RG-S2900

RGOS 10.4(2)

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*]

mode	
command-alias	
original-command	

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
globle 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>
```

`able 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*]

privilege-level	

disable

```
Ruijie# disable 10
```

enable	

-	-

2.1.2 enable

enable

-	-

-	-

-	-

2.1.3 enable password

enable password **no**

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

Password	EXEC
Level	
0|7	0 7
encrypted-password	

1 26

~ EXEC

pw10

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

enable secret	

-	-

2.1.4 enable secret

enable secret **no**

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

no enable secret

Secret	EXEC
Level	
0|5	0 5
encrypted-password	

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

EXEC **lock**

lock

-	-

lock

“ Locked ”

line **lockable**

line

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

lockable	

-	-

2.1.11 lockable

lock line **lockable**

lock **no**

lockable

no lockable

-	-

line

EXEC

lock

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

lock	

login

no login

-	-

line

AAA

VTY console

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

no password

password	line

service password-encryption

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

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

message	

```
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*

hh:mm:ss	24 : :
day	1-31
month	1-12
year	1993-2035

clock set

2003 3 17 10 20 30

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

show clock	

-	-

2.2.5 clock update-calendar

clock update-calendar

-	-

calendar

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

-	- ÎB1u)QÚ ÊÜ AGÀ´

10

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

-	-

-	-

2.2.10 session-timeout

LINE **session-timeout**

no session-timeout LINE

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

no session-timeout

minutes	
output	

0 min

LINE

LINE

LINE

line vty 0 5 30

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

-	-

-	-

2.2.11 speed

speed *speed*

no speed

speed *speed*

Speed	bps 9600 19200 38400 57600 115200

9600

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.
```

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

-	-

-	-

2.3.3 show reload

show reload

show reload

-	-

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

-	-

-	-

2.3.4 show running-config

show running-config

show running-config

-	-

-	-

5 ,ÕG!5B2

Ý # ò #

```
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**}

-	-

3.1.2 line

LINE

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

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

LINE

LINE VTY 1 3 LINE

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

-	-

-	-

3.1.3 line vty

VTY **no**

VTY

line vty *line-number*

no line vty *line-number*

-	-

VTY 5 0--4

VTY

1 VTY 20 VTY 0--19

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

2 VTY 10 VTY 0—9

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

-	-

-	-

3.1.4 transport input

Line **transport input** Line **default transport input** LINE

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

default transport input

all	Line
ssh	Line SSH

telnet	Line Telnet
none	Line

VTY TTY NONE
default transport input

Line

Line VTY
VTY **show running** Line

	d**efault transport inpu**t **no transport input** LINE **transport input none**

line vty 0 4 telnet

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

show running	

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*]]

ip-address	IPv6

length	
times	
seconds	
data	
source	IPv6 ::1

2 5 100Byte IP

Ping ipv6

ping ipv6 ping ipv6

ping ipv6

2 5 100Byte IP

‘!’ ‘.’

‘C’ ping ipv6

ping

ping ipv6

-	-

ipv6

-	-

4.1.3 traceroute

traceroute .

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

vrf-name	VRF
Ip-address	IPv4
number	
source	IPv4 127.0.0.1
seconds	
minimum maximum	

```
2     192.168.9.2     4 msec  4 msec 4 msec
3     192.168.9.1     8 msec  8 msec  4 msec
4     192.168.0.10    4 msec  28 msec  12 msec
5     202.101.143.130     4 msec  16 msec  8 msec
6     202.101.143.154    12 msec  8 msec  24 msec
7     61.154.22.36    12 msec  8 msec  22 msec
```

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*] [**ttl** *minimum maximum*]]

Ip-address	IPv6
number	
seconds	
minimum maximum	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 Down Up
DCD

DCD

DCD

-	-

5.1.2 clear counters

clear counters [*interface-id*]

interface-id	

show interfaces **clear counters**

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

show interfaces	

-	-

5.1.3 clear interface

clear interface *interface-id*

interface-id	

Switch Port,L2 Aggregrate port ,Routed port,L3 Aggregate port

shutdown **no shutdown**

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

shutdown	

-	-

5.1.4 descriptioin

no

description *string*

no description

string	

show interfaces

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

show interfaces	

-	-

5.1.5 duplex

no

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

no duplex

auto	
full	
half	

show interfaces

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


no

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

no flowcontrol

auto	
off	
on	

show interfaces

1/1

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

show interfaces	

-	-

5.1.7 interface aggregateport

no

interface aggregateport *port-number*

port-number	Aggregate port

aggregate Ä aggregate

show **interfaces** **show** **interfaces**

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

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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** **show interfaces gigabitEthernet**

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

-	-

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**}

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

VLAN all Native VLAN VLAN 1

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

show interfaces	
switchport access	statics accessport VLAN

-	-

5.2

5.2.1 show interfaces

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

interface-id	aggregateport SVI loopback
counters	
description	link
status	
switchport	
trunk	trunking port Aggregate port
transceiver	
alarm	“ None ”

diagnosis	

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```
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
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

aggregate-port-number	Aggregate Port

Aggregate Port

7 VLAN

7.1

7.1.1 name

VLAN **no**

name *vlan-name*

no name

vlan-name	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

access port VLAN

no VLAN

switchport access vlan *vlan-id*

no switchport access vlan

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

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

allowed vlan *vlan-list*	Trunk VLAN vlan-list VLAN VLAN VLAN ID VLAN ID - 10-20 , 1-10,20-25,30,33 all VLAN VLAN add VLAN VLAN remove VLAN VLAN except VLAN VLAN VLAN
native vlan *vlan-id*	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*]

vlan-id	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 *num*	-
no protocol-vlan profile	-
no protocol-vlan profile *num*	-

RGOS10.1

-	-

8.1.3 protocol-vlan profile num vlan id

profile

num	profile
id	VLAN ID 1- VLAN

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

show protocol-vlan profile	-
show protocol-vlan profile *num*	-
no protocol-vlan profile	-
no protocol-vlan profile *num*	-

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

svlist	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*}

community	community VLAN
isolated	isolated VLAN
primary	primary VLAN
no	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

p_vid	primary VID
s_vid	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 T0 1.994.02 0 0 10.0 2 439.32 12541 60 1 Tf1198 -0.

