AggregatePort  MaxPorts      SwitchPort Mode  Ports
-----
Ag1             8             Enabled  ACCESS
```

┌

aggregateport load-balance	AP

┌

┌

-	-

7 VLAN

7.1

7.1.1 name

VLAN **no**

name *vlan-name*

no name

	<i>vlan-name</i>	VLAN

VLAN	VLAN	VLAN ID	VLAN 2	"VLAN0002"
------	------	---------	--------	------------

VLAN		
------	--	--

show vlan	vlan	
------------------	------	--

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

show vlan		VLAN

--	--	--

-		-

7.1.2 switchport access

no access port VLAN VLAN

switchport access vlan *vlan-id*

no switchport access vlan

access	switch port	access port
trunk	switch port	trunk port
hybrid	switch port	hybrid port

no switchport trunk {allowed vlan | native vlan }

allowed vlan <i>vlan-list</i>	Trunk	VLAN	vlan-list
	VLAN		VLAN
	VLAN ID	VLAN ID	-
	10-20		,
	1-10,20-25,30,33		
	all	VLAN	VLAN
add	VLAN	VLAN	
remove	VLAN	VLAN	
except	VLAN	VLAN	
	VLAN		
native vlan <i>vlan-id</i>	Native VLAN		

VLAN all Native VLAN VLAN 1

Native VLAN

Trunk native VLAN native VLAN
 UNTAG VLAN VLAN ID
 IEEE 802.1Q PVID native VLAN VLAN ID Trunk
 native VLAN UNTAG
VLAN
 Trunk VLAN 1 4094
 Trunk VLAN VLAN Trunk

show interfaces switchport

```

VLAN 2 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
    
```

--	--	--

VLAN

-	-
---	---

7.2

7.2.1 show vlan

VLAN

show vlan [*id vlan-id*]

<i>vlan-id</i>	VLAN ID
----------------	---------

|

|

|

end **Ctrl+C**
exit

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

name	VLAN
switchport access	Vlan

|

-	-
---	---

8 Super-vlan

8.1

8.1.1 subvlan

super vlan subvlan subvlan

subvlan *vlan-id-list*

no subvlan [*vlan-id-list*]

	<i>Vlan-id-list</i>	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

┌

-		-

8.1.2 subvlan-address-range

subvlan ip

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

no subvlan-address-range

<i>start-ip</i>	SubVLAN IP
<i>end-ip</i>	SubVLAN IP

VLAN

end **Ctrl+C**
exit

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

show supervlan	supervlan

-	-

8.1.4 proxy-arp

VLAN ARP

proxy-arp
no proxy-arp

-	-	-

VLAN

end **Ctrl+C**
exit

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

--	--

	show supervlan	supervlan
--	-----------------------	-----------

Super-vlan

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

<i>svlist</i>	secondary VLAN list
no	

|

Primary VLAN

|

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

show vlan private-vlan	-

RGOS10.1

-	-

9.1.3 private-vlan type

VLAN VLAN

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

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

<i>community</i>	community VLAN
<i>isolated</i>	isolated VLAN
<i>primary</i>	primary VLAN
<i>no</i>	VLAN

┌ VLAN

┌ VLAN

┌

┌ Ruijie(config)# **vlan 22**
Ruijie(config-vlan)# **private-vlan primary**



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

primary	primary VLAN
community	community VLAN
isolated	isolated VLAN

private VLAN

Ruijie# **show vlan private-vlan**

-	-

RGOS10.1

-	-

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

|

|

	-	-

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

```
|
```

```
| (5760 )
```

```
|
```

```

                tpid 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

```

show frame-tag tpid	-

```
| RGOS10.1
```

--	--

	-	-
--	---	---

10.1.2 inner-priority-trust enable

/ tag tag

inner-priority-trust enable

no inner-priority-trust enable

no	tag	tag

└───

└───

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

--	--	--	--	--

no

```

┌
└

```

```

┌
└

```

```

┌
└

```

```

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

```

```

┌
└

```

show vlan	-

```

┌
└

```

RGOS10.1

```

┌
└

```

-	-

10.1.5 switchport mode uplink

```

┌
└

```

uplink

switchport mode uplink**no switchport mode**

```

┌
└

```

no	uplink

```

┌
└

```

uplink

```

┌
└

```

```

┌
└

```

```

┌
└

```

```

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

```

	show vlan	-
	RGOS10.1	
	-	-

10.1.6 switchport dot1q-tunnel allowed vlan

dot1q-tunnel 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	tag
<i>v_list</i>	vlan id
no	

vlan 1 untagged

```

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

```

--	--

	-	-

10.1.7 switchport dot1q-tunnel native vlan

dot1q-tunnel vlan id

switchport dot1q-tunnel native vlan *vid*

no switchport dot1q-tunnel native vlan

<i>vid</i>		vlan id
no		vlan 1

vlan 1

```

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

```

show interface dot1q-tunnel		-

RGOS10.3

	-	-

10.1.8 l2protocol-tunnel

dot1q-tunnel

l2protocol-tunnel {stp|gvrp}

no l2protocol-tunnel {stp|gvrp}

stp	stp
gvrp	gvrp
no	

|

|

|

```

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

```

show l2protocol-tunnel {gvrp stp}	-

|

RGOS10.3

-	-

10.1.9 l2protocol-tunnel *proto-type* enable

l2protocol-tunnel { stp|gvrp } enable

no l2protocol-tunnel { stp|gvrp } enable

stp	stp
gvrp	gvrp

	no	
--	-----------	--

┌

┌

┌

```
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

	-	-

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	

┌

┌

	-	-
--	---	---

show inner-priority-trust

	-	-

|

|

|

```
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
```

-	-

RGOS10.3

-	-

10.2.5 show interface intf-name remark

show interface intf-name remark

-	-

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

-	-

RGOS10.1

	-	-

10.2.6 show interface mac-address-mapping x

MAC

show mac-address-mapping x

	-	-

|

|

|

```
ruijie# show mac-address-mapping 1
```

```
Ports          Destination-VID  Source-VID-list
```

	<i>intf-id</i>
--	----------------

┌

┌

┌

```
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*]

<i>intf-id</i>	

┌

┌

┌

```
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*]

<i>intf-id</i>	

	-	-
	RGOS10.3	
	-	-

10.2.10 show l2protocol-tunnel

show l2protocol-tunnel{gvrp|stp}

	gvrp	gvrp
	stp	stp


```

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

	-	-
	RGOS10.3	
	-	-

11 Share VLAN

11.1

11.1.1 share

	share vlan	
	-	-
	vlan	
	share vlan no share	
	end	Ctrl+C
	exit	
	Ruijie(config)# vlan 2	
	Ruijie(config-vlan)# share	
	-	-
	-	-

11.2

11.2.1 show mac-address-table share

Status	duplicated share vlan	Status	original	Status
	-		-	

|

|

|

end Ctrl+C
exit

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

|

|

|

-	-

-	-

12 MAC地

12.1

/

address-bind install

no address-bind install



|

|

IP MAC IP IP
 MAC MAC

|

ip 3.3.3.3 mac 00d0.f811.1112
Ruijie(config)# **address-bind** 3.3.3.3 00d0.f811.1112



|

show address-bind	

|

	Ipv4
	IPV4+MAC
	IPV4+MAC
	IPV4+MAC

	IPV6	
	ipv6	
	IPV6	
	MAC	MAC IPV6

```

IP      192.168.5.2      00d0.f822.33aa
IPV6
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
    
```

-	-

-	-

MAC



IP

MAC

MAC

IP

MAC

(address-bind install)

IP

IP

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

show mac-address-table dynamic	

-	-

12.1.7 clear mac-address-table filtering

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

filtering	
address <i>mac-addr</i>	
vlan <i>vlan-id</i>	VLAN

```
show mac-address-table filtering
```

```
00d0.f800.0c0c
```

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

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



no mac-address-table aging-time

	<i>seconds</i>	

└───

300

└───

└───

show mac-address-table aging-time

show mac-address-table dynamic

└───

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

--	--	--

show mac-address-table filtering

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

clear mac-address-table filtering	
show mac-address-table filtering	

-	-

12.1.11 mac-address-table notification

MAC **no**

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

no mac-address-table notification [interval | history-size]

interval <i>value</i>	MAC	Trap	1
history-size <i>value</i>	MAC		50

1 50

MAC Trap
snmp-server enable traps mac-notification
 MAC Trap

Ruijie(config)# **mac-address-table notification**
 Ruijie(config)# **mac-address-table notification interval 40**
 Ruijie(config)# **mac-address-table notification history-size 100**

	EÄGAAga9FžG@Néht...7dJgX6
snmp-server enable traps	trap
show mac-address-table notification	MAC

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

└───┘

	-	-

12.1.13 snmp trap mac-notification

MAC no

snmp trap mac-notification {added | removed}

no snmp trap mac-notification {added | removed}

	added	
	removed	

└───┘

└───┘

└───┘

show mac-address-table notification *interface*

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

	-	
	-	

12.1.14 mac-address-learning

/

mac-address-learning	
	MAC
1	
Ruijie(config-if)# no mac-address-learning	

12.2

12.2.1 show address-bind

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	

|

|

-	-

12.2.2 show address-bind uplink

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

	-	-
--	---	---

12.2.5 show mac-address-table count

show mac-address-table count

	-	-

--	--

--	--

--	--

```
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
```

show mac-address-table static	
show mac-address-table filtering	
show mac-address-table dynamic	
show mac-address-table address	
show mac-address-table interface	
show mac-address-table vlan	VLAN

--	--

	-	-

12.2.7 show mac-address-table filtering

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

--	--

mac-addr

interface <i>interface-id</i>	MAC
<i>history</i>	MAC

MAC

```

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
    
```

mac-address-table notification	MAC
snmp trap mac-notification	MAC

-	-
---	---

12.2.10 show mac-address-table static

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

<i>mac-addr</i>	MAC
<i>vlan-id</i>	VLAN
<i>interface-id</i>	(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	
clear mac-address-table static	

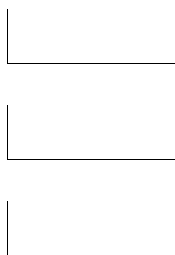
-	-

12.2.11 show mac-address-table vlan

VLAN

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

<i>vlan-id</i>	VLAN ID



```
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	
show mac-address-table filtering	
show mac-address-table dynamic	
show mac-address-table address	
show mac-address-table interface	
show mac-address-table count	

|

1

13 DHCP Snooping

13.1 DHCP snooping

13.1.1 ip dhcp snooping

```
DHCP Snooping                                no
      DHCP Snooping
```

[no] ip dhcp snooping

-	-

└───

└───

DHCP Snooping snooping	show ip dhcp snooping	DHCP
r	DHCP Snooping	Private VLAN

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
	-	-

13.1.2 ip dhcp snooping bootp-bind

```
DHCP Snooping   Bootp
no              DHCP snooping   Bootp
```

[no] ip dhcp snooping bootp-bind

	-	-

```
                DHCP Snooping   Bootp
Snooping       Bootp           Bootp   DHCP
Snooping       Bootp           Bootp   DHCP
```

```
                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)
-----
```

show ip dhcp snooping	DHCP snooping

┌

-	-

13.1.4 ip dhcp snooping database write-to-flash

DHCP Snooping

FLASH

ip dhcp snooping database write-to-flash

-	-

┌

┌

┌

DHCP Snooping

FLASH

DHCP

flash

-	-
---	---

13.1.5 ip dhcp snooping information option

DHCP option82
no

[no] ip dhcp snooping information option

-	-

┌

┌

┌

DHCP option82 DHCP option82

┌

```

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)
-----
```

┌

show ip dhcp snooping	DHCP snooping

┌

┌

--	--

[no] ip dhcp snooping verify mac-address

-	-

└───┘

└───┘

MAC DHCP	DHCP CLIENT CLIENT MAC	MAC	MAC
-------------	---------------------------	-----	-----

└───┘

```

DHCP      MAC
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping verify mac-address
Ruijie(config)# end
Ruijie# show ip dhcp snooping
Switch DHCP snooping status  ENABLE
Verification of hwaddr field status  ENABLE
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)
-----                -

```

└───┘

show ip dhcp snooping	DHCP snooping

└───┘

-	-

13.2 DHCP snooping

13.2.1 ip dhcp snooping limit rate

DHCP

no

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

<i>rate-value</i>	PPS[Packet Per Second]

```

DHCP Snooping    VLAN
                  CPP[CPU Protect Protocol]    CPP    DHCP
                  CPP                          DHCP Snooping
CPP
show ip dhcp snooping
    
```

```

          1          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
    
```

show ip dhcp snooping	DHCP snooping

-	-

13.2.2 ip dhcp snooping suppression

suppression no
no suppression

[no] ip dhcp snooping suppression

-	-

┌

┌

┌
DHCP

DHCP

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

fastethernet 0/2 suppression

-	-

┌

-	-

13.2.3 ip dhcp snooping trust

DHCP snooping TRUST
no UNTRUST

[no] ip dhcp snooping trust

-	-

UNTRUST

	DHCP	TRUST
DHCP	UNTRUST	DHCP

```

fastEthernet 0/1 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

show ip dhcp snooping

-	-

└───

└───

└───

DHCP Snooping

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)
-----	-----	-----

ip dhcp snooping	DHCP snooping
ip dhcp snooping verify mac-address	DHCP snooping mac
ip dhcp snooping write-delay	flash
ip dhcp snooping information option	DHCP option82
ip dhcp snooping bootp-bind	DHCP Snooping Bootp
ip dhcp snooping trust	DHCP snooping trust

|

|

-	-

13.3.2 show ip dhcp snooping binding

DHCP Snooping

show ip dhcp snooping binding

|

-	-

|

|

|

DHCP Snooping

13.4 DHCP snooping

13.4.1 clear ip dhcp snooping binding

DHCP Snooping

clear ip dhcp snooping binding

-	-

└──

└──

└──

DHCP snooping

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

show ip dhcp snooping binding	DHCP snooping

└──

-	-

13.4.2 debug ip dhcp snooping

DHCP Snooping

debug ip dhcp snooping {event | packet}

	-	-

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└

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└

DHCP snooping

┌
└

DHCP snooping

Ruijie# **debug ip dhcp snooping event**

Ruijie# **debug ip dhcp snooping packet**

	-	-

┌
└

14 IGMP Snooping

14.1

14.1.1 deny

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

14.1.2 permit

profile profile permit profile

permit

permit	profile

profile deny

profile

profile range profile
profile

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	

-	-

14.1.3 range

profile profile range
no

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

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

<i>low-ip-address</i>	

	<i>high-ip-address</i>	
--	------------------------	--

--

profile

	profile	profile	deny
--	---------	---------	------

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**

ip igmp profile		profile	
deny		profile	deny
permit		profile	permit

--

-	-

14.1.4 ip igmp profile

IGMP profile profile profile-number igmp profile

ip igmp profile *profile-number*

no ip igmp profile *profile-number*

<i>profile-number</i>	profile 1-65535

--

--

```

IGMP Profiles                               SVGL
IGMP Filtering                               profile
profile
    
```

```

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

range	profile	
permit	profile	permit
deny	profile	deny

-	-

14.1.5 ip igmp snooping ivgl

```

igmp snooping ivgl ip igmp snooping ivgl
no igmp snooping
    
```

ip igmp snooping ivgl

no ip igmp snooping

-	-

disable

```

VLAN VLAN VLAN VLAN
VLAN
    
```

```

r      pim snooping          igmp snooping  IVGL  IVGL-SVGL
      no ip igmp snooping  igmp snooping
      pim snooping          pim snooping
    
```

```

Ruijie(config)# ip igmp snooping ivgl
    
```

ip igmp snooping svgl	igmp snooping	svgl	
ip igmp snooping ivgl-svgl	igmp snooping		

-		-	

14.1.6 ip igmp snooping vlan

```

vlan      igmp snooping      ivgl      ip igmp
snooping vlan      no      igmp snooping
ip igmp snooping vlan vid
no ip igmp snooping vlan vid
    
```

vid		vlan id	

disable

```

r      vlan      IGMP Snooping
      vlan      pim snooping      igmp snooping
      no ip igmp snooping vlan      igmp snooping
      pim snooping      VLAN      pim snooping
    
```

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

ip igmp snooping ivgl	igmp snooping ivgl
ip igmp snooping ivgl-svgl	igmp snooping



	-	-

14.1.8 ip igmp snooping svgl profile

profile SVGL

```
77 ID806 Td( )T/C Td(8.796 1 Tf-E3>JT/TT<350E2CD516/T1 1 Tf0 Tr 4.01/C)5fb1G4jv 14018 Tc 5.2390
@ 17... U6
}
```

no ip igmp snooping dyn-mr-aging-time

<i>time</i>	,	<1-3600>

300s

Hello IGMP PIM

100s
Ruijie(config)# ip igmp snooping dyn-mr-aging-time 100

-	-

14.1.10 ip igmp snooping fast-leave enable

igmp snooping ip igmp snooping fast-leave
enable no igmp snooping fast-leave

ip igmp snooping fast-leave enable

no ip igmp snooping fast-leave enable

-	-

disable

IP IGMP

IP IGMP

100s

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

	ip igmp snooping limit-ipmc	ip
	-	-

14.1.13 ip igmp snooping limit-ipmc

no IP IP ip igmp snooping limit-ipmc vlan

ip igmp snooping limit-ipmc vlan *vid* *address* *gaddress* **server** *saddress*

no ip igmp snooping limit-ipmc vlan *vid* *address* *gaddress* **server** *saddress*

<i>vid</i>	ip	vlan id
<i>gaddress</i>		
<i>saddress</i>	(.

