



RG-S2600

RGOS 10.4(2b2)

©2000-2011



RGOS®

RGNOS®



锐捷®

RGOS® 10.4(2b2)

1.

Courier New

5

2.

Arial

```
[]      []
```

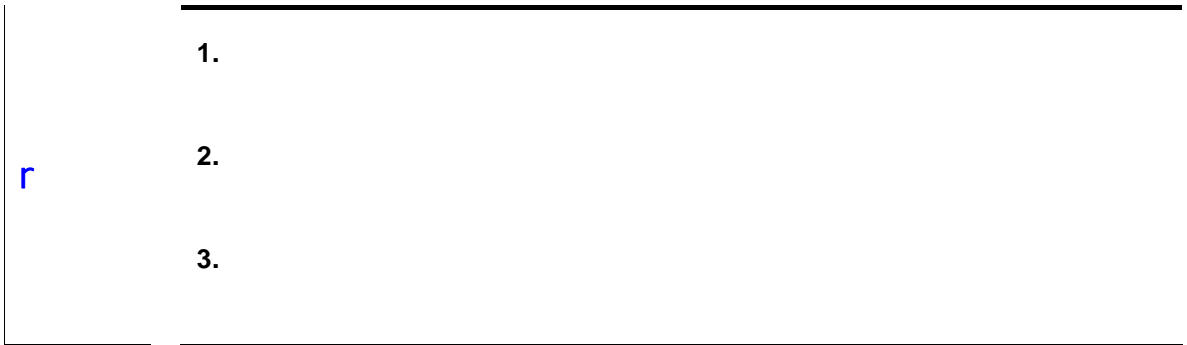
```
{x|y|...}
```

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

```
//
```

3.

r



1 CLI

1.1

1.1.1 alias

alias

no

alias *mode command-alias original-command*

no alias *mode [original-command]*

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

EXEC

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

```

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

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

show aliases

```

```

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

```

show aliases	

-

privilege

ommand-string

mand-string

CLI

0-15

CLI

privilege ?

0.0.2 294.68 -139.2 -19.1Hp

```

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

```

enable secret	CLI

EXEC

```
Ruijie# show aliases exec
```

```
exec mode alias:
```

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



2

2.1

CLI

2.1.1 disable

disable

disable [*privilege-level*]

	<i>privilege-level</i>	

|

|

|

disable

Ruijie# **disable** 10

	enable	

	-	-

|

	-	-

2.1.2 enable

enable

	-	-

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	-	-

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	-	-

2.1.3 enable password

enable password

no

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

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

┌

1 26

r EXEC

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

enable secret	

-	-

2.1.4 enable secret

enable secret

no

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

```

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**

	-	-
--	---	---

2.1.9 ip telnet source-interface

	IP	Telnet	ip telnet
source-interface			
ip telnet source-interface	<i>interface-name</i>		

|

|

|

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**
 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	name
<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

```

1
Ruijie# write
Building configuration...
[OK]

```

copy	
show running-config	

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

```

-	-

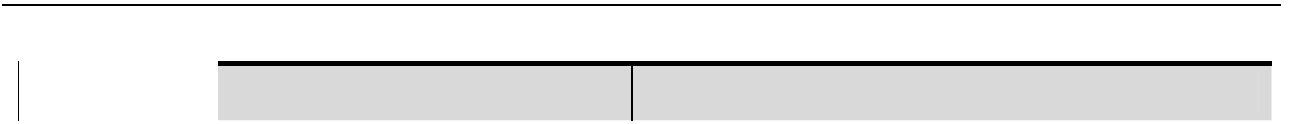
2.3.3 show reload

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

1 ping

```
Ruijie# ping 192.168.5.1
```

```
Sending 5, 100-byte ICMP Echoes to 192.168.5.1, timeout is 2 seconds:
```

```
< press Ctrl+C to break >
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/10 ms
```

2 ping

```
Ruijie# ping 192.168.5.197 length 1500 ntimes 100 timeout 3 data ffff source 192.168.4.10
```

```
Sending 100, 1000-byte ICMP Echoes to 192.168.5.197, timeout is 3 seconds:
```

```
< press Ctrl+C to break >
```

```
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!  
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
```

```
Success rate is 100 percent (100/100), round-trip min/avg/max = 2/2/3 ms
```

-	-

-	-

4.1.2 ping ipv6

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

<i>ip-address</i>	IPv6

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

2 5 100Byte IP

```

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

	-	-
	-	-

4.1.3 traceroute

traceroute

traceroute [*vrf*] [*vrf-name*] [**ip** *ip-address*][*ip-address* [**probe** *number*] [**source** *source*] [**timeout** *seconds*] [**t***tl* *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>	TTL

Traceroute

DNS

traceroute

```

1          traceroute
Ruijie# traceroute 61.154.22.36
< press Ctrl+C to break >

```

```

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

```

2 traceroute

```

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

```

```

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

```

```

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

```

-	-

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-	-

4.1.4 traceroute ipv6

traceroute ipv6

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

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

Traceroute ipv6

DNS

traceroute ipv6

1 traceroute ipv6

Ruijie# **traceroute ipv6 3004::1**

< press Ctrl+C to break >

Tracing the route to 3004::1

1	3000::1	0 msec	0 msec	0 msec
2	3001::1	4 msec	4 msec	4 msec
3	3002::1	8 msec	8 msec	4 msec
4	3004::1	4 msec	28 msec	12 msec

IP 3004::1

1 4

2 traceroute ipv6

Ruijie# **traceroute ipv6 3004::1**

< press Ctrl+C to break >

Tracing the route to 3004::1

1	3000::1	0 msec	0 msec	0 msec
2	3001::1	4 msec	4 msec	4 msec
3	3002::1	8 msec	8 msec	4 msec
4	* * *			
5	3004::1	4 msec	28 msec	12 msec

IP 3004::1

1 5 4

-	-

--	--	--

- -

	-	-
--	---	---

5.1.2 clear counters

clear counters [*interface-id*]

	<i>interface-id</i>	

|

|

	show interfaces	clear
counters		

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

	show interfaces	

|

	-	-

5.1.3 clear interface

clear interface *interface-id*

	<i>interface-id</i>	

|

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┌

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

┌

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

┌

shutdown	

┌

┌

-	-

5.1.4 description

no

description *string*

no description

┌

<i>string</i>	

┌

┌

┌

show interfaces

┌

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

┌

show interfaces	

	-	-

5.1.5 duplex

no

duplex {auto | full | half}

no duplex

	auto	
	full	
	half	

|

|

|

show interfaces

|

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

--	--	--

no

flowcontrol {auto | off | on}

no flowcontrol

auto	
off	
on	

└───┘

└───┘

└───┘

show interfaces

└───┘

1/1

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

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

show interfaces	

└───┘

-	-

5.1.7 interface aggregateport

no

interface aggregateport *port-number*

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

└───┘

|

|

aggregate port aggregate port
aggregate port **show**
interfaces **show interfaces aggregateport**

|

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

|

show interfaces	

|

-

|

-	-

5.1.8 interface fastEthernet

interface fastEthernet *mod-num/port-num*

|

--	--

mod-num/port-num /

	show interfaces	

┌

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5.1.9 interface giagbitEthernet

interface gigabitEthernet *mod-num/port-num*

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

┌

┌

no

10G

interface tenGigabitEthernet *mod-num/port-num*

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

|

|

|

no
tenGigabitEthernet

show interfaces **show interfaces**

|

Ruijie(config)# **interface tenGigabitEthernet** 1/2
Ruijie(config-if)#

|

show interfaces	

|

|

-	-

5.1.11 interface vlan

switch virtual interface SVI

no SVI

interface vlan *vlan-id*

no interface vlan *vlan-id*

|

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

|



	show interfaces	

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
no shutdown if0 Tc 13.773 0 T715 0.96 ref1432 481369.44T

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
Ap show interfaces
10M 100M SFP

└───┘

```
Ruijie(config)# interface gigabitethernet 1/1  
Ruijie(config-if)# speed 100
```

VLAN ID VLAN	trunkport	VLAN ID VLAN ID	VLAN VLAN
-----------------	-----------	--------------------	--------------

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# switchport access vlan 2
```

switchport mode	switch port
switchport trunk	trunkport native VLAN Trunk VLAN

-	-

5.1.18 switchport mode

trunk port, 802.1Q switch port **no** access port

switchport mode {access | trunk}

no switchport mode

access	switch port access port
trunk	switch port trunk port

switch port access

VLAN

switchport access vlan VLAN

VLAN

switch port access trunk

VLAN	VLAN	trunk port	VLAN
VLAN	switchport trunk		VLAN
Ruijie(config-if)# switchport mode trunk			
switchport access	accessport	statics	VLAN
switchport trunk	VLAN	trunkport	native
	VLAN	Trunk	
-			-

5.1.19 switchport trunk

trunkport native VLAN Trunk VLAN
no trunk

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

no switchport trunk {allowed vlan | native vlan}

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

native vlan *vlan-id*

5.2

5.2.1 show interfaces

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

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

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

duplex	

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

-	-

6 Aggregate Port

6.1

6.1.1 aggregateport load-balance

AP no

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

no aggregateport load-balance

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

MAC

show aggregateport load-balance

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

show aggregateport load-balance	aggregateport

-

-	-

6.1.2 port-group

Aggregate Port

no

Aggregate Port

port-group *port-group-number*

no port-group

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

Aggregate Port

AP VLAN trunk port native
VLAN AP

1/3 AP 3

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

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

-	-

	-	
	-	-

6.2

e9(eg-9(eg))1(-5pte 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
add	VLAN	VLAN	
remove	VLAN	VLAN	
except	VLAN	VLAN	
	VLAN		
native vlan <i>vlan-id</i>	Native VLAN		

VLAN all Native VLAN VLAN 1

Native VLAN

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

VLAN

Trunk VLAN 1 4094
 Trunk VLAN VLAN Trunk

show interfaces switchport

```

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

--	--	--

VLAN

-	-
---	---

7.2

7.2.1 show vlan

VLAN

show vlan [id *vlan-id*]

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

--

--

--

end **Ctrl+C**
exit

Ruijie# show vlan id 1
VLAN Name Status Ports

1 VLAN0001 STATIC Fa0/1, Fa0/2

name	VLAN
switchport access	Vlan

--

-	-
---	---

8 Private VLAN

8.1

8.1.1 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

-	-

8.1.3 private-vlan type

VLAN VLAN

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

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

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

┌
└ VLAN

┌
└ VLAN

┌
└

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

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

primary	primary VLAN
community	community VLAN
isolated	isolated VLAN

private VLAN

Ruijie# **show vlan private-vlan**

-	-

RGOS10.1

-	-

8.3 Hybrid

8.3.1 switchport hybrid allowed vlan

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

no switchport hybrid allowed vlan

hybrid

no	hybrid

L

L

L

L

L

L

L

L

L

	-	-

8.3.3 switchport mode hybrid

switchport mode hybrid

no switchport mode

hybrid

no		hybrid

|

|

|

|

Ruijie(config-if)# **switchport mode hybrid**

--	--

9 802.1Q Tunneling

9.1

9.1.1 frame-tag tpid tpid

tpid

frame-tag tpid <tpid>

no frame-tag tpid

	no	

┌

┌

┌

```
Ruijie(config)# interface g0/3
Ruijie(config-if)# frame-tag tpid 9100
Ruijie(config-if)# end
Ruijie# show frame-tag tpid
Port      tpid
-----  -
Gi0/3     0x9100
```

	show frame-tag tpid	-

┌

RGOS10.1

	-	-

9.1.2 inner-priority-trust enable