- -

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

primary	primary VLAN
community	community VLAN
isolated	isolated VLAN

private VLAN

```
Ruijie# show vlan private-vlan
```

-	-

RGOS10.1

-	-

9.3 Hybrid

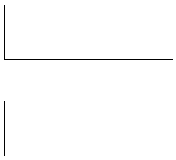
9.3.1 switchport hybrid allowed vlan

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 Status
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 fa0/1
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*

ip-address	IP
mac-address	mac

IP MAC IP IP
MAC IP MAC

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

-	-

	Ipv4
	IPV4+MAC
	IPV4+MAC
	IPV4+MAC

	IPV6	
	ipv6	
	IPV6	
	MAC MAC IPV6	

IP 192.168.5.2 00d0.f822.33aa

IPV6

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

-	-

-	-

11.1.5 address-bind uplink

ip mac .

address-bind uplink *intf-id*

no address-bind uplink *intf-id*

intf-id	

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 *mac-addr*	
interface *interface-id*	
vlan *vlan-id*	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 [**interva**l | **history-size**]

interval *value*	MAC Trap 1
history-size *value*	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	

-	-

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*]

mac-addr	MAC
vlan-id	VLAN
interface-id	(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	

-	-

11.2.7 show mac-address-table filtering

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

mac-addr	MAC
vlan-id	VLAN

interface-id	(AggregatePort)
vlan-id	VLAN

```
Ruijie#
```

interface *interface-id*	MAC
history	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*

vlan-id	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

1

Ruijie# show mac-address-learning

12 DHCP Snooping

12.1 DHCP snooping

12.1.1 ip dhcp snooping

DHCP Snooping no
DHCP Snooping

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

-	-

DHCP Snooping **show ip dhcp snooping** DHCP snooping

~ 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**

-	-

DHCP Snooping Bootp DHCP Snooping Bootp Bootp DHCP Snooping Bootp

DHCP Snooping Bootp

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

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

show ip dhcp snooping	DHCP snooping

-	-

12.1.4 ip dhcp snooping database write-to-flash

DHCP Snooping FLASH

ip dhcp snooping database write-to-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*

rate-value	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 TRUST TRUST
DHCP UNTRUST DHCP

fastethernet 0/1 TRUST

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

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 ˝H ƙ Ŷ Ń ط

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	

high-ip-address	

profile

profile deny
profile profile

224.2.2.2~224.2.2.244 profile

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

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*

profile-number	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

profile-number	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

ip igmp snooping fast-leave enable

no ip igmp snooping fast-leave enable

-	-

disable

IP IGMP

IP IGMP

igmp snooping fast-leave

```
Ruijie(config)# ip igmp snooping fast-leave enable
```

-	-

-	-

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

time	

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

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*

vid	ip vlan id
gaddress	
saddress	( )

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
vlan IGMP Report
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*

vid	vlan id
interface-id	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 Hellp

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**

vid	vlan id

VLAN щ ч

no ip igmp snooping filter *profile-number*

profile-number	profile <1-65536>

IGMP Profile IGMP Report
IGMP Profile
profile filter

0/1 profile 1

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

ip igmp profile	profile

-	-

13.1.18 ip igmp snooping max-groups

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

ip igmp snooping max-groups *number*

no ip igmp snooping max-groups

number	<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 filtring
mrouter	
statistics [**vlan** *vlan-id*]	snooping
vlan	vlan snooping

EXEC

-	-

-	-

13.2.2 show ip igmp profile [profile-number]

	profile
profile-number	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 snooping **no** dhcpv6 snooping

ipv6 dhcp snooping

no ipv6 dhcp snooping

-	-

dhcpv6 snooping **show ipv6 dhcp snooping** dhcpv6 snooping

1 dhcpv6 snooping

```
Ruijie(config)# ipv6 dhcp snooping
```

show ipv6 dhcp snooping	dhcpv6 snooping

no

ipv6 dhcp snooping binding-delay *seconds*

no ipv6 dhcp snooping binding-delay

time	

IPv6

1 10

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


10.4	

14.1.3 ipv6 dhcp snooping database write-delay

dhcpv6 snooping flash **no**

ipv6 dhcp snooping database write-delay *time*

no ipv6 dhcp snooping database write-delay

dhcpv6 snooping flash

IP

1 flash 100

```
Ruijie(config)# ipv6 dhcp snooping database write-delay 100
```

show ipv6 dhcp snooping	dhcpv6 snooping

10.4	

14.1.4 ipv6 dhcp snooping database write-to-flash

dhcpv6 snooping flash

ipv6 dhcp snooping database write-to-flash

-	

dhcpv6 snooping flash

flash

10.4	

14.1.5 ipv6 dhcp snooping filter-dhcp-pkt

dhcpv6 no

ipv6 dhcp snooping filter-dhcp-pkt

no ipv6 dhcp snooping filter-dhcp-pkt

dhcpv6

dhcpv6

1 **fastethernet** 0/1 dhcpv6

```
Ruijie(config)# interface fastethernet 0/1
Ruijie(config-if)# ipv6 dhcp snooping filter-dhcp-pkt
```

-	-

10.4	

14.1.6 ipv6 dhcp snooping ignore dest-not-found

“ ” no DHCPv6

ipv6 dhcp snooping ignore dest-not-found

no ipv6 dhcp snooping ignore dest-not-found

DHCPv6 MAC DHCPv6
MAC
MAC

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

untrust

dhcpv6 trust trust dhcpv6 Server untrust 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 no vlan dhcpv6 snooping

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

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

vlan-list	vlan 1,3-5,7,9-11
vlan-min	vlan id
vlan-max	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*

mac-address	MAC
vlan-id	VLAN
ipv6-address	IPV6
interface-name	

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 *vlan_id*	VLAN
interface *interface_name*	

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*]

ipv6-address	ipv6
mac-address	mac
vlan *vlan_id*	VLAN
interface *interface_name*	

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*]

ipv6-prefix	ipv6
mac-address	mac
vlan *vlan_id*	VLAN
interface *interface_name*	

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

10.4	

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*]}}

vlan-rng	vlan
vlan-min	vlan
vlan-max	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

15.1.4 ipv6 nd snooping check address-resolution

ND no ND

ipv6 nd snooping check address-resolution [**key-node-only**]
no ipv6 nd snooping check address-resolution

key-node-only	ND

ND

1 ND

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)#ipv6 nd snooping check address-resolution
```

2 ND

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)#ipv6 nd snooping check address-resolution
key-node-only
```

15.1.5 ipv6 nd snooping detect gateway

no

ipv6 nd snooping detect gateway ra

no ipv6 nd snooping detect gateway ra

VLAN

```
Ruijie#
```

vlan-rng	vlan
vlan-min	vlan
vlan-max	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*

vid	link-local VID

ipv6_address/prefix_len	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

1

```
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
```

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

num	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*]

vid	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*]

vid	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***]**

vlan	VLAN

IPv6

```
Ruijie# clear ipv6 nd snooping prefix
```


10.4(2)	

15.2

15.2.1 show ipv6 nd snooping

IPv6 nd snooping

show ipv6 nd snooping [interface]

interface	

IPv6 nd snooping

```
Ruijie# show ipv6 nd snooping
```


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)	

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

H.H.H	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*]

interface-id	

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>TjTT1 1 Tf-0.000**

forward-time hello-time max-age

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

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	BPDU Guard

-	-

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** | **mst***p*]

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	

-	-

VLAN 3 Instance 1 MST

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

Instance 1

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

MST show

MSTP

[redacted]

Region

[redacted]

[redacted]ce 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*

[redacted]

.

