



**RG-S2600E/P**

**RGOS 10.4(2b2)**

©2000-2011



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# RGOS<sup>®</sup> 10.4(2b2)

**1.**

Courier New

5

**2.**

Arial

```
[]      []
```

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

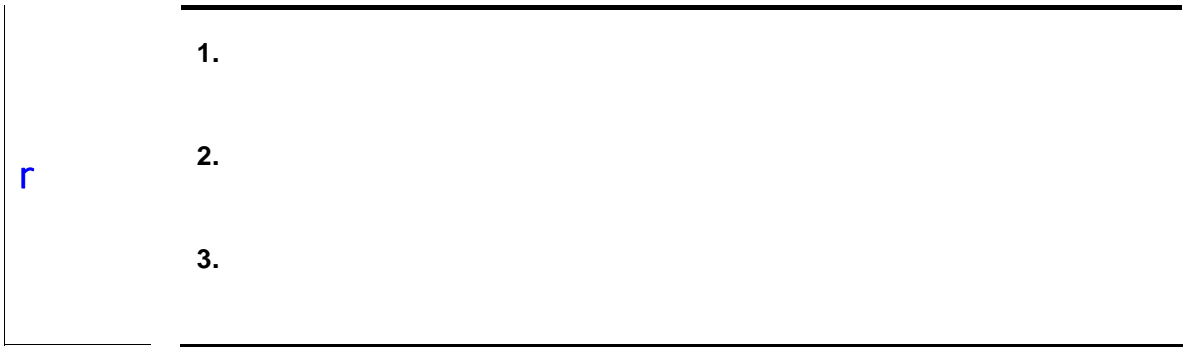
```
[x|y|...]
```

```
//
```

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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
```

EXEC

"sv" "show version"

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

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

"ia"

"ip address"

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

"ip address"

**show aliases**

"def-route"

"ip route"

0.0.0.0 0.0.0.0 192.168.1.1"

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

<b>show aliases</b>	

---

---

---

---

**privilege**

*ommand-string*

*mand-string*

---

---

CLI

0-15

---

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---

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CLI

**privilege ?**

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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>
    
```

1		
	enable secret	CLI



## EXEC

```
Ruijie# show aliases exec
```

```
exec mode alias:
```

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



---

# 2

## 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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## 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>		
<b>0 7</b>	0	7
<i>encrypted-password</i>		

1 26

r EXEC

pw10

Ruijie(config)# enable password pw10

enable secret	

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## 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>	
<b>0 5</b>	0 5
<i>encrypted-password</i>	



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**no enable service**

enable service ssh-sesrver, SSH Server

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



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## **Telnet**

configure terminal

line tty 1 16

---

enable

Web

**no ip http authentication**

Web

local

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

**enable service**

## 2.1.9 ip telnet source-interface

	IP	Telnet	
	<b>telnet source-interface</b>		
	<b>ip telnet source-interface <i>interface-name</i></b>		
	<i>interface-name</i>	IP	Telnet
	Telnet	IP	Telnet
	<b>no ip telnet source-interface</b>		
	Loopback 1	IP	Telnet
	Ruijie(config)# <b>ip telnet source-interface <i>Loopback 1</i></b>		
	<b>telnet</b>		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**                  **no**                  **line**                  **lockable**  
**lockable**  
**no lockable**

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┌

┌ 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>

<b>lock</b>	

---

**login**

**no login**

	-	-

|

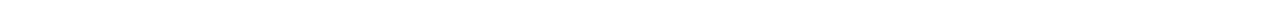
| line

| AAA  
| VTY console

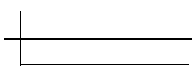
---

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

<b>password</b>		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**

<b>username</b>	

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### 2.1.15 privilege mode

CLI

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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**

<i>password</i>	line

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**service password-encryption**



<b>interface</b> <i>interface-name</i>	Telnet
<b>!vrf</b> <i>vrf-name</i>	VRF

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telnet	
<b>r</b>	<b>/ipv6</b> IPV6

┌

```

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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<b>ip telnet source-interface</b>	IP          Telnet
<b>show session</b>	TTY
<b>exit</b>	

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## 2.1.19 username

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

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

## 2.2.2 banner motd

	no banner motd	banner motd
	<b>banner motd</b> <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

```

<b>show boot system</b>	

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## 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

|

<b>show clock</b>	

|

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## 2.2.5 clock update-calendar

**clock update-calendar**

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calendar

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```
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 session-timeout
no session-timeout LINE
session-timeout minutes [output]
no session-timeout
```

|

minutes	
output	

|

```
0 min
```

|

```
LINE
```

|

```
LINE
LINE
```

|

```
line vty 0 5 30
```

---

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

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-	-

## 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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```

[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]

```

<b>boot config</b>	
<b>copy</b>	
<b>show running-config</b>	

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## 2.3

### 2.3.1 show clock

**show clock**

**show clock**

-	-

detail

**show clock**

```

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

```

<b>clock set</b>	

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## 2.3.2 show line

### show line

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

<b>console</b>	
<b>aux</b>	aux
<b>vty</b>	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**

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

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### 2.3.4 show running-config

show running-config

show running-config

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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*]

<b>aux</b>		
<b>console</b>		
<b>tty</b>		
<b>vty</b>		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
```

|

	-	-

|

|

	-	-

### 3.1.3 line vty

```

                VTY                no
    VTY
    line vty line-number
    no line vty line-number
  
```

	-	-

```

                VTY            5      0--4
  
```

```

                VTY
  
```

```

    1      VTY           20      VTY       0--19
    Ruijie(config)# line vty 19
    2      VTY           10      VTY       0--9
    Ruijie(config)# line vty 10
  
```

	-	-

	-	-

### 3.1.4 transport input

```

    Line                transport input                Line
    default transport input                LINE
    transport input {all | ssh | telnet | none}
  
```

**default transport input**

<b>all</b>	Line	
<b>ssh</b>	Line	SSH

LINE

<b>telnet</b>	Line	Telnet
<b>none</b>	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

```

<b>show running</b>	
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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]
```

<i>ip-address</i>	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

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- -

---

# 5

## 5.1

### 5.1.1 carrier-delay

**carrier-delay**

**no**

**carrier-delay** [ *seconds* ]

**no carrier-delay**

<i>seconds</i>		1 60

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2

└─┘

└─┘

DCD

DCD

DCD

DCD Down Up

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### 5.1.2 clear counters

**clear counters** [*interface-id*]

	<i>interface-id</i>	

|

|

	<b>show interfaces</b>	<b>clear</b>
<b>counters</b>		

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

	<b>show interfaces</b>	

|

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### 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**

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

┌

<b>shutdown</b>	

┌

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### 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**

┌

<b>show interfaces</b>	

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### 5.1.5 duplex

**no**

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

**no duplex**

	<b>auto</b>	
	<b>full</b>	
	<b>half</b>	

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└──

└──

**show interfaces**

└──

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

--	--	--

no

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

**no flowcontrol**

<b>auto</b>	
<b>off</b>	
<b>on</b>	

└───┘

└───┘

└───┘

**show interfaces**

└───┘

1/1

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

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

<b>show interfaces</b>	

└───┘

-	-

### 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**

<b>show interfaces</b>	

	<b>clear interface</b>	
	<b>show interfaces</b>	

┌

	-	-

### 5.1.15 snmp trap link-status

SNMP LinkTrap, LinkTrap Link  
 LinkTrap no SNMP

**snmp trap link-status**

**no snmp trap link-status**


Link SNMP LinkTrap

---

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

link trap





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

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

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

```

<b>show interfaces</b>	
<b>switchport access</b>	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
<b>counters</b>	
<b>description</b>	link
<b>status</b>	
<b>switchport</b>	
<b>trunk</b>	trunking port                      Aggregate port
<b>transceiver</b>	
<b>alarm</b>	None

---

	<b>diagnosis</b>	

Ruijie# **show interfacesgigabitEthernet**

# 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**

<b>dst-mac</b>		MAC		AP
		MAC		
		MAC		
<b>src-mac</b>		MAC		AP
		MAC		
		MAC		
<b>src-dst-ip</b>	IP	IP		IP—
	IP			IP—
	IP			
<b>dst-ip</b>		IP		AP
	IP			
<b>src-ip</b>		IP		AP
		IP		
		IP		
<b>src-dst-mac</b>	MAC	MAC		
	MAC—	MAC		
	MAC—	MAC		

MAC

**show aggregateport load-balance**

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

<b>show aggregateport load-balance</b>	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
<b>load-balance</b>	aggregaye port
<b>summary</b>	aggregate port

┌

┌

┌

aggregate port

aggregate port

┌

Ruijie# **show aggregateport 1 summary**

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

┌

<b>aggregateport load-balance</b>	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		
------	--	--

<b>show vlan</b>	vlan	
------------------	------	--

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

<b>show vlan</b>		VLAN

--	--	--

	-	-

### 7.1.2 switchport access

**no** access port VLAN VLAN

**switchport access vlan *vlan-id***

**no switchport access vlan**

<b>access</b>	switch port	access port
<b>trunk</b>	switch port	trunk port
<b>hybrid</b>	switch port	hybrid port

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

<b>allowed vlan</b> <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		
<b>native vlan</b> <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*]

	Vlan-id-list	VLAN	subvlan	ID,            vlan

┌

┌

VLAN

┌

**no subvlan**    supevlan    subvlan

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

<b>show supervlan</b>	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
```

[Redacted]	
<b>show supervlan</b>	supervlan

[Redacted]

[Redacted]	
-	-

### 8.1.4 proxy-arp

VLAN    ARP

**proxy-arp**

**no proxy-arp**

[Redacted]	
-	-

[Redacted]

VLAN

**end**                    **Ctrl+C**  
**exit**

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

[Redacted]	
------------	--

	<b>show supervlan</b>	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
<b>no</b>	

|

Primary VLAN

|

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

<b>show vlan private-vlan</b>	-

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**



<b>show vlan private-vlan</b>	-
RGOS10.1	
-	-

### 9.1.5 switchport private-vlan host-association

private VLAN

primary VLAN

secondary VLAN

**switchport private-vlan host-association** *p\_vid s\_vid*

**no switchport private-vlan host-association**

<i>p_vid</i>	primary VID
<i>s_vid</i>	secondary VID
<b>no</b>	VLAN

┌  
└  
┌  
└  
┌  
└

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

--	--

OS 1 1.006 T... TO 1.994.02 0 0 10.02 439.32 12541.60 1 Tf1198 -0.



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

<b>primary</b>	primary VLAN
<b>community</b>	community VLAN
<b>isolated</b>	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

<b>no</b>	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**

<b>no</b>	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