```

/
tag tag

```

```
inner-priority-trust enable
```

```
no inner-priority-trust enable
```

			EA
no		tag	tag

```

└───┘

```

```

└───┘

```

```

└───┘

```

```
Ruijie(config)#
```


show vlan private-vlan	-

RGOS10.1

-	-

9.2

9.2.1 show frame-tag tpid

private VLAN

show frame-tag tpid [interface <interface>]

<i>interface</i>	

tpid

```
Ruijie# show frame-tag tpid
Ruijie# show frame-tag tpid interface gi0/1
Port    tpid
-----
Gi0/1   0x9100
```

-	-

RGOS10.1

-	-

9.2.2 show inner-priority-trust

show inner-priority-trust

-	-

└───

└───

└───

```
Ruijie# show inner-priority-trust
Port    inner-priority-trust
----    -
Gi0/1   enable
```

-	-

└─── RGOS10.1

-	-

10 Share VLAN

10.1

10.1.1 share

share vlan



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

1 1 . 1 .

/

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 MAC IP IP

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

show address-bind	

-	-

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>	

└─

└─

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	

-

-	-

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	

|

|

-	-

11.2.2 show address-bind uplink

show address-bind uplink

|

|

|

|

|

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

MAC

.....

address-bind uplink	

-	-

11.2.3 show mac-address-table address

MAC

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

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

Ruijie#

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	

|

--	--

	-	-
--	---	---

11.2.5 show mac-address-table count

show mac-address-table count

	-	-

└───

└───

└───

```
Ruijie# show mac-address-table count
Dynamic Address Count : 51
Static Address Count : 0
Filter Address Count : 0
Total Mac Addresses : 51
Total Mac Address Space Available: 8139
```

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

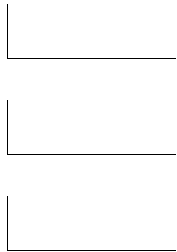
└───

	-	-

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



-	-
---	---

11.2.7 show mac-address-table filtering

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

--	--

mac-addr

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

MAC

```

Ruijie# show mac-address-table notification interface
Interface          MAC Added Trap  MAC Removed Trap
-----
GigabitEthernet1/14  Disabled        Disabled
Ruijie# show mac-address-table notification
MAC Notification Feature : Disabled
Interval between Notification Traps : 1 secs
Maximum Number of entries configured in History Table :1
Current History Table Length : 0
Ruijie# show mac-address-table notification history
History Index : 0
MAC Changed Message :
Operation:ADD Vlan : 1 MAC Addr: 00f8.d012.3456 GigabitEthernet 3/1
    
```

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

-	-
---	---

11.2.10 show mac-address-table static

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

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

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

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

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

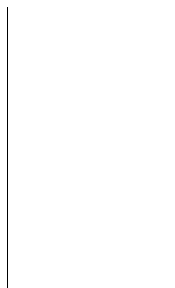
-	-

11.2.11 show mac-address-table vlan

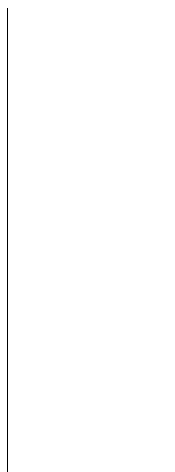
VLAN

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

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



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



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

|

1

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
Snooping        Bootp                Bootp      DHCP
Snooping        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
	-	-

12.1.3 ip dhcp snooping database write-delay

```

DHCP Snooping          FLASH
                        no      FLASH
    
```

ip dhcp snooping database write-delay time

[no] ip dhcp snooping database write-delay

<i>time</i>	DHCP snooping	FLASH

FLASH

```

DHCP Snooping          FLASH
                        IP
    
```

```

flash          3600
    
```

```

Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping database write-delay 3600
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: 3600seconds
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	DHCP CLIENT CLIENT MAC	MAC	MAC
-------------	---------------------------	-----	-----

└───

```

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

```

└───

show ip dhcp snooping	DHCP snooping

└───

-	-

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]

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┌

┌

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
Verifi-19( )6(i).56n of hwaddr field
```

	-	-

12.2.2 ip dhcp snooping suppression

suppression no
no suppression

[no] ip dhcp snooping suppression

	-	-

--

--

	DHCP	DHCP
	DHCP	

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

	-	-

--

	-	-

12.2.3 ip dhcp snooping trust

DHCP snooping TRUST
no UNTRUST

[no] ip dhcp snooping trust

-	-

UNTRUST

DHCP	DHCP	TRUST	TRUST
	UNTRUST	DHCP	

fastEthernet 0/1 TRUST

```

Ruijie# configure terminal
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ip dhcp snooping trust
Ruijie(config-if)# end
Ruijie# show ip dhcp snooping
Switch DHCP snooping status    ENABLE
Verification of hwaddr field status  DISABLE
    
```

12.3.1 show ip dhcp snooping

DHCP Snooping

show ip dhcp snooping

-	-

└───┘

└───┘

└───┘

DHCP Snooping

DHCP Snooping

Ruijie# **show ip dhcp snooping**

Switch DHCP snooping status ENABLE

Verification of hwaddr field status DISABLE

DHCP snooping database write-delay time: 0 seconds

DHCP snooping option 82 status: ENABLE

DHCP snooping Support Bootp bind status: ENABLE

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

└───┘

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

└───┘

└───┘

-	-

12.3.2 show ip dhcp snooping binding

DHCP Snooping

show ip dhcp snooping binding

-	-

┌

┌

┌

DHCP Snooping

Ruijie# **show ip dhcp snooping binding**

Total number of bindings: 1

```

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

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

┌

-	-

12.4 DHCP snooping

12.4.1 clear ip dhcp snooping binding

DHCP Snooping

clear ip dhcp snooping binding

-	-

└───┘

└───┘

└───┘

DHCP snooping

DHCP snooping

Ruijie# **clear ip dhcp snooping binding**

Ruijie# **show ip dhcp snooping binding**

Total number of bindings: 0

MacAddress IpAddress Lease(sec) Type VLAN Interface

show ip dhcp snooping binding	DHCP snooping

└───┘

-	-

12.4.2 debug ip dhcp snooping

DHCP Snooping

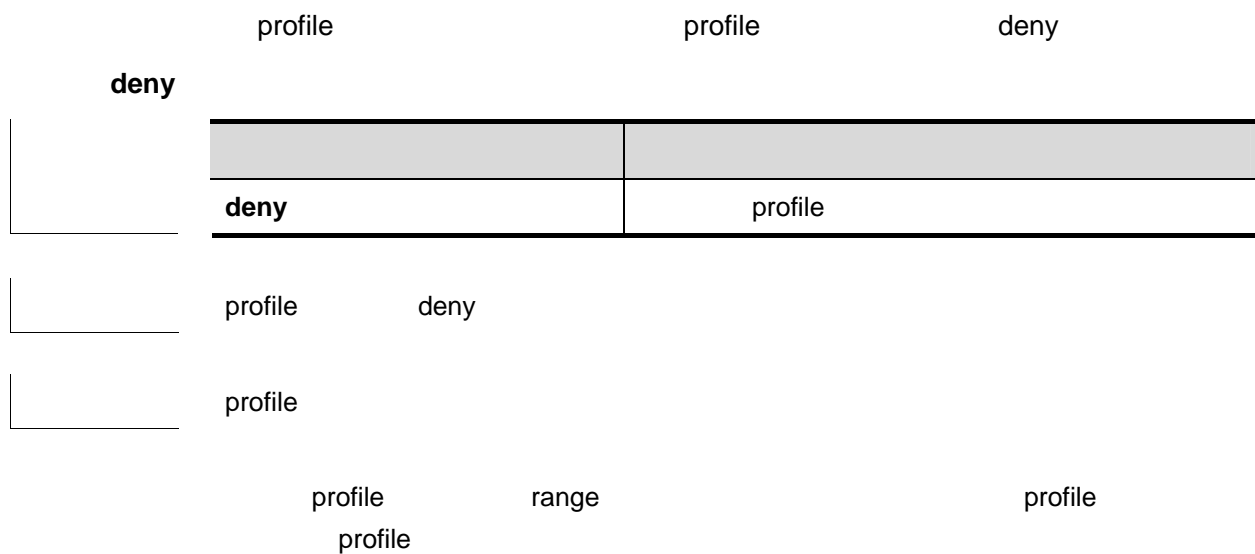
debug ip dhcp snooping {event | packet}

--	--

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 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      vlan      igmp snooping
      pim snooping      VLAN      pim snooping
    
```


	-	-

13.1.8 ip igmp snooping svgl profile

profile SVGL

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

no ip igmp snooping dyn-mr-aging-time

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

300s

Hello

IGMP

PIM

100s

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



```
IP          IGMP
```

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

```
© [REDACTED]
```


	ip igmp snooping source-check default-server	IP IP

	-
--	---

13.1.14 ip igmp snooping mrouter learn pim-dvmrp

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

ip igmp snooping mrouter learn pim-dvmrp

no ip igmp snooping mrouter learn pim-dvmrp

┌

┌

```

no
                                no
                                vlan
                                vlan
                                vlan
                                igmp snooping

```

┌

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

ip igmp snooping vlan mrouter learn pim-dvmrp	vlan

┌

-	-

13.1.15 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	

┌

-	-

13.1.16 ip igmp snooping vlan mrouter learn pim-dvmrp

IGMP Query/Dvmrp/PIM Hello

vid

vlan id

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

┌

┌

┌

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

ip igmp snooping vlan mrouter interface	

┌

-	-

13.1.18 ip igmp snooping filter

profile no profile

ip igmp snooping filter *profile-number*

no ip igmp snooping filter *profile-number*

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

┌

┌

IGMP Profile

IGMP Report

IGMP Profile

profile

filter

0/1

profile 1

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

Ruijie(config-if)# **ip igmp snooping filter 1**

ip igmp profile	profile

--	--

	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

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

RSTP BPDU BPDU

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

<i>interface-id</i>	

|

|

|

|

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

show spanning-tree interface	STP

|

-	-

14.1.3 spanning-tree

MSTP MSTP MSTP
no spanning-tree no spanning tree

spanning-tree [**forward-time** *seconds* | **hello-time** *seconds* | **max-age** *seconds*]

no spanning-tree [**forward-time** | **hello-time** | **max-age**]

forward-time <i>seconds</i>	
hello-time <i>seconds</i>	BPDU
max-age <i>seconds</i>	BPDU

|

spanning-tree

forward-time hello-time max-age

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