‰

	-	-

14.1.14 ip igmp snooping source-check port

```
igmp snooping
ip igmp snooping source-check port no
```

14.1.15 ip igmp snooping suppression enable

igmp snooping Report **ip igmp snooping**
suppression enable no igmp snooping suppression
ip igmp snooping suppression enable
no ip igmp snooping suppression enable

	-	-

disable

IGMP
vlan IGMP Report
IGMP Report

<i>vid</i>	vlan id
<i>interface-id</i>	id

┌

┌

┌

IP

┌

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

┌

ip igmp snooping source-check port	

┌

┌

-	-

14.1.18 ip igmp snooping vlan mrouter learn pim-dvmrp

IGMP Query/Dvmrp/PIM Hello
ip igmp snooping vlan mrouter learn no

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

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

┌

<i>vid</i>	vlan id

┌

```

VLAN
no
VLAN
igmp snooping

```

```

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

```

ip igmp snooping mrouter learn pim-dvmrp	

-	-

14.1.19 ip igmp snooping vlan static interface

```

igmp snooping
IGMP
no

```

ip igmp snooping vlan static interface

```

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

```

<i>vid</i>	vlan id
<i>ip-addr</i>	
<i>interface-id</i>	id

|

|

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

ip igmp snooping vlan mrouter interface	

|

-	-

14.1.20 ip igmp snooping filter

profile no profile

ip igmp snooping filter *profile-number*

no ip igmp snooping filter *profile-number*

<i>profile-number</i>	profile <1-65536>

|

|

IGMP Profile	IGMP Report
	IGMP Profile
	profile filter

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



	-
--	---

14.2

14.2.1 show ip igmp snooping

igmp snooping

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

	igmp snooping
gda-table	
interfaces	igmp snooping filtering
mrouter	
statistics [vlan <i>vlan-id</i>]	snooping
vlan	vlan snooping

┌

┌ EXEC

┌

┌





	IGMP Snooping
event	IGMP Snooping
packet	IGMP Snooping
msf	IGMP Snooping
warning	IGMP Snooping

┌

┌ EXEC

┌

┌

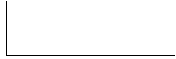
-	-

┌

-	-

15 MSTP

15.1



forward-time hello-time max-age

$2 * (\text{Hello Time} + 1.0\text{snd}) \leq \text{Max-Age Time} \leq 2 * (\text{Forward-Delay} - 1.0\text{snd})$

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

show spanning-tree interface

STP

	-	-
--	---	---

|

|

|

|

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



	-	-

|

--	--	--

root guard

no

root guard

root guard

spanning-tree guard root

no spanning-tree guard root

	-			-
		root guard		
*		*		!

Q

|

|

|

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

|

show spanning-tree interface	STP

|

|

-	-

15.1.12 spanning-tree loopguard default

loop guard no loop guard loop guard
 bpd

spanning-tree loopguard default

no spanning-tree loopguard default

|

-	-

|

loop guard

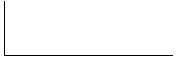
|

|

|

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






```

instance vlan          Vlan Instance 0
name
revision 0

```

```

end Ctrl+C

```

```

exit

```

```

MST

```

```

instance instance-id vlan-vlan-range Vlan 32 MST Instance instance-id no-name 0 64 vlan

```

```

revision version MST 0 65535 no revision

```

```

show MST region

```

```

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

show spanning-tree mst	MST region
instance instance-id vlan vlan-range	Vlan MST Instance
name	MST
revision	MST
show	MST MST

-	-

MSTP

Region

Instance 20 Gigabitethernet 1/1 10

Ruijie(config)# **interface gigabitethernet 1/1**

Ruijie(config-if)# **spanning-tree mst 20 port-priority 0**

show spanning-tree mst instance interface interface-id

show spanning-tree mst	MSTP
spanning-tree mst cost	
spanning-tree mst priority	Instance

-	-

15.1.18 spanning-tree mst priority

Instance no

spanning-tree [mst instance-id] priority priority

no spanning-tree [mst instance-id] priority

<i>instance-id</i>	Instance 0 64
<i>priority</i>	0, 4096, 8192, 12288, 16384, 20480, 24576, 28672, 32768, 36864, 40960, 45056, 49152, 53248, 57344 61440 16 4096

instance-id 0

priority 32768

Instance 20 8192

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

show spanning-tree mst instance interface interface-id

show spanning-tree mst	MSTP
spanning-tree mst cost	
spanning-tree mst port-priority	Instance

-	-

15.1.19 spanning-tree pathcost method

no

spanning-tree pathcost method [long | short]

no spanning-tree pathcost method

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

802.1T Path-cost

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

--	--

	show spanning-tree interface	STP
	-	-

15.1.20 spanning-tree portfast

	Portfast	disabled	Portfast
	spanning-tree portfast [disabled]		
	disabled	Portfast	
	-		
	<pre>Ruijie(config)# interface gigabitethernet 1/1 Ruijie(config-if)# spanning-tree portfast</pre>		
	show spanning-tree interface	STP	
	-	-	

15.1.21 spanning-tree portfast bpdupfilter default

	BPDU filter	no	BPDU filter
	spanning-tree portfast bpdupfilter default		

no spanning-tree portfast bpdupfilter default

	-	-

BPDU filter

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

show spanning-tree interface	STP

15.1.24 spanning-tree reset

spanning-tree

|

|

|

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

|

-	-

|

|

-	-

15.1.26 spanning-tree tc-protection

tc- protection

no

tc- protection

spanning-tree tc- protection

no spanning-tree tc- protection

|

-	-

|

tc- protection

|

|

|

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

|

-	-

|

-	-

15.1.27 spanning-tree tc-protection tc-guard

tc-guard no tc-guard tc-guard
tc

spanning-tree tc-protection tc-guard

no spanning-tree tc-protection tc-guard

-	-

|

tc-guard

|

|

|

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

-	-

|

-	-

15.1.28 spanning-tree tx-hold-count

STP TxHoldCount BPDU no

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

no spanning-tree tx-hold-count

MSTP

<i>tx-hold-count</i>	TxHoldCount	1	10

3



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

show spanning-tree	MSTP	

tx-hold-count	TxHoldCount
pathcost method	

┌

┌

┌

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

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

┌

-	-

15.2.2 show spanning-tree interface

STP

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

<i>interface-id</i>	
bpdufilter	bpdufilter
portfast	portfast
bpduguard	bpduguard

e gigabitethernet 1/5

spanning-tree bpdufilter	BPDU filter
spanning-tree portfast	portfast
spanning-tree bpduguard	BPDU guard

spanning-tree link-type

|

|

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
spanning-tree mst port-priority	instance

|

|

-	-

16 SPAN

16.1

16.1.1 monitor session

SPAN . no

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

SPAN

|

|

|

show monitor

SPAN 1

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

|

monitor session	SPAN

|

|

-	-

17

```

1/2 //
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
    
```

show monitor	

reflector-port

-	-

17.1.2 remote-span

RSPAN VLAN

[no] remote-span

-	-

VLAN

end Ctrl+C
exit

```

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

--	--

	show vlan	Vlan
	-	-

18

IP 地

18.1

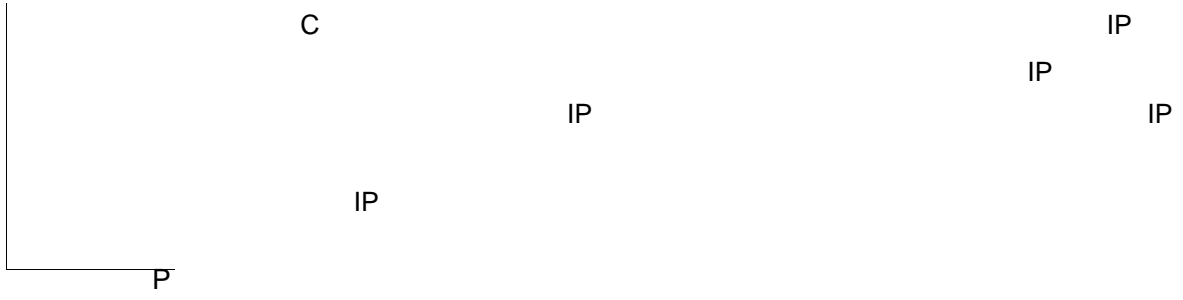
地

18.1.1 ip address

IP

no

IP



```
IP 10.10.10.1 255.255.255.0  
ip address 10.10.10.1 255.255.255.0
```

show interface	

SLIP HDLC PPP LAPB Frame-relay

X.25

ping
SNMP

IP

FastEthernet 0/1

IP

ip unnumbered fastEthernet 0/1

show interface	

-	-

18.2 ^(地)

18.2.1 arp

ARP IP MAC no
MAC

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

no arp [vrf name] ip-address

vrf name	VRF name VRF

|

ARP

|

RGOS

ARP

32

IP

48

MAC

ARP

ARP

clear

c

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

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

IP

	Arp retry times <i>number</i>	ARP
--	--------------------------------------	-----

--

8192 ARP no
arp unresolve number
no arp unresolve

<i>number</i>	> ARP 8192	< 1-8192

ARP 8192

ARP

arp unresolved 500

-		-

-		-

18.2.7 ip proxy-arp

ARP ARP ip proxy-arp no
ip proxy-arp
no ip proxy-arp

-		-

┌

10.2(3) (10.2(3))
ARP

ARP

┌

┌

ARP
MAC ARP ARP IP IP MAC
IP ARP IP
IP ARP
MAC

┌

FastEthernet 0/1 ARP
interface fastEthernet 0/1
no switchport
ip proxy-arp



IP

mask

ARP

mask

vrf vrf_name	VRF	VRF	ARP
trusted	ARP	ARP	VRF
ip	IP trusted	IP	ARP ARP
mask	IP ARP	ARP ; ARP	trusted
static	arp		
mac-address	mac	ARP	
complete	arp		
incomplete	arp		
oob	(interface of mgmt) ARP		

```

1      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

Protocol	Internet
Address	IP

Age (min)	ARP
Hardware	IP
Type	ARPA
Interface	IP

2 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 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 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

-	-

-	-

18.3.3 show arp counter

ARP

arp

show arp counter

--	--

-	-
---	---

--

--

--

```

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

-	-
---	---

--

-	-
---	---

18.3.4 show arp detail

ARP

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

<i>interface-type interface-number</i>	ARP
<i>ip</i>	ip ip ARP
<i>ip mask</i>	ip mask ARP
<i>mac-address</i>	mac ARP
static	arp
complete	arp
incomplete	arp

ARP

ARP

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	-- VI3	--	
20.1.1.1	000f.e200.0001	Static	-- VI3	Gi2/0/1	
193.1.1.70	00e0.fe50.6503	Dynamic	1 VI3	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 VI2	Ag2	
192.168.0.39	0012.a990.2241	Local	-- VI3	--	
192.168.0.39	0012.a990.2241	Local	-- Gi2/0/3	--	
192.168.0.1	0012.a990.2241	Local	-- VI3	--	
192.168.0.1	0012.a990.2241	Local	-- Gi2/3/2	--	

ARP

IP Address	IP
MAC Address	IP
Type	ARP
Age	ARP
Interface	IP
Port	ARP

	-	-

L

--	--	--

18.3.6 show ip arp

ARP

show ip arp

-	-

┌

┌

┌

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

Protocol	Internet
Address	IP
Age (min)	ARP “_”
Hardware	IP
Type	ARPA
Interface	IP

-	-

┌

-	-

18.3.7 show ip interface

IP

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

<i>Interface-type</i>	
<i>Interface-number</i>	

┌

┌

```

RGOS                RGOS                RGOS
                    UP                    UP
                    UP                    UP
    
```

```

show ip interface
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 unreachable is: ON
DHCP relay is: OFF
Fast switch is: ON

└───

└───

-	-

18.4

18.4.1 ip default-gateway

ip default-gateway no

ip default-gateway

no ip default-gateway

└───

-	-

└───

└───

19 DHCP Relay

19.1

19.1.1 ip dhcp relay check server-id

DHCP Relay check server-id no
DHCP Relay check server-id

[no] ip dhcp relay check server-id

	-	-

└───┘

└───┘

D H C P i a y

DHCP Relay option dot1x no

[no] ip dhcp relay information option dot1x

-	-

└───┘

└───┘

└───┘

DHCP 802.1x

└───┘
 Ruijie# **configure terminal**
 Ruijie(config)# **ip dhcp relay information option dot1x**

service dhcp	DHCP
ip dhcp relay information option dot1x access-group <i>acl-name</i>	option dot1x acl

└───┘

-	-

19.1.3 ip dhcp relay information option dot1x access-group

DHCP Relay option dot1x ACL no
 DHCP Relay option dot1x ACL

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

-	-

└───┘

ACL



ACL

ACL ACE

dhcp option dot1x acl

```

Ruijie# configure terminal
Ruijie(config)# ip access-list extended
DenyAccessEachOtherOfUnauthrize
Ruijie(config-ext-nacl)# permit ip any host 192.168.3.1
//
Ruijie(config-ext-nacl)# permit ip any host 192.168.4.1
Ruijie(config-ext-nacl)# permit ip any host 192.168.5.1
Ruijie(config-ext-nacl)# permit ip host 192.168.3.1 any
// IP
Ruijie(config-ext-nacl)# permit ip host 192.168.4.1 any
Ruijie(config-ext-nacl)# permit ip host 192.168.5.1 any
Ruijie(config-ext-nacl)# deny ip 192.168.3.0 0.0.0.255 192.168.3.0
0.0.0.255
//
Ruijie(config-ext-nacl)# deny ip 192.168.3.0 0.0.0.255
192.168.4.0 0.0.0.255
Ruijie(config-ext-nacl)# deny ip 0.2555
192.168.4.0 0.0.0.255
Ruijie(config-ext-nacl)# deny ip4 192.168.3.0 0.0.0.255
Ruijie(config-ext-nacl)# deny ip

```

	ip dhcp relay information option dot1x	DHCP option dot1x
	-	-

19.1.4 ip dhcp relay information option82

DHCP Relay option82 no

[no] ip dhcp relay information option82

	-	-

option dot1x

DHCP option82

Ruijie# **configure terminal**

Ruijie(config)# **Ip dhcp relay information option82**

	Service dhcp	DHCP
	ip dhcp relay information option dot1x	DHCP option dot1x

	-	-

19.1.5 ip dhcp relay information option vpn

DHCP Relay
no

DHCP Relay Aware VRF

DHCP

1 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

```
1          192.168.1.1
2      vrf    dep1      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
```



L

L

-	-

20 DNS

20.1

20.1.1 ip domain-lookup

	DNS	no	DNS
	ip domain-lookup		
	no ip domain-lookup		
	-		-
	DNS		
	DNS		DNS
	DNS		
	Ruijie(config)# ip domain-lookup		
	show hosts		DNS
	-		-

20.1.2 ip name-server

✘ IP/IPv6

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

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

<i>ip-address</i>	IP
<i>ipv6-address</i>	IPV6

└──

└──

DNS Server	IP/IPv6	DNS Server	DNS Server
Server		Server	DNS
6	DNS Server	ip-address	ipv6-address
	DNS		

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

show hosts	DNS

└──

-	-

	<i>ip-address</i>	IP
		no ip host host-name ip-address
		Ruijie(config)# ip host switch 192.168.5.243
	show hosts	DNS
	-	-

20.1.4 ipv6 host

	IPV6	no
	ipv6 host host-name ipv6-address	
	no ipv6 host host-name ipv6-address	
	<i>host-name</i>	
	<i>ipv6-address</i>	IPV6
		no ipv6 host host-name ipv6-address
		Ruijie(config)# ipv6 host ruijie 2001:0DB8:700:20:1::12

show hosts	DNS

┌

-	-

20.2

20.2.1 clear host

clear host [*host-name*]

<i>host-name</i>	(((**)))

┌

┌

2 DNS	1 ip host ipv6 host DNS

┌

clear host * -IP

show hosts	

┌

-	-

20.2.2 show hosts

DNS

show hosts [*hostname*]

-	-

└───┘

└───┘

└───┘

DNS

```
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	IP
ipv6 host	IPV6
ip name-server	DNS

└───┘

-	-

21 SNTP

21.1

21.1.1 sntp enable

	SNTP	no	—Disable
[no] sntp enable			
	-	-	
	SNTP	Disable	
	show sntp	SNTP	
Ruijie(config)# sntp enable			
	show sntp	SNTP	
	clock update-calendar		
	clock set		
	RGOS10.0		
	-	-	

21.1.2 sntp interval

SNTP Client NTP/SNTP Server

sntp interval *seconds*

|

|

show sntp SNTP

|

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

|

show sntp	SNTP
sntp enable	SNTP

|

RGOS10.0

|

-	-

21.2

21.2.1 show sntp

|

SNTP

-	-

|

|

S*üB

show sntp

SNTP

	sntp enable	SNTP
	show sntp	SNTP

RGOS10.0

	-	-

22 NTP

22.1 NTP

22.1.1 no ntp

	ntp	ntp
	no ntp	
	-	-
	NTP	
	NTP	NTP
	NTP	NTP
	no ntp	NTP
	ntp server	NTP
	-	-

22.1.2 ntp access-group

NTP
no

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
serve	NTP
serve-only	NTP
query-only	NTP
<i>access-list-number</i>	IP 1 99 1300 1999
<i>access-list-name</i>	IP

NTP

NTP
NTP
NTP

peer serve serve-only query-only

r

1
2

Ruijie(config)# **ntp access-group peer 1**

Ruijie(config)# **ntp access-group serve-only 2**

ip access-list	IP

	-	-

22.1.3 ntp authenticate

NTP NTP

ntp authenticate

no ntp authenticate

	-	-

NTP

ntp authentication-key ntp trusted-key

NTP

NTP

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

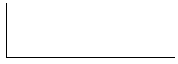
no ntp authentication-key *key-id* **md5** *key-string* [*enc-type*]

<i>key-id</i>	ID
<i>key-string</i>	
<i>enc-type</i>	0

NTP

	-	-
--	---	---

.