```

```

└───┬───┘

```

<b>show vlan</b>	-

```

└───┬───┘

```

RGOS10.1

```

└───┬───┘

```

-	-

### 10.1.5 switchport mode uplink

```

└───┬───┘

```

uplink

**switchport mode uplink****no switchport mode**

```

└───┬───┘

```

<b>no</b>	uplink

```

└───┬───┘

```

uplink

```

└───┬───┘

```

```

└───┬───┘

```

```

└───┬───┘

```

```

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

```

	<b>show vlan</b>	-
	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**

<b>tagged</b>	tag
<b>untagged</b>	tag
<i>v_list</i>	vlan id
<b>no</b>	

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
<b>no</b>		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

```

<b>show interface dot1q-tunnel</b>		-

RGOS10.3

	-	-

### 10.1.8 l2protocol-tunnel

dot1q-tunnel

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

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

<b>stp</b>	stp
<b>gvrp</b>	gvrp
<b>no</b>	

|

|

|

```

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

```

<b>show l2protocol-tunnel {gvrp stp}</b>	-

|

RGOS10.3

-	-

### 10.1.9 l2protocol-tunnel *proto-type* enable

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

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

<b>stp</b>	stp
<b>gvrp</b>	gvrp

	<b>no</b>	
--	-----------	--

┌

┌

┌

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

	<b>show l2protocol-tunnel { gvrp stp }</b>	-

┌

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***

	<b>stp</b>	stp
	<b>gvrp</b>	gvrp
	<b>no</b>	

┌

┌



---

	-	-
--	---	---

---

**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}

	<b>gvrp</b>	gvrp
	<b>stp</b>	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 <b>no share</b>	
	<b>end</b>	Ctrl+C
	<b>exit</b>	
	Ruijie(config)# <b>vlan 2</b>	
	Ruijie(config-vlan)# <b>share</b>	
	-	-
	-	-

## 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

## 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

<b>show address-bind</b>	

	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
```

<b>show mac-address-table dynamic</b>	

-	-

### 12.1.7 clear mac-address-table filtering

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

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

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

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

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

<b>mac-address-table filtering</b>	
<b>show mac-address-table filtering</b>	

--	--	--

**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** [

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

	<b>show mac-address-table static</b>	
	<b>clear mac-address-table static</b>	

└───┘

	-	-

### 12.1.13 snmp trap mac-notification

MAC no

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

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

	<b>added</b>	
	<b>removed</b>	

└───┘

└───┘

└───┘

**show mac-address-table notification *interface***

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



|

|

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

|

<b>address-bind</b>	

|

|

-	-

## 12.2.2 show address-bind uplink

### show address-bind uplink

|


|

|

|

|

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

.....

.....

.....	
<b>address-bind uplink</b>	

.....

.....

.....	
-	-

### 12.2.3 show mac-address-table address

<b>show mac-address-table interface</b>	
<b>show mac-address-table vlan</b>	VLAN
<b>show mac-address-table count</b>	
<b>show mac-address-table static</b>	
<b>show mac-address-table filtering</b>	

	-
--	---

### 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
```

<b>show mac-address-table static</b>	
<b>show mac-address-table filtering</b>	
<b>show mac-address-table dynamic</b>	
<b>show mac-address-table address</b>	
<b>show mac-address-table interface</b>	
<b>show mac-address-table vlan</b>	VLAN

--	--

-	-



## 12.2.7 show mac-address-table filtering

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

--	--

*mac-addr*



<b>interface</b> <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
    
```

<b>mac-address-table notification</b>	MAC
<b>snmp trap mac-notification</b>	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

<b>mac-address-table static</b>	
<b>clear mac-address-table static</b>	

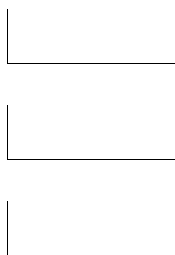
-	-

### 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
```

<b>show mac-address-table static</b>	
<b>show mac-address-table filtering</b>	
<b>show mac-address-table dynamic</b>	
<b>show mac-address-table address</b>	
<b>show mac-address-table interface</b>	
<b>show mac-address-table count</b>	

|

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
```

<b>show ip dhcp snooping</b>	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                    DHCP  
Snooping              Bootp                              Bootp                    DHCP  
Snooping      Bootp

```

                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)
-----

```



-----

<b>show ip dhcp snooping</b>	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)
-----                      -                      -----

```

<b>show ip dhcp snooping</b>	DHCP snooping
------------------------------	---------------

└───

--	--





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
    
```

<b>show ip dhcp snooping</b>	DHCP snooping

-	-

### 13.2.2 ip dhcp snooping suppression

suppression no  
no suppression

**[no] ip dhcp snooping suppression**

-	-

┌

┌

DHCP	DHCP
------	------

```

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

-	-

┌

-	-

### 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)
-----	-----	-----

-----

<b>ip dhcp snooping</b>	DHCP snooping
<b>ip dhcp snooping verify mac-address</b>	DHCP snooping mac
<b>ip dhcp snooping write-delay</b>	flash
<b>ip dhcp snooping information option</b>	DHCP option82
<b>ip dhcp snooping bootp-bind</b>	DHCP Snooping Bootp
<b>ip dhcp snooping trust</b>	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**

-	-

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┌

┌

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

-----

<b>show ip dhcp snooping binding</b>	DHCP snooping

┌

-	-

### 13.4.2 debug ip dhcp snooping

DHCP Snooping

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

	-	-

┌  
└

┌  
└

┌  
└

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
<b>deny</b>			
	<b>deny</b>	profile	
	profile	deny	
	profile		
	profile	range	profile
	profile		
		224.2.2.2	profile
	Ruijie(config)# <b>ip igmp profile 1</b>		
	Ruijie(config-profile)# <b>range 224.2.2.2</b>		
	Ruijie(config-profile)# <b>deny</b>		
	<b>ip igmp profile</b>	profile	
	<b>range</b>		
	-	-	

### 14.1.2 permit

profile profile permit profile

**permit**

<b>permit</b>	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**

<b>ip igmp profile</b>	profile
<b>range</b>	

-	-

### 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	deny
profile	profile	

```

                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
    
```

<b>ip igmp profile</b>	profile
<b>deny</b>	profile deny
<b>permit</b>	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)#

<b>range</b>	profile	
<b>permit</b>	profile	permit
<b>deny</b>	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

```

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

```

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

<b>ip igmp snooping svgl</b>	igmp snooping svgl
<b>ip igmp snooping ivgl-svgl</b>	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
```

<b>ip igmp snooping ivgl</b>	igmp snooping      ivgl
<b>ip igmp snooping ivgl-svgl</b>	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

<b>ip igmp snooping limit-ipmc</b>	ip

└──


no IP IP

**address**      **server address**  
**vid address**      **server**

<i>vid</i>	ip      vlan id

(

	-	-

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



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

┌

┌

┌

IP

┌

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

┌

<b>ip igmp snooping source-check port</b>	

┌

┌

-	-

### 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

```

<b>ip igmp snooping mrouter learn pim-dvmrp</b>	

-	-

### 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
```

<b>ip igmp snooping vlan mrouter interface</b>	

|

-	-

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

┌

┌ EXEC

┌

┌





	IGMP Snooping
<b>event</b>	IGMP Snooping
<b>packet</b>	IGMP Snooping
<b>msf</b>	IGMP Snooping
<b>warning</b>	IGMP Snooping

┌

┌ EXEC

┌

┌

-	-

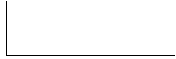
┌

-	-

# 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
```

```
┌
```

<b>show spanning-tree interface</b>	STP

```
┌
```

```
┌
```

-	-

## 15.1.12 spanning-tree loopguard default

```
loop guard                no                loop guard                loop guard
                        bpdu
```

**spanning-tree loopguard default**

**no spanning-tree loopguard default**

```
┌
```

-	-

```
┌
```

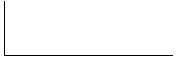
```
loop guard
```

```
┌
```

```
┌
```

```
┌
```

```
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
    
```

<b>show spanning-tree mst</b>	MST region
<b>instance instance-id vlan vlan-range</b>	Vlan MST Instance
<b>name</b>	MST
<b>revision</b>	MST
<b>show</b>	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

Instance 20 8192

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

**show spanning-tree mst instance interface interface-id**

<b>show spanning-tree mst</b>	MSTP
<b>spanning-tree mst cost</b>	
<b>spanning-tree mst port-priority</b>	Instance

-	-

### 15.1.19 spanning-tree pathcost method

no

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

**no spanning-tree pathcost method**

<b>long</b>	802.1t	path-cost
<b>short</b>	802.1d	path-cost

802.1T Path-cost

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

--	--

	<b>show spanning-tree interface</b>	STP
	-	-

### 15.1.20 spanning-tree portfast

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

### 15.1.21 spanning-tree portfast bpdudfilter default

	BPDU filter	no	BPDU filter
	<b>spanning-tree portfast bpdudfilter default</b>		

**no spanning-tree portfast bpdupfilter default**

	-	-

BPDU filter

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

<b>show spanning-tree interface</b>	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**

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

3

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

--	--

**show spanning-tree**

<b>tx-hold-count</b>	TxHoldCount
<b>pathcost method</b>	

┌

┌

┌

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

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

┌

-	-

### 15.2.2 show spanning-tree interface

STP

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

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

	<b>link-type</b>	linktype
--	------------------	----------

5

|

|

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

|

<b>spanning-tree mst configuration</b>	MST region
<b>spanning-tree mst cost</b>	instance
<b>spanning-tree mst max-hops</b>	instance
<b>spanning-tree mst priority</b>	instance
<b>spanning-tree mst port-priority</b>	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
```

|

---

<b>monitor session</b>	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
    
```

<b>show monitor</b>	

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
    
```

