



RG-S2900

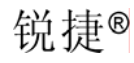
RGOS 10.4(2b2)

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RGOS®

RGNOS®



RGOS® 10.4(2b2)

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1.

Courier New

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2.

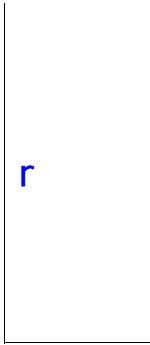
Arial

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

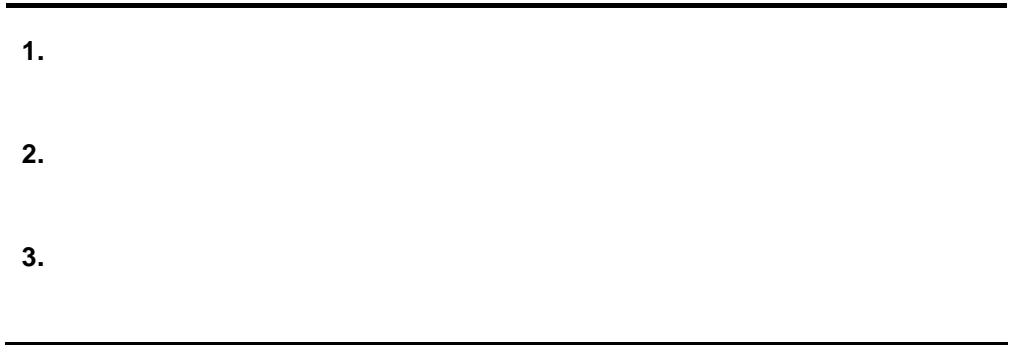
3.

r

/



r



1.

2.

3.

1 CLI

1.1

1.1.1 alias

alias

no

alias *mode command-alias original-command*

no alias *mode [original-command]*

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

EXEC

EXEC h p s u un help ping show
undebug undebug
no alias exec

```

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

Ruijie# s?
show start-chat start-terminal-service
"ia"
"ip address"
Ruijie(config-if)# ia ?
A.B.C.D IP address
dhcp IP Address via DHCP
Ruijie(config-if)# ip address
"ip address"

show aliases

```

```

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

```

show aliases	

privilege

ommand-string

mand-string

CLI

0-15

CLI

privilege ?

0.0.2 294.68 -139.2 -19.1Hp

```

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

```


[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	enable secret	CLI

EXEC

```
Ruijie# show aliases exec
```

```
exec mode alias:
```

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



2

2.1

CLI

2.1.1 disable

disable

disable [*privilege-level*]

	<i>privilege-level</i>	

|

|

|

/ **disable**

|

Ruijie# **disable 10**

	enable	

|

	-	-

|

|

	-	-

2.1.2 enable

enable

	-	-

	-	-

	-	-

2.1.3 enable password

enable password

no

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

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

> 1 26

>

r EXEC

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

enable secret	

-	-

2.1.4 enable secret

enable secret **no**

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

```

password security password 15
security 0 15
password 15 password
security 15 password security
password
security

```

```

pw10
Ruijie(config)# enable secret 0 pw10

```

enable password	

-	-

2.1.5 enable service

SSH Server/Telnet Server/Web Server/Snmp Agent
enable service

enable service { ssh-sesrver | telnet-server | web-server | snmp-agent}

ssh-sesrver	IPv6	SSH Server IPv4
telnet-server	IPv6	Telnet Server IPv4
web-server	IPv6	Http Server IPv4
snmp-agent	IPv6	Snmp Agent IPv4

no enable service

enable service ssh-sesrver, SSH Server
Ruijie(Config # **enable service ssh-sesrver**

show service	

-	-

2.1.6 execute

execute

execute {[flash:] *filename*}

flash:	
<i>filename</i>	

TFTP
CLI

Flash

PC

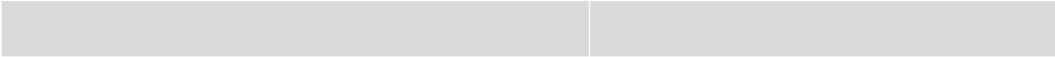
Telnet

configure terminal
line tty 1 16
transport input all

line_rcms_script.text

```
no exec
end
```

```
Ruijie# execute flash:line_rcms_script.text
executing script file line_rcms_script.text .....
executing done
Ruijie# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# line vty 1 16
Ruijie(config-line)# transport input all
Ruijie(config-line)# no exec
Ruijie(config-line)# end
```



Web **no ip http authentication**

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

enable service	

-	-

2.1.8 ip http port

HTTP **ip http port**

ip http port *number*

<i>number</i>	HTTP Server 80

80

HTTP **no ip http port**

HTTP 8080
Ruijie(config)# **ip http port 8080**

enable service	

	-	-
--	---	---

2.1.9 ip telnet source-interface

IP
source-interface

Telnet

ip telnet

ip telnet source-interface *interface-name*

		0	tree-interface
--	--	---	----------------

```

>          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          lock          line          lockable
lock          no
lockable
no lockable

```

--	--

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

2.1.12 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

-	-

2.1.13 login authentication

AAA

AAA

no

login authentication {default | *list-name*}

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

default	
<i>list-name</i>	A A A =

```

Ruijie(config)# aaa new-model
Ruijie(config)# aaa authentication login default radius
Ruijie(config)# line vty 0
Ruijie(config-line)# login authentication default

```

aaa new-model	AAA
aaa authentication login	

-	-

2.1.14 login local

AAA •!™^†æ ð Àp(H—à4â Æ À! y à Ô!Zì ù~€W itæ loRUC01 7f0TC2.253-0/5008cr33A5A15A

	username	
	-	-

2.1.15 privilege mode

	CLI	
	-	-

<i>password</i>	line
0 7	0 7
<i>encrypted-password</i>	

line

line

line red
 Ruijie(config)# **line vty 0**
 Ruijie(config-line)# **password red**

login	

-	-

2.1.17 service password-encryption

service password-encryption no

service password-encryption

-	-

```
service password-encryption
password
show running write
service password-encryption
```

```
service password-encryption
password
```

r	/vrf	RSR		
	/ipv6	IPV6	S3760	S57 S86

```

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

username

username *name*{**nopassword**|**password**{*password* | [**0|7**]*encrypted-password*}}

username *name* **privilege** *privilege-level*

no username *name*

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

```

7
r          7
          7

```

```

15
Ruijie(config)# username test privilege 15 password 0 pw15

```

login local	

-	-

2.2

2.2.1 banner login

no banner login

banner login

banner login c message c

c	
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*

<i>c</i>	
<i>message</i>	

	-	-

2.2.3 clock set

2.2.4 clock update-calendar

clock update-calendar

	-	-

|

|

|

calendar

|

Ruijie# clock update-calendar

	-	-

|

	-	-

2.2.5 exec-timeout

LINE

exec-timeout

no exec-timeout

LINE

exec-timeout *minutes* [*seconds*]

no exec-timeout

	<i>minutes</i>	

	<i>seconds</i>	
	10 min	
	LINE	
		LINE
	line vty 0	5 30
	Ruijie(config-line)# exec-timeout 5 30	
	-	-
	-	-

2.2.6 hostname

hostname	
hostname	<i>name</i>
<i>name</i>	63

2.2.8 reload

no session-timeout

<i>minutes</i>	
output	

0 min

LINE

LINE
LINE

line vty 0 5 30
Ruijie(config-line)# **exec-timeout 5 30**

```

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

```

-	-

-	-

2.2.11 write

running-config

write [memory | network | terminal]

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

copy	
show running-config	

-	-

2.3

2.3.1 show clock

show clock

show clock

-	-

detail

show clock

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

clock set	

--	--

2.3.2 show line

show line

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

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

```

                                console
Ruijie# show line console 0
CON      Type      speed  Overruns
* 0      CON        9600   45927
Line 0, Location: "", Type: "vt100"
Length: 24 lines, Width: 79 columns
Special Chars: Escape Disconnect Activation
                ^^x      none      ^M
Timeouts:      Idle EXEC      Idle Session
                never        never
History is enabled, history size is 10.
Total input: 53564 bytes
Total output: 395756 bytes
Data overflow: 27697 bytes
stop rx interrupt: 0 times
```

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.
```

|



3 LINE

3.1 LINE

3.1.1 access-class

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

LINE

	-	-

3.1.2 line

LINE

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

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

|

|

|

LINE

|

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

	-	-

|

	-	-

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

LINE

telnet	Line	Telnet
none	Line	

VTY TTY NONE
default transport input

Line

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

```

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

```

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

RGOS10.1

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---	---

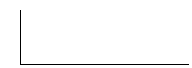
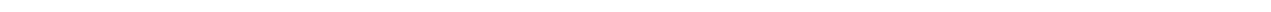
4

4.1

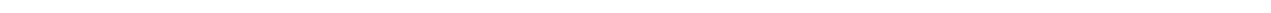
4.1.1 ping

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





DNS



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

2 5 100Byte IP

```

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

	-	-
	ipv6	
	-	-

4.1.3 traceroute

traceroute

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

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

```

2      192.168.9.2      4 msec  4 msec  4 msec
3      192.168.9.1      8 msec  8 msec  4 msec
4      192.168.0.10     4 msec  28 msec 12 msec
5      202.101.143.130  4 msec  16 msec  8 msec
6      202.101.143.154 12 msec  8 msec  24 msec
7      61.154.22.36    12 msec  8 msec  22 msec
                                     IP      61.154.22.36
1 6

```

2 traceroute

```

Ruijie# traceroute 202.108.37.42
< press Ctrl+C to break >
Tracing the route to 202.108.37.42
1      192.168.12.1     0 msec  0 msec  0 msec
2      192.168.9.2      0 msec  4 msec  4 msec
3      192.168.110.1    16 msec 12 msec 16 msec
4      * * *
5      61.154.8.129    12 msec 28 msec 12 msec
6      61.154.8.17     8 msec 12 msec 16 msec
7      61.154.8.250    12 msec 12 msec 12 msec
8      218.85.157.222  12 msec 12 msec 12 msec
9      218.85.157.130  16 msec 16 msec 16 msec
10     218.85.157.77   16 msec 48 msec 16 msec
11     202.97.40.65    76 msec 24 msec 24 msec
12     202.97.37.65    32 msec 24 msec 24 msec
13     202.97.38.162   52 msec 52 msec 224 msec
14     202.96.12.38    84 msec 52 msec 52 msec
15     202.106.192.226  88 msec 52 msec 52 msec
16     202.106.192.174  52 msec 52 msec 88 msec
17     210.74.176.158  100 msec 52 msec 84 msec
18     202.108.37.42   48 msec 48 msec 52 msec
                                     IP      202.108.37.42
1 17 4

```

```

Ruijie# traceroute www.ietf.org
Translating " www.ietf.org "...[OK]
< press Ctrl+C to break >
Tracing the route to 64.170.98.32
1      192.168.217.1    0 msec  0 msec  0 msec
2      10.10.25.1       0 msec  0 msec  0 msec

```

```

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

```

-	-

-

-	-

4.1.4 traceroute ipv6

traceroute ipv6

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

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

Traceroute ipv6

DNS

traceroute ipv6

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

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

-	-

--	--	--

- -

5

5.1

5.1.1 carrier-delay

carrier-delay

no

carrier-delay [*seconds*]

no carrier-delay

<i>seconds</i>		1 60

2

DCD

DCD DCD Down Up

DCD

DCD

	-	-
--	---	---

5.1.2 clear counters

clear counters [*interface-id*]

	<i>interface-id</i>	

|

|

	show interfaces	clear
counters		

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

	show interfaces	

|

	-	-

5.1.3 clear interface

clear interface *interface-id*

	<i>interface-id</i>	

|

┌

┌

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

┌

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

┌

shutdown	

┌

┌

-	-

5.1.4 description

no

description *string*

no description

┌

<i>string</i>	

┌

┌

┌

show interfaces

┌

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

┌

show interfaces	

	-	-

5.1.5 duplex

no

duplex {auto | full | half}

no duplex

	auto	
	full	
	half	

|

|

|

show interfaces

|

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

--	--	--

no

flowcontrol {auto | off | on}

no flowcontrol

auto	
off	
on	

└───┘

└───┘

└───┘

show interfaces

└───┘

1/1

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

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

show interfaces	

└───┘

-	-

5.1.7 interface aggregateport

no

interface aggregateport *port-number*

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

└───┘

|

|

show aggregate Ä aggregate interfaces show
interfaces

|

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

|

Q,	£EÄ

|

S2900

|

	AÈ á

|

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*

	<i>mod-num/port-num</i>	/

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

<i>num</i>	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	

-	-

5.1.15 snmp trap link-status

SNMP LinkTrap, LinkTrap no SNMP Link

LinkTrap

snmp trap link-status

no snmp trap link-status

Link SNMP LinkTrap

Ap SVI LinkTrap

Link SNMP LinkTrap,

```
1 Link trap
Ruijie(config)# interface gigabitEthernet 1/1
Ruijie(config-if)# no snmp trap link-status
2 Link trap
Ruijie(config)# interface gigabitEthernet 1/1
Ruijie(config-if)# snmp trap link-status
```

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

É



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

no switchport trunk {allowed vlan | native vlan}

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

VLAN all Native VLAN VLAN 1

```

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

```

show interfaces	
switchport access	accessport statics VLAN

-	-

5.2

5.2.1 show interfaces

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

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

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

S2900

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

Interface Switchport ModeAccess Native Protected VLAN lists

GigabitEthernet 0/1 enabled Access 11 Disabled ALL

duplex	
flowcontrol	
interface gigabitEthernet	
interface aggregateport	

interface vlan

switch virtual interface

8

6 Aggregate Port

6.1

6.1.1 aggregateport load-balance

AP no

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

no aggregateport load-balance

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

MAC

Aggregate Port

```
S2900
      >                8
      >            31  AP
```

-	-

6.2

6.2.1 show aggregateport

aggregateport

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

Aggregate Port

7 VLAN

7.1

7.1.1 name

VLAN **no**

name *vlan-name*

no name

	<i>vlan-name</i>	VLAN

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

VLAN		
------	--	--

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

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

show vlan		VLAN

--	--	--

-		-

7.1.2 switchport access

no access port VLAN VLAN

switchport access vlan *vlan-id*

no switchport access vlan

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

no switchport trunk {allowed vlan | native vlan }

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

VLAN all Native VLAN VLAN 1

Native VLAN

```

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

```

show interfaces switchport

```

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

```

--	--	--

VLAN

-	-
---	---

7.2

7.2.1 show vlan

VLAN

show vlan [id *vlan-id*]

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

|

|

|

end

Ctrl+C

exit

|

Ruijie# **show vlan id 1**

VLAN Name

Status

Ports

```
-----
```

1 VLAN0001	STATIC	Fa0/1, Fa0/2
------------	--------	--------------

|

name	VLAN
switchport access	Vlan

|

|

-	-
---	---

|

|

|

|

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

RGOS10.1



Protocol VLAN

	-	-
--	---	---

9 Private VLAN

9.1

9.1.1 private-vlan association

secondary VLAN primary VLAN

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

no private-vlan association

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

no private-vlan mapping

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

|

Primary VLAN

|

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

show vlan private-vlan	-

RGOS10.1

-	-

9.1.3 private-vlan type

VLAN VLAN

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

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

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

┌ VLAN

┌ VLAN

┌

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



show vlan private-vlan	-
RGOS10.1	
-	-

9.1.5 switchport private-vlan host-association

private VLAN

primary VLAN

secondary VLAN

switchport private-vlan host-association *p_vid* *s_vid*

no switchport private-vlan host-association

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

┌
└
┌
└
┌
└

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

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

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

primary	primary VLAN
community	community VLAN
isolated	isolated VLAN

private VLAN

Ruijie# **show vlan private-vlan**

-	-

RGOS10.1

-	-

9.3 Hybrid

9.3.1 switchport hybrid allowed vlan

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

no switchport hybrid allowed vlan

hybrid

no	hybrid

|

|

	-	-

9.3.3 switchport mode hybrid

10 Share VLAN

10.1

10.1.1 share

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

10.2

10.2.1 show mac-address-table share

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

-	-	-	-	-

end Ctrl+C
exit

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

Vlan	MAC Address	Type	Interface	Status
1	0040.4650.1e1e	DYNAMIC	Gigabit 0/1	original
2	0040.4650.1e1e	DYNAMIC	Gigabit 0/1	duplicated

-	-	-	-	-

-	-	-	-	-

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

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

|

MAC

┌

┌

┌

┌

┌

┌

IP MAC IP IP
 MAC MAC

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

show address-bind	

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
    
```

<i>intf-id</i>	

MAC

|

|

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

|

fa 0/1

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

|

show address-bind uplink	

|

RGOS10.1

|

-	-

11.1.6 clear mac-address-table dynamic

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

|

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

|

|

|

show mac-address-table dynamic

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

show mac-address-table dynamic	

-	-

11.1.7 clear mac-address-table filtering

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

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

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

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

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

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

--	--	--

no mac-address-table aging-time



show mac-address-table filtering

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

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

-	-

11.1.11 mac-address-table notification

MAC **no**

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

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

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

1 50

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

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



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

```

S2900
  > MAC 16K
  > MAC 1K
    
```

-	-

11.1.13 snmp trap mac-notification

MAC no

snmp trap mac-notification {added | removed}

no snmp trap mac-notification {added | removed}

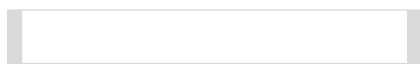
added	
removed	

show mac-address-table notification *interface*

```

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

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



|

|

|

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

|

address-bind	

|

MAC

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

-	-

11.2.4 show mac-address-table aging-time

show mac-address-table aging-time

-	-

└───┘

└───┘

└───┘

