

RG-S3250

RGOS 10.2(4)

©2009



RGOS® RGNOS®



锐捷®

RGOS®10.2(4)

-
-
-

1.

5

Courier New

5

2.

Arial

[] []

{x|y|...}

[x|y|...]

//

/02D60A5(3.70.257 GTc 28 0 T M0w5

CLI

alias

alias

no

alias *mode command-alias original-command*
no alias *mode [original-command]*

mode
command-alias

```

aaa-gs          AAA server group mode
acl             acl configure mode
bgp            Configure bgp Protocol
config         globle configure mode

```

*

**command-alias=original-command*

```

EXEC           "s"   "show"           "s?"
's'

```

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          iproute 0.0.0.0 0.0.0.0 192.168.1.1
```



exec	
interface	
ip-dhcp-pool	DHCP
keychain	KeyChain
keychain-key	KeyChain-key
time-range	Time-Range

CLI 1 "test" reload

```
Ruijie(config)# enable secret level 1 0 test  
Ruijie(config)# privilege exec level 1 reload
```

1 CLI reload

```
Ruijie> reload ?
```

mode

EXEC

EXEC

Ruijie# **show aliases exec**

exec mode alias:

h	help
p	ping
s	show
u	undebug
un	undebug

alias	

CLI

- **disable**
- **enable**
- **enable password**
- **enable secret**
- **password**
- **login**
- **login local**
- **login authentication**
- **username**
- **lock**
- **lockable**
- **telnet**
- **enable service**
- **ip http authentication**
- **ip http port**

disable

disable

disable [*privilege-level*]

privilege-level



disable

Ruijie# **disable** 10

enable	

enable

enable

enable password

enable password

no

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

no enable password

Password

EXEC

Level

0|7

0

7

encrypted-password

- 1 26
-

EXEC

pw10

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

enable secret	

enable secret

enable secret

no

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

no enable secret

Secret

EXEC

Level

0|5

0

5

encrypted-password

```

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

```

pw10

```
Ruijie(config)# enable secret 0 pw10
```

enable password	

password

```

line line password
no line
password {password | [0|7] encrypted-password}
no password

```

```

password line
0|7 0 7
encrypted-password

```

line

line

line red

```

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

```

login	

login

```

AAA
    login          no

login
no login

```

line

```

AAA
    VTY console

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

```

password	line

login local

```

AAA
    login local    no

login local

```

no login local

line

AAA

username

VTY

```
Ruijie(config)# no aaa new-model
Ruijie(config)# username test password 0 test
Ruijie(config)# line vty 0
Ruijie(config-line)# login local
```

username	

login authentication

AAA

AAA

no

login authentication {default | *list-name*}

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

default

list-name

line

AAA


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

login local	

lock

EXEC lock

lock

1. **lock**
 - 2.
 - 3.
- " Locked"

line

lockable line

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

Ruijie#

lockable	

lockable

lock **lock** **line** **no** **lockable**

lockable

no lockable

line

EXEC **lock**

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

lock	

telnet

telnet

EXEC

telnet

telnet *host* [*port*] [*keyword*]

Host

IP

Web

no ip http authentication

ip http authentication local, Web

local

Ruijie(Config # **ip http authentication local**

enable service	

ip http port

HTTP

ip http port

ip http port *number*

number HTTP Server 80

HTTP

no ip http port

HTTP 8080

Ruijie(Config # **ip http port 8080**

enable service	

-
- clock set
 - clock update-calendar
 - exec-timeout
 - hostname
 - session-timeout
 - show clock
 - show cpu
 - show cpu slot
 - show memory
 - show memory slot
 - show running-config
 - show startup-config
 - reload
 - show reload
 - prompt
 - banner motd
 - banner login
 - speed
 - show line
 - write

clock set

clock set

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

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

clock set

2008 1 30 05 54 43

Ruijie# **clock set** 05:54:43 1 30 2008

Ruijie# **show clock**

05:54:43 CHN-BJ Wed 2008-01-30

show clock	

clock update-calendar

clock clock privileged EXEC clock
update-calendar clock clock
clock update-calendar

calendar

clock

clock

Ruijie# **clock update-calendar**

exec-timeout

```
LINE                               exec-timeout
no exec-timeout                   LINE
exec-timeout minutes [seconds]
no exec-timeout

minutes
seconds

10 min

LINE

LINE

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

hostname

```
hostname

hostname name

name
63

Ruijie
```

CHAP

BeiJingAgenda

Ruijie(config)# **hostname** *BeiJingAgenda*
BeiJingAgenda(config)#

session-timeout

LINE
session-timeout **no session-timeout** LINE

session-timeout *minutes [seconds]*
no session-timeout

minutes
seconds

0 min

LINE

LINE

LINE

line vty 0 5 30 :

