



RG-S2900

RGOS 10.4(2)

©2010

**RGOS®**

锐捷®

RGOS® 10.4(2)

1.

Courier New

5

2.

Arial

```
[]      []  
{ x | y | ... }  
[ x | y | ... ]  
//
```

3.

~

~

1.

2.

3.

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

show aliases	

-

privilege

ommand-string
mand-string

CLI
0-15

CLI
privilege ?

0.0.2 294.68 -139.2 -19.1Hp

```
Ruijie(config)# enable secret level 1 0 test
Ruijie(config)# privilege exec level 1 reload
1 CLI reload
Ruijie> reload ?
<cr>
reload 1 all
Ruijie(config)# privilege exec all level 1 reload
1 CLI reload
Ruijie> reload ?
at reload at a specific time/date
cancel cancel pending reload scheme
in reload after a time interval
<cr>
```

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

-		-



	-	-
--	---	---

	-	-
--	---	---

2.1.3 enable password

enable password	no
-----------------	----

enable password	no
-----------------	----

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

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

--	--

	enable secret	

2.1.4 enable secret

enable secret	no
----------------------	-----------

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

no enable secret

|

|

|

|

no enable service

enable service ssh-sesrver, SSH Server

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



Telnet

configure terminal

line tty 1 16

	enable	
	Web	no ip http authentication
	Web	local
	Ruijie(config)# ip http authentication local	
	enable service	

-	-

2.1.9 ip telnet source-interface

IP

Telnet

ip

telnet source-interface

ip telnet source-interface interface-name

interface-name	IP Telnet

IP

Telnet

telnet

Telnet

no ip telnet source-interface

Loopback 1

IP

Telnet

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

telnet	Telnet

10.4(2)	

2.1.10 lock

[illegible]

2.1.11 lockable

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**

	password	line

line

username

VTY

Ruijie(config)# no aaa new-model

Ruijie(config)# username test password 0 test

Ruijie(config)# line vty 0

Ruijie(config-line)# login local

username	

-	-

2.1.15 privilege mode

CLI

-	-

CLI

CLI

CLI

CLI

-	-

--	--

	-	-

2.1.16 password

line	line	password	no	line
password { <i>password</i> [0 7] <i>encrypted-password</i> }				
no password				
	<i>password</i>	line		

service password-encryption

--	--

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

telnet	
~	/ipv6 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

ip telnet source-interface	IP Telnet
show session	TTY
exit	

-	-

2.1.19 username

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

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

2.2.2 banner motd

banner motd

no banner motd

banner motd *c message c*

c	
message	

```

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

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

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

```

show boot system	

-

-	-

2.2.4 clock set

clock set

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

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

```

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

```

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

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

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

	show clock	

[illegible][illegible]

2.2.5 clock update-calendar

clock update-calendar	
-	-

[illegible][illegible]

calendar

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





```
Router will reload in 600 seconds.
```

-	-

-	-

2.2.10 session-timeout

LINE

no session-timeout

LINE

session-timeout

session-timeout *minutes* [output]

no session-timeout

<i>minutes</i>	
output	



0 min

LINE

LINE

LINE

```
line vty 0
```

5 30

1

1

2.2.11 speed

speed *speed*

no speed

speed *speed*

57600 bps

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

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

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

boot config	
copy	
show running-config	

-	-

2.3

2.3.1 show clock

show clock

show clock

-	-

detail

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

	clock set	
	-	-

2.3.2 show line

show line

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

	console	
	aux	aux
	vty	vty
	line-num	line


```

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

```

1000

2.3.3 show reload

show reload

show reload

	-	-

2.3.4 show running-config

show running-config

show running-config

	-	-



	-	-

--	--

5 ,ÖG!5B2

s

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

-	-

-	-

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**}

	-	-
--	---	---

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

```

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

```

	-	-
--	---	---

	-	-
--	---	---

[illegible]

3.1.4 transport input

Line	transport input	Line
default transport input	LINE	
transport input {all ssh telnet none}		
default transport input		
all	Line	
ssh	Line	SSH

telnet	Line	Telnet
none	Line	

VTY	TTY	NONE
default transport input		

Line

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

```

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

```

show running	
---------------------	--

RGOS10.1

-	-
---	---

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
```

-	-

-	-

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

25100ByteIP

Ping ipv6

ping ipv6
 ping ipv6

 ping ipv6
 25100ByteIP
 '!'
 'C'
 ping
 ping ipv6
 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

```

-	-

-

-	-

4.1.4 traceroute ipv6

traceroute ipv6

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

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

Traceroute ipv6

DNS

traceroute ipv6

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

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

-	-

--	--	--

-

-

5

5.1

5.1.1 carrier-delay

carrier-delay		no
carrier-delay [seconds]		
no carrier-delay		
	seconds	1 60
	2	
	DCD	DCD Down Up
	DCD	
		DCD

	-	-
--	---	---

5.1.2 clear counters

clear counters *[interface-id]*

	<i>interface-id</i>	

		show interfaces	clear
	counters		

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

	show interfaces	

	-	-

5.1.3 clear interface

clear interface *interface-id*

	<i>interface-id</i>	

,Routed port,L3 Aggregate port

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

shutdown

—

—

no

description *string*

no description

string

show interfaces

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

```
Ruijie(config-if)# description GBIC-1
```

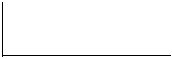
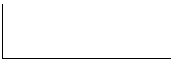
show interfaces

no

flowcontrol {auto | off | on}

no flowcontrol

auto	
off	
on	



show interfaces



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

show interfaces	



-	-

5.1.7 interface aggregateport

no

interface aggregateport *port-number*

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



show

aggregate

Ä aggregate

interfaces

show

interfaces

Ruijie(config)# interface aggregateport 3
Ruijie(config-if)#

Q ,	£EÄ

S2900

	AÈ â

interface

mod-num/port-num

fastEthernet

- D	£EÄ
mod-num/port-num	/

no

show

show

fastEthernet

Ruijie(config)# interface fastEthernet 1/2
Ruijie(config-if)#

	show interfaces	
	S2900	
	-	-

5.1.9 interface giagbitEthernet

	interface gigabitEthernet	mod-num/port-num
	mod-num/port-num	/
	no	show interfaces
	gigabitEthernet	show interfaces
	Ruijie(config)# interface gigabitEthernet 1/2	
	Ruijie(config-if)#	

5.1.10 interface vlan

switch virtual interface SVI noce

```

Ruijie(config)#interface gigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)#line-detect
Interface : GigabitEthernet 0/1
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	OKShortOpen A BOK C D ShortOK
length	stateOK ShortOpenlength

-	-

5.1.12 medium-type

no

medium-type { fiber | copper }

no medium-type

	fiber	
	copper	

Ap SVI

Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# medium-type copper

	show interfaces	

24SFP/12GT 12 SFP 12 10/100/1000M BASE-T
 SFP 10/100/1000M BASE-T

	-	-

5.1.13 mtu

mtu

Mtu num

	num	64 9216(65536)

1500

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

5.1.14 shutdown

	no	
	shutdown	
	no shutdown	
	-	-
	Ap SVI	
	show interfaces	
	no shutdown	
	1 Ap 1	
	Ruijie(config)# interface aggregateport 1	
	Ruijie(config-if)# shutdown	
	2 Ap 1	
	Ruijie(config)# interface aggregateport 1	

Ruijie(config-if)# **no shutdown**

clear interface	
show interfaces	

Ruijie(config-if)# snmp trap link-status	link trap
Ruijie(config-if)# no snmp trap link-status	link trap

-	-

5.1.16 speed

	no
10	10Mbps
100	100Mbps
1000	1000Mbps
10G	10Gbps
auto	

Ap

Ap

Ap

show interfaces

SFP

È

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

no switchport trunk {allowed vlan | native vlan}

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

VLAN	all	Native VLAN	VLAN 1

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

show interfaces	
switchport access	accessport statics VLAN

-	-

5.2

5.2.1 show interfaces

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

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

diagnosis

S2900

Ruijie# **show interfacesgigabitEthernet 0/1 switchport**

Interface Switchport ModeAccess Native Protected VLAN lists

GigabitEthernet 0/1 enabled Access 11 Disabled ALL

duplex

flowcontrol

interface gigabitEthernet

interface aggregateport

interface vlan

switch virtual interface

8

6 Aggregate Port

6.1

6.1.1 aggregateport load-balance

AP no

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

no aggregateport load-balance

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

Aggregate Port

S2900	
	8
31	AP
-	-

6.2

6.2.1 show aggregateport

aggregateport	
<i>aggregate-port-number</i>	Aggregate Port

Aggregate Port

7 VLAN

7.1

7.1.1 name

VLAN no
name *vlan-name*
no name

	<i>vlan-name</i>	VLAN

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

VLAN

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

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

show vlan	VLAN

--

-	-

7.1.2 switchport access

no access port VLAN
VLAN

switchport access vlan *vlan-id*

no switchport access vlan

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

no switchport trunk {allowed vlan | native vlan }

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

VLAN all Native VLAN VLAN 1

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
```

--	--	--

	-	-
--	---	---

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

--	--

-	-


```
Ruijie(config)# protocol-vlan profile 1 frame-type ETHERII
ether-type aarp
```

show protocol-vlan profile	-
show protocol-vlan profile <i>num</i>	-
no protocol-vlan profile	-
no protocol-vlan profile <i>num</i>	-

RGOS10.1

-	-

8.1.3 protocol-vlan profile num vlan id

profile

<i>num</i>	profile
<i>id</i>	VLAN ID 1- VLAN

```
Ruijie(config-if)# protocol-vlan profile 1 vlan 101
```

	show protocol-vlan profile	-
	show protocol-vlan profile <i>num</i>	-
	no protocol-vlan profile	-
	no protocol-vlan profile <i>num</i>	-

RGOS10.1

	-	-

9 Private VLAN

9.1

9.1.1 private-vlan association

secondary VLAN primary VLAN

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

no private-vlan association

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

no private-vlan mapping

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

Primary VLAN

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

show vlan private-vlan	-

RGOS10.1

-	-

9.1.3 private-vlan type

VLAN VLAN

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

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

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

VLAN

VLAN

Ruijie(config)# **vlan 22**

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



	show vlan private-vlan	-
	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
	no	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]

primary	primary VLAN
community	community VLAN
isolated	isolated VLAN

private VLAN

Ruijie# **show vlan private-vlan**

-	-

RGOS10.1

-	-

9.3 Hybrid

9.3.1 switchport hybrid allowed vlan

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

no switchport hybrid allowed vlan

hybrid

no	hybrid

|

|

	-	-

9.3.3 switchport mode hybrid

10 Share VLAN

10.1

10.1.1 share

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

10.2

10.2.1 show mac-address-table share

	Status	original	Status
	duplicated share vlan		
	-	-	
	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
	-	-	
	-	-	

11 MAC

11.1

11.1.1 address-bind

ip mac

address-bind *ip-address mac-address*

no address-bind *ip-address*

--	--

/

address-bind install

no address-bind install

	-	-

	fa 0/1
	Ruijie(config)# address-bind uplink <i>fa0/1</i>
	Ruijie(config)# address-bind install

	show address-bind uplink	

RGOS10.1

	-	-

11.1.3 address-bind ip-address

ip mac .

address-bind *ip-address mac-address*

no address-bind *ip-address*

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

MAC

IP	MAC	IP	MAC	IP	IP
----	-----	----	-----	----	----

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

show address-bind	

S2900	IPv4+MAC	1K.
-------	----------	-----

-	-

11.1.4 address-bind ipv6-mode

ip IP

address-bind ipv6-mode compatible

address-bind ipv6-mode loose

address-bind ipv6-mode strict

-	-

MAC

IP MAC IP IP
MAC IP MAC
(address-bind install)

fa 0/1
Ruijie(config)#**address-bind uplink** fa0/1

show address-bind uplink	

RGOS10.1

-	-

11.1.6 clear mac-address-table dynamic

clear mac-address-table dynamic[address *mac-addr*] [**interface** *interface-id*] [**vlan** *vlan-id*]

dynamic	
address <i>mac-addr</i>	
interface <i>interface-id</i>	
vlan <i>vlan-id</i>	VLAN

show mac-address-table dynamic

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

```
show mac-address-table dynamic
```

-

-

11.1.7 clear mac-address-table filtering

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

```
filtering
```

```
address mac-addr
```

```
vlan vlan-id
```

```
VLAN
```

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

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

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

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

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

--	--	--

no mac-address-table aging-time



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

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

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

-	-

11.1.11 mac-address-table notification

MAC

no

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

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

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

1

50

MAC

Trap

snmp-server enable traps mac-notification

MAC Trap

```
Ruijie(config)# mac-address-table notification
```

```
Ruijie(config)# mac-address-table notification interval 40
```

```
Ruijie(config)# mac-address-table notification history-size 100
```

--	--

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

S2900

MAC

16K

MAC

1K

-	-

11.1.13 snmp trap mac-notification

MAC

no

snmp trap mac-notification {added | removed}

no snmp trap mac-notification {added | removed}

added	
removed	

show mac-address-table notification *interface*

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

Ruijie(config-if)# **snmp trap mac-notification added**

mac-address-table notification	MAC
show mac-address-table notification	MAC



```
Ruijie# show address-bind
```

```
IP Address      Binding MAC Addr
```

```
-----
```

```
3.3.3.3         00d0.f811.1112
```

```
3.3.3.4         00d0.f811.1117
```

address-bind	

MAC

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

-	-

11.2.4 show mac-address-table aging-time

show mac-address-table aging-time

-	-

Ruijie# show mac-address-table aging-time

Aging time : 300

mac-address-table aging-time	
------------------------------	--

MAC

	-	-

11.2.5 show mac-address-table count

show mac-address-table count

	-	-

Ruijie#

	-	-
--	---	---

11.2.6 show mac-address-table dynamic

show mac-address-table dynamic [**address** *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 dynamic
Vlan      MAC Address      Type      Interface
-----
1         0000.0000.0001    DYNAMIC   gigabitethernet 1/1
1         0001.960c.a740    DYNAMIC   gigabitethernet 1/1
1         0007.95c7.dff9    DYNAMIC   gigabitethernet 1/1
1         0007.95cf.eee0    DYNAMIC   gigabitethernet 1/1
1         0007.95cf.f41f    DYNAMIC   gigabitethernet 1/1
1         0009.b715.d400    DYNAMIC   gigabitethernet 1/1
1         0050.bade.63c4    DYNAMIC   gigabitethernet 1/1
```

clear mac-address-table dynamic	

--

--	--

MAC

	-	-
--	---	---

11.2.7 show mac-address-table filtering

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

<i>mac-addr</i>	MAC
<i>vlan-id</i>	VLAN

MAC

	<i>interface-id</i>	(	AggregatePort)
	<i>vlan-id</i>	VLAN	

Ruijie#

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

MAC

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

Interface	MAC Added Trap	MAC Removed Trap
-----------	----------------	------------------

-----	-----	-----
GigabitEthernet1/14	Disabled	Disabled

Ruijie# **show mac-address-table notification**

MAC Notification Feature : Disabled

Interval between Notification Traps : 1 secs

Maximum Number of entries configured in History Table :1

Current History Table Length : 0

Ruijie# **show mac-address-table notification history**

History Index : 0

MAC Changed Message :

Operation:ADD Vlan : 1 MAC Addr: 00f8.d012.3456 GigabitEthernet 3/1

mac-address-table notification	MAC
---------------------------------------	-----

snmp trap mac-notification	MAC
-----------------------------------	-----

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

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

```
Ruijie# show mac-address-table vlan 1
```

Vlan	MAC Address	Type	Interface
1	00d0.f800.1001	STATIC	gigabitethernet 1/1
1	00d0.f800.1002	STATIC	gigabitethernet 1/1
1	00d0.f800.1003	STATIC	gigabitethernet 1/1

show mac-address-table static

show mac-address-table filtering

show mac-address-table dynamic

show mac-address-table address

show mac-address-table interface

show mac-address-table count

-

11.2.12 show mac-address-learning

--

```
Ruijie# show mac-address-learning
```


12 DHCP Snooping

12.1 DHCP snooping

12.1.1 ip dhcp snooping

```
DHCP Snooping
DHCP Snooping
```

no

```
[no] ip dhcp snooping
```

-	-

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

	show ip dhcp snooping	DHCP snooping
	-	-

12.1.2 ip dhcp snooping bootp-bind

DHCP Snooping Bootp
no DHCP snooping Bootp

[no] ip dhcp snooping bootp-bind

	-	-
--	---	---

	Snooping Snooping	DHCP Snooping Bootp	Bootp Bootp	DHCP DHCP
--	----------------------	------------------------	----------------	--------------

```

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

```


FLASH

	-	-
--	---	---

12.1.5 ip dhcp snooping information option

DHCP option82
no

[no] ip dhcp snooping information option

	-	-

	DHCP	option82	DHCP	option82
--	------	----------	------	----------

```

DHCP                      option82
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping information option
Ruijie(config)# end
Ruijie# show ip dhcp snooping
Switch DHCP snooping status    ENABLE
Verification of hwaddr field status    DISABLE
DHCP snooping database write-delay time: 0 seconds
DHCP snooping option 82 status: ENABLE
DHCP snooping Support Bootp bind status: ENABLE
Interface                      Trusted      Rate limit (pps)
-----

```

show ip dhcp snooping	DHCP snooping	

--	--	--

DHCP

no

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

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

DHCP Snooping VLAN

CPP[CPU Protect Protocol]

CPP

DHCP

CPP

DHCP Snooping

CPP

show ip dhcp snooping

1 100pps

Ruijie# **configure terminal**Ruijie(config)# **interface fastEthernet 0/1**Ruijie(config-if)# **ip dhcp snooping limit rate 100**Ruijie(config-if)# **end**Ruijie# **show ip dhcp snooping**

Switch DHCP snooping status ENABLE

Verification of hwaddr field status DISABLE

DHCP snooping database write-delay time: 0 seconds

DHCP snooping option 82 status: ENABLE

DHCP snooping Support Bootp bind status: ENABLE

Interface Trusted Rate limit (pps)

FastEthernet0/1 NO 100

show ip dhcp snooping	DHCP snooping

DHCP snooping TRUST
no UNTRUST

[no] ip dhcp snooping trust

-	-

UNTRUST

DHCP DHCP TRUST TRUST
 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
-----------------	-----	-----------

12.3 DHCP snooping

12.3.1 show ip dhcp snooping

└───

└───

-	-

12.3.2 show ip dhcp snooping binding

DHCP Snooping

show ip dhcp snooping binding

└───

-	-

└───

└───

└───

DHCP Snooping

└───

Ruijie# **show ip dhcp snooping binding**

Total number of bindings: 1

MacAddress	IpAddress	Lease(sec)	Type	VLAN	Interface
0000.0000.0001	1.1.1.1	78128	dhcp-snooping	1	FastEthernet 0/1

└───

ip dhcp snooping binding	DHCP snooping
clear ip dhcp snooping binding	DHCP snooping

└───

└───

--	--

DHCP Snooping

debug ip dhcp snooping {

13 IGMP Snooping

13.1

13.1.1 deny

	profile	profile	deny
deny			
	deny	profile	
	profile	deny	
	profile		
	profile	range	profile
	profile		Y N

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

13.1.3 range

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

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

profile	
---------	--

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

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

ip igmp profile	profile
deny	profile deny
permit	profile permit

-	-

13.1.4 ip igmp profile

IGMP	profile	profile	
profile		profile-number	igmp profile

ip igmp profile *profile-number*

no ip igmp profile *profile-number*

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

IGMP Profiles “ SVGL ” “
” “ IGMP Filtering ” profile
profile

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

range	profile	
permit	profile	permit
deny	profile	deny

-	-

13.1.5 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

	pim snooping	igmp snooping	IVGL	IVGL-SVGL
~	no ip igmp snooping	igmp snooping		
	pim snooping		pim snooping	

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

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

-	-	

13.1.6 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
--	---------

		vlan	IGMP Snooping
	vlan	pim snooping	igmp snooping
~	no ip igmp snooping vlan	vlan	igmp snooping
	pim snooping	VLAN	pim snooping