```
Ruijie# show mac-address-table aging-time
Aging time   : 300
```

mac-address-table aging-time	

└───┘

MAC

	-	-

11.2.5 show mac-address-table count

show mac-address-table count

	-	-

|

|

|

Ruijie#

-	-
---	---

11.2.6 show mac-address-table dynamic

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

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

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

Vlan	MAC Address	Type	Interface
----	-----	-----	-----
1	0000.0000.0001	DYNAMIC	gigabitethernet 1/1
1	0001.960c.a740	DYNAMIC	gigabitethernet 1/1
1	0007.95c7.dff9	DYNAMIC	gigabitethernet 1/1
1	0007.95cf.eee0	DYNAMIC	gigabitethernet 1/1
1	0007.95cf.f41f	DYNAMIC	gigabitethernet 1/1
1	0009.b715.d400	DYNAMIC	gigabitethernet 1/1
1	0050.bade.63c4	DYNAMIC	gigabitethernet 1/1

clear mac-address-table dynamic	
--	--

--	--

MAC

	-	-
--	---	---

11.2.7 show mac-address-table filtering

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

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

MAC

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

┌
└

┌
└

┌
└

```
Ruijie# show mac-address-table 100 02 01BB81t
```

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

MAC

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

```
Interface          MAC Added Trap  MAC Removed Trap
```

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

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

```
MAC Notification Feature : Disabled
```

```
Interval between Notification Traps : 1 secs
```

```
Maximum Number of entries configured in History Table :1
```

```
Current History Table Length : 0
```

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

```
History Index : 0
```

```
MAC Changed Message :
```

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

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

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

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

┌

┌

┌

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

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

┌

-	-
---	---

11.2.12 show mac-address-learning

--	--

┌

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		
r	DHCP Snooping Private VLAN	

└───

```

DHCP snooping
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping
Ruijie(config)# end
Ruijie# show ip dhcp snooping

Switch DHCP snooping status    ENABLE
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
DHCP Snooping   Bootp                Bootp      DHCP
```

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

show ip dhcp snooping	DHCP snooping

-	-

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

└───

--	--

[no] ip dhcp snooping verify mac-address

-	-

└───

└───

MAC	DHCP CLIENT	MAC	MAC
DHCP	CLIENT MAC	MAC	

```

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

```

show ip dhcp snooping	DHCP snooping

└───

-	-

12.2 DHCP snooping

12.2.1 ip dhcp snooping limit rate

DHCP

no

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

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

DHCP Snooping VLAN
 CPP[CPU Protect Protocol] CPP DHCP
 CPP DHCP Snooping

CPP

show ip dhcp snooping

1 100pps

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

show ip dhcp snooping	DHCP snooping

DHCP snooping TRUST
 no UNTRUST

[no] ip dhcp snooping trust

-	-

UNTRUST

	DHCP	TRUST
DHCP	UNTRUST	DHCP

```

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



12.3 DHCP snooping

12.3.1 show ip dhcp snooping

DHCP Snooping

show ip dhcp snooping

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└───

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└───

DHCP Snooping

DHCP Snooping

Ruijie# **show ip dhcp snooping**

Switch DHCP snooping status ENABLE

Verification of hwaddr field status DISABLE

DHCP snooping database write-delay time: 0 seconds

DHCP snooping option 82 status: ENABLE

DHCP snooping Support Bootp bind status: ENABLE

Interface	Trusted	Rate limit (pps)
-----------	---------	------------------

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

|

|

-	-

12.3.2 show ip dhcp snooping binding

DHCP Snooping

show ip dhcp snooping binding

|

- D	
-	-

|

|

|

DHCP Snooping

12.4 DHCP snooping

12.4.1 clear ip dhcp snooping binding

DHCP Snooping

clear ip dhcp snooping binding

-	-

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DHCP snooping

DHCP snooping

Ruijie# **clear ip dhcp snooping binding**

Ruijie# **show ip dhcp snooping binding**

Total number of bindings: 0

MacAddress IpAddress Lease(sec) Type VLAN Interface

show ip dhcp snooping binding	DHCP snooping

┌

-	-

12.4.2 debug ip dhcp snooping

DHCP Snooping

debug ip dhcp snooping {event | packet}

	-	-

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DHCP snooping

┌
Ruijie# **debug ip dhcp snooping event**
Ruijie# **debug ip dhcp snooping packet**

DHCP snooping

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

	-	-

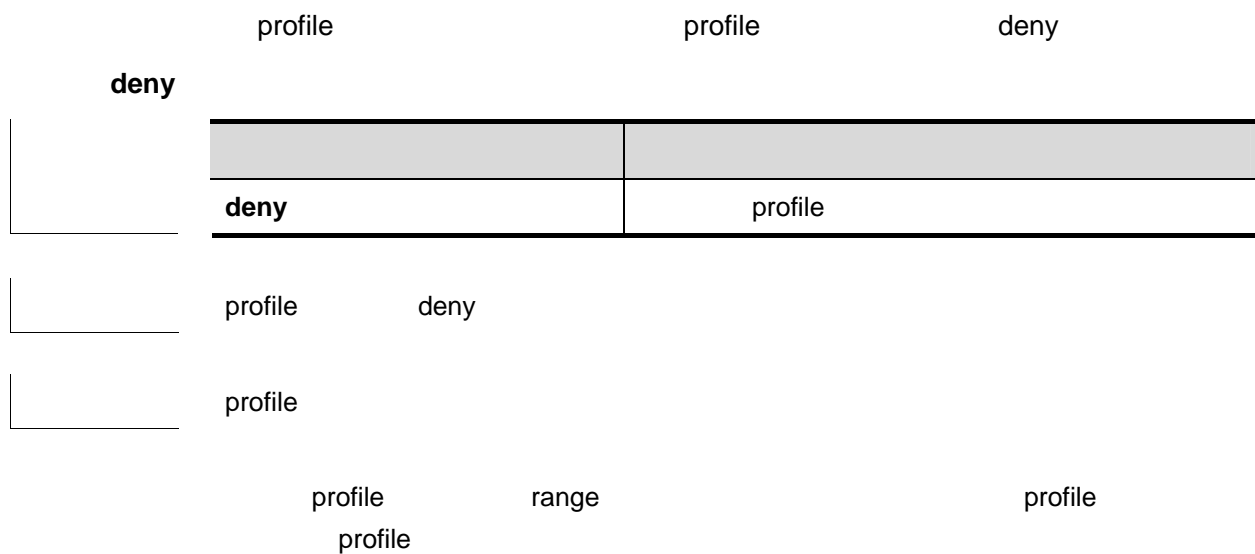
┌

--	--

13 IGMP Snooping

13.1

13.1.1 deny



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*]

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

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

--

profile

	profile	deny
profile	profile	

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

ip igmp profile	profile
deny	profile deny
permit	profile permit

--

-	-

13.1.4 ip igmp profile

IGMP profile profile
profile profile-number igmp profile

ip igmp profile *profile-number*

no ip igmp profile *profile-number*

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

```

IGMP Profiles                               SVGL
IGMP Filtering                               profile
profile
    
```

```

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

range	profile	
permit	profile	permit
deny	profile	deny

```

    
```

-	-

13.1.5 ip igmp snooping ivgl

```

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

ip igmp snooping ivgl

no ip igmp snooping

-	-

```

disable
    
```

```

    
```

```

VLAN VLAN VLAN VLAN
VLAN
    
```

```

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

```

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

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

-		-	

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

```

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

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

-	-

13.1.7 ip igmp snooping svgl profile

```

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

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

```

svgl      profile
    
```

```

SVGL      IVGL-SVGL
    
```

```

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

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

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

	<i>time</i>	

10s

┌

┌

```

IGMP
                                0
                                IGMP Snooping

IGMP
                                0
                                IGMP Snooping

IGMPv3
    
```

┌

```

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

┌

┌

┌

-	-

13.1.11 ip igmp snooping limit-ipmc

```

no IP IP ip igmp snooping limit-ipmc vlan
    
```

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

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

┌

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

┌

┌

IP

ip

```
Ruijie(config)# ip igmp snooping limit-ipmc vlan 1 address 224.0.0.1
server 192.168.4.243
```

ip igmp snooping source-check default-server	IP IP

-	-

13.1.12 ip igmp snooping suppression enable

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

ip igmp snooping suppression enable
no ip igmp snooping suppression enable

-	-

disable

IGMP IGMP Report

vlan IGMPv1/v2 report

IGMP Report

suppression

IGMPv3 report

igmp snooping suppression

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



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

13.1.14 ip igmp snooping vlan mrouter interface

ip igmp snooping vlan mrouter interface , no

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

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

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

IP

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

	ip igmp snooping source-check port	

	-	-

13.1.15 ip igmp snooping vlan mrouter learn pim-dvmrp

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

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

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

	<i>vid</i>	vlan id

┌

┌

VLAN

no ip igmp snooping filter *profile-number*

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

└───┘

└───┘

```

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

ip igmp profile	profile

└───┘

-	-

13.1.18 ip igmp snooping max-groups

```

max-groups no , ip igmp snooping
ip igmp snooping max-groups number
no ip igmp snooping max-groups
    
```

<i>number</i>	<0 – 1024>

└───┘

IGMP Report

0/1 100

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

ip igmp snooping filter	
-	-

13.2

13.2.1 show ip igmp snooping

igmp snooping

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

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

EXEC

|

|

|

-	-

|

|

-	-

13.2.2 show ip igmp profile [profile-number]

|

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

|

|

EXEC

|

profile

|

E

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 MSTP

14.1

14.1.1 bpdu src-mac-check

bpdu mac

no

bpdu mac

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

no bpdu src-mac-check

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

┌

┌

┌

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

-	-
---	---

┌

-	-
---	---

14.1.2 clear spanning-tree detected-protocols


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

show spanning-tree interface

STP

	-	-
--	---	---

14.1.6 spanning-tree bpduguard

BPDU Guard enabled disabled
BPDU Guard

spanning-tree bpduguard [enabled | disabled]

enabled		BPDU Guard
disabled		BPDU Guard

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!

config)#.012

	-	-
--	---	---

|

|

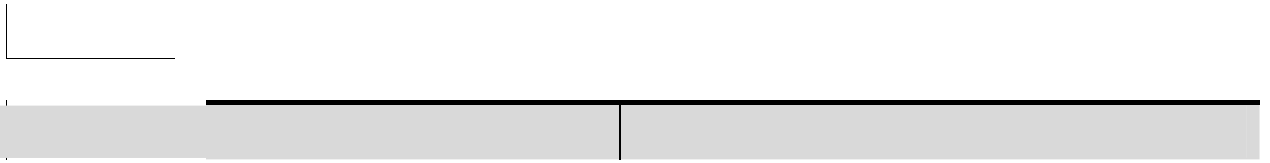
|

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

	-	-

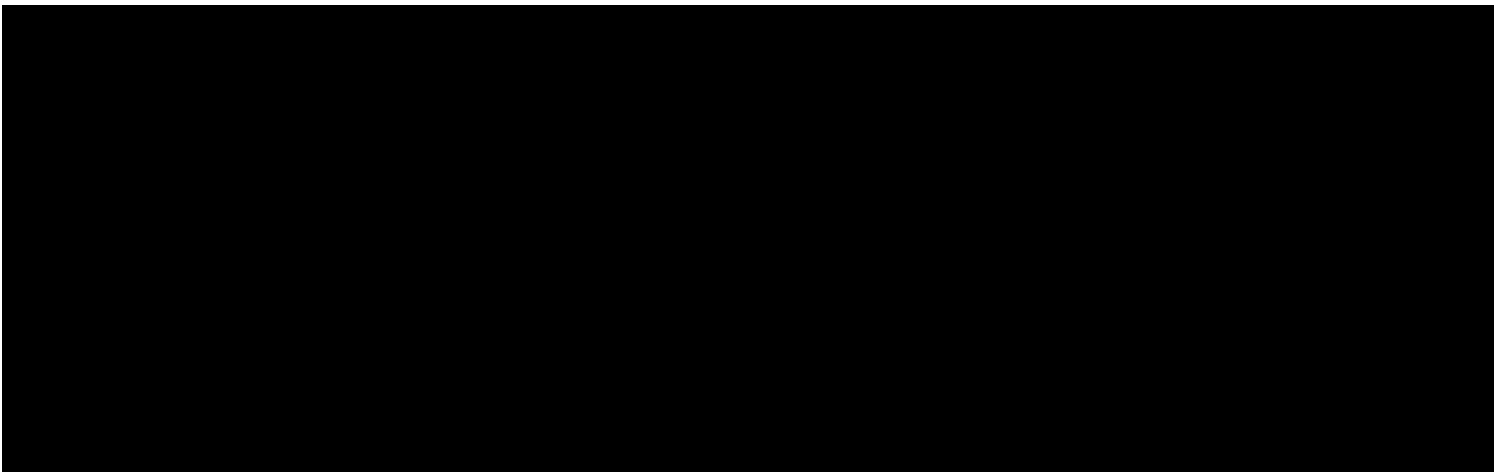
|

MSTP



- spanning-tree guard none0

|



root guard

|

|

|

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



MSTP

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└───

-	-

14.1.13 spanning-tree max-hops

0 BPDU Max-hops Count
%


```

instance vlan          Vlan Instance 0
name
revision 0

```

```

end Ctrl+C

```

```

exit

```

```

MST

```

```

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

```

```

revision version MST 0 65535 no revision

```

```

show MST region

```

```

MST VLAN 3, 5-10 MST Instance 1.

```

```

Ruijie(config)# spanning-tree mst configuration

```

```

Ruijie(config-mst)# instance 1 vlan 3 5-10

```

```

Ruijie(config-mst)# name region 1

```

```

Ruijie(config-mst)# revision 1

```

```

Ruijie(config-mst)# show

```

```

MST configuration

```

```

Name [region1]

```

```

Revision 1

```

```

Instance Vlans Mapped

```

```

-----
0      1-2,4,11-4094

```

```

1      3,5-10
-----

```

```

Ruijie(config-mst)# exit

```

```

Ruijie(config)#

```

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



MSTP

Region

```

Instance 20    GigabitEthernet 1/1          10
Ruijie(config)# interface gigabitEthernet 1/1
Ruijie(config-if)# spanning-tree mst 20 port-priority 0
show spanning-tree mst instance interface interface-id
    
```

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

-	-
---	---

14.1.18 spanning-tree mst priority

Instance no

spanning-tree [mst instance-id] priority priority

no spanning-tree [mst instance-id] priority

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

instance-id 0

priority 32768

Instance 20

8192

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

show spanning-tree mst instance interface interface-id

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

-	-

14.1.19 spanning-tree pathcost method

no

spanning-tree pathcost method [long | short]

no spanning-tree pathcost method

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

802.1T

Path-cost

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

--	--

	show spanning-tree interface	STP
	-	-

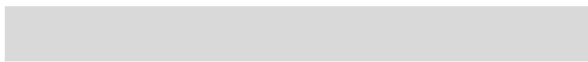
14.1.20 spanning-tree portfast

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

14.1.21 spanning-tree portfast bpdudfilter default

	BPDU filter	no
	BPDU filter	BPDU filter
	spanning-tree portfast bpdudfilter default	


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



14.1.24 spanning-tree reset

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

14.1.25 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**

|

-	-

|

|

-	-

14.1.26 spanning-tree tc-protection

tc- protection

no

tc- protection

spanning-tree tc- protection

no spanning-tree tc- protection

|


-	-

|

tc- protection

|

|

Ruijie(config)#0 



MSTP

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

3



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

show spanning-tree	MSTP	

tx-hold-count	TxHoldCount
pathcost method	

└───

└───

└───

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

spanningtree pathcost method	
spanning-tree forward-time	BridgeForwardDelay
spanning-tree hello-time	BridgeHelloTime
spanning-tree max-age	BridgeMaxAge

e gigabitethernet 1/5

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

spanning-tree link-type

|

|

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

|

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

|

|

-	-

15 SPAN

15.1

15.1.1 monitor session

SPAN . no

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

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

no monitor session all

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

16

```

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

```

show monitor	

reflector-port

-	-

16.1.2 remote-span

RSPAN VLAN

[no] remote-span

-	-

VLAN

end Ctrl+C
exit

```

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

```

--	--

	show vlan	Vlan
	-	-

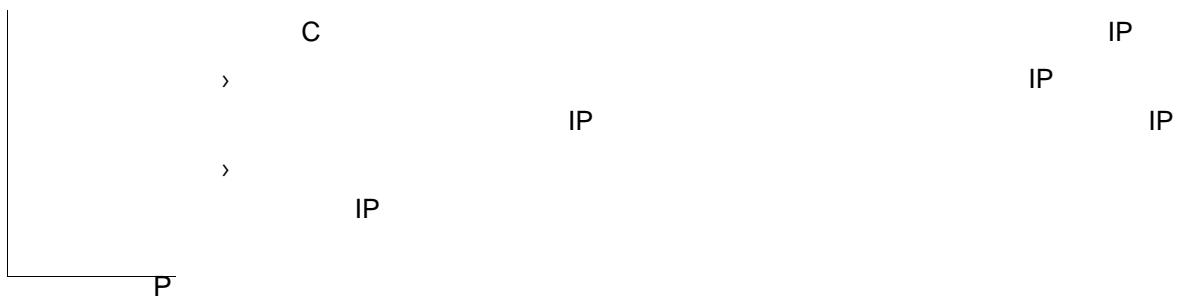
17 IP

17.1

17.1.1 ip address

IP

no



```
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
```

[Redacted]	
show interface	

[Redacted]	
-	-

17.2

17.2.1 arp

```
          ARP          IP          MAC          no
MAC          ip-address (MA-addre)-4(ss a)6typce
```

┌ ARP

└─┬─

RGOS

ARP

32

IP

48

MAC

ARP


ARP

clear

ARP0.