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

show clock

show clock

show clock [detail]

detail

detail

show clock

```
Ruijie# show clock detail
05:54:43 CHN-BJ Wed 2008-01-30
Clock read from calendar when system boot.
```

clock set	

show cpu

CPU

show cpu

CPU

show cpu

```
Ruijie# show cpu
CPU utilization in five seconds: 0%
CPU utilization in one minute : 35%
CPU utilization in five minutes: 33%
NO   5Sec  1Min  5Min  Process
0    0%   0%   0%   LISR INT
1    0%   0%   0%   HISR INT
2    0%   0%   0%   ktimer
3    0%   0%   0%   atimer
4    0%   0%   0%   printk_task
```

```

 5   0%   0%   0%   waitqueue_process
 6   0%   0%   0%   tasklet_task
 7   0%   0%   0%   kevents
 8   0%   0%   0%   snmpd
 9   0%   0%   0%   snmp_trapd
10   0%   0%   0%   mtdblock
11   0%  35%  33%   gc_task
12   0%   0%   0%   Context
13   0%   0%   0%   kswapd
14   0%   0%   0%   bdflush
15   0%   0%   0%   kupdate
16   0%   0%   0%   buffcopy
17   0%   0%   0%   ll_mt
18   0%   0%   0%   ll main process
19   0%   0%   0%   ISDN MAIN
20   0%   0%   0%   tnet
21   0%   0%   0%   Tarptime
22   0%   0%   0%   gra_arp
23   0%   0%   0%   Ttcptimer
24   0%   0%   0%   gk process
25   0%   0%   0%   rl_con
26 100%  65%  67%   idle

```

show cpu

CPU utilization in five seconds	5 CPU
CPU utilization in one minute	1 CPU
CPU utilization in five minutes	5 CPU
NO	
Process	
5Sec	5 CPU
1Min	1 CPU
5Min	5 CPU

--	--

show cpu slot

CPU

show cpu slot [*slot-number*]

slot-number

CPU

PU

show memory

```
Ruijie# show memory
Physical Memory: 256M total
Image: 78M
Application Memory: 178M (57M used 121M available)
Utilization: 52.7%
```

show memory

Physical Memory	
Image	
Application Memory	used available available
Utilization	

show memory slot	

show memory slot

show memory slot [*slot-number*]

slot-number

1 1
Ruijie# **show memory slot 1**
Physical Memory: 256M total
Image: 45M
Application Memory: 211M (55M used 156M available)
Utilization: 39.1%

2
ruijie# **show memory slot**
slot 1 memory information
Physical Memory: 256M total
Image: 45M
Application Memory: 211M (55M used 156M available)
Utilization: 39.1%
slot 3 memory information
Physical Memory: 256M total
Image: 45M
Application Memory: 211M (57M used 154M available)
Utilization: 39.8%

show memory	

show running-config

show
running-config
show running-config

show startup-config

NVRAM

show startup-config

show startup-config

NVRAM

startup-config

reload

reload

reload [*text* | **in** [*hh:*] *mm* [*text*] | **at** *hh:mm* [*month day* | *day month*]
[*text*] | **cancel**]

text 1-255

in [*hh:*] *mm* 24

at *hh:mm*

month 3 Mar

day 1 31

cancel

10

Ruijie# **reload in 10**

Router will reload in 600 seconds.

show reload

reload

show

show reload

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

prompt

prompt

no prompt

prompt *string*

string

32

EXEC

RGOS

```
Ruijie(config)# prompt RGOS
Ruijie(config)# end
```

RGOS

banner motd

```
banner motd
no banner motd
banner motd c message c
c
message
```

```
Ruijie(config)
Ruijie(config)# banner motd $ hello,world $
```

banner login

```
banner login
no banner login
banner login c message c
c
message
```

```
Ruijie(config)
Ruijie(config)# banner login $ enter your password $
```

speed

```
no speed
speed speed
```

```
Speed                               bps
    9600  19200  38400  57600  115200
    9600
```

9600

57600 bps

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

show line

show line

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

console

aux **aux**
vty **vty**
line-num **line**

console

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

write

write

write [*memory* | *network* | *terminal*]

<i>memory</i>	running-config	NVRAM	copy
running-config	startup-config		
<i>network</i>	TFTP		copy
running-config	tftp		
<i>terminal</i>	show running-config		

memory

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

show running-config	
copy	

VTY 5 0--4

VTY

VTY 20 VTY 0--19

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

VTY 10 VTY 0—9

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

transport input

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

transport input {all | ssh | telnet | none}

default transport input

all	Line
ssh	Line SSH
telnet	Line Telnet
none	Line

NONE VTY TTY
default transport input

Line

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

line vty 0 4 telnet

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

show running	

RGOS10.1

access-class

Line	ACL	access-class	<i>acl-no</i>
{ in out }	Line	no access-class	
<i>access-list-number</i>	{in out}	LINE	ACL

[no] access-class *access-list-number* {in | out}

<i>access-list-number</i>	access-list
<i>in</i>	
<i>out</i>	

Line

LINE

CLI

copy tftp

	2	5	100Byte
IP		' !'	
' .'	ping	ping	
	ping		
			DNS

<i>ip-address</i>	IPv4
<i>number</i>	

```

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
Ruijie#

```

```

                                     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

```

-
- interface aggregateport
 - interface fastEthernet
 - interface giagbitEthernet
 - interface tenGigabitEthernet
 - interface vlan
 - medium-type
 - descriptioin
 - shutdown
 - speed
 - duplex
 - flowcontrol
 - mtu
 - clear counters
 - clear interface
 - switchport
 - snmp trap link-status

interface aggregateport

no

interface aggregateport *port-number*

port-number Aggregate port

port

aggregate port aggregate

interface giagbitEthernet

interface gigabitEthernet *mod-num/port-num*

mod-num/port-num /

no **show interfaces**
show interfaces gigabitEthernet

```
Ruijie(config)# interface gigabitEthernet 1/2  
Ruijie(config-if)#
```

show interfaces	

interface tenGigabitEthernet

10G

interface tenGigabitEthernet *mod-num/port-num*

mod-num/port-num /

no **show interfaces**
show interfaces tenGigabitEthernet

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

medium-type { fiber | copper }
no medium-type

fiber
copper

Ap SVI

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

show interfaces	

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

description

no

description *string*
no description

string

show interfaces

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

show interfaces	

shutdown

no

shutdown
no shutdown

Ap SVI
show interfaces

Ap 1

```
Ruijie(config)# interface aggregateport 1  
Ruijie(config-if)# shutdown
```