```

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

```

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

-	-

13.1.7 ip igmp snooping svgl profile

```

                                profile      SVGL      ip igmp snooping svgl
profile      no
ip igmp snooping svgl profile profile-number
no ip igmp snooping svgl profile

```

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

```

                                svgl      profile

```

```

                                SVGL      IVGL-SVGL

```

```

                                igmp snooping svgl      profile 2
Ruijie(config)# ip igmp snooping svgl profile 2

```

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

[illegible]

13.1.10 ip igmp snooping query-max-response-time

query

ip igmp snooping query-max-response-time *time*

no ip igmp snooping query-max-response-time

	<i>time</i>	
	10s	

IGMP

0

IGMP Snooping

IGMP

0

IGMP Snooping

IGMPv3

100s

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


-	-

13.1.11 ip igmp snooping limit-ipmc

no IP

ip igmp snooping limit-ipmc vlan

no IP

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

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

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

	IP	
	ip	
	Ruijie(config)# ip igmp snooping limit-ipmc vlan 1 address 224.0.0.1 server 192.168.4.243	
	ip igmp snooping source-check default-server	IP IP
	-	-

13.1.12 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	IGMP Report
	vlan	
	IGMP Report	
	suppression	IGMPv1/v2 report
	IGMPv3 report	
	igmp snooping suppression	
	Ruijie(config)# ip igmp snooping suppression	



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

-	-

13.1.14 ip igmp snooping vlan mrouter interface

ip igmp snooping vlan mrouter interface , no

ip igmp snooping vlan *vid* **mrouter interface** *interface-id*

no ip igmp snooping vlan *vid* **mrouter interface** *interface-id*

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

IP

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

ip igmp snooping source-check port	
---	--

	-	-

13.1.15 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 ip igmp snooping filter *profile-number*

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

IGMP Profile	IGMP Report
IGMP Profile	IGMP Profile
profile	filter

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

ip igmp profile	profile

-	-

13.1.18 ip igmp snooping max-groups

max-groups no , **ip igmp snooping**

ip igmp snooping max-groups *number*

no ip igmp snooping max-groups

<i>number</i>	<0 – 1024>

IGMP Report

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

ip igmp snooping filter	

-	-

13.2

13.2.1 show ip igmp snooping

igmp snooping

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

	igmp snooping
gda-table	
interfaces	igmp snooping filtering
mrouter	
statistics [vlan vlan-id]	snooping
vlan	vlan snooping

EXEC

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

EXEC

profile

IGMP Snooping Debug no

- debug igmp-snp
- debug igmp-snp event
- debug igmp-snp packet
- debug igmp-snp msf
- debug igmp-snp warning
- undebug igmp-snp
- undebug igmp-snp event
- undebug igmp-snp packet
- undebug igmp-snp msf
- undebug igmp-snp warning

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

EXEC

-	-

-	-

14 DHCPV6 Snooping

14.1

14.1.1 ipv6 dhcp snooping

dhcpv6 snoopingno dhcpv6
snooping
ipv6 dhcp snooping
no ipv6 dhcp snooping

	-	-

snoopingdhcpv6 snoopingshow ipv6 dhcpv6 snooping

1 dhcpv6 snooping
Ruijie(config)# ipv6 dhcp snooping

	show ipv6 dhcp snooping	dhc pv6 snooping

no ipv6 dhcp snooping binding-delay

[illegible]

1	10
---	----

```
Ruijie(config)# ipv6 dhcp snooping binding-delay 10
```

inv6 dbcn snooping database write-delay time

ipvs anop sheepling database write delay time

no ipv6 dhcp snooping database write delay

[illegible]

```
dhcipv6 snooping                                     flash
                                                    IP
1             flash                                100
Ruijie(config)# ipv6 dhcp snooping database write-delay 100
```

show ipv6 dhcp snooping	dhcipv6 snooping

10.4	

14.1.4 ipv6 dhcp snooping database write-to-flash

```
dhcipv6 snooping                                     flash
ipv6 dhcp snooping database write-to-flash
```

-	

```
dhcipv6 snooping                                     flash
flash
```

	dhcipv6	no
ipv6 dhcp snooping filter-dhcp-pkt		
no ipv6 dhcp snooping filter-dhcp-pkt		
	dhcipv6	dhcipv6
	1	fastethernet 0/1
		dhcipv6
	Ruijie(config)# interface fastethernet 0/1	
	Ruijie(config-if)# ipv6 dhcp snooping filter-dhcp-pkt	
	-	-
	10.4	

“ ” no DHCPv6

ipv6 dhcp snooping ignore dest-not-found
no ipv6 dhcp snooping ignore dest-not-found

DHCPv6	MAC	MAC	DHCPv6	MAC
“ DHCPV6_SNOOPING-5-DEST_NOT_FOUND: Could not find destination port. Destination MAC [mac-address] ”				
	MAC		DHCPv6	VLAN

1
Ruijie(config)# ipv6 dhcp snooping ignore dest-not-found

show ipv6 dhcp snooping	dhcpv6 snooping

10.4	

14.1.7 ipv6 dhcp snooping link-detection

LINK DOWN no

ipv6 dhcp snooping link-detection
no ipv6 dhcp snooping link-detection

	LINK DOWN	
	LINK DOWN	
	1 LINK DOWN	
	Ruijie(config)# ipv6 dhcp snooping link-detection	
	show ipv6 dhcp snooping	dhcpv6 snooping
	10.4	

14.1.8 ipv6 dhcp snooping trust

	dhcpv6 snooping	trust	no
	untrust		
	ipv6 dhcp snooping trust		
	no ipv6 dhcp snooping trust		
	dhcpv6	trust	trust
	untrust	dhcpv6 Server	dhcpv6 Server

```

1          fastethernet 0/1   trust
Ruijie(config)# interface fastethernet 0/1
Ruijie(config-if)# ipv6 dhcp snooping trust

```

show ipv6 dhcp snooping	dhcpv6 snooping

10.4	

14.1.9 Ipv6 dhcp snooping vlan

```

vlan          dhcpv6 snooping
vlan          dhcpv6 snooping

```

ipv6 dhcp snooping {*vlan-list* | {*vlan-min* [*vlan-max*]}}

no ipv6 dhcp snooping {*vlan-list* | {*vlan-min* [*vlan-max*]}}

<i>vlan-list</i>	vlan 1,3-5,7,9-11
<i>vlan-min</i>	vlan id
<i>vlan-max</i>	vlan id

```

dhcpv6 snooping      vlan

```

```

dhcpv6 snooping      vlan  dhcpv6 snooping
vlan      dhcpv6 snooping      vlan      dhcpv6 snooping

```

```

1      vlan 1      dhcpv6 snooping
Ruijie(config)# no ipv6 dhcp snooping vlan 1

```

--	--

	-	-
	10.4	

14.1.10 ipv6 source binding

no

ipv6 source binding *mac-address* **vlan** *vlan-id* *ipv6-address* **interface** *interface-name*

no ipv6 source binding *mac-address* **vlan** *vlan-id* *ipv6-address* **interface** *interface-name*

<i>mac-address</i>	MAC
<i>vlan-id</i>	VLAN
<i>ipv6-address</i>	IPV6
<i>interface-name</i>	

IPV6

DHCPV6

IPV6

1
Ruijie(config)#

ipv6 source binding *00d0.f866.4777* **vlan** *10*
2001:2002::2003 interface *fastethernet 0/10*

--	--

	10.4	
--	------	--

14.1.11 ipv6 verify source

no

ipv6 verify source [port-security]

no ipv6 verify source

port-security	MAC	+ IPV6	MAC
		IPV6	
		IPV6	IPV6

--

--

	IPV6	DHCPV6	IPV6
--	------	--------	------

1	fastethernet 0/1	MAC+IPV6
Ruijie(config)# interface fastethernet 0/1		
Ruijie(config-if)# ipv6 verify source port-security		

--

10.4		

14.2

14.2.1 show ipv6 dhcp snooping

dhcpv6 snooping

show ipv6 dhcp snooping

	-	-

dhcpv6 snooping

1 dhcpv6 snooping

Ruijie# show ipv6 dhcp snooping

Switch DHCPv6 snooping status ENABLE

DHCPv6 snooping vlan: 1-4094

DHCPv6 snooping database write-delay time: 0 seconds

DHCPv6 ignore dest-not-found :DISABLE

DHCPv6 snooping link detection :DISABLE

Interface	Trusted	Filter DHCP
-----------	---------	-------------

-----	-----	-----
-------	-------	-------

FastEthernet0/10	yes	DISABLE
------------------	-----	---------

10.4		

14.2.2 show ipv6 dhcp snooping binding

dhcpv6 snooping

show ipv6 dhcp snooping binding [*ipv6-address*] [*mac-address*] [**vlan** *vlan_id*]
 [**interface** *interface_name*]

	vlan <i>vlan_id</i>	VLAN
	interface <i>interface_name</i>	

dhcpv6 snooping

dhcpv6 snooping

show ipv6 source binding [*ipv6-address*] [*mac-address*] [**vlan** *vlan_id*]
[**interface** *interface_name*] [**dhcp-snooping** | **static**]

14.3.1 clear ipv6 dhcp snooping binding

dhcpv6 snooping

clear ipv6 dhcp snooping binding [*ipv6-address*] [*mac-address*] [**vlan** *vlan_id*]
[**interface** *interface_name*]

<i>ipv6-address</i>	ipv6
<i>mac-address</i>	mac
vlan <i>vlan_id</i>	VLAN
interface <i>interface_name</i>	

dhcpv6 snooping

1 dhcpv6 snooping
Ruijie# **clear ipv6 dhcp snooping binding**

10.4	

14.3.2 clear ipv6 dhcp snooping prefix

dhcpv6 snooping

clear ipv6 dhcp snooping prefix [*ipv6-prefix*] [*mac-address*] [**vlan** *vlan_id*]
[**interface** *interface_name*]

--	--

<i>ipv6-prefix</i>	ipv6
<i>mac-address</i>	mac
vlan <i>vlan_id</i>	VLAN
interface <i>interface_name</i>	

└───

└───

└───

dhcpv6 snooping

└───

1 dhcpv6 snooping
Ruijie# **clear ipv6 dhcp snooping prefix**

└───

└───

└───

10.4	

14.3.3 clear ipv6 dhcp snooping statistics

dhcpv6 snooping dhcpv6

clear ipv6 dhcp snooping statistics

└───

-	-

└───

└───

└───

dhcpv6 snooping dhcpv6

15 ND Snooping

15.1

15.1.1 ipv6 nd snooping

IPv6 ND snooping no IPv6 ND Snooping

ipv6 nd snooping

no ipv6 nd snooping

ipv6 nd snooping

IPv6 ND snooping

Ruijie# **configure terminal**

Enter configuration commands, one per line. End with CNTL/Z.

Ruijie(config)# **ipv6 nd snooping**

show ipv6 nd snooping	ipv6 nd snooping

--	--

10.4(2)

15.1.2 ipv6 nd snooping vlan

VLAN IPv6 ND snooping no VLAN
IPv6 ND Snooping

ipv6 nd snooping vlan {*vlan-rng* | {*vlan-min* [*vlan-max*]}}

no ipv6 nd snooping vlan {*vlan-rng* | {*vlan-min* [*vlan-max*]}}

<i>vlan-rng</i>	vlan
<i>vlan-min</i>	vlan
<i>vlan-max</i>	vlan

vlan ipv6 nd snooping

1 VLAN 100 IPv6 ND Snooping

Ruijie# **configure terminal**

Enter configuration commands, one per line. End with CNTL/Z.

Ruijie(config)# **no ipv6 nd snooping vlan 100**

2 VLAN 4 5-7 15 IPv6 ND Snooping

Ruijie# **configure terminal**

Enter configuration commands, one per line. End with CNTL/Z.

Ruijie(config)# **no ipv6 nd snooping vlan 4,5-7,15**

show ipv6 nd snooping	ipv6 nd snooping

15.1.5 ipv6 nd snooping detect gateway

no

ipv6 nd snooping detect gateway ra
no ipv6 nd snooping detect gateway ra

VLAN

Ruijie#

<i>vlan-rng</i>	vlan
<i>vlan-min</i>	vlan
<i>vlan-max</i>	vlan

VALN

Ruijie# **configure terminal**

Enter configuration commands, one per line. End with CNTL/Z.

Ruijie(config)# **ipv6 nd snooping detect gateway vlan 8**

show ipv6 nd snooping	nd snooping

10.4(2)	

15.1.7 ipv6 nd snooping key-node

ND

no

ipv6 nd snooping key-node [link-local vid]ipv6_address/prefix_len

no ipv6 nd snooping key-node [link-local vid] ipv6_address/prefix_len

<i>vid</i>	link-local VID

<i>ipv6_address/prefix_len</i>	IPv6

Ruijie# **configure terminal**

Enter configuration commands, one per line. End with CNTL/Z.

Ruijie(config)#**ipv6 nd snooping key-node 2003::1/128**

show ipv6 nd snooping key-node	nd snooping

10.4(2)	

15.1.8 ipv6 nd snooping monitor stateless-user

no

ipv6 nd snooping monitor stateless-user

no ipv6 nd snooping monitor stateless-user

ND

Ruijie# **configure terminal**

Enter configuration commands, one per line. End with CNTL/Z.

Ruijie(config)#**no ipv6 nd snooping monitor stateless-user**

show ipv6 nd snooping stateless-user	

10.4(2)	

15.1.9 ipv6 nd snooping stateless-user combine-security

no

ipv6 nd snooping stateless-user combine-security

no ipv6 nd snooping stateless-user combine-security

Ruijie# **configure terminal**
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# **ipv6 nd snooping stateless-user combine-security**

show ipv6 nd snooping	ipv6 nd snooping

10.4(2)	

15.1.10 **ipv6 nd snooping stateless-user address-bind**

IPv6 no

ipv6 nd snooping stateless-user address-bind [strict] [ip-mac]
no ipv6 nd snooping stateless-user address-bind

strict	link-local link-local link-local
ip-mac	IP+MAC IP

```
Ruijie# configure terminal
```

```
Enter configuration commands, one per line. End with CNTL/Z.
```

```
Ruijie(config)# ipv6 nd snooping stateless-user address-bind
```

```
2
```

```
IP+MAC
```

```
Ruijie# configure terminal
```

```
Enter configuration commands, one per line. End with CNTL/Z.
```

```
Ruijie(config)#ipv6 nd snooping stateless-user address-bind strict  
ip-mac
```

G2(hG5B(C

```
show ipv6 nd snooping
```

```
ipv6 nd snooping
```

Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# **ipv6 nd snooping stateless-user station-move**



show ipv6 nd snooping	ipv6 nd snooping
------------------------------	------------------

10.4(2)	

15.1.13 ipv6 nd snooping stateless-user per-vlan prefix-limit

VLAN IPv6

ipv6 nd snooping stateless-user per-vlan prefix-limit *num*

no ipv6 nd snooping stateless-user per-vlan prefix-limit

<i>num</i>	VLAN IPv6
------------	-----------

2

VLAN 4 IPv6

Ruijie# **configure terminal**

Enter configuration commands, one per line. End with CNTL/Z.

Ruijie(config)#**ipv6 nd snooping stateless-user per-vlan prefix-limit 4**

show ipv6 nd snooping	ipv6 nd snooping
------------------------------	------------------

10.4(2)	
---------	--

15.1.14 clear ipv6 nd snooping key-node

clear ipv6 nd snooping key-node [vlan *vid*]

<i>vid</i>	VLAN

Ruijie# **clear ipv6 nd snooping key-node**

10.4(2)	

15.1.15 clear ipv6 nd snooping stateless-user

clear ipv6 nd snooping stateless-user [vlan *vid*]

<i>vid</i>	VLAN

Ruijie# **clear ipv6 nd snooping stateless-user**

10.4(2)	

15.1.16 clear ipv6 nd snooping prefix

VLAN

clear ipv6 nd snooping prefix [vid *vlan*]

<i>vlan</i>	VLAN

IPv6

Ruijie# **clear ipv6 nd snooping prefix**

--	--

15.2.1 show ipv6 nd snooping

[illegible]

15.2.2 show ipv6 nd snooping key-node

show ipv6 nd snooping key-node

Ruijie# show ipv6 nd snooping key-node

10.4(2)	

15.2.3 show ipv6 nd snooping stateless-user

ipv6

show ipv6 nd snooping stateless-user

ipv6

Ruijie# show ipv6 nd snooping stateless-user

10.4(2)	

\$1-CtNQ-rQ,

ND Snooping

16 MSTP

16.1

16.1.1 bpdu src-mac-check

bpdu

mac

no

bpdu

mac

bpdu src-mac-check *H.H.H*

no bpdu src-mac-check

<i>H.H.H</i>	mac	bpdu
no	bpdu	

Ruijie(config)# interface gigabitethernet 1/1

Ruijie(config-if)# bpdu src-mac-check 00d0.f800.1e2f

8	6	8
-		-

RSTP BPDU BPDU

clear spanning-tree detected-protocols [**interface** *interface-id*]

	<i>interface-id</i>	

Ruijie# **clear spanning-tree detected-protocols**

	show spanning-tree interface	STP

	-	-

16.1.3 spanning-tree

MSTP MSTP MSTP
no spanning-tree no
spanning tree

spanning-tree [**forward-time** *seconds* | **hello-time** *seconds* | **max-age** *seconds*]**no spanning-tree** [forwa Td[(no spannin)5(g)-10.001 Tc 0.0032 Tw 5.251 0 Td<01C4>T]/TT1 1 Tf-0.000

forward-time hello-time max-age

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

```

1      spanning-tree
Ruijie(config)# spanning-tree
2      BridgeForwardDelay
Ruijie(config)# spanning-tree forward-time 10
```

show spanning-tree	STP
spanning-tree mst cost	STP PathCost
spanning-tree tx-hold-count STP	TxHoldCount

-	-

16.1.4 spanning-tree autoedge

Autoedge

disabled

Autoedge

spanning-tree autoedge [disabled]

disabled	Autoedge

	-	-
--	---	---

16.1.6 spanning-tree bpduguard

	BPDU Guard	enabled	disabled
	BPDU Guard		
	spanning-tree bpduguard	enabled	disabled
		EA 7	
	enabled		
	disabled		BPDU Guard

Bä]×a ìÿ# Ã õÀ % 3• Ð• HNþf9€ f"7Nf9€ v B NöhD‡vs Nû4B ñ e%" 0CE †3L> ×â4Ãb3\ LN b2'f"R C,,

	-	-

root guard

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

show spanning-tree interface	STP

-

-

16.1.12 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
```

-

-



16.1.14 spanning-tree mode

STP no

spanning-tree mode [stp | rstp | mstp]

no spanning-tree mode

	stp	Spanning tree protocol(IEEE 802.1d)
	rstp	Rapid spanning tree protocol(IEEE 802.1w)
	mstp	Multiple spanning tree protocol(IEEE 802.1s)

MSTP

.

Ruijie(config)# spanning-tree mode stp

	show spanning-tree	

	-	-

MSTP

MSTP

Region

```
mst 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
```

```
Instance 20                               8192
Ruijie(config-if)# spanning-tree mst 20 priority 8192
show spanning-tree mst instance interface interface-id
```

	show spanning-tree interface	STP
	-	-

16.1.20 spanning-tree portfast

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

16.1.21 spanning-tree portfast bpdupfilter default

	BPDU filter	no	BPDU filter
	spanning-tree portfast bpdupfilter default		

no spanning-tree portfast bpdupfilter default

	-	-

BPDU filter

BPDU Filter

BPDU

show spanning-tree

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

	show spanning-tree interface	STP

	-	-

16.1.22 spanning-tree portfast bpduguard default

BPDU guard

no

BPDU guard

spanning-tree portfast bpduguard default

no spanning-tree portfast bpduguard default

	-	-

BPDU Guard.

the 1990s, the number of people in the United States who are 65 years of age or older is projected to increase from 20 million to 35 million. The number of people 75 years of age or older is projected to increase from 10 million to 15 million. The number of people 85 years of age or older is projected to increase from 2 million to 4 million.