┌

┌

NTP

Ntp synchronize

┌

ntp server	NTP

┌

┌

-	-

22.1.9 ntp trusted-key

ID

ntp trusted-key *key-id*

no ntp trusted-key *key-id*

┌

<i>key-id</i>	ID

┌

┌

┌

NTP

ID

┌

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

┌

--	--

NTP

	-	-

22.2

22.2.1 debug ntp

NTP

debug ntp

no debug ntp

	-	-

--

--

--

NTP

--

NTP

debug ntp

	-	-

--

	-	-

22.2.2 show ntp status

NTP

show ntp status



23 FTP Server

23.1

23.1.1 debug ftpserver

FTP no

debug ftpserver

no debug ftpserver

	-	-

|

|

|

debug ftpserver FTP

1

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

Ruijie# **no debug ftpserver**

	-	-

|

|

--	--	--

	-	-
--	---	---

23.1.2 ftp-server enable

FTP no FTP

ftp-server enable

no ftp-server enable

	-	-



FTP

FTP

ftp-server topdir

FTP

!60B

r

FTP

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

no ftp-server password

<i>type</i>	0 7 0
<i>password</i>	7

┌

┌

FTP

	1	25	4
	52		
r	FTP		

```

1 pass
Ruijie(config)# ftp-server password pass

Ruijie(config)# ftp-server password 0 pass
2 8001
Ruijie(config)# ftp-server password 7 8001
3
Ruijie(config)# no ftp-server password
    
```

-	-

┌

-	-

23.1.4 ftp-server topdir

FTP no
 FTP

ftp-server topdir *directory*

no ftp-server topdir

<i>directory</i>	FTP

┌

┌

┌

FTP
 FTP FTP
 FTP

┌

1 FTP syslog
 Ruijie(config)# **ftp-server topdir /syslog**
 Ruijie(config)# **ftp-server enable**
 2
 Ruijie(config)# **no ftp-server topdir**

┌

-	-

┌

┌

-	-

23.1.5 ftp-server timeout

FTP Session idle timeout no
 30

ftp-server timeout *time*



FTP

¥ K€

24 UDP-Helper

24.1

24.1.1 ip forward-protocol

UDP

no

UDP

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	UDP

-	-

24.1.2 ip helper-address

UDP

no

UDP

ip helper-address *address*

no ip helper-address *address*

<i>address</i>	UDP 20

UDP

20
, UDP-Helper UDP

no ip helper-address

```
Ruijie(config-if)# ip helper-address 192.168.100.1
```

ip forward-protocol	UDP

┌

┌

-	-

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

SNMP

no snmp

123456:

over chassis-id 123456

SNMP

<i>aclnumber</i>	1-99 MIB ipv4 NMS
<i>aclname</i>	MIB ipv4 NMS
<i>ipv6_aclname</i>	ipv6 MIB ipv6 NM MIB

<i>text</i>	

|

|

|

SNMP

i-net800@i-net.com.cn

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

	<i>ipv6_aclname</i>	ipv6 MIB ipv6 NMS
--	---------------------	-------------------------

<i>port-num</i>	snmp
<i>notification-type</i>	snmp

SNMP

```

snmp-server enable traps NMS
SNMP
vrf [ vrf ]
    
```

```

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

snmp-server enable traps	

-	-

25.1.8 snmp-server location

```

SNMP snmp-server location no
SNMP
snmp-server location text
no snmp-server location
    
```

<i>text</i>	

|

|

|

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

|

snmp-sever contact	SNMP

|

|

-	-

25.1.9 snmp-server packetsiz

SNMP
no

snmp-sever packetsize

snmp-server packetsize *byte-count*

no snmp-server packetsize

|

<i>byte-count</i>	484 17876

|

1500

|

|

|

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

|

--	--

	snmp-server queue-length	SNMP

SNMP

no

SNMP

snmp-server system-shutdown

snmp-server system-shutdown

no snmp-server system-shutdown

-	-

SNMP

SNMP

RGOS

reload/reboot

NMS

SNMP

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

-	-

-	-

25.1.12 snmp-server trap-source

SNMP

snmp-server trap-source

no

snmp-server trap-source *interface*

no snmp-server trap-source

<i>interface</i>	SNMP

SNMP

IP

┌

┌

SNMP

IP
IP SNMP

┌

0 IP SNMP

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

┌

snmp-server enable traps	
snmp-server enable host	NMS

┌

┌

-	-

25.1.13 snmp-server trap-timeout

snmp-server trap-timeout

no

snmp-server trap-timeout *seconds*

no snmp-server trap-timeout

┌

seconds	1 – 1000

┌

30

┌

┌

┌

60

Ruijie(config)# **snmp-server trap-timeout 60**

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

25.1.14 snmp-server user

SNMP **snmp-server user** no

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**}

	<i>username</i>		
	<i>groupname</i>		
	v1 v2 v3	SNMP	v3
	encrypted	16	MD5 16
	auth	16	SHA 20

SHA

<i>aclnum</i>	MIB ipv4 NMS
<i>aclname</i>	MIB ipv4 NMS
<i>ipv6_aclname</i>	ipv6 MIB ipv6 NMS

└──

└──

└──

```

                                snmpV3          md5          DES
Ruijie(config)# snmp-server user user-2 mib2user v3 auth md5
authpassstr priv des56 despassstr
    
```

show snmp user	SNMP

└──

-	-

25.1.15 snmp-server view

SNMP

snmp-server view

s

n

┌

default

MIB

┌

┌

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

MIB-2 oid 1.3.6.1

┌
show snmp view

show snmp view	SNMP

┌

┌
 -

-	-

25.1.16 snmp trap link-status

25.2

25.2.1 show snmp

SNMP

show snmp

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

┌
 -

-	-

┌

┌

┌
show snmp

SNMP

```

show snmp mib                snmp mib
show snmp user             snmp
show snmp view            snmp
show snmp group          snmp
show snmp host
    
```

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

-	-

26 RMON

26.1

26.1.1 rmon alarm

MIB no

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

no rmon alarm *number*

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RGOS variable
 absolute/delta owner interval rising-threshold/falling-threshold event

MIB ifInNUcastPkts.6
 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 <i>number [log] [trap community] [description-string]</i>	

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26.1.2 rmon collection history

no

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

no rmon collection history *index*



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L

1 =



trap

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
```

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

```

Ruijie# show rmon history
Entry : 1
Data source : Gil/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 <i>index</i> [owner ownername] [buckets bucket-number] [interval seconds]	

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 |

Ruijie# **show rmon statistics**

```

Statistics : 1
Data source : Gil/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
  
```

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 |

rmon collection stats <i>index</i> [owner <i>owner-string</i>]	

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IPv6

IPV6		UP		
IPv6			IPv6	=
+				+
DHCPv6	PD		ipv6 general-prefix	
+			DHCPv6	
			<i>sub-bits/prefix-length</i>	
no ipv6 address				
no ipv6 address	<i>ipv6-prefix/prefix-length</i>	eui-64		ipv6 address
<i>ipv6-prefix/prefix-length</i>	eui-64			

```

1                               IPv6
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
Ruijie(config-if)# ipv6 address my-prefix 0:0:0:7272::72/64
                    my-prefix          2001:1111:2222::/48          IPv6

```

default	default

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```

                                RA                RA
                                EUI-64
                                RA                DHCPv6
                                DNS                NTP                IPv6
                                IPv6                IPv6

no ipv6 address autoconfig                IPv6
    
```

```

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

ipv6 address <i>ipv6-prefix/prefix-length</i> [eui-64]	IPv6

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RGOS10.4	RGOS10.4

27.1.4 ipv6 enable

2	IPv6	ipv6 enable
	IPv6	
r	IPv6	IPv6
	no ipv6 enable	IPV6

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

show ipv6 interface	
----------------------------	--

-	-
---	---

27.1.5 ipv6 general-prefix

IPv6

ipv6 general-prefix

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

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

<i>prefix-name</i>	
<i>ipv6-prefix</i>	RFC4291
<i>prefix-length</i>	

IPv6

my-prefix

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

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

RGOS10.4	RGOS10.4

27.1.6 ipv6 hop-limit

ipv6 hop-limit value

no ipv6 hop-limit

-	-

64

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

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	-	-

27.1.7 ipv6 nd dad attempts

```

                IPV6                                (NS)
                no
    ipv6 nd dad attempts value
    no ipv6 nd dad attempts
    
```

value	(NS)	0
	0-600	ipv6 :

```

1

```

```

                IPV6
                "tentative"( )
                EUI-64
                (                IPV6                )
                down/up
                down                up
    
```

```

Ruijie(config)# interface vlan 1
Ruijie(config-if)# ipv6 nd dad attempts 3
    
```

show ipv6 interface	

no

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

no ipv6 neighbor *ipv6-address interface-id*

<i>ipv6-address</i>	IPV6	RFC4291	
<i>interface-id</i>	SVI	Routed Port,L3 AP	
<i>hardware-address</i>	MAC	XXXX.XXXX.XXXX	48
		'X'	

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ARP

NDP

IPV6

Reachble

IPV6

mac

inactive

show ipv6 neighbor static

clear ipv6 neighbors (NDP)

show ipv6 neighbors

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

show ipv6 neighbors	
clear ipv6 neighbors	

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27.1.10 ipv6 ns-linklocal-src

no ipv6
IPv6

ns-linklocal-src
RFC3484

ipv6 ns-linklocal-src

no ipv6 ns-linklocal-src

-	-

|

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

-	-

|

-	-

27.1.11 ipv6 route

IPV6

no

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*]}

<i>ipv6-prefix</i>	IPV6 RFC4291
<i>prefix-length</i>	IPV6 '/'

<i>ipv6-address</i>	RFC4291
<i>interface-id</i>	

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

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show ipv6 route	IPv6

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27.1.12 ipv6 source-route

	IPv6	no
IPv6		
ipv6 source-route		
no ipv6 source-route		

	-	-

└───┘

IPv6

└───┘

└───┘

0

IPv6

0

IPv6

└───┘

Ruijie(config)# **no ipv6 source-route**

	-	-

└───┘

	-	-

27.2

27.2.1 clear ipv6 neighbors

clear ipv6 neighbors

	-	-

└───┘

```
Ruijie# clear ipv6 neighbors
```

ipv6 neighbor	
show ipv6 neighbors	

-	-

27.2.2 show ipv6 general-prefix

```
show ipv6 general-prefix
```

```
show ipv6 general-prefix
```

-	-

```
show ipv6 general-prefix
```

```
DHCPv6
```

```
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
```

```

|
|
|

```

RGOS10.4	RGOS10.4

27.2.3 show ipv6 interface

IPV6

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

<i>interface-id</i>	aggregateport	SVI
ra-info	RA	

```

|
|
|

```

```

|
|
|

```

```

|
|
|

```

IPV6

ND

```

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

INET6: 2001::1 , subnet is 2001::/64

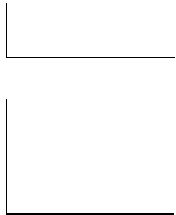
[TENTATIVE]	INET6	[]
ANYCAST		
TENTATIVE		(DAD)
DUPLICATED		
DEPRECATED		
NODAD		
AUTOIFID		EUI-64
PRE		
GEN		

```
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 ~~ANDY-BA-h5yb7416~~

1

waits	
initcount	RA
RA(out/in/inconsistent)	Out in inconsistent
RS(input)	
Link-layer address	
Physical MTU	



-	-

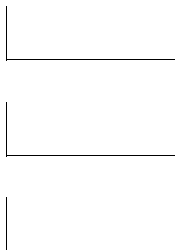
27.2.4 show ipv6 neighbors

IPV6

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



verbose	
<i>interface-id</i>	
<i>ipv6-address</i>	
static	



1 SVI 1

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	<p style="text-align: right;">state/H(R)</p> <p>STATE</p> <p>INCOMP(Incomplete)—</p> <p style="padding-left: 100px;">(NS)</p> <p style="padding-left: 100px;">(NA)</p> <p>REACH(Reachable) —</p> <p style="padding-left: 100px;">STALE —</p> <p style="text-align: right;">NUD</p> <p>(Neighbor Unreachability Detection)</p> <p>DELAY—</p> <p style="padding-left: 100px;">STALE</p>

State

STALE

501 (REACH/Reachable) E3(ha)8.838

IPv6 Address	IPV6
Linklayer Addr	Mac
Interface	

State	STATE	
	ACTIVE—	
	INACTIVE—	IPV6

```

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

```

ipv6 route	

-	-

27.2.6 show ipv6 router

IPv6

show ipv6 router

show ipv6 router [*interface-type interface-number*]

--	--

28 MLD Snooping

28.1

28.1.1 ipv6 mld profile

MLD profile profile profile-number mld
profile

	10.4	

28.1.3 deny

	profile	profile	deny
	deny		
	profile	deny	
	profile		
	profile	range	
		FF77::100	profile :
	Ruijie(config)# ipv6 mld profile 1		
	Ruijie(config-profile)# range FF77::100		
	Ruijie(config-profile)# deny		
	ipv6 mld profile	profile	
	range		
	permit	profile	permit
	10.4		

28.1.4 permit

	profile	profile	permit
	permit		

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VLAN

VLAN

VLAN

VLAN

mld snooping ivgl

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

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

10.4	

28.1.6 ipv6 mld snooping svgl profile

SVGL

no ipv6 mld snooping profile

ipv6 mld snooping profile *profile-number*

no ipv6 mld snooping profile

<i>profile-number</i>	profile 1-1024

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mld snooping

mld snooping SVGL

profile SVGL

profile SVGL

SVGL

IVGL-SVGL

SVGL

VLAN

VLAN

SVGL

|

|

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

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

|

<i>time</i>	MLD 1-65535

|

10s

|

|

MLD

0

mld snooping

MLD

0

mld snooping

MLD

MLD

15s

|

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

|

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	10.4	
--	------	--

28.1.9 ipv6 mld snooping vlan

ipv6 mld snooping vlan vid vlan mld snooping **no ipv6**
mld snooping vlan vid vlan mld snooping
ipv6 mld snooping vlan vid
no ipv6 mld snooping vlan vid

<i>vid</i>	vlan id 1-4094

mld snooping vlan mld snooping

mld snooping vlan mld snooping

vlan mld snooping

VLAN 1 mld snooping

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

10.4	

28.1.10 ipv6 mld snooping vlan mrouter learn

MLD query PIM

ipv6 mld snooping vlan mrouter learn no

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

MLD Snooping

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10.4	

28.1.15 ipv6 mld source-check port

```

no mld snooping
    ipv6 mld snooping source-check port

```

```

ipv6 mld snooping source-check port
no ipv6 mld snooping source-check port

```

┌

┌

┌

┌

```

mld snooping          MLD          mld snooping
                       mld snooping

```

┌

```

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

```

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10.4	

28.1.16 ipv6 mld snooping filter

```

profile          no          profile
ipv6 mld snooping filter profile-number
no ipv6 mld snooping filter profile-number
    
```

<i>profile-num</i>	profile

└──

└──

```

                                MLD Profile
                                MLD Report
                                MLD Profile
                                profile          filter
    
```

```

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

ipv6 mld profile	profile

ipv6 mld

snooping max-groups no

ipv6 mld snooping max-groups *number*

no ipv6 mld snooping max-groups

<i>Number</i>	0 – 1024

1024

MLD Report

0/1 100

Ruijie(config)# interface fastEthernet 0/1

Ruijie(config-if)# ipv6 mld snooping max-group 100

ipv6 mld snooping filter	

10.4	

28.1.18 clear ipv6 mld snooping gda-table

clear ipv6 mld snooping

gda-table

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`

10.4	

28.2

28.2.1 show ipv6 mld snooping

mld snooping

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

	mld snooping
gda-table	
interfaces	mld snooping Filtering
mrouter	
statistics [vlan <i>vlan-id</i>]	snooping

mld snooping

```

1      show ipv6 mld snooping          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 response time : 10(Seconds)
2      show ipv6 mld snooping statistics  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          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
    
```

```

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
    
```


10.4	

28.2.2 show ipv6 mld profile

MLD profile

show ipv6 mld profile [*profile-number*]

	profile
<i>profile-number</i>	profile

└───

└───

└───

mld profile

1 **show ipv6 mld profile** MLD profile

Ruijie# **show ipv6 mld profile 1**

MLD Profile 1

permit

range FF77::1 FF77::100

range FF88::123

└───

3B.24 20.34 Tf-17.<30.34 Tf7rg431 Tf1D50.24 20.128 0 D00>142.3B154.38 0.48 ref29.16 I347.36 42

29

的

29.1

29.1.1 storm-control

no

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

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

broadcast	
multicast	
unicast	
<i>percent</i>	20 20%
<i>packets</i>	pps packets per second
<i>Rate-bps</i>	
<i>64k-2M</i>	64k
<i>2-100M</i>	1M
<i>100M</i>	8M

show storm-control

GigabitEthernet 1/1

4M

Ruijie# **configure terminal**

Ruijie(config)# **interface GigabitEthernet 1/1**

Ruijie(config-if)# **storm-control multicast 4096**

Ruijie(config-if)# **end**

show storm-control	

-	-

29.1.2 switchport protected

no

switchport protected

no switchport protected

-	-

|

-

|

-	-

29.1.3 switchport port-security

no

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

no switchport port-security [violation]

|

port-security	
violation protect	
violation restrict	trap
violation shutdown	Trap

|

|

|

```

)
(
MAC
IP(
)
1
M

```

|

```

GigabitEthernet 1/1
shutdown
Ruijie(config)# interface gigabitEthernet 1/1
Ruijie(config-if)# switchport port-security
Ruijie(config-if)# switchport port-security violation shutdown