Ap 1

```
Ruijie(config)# interface aggregateport 1  
Ruijie(config-if)# no shutdown
```

clear interface	
show interfaces	



no shutdown

speed

no

10

show interfaces	

duplex

no

duplex {auto | full | half}

no duplex

auto

full

half

show interfaces

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

show interfaces	

flowcontrol

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	

mtu

mtu

Mtu num

num 64 9216(65536)

1500

mtu

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

show interfaces	

carrier-delay

```
no carrier-delay
no carrier-delay [ seconds ]
no carrier-delay

seconds 0 60

2

DCD DCD Down Up
DCD
DCD

5

Ruijie(config)# interface gigabitethernet 1/1
Ruijie(coinfig)# carrier-delay 5
```

clear counters

clear counters [*interface-id*]

interface-id

show interfaces

clear counters

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

show interfaces	

clear interface

clear interface *interface-id*

interface-id

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

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

switch port access VLAN VLAN 1

 VLAN ID VLAN ID
 VLAN VLAN
VLAN ID VLAN
 trunkport

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

switchport mode	switch port
switchport trunk	trunkport native VLAN Trunk VLAN

	Trunk	VLAN	vlan-list
	VLAN		VLAN
	VLAN ID	VLAN ID	
	-	10-20	,
		1-10,20-25,30,33	
allowed vlan	allB4C6814D402C80F56>. ID		
<i>vlan-list</i>			

Protected is disabled
Vlan lists is
1,3-4094



show interfaces



Aggregate Port

port-group

Aggregate Port no
Aggregate Port

port-group *port-group-number*

no port-group

Aggregate Port

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

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

no aggregateport load-balance

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

MAC

86

29

show aggregateport load-balance

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

show aggregateport load-balance	aggregateport

show aggregateport

aggregateport

show aggregateport {[*aggregate-port-number*] **summary** | **load-balance**}

<i>aggregate-port-number</i>	Aggregate Port
load-balance	aggeregaye port aggregate port
summary	

aggregate port

aggregate port

Ruijie# **show aggregateport 1 summary**

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

aggregateport load-balance	AP

VLAN

name

VLAN

no

name *vlan-name*

no name

<i>vlan-name</i>	VLAN

VLAN

VLAN

show vlan

vlan

switch port access

switch port access VLAN
switchport access vlan VLAN

switch port trunk VLAN
 VLAN VLAN VLAN trunk port
switchport trunk
 VLAN

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

switchport access	statics accessport VLAN
switchport trunk	trunkport native VLAN Trunk VLAN

switchport access

access port VLAN
no VLAN

switchport access vlan *vlan-id*

no switchport access vlan

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

switch port access VLAN VLAN 1

```

                VLAN ID                VLAN ID
            VLAN
VLAN ID      VLAN
                trunkport
    
```

```

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

switchport mode	switch port
switchport trunk	trunkport native VLAN Trunk VLAN

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 }
    
```

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

show vlan

VLAN

show vlan [id *vlan-id*]

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

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

```
Ruijie# show vlan id 1
VLAN[1] "VLAN0001"
GigabitEthernet 3/1
GigabitEthernet 3/2
GigabitEthernet 3/3
GigabitEthernet 3/4
GigabitEthernet 3/5
GigabitEthernet 3/6
GigabitEthernet 3/7
GigabitEthernet 3/8
GigabitEthernet 3/9
GigabitEthernet 3/10
GigabitEthernet 3/11
GigabitEthernet 3/12
```

name	VLAN

VLAN

switchport access	Vlan
--------------------------	------

Super-vlan

supervlan

VLAN **supervlan**

supervlan

no supervlan

no subvlan [*vlan-id-list*]

<i>Vlan-id-list</i>	VLAN subvlan ID, vlan

VLAN

no subvlan supevlan subvlan

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

show supervlan	supervlan

subvlan-address-range

subvlan ip

subvlan-address-range *start-ip end-ip*

no subvlan-address-range

<i>start-ip</i>	SubVLAN IP
<i>end-ip</i>	SubVLAN IP

VLAN

end

Ctrl+C

exit

Ruijie(config)#

show supervlan

SuperVLAN SubVLAN

show supervlan

show supervlan id *vlan-id*

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

Ruijie# **show supervlan**

Protocol VLAN

- **protocol-vlan ipv4** *addr mask addr vlan id*
- **protocol-vlan profile** *num frame-type [type] ether-type [type]*
- **protocol-vlan profile** *num vlan id*

protocol-vlan ipv4 addr mask addr vlan id

	IP		VLAN
<i>addr</i>	IP		x.x.x.x
<i>id</i>	VLAN ID	1-	VLAN

```
Ruijie(config)# protocol-vlan ipv4 192.168.100.3 mask  
255. 255.255.0 vlan 100
```

```
show protocol-vlan ipv4
```

```
no protocol-vlan ipv4 addr mask addr
```

```
no protocol-vlan ipv4
```

RGOS10.1

protocol-vlan profile num frame-type type ether-type type

profile

num profile
type

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

```
show protocol-vlan profile  
show protocol-vlan profile num  
no protocol-vlan profile  
no protocol-vlan profile num
```