```
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 <i>number</i>	ARP
	-	-

17.2.4 arp retry times

```

no arp                    5 ARP IP ARP
arp retry times number
no arp retry times

```

-f|

}£

8192 ARP no
arp unresolve number
no arp unresolve

number	ARP > 8192	< 1-8192

ARP 8192

ARP

arp unresolved 500 500

-		-

-		-

17.2.7 ip proxy-arp

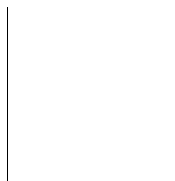
ARP ARP ip proxy-arp no
ip proxy-arp
no ip proxy-arp

-		-

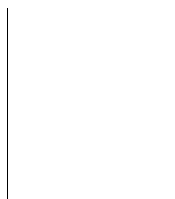


10.2(3) (10.2(3))
ARP

ARP



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



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

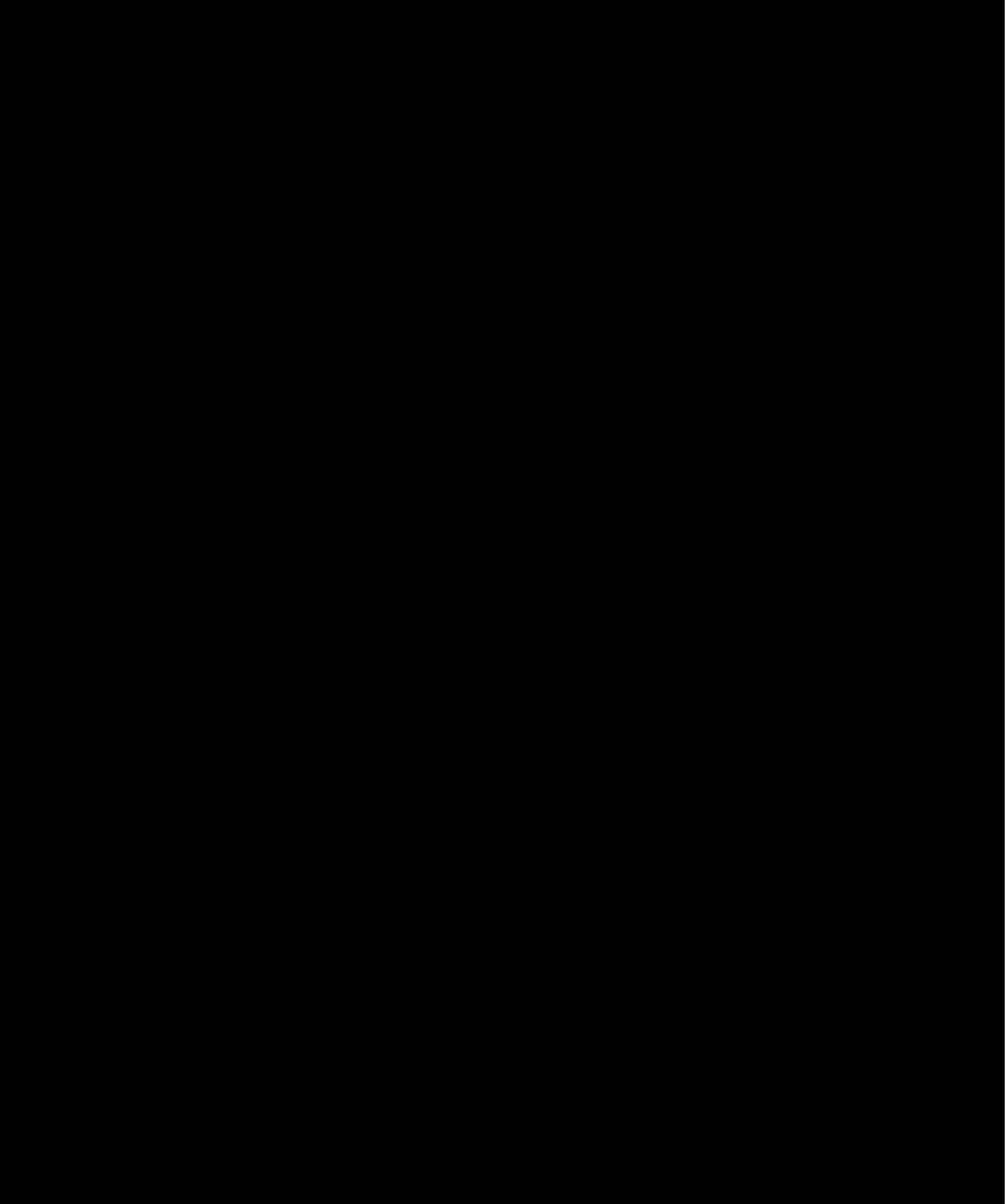


IP

mask

ARP

mask



Age (min)	ARP
Hardware	IP
Type	ARPA
Interface	IP

2 **show arp 192.168.195.68**

Ruijie# **show arp 192.168.195.68**

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

3 **show arp 192.168.195.0 255.255.255.0**

Ruijie# **show arp 192.168.195.0 255.255.255.0**

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

4 **show arp 001a.a0b5.378d**

Ruijie# **show arp 001a.a0b5.378d**

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

-	-

-	-

17.3.3

-	-
---	---

┌

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┌

```

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

-	-
---	---

┌

-	-
---	---

17.3.4 show arp detail

ARP

```

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

<i>interface-type interface-number</i>	ARP
<i>ip</i>	ip ip ARP

A R P à s , C ™ @ "

ARP

ARP

show arp detail

Ruijie# **show arp detail**

IP Address	MAC Address	Type	Age(min)	Interface	Port
20.1.1.1	000f.e200.0001	Static	-- --	--	
20.1.1.1	000f.e200.0001	Static	-- VI3	--	
20.1.1.1	000f.e200.0001	Static	-- VI3	Gi2/0/1	
193.1.1.70	00e0.fe50.6503	Dynamic	1 VI3	Gi2/0/1	
192.168.0.1	0012.a990.2241	Dynamic	10 Gi2/0/3	Gi2/0/3	
192.168.0.1	0012.a990.2241	Dynamic	20 Ag1	Ag1	
192.168.0.1	0012.a990.2241	Dynamic	30 VI2	Ag2	
192.168.0.39	0012.a990.2241	Local	-- VI3	--	
192.168.0.39	0012.a990.2241	Local	-- Gi2/0/3	--	
192.168.0.1	0012.a990.2241	Local	-- VI3	--	
192.168.0.1	0012.a990.2241	Local	-- Gi2/3/2	--	

ARP

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

	-	-

L

--	--	--

17.3.6 show ip arp

ARP

show ip arp

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

┌

┌

┌

show ip arp

Ruijie# **show ip arp**

```

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

```

ARP

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

-	-

└───

-	-

17.3.7 show ip interface

IP

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

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

└───

└───

```

RGOS                RGOS                RGOS
                    UP                    UP
                    UP                    UP
    
```

```

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

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

|

|

-	-

17.3.8 show ip redirects

show ip redirects

|

-	-

|

|

|

|

show ip redirects

Ruijie# **show ip redirects**

Default Gateway: 192.168.195.1

|

ip default-gateway	

|

|

-	-

17.4

17.4.1 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	

|

|

	-	-

18 DHCP Relay

18.1

18.1.1 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
```

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

```
c1p1CTf2 Tr 10.02 0 0 10.02 78.36 434.8403 Tmf0 gB/C2_0 1 Tf53.7 22C
```

DHCP Relay option dot1x

no

[no] ip dhcp relay information option dot1x

-	-

┌

┌

┌

DHCP

802.1x

┌

┌

option dot1x

┌

DHCP

option82

Ruijie# **configure terminal**

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

┌

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

┌

┌

-	-

18.1.4 ip dhcp relay information option vpn

DHCP Relay
no

DHCP Relay Aware VRF

┌

-	-

┌

┌

┌

option82 option dot1x

┌

DHCP

DHCP Relay Aware VRF

Ruijie# **configure terminal**

Ruijie(config)# **ip dhcp relay information option vpn**



	ip dhcp relay information option dot1x	DHCP option dot1x
	-	-

18.1.5 ip dhcp relay suppression

DHCP Relay

18.1.6 ip helper-address

DHCP no
DHCP

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

-	-

┌

┌

/	20 DHCP	DHCP Relay	DHCP
vrf	DHCP	DHCP Relay	DHCP
vrf	vrf	vrf	vrf
vrf	vrf	vrf	vrf

┌

```

1          192.168.1.1
2    vrf    dep1      192.168.2.1
Ruijie# configure terminal
Ruijie(config)# ip helper-address 192.168.1.1
Ruijie(config)# ip helper-address vrf dep1 192.168.2.1
    
```

service dhcp	DHCP

┌

-	-

18.1.7 service dhcp

DHCP

no

[no] service dhcp



19 DNS

19.1

19.1.1 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

```


```

--	--	--

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	DNS Server
	Server	Server	DNS
6	DNS Server	ip-address	ipv6-address
	DNS		

Ruijie(config)# ip name-server 18:26:5660 1:150:127:10013 0 0 05523024128r

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

19.1.4 ipv6 host

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

show hosts	DNS

┌

-	-

19.2

19.2.1 clear host

clear host [*host-name*]

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

┌

┌

2 DNS	1 ip host ipv6 host DNS

┌

clear host * -IP

show hosts	

┌

-	-

19.2.2 show hosts

DNS

show hosts [*hostname*]



20 SNTP

20.1

20.1.1 sntp enable

SNTP

no

—Disable

[no] sntp enable



|

|

show sntp SNTP

|

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

|

show sntp	SNTP

	sntp enable	SNTP
	show sntp	SNTP

RGOS10.0

	-	-

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

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

NTP

NTP
 NTP
 NTP

peer serve serve-only query-only

r

	-	-

21.1.3 ntp authenticate

NTP NTP

ntp authenticate

no ntp authenticate

	-	-

NTP

ntp authentication-key ntp trusted-key

```
ntp authentication-key 6 md5 woooooop
ntp trusted-key 6
ntp authenticate
```

	ntp authentication-key	
	ntp trusted-key	

	-	-

21.1.4 ntp authentication-key

NTP

NTP

ntp authentication-key *key-id* **md5** *key-string* [

NTP

	-	-
--	---	---

.

r

12

Ruijie(config)# **ntp master 12**

-	-



└──

└──

20

prefer

NTP

IP

NTP

└──

NTP server

IPv4 Ruijie(config)# **ntp server** 192.168.210.222

IPv6 Ruijie(config)# **ntp server** 10::2

└──

no ntp	NTP

┌

┌

NTP

Ntp synchronize

┌

ntp server	NTP

┌

┌

-	-

21.1.9 ntp trusted-key

ID

ntp trusted-key *key-id*

no ntp trusted-key *key-id*

┌

<i>key-id</i>	ID

┌

┌

NTP

ü

8

"

ntp authenticate	
ntp authentication-key	NTP
ntp server	NTP

┌

-	-

21.1.10 ntp update-calendar

NTP

no

ntp update-calendar

no ntp update-calendar

-	-

┌

┌

NTP	
NTP	NTP

┌
Ruijie(config)# **ntp update-calendar**

-	-

┌

NTP

	-	-

21.2

21.2.1 debug ntp

NTP

debug ntp

no debug ntp

	-	-

--

--

--

NTP

--

NTP

debug ntp

	-	-

--

	-	-

21.2.2 show ntp status

NTP

show ntp status



22 FTP Server

22.1

22.1.1 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**

└──

	-	-
--	---	---

22.1.2 ftp-server enable

FTP

no

FTP

ftp-server enable

no ftp-server enable

--	--	--

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

no ftp-server password

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

22.1.4 ftp-server topdir

FTP

no

FTP

ftp-server topdir *directory*

no ftp-server topdir

	<i>directory</i>	FTP

└──

└──

FTP

|

|

|

FTP

64

FTP

r FTP

|

1 user

Ruijie(config)# **ftp-server username user**

2

Ruijie(config)# **no ftp-server username**

FTP

```
>
>
>
>
>
>
>
>
```

FTP

```
Ruijie# show ftp-server
ftp-server information
=====
enable : Y
topdir : /
timeout: 20min
username config : Y
password config : Y
type: BINARY
control connect : Y
ftp-server: ip=192.167.201.245 port=21
ftp-client: ip=192.167.201.82 port=4978
port data connect : Y
ftp-server: ip=192.167.201.245 port=22
ftp-client: ip=192.167.201.82 port=4982
passive data connect : N
```

-	-

23 UDP-Helper

23.1

23.1.1 ip forward-protocol

UDP

no

UDP

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

no ip forward-protocol udp [*port* | **tftp** | **domain** | **time** | **netbios-ns** | **netbios-dgm** | **tacacs**]

EMcÖ%U#A#8B#5E"R.Y.Hd m\G6A(p0f4070.Ts40049Tm\vdgFlerE6afar6R"/E5#69)PQF

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

udp-helper enable	UDP
ip forward-protocol	UDP

	RGOS10.1	
	-	-

23.1.3 udp-helper enable

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

	-	-

	UDP	
	UDP-Helper	69,53,37,137,138,49 UDP

	UDP
	Ruijie(config)# udp-helper enable

SNMP

no snmp-server chassis-id

<i>text</i>	

```

60FF60

```

```


```

```

SNMP
show snmp

```

```

SNMP 123456:
Ruijie(config)# snmp-server chassis-id 123456

```

show snmp	SNMP

```


```

-	-

24.1.3 snmp-server community

```

SNMP
no SNMP
snmp-server community string [view view-name] [[ro | rw] [host ipaddr] ] [ number ipv6
ipv6-aclname][aclnum | aclname]

```

```

no snmp-server community string

```

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

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

<i>text</i>	

┌

┌

┌

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

show snmp-server	SNMP
no snmp-server	SNMP

┌

-	-

24.1.5 snmp-server enable traps

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

snmp-server enable traps [snmp]

no snmp-server enable traps

snmp	SNMP

┌

┌

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

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

SNMP

snmp-server enable traps NMS

SNMP

vrf [vrf]

SNMP SNMP

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

snmp-server enable traps	
---------------------------------	--

-	-
---	---

24.1.8 snmp-server location

SNMP **snmp-server location** no

SNMP

<i>text</i>	
-------------	--

|

|

|

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

|

snmp-sever contact	SNMP

|

|

-	-

24.1.9 snmp-server packetsiz

SNMP
no

snmp-sever packetsize

snmp-server packetsize *byte-count*

no snmp-server packetsize

|

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

|

1500

|

|

|

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

|

--	--

	snmp-server queue-length	SNMP
--	---------------------------------	------

--

--	--	--

SNMP

no

SNMP

snmp-server system-shutdown

snmp-server system-shutdown

no snmp-server system-shutdown

-	-

SNMP

SNMP

RGOS

reload/reboot

NMS

SNMP

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

-	-

-	-

24.1.12 snmp-server trap-source

SNMP

snmp-server trap-source

no

snmp-server trap-source *interface*

no snmp-server trap-source

<i>interface</i>	SNMP

SNMP

IP

┌

┌

SNMP

IP
IP SNMP

┌

0 IP SNMP

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

┌

snmp-server enable traps	
snmp-server enable host	NMS

┌

┌

-	-

24.1.13 snmp-server trap-timeout

snmp-server trap-timeout

no

snmp-server trap-timeout *seconds*

no snmp-server trap-timeout

┌

seconds	1 – 1000

┌

30

┌

┌

┌

60

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

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

	(E	A
	-	-

24.1.14 snmp-server user

SNMP

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



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

└─┘

└─┘

└─┘

```

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

show snmp user	SNMP

└─┘

-	-

24.1.15 snmp-server view

SNMP **snmp-server view** no

snmp-server view *view-name oid-tree {include | exclude}*

no snmp-server view *view-name [oid-tree]*

<i>view-name</i>	
<i>oid-tree</i>	MIB MIB
include	MIB
exclude	MIB

|

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 ownname]*

no rmon alarm *number*

-	-

└──

└──

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

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

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

└──

-	-

25.1.2 rmon collection history

no

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

no rmon collection history *index*

-	-

└──

└──

RGOS	owner buckets
interval	

└──

1

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

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

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

└──

-	-

25.1.3 rmon collection stats

no

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

no rmon collection stats *index*

	-	-

|

|

|



trap

Ruijie(config)# **rmon event**

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

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

--	--

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

```

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

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

-	-

|
 |
 |
 |

```

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

|
 |
 |

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

	-	-

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 , no

ipv6 address *ipv6-address/prefix-length*

ipv6 address *ipv6-prefix/prefix-length eui-64*

ipv6 address *prefix-name sub-bits/prefix-length [eui-64]*

no ipv6 address

no ipv6 address *ipv6-address/prefix-length*

no ipv6 address *ipv6-prefix/prefix-length eui-64*

no ipv6 address *prefix-name sub-bits/prefix-length [eui-64]*

<i>ipv6-address</i>	IPV6	RFC4291 16
<i>ipv6-prefix</i>	IPV6	RFC4291 16
<i>prefix-length</i>	IPV6	IPV6
<i>prefix-name</i>		

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

|



default

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

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

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

-	-
---	---

26.1.5 ipv6 general-prefix

IPv6

ipv6 general-prefix

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

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

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

IPv6

my-prefix

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

ipv6 address prefix-name

sub-bits/prefix-length

	-	-
	-	-

26.1.7 ipv6 nd dad attempts