```

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

```

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

-	-
---	---

14.1.4 spanning-tree autoedge

Autoedge disabled Autoedge

spanning-tree autoedge [disabled]

disabled	Autoedge
-----------------	----------

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



MSTP

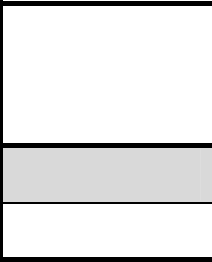
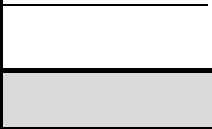
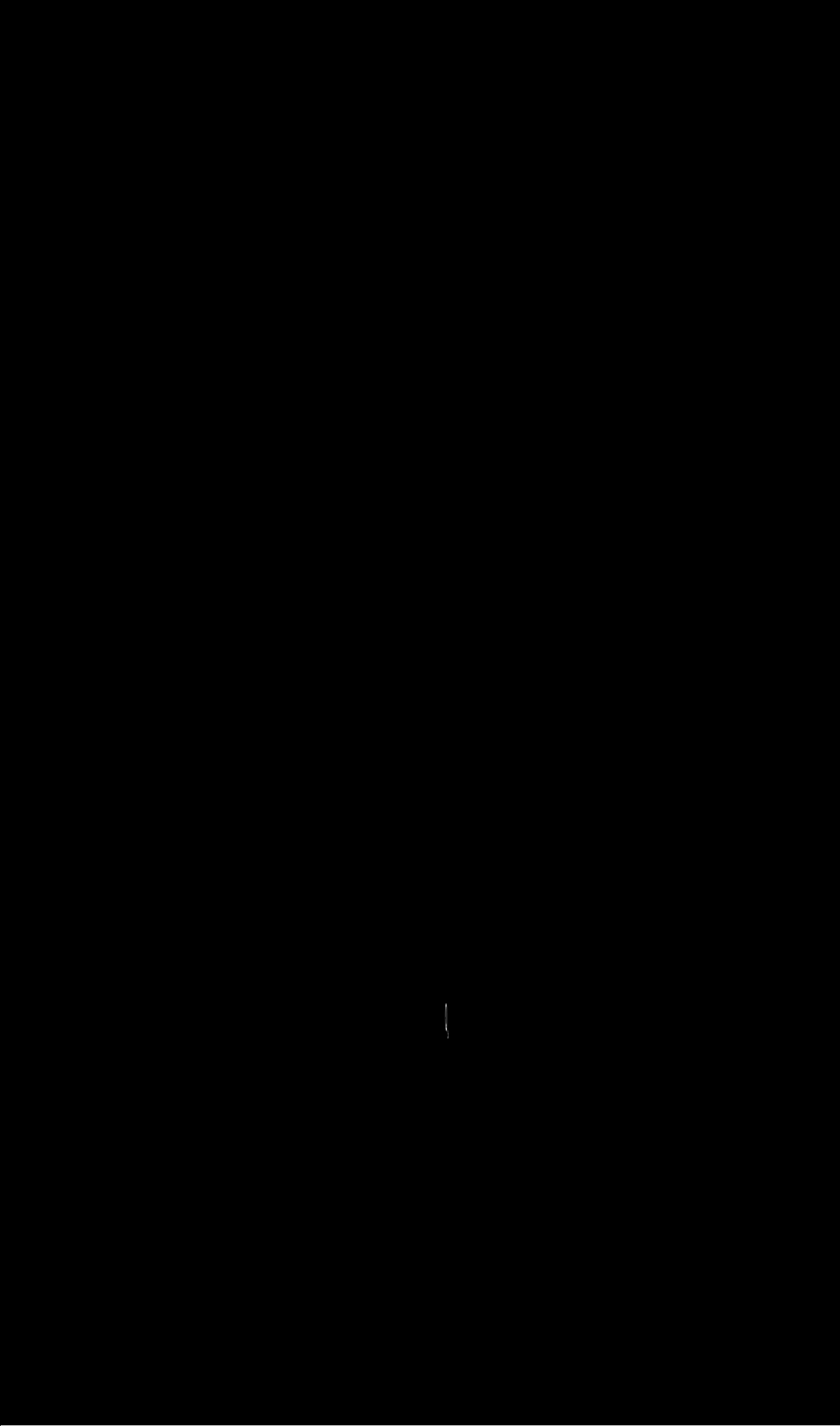
	-	-
--	---	---

|

|

|

Ruijie(config-if)#



root guard no root guard root guard

spanning-tree guard root

no spanning-tree guard root

	-	-

root guard

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

	-	-

	-	-

14.1.11 spanning-tree link-type

“ ” no

spanning-tree link-type [point-to-point | shared]

no spanning-tree link-type

	point-to-point	point-to-point.
	shared	shared

shared. point-to-point



14.1.14 spanning-tree mode

STP no

spanning-tree mode [stp | rstp | mstp]

no spanning-tree mode

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

MSTP

.

```
Ruijie(config)# spanning-tree mode stp
```

show spanning-tree	

-	-

14.1.15 spanning-tree mst configure

MST MSTP Region no
name revision vlan map

spanning-tree mst configuration

no spanning-tree mst configuration

-	-


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



MSTP

MSTP

Region

```

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

Instance 20

8192

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

show spanning-tree mst instance interface interface-id

show spanning-tree 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


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

show spanning-tree interface	STP

-	-

14.1.23 spanning-tree portfast default

Portfast no Portfast

spanning-tree portfast default

no spanning-tree portfast default

-	-

! Portfast

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

|

} 52 B

}



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

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

┌

┌

┌

Ruijie# **show spanning-tree interface gigabitethernet 1/5**

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

┌

-	-
---	---

14.2.3 show spanning-tree mst

MST Instance

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

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

┌ Instance

┌

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

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** } | [**both** | **rx** | **tx**]} [**acl name**]

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

SPAN

|

|

|

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

|

monitor session	SPAN

|

|

-	-

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
	S2600	
	-	-

17 IP

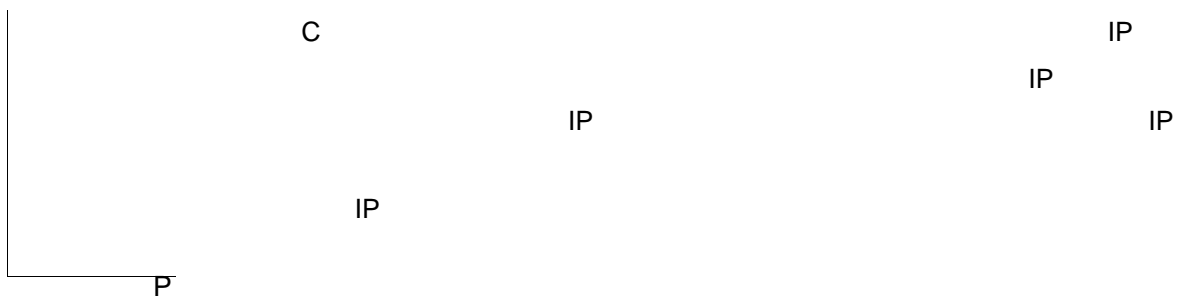
17.1

17.1.1 ip address

IP

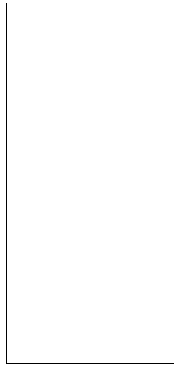
no

IP



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

show interface	



SLIP HDLC PPP LAPB Frame-relay

X.25

ping
SNMP

IP



FastEthernet 0/1

IP

ip unnumbered fastEthernet 0/1



[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

```
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

```


8192 ARP no
arp unresolve number
no arp unresolve

<i>number</i>	> 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 IP MAC
ARP ARP IP
MAC MAC ARP

|
|
|

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



IP

mask

ARP

mask

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

```

1      show arp
Ruijie# show arp
Total Numbers of Arp: 7
Protocol Address      Age(min)  Hardware
Type Interface
Internet 192.168.195.68 0         0013.20a5.7a5f arpa  VLAN 1
Internet 192.168.195.67 0         001a.a0b5.378d arpa  VLAN 1
Internet 192.168.195.65 0         0018.8b7b.713e arpa  VLAN 1
Internet 192.168.195.64 0         0018.8b7b.9106 arpa  VLAN 1
Internet 192.168.195.63 0         001a.a0b5.3990 arpa  VLAN 1
Internet 192.168.195.62 0         001a.a0b5.0b25 arpa  VLAN 1
Internet 192.168.195.5  --        00d0.f822.33b1 arpa  VLAN 1

```

ARP

Protocol	Internet
Address	IP

Age (min)	ARP
Hardware	IP
Type	ARPA
Interface	IP

2 **show arp 192.168.195.68**

Ruijie# **show arp 192.168.195.68**

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

3 **show arp 192.168.195.0 255.255.255.0**

Ruijie# **show arp 192.168.195.0 255.255.255.0**

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

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

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

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

-	-

-	-

17.3.3

-	-
---	---

--	--

--	--

--	--

```

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

-	-

└───

└───

└───

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

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

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

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

└───

-	-

18.1.3 ip dhcp relay information option dot1x access-group

DHCP Relay option dot1x ACL no
 DHCP Relay option dot1x ACL

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

-	-

└───

ACL

ACL ACL ACE

dhcp option dot1x acl

```

Ruijie# configure terminal
Ruijie(config)# ip access-list extended
DenyAccessEachOtherOfUnauthrize
Ruijie(config-ext-nacl)# permit ip any host 192.168.3.1
//
Ruijie(config-ext-nacl)# permit ip any host 192.168.4.1
Ruijie(config-ext-nacl)# permit ip any host 192.168.5.1
Ruijie(config-ext-nacl)# permit ip host 192.168.3.1 any
// IP
Ruijie(config-ext-nacl)# permit ip host 192.168.4.1 any
Ruijie(config-ext-nacl)# permit ip host 192.168.5.1 any
Ruijie(config-ext-nacl)# deny ip 192.168.3.0 0.0.0.255 192.168.3.0
0.0.0.255
//
Ruijie(config-ext-nacl)# deny ip 192.168.3.0 0.0.0.255
192.168.4.0 0.0.0.255
Ruijie(config-ext-nacl)# deny ip 192.168.3.0 0.0.0.255
192.168.5.0 0.0.0.255
Ruijie(config-ext-nacl)# deny ip 192.168.4.0 0.0.0.255
192.168.4.0 0.0.0.255
Ruijie(config-ext-nacl)# deny ip 192.168.4.0 0.0.0.255
192.168.5.0 0.0.0.255
Ruijie(config-ext-nacl)# deny ip 192.168.5.0 0.0.0.255
192.168.5.0 0.0.0.255
Ruijie(config-ext-nacl)# deny ip 192.168.5.0 0.0.0.255
192.168.3.0 0.0.0.255
Ruijie(config-ext-nacl)# deny ip 192.168.5.0 0.0.0.255
192.168.4.0 0.0.0.255
Ruijie(config-ext-nacl)# exit
Ruijie(config)# ip dhcp relay information option dot1x access-group
DenyAccessEachOtherOfUnauthrize
    
```

service dhcp	DHCP

	ip dhcp relay information option dot1x	DHCP option dot1x
	-	-

18.1.4 ip dhcp relay information option82

DHCP Relay option82 no

[no] ip dhcp relay information option82

	-	-

option dot1x

DHCP opion82
 Ruijie# **configure terminal**
 Ruijie(config)# **Ip dhcp relay information option82**

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

DHCP Relay
no

DHCP Relay Aware VRF

DHCP

1 DHCP relay

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

service dhcp	DHCP

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



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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*]

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

└──┘

└──┘

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

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

	-	-
--	---	---

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12

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

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└──

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

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

FTP

no

FTP

ftp-server topdir *directory*

no ftp-server topdir



time



FTP

64

FTP



r

FTP



IP Port

IP Port

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
    
```

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-	-

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**]

Entö%Ura#8BtNE"ryhd mÄ.tG6h05,4070Tas40019JmähÖke-Pänjar RT6R"Zs69)1A0

```
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 ipv6 NMS

<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

┌

┌

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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



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	-	-

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>	

┌

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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*

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1 ~ .



trap

Ruijie(config)# **rmon event**

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

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

--	--

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

```

Ruijie# show rmon history
Entry : 1
Data source : 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		

	-	-

└───

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

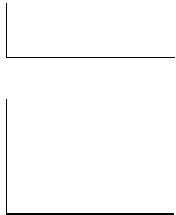
INET6: 2001::1 , subnet is 2001::/64

[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 ~~RDY-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)



-	-

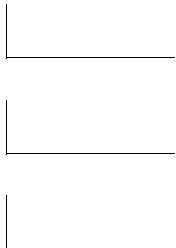
26.2.4 show ipv6 neighbors

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)— (NS) (NA)</p> <p>REACH(Reachable) —</p> <p>STALE —</p> <p>NUD (Neighbor Unreachability Detection)</p> <p>DELAY— STALE STALE DELAY</p> <p>DELAY_FIRST_PROBE_TIME seconds(5)</p> <p>DELAY PROBE (NS) NUD</p> <p>PROBE— NUD RetransTimer milliseconds (NS)</p> <p>MAX_UNICAST_SOLICIT(3)</p> <p>?— /R— /H—</p>
Age	'expired' NUD
Asked	