RGOS10.1

protocol-vlan profile num vlan id

profile

num profile
id VLAN ID 1- VLAN

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

```
show protocol-vlan profile  
show protocol-vlan profile num
```

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

RGOS10.1

- **show protocol-vlan**

show protocol-vlan

Protocol VLAN

show vlan protocol-vlan

Ruijie# **show protocol-vlan**

RGOS10.1

PrivateVLAN

- **private-vlan type**
- **private-vlan association**
- **private-vlan mapping**
- **switchport mode private-vlan**
- **switchport private-vlan host-association**
- **switchport private-vlan mapping**

private-vlan type

VLAN VLAN

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

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

community community VLAN

isolated isolated VLAN

primary primary VLAN

no VLAN

VLAN

VLAN

```
Ruijie(config)# vlan 22
```

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

show vlan private-vlan

RGOS10.1

private-vlan association

secondary VLAN primary VLAN

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

no private-vlan association

svlist secondary VLAN list

no primary VLAN secondary VLAN

Primary VLAN

```
Ruijie(config)# vlan 22
```

```
Ruijie(config-vlan)# private-vlan association add 24-26
```

show vlan private-vlan

RGOS10.1

private-vlan mapping

secondary VLAN SVI

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

no private-vlan mapping

svlist secondary VLAN list

no

Primary VLAN

```
Ruijie(config)# interface vlan 22
```

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


no: VLAN

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

show vlan private-vlan

RGOS10.1

switchport private-vlan mapping

private VLAN secondary VLAN

switchport private-vlan mapping *p_vid* {*svlist*|**add** *svist* |**remove** *svlist*}

no switchport private-vlan mapping

p_vid primary VID
svlist secondary VLAN list
no secondaryVLAN

secondary VLAN

VLAN

```
Ruijie(config)# interface gigabitEthernet 0/1
Ruijie(config-if)# switchport mode private-vlan
promiscuous
Ruijie(config-if)# switchport private-vlan mapping 22
add 23-25
```

Private VLAN

switchport mode hybrid

switchport mode hybrid

no switchport mode

hybrid

no hybrid

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

RGOS10.1

switchport hybrid native vlan

switchport hybrid native vlan *vid*

no switchport hybrid native vlan

hybrid vlan

no hybrid VLAN

```
Ruijie(config-if)# switchport hybrid native vlan 3
```

RGOS10.1

switchport hybrid allowed vlan

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

vlist

no switchport hybrid allowed vlan

hybrid

no hybrid

```
Ruijie(config-if)# switchport hybrid allowed vlan add  
untagged 3-5
```

RGOS10.1


```
Ruijie# show frame-tag tpid
Port      tpid
-----  -
Gi0/3     0x9100
```

show frame-tag tpid

RGOS10.1

inner-priority-trust enable

```
          /          tag          tag
inner-priority-trust enable
no inner-priority-trust enable

no          tag          tag
```

```
Ruijie(config)# interface gigabitEthernet 0/2
Ruijie(config-if)# inner-priority-trust enable
```

show inner-priority-trust

RGOS10.1 S37

- **show frame-tag tpid**
- **show inner-priority-trust**

show frame-tag tpid

private VLAN

show frame-tag tpid [[

MAC

- **mac-address-table aging-time**
- **clear mac-address-table dynamic**
- **clear mac-address-table filtering**
- **clear mac-address-table static**
- **mac-address-table static**
- **mac-address-table filtering**
- **mac-address-table notification**
- **snmp trap mac-notification**
- **address-bind**
- **address-bind ip-address**
- **address-bind uplink**
- **address-bind ipv6-mode**

mac-address-table aging-time

no

mac-address-table aging-time *seconds*

no mac-address-table aging-time

seconds

300

show mac-address-table aging-time

show mac-address-table dynamic

MAC

clear mac-address-table filtering

clear mac-address-table filtering [**address** *mac-addr*

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

show mac-address-table static

MAC 00d0.f800.073c

```
Ruijie# clear mac-address-table static address
00d0.f800.073c
```

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

mac-address-table static

no

mac-address-table static *mac-addr* **vlan** *vlan-id* **interface** *interface-id*

no mac-address-table static *mac-addr* **vlan** *vlan-id* **interface** *interface-id*

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

```

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

```

00d0.f800.073c VLAN 4

gigabitethernet 1/1

```

Ruijie(config)# mac-address-table static
00d0.f800.073c vlan 4 interface gigabitethernet 1/1

```

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

mac-address-table filtering

no

mac-address-table filtering *mac-address* **vlan** *vlan-id*

no mac-address-table filtering *mac-address* **vlan** *vlan-id*

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

show mac-address-table filtering

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

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

mac-address-table notification

MAC **no**

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

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

interval 1	MAC Trap
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
```

snmp-server enable traps	trap
show mac-address-table notification	MAC
snmp trap mac-notification	MAC

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

address-bind

ip mac .

address-bind *ip-address mac-address*

no address-bind

address-bind

<i>intf-id</i>	

```

IP          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

address-bind install

/

address-bind install

no address-bind install

Ruijie(config)# **address-bind install**

show address-bind uplink	
show address-bind summary	

RGOS10.1

address-bind ipv6-mode

ip IP

address-bind ipv6-mode compatible

address-bind ipv6-mode loose

address-bind ipv6-mode strict

:

	Ipv4	IPV6
	IPV4+MAC	ipv6
	IPV4+MAC	IPV6

	IPV4+MAC	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
```

- **show mac-address-table address**
- **show mac-address-table aging-time**
- **show mac-address-table count**
- **show mac-address-table dynamic**
- **show mac-address-table filtering**
- **show mac-address-table interface**
- **show mac-address-table notification**
- **show mac-address-table static**
- **show mac-address-table vlan**
- **show address-bind**
- **show address-bind summary**
- **show address-bind [ip-address *ip* | mac-address *mac*]**

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 address 00d0.f800.1001
Vlan      MAC Address      Type      Interface
-----  -
1         00d0.f800.1001  STATIC    Gi1/1
```

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

show mac-address-table aging-time

show mac-address-table aging-time

```
Ruijie# show mac-address-table aging-time
```


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	

show mac-address-table filtering

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

<i>mac-addr</i>	MAC

MAC

vlan-id

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

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

show address-bind

show address-bind

```
Ruijie# show address-bind
Total Bind Addresses in System : 2
IP Address      Binding MAC Addr
-----
3.3.3.3         00d0.f811.1112
3.3.3.4         00d0.f811.1117
```

address-bind	

show address-bind summary

address-bind install

show address-bind summary

```
Ruijie# show address-bind summary
Total Bind Addresses in System : 0
Max Bind Addresses limit in System : 1000
System Address bind status:SUCCESS
```

address-bind	

show address-bind [ip-address *ip* | mac-address *mac*]

IP MAC

show address-bind [ip-address *ip* | mac-address *mac*]

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

address-bind	

DHCP Snooping

DHCP snooping

DHCP snooping

- **ip dhcp snooping**
- **ip dhcp snooping bootp-bind**
- **ip dhcp snooping verify mac-address**
- **ip dhcp snooping binding**
- **ip dhcp snooping database write-delay**
- **ip dhcp snooping database write-to-flash**
- **ip dhcp snooping information option**

ip dhcp snooping

DHCP Snooping
no

DHCP snooping

[no] ip dhcp snooping

DHCP snooping
DHCP snooping

show ip dhcp snooping

DHCP snooping

```
Ruijie# configure terminal  
Ruijie(config)# ip dhcp snooping  
Ruijie(config)# end  
Ruijie# show ip 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
-----
FastEthernet0/11                yes
```

show ip dhcp snooping	DHCP snooping

ip dhcp snooping bootp-bind

```

DHCP Snooping      Bootp
no                  DHCP snooping      Bootp
```

[no] ip dhcp snooping bootp-bind

```

DHCP Snooping      Bootp
DHCP Snooping      Bootp      Bootp
Bootp              DHCP Snooping
```

```
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
-----
FastEthernet0/11                yes
    
```

show ip dhcp snooping	DHCP snooping

ip dhcp snooping verify mac-address

```

MAC
no          MAC
    
```

[no] ip dhcp snooping verify mac-address

```

MAC          DHCP CLIENT
MAC          DHCP CLIENT MAC
MAC

DHCP        MAC
    
```

```

Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping verify mac-address
Ruijie(config)# end
    
```

```
Ruijie# show ip dhcp snooping

Switch DHCP snooping status  ENABLE
Verification of hwaddr field status  DISABLE
DHCP snooping database write-delay time: 0 seconds
DHCP snooping option 82 status: ENABLE
DHCP snooping Support Bootp bind status: ENABLE
Interface                        Trusted
-----                        -
FastEthernet0/11                 yes
```

show ip dhcp snooping	DHCP snooping

ip dhcp snooping binding

```
DHCP snooping
no
```

```
[no] ip dhcp snooping binding mac-address vlan vlan-id ip
ip-address interface interface-id
```

```
mac-address          MAC
vlan-id              VLAN
ip-address           IP
interface-id
```

```
DHCP                                DHCP snooping
```

```
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping binding 00d0.f801.0101
```

```
vlan 1 ip 192.168.4.243 interface fastethernet 0/1
Ruijie(config)# end
Ruijie# show ip dhcp snooping binding
Total number of bindings: 1
MacAddress IpAddress Lease Type VLAN Interface
-----
00d0.f801.0101 192.168.1.1 - static 1 fastethernet 0/1
```

show ip dhcp snooping binding	DHCP snooping

ip dhcp snooping information option

```
DHCP          option82
              no
```

[no] ip dhcp snooping information option

```
DHCP          option82      DHCP
```

```

DHCP snooping Support Bootp bind status: ENABLE
Interface                Trusted
-----                -
FastEthernet0/11        yes
    
```

show ip dhcp snooping	DHCP snooping

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

```

time                DHCP snooping                FLASH FLASH
    
```

DHCP snooSing

DHCP Snooping

```
DHCP snooping option 82 status: ENABLE
DHCP snooping Support Bootp bind status: ENABLE
Interface                               Trusted
-----                               -
FastEthernet0/11                        yes
```

DHCP snooping

DHCP snooping

ip dhcp snooping trust

ip dhcp snooping address-bind

ip dhcp snooping trust

```
DHCP snooping          TRUST
                        no          UNTRUST
```

[no] ip dhcp snooping trust

UNTRUST

```
TRUST          DHCP          TRUST
DHCP          DHCP          UNTRUST
```

```
fastethernet 0/1 TRUST
```

```
Ruijie# configure terminal
```

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

```
Ruijie(config-if)# ip dhcp snooping trust
```