--	--

	<b>show vlan</b>	Vlan
	-	-

# 18 IP

## 18.1

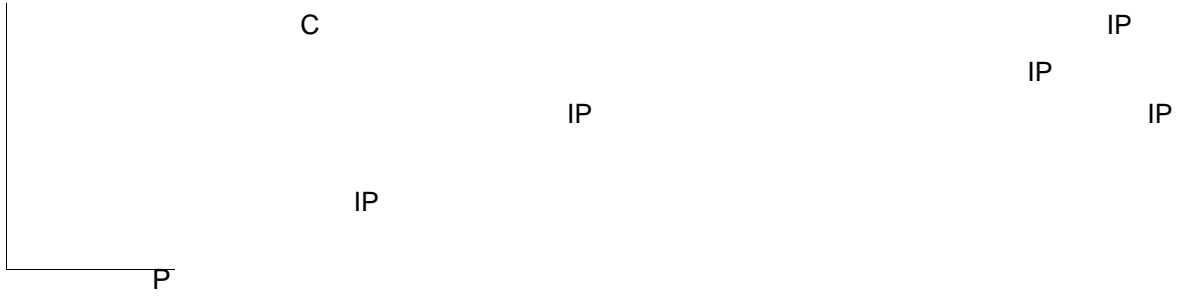
### 18.1.1 ip address

IP

no

IP

---



---

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

---

<b>show interface</b>	

---



SLIP HDLC PPP LAPB Frame-relay

X.25

ping  
SNMP

IP



FastEthernet 0/1

IP  
ip unnumbered fastEthernet 0/1



<b>show interface</b>	



-	-

## 18.2

### 18.2.1 arp

ARP IP MAC no  
MAC

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

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



<b>vrf name</b>	VRF name VRF

|

---

ARP

|

---

RGOS

ARP

32

IP

48

MAC

ARP

ARP


**clear**

2

```
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

---

	<b>Arp retry times</b> <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 500 500

-		-

-		-

### 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*

<b>vrf vrf_name</b>	VRF	VRF	ARP
<b>trusted</b>	ARP	ARP	VRF
<b>ip</b>	IP <b>trusted</b>	IP	ARP ARP
<b>mask</b>	IP ARP	ARP ; ARP	trusted
<b>static</b>	arp		
<b>mac-address</b>	mac	ARP	
<b>complete</b>	arp		
<b>incomplete</b>	arp		
<b>oob</b>	(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
<b>static</b>	arp
<b>complete</b>	arp
<b>incomplete</b>	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**

Protocol	Address	Age (min)	Hardware	Type
-	-	-	-	-

┌

┌

┌

### 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**

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

	<b>ip dhcp relay information option dot1x</b>	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**

	<b>Service dhcp</b>	DHCP
	<b>ip dhcp relay information option dot1x</b>	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)#
```

<b>service dhcp</b>	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
	<b>ip domain-lookup</b>		
	<b>no ip domain-lookup</b>		
	-		-
	DNS		
	DNS		DNS
	DNS		
	Ruijie(config)# <b>ip domain-lookup</b>		
	<b>show hosts</b>		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
```

<b>show hosts</b>	DNS

└───┘

-	-

└───┘

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

## 20.1.4 ipv6 host

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

<b>show hosts</b>	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

<b>show hosts</b>	

┌

-	-

## 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
```

└───┘

<b>ip host</b>	IP
<b>ipv6 host</b>	IPV6
<b>ip name-server</b>	DNS

└───┘

└───┘

-	-

# 21 SNTP

## 21.1

### 21.1.1 sntp enable

	SNTP	no	—Disable
[no] sntp enable			
	-	-	
	SNTP	Disable	
	<b>show sntp</b>	SNTP	
Ruijie(config)# sntp enable			
	<b>show sntp</b>	SNTP	
	<b>clock update-calendar</b>		
	<b>clock set</b>		
	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

<b>show sntp</b>	SNTP
<b>sntp enable</b>	SNTP

RGOS10.0

SNTP

	<b>sntp enable</b>	SNTP
	<b>show sntp</b>	SNTP

RGOS10.0

	-	-

# 22 NTP

## 22.1 NTP

### 22.1.1 no ntp

	ntp	ntp
<b>no ntp</b>		
	-	-
	NTP	
	NTP	NTP
	NTP	NTP
	no ntp	NTP
	<b>ntp server</b>	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**

<b>peer</b>	NTP
<b>serve</b>	NTP
<b>serve-only</b>	NTP
<b>query-only</b>	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**

<b>ip access-list</b>	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

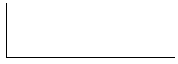
---

	-	-
--	---	---

---

.





┌

┌

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

¥ 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**

UD\_6j9(134)Tj/TT290 Tc C

┌

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-	-

### 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

|

---

|

<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
    
```

<b>snmp-server enable traps</b>	

-	-

### 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

|

<b>snmp-sever contact</b>	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

|

--	--

	<b>snmp-server queue-length</b>	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**

┌

<b>snmp-server enable traps</b>	
<b>snmp-server enable host</b>	NMS

┌

┌

-	-

### 25.1.13 snmp-server trap-timeout

no

**snmp-server trap-timeout**

**snmp-server trap-timeout** *seconds*

**no snmp-server trap-timeout**

┌

seconds	1 – 1000

┌

30

┌

┌

┌

60

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

<b>snmp-server queue-length</b>	
<b>snmp-server enable host</b>	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>			
<b>v1</b>   <b>v2</b>   <b>v3</b>	SNMP	v3	
<b>encrypted</b>			16
	16	SHA	MD5
<b>auth</b>			20

SHA



┌

default

MIB

┌

┌

┌  
 Ruijie(config)#

MIB-2 oid 1.3.6.1

**snmp-server view mib2 1.3.6.1 include**

┌  
**show snmp view**

<b>show snmp view</b>	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]**

┌  
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-	-

┌

┌

┌  
**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

```

<b>snmp-server chassis-id</b>	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*

-	-

┌

┌

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

<b>rmon event</b> <i>number [log] [trap community] [description-string]</i>	

┌

-	-

## 26.1.2 rmon collection history

**no**

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

**no rmon collection history** *index*



	-	-

└───

└───

└───



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
```

---

--	--

**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
    
```

<b>rmon collection history</b> <i>index</i> [owner ownername] [buckets bucket-number] [interval seconds]	


-	-

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
    
```

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

	-	-

IPv6



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

```

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

```

<b>default</b>	<b>default</b>

┌

┌

```

                                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
    
```

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

┌

RGOS10.4	RGOS10.4

### 27.1.4 ipv6 enable

2	IPv6	<b>ipv6 enable</b>
	IPv6	
<b>r</b>	IPv6	IPv6
	<b>no ipv6 enable</b>	IPV6

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

<b>show ipv6 interface</b>	
----------------------------	--

-	-
---	---

### 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

<b>ipv6 address</b> prefix-name sub-bits/prefix-length	
<b>show ipv6 general-prefix</b>	

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

--	--

	-	-
	-	-

### 27.1.7 ipv6 nd dad attempts

IPV6 (NS)  
no



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'

ARP

IPV6

NDP

Reachble

IPV6

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

<b>show ipv6 neighbors</b>	
<b>clear ipv6 neighbors</b>	

-	-
---	---

### 27.1.10 ipv6 ns-linklocal-src

**no ipv6**  
IPv6

**ns-linklocal-src**  
RFC3484

**ipv6 ns-linklocal-src**

**no ipv6 ns-linklocal-src**

-	-

|

|

|

|

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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r

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┌

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

┌

<b>show ipv6 route</b>	IPv6

┌

-	-

### 27.1.12 ipv6 source-route

	IPv6	no
IPv6		
<b>ipv6 source-route</b>		
<b>no ipv6 source-route</b>		

	-	-

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
<b>ra-info</b>	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

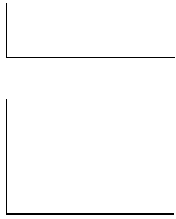
[TENTATIVE]	INET6	[ ]
ANYCAST		
TENTATIVE		(DAD)
DUPLICATED		
DEPRECATED		
NODAD		
AUTOIFID		EUI-64
PRE		
GEN		

```
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 ~~RDY-RA-Info~~

1

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



-	-

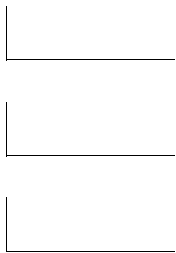
### 27.2.4 show ipv6 neighbors

IPV6

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



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



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>state/H(R)</p> <p>STATE</p> <p>INCOMP( Incomplete)—</p> <p>(NS)</p> <p>(NA)</p> <p>REACH(Reachable) —</p> <p>STALE —</p> <p>NUD</p> <p>( Neighbor Unreachability Detection )</p> <p>DELAY—</p> <p>STALE</p>
State	<p>STALE</p> <p>500 (REACH/Reachable)</p> <p>500 (REACH/Reachable)</p>

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

```

<b>ipv6 route</b>	

-	-

## 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

	<b>10.4</b>	

### 28.1.3 deny

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

### 28.1.4 permit

	profile	profile	permit
	<b>permit</b>		



┌

┌

┌

┌

┌

VLAN VLAN VLAN VLAN

mld snooping ivgl

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

<b>ipv6 mld snooping svgl</b>	mld snooping svgl
<b>ipv6 mld snooping ivgl-svgl</b>	mld snooping

<b>10.4</b>	

### 28.1.6 ipv6 mld snooping svgl profile

SVGL **ipv6 mld snooping profile** *profile-number*, **no ipv6 mld snooping profile**

**ipv6 mld snooping profile** *profile-number*

**no ipv6 mld snooping profile**

┌

┌

┌

┌

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

mld snooping

mld snooping SVGL IVGL-SVGL

SVGL profile SVGL

VLAN VLAN

profile 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





┌

┌

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
```

┌


┌

<b>10.4</b>	

### 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
    
```

<b>ipv6 mld profile</b>	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**

<b>ipv6 mld snooping filter</b>	

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**

|

---


|

---

|

---

<b>10.4</b>	

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

|


---

# 29

## 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*}]

<b>broadcast</b>	
<b>multicast</b>	
<b>unicast</b>	
<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**

|

-

|

-	-

### 29.1.3 switchport port-security

no

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

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

|

<b>port-security</b>	
<b>violation protect</b>	
<b>violation restrict</b>	trap
<b>violation shutdown</b>	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**

---

	<b>show port-security</b>	
--	---------------------------	--

---

--	--	--

<b>switchport port-security</b>	
<b>switchport port-security binding interface</b>	
<b>Switchport port-security mac-address</b>	
<b>switchport port-security aging</b>	
<b>show port-security</b>	

-	-

### 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