```

|

--	--

show port-security

	show port-security	
--	---------------------------	--

--

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

-	-

29.1.6 switchport port-security binding interface

IP+ MAC IP

no

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

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

<i>interface-id</i>	ID
<i>mac-address</i>	MAC
<i>Vlan_id</i>	MAC VID
<i>Ipv4-address</i>	Ipv4 Ip
<i>Ipv6-address</i>	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

```

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



1 TRUNK 10

```
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

```

storm-control	

-	-

29.2.2 show port-security

show port-security [*address*] [*interface interface-id*] [*all*]

address	
interface <i>interface-id</i>	
all	

U

	switchport port-security	
	switchport port-security aging	
	switchport port-security mac-address	

	-	-

30 802.1X

30.1 dot1x

30.1.1 dot1x auto-req

802.1X

dot1x auto-req

no

[no] dot1x auto-req

-	-

└───

└───

└───

802.1x

show dot1x auto-req

└───

802.1x

```

Ruijie# configure terminal
Ruijie(config)# dot1x auto-req
Ruijie(config)# end
Ruijie# show dot1x auto-req
Ruijie(config)# dot1x auto-req
Auto-Req: Enabled
User-Detect : Enabled
Packet-Num : 0
Req-Interval: 30 Second

```

└───

show dot1x auto-req	

└───

	-	-

30.1.3 dot1x auto-req req-interval

no

dot1x auto-req req-interval *interval*

no dot1x auto-req req-interval

	<i>interval</i>	s

30

show dot1x auto-req

802.1x

60s

30.1.4 dot1x auto-req user-detect

no

dot1x auto-req user-detect

no dot1x auto-req user-detect

-	-

└───

└───

└───

show dot1x auto-req

└───

```
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
```

└───

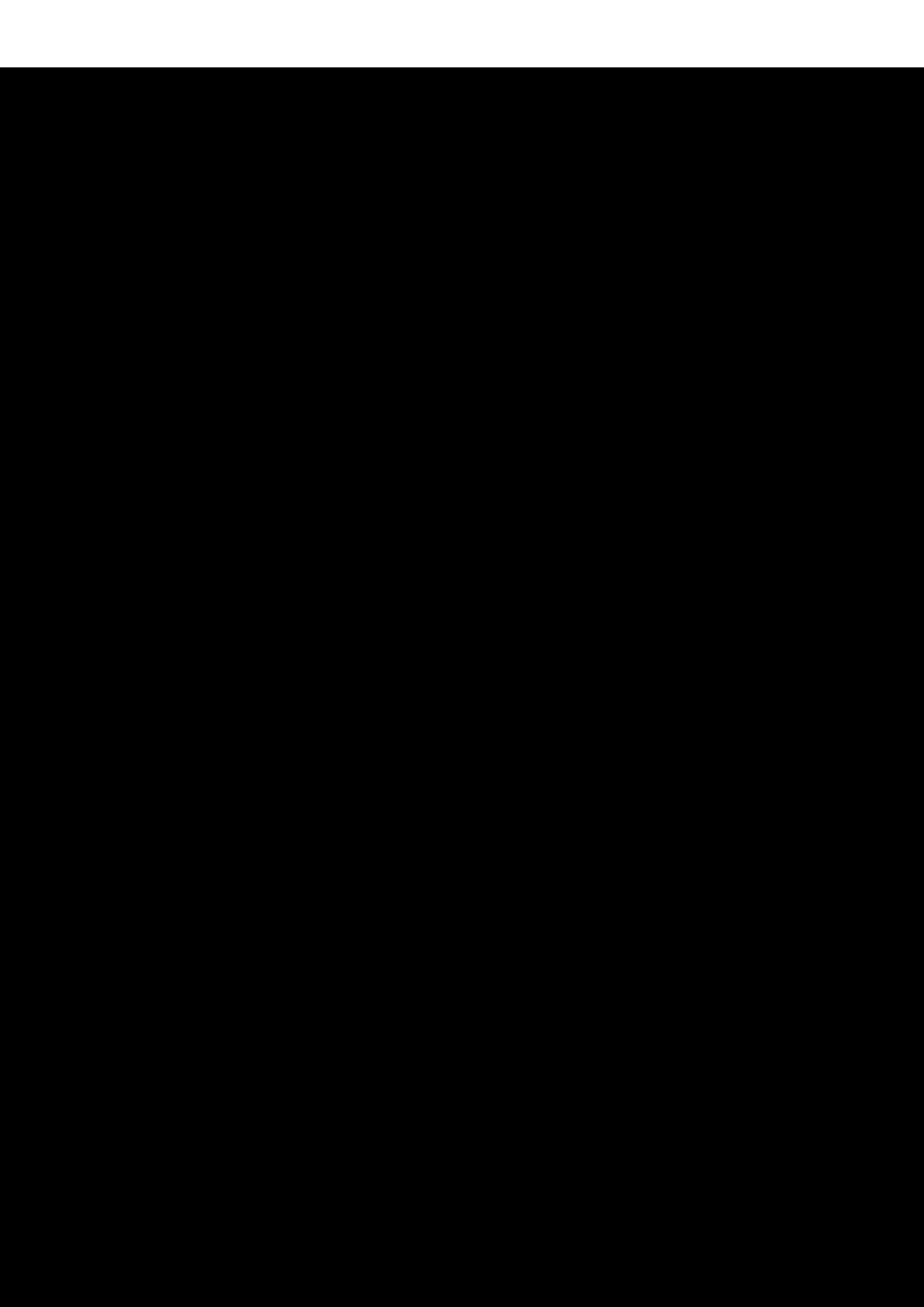
show dot1x auto-req	

└───

└───

-	-

30.2 dot1x 超



	show dot1x	802.1x
	-	-

30.2.2 dot1x timeout re-authperiod

no

dot1x timeout re-authperiod *seconds*

no dot1x timeout re-authperiod

	<i>seconds</i>	0	65535	s

3600

show dot1x 802.1x

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

<i>seconds</i>	0 65535

5

show dot1x 802.1x

10s

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

```

show dot1x	802.1x

-	-

30.2.4 dot1x timeout supp-timeout

no

dot1x timeout supp-timeout *seconds*

no dot1x timeout supp-timeout

--	--

3

30.2.5 dot1x timeout tx-period

no

dot1x timeout tx-period *seconds*

no dot1x timeout tx-period

<i>seconds</i>	0 65535

3

show dot1x 802.1x

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

```

	show dot1x	802.1x

	-	-

30.3 dot1x

30.3.1 dot1x re-authentication

no

[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

-	-

```

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

```

show dot1x	802.1x

-	-

30.4 dot1x

30.4.1 dot1x probe-timer

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

no dot1x probe-timer

no	

<i>interval</i>	hello
alive	
interval	

```
Hello          20
                250
```

show dot1x 802.1x

```
hello          30 ,          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
```

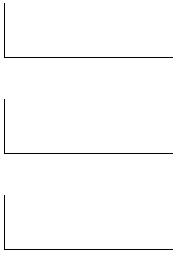
Show dot1x probe-timer	

-	-

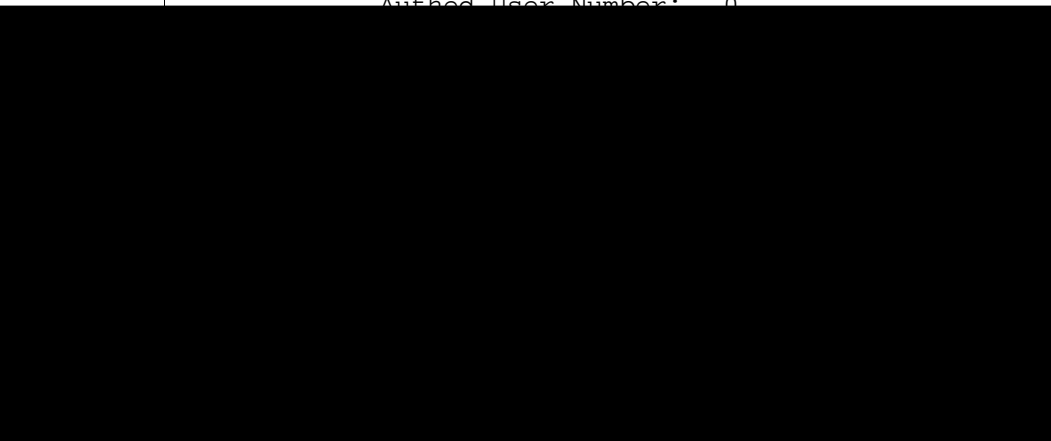
30.4.2 dot1x client-probe enable

[no] dot1x client-probe enable

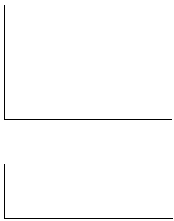
-	-



```
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



--	--

-

-

30.5.1 dot1x authentication

AAA

AAA

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

default	
<i>list-name</i>	

AAA

AAA

AAA

dot1x

group radius

```

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

```

aaa new-model	AAA
aaa authentication dot1x	

-	-

30.5.2 dot1x auth-address-table

802.1X

no

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

<i>mac-addr</i>	
<i>Interface</i>	

802.1X

show dot1x auth-address**table**

```

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

```

show dot1x auth-address-table

802.1X

<i>num</i>	VLAN	,	1-3
------------	------	---	-----

3

show dot1x

VLAN

Ruijie# **configure terminal**

Ruijie(config)# **dot1x auth-fail max-attempt** E9Bù

show dot1x interface

```

      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

```

show dot1x interface	802.1x

10.3(5)	

30.5.5 dot1x auth-mode

802.1x

dot1x auth-mode {eap-md5 | chap | pap}**no dot1x auth-mode**

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

EAP-MD5

show dot1x 802.1x

802.1x

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

show dot1x	802.1x

-	-

30.5.6 dot1x default

802.1x

dot1x default

-	-

show dot1x 802.1x

```
802.1x
Ruijie# configure terminal
Ruijie(config)# dot1x default
Ruijie(config)# end
Ruijie# end
```

show dot1x	802.1x

	-	-

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

dot1x dynamic-vlan <1 - 4094>

no dot1x guest-vlan

vid	<1 - 4094>

|

|

```

                                guest vlan
                                guest vlan
                                guest vlan
                                vlan
                                show running-config      802.1x
                                dot1x dynamic-vlan enable

```

```

                                802.1x guest vlan
Ruijie# configure terminal
Ruijie(config)# dot1x guest-vlan 10
Ruijie(config)# end
Ruijie#

```

show running-config	802.1x

|

-	-

30.5.9 dot1x eapol-tag

EAPOL TAG

dot1x eapol-tag

no dot1x eapol-tag

--	--

-	-
---	---

┌

┌

┌

show dot1x 802.1x

┌

802.1X tag

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

┌

show dot1x	802.1x

┌

┌

-	-

30.5.10 dot1x mac-auth-bypass

MAC

dot1x mac-auth-bypass

no dot1x mac-auth-bypass

┌

┌

MAC

┌

┌

show dot1x port-control interface

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
```

show dot1x port-control interface	802.1x
--	--------

10.3(5)	
----------------	--

30.5.11 dot1x mac-auth-bypass timeout-activity

802.1x MAC

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

no dot1x mac-auth-bypass timeout-activity

<i>value</i>	, 1-65535
--------------	-----------

show run 802.1x

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
	10.3(5)	

30.5.12 dot1x mac-auth-bypass violation

802.1x MAC

dot1x mac-auth-bypass violation

no dot1x mac-auth-bypass violation

show run 802.1x

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

	10.3(5)	

30.5.13 dot1x max-req

```

DOT1X
DOT1X
no
dot1x max-req count
no dot1x max-req

```

	count	

```

3

```

```


```

```

show dot1x 802.1x

```

```

802.1x 7
Ruijie# configure terminal
Ruijie(config)# dot1x max-req 7
Ruijie(config)# end
Ruijie#

```

	show dot1x	802.1x

```


```

	-	-

30.5.14 dot1x private-supPLICANT-only

no

|

802.1x

|

|

show dot1x

802.1x

|

802.1x

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

|

show dot1x	802.1x

|

|

-	-

30.5.16 dot1x port-control-mode

802.1x

MAC

dot1x port-control-mode {mac-based | {port-based [mac-basedE> {~~mac-based~~ mac-based}]} | {port-based [mac-basedE> {~~mac-based~~ mac-based}]} } gCAGVACGV

single-host	802.1x
--------------------	--------

mac-based

```

show dot1x port-control           802.1x
s26                                802.1X
                                802.1X
single-host                        802.1x
port-based show running-config   show dot1x port-control
port-based single-host          dot1x port-control-mode
single-host                        default-user-limit single-host
                                single-host          default-user-limit
single-host

```

```

1                                802.1x
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                                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
Show running-config	

30.5.17 dot1x stationarity enable

802.1x

802.1X

dot1x stationarity enable**no dot1x stationarity enable**

	-	-

┌

┌

┌

```

802.1x
Ruijie# configure terminal
Ruijie(config)# dot1x stationarity enable
Ruijie(config)# end
Ruijie#

```

	-	-

┌

url url no
url

dot1x redirect url [*url-string*]

[no] dot1x redirect url

	<i>url-string</i>	URL

|

|

|

1

di

ie

dot1x re

-ip

└───

└───

```

1                               3
Ruijie(config)# dot1x redirect num for special source-ip 3
    
```

└───

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

└───

└───

-	-

30.6 dot1x

30.6.1 show dot1x

802.1x

show dot1x

└───

-	-


└───

└───

└───

└───

```
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

802.1X

show dot1x auth-address-table[address mac-addr][interface interface]

<i>mac-addr</i>	
<i>interface</i>	

┌

┌

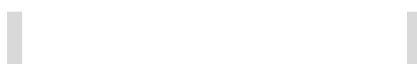
┌

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

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

	dot1x timeout supp-timeout	
	dot1x timeout tx-period	

└───



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

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

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

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

-	-

30.6.6 show dot1x port-control

show dot1x port-control [interface *interface*]

<i>interface</i>	

```

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
dot1x max-req	
dot1x port-control auto	
dot1x reauth-max	
dot1x re-authentication	
dot1x timeout quiet-period	
dot1x timeout re-authperiod	
dot1x timeout server-timeout	
dot1x timeout supp-timeout	
dot1x timeout tx-period	

-	-
---	---

30.6.7 show dot1x probe-timer

```
show dot1x probe-timer
```

-	-

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

dot1x auth-mode	802.1x
dot1x max-req	
dot1x port-control auto	
dot1x reauth-max	
dot1x re-authentication	

dot1x timeout quiet-period

30.6.8 show dot1x re-authentication

show dot1x re-authentication

	-	-

|

|

|

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

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

-	-

30.6.9 show dot1x reauth-max

show dot1x reauth-max

-	-

└───┘

└───┘

└───┘

└───┘

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

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


```

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 session time is 1000000 seconds
Authorization ip address is 192.168.217.64
Start accounting
Permit proxy user
Permit dial user
IP privilege is 2

```

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

-	-

30.6.12 show dot1x timeout

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

-	-

┌

┌

┌

┌

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

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

	dot1x timeout tx-period	
	-	-

30.7

30.7.1 dot1x redirect

dot1x redirect no

dot1x redirect

no dot1x redirect

	-	-

┌

┌

┌

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


┌

	10.2(5)	

30.7.2 http redirect

HTTP IP http redirect
no HTTP IP

http redirect *ip-address*

no http redirect

<i>ip-address</i>	HTTP	IP

	HTTP	IP
--	------	----

--	--	--

	HTTP	HTTP	IP
--	------	------	----

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

show http redirect		HTTP
http redirect homepage		

--	--	--

	10.2(5)	

30.7.3 http redirect direct-site

no

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

<i>url-string</i>	<i>url-string</i>
	"http://" "https://" 255

www.su-download.net/

Ruijie# **configure terminal**

Ruijie(config)# **http redirect homepage *www.su-download.net/***

show http redirect	HTTP

10.2(5)	

30.7.5 http redirect port

redirect port HTTP **no** http

http redirect port *port-num*

no http redirect port *port-num*

--	--

<i>port-session-num</i>	1-300	HTTP
	HTTP	255

```

GET/HEAD          HTTP
      GET/HEAD          TCP

```

HTTP

```

4
Ruijie# configure terminal
Ruijie(config)# http redirect timeout 4

```

show http redirect	HTTP

10.2(5)	

30.7.8 show http redirect

HTTP

```
show http redirect
```

-	-

```

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		
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

no

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

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

<i>ip-address</i>	IP
<i>ip-mask</i>	IP
arp	ARP CHECK ARP arp

└───┘

└───┘

Web	Web
50	

1 IP 172.16.0.1
Ruijie(config)# **http redirect direct-site** 172.16.0.1

show http redirect	HTTP

└───┘

10.2(5)	

no

<i>url-string</i>	"http://" "https://" 255

Web

```

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

show http redirect	HTTP
http redirect	IP

10.2(5)	

31.1.4 http redirect port

```

port no HTTP WEB http redirect HTTP WEB
    
```

http redirect port *port-num*

no http redirect port *port-num*

<i>port-num</i>	HTTP WEB

80 HTTP

┌

```

HTTP
HTTP
80 HTTP
HTTP
10 80

```

┌

```

1 8080 HTTP WEB
Ruijie(config)# http redirect port 8080
1 80 HTTP WEB
Ruijie(config)# no http redirect port 80

```

┌

show http redirect	HTTP

┌

┌

10.2(5)	

31.1.5 http redirect session-limit

```

no HTTP HTTP
HTTP HTTP
http redirect session-limit session-num [port port-session-num]
no http redirect session-limit

```

┌

<i>session-num</i>	HTTP 1-255
<i>port-session-num</i>	HTTP 1-300

```
HTTP 300 HTTP 255
HTTP
HTTP HTTP TCP
HTTP HTTP HTTP HTTP
HTTP 1 HTTP
1 HTTP 4
Ruijie(config)# http redirect session-limit 4
```