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 bpdufilter default

BPDU filter no BPDU filter

spanning-tree portfast bpdufilter default

no spanning-tree portfast bpdufilter default

-	-

BPDU filter

BPDU Filter BPDU **show spanning-tree**

```
Ruijie(config)# spanning-tree portfast bpdufilter 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.

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

show spanning-tree interface	STP

-	-

16.1.23 spanning-tree portfast default

Portfast no Portfast

spanning-tree portfast default

no spanning-tree portfast default

-	-

Portfast

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

tx-hold-count	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 bpdufilter	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
instance-id	*Instance*
interface-id	

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

session_number	SPAN
source interface *interface-id*	*interface-id* SVI
destination interface *interface-id*	*interface-id* SVI

mac source *mac-addr*

18 IP

18.1

18.1.1 ip address

IP no

C IP

IP

IP IP

IP

P

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 IP

SNMP

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
ip-address	MAC IP
MAC-address	48
type	ARP arpa

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
```


Arp retry times *number*	ARP

ARP no

8192

arp unresolve *number*

no arp unresolve

number	ARP < 1-8192 > 8192

ARP 8192

ARP

500

```
arp unresolved 500
```

-	-

-	-

18.2.7 ip proxy-arp

ARP **ip proxy-arp** no

ARP

ip proxy-arp

no ip proxy-arp

-	-

10.2(3) (10.2(3)) ARP
ARP

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

FastEthernet 0/1

mask ARP

mask

vrf *vrf_name*	VRF VRF ARP
trusted	ARP Đ ä ẄRF ã ϟ

Age (min)	“-”
Hardware	
Type	
Interface	

show arp 192.168.195.68 **show arp**Protocol Address Age(min) H

-	-

-	-

18.3.3 show arp counter

-	-

show arp counter

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

-	-

-	-

18.3.4 show arp detail

ARP

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

interface-type interface-number	ARP
ip	ip ip ARP
ip mask	ip mask ARP
mac-address	mac ARP
static	arp
complete	arp
incomplete	arp

ARP ARP

show arp detail

```
Ruijie# show arp detail
```

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

ARP

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

-	-

-	-

18.3.7 show ip interface

IP

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

Interface-type	
Interface-number	

RGOS

RGOS RGOS

“ UP ”

“ UP ”

show ip interface

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

```
Forward direct-boardcast is: ON
ICMP mask reply is: ON
Send ICMP redirect is: ON
Send ICMP unreachabled 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	

-	-

19 DHCP Relay

19.1

19.1.1 ip dhcp relay check server-id

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

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

-	-

DHCP Relay DHCP option server-id
DHCP DHCP DHCP

DHCP relay check server-id

```
Ruijie# configure terminal
Ruijie(config)# ip dhcp relay check server-id
```

Service dhcp	DHCP

-	-

19.1.2 ip dhcp relay information option dot1x

DHCP Relay option dot1x no

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

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

ip dhcp relay information option dot1x	DHCP option dot1x

-	-

19.1.5 ip dhcp relay suppression

DHCP Relay no
DHCP relay

[**no**] **ip dhcp relay suppression**

-	-

DHCP

1 DHCP relay

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

service dhcp	DHCP

-	-

19.1.6 ip helper-address

DHCP no
DHCP

[**no**] **ip helper-address** [**vrf** *vrf-name*]*A.B.C.D*

-	-

/

20 DHCP

DHCP DHCP Relay DHCP

DHCP DHCP Relay

2C58>6<1C.354254<RDC644.014026(P)8>]3 Td[<[(DHC)-.0036 TcT

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*]

ip-address	IP
ipv6-address	IPV6

DNS Server IP/IPv6 DNS Server
Server Server DNS

6 DNS Server ip-address ipv6-address
DNS

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

show hosts	DNS

-	-

ip-address	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*

host-name	
Ipv6-address	IPV6

no ipv6 host host-name ipv6-address

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

show hosts	DNS

-	-

20.2

20.2.1 clear host

clear host [*host-name*]

host-name	“*”

1 ip host ipv6 host

2 DNS DNS

-IP

```
clear host *
```

show hosts	

-	-

20.2.2 show hosts

DNS

show hosts [*hostname*]

-	-

DNS

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

ip host	IP
Ipv6 host	IPV6
ip name-server	DNS

-	-

21 SNTP

21.1

21.1.1 sntp enable

SNTP **no** —Disable

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

-	-

SNTP Disable

show sntp SNTP

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

show sntp	SNTP
clock update-calendar	
clock set	

RGOS10.0

-	-

21.1.2 sntp interval

SNTP Client NTP/SNTP Server

sntp interval *seconds*

show sntp SNTP

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

	,D¾Ã5'Ÿ 1"þþ8FdPŠd‚ëTFE'@eëX
show sntp	SNTP

```
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 ntp

no ntp

-	-

NTP

NTP NTP NTP
NTP

NTP
no ntp

ntp server	NTP

-	-

22.1.2 ntp access-group

NTP no

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

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

peer	NTP
serve	NTP
serve-only	NTP
query-only	NTP
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*ÕD<OwÜGaŭ0h!5BĖKÁÃG<@'ÈNTP#dP@ÁP0W nŴP#$< ±yABbv<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*]

key-id	ID
key-string	
enc-type	0

	-	-

!