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		

┌

┌
 VLAN

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

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

┌

┌
 10.4

10.4	

27.1.6 ipv6 mld snooping dyn-mr-aging-time

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

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

┌
time

<i>time</i>	1-3600

┌
 300s

┌

┌
 Hello

┌

	MLD	IPv6 PIM
Hello		
	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
    
```


└───┘

└───┘

```

IPv6 MLD
IPv6 MLD
    
```

```

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


```

    
```

10.4	

27.1.13 ipv6 mld snooping suppression enable

```

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


```

    
```

```

    
```

```

MLD
IPv6 MLD MLD
suppression MLD v1 report
MLD v2 report
    
```

```

mld snooping suppression
    
```

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


10.4	

27.1.14 ipv6 mld snooping filter

```
profile          no          profile
```

```
ipv6 mld snooping filter profile-number
```

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

<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	

L

L

-	-

28.1.3 switchport port-security

no

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

no switchport port-security [violation]

	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

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
Serv296.7 51Tc -12Tc 52(Timeout: 3 )ber: 0
```

	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

┌

	-	-

29.3 dot1x

29.3.1 dot1x re-authentication

no

[no] dot1x re-authentication

	-	-

┌

┌

┌

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

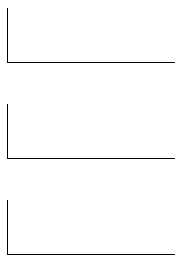
29.4.1 dot1x probe-timer

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

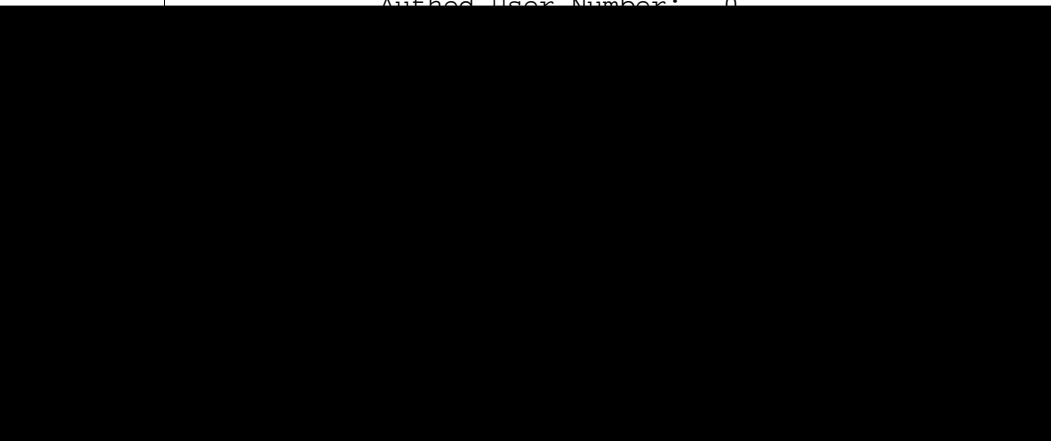
no dot1x probe-timer

no	

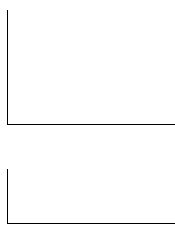
<i>interval</i>	hello
alive	
interval	



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

┌

-	-

29.5.19 dot1x redirect for special tcp-destination port

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

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

	<i>port num</i>	TCP

```

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



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

```
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
ctrl-mode status
-----
Gi0/1      0          1          6000      dscp: 0 mac-base Authed
Ruijie#

```

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

-	-
---	---

29.6.7 show dot1x probe-timer

```
show dot1x probe-timer
```


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	
	-	-

30 Web

30.1 Web

30.1.1 http redirect

HTTP

no

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

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

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

└──

└──

Web	Web
50	

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

show http redirect	HTTP

└──

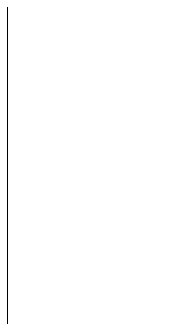
10.2(5)	

30.1.3 http redirect homepage

no

http redirect homepage *url-string*

no http redirect homepage



```
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	1	
	1		HTTP	4	
	Ruijie(config)# http redirect session-limit 4				
	show http redirect		HTTP		
	10.2(5)				

30.1.6 http redirect timeout

		no
	3	
	http redirect timeout <i>seconds</i>	
	no http redirect timeout	
	<i>seconds</i>	<i>seconds</i> 1-10
	3	
		HTTP

GET/HEAD

HTTP

show web-auth allow-vlan	VLAN	Web	VLAN
10.4(2b2)			

30.1.8 web-auth direct-host

IP

no

web-auth direct-host *ip-address* [*ip-mask*] [**port** *interface-name*] [**arp**]

no web-auth direct-host *ip-address*

<i>ip-address</i>	IP
<i>ip-mask</i>	IP
port <i>interface-name</i>	IP

|

Web

	10.2(5)	

30.1.10 web-auth port-control

Web

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

30.1.11 web-auth portal key

no

HTTP WEB

WEB

web-auth portal key *key-string*

no web-auth portal key

<i>key-string</i>	255

┌

┌

┌

Web

┌
Ruijie(config)#

1

web-auth

web-auth portal key *web-auth*

http redirect	IP
http redirect homepage	
web-auth port-control	Web

┌

┌

10.2(5)	

30.1.12 web-auth update-interval

no

60

web-auth update-interval *seconds*

no web-auth update-interval

<i>seconds</i>	30-3600

60

1 HTTP

Ruijie# **show http redirect**

HTTP redirection settings:

```

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

Direct sites:

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

Direct hosts:

Address	Mask	Port	ARP Binding
192.168.1.1	255.255.255.255	Fa0/1	On

server	IP
port	HTTP
homepage	

Web

|
|

|
|

|
|

|
|
|
|

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

	-	-

Web

Ruijie# **show web-auth user**

Current user num : 4

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

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

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

Address	IP
Mac	MAC
	0
Time Start	
Status	Active Create Destroy

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

31 AAA

31.1

31.1.1 aaa authentication dot1x

```
AAA    AAAf0nw 10.50 0 10AAAAAA Tf0nw 10.50 0 10AAA
```

aaa new-model	AAA
dot1x authentication	802.1X
username	

-	-

31.1.2 aaa authentication enable

AAA Enable **aaa authentication enable** Enable
no

aaa authentication enable default *method1* [*method2...*]

no aaa authentication enable default

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

AAA Enable **aaa authentication enable** AAA Enable Enable Enable
Enable Enable Enable Enable Enable Enable Enable Enable Enable Enable

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

```

├

```

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 authentication ppp AAA 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

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>	

method

none **group**
 ?UE • © A
 4

ÂQ P † PÂ pß2â•ñ lp Sf r lhA,,W sf`b J?

-	-

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
 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

|

|

-	-

32.1.2 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 privile	42
----	---------------	----

	radius set qos cos	radius	qos	cos
	-	-		

32.1.3 radius-server attribute 31

RADIUS Calling-Station-ID

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-server RADIUS AAA RADIUS

RADIUS

	-	-

32.1.6 radius-server key

	RADIUS
radius-server key	no
radius-server key	

RADIUS

RADIUS

RADIUS

	<i>seconds</i>	1-1000
--	----------------	--------

5

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

radius vendor-specific extend	Radius id

-	-

32.1.10 radius vendor-specific extend

id

radius vendor-specific extend

no radius vendor-specific extend

-	-

id

id

```
Ruijie(config)#
```

	-	-

32.2 RADIUS

32.2.1 debug radius

RADIUS

no

RADIUS

debug radius [event | detail]

no debug radius [event | detail]

	-	-

--

EXEC

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--

	-	-

--

	-	

RADIUS

	-	-
--	---	---

|

|

|

radius

```
Ruijie# show radius parameter
```

```
Server Timeout: 5 Seconds
```

```
Server Deadtime: 5 Minutes
```

```
Server Retries: 3
```

```
Server Key: *****
```

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

radius

```
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
9     file-diractory        9
10    file-count             10
11    file-name-0            11
12    file-name-1            12
13    file-name-2            13
14    file-name-3            14
15    file-name-4            15
16    max up-rate            75
17    version to server     17
18    flux-max-high32       18
19    flux-max-low32        19
20    proxy-avoid           20
21    dailup-avoid          21
22    ip privilige          22
23    login privilige       42
24    limit to user number  50

```

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

RADIUS

	-	-
--	---	---

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

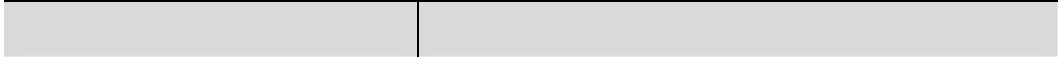
-		-

o tacacs source-interface

TACACS+

o tacacs source-interface *interface*

o 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
```

Td(2)Tj/TT0 1 Tf1.573.053-209.22 -20.6174.4241.6 573.02<05Tj356.58 572.55

|

|

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

	-	-
--	---	---

34.1.2 crypto key zeroize

SSH

crypto key zeroize {rsa / dsa}

rsa		RSA
dsa		DSA

--

--

	SSH Server	SSH Server	DISABLE
		no enable service ssh-server	

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

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

RGOS10.1

-		-

34.1.3 ip ssh authentication-retries

SSH Server

no

ip ssh authentication-retries *retry times*

no ip ssh authentication-retries

<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

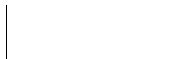
SSH Server no

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**

Q ₃	
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**

|

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RGOS10.1

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35 CPU

35.1

35.1.1 cpu-protect type packet-type pps pps_value

CPU

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

CPU

cpu-protect type { arp | bpdu | dhcp | ipv6mc | igmp | rip | ospf | vrrp | pim | ttl1 | unknown-ipmc | dvmrp | ...} **pri** *pri_num*

<i>pri_num</i>	ID	0 7

0

BPDU 7
 Ruijie(config)# **cpu-protect type bpdu pri 7**
 Set packet type bpdu pri 7.

cpu-protect type packet-type pps <i>pps_value</i>	

-	-

35.2

35.2.1 show cpu-protect type

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



|

|

|

show cpu-protect type bpdu BPDUs

Ruijie(config)# **show cpu-protect type arp**

Slot	Type	Pps	Total	Drop

MainBoard	bpdu	100	30	0
Slot-2	bpdu	100	30	0

|

show cpu-protect type <i>packet-type</i>	CPU

|

-

|

-	-

|

CPP	"..."	CPP	

36 DoS

36.1

36.1.1 ip deny invalid-l4port

no

ip deny invalid-l4port

no ip deny invalid-l4port

	-	-

└───

└───

└───

1
Ruijie(config)# ip deny invalid-l4port

2
Ruijie(config)# no ip deny invalid-l4port

	show ip deny invalid-l4port	

└───

	-	-

36.1.2 ip deny invalid-tcp

	TCP	no	TCP
ip deny invalid-tcp			
no ip deny invalid-tcp			
	-		-

┌
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┌
└
┌

TCP

┌
└
┌
└

```
1 TCP
Ruijie(config)# ip deny invalid-tcp
2 TCP
Ruijie(config)# no ip deny invalid-tcp
```

┌
└

show ip deny invalid-tcp	TCP	P532A>6<0B9TJ
---------------------------------	-----	---------------

|

|

|

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

|

show ip deny land	Land

|

-

|

-	-

36.2

36.2.1 show ip deny invalid-l4port

show ip deny invalid-l4port

|

-	-

|

|

|

|

```
Ruijie# show ip deny invalid-l4port
DoS Protection Mode          State
-----
```

```
protect against invalid l4port attack Off
```