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

```
Ruijie# show ip dhcp snooping
```

```
Switch DHCP snooping status  ENABLE
```

```
Verification of hwaddr field status  DISABLE
```

```
DHCP snooping database write-delay time: 0 seconds
```

```
DHCP snooping option 82 status: ENABLE
```

```
DHCP snooping Support Bootp bind status: ENABLE
```

```
Interface          Trusted
```

```
-----          -----
```

```
FastEthernet0/11          yes
```

show ip dhcp snooping	DHCP snooping

ip dhcp snooping address-bind

no

[no] ip dhcp snooping address-bind

Snooping	MAC	IP	IP VLAN ID	DHCP
----------	-----	----	---------------	------

fastethernet 0/1

```
Ruijie# configure terminal
Ruijie(config)# interface fastethernet 0/1
Ruijie(config-if)# ip dhcp snooping address-bind
Ruijie(config-if)# end
```

DHCP snooping

- **show ip dhcp snooping**
- **show ip dhcp snooping binding**

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
-----                               -
FastEthernet0/11                        yes
```

ip dhcp snooping	DHCP snooping
ip dhcp snooping verify mac-address	DHCP snooping mac
ip dhcp snooping write-delay	flash

DHCP snooping

DHCP snooping

```
Ruijie# debug ip dhcp snooping event
```

```
Ruijie# debug ip dhcp snooping packet
```

IGMP Snooping

IGMP Snooping profile

Profile

- deny
- permit
- range

- ip igmp profile
- ip igmp snooping filter
- ip igmp snooping ivgl
- ip igmp snooping ivgl-svgl
- ip igmp snooping limit-ipmc vlan
- ip igmp snooping max-groups
- ip igmp snooping source-check default-server
- ip igmp snooping source-check port
- ip igmp snooping svgl
- ip igmp snooping fast-leave enable
- ip igmp snooping fast-leave enable
- ip igmp snooping vlan mrouter interface
- ip igmp snooping vlan mrouter interface profile
- ip igmp snooping vlan mrouter learn
- ip igmp snooping vlan static

deny

deny profile profile

deny

deny	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)# deny
```

ip igmp profile	profile
range	1

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	

range

profile profile range

no

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

low-ip-address

high-ip-address

profile

profile

range	profile

ip igmp snooping filter

```

profile          no          profile
ip igmp snooping filter profile-number
no ip igmp snooping filter profile-number

```

Profile-number 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 ivgl

```

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

```

disable

snooping VLAN igmp
GDA

igmp snooping ivgl

Ruijie(config)# ip igmp snooping ivgl

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

ip igmp snooping ivgl-svgl

igmp snooping ivgl-svgl
ip igmp snooping ivgl-svgl no igmp snooping
ip igmp snooping ivgl-svgl
no ip igmp snooping

disable

IVGL SVGL

igmp snooping ivgl-svgl

Ruijie(config)# **ip igmp snooping ivgl-svgl**

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

ip igmp snooping source-check default-server	IP IP

ip igmp snooping max-groups

```

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

```

number 0 – 4294967294

IGMP Report

0/1 100

```

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

```

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ip igmp snooping source-check default-server *address*
no ip igmp snooping souce-check

address

ip

IPMC

IPMC mroute

igmp snooping

Ruijie(config)# **ip igmp snooping source-check port**

ip igmp snooping source-check default-server	ip

ip igmp snooping svgl

```

    igmp snooping          svgl          ip
igmp snooping svgl      no          igmp snooping
ip igmp snooping svgl
no ip igmp snooping

```

disable

svgl

svgl

igmp snooping svgl

Ruijie(config)# **ip igmp snooping svgl**



ip igmp snooping ivgl

IGMP Profile

ip igmp snooping vlan mrouter interface
profile no profile

ip igmp snooping vlan vid mrouter interface interface-id profile
profile-num

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

vid vlan id

interface-id id

profile-num profile

profile

profile

profile

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

ip igmp snooping vlan mrouter interface	

ip igmp snooping vlan mrouter learn pim-dvmrp

IGMP query/dvmrp PIM
ip igmp snooping vlan mrouter
learn no

ip igmp snooping vlan vid mrouter learn pim-dvmrp

no ip igmp snooping vlan vid mrouter learn pim-dvmrp

vid

vlan id

igmp snooping

```
Ruijie(config)# ip igmp snooping vlan 1 mrouter learn pim-dvmrp
```

ip igmp snooping vlan <i>vid</i> mrouter learn pim-dvmrp	

ip igmp snooping dyn-mr-aging-time

```
ip igmp snooping dyn-mr-aging-time time  
no ip igmp snooping dyn-mr-aging-time
```

time

300s

100s

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

ip igmp snooping	

ip igmp snooping vlan static interface

igmp snooping

IGMP

ip igmp

snooping vlan static interface no

ip igmp snooping vlan *vid* **static** *ip-addr* **interface** *interface-id*

no ip igmp snooping vlan *vid* **static** *ip-addr* **interface** *interface-id*

ip igmp snooping fast-leave enable

```
igmp snooping fast-leave
snooping fast-leave enable      no      ip igmp
fast-leave                        igmp snooping
```

```
ip igmp snooping fast-leave enable
no ip igmp snooping fast-leave enable
```

disable

fast-leave

IGMP leave

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

ip igmp snooping suppression enable

```
igmp snooping suppression
snooping suppression enable    no      ip igmp
suppression                      igmp snooping
```

```
ip igmp snooping suppression enable
no ip igmp snooping suppression enable
```

disable

report suppression IGMP v1/v2

igmp snooping suppression

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

ip igmp snooping query-max-resposne-time

query

ip igmp snooping query-max-resposne-time *time*
no ip igmp snooping query-max-resposne-time