```

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

value	(NS)	0
	0-600	ipv6 :

```

1

```

```

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

```

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

show ipv6 interface	

no

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

no ipv6 neighbor *ipv6-address interface-id*

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

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
IPv6

ns-linklocal-src
RFC3484

ipv6 ns-linklocal-src

no ipv6 ns-linklocal-src

-	-

|

|

|

|

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

-	-

|

-	-

26.1.11 ipv6 route

IPV6

no

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

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

IPv6	
<i>ipv6-prefix</i>	IPV6 RFC4291

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

┌

┌

r

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		

	-	-

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IPv6

┌

┌
0
IPv6

IPv6

0

┌

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

	-	-

┌

	-	-

26.2

26.2.1 clear ipv6 neighbors

clear ipv6 neighbors

	-	-

┌

┌

┌


```

|
|
|

```

RGOS10.4	RGOS10.4

26.2.3 show ipv6 interface

IPV6

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

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

```

|
|
|

```

```

|
|
|

```

```

|
|
|

```

IPV6

ND

```

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

```

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

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

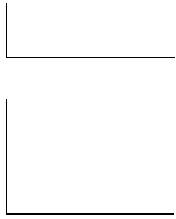
[TENTATIVE]	INET6	[]
ANYCAST		
TENTATIVE		(DAD)
DUPLICATED		
DEPRECATED		
NODAD		
AUTOIFID		EUI-64
PRE		
GEN		

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

ra-info ~~ANDY-RA-Info~~

1

waits	
initcount	RA
RA(out/in/inconsistent)	Out in inconsistent
RS(input)	
Link-layer address	
Physical MTU	MTU
!M M	!M managed-config-flag M:
!O O	!O other-config-flag O
ra-info	(Prefix)



-	-

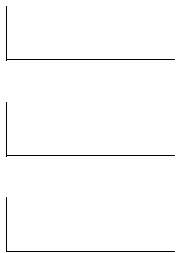
26.2.4 show ipv6 neighbors

IPV6

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



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



1 SVI 1

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

2

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

IPv6 Address	IPV6



Linklayer Addr	Mac incomplete
Interface	
State	<p>state/H(R)</p> <p>STATE</p> <p>INCOMP(Incomplete)—</p> <p>(NS)</p> <p>(NA)</p> <p>REACH(Reachable) —</p> <p>STALE —</p> <p>NUD</p> <p>(Neighbor Unreachability Detection)</p> <p>DELAY— STALE</p> <p>STALE DELAY</p> <p>DELAY_FIRST_PROBE_TIME seconds(5)</p> <p>DELAY PROBE</p> <p>(NS) NUD</p> <p>PROBE— NUD</p> <p>RetransTimer milliseconds</p> <p>(NS)</p> <p>MAX_UNICAST_SOLICIT(3)</p> <p>?—</p> <p>/R—</p> <p>/H—</p>
Age	'expired'
Asked	NUD

IPv6 Address	IPv6
Linklayer Addr	Mac
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	

-	-

26.2.6 show ipv6 router

IPv6

show ipv6 router

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

--	--

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		

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	VLAN		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

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<i>time</i>			1-3600
300s			
Hello		MLD	IPv6 PIM
		500s	

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

--	--

MLD query PIM
ipv6 mld snooping vlan mrouter learn no

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

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

VLAN

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

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

└───

└───

└───

```

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

ipv6 mld snooping vlan mrouter interface	

└───

10.4	

27.1.12 ipv6 mld snooping fast-leave enable

```

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

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


└───

└───


```
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
```

<i>profile-num</i>	profile

MLD Profile

MLD Report
MLD Profile

profile

filter

0/1 profile 1

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

```
Ruijie(config-if)# ipv6 mld snooping filter 1
```

ipv6 mld profile	profile

	10.4	

clear ipv6 mld snooping gda-table

|

|

|

|

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

|

10.4	

27.1.17 debug mld-snp

mld , debug mld-snp

debug mld-snp
undebug mld-snp

|

|

|

|

mld

mld

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


10.4	

27.2

27.2.1 show ipv6 mld snooping

mld snooping

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

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

mld snooping

```
1 show ipv6 mld snooping mld snooping
```

```
Ruijie# show ipv6 mld snooping
```

```
MLD-snooping mode      : IVGL
SVGL vlan-id           : 1
SVGL profile number    : 0
Source check port      : Disabled
```

Query max response time : 10(Seconds)

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

Ruijie# **show ipv6 mld snooping statistics**

GROUP	Interface	Last report time	Last leave time	Last reporter
FF88::1	VL1:Gi4/2	0d:0h:0m:7s	----	2003::1111
		Report pkts: 1		Leave pkts: 0

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

Ruijie# **show ipv6 mld snooping mrouter**

Vlan	Interface	State	MLD profile number
1	GigabitEthernet 0/7	static	1
1	GigabitEthernet 0/12	dynamic	0

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

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

Abbr: M - mrouter
 D - dynamic
 S - static

VLAN	Address	Member ports
1	FF88::1	GigabitEthernet 0/7(S)

5 **show ipv6 mld snooping interface** mld snooping Filtering

Ruijie# **show ipv6 mld snooping interface GigabitEthernet 0/7**

Interface	Filter Profile number	max-groups
GigabitEthernet 0/7	1	4294967294

--	--

10.4

27.2.2 show ipv6 mld profile

MLD profile

show ipv6 mld profile [*profile-number*]

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

mld profile

```

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

10.4

28

28.1

28.1.1 storm-control

no

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

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

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

2-100M

1M

187.1 0. 20.1 ref296.7 92 Tw 11MBT 602.0 100.0

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	

-	-

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	

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-

┌

-	-

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 *interface-id* *mac-address* **vlan** *vlan_id* *ipv4-address* | *ipv6-address*

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

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

└───

└───

└───

```

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

```

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

1 TRUNK 10

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

```

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

```

storm-control	

-	-

28.2.2 show port-security

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

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

-	-

└───

└───

└───

802.1x

show dot1x auto-req

└───

802.1x

```

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

```

└───

show dot1x auto-req	

└───

-	-

29.1.3 dot1x auto-req req-interval

no

dot1x auto-req req-interval *interval*

no dot1x auto-req req-interval

<i>interval</i>	s

30

show dot1x auto-req

```

802.1x          60s
Ruijie# configure terminal
Ruijie(config)# dot1x auto-req req-interval 60
Ruijie(config)# end
Ruijie# show dot1x auto-req
Auto-Req: Enabled
User-Detect : Enabled
Packet-Num  : 0
Req-Interval: 60 Second
    
```

show dot1x auto-req	

-	-

29.1.4 dot1x auto-req user-detect

no

dot1x auto-req user-detect

no dot1x auto-req user-detect

-	-

show dot1x auto-req

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

show dot1x auto-req	

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

29.2.1 dot1x timeout quiet-period

no

dot1x timeout quiet-period *seconds*

no dot1x timeout quiet-period

<i>seconds</i>	0 65535 s

10

show dot1x

```

1000s
Ruijie# configure terminal
Ruijie(config)# dot1x timeout quiet-period 1000
Ruijie(config)# end
Ruijie# show dot1x
802.1X Status:      Enabled
Authentication Mode: EAP-MD5
Authed User Number: 0
Re-authen Enabled:  Disabled
Re-authen Period:   3600 sec
Quiet Timer Period: 1000 sec
Tx Timer Period:    3 sec
Supplicant Timeout: 3 sec
Server Timeout:     5 sec
Re-authen Max:      3 times
Maximum Request:    3 times
Filter Non-RG Supp: Disabled
Client Oline Probe: Disabled
Eapol Tag Enable:   Disabled
Authorization Mode:  Group Server

```

	show dot1x	802.1x
	-	-

29.2.2 dot1x timeout re-authperiod

no

dot1x timeout re-authperiod *seconds*

no dot1x timeout re-authperiod

	<i>seconds</i>	0	65535	s

3600

show dot1x 802.1x

1000s

```

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

```

```

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

```

show dot1x	802.1x

-	-

29.2.3 dot1x timeout server-timeout

no

dot1x timeout server-timeout *seconds*

no dot1x timeout server-timeout

<i>seconds</i>	0 65535

```

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

```

show dot1x	802.1x

-	-

29.2.4 dot1x timeout supp-timeout

no

dot1x timeout supp-timeout *seconds*

no dot1x timeout supp-timeout

<i>seconds</i>	0 65535

3

	show dot1x	802.1x

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29.3 dot1x

29.3.1 dot1x re-authentication

no

[no] dot1x re-authentication

	-	-

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show dot1x 802.1x

```
Ruijie# configure terminal
Ruijie(config)# dot1x re-authentication
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: 3 times
Maximum Request: 3 times
Filter Non-RG Supp: Disabled
Client Oline Probe: Disabled
Eapol Tag Enable: Disabled
Authorization Mode: Group Server

show dot1x	802.1x

-	-

```

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

```

show dot1x	802.1x

-	-

29.4 dot1x

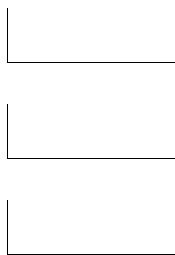
29.4.1 dot1x probe-timer

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

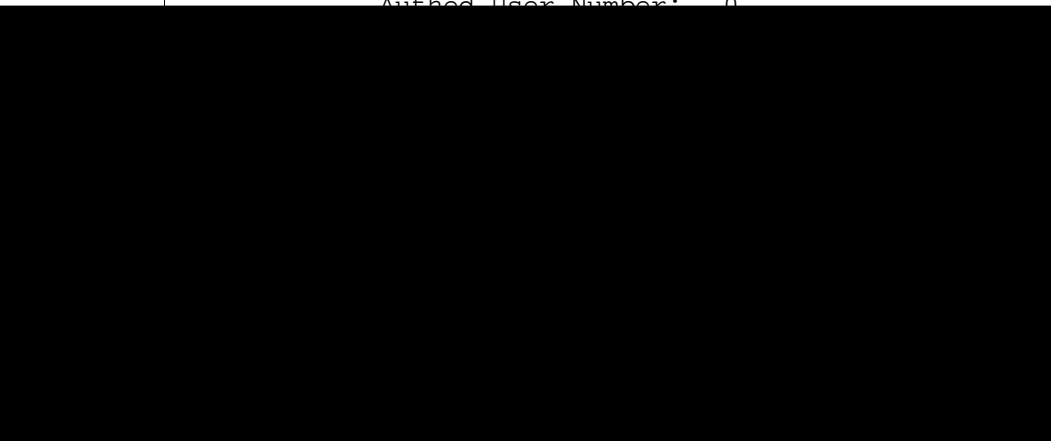
no dot1x probe-timer

no	

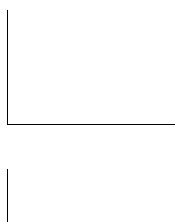
<i>interval</i>	hello
alive	
interval	



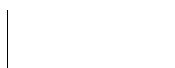
```
Ruijie# configure terminal
Ruijie(config)# dot1x client-probe enable
Ruijie(config)# end
Ruijie# show dot1x
802.1X Status:      Enabled
Authentication Mode: EAP-MD5
Authed User Number: 0
```



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



show dot1x	dot1x



--	--

-

-

29.5.1 dot1x authentication

AAA

AAA

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

default	
<i>list-name</i>	

AAA

AAA

AAA

dot1x

group radius

```

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

```

aaa new-model	AAA
aaa authentication dot1x	

802.1X

no

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

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

|

|

|

802.1X

show dot1x auth-address**table**

|

```

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

```

|

show dot1x auth-address-table	802.1X

|

|

-	-

29.5.3 dot1x auth-fail max-attempt

VLAN

dot1x auth-fail max-attempt *num***no dot1x auth-fail max-attempt**

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

3

show dot1x

VLAN

Ruijie# **configure terminal**

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

show dot1x interface

```

      802.1x    vlan
Ruijie# configure terminal
Ruijie(config)# interface fa 0/1
Ruijie(config-if)# dot1x auth-fail vlan 2
Ruijie(config-if)# end
Ruijie#write

```

show dot1x interface	802.1x

10.3(5)	

29.5.5 dot1x auth-mode

802.1x

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

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

EAP-MD5

show dot1x 802.1x

802.1x

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

show dot1x	802.1x

-	-

29.5.6 dot1x default

802.1x

dot1x default

-	-

show dot1x 802.1x

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

show dot1x	802.1x

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

┌

-	-

29.5.9 dot1x eapol-tag

EAPOL TAG

dot1x eapol-tag**no dot1x eapol-tag**

--	--

-	-
---	---

┌

┌

┌ **show dot1x** 802.1x

```

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

show dot1x	802.1x

┌

-	-

29.5.10 dot1x mac-auth-bypass

MAC

dot1x mac-auth-bypass

no dot1x mac-auth-bypass

┌ MAC

┌

802.1x MAC

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

show dot1x port-control interface	802.1x

10.3(5)	

29.5.11 ph-b timeout-activity)

	show dot1x port-control interface	802.1x
	10.3(5)	

29.5.12 dot1x mac-auth-bypass violation

802.1x MAC

dot1x mac-auth-bypass violation

no dot1x mac-auth-bypass violation

show run 802.1x

802.1x MAC

Ruijie# **configure terminal**

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

Ruijie(config-if)# **dot1x mac-auth-bypass violation**

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

Ruijie#write

	show dot1x port-control interface	802.1x

10.3(5)	

29.5.13 dot1x max-req

```

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

<i>count</i>	

```

3
    
```

```

    
```

```

show dot1x 802.1x
    
```

```

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

show dot1x	802.1x

```

    
```

-	-

29.5.14 dot1x private-supPLICANT-only

no

dot1x private-supPLICANT-only**no dot1x private-supPLICANT-only**

	-	-

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	

	-	-

29.5.15 dot1x port-control auto

no

dot1x port-control auto**no dot1x port-control**

	-	-

```

802.1x

```

```

show dot1x      802.1x

```

```

802.1x
Ruijie# configure terminal
Ruijie(config)# interface g0/1
Ruijie(config-if)# dot1x port-control auto
Ruijie(config-if)# end
Ruijie#

```

show dot1x	802.1x

-	-

29.5.16 dot1x port-control-mode

802.1x

MAC

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

```
no dot1x port-control-mode
```

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

mac-based

```

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

```

```

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

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

```

show dot1x port-control	802.1x
Show running-config	

29.5.17 dot1x stationarity enable

802.1x

802.1X

dot1x stationarity enable**no dot1x stationarity enable**

	-	-

--

--

--

```

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

```

	-	-

--

	-	-

29.5.18 dot1x redirect url

	802.1x		
	URL	URL	http://
http://ruijie.net/web	http://	https://	

url url no
url

dot1x redirect url [*url-string*]

[no] dot1x redirect url

<i>url-string</i>	URL

┌

┌

┌

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

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

┌

-	-

29.5.19 dot1x redirect for special tcp-destination port

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

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

	<i>port num</i>	TCP

```

3
1
5
Ruijie(config)# dot1x redirect time-out 5

```

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

```

-
-

```

-	-

29.5.21 dot1x redirect num for special source-ip

1 1-10 no

dot1x redirect num for special source-ip *num*

no dot1x redirect num for special source-ip

```

num
1

```

<i>num</i>	

└───

└───

```

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

└───

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

└───

└───

-	-

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#
```



	-	-
--	---	---

29.6.2 show dot1x auth-address-table

802.1X

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

	dot1x timeout supp-timeout	
	dot1x timeout tx-period	

┌



dot1x re-authentication

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

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

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

-	-

29.6.6 show dot1x port-control

show dot1x port-control [interface *interface*]

<i>interface</i>	



```
Ruijie# show dot1x port-control  
interface dyn-user static-user max-user qos
```


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	


```

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

```

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

-	-

29.6.12 show dot1x timeout

802.1X

show dot1x timeout quiet-period

show dot1x timeout re-authperiod

show dot1x timeout server-timeout

show dot1x timeout supp-timeout

show dot1x timeout tx-period

-	-

|

|

|

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

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

	dot1x timeout tx-period	
	-	-

29.7

29.7.1 dot1x redirect

dot1x redirect no

dot1x redirect

no dot1x redirect

	-	-

┌

┌

┌

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


┌

10.2(5)	

29.7.2 http redirect

HTTP
IP
http redirect
no
HTTP
IP

http redirect *ip-address*

no http redirect

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

	HTTP IP

	HTTP IP
	HTTP IP

```

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

show http redirect	HTTP
http redirect homepage	

10.2(5)	

29.7.3 http redirect direct-site

no

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

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



http redirect homepage *url-string*

no http redirect homepage

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

www.su-download.net/

Ruijie# **configure terminal**

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

show http redirect	HTTP

10.2(5)	

29.7.5 http redirect port

redirect port HTTP **no** http

http redirect port *port-num*

no http redirect port *port-num*

-	-

port-session-num

```

|
|
|

```

```

|
|
|

```

```

GET/HEAD          HTTP
GET/HEAD          TCP

```

HTTP

```

|
|
|

```

4

```

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

```

```

|
|
|

```

show http redirect	HTTP

```

|
|
|

```

```

|
|
|

```

10.2(5)	

29.7.8 show http redirect

HTTP

```

show http redirect

```

```

|
|
|

```

-	-

```

|
|
|

```

```

|
|
|

```

```

|
|
|

```

```

|
|
|
|
|

```

HTTP

```

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

```

```

session-limit: 10
timeout:      5
    
```

Direct sites:

Address	MASK	ARP Binding
61.233.3.215	255.255.255.255	On
61.233.3.220	255.255.255.255	Off
192.168.5.140	255.255.255.255	Off
218.30.66.101	255.255.0.0	Off
218.30.66.101	255.255.255.255	Off

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

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

30 Web

30.1 Web

30.1.1 http redirect

HTTP IP
HTTP IP

http redirect no

http redirect *ip-address*

no http redirect



*ip-address*HTTPG@FQ@

no

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

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

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

└──

└──

Web	Web
50	

```

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

show http redirect	HTTP

└──

10.2(5)	

30.1.3 http redirect homepage

no

http redirect homepage *url-string*

no http redirect homepage

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

Web

```

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

show http redirect	HTTP
http redirect	IP

10.2(5)	