ŕ6V'£.0QN0ŕBġ†TqT? ^c-uH€)HGh†9gT†T|(ŕ8†5 QB2YT 4~đ! 'fei GEg5B œD ¼\$ Đ w•Â

GET/HEAD	HTTP	TCP
GET/HEAD		
1	4	
Ruijie(config)# http redirect timeout 4		
show http redirect		HTTP
10.2(5)		

31.1.7 web-auth allow-vlan

VLAN	Web	VLAN	no
web-auth allow-vlan list			
no web-auth allow-vlan [list]			
<i>list</i>	VLAN	web	<i>list</i>
VLAN	Web	VLAN	
VLAN	VLAN	VLAN	VLAN
VLAN	VLAN	VLAN	Web
		TRUNK	
1	VLAN	VLAN1 2 3 5	
Ruijie(config)# web-auth allow-vlan 1-3,5			

┌

┌

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

┌

┌

┌

┌

- 1) " "
 - 2) LinkDown 60s
 - 3) LinkUp 15
- 1 2 3 1
- 2

┌

1
Ruijie(config)# web-auth offline-detect-mode flow

--	--

10.2(5)	
10.4(2b2)	ip-only-mode

b-auth portal key

31.1.12 web-auth update-interval

1 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

Direct hosts:

Address	Mask	Port	ARP Binding
192.168.1.1	255.255.255.255	Fa0/1	On

server	IP
port	HTTP
homepage	

Web

└───
└───
└───

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

-	-

└───
└───
└───

	VLAN Web VLAN
web-auth allow-vlan	

└───
└───

10.4(2b2)	

31.2.3 show web-auth direct-host

web

show web-auth direct-host

└───
└───
└───

-	-

```
Ruijie# show web-auth direct-host
```

```
Direct hosts:
```

```
Address      Mask
-----
192.168.4.11 255.255.255.255 Fa0/10  Or
192.168.5.0  255.255.255.0   Fa0/16  O
```

Address	IP
Mask	IP
Port	ARP
web-auth direct-host	IP

10.2(5)

31.2.4 show web-auth port-control

```

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

```

Port	Control
FastEthernet 0/1	On
FastEthernet 0/2	On
FastEthernet 0/3	Off

web-auth port-control	Web
FastEthernet 0/1	On
FastEthernet 0/2	On
FastEthernet 0/3	Off

10.2(5)	

31.2.5 show web-auth user

IP

show web-auth user [ip-address]

ip-address	IP

```

1 web

```

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
Mac	MAC
Port	
Online	
Time Limit	0
Time Used	
Time Start	
Status	Active Create Destroy

	10.2(5)	
--	----------------	--

32 AAA

32.1

32.1.1 aaa authentication dot1x

AAA 802.1X **aaa authentication dot1x**
802.1X no 802.1X

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

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

default	802.1X
<i>list-name</i>	802.1X

aaa new-model	AAA
dot1x authentication	802.1X
username	

AAA Enable

RADIUS

RADIUS

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

┌

```

AAA                                     AAA  Login
aaa authentication login                               Login
Login                                     Login
    
```

┌

```

list-1  AAA Login
RADIUS                                     RADIUS
Ruijie(config)# aaa authentication login list-1 group radius local
    
```

┌

aaa new-model	AAA
username	
login authentication	Login

┌

┌

-	-

32.1.4 aaa authentication ppp

AAA PPP

aaa authentication ppp

local	
none	
group	TACACS+ RADIUS

└───

└───

└───

AAA PPP AAA PPP
aaa authentication ppp PPP

rds_ppp AAA PPP
RADIUS RADIUS

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

default	Login
<i>list-name</i>	Login

```

Login
Login
                                Login
                                Login
                                Login

```

```

list-1 AAA Login
VTY 0 - 4
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
username	
login authentication	Login

-	-
---	---

32.2

32.2.1 aaa authorization commands

	NAS	CLI	AAA	aaa authorization
commands		no	AAA	
aaa authorization commands	<i>level</i>	{ default <i>list-name</i> }	<i>method1</i>	[<i>method2...</i>]

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

<i>level</i>	0~15
default	Q

32.2.2 aaa authorization config-commands

AAA

aaa authorization config-commands

no

AAA

aaa authorization config-commands

no aaa authorization config-commands



	-	-

|

|

|

RGOS

|

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

--	--	--	--

aaa new-model

AAA

AAA

default	Network
<i>method</i>	none group 4
none	
group	TACACS+ RADIUS

AAA Network

RGOS

PPP SLIP

RADIUS TACACS+

G

! RADIUS B \$ U
 Ruijie(config)# aaa authorization network default group radius

ö

aaa new-model	AAA
aaa accounting	AAA
aaa authentication	AAA

authorization

commands no

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

no authorization commands *level*

<i>level</i>	0~15
default	
<i>list-name</i>	

AAA

cmd 15 TACACS+
none VTY 0-4

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

aaa new-model	AAA
aaa authorization commands	AAA

-	-
---	---

32.2.7 authorization exec

Exec

authorization exec

no

Exec

authorization exec {**default** | *list-name*}**no authorization exec**

default	Exec
<i>list-name</i>	Exec

AAA Exec

Exec

Exec

Exec

Exec

exec-1 Exec

RADIUS

none

VTY 0 – 4

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
aaa authorization commands	AAA Exec

-	-

32.3

32.3.1 aaa accounting commands

NAS

aaa accounting commands no

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

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

<i>level</i>	0~15
default	
<i>list-name</i>	
<i>method</i>	none group 4
none	
group	TACACS+

RGOS


```
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

no aaa accounting update

-	-

AAA

AAA

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

```
Ruijie(config)#
```

--	--

	aaa new-model	AAA
	aaa accounting network	



-	-

32.3.6 accounting commands

accounting commands

no

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

no accounting commands *level*

<i>level</i>	0~15
default	
<i>list-name</i>	

└──

└──

└──

cmd

15

TACACS+

none

VTY 0-4

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

└──

-	-

32.3.7 accounting exec

Exec

no

Exec

accounting exec

accounting exec {default | *list-name*}

no accounting exec

default	Exec
<i>list-name</i>	Exec

└──

└──

└──

Exec
Exec

Exec

Exec

exec-1 Exec
none

RADIUS
VTY 0 – 4

Ruijie(config)# **aaa accounting exec exec-1 group radius none**

Ruijie(config)# **line vty 0 4**

Ruijie(config-line)# **accounting exec exec-1**

aaa new-model	AAA
aaa accounting commands	AAA Exec

└──

└──

--	--

	-	-
--	---	---

32.4 的 AAA

32.4.1 aaa domain

no

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

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

	default	
	<i>domain-name</i>	

┌

┌

┌

AAA default
 domain-name

32

┌

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

--	--

32.4.2 aaa domain enable

AAA
AAA no

aaa domain enable

no aaa domain enable

	-	-

--	--

AAA

--	--

--	--

AAA

--	--

AAA

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

aaa new-model		AAA
show aaa domain		

--	--

	-	-

32.4.3 access-limit

IEEE802.1x

no

access-limit *num*

no access-limit

	<i>num</i>	IEEE802.1x

default

Network

Network

Ruijie(config)# **aaa domain ruijie.com**

Ruijie(config-aaa-domain)# **accounting network default**

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

-	-

32.4.5 authentication dot1x

IEEE802.1x

no

authentication dot1x {default | list-name}

no authentication dot1x

default	
<i>list-name</i>	

default



IEEE802.1x

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



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

-	-

32.4.8 show aaa domain

show aaa domain [default

AAA

aaa new-model	AAA
aaa domain enable	AAA

	AAA
-	-

32.4.9 username-format

NAS

no

-	-

32.5 AAA

32.5.1 aaa group server

AAA no

aaa group server {radius | tacacs+} name

no aaa group server {radius | tacacs+} name

<i>name</i>	tacacs+	RADIUS	radius TACACS+

└──

└──

└──

AAA RADIUS TACACS+

└──

```
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

└──

	-	-

32.5.2 ip vrf forwarding

AAA vrf no

ip vrf forwarding *vrf_name*

no ip vrf forwarding

	<i>vrf_name</i>	vrf

└──

└──

└──

vrf

└──

```
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
```

	aaa group server	aaa
	show aaa group	aaa

└──

└──

	-	-

32.5.3 server

AAA no

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

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

<i>ip-addr</i>	ip
<i>port1</i>	RADIUS
<i>port2</i>	RADIUS

```
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
```

aaa group server	aaa
show aaa group	aaa

AAA

	-	-
--	---	---

32.5.4 show aaa group

AAA

show aaa group



32.6.1 aaa local authentication attempts

login

aaa local authentication attempts *max-attempts*

<i>max-attempts</i>	1~2147483647

3

Login

Ruijie# **configure terminal**

Ruijie(config)# **aaa local authentication attempts 6**

Show running-config	
Show aaa lockout	login

-	-
---	---

32.6.2 aaa local authentication lockout-time

login

aaa local authentication lockout-time *lockout-time*

<i>lockout-time</i>	1~2147483647

15

|

| login

|

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

|

Show running-config	
Show aaa lockout	login

|

|

-	-

32.6.3 aaa new-model

RGOS AAA **aaa new-model** AAA
 no AAA

aaa new-model

no aaa new-model

|

-	-

| AAA

|

|

AAA AAA **aaa new-model**
 AAA AAA AAA

|

AAA
 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

no

g aaa event

debug aaa event

-	-

EXEC

--	--

10514. rē f25 R102V8.5!-102

AAA

AAA

```
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 authorizing network default group radius
```

|

|

Ruijie# **show aaa user lockout all**

|

show running-config	
show aaa lockout	login

|

|

-	-

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**

<i>id</i>	id <1-255>
<i>type</i>	type

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 privilege	22

23	login privilege	42
id		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 privilege	22
23	login privilege	42
24	limit to user number	50

max up-rate

	radius set qos cos	radius	qos	cos
	-	-		

33.1.3 radius-server attribute 31

RADIUS Calling-Station-ID

┌

┌

10.3(5)	

33.1.4 radius-server deadtime

t t
 deadtime RGOS RADIUS
radius-server deadtime no
radius-server deadtime *minutes*
no radius-server deadtime

┌

<i>minutes</i>	1-1000

┌

5

┌

┌

┌

10

Ruijie(config)# **radius-server deadtime 10**

┌

radius-server host	RADIUS
radius-server retransmit	RADIUS
radius-server key	RADIUS
radius-server timeout	RADIUS

┌

┌

-	-

RADIUS

RADIUS

RADIUS

seconds

1-1000

5

10

Ruijie(config)# **radius-server timeout 10**

US

US

US

- 2!v6j(QT76>dh46)1q

```
Ruijie(config)# radius set qos cos
```

radius vendor-specific extend	Radius id

-	-

33.1.10 radius vendor-specific extend

id

radius vendor-specific extend

no radius vendor-specific extend

-	-

id

id

```
Ruijie(config)#
```

RADIUS

	-	-

33.2 RADIUS

33.2.1 debug radius

RADIUS

no

RADIUS

debug radius [event | detail]

no debug radius [event | detail]

	-	-

--

--

EXEC

--

--

	-	-

--

	-	-

33.2.2 show radius parameter

RADIUS

show radius parameter

--	--	--

RADIUS

-	-
---	---

┌

┌

┌

radius

┌
┌
┌

```
Ruijie# show radius parameter
Server Timeout: 5 Seconds
Server Deadtime: 5 Minutes
Server Retries: 3
Server Key: *****
```

radius-server host	RADIUS
radius-server retransmit	RADIUS
radius-server key	RADIUS
radius-server timeout	RADIUS

┌

┌

-	-

33.2.3 show radius server

RADIUS

show radius server

┌

-	-

┌

┌

radius

```
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
radius-server retransmit	RADIUS
radius-server key	RADIUS
radius-server timeout	RADIUS

-	-

33.2.4 show radius vendor-specific

RADIUS

show radius vendor-specific

-	-

radius

```

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	RADIUS
radius-server retransmit	RADIUS
radius-server key	RADIUS
radius-server timeout	RADIUS

RADIUS

	-	-
--	---	---

34 TACACS+

34.1 TACACS+

34.1.1 aaa group server tacacs+

TACACS+

TACACS+

```
aaa group server tacacs+ group-name
```

```
no aaa group server tacacs+ group-name
```

	<i>group-name</i>	TACACS+

```
TACACS+
```

```
TACACS+
```

```

tac1 TACACS+ 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

TACACS+

ip tacacs source-interface *interface*

no ip tacacs source-interface



<i>vrf-name</i>	vrf
-----------------	-----

TACACS+

TACACS+ vrf

```

TACACS+ VRF vpn1
Ruijie(config)# aaa group server tacacs+ tac1
Ruijie(config-gs-radius)# server 1.1.1.1
Ruijie(config-gs-radius)# ip vrf forwarding vpn1
    
```

aaa group server tacacs+	TACACS+
server	TACACS+ server

--	--

```
TACACS+          aaa group server tacacs+  TACACS+
host                                tacacs-server
```

```
TACACS+
```

```
TACACS+
```

```
tac1  TACACS+                                1.1.1.1
```

```
Ruijie(config)# aaa group server tacacs+ tac1
```

```
Ruijie(config-gs-tacacs+)# server 1.1.1.1
```

```
53209.22 -20.64174.421.6 573.02 055jE56.58 572.5
```

┌

┌

TACACS+ AAA TACACS+
tacacs-server TACACS+

┌

TACACS+
 Ruijie(config)# **tacacs-server host** 192.168.12.1
 Ruijie(config)# **tacacs-server host** 2001::1

┌

aaa authentication	AAA
tacacs-server key	TACACS+
tacacs-server timeout	TACACS+

┌

┌

-	-

34.1.6 tacacs-server key

TACACS+
tacacs-server key [0 | 7] *string*
no tacacs-server key

┌

<i>string</i>	

	key	host	key
	TACACS+	aaa	
	Ruijie(config)# tacacs-server key aaa		
	tacacs-server host	TACACS+	
	tacacs-server timeout	TACACS+	
	-	-	

34.1.7 tacacs-server timeout

	TACACS+		
	tacacs-server timeout <i>seconds</i>		
	no tacacs-server timeout		
	<i>seconds</i>	1-1000	
	5		
	timeout	host	timeout
	10		
	Ruijie(config)# tacacs-server timeout 10		

	tacacs-server host	TACACS+
	tacacs-server key	TACACS+
	-	-

34.2 TACACS+

34.2.1 debug tacacs+

TACACS+ no TACACS+

debug tacacs+

no debug tacacs+

--	--

34.2.2 show tacacs

TACACS+

show tacacs

	-	-

|

|

|

TACACS+

```
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
```

|

tacacs-server host	TACACS+

|

|

-	-

35 SSH

35.1 SSH

35.1.1 crypto key generate

crypto key generate {rsa | dsa}

rsa	RSA
dsa	DSA

SSH Server

SSH Server

SSH

enable service ssh-server

SSH Server

SSH 1

RSA

SSH

2 RSA DSA

RSA

SSH1

SSH2

DSA

SSH2

no crypto key generate

r

crypto key zeroize

Ruijie# **configure terminal**

Ruijie(config)# **crypto key generate rsa**

┌

SSH Server

120s show ip ssh SSH server

┌

100s

Ruijie# **configure terminal**
 Ruijie(config)# **ip ssh time-out 100**

┌

show ip ssh	ssh-server

┌

RGOS10.1

┌

-	-

35.1.5 ip ssh version

SSH server no

ip ssh version {1 / 2}

no ip ssh version

┌

1	SSH Server SSH1
2	SSH Server SSH2

┌

SSH 1 2 SSH

no ip ssh version

2

```
Ruijie# configure terminal  
Ruijie(config)# ip ssh version 2
```

show ip ssh	SSH Server

RGOS10.1

	Clear line vty <i>line_number</i>	VTY
	RGOS10.1	
	-	-

35.2.2 show crypto key mypubkey

SSH Server

show crypto key mypubkey {rsa/dsa}

	rsa	RSA
	dsa	DSA

SSH Server

Ruijie# **show crypto key mypubkey rsa**

	crypto key generate {rsa dsa}	DSA RSA
	RGOS10.1	
	-	-

35.2.3 show ip ssh

SSH Server

show ip ssh

	-	-

└───┘

└───┘

SSH Server	SSH Server
SSH	
r	SSH

└───┘

Ruijie# **show ip ssh**

ip ssh version {1 2}	SSH Server
ip ssh time-out time	SSH Server
ip ssh authentication-retries retry times	SSH Server

└───┘

RGOS10.1

-	-

35.2.4 show ssh

SSH

show ssh

-	-

└───┘

36 CPU

36.1

36.1.1 `cpu-protect type packet-type pps pps_value`

CPU

`cpu-protect type { arp | bpdu | dhcp | ipv6mc | igmp | rip | ospf | vrrp | pim | ttl1 |
unknown-ipmc | dvmrp | ... } pps pps_value`

CPU

CPU

S9610 CPU

```
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 <i>slot-num</i>	CPU
--	-----

.02

37 DoS

37.1

37.1.1 ip deny invalid-l4port

no

no ip deny invalid-tcp



```

1          Land
Ruijie(config)# ip deny land
2          Land
Ruijie(config)# no ip deny land

```

show ip deny land	Land

-	-

37.2

37.2.1 show ip deny invalid-l4port

show ip deny invalid-l4port

-	-

```

Ruijie# show ip deny invalid-l4port
DoS Protection Mode          State
-----
protect against invalid l4port attack Off

```

-	-

	-	-

37.2.2 show ip deny invalid-tcp

TCP

show ip deny invalid-tcp

-	-
---	---

|

|

|