time

10s

query

query

100s

Ruijie(config)# **ip igmp snooping query-max-resposne-time 100**

ip igmp snooping	

- **show ip igmp snooping** [*gda-table* | **interface** | **mrouter**]
- **show ip igmp profile** [*profile-number*]
- **debug igmp**

show ip igmp snooping

igmp snooping

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

igmp snooping

gda-table

interfaces igmp snooping filtering

mrouter

statistics [**vlan** *vlan-id*] snooping

EXEC

show ip igmp profile [profile-number]

debug igmp

igmp

no

debug igmp-snp

undebug igmp-snp

EXEC

MSTP

spanning-tree

MSTP

no

MSTP

spanning-tree

MSTP

no

spanning tree

spanning-tree [**forward-time** *seconds*

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

spanning-tree bpdudfilter

```
disabled BPDU filter enabled  
BPDU filter  
spanning-tree bpdudfilter [enabled | disabled]
```

```
enabled BPDU filter  
Disabled BPDU filter
```

```
Ruijie(config)# interface gigabitethernet 1/1  
Ruijie(config-if)# spanning-tree bpdudfilter enable
```

```
show spanning-tree interface STP
```

spanning-tree bpduguard

```
disabled BPDU Guard enabled  
BPDU Guard
```

spanning-tree bpduguard [enabled | disabled]

enabled	BPDU Guard
disabled	BPDU Guard

```
Ruijie(config)# interface gigabitethernet 1/1  
Ruijie(config-if)# spanning-tree bpduguard enable
```

show spanning-tree interface STP

spanning-tree link-type

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

```
show spanning-tree interface STP
```

spanning-tree max-hops

Count	BPDU Instance	BPDU Region	Max-hops
		no	

```
spanning-tree max-hops hop-count
```

```
no spanning-tree max-hops
```

<i>hop-count</i>	BPDU		1 40
------------------	------	--	------

<i>hop-count</i>	20
------------------	----

Region Bridge	Root Bridge	BPDU Hop Count	Hot Count	Root
BPDU		Hops 0	1 0	
	max-hops	Instance		

MST Instance	Max-hops	10
--------------	----------	----

```
Ruijie(config)# spanning-tree max-hops 10
```

```
show spanning-tree mst
```

```
show spanning-tree MSTP
```

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

spanning-tree mst configure

no MST MSTP Region
name revision vlan map

spanning-tree mst configuration

no spanning-tree mst configuration

instance vlan Vlan Instance 0

name

revision 0

```

end                               Ctrl+C
exit

MST

instance instance-id vlan vlan-range Vlan MST Instance
instance-id 0 64 vlan 1 4095 vlan-range
vlan VLAN ID VLAN ID
' ' VLAN ID instance 10 vlan 2,3,6-9
VLAN 2 3 6 7 8 9 Instance 10
VLAN Instance 0 VLAN Instance
no no instance instance-id [vlan vlan-range] ( no
Instance 1 64)

name name MST 32
no name

revision version MST 0 65535 no revision

show MST region

MST VLAN 3, 5-10 MST
Instance 1

Ruijie(config)# spanning-tree mst configuration
Ruijie(config-mst)# instance 1 vlan 3 5-10
Ruijie(config-mst)# name region 1
Ruijie(config-mst)# revision 1
Ruijie(config-mst)# show
MST configuration
Name [region1]
Revision 1
Instance Vlans Mapped
-----
0 1-2,4,11-4094
1 3,5-10
-----
Ruijie(config-mst)# exit
Ruijie(config)#
VLAN 3 Instance 1 MST

```

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

```
Instance 1
```

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

```
MST show
```

```
show spanning-tree mst MST region
```

```
instance instance-id vlan vlan-range Vlan MST Instance
```

```
name MST
```

```
revision MST
```

```
show MST MST
```

spanning-tree mst cost

```
Instance no
```

```
spanning-tree [mst instance-id] cost cost
```

```
no spanning-tree [mst instance-id] cost
```

```
instance-id Instance 0 64
```

```
cost 1 200 000 000
```

```
Instance-ID 0
```

```
Interface
```

- 1000 Mbps—20000
- 100 Mbps—200000
- 10 Mbps—2000000

cost

Instance 3

400

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

```
Ruijie(config-if)# spanning-tree mst 3 cost 400
```

```
Instance 20    Gigabitethernet 1/1
10
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# spanning-tree mst 20 port-priority
0
```

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

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

spanning-tree mst priority

Instance no

spanning-tree [mst *instance-id*] priority *priority*

no spanning-tree [mst *instance-id*] priority

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

```
instance-id      0
priority         32768
```

Instance 20 8192

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

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

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

spanning-tree reset

```
spanning-tree                       no  
spanning-tree reset
```


spanning-tree portfast

Portfast disabled
Portfast

spanning-tree portfast [disabled]

disabled Portfast

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

show spanning-tree interface STP

spanning-tree portfast bpduguard default

BPDU guard no BPDU
guard

spanning-tree portfast bpduguard default

no spanning-tree portfast bpduguard default

BPDU Guard.

spanning-tree portfast default

Portfast no
Portfast

spanning-tree portfast default

no spanning-tree portfast default

Portfast

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

```
show spanning-tree interface STP
```

spanning-tree tc-protection tc-guard

tc-guard no tc-guard
tc-guard tc

spanning-tree tc-protection tc-guard

no spanning-tree tc-protection tc-guard

tc-guard

```
Ruijie(config)# spanning-tree tc-protection tc-guard
```

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
```

spanning-tree guard root