Portfast

no spanning-tree portfast default

16.1.24 spanning-tree reset

	spanning-tree	no
	spanning-tree reset	
	-	-
	Ruijie(config)# spanning-tree reset	
	show spanning-tree	STP
	show spanning-tree interface	STP
	-	-

16.1.25 spanning-tree tc-guard

	tc- guard	no	tc- guard	tc-guard
	tc			
	spanning-tree tc-guard			
	no spanning-tree tc-guard			
	-		-	
	tc- guard			

|

|

|

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

|

-	-

|

|

-	-

16.1.26 spanning-tree tc-protection

tc- protection

no

tc- protection

spanning-tree tc- protection

no spanning-tree tc- protection

|

-	-

|

tc- protection

	-	-

16.1.27 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
--	--

	-	-

--	--

	-	-

16.1.28 spanning-tree tx-hold-count

STP TxHoldCount

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

3

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

--	--

show spanning-tree

	tx-hold-count	TxHoldCount
	pathcost method	

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



	link-type	linktype
--	-----------	----------

--

--

--

Ruijie# show spanning-tree interface gigabitethernet 1/5

	spanning-tree bpdupfilter	BPDU filter
	spanning-tree portfast	portfast
	spanning-tree bpduguard	BPDU guard
	spanning-tree link-type	“ ”

--

	-	-

16.2.3 show spanning-tree mst

MST Instance

show spanning-tree mst { **configuration** | *instance-id* [**interface** *interface-id*] }

configuration	mst
<i>instance-id</i>	<i>Instance</i>
<i>interface-id</i>	

Instance

.

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

17 SPAN

17.1

17.1.1 monitor session

SPAN . no

monitor session *session_number* {**source interface** *interface-id* [**both** | **rx** | **tx**] |
destination interface *interface-id* { **encapsulation** | **switch** } | **mac** {**source** *mac-addr*|
destination *mac-addr* } [**both** | **rx** | **tx**]} [**acl** *name*]

no monitor session *session_number* [**source interface** *interface-id* [**both** | **rx** | **tx**] |
destination interface *interface-id* { **encapsulation** | **switch** }} | **mac** {**source** *mac-addr*|
destination *mac-addr* } [**both** | **rx** | **tx**] [**acl** *name*]

no monitor session all

<i>session_number</i>	SPAN
source interface <i>interface-id</i>	<i>interface-id</i> SVI
destination interface <i>interface-id</i>	<i>interface-id</i> SVI
mac source <i>mac-addr</i>	

18 IP

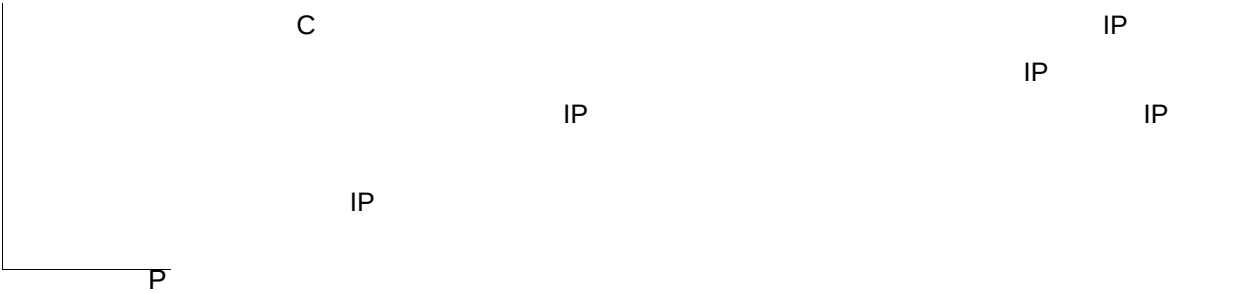
18.1

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
```

show interface	

SLIP HDLC PPP LAPB Frame-relay

X.25

ping
SNMP

IP

FastEthernet 0/1

IP
ip unnumbered fastEthernet 0/1

show interface	

-	-

18.2

18.2.1 arp

ARP	IP	MAC	no
MAC			

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

vrf name	VRF name VRF
<i>ip-address</i>	MAC IP
<i>MAC-address</i>	48
<i>type</i>	ARP arpa

IP

ARP

RGOS

ARP

32

IP

48

MAC

ARP

ARP

clear

1	SVI 1	ARP
---	-------	-----

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

2	SVI 1	ARP
---	-------	-----

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

--	--

IP

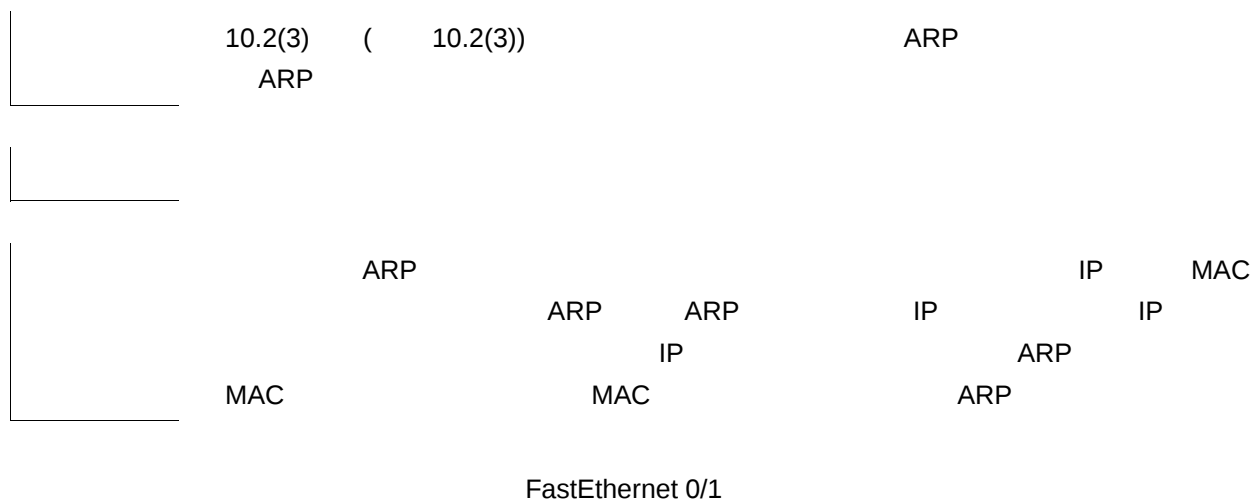
	Arp retry times <i>number</i>	ARP
--	--------------------------------------	-----

--

[illegible]

18.2.7 ip proxy-arp

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



IP

mask

ARP

mask

	vrf <i>vrf_name</i>	VRF	VRF	ARP
	trusted		ARP	Đ ä VRF ã

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

18.3.4 show arp detail

ARP

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

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

ARP

ARP

show arp detailRuijie# **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

18.3.6 show ip arp

ARP

show ip arp

-	-

show ip arp

Ruijie# **show ip arp**

```

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

```

ARP

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

IP

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

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

RGOS

RGOS

RGOS

“ UP ”

“ UP ”

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

-	-

18.3.8 show ip redirects

show ip redirects

-	-

show ip redirects

Ruijie# **show ip redirects**

Default Gateway: 192.168.195.1

ip default-gateway	

-	-

18.4

18.4.1 ip default-gateway

ip default-gateway no

ip default-gateway
no ip default-gateway

	-	-

show ip redirects

192.168.1.1
ip default-gateway 192.168.1.1

	show ip redirects	

	-	-

no

1		

option dot1x

DHCP opion82

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

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

DHCP

no

[no] service dhcp



20 DNS

20.1

20.1.1 ip domain-lookup

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

20.1.2 ip name-server

IP/IPv6
✕

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

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

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

DNS Server IP/IPv6
Server

DNS Server
Server DNS

6

DNS Server

ip-address

ipv6-address

DNS

Ruijie(config)# **ip name-server** 192.168.5.134

Ruijie(config)# **ip name-server**

2001:0DB8::250:8bff:fee8:f800 2001:0DB8:0:f004::1

show hosts	DNS

-	-

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

no ip host host-name ip-address

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

show hosts	DNS
-------------------	-----

-

-

20.1.4 ipv6 host

IPV6

no

ipv6 host host-name ipv6-address

no ipv6 host host-name ipv6-address

<i>host-name</i>	
<i>ipv6-address</i>	IPV6

no ipv6 host host-name ipv6-address

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

20.2.2 show hosts

DNS

show hosts [*hostname*]

	-	-

DNS

Ruijie# **show hosts**

Name servers are:

static

host	type	address
switch	static	192.168.5.243
www.ruijie.com	dynamic	192.168.5.123

ip host	IP
ipv6 host	IPV6
ip name-server	DNS

-	-

21 SNTP

21.1

21.1.1 sntp enable

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

21.1.2 sntp interval

SNTP Client	NTP/SNTP Server
sntp interval seconds	

show sntp SNTP

Ruijie(config)# sntp server 192.168.4.12

show sntp

SNTP

,D46% 1"5PS,IPd18TFE'@eāX0

SNTP sync interval : 60

Time zone : +8

sntp enable	SNTP
show sntp	SNTP

RGOS10.0

-	-

22 NTP

22.1 NTP

22.1.1 no ntp

ntp

no ntp

[illegible]

NTP

NTP

NTP

NTP

```
no ntp
```

ntp server	NTP

[illegible]

22.1.2 ntp access-group

no

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

peer	NTP
serve	NTP
serve-only	NTP
query-only	NTP
access-list-number	IP 1 99 1300 1999
access-list-name	IP

NTP

NTP
NTP
NTP

peer serve serve-only query-only

~

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

ip access-list	IP

	-	-

22.1.3 ntp authenticate

NTP NTP

ntp authenticate
no ntp authenticate

	-	-

NTP

S*~D<OwÜGñ!5BÈK,ÁG<@E8T#E#p#Q/BSW nWP#S< 3yABbv<yA@d6f0
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 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



23.1.1 debug ftpserver

no

```
no debug ftpserver
```

	-	-
--	---	---

debug ftpserver	FTP
------------------------	-----

```
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.
```

```
Ruijie# no debug ftpserver
```

	-	-
--	---	---

--	--	--

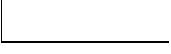
ftp-server password [*type*] *password*

no ftp-server password

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



FTP			
	1	25	4
	52		
~	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
FTP no

ftp-server topdir *directory*

no ftp-server topdir

<i>directory</i>	FTP



FTP

¥ K€

SNMP

no snmp-server chassis-id

	<i>text</i>	
	60FF60	
	SNMP	
	show snmp	
	SNMP	123456:
	Ruijie(config)# snmp-server chassis-id 123456	
	show snmp	SNMP
	-	-

24.1.3 snmp-server community

SNMP

snmp-server community

no

SNMP

snmp-server community *string* [**view** *view-name*] [[**ro** | **rw**] [**host** *ipaddr*]] [*number* **ipv6** *ipv6-aclname*][*aclnum* | *aclname*]

no snmp-server community *string*

	<i>string</i>	NMS SNMP
	<i>view-name</i>	
	ro	NMS MIB
	rw	NMS MIB

	<i>text</i>	

SNMP i-net800@i-net.com.cn
Ruijie(config)# **snmp-server contact** *i-net800@i-net.com.cn*

	show snmp-server	SNMP
	no snmp-server	SNMP

	-	-

24.1.5 snmp-server enable traps

SNMP NMS Trap
snmp-server enable traps no SNMP NMS
Trap

snmp-server enable traps [snmp]

no snmp-server enable traps

	snmp	SNMP

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

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

SNMP

--

snmp-server enable traps	NMS
SNMP	
vrf	[vrf]

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

snmp-server enable traps	

--

-	-

24.1.8 snmp-server location

SNMP	snmp-server location	no
SNMP		

<i>text</i>	

--

|

|

|

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

|

snmp-sever contact	SNMP

|

|

-	-

24.1.9 snmp-server packetsiz

SNMP
no snmp-sever packetsize

snmp-server packetsize *byte-count*
no snmp-server packetsize

|

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

|

1500

|

|

|

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

|

--	--

	snmp-server queue-length	SNMP

SNMP

no

SNMP

snmp-server system-shutdown**snmp-server system-shutdown****no snmp-server system-shutdown**

	-	-

SNMP

SNMP

RGOS

reload/reboot

NMS

SNMP

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

	-	-

	-	-

24.1.12 snmp-server trap-source

SNMP

snmp-server trap-source

no

snmp-server trap-source *interface***no snmp-server trap-source**

<i>interface</i>		SNMP

SNMP

IP

SNMP

IP

IP

SNMP

0 IP

SNMP

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

snmp-server enable traps	
snmp-server enable host	NMS

-	-

24.1.13 snmp-server trap-timeout

snmp-server trap-timeout

no

snmp-server trap-timeout *seconds*

no snmp-server trap-timeout

seconds	1 – 1000

30

60

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

24.1.14 snmp-server user

|

default

MIB

|

|

|

MIB-2 oid 1.3.6.1

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

|

show snmp view	SNMP

|

|

-	-

24.1.16 snmp trap link-status

24.2

24.2.1 show snmp

SNMP

show snmp

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

|

-	-

|

|

|

show snmp

SNMP

```

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

```

```

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

```

snmp-server <i>chassis-id</i>	SNMP

-	-

25 RMON

25.1

25.1.1 rmon alarm

MIB no

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

no rmon alarm *number*

-	-

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

MIB ifInNUcastPkts.6
 Ruijie(config)# **rmon alarm** 10 1.3.6.1.2.1.2.2.1.12.6 30 **delta**
rising-threshold 20 1 **falling-threshold** 10 1 **owner** zhangsan

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

-	-

25.1.2 rmon collection history

no

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

no rmon collection history *index*

-	-

RGOS	owner	buckets
interval		

1

Ruijie(config)# **interface fast-Ethernet 0/1**

Ruijie(config-if)# **rmon collection history 1 zhansan buckets 10 interval 10**

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

-	-

25.1.3 rmon collection stats

no

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

no rmon collection stats *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 : Gi1/1
Buckets requested : 65535
Buckets granted : 10
Interval : 1
Owner : zhangsan
Sample : 198
Interval start : 0d:0h:15m:0s
DropEvents : 0
Octets : 67988
Pkts : 726
BroadcastPkts : 502
MulticastPkts : 189
CRCAlignErrors : 0
UndersizePkts : 0
OversizePkts : 0
Fragments : 0
Jabbers : 0
Collisions : 0
Utilization : 0
    
```

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

--	--



	-	-

Ruijie# **show rmon statistics**

Statistics : 1

Data source : Gi1/1

DropEvents : 0

Octets : 1884085

Pkts : 3096

BroadcastPkts : 161

MulticastPkts : 97

CRCAAlignErrors : 0

UndersizePkts : 0

OversizePkts : 1200

Fragments : 0

Jabbers : 0

Collisions : 0

Pkts64Octets : 128

Pkts65to127Octets : 336

Pkts128to255Octets : 229

Pkts256to511Octets : 3

Pkts512to1023Octets : 0

Pkts1024to1518Octets : 1200

Owner : zhangsan

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

	-	-

26 IPv6

26.1

26.1.1 ping ipv6

IPV6

ping ipv6 [ipv6-address]

ipv6-addres	s

Ruijie# ping ipv6 fec0::1

ping

!	
.	
U	
R	
F	
A	
D	Down IPV6 ()
?	

-	-

IPV6

UP IPV6

@ ↑

--	--	--

default

2	IPv6	ipv6 enable	,
	IPv6		
~	IPv6	IPv6	
	no ipv6 enable	IPV6	

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

show ipv6 interface	

-	-

26.1.5 ipv6 general-prefix

IPv6 **ipv6 general-prefix**

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

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

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

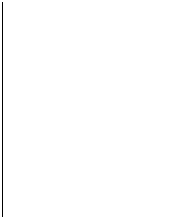


IPv6



my-prefix

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



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

	-	-
	-	-

26.1.7 ipv6 nd dad attempts

no IPV6 (NS)

ipv6 nd dad attempts *value*

no ipv6 nd dad attempts

value	(NS)	0
	ipv6	:
	0-600	

1

IPV6
"tentative" ()

EUI-64

(IPV6)

down/up

down up

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

show ipv6 interface	

IPv6

no ipv6 neighbor *ipv6-address interface-id*

```
show ipv6 neighbors
```

“ no ipv6

IPv6

ns-linklocal-src

RFC3484

ipv6 ns-linklocal-src

no ipv6 ns-linklocal-src

	-	-

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

	-	-

	-	-

26.1.11 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*]}

ipv6-prefix	IPV6	RFC4291

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

	~	

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

	show ipv6 route	IPv6

	-	-

26.1.12 **ipv6 source-route**

IPv6

IPv6

no

ipv6 source-route

no ipv6 source-route

	-	-

IPv6

0 IPv6 0
IPv6

Ruijie(conifg)# no ipv6 source-route

	-	-

26.2

26.2.1 clear ipv6 neighbors

clear ipv6 neighbors

	-	-

Ruijie# **clear ipv6 neighbors**

	ipv6 neighbor	
	show ipv6 neighbors	

	-	-

26.2.2 show ipv6 general-prefix

show ipv6 general-prefix

show ipv6 general-prefix

	-	-



```

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

```


total	
fec0:1:1:1::/64	
Def	
Auto CFG	Auto IPV6 , CFG
!Adv	
vltime	()
pltime	()
L !L	L on-link !L
A !A	A

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	

state/H(R)

STATE

INCMP(Incomplete)—

(NS)

(NA)

REACH(Reachable) —

STALE —

NUD

(Neighbor Unreachability Detection)

DELAY— STALE

STALE DELAY

State DELAY_FIRST_PROBE_TIME seconds(5)

DELAY PROBE

(NS) NUD

PROBE— NUD

RetransTimer milliseconds

(NS)

MAX_UNICAST_SOLICIT(3)

?—

/R—

	Interface	
	State	STATE ACTIVE— INACTIVE— mac
		IPV6

	ipv6 neighbor	

	-	-

26.2.5 show ipv6 route

IPV6

show ipv6 route [static] [local] [connected]

	static	
	local	
	connected	

Ruijie# **show ipv6 route**

Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP

I1 - ISIS L1, I2 - ISIS L2, IA - IIS interarea

```
L   ::1/128
    via ::1, loopback 0
C   fa::/64
    via ::, vlan 1
L   fa::1/128
    via ::, loopback 0
C   2001::/64
    via ::, vlan 2
L   2001::1/128
    via ::, loopback 0
L   fe80::/10
    via ::1, Null0
C   fe80::/64
    via ::, vlan 1
L   fe80::200:ff:fe00:1/128
    via ::, loopback 0
C   fe80::/64
    via ::, vlan 2
```

--	--

ipv6 route

show ipv6 router

IPv6

Ruijie# **show ipv6 router**

Router FE80::2D0:F8FF:FEC1:C6E1 on VLAN 2, last update 62 sec
Hops 64, Lifetime 1800 sec, ManagedFlag=0, OtherFlag=0, MTU=1500
Preference=MEDIUM
Reachable time 0 msec, Retransmit time 0 msec
Prefix 6001:3::/64 onlink autoconfig
Valid lifetime 2592000 sec, preferred lifetime 604800 sec
Prefix 6001:2::/64 onlink autoconfig
Valid lifetime 2592000 sec, preferred lifetime 604800 sec