م

NTP

```
Ntp synchronize
```

ntp server	NTP

-	-

22.1.9 ntp trusted-key

ID

ntp trusted-key *key-id*

no ntp trusted-key *key-id*

key-id	ID

NTP ID

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


-	-

22.2

22.2.1 debug ntp

NTP

debug ntp

no debug ntp

-	-

NTP

NTP

```
debug ntp
```

-	-

-	-

22.2.2 show ntp status

NTP

show ntp status

23 FTP Server

23.1

23.1.1 debug ftpserver

FTP no

debug ftpserver

no debug ftpserver

-	-

debug ftpserver FTP

1

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

2

```
Ruijie# no debug ftpserver
```

-	-

-	-

23.1.2 ftp-server enable

FTP no FTP

ftp-server enable

no ftp-server enable

-	-

FTP FTP

ftp-server topdir FTP

~

!60B FTP

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

no ftp-server password

type	0 7 0 7
password	

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 no

FTP

ftp-server topdir *directory*

no ftp-server topdir

directory	FTP

FTP ¥ K€

SNMP

no snmp-server chassis-id

text	

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*

string	NMS SNMP
view-name	
ro	NMS MIB
rw	NMS MIB

aclnumber	1-99 MIB ipv4 NMS
aclname	MIB ipv4 NMS
ipv6_aclname	ipv6 MIB ipv6 NMSvTf09CB>18<0BC2>6*24BC22-5(vTf09CB>18<0BC2>6*24BC22-5(vTf09CB>18<

text	

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

	ipv6_aclname	ipv6 MIB ipv6 NMS

port-num	snmp
notification-type	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

text	

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

snmp-sever contact	SNMP

-	-

24.1.9 snmp-server packetsiz

SNMP **snmp-sever packetsize**

no

snmp-server packetsize *byte-count*

no snmp-server packetsize

byte-count	484 17876

1500

SNMP 1492

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


snmp-server queue-length	SNMP

-	-

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

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

interface	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
```

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

(Ë	AÈ
-	-

24.1.14 snmp-server user

SNMP **snmp-servesnmp-servme grou 06(pna)-6(me).84 719.36 0.24**

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 *chassis-id*	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 *number* [**log**] [**trap** *community*] [*description-string*]	

-	-

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 *index*[**owner** *owner-name*]	

-	-

25.1.3 rmon collection stats

no

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

no rmon collection stats *index*

-	-

1

trap

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

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

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


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

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

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

-	-

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

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

-	-

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 ( )
?	

-	-

-	-

26.1.2 ipv6 address

IPV6 ,

IPV6 UP IPV6 @ ш

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*

prefix-name	
ipv6-prefix	RFC4291
prefix-length	

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

IPV6 (NS)
no

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

show ipv6 interface	

IPv6

no

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

no ipv6 neighbor *ipv6-address interface-id*

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

ARP IPV6
NDP
Reachble
IPV6 IPV6
mac
inactive show ipv6 neighbor static

clear ipv6 neighbors (NDP)

show ipv6 neighbors

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

show ipv6 neighbors	
clear ipv6 neighbors	

“ **no ipv6**

ns-linklocal-src“ IPv6

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

ipv6-address	RFC4291
interface-id	

~

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

show ipv6 route	IPV6

-	-

26.1.12 ipv6 source-route

IPv6 no

IPv6

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

clrear 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

State STALE DELAY

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— IPV6 mac

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-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 *time*
no ipv6 mld snooping dyn-mr-aging-time

ipv6 mld snooping dyn-mr-aging-time *time*

no ipv6 mld snooping dyn-mr-aging-time

time	1-3600

300s

MLD IPv6 PIM

Hello

500s

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

10.4	

27.1.8 ipv6 mld snooping vlan

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

ipv6 mld snooping vlan *vid*

no ipv6 mld snooping vlan *vid*

vid	vlan id 1-4094

mld snooping vlan mld snooping

mld snooping vlan mld snooping vlan mld snooping

VLAN 1 mld snooping

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


10.4	

27.1.9 ipv6 mld snooping vlan mrouter learn

MLD query PIM

ipv6 mld snooping vlan mrouter learn no

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

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

vid	vlan id 1-4094

VLAN

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

vid	vlan id 1-4094
ipv6-multiaddr	
interface-id	

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

IPv6 MLD

IPv6 MLD

mld snooping fast-leave

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


10.4	

27.1.13 ipv6 mld snooping suppression enable

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

ipv6 mld snooping suppression enable

no ipv6 mld snooping suppression enable

MLD

IPv6 MLD

MLD

suppression MLD v1 report

MLD v2 report

mld snooping suppression

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


10.4	

27.1.14 ipv6 mld snooping filter

profile no profile

ipv6 mld snooping filter *profile-number*

no ipv6 mld snooping filter *profile-number*

profile-num	profile

MLD Profile MLD Report
MLD Profile
profile filter

0/1 profile 1

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

ipv6 mld profile	profile

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** *vlan-id*]	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 respone time : 10(Seconds)
```

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

```
Ruijie# show ipv6 mld snooping statistics
GROUP    Interface    Last report       Last leave     Last
                        time          time         reporter
--------------- ------------ -------------  -------------   -
FF88::1 VL1:Gi4/2   0d:0h:0m:7s     ----    2003::1111
                       Report pkts: 1          Leave pkts: 0
```

3 **show ipv6 mld snooping mrouter** mld snooping

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

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

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

5 show ipv6 mld snooping interface mld snooping Filtering

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


10.4	

27.2.2 show ipv6 mld profile

MLD profile

show ipv6 mld profile [*profile-number*]

	profile
profile-number	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	

28

28.1

28.1.1 strom-control

no

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

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

broadcast		
multicast		
unicast		
percent		20 20%
packets	pps	packets per second
Rate-bps		
64k-2M	64k	
2-100M	1M	187.1 0. 20.1 ref296.7 92 Tw 1

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

	show port-security	

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** i*nterface-id mac-address* **vlan** *vlan_id ipv4-address* | *ipv6-address*

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

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

1 192.168.1.100 10

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

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

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

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

1 TRUNK 10

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

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

storm-control	

-	-

28.2.2 show port-security

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

address	
interface *interface-id*	
all	

```
Ruijie# show port-security
Secure  Port  MaxSecureAddr(count)  CurrentAddr(count)  Security
Action
-------- ------------- ----------- -----------
Gi1/1 128 1 Restrict
Gi1/2 128 0 Restrict
Gi1/3 8 1 Protect
```

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

interval	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‡ ◁Âů Â)pÁ— Ä — e, ñvX! p Bá— 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

seconds	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

seconds	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

count	

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	
interval	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

29.5.2 dot1x auth-address-table

802.1X **no**

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

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

mac-addr	
Interface	

802.1X **show dot1x auth-address table**

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

show dot1x auth-address-table	802.1X

-	-

29.5.3 dot1x auth-mode

802.1x

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

no dot1x auth-mode

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

EAP-MD5

show dot1x 802.1x

802.1x

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

show dot1x	802.1x

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>

guest vlan **dot1x dynamic-vlan enable**
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