```
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

security address-bind enable

no security address-bind enable

	-	-

┌

┌

AP AP

┌

GSN

┌

Ruijie(config-if)# security address-bind enable

┌

	security gsn enable	GSN

┌

RGOS10.1

┌

	-	-

38.1.2 security community

smp

security { [v1 | v2] **community** *community* | v3 **user** *username* }

no security { [v1 | v2] **community** *community* | v3 **user** *username* }

<i>community</i>	<i>community</i>
<i>username</i>	v3

┌

┌

┌

SNMP v3 **snmp-server** v3

| 5

|

|

show security event interval

|

Ruijie(config)# **security event interval 10**

|

show security event interval	

|

RGOS10.1

|

-	-

38.1.4 security gsn enable

GSN

	-	-
	RGOS10.1	
	-	-

38.1.5 smp-server host

smp-server ip

smp-server host *ip-address*

no smp-server host

	<i>ip-address</i>	smp server ip

smp server

show smp-server

Ruijie(config)#**smp-server host** 192.168.4.243

	show smp-server	smp server

RGOS10.1

	-	-

38.2

38.2.1 show security evnet interval

-	-

┌

┌

┌

```
Ruijie# show security event interval
Event sending interval(Seconds):5
```

security event interval <i>interval</i>	

RGOS10.1

-	-

38.2.2 show smp-server

smp server IP

-	-

┌

┌

smp server IP

```
Ruijie# show smp-server
```

SMP-Server IP 192.168.20.30

smp-server host	smp server ip

RGOS10.1

-	-

39 DAI

39.1 VLAN 的 DAI 查

39.1.1 ip arp inspection vlan

```

vlan-id          vlan-id          VLAN  DAI          no          VLAN
vlan-id          VLAN  DAI          vlan-id          VLAN
DAI

```

```
ip arp inspection vlan vlan-id
```

```
no ip arp inspection vlan [vlan-id]
```

<i>vlan-id</i>		vlan

```
VLAN  DAI
```

```
DAI
```

```

VLAN 1          ARP
Ruijie(config)# ip arp inspection
Ruijie(config)# ip arp inspection vlan 1

```

show ip arp inspection vlan	VLAN DAI

-	-

39.2

39.2.1 ip arp inspection trust

ip arp inspection trust no

ip arp inspection trust

no ip arp inspection trust

-	-

┌

┌

ARP	DAI
NFPP()	NFPP
DAI	show ip arp inspection interface

┌
Ruijie(config)# **interface gigabitEthernet 0/19**
Ruijie(config-if)# **ip arp inspection trust**

show ip arp inspection interface	DAI

┌

-	-

39.3 DHCP Snooping

40 arp

40.1 arp

40.1.1 anti-arp-spoofing ip

arp no

anti-arp-spoofing ip *ip-address*

no anti-arp-spoofing ip *ip-address*

<i>ip-address</i>	IP

show anti-arp-spoofing

```
Ruijie(config)#interface fastEthernet 0/1
Ruijie(config-if)#anti-arp-spoofing ip 192.168.1.1
```

show anti-arp-spoofing	arp

-	-

40.2 arp

40.2.1 show anti-arp-spoofing

arp

show anti-arp-spoofing

|

|

|

```
Ruijie#show anti-arp-spoofing
      port      ip
      -----
      Fa0/1     192.168.1.1
```

anti-arp-spoofing ip	arp

|

-	-

41 IP Source Guard

41.1 IP Source Guard

41.1.1 ip source binding

IP no

[no] ip source binding *mac-address* **vlan** *vlan-id* *ip-address* **interface** *interface-id*

<i>mac-address</i>	MAC
<i>vlan-id</i>	vlan id
<i>ip-address</i>	IP
<i>interface-id</i>	

|

|

|

IP Source Guard

DHCP

|

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
```

--	--

show ip source binding		IP
	-	-

41.2 IP Source Guard

41.2.1 ip verify source

```

IP Source Guard      no
[no] ip verify source [port-security]

```

port-security	IP Source Guard	IP+MAC

```

IP Source Guard      IP
IP+MAC
IP Source Guard      DHCP Snooping      Trust
DHCP Snooping      IP Source Guard      IP Source Guard

```

```

1 IP Source Guard
Ruijie# configure terminal
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ip verify source
Ruijie(config-if)# end

```

-	-

41.3 IP Source Guard

41.3.1 show ip source binding

IP

show ip source binding [*ip-address*] [*mac-address*] [**dhcp-snooping**] [**static**] [**vlan** *vlan-id*] [**interface** *interface-id*]

<i>ip-address</i>	ip
<i>mac-address</i>	mac
dhcp-snooping	
static	
<i>vlan-id</i>	vlan
<i>interface-id</i>	

└───

└───

└───

```
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
```

ip source binding	IP

|

|

-	-

|

|

-	-

cpu-protect sub-interface {*manage|protocol|route*} **percent** *percent_vaule*

<i>percent_vaule</i>	1 100

	<i>pps</i>	[1,9999]
--	------------	----------

	IP 200	MAC	8
--	-----------	-----	---

NFPP

```
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
```

	nfpp arp-guard policy	
	show nfpp arp-guard summary	
	show nfpp arp-guard hosts	

┌

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# arp-guard enable
```

┌

nfpp arp-guard enable	ARP
show nfpp arp-guard summary	

┌

┌

-	-

42.3.3 arp-guard isolate-period

arp-guard isolate-period {seconds | permanent}

┌

seconds	0 [30, 86400]
permanent	

┌

0

┌

NFPP

┌

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# arp-guard isolate-period 180
```

┌

nfpp arp-guard isolate-period	
show nfpp arp-guard summary	

└───

└───

-	-

42.3.4 arp-guard monitor-period

arp-guard monitor-period *seconds*

└───

<i>seconds</i>	[180, 86400]

42.3.5 arp-guard monitored-host-limit

arp-guard monitored-host-limit *number*

<i>number</i>		1
	4294967295	

1000

NFPP

1000

1000 %ERROR The value that you configured is smaller than current monitored hosts 1000 please clear a part of monitored hosts.

% NFPP_ARP_GUARD-4-SESSION_LIMIT: Attempt to exceed limit of 1000 monitored hosts.

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# arp-guard monitored-host-limit 200
```

show nfpp arp-guard summary	

-	-

42.3.6 arp-guard rate-limit

arp-guard rate-limit {per-src-ip | per-src-mac | per-port} *pps*

--	--

per-src-ip	IP
per-src-mac	MAC
per-port	
<i>pps</i>	[1,9999]

IP	MAC	4
100		

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
```

nfpp arp-guard policy	
show nfpp arp-guard summary	

-	-
---	---

42.3.7 arp-guard scan-threshold

arp-guard scan-threshold *pkt-cnt*

<i>pkt-cnt</i>	[1,9999]
----------------	----------

15	10
----	----

NFPP

10	15	ARP	MAC	IP
	MAC	IP	IP	

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# arp-guard scan-threshold 20
```

nfpp arp-guard scan-threshold	
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

clear nfpp arp-guard hosts [vlan *vid*] [interface *interface-id*] [*ip-address* | *mac-address*]

<i>vid</i>	

VLAN 1 g 0/1

Ruijie# **clear nfpp arp-guard hosts vlan 1 interface g0/1**



	-	-

42.3.10 nfpp arp-guard enable

<i>seconds</i>	0	[30, 86400]
permanent		

└───┘

└───┘

└───┘

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp arp-guard isolate-period 180
```

arp-guard isolate-period	
show nfpp arp-guard summary	

└───┘

10.4	

42.3.12 nfpp arp-guard policy

```
nfpp arp-guard policy {per-src-ip | per-src-mac | per-port} rate-limit-pps
attack-threshold-pps
```

per-src-ip	IP
per-src-mac	MAC
per-port	
<i>rate-limit-pps</i>	1 9999
<i>attack-threshold-pps</i>	1 9999

└───┘

```
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	
---------------------------	--

clear nfpp arp-guard hosts	
----------------------------	--

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp arp-guard scan-threshold 20
```

arp-guard scan-threshold	
show nfpp arp-guard summary	
show nfpp arp-guard scan	ARP
clear nfpp arp-guard scan	ARP

10.4	

42.4 DHCP

42.4.1 dhcp-guard attack-threshold

dhcp-guard attack-threshold { per-src-mac | per-port} pps

per-src-mac	MAC
per-port	
<i>pps</i>	[1,9999]

MAC 10 300

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
```

	nfpp dhcp-guard policy	
	show nfpp dhcp-guard summary	
	show nfpp dhcp-guard hosts	
	clear nfpp dhcp-guard hosts	

┌

	-	-

42.4.2 dhcp-guard enable

DHCP

dhcp-guard enable

	-	-

┌

DHCP

┌

NFPP

┌

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcp-guard enable
```

	nfpp dhcp-guard enable	DHCP
	show nfpp dhcp-guard summary	

┌

--	--	--

	-	-
--	---	---

42.4.3 dhcp-guard isolate-period

dhcp-guard isolate-period {*seconds* | **permanent**}



NFPP

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcp-guard rate-limit per-src-mac 8
Ruijie(config-nfpp)# dhcp-guard rate-limit per-port 100
```

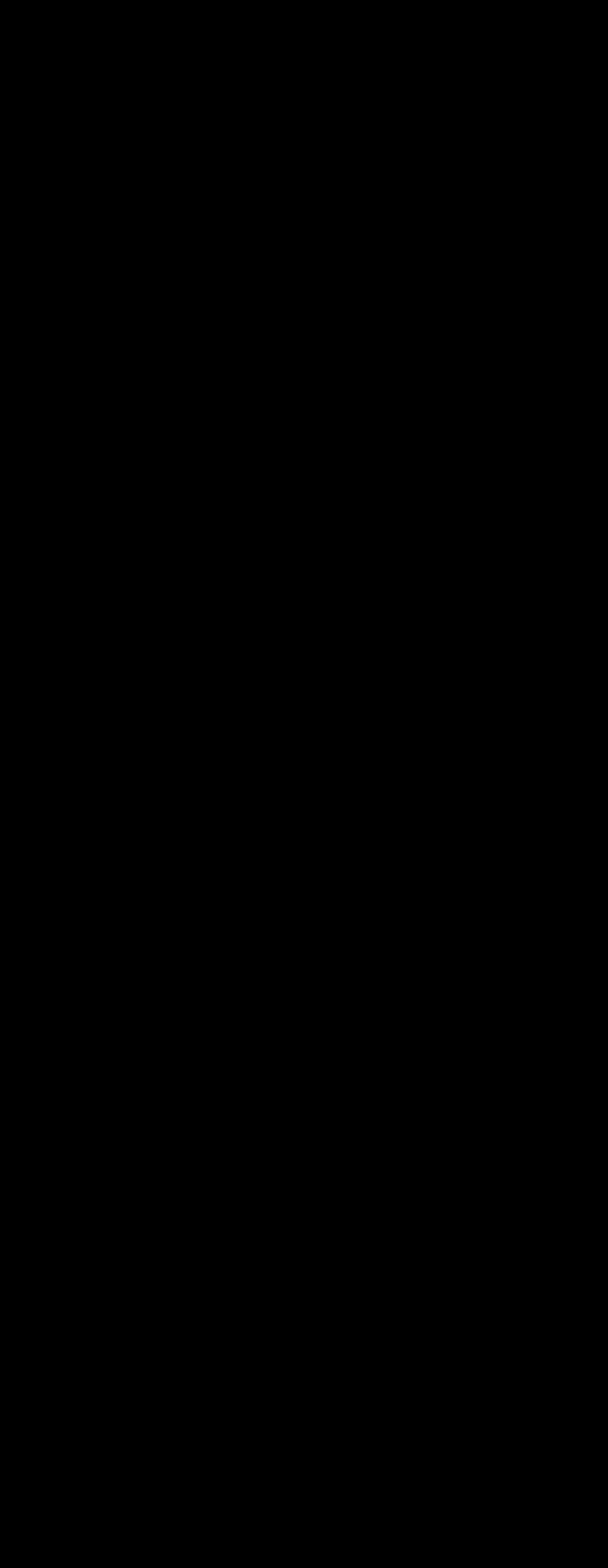
nfpp dhcp-guard policy	
show nfpp dhcp-guard summary	

-	-

42.4.7 clear nfpp dhcp-guard hosts

clear nfpp dhcp-guard hosts [*vlan vid*] [**interface** *interface-id*] [*mac-address*]

<i>vid</i>	
<i>interface-id</i>	
<i>mac-address</i>	MAC - D2Df 0.48 ref341.6 3156(- D2Df 00.1 ref246.84 515.7



	-

	-

DHCP

G0/1

dhcp-guard enable

	DHCP

nfpp dhcp-guard isolate-period {seconds | permanent}

<i>seconds</i>	0	[30, 86400]	
permanent			

└───┘

└───┘

└───┘

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp dhcp-guard isolate-period 180
```

dhcp-guard isolate-period	
show nfpp dhcp-guard summary	

└───┘

10.4	

42.4.10 nfpp dhcp-guard policy

nfpp dhcp-guard policy { per-src-mac | per-port} rate-limit-pps attack-threshold-pps

per-src-mac	MAC		
per-port			
<i>rate-limit-pps</i>	1	9999	
<i>attack-threshold-pps</i>	1	9999	

└───┘

|

|

|

```
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
```

|

dhcp-guard attack-threshold	
dhcp-guard rate-limit	
show nfpp dhcp-guard summary	
show nfpp dhcp-guard hosts	
clear nfpp dhcp-guard hosts	

|

|

10.4	

42.5 DHCPv6

42.5.1 dhcpv6-guard attack-threshold

dhcpv6-guard attack-threshold { per-src-mac | per-port} pps

|

per-src-mac	MAC
per-port	
<i>pps</i>	[1,9999]

|

MAC 10 300

|

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

nfpp dhcpv6-guard enable	DHCPv6
show nfpp dhcpv6-guard summary	
10.4	

42.5.3 dhcpv6-guard isolate-period

dhcpv6-guard isolate-period {seconds | permanent}

seconds	0 [30, 86400]
permanent	

0

NFPP

Ruijie(config)# **nfpp**

Ruijie(config-nfpp)# **dhcpv6-guard isolate timeout 180**

nfpp dhcpv6-guard isolate-period	
show nfpp dhcpv6-guard summary	

dhcpv6-guard monitored-host-limit *number*

<i>number</i>	1
	4294967295

1000

NFPP

1000

1000 %ERROR The value that you configured is smaller than current monitored hosts 1000 please clear a part of monitored hosts.

% NFPP_DHCP_GUARD-4-SESSION_LIMIT: Attempt to exceed limit of 1000 monitored hosts.

```
MAC 5 150
```

```
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
```

nfpp dhcpv6-guard policy	
show nfpp dhcpv6-guard summary	

10.4	

42.5.7 clear nfpp dhcpv6-guard hosts

clear nfpp dhcpv6-guard hosts [*vlan vid*] [**interface** *interface-id*] [*mac-address*]

<i>vid</i>	
<i>interface-id</i>	
<i>mac-address</i>	MAC

```
VLAN 1      g 0/1
Ruijie# clear nfpp dhcpv6-guard hosts vlan 1 interface g0/1
```

dhcpv6-guard attack-threshold	
nfpp dhcpv6-guard policy	
show nfpp dhcpv6-guard hosts	

10.4	

42.5.8 nfpp dhcpv6-guard enable

DHCPv6

nfpp dhcpv6-guard enable

-	-

DHCPv6

DHCPv6

DHCP

```
Ruijie(config)# interface G0/1
Ruijie(config-if)# nfpp dhcpv6-guard enable
```

dhcpv6-guard enable	DHCPv6
show nfpp dhcpv6-guard summary	

10.4	

42.5.9 nfpp dhcpv6-guard isolate-period

nfpp dhcpv6-guard isolate-period {*seconds* | **permanent**}

<i>seconds</i>	0 [30, 86400]
permanent	

|

|

|

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp dhcpv6-guard isolate-period 180
```

dhcpv6-guard isolate-period	

per-src-mac	MAC
per-port	
<i>rate-limit-pps</i>	1 9999
<i>attack-threshold-pps</i>	1 9999

└───┘

└───┘

└───┘

```
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
```

dhcpv6-guard attack-threshold	
dhcpv6-guard rate-limit	
show nfpp dhcpv6-guard summary	
show nfpp dhcpv6-guard hosts	
clear nfpp dhcpv6-guard hosts	



per-src-ip

IP

NFPP

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# icmp-guard enable
```

nfpp icmp-guard enable	ICMP
show nfpp icmp-guard summary	

-	-

42.6.3 icmp-guard isolate-period

icmp-guard isolate-period {seconds | permanent}

seconds	0 [30, 86400]
permanent	

0

NFPP

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# icmp-guard isolate-period 180
```


NFPP

42.6.6 icmp-guard rate-limit

icmp-guard rate-limit { per-src-ip | per-port} pps

per-src-ip	IP
per-port	
<i>pps</i>	[1,9999]

IP	900	1000
----	-----	------

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
```

nfpp icmp-guard policy	
show nfpp icmp-guard summary	

-	-

42.6.7 icmp-guard trusted-host

icmp-guard trusted-host ip!

NFPP

|

|

|

```
VLAN 1    g 0/1
Ruijie# clear nfpp icmp-guard hosts vlan 1 interface g 0/1
```

|

icmp-guard attack-threshold	
nfpp icmp-guard policy	
show nfpp icmp-guard hosts	

|

|

-	-

42.6.9 nfpp icmp-guard enable

ICMP

nfpp icmp-guard enable

|

-	-

|

ICMP

|

|

ICMP

ICMP

|