-	-

27 MLD Snooping

27.1

27.1.1 ipv6 mld profile

MLD	profile	profile	
	profile	profile-number	mld
profile			

	10.4	

27.1.3 deny

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

27.1.4 permit

	profile	profile	permit
	permit		

	VLAN		VLAN
VLAN		VLAN	
	mld snooping	ivgl	
	Ruijie(config)# ipv6 mld snooping ivgl		
	ipv6 mld snooping svgl	mld snooping	svgl
	ipv6 mld snooping ivgl-svgl	mld snooping	
	10.4		

27.1.6 ipv6 mld snooping dyn-mr-aging-time

	ipv6 mld snooping dyn-mr-aging-time <i>time</i>		
	no ipv6 mld snooping dyn-mr-aging-time		
	ipv6 mld snooping dyn-mr-aging-time <i>time</i>		
	no ipv6 mld snooping dyn-mr-aging-time		
	<i>time</i>		1-3600
	300s		
	Hello	MLD	IPv6 PIM
		500s	

|

Ruijie(config)# **ipv6 mld snooping dyn-mr-aging-time 500**

|

|

|

--	--

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

vid	vlan id 1-4094

VLAN fl

ipv6 mld snooping vlan *vid* mrouter interface *interface-id*

<i>vid</i>	vlan id 1-4094
<i>ipv6-multiaddr</i>	
<i>interface-id</i>	

FF88::1
Ruijie(config)# **ipv6 mld snooping vlan 1 static FF88::1 interface fastEthernet 0/1**

ipv6 mld snooping vlan mrouter interface	

10.4	

27.1.12 ipv6 mld snooping fast-leave enable

mld snooping fast-leave **ipv6 mld snooping**
fast-leave enable no mld snooping fast-leave
ipv6 mld snooping fast-leave enable
no ipv6 mld snooping fast-leave enable



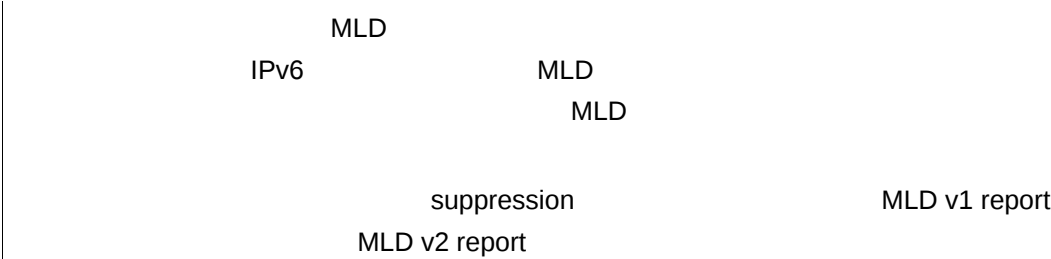
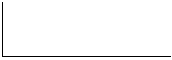
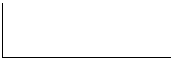
mld snooping fast-leave
Ruijie(config)# **ipv6 mld snooping fast-leave**



10.4	

27.1.13 ipv6 mld snooping suppression enable

mld snooping suppression suppression enable no mld snooping suppression
ipv6 mld snooping suppression enable
no ipv6 mld snooping suppression enable



mld snooping suppression

[illegible]

	10.4	

clear ipv6 mld snooping gda-table

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

10.4	

27.1.17 debug mld-snp

mld , debug mld-snp

debug mld-snp
undebug mld-snp

mld

mld

```
Ruijie# debug mld-snp
```


10.4	

27.2

27.2.1 show ipv6 mld snooping

mld snooping

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

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

mld snooping

```

1      show ipv6 mld snooping      mld snooping
Ruijie# show ipv6 mld snooping
MLD-snooping mode      : IVGL
SVGL vlan-id           : 1
SVGL profile number     : 0
Source check port       : Disabled

```

Query max response time : 10(Seconds)

2 **show ipv6 mld snooping statistics** mld snooping

Ruijie# **show ipv6 mld snooping statistics**

GROUP	Interface	Last report time	Last leave time	Last 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

27.2.2 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

```

10.4

				GigabitEthernet 1/1
			4M	
			Ruijie#	configure terminal
			Ruijie(config)#	interface GigabitEthernet 1/1
			Ruijie(config-if)#	storm-control multicast 4096
			Ruijie(config-if)#	end
			show storm-control	
			86	pps
			-	-

28.1.2 switchport protected

				no
			switchport protected	
			no switchport protected	
			3	show interfaces
			Ruijie(config)#	interface gigabitethernet 1/1
			Ruijie(config-if)#	switchport protected
			show interfaces	

└──

-

└──

-	-

28.1.3 switchport port-security

no

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

no switchport port-security [violation]

└──

port-security	
violation protect	
violation restrict	trap
violation shutdown	Trap

└──

└──

└──

)

(

MAC IP(
)
1
M

Gigabitethernet 1/1

shutdown

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

-	-

28.1.6 switchport port-security binding interface

IP+ MAC IP

no

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

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

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

```

1      192.168.1.100      10
Ruijie(config)# switchport port-security binding interface g0/10
192.168.1.100
2      192.168.1.100 MAC      00d0.f800.5555, VID= 1      10
Ruijie(config)# switchport port-security binding interface g0/10 00d0.f800.5555
vlan 1 192.168.1.100

```

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



1	TRUNK	10
---	-------	----

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

1000

28.2.2 show port-security

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

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

29 802.1X

29.1 dot1x

29.1.1 dot1x auto-req

802.1X

dot1x auto-req

no

[no] dot1x auto-req

	-	-

29.1.3 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

Ruijie# **configure terminal**

Ruijie(config)# **dot1x auto-req req-interval 60**

Ruijie(config)# **end**

Ruijie# **show dot1x auto-req**

Auto-Req: Enabled

User-Detect : Enabled

Packet-Num : 0

Req-Interval: 60 Second

show dot1x auto-req		

-		-

29.1.4 dot1x auto-req user-detect

no

dot1x auto-req user-detect

no dot1x auto-req user-detect

	-	-

show dot1x auto-req

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

	show dot1x auto-req	

! 5BË‡ <Â Â)pÁ— Ä — e, ñvX! p Bâ— Ä. t%# 1wBR0 p BrB6)pÁvX(T0e1T'4@ t%" ™ 0`...!AbrB", N

29.2 dot1x

29.2.1 dot1x timeout quiet-period

no

dot1x timeout quiet-period *seconds*

no dot1x timeout quiet-period

<i>seconds</i>				
	0	65535	s	

10

show dot1x

1000s

Ruijie# **configure terminal**

Ruijie(config)# **dot1x timeout quiet-period 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: 3600 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 Request: 3 times

Filter Non-RG Supp: Disabled

```

Client Oline Probe: Disabled
Eapol Tag Enable: Disabled
Authorization Mode: Group Server

```

```
show dot1x
```

802.1x

-

-

29.2.2 dot1x timeout re-authperiod

```
no
```

```
dot1x timeout re-authperiod seconds
```

```
no dot1x timeout re-authperiod
```

```
seconds
```

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
```

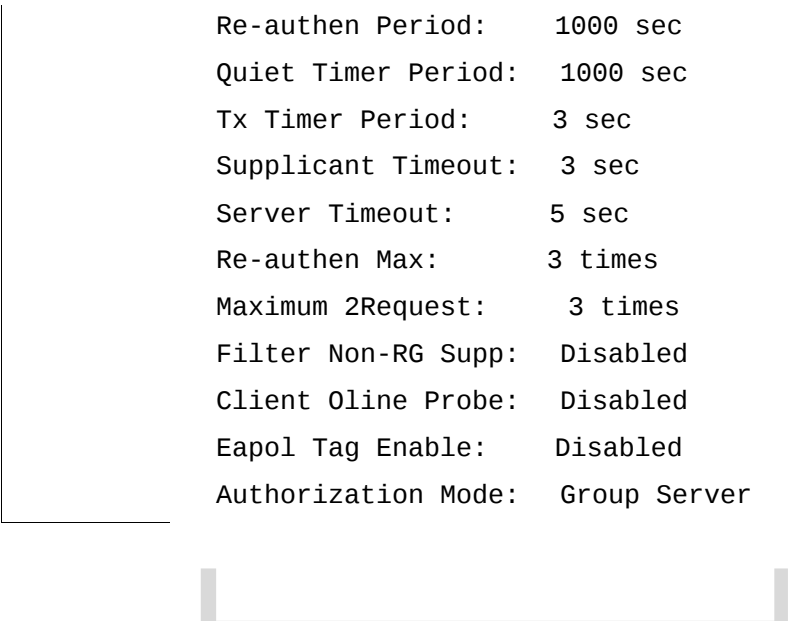
```
802.1X Status: Enabled
```

```
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



	-	-
--	---	---

29.2.5 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



```

Re-authen Period:    1000 sec
Quiet Timer Period:  1000 sec
Tx Timer Period:     10 sec
Supplicant Timeout:  10 sec
Server Timeout:      10 sec
Re-authen Max:       3 times
Maximum Request:     3 times
Filter Non-RG Supp:  Disabled
Client Oline Probe:  Disabled
Eapol Tag Enable:    Disabled
Authorization Mode:   Group Server

```

show dot1x	802.1x

-	-

29.3.2 dot1x reauth-max

no

dot1x reauth-max *count*

no dot1x reauth-max

<i>count</i>	

3

show dot1x

802.1x

```

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

```

show dot1x	802.1x

-	-

29.4 dot1x

29.4.1 dot1x probe-timer

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

no dot1x probe-timer

no	
<i>interval</i>	hello
alive	
interval	

Hello 20
 250

show dot1x 802.1x

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

Show dot1x probe-timer	



	-	-
--	---	---

--

--

--

```
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
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
```

29.5 dot1x

29.5.1 dot1x authentication

AAA

AAA

no

dot1x authentication {default | *list-name*}

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

603c 24 1 86

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

no dot1x auth-mode

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

EAP-MD5

show dot1x 802.1x

802.1x

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

show dot1x	802.1x

show dot1x 802.1x

802.1x

Ruijie# **configure terminal**

Ruijie(config)# **dot1x default**

Ruijie(config)# **end**

Ruijie# **end**

--	--

show dot1x

802.1x

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

show dot1x	802.1x

-	-

29.5.6 dot1x guest-vlan

guest vlan **no**

dot1x dynamic-vlan <1 - 4094>

no dot1x guest-vlan

vid	<1 - 4094>

dot1x dynamic-vlan enable

guest vlan

guest vlan

guest vlan

vlan

show running-config 802.1x

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

	show running-config	802.1x

	-	-

29.5.7 dot1x eapol-tag

	EAPOL	TAG
	dot1x eapol-tag	
	no dot1x eapol-tag	
	-	-
	show dot1x	802.1x
	802.1X tag	
	Ruijie# configure terminal	
	Ruijie(config)# dot1x eapol-tag	
	Ruijie(config)# end	
	Ruijie#	
	show dot1x	802.1x
	-	-

29.5.8 dot1x max-req

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



```
show dot1x private-supPLICant-only
```

802.1x

```
Ruijie# configure t
```

```
Ruijie(config)# dot1x private-supPLICant-only
```

```
Ruijie(config)# end
```

```
Ruijie#
```

```
show dot1x private-supPLICant-only
```

29.5.10 dot1x port-control auto

```
no
```

```
dot1x port-control auto
```

```
no dot1x port-control
```

```
no2_0 1 T5/T10 1 0.0803 5/TT0 1 0.0803 5TjETq/TT1 1 5TjETq/TT1 1 5 328.280.52 I55 328.280.52 I55
```

Ruijie#

show dot1x

802.1x

-

-

29.5.11 dot1x port-control-mode

802.1x

MAC

dot1x port-control-mode {mac-based | {port-based [single-host]} }

no dot1x port-control-mode

mac-based

mac 802.1X

port-based

802.1X

single-host

802.1x

mac-based

show dot1x port-control

802.1x

single-host

```
1          802.1x
Ruijie(config)# interface g 0/1
Ruijie(config-if)# dot1x port-control auto
Ruijie(config-if)# dot1x port-control-mode port-based
Ruijie(config-if)# end
Ruijie#

2          802.1x
Ruijie(config)# interface g 0/1
Ruijie(config-if)# dot1x port-control auto
Ruijie(config-if)# dot1x port-control-mode port-based single-host
Ruijie(config-if)# end
Ruijie#
```

show dot1x port-control	802.1x
Show running-config	

-	-

29.5.12 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#

-	-

-	-

29.5.13 dot1x redirect url

802.1x

URL

URL http://

http://ruijie.net/web

http://

https://

url

url no

url

dot1x redirect url [*url-string*]**[no] dot1x redirect url**

<i>url-string</i>	URL

1

ruijie.net/web

Ruijie(config)# **dot1x redirect url** http://ruijie.net/web

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

-	-

29.5.14 dot1x redirect for special tcp-destination port

port 16 TCP ip ip web 80 8080
no dot1x redirect for special tcp-destination port_mum

[no] dot1x redirect for special tcp-destination port *port num*

<i>port num</i>	TCP

	tcp 80 8080 no

TCP	1-65535

1 TCP 8443	
Ruijie(config)#dot1x redirect for special tcp-destination port 8443	

dot1x redirect url	

(), 3 1-10 no

no dot1x redirect time-out port

<i>time-out-interval</i>	

```
1          5
Ruijie(config)# dot1x redirect time-out 5
```

dot1x redirect url	web	ip ip
dot1x redirect for special tcp-destination port		
dot1x redirect num for special source-ip		

show dot1x

dot1x

	-	-

29.6 dot1x

29.6.1 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#

```

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

--	--

```
Ruijie# show dot1x auth-address-table
```

```
interface:g3/1
```

```
-----
```

```
mac addr: 00D0.F800.0001
```

```
Ruijie#
```

--	--

dot1x auth-mode

-	-

Ruijie# **show dot1x auto-req**

Auto-Req: Disabled

User-Detect : Enabled

Packet-Num : 0

Req-Interval: 30 Seconds

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

-	-

29.6.4 show dot1x private-supPLICANT-only

show dot1x private-supPLICANT-only

-	-

```
Ruijie# show dot1x private-supPLICANT-only
private-supPLICANT-only:: disabled
Ruijie#
```

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

-	-

29.6.5 show dot1x max-req

show dot1x max-req

-	-

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

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

	-	-

29.6.6 show dot1x port-control

show dot1x port-control [*interface interface*]

<i>interface</i>		

	dot1x timeout server-timeout	
	dot1x timeout supp-timeout	
	dot1x timeout tx-period	

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

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

-	-

29.6.10 show dot1x summary

802.1X

show dot1x summary

-	-

```
Ruijie# show dot1x summary
```

```
ID      MAC      Interface VLAN Auth-State
```

```
Backend-State Port-Status Type
```

```
-----
```

```
1 00d0f8000000 Gi0/1      1 Authenticated Idle
```

```
Authed      Static
```

```
Ruijie#
```

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

-	-

29.6.11 show dot1x user id

802.1X

show dot1x user id <id>

id

--	--

	dot1x max-req	
	dot1x port-control auto	

Ruijie# **show dot1x timeout quiet-period**

quiet-period: 60 sec

Ruijie#

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

dot1x timeo/Tpf-0.0024 Tw 1.198 <4-0.0024 Tw 1.] 0.47A48 20.1 33.36 394.9840.1 F909E20804

30 AAA

30.1

30.1.1 aaa authentication dot1x

AAA 802.1X

aaa authentication dot1x

	aaa new-model	AAA
	dot1x authentication	802.1X
	username	

AAA Enable

RADIUS

RADIUS

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

The diagram illustrates the relationship between AAA (Authentication, Authorization, and Accounting) and Login components in a distributed system. It is divided into two main sections by a vertical line. On the left, the text 'aaa authentication login' is centered, with 'AAA' above it and 'Login' below it. On the right, the text 'Login' is centered, with 'AAA' above it and 'Login' below it. This suggests a bidirectional or shared relationship between the AAA and Login components across the system boundary.

```
list-1    AAA Login
RADIUS                                         RADIUS

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

aaa new-model	AAA
username	
login authentication	Login

100

--	--	--

	local	
	none	
	group	TACACS+ RADIUS

AAA PPP AAA PPP
aaa authentication ppp PPP

rds_ppp AAA PPP
RADIUS RADIUS

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

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

Login
Login
Login

list-1 AAA Login
VTY 0 - 4
Ruijie(config)# **aaa authentication login list-1 local**
Ruijie(config)# **line vty 0 4**
Ruijie(config-line)# **login authentication list-1**

aaa new-model	AAA
username	
login authentication	Login

-	-
---	---

30.2

30.2.1 aaa authorization commands

NAS CLI AAA
aaa authorization
commands no AAA
aaa authorization commands level {default | list-name} method1 [method2...]

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

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

AAA

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

AAA Network

RGOS

PPP SLIP

RADIUS TACACS+

RADIUS

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

aaa new-model	AAA
aaa accounting	AAA
aaa authentication	AAA

authorization

commands no

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

no authorization commands *level*

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

AAA

cmd 15 TACACS+
none VTY 0 – 4

Ruijie(config)# **aaa authorization commands 15 cmd group tacacs+ none**

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

Ruijie(config-line)# **authorization commands 15 cmd**

aaa new-model	AAA
aaa authorization commands	AAA

-	-

30.2.7 authorization exec

Exec
no Exec **authorization exec**

authorization exec {default | list-name}

no authorization exec

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

AAA Exec

Exec
Exec Exec Exec

exec-1 Exec RADIUS
none VTY 0 – 4
Ruijie(config)# **aaa authorization exec exec-1 group radius none**
Ruijie(config)# **line vty 0 4**
Ruijie(config-line)# **authorization exec exec-1**

aaa new-model	AAA
aaa authorization commands	AAA Exec

-	-

30.3

30.3.1 aaa accounting commands

NAS

aaa accounting commands **no**

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

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

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

RGOS

α

+

-	-

30.3.2 aaa accounting exec

accounting exec NAS aaa
no Exec

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

no aaa accounting exec {default | list-name}

default	Exec
list-name	Exec
method	" none group " 4
none	
group	RADIUS TACACS+

RGOS Exec
none Exec
NAS CLI Start
Stop
Start Stop
Exec

RADIUS NAS

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

--	--

aaa new-model	AAA
aaa authentication	AAA
accounting commands	Exec

-	-

30.3.3 aaa accounting network

aaa accounting network **no**

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

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

default	Network
<i>list-name</i>	
start-stop	
<i>method</i>	4
none	

group

RADIUS +<0A60>Tj/TT0 1 Tf

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

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

-	-

30.3.4 aaa accounting update

aaa accounting update

no

aaa accounting update

no aaa accounting update

-	-

AAA

AAA

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

--	--

AAA

	aaa new-model	AAA
	aaa accounting network	



	-	-

30.3.6 accounting commands

accounting commands

no

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

no accounting commands *level*

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

cmd

15

TACACS+

none

VTY 0 – 4

Ruijie(config)# **aaa accounting commands 15 cmd group tacacs+ none**

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

Ruijie(config-line)# **accounting commands 15 cmd**

aaa new-model		AAA
aaa accounting commands		AAA

	-	-

30.3.7 accounting exec

Exec

accounting exec

no

Exec

accounting exec {default | *list-name*}

no accounting exec

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

Exec

Exec

Exec

Exec

exec-1 Exec

RADIUS

none

VTY 0 – 4

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

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

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

aaa new-model		AAA
aaa accounting commands		AAA Exec

--	--	--

AAA		
	-	-

30.4 AAA

30.4.1 aaa domain

	no	
	aaa domain {default domain-name}	
	no aaa domain {default domain-name}	
	default	
	domain-name	
	AAA	default
		domain-name
		32
	Ruijie(config)# aaa domain ruijie.com	
	Ruijie(config-aaa-domain)#	
	aaa new-model	AAA
	aaa domain enable	AAA
	show aaa domain	
	-	-

30.4.2 aaa domain enable

	AAA	
	AAA	no
	aaa domain enable	
	no aaa domain enable	
	-	-
	AAA	
	AAA	
	AAA	
	Ruijie(config)# aaa domain enable	
	aaa new-model	AAA
	show aaa domain	
	-	-

30.4.3 access-limit

	IEEE802.1x	no
	access-limit num	

"

default

Network

Network

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

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

-	-

30.4.5 authentication dot1x

IEEE802.1x no

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

default	
<i>list-name</i>	

default

IEEE802.1x

IEEE802.1x