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**

url-string	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

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

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

port num	TCP

tcp 80 8080 no

TCP 1-65535

1 TCP 8443

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

dot1x redirect url	

dot1x redirect time-out	
dot1x redirect num for special source-ip	
show dot1x	dot1x

-	-

29.5.15 dot1x redirect time-out

( ), 3 1-10 no

dot1x redirect time-out port *time-out-interval*

no dot1x redirect time-out port

time-out-interval	

3

1 5

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

dot1x redirect url	ip ip web
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*]

interface	

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

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	

-	-

29.6.8 show dot1x re-authentication

show dot1x re-authentication

-	-

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

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

-	-

29.6.9 show dot1x reauth-max

show dot1x reauth-max

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

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

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 F909B>E20804

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
```

AAA AAA Login
aaa authentication login Login

Login Login

list-1 AAA Login
RADIUS RADIUS

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

aaa new-model	AAA
username	
login authentication	Login

local	
none	
group	RADIUS TACACS+

AAA PPP AAA PPP
aaa authentication ppp PPP

rds_ppp AAA PPP
RADIUS RADIUS

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

default	Login
list-name	Login

Login

Login

Login Login

list-1 AAA Login

VTY 0 - 4

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

aaa new-model	AAA
username	
login authentication	Login

-	-

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*}

level	0~15
default	’] U Ă –

30.2.2 aaa authorization config-commands

AAA

aaa authorization config-commands no AAA

aaa authorization config-commands

no aaa authorization config-commands

-	-

no

Ruijie(config)# **aaa authorization config-commands**

aaa new-model	AAA
aaa authorization commands	AAA

-	-

30.2.3 aaa authorization console

AAA **aaa authorization console** no AAA

aaa authorization console

no aaa authorization console

-	-

RGOS

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

aaa new-model	AAA

AAA

default	Network
method	“ 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*

level	0~15
default	
list-name	

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 **authorization exec**
no Exec

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

no authorization exec

default	Exec
list-name	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*}

level	0~15
default	
list-name	
method	“ **none** **group** ” 4
none	
group	TACACS+

RGOS

-	-

30.3.2 aaa accounting exec

NAS **aaa accounting exec** 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
list-name	
start-stop	
method	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 new-model	AAA
aaa accounting network	

-	-

30.3.6 accounting commands

accounting commands

no

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

no accounting commands *level*

level	0~15
default	
list-name	

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
list-name	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

-	-

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	
list-name	

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	
list-name	

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 AAA

30.5.1 aaa group server

AAA no

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

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

name	“ radius ” “ tacacs+ ” 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

vrf_name	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*]

ip-addr	ip
port1	RADIUS
port2	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

AAA

show aaa group

-	-

AAA

```
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*

max-attempts	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 **aaa new-model** AAA
no AAA

aaa new-model

no aaa new-model

-	-

AAA

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

AAA

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

aaa authentication	
aaa accounting	

-	-

30.6.4 clear aaa local user lockout

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 authorizating network default group radius
```

aaa authentication	
aaa authorization	
aaa accounting	

-	-

30.6.7 show aaa user lockout

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

<*word*>	ID

```
Ruijie# show aaa user lockout all
```

show running-config	
show aaa lockout	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**

id	id <1-255>
type	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 privilige	22

23	login privilige	42

radius-server key	RADIUS
radius-server retransmit	RADIUS

-	-

31.1.6 radius-server retransmit

RADIUS

radius-server retransmit **no**

radius-server retransmit *retries*

no radius-server retransmit

retries	RADIUS

3

AAA

"O

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

-	-

qos dscp

qos cos dscp

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

radius vendor-specific extend	Radius id

-	-

31.1.9 radius vendor-specific extend

id

radius vendor-specific extend

no radius vendor-specific extend

-	-

id

id

```
Ruijie(config)# radius vendor-specific extend
```


/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 2.24l*S

RADIUS

show radius parameter

-	-

radius

```
Ruijie# show radius parameter
Server Timout:   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)]TJ/C2_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
```

-	-

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

vrf-name	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+ **tacacs-server**

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
```

TACACS+ AAA TACACS+

tacacs-server TACACS+

TACACS+

```
Ruijie(config)# tacacs-server host 192.168.12.1
Ruijie(config)# tacacs-server host 2001::1
```

host key
key key

TACACS+ aaa

```
Ruijie(config)#tacacs-server key aaa
```

tacacs-server host	TACACS+
tacacs-server timeout	TACACS+

-	-

32.1.7 tacacs-server timeout

TACACS+

tacacs-server timeout *seconds*

no tacacs-server timeout

seconds	1-1000

5

host timeout
timeout timeout

10

```
Ruijie(config)# tacacs-server timeout 10
```


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

-	

32.2 TACACS+

32.2.1 debug tacacs+

TACACS+ no TACACS+

debug tacacs+

no 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 DISABLE

SSH Server **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

Clear line vty *line_number*	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*

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

-	-

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

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

value	

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

id_num	ID 0 7
bandwidth_value	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** *traffic-class-num*	
cpu-protect traffic-class all bandwidth *bandwidth_value*	

-	-

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 *packet-type*	
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*

idt_num	0-7

1 CPU

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

show cpu-protect type *packet-type*	
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 *packet-type*	
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**********
              bpdu           6
               arp           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 *id_num*	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