-	-

-	-

36.2.2 show ip deny invalid-tcp

TCP

show ip deny invalid-tcp

-	-

```
Ruijie# show ip deny invalid-tcp
```

```
DoS Protection Mode                State
-----
```

```
protect against invalid tcp attack  On
```

(no) ip deny invalid-tcp	TCP

-	-

36.2.3 show ip deny land

Land

show ip deny land

37 GSN

37.1

37.1.1 security address-bind enable

security address-bind enable

no security address-bind enable

	-	-

|

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AP AP

|

GSN

|

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

|

	security gsn enable	GSN

|

RGOS10.1

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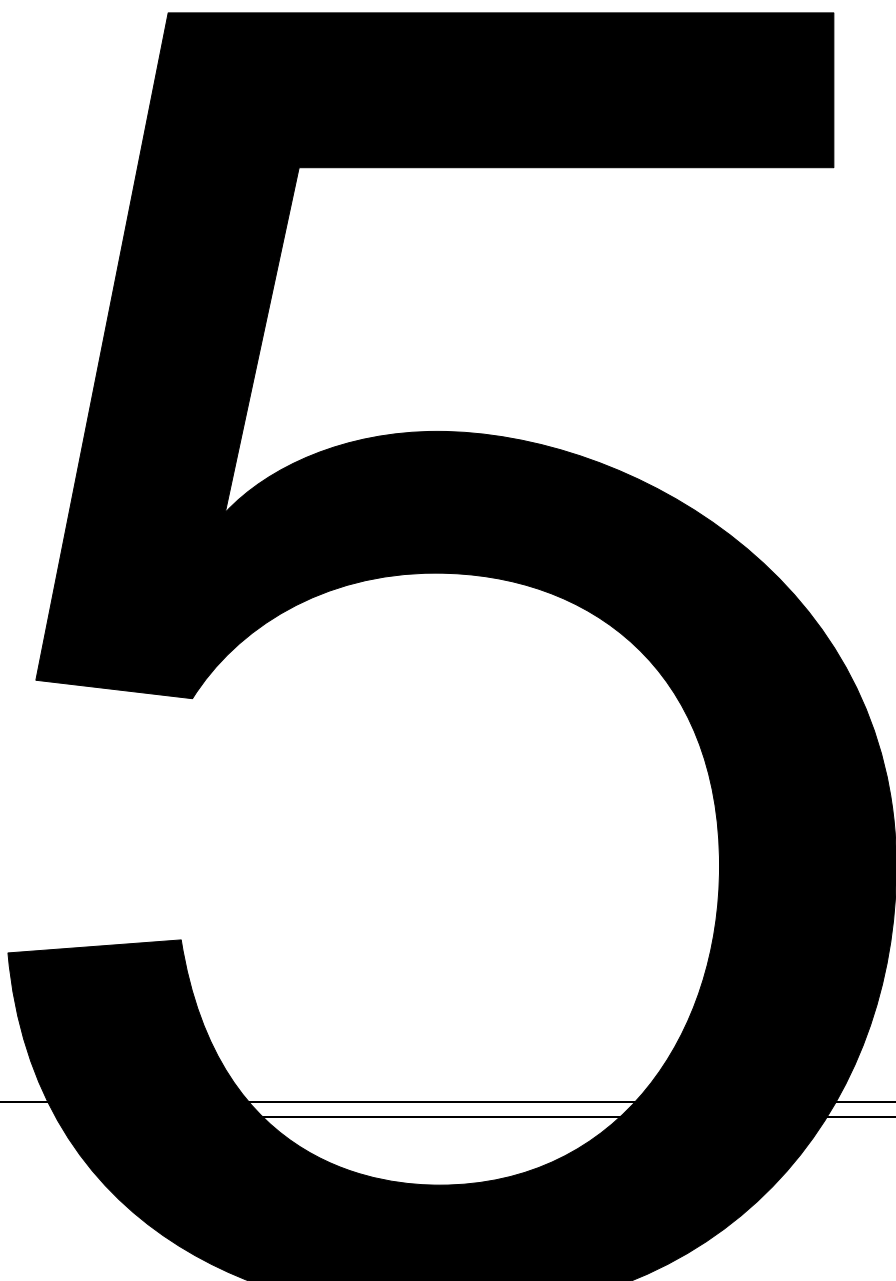
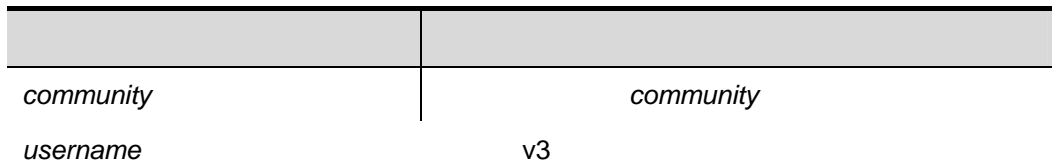
	-	-

37.1.2 security community

smp

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

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



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	RGOS10.1	
	-	-

37.1.5 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

	-	-

37.2

37.2.1 show security evnet interval

	-	-

┌

┌

┌

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

	security event interval	<i>interval</i>

┌
RGOS10.1

	-	-

37.2.2 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

-	-

38 DAI

38.1 VLAN DAI

38.1.1 ip arp inspection vlan

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

ip arp inspection vlan *vlan-id*

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



38.2

38.2.1 ip arp inspection trust

ip arp inspection trust no

ip arp inspection trust

no ip arp inspection trust



39

arp

arp

show anti-arp-spoofing

|

|

|

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

anti-arp-spoofing ip	arp

|

-	-

40 IP Source Guard

40.1 IP Source Guard

40.1.1 ip source binding

IP no

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

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

|

|

|

IP Source Guard

DHCP

|

1

Ruijie# **configure terminal**

Ruijie(config)# **ip source binding** 0000.0000.0001 **vlan** 1 1.1.1.1
interface FastEthernet 0/1

Ruijie(config)# **end**

Ruijie# **show ip source binding**

```

MacAddress      IpAddress  Lease(sec)  Type   VLAN  Interface
-----
0000.0000.0001 1.1.1.1   infinite   static  1    FastEthernet 0/1
Total number of bindings: 1
    
```

--	--

show ip source binding		IP
	-	-

40.2 IP Source Guard

40.2.1 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

```

-	-

40.3 IP Source Guard

40.3.1 show ip source binding

IP

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

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

└───

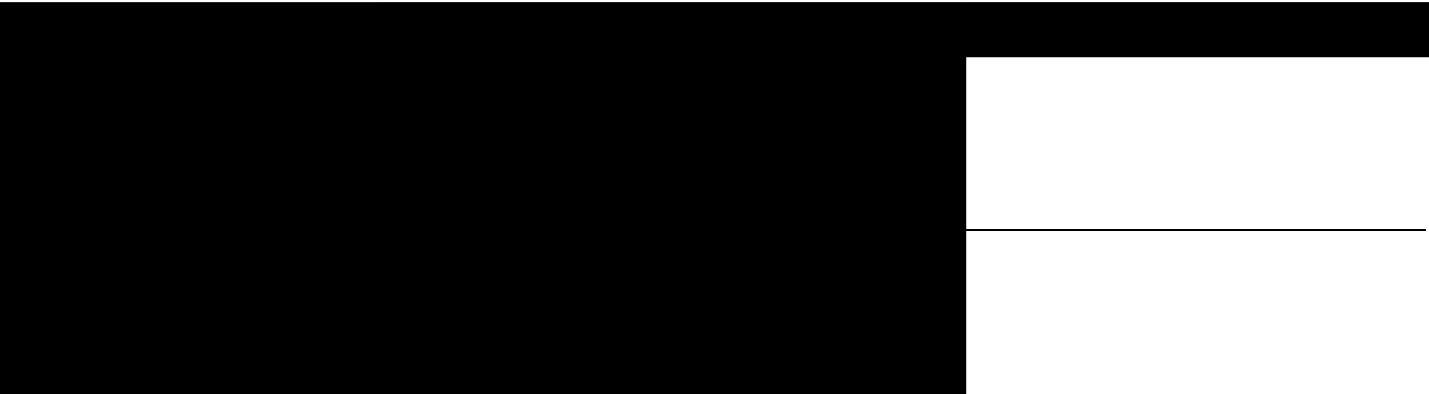
└───

└───

└───

```
Ruijie# show ip source binding static
MacAddress   IpAddress  Lease(sec)  Type   VLAN  Interface
-----
0000.0000.0001 1.0.0.1   infinite   static    1  FastEthernet 0/1
Total number of bindings: 1
```

└───



|

|

-	-

|

|

-	-

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

<i>percent_vaule</i>	1	100

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

└───

└───

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



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

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

NFPP

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

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



|

|

-	-

41.3.4 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	

41.3.5 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		

-		-

41.3.6 arp-guard rate-limit

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

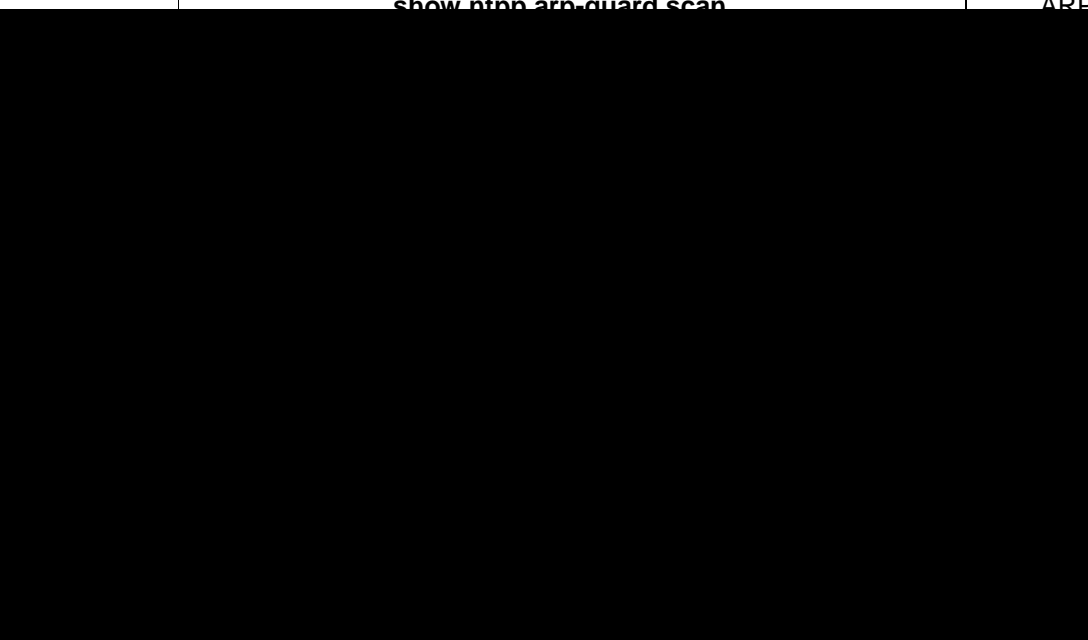
--	--	--

NFPP

10	15	ARP	MAC	IP
	MAC	IP	IP	

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

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



- , f â j R z

```
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	

-	-

41.3.9 clear nfpp arp-guard scan

ARP

clear nfpp arp-guard scan

-	-

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

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

	-	-

41.3.10 nfpp arp-guard enable

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

|

|

|

|

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



```
arp-guard isolate-period  
show nfpp dfpp 8 0 Td( )TET6605.4-0..36 559.1603 Tm[<48065BLh/
```