```
Ruijie(config)# aaa domain ruijie.com
Ruijie(config-aaa-domain)# authentication dot1x default
```

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

-	-

30.4.6 authorization network

Network no

```
authorization network {default | list-name}
no authorization network
```

default	
<i>list-name</i>	

default

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

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

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

--	--

	-	-

30.4.8 show aaa domain

show aaa domain [default

	aaa new-model	AAA
	aaa domain enable	AAA

	-	-

30.4.9 username-format

NAS

no

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

no username-format

	without-domain	

30.5.1 aaa group server

30.5.1 aaa group server

no

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

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



AAA

RADIUS

TACACS+

```
Ruijie(config)# aaa group server radius ss
```

```
Ruijie(config-gs-radius)# end
```

```
Ruijie# show aaa group
```

Group Name: ss

Group Type: radius

Referred: 1

Server List:

show aaa group	aaa

	-	-

30.5.2 ip vrf forwarding

AAA vrf no

ip vrf forwarding *vrf_name*

no ip vrf forwarding

	<i>vrf_name</i>	vrf

vrf

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

	aaa group server	aaa
	show aaa group	aaa

	-	-

30.5.3 server

AAA

no

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

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

```

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

```

aaa group server	aaa
show aaa group	aaa

	-	-
--	---	---

30.5.4 show aaa group

show aaa group

[illegible]



```
Ruijie# show aaa group
Group Name:  ss
Group Type:  radius
Referred:    2
Server List:
IP Address:  192.168.217.64
Authentication Port: 1812
Accounting Port: 1813
Referred:    1
```

aaa group server	AAA

-		-

30.6 AAA

30.6.1 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
```



login

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

Show running-config	
Show aaa lockout	login

-	-

30.6.3 aaa new-model

```
RGOS AAA
no AAA

aaa new-model
no aaa new-model
```

-	-

AAA

```
AAA AAA aaa new-model
AAA AAA
```

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

[illegible]

30.6.5 debug aaa

AAA		no	
debug aaa event			
no debug aaa event			
	EXEC		

30.6.6 show aaa method-list

AAA	
show aaa method-list	

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

aaa authentication	
aaa authorization	
aaa accounting	

-	-

30.6.7 show aaa user logout

show aaa user logout {all | user-name <word>}

<word>	ID

Ruijie# show aaa user logout all

show running-config	
show aaa logout	login

-	-

31.1.2 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
----	-----------------	----

	radius-server key	RADIUS
	radius-server retransmit	RADIUS

RADIUS

	-	-

31.1.6 radius-server retransmit

RADIUS
radius-server retransmit no
radius-server retransmit *retries*
no radius-server retransmit

	<i>retries</i>	RADIUS

--	--

--	--

AAA

RADIUS

radius-server timeout no

radius-server timeout seconds

no radius-server timeout

seconds	1-1000

5

10
Ruijie(config)# radius-server timeout 10

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

-	-

31.1.8 radius set qos cos

radius qos cos

radius set qos cos

no radius set qos cos

-	-

/GS0 gsBT/C2_0 1 Tf0 Tc 0 Tw 0 Ts 100 Tz 0 Tr 9 0 0 9 62.34 790.4003 Tm<47213542>Tj/TT0 1 Tf-0.0006 Tc 2.24I*S

RADIUS

show radius parameter

	-	-

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

	-	-

radius

Ruijie# **show radius server**

server ip : 192.168.4.12

acct port: 23

authen port: 77

server state: ready

server ip : 192.168.4.13

acct port: 45

authen port: 74

server state: ready

radius-server host	RADIUS
radius-server retransmit	RADIUS

radius-server key Tw 1.198 -0.012 Td[(radius-serv)11(e)-1(r retran)6(smit)]TTC2_0 1 Tf0 Tc 0 Tw

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

[illegible]

32 TACACS+

32.1 TACACS+

32.1.1 aaa group server tacacs+

	TACACS+	TACACS+
	aaa group server tacacs+ group-name	
	no aaa group server tacacs+ group-name	
	group-name	TACACS+
	TACACS+	
	TACACS+	
	tac1	TACACS+ 1.1.1.1
	TACACS+	
	Ruijie(config)# aaa group server tacacs+ tac1	
	Ruijie(config-gs-tacacs)# server 1.1.1.1	
	server	TACACS+ server
	ip vrf forwarding	TACACS+ VRF
	-	-

32.1.2 ip tacacs source-interface

TACACS+

ip tacacs source-interface *interface*

no ip tacacs source-interface

--	--

Interface

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

TACACS+

TACACS+ vrf

TACACS+ VRF vpn1

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

aaa group server tacacs+	TACACS+
server	TACACS+ server

-	-

r(TACACS+)

TACACS+

```
{ip-address | ipv6-address}
er {ip-address | ipv6-address}
```



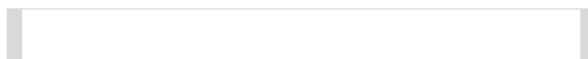
```
aaa group server tacacs+ TACACS+
tacacs-server
TACACS+
host
TACACS+
```

```
tac1 TACACS+ 1.1.1.1
TACACS+
Ruijie(config)# aaa group server tacacs+ tac1
Ruijie(config-gs-tacacs+)# server 1.1.1.1
```

W0(12G9%7V2XW%c""rP1tBes520TW0*P4esRSeY8â'Q2"©B2A"GuA0p<4E-v4E2"3)9DE1c"A0yx6b 3h

TACACS+ AAA TACACS+
tacacs-server TACACS+

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



[illegible]

2

[illegible]

100

32.2.1 debug tacacs+

32.2.2 show tacacs

TACACS+

show tacacs

33 SSH

33.1 SSH

33.1.1 crypto key generate

crypto key generate {rsa | dsa}

rsa	RSA
dsa	DSA

SSH Server

SSH Server			SSH		
enable service ssh-server			SSH Server	SSH 1	RSA SSH
2	RSA	DSA	RSA	SSH1	SSH2
		DSA	SSH2		
			no crypto key generate		
~			crypto key zeroize		

Ruijie# configure terminal
Ruijie(config)# crypto key generate rsa

	-	-
--	---	---

33.1.2 crypto key zeroize

SSH

crypto key zeroize {rsa | dsa}

	rsa	RSA
	dsa	DSA

	SSH Server	SSH Server	DISABLE
		no enable service ssh-server	

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


SSH Server
120s
show ip ssh
SSH server

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

show ip ssh	ssh-server

RGOS10.1

-	-

33.1.5 ip ssh version

SSH server
no
ip ssh version {1 | 2}

2

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

show ip ssh	SSH Server

RGOS10.1

SSH

	Clear line vty <i>line_number</i>	VTY
--	--	-----

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

show ip ssh

	-	-

SSH Server	SSH Server
~	SSH
SSH	

Ruijie# show ip ssh

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

RGOS10.1

-	-

33.2.4 show ssh

SSH

show ssh

-	-

34 CPU

34.1

34.1.1 cpu-protect cpu bandwidth *bandwidth_value*

CPU

cpu-protect cpu bandwidth *bandwidth_value*

<i>bandwidth_value</i>	64 1000000(kbps)

S2900 CPU 100000kbps

```

CPU 2000 kbps
Ruijie# configure terminal
Ruijie(config)# cpu-protect cpu bandwidth 2000
Ruijie(config)#end
Ruijie# show cpu-protect cpu
%cpu port bandwidth: 2000(kpbs)

```

cpu-protect type packet-type traffic-class <i>traffic-class-num</i>	
cpu-protect traffic-class id <i>id_num</i> bandwidth <i>bandwidth_value</i>	
cpu-protect traffic-class all bandwidth <i>bandwidth_value</i>	

	-	-

34.1.2 cpu-protect mac-address storm-control enable *value*

cpu-protect mac-address storm-control enable *value*

	<i>value</i>	

cpu-protect traffic-class id *id_num* bandwidth *bandwidth_value*

<i>id_num</i>	ID 0 7
<i>bandwidth_value</i>	32 131072(kbps)

S2900 7 100000kbps 1000kbps

7 312(kbps)

Ruijie#**configure terminal**

Ruijie(config)# **cpu-protect traffic-class id 7 bandwidth 312**

Ruijie(config)#**end**

Ruijie# **show cpu-protect traffic-class id 7**

%*****traffic class bandwidth(kbps)*****

7 312

cpu-protect type packet-type traffic-class	
<i>traffic-class-num</i>	
cpu-protect traffic-class all bandwidth	
<i>bandwidth_value</i>	

-	-

34.1.4 cpu-protect traffic-class all bandwidth *bandwidth_value***cpu-protect traffic-class id *id_num* bandwidth *bandwidth_value***

|--|--|

bandwidth_

S2900



|

|

-	-

34.2

34.2.1 show cpu-protect cpu

CPU

show cpu-protect cpu

|

-	-

|

|

|

CPU

|

CPU

Ruijie# show cpu-protect cpu
%cpu port bandwidth: 100000(kbps)

|

show cpu-protect type <i>packet-type</i>	
show cpu-protect traffic-class id id_num	id_num 0 7
show cpu-protect traffic-class all	

|

|

--	--

	-	-
--	---	---

34.2.2 show cpu-protect traffic-class id id_num

show cpu-protect traffic-class id *id_num*

<i>idt_num</i>		0-7

--

--

--

	1 CPU
	Ruijie#show cpu-protect traffic-class id 1
	%*****traffic class bandwidth(kbps)*****
	1000

show cpu-protect type <i>packet-type</i>		
show cpu-protect traffic-class all		
show cpu-protect cpu		CPU

--

-		-

34.2.3 show cpu-protect traffic-class all

show cpu-protect traffic-class all

--	--	--

	-	-
--	---	---

--

--

--

show cpu-protect traffic-class all		
Ruijie# show cpu-protect traffic-class all		
%*****	traffic class	bandwidth(kbps)*****
0		1000
1		1000
2		1000
3		1000
4		1000
5		1000
6		1000
7		100000

show cpu-protect type <i>packet-type</i>		
show cpu-protect traffic-class id id_num		id_num 0 7
show cpu-protect cpu		CPU

--

	-	-
--	---	---

34.2.4 show cpu-protect type packet-type

show cpu-protect type *packet-type*

--	--	--

	-	-
--	---	---

show cpu-protect type all

```
%*****packet type      traffic-class*****
      bpdud              6
      arpd              5
      tpp              6
      dot1x            3
      gvrp             3
      rldp             6
      dhcp             2
unknown-ipv6-mc         1
      known-ipv6-mc      1
unknown-ipv4-mc         1
      known-ipv4-mc      1
      udp-helper        0
      dvmrp            5
      igmp             3
      icmp             5
      ospf             5
      pim              5
      rip              5
      vrrp             5
      mld              3
      ns               5
      error-ttl         0
error-hop-limit         0
      local-telnet       5
      local-snmp        5
      local-http        5
      local-tftp        5
      local-other       5
```

ipv4-uc	4
ipv6-uc	4
other	0

show cpu-protect traffic-class id <i>id_num</i>	id_num 0 7
show cpu-protect traffic-class all	
show cpu-protect cpu	CPU

--

-	-

34.2.5 show cpu-protect mac-address storm-control

show cpu-protect mac-address storm-control

-	-

--

--

--

CPU

Ruijie# **show cpu-protect mac-address storm-control**

%MAC address storm control state: enable

%MAC address storm control rate: 2000(address/second)

-	-



35 **GSN**

35.1

35.1.1 security address-bind enable

security address-bind enable

no security address-bind enable

	-	-
--	---	---

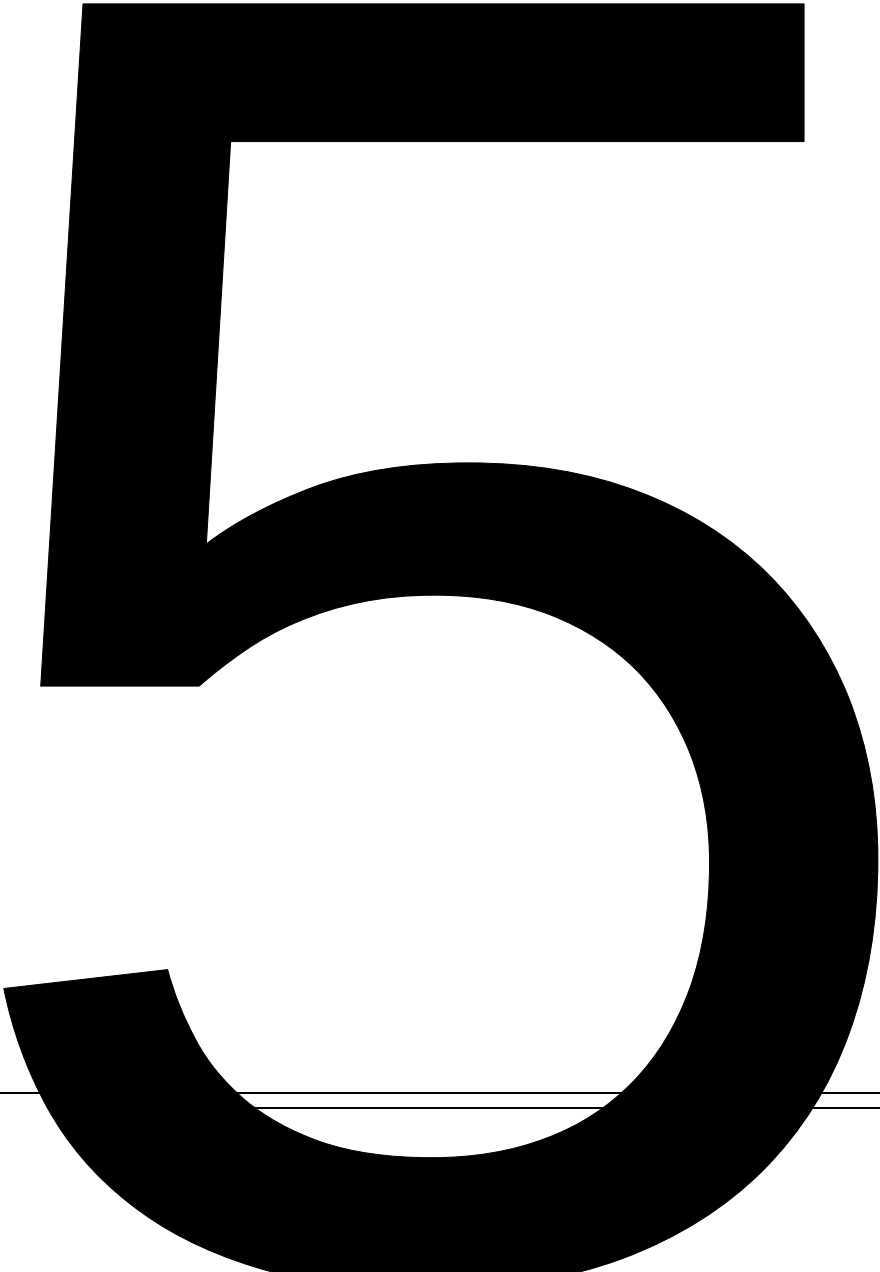
AP AP

1001

GSN

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



| 5

|

|

show security event interval

|

Ruijie(config)# security event interval 10

|

show security event interval	

|

RGOS10.1

|

-	-

35.1.4 security gsn enable

GSN no

security gsn enable

no security gsn enable

|

-	-

|

|

|

GSN GSN

|

Ruijie# configure terminal
Ruijie(config)# security gsn enable

|

--	--

	-	-
	RGOS10.1	
	-	-

35.1.5 smp-server host

smp-server ip

smp-server host *ip-address*

no smp-server host

	<i>ip-address</i>	smp server ip
	smp server	
	show smp-server	
	Ruijie(config)#smp-server host 192.168.4.243	
	show smp-server	smp server
	RGOS10.1	
	-	-

35.2

35.2.1 show security evnet interval

	-	-

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

	security event interval <i>interval</i>	

RGOS10.1

	-	-

35.2.2 show smp-server

smp server IP

	-	-

smp server IP

Ruijie# **show smp-server**

	SMP-Server IP 192.168.20.30	
	smp-server host	smp server ip
	RGOS10.1	
	-	-

36 DAI

36.1 VLAN DAI

36.1.1 ip arp inspection vlan

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

ip arp inspection vlan *vlan-id*

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

<i>vlan-id</i>	vlan

36.2

36.2.1 ip arp inspection trust

ip arp inspection trust no

ip arp inspection trust
no ip arp inspection trust

	-	-

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

36.3.1 ip arp inspection limit-rate limit-rate

		ARP		ip arp inspection limit-rate
		no		
		ip arp inspection limit-rate {limit-rate none }		
		no ip arp inspection limit-rate		
		none		
		limit-rate	1	2048
		15	ARP	/
				0
		DAI		(Network
		Foundation Protection Policy)		
		VLAN 2	gigabitEthernet 0/2	10 ARP
		/		
		Ruijie(config)# ip arp inspection		
		Ruijie(config)# interface gigabitEthernet 0/2		
		Ruijie(config-if)# ip arp inspection limit-rate 10		
		-		-
		-		
		-		-

36.4 DHCP Snooping

	VLAN	DAI	ARP	
ARP			DHCP Snooping	.