-	-

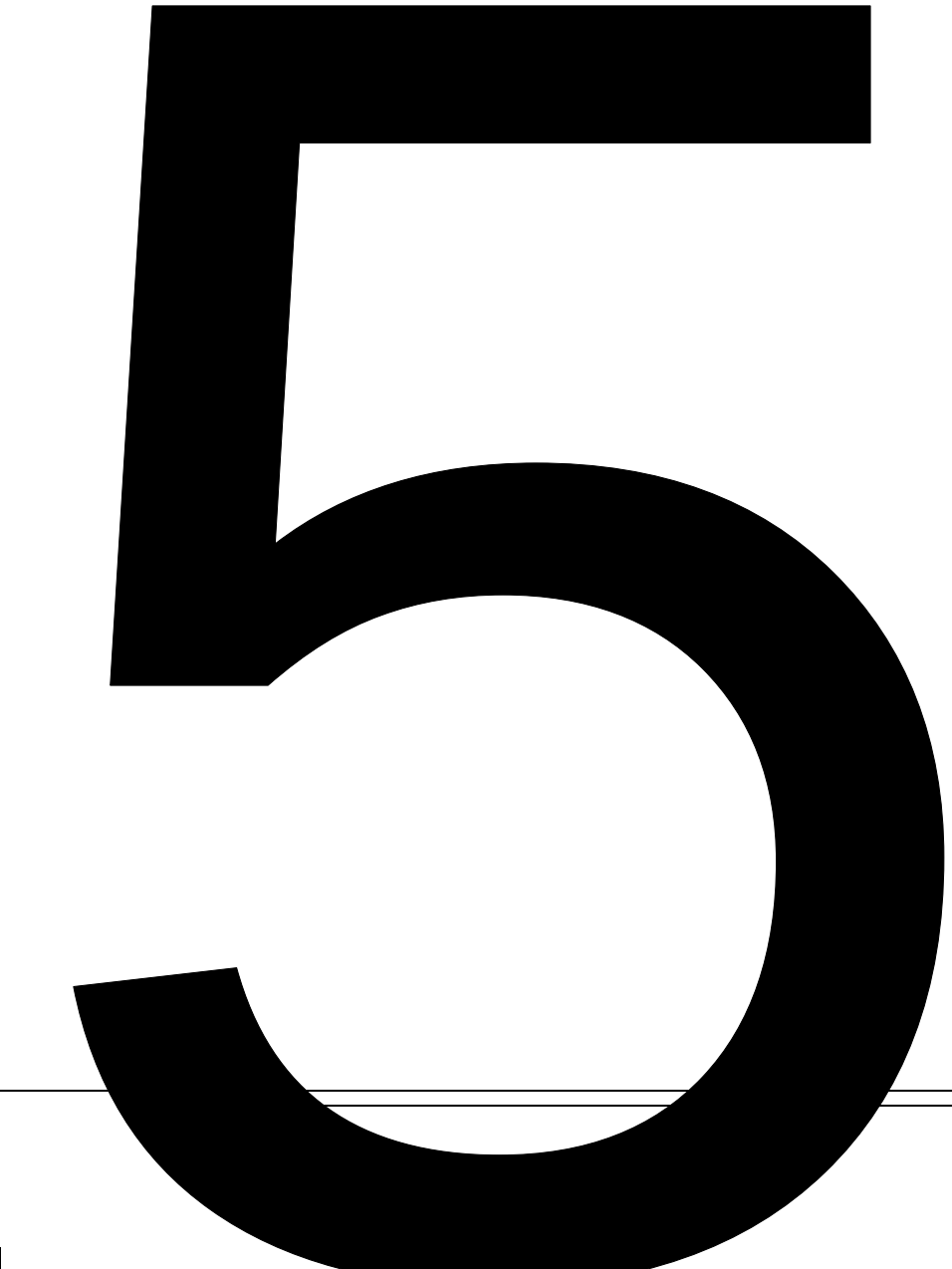
AP AP

GSN

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

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

community	*community*
username	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

ip-address	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 *interval*	

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

ip arp inspection vlan *vlan-id*

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

vlan-id	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( ) NFPP

DAI **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 *ip-address*

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

Ip-address	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*]

ip-address	ip
mac-address	mac ي
dhcp-snooping	پ
static	پ
vlan-id	vlan ي

-	-

-	-

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

percent_vaule	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*

per-src-ip	

39.3.2 arp-guard enable

ARP

arp-guard enable

-	-

ARP

NFPP

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

nffp 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*

seconds	[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*

pkt-cnt	[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*]

vid	
interface-id	
ip-address	IP
mac-address	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**}

seconds	0 [30, 86400] 0
permanent	

></ah2F!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	
rate-limit-pps	1 9999
attack-threshold-pps	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*

pkt-cnt	[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
```

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

-	-

39.4.2 dhcp-guard enable

DHCP

dhcp-guard enable

-	-

DHCP

NFPP

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

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

-	-

39.4.3 dhcp-guard isolate-period

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

seconds	0 [30, 86400] 0
permanent	

0

NFPP

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

nfpp dhcp-guard isolate-period	

show nfpp dhcp-guard summary	

-	-

39.4.4 dhcp-guard monitor-period

dhcp-guard monitor- period *seconds*

seconds 

NFPP

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

per-src-mac	MAC
per-port	
pps	[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	

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	
rate-limit-pps	1 9999
attack-threshold-pps	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	
pps	[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
```

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

10.4	

39.5.3 dhcpv6-guard isolate-period

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

seconds	0 [30, 86400] 0
permanent	

0

NFPP

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

10.4	

39.5.5 dhcpv6-guard monitored-host-limit

dhcpv6-guard monitored-host-limit *number*

number	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	
pps	[1,9999]

MAC 5 150

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

vid	
interface-id	
mac-address	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**}

seconds	0 [30, 86400] 0
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	
pps	[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

ICMP

icmp-guard enable

seconds	0 [30, 86400] 0
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	
pps	[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*]

vid	
interface-id	
ip-address	IP


```
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] 0
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-redir
ect 10
```


nfpp nd- nd-403 Tw.d-guard attack-tu9nicardyTc 4.8448.695 0 Td( )Tj.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
```

nffp 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-threshold-pps*

ns-na	
rs	
ra-redirect	
rate-limit-pps	1 9999
attack-threshold-pps	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*

number	[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*

number_of_message	0-1024 0
length_in_seconds	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 *number*	NFPP
show nfpp log summary	NFPP

10.4	

39.8.4 logging

NFPP VLAN

logging vlan *vlan-range*

logging interface *interface-id*

vlan-range	VLAN “ 1-3,5 ”
interface-id	

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	
vid	
interface-id	
ip-address	IP
mac-address	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*] [*mac-address*]]]

statistics	ARP
vid	
interface-id	
ip-address	IP
mac-address	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 Sc
an-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	
vid	
interface-id	
mac-address	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	
vid	
interface-id	

mac-address	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-addr ess*]]]

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

fpp 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	
prot	IPv6 ipv6 icmp tcp udp 0-255 IPv4 eigrp gre ipinip igmp nos ospf icmp udp I1. 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 port[port]	Operator lt- eq- gt- neq- range- port

	B	MAC	6	P		35
	C		12	Q	IP	36
	D	VLAN tag	14	R	ip	38
	E	DSAP( )	18	S	ip	42
	F	SSAP( )	19	T	TCP	46
	G	Ctrl	20	U	TCP	48
	H	Org Code	21	V		50
	I	# ỗ Ử			‹ K	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*]] {**s***ource source-wildcard* | **host** *source* | **any**} {**host** *source-mac-address* | **any** } {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [**time-range** *time-range-name*]

Protocol

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

Expert

Internet Control Message Protocol (ICMP)

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

Transmission Control Protocol (TCP)

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

User Datagram Protocol (UDP)

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

5)

access-list *list-remark text*

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

match-all	*tcp flag*
tcp-flag	tcp flag

ACL

access-list

R R Ó B

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)-

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** *time-range-name*]

c) expert

Internet Control Message Protocol (ICMP)

[*sn*] **deny icmp** [[**VID** [*out*][**inner** *in*]]] {*source source-wildcard* | **host** *source* | **any**} {**host** *source-mac-address* | **any**} {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**precedence** *precedence*] [**tos** *tos*] [**frag-6( )]931 Tf0(upper)c 0 Tw 2.571 0 Td[(icmp-)-65 Tf2E3C02D6>TJTT0 1 Tf7**

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

Transmission Control Protocol (TCP)

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

User Datagram Protocol (UDP)

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

Sn	ACL
source-ipv6-prefix	IPv6 .
destination-ipv6-prefix	IPv6
prefix-length	
source-ipv6-address	IPv6
destination-ipv6-address	IPv6
dscp	
dscp	0-63.
flow-label	
flow-label	0-1048575
protocol	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)#
```