```

	<b>switchport port-security</b>	
	<b>switchport port-security binding</b>	
	<b>Switchport port-security mac-address</b>	
	<b>switchport port-security aging</b>	
	<b>show port-security</b>	





---

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
```

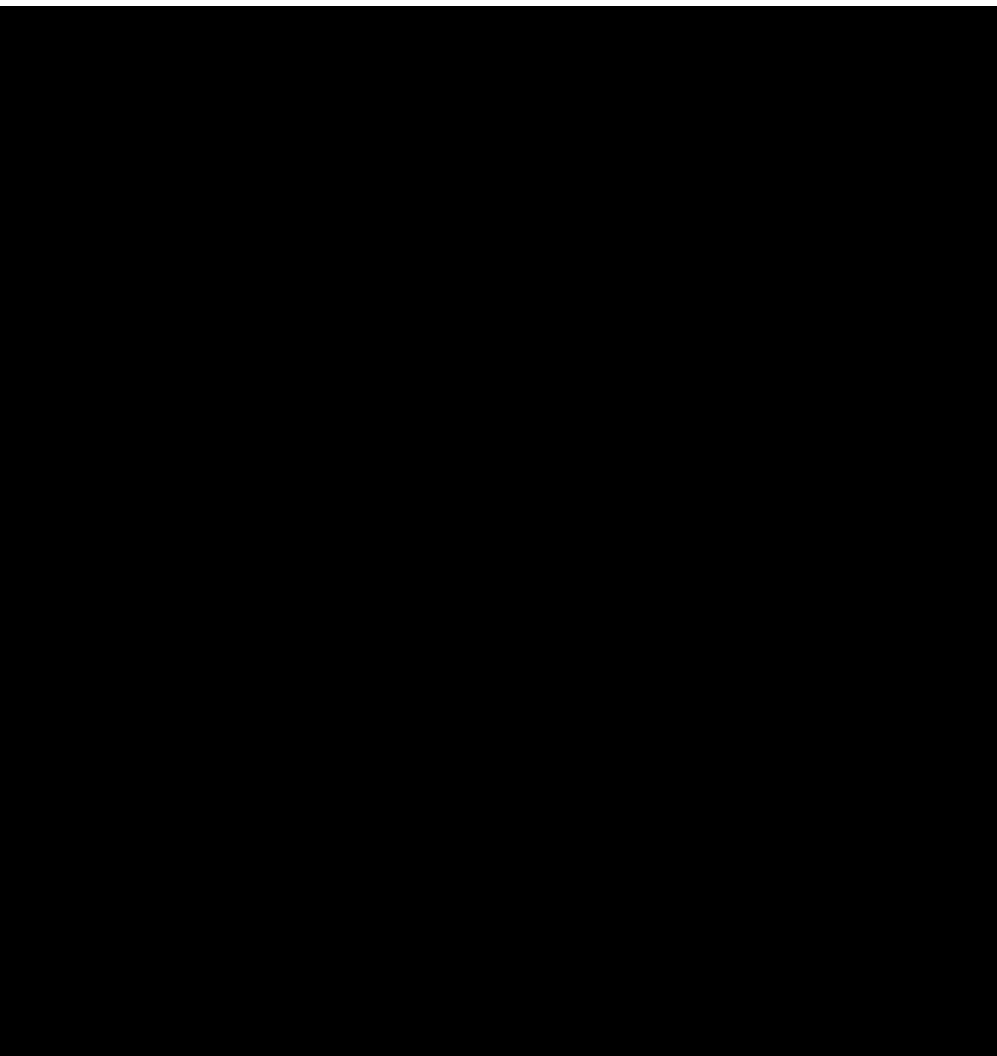
---

Interface Broadcast Control Multicast Control Unicast Control

-----  
Gi1/1 Disabled Disabled Disabled

<b>storm-control</b>	

-	-




---

	<b>switchport port-security</b>	
	<b>switchport port-security aging</b>	
	<b>switchport port-security mac-address</b>	

---

	-	-

# 30 802.1X

## 30.1 dot1x

### 30.1.1 dot1x auto-req

802.1X

**dot1x auto-req**

**no**

**[no] 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
```

┌

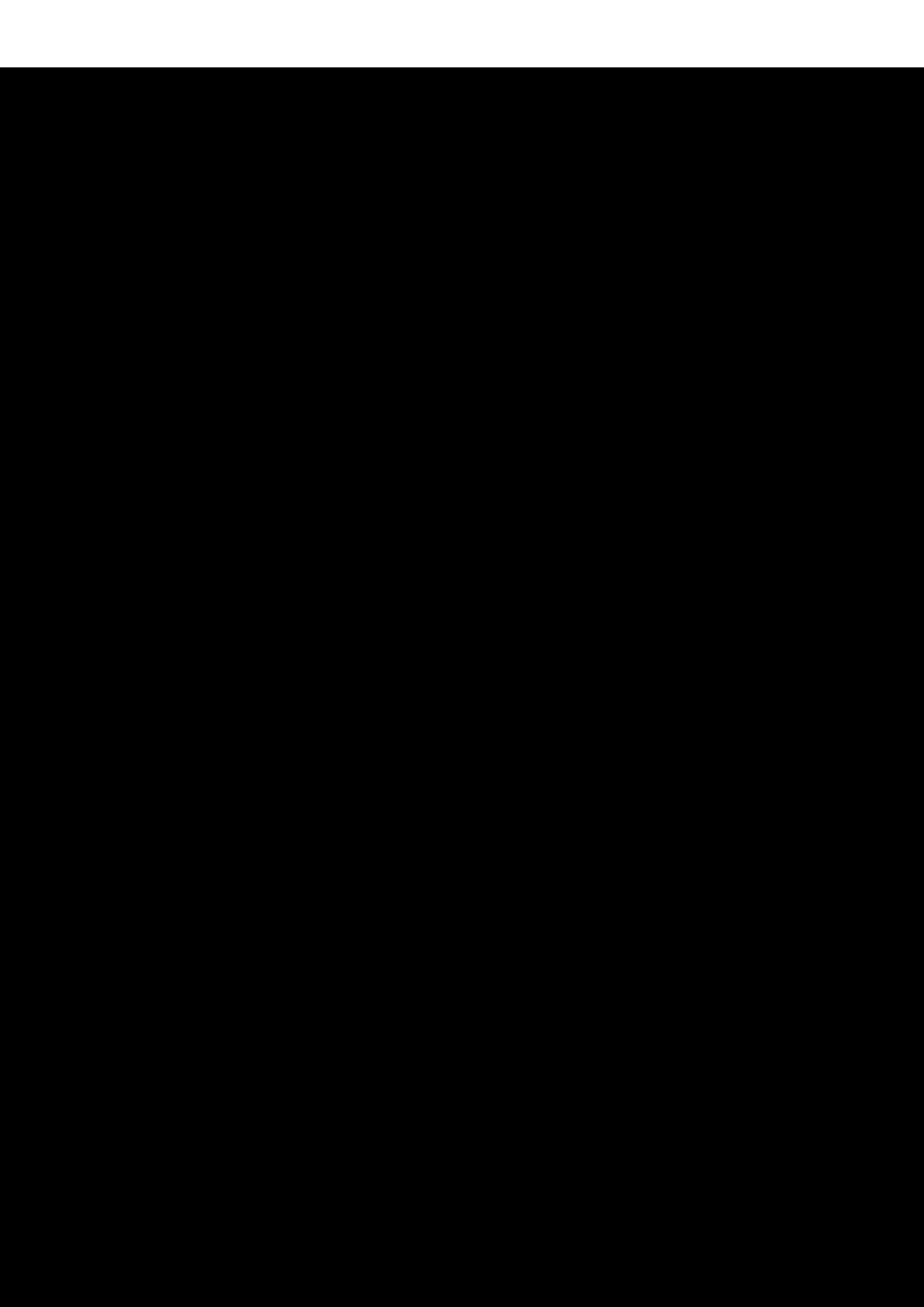
<b>show dot1x auto-req</b>	

┌

┌

-	-

### 30.2 dot1x



	<b>show dot1x</b>	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
    
```

<b>show dot1x</b>	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

```

<b>show dot1x</b>	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

```

	<b>show dot1x</b>	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

---

<b>show dot1x</b>	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

```

<b>show dot1x</b>	802.1x

-	-

## 30.4 dot1x

### 30.4.1 dot1x probe-timer

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

**no dot1x probe-timer**

<b>no</b>	

<i>interval</i>	hello
<b>alive</b>	
<b>interval</b>	

```
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
```

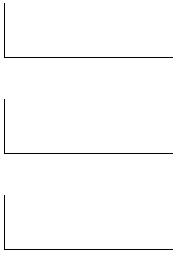
<b>Show dot1x probe-timer</b>	

-	-

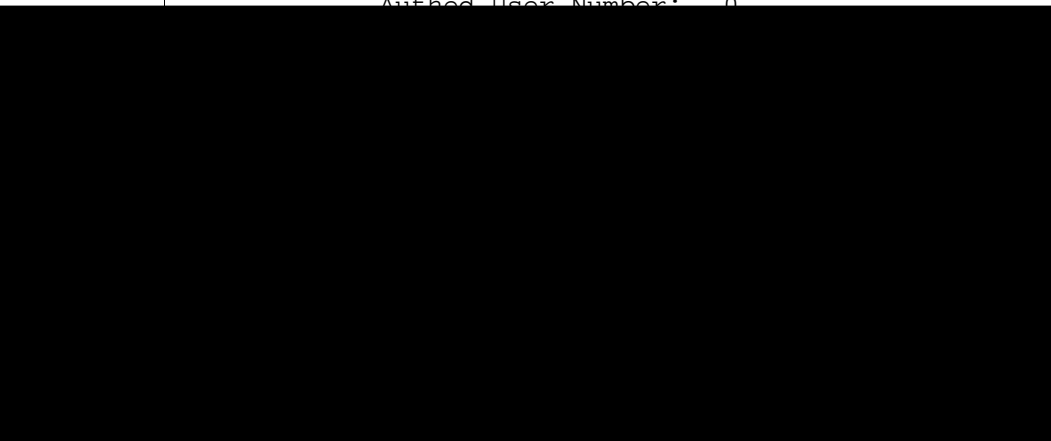
### 30.4.2 dot1x client-probe enable

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

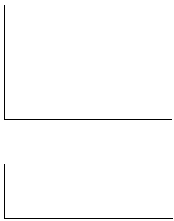
-	-



```
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
```