37

arp

37.1

arp

37.1.1 anti-arp-spoofing ip

	arp	no
	anti-arp-spoofing ip <i>ip-address</i>	
	no anti-arp-spoofing ip <i>ip-address</i>	
	<i>ip-address</i>	IP
	show anti-arp-spoofing	
	Ruijie(config)#interface fastEthernet 0/1	
	Ruijie(config-if)#anti-arp-spoofing ip 192.168.1.1	
	show anti-arp-spoofing	arp
	-	-

37.2

arp

37.2.1 show anti-arp-spoofing

arp

show anti-arp-spoofing


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

anti-arp-spoofing ip	arp

-	-

38 IP Source Guard

38.1 IP Source Guard

38.1.1 ip source binding

IP no

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

mac-address	

	show ip source binding	IP
	-	-

38.2 IP Source Guard

38.2.1 ip verify source

	IP Source Guard	no
	[no] ip verify source [port-security]	
	port-security	IP Source Guard IP+MAC
	IP Source Guard	IP
	IP+MAC	
	IP Source Guard	DHCP Snooping Trust
	DHCP Snooping	IP Source Guard IP Source Guard
	1 IP Source Guard	
	Ruijie# configure terminal	
	Ruijie(config)# interface fastEthernet 0/1	
	Ruijie(config-if)# ip verify source	
	Ruijie(config-if)# end	

	-	-

38.3 IP Source Guard

38.3.1 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

[illegible]

[illegible]

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

	<i>percent_vaule</i>	1 100

	(Manage)	30
	(Route)	25
	(Protocol)	45

--	--	--

--	--	--

Ruijie(config)# **cpu-protect sub-interface manage percent 60**

	cpu-protect sub-interface { manage protocol route } pps	

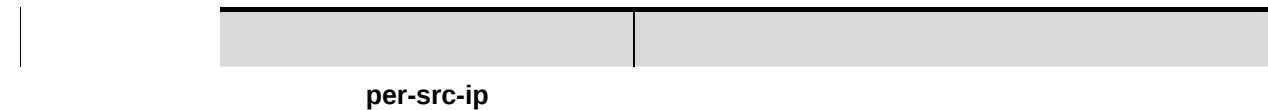
--	--	--

	-	-

39.3 ARP

39.3.1 arp-guard attack-threshold

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



39.3.2 arp-guard enable

ARP

arp-guard enable

	-	-

ARP

NFPP

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

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

	-	-

NFPP

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

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

-	-

39.3.4 arp-guard monitor-period

arp-guard monitor-period *seconds*

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

600

NFPP

0

0

Ruijie(config)# **nfpp**

Ruijie(config-nfpp)# **arp-guard monitor-period 180**

show nfpp arp-guard summary

	-	-

39.3.7 arp-guard scan-threshold

arp-guard scan-threshold *pkt-cnt*

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

	15	10
--	----	----

	NFPP
--	------

10	15	ARP	MAC	IP
	MAC	IP	IP	

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

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

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

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

VLAN 1 g 0/1
 Ruijie# **clear nfpp arp-guard hosts vlan 1 interface g0/1**

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

-	-

39.3.9 clear nfpp arp-guard scan

ARP

clear nfpp arp-guard scan

-	-

```
Ruijie# clear nfpp arp-guard scan
```

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

-	-

39.3.10 nfpp arp-guard enable

ARP

nfpp arp-guard enable

-	-

ARP

ARP

ARP

```
Ruijie(config)# interface G0/1
```

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

arp-guard enable	ARP
show nfpp arp-guard summary	

|

|

10.4	

39.3.11 nfpp arp-guard isolate-period

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

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

|

|

></h2F!Ä

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

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

Ruijie(config)# **interface G 0/1**

Ruijie(config-if)# **nfpp arp-guard policy per-src-ip 2 10**

Ruijie(config-if)# **nfpp arp-guard policy per-src-mac 3 10**

Ruijie(config-if)# **nfpp arp-guard policy per-port 50 100**

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

10.4	

39.3.13 nfpp arp-guard scan-threshold

nfpp arp-guard scan-threshold *pkt-cnt*

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

	ARP	ARP
--	-----	-----

--	--

--	--

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

	pps	[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											
	<table><tr><td></td><td></td></tr><tr><td>nfpp dhcp-guard policy</td><td></td></tr><tr><td>show nfpp dhcp-guard summary</td><td></td></tr><tr><td>show nfpp dhcp-guard hosts</td><td></td></tr><tr><td>clear nfpp dhcp-guard hosts</td><td></td></tr></table>				nfpp dhcp-guard policy		show nfpp dhcp-guard summary		show nfpp dhcp-guard hosts		clear nfpp dhcp-guard hosts	
nfpp dhcp-guard policy												
show nfpp dhcp-guard summary												
show nfpp dhcp-guard hosts												
clear nfpp dhcp-guard hosts												
	<table><tr><td></td><td></td></tr><tr><td>-</td><td>-</td></tr></table>				-	-						
-	-											

39.4.2 dhcp-guard enable

DHCP

dhcp-guard enable

	-	-
	DHCP	
	NFPP	

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

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

-	-

39.4.3 dhcp-guard isolate-period

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

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

0

NFPP

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcp-guard isolate timeout 180
```

nfpp dhcp-guard isolate-period	

NFPP

dhcp-guard rate-limit { per-src-mac | per-port} pps

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

MAC	5	150
-----	---	-----

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
```

VLAN 1 g 0/1
Ruijie# **clear nfpp dhcp-guard hosts vlan 1 interface g0/1**

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

--	--

NFPP

39.4.9 nfpp dhcp-guard isolate-period

39.4.10 nfpp dhcp-guard policy

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

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

Ruijie(config)# **interface G 0/1**

Ruijie(config-if)# **nfpp dhcp-guard policy per-src-mac 3 10**

Ruijie(config-if)# **nfpp dhcp-guard policy per-port 50 100**

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

10.4	

39.5 DHCPv6

39.5.1 dhcpv6-guard attack-threshold

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

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

MAC	10	300
-----	----	-----

NFPP

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcpv6-guard attack-threshold per-src-mac 15
Ruijie(config-nfpp)# dhcpv6-guard attack-threshold per-port 200
```

nfpp dhcpv6-guard policy	
show nfpp dhcpv6-guard summary	
show nfpp dhcpv6-guard hosts	
clear nfpp dhcpv6-guard hosts	

10.4	

39.5.2 dhcpv6-guard enable

DHCPv6

dhcpv6-guard enable

	-	-

DHCPv6

NFPP

Ruijie(config)# **nfpp**Ruijie(config-nfpp)# **dhcpv6-guard enable**

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

10.4		

39.5.3 dhcpv6-guard isolate-period

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

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

0

NFPP



<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. "
Ruijie(config)# nfpp	
Ruijie(config-nfpp)# dhcp-guard monitored-host-limit 200	
show nfpp dhcpv6-guard summary	

10.4	

39.5.6 dhcpv6-guard rate-limit

dhcpv6-guard rate-limit { per-src-mac | per-port} pps

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

MAC

5

150

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

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

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

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

10.4	

39.5.8 nfpp dhcpv6-guard enable

DHCPv6

nfpp dhcpv6-guard enable

-	-

DHCPv6

DHCPv6

DHCP

```
Ruijie(config)# interface G0/1
```

```
Ruijie(config-if)# nfpp dhcpv6-guard enable
```

dhcpv6-guard enable	DHCPv6
show nfpp dhcpv6-guard summary	

10.4	

39.5.9 nfpp dhcpv6-guard isolate-period

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

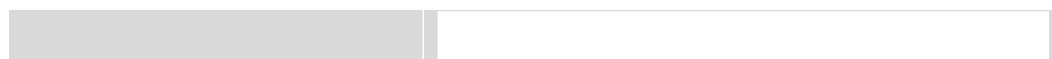
<i>seconds</i>	0 [30, 86400]
permanent	

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

```
Ruijie(config-if)# nfpp dhcpv6-guard isolate-period 180
```

--	--

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



10.4

39.6 ICMP

39.6.1 icmp-guard attack-threshold

icmp-guard attack-threshold { per-src-ip | per-port} pps

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

IP

1200

1500

NFPP

```
Ruijie(config)# nfpp
```

```
Ruijie(config-nfpp)# icmp-guard attack-threshold per-src-ip 600
```

```
Ruijie(config-nfpp)# icmp-guard attack-threshold per-port 1200
```

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

	-	-

39.6.2 icmp-guard enable

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

0

NFPP

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

nfpp icmp-guard isolate-period	

exceed limit of 1000 monitored hosts. "

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

show nfpp icmp-guard summary	

-	-

39.6.6 icmp-guard rate-limit

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

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

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

NFPP

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# icmp-guard rate-limit per-src-ip 500
Ruijie(config-nfpp)# icmp-guard rate-limit per-port 800
```

nfpp icmp-guard policy	
show nfpp icmp-guard summary	

39.6.8 clear nfpp icmp-guard hosts

clear nfpp icmp-guard hosts [*vlan vid*] [**interface** *interface-id*] [*ip-address*]

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

VLAN 1 g 0/1

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

--	--

ICMP

ICMP

ICMP

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

icmp-guard enable	ICMP
show nfpp icmp-guard summary	

10.4	

39.6.10 nfpp icmp-guard isolate-period

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

seconds	0 [30, 86400]
permanent	

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

--	--	--

icmp-guard isolate-period

clear nfpp icmp-guard hosts	
-----------------------------	--

10.4	
------	--

39.7 ND

39.7.1 nd-guard attack-threshold

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

ns-na	
rs	
ra-redirect	
pps	[1,9999]

30	/	30	/	30
----	---	----	---	----

NFPP

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# nd-guard attack-threshold per-port ns-na 20
Ruijie(config-nfpp)# nd-guard attack-threshold per-port rs 10
Ruijie(config-nfpp)# nd-guard attack-threshold per-port ra-redirect 10
```

nfpp nd- nd-403 Tw.d-guard attack-tu9nicardyTc 4.8448.695 0 Td()Tþ.9071 Tf0.0047 T0.006 Td[<4.5pp
--



10.4	

39.7.2 nd-guard enable

ND

nd-guard enable



-	-



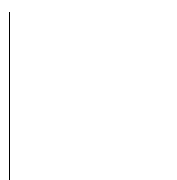
ND



NFPP



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



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



10.4	

39.7.3 nd-guard rate-limit

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

ND

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

nd-guard enable	ND
show nfpp nd-guard summary	

10.4	

39.7.5 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	
ra-redirect	
<i>rate-limit-pps</i>	1 9999
<i>attack-threshold-pps</i>	1 9999

ND snooping

ND snooping

ND snooping

ND guard

800

900

ND guard

ND snooping

ND snooping

Ruijie(config)# **interface G 0/1**

Ruijie(config-if)# **nfpp nd-guard policy per-port ns-na 50 100**

Ruijie(config-if)# **nfpp nd-guard policy per-port rs 10 20**

Ruijie(config-if)# **nfpp nd-guard policy per-port ra-redirect 10 20**



```
Ruijie# clear nfpp log
```

```
32 log-buffer entries were cleared.
```

show nfpp log	NFPP

10.4	

39.8.2 log-buffer entries

NFPP

log-buffer entries *number*

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

256

NFPP

NFPP

50

```
Ruijie(config)# nfpp
```

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

log-buffer logs number_of_message interval length_in_seconds	NFPP
show nfpp log	NFPP

10.4

39.8.3 log-buffer logs

NFPP

log-buffer logs *number_of_message interval length_in_seconds*

<i>number_of_message</i>	0-1024 0
<i>length_in_seconds</i>	0-86400 1 0
	number_of_message length_in_seconds 0
	number_of_message /length_in_second

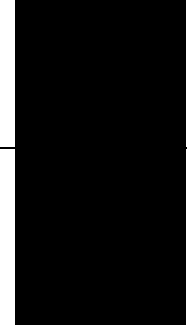
number_of_message 1 *length_in_seconds* 30

NFPP

Ruijie(config)# **nfpp**

Ruijie(config-nfpp)# **log-buffer logs 2 interval 12**

log-buffer entries <i>number</i>	NFPP
show nfpp log summary	NFPP



10.4	

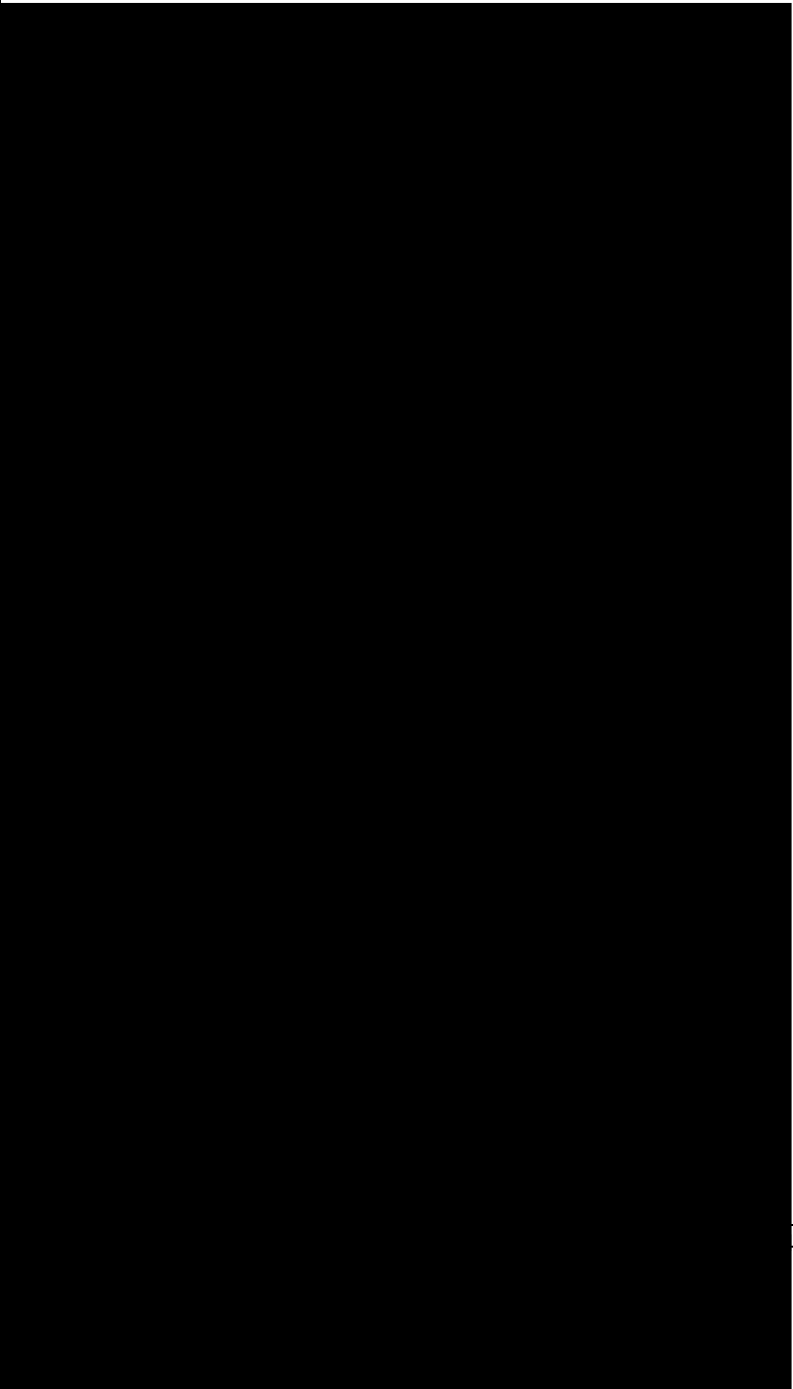
39.8.4 logging

NFPP VLAN

logging vlan *vlan-range*

logging interface *interface-id*

<i>vlan-range</i>	VLAN “ 1-3,5 ”
<i>interface-id</i>	



39.8.5 show nfpp log

NFPP

show nfpp log summary

NFPP

show nfpp log buffer [statistics]

statistics	NFPP

"_"

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

NFPP

Ruijie#**show nfpp log summary**

Total log buffer size : 10

Syslog rate : 1 entry per 2 seconds

Logging:

VLAN 1-3, 5

interface Gi 0/1

interface Gi 0/2

NFPP

Ruijie#**show nfpp log buffer statistics**

There are 6 logs in buffer.

NFPP

Ruijie#**show nfpp log buffer**

Protocol	VLAN	Interface	IP address	MAC address	Reason
Timestamp					

10.4

39.9 ARP

39.9.1 show nfpp arp-guard hosts

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

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

```

1
Ruijie# show nfpp arp-guard hosts statistics
success    fail    total
-----
100         20     120
          120          100          20

```

```

2                                     " remain-time(seconds) "
Ruijie# show nfpp arp-guard hosts
If column 1 shows '*', it means "hardware do not isolate user" .
VLAN  interface IP address  MAC address    remain-time(s)
----  -
1     Gi0/1     1.1.1.1       -              110
2     Gi0/2     1.1.2.1       -              61
*3    Gi0/3     -              0000.0000.1111 110

```

```
4      Gi0/4      -      0000.0000.2222  61
```

```
Total  4 hosts
```

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

```
-
```

```
-
```

39.9.2 show nfpp arp-guard scan

ARP

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

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

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

```
ARP scan table has 4 record(s).
```

```
      " ARP              4              "
```

```
Ruijie# show nfpp arp-guard scan
```

```
VLAN      interface  IP address  MAC address  timestamp
```

```

-----
1      Gi0/1      N/A      0000.0000.0001  2008-01-23
16:23:10
2      Gi0/2      1.1.1.1    0000.0000.0002  2008-01-23
16:24:10
3      Gi0/3      N/A      0000.0000.0003  2008-01-23
16:25:10
4      Gi0/4      N/A      0000.0000.0004  2008-01-23
16:26:10
Total  4 record(s)

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

```

```

Ruijie# show nfpp arp-guard scan vlan 1 interface G 0/1
0000.0000.0001
VLAN   interface   IP address   MAC address   timestamp
-----
1      Gi0/1      N/A          0000.0000.0001  2008-01-23
16:23:10
Total  1 record(s)

```

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

-	-

39.9.3 show nfpp arp-guard summary

show nfpp arp-guard summary

-	-

Ruijie# show nfpp arp-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	Scan-threshold
Global	Enable	300	4/5/60	8/10/100	15
Gi 0/1	Enable	180	5/-/-	8/-/-	-
Gi 0/2	Disable	200	4/5/60	8/10/100	20

Maximum count of monitored hosts: 1000

Monitor period 300s

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

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

```

|
|
|

```

```

|
|
|

```

-	-

39.10 DHCP

39.10.1 show nfpp dhcp-guard hosts

show nfpp dhcp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

```

|
|
|
|
|

```

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

```

|
|

```

```

|
|

```

```

|
|

```

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

success fail total

----- ---- -----

100 20 120

 120 100 20

“ remain-time(seconds) ”

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

If column 1 shows '*', it means "hardware failed to isolate host".

VLAN interface MAC address remain-time(seconds)

```

-----
1      gi0/2      0000.0000.0001  10
*2     gi0/1      0000.0000.0002  20
Total  2 host(s)

```

```

clear nfpp dhcp-guard hosts

```

```

10.4

```

39.10.2 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.