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**}

id	Expert ۻ C ȯ 0 ∧ A Ỹ

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`Ð’ ÑA56Ic@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	

ACL

[redacted]

-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 **show ipv6 traffic-filter**

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**}

id	MAC 700-799
name	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*}

Id	MAC 700-799
name	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**

destin4tion-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*]] [**precedenceprecedence**] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

Address Resolution Protocol (ARP)

[*sn*] **permit arp** {**vid** *vlan-id***}** [**host** *source-mac-address* | **any**] [**host** *destination –mac-address* | **any**] {*sender-ip sender-ip–wildcard* | **host** *sender-ip* | **any**} {*sender-mac sender-mac-wildcard* | **host** *sender-mac* | **any**} {*target-ip target-ip–wildcard* | **host** *target-ip* | **any**}

5) IPV6

[*sn*] **permit protocol** {*source-ipv6-prefix* / *prefix-length* | **any** | **host** *source-ipv6-address*} {*destination-ipv6-prefix* / *prefix-length* | **any**| *hostdestination-ipv6-address*} [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

IPV6

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*]

id	i d

```
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

id	ACL id
name	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

id	ACL id
name	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

QoS QoS

1 policy-map

policy-map class-map

class-map 1 ACL ACL ACE

ACE “ ACL”

QoS

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*

acl-name	ACL
acl-id	ACL id
class-map-name	class map
no class-map *class-map-name*	class map
no match access-group *acl-name*| *acl-id*	

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
```

4

show mls qos queueing	-

-	-

41.2.3 interface rate-limit

rate-limit {**input** | **output**} *bps burst-size*

no rate-limit

input	
output	
bps	
burst-size	(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

default-cos	0 7
no	

CoS 0

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

show mls qos interface *interface-id*	-

dscp	
no	

```
Ruijie(config)# mls qo 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

dscp-list	
cos	

```
Ruijie(config)# mls qos map dscp-cos
```

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
ip-precedence	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*]

class-name	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*]]

policy-name	policy name

class-name	class map

policy name

```
Ruijie# show policy-map
```

-	-

-	-

41.3.3 show mls qos interface

QoS

show mls qos interface *interface-id* [**policers**]

interface-id	
policers	police

QOS

```
Ruijie# show mls qos interface fastEthernet 0/1
```


-	-

-	-

41.3.4 show mls qos maps

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

vlan-id	Voice VLAN ID

Voice VLAN Remot /C2_ 1 Tc 0

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

cos-value	Voice VLAN CoS

cos-value 6

Voice VLAN CoS DSCP

1 Voice VLAN CoS 5

```
Ruijie(config)# voice vlan cos 5
```

show voice vlan	Voice VLAN

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

1 Voice VLAN

Voice VLAN Voice VLAN

2

native VLAN Voice VLAN

~

3 Trunk Port/Hybrid Port VLAN

Voice VLAN VLAN Voice VLAN Voice VLAN

Voice VLAN

Voice VLAN

Voice VLAN ,X] < õ ã Ä

' Ô] < õ ã âA’ Û î Í y [,X$d MAC MAC

Voice VLAN OUI untagged Voice VLAN Voice VLAN tag

MAC Voice VLAN tag

VLAN Voice /

1 Ö ' Ô Voice VLAN

```
Ruijie(config)# voice vlan security enable
```

¥ K€	£EÄ

,XySà’7QHyQD/EE@]<1Td<278>6<09TT0 1 Tf-0.88AC4>5.988 Tc 1.252 0 T3 458.9 0.24 1.5 ref13714

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 *vlan-id*	Voice VLAN VLAN Voice VLAN
voice vlan aging *minutes*	Voice VLAN
voice vlan cos *cos-value*	Voice VLAN CoS
voice vlan dscp *dscp-value*	Voice VLAN DSCP
voice vlan enable	Voice VLAN
voice vlan mode auto	Voice VLAN
voice vlan security enable	Voice VLAN

10.4

43

43.1

43.1.1 rgos-security compatible

44 RLDP

44.1

44.1.1 rldp detect-interval

RLDP

rldp detect-interval *interval*

no rldp detect-interval

interval	2-15

3

rldp detect-max *num*

no rldp detect-max

num	, 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
```

44.2

44.2.1 show rldp

rldp

show rldp [**interface** *interface-id*]

Interface-id	

EXEC

-	-

-	-

44.2.2 debug rldp

rldp no

debug rldp [**packet | event | error**]

undebug rldp [**packet | event | error**]

packet	rldp
event	
error	

EXEC

-	-

-	-

45 TPP

45.1

45.1.1 topology guard

topology guard

no

[**no**] **topology guard**

-	-

cpu topology-limit

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

tp-guard port enable	
cpu topology-limit	CPU

-	-

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*]

filesystem	“ ”
directory	

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*

url	url

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*

directory	

( )