<b>show dot1x</b>	dot1x



--	--

-

-

### 30.5.1 dot1x authentication

AAA

AAA

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

<b>default</b>	
<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

```

<b>aaa new-model</b>	AAA
<b>aaa authentication dot1x</b>	

-	-

### 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

```

<b>show dot1x interface</b>	802.1x

<b>10.3(5)</b>	

**30.5.5 dot1x auth-mode**

802.1x

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

<b>eap-md5</b>	802.1x	EAP-MD5
<b>chap</b>	802.1x	CHAP
<b>pap</b>	802.1x	PAP

EAP-MD5

**show dot1x**      802.1x

802.1x

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

<b>show dot1x</b>	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
```

<b>show dot1x</b>	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#

<b>show dot1x</b>		802.1x

┌

┌

	-	-

### 30.5.8 dot1x guest-vlan

guest vlan no



-	-
---	---

┌

┌

┌

**show dot1x**            802.1x

┌  
 ┌  
 ┌  
 ┌

```

      802.1X    tag
Ruijie# configure terminal
Ruijie(config)# dot1x eapol-tag
Ruijie(config)# end
Ruijie#
  
```

┌

<b>show dot1x</b>	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
```

<b>show dot1x port-control interface</b>	802.1x
--	--------

<b>10.3(5)</b>	
----------------	--

### 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
```

	<b>show dot1x port-control interface</b>	802.1x
	<b>10.3(5)</b>	

### 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

	<b>show dot1x port-control interface</b>	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#
    
```

<b>show dot1x</b>	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}]} gCAGVACGV/

<b>single-host</b>	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
                                         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#

```

<b>show dot1x port-control</b>	802.1x
<b>Show running-config</b>	

### 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
    
```

└───

<b>dot1x redirect url</b>	
<b>dot1x redirect for special tcp-destination port</b>	web ip ip
<b>dot1x redirect time-out</b>	
<b>show dot1x</b>	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>	

┌

┌

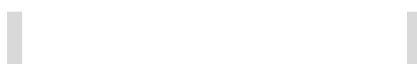
┌

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

<b>dot1x auth-mode</b>	802.1x
<b>dot1x max-req</b>	
<b>dot1x port-control auto</b>	
<b>dot1x reauth-max</b>	

	<b>dot1x timeout supp-timeout</b>	
	<b>dot1x timeout tx-period</b>	

└───┘



<b>dot1x re-authentication</b>	
<b>dot1x timeout quiet-period</b>	
<b>dot1x timeout re-authperiod</b>	
<b>dot1x timeout server-timeout</b>	
<b>dot1x timeout supp-timeout</b>	

---

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

---

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

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

-	-

### 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#

```

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

-	-
---	---

### 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#
```

<b>dot1x auth-mode</b>	802.1x
<b>dot1x max-req</b>	
<b>dot1x port-control auto</b>	
<b>dot1x reauth-max</b>	

---

**dot1x timeout quiet-period**

### 30.6.8 show dot1x re-authentication

#### show dot1x re-authentication

	-	-

|

|

|

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

<b>dot1x auth-mode</b>	802.1x
<b>dot1x max-req</b>	
<b>dot1x port-control auto</b>	
<b>dot1x reauth-max</b>	

-	-

### 30.6.9 show dot1x reauth-max

#### show dot1x reauth-max

-	-

└───

└───

└───

└───

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

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

	<b>dot1x timeout supp-timeout</b>	
	<b>dot1x timeout tx-period</b>	
	-	-

### 30.6.10 show dot1x summary

Ø 5 # ! S



```

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

```

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

-	-

## 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#

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

	<b>dot1x timeout tx-period</b>	
	-	-

## 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 IP
	HTTP

```

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

<b>show http redirect</b>	HTTP
<b>http redirect homepage</b>	


10.2(5)	

### 30.7.3 http redirect direct-site

**no**

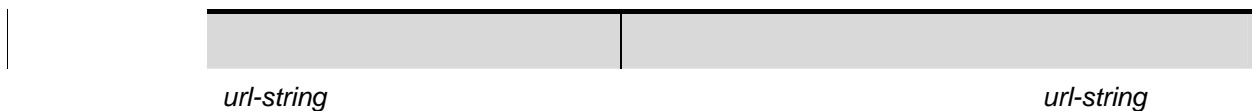
**http redirect direct-site** *ip-address* [*ip-mask*] [**arp**]

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



**http redirect homepage** *url-string*

**no http redirect homepage**





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

```

GET/HEAD          HTTP
GET/HEAD          TCP
4
Ruijie# configure terminal
Ruijie(config)# http redirect timeout 4

```

<b>show http redirect</b>	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

<b>http redirect</b>	HTTP	IP
<b>http redirect direct-site</b>		
<b>http redirect homepage</b>		
<b>http redirect port</b>	HTTP	
<b>http redirect session-limit</b>		HTTP
<b>http redirect timeout</b>		

<b>10.2(5)</b>	
----------------	--

# 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
<b>arp</b>	ARP CHECK ARP <b>arp</b>

|

|

Web	Web
50	

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

<b>show http redirect</b>	HTTP

|

<b>10.2(5)</b>	

**no**



┌

```

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

```

<b>show http redirect</b>	HTTP

┌

<b>10.2(5)</b>	

### 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
```



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

### 31.1.7 web-auth allow-vlan

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



┌

┌

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
<b>web-auth allow-vlan</b>	

└───  
└───

10.4(2b2)	

### 31.2.3 show web-auth direct-host

web

**show web-auth direct-host**

└───  
└───  
└───

-	-

1

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

Direct hosts:

Address	Mask	Port	ARP Binding
192.168.0.1	255.255.255.255	Fa0/2	On
192.168.4.11	255.255.255.255	Fa0/10	On
192.168.5.0	255.255.255.0	Fa0/16	Off

Address	IP
Mask	IP
Port	IP
ARP Binding	ARP

<b>web-auth direct-host</b>	IP
-----------------------------	----

<b>10.2(5)</b>	
----------------	--

### 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

	<b>10.2(5)</b>	
--	----------------	--

## 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*}

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

-m f5\_0hodf5\_2f 0 Tc23 Tc 2.28 0 T2 [<13.891 66.84 ...]745.5 0 Tc -0.0018 Tw 1.12 0 T012 T-96m 94T-9re576.84 n

<b>aaa new-model</b>	AAA
<b>dot1x authentication</b>	802.1X
<b>username</b>	

!

AAA Enable

RADIUS

RADIUS

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

|

|

```

AAA
aaa authentication login
Login
AAA Login
Login
RADIUS
RADIUS

```

|

```

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

```

|

<b>aaa new-model</b>	AAA
<b>username</b>	
<b>login authentication</b>	Login

|

|

--	--

<b>local</b>	
<b>none</b>	
<b>group</b>	TACACS+ RADIUS

└───┘

└───┘

└───┘

AAA PPP AAA PPP  
**aaa authentication ppp** PPP

rds\_ppp AAA PPP  
RADIUS RADIUS

Ruijie(config)# **aaa authentication ppp** *rds\_ppp*

<b>default</b>	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

```

<b>aaa new-model</b>	AAA
<b>username</b>	
<b>login authentication</b>	Login

-	-
---	---

## 32.2

### 32.2.1 aaa authorization commands

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

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

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

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

AAA Network

RGOS

PPP SLIP

RADIUS TACACS+

RADIUS

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

<b>aaa new-model</b>	AAA
<b>aaa accounting</b>	AAA
<b>aaa authentication</b>	AAA

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

<i>level</i>	0~15
<b>default</b>	
<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**

<b>aaa new-model</b>	AAA
<b>aaa authorization commands</b>	AAA

-	-

**32.2.7 authorization exec**

Exec

**authorization exec**

no

Exec

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

<b>default</b>	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**

<b>aaa new-model</b>	AAA
<b>aaa authorization commands</b>	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
<b>default</b>	
<i>list-name</i>	
<i>method</i>	<b>none group</b> 4
<b>none</b>	
<b>group</b>	TACACS+

RGOS



<b>aaa new-model</b>	AAA
<b>aaa authentication</b>	AAA
<b>accounting commands</b>	Exec
-	-

### 32.3.3 aaa accounting network

**aaa accounting network** no

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

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

<b>default</b>	Network
<i>list-name</i>	
<b>start-stop</b>	
<i>method</i>	4
<b>none</b>	
<b>group</b>	TACACS+ RADIUS

RGOS **start-stop**

RADIUS

```
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)#
```

--	--

	<b>aaa new-model</b>	AAA
	<b>aaa accounting network</b>	

┌

---



-	-

### 32.3.6 accounting commands

#### accounting commands

no

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

**no accounting commands** *level*

<i>level</i>	0~15
<b>default</b>	
<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
```

<b>aaa new-model</b>	AAA
<b>aaa accounting commands</b>	AAA

└──

	-	-

### 32.3.7 accounting exec

Exec

no

Exec

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

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

└───┘

└───┘

└───┘

└───┘

```

Exec
Exec
                               Exec
                               Exec

```

└───┘

```

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

```

└───┘

<b>aaa new-model</b>	AAA
<b>aaa accounting commands</b>	AAA Exec

└───┘

└───┘

--	--

	-	-
--	---	---

## 32.4 AAA

### 32.4.1 aaa domain

no

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

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

	<b>default</b>	
	<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**

	<b>aaa new-model</b>	AAA
	<b>show aaa domain</b>	

--	--

	-	-

### 32.4.3 access-limit

IEEE802.1x no

**access-limit** *num*



default

Network

Network

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

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

<b>aaa new-model</b>	AAA
<b>aaa domain enable</b>	AAA
<b>show aaa domain</b>	

-	-

### 32.4.5 authentication dot1x

IEEE802.1x

no

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

**no authentication dot1x**

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

default



IEEE802.1x

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



<b>aaa new-model</b>	AAA
<b>aaa domain enable</b>	AAA
<b>show aaa domain</b>	



-	-

### 32.4.8 show aaa domain

**show aaa domain [default**



-	-

## 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:
```

<b>show aaa group</b>	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
```