30.1.4 http redirect port

```

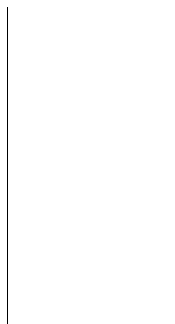
port no HTTP WEB http redirect HTTP WEB
    
```

http redirect port *port-num*

no http redirect port *port-num*

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

80 HTTP



```
HTTP
HTTP
80 HTTP
HTTP
80
1 8080 HTTP WEB
Ruijie(config)# http redirect port 8080
1 80
```

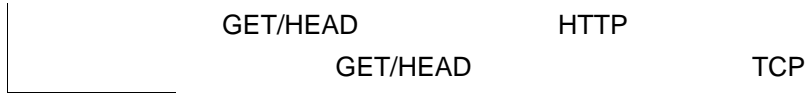
HTTP 300 HTTP 255

HTTP TCP
HTTP
HTTP HTTP
HTTP 1 HTTP

1 HTTP 4
Ruijie(config)# http redirect session-limit 4

2AFC180B 9C32.092AFCTf 9 Tr 2.01f -0>
w http redirect





|

|

10.2(5)	

30.1.9 web-auth offline-detect-mode flow

no

web-auth offline-detect-mode flow

no web-auth offline-detect-mode flow

|

10.2(5)	

30.1.10 web-auth port-control

Web

no

Web

web-auth port-control [ip-only-mode]

no web-auth port-control

ip-only-mode	<p>MAC Web IP</p> <p> IP MAC</p> <p> IP</p>

Web

Web

```

1        FastEthernet 0/14        Web
Ruijie(config)# interface FastEthernet 0/14
Ruijie(config-if)# web-auth port-control
    
```

show web-auth port-control	Web
http redirect	IP
http redirect homepage	
web-auth portal key	

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

30.1.11 web-auth portal key

HTTP WEB WEB no
web-auth portal key *key-string*
no web-auth portal key

	<i>key-string</i>	255

Web

1 10 13A4A7

30.1.12 web-auth update-interval

1 HTTP

Ruijie# **show http redirect**

HTTP redirection settings:

```

server:          192.168.32.123
port:            80 8000
homepage:        http://192.168.32.123:8888/ePortal/index.jsp
session-limit:  10
timeout:         5
  
```

Direct sites:

Address	MASK	ARP Binding
61.233.3.215	255.255.255.255	On
61.233.3.220	255.255.255.255	Off
192.168.5.140	255.255.255.255	Off
218.30.66.101	255.255.0.0	Off
218.30.66.101	255.255.255.255	Off

Direct hosts:

Address	Mask	Port	ARP Binding
---------	------	------	-------------

Web

|
|

|
|

|
|

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



1

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

Direct hosts:

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

Address	IP
Mask	IP
Port	IP
ARP Binding	ARP

web-auth direct-host	IP
-----------------------------	----

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

30.2.4 show web-auth port-control

show web-auth port-control

-	-
---	---

Web

Ruijie# **show web-auth user**

Current user num : 4

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

Ruijie# **show web-auth user 192.168.0.11**

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

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

31 AAA

31.1

31.1.1 aaa authentication dot1x

AAA

AAA Enable

RADIUS

RADIUS

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

aaa new-model	AAA
enable	
username	

-	-

31.1.3 aaa authentication login

AAA

Login

aaa authentication login

Login no

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

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

default	Login
<i>list-name</i>	Login
<i>method</i>	local none group 4
local	
none	
group	TACACS+ RADIUS

┌

├

```

AAA
aaa authentication login
Login
AAA 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

├

├

-	-

31.1.4 aaa authentication ppp

```

AAA PPP
aaa authentication ppp PPP

```

local	
none	
group	TACACS+ RADIUS

┌
└

AAA PPP AAA PPP
aaa authentication ppp PPP

rds_ppp AAA PPP RADIUS RADIUS
 Ruijie(config)# **aaa authentication ppp rds_ppp group radius local**

aaa new-model	AAA
ppp authentication	PPP
username	

┌
└

-	-
---	---

31.1.5 login authentication

authentication Login no **login**

login authentication {default | list-name}

no login authentication

--	--

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

Login
Login
Login

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

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

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

-	-

└──

└──

└── RGOS

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

aaa new-model	AAA
aaa authorization commands	AAA
authorization commands	

└──

-	-

31.2.4 aaa authorization exec

AAA NAS CLI Exec
aaa authorization exec no AAA Exec

aaa authorization exec {default | list-name} method1 [method2...]

no aaa authorization exec {default | list-name}

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

AAA

default	Network
<i>method</i>	

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

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

AAA

cmd

15

TACACS+

none

VTY 0-4

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

aaa new-model	AAA
aaa authorization commands	AAA

Exec

no

Exec

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

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

AAA Exec

Exec

Exec

Exec

Exec

exec-1 Exec

RADIUS

none

VTY 0 – 4

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

aaa new-model	AAA
aaa authorization commands	AAA Exec

-	-

31.3

NAS

aaa accounting commands no

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

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

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

-	-

31.3.2 aaa accounting exec

accounting exec no NAS Exec **aaa**

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

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

default	Exec
<i>list-name</i>	Exec
<i>method</i>	none group 4
none	

aaa new-model	AAA
aaa authentication	AAA
accounting commands	Exec
-	-

31.3.3 aaa accounting network

aaa accounting network no

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

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

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

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

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

-	-

31.3.4 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	



	-	-

31.3.6 accounting commands

accounting commands

no

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

no accounting commands *level*

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

-	-

31.3.7 accounting exec

Exec

no

Exec

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

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

└───┘

└───┘

└───┘

Exec
Exec

Exec

Exec

└───┘

exec-1 Exec
none

RADIUS
VTY 0 – 4

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

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

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

aaa new-model	AAA
aaa accounting commands	AAA Exec

└───┘

└───┘

--	--

	-	-
--	---	---

31.4

AAA

31.4.1 aaa domain

no

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

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

	default	
	<i>domain-name</i>	

--	--

--	--

--	--

AAA default
 domain-name

32

--	--

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

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

--	--

--	--

--	--

31.4.2 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	

┌
└

-	-

31.4.3 access-limit

no access-limit

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

default

Network

Network

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

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

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

-	-

31.4.5 authentication dot1x

IEEE802.1x

no

authentication dot1x {default | list-name}

no authentication dot1x

default	
<i>list-name</i>	

default

```
IEEE802.1x
```

```
IEEE802.1x
```

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

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

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

-	-

31.4.6 authorization network

```
Network no
```

```
authorization network {default | list-name}
```

```
no authorization network
```

default	
<i>list-name</i>	

```
default
```

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

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

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

-	-

31.4.7 state

no

state {block | active}

no state

block	
active	

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

```
Ruijie(config-aaa-domain)# state block
```

--	--

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

AAA

aaa new-model

AAA

-	-

31.5 AAA

31.5.1 aaa group server

AAA no

aaa group server {radius | tacacs+} name

no aaa group server {radius | tacacs+} name

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

AAA RADIUS TACACS+

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

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

```
Ruijie# show aaa group
```

```
Group Name: ss
```

```
Group Type: radius
```

```
Referred: 1
```

```
Server List:
```

show aaa group	aaa

	-	-

31.5.2 ip vrf forwarding

AAA vrf no

ip vrf forwarding *vrf_name*

no ip vrf forwarding

	<i>vrf_name</i>	vrf

└──

└──

└──

vrf

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

	aaa group server	aaa
	show aaa group	aaa

└──

AAA no

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

no server

AAA

	-	-
--	---	---

31.5.4 show aaa group

AAA

show aaa group



31.6.1 aaa local authentication attempts

login

aaa local authentication attempts *max-attempts*

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

|

3

|

|

Login

D

|

| login

|

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

|

Show running-config	
Show aaa lockout	login

|

|

-	-

31.6.3 aaa new-model

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

aaa new-model

no aaa new-model

|

-	-

| AAA

|

|

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

|

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

	aaa authentication	
	aaa authorization	
	aaa accounting	

└───┘

	-	-

31.6.4 clear aaa local user lockout

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

	<word>	ID

└───┘

└───┘

31.6.5 debug aaa

AAA

no

debug aaa event

no debug aaa event

	-	-

┌

┌ EXEC

┌

┌

	-	-

┌

	-	-

31.6.6 show aaa method-list

AAA

show aaa method-list

	-	-

┌

~

```
AAA
```

```
AAA
```

```
Ruijie# show aaa method-list
Authentication method-list
aaa authentication login default group radius
aaa authentication ppp default group radius
aaa authentication dot1x default group radius
aaa authentication dot1x san-f local group angel group rain none
aaa authentication enable default group radius
Accounting method-list
aaa accounting network default start-stop group radius
Authorization method-list
aaa authorizing network default group radius
```

aaa authentication	
aaa authorization	
aaa accounting	

-	-

31.6.7 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

|

|

-	-

32 RADIUS

32.1 RADIUS

RADIUS

32.1.1 ip radius source-interface

```

radius                               ip radius source-interface
no RADIUS
ip radius source-interface interface
no radius source-interface

```

<i>Interface</i>	radius

```
radius
```

```

radius                               nas                               radius
ip radius

```

```
radius fastEthernet 0/0 ip radius
```

```

Ruijie(config)# ip radius source-interface
fastEthernet 0/0

```

radius-server host	RADIUS
ip address	ip

-	-

32.1.2 radius attribute

radius ttribute{<id> | **down-rate-limit** | **dscp** | **mac-limit** | **up-rate-limit**} **vendor-type** <type>

no radius attribute {<id>|**down-rate-limit** | **dscp** | **mac-limit** | **up-rate-limit**} **vendor-type**

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

id		type
1	max down-rate	1
2	qos	2
3	user ip	3
4	vlan id	4
5	version to client	5
6	net ip	6
7	user name	7
8	password	8
9	file-diractory	9
10	file-count	10
11	file-name-0	11
12	file-name-1	12
13	file-name-2	13
14	file-name-3	14
15	file-name-4	15
16	max up-rate	16
17	version to server	17
18	flux-max-high32	18
19	flux-max-low32	19

20	proxy-avoid	20
21	dailup-avoid	21
22	ip privilege	22
23	login privilege	42

id		type
1	max down-rate	76
2	qos	77
3	user ip	3
4	vlan id	4
5	version to client	5
6	net ip	6
7	user name	7
8	password	8
9	file-diractory	9
10	file-count	10
11	file-name-0	11
12	file-name-1	12
13	file-name-2	13
14	file-name-3	14
15	file-name-4	15
16	max up-rate	75
17	version to server	17
18	flux-max-high32	18
19	flux-max-low32	19
20	proxy-avoid	20
21	dailup-avoid	21
22	ip privilege	22
23	login privilege	42
24	limit to user number	50

┌

```

max up-rate          211
Ruijie(config)# radius attribute 16 vendor-type 211
    
```

┌

radius set qos cos	radius qos cos

┌

┌

-	-

32.1.3 radius-server attribute 31

```

RADIUS Calling-Station-ID          MAC
radius-server attribute 31          no
radius-server attribute 31 mac format {ietf | normal | unformatted}
no radius-server attribute 31 mac format
    
```

┌

ietf	ETF RFC3580 - 00-D0-F8-33-22-AC
normal	MAC 00d0.f833.22ac
unformatted	00d0f83322ac

┌

unformatted

┌

┌

```

RADIUS          802.1x          IETF
Calling-Station-ID          IETF
    
```

┌

```

RADIUS Calling-Station-ID          IETF
Ruijie(config)# radius-server attribute 31 mac format ietf
    
```



-	-

32.1.5 radius-server host

```
RADIUS
RADIUS
radius-server no
```

radius-server host { *ipv4-address* | *ipv6-address*} [**auth-port** *port-number*] [**acct-port** *port-number*]

no radius-server host { *ipv4-address* | *ipv6-address*}

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

```
RADIUS
```

```
RADIUS AAA RADIUS
radius-server RADIUS
```

```
IPv4 RADIUS
Ruijie(config)# radius-server host 192.168.12.1
IPv6 RADIUS
Ruijie(config)# radius-server host 3000::100
```

aaa authentication	AAA
radius-server key	RADIUS

radius-server retransmit	RADIUS
radius-server timeout	RADIUS

-	-
---	---

32.1.6 radius-server key

radius-server key RADIUS
no

radius-server key *text-string*

no radius-server key

<i>text-string</i>	
--------------------	--

RADIUS RADIUS

RADIUS

RADIUS aaa

Ruijie(config)# **radius-server key** aaa

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

--	--

RADIUS

	-	-
--	---	---

radius-server timeout *seconds*

no radius-server timeout



seconds

RADIUS

└──

└──

qos cos dscp

└──

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

└──

[Redacted]	
radius vendor-specific extend	Radius id

└──

└──

[Redacted]	
-	-

RADIUS

show radius parameter

-	-

|

|

|

radius

|

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

|

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

|

|

-	-

┌

┌

┌

radius

┌

```
Ruijie# show radius server
server ip : 192.168.4.12
acct port: 23
authen port: 77
server state: ready
server ip : 192.168.4.13
acct port: 45
authen port: 74
server state: ready
```

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

┌

┌

-	-

32.2.4 show radius vendor-specific

RADIUS

show radius vendor-specific

┌

-	-

┌

|
|
|

|
|
|

radius

```
Ruijie# show radius vendor-specific
id   vendor-specific      type-value
-----
1    max down-rate        76
2    qos                  77
3    user ip              3
4    vlan id              4
5    version to client    5
6    net ip               6
7    user name            7
8    password             8
```

RADIUS

L

L

-	-

33 TACACS+

33.1 TACACS+

33.1.1 aaa group server tacacs+

TACACS+

TACACS+

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

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

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

```
TACACS+
```

```
TACACS+
```

```

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

server	TACACS+	server
ip vrf forwarding	TACACS+	VRF

-		-

33.1.2 ip tacacs source-interface

TACACS+

ip tacacs source-interface *interface*

no ip tacacs source-interface



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

TACACS+

TACACS+ vrf

```

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

aaa group server tacacs+	TACACS+
server	TACACS+ server

--	--

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

```
TACACS+
```

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



|

|

TACACS+ AAA TACACS+
tacacs-server TACACS+

|

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

|

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

|

|

```

key                               host      key

```

```

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

```

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

-	-

33.1.7 tacacs-server timeout

TACACS+

tacacs-server timeout *seconds*

no tacacs-server timeout

--	--

seconds

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

	-	

33.2 TACACS+

33.2.1 debug tacacs+

TACACS+ no TACACS+

debug tacacs+

no debug tacacs+

--	--

33.2.2 show tacacs

TACACS+

show tacacs

-	-

|

|

|

TACACS+

```
Ruijie# show tacacs
Tacacs+ Server : 172.19.192.80/49
Socket Opens: 0
Socket Closes: 0
Total Packets Sent: 0
Total Packets Recv: 0
Reference Count: 0
```

tacacs-server host	TACACS+

|

-	-

34 SSH

34.1 SSH

34.1.1 crypto key generate

crypto key generate {rsa | dsa}

rsa	RSA
dsa	DSA

SSH Server

```

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

```

```

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

```

show ip ssh	SSH Server
crypto key zeroize {rsa dsa}	DSA RSA SSH Server

RGOS10.1

<i>retry times</i>	

3 no ip ssh

authentication-retries

SSH Server SSH Server

show ip ssh SSH Server

2

Ruijie# **configure terminal**

Ruijie(config)# **ip ssh ssh authentication-retries 2**

show ip ssh	SSH Server

RGOS10.1

-	-

34.1.4 ip ssh time-out

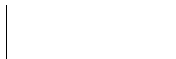
SSH Server no

ip ssh time-out *time*

no ip ssh time-out

<i>time</i>	

120s no ip ssh time-out



SSH Server
120s

2

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

```
show ip ssh
```

```
SSH Server
```

```
RGOS10.1
```

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

34.2.2 show crypto key mypubkey

SSH Server

show crypto key mypubkey {rsa/dsa}

	rsa	RSA
	dsa	DSA

SSH Server

Ruijie# **show crypto key mypubkey rsa**

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

34.2.3 show ip ssh

SSH Server

show ip ssh

	-	-

└───┘

└───┘

SSH Server	SSH Server
SSH	
r	SSH

└───┘

Ruijie# **show ip ssh**

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

└───┘

RGOS10.1

-	-

34.2.4 show ssh

SSH

show ssh

-	-

└───┘

|

|

SSH

VTY

SSH

|

Ruijie# **show ssh**

|

-	-

|

RGOS10.1

|

--	--

35 CPU

35.1

35.1.1 cpu-protect cpu bandwidth *bandwidth_value*

CPU

cpu-protect cpu bandwidth *bandwidth_value*

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

S2900 CPU 100000kbps

CPU 2000 kbps
Ruijie# **configure terminal**

	-	-

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

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

<i>value</i>		200 51200

2000

```

CPU          2000 kbps
Ruijie#configure terminal
Ruijie(config)# cpu-protect mac-address storm-control enable 3000
Ruijie(config)#end
Ruijie# show cpu-protect mac-address storm-control
%MAC address storm control state: enable
%MAC address storm control rate: 3000(address/second)

```

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

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

S2900 7 100000kbps 1000kbps

┌

┌

```

              7          312(kbps)
Ruijie#configure terminal
Ruijie(config)# cpu-protect traffic-class id 7 bandwidth 312
Ruijie(config)#end
Ruijie# show cpu-protect traffic-class id 7
%*****traffic class      bandwidth(kbps)*****
              7          312
    
```

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

┌

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35.1.4 cpu-protect traffic-class all bandwidth *bandwidth_value*

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

--	--

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	<i>bandwidth_value</i>			32 131072(kbps)
	S2900	7	100000kbps	1000kbps

S2900



CPU

		-	-

35.2

35.2.1 show cpu-protect cpu

CPU

show cpu-protect cpu

--	--	--	--

	-	-
--	---	---

35.2.2 show cpu-protect traffic-class id id_num

show cpu-protect traffic-class id *id_num*

	<i>idt_num</i>	0-7

|

|

|