~ 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*

46.1.7 rmdir

rmdir *directory*

directory	,

239.88 12CfT 56A3ET 41B9 239.88 140422 0 051CL

pwd

1

Ruijie#**show file systems**

47

47.1 CPU

47.1.1 cpu-log

CPU , **cpu-log**

cpu-*log* *log-limit low_num high_num*

-	-

-	-

47.1.2 show cpu

CPU **show cpu**

show cpu

-	-

CPU 5 1 5

CPU 5 1 5

CPU

```
 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%    vty_connect
57    0%    0%    0%    aaa_task
58    0%    0%    0%    Tlogtrap
59    0%    0%    0%    dhcp6c
60    0%    0%    0%    sntp_recv_task
61    0%    0%    0%    ntp_task
62    0%    0%    0%    sla_deamon
63    0%    3%    1%    track_daemon
64    0%    0%    0%    pbr_guard
65    0%    0%    0%    vrrpd
66    0%    0%    0%    psnpd
67    0%    0%    0%    igsnpd
68    0%    0%    0%    coa_recv
69    0%    0%    0%    co_oper
70    0%    0%    0%    co_mac
71    0%    0%    0%    radius_task
72    0%    0%    0%    tac+_acct_task
73    0%    0%    0%    tac+_task
74    0%    0%    0%    dhcpd_task
75    0%    0%    0%    dhcps_task
76    0%    0%    0%    dhcpping_task
77    0%    0%    0%    dhcpc_task
78    0%    0%    0%    uart_debug_file_task
79    0%    0%    0%    ssp_init_task
80    0%    0%    0%    rl_listen
81    0%    0%    0%    ikl_msg_operate_thread
82    0%    0%    0%    bcmDPC
```

```
 83     0%     0%     0%    bcmL2X.0
 84     3%     3%     3%    bcmL2X.0
 85     0%     0%     0%    bcmCNTR.0
 86     0%     0%     0%    bcmTX
 87     0%     0%     0%    bcmXGS3AsyncTX
 88     0%     2%     1%    bcmLINK.0
 89     0%     0%     0%     bcmRX
 90     0%     0%     0%     mngpkt_rcv_thread
 91     0%     0%     0%     mngpkt_recycle_thread
 92     0%     0%     0%     stack_task
 93     0%     0%     0%     stack_disc_task
 94     0%     0%     0%     redun_sync_task
 95     0%     0%     0%     conf_dispatch_task
 96     0%     0%     0%     devprob_task
 97     0%     0%     0%     rdp_snd_thread
 98     0%     0%     0%     rdp_rcv_thread
 99     0%     0%     0%     rdp_slot_change_thread
100     4%     2%     1%     datapkt_rcv_thread
101     0%     0%     0%     keepalive_link_notify
102     0%     0%     0%     rerp_msg_recv_thread
103     0%     0%     0%     ip_scan_guard_task
104     0%     0%     0%     ssp_ipmc_hit_task
105     0%     0%     0%     ssp_ipmc_trap_task
106     0%     0%     0%     hw_err_snd_task
107     0%     0%     0%    rerp_packet_send_task
108     0%     0%     0%    idle_vlan_proc_thread
109     0%     0%     0%    cmic_pause_detect
110     1%     1%     1%    stat_get_and_send
111     0%     1%     0%    rl_con
112    75%    80%    90%    idle
```

3 5 1 5

CPU LISR HISR CPU

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

2 ,X Ş

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

levell	0 7

4k Bytes

7

show logging

clear logging

FLASH

Syslog Server

8

Emergencies	0	
Alerts	1	

-	-

48.1.4 logging console

no

logging console *level*

no logging console

level	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	

-	-

48.1.6 logging facility

no

(23)

logging facility *facility-type*

no logging facility

facility-type	Syslog

Local7(23)

2 Syslog

Numerical Code	Facility
0	kernel messages
1	user-level messages
2	mail system
3	system daemons
4	security/authorization messages
5	messages generated internally by syslogd
6	line printer subsystem
7	network news subsystem
8	UUCP subsystem
9	clock daemon
10	security/authorization messages
11	FTP daemon
12	NTP subsystem
13	log audit
14	log alert
15	clock daemon
16	local use 0 (local0)
17	local use 1 (local1)
18	local use 2 (local2)
19	local use 3 (local3)
20	local use 4 (local4)
21	local use 5 (local5)
22	local use 6 (local6)
23	local use 7 (local7)

(local7) 23

Syslog kernel

```
Ruijie(config)# logging facility kern
```

logging console	

-	-

48.1.7 logging file flash

FLASH FLASH

no

logging file flash:filename [*max-file-size*] [*level*]

no logging file

Filename	txt
max-file-size	128K 6M bytes 128K
level	FLASH 6 1

FLASH

Syslog Server

FLASH

txt

~	FLASH FLASH FLASH logging file flash

FLASH trace.txt 64K,
6

```
Ruijie(config)# logging file flash:trace
```

logging on	
show logging	
more flash	FLASH

-	-

48.1.8 logging monitor

VTY telnet SSH
no VTY

logging monitor *level*

no logging monitor

level	1

Debugging (7)

VTY **terminal monitor**
VTY **logging 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

number	1—10000
all	0—7
console	
except	error(3) error
severity	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#configue terminal
Oct  9 23:40:55 %LINK-5-CHANGED: Interface GigabitEthernet 0/1,
changed state to down
Oct  9 23:40:55 %LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet 0/1, changed state to DOWN
Ruijie# configue terminal        //
```

show running-config	

-	-

48.1.15 logging trap

Syslog Server

no Syslog Server

logging trap *level*

no logging trap

level	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)#
```

msec	: : . Jul 27 16:53:07.299
year	2007 Jul 27 16:53:07

RTC

Uptime
Datetime

Log Debug Datetime

```
Ruijie(config)# service timestamps debug datetime msec
Ruijie(config)# service timestamps log datetime msec
Ruijie(config)# end
Ruijie(config)# Oct 8 23:04:58.301 %SYS-5-CONFIG_I: Configured from
console by console
```

logging on	
service sequence-numbers	

-	-

48.1.19 terminal monitor

VTY VTY
no

terminal monitor

terminal no monitor

-	-

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*

member	1-MAX, .
description	31,

SWITCH

show member

2 red-giant

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

show member [*member*]	member

-	-

49.1.2 device-priority

device-priority [*member*] **priority**

```
Ruijie(config)# member 2
Ruijie@2(config)# exit
Ruijie(config)#
```

-	-

-	-

49.1.4 stack

stack {**on** | **off**} [**copper** | **fiber**]

on	
off	
copper	
fiber	

,

, ,

: : - - . ,

, ID

2 gigabitEthernet 0/3

```
Ruijie(config)# interface gigabitEthernet 2/0/3
Ruijie(config-if)# stack on
```


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

-	-