	<b>aaa group server</b>	aaa
	<b>show aaa group</b>	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
```

<b>aaa group server</b>	aaa
<b>show aaa group</b>	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**

<b>Show running-config</b>	
<b>Show aaa lockout</b>	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**

|

<b>Show running-config</b>	
<b>Show aaa lockout</b>	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**

	<b>aaa authentication</b>	
	<b>aaa authorization</b>	
	<b>aaa accounting</b>	

└───┘

	-	-

### 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
```

Acting9.

|

|

Ruijie# **show aaa user lockout all**

|

<b>show running-config</b>	
<b>show aaa lockout</b>	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

	<b>radius set qos cos</b>	radius	qos	cos
	-	-		

### 33.1.3 radius-server attribute 31

RADIUS Calling-Station-ID

┌

┌

10.3(5)	

### 33.1.4 radius-server deadtime

t

deadtime RGOS RADIUS t

**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**

┌

<b>radius-server host</b>	RADIUS
<b>radius-server retransmit</b>	RADIUS
<b>radius-server key</b>	RADIUS
<b>radius-server timeout</b>	RADIUS

┌

┌

-	-

### 33.1.5 radius-server host

RADIUS

**radius-server**

**no**

RADIUS

<i>ipv4-address</i>	IPv4		
<i>ipv6-address</i>	IPv6		
<i>auth-port</i>	UDP		
<i>port-number</i>	UDP	0	
<i>acct-port</i>	UDP		
<i>port-number</i>	UDP	0	

RADIUS



RADIUS

AAA

RADIUS

**radius-server**

R



RADIUS

---

RADIUS

RADIUS

<i>seconds</i>	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

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---	---

┌

┌

┌

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

┌

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---	---

### 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
```

<b>radius-server host</b>	RADIUS
<b>radius-server retransmit</b>	RADIUS
<b>radius-server key</b>	RADIUS
<b>radius-server timeout</b>	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

```

<b>radius-server host</b>	RADIUS
<b>radius-server retransmit</b>	RADIUS
<b>radius-server key</b>	RADIUS
<b>radius-server timeout</b>	RADIUS

e(1.B1D&gt;T59.66 175 ref661

RADIUS

---

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--	---	---

---

---

## 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
```

<b>server</b>	TACACS+	server
<b>ip vrf forwarding</b>	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+
host
aaa group server tacacs+ TACACS+
tacacs-server
```

```
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
```



```
0 Td2 ercac(eracac)6(s+)]TJ/c(er+ 1
```

┌

┌

TACACS+    AAA    TACACS+  
**tacacs-server**    TACACS+

┌

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

┌

<b>aaa authentication</b>	AAA
<b>tacacs-server key</b>	TACACS+
<b>tacacs-server timeout</b>	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)# <b>tacacs-server key aaa</b>		
	<b>tacacs-server host</b>	TACACS+	
	<b>tacacs-server timeout</b>	TACACS+	
	-	-	

### 34.1.7 tacacs-server timeout

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



### 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
```

|

<b>tacacs-server host</b>	TACACS+

|

-	-
---	---

# 35 SSH

## 35.1 SSH

### 35.1.1 crypto key generate

**crypto key generate {rsa | dsa}**

<b>rsa</b>	RSA
<b>dsa</b>	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

	-	-
--	---	---

### 35.1.2 crypto key zeroize

SSH

**crypto key zeroize {rsa / dsa}**

<b>rsa</b>		RSA
<b>dsa</b>		DSA

--

--

	SSH Server	SSH Server	DISABLE
		<b>no enable service ssh-server</b>	

```
Ruijie# configure terminal  
Ruijie(config)# crypto key zeroize rsa
```

<b>show ip ssh</b>		SSH Server
<b>crypto key generate {rsa dsa}</b>		DSA RSA

	RGOS10.1
--	----------

	-	-

### 35.1.3 ip ssh authentication-retries

SSH Server no

**ip ssh authentication-retries** *retry times*

**no ip ssh authentication-retries**



┌

SSH Server

120s show ip ssh SSH server

┌

100s

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

┌

<b>show ip ssh</b>	ssh-server

┌

RGOS10.1

┌

-	-

### 35.1.5 ip ssh version

SSH server no

**ip ssh version {1 / 2}**

**no ip ssh version**

┌

<b>1</b>	SSH Server    SSH1
<b>2</b>	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}**

<b>rsa</b>	RSA
<b>dsa</b>	DSA

SSH Server

Ruijie# **show crypto key mypubkey rsa**

<b>crypto key generate {rsa   dsa}</b>	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**

<b>ip ssh version {1   2}</b>	SSH Server
<b>ip ssh time-out time</b>	SSH Server
<b>ip ssh authentication-retries retry times</b>	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 slot-num
```

CPU



# 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
```

<b>show ip deny land</b>	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
--	-------------------	------

|

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--	---	---

# 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

┌

	<b>security gsn enable</b>	GSN

┌

RGOS10.1

┌

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### 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

1            J/C2\_1 Tf0 Tc 3.132 0 05272.987 0 OCC1>-6< 1 Tf1.252 0 T

| 5

|

|

**show security event interval**

|

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

|

<b>show security event interval</b>	

|

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

	<b>show smp-server</b>	smp server

RGOS10.1

	-	-

## 38.2

### 38.2.1 show security evnet interval

-	-

┌

┌

┌

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

<b>security event interval</b> <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

<b>smp-server host</b>	smp server ip

RGOS10.1

-	-

## 39 DAI

### 39.1 VLAN DAI

#### 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

```

<b>show ip arp inspection vlan</b>	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	<b>show ip arp inspection interface</b>

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

<b>show ip arp inspection interface</b>	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
```

<b>show anti-arp-spoofing</b>	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
```

<b>anti-arp-spoofing ip</b>	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
```

--	--

	<b>show ip source binding</b>	IP
	-	-

## 41.2 IP Source Guard

### 41.2.1 ip verify source

	IP Source Guard <b>no</b>	
	<b>[no] ip verify source [port-security]</b>	
	<b>port-security</b>	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
```

<b>ip source binding</b>	IP

|

---

|

---

-	-

└──

└──

-	-



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

<i>percent_vaule</i>	1 100

NFPP

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

	IP	MAC	8
	200		

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
```



	<b>nfpp arp-guard policy</b>	
	<b>show nfpp arp-guard summary</b>	
	<b>show nfpp arp-guard hosts</b>	

┌

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

<b>nfpf arp-guard enable</b>	ARP
<b>show nfpf arp-guard summary</b>	

┌

```
-
```

-	-

### 42.3.3 arp-guard isolate-period

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

┌

seconds	0 [30, 86400]
permanent	

┌

0

┌

NFPP

┌

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

<b>nfpf arp-guard isolate-period</b>	
<b>show nfpf arp-guard summary</b>	

|

|

-	-

### 42.3.4 arp-guard monitor-period

**arp-guard monitor-period** *seconds*

|

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

,Xr0-B#<Xr0

### 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
```

<b>show nfpp arp-guard summary</b>		

-		-

### 42.3.6 arp-guard rate-limit

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

--	--	--

<b>per-src-ip</b>	IP
<b>per-src-mac</b>	MAC
<b>per-port</b>	
<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
```

<b>nfpp arp-guard policy</b>	
<b>show nfpp arp-guard summary</b>	

-	-
---	---

### 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
```

<b>nfpp arp-guard scan-threshold</b>	
<b>show nfpp arp-guard summary</b>	
<b>show nfpp arp-guard scan</b>	ARP
<b>clear nfpp arp-guard scan</b>	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]
<b>permanent</b>		

└───┘

└───┘

└───┘

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

<b>arp-guard isolate-period</b>	
<b>show nfpp arp-guard summary</b>	

└───┘

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
```

<b>per-src-ip</b>	IP
<b>per-src-mac</b>	MAC
<b>per-port</b>	
<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
```

<b>arp-guard scan-threshold</b>	
<b>show nfpp arp-guard summary</b>	
<b>show nfpp arp-guard scan</b>	ARP
<b>clear nfpp arp-guard scan</b>	ARP

10.4	

## 42.4 DHCP

### 42.4.1 dhcp-guard attack-threshold

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

<b>per-src-mac</b>	MAC
<b>per-port</b>	
<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
```

	<b>nfpp dhcp-guard policy</b>	
	<b>show nfpp dhcp-guard summary</b>	
	<b>show nfpp dhcp-guard hosts</b>	
	<b>clear nfpp dhcp-guard hosts</b>	

┌

	-	-

### 42.4.2 dhcp-guard enable

DHCP

**dhcp-guard enable**

	-	-

┌

DHCP

┌

NFPP

┌

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

	<b>nfpp dhcp-guard enable</b>	DHCP
	<b>show nfpp dhcp-guard summary</b>	

┌

--	--	--

	-	-
--	---	---

### 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
```

<b>nfpp dhcp-guard policy</b>	
<b>show nfpp dhcp-guard summary</b>	

-	-

### 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

<b>show nfpp dhcp-guard hosts</b>	
-	-

### 42.4.8 nfpp dhcp-guard enable

DHCP

**nfpp dhcp-guard enable**

-	-

DHCP

|

|

DHCP

DHCP

|

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

|

<b>dhcp-guard enable</b>	DHCP
<b>show nfpp dhcp-guard summary</b>	

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

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

└───┘

└───┘

└───┘

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

<b>dhcp-guard isolate-period</b>	
<b>show nfpp dhcp-guard summary</b>	

└───┘

10.4	

### 42.4.10 nfpp dhcp-guard policy

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

<b>per-src-mac</b>	MAC		
<b>per-port</b>			
<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
```

<b>dhcp-guard attack-threshold</b>	
<b>dhcp-guard rate-limit</b>	
<b>show nfpp dhcp-guard summary</b>	
<b>show nfpp dhcp-guard hosts</b>	
<b>clear nfpp dhcp-guard hosts</b>	

|

|

10.4	

## 42.5 DHCPv6

### 42.5.1 dhcpv6-guard attack-threshold

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

|

<b>per-src-mac</b>	MAC
<b>per-port</b>	
<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**

<b>nfpp dhcpv6-guard enable</b>	DHCPv6
<b>show nfpp dhcpv6-guard summary</b>	
10.4	

### 42.5.3 dhcpv6-guard isolate-period

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

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

0

NFPP

Ruijie(config)# **nfpp**

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

<b>nfpp dhcpv6-guard isolate-period</b>	
<b>show nfpp dhcpv6-guard summary</b>	



**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
```