```

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

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

-	-
---	---

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```

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

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

┌

-	-
---	---

35.2.4 show cpu-protect type packet-type

show cpu-protect type *packet-type*

--	--

-	-
---	---

show cpu-protect type all

```

%*****packet type          traffic-class*****
      bpdud                   6
      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
  
```

CPU

```
    ipv4-uc      4
    ipv6-uc      4
    other        0
```

show cpu-protect traffic-class id <i>id_num</i>	id_num	0	7
show cpu-protect traffic-class all			Q②



36 GSN

36.1

36.1.1 security address-bind enable

security address-bind enable

no security address-bind enable

	-	-

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AP AP

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GSN

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

┌

	security gsn enable	GSN

┌

RGOS10.1

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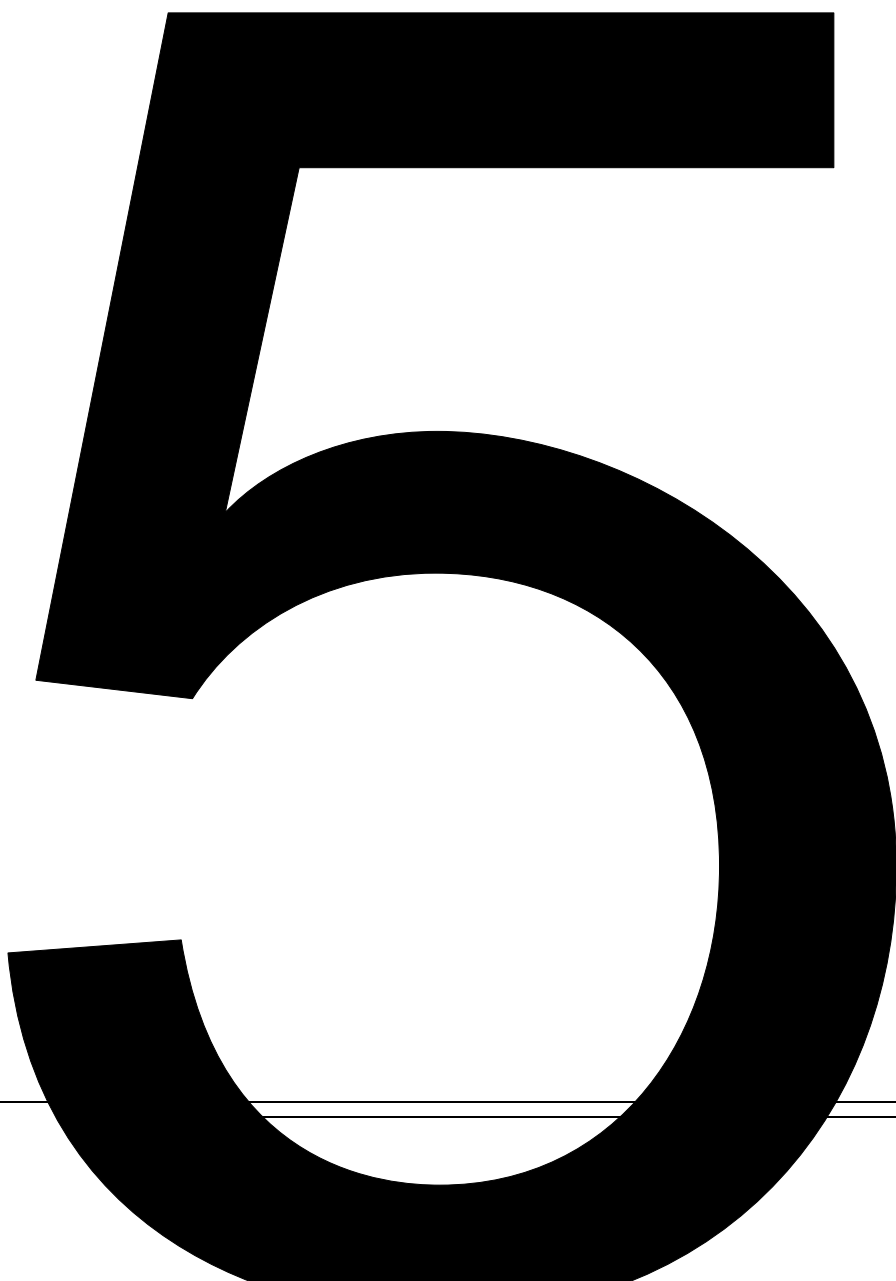
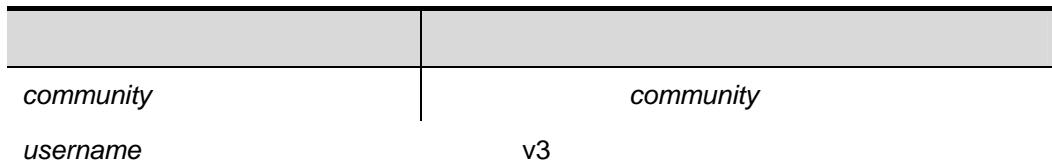
	-	-

36.1.2 security community

smp

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

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



5

show security event interval

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

[Redacted]	
show security event interval	

RGOS10.1

[Redacted]	
-	-

36.1.4 security gsn enable

GSN no

security gsn enable

no security gsn enable

[Redacted]	
-	-

GSN

	-	-
	RGOS10.1	
	-	-

36.1.5 smp-server host

smp-server ip

smp-server host *ip-address*

no smp-server host

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

smp server

show smp-server

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

	show smp-server	smp server

RGOS10.1

	-	-

36.2

36.2.1 show security evnet interval

-	-

┌

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┌

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

security event interval <i>interval</i>	

RGOS10.1

-	-

36.2.2 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

-	-

37 DAI

37.1 VLAN DAI

37.1.1 ip arp inspection vlan

```

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

```

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

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

<i>vlan-id</i>		vlan

```
VLAN  DAI
```

```
DAI
```

```

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

```

show ip arp inspection vlan	VLAN DAI

-	-

37.2

37.2.1 ip arp inspection trust

ip arp inspection trust no

ip arp inspection trust

no ip arp inspection trust

-	-

┌

┌

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

gigabitEthernet 0/19

Ruijie(config)# **interface gigabitEthernet 0/19**

Ruijie(config-if)# **no ip arp inspection trust**

37.3.1 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	
	-	-
	-	-
	-	-

37.4 DHCP Snooping

ARP	VLAN	DAI	ARP	DHCP Snooping
				.

38

arp

arp

show anti-arp-spoofing

|

|

|

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

anti-arp-spoofing ip	arp

|

-	-

39 IP Source Guard

39.1 IP Source Guard

39.1.1 ip source binding

IP

no

show ip source binding		IP
	-	-

39.2 IP Source Guard

39.2.1 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

```

-	-

39.3 IP Source Guard

39.3.1 show ip source binding

IP

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

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

┌

┌

-	-

39.3.2 show ip verify source

IP Source Guard

show ip verify source [interface *interface-id*]

┌

<i>interface-id</i>	

┌

┌

┌

interface

IP Source Guard

“IP source guard is not configured on the interface FastEthernet 0/10”

IP Source Guard (**mode**)

- > **inactive-no-snooping-vlan** DHCP Snooping
- > **inactive-trust-port** DHCP Snooping
- > **active** DHCP Snooping

|

|

-	-

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

<i>percent_vaule</i>	1 100

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

IP	MAC	8
200		

NFPP

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# arp-guard attack-threshold per-src-ip 2
Ruijie(config-nfpp)# arp-guard attack-threshold per-src-mac 3
Ruijie(config-nfpp)# arp-guard attack-threshold per-port 50
```

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

-	-

40.3.2 arp-guard enable

ARP

arp-guard enable

-	-

ARP

NFPP

|

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

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

|

|

-	-

40.3.3 arp-guard isolate-period

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

|

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

|

0

| NFPP

|

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

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

|

|

-	-

40.3.4 arp-guard monitor-period

arp-guard monitor-period *seconds*

|

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

|

600

|

NFPP

|

>

0

0

>

|

Ruijie(config)# **nfpp**

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

|

show nfpp arp-guard summary	
show nfpp arp-guard hosts	
clear nfpp arp-guard hosts	

|

40.3.5 arp-guard monitored-host-limit

arp-guard monitored-host-limit *number*

<i>number</i>		1
	4294967295	

1000

NFPP

1000

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

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

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

show nfpp arp-guard summary	

-	-

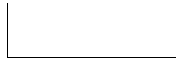
per-src-ip	IP
per-src-mac	MAC
per-port	
<i>pps</i>	[1,9999]

IP	MAC	4
100		

NFPP

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# arp-guard rate-limit per-src-ip 2
Ruijie(config-nfpp)# arp-guard rate-limit per-src-mac 3
Ruijie(config-nfpp)# arp-guard rate-limit per-port 50
```





NFPP

10

15

ARP

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	

-	-

40.3.9 clear nfpp arp-guard scan

ARP

clear nfpp arp-guard scan

-	-

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

--	--

	-	-

40.3.10 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	

40.3.11 nfpp arp-guard isolate-period

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

--	--	--

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

└───┘

└───┘

└───┘

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

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

└───┘

10.4	

40.3.12 nfpp arp-guard policy

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

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

└───┘

```
Ruijie(config)# interface G 0/1  
Ruijie(config-if)# nfpp arp-guard policy per-src-ip 2 10  
Ruijie(config-if)# nfpp arp-guard policy per-src-mac 3 10  
Ruijie(config-if)# nfpp arp-guard policy per-port 50 100
```

arp-guard attack-threshold

arp-guard rate-limit

show nfpp arp-guard summary

show nfpp arp-guard hosts

clear nfpp arp-guard hosts

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

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

10.4	

40.4 DHCP

40.4.1 dhcp-guard attack-threshold

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

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

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

┌

	-	-

40.4.2 dhcp-guard enable

DHCP

dhcp-guard enable

	-	-

┌

DHCP

┌

NFPP

┌

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

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

┌

--	--	--

	-	-
--	---	---

40.4.3 dhcp-guard isolate-period

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

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

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

600

NFPP

```
> 0
0
>
```

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcp-guard monitor-period 180
```



NFPP

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

nfpp dhcp-guard policy	
show nfpp dhcp-guard summary	

-	-

40.4.7 clear nfpp dhcp-guard hosts

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

<i>vid</i>	
<i>interface-id</i>	
<i>mac-address</i>	MAC - D2Df 0.48 ref341.6 3156(- D2Df 00.1 ref246.84 515.72)

	show nfpp dhcp-guard hosts	
	-	-

40.4.8 nfpp dhcp-guard enable

DHCP

nfpp dhcp-guard enable

	-	-

DHCP

┌

└

DHCP

DHCP

┌

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

	dhcp-guard enable	DHCP
	show nfpp dhcp-guard summary	

┌

	10.4	

40.4.9 nfpp dhcp-guard isolate-period

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

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

└───┘

└───┘

└───┘

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

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

└───┘

10.4	

40.4.10 nfpp dhcp-guard policy

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

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

└───┘

|

|

|

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp dhcp-guard policy per-src-mac 3 10
Ruijie(config-if)# nfpp dhcp-guard policy per-port 50 100
```

|

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

|

|

10.4	

40.5 DHCPv6

40.5.1 dhcpv6-guard attack-threshold

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

|

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

|

MAC 10 300

|

NFPP

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

nfpp dhcpv6-guard policy

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

40.5.3 dhcpv6-guard isolate-period

dhcpv6-guard isolate-period {seconds | permanent}

seconds	0 [30, 86400]
permanent	

0

NFPP

Ruijie(config)# **nfpp**

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

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

	10.4
--	------

40.5.4 dhcpv6-guard monitor-period

dhcpv6-guard monitor- period seconds

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

	600
--	-----

	NFPP
--	------

>	0
---	---

	0
--	---

>	
---	--

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

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

--	--

10.4	

40.5.5 dhcpv6-guard monitored-host-limit

dhcpv6-guard monitored-host-limit *number*

<i>number</i>	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. " 0


```
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	

40.5.8 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	

40.5.9 nfpp dhcpv6-guard isolate-period

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

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

└──

└──

└──

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

dhcpv6-guard isolate-period	

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

└───┘

└───┘

└───┘

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp dhcpv6-guard policy per-src-mac 3 10
Ruijie(config-if)# nfpp dhcpv6-guard policy per-port 50 100
```

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

└───┘

10.4	

40.6 ICMP

40.6.1 icmp-guard attack-threshold

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



per-src-ip

IP

NFPP

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

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

-	-

40.6.3 icmp-guard isolate-period

icmp-guard isolate-period {seconds | permanent}

seconds	0 [30, 86400]
permanent	

0

NFPP



nfpp icmp-guard isolate-period

	-	-

40.6.5 icmp-guard monitored-host-limit

icmp-guard monitored-host-limit *number*

<i>number</i>	4294967295	1

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

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

show nfpp icmp-guard summary		

-		-

40.6.6 icmp-guard rate-limit

NFPP

|
|
|

|
|
|

|
|
|

VLAN 1 g 0/1

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



```
show nfpp icmp-guard summary
```

10.4	

40.6.10 nfpp icmp-guard isolate-period

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

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

0	

permanent	
------------------	--

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

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

icmp-guard isolate-period	
----------------------------------	--

```
show nfpp icmp-guard summary
```

10.4	

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

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

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp icmp-guard policy per-src-ip 5 10
Ruijie(config-if)# nfpp icmp-guard policy per-port 100 200
```

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

10.4	

40.7 ND

40.7.1 nd-guard attack-threshold

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

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

		/		30
	30	/		30

NFPP

```

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

nfpp nd-guard policy

└─┘

ND

└─┘

NFPP

└─┘

└─┘

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

└─┘

nfp nd-guard enable	ND
show nfp nd-guard summary	

└─┘

└─┘

10.4	

40.7.3 nd-guard rate-limit

└─┘

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

└─┘

```
15 / 15
15 / 15
```

└─┘

NFPP

└─┘

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# nd-guard rate-limit per-port ns-na 10
Ruijie(config-nfpp)# nd-guard rate-limit per-port rs 5
Ruijie(config-nfpp)# nd-guard rate-limit per-port ra-redirect 5
```

nfpp nd-guard policy	
show nfpp nd-guard summary	

10.4	

40.7.4 nfpp nd-guard enable

ND

nfpp nd-guard enable

-	-

ND

ND

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

nd-guard enable	ND
show nfpp nd-guard summary	

10.4	

40.7.5 nfpp nd-guard policy

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

ns-na	
rs	

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

└───┘

	10.4	

40.8 NFPP

40.8.1 clear nfpp log

NFPP

clear nfpp log



40.8.2 log-buffer entries

NFPP

log-buffer entries *number*

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

256

NFPP

```

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

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

10.4	

40.8.3 log-buffer logs

NFPP

log-buffer logs *number_of_message interval length_in_seconds*

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

33_33

Protocol

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

Reason 5

- › DoS
- › ISOLATED
- › ISOLATE_FAILED
- › SCAN
- › PORT_ATTACKED



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

ARP

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

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

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

ARP scan table has 4 record(s).

ARP 4

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

VLAN	interface	IP address	MAC address	timestamp
1	Gi0/1	N/A	0000.0000.0001	2008-01-23 16:23:10
2	Gi0/2	1.1.1.1	0000.0000.0002	2008-01-23 16:24:10
3	Gi0/3	N/A	0000.0000.0003	2008-01-23 16:25:10
4	Gi0/4	N/A	0000.0000.0004	2008-01-23 16:26:10

Total 4 record(s)

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

Ruijie# **show nfpp arp-guard scan vlan 1 interface G 0/1**

0000.0000.0001

VLAN	interface	IP address	MAC address	timestamp
----	-----	-----	-----	-----
1	Gi0/1	N/A	0000.0000.0001	2008-01-23 16:23:10
Total 1 record(s)				

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

-	-

40.9.3 show nfpp arp-guard summary

show nfpp arp-guard summary

--	--

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

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

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

-	-
---	---

40.10 DHCP

40.10 -1 show nfpp dhcp-guard hosts

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

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

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

```

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

remain-time(seconds)

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

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

```

VLAN  interface  MAC address  remain-time(seconds)
----  -
1     gi0/2      0000.0000.0001  10
*2    gi0/1      0000.0000.0002  20
Total  2 host(s)
  
```

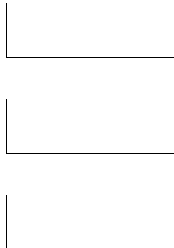
clear nfpp dhcp-guard hosts	

--	--

40.10.2 show nfpp dhcp-guard summary

show nfpp dhcp-guard summary

-	-



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

Format of column Rate-limit and Attack-threshold is per-src-ip /per-src-mac/per-port.