```

```

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

```

dhcp-guard attack-threshold	
dhcp-guard enable	DHCP
dhcp-guard isolate-period	
dhcp-guard monitor-period	
dhcp-guard monitored-host-limit	
dhcp-guard rate-limit	
nfpp dhcp-guard enable	DHCP
nfpp dhcp-guard isolate-period	
nfpp dhcp-guard policy	

10.4	

39.11 DHCPv6

39.11.1 show nfpp dhcpv6-guard hosts

show nfpp dhcpv6-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

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

<i>mac-address</i>	MAC

Ruijie# **show nfpp dhcpv6-guard hosts statistics**

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

“ 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)		

-	-

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		" - "



10.4	

39.12 ICMP

39.12.1 show nfpp icmp-guard hosts

show nfpp icmp-guard hosts [statistics | [[vlan vid] [interface interface-id] [ip-address]]]

statistics	
vid	
interface-id	
ip-address 10.4	istics

2 Gi0/2 1.1.2.1 61

Total 2 host(s)

clear nfpp icmp-guard hosts	

10.4	

ow nfpp icmp-guard summary

nfpp icmp-guard summary

```

2      Status
3      Rate-limit      IP      /      MAC      /
                        Attack-threshold      " _ "

```

icmp-guard attack-threshold	
icmp-guard enable	ICMP
icmp-guard isolate-period	
icmp-guard monitor-period	
icmp-guard monitored-host-limit	
icmp-guard rate-limit	
nfpp icmp-guard enable	ICMP
nfpp icmp-guard isolate-period	
nfpp icmp-guard policy	

10.4	

39.12.3 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

```

Gi 0/1      Enable 15/15/15  30/30/30
Gi 0/2      Disable -/5/30   -/10/50

```

```

1      Interface  Global
2      Status
3      Rate-limit          /          /
      /          /          Attack-threshold
      " _ "
      " -/5/30 "          G 0/2          /
      5          /          30

```

nd-guard attack-threshold	
nd-guard enable	ND
nd-guard rate-limit	
nfpp nd-guard enable	ND
nfpp nd-guard policy	

--	--

40

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	

IPv6 ipv6 icmp tcp

udp 0-255 IPv4 eigrp gre

prot ipinip igmp nos ospf icmp udp l1. 1 TiJ/C2_0 1 r.36 440.4

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	lt-	eq-	gt-	neq-
operator port[port]	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	#				Q

4) Expert

2700 - 2899

access-list *id* {**deny** | **permit**} [**protocol** | [*ethernet-type*][**cos** [*out*][*inner in*]]] [**VID** [*out*][*inner in*]] {*source source-wildcard* | **host source** | **any**} {**host source-mac-address** | **any**} {*destination destination-wildcard* | **host destination** | **any**} {**host destination-mac-address** | **any**} [[**precedence precedence**] [**tos tos**] [**fragments**] [**range lower upper**] [**time-range time-range-name**]

Ethernet-type cos

access-list *id* {**deny** | **permit**} {*ethernet-type*| **cos** [*out*][*inner in*]] [**VID** [*out*][*inner in*]] {*source source-wildcard* | **host source** | **any**} {**host source-mac-address** | **any** } {*destination destination-wildcard* | **host destination** | **any**} {**host destination-mac-address** | **any**} [**time-range time-range-name**]

Protocol

access-list *id* {**deny** | **permit**} **protocol** [**VID** [*out*][*inner in*]] {*source source-wildcard* | **host source** | **any**} {**host source-mac-address** | **any** } {*destination destination-wildcard* | **host destination** | **any**} {**host destination-mac-address** | **any**} [**precedence precedence**] [**tos tos**] [**fragments**] [**range lower upper**] [**time-range time-range-name**]

Expert

Internet Control Message Protocol (ICMP)

access-list *id* {**deny** | **permit**} **icmp** [**VID** [*out*][*inner in*]] {*source source-wildcard* | **host source** | **any**} {**host source-mac-address** | **any** } {*destination destination-wildcard* | **host destination** | **any**} {**host destination-mac-address** | **any**} [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**precedence precedence**] [**tos tos**] [**fragments**] [**time-range time-range-name**]

Transmission Control Protocol (TCP)

access-list *id* {**deny** | **permit**} **tcp** [**VID** [*out*][*inner in*]] {*source source-wildcard* | **host Source** | **any**} {**host source-mac-address** | **any** } [**operator port** [*port*]] {*destination destination-wildcard* | **host destination** | **any**} {**host destination-mac-address** | **any**} [**operator port** [*port*]] [**precedence precedence**] [**tos tos**] [**fragments**] [**range lower upper**] [**time-range time-range-name**] [**match-all tcp-flag**]

User Datagram Protocol (UDP)

access-list *id* {**deny** | **permit**} **udp** [**VID** [*out*][*inner in*]] {*source source -wildcard* | **host source** | **any**} {**host source-mac-address** | **any** } [**operator port** [*port*]] {*destination destination-wildcard* | **host destination** | **any**} {**host destination-mac-address** | **any**} [**operator port** [*port*]] [**precedence precedence**] [**tos tos**] [**fragments**] [**range lower upper**] [**time-range time-range-name**]

5)

access-list *list-remark text*

<i>id</i>	1-99 100-199 1300-1999 2000-2699 2700 – 2899 700 - 799
Deny	
Permit	
<i>Source</i>	
<i>source-wildcard</i>	0.255.0.32
<i>protocol</i>	IP EIGRP GRE IPINIP IGMP NOS OSPF ICMP UDP TCP IP IP 0-255 ICMP/TCP/UDP
<i>Destination</i>	
<i>destination-wildcard</i>	0.255.0.32
fragments	
precedence	
<i>precedence</i>	0-7
range	
<i>lower</i>	
<i>upper</i>	
time-range	
<i>time-range-name</i>	
tos	
<i>tos</i>	0-15
<i>icmp-type</i>	ICMP 0-255
<i>icmp-code</i>	ICMP 0-255
<i>icmp-message</i>	ICMP
<i>operator</i>	lt- eq- gt- neq- range-
port [<i>port</i>]	<i>range</i>
host <i>source-mac-address</i>	
host <i>destination-mac-address</i>	
VID <i>vid</i>	<i>vid</i>
<i>ethernet-type</i>	

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

ACL

access-list

≠ ≠ S

dod-host-prohibited
dod-net-prohibited
echo
echo-reply
fragment-time-exceeded
general-parameter-problem
host-isolated
host-precedence-unreachable
host-redirect
host-tos-redirect
host-tos-unreachable
host-unknown
host-unreachable
information-reply
information-request
mask-reply
mask-request
mobile-redirect
net-redirect
net-tos-redirect
net-tos-unreachable
net-unreachable
network-unknown
no-room-for-option
option-missing
packet-too-big
parameter-problem
port-unreachable
precedence-unreachable
protocol-unreachable
redirect
router-advertisement
router-solicitation
source-quench
source-route-failed
time-exceeded
timestamp-reply
timestamp-request

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

access-list

40.1.2 deny

(deny)

1 IP

```
[sn] deny {source source-wildcard 1
```

```
[sn] d[ ] [(s)-8063)8(pwce)5-090Z T30000 Td (,057028(1P)4/C2_637.486)Uj341p6003.246
```

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**} {*destinationdestination-wildcard* | **host** *destination* | **any**}
{**host** *destination-mac-address* | **any**} [**precedence** *precedence*] [**tos** *tos*] [**fragments**]
[**range** *lower upper*] [**time-range** *name*]

c) expert

Internet Control Message Protocol (ICMP)

[*sn*] **deny icmp** [[**VID** [*out*][**inner** *in*]]] {*source source-wildcard* | **host** *source* | **any**} {**host**
source-mac-address | **any**} {*destination destination-wildcard* | **host** *destination* | **any**} {**host**
destination-mac-address | **any**} [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]]
[**precedence**] [**tos** *tos*] [**frag-6()**]931 Tf0(upper)c 0 Tw 2.571 0 Td[(icmp-)-65 Tf2BE3C02D6>T]TT0 1 Tf

[[*icmp-type icmp-code*]] | [*icmp-message*] [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragments**]
[**time-range** *time-range-name*]

Transmission Control Protocol (TCP)

[*sn*] **deny tcp** {*source-ipv6-prefix / prefix-length* | **host** *source-ipv6-address* | **any**} [*operator*
port [*port*]] {*destination-ipv6-prefix / prefix-length* | **host** *destination-ipv6-address* | **any**}
[*operator port* [*port*]] [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragments**] [**range** *lower upper*]
[**time-range** *time-range-name*] [**match-all** *tcp-flag*]

User Datagram Protocol (UDP)

[*sn*] **deny udp** {*source-ipv6-prefix/prefix-length* | **host** *source-ipv6-address* | **any**} [*operator*
port [*port*]] {*destination-ipv6-prefix / prefix-length* | **host** *destination-ipv6-address* |
any} [*operator port* [*port*]] [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragments**] [**range** *lower*
upper] [**time-range** *time-range-name*]

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

```
192.168.4.12 host 0013.0049.8272 any any
Ruijie(config-exp-nacl)# permit any any any any
Ruijie(config-exp-nacl)# show access-lists
expert access-list extended 2702
10 deny tcp host 192.168.4.12 host 0013.0049.8272 any any
20 permit any any any any
Ruijie(config-exp-nacl)#
2 0013.0049.8272 deny tcp 192.168.4.12 0.0.0.0 0013.0049.8272 0.0.0.0
```

1

```

Ruijie(config)# ipv6 access-list extended v6-acl
Ruijie(config-ipv6-nacl)# 11 deny ipv6 host 192.168.4.12 any
Ruijie(config-ipv6-nacl)# show access-lists
ipv6 access-list extended v6-acl
11 deny ipv6 host 192.168.4.12 any
Ruijie(config-ipv6-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# ipv6 traffic-filter v6-acl in

```

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

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

40.1.3 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	C	s	0	L	A
-----------	--------	---	---	---	---	---

in	
out	

Expert ACL

ACL **show**
access-group

access-list accept_00d0f8xxxxxx_only Gigabit 1
Ruijie(config)# **interface GigaEthernet 0/1**
Ruijie(config-if)# expert access-group accept_00d0f8xxxxxx_only in

*üñgp m`Đ' ÑA56lc@3{6 -? ~ fQÚ Û nF

show expert access-lists

```
1          ACL
Ruijie(config)# expert access-list extended exp-acl
Ruijie(config-exp-nacl)# show expert access-lists
expert access-list extended exp-acl
Ruijie(config-exp-nacl)#

2          ACL
Ruijie(config)# expert access-list extended 2704
Ruijie(config-exp-nacl)# show expert access-lists
expert access-list extended 2704
Ruijie(config-exp-nacl)#
```

show expert access-lists	

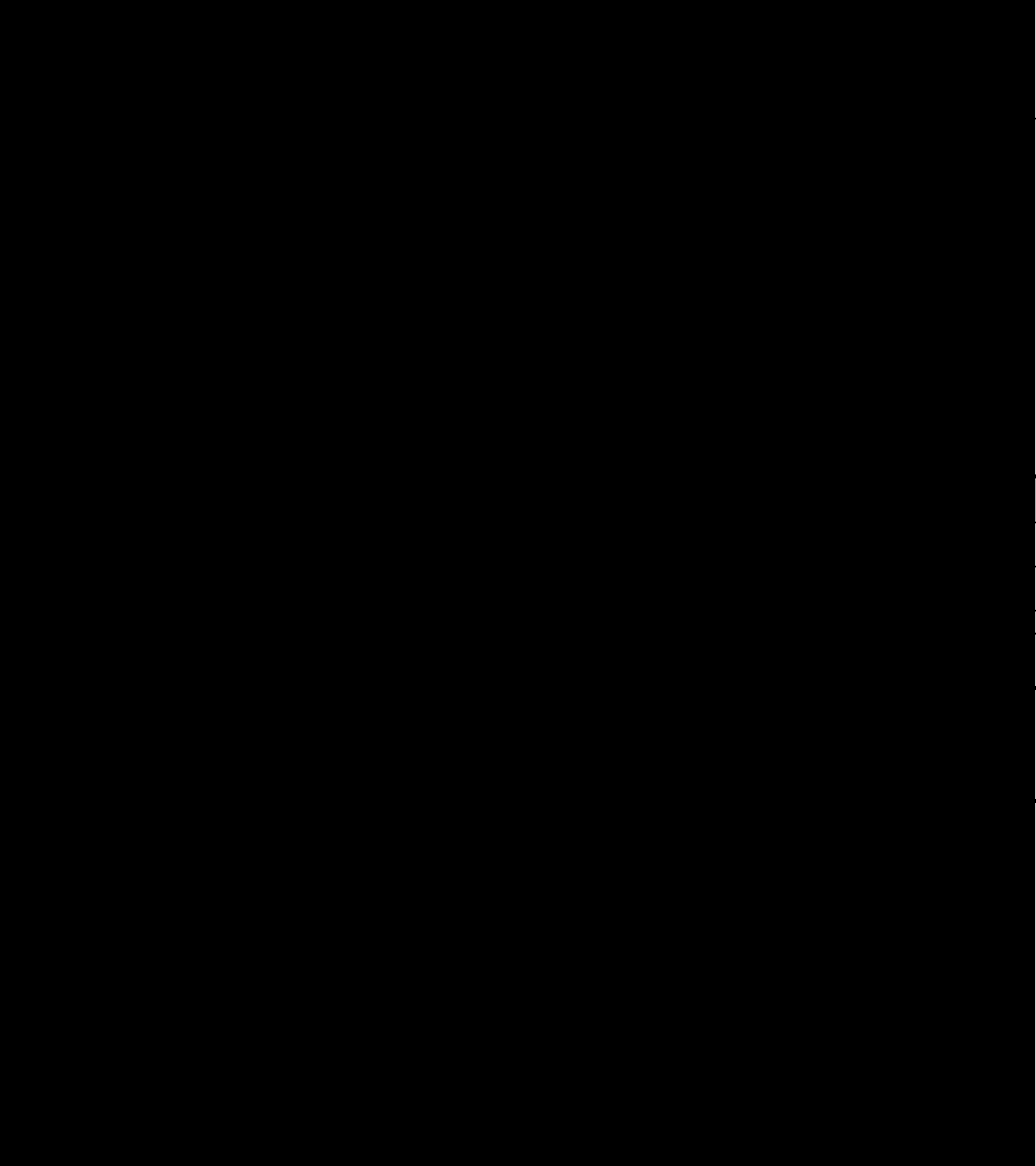
V10.0	V10.0

40.1.5 ip access-group

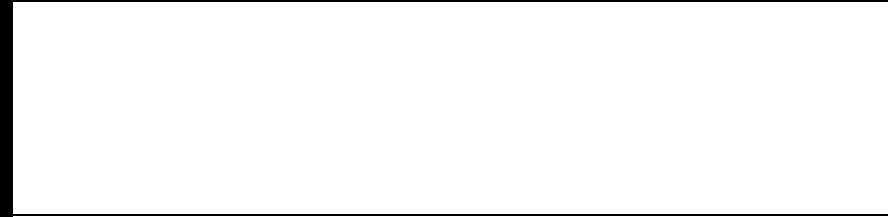
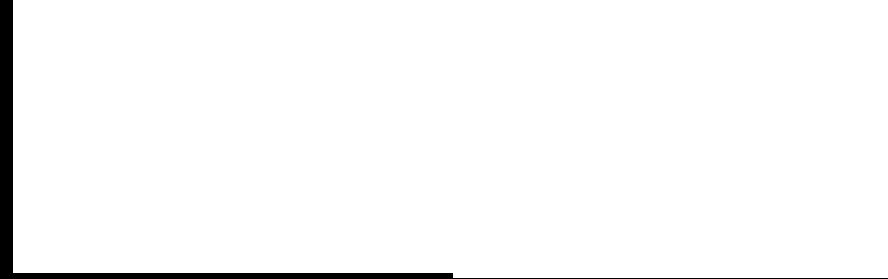
ip access-group no

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

id	IP 1-199 1300-2699
name	IP
in	
out	



-199 1300



1 ACL

```
Ruijie(config)# ip access-list standard std-acl
```

```
Ruijie(config-std-nacl)# show ip access-lists
```

```
ip access-list standard std-acl
```

```
Ruijie(config-std-nacl)#
```

2 ACL

```
Ruijie(config)# ip access-list extended 123
```

```
Ruijie(config-ext-nacl)# show ip access-lists
```

```
ip access-list extended 123
```



show access-lists

ACL

Ruijie# **show access-lists**

ip access-list standard 1

10 permit host 192.168.4.12

20 deny any any

Ruijie# **config**Ruijie(config)# **ip access-list resequence 1 21 43**Ruijie(config)# **exit**Ruijie# **show access-lists**

ip access-list standard 1

21 permit host 192.168.4.12

64 deny any any

show access-lists	

V10.0	V10.0

40.1.8 ipv6 traffic-filter

IPV6 ACL

no

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

name	IPV6
in	
out	

IPV6 ACL

ACL
traffic-filter

show ipv6

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

show ipv6 access-lists	IPV6

V10.0	V10.0

40.1.10 MAC access-group

MAC ACL

no

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

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

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

ACL

show running-config

```

access-list accept_00d0f8xxxxxx_only Gigabit 1
Ruijie(config)# interface GigaEthernet 1/1
Ruijie(config-if)# mac access-group accept_00d0f8xxxxxx_only in

```

show access-group	ACL

V10.0	V10.0

40.1.11 MAC access-list

MAC ACL

no

ACL

mac access-list extended {*id* | *name*}

no mac access-list extended {*id* | *name*}

<i>Id</i>	MAC 700-799
<i>name</i>	MAC

MAC ACL

show mac access-lists

1 MAC ACL

Ruijie(config)# **mac access-list extended** *mac-acl*

Ruijie(config-mac-nacl)# **show mac access-lists**

mac access-list extended mac-acl

2 MAC ACL

Ruijie(config)# **mac access-list extended** 704

Ruijie(config-mac-nacl)# **show mac access-lists**

mac access-list extended 704

show mac access-lists	mac

	V10.0	V10.0

40.1.13 permit

(permit)

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-wildcard* |

Ethernet-type cos

[sn] **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

[sn] **permit protocol** [**VID** [*out*][*inner in*]] {*source source-wildcard* | **host** *Source* | **any**} {**host** *source-mac-address* | **any**} {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

Expert

Internet Control Message Protocol (ICMP)

[sn] **permit icmp** [**VID** [*out*][*inner in*]] {*source source-wildcard* | **host** *source* | **any**} {**host** *source-mac-address* | **any**} {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)

[sn] **permit tcp** [**VID** [*out*][*inner in*]] {*source source-wildcard* | **host** *Source* | **any**} {**host** *source-mac-address* | **any**} [*operator port* [*port*]] {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [*operator port* [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag*]

User Datagram Protocol (UDP)

[sn] **permit udp** [**VID** [*out*][*inner in*]] {*source source-wildcard* | **host** *source* | **any**} {**host** *source-mac-address* | **any**} [*operator port* [*port*]] {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [*operator port* [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

Address Resolution Protocol (ARP)

[sn] **permit arp** {**vid** *vlan-id*} [**host** *source-mac-address* | **any**] [**host** *destination-mac-address* | **any**] {*sender-ip sender-ip-wildcard* | **host** *sender-ip* | **any**} {*sender-mac sender-mac-wildcard* | **host** *sender-mac* | **any**} {*target-ip target-ip-wildcard* | **host** *target-ip* | **any**}

5) IPV6

[sn] **permit protocol** {*source-ipv6-prefix / prefix-length* | **any** | **host** *source-ipv6-address*} {*destination-ipv6-prefix / prefix-length* | **any** | *host destination-ipv6-address*} [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

IPV6

Internet Control Message Protocol (ICMP)

```
[sn] permit icmp {source-ipv6-prefix / prefix-length | any source-ipv6-address | host}
{destination-ipv6-prefix / prefix-length | host destination-ipv6-address | any} [icmp-type]
[[icmp-type [icmp-code]] | [icmp-message]] [dscp dscp] [flow-label flow-label][fragments]
[time-range time-range-name]
```

Transmission Control Protocol (TCP)

```
[sn] permit tcp {source-ipv6-prefix / prefix-length | host source-ipv6-address | any}
[operator port [port]] {destination-ipv6-prefix / prefix-length | host destination-ipv6-address
| any} [operator port [port]] [dscp dscp] [flow-label flow-label] [fragments] [range lower
upper] [time-range time-range-name] [match-all tcp-flag]
```

User Datagram Protocol (UDP)

```
[sn] permit udp {source-ipv6-prefix / prefix-length | host source-ipv6-address | any}
[operator port [port]] {destination-ipv6-prefix / prefix-length | host destination-ipv6-address
| any} [operator port [port]] [dscp dscp] [flow-label flow-label] [fragments] [range lower
upper] [time-range time-range-name]
```

deny	-

ACL

ACL

ACL

```

1                               Expert Extended ACL      ACL      IP
192.168.4.12      MAC      001300498272      TCP
Ruijie(config)# expert access-list extended exp-acl
Ruijie(config-exp-nacl)# permit tcp host 192.168.4.12 host
0013.0049.8272 any any
Ruijie(config-exp-nacl)# deny any any any any
Ruijie(config-exp-nacl)# show access-lists
expert access-list extended exp-acl
10 permit tcp host 192.168.4.12 host 0013.0049.8272 any any
20 deny any any any any
Ruijie(config-exp-nacl)#
2      IP      ACL                               IP      192.168.4.12      TCP
```

```
100                                1
Ruijie(config)# ip access-list extended 102
Ruijie(config-ext-nacl)# permit tcp host 192.168.4.12 eq 100 any
Ruijie(config-ext-nacl)# show access-lists
ip access-list extended 102
10 permit tcp host 192.168.4.12 eq 100 any
Ruijie(config-ext-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# ip access-group 102 in
```

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# ipv6 traffic-filter v6-acl in
```

```
show access-lists
```

```
Ruijie# show access-group
ip access-list standard ipstd3
Applied On interface GigabitEthernet 0/1.
ip access-list standard ipstd4
Applied On interface GigabitEthernet 0/2.
ip access-list extended 101
Applied On interface GigabitEthernet 0/3.
ip access-list extended 102
Applied On interface GigabitEthernet 0/8.
```

ip access-group	ip
mac access-group	MAC
expert access-group	Expert
ipv6 traffic-filter	IPV6

V10.0	V10.0

40.2.2 show access-lists

ACL ACL