┌

┌

┌

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

┌

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

┌

┌

10.4	

41.3.13 nfpp arp-guard scan-threshold

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

┌

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

┌

ARP

ARP

┌

┌

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

┌

	-	-

41.4.2 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	

┌

--	--	--

	-	-
--	---	---

41.4.3 dhcp-guard isolate-period

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

|



NFPP

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

nfpp dhcp-guard policy	
show nfpp dhcp-guard summary	

-	-

41.4.7 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

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

dhcp-guard attack-threshold	
nfpp dhcp-guard policy	

show nfpp dhcp-guard hosts	
-	-

41.4.8 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	

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	

41.4.10 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	

41.5 DHCPv6

41.5.1 dhcpv6-guard attack-threshold

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

|

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

|

MAC 10 300

|

NFPP

|

|

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

|

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

|

|

10.4	

41.5.2 dhcpv6-guard enable

DHCPv6

dhcpv6-guard enable

|

-	-

|

DHCPv6

|

NFPP

|

|

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

|

--	--

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

41.5.3 dhcpv6-guard isolate-period

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

--	--

seconds

dhcpv6-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.

```
MAC 5 150
```

```
NFPP
```

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcpv6-guard rate-limit per-src-mac 8
Ruijie(config-nfpp)# dhcpv6-guard rate-limit per-port 100
```

nfpp dhcpv6-guard policy	
show nfpp dhcpv6-guard summary	

10.4	

41.5.7 clear nfpp dhcpv6-guard hosts

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



```
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	

41.5.9 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	



NFPP

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

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

-	-

41.6.3 icmp-guard isolate-period

icmp-guard isolate-period {seconds | permanent}

seconds	0 [30, 86400]
permanent	

0

NFPP

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

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

└───

	-	-

41.6.4 icmp-guard monitor-period

icmp-guard monitor-period *seconds*

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

└───

600

└───

NFPP

───

”

└──

└──

-	-

41.6.6 icmp-guard rate-limit

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

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

IP 900 1000

NFPP

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

nfpp icmp-guard policy	
show nfpp icmp-guard summary	

-	-

41.6.7 icmp-guard trusted-host

icmp-guard trusted-host ip mask

no icmp-guard trusted-host {all | ip mask}

--	--

<i>ip</i>	IP
<i>mask</i>	IP
all	no

NFPP

CPU ICMP CPU
500

```
Ruijie(config)# nfpp  
Ruijie(config-nfpp)# icmp-guard trusted-host 1.1.1.0 255.255.255.0
```

show nfpp icmp-guard trusted-host	

-	-

41.6.8 clear nfpp icmp-guard hosts

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

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

|

|

|

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

|

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

|

|

-	-

41.6.9 nfpp icmp-guard enable

ICMP

nfpp icmp-guard enable

|

-	-

|

ICMP

|

|

ICMP

ICMP

|

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

|

icmp-guard enable	ICMP

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		

└── ND

└── NFPP

└──

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

```
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	

41.7.4 nfpp nd-guard enable

ND

nfpp nd-guard enable

-	-

ND

ND

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

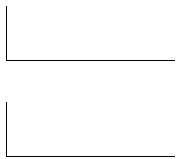
nd-guard enable	ND
show nfpp nd-guard summary	

10.4	

41.7.5 nfpp nd-guard policy

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

ns-na	
rs	
ra-redirect	
<i>rate-limit-pps</i>	1 9999
<i>attack-threshold-pps</i>	1 9999



ND snooping

ND snooping

ND snooping

ND guard
900

800

ND guard ND snooping

ND snooping

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp nd-guard policy per-port ns-na 50 100
Ruijie(config-if)# nfpp nd-guard policy per-port rs 10 20
Ruijie(config-if)# nfpp nd-guard policy per-port ra-redirect 10 20
```

--	--

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

10.4	

41.8 NFPP

41.8.1 clear nfpp log

NFPP

41.8.2 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</i> interval	

|

| NFPP

|

VLAN

|

```

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

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

|

show nfpp log summary	NFPP

|

|

10.4	

41.8.5 show nfpp log

NFPP

show nfpp log summary

NFPP

show nfpp log buffer [statistics]

|

statistics	NFPP

|

|

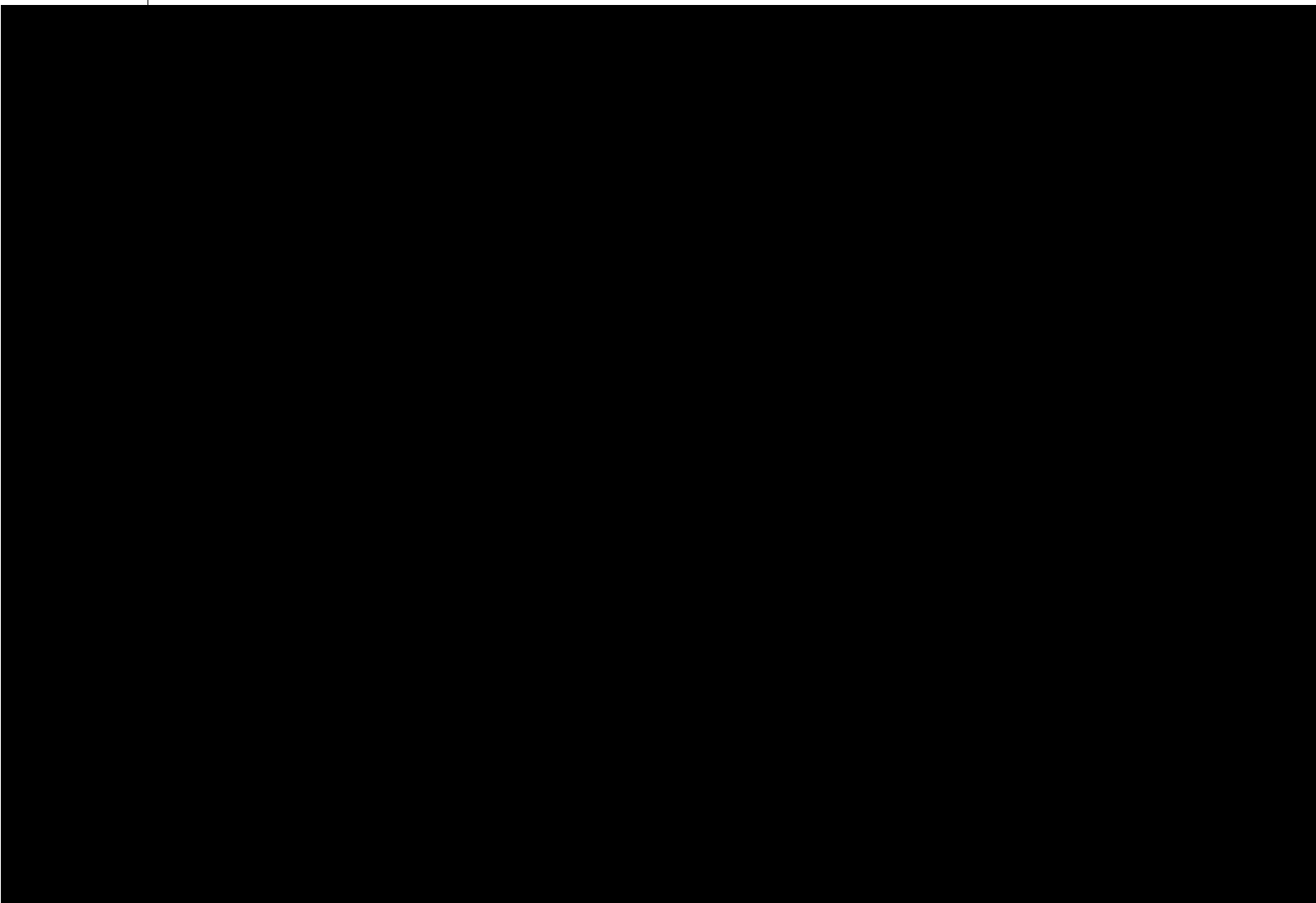
33_33

Protocol

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

Reason 5

DoS



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

1

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

```

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

2

remain-time(seconds)

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

If column 1 shows '*', it means "hardware do not isolate user" .

```

VLAN  interface IP address  MAC address  remain-time(s)
----  -
1     Gi0/1     1.1.1.1     -            110
2     Gi0/2     1.1.2.1     -            61
*3    Gi0/3     -           0000.0000.1111 110
4     Gi0/4     -           0000.0000.2222 61
    
```

Total 4 hosts

clear nfpp arp-guard hosts	

-	-

41.9.2 show nfpp arp-guard scan

ARP

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

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

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

ARP scan table has 4 record(s).

ARP 4

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

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

Total 4 record(s)

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

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

0000.0000.0001

NFPP

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)				



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	

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

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

```

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

remain-time(seconds)

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

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

```

VLAN  interface  MAC address  remain-time(seconds)
----  -
1     gi0/2      0000.0000.0001  10
*2    gi0/1      0000.0000.0002  20
Total  2 host(s)
    
```

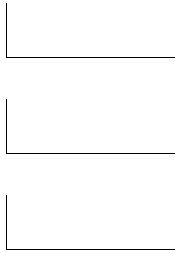
clear nfpp dhcp-guard hosts	

10.4	

41.10.2 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-period	
dhcp-guard monitored-host-limit	

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

10.4	

41.11 DHCPv6

41.11.1 show nfpp dhcpv6-guard hosts

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

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

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

```

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



```

                                remain-time(seconds)
Ruijie# show nfpp dhcpv6-guard hosts
If column 1 shows '*', it means "hardware failed to isolate host".
VLAN  interface  MAC address  remain-time(seconds)
----  -
1     gi0/2      0000.0000.0001  10
*2    gi0/1      0000.0000.0002  20
Total 2 host(s)
    
```



clear nfpp dhcpv6-guard hosts	



10.4	

41.11.2 show nfpp dhcpv6-guard summary

show nfpp dhcpv6-guard summary



-	-



```

Ruijie# show nfpp dhcpv6-guard summary

Format of column Rate-limit and Attack-threshold is per-src-ip
/per-src-mac/per-port.
Interface  Status  Isolate-period  Rate-limit  Attack-threshold
    
```

```

Global      Enable 300          -/5/150    -/10/300
Gi 0/1      Enable 180          -/6/-      -/8/-
Gi 0/2      Disable 200         -/5/30     -/10/50
    
```

Maximum count of monitored hosts: 1000

Monitor period 300s

```

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

dhcpv6-guard attack-threshold	
dhcpv6-guard enable	DHCPv6

show nfpp icmp-guard summary

	-	-

|

|

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

┌

10.4	

41.12.3 show nfpp icmp-guard trusted-host

show nfpp icmp-guard trusted-host

-	-

┌

┌

┌

```
Ruijie# show nfpp icmp-guard trusted-host
IP address      mask
-----
1.1.1.0         255.255.255.0
1.1.2.0         255.255.255.0
Total 2 record(s)
```

icmp-guard trusted-host	

┌

--	--

NFPP

NFPP

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

42 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>	
<i>destination-wildcard</i>	0.255.0.32
fragments	

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

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

ACL

access-list

dod-host-prohibited
dod-net-prohibited
echo
echo-reply
fragment-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
```


destination-wildcard | **host** *destination* | **any** {**host** *destination-mac-address* | **any**}
[time-range *time-range-name*]

b) protocol

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

c) expert

Internet Control Message Protocol (ICMP)

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

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

Transmission Control Protocol (TCP)

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

User Datagram Protocol (UDP)

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

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

1

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

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

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

42.1.3 expert access-group

EXPERT ACL

no

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

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

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

ACL

show expert access-lists

```

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

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

show expert access-lists	

V10.0	V10.0

42.1.5 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	

ip access-group

fastEthernet0/0 120

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

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

access-list	
show access-lists	
show ip access-list	IP 1-199 1300 - 2699 3000 3199

```

1      ACL
Ruijie(config)# ip access-list standard std-acl
Ruijie(config-std-nacl)# show ip access-lists
ip access-list standard std-acl
Ruijie(config-std-nacl)#

2      ACL
Ruijie(config)# ip access-list extended 123
Ruijie(config-ext-nacl)# show ip access-lists
ip access-list extended 123
    