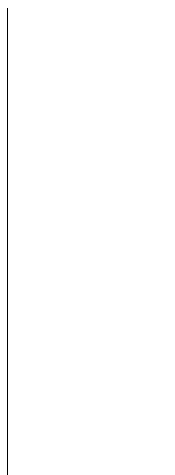
Interface	Status	Isolate-period	Rate-limit	Attack-threshold
Global	Enable	300	-/5/150	-/10/300
Gi 0/1	Enable	180	-/6/-	-/8/-
Gi 0/2	Disable	200	-/5/30	-/10/50

Maximum count of monitored hosts: 1000

Monitor period 300s

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

dhcp-guard attack-threshold	
dhcp-guard enable	DHCP
dhcp-guard isolate-period	
dhcp-guard monitor-per0.01it	



```

                                remain-time(seconds)
Ruijie# show nfpp dhcpv6-guard hosts
If column 1 shows '*', it means "hardware failed to isolate host".
VLAN  interface  MAC address  remain-time(seconds)
----  -
1     gi0/2      0000.0000.0001  10
*2    gi0/1      0000.0000.0002  20
Total 2 host(s)
    
```

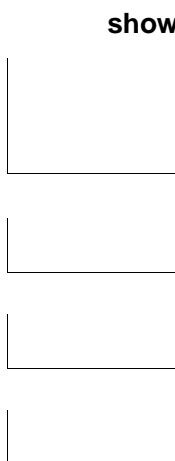


clear nfpp dhcpv6-guard hosts	



10.4	

40.11.2 show nfpp dhcpv6-guard summary



show nfpp dhcpv6-guard summary

-	-

```

Ruijie# show nfpp dhcpv6-guard summary
Format of column Rate-limit and Attack-threshold is per-src-ip
/per-src-mac/per-port.
    
```

Global	Enable	300	-/5/150	-/10/300
Gi 0/1	Enable	180	-/6/-	-/8/-
Gi 0/2	Disable	200	-/5/30	-/10/50

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

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

```

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

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

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

```

VLAN  interface IP address    remain-time(s)
----  -
1     Gi0/1     1.1.1.1     110
2     Gi0/2     1.1.2.1     61
Total 2 host(s)
    
```

clear nfpp icmp-guard hosts	

10.4	

40.12.2 show nfpp icmp-guard summary

show nfpp icmp-guard summary

	-	-

|

|

|

nfpp icmp-guard isolate-period

nfpp icmp-guard policy

NFPP

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

10.4	

41 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

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

B	MAC	6	P		35
C		12	Q	IP	36
D	VLAN tag	14	R	ip	38
E	DSAP()	18	S	ip	42
F	SSAP()	19	T	TCP	46
G	Ctrl	20	U	TCP	48
H	Org Code	21	V		50
I					

4) Expert 2700 - 2899

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

> Ethernet-type cos

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

> Protocol

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

> Expert

Internet Control Message Protocol (ICMP)

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

Transmission Control Protocol (TCP)

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

User Datagram Protocol (UDP)

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

5)

access-list *list-remark text*

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

destination-wildcard Å 640D040D1445EE>6<472130F4D7168()8 re f 10.467 -0.006 Td [<18791B5B

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

ACL

access-list

- › dod-host-prohibited
- › dod-net-prohibited
- › echo
- › echo-reply
- › fragment-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
   1
```

```
Ruijie(config)# access-list 702 deny host 00d0f8000c0c any aarp
```

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

```
Ruijie(config-if)# mac access-group 702 in
```

```
4 Expert
   Expert Extended ACL      ACL      IP
```

```
192.168.12.3      MAC      00d0.f800.0044      TCP
```

```
Ruijie(config)# access-list 2702 deny tcp host
```

```
192.168.12.3 mac 00d0.f800.0044 any any
```

```
Ruijie(config)# access-list 2702 permit any any any any
```

```
Ruijie(config)# show access-lists
```

```
expert access-list extended 2702
```

```
10 deny tcp host 192.168.12.3 mac 00d0.f800.0044 any any
```

```
10 permit any any any any
```

```
show access-lists
```

41.1.2 deny

(deny)

1 IP

[sn] deny {source source-wildcard 1

[sn] d{ } [(s)-s(s)e(s)(t/c2)3a7(0)1/18000011d(3)5722280H6/4276671850j34p1006.046

destination-wildcard | **host destination** | **any** {**host destination-mac-address** | **any**}
[time-range time-range-name]

b) protocol

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

› **Transmission Control Protocol (TCP)**

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

› **Address Resolution Protocol (ARP)**

[sn] **deny arp** {**vid vlan-id**}[*source-mac-address source-wildcard* | **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] **deny protocol**{*source-ipv6-prefix/prefix-length* | **any** | **host source-ipv6-address** }
 {*destination-ipv6-prefix / prefix-length* | **any**| *host destination-ipv6-address*} [**dscp dscp**]
[flow-label flow-label] [**fragments**] [**range lower upper**] [**time-range**]

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

› **Transmission Control Protocol (TCP)**

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

› **User Datagram Protocol (UDP)**

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

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

1

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

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

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

41.1.3 expert access-group

EXPERT ACL

no

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

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

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

	in	
	out	

└───

Expert ACL

└───

show expert access-lists

```

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

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

show expert access-lists	

V10.0	V10.0

41.1.5 ip access-group

ip access-group no

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

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

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

ACL



ip access-group



fastEthernet0/0 120

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

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



```

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 ip access-lists	IP

V10.0	V10.0

41.1.7 ip access-list resequence

```

ip      ACL          IPV6    ACL
no
    
```

ip access-list resequence {id | name} start-sn inc-sn

no ip access-list resequence {id | name}

<i>id</i>	ACL
<i>name</i>	ACL
<i>start-sn</i>	
<i>inc-sn</i>	

```

start-sn 10
inc-sn 10
    
```

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

|

|

ACL
traffic-filter

show ipv6

|

```

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

|

show access-group	ACL

|

|

V10.0	V10.0

41.1.9 ipv6 access-list

```

IPV6 ACL no ACL
ipv6 access-list name
no ipv6 access-list name
    
```

|

name	ACL

|

|

|

show access-lists

|

```

IPV6 ACL
Ruijie(config)# ipv6 access-list v6-acl
Ruijie(config-ipv6-nacl)# show access-lists
ipv6 access-list extended v6-acl
Ruijie(config-ipv6-nacl)#
    
```

	show ipv6 access-lists	IPV6



	V10.0	V10.0

41.1.10 MAC access-group

MAC ACL

no

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

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

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

	V10.0	V10.0

41.1.11 MAC access-list

MAC ACL

V10.0	V10.0

41.1.13 permit

(permit)

1) IP

[sn] **permit** {source source-wildcard | host source | any}

2) IP

[sn] **permit protocol** source source-wildcard destination destination-wildcard [precedence precedence] [tos tos] [fragments] [range lower upper] [time-range time-range-name]

IP

> Internet Control Message Protocol (ICMP)

[sn] **permit icmp** {source source-wildcard | host source | any} {destination destination-wildcard | host destination | any} [icmp-type] [[icmp-type [icmp-code]] | [icmp-message]] [precedence precedence] [tos tos] [fragments] [time-range time-range-name]

> Transmission Control Protocol (TCP)

[sn] **permit tcp** {source source-wildcard | host source | any} [operator port [port]] {destination destination-wildcard | host destination | 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** {source source-wildcard | host source | any} [operator port [port]] {destination destination-wildcard | host destination | any} [operator port [port]]

a host o ild

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	
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
deny	ACL

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

41.2

41.2.1 show access-group

ACL

show access-group [interface <interface>]

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

ACL

ACL

```
Ruijie# show access-group
ip access-list standard ipstd3
Applied On interface GigabitEthernet 0/1.
ip access-list standard ipstd4
Applied On interface GigabitEthernet 0/2.
ip access-list extended 101
Applied On interface GigabitEthernet 0/3.
ip access-list extended 102
Applied On interface GigabitEthernet 0/8.
```

ip access-group	ip
mac access-group	MAC
expert access-group	Expert
ipv6 traffic-filter	IPV6

V10.0	V10.0
-------	-------

41.2.2 show access-lists

ACL ACL

show access-lists [*id* | *name*]

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

acl *id* *name* ACL

```
Ruijie# show access-lists n_acl
ip access-list standard n_acl
Ruijie# show access-lists 102
ip access-list extended 102
Ruijie# show access-lists
ip access-list standard n_acl
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

```
Ruijie# show expert access-group interface gigabitethernet 0/2
expert access-group ee in
Applied On interface GigabitEthernet 0/2.
```

expert access-list	Expert ACL

V10.0	V10.0

41.2.4 show ip access-group

IP ACL

show ip access-group[interface <interface>]

V10.0	V10.0
-------	-------

41.2.5 show ipv6 traffic-filter

IPV6

show ipv6 traffic-filter [interface <interface>]

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

┌

┌

┌

IPv6 ACL

IPv6 ACL

```
Ruijie# show ipv6 traffic-filter interface gigabitethernet 0/4
ipv6 traffic-filter v6 in
Applied On interface GigabitEthernet 0/4.
```

ipv6 access-list	IPV6 ACL
------------------	----------

┌

V10.0	V10.0
-------	-------

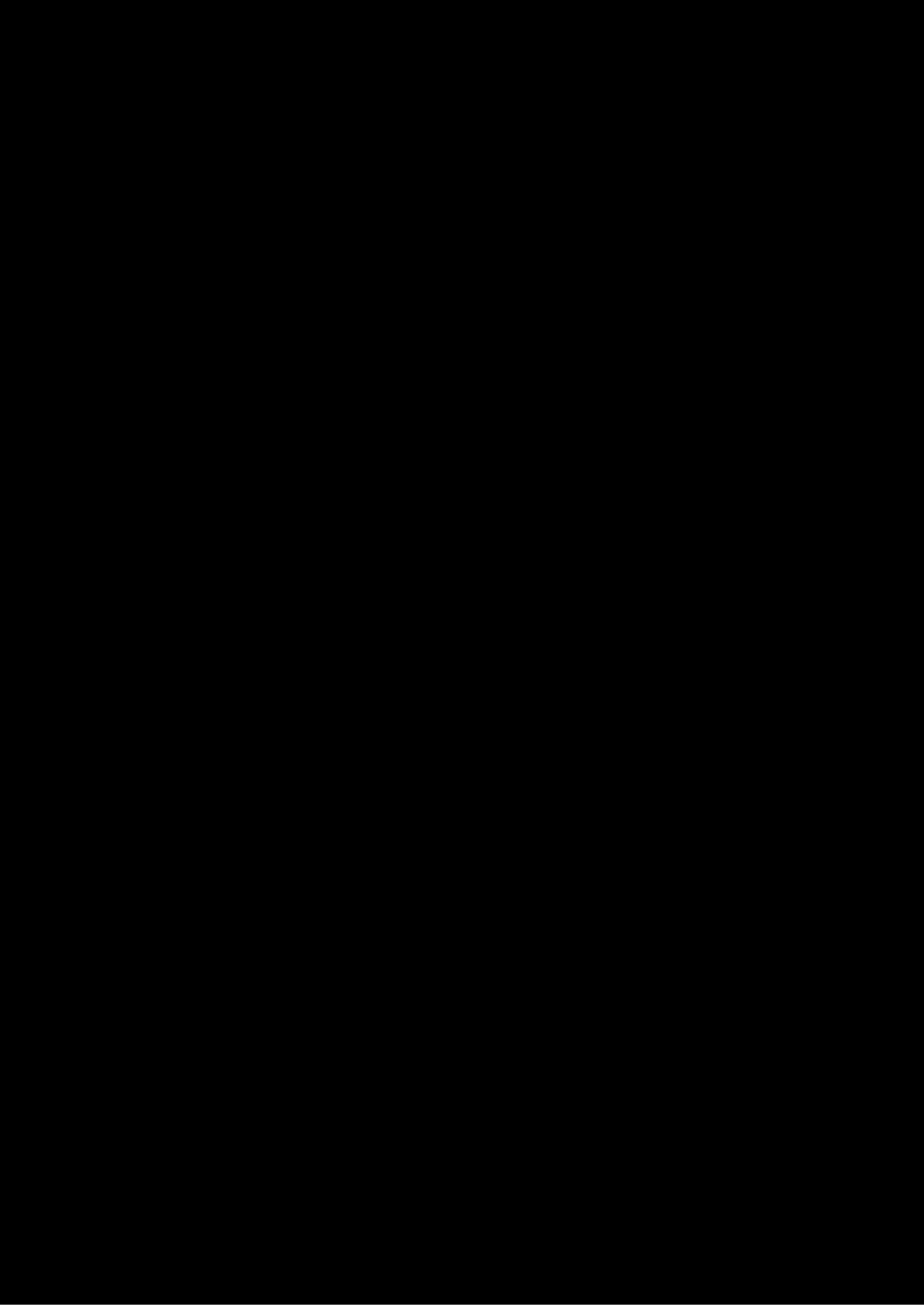
41.2.6 show mac access-group

MAC

show mac access-group[interface <interface>]

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

┌



	show secu-acl	

└───┘

	V10.2	V10.2

41.3.2 security global access-group

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

no security global access-group

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

└───┘

└───┘

└───┘

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

	show secu-acl	

└───┘

	V10.2	V10.2

41.3.3 security uplink enable

security uplink enable

no security uplink enable

	-	-

|

|

|

| Ruijie(config-if)#**security uplink enable**

	show secu-acl	

```
Ruijie(config-if)#show secu-acl
```

```
Ports      Type      access-group
```

```
-----
```

```
Fa0/4      security  50
```

```
Global     security  60
```

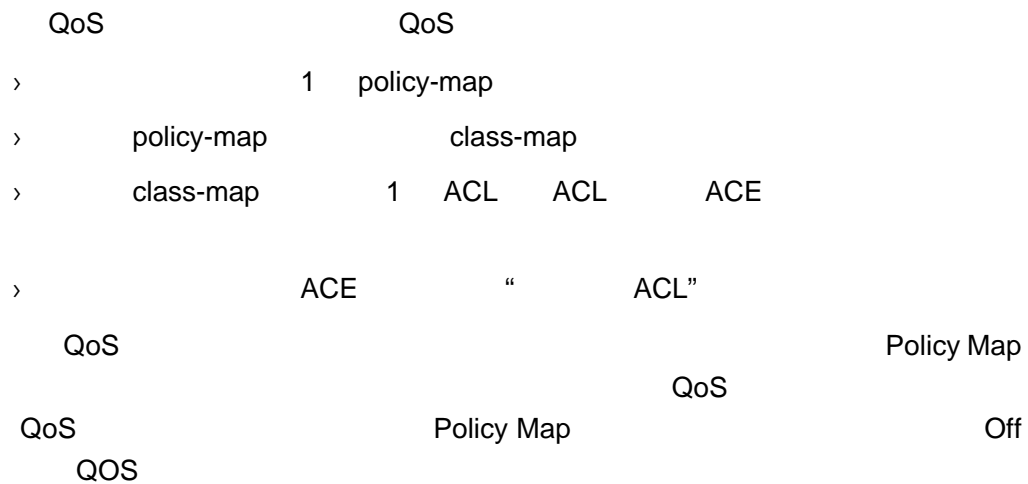
```
Fa0/6      uplink    --
```

security global access-group	
security access-group	
security uplink enable	

V10.2	V10.2

42 QOS

42.1



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

IP-Precedence to DSCP

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

DSCP to CoS

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

/

S29

DRR Weight Range

42.2

42.2.1 class maps

ACL

ip access-list {**extended** | **standard**} { *acl-id* | *acl-name* }

mac access-list extended {*acl-id* | *acl-name*}


expert access-list extended {*acl-id* | *acl-name*}

ipv6 access-list extended *acl-name*

```
4      class-map,   cm
Ruijie(config)# class-map cm

5      ACL
Ruijie(config-cmap)# match access-group me

6      class-map
Ruijie(config-cmap)# exit
```



	show mls qos queueing	-
	-	-

42.2.3 interface rate-limit

`rate-limit {input | output}`

QoS

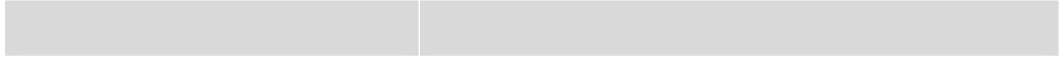
	-	-
--	---	---

42.2.4 mls qos cos

CoS

mls qos cos *default-cos*

no mls qos cos



dscp	
no	

┌

┌

┌

```
Ruijie(config)# mls qos map cos-dscp 8 10 16 18 24 26 32 34
```

show mls qos maps	dscp-cos maps,dscp-cos maps ip-prec-dscp maps
--------------------------	--

┌

-	-
---	---

42.2.6 mls qos map dscp-cos

DSCP CoS

mls qos map dscp-cos *dscp-list to cos*

no mls qos map dscp-cos

<i>dscp-list</i>	
cos	0 7
no	

┌

┌

```
Ruijie(config)# mls qos mls qos
```

42.2.8 mls qos scheduler

mls qos scheduler [sp | wrr | drr]

no mls qos scheduler

sp		
wrr		
drr		
no		

|

wrr

|

|

|

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

|

show mls qos scheduler		-

|

|

-		-

42.2.9 mls qos trust

Qos

mls qos trust [cos | dscp | ip-precedence]

no mls qos trust

cos	Qos	CoS

policy-map-name

[no] priority-queue

priority-queue	SP (S2900)
no priority-queue	WRR

┌

WRR

┌

┌

┌

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

┌

show mls qos queueing	-

┌

┌

-	-

42.2.12 priority-queue cos-map

CoS

QAcenf7448Dce-486VhaDUCeCP48PaUOC3hDu48PaVA566YPC47PCCF48PaUOC7hD

|

|

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

|

show mls qos queueing	-

|

|

-	-

42.2.13 service-policy

policy map

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

no service-policy {input | output}

|

<i>policy-map-name</i>	polycymap
no	policy map

|

|

|

|

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

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

|

show mls qos interface	-

|

S2900 input

-	-

42.3

42.3.1 show class-map

class map

show class-map [*class-name*]

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

class map

Ruijie# **show class-map**

-	-

S2900

-	-

42.3.2 show policy-map

QoS policy map [class *class-name*]

show policy-map [*policy-name* [**class** *class-name*]]