<b>nfpp dhcpv6-guard policy</b>	
<b>show nfpp dhcpv6-guard summary</b>	

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
```

<b>dhcpv6-guard attack-threshold</b>	
<b>nfpp dhcpv6-guard policy</b>	
<b>show nfpp dhcpv6-guard hosts</b>	

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
```

<b>dhcpv6-guard enable</b>	DHCPv6
<b>show nfpp dhcpv6-guard summary</b>	

10.4	

### 42.5.9 nfpp dhcpv6-guard isolate-period

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

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

|

|

|

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

<b>dhcpv6-guard isolate-period</b>	

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

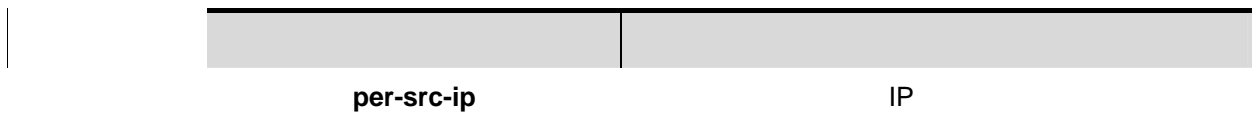
└───

└───

└───

```
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
```

<b>dhcpv6-guard attack-threshold</b>	
<b>dhcpv6-guard rate-limit</b>	
<b>show nfpp dhcpv6-guard summary</b>	
<b>show nfpp dhcpv6-guard hosts</b>	
<b>clear nfpp dhcpv6-guard hosts</b>	



NFPP

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

<b>nffp icmp-guard enable</b>	ICMP
<b>show nfpp icmp-guard summary</b>	

-	-

### 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**

<b>per-src-ip</b>	IP
<b>per-port</b>	
<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
```

<b>nfpp icmp-guard policy</b>	
<b>show nfpp icmp-guard summary</b>	

-	-

## 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
```

|

<b>icmp-guard attack-threshold</b>	
<b>nfpp icmp-guard policy</b>	
<b>show nfpp icmp-guard hosts</b>	

|

|

-	-

### 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
```

|

<b>icmp-guard enable</b>	ICMP

<b>show nfpp icmp-guard summary</b>	
10.4	

### 42.6.10 nfpp icmp-guard isolate-period

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

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

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

<b>icmp-guard isolate-period</b>	
<b>show nfpp icmp-guard summary</b>	

10.4	

### 42.6.11 nfpp icmp-guard policy

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

<b>per-src-ip</b>	IP
<b>per-port</b>	
<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
```

<b>icmp-guard attack-threshold</b>	
<b>icmp-guard rate-limit</b>	
<b>show nfpp icmp-guard summary</b>	
<b>show nfpp icmp-guard hosts</b>	
<b>clear nfpp icmp-guard hosts</b>	

10.4	

## 42.7 ND

### 42.7.1 nd-guard attack-threshold

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

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

		/	30	
30		/		30

NFPP

```

threshold per-port ns-na 20
threshold per-port rs 10
threshold per-port ra-redirect
    
```

**nfpp nd-guard policy**

└──

ND

└──

NFPP

└──

└──

```
Ruijie(config)# nfp
Ruijie(config-nfp)# nd-guard enable
```

└──

<b>nfp nd-guard enable</b>	ND
<b>show nfp nd-guard summary</b>	

└──

└──

10.4	

### 42.7.3 nd-guard rate-limit

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

└──

<b>ns-na</b>	
<b>rs</b>	
<b>ra-redirect</b>	
<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
```

<b>nfpp nd-guard policy</b>	
<b>show nfpp nd-guard summary</b>	

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
```

<b>nd-guard enable</b>	ND
<b>show nfpp nd-guard summary</b>	

	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	

<b>nd-guard attack-threshold</b>	
<b>nd-guard rate-limit</b>	
<b>show nfpp nd-guard summary</b>	

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**

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

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**]]

<b>statistics</b>	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)				

<b>arp-guard scan-threshold</b>	
<b>nfpp arp-guard scan-threshold</b>	
<b>clear nfpp arp-guard scan</b>	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          -
```

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

-	-
---	---

## 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]]]
```

<b>statistics</b>	
<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)
    
```

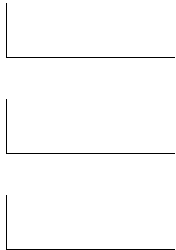
<b>clear nfpp dhcp-guard hosts</b>	

--	--

## 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	-

---

<b>dhcp-guard rate-limit</b>	
<b>nfpp dhcp-guard enable</b>	DHCP
<b>nfpp dhcp-guard isolate-period</b>	
<b>nfpp dhcp-guard policy</b>	

---

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)
    
```



<b>clear nfpp dhcpv6-guard hosts</b>	



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      -
    
```

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

<b>statistics</b>	
<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)
    
```

<b>clear nfpp icmp-guard hosts</b>	

10.4	

### 42.12.2 show nfpp icmp-guard summary

**show nfpp icmp-guard summary**

	-	-

|

|

|

<b>nfpp icmp-guard isolate-period</b>	
<b>nfpp icmp-guard policy</b>	

└───┘

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)
```

<b>icmp-guard trusted-host</b>	

└───┘

--	--

NFPP

NFPP

<b>ndfpp nd6(agu)y</b>	G!5B ÂD_6" 4" Ĩ 66"
<b>nd-guard attack-threshold</b>	
<b>nd-guard enable</b>	ND
<b>nd-guard ra</b>	

# 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
<b>Deny</b>	
<b>Permit</b>	
<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
<b>fragments</b>	

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

<b>match-all</b>	<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
```

```
Ruijie(config)#
```

### 43.1.2 deny

6  
(deny)

1 IP

[sn] deny {source source-wildcard 1

[sn] d{ } [(s)-8(FS)8(Tu/C2)5-01007 T300000 Td (,)0571028(11P)4/02\_637.48601j341p600-246

*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
<b>dscp</b>	
<i>dscp</i>	0-63.
<b>flow-label</b>	
<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
```

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

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)#
    
```

<b>show expert access-lists</b>	

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
<b>in</b>	
<b>out</b>	

ACL

**ip access-group**

fastEthernet0/0 120

Ruijie(config)# **interface fastEthernet 0/0**

Ruijie(config-if)#**ip access-group 120 in**

<b>access-list</b>	
<b>show access-lists</b>	
<b>show ip access-list</b>	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

<b>show access-lists</b>	

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
<b>in</b>	
<b>out</b>	

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
<b>in</b>	
<b>out</b>	



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	<b>no</b>	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** | hostdestination-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 748013 557 0 Td[<02D603DF>-94 0
```

<b>ip access-group</b>	IP ACL
<b>mac access-group</b>	MAC ACL
<b>ip access-list</b>	IP ACL
<b>mac access-list</b>	MAC ACL
<b>expert access-list</b>	ACL
<b>ipv6 access-list</b>	IPV6 ACL
<b>deny</b>	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.
```

<b>ip access-group</b>	ip
<b>mac access-group</b>	MAC
<b>expert access-group</b>	Expert
<b>ipv6 traffic-filter</b>	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
```

ACL

group mm in  
interface GigabitEthernet 0/3.

st

MAC

ACL

V10.2	V10.2

### 43.3.2 security global access-group

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

**no security global access-group**

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

|

|

|

|

Ruijie(config)#**security global access-group 1**

|

--	--

**show secu-acl**



Fa0/6      uplink      --

<b>security global access-group</b>	
<b>security access-group</b>	
<b>security uplink enable</b>	

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**

<b>CoS to DSCP</b>	<b>CoS</b>	<b>DSCP</b>
	0	0
	1	8
	2	16
	3	24
	4	32
	5	40
	6	48
	7	56

IP-Precedence to DSCP

<b>IP-Precede nce to DSCP</b>	<b>IP-Precedence</b>	<b>DSCP</b>
	0	0
	1	8
	2	16
	3	24
	4	32
	5	40
	6	48
	7	56

DSCP to CoS

<b>DSCP to CoS</b>	<b>DSCP</b>	<b>CoS</b>
	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
    
```

<b>show mac access-lists</b>	-
<b>show ip access-lists</b>	-
<b>show class-map</b>	-

-	-

### 44.2.2 drr-queue bandwidth

DRR

**drr-queue bandwidth** *weight1...weight8*

**no drr-queue bandwidth**

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

```

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

--	--

	<b>show mls qos queueing</b>	-
	-	-

QOS

### 44.2.4 mls qos

mls qos co

no mls qos

de

no

Co

Ru

Ru

itethernet 1/1

7

0 Tc[(sho)18(w)-2501 6( Tf0 6(s rnet)Tj0 Td( )28 -0.012 T

	<b>dscp</b>	
	<b>no</b>	

|

|

|

|

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**

<b>dscp</b>	
<b>no</b>	

```
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**

<b>sp</b>	
<b>rr</b>	
<b>wrr</b>	
<b>drr</b>	
<b>no</b>	

wrr

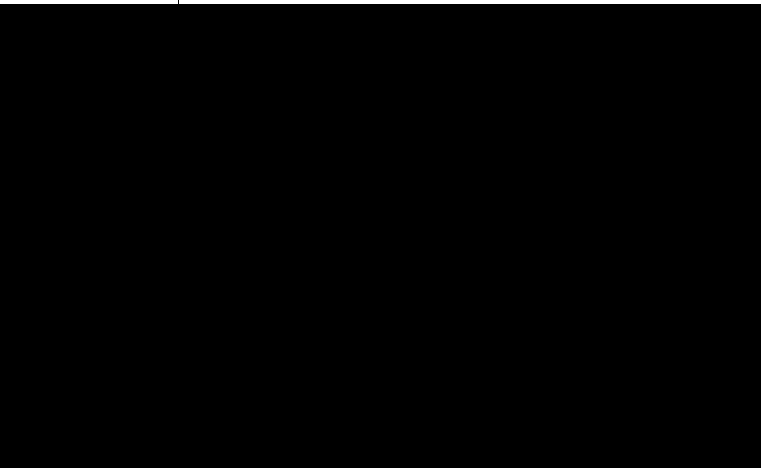
Ruijie(config)# **mls qos scheduler sp**