```

show ip access-lists	IP

V10.0	V10.0

42.1.7 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#

|

|

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

42.1.9 ipv6 access-list

|

IPV6 ACL

no

ACL

ipv6 access-list *name*

no ipv6 access-list *name*

|

<i>name</i>	ACL

|

|

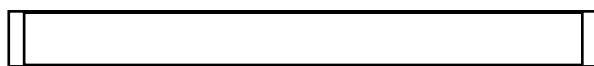
|

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)#
    
```





V10.0	V10.0

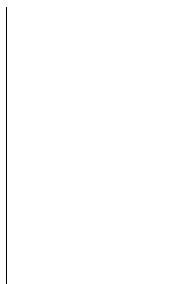
42.1.11 MAC access-group

MAC ACL

no

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

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



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



ACL



show running-config



```

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



--	--

show access-group

ACL

MAC ACL

no

ACL

mac access-list extended {*id* | *name*}

no mac access-list extended {*id* | *name*}

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

MAC ACL

show mac access-lists

1 MAC ACL

Ruijie(config)# **mac access-list extended** *mac-acl*

Ruijie(config-mac-nacl)# **show mac access-lists**

mac access-list extended *mac-acl*

2 MAC ACL

Ruijie(config)# **mac access-list extended** *704*

Ruijie(config-mac-nacl)# **show mac access-lists**

mac access-list extended *704*

show mac access-lists	mac

V10.0	V10.0

42.1.13 no sn

ACL

no *sn*

--	--

<i>sn</i>	ACL
-----------	-----

ACL

ACL

ACL

```
Ruijie(config)# ipv6 access-list extended v6-acl
Ruijie(config-ipv6-nacl)# permit ipv6 host ::192.168.4.12 any
Ruijie(config-ipv6-nacl)# 12 deny ipv6 host any any
Ruijie(config-ipv6-nacl)# show access-lists
ipv6 access-list extended v6-acl
10 permit ipv6 host ::192.168.4.12 any
12 deny ipv6 any any
Ruijie(config-ipv6-nacl)# no 12
Ruijie(config-ipv6-nacl)# show access-lists
ipv6 access-list extended v6-acl
10 permit ipv6 host ::192.168.4.12 any
Ruijie(config-ipv6-nacl)#
```

1) IP

[sn] **permit** {*source source-wildcard* | **host** *source* | **any**}

2) IP

[sn] **permit protocol** *source source-wildcard destination destination-wildcard* [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

IP

Internet Control Message Protocol (ICMP)

[sn] **permit icmp** {*source source-wildcard* | **host** *source* | **any**} {*destination destination-wildcard* | **host** *destination* | **any**} [*icmp-type*] [[*icmp-type* [*icmp-code*]]] | [*icmp-message*] [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)

[sn] **permit tcp** {*source source-wildcard* | **host** *source* | **any**} [*destination destination-wildcard* | **host** *destination* | **any**] [*port*] [*port*]

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

Expert

Internet Control Message Protocol (ICMP)

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

Transmission Control Protocol (TCP)

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

User Datagram Protocol (UDP)

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

Address Resolution Protocol (ARP)

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

5) IPV6

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

IPV6

Internet Control Message Protocol (ICMP)


[sn] **permit icmp** {source-ipv6-prefix / prefix-length | **any** source-ipv6-address | **host**} {destination-ipv6-prefix / prefix-length | **host** destination-ipv6-address | **any**} [icmp-type] [[icmp-type [icmp-code]] | [icmp-message]] [dscp dscp] [flow-label flow-label] [fragments] [time-range time-range-name]

Transmission Control Protocol (TCP)

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

User Datagram Protocol (UDP)

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



```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# ip access-group 102 in
Ruijie(config-if)#
    3      MAC      ACL              MAC  0013.0049.8272
      100              1
Ruijie(config)# mac access-list extended 702
Ruijie(config-mac-nacl)# permit host 0013.0049.8272 any aarp
Ruijie(config-mac-nacl)# show access-lists
mac access-list extended
10 permit host 0013.0049.8272 any aarp702
Ruijie(config-mac-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# mac access-group 702 in
    4      ip      ACL              IP  192.168.4.12
      1
Ruijie(config)# ip access-list standard std-acl
Ruijie(config-std-nacl)# permit host 192.168.4.12
Ruijie(config-std-nacl)# show access-lists
ip access-list standard std-acl
10 permit host 192.168.4.12
Ruijie(config-std-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# ip access-group std-acl in
    5      IPV6      ACL              IP  192.168.4.12
      1
Ruijie(config)# ipv6 access-list extended v6-acl
Ruijie(config-ipv6-nacl)# 11 permit ipv6
host ::192.168.4.12 any
Ruijie(config-ipv6-nacl)# show access-lists
ipv6 access-list extended v6-acl
11 permit ipv6 host ::192.168.4.12 any
show accessj/T0-2interface#interface#gigabitethernet
```

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

42.2

42.2.1 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

42.2.2 show access-lists

ACL ACL

show access-lists [*id* | *name*]

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

acl *id* *name* ACL

```

Ruijie# show access-lists n_acl
ip access-list standard n_acl
Ruijie# show access-lists 102
ip access-list extended 102
Ruijie# show access-lists
ip access-list standard n_acl
    
```

ACL

┌

┌

V10.0	V10.0

42.2.4 show ip access-group

IP ACL

show ip access-group[interface <interface>]

┌

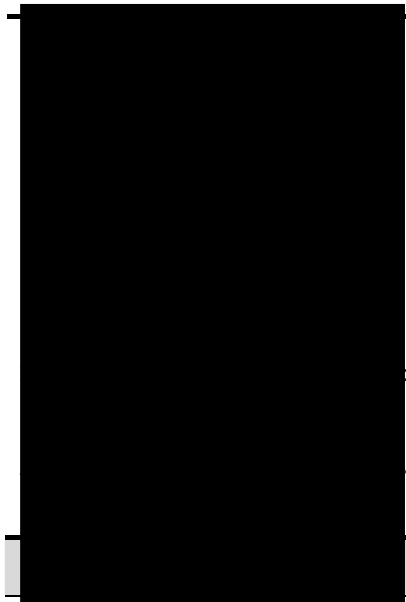
<interface>	

┌

┌

┌

┌



IP ACL

group interface gigabitEthernet 0/1

abitEthernet 0/1.

┌

ip access-list	IP ACL

┌



<i><interface></i>	

|

|

|

IPv6 ACL

IPv6 ACL

|
Ruijie# **show ipv6 traffic-filter interface gigabitethernet 0/4**
ipv6 traffic-filter v6 in
Applied On interface GigabitEthernet 0/4.

--	--

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

mac access-list		MAC	ACL

V10.0		V10.0	

42.3

42.3.1 security access-group

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

no security access-group

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

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

show secu-acl			

	V10.2	V10.2

42.3.2 security global access-group

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

no security global access-group

--	--	--

Fa0/6 uplink --

security global access-group	
security access-group	
security uplink enable	

V10.2	V10.2

43 QOS

43.1

```

QoS
    1 policy-map
        policy-map
            class-map
                1 ACL ACL ACE
                    ACE "ACL"
    
```

```

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

CoS	0
	8
	WRR A

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

43.2

43.2.1 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
```



	-	-
--	---	---

43.2.4 mls qos cos

CoS

mls qos cos *default-cos*

no mls qos cos

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

CoS 0

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

	show mls qos interface <i>interface-id</i>	-

	dscp	
	no	

|

|

|

|

Ruijie(config)# **mls qos map cos-dscp 8 10 16 18 24 26 32 34**

```
Ruijie(config)# mls qos mls qos
```

43.2.8 mls qos scheduler

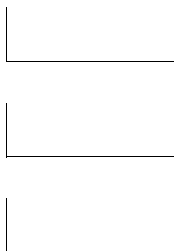
mls qos scheduler [sp | rr | wrr | drr]

no mls qos scheduler



cos	Qos	CoS
dscp	Qos	DSCP

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



```

1      policy map,   po
Ruijie(config)# policy-map po
2      class-map cm
Ruijie(config-pmap)# class cm
3      dscp      10
Ruijie(config-pmap-c)# set ip dscp 10
4      1M,      4096k,      dscp 16
Ruijie(config-pmap-c)# police 1000000 4096 exceed-action dscp 16

```

show policy-map	-
------------------------	---



-	-
---	---

43.2.11 priority-queue

[no] priority-queue

priority-queue	SP
no priority-queue	WRR

WRR

E

!

8

|

|

|

|

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

|

show mls qos queueing	-

|

|

-	-

43.2.13 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 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**

-	-

-	-

43.3.3 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
```

-	-

-	-

43.3.4 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
```

-	-

-	-

43.3.5 show mls qos queueing

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

show mls qos queueing



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

-	-

-	-

43.3.7 show mls qos scheduler

show mls qos scheduler

-	-

Ruijie# **show mls qos scheduler**

-	-

-

-	-

44 Voice VLAN

44.1

44.1.1 voice vlan

```

Voice VLAN
Voice VLAN
voice vlan vlan-id
no voice vlan

```

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

```


```

	Voice VLAN	Voice VLAN ID
1	Voice VLAN	VLAN
2	VLAN 1 VLAN	VLAN 1 Voice
3	VLAN	Voice VLAN Super VLAN
4		802.1x VLAN
		VID Voice VLAN ID
5	RSPAN Remote VLAN	Voice VLAN 1
	VLAN	Voice VLAN

```

1 Voice VLAN VLAN2 Voice VLAN
Ruijie(config)# vlan 2
Ruijie(config-vlan)# exit
Ruijie(config)# voice vlan 2

```

--	--

show voice vlan

Voice VLAN
44-2

44.1.3 voice vlan cos

Voice VLAN CoS **no**

voice vlan cos *cos-value*

no voice vlan cos

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

cos-value 6

Voice VLAN CoS DSCP

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

show voice vlan	Voice VLAN

10.4	

44.1.4 voice vlan dscp

Voice VLAN DSCP **no**

voice vlan dscp *dscp-value*

no voice vlan dscp

--	--

	<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	
	10.4		

44.1.5 voice vlan enable

	Voice VLAN	Voice VLAN	no
	voice vlan enable		
	no voice vlan enable		


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

r

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

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

```

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

```

show voice vlan	Voice VLAN

[Redacted]

|

Voice VLAN

Voice VLAN

```

1          Voice VLAN
Ruijie(config)# show voice vlan
Voice VLAN status: ENABLE           //Voice VLAN
Voice VLAN ID: 2                     //Voice VLAN ID
Voice VLAN security mode: Security //
Voice VLAN aging time: 5 minutes    //
Voice VLAN cos: 6                    //      CoS
Voice VLAN dscp: 46                  //      DSCP
Current voice vlan enabled port mode: //      Voice VLAN
PORT                                MODE
-----
Fa0/1                                Auto
    
```

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

10.4	
------	--

44.2.2 show voice vlan oui

OUI OUI

show voice vlan oui

Voice VLAN

--	--	--

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┌

46 RLDP

46.1

46.1.1 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		

-		-

46.1.2 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	

-	-

46.1.3 rldp enable

RLDP

rldp enable

no rldp enable

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

46.1.4 rldp port

rldp

rldp port { unidirection-detect | bidirection-detect | loop-detect | 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

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

rldp enable	rldp

-	-

46.1.5 rldp reset

rldp shutdown disable rldp

rldp reset

-	-