```
Ruijie(config)# interface G0/1
Ruijie(config-if)# nfpp icmp-guard enable
```

|

icmp-guard enable	ICMP

show nfpp icmp-guard summary	
10.4	

42.6.10 nfpp icmp-guard isolate-period

nfpp icmp-guard isolate-period {seconds | permanent}

<i>seconds</i>	0 [30, 86400]
permanent	

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp icmp-guard isolate-period 180
```

icmp-guard isolate-period	
show nfpp icmp-guard summary	

10.4	

42.6.11 nfpp icmp-guard policy

nfpp icmp-guard policy { per-src-ip | per-port} rate-limit-pps attack-threshold-pps

per-src-ip	IP
per-port	
<i>rate-limit-pps</i>	1 9999
<i>attack-threshold-pps</i>	1 9999

```
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
```

icmp-guard attack-threshold	
icmp-guard rate-limit	
show nfpp icmp-guard summary	
show nfpp icmp-guard hosts	
clear nfpp icmp-guard hosts	

10.4	

42.7 ND

42.7.1 nd-guard attack-threshold

nd-guard attack-threshold per-port {ns-na | rs | ra-redirect} pps

	ns-na		
	rs		
	ra-redirect		
	<i>pps</i>		[1,9999]

30 / 30 / 30

NFPP

reshold per-port ns-na 20
 reshold per-port rs 10
 hreshold per-port ra-redir

nfpp nd-guard policy



└───┘

ND

└───┘

NFPP

└───┘

└───┘

Ruijie(config)# **nfpp**
 Ruijie(config-nfpp)# **nd-guard enable**

└───┘

nffp nd-guard enable	ND
show nfpp nd-guard summary	

└───┘

└───┘

10.4	

42.7.3 nd-guard rate-limit

nd-guard rate-limit per-port {ns-na | rs | ra-redirect} pps

└───┘

ns-na	
rs	
ra-redirect	
<i>pps</i>	[1,9999]

└───┘

15 / 15

└───┘

NFPP

└───┘

```
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
```

nfpp nd-guard policy	
show nfpp nd-guard summary	

10.4	

42.7.4 nfpp nd-guard enable

ND

nfpp nd-guard enable

-	-

ND

ND

```
Ruijie(config)# interface G0/1
Ruijie(config-if)# nfpp nd-guard enable
```

nd-guard enable	ND
show nfpp nd-guard summary	

10.4	

42.7.5 nfpp nd-guard policy

**nfpp nd-guard policy per-port {ns-na | rs | ra-redirect} rate-limit-pps attack-thresh
old-pps**

ns-na	
rs	

nd-guard attack-threshold	
nd-guard rate-limit	
show nfpp nd-guard summary	

10.4	

42.8 NFPP

42.8.1 clear nfpp log

NFPP

clear nfpp log

-	-

S*0

42.8.2 log-buffer entries

NFPP

log-buffer entries *number*

<i>number</i>	[0,1024]

256

NFPP

NFPP 50

Ruijie(config)# **nfpp**

Ruijie(config-nfpp)# **log-buffer entries 50**

log-buffer logs <i>number_of_message interval length_in_seconds</i>	NFPP
show nfpp log	NFPP

10.4

42.8.3 log-buffer logs

NFPP

log-buffer logs *number_of_message interval length_in_seconds*

<i>number_of_message</i>	0-1024 0

|

| NFPP

|

VLAN

|

```

VLAN 1 VLAN 2 VLAN 3 VLAN 5
Ruijie(config)# nfpp
Ruijie(config-nfpp)# logging vlan 1-3,5

G 0/1
Ruijie(config)# nfpp
Ruijie(config-nfpp)# logging interface G 0/1
    
```

|

show nfpp log summary	NFPP

|

|

10.4	

42.8.5 show nfpp log

NFPP

show nfpp log summary

NFPP

show nfpp log buffer [statistics]

|

statistics	NFPP

|

|

”_”

%NFPP_ARP_GUARD-4-DOS_DETECTED: Host<IP=N/A,MAC=0000.0000.0004,port=Gi4/1,VLAN=1> was detected.(2009-07-01 13:00:00)

NFPP

Ruijie#**show nfpp log summary**

Total log buffer size : 10

Syslog rate : 1 entry per 2 seconds

Logging:

VLAN 1-3, 5

interface Gi 0/1

interface Gi 0/2

NFPP

Ruijie#**show nfpp log buffer statistics**

There are 6 logs in buffer.

NFPP

Ruijie#**show nfpp log buffer**

Protocol	VLAN	Interface	IP address	MAC address	Reason
Timestamp					

ARP	1	Gi0/1	1.1.1.1	-	DoS
2009-05-30 16:23:10					
ARP	1	Gi0/1	1.1.1.1	-	ISOLATED
2009-05-30 16:23:10					
ARP	1	Gi0/1	1.1.1.2	-	DoS
2009-05-30 16:23:15					
ARP	1	Gi0/1	1.1.1.2	-	ISOLATE_FAILED
2009-05-30 16:23:15					
ARP	1	Gi0/1	-	0000.0000.0001	SCAN
2009-05-30 16:30:10					
ARP	-	Gi0/2	-	-	PORT_ATTACKED
2009-05-30 16:30:10					

Protocol

ARP ARP
IP IP
ICMP ICMP
DHCP DHCP
DHCPv6 DHCPv6
NS-NA ND
RS ND
RA-REDIRECT ND

Reason 5

DoS
ISOLATED
ISOLATE_FAILED
SCAN
PORT_ATTACKED



<i>interface-id</i>	
<i>ip-address</i>	IP

ARP

show nfpp arp-guard scan [**statistics** | [[**vlan vid**] [**interface interface-id**] [**ip-address**]
s] [**mac-address**]]

statistics	ARP
<i>vid</i>	
<i>interface-id</i>	
<i>ip-address</i>	IP
<i>mac-address</i>	MAC

Ruijie# **show nfpp arp-guard scan statistics**

ARP scan table has 4 record(s).

ARP 4

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)

timestamp	ARP	2008-01-23 16:23:10
2008 1 23 16 23 10	ARP	

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)				

arp-guard scan-threshold	
nfpp arp-guard scan-threshold	
clear nfpp arp-guard scan	ARP

└───┘

-	-

42.9.3 show nfpp arp-guard summary

show nfpp arp-guard summary

-	-

└───┘

└───┘

└───┘

Ruijie# show nfpp arp-guard summary403 组()号/C23 1 760006 组()号-47D1D17022

```
Maximum count of monitored hosts: 1000
Monitor period 300s
```

```
1      Interface  Global
2      Status
3      Rate-limit          IP          /      MAC
      /                    Attack-threshold          -
```

arp-guard attack-threshold	
arp-guard enable	ARP
arp-guard isolate-period	
arp-guard monitor-period	
arp-guard monitored-host-limit	
arp-guard rate-limit	
arp-guard scan-threshold	
nfpp arp-guard enable	ARP
nfpp arp-guard isolate-period	
nfpp arp-guard policy	
nfpp arp-guard scan-threshold	

-	-
---	---

42.10 DHCP

42.10.1 show nfpp dhcp-guard hosts

```
show nfpp dhcp-guard hosts [statistics | [[vlan vid] [interface interface-id] [mac-a
ddress]]]
```

statistics	
<i>vid</i>	
<i>interface-id</i>	
<i>mac-address</i>	MAC

Ruijie# **show nfpp dhcp-guard hosts statistics**

```

success    fail    total
-----    ---    -----
100         20      120
           120         100         20
    
```

remain-time(seconds)

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  2 host(s)
    
```

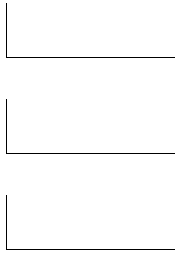
clear nfpp dhcp-guard hosts	

--	--

42.10.2 show nfpp dhcp-guard summary

show nfpp dhcp-guard summary

-	-



Ruijie# **show nfpp dhcp-guard summary**

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

1	Interface	Global		
2	Status			
3	Rate-limit		IP	/ MAC
/			Attack-threshold	-

dhcp-guard rate-limit	
nfpp dhcp-guard enable	DHCP
nfpp dhcp-guard isolate-period	
nfpp dhcp-guard policy	

10.4	

42.11 DHCPv6



```

                                remain-time(seconds)
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)
    
```



clear nfpp dhcpv6-guard hosts	



10.4	

42.11.2 show nfpp dhcpv6-guard summary



show nfpp dhcpv6-guard summary

-	-



```

Ruijie# show nfpp dhcpv6-guard summary

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

```

1      Interface  Global
2      Status
3      Rate-limit      IP          /      MAC
      /                Attack-threshold      -
    
```

dhcpv6-guard attack-threshold	
dhcpv6-guard enable	DHCPv6
dhcpv6-guard isolate-period	
dhcpv6-guard monitor-period	<A>015B,103d4

statistics	
<i>vid</i>	
<i>interface-id</i>	
<i>ip-address</i>	IP

Ruijie#**show nfpp icmp-guard hosts statistics**

```

success   fail   total
-----   ---   -----
100         20     120
                120           100           20
    
```

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)
    
```

clear nfpp icmp-guard hosts	

10.4	

42.12.2 show nfpp icmp-guard summary

show nfpp icmp-guard summary

	-	-

|

|

|

nfpp icmp-guard isolate-period	
nfpp icmp-guard policy	

└───┘

10.4	

42.12.3 show nfpp icmp-guard trusted-host

show nfpp icmp-guard trusted-host

-	-

└───┘

└───┘

└───┘

```
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)
```

icmp-guard trusted-host	

└───┘

--	--

NFPP

NFPP

ndfpp nd6(agu)y	G!5B ÂD_6" 4" İ 66"
nd-guard attack-threshold	
nd-guard enable	ND
nd-guard ra	

43 ACL

id	IP ACL 1-99 1300-1999 IP ACL 100-199 2000-2699 MAC ACL 700-799 ACL 2700-2899
name	ACL
sn	ACL ()
start-sn	
inc-sn	
deny	
permit	
prot	IPv6 ipv6 icmp tcp udp 0-255 IPv4 eigrp gre ipinip igmp nos ospf icmp udp tcp ip IP 0-255 icmp/tcp/udp
interface idx	
src	
src-wildcard	0.255.0.32
src-ipv6-pfix	IPv6
dst-ipv6-pfix	IPv6
pfix-len	
src-ipv6-addr	IPv6
dst-ipv6-addr	IPv6
dscp dscp	, 0-63
flow-label flow-label	0-1048575
dst	
dst-wildcard	0.255.0.32

precedence precedence	0-7
range	
time-range tm-rng-name	tm-rng-name
tos tos	0-15
cos cos	cos (0-7)
cos inner cos	tag cos
icmp-type	ICMP 0-255
icmp-code	ICMP 0-255
icmp-message	ICMP
operator port[port]	Operator lt- eq- gt- neq- range- port

B	MAC	6	P		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		50
I					

4) Expert 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]

Ethernet-type cos

access-list *id* {deny | permit} {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} [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*

<i>Id</i>	1-99 100-199 1300-1999 2000-2699 2700 - 2899 700 - 799
Deny	
Permit	
<i>Source</i>	
<i>source-wildcard</i>	0.255.0.32
<i>protocol</i>	IP EIGRP GRE IPINIP IGMP NOS OSPF ICMP UDP TCP IP IP 0-255 ICMP/TCP/UDP
<i>Destination</i>	
<i>destination-wildcard</i>	0.255.0.32
fragments	

precedence 0.0 Tc 0.98<01C3D9.4SPF XE\$

match-all	<i>tcp flag</i>
<i>tcp-flag</i>	tcp flag

ACL

access-list

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		
TCP		TCP
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		
UDP		UDP
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

Ethernet-type

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
   IP                192.168.1.64 - 192.168.1.127
```

```
Ruijie(config)# access-list 1 permit 192.168.1.64 0.0.0.63
```

```
2 IP
   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
```

```
MAC 00d0f8000c0c      100
     102 access-list      access-list
```

43.1.2 deny

(deny)

1 IP

[sn] deny {source source-wildcard 1

[sn] d{ } [(s)-8((s)8(du/C2)5-01007 T300000 Td (,)0571028(11P)4/02_637.786)1j341p600-246

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**} {*destination destination-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 precedence] [**tos tos**] [**frag-6()**] **931 Tf0(upper)c 0 Tw 2.571 0 Td[(icmp)-65 Tf2BE3C02D6>T/TT0 1 Tf**

[[*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*]

<i>Sn</i>	ACL
<i>source-ipv6-prefix</i>	IPv6
<i>destination-ipv6-prefix</i>	IPv6
<i>prefix-length</i>	
<i>source-ipv6-address</i>	IPv6
<i>destination-ipv6-address</i>	IPv6
dscp	
<i>dscp</i>	0-63.
flow-label	
<i>flow-label</i>	0-1048575
<i>protocol</i>	IPV6 <0-255> IPV6 icmp tcp udp

1

```
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
```

show access-lists	
ipv6 traffic-filter	IPV6
ip access-group	IP ACL
mac access-group	MAC ACL
ip access-list	IP ACL
mac access-list	MAC ACL
expert access-list	ACL
ipv6 access-list	IPV6 ACL
permit	

V10.0	V10.0 arp V10.2(3)
-------	-----------------------

43.1.3 expert access-group

EXPERT ACL

no

expert access-group {*id* | *name*} {in | out}

no expert access-group {*id* | *name*} {in | out}

<i>id</i>	Expert	2700-2899
<i>name</i>	Expert	

ACL

show expert access-lists

```

1          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          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	

V10.0	V10.0

43.1.5 ip access-group

ip access-group no

ip access-group {*id* | *name*} {**in** | **out**}

no ip access-group { *id* | *name*} {**in** | **out**}

<i>id</i>	IP 1-199 1300-2699
<i>name</i>	IP
in	
out	

ACL

ip access-group

fastEthernet0/0 120

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
```



show access-lists

```

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
    
```

show access-lists	

V10.0	V10.0

43.1.8 ipv6 traffic-filter

IPV6 ACL

no

ipv6 traffic-filter *name* {in | out}

no ipv6 traffic-filter *name* {in | out}

<i>name</i>	IPV6
in	
out	

IPV6 ACL

|

|

|

ACL
traffic-filter

show ipv6

```
access-list v6-acl Gigabit 1
Ruijie(config)# interface GigaEthernet 0/1
Ruijie(config-if)# ipv6 traffic-filter v6-acl in
```





V10.0	V10.0

43.1.11 MAC access-group

MAC ACL

no

mac access-group {*id* | *name*}{*in* | *out*}

no mac access-group {*id* | *name*} {*in* | *out*}



<i>id</i>	MAC 700-799
<i>name</i>	MAC
in	
out	



ACL



show running-config



```

access-list accept_00d0f8xxxxx_only Gigabit 1
Ruijie(config)# interface GigaEthernet 1/1
Ruijie(config-if)# mac access-group accept_00d0f8xxxxx_only in
    
```



--	--


show access-group

ACL

MAC	ACL	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

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* | **host** *source* | **any**} [*destination destination-wildcard* | **host** *destination* | **any**] [*port*] [*port*]

[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]] [precedence precedence] [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** | **host** destination-ipv6-address} [dscp dscp] [flow-label flow-label] [fragments] [range lower upper] [time-range time-range-name]

IPV6

Internet Control Message Protocol (ICMP)

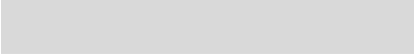
[sn] **permit icmp** {source-ipv6-prefix / prefix-length | **any** source-ipv6-address | **host**} {destination-ipv6-prefix / prefix-length | **host** destination-ipv6-address | **any**} [icmp-type] [[icmp-type [icmp-code]] | [icmp-message]] [dscp dscp] [flow-label flow-label] [fragments] [time-range 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      MAC      ACL              MAC  0013.0049.8272
      100              1
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      ip      ACL              IP  192.168.4.12
      1
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      IPV6    ACL              IP  192.168.4.12
      1
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
```

ip access-group	IP ACL
mac access-group	MAC ACL
ip access-list	IP ACL
mac access-list	MAC ACL
expert access-list	ACL
ipv6 access-list	IPV6 ACL
deny	ACL

V10.0	V10.0 arp V10.2(3)
-------	-----------------------

43.2

43.2.1 show access-group

ACL

show access-group [interface <interface>]

<interface>	
-------------	--

ACL

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*]

<i>id</i>	
<i>name</i>	

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

|

<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
```

```
mac access-group mm in
Applied On interface GigabitEthernet 0/3.
```

mac access-list	MAC ACL

V10.0	V10.0

43.3 道

43.3.1 security access-group

security access-group {*id*|*name*}

no security access-group

<i>id</i>	ACL id
<i>name</i>	ACL

```
Ruijie(config-if)#security access-group 1
```

show secu-acl	

V10.2	V10.2

43.3.2 security global access-group

security global access-group {*id*|*name*}

no security global access-group

<i>id</i>	ACL id
<i>name</i>	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
    1 policy-map
        policy-map
            class-map
                1 ACL ACL ACE
                    ACE "ACL"
    
```

```

QoS
    QoS
        QoS
            Policy Map
                QoS
                    Policy Map
                        Off
    
```

CoS	0
	8
	WRR
QueueWeight	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-Precede nce 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

<i>weight1...weight8</i>	
no	