```
show access-lists [id | name]
```

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

```
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
ip access-list extended 101
mac access-list extended mac_acl
expert access-list extended exp_acl
ipv6 access-list extended v6_acl
```

ip access-list	IP ACL
mac access-list	MAC ACL
expert access-list	Expert ACL
ipv6 access-list	IPv6 ACL

V10.0	V10.0

40.2.3 show expert access-group

Expert

V10.0

V10.0

MAC ACL

MAC ACL

```
Ruijie# show mac access-group interface gigabitethernet 0/3
mac access-group mm in
Applied On interface GigabitEthernet 0/3.
```

mac access-list	MAC ACL

V10.0	V10.0

40.3

40.3.1 security access-group

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

no security access-group

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

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

show secu-acl	

V10.2	V10.2

40.3.2 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	

V10.2	V10.2

40.3.3 security uplink enable

security uplink enable

no security uplink enable

	-	-

Ruijie(config-if)#**security uplink enable**

	show secu-acl	

	V10.2	V10.2

40.3.4 show security

show secu-acl

```
Ruijie(config-if)#show secu-acl
```

```
Ports      Type      access-group
```

```
-----
```

```
Fa0/4      security  50
```

```
Global     security  60
```

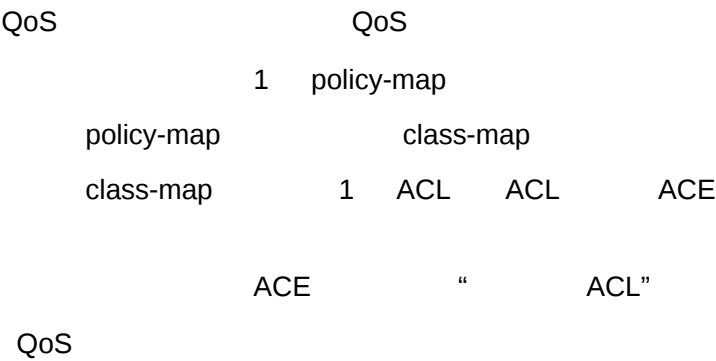
```
Fa0/6      uplink    --
```

security global access-group	
security access-group	
security uplink enable	

V10.2	V10.2

41 QOS

41.1



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

IP-Precedence to DSCP

IP-Precedence to DSCP	IP-Precedence	DSCP
	0	0
	1	8
	2	16
	3	24
	4	32
	5	40
	6	48
	7	56

DSCP to CoS

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

	S29	DRR Weight Range

41.2

41.2.1 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*

access-list *acl-id* ACL

class map class map

[**no**] **class-map** *class-map-name*

class map

[**no**] **match access-group** *acl-name*| *acl-id*

<i>acl-name</i>	ACL
<i>acl-id</i>	ACL id
<i>class-map-name</i>	class map
no class-map <i>class-map-name</i>	class map
no match access-group <i>acl-name</i> <i>acl-id</i>	

```

1      MAC ACL,      me
Ruijie(config)# mac access-list extended me
2      ACL
Ruijie(config-ext-macl)# permit host 1111.2222.3333 any
3      ACL
Ruijie(config-ext-macl)# exit

```


show mls qos queueing	-
------------------------------	---

-	-

41.2.3 interface rate-limit

rate-limit {input | output} *bps burst-size*

no rate-limit

input	
output	
<i>bps</i>	
<i>burst-size</i>	(Kbyte)dscp-list
no	

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

```
Ruijie(config-if)# rate-limit input 1000000 4096
```

show mls qos interface	-
-------------------------------	---

	-	-
--	---	---

41.2.4 mls qos cos

CoS

mls qos cos *default-cos*

no mls qos cos

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

CoS 0

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

show mls qos interface <i>interface-id</i>		-

	dscp	
	no	

Ruijie(config)# **mls qos map cos-dscp 8 10 16 18 24 26 32 34**

	show mls qos maps	dscp-cos maps,dscp-cos maps ip-prec-dscp maps

	-	-

41.2.6 mls qos map dscp-cos

DSCP CoS

mls qos map dscp-cos *dscp-list* to *cos*

no mls qos map dscp-cos

	<i>dscp-list</i>	
	cos	

Ruijie(config)# **mls qos mstcp2cos**

41.2.8 mls qos scheduler

mls qos scheduler [sp | wrr | drr]

no mls qos scheduler

sp	
wrr	
drr	
no	

wrr

f 1o

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

policy-map-name

[no] priority-queue

priority-queue	SP (S2900)
no priority-queue	WRR

WRR

*

	-	-

41.3

41.3.1 show class-map

class map

show class-map [*class-name*]

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

class map

Ruijie# **show class-map**

-		-

S2900

-		-

41.3.2 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
```

-	-

-	-

41.3.3 show mls qos interface

QoS

```
show mls qos interface interface-id [policers]
```

<i>interface-id</i>	
policers	police

QOS

```
Ruijie# show mls qos interface fastEthernet 0/1
```

[illegible]

```
dscp-cos maps,dscp-cos maps
```

show mls qos queueing

	-	-

Ruijie#

	-	-
	-	-

41.3.7 show mls qos scheduler

show mls qos scheduler

	-	-
	-	-
	-	-
	-	-
	-	-

Ruijie# show mls qos scheduler

42 Voice VLAN

42.1

42.1.1 voice vlan

Voice VLAN

VLAN

Voice VLAN

no

Voice VLAN

voice vlan *vlan-id*

no voice vlan

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

Voice VLAN Remot /C2_0 1 T 0 Tc 0 s43/C2_5036 Tf-0.006d

	show voice vlan		Voice VLAN
	10.4		

42.1.2 voice vlan aging

Voice VLAN		no
voice vlan aging minutes		
no voice vlan aging		
mn aging		

42.1.3 voice vlan cos

Voice VLAN

CoS

no

voice vlan cos *cos-value***no voice vlan cos**

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

<i>cos-value</i>	6
------------------	---

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

1	Voice VLAN	CoS	5
---	------------	-----	---

Ruijie(config)# **voice vlan cos 5**

show voice vlan	Voice VLAN

10.4	

42.1.4 voice vlan dscp

Voice VLAN

DSCP

no

voice vlan dscp *dscp-value***no voice vlan dscp**

--	--

	dscp-value	Voice VLAN	DSCP
	dscp-value	46	
	Voice VLAN	CoS	DSCP
	1	Voice VLAN	DSCP 40
	Ruijie(config)# voice vlan dscp 40		
	show voice vlan	Voice VLAN	
	S29		
	10.4		

42.1.5 voice vlan enable

	Voice VLAN	no			
	Voice VLAN				
	voice vlan enable				
	no voice vlan enable				
	Voice VLAN				
	Voice VLAN	Voice VLAN			
	Access Port	Trunk Port	Hybrid Port	Private VLAN	Private 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
```

show voice vlan oui	OUI OUI

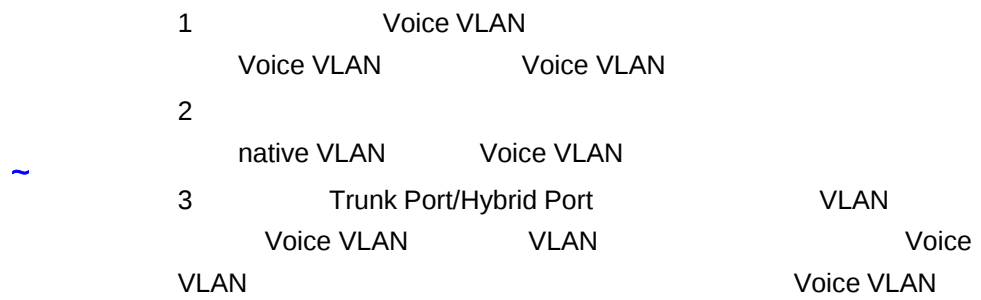
10.4	

42.1.7 voice vlan mode auto

```
                                Voice VLAN      no
                                Voice VLAN
voice vlan mode auto
no voice vlan mode auto
```


```
Voice VLAN
```

```
Voice VLAN      Voice VLAN
Voice VLAN      IP
Voice VLAN
```



Voice VLAN			
Voice VLAN			
Voice VLAN ,X] < õ ã Ä			
' Ô] < õ ã âA' Û î Í y [,X\$d	MAC	MAC	
Voice VLAN OUI	untagged	Voice VLAN tag	
MAC		Voice VLAN tag	
VLAN		Voice	/

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

¥ K€	£EÄ
------	-----

,XySA'7QHyQD(BO]<1Td<278>6<09TT0 1 Tf-0.88AC4>5.988 Tc 1.252 0 T3 458.9 0.24 1.5 ref137140

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

43

43.1

43.1.1 rgos-security compatible

44 RLDP

44.1

44.1.1 rldp detect-interval

RLDP		
rldp detect-interval <i>interval</i>		
no rldp detect-interval		
	<i>interval</i>	2-15
	3	

rldp detect-max *num*

no rldp detect-max

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

2

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

rldp detect-interval		

-		-

44.1.3 rldp enable

RLDP

rldp enable

no rldp enable

RLDP

RLDP

```
Ruijie(config)# rldp enable
```

rldp port	RLDP

-	-

44.1.4 rldp port

rldp

rldp port {unidirection-detect | bidirection-detect | loop-detect } {warning | shutdown-svi | shutdown-port | block}

no rldp port { unidirection-detect | bidirection-detect | loop-detect }

unidirection-detect	
bidirection-detect	
loop-detect	
warning	
shutdown-svi	shutdown svi
shutdown-port	shutdown
block	

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


EXEC

-	-

-	-

45 TPP

45.1

45.1.1 topology guard

topology guard

no

[no] topology guard

[illegible]



cpu topology-limit

```
Ruijie(config)# topology guard
```

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

tp-guard port enable		
cpu topology-limit		CPU

	-	-
--	---	---

45.1.2 tp-guard port enable

no

[no] tp-guard port enable



|

|

tpp

|

Ruijie# show tpp

|

topology guard	

|

|

-	-

46

46.1

46.1.1 cd

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

	<i>filesystem</i>	“ ”
	<i>directory</i>	

flash

cd “ / ” pwd

1 usb0
Ruijie# **cd** usb0:/
2 sd
Ruijie# **cd** sd0:/

	pwd	

46.1.2 copy

copy source-url destination-url

source-url	URL
destination-url	URL

--

--

copy

URL

flash:	flash URL flash flash
tftp:	TFTP
xmodem:	xmodem
slave:	flash
usb0:	usb
usb1:	usb
sd0:	sd

~

URL

1	tftp
---	------

```

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

```

del	
rename	
dir	

46.1.3 delete

delete url

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

url	URL	flash:/
usb0:/	usb1:/	slave:/
url		
~		
.		

```
1 tmpfile
Ruijie# delete tmpfile
2 rgos.bin.bak
Ruijie# delete slave:/rgos.bin.bak
3 sd aaa.bin
Ruijie# delete sd0:/aaa.bin
```

copy	
dir	

46.1.4 dir

dir [filesystem:][directory]

filesystem	??
directory	.

46.1.5 mkdir

mkdir *directory*

<i>directory</i>	

()	
~	flash:/backup/temp flash:/backup flash:/bakcup
	flash:/backup/temp

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

46.1.6 rename

rename url1 url2

/l̈á•+ž™a' a Ñ „x

pwd



	1								
	Ruijie#show file systems								
	<table><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>								
	<table><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>								

47

47.1 CPU

47.1.1 cpu-log

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

5	0%	0%	0%	waitqueue_process
6	0%	0%	0%	tasklet_task
7	0%	0%	0%	kevents
8	0%	0%	0%	snmpd
9	0%	0%	0%	snmp_trapd
10	0%	0%	0%	mtdblock
11	0%	0%	0%	gc_task
12	0%	0%	0%	Context
13	0%	0%	0%	kswapd
14	0%	0%	0%	bdflush
15	0%	0%	0%	kupdate
16	0%	3%	1%	ll_mt
17	0%	0%	0%	ll main process
18	0%	0%	0%	bridge_relay
19	0%	0%	0%	d1x_task
20	0%	0%	0%	secu_policy_task
21	0%	0%	0%	dhcpa_task
22	0%	0%	0%	dhcpsnp_task
23	0%	0%	0%	igmp_snp
24	0%	0%	0%	mstp_event
25	0%	0%	0%	GVRP_EVENT
26	0%	0%	0%	rldp_task
27	0%	2%	1%	rerp_task
28	0%	0%	0%	reup_event_handler
29	0%	0%	0%	tpp_task
30	0%	0%	0%	ip6timer
31	0%	0%	0%	rtadvd
32	0%	0%	0%	tnet6
33	2%	0%	0%	tnet
34	0%	0%	0%	Tarptime
35	0%	0%	0%	gra_arp
36	0%	0%	0%	Ttcptimer
37	8%	1%	0%	ef_res
38	0%	0%	0%	ef_rcv_msg
39	0%	0%	0%	ef_inconsistent_daemon
4t_daemon				
4t_daemon				
4t_dvmp_snp	17	0%	39	0%

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%	vtty_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%	psnpg
67	0%	0%	0%	igsnpg
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%	dhcpg_task
75	0%	0%	0%	dhcps_task
76	0%	0%	0%	dhcpping_task
77	0%	0%	0%	dhcpg_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

Š

bgp

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

show memory	

-

10.3(4b3)	

47.2.2 show memory

show memory

show memory

	-	-

show memory

Ruijie#show memory

System Memory Statistic:

Free pages: 1079
watermarks : min 379, lower 758, low 1137, high 1516
System Total Memory : 128MB, Current Free Memory : 5283KB
Used Rate : 96%

1. 4k

2.

min	
lower	memory-lack exit-policy
low	OVERFLOW
high	OVERFLOW

3.

-	-

-	-

47.2.3 show memory protocols

show memory protocols



48

48.1

48.1.1 clear logging

clear logging

	-	-

Ruijie# clear logging

	logging on	
	show logging	
	logging buffered	

	-	-

48.1.2 more flash

FLASH

more flash:filename

Filename	

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

logging file flash:	FLASH

-	-

48.1.3 logging buffered

no	default
logging buffered [buffer-size level]	
no logging buffered	
default logging buffered	
buffer-size	4K 128K Bytes

<i>level</i>	0 7
--------------	-----

4k Bytes
7

show logging
clear logging
FLASH

Syslog Server
8

Emergencies	0	
Alerts	1	

[illegible]

48.1.4 logging console

no

logging console *level*

no logging console

<i>level</i>	0 7 1

Debugging (7)

show logging

6

```
Ruijie(config)# logging console informational
```

logging on	
show logging	

	-	-
--	---	---

48.1.5 logging count

no

logging count

no logging count

	-	-

no logging count

Ruijie(config)# logging count

show logging count		
show logging		

	-	-

(23)

logging facility *facility-type*

no logging facility

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)

An empty coordinate grid with a horizontal x-axis and a vertical y-axis. The grid consists of 10 units by 10 units, with the origin (0,0) at the bottom-left corner. The x-axis is labeled from 0 to 10, and the y-axis is labeled from 0 to 10. The grid lines are spaced at 1-unit intervals.

```
Ruijie(config)# logging facility kern
```

48.1.7 logging file flash

FLASH

FLASH

no

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

no logging file

FLASH

txt

[illegible]

48.1.8 logging monitor

```
VTY          telnet          SSH
              no              VTY
```

logging monitor *level*

no logging monitor

<i>level</i>	1

Debugging (7)

```

VTY
VTY
Logging monitor

```

terminal monitor
logging monitor

VTY

VTY

6

Ruijie(config)# **logging monitor informational**



logging	Syslog Server
logging file flash:	FLASH
logging console	
logging monitor	VTY (telnet)
logging trap	Syslog Server

-	-

48.1.10 logging rate-limit

no

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

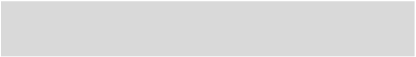
no logging rate-limit

<i>number</i>	1—10000
<i>all</i>	0—7
<i>console</i>	
<i>except</i>	error(3) error
<i>severity</i>	0—7

debug 10 warning

Ruijie(config)#**logging rate-limit all 10 except warnings**

show logging count	
show logging	



2 IPV6 AAAA:BBBB::FFFF
Ruijie(config)# **logging server ipv6 AAAA:BBBB::FFFF**

logging on	
show logging	
logging trap	syslog server

	-	-

48.1.14 logging synchronous

no

logging synchronous

no logging synchronous

	-	-

```

Ruijie(config)#line console 0
Ruijie(config-line)#logging synchronous
                                UP-DOWN
Ruijie#configure terminal
Oct  9 23:40:55 %LINK-5-CHANGED: Interface GigabitEthernet 0/1,
changed state to down
Oct  9 23:40:55 %LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet 0/1, changed state to DOWN
Ruijie# configure terminal      //
```

	show running-config	

	-	-

48.1.15 logging trap

		Syslog Server		
	no		Syslog Server	
	logging trap <i>level</i>			
	no logging trap			
	<i>level</i>		1	
	Informational(6)			
		Syslog Server	logging	Syslog
	Server	logging trap		
	show logging			
		6	202.101.11.22	Syslog Server
	Ruijie(config)# logging 202.101.11.22			
	Ruijie(config)# logging trap informational			
	logging on			
	logging		Syslog Server	
	show logging			
	-		-	

48.1.16 service sequence-numbers

no

service sequence-numbers

no service sequence-numbers



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

<i>msec</i>	Jul 27 16:53:07.299
<i>year</i>	2007 Jul 27 16:53:07



15 JULY 2004

logging on	
service sequence-numbers	

	-	-
--	---	---

48.1.19 terminal monitor

```
VTY
no
terminal monitor
terminal no monitor
```

VTY

show logging

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

Trap logging: level debugging, 2 message lines logged,0 reserved,0 fail

logging to 202.101.11.22

logging to 192.168.200.112

Log Buffer (Total 4096 Bytes) : have written 680

00001 2004-11-17 10:20:59 Ruijie: %7:%LINK CHANGED: Interface FastEthernet 0/0, changed state to up

00002 2004-11-17 10:20:59 Ruijie: %7:%LINE PROTOCOL CHANGE: Interface FastEthernet 0/0, changed state to UP

00003 2004-11-17 10:57:18 Ruijie: %7:%LINK CHANGED: Interface FastEthernet 0/1, changed state to administratively down

00004 2004-11-17 10:57:21 Ruijie: %7:%LINK CHANGED: Interface FastEthernet 0/1, changed state to down

00005 2004-11-17 10:57:41 Ruijie: %7:%LINK CHANGED: Interface FastEthernet 0/1, changed state to administratively down

00006 2004-11-17 10:57:43 Ruijie: %7:%LINK CHANGED: Interface FastEthernet 0/1, changed state to down

Syslog logging	enabled, disabled
Console logging	
Monitor logging	VTY
Buffer logging	
Timestamp debug messages	Debug
Timestamp log messages	Log
Sequence log messages	

	logging count
	show logging
	clear logging

49

49.1

49.1.1 device-description

device-description [*member member*] *description*

<i>member</i>	1-MAX,	.
<i>description</i>	31,	

SWITCH

show member

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

show member [<i>member</i>]	member	

-	-	

49.1.2 device-priority

device-priority [*member*] **priority**

49.1.4 stack

stack {on | off} [copper | fiber]



1

10

	show stack interface	
	S2900	switch port
	-	-

49.1.5 synchronize

synchronize flash: *filename*

--	--

49.2.1 show member

show member [member]

member	1-MAX, .

Member	Mac Address	Priority	Software Ver	Hardware Ver
Description				
-----	-----	-----	----	-----
1 00d0.f822.3100		1 RGOS 10.1	1.0	SWITCH
2 00d3.f822.33aa		1 RGOS 10.1	1.0	SWITCH
3 00d3.f824.33ac		1 RGOS 10.1	1.0	SWITCH

show stack interface

--	--	--