```
Ruijie# rldp reset
```

rldp enable	Rldp

-	-

46.2

46.2.1 show rldp

rldp

show rldp [interface *interface-id*]

		EÄ
--	--	----

└──

└── EXEC

└──

└──

└──

-	-

└──

└──

-	-

47 TPP

47.1

47.1.1 topology guard

topology guard

no

[no] topology guard

	-	-

no

[no] tp-guard port enable



|

|

tpp

|

Ruijie# **show tpp**

|

topology guard	

|

|

-	-

48

48.1

48.1.1 cd

`cd [filesystem:][directory]`

	<i>filesystem</i>	
	<i>directory</i>	

flash

cd / pwd

1 usb0
Ruijie# **cd** usb0:/
2 sd
Ruijie# **cd** sd0:/

	pwd	

48.1.2 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	

[Redacted]

r

1

Ruijie# **dir** slave0:/

Directory of slave:/

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	
cd	

--	--	--

48.1.5 mkdir

mkdir *directory*

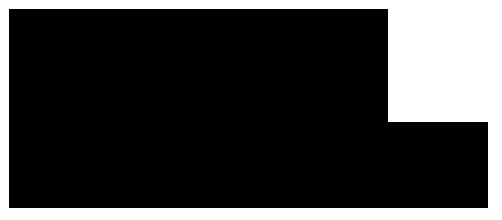
48.1.6 rename

rename *url1 url2*

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

└───

└───



└───┘

└───┘

└───┘

└───┘

```
1
Ruijie# pwd
flash:/
```


```
cd
```

└───┘

48.2.2 show file systems

show file systems

└───┘

└───┘



1

Ruijie#show file systems





--	--

49

49.1 CPU

49.1.1 cpu-log

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

	-	-

	-	-

49.1.2 show cpu

	CPU	show cpu
show cpu		
	-	-

	CPU	5	1	5
CPU		5	1	5
CPU	p			1

5	0%	0%	0%	waitqueue_process
6	0%	0%	0%	tasklet_task
7	0%	0%	0%	kevents
8	0%	0%	0%	snmpd
9	0%	0%	0%	snmp_trapd
10	0%	0%	0%	mtdblock
11	0%	0%	0%	gc_task
12	0%	0%	0%	Context
13	0%	0%	0%	kswapd
14	0%	0%	0%	bdflush
15	0%	0%	0%	kupdate
16	0%	3%	1%	ll_mt
17	0%	0%	0%	ll main process
18	0%	0%	0%	bridge_relay
19	0%	0%	0%	dlx_task
20	0%	0%	0%	secu_policy_task
21	0%	0%	0%	dhcpa_task
22	0%	0%	0%	dhcpsnp_task
23	0%	0%	0%	igmp_snp
24	0%	0%	0%	mstp_event
25	0%	0%	0%	GVRP_EVENT
26	0%	0%	0%	rldp_task
27	0%	2%	1%	rerp_task
28	0%	0%	0%	reup_event_handler
29	0%	0%	0%	tpp_task
30	0%	0%	0%	ip6timer
31	0%	0%	0%	rtadvd
32	0%	0%	0%	tnet6
33	2%	0%	0%	tnet
34	0%	0%	0%	Tarptime
35	0%	0%	0%	gra_arp
36	0%	0%	0%	Ttcptimer
37	8%	1%	0%	ef_res
38	0%	0%	0%	ef_rcv_msg
39	0%	0%	0%	ef_inconsistent_daemon
40	0%	0%	0%	ip6_tunnel_rcv_pkt
41	0%	0%	0%	res6t
42	0%	0%	0%	tunrt6
43	0%	0%	0%	ef6_rcv_msg

44	0%	0%	0%	ef6_inconsistent_daemon
45	0%	0%	0%	imid
46	0%	0%	0%	nsmd
47	0%	0%	0%	ripd
48	0%	0%	0%	ripngd
49	0%	0%	0%	ospfd
50	0%	0%	0%	ospf6d
51	0%	0%	0%	bgpd
52	0%	0%	0%	pimd
53	0%	0%	0%	pim6d
54	0%	0%	0%	pdmd
55	0%	0%	0%	dvmrpd
56	0%	0%	0%	vty_connect
57	0%	0%	0%	aaa_task
58	0%	0%	0%	Tlogtrap
59	0%	0%	0%	dhcp6c
60	0%	0%	0%	sntp_recv_task
61	0%	0%	0%	ntp_task
62	0%	0%	0%	sla_daemon
63	0%	3%	1%	track_daemon
64	0%	0%	0%	pbr_guard
65	0%	0%	0%	vrrpd
66	0%	0%	0%	psnps
67	0%	0%	0%	igsnpd
68	0%	0%	0%	coa_recv
69	0%	0%	0%	co_oper
70	0%	0%	0%	co_mac
71	0%	0%	0%	radius_task
72	0%	0%	0%	tac+_acct_task
73	0%	0%	0%	tac+_task
74	0%	0%	0%	dhcpd_task
75	0%	0%	0%	dhcps_task
76	0%	0%	0%	dhcpping_task
77	0%	0%	0%	dhcpc_task
78	0%	0%	0%	uart_debug_file_task
79	0%	0%	0%	ssp_init_task
80	0%	0%	0%	rl_listen
81	0%	0%	0%	ikl_msg_operate_thread
82	0%	0%	0%	bcmDPC

83	0%	0%	0%	bcmL2X.0	
84	3%	3%	3%	bcmL2X.0	
85	0%	0%	0%	bcmCNTR.0	
86	0%	0%	0%	bcmTX	
87	0%	0%	0%	bcmXGS3AsyncTX	
88	0%	2%	1%	bcmLINK.0	
89	0%	0%	0%	bcmRX	
90	0%	0%	0%	mngpkt_rcv_thread	
91	0%	0%	0%	mngpkt_recycle_thread	
92	0%	0%	0%	stack_task	
93	0%	0%	0%	stack_disc_task	
94	0%	0%	0%	redun_sync_task	
95	0%	0%	0%	conf_dispatch_task	
96	0%	0%	0%	devprob_task	
97	0%	0%	0%	rdp_snd_thread	
98	0%	0%	0%	rdp_rcv_thread	
99	0%	0%	0%	rdp_slot_change_thread	
100	4%	2%	1%	datapkt_rcv_thread	
101	0%	0%	0%	keepalive_link_notify	
102	0%	0%	0%	rerp_msg_rcv_thread	
103	0%	0%	0%	ip_scan_guard_task	
104	0%	0%	0%	ssp_ipmc_hit_task	
105	0%	0%	0%	ssp_ipmc_trap_task	
106	0%	0%	0%	hw_err_snd_task	
107	0%	0%	0%	rerp_packet_send_task	
108	0%	0%	0%	idle_vlan_proc_thread	
109	0%	0%	0%	cmic_pause_detect	
110	1%	1%	1%	stat_get_and_send	
111	0%	1%	0%	rl_con	
112	75%	80%	90%	idle	
		3	5	1	5
	CPU	LISR	HISR		CPU

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

2

,X

bgp

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

show memory	

-

10.3(4b3)	

49.2.2 show memory

show memory

show memory

-	-

└───

└───

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

50

50.1

50.1.1 threshold set

CPU CPU 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	memory	cpu
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

```

show threshold	

10.3(4b3)	

50.2

50.2.1 show threshold

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

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

```

1          M1 CPU

```

```
Ruijie# show threshold cpu M1
```

```
2
```

```
Ruijie# show threshold memory
```



51

51.1

51.1.1 clear logging

clear logging

	-	-

└───

└───

└───

└───
Ruijie# clear logging

	logging on	
	show logging	
	logging buffered	

└───

	-	-

51.1.2 more flash

FLASH

more flash:filename



<i>level</i>	0 7
--------------	-----

4k Bytes
7

show logging

clear logging
FLASH

Syslog Server

8

Emergencies	0	
Alerts	1	
Critical	2	
Errors	3	
warnings	4	
Notifications	5	
informational	6	
Debugging	7	

0

6 6 10000

Ruijie(config)# **logging buffered 10000 6**

	-	-

51.1.4 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	

	-	-

51.1.5 logging count

no

logging count

no logging count

	-	-

|

|

|

no logging count

|

Ruijie(config)# **logging count**

	show logging count	
	show logging	

|

	-	-

51.1.6 logging facility

no

(23)

logging facility *facility-type*

no logging facility

<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

```

FLASH FLASH
FLASH logging file flash

```

```

6
Ruijie(config)# logging file flash:trace

```

logging on	
show logging	
more flash	FLASH

-	-

51.1.8 logging monitor

```

VTY telnet SSH
no VTY
logging monitor level
no logging monitor

```

--	--

```

level 50648 ref66.82 -32.68 62.76 0.24 ref142.32534.98 154.38 1.5 r

```

VTY

6

Ruijie(config)# **logging monitor informational**

logging on	
show logging	

--	--

logging	Syslog Server
logging file flash:	FLASH
logging console	
logging monitor	VTY (telnet)
logging trap	Syslog Server

-	-

51.1.10 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

2 IPV6 AAAA:BBBB::FFFF
Ruijie(config)# **logging server ipv6**

	logging	Syslog server
	-	-

51.1.13 logging source interface

no

logging source interface *interface-type interface-number*

no logging source interface

	<i>interface-type</i>	
	<i>interface-number</i>	
		IP

Syslog Server

IP

IP

IP

-	-

51.1.14 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	

└──

-	-

51.1.15 logging trap

```

Syslog Server
no Syslog Server
logging trap level
no logging trap

```

level	1

```

Informational(6)

```

```

Syslog Server logging Syslog
Server logging trap
show logging

```

```

6 202.101.11.22 Syslog Server
Ruijie(config)# logging 202.101.11.22
Ruijie(config)# logging trap informational

```

2 e S g o l s

no

service sequence-numbers

no service sequence-numbers



```

Mar 22 15:28:02 %SYS-5-CONFIG: Configured from console by console
Ruijie# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# service sysname
Ruijie(config)# end
Mar 22 15:35:57 S3250 %SYS-5-CONFIG: Configured from console by
console

```

show logging	

-	-

51.1.18 service timestamps

no

default

service timestamps *message-type* [*uptime* | *datetime* [*msec* | *year*]]

no service timestamps *message-type*

default service timestamps *message-type*

<i>message-type</i>	log debug log 0 6 debug 7
<i>uptime</i>	* * * * 07:00:10:41

<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	

-	-

51.1.19 terminal monitor

VTY
no

VTY

terminal no monitor

	-	-

VTY

VTY VTY

VTY
Ruijie# **terminal monitor**

	-	-

	-	-

51.2

51.2.1 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

logging count	
show logging	
clear logging	

-	-

52

52.1

52.1.1 device-priority

device-priority [*member*] *priority*

<i>member</i>	ID member 1
<i>priority</i>	[1, 10]

|

|

```
1 10 10
1
write
```

```
2 8
Ruijie(config)# device-priority 2 8
```

show member	

|

-	-

52.1.2 device-description

device-description [*member member*] *description*

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

└──

└──

└──

└──

```

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

```

show member	

└──

-	-
---	---

52.2

52.2.1 show member

show member [*member*]

<i>member</i>	ID

└──

└──

└──

Ruijie# **show member**

```
Member Mac Address      Priority Software Version
HardwareVersion Description
-----
1 00d0.f810.3323 1 RGOS 10.1.00(2),Release(12889) 1.0 SWITCH
2 00d0.f822.33aa 1 RGOS 10.1.00(2),Release(12889) 1.0 SWITCH
3 00d0.f822.33ae 1 RGOS 10.1.00(2),Release(12889) 1.0 SWITCH
4 00d0.f822.33b0 1 RGOS 10.1.00(2),Release(12889) 1.0 SWITCH
5 00d0.f822.33b2 1 RGOS 10.1.00(2),Release(12889) 1.0 SWITCH
6 00d0.f824.23b4 1 RGOS 10.1.00(2),Release(12889) 1.0 SWITCH
7 00d0.f833.44b4 1 RGOS 10.1.00(2),Release(12889) 1.0 SWITCH
8 00d0.f855.33ae 1 RGOS 10.1.00(2),Release(12889) 1.0 SWITCH
```

-	-

-	-