```

Ruijie(config)# drr-queue bandwidth 1 2 3 4 5 6 7 8
    
```

--	--

	show mls qos queueing	-
	-	-

	-	-
--	---	---

44.2.4 mls qos cos

CoS

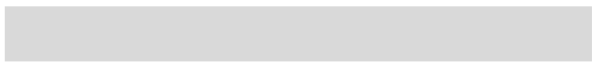
mls qos cos default-cos

no mls qos cos

<i>default-cos</i>		0 7
no		

CoS 0

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# mls qos cos 7
```



	dscp	
	no	

|

|

|

|

Ruijie(config)# **mls qos 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	
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	
rr	
wrr	
drr	
no	

wrr

Ruijie(config)# **mls qos scheduler sp**

cos	Qos	CoS
dscp	Qos	DSCP
<i>ip-precedence</i>	Qos	IP-PRE
no		

|

|

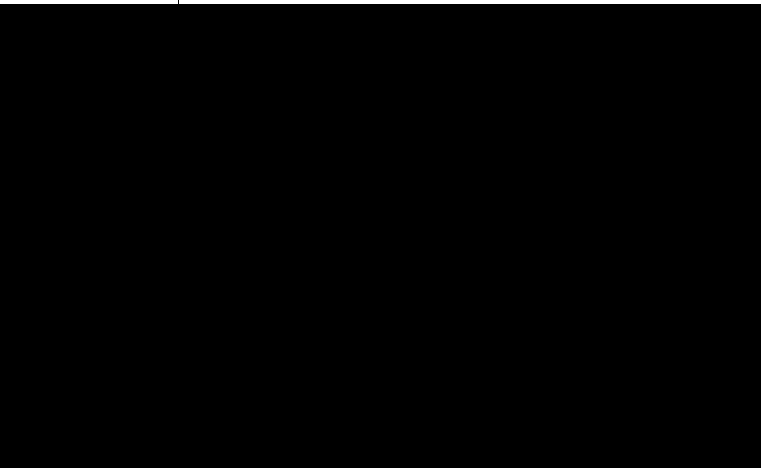
|

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# mls qos trust cos
```

|

--	--

no policy-map <i>policy-map-name</i>	policy map
<i>class-map-name</i>	class map
no class <i>class-map-name</i>	
<i>new-dscp</i>	DSCP
<i>rate-bps</i>	kbps
<i>burst-byte</i>	kbyte
<i>drop</i>	
<i>dscp-value</i>	DSCP



map po

ass cm

```
Ruijie(config-pmap-c)# set ip dscp 10
4 1M, 4096k, dscp 16
Ruijie(config-pmap-c)# police 1000000 4096 exceed-action dscp 16
```



priority-queue	SP
no priority-queue	WRR

|

WRR

|

|

|

Ruijie(config)# **no priority-queue**

show mls qos queueing	-

|

-	-

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

<i>qid</i>	id
<i>cos7</i>	<i>cos0 ...</i> CoS
<i>no</i>	

|

|

|

```
Ruijie(config)# priority-queue cos-map 1 0 1
```

show mls qos queueing	-

-	-

44.2.13 service-policy

policy map

service-policy {input | output} *policy-map-name*

no service-policy {input | output}

<i>policy-map-name</i>	polycymap
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

<i>weight1...weightn</i>	n	n
no		

weight1: ...: weightn = 1:::1

Ruijie(config)# **wrr-queue bandwidth 1 2 3 4 5 6 7 8**

show mls qos queueing	-

-	-

44.3

44.3.1 show class-map

class map

show class-map [*class-name*]

<i>class-name</i>	class map

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*]

<i>policy-name</i>	policy name
<i>class-name</i>	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

┌

┌

Ruijie# **show mls qos maps**

-	-

┌

-	-

44.3.5 show mls qos queueing

QoS (cos-to-queue map,wrr weight,drr weight)

show mls qos queueing

-	-

┌

┌

┌

Ruijie# **show mls qos queueing**

-	-

	-	-

44.3.6 show mls qos rate-limit

show mls qos rate-limit [interface *interface-id*]

	interface	interface-id rate-limit

|

|

|

|

Ruijie# **show mls qos rate-limit**

--	--	--

|

|

|

|

Ruijie# **show mls qos scheduler**

|

-	-

|

-	-

show voice vlan

Voice VLAN
45-2

45.1.3 voice vlan cos

Voice VLAN CoS **no**

voice vlan cos *cos-value*

no voice vlan cos

<i>cos-value</i>	Voice VLAN CoS

```

cos-value                      6

```

```

Voice VLAN                      CoS    DSCP

```

```

1            Voice VLAN                      CoS    5
Ruijie(config)# voice vlan cos 5

```

```

show voice vlan                      Voice VLAN
cah8bHT"tj5P#$16APPBDry@ gpm&

```

<i>dscp-value</i>	Voice VLAN	DSCP
-------------------	------------	------

<i>dscp-value</i>	46	
-------------------	----	--

Voice VLAN	CoS	DSCP
------------	-----	------

1	Voice VLAN	DSCP	40
---	------------	------	----

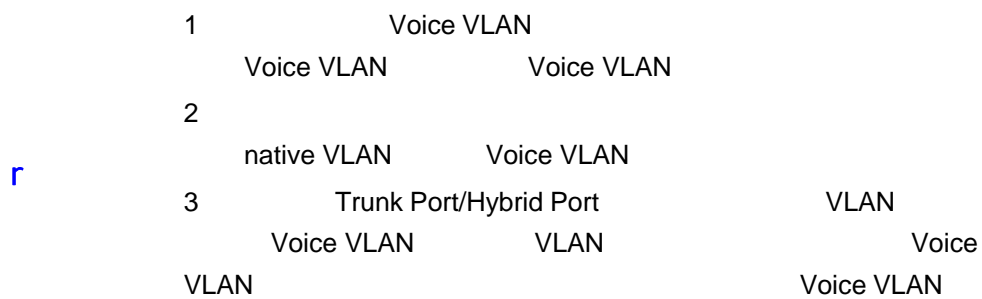
```
Ruijie(config)# voice vlan dscp 40
```



show voice vlan

Voice VLAN


```
1      OUI      0012.3400.0000  Voice VLAN      Company A
Ruijie(config)# voice vlan mac-address 0012.3400.0000 mask
                ffff.ff00.0000 description Company A
```



Voice VLAN OUI	MAC	MAC
	Voice VLAN	
	Voice VLAN	
	untagged	Voice VLAN tag
MAC VLAN		Voice VLAN tag Voice VLAN /

1 Voice VLAN
Ruijie(config)# voice vlan security enable

show voice vlan	Voice VLAN

[Redacted]

|

Voice VLAN

Voice VLAN

```

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
PORT                                MODE
-----
Fa0/1                                Auto
    
```

	Voice VLAN	Voice VLAN
voice vlan <i>vlan-id</i>	Voice VLAN VLAN	Voice VLAN
voice vlan aging <i>minutes</i>	Voice VLAN	
voice vlan cos <i>cos-value</i>	Voice VLAN	CoS
voice vlan dscp <i>dscp-value</i>	Voice VLAN	DSCP
voice vlan enable	Voice VLAN	
voice vlan mode auto	Voice VLAN	
voice vlan security enable	Voice VLAN	

10.4	
------	--

45.2.2 show voice vlan oui

OUI OUI

show voice vlan oui

Voice VLAN

--	--	--

└───

└───

47 RLDP

47.1

47.1.1 rldp detect-interval

RLDP

rldp detect-interval *interval*

no rldp detect-interval

	<i>interval</i>	2-15

3

stp × stp

5s :
Ruijie(config)# **rldp detect-interval 5**

	rldp detect-max	

	-	-

47.1.2 rldp detect-max

RLDP

rldp detect-max *num*

no rldp detect-max

<i>num</i>	,	2-10

2

5
Ruijie(config)# **rldp detect-max 5**

rldp detect-interval	

-	-

47.1.3 rldp enable

RLDP

rldp enable

no rldp enable

--	--

	RLDP	RLDP
	Ruijie(config)# rldp enable	
	rldp port	RLDP
	-	-

47.1.4 rldp port

rldp

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	

	RLDP	RLDP
	fas 0/1	rldp

```
Ruijie(config)# interface fas 0/1
Ruijie(config-if)# rldp port loop-detect block
```

rldp enable	rldp

-	-

47.1.5 rldp reset

rldp shutdown disable rldp

rldp reset

-	-

```
Ruijie# rldp reset
```

rldp enable	Rldp

-	-

47.2

47.2.1 show rldp

rldp

show rldp [interface *interface-id*]

	<i>Interface-id</i>	

--	--

	EXEC
--	------

--	--

--	--

	-	-

--	--

	-	-

47.2.2 debug rldp

rldp

no

debug rldp [packet | event | error]

undebug rldp [packet | event | error]

	packet	rldp
	event	
	error	

└──

└── EXEC

└──

└──

└──

-	-

└──

└──

-	-

48 TPP

48.1

48.1.1 topology guard

topology guard

no

[no] topology guard

-	-

└──

└──

└──

cpu topology-limit

```
Ruijie(config)# topology guard
Ruijie(config)# no topology guard
```

└──

tp-guard port enable	
cpu topology-limit	CPU

└──

-	-

48.1.2 tp-guard port enable

no

[no] tp-guard port enable



|

|

tpp

|

Ruijie# **show tpp**

|

topology guard	

|

|

-	-

49

49.1

49.1.1 cd

`cd [filesystem:][directory]`

49.1.2 copy

copy *source-url destination-url*

<i>source-url</i>	URL
<i>destination-url</i>	URL

```

Ruijie#copy tftp://192.168.201.54/rgos.bin flash:/
2          tftp
Ruijie#copy flash:/rgos.bin tftp://192.168.201.54/rgos.bin
3          xmodem
Ruijie# copy xmodem: flash:/config.text
4          U
Ruijie#copy flash:/config.text usb0:/config.text
5
Ruijie#copy flash:/config.text slave:/config.text
6          flash      sd
Ruijie#copy flash:/rgos.bin sd0:/rgos.bin
7          U          sd
Ruijie#copy usb0:/config.text sd0:/config.text
8          sd          U
Ruijie#copy sd0:/config.text usb0:/config.text

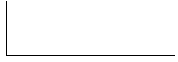
```

del	
rename	
dir	

49.1.3 delete

delete url

<i>url</i>	<i>url</i>



url

```
r
```

```
1
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*

<i>directory</i>	

|

|

()

```
r          flash:/backup/temp      flash:/backup
          flash:/bakcup
          flash:/backup/temp
```

```
1          test
Ruijie# mkdir test

2  sd          test2
Ruijie# mkdir sd0:/test2
```

rmdir	
pwd	

|

--	--

49.1.6 rename

rename *url1 url2*

<i>url1</i>		URL
<i>url2</i>		URL

usb0/1, flash, slave

49.1.7 rmdir

rmdir *directory*

<i>directory</i>	,

└──

└──

└──

└──
 Ruijie# **rmdir** tmp

mkdir	

└──

49.2

49.2.1 pwd

pwd

└──

└──

└──

└──
1
Ruijie# **pwd**
flash:/

cd	

└──

49.2.2 show file systems

show file systems

└──

└──

└──

└──

1
Ruijie#show file systems

└──

└──

└──

50

50.1 CPU 查

50.1.1 cpu-log

CPU , **cpu-log**
cpu-log *log-limit low_num high_num*

	-	-
	-	-

50.1.2 show cpu

	CPU	show cpu
show cpu		
	-	-

		CPU	5	1	5
	CPU		5	1	5
	CPU				

```

show cpu
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%	dlx_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_daemon
63	0%	3%	1%	track_daemon
64	0%	0%	0%	pbr_guard
65	0%	0%	0%	vrrpd
66	0%	0%	0%	psnps
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_rcv_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	
		3	5	1	5
	CPU	LISR	HISR		CPU

No	
5Sec	5 CPU
1Min	1 CPU
5Min	5 CPU

2

,X

bgp

1 BGP
Ruijie(config)# **memory-lack exit-policy bgp**

show memory	
-	
10.3(4b3)	

50.2.2 show memory

show memory

show memory

-	-

└───┘

└───┘

└───┘

└───┘

show memory

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%

1. 4k

2.

min	
lower	memory-lack exit-policy
low	OVERFLOW
high	OVERFLOW

3.

-	-

-	-

50.2.3 show memory protocols

show memory protocols

--	--

BGP,OSPF,RIP,LDP,PIM,ISIS

```

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

```

show memory	

-

10.3(4b3)	

51

51.1

51.1.1 threshold set

no
CPU
CPU
syslog
3
syslog
CPU
MIB

```

1          M1
Ruijie(config)# threshold set memory M1 70 90

```

```

2          CPU
Ruijie(config)# threshold set cpu member 2 70 90

```

show threshold	

10.3(4b3)	

51.2

51.2.1 show threshold

show threshold {cpu | memory | temperature} [M1 | M2 | slot *n* | member *n*]

cpu memory temperature	cpu CPU
	memory
	temperature
M1 M2 slot <i>n</i>	<i>n</i>
member <i>n</i>	<i>n</i>

1 M1 CPU

Ruijie# **show threshold cpu M1**

2

Ruijie# **show threshold memory**

threshold set	

10.3(4b3)	

52

52.1

52.1.1 clear logging

clear logging

	-	-

<i>level</i>	0 7
--------------	-----

4k Bytes
7

show logging

clear logging
FLASH

Syslog Server

8

Emergencies	0	
Alerts	1	
Critical	2	
Errors	3	
warnings	4	
Notifications	5	
informational	6	
Debugging	7	

0

6 6 10000

Ruijie(config)# **logging buffered 10000 6**

logging on	
show logging	
clear logging	

52.1.5 logging count

no

logging count

no logging count

	-	-

|

|

|

no logging count

|

Ruijie(config)# **logging count**

show logging count		
show logging		

|

	-	-

52.1.6 logging facility

(23)

no

<i>facility-type</i>	Syslog
----------------------	--------

Local7(23)

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)

(local7) 23

	Syslog	kernel
	Ruijie(config)# logging facility kern	
	logging console	
	-	-

52.1.7 logging file flash

	FLASH	FLASH
	no	
	logging file flash:filename [max-file-size] [level]	
	no logging file	
	Filename	txt
	max-file-size	128K 6M bytes
	level	FLASH 6
		1
	FLASH	
	Syslog Server	FLASH
	txt	
	FLASH	FLASH
	FLASH logging file flash	

```

FLASH          trace.txt          64K,
6
Ruijie(config)# logging file flash:trace

```

logging on	
show logging	
more flash	FLASH

-	-

52.1.8 logging monitor

```

VTY          telnet          SSH
              no              VTY

logging monitor level
no logging monitor

```

<i>level</i>	1

Debugging (7)

```

VTY          terminal monitor
VTY          logging monitor
Logging monitor          VTY

```

```

VTY          6
Ruijie(config)# logging monitor informational

```



┌

┌

-	-

└

52.1.13 logging source interface

no

logging source interface *interface-type interface-number*

i<45AD1E0B317509

no logging source interface

┌

<i>interface-type</i>	
<i>interface-number</i>	

└

┌

┌

Syslog Server

IP

IP

52.1.14 logging synchronous

no

logging synchronous

no logging synchronous

	-	-

|

|

|

```
Ruijie(config)#line console 0
Ruijie(config-line)#logging synchronous
                        UP-DOWN
Ruijie#configure terminal
Oct  9 23:40:55 %LINK-5-CHANGED: Interface GigabitEthernet 0/1,
changed state to down
Oct  9 23:40:55 %LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet 0/1, changed state to DOWN
Ruijie# configure terminal      //
```

|

	show running-config	

|

|

	-	-

52.1.15 logging trap

		Syslog Server	
	no	Syslog Server	
	logging trap	<i>level</i>	
	no logging trap		
		<i>level</i>	1
		Informational(6)	
		Syslog Server	logging Syslog
	Server	logging trap	
	show logging		
		6	202.101.11.22 Syslog Server
	Ruijie(config)#	logging	202.101.11.22
	Ruijie(config)#	logging trap informational	
	logging on		
	logging		Syslog Server
	show logging		
		-	-

52.1.16 service sequence-numbers

no

service sequence-numbers

no service sequence-numbers

	-	-

└───┘

└───┘

└───┘

1

└───┘

Ruijie(config)# **service sequence-numbers**

logging on		
service timestamps		

└───┘

	-	-

52.1.17 service sysname

no

service sysname

no service sysname

	-	-

└───┘

└───┘

An L-shaped corner symbol consisting of a vertical line segment on the left and a horizontal line segment extending to the right from the bottom of the vertical segment.

	<i>year</i>	2007 Jul 27 16:53:07
--	-------------	----------------------

RTC

```
VTY
VTY
VTY
VTY
Ruijie# terminal monitor

```

	-	-

G T 6-11046ET 61 1 4 572.36 451242.48 re f 141.6 551.24 451242.0.48 re f 66.84 530.84 4

```
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	

┌

	-	-

52.2.2 show logging count

show logging count

	-	-

	clear logging	
	-	-

53 POE

53.1

53.1.1 Poe disconnect-mode mode/no poe disconnect-mode

mode	[ac/dc]

┌

┌

┌

```

POE          dc
Ruijie# configure
Ruijie(config)# poe disconnect-mode dc
Ruijie(config)# end
    
```

-	-

┌

-	-

53.1.2 Poe enable/no poe enable

--	-

	-	-
	-	-

53.1.4 Poe-power upper lower/no poe-power upper

	<i>upper</i>	[55000-57000]

┌

┌

┌

```

POE                    56000
Ruijie# configure
Ruijie(config)# poe-power upper 56000
Ruijie(config)# end
    
```

	-	-

┌

	-	-

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
```

-	-

└───┘

-	-

53.2.2 show poe powersupply

-	-

└───┘

POE

```
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*

<i>member</i>	ID member 1
<i>priority</i>	[1, 10]

|

|

| 1 10 10

| 1
write

| 2 8
Ruijie(config)# **device-priority 2 8**

show member	

|

-	-

member <i>member</i>	ID member 1
<i>description</i>	31

└───┘

└───┘

└───┘

└───┘

```

write
2 red-giant
Ruijie(config)# device-description member 2 red-giant

```

show member	

└───┘

-	-
---	---

54.2

54.2.1 show member

show member [*member*]

<i>member</i>	ID

└───┘

└───┘

└───┘

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
```

[Redacted]	
-	-

[Redacted]	
-	-