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

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



<b>no policy-map</b> <i>policy-map-name</i>	policy map
<i>class-map-name</i>	class map
<b>no class</b> <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
```



<b>priority-queue</b>	SP
<b>no priority-queue</b>	WRR

|

WRR

|

|

|

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

<b>show mls qos queueing</b>	-

|

-	-

### 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
```

<b>show mls qos queueing</b>	-

-	-

### 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
<b>no</b>	policy map

```
Ruijie(config)# interface fastEthernet 0/1
```

```
Ruijie(config-if)# service-policy input po
```

<b>show mls qos interface</b>	-

-	-

## 44.2.14 wrr-queue bandwidth

WRR

**wrr-queue bandwidth** *weight1 ... weightn*

**no wrr-queue bandwidth**

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

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

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

<b>show mls qos queueing</b>	-

-	-

## 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**

-	-



---

<b>ip-prec-dscp</b>	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*]**

	<b>interface</b>	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
```

r

1	Voice VLAN		
	Voice VLAN	Voice VLAN	
2			
	native VLAN	Voice VLAN	
3	Trunk Port/Hybrid Port		VLAN
	Voice VLAN	VLAN	Voice
VLAN			Voice VLAN
		Voice VLAN	

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

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

10.4	
------	--

### 45.2.2 show voice vlan oui

OUI      OUI

**show voice vlan oui**

Voice VLAN

---

--	--	--

└───

└───

---

# 46

## 46.1

### 46.1.1 rgos-security compatible

	RGOS	rgos-security
compatible	RGOS	no
rgos-security compatible		
no rgos-security compatible		
	RGOS	
	r	
	1	RGOS
	Ruijie(config)#no gos-security compatible	

# 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**

	<b>rldp detect-max</b>	

	-	-

### 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**

	<b>rldp detect-interval</b>	

	-	-

### 47.1.3 rldp enable

RLDP

**rldp enable**

**no rldp enable**

--	--	--

	RLDP	RLDP
	Ruijie(config)# <b>rldp enable</b>	
	<b>rldp port</b>	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 }**

	<b>unidirection-detect</b>	
	<b>bidirection-detect</b>	
	<b>loop-detect</b>	
	<b>warning</b>	
	<b>shutdown-svi</b>	shutdown      svi
	<b>shutdown-port</b>	shutdown
	<b>block</b>	

	RLDP	RLDP
	fas 0/1	rldp

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

<b>rldp enable</b>	rldp

-	-

### 47.1.5 rldp reset

**rldp shutdown    disable                    rldp**

**rldp reset**

-	-

```
Ruijie# rldp reset
```

<b>rldp enable</b>	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
```

└───

<b>tp-guard port enable</b>	
<b>cpu topology-limit</b>	CPU

└───

-	-

### 48.1.2 tp-guard port enable

no

**[no] tp-guard port enable**



|

|

tpp

|

Ruijie# **show tpp**

|

<b>topology guard</b>	

|

|

-	-

---

# 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

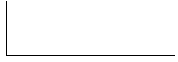
```

<b>del</b>	
<b>rename</b>	
<b>dir</b>	

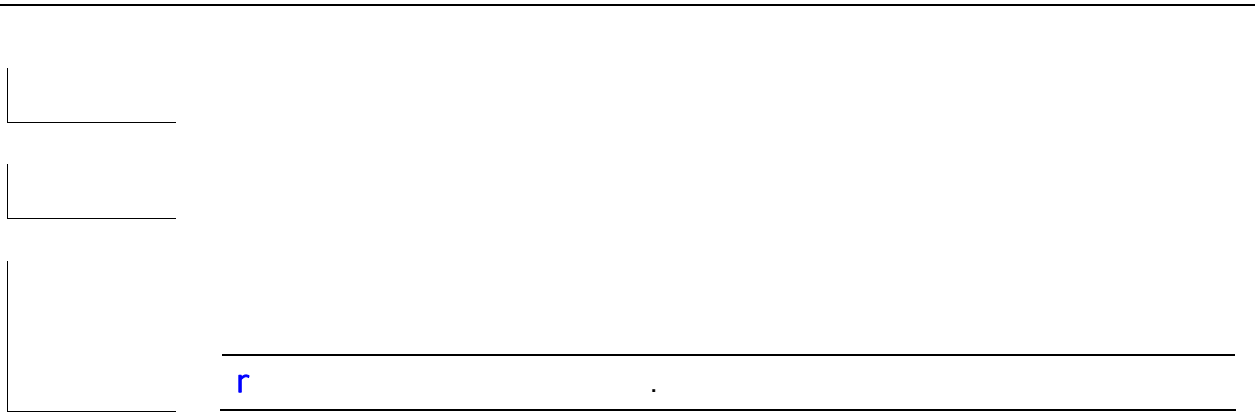

### 49.1.3 delete

#### delete url

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



url



```
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
```

<b>rmdir</b>	
<b>pwd</b>	

|

--	--

---


### 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>	,

--

--

--

--

tmp  
Ruijie# **rmdir** tmp

<b>mkdir</b>	

--


## 49.2

### 49.2.1 pwd

---

**pwd**


└─┘

└─┘

└─┘

└─┘  
1  
Ruijie# **pwd**  
**flash:/**

<b>cd</b>	

└─┘


## 49.2.2 show file systems

**show file systems**


└─┘

---

└──

└──

└──

1  
Ruijie#show file systems

└──


└──

└──


---

# 50

## 50.1 CPU

### 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%	psnpd
67	0%	0%	0%	igsnpd
68	0%	0%	0%	coa_recv
69	0%	0%	0%	co_oper
70	0%	0%	0%	co_mac
71	0%	0%	0%	radius_task
72	0%	0%	0%	tac+_acct_task
73	0%	0%	0%	tac+_task
74	0%	0%	0%	dhcpd_task
75	0%	0%	0%	dhcps_task
76	0%	0%	0%	dhcpping_task
77	0%	0%	0%	dhcpc_task
78	0%	0%	0%	uart_debug_file_task
79	0%	0%	0%	ssp_init_task
80	0%	0%	0%	rl_listen
81	0%	0%	0%	ikl_msg_operate_thread
82	0%	0%	0%	bcmDPC

83	0%	0%	0%	bcmL2X.0	
84	3%	3%	3%	bcmL2X.0	
85	0%	0%	0%	bcmCNTR.0	
86	0%	0%	0%	bcmTX	
87	0%	0%	0%	bcmXGS3AsyncTX	
88	0%	2%	1%	bcmLINK.0	
89	0%	0%	0%	bcmRX	
90	0%	0%	0%	mngpkt_rcv_thread	
91	0%	0%	0%	mngpkt_recycle_thread	
92	0%	0%	0%	stack_task	
93	0%	0%	0%	stack_disc_task	
94	0%	0%	0%	redun_sync_task	
95	0%	0%	0%	conf_dispatch_task	
96	0%	0%	0%	devprob_task	
97	0%	0%	0%	rdp_snd_thread	
98	0%	0%	0%	rdp_rcv_thread	
99	0%	0%	0%	rdp_slot_change_thread	
100	4%	2%	1%	datapkt_rcv_thread	
101	0%	0%	0%	keepalive_link_notify	
102	0%	0%	0%	rerp_msg_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**

<b>show memory</b>	
-	
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	<b>memory-lack exit-policy</b>
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

```

<b>show memory</b>	

-

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

```

<b>show threshold</b>	

<b>10.3(4b3)</b>	

## 51.2

### 51.2.1 show threshold

**show threshold {cpu | memory | temperature} [M1 | M2 | slot *n* | member *n*]**

<b>cpu   memory   temperature</b>	<b>cpu CPU</b>
	<b>memory</b>
	<b>temperature</b>
<b>M1   M2   slot <i>n</i></b>	<b><i>n</i></b>
<b>member <i>n</i></b>	<b><i>n</i></b>

---

1 M1 CPU

Ruijie# **show threshold cpu M1**

2

Ruijie# **show threshold memory**

<b>threshold set</b>	

<b>10.3(4b3)</b>	

---

# 52

## 52.1

### 52.1.1 clear logging

clear logging

	-	-

**more flash:filename**

<i>Filename</i>	

└──

└──

└──

FLASH                                   "/f2" "/f3"

└──

```

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

└──

<b>logging file flash:</b>	FLASH

└──

└──

-	-

### 52.1.3 logging buffered

no

default

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

**no logging buffered**

**default logging buffered**

<i>buffer-size</i>	4K 128K Bytes

<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**

<b>logging on</b>	
<b>show logging</b>	
<b>clear logging</b>	



---

### 52.1.5 logging count

no

**logging count**

**no logging count**

	-	-

|

|

|

**no logging count**

|

Ruijie(config)# **logging count**

<b>show logging count</b>		
<b>show logging</b>		

|

	-	-

### 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

```

<b>logging on</b>	
<b>show logging</b>	
<b>more flash</b>	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      //
```

|

	<b>show running-config</b>	

|

|

	-	-

## 52.1.15 logging trap

---

no Syslog Server Syslog Server n o

---

**no service sequence-numbers**

	-	-

└───┘

└───┘

└───┘

1

└───┘

Ruijie(config)# **service sequence-numbers**

<b>logging on</b>		
<b>service timestamps</b>		

└───┘

	-	-

### 52.1.17 service sysname

no

**service sysname**

**no service sysname**

	-	-

└───┘

└───┘

---

L

---

---

	<i>year</i>	2007 Jul 27 16:53:07
--	-------------	----------------------

---

RTC

---

└───

VTY

└───

└───

VTY

VTY

└───

VTY

Ruijie# **terminal monitor**

└───

-	-

└───



---

```
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
```

---

	<b>logging on</b>	
	<b>clear logging</b>	

┌

	-	-

### 52.2.2 show logging count

**show logging count**

	-	-

---

	<b>clear logging</b>	
	-	-

# 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
```

<b>show member</b>	

|

-	-
---	---

<b>member</b> <i>member</i>	ID member 1
<i>description</i>	31

└───

└───

└───

write

└───

2 red-giant

Ruijie(config)# **device-description member 2 red-giant**

<b>show member</b>	

└───

-	-
---	---

## 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
```

-	-

-	-