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

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

policy name

Ruijie# **show policy-map**

-	-

-	-

42.3.3 show mls qos interface

QoS

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

<i>interface-id</i>	
policers	police

QoS

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

--	--

	-	-
	-	-

42.3.4 show mls qos maps

dscp-cos maps, dscp-cos maps ip-prec-dscp maps

show mls qos maps [cos-dscp | dscp-cos | ip-prec-dscp]

cos-dscp	cos-dscp maps
dscp-cos	dscp-cos maps
ip-prec-dscp	ip-prec-dscp maps

dscp-cos maps dscp-cos maps ip-prec-dscp maps

Ruijie# **show mls qos maps**



show mls qos queueing

	-	-

|

|

|

Ruijie#

	-	-

┌

	-	-

42.3.7 show mls qos scheduler

show mls qos scheduler

	-	-

┌

┌

┌

Ruijie# show mls qos scheduler

	-	-

┌

	-	-

43 Voice VLAN

43.1

43.1.1 voice vlan

```
      Voice VLAN          VLAN  Voice VLAN          no
Voice VLAN
voice vlan vlan-id
no voice vlan
```

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

```
      Voice VLAN          Voice VLAN          Voice VLAN ID
r      Voice VLAN          VLAN          Voice VLAN ID
                                VLAN          VLAN
```

```
      Voice VLAN          Voice VLAN
```

show voice vlan

Voice VLAN
43-2

43.1.3 voice vlan cos

Voice VLAN

CoS

no

voice vlan cos *cos-value*

no voice vlan cos

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

cos-value 6

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

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

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

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

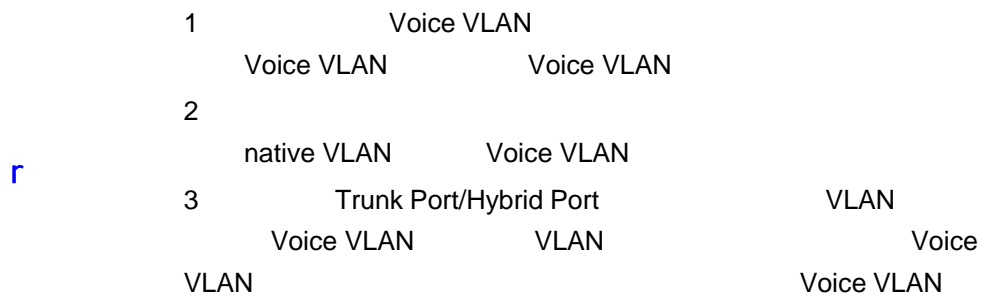
```
Ruijie(config)# voice vlan dscp 40
```

--	--

show voice vlan

Voice VLAN


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



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

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

show voice vlan	Voice VLAN

[Redacted]

|

Voice VLAN

Voice VLAN

```

1          Voice VLAN
Ruijie(config)# show voice vlan
Voice VLAN status: ENABLE           //Voice VLAN
Voice VLAN ID: 2                    //Voice VLAN ID
Voice VLAN security mode: Security //
Voice VLAN aging time: 5 minutes   //
Voice VLAN cos: 6                   //      CoS
Voice VLAN dscp: 46                 //      DSCP
Current voice vlan enabled port mode: //      Voice VLAN
PORT                                MODE
-----
Fa0/1                                Auto
    
```

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

10.4	
------	--

43.2.2 show voice vlan oui

OUI OUI

show voice vlan oui

Voice VLAN

--	--	--

┌

┌

44

44.1

44.1.1 rgos-security compatible

compatible	RGOS	rgos-security
rgos-security compatible	RGOS	no
no rgos-security compatible		
┌ └	[Redacted]	[Redacted]
┌ └	RGOS	
┌ └		
┌ └	r	
┌ └	1	RGOS Ruijie(config)#no gos-security compatible
┌ └	[Redacted]	[Redacted]

45 RLDP

45.1

45.1.1 rldp detect-interval

RLDP

rldp detect-interval *interval*

no rldp detect-interval

	<i>interval</i>	2-15

3

stp y stp

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

	rldp detect-max	

	-	-

45.1.2 rldp detect-max

RLDP

rldp detect-max *num*

no rldp detect-max

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

2

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

	rldp detect-interval	

	-	-

45.1.3 rldp enable

RLDP

rldp enable

no rldp enable

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

45.1.4 rldp port

rldp

rldp port { unidirection-detect | bidirection-detect | loop-detect } { warning | shutdown-svi | shutdown-port | block }

no rldp port { unidirection-detect | bidirection-detect | loop-detect }

	unidirection-detect	
	bidirection-detect	
	loop-detect	
	warning	
	shutdown-svi	shutdown svi
	shutdown-port	shutdown
	block	

	RLDP	RLDP
	fas 0/1	rldp

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

rldp enable	rldp

-	-

45.1.5 rldp reset

rldp shutdown disable rldp

rldp reset

-	-

```
Ruijie# rldp reset
```

rldp enable	Rldp

-	-

45.2

45.2.1 show rldp

rldp

show rldp [interface *interface-id*]

	<i>Interface-id</i>	

--	--

	EXEC
--	------

--	--

--	--

	-	-

--	--

	-	-

45.2.2 debug rldp

rldp

no

debug rldp [packet | event | error]

undebug rldp [packet | event | error]

	packet	rldp
	event	
	error	

└──

└── EXEC

└──

└──

└──

-	-

└──

└──

-	-

46 TPP

46.1

46.1.1 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

┌

-	-

46.1.2 tp-guard port enable

no

[no] tp-guard port enable



|

|

tpp

|

Ruijie# **show tpp**

|

topology guard	

|

|

-	-

47

47.1

47.1.1 cd

`cd [filesystem:][directory]`

	<i>filesystem</i>	
	<i>directory</i>	

flash

cd / pwd

1 usb0
Ruijie# **cd** usb0:/
2 sd
Ruijie# **cd** sd0:/

	pwd	

47.1.2 copy

copy *source-url destination-url*

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

copy

URL

flash:	flash URL flash
tftp:	TFTP
xmodem:	xmodem
slave:	flash
usb0:	usb
usb1:	usb
sd0:	sd

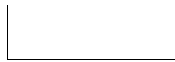
r

/

URL

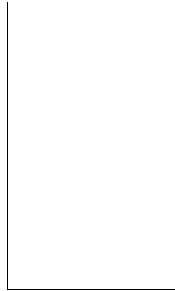
1 tftp

```
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 5
```

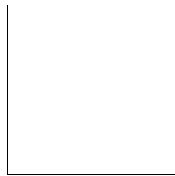


url URL flash/
usb0:/ usb1:/slave:/ url

r .



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	



r

1

Ruijie# **dir** slave0:/

Directory of slave0:/

Mode	Link	Size	MTime	Name
1		10838016	2008-01-01 00:01:53	rgos.bin
1		399	2008-01-01 00:01:37	config.text
1		399	2008-01-01 00:17:58	cfg.txt

3 Files (Total size 11210782 Bytes), 0 Directories.

Total 33030144 bytes (31MB) in this device, 20463616 bytes (19MB) available.

2

Ruijie# **dir**

Directory of temp:/

Mode	Link	Size	MTime	Name
1		399	2008-01-01 00:17:58	a.dat

1 Files (Total size 399 Bytes), 0 Directories.

Total 33030144 bytes (31MB) in this device, 20463616 bytes (19MB) available.

--	--

pwd

47.1.5 mkdir

mkdir *directory*

<i>directory</i>	

()

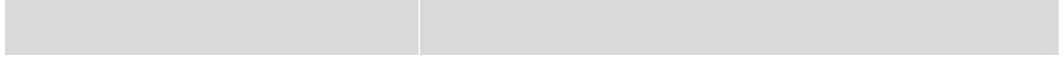
```
r          flash:/backup/temp      flash:/backup
          flash:/bakcup
          flash:/backup/temp
```

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

rmdir	
pwd	

47.1.6 rename

rename *url1 url2*



47.1.7 rmdir

rmdir *directory*

<i>directory</i>	,

|

|

|

|

tmp
Ruijie# **rmdir** tmp

|

--	--

mkdir



└──

└──

1
Ruijie#show file systems

└──

└──

--	--

48

48.1 CPU

48.1.1 cpu-log

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

	-	-
	-	-

48.1.2 show cpu

	CPU	show cpu
show cpu		
	-	-

		CPU	5	1	5
	CPU		5	1	5
	CPU				

```

show cpu
Ruijie# show cpu
=====
      CPU Using Rate Information
CPU utilization in five seconds: 25%
CPU utilization in one minute  : 20%
CPU utilization in five minutes: 10%
NO   5Sec  1Min  5Min  Process
0    0%   0%   0%   LISR INT
1    7%   2%   1%   HISR INT
2    0%   0%   0%   ktimer
3    0%   0%   0%   atimer
4    0%   0%   0%   printk_task

```

5	0%	0%	0%	waitqueue_process
6	0%	0%	0%	tasklet_task
7	0%	0%	0%	kevents
8	0%	0%	0%	snmpd
9	0%	0%	0%	snmp_trapd
10	0%	0%	0%	mtdblock
11	0%	0%	0%	gc_task
12	0%	0%	0%	Context
13	0%	0%	0%	kswapd
14	0%	0%	0%	bdflush
15	0%	0%	0%	kupdate
16	0%	3%	1%	ll_mt
17	0%	0%	0%	ll main process
18	0%	0%	0%	bridge_relay
19	0%	0%	0%	dlx_task
20	0%	0%	0%	secu_policy_task
21	0%	0%	0%	dhcpa_task
22	0%	0%	0%	dhcpsnp_task
23	0%	0%	0%	igmp_snp
24	0%	0%	0%	mstp_event
25	0%	0%	0%	GVRP_EVENT
26	0%	0%	0%	rldp_task
27	0%	2%	1%	rerp_task
28	0%	0%	0%	reup_event_handler
29	0%	0%	0%	tpp_task
30	0%	0%	0%	ip6timer
31	0%	0%	0%	rtadvd
32	0%	0%	0%	tnet6
33	2%	0%	0%	tnet
34	0%	0%	0%	Tarptime
35	0%	0%	0%	gra_arp
36	0%	0%	0%	Ttcptimer
37	8%	1%	0%	ef_res
38	0%	0%	0%	ef_rcv_msg
39	0%	0%	0%	ef_inconsistent_daemon
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_daemon
63	0%	3%	1%	track_daemon
64	0%	0%	0%	pbr_guard
65	0%	0%	0%	vrrpd
66	0%	0%	0%	psnpd
67	0%	0%	0%	igsnpd
68	0%	0%	0%	coa_recv
69	0%	0%	0%	co_oper
70	0%	0%	0%	co_mac
71	0%	0%	0%	radius_task
72	0%	0%	0%	tac+_acct_task
73	0%	0%	0%	tac+_task
74	0%	0%	0%	dhcpd_task
75	0%	0%	0%	dhcps_task
76	0%	0%	0%	dhcpping_task
77	0%	0%	0%	dhcpc_task
78	0%	0%	0%	uart_debug_file_task
79	0%	0%	0%	ssp_init_task
80	0%	0%	0%	rl_listen
81	0%	0%	0%	ikl_msg_operate_thread
82	0%	0%	0%	bcmDPC

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

	CPU	LISR	HISR	CPU
		3	5	1
				5
5Sec				5 CPU
1Min				1 CPU
5Min				5 CPU

2

,X

bgp

/

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

show memory	

-

10.3(4b3)	

48.2.2 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

49

49.1

49.1.1 threshold set

```

CPU          CPU          3          CPU          MIB
CPU          CPU          syslog
no

```

threshold set {cpu | memory } [M1 | M2 | slot *n* | member *n*] warning_value critical_value


no threshold set {cpu | memory }

cpu memory	cpu CPU memory
M1 M2 slot <i>n</i>	<i>n</i>
member <i>n</i>	<i>n</i>
<i>warning_value</i>	1 ~ 100 cpu memory
<i>critical_value</i>	memory 1 ~ 100 cpu
no	

CPU	90	100.
	90	100.

1 M1
Ruijie(config)# **threshold set memory M1 70 90**

2 CPU
Ruijie(config)# **threshold set cpu member 2 70 90**



```
Ruijie# show threshold cpu M1
```

```
2
```

```
Ruijie# show threshold memory
```



50

50.1

50.1.1 clear logging

clear logging

	-	-

|

|

|

|

Ruijie# clear logging

	logging on	
	show logging	
	logging buffered	

|

more flash:filename

<i>Filename</i>	

└──

└──

FLASH

"//f2" "//f3"

<i>level</i>	0 7
--------------	-----



4k Bytes
7



show logging

clear logging

	-	-

50.1.4 logging console

no

logging console level

no logging console

		0 7
<i>level</i>		1

Debugging (7)

show logging

6
Ruijie(config)# **logging console informational**

	logging on	
	show logging	

	-	-

50.1.5 logging count

no

logging count

no logging count

	-	-

|

|

|

no logging count

|

Ruijie(config)# **logging count**

	show logging count	
	show logging	

|

	-	-

<i>facility-type</i>	Syslog
----------------------	--------

Local7(23)

2 Syslog

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

(local7) 23

Syslog kernel

Ruijie(config)# logging facility kern

logging console	

-	-

50.1.7 logging file flash

FLASH

FLASH

no

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

no logging file

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

FLASH

Syslog Server

FLASH

txt

r

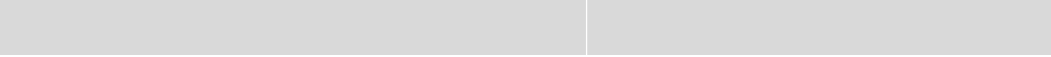
FLASH
FLASH logging file flash

FLASH

VTY

6

Ruijie(config)# **logging monitor informational**



logging	Syslog Server
logging file flash:	FLASH
logging console	
logging monitor	VTY (telnet)
logging trap	Syslog Server

-	-

50.1.10 logging rate-limit

no

logging rate-limit {*number* | *all number* | *console* {*number* | *all number*}} [*except severity*]

no logging rate-limit

<i>number</i>	1—10000
<i>all</i>	0—7
<i>console</i>	
<i>except</i>	error(3) error
<i>severity</i>	0—7

debug 10 warning

Ruijie(config)#**logging rate-limit all 10 except warnings**

show logging count	
show logging	



	logging	Syslog server

-	-

50.1.14 logging synchronous

no

logging synchronous

no logging synchronous

-	-

|

|

|

```
Ruijie(config)#line console 0
Ruijie(config-line)#logging synchronous
                        UP-DOWN
Ruijie#configure terminal
Oct  9 23:40:55 %LINK-5-CHANGED: Interface GigabitEthernet 0/1,
changed state to down
Oct  9 23:40:55 %LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet 0/1, changed state to DOWN
Ruijie# configure terminal      //
```

show running-config	

|

-	-

50.1.15 logging trap

no Syslog Server Syslog Server

logging trap *level*

no logging trap



level

no

service sequence-numbers

no service sequence-numbers

	-	-

|

|

|

1

|

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

	logging on	
	service timestamps	

|

	-	-

50.1.17 service sysname

no

service sysname

no service sysname

	-	-

|
|

|
|

<i>datetime</i>	27 16:53:07	Jul
<i>msec</i>	.	Jul 27 16:53:07.299
<i>year</i>	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	

-	-

50.1.19 terminal monitor

```
VTY
no
terminal monitor
VTY
```

terminal no monitor

	-	-

VTY

VTY VTY

VTY
Ruijie# **terminal monitor**

	-	-

	-	-

50.2

50.2.1 show logging

show logging

	-	-

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	
Trap logging	Syslog Server
Log Buffer	

logging on	
clear logging	

-	-

50.2.2 show logging count

show logging count

-	-

```

logging count
show logging

```

```

show logging count
Ruijie# show logging count
Module Name  Message Name Sev Occur      Last Time
-----
CONFIG_I     5  1          Jul 6 10:29:57
-----SYS
-----SYS      TOTAL      1

```

logging count	
show logging	
clear logging	

-	-

51

51.1

51.1.1 device-description

device-description [*member member*] *description*

<i>member</i>	1-MAX, .
<i>description</i>	31,

SWITCH

show member

2 red-giant

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

show member [<i>member</i>]	member

-	-

51.1.2 device-priority

device-priority [*member*] *priority*



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

-	-

-	-

51.1.4 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
	-	-

51.1.5 synchronize

synchronize flash: *filename*

	<i>filename</i>	
	TFTP XMODEM	.
	2	
	Ruijie(config)# member 2	
	Ruijie@2(config)# exit	
	Ruijie(config)#	
	-	-
	-	-

51.2

51.2.1 show member

show member [*member*]

<i>member</i>	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
4	00d3.f824.33b2	1	RGOS 10.1 1.0	SWITCH
5	00d3.f824.33b4	1	RGOS 10.1 1.0	SWITCH
6	00d3.f824.33b6	1	RGOS 10.1 1.0	SWITCH
7	00d3.f824.33b8	1	RGOS 10.1 1.0	SWITCH
8	00d0.f822.8803	8	RGOS 10.1 1.0	SWITCH

-	-

└──

-	-

51.2.2 show stack interface

show stack interface

-	-

└──

└──

└──

Member	Interface	Running Status	Configure Status	Status	Type

1	Gi1/0/1	active	stack on	up	copper
1	Gi1/0/24	active	stack on	up	fiber
2	Gi2/0/1	active	stack on	up	copper
2	Gi2/0/24	active	stack on	up	fiber
3	Gi3/0/1	active	stack on	up	copper
3	Gi3/0/24	active	stack on	up	fiber
4	Gi4/0/1	active	stack on	up	copper
4	Gi4/0/24	active	stack on	up	fiber
5	Gi5/0/1	active	stack on	up	copper
5	Gi5/0/24	active	stack on	up	fiber
6	Gi6/0/1	active	stack on	up	copper
6	Gi6/0/24	active	stack on	up	fiber
7	Gi7/0/1	active	stack on	up	copper
7	Gi7/0/24	active	stack on	up	fiber
8	Gi8/0/1	active	stack on	up	copper
8	Gi8/0/48	active	stack on	up	fiber

-	-

└──

-	-