```
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
```

spanning-tree loopguard default

loop guard	no	loop guard
loop guard		bpdu

spanning-tree loopguard default

no spanning-tree loopguard default

loop guard

```
Ruijie(config)# spanning-tree loopguard default
```

spanning-tree guard loop

loop guard	no	loop guard
loop guard		bpdu

spanning-tree guard loop

no spanning-tree guard loop

loop guard

```
Ruijie(config-if)# spanning-tree guard loop
```

spanning-tree guard none

```
guard no guard
```

```
spanning-tree guard none
```

```
no spanning-tree guard none
```

```
guard
```

```
Ruijie(config-if)# spanning-tree guard none
```

spanning-tree autoedge

```
Autoedge disabled  
Autoedge
```

```
spanning-tree autoedge [disabled]
```

```
disabled Autoedge
```



```
Ruijie(config)# clear spanning-tree detected-protocols
```

```
show spanning-tree interface           STP
```

spanning-tree compatible enable

MSTI

```
spanning-tree compatible enable
```

```
no spanning-tree compatible enable
```

```
Ruijie(config-if)#spanning-tree compatible enable
```

show spanning-tree

```
show spanning-tree [summary | forward-time | hello-time |  
max-age | inconsistentports| tx-hold-count | pathcost method |  
max_hops]
```

```
summary          MSTP      instance  
Inconsistentports                block  
forward-time      BridgeForwardDelay  
hello-time        BridgeHelloTime  
max-age           BridgeMaxAge  
max-hops          instance  
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  
spanning-tree max-hops          instance  
spanning-tree tx-hold-count     TxHoldCount
```

show spanning-tree interface

STP

show spanning-tree interface *interface-id*

Instance

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

IP

- ip address
- ip unnumbered

ip address

IP no IP

ip address *ip-address network-mask* [**secondary**]

no ip address *ip-address network-mask* [**secondary**]



IP

" 255.0.0.0"

- arp
- arp retry
- arp trusted
- arp unresolved
- arp gratuitous-send
- arp timeout
- ip proxy-arp
- service trustedarp

arp

```

no ARP IP MAC
no ARP MAC IP MAC
arp ip-address MAC-address type [ alias ]
no arp ip-address MAC-address type [ alias ]

```

<i>ip-address</i>	MAC	IP	
<i>MAC-address</i>		48	
<i>type</i>	ARP arpa		
alias	arp	RGOS	IP

ARP

```

RGOS ARP 32 IP 48
MAC

```

clear arp-cache ARP

ARP ARP

arp 1.1.1.1 4e54.3800.0002 arpa ARP

clear arp-cache	ARP

arp retry interval

2 ARP arp no IP
1 ARP

arp retry interval *seconds*

no arp retry interval

<i>seconds</i>	<1-3600>,ARP 1 —3600 1

ARP 1

ARP ARP ARP

ARP 30s
arp retry interval 30

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

arp retry times

```

                    arp                    IP
                    ARP                    no
5 ARP

```

arp retry times *number*

no arp retry times

<i>number</i>	ARP <1-100> 1 ARP 1 ARP

```

                    ARP                    ARP                    5

```

```

                    ARP
                    ARP
ARP

```

```

                    ARP
arp retry times 1
                    ARP                    1
arp retry times 2

```

arp retry interval <i>seconds</i>	arp

arp trusted NUM

ARP

no

arp trusted *number*

no arp trusted

hF(REbDbáDbáRa>hFB9701044D5EAT(5FB951150)TGA)5J102;1769105102/14014

IP

GSN ARP

ARP

ARP

500

```
arp unresolved 500
```

arp gratuitous-send interval

```
arp no
```

```
arp gratuitous-send interval seconds
```

```
no arp gratuitous-send
```

<i>seconds</i>	ARP <1-3600>

ARP

ARP

SVI 1

ARP

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

SVI 1

ARP

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

arp timeout

```

ARP      ARP
no

```

arp timeout *seconds*

no arp timeout

<i>seconds</i>	0-2147483

3600

```

ARP      IP      MAC      ARP
      ARP
ARP

```

FastEthernet 0/1 ARP

120

```

interface fastEthernet 0/1
arp timeout 120

```

clear arp-cache	ARP
show interface	

ip proxy-arp

```

no      ARP      ip proxy-arp
      ARP

```

ip proxy-arp
no ip proxy-arp

10.2 3

ARP

IP ARP
IP MAC

ARP

ARP

service trustedarp

config
service trustedarp

s32

ip directed-broadcast

IP ip
directed-broadcast no
ip directed-broadcast [*access-list-number*]
no ip directed-broadcast

--	--

```
interface fastEthernet 0/1
ip directed-broadcast
```

IP

IP

- **clear arp-cache**
- **show arp**
- **show arp counter**
- **show arp timeout**
- **clear ip route**
- **show ip arp**
- **show ip interface**

clear arp-cache

ARP ARP IP
clear arp-cache

clear arp-cache [A.B.C.D] | **interface** *interface-name*]

ARP

clear arp mac (IP) ARP
1s
ARP

ARP

```
clear arp-cache
```

```
          ARP    1.1.1.1
```

```
clear arp-cache 1.1.1.1
```

```

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

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

```

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

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
```

show arp counter

ARP arp

show arp counter

show arp counter

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

show arp timeout

ARP

show arp timeout

show arp timeout

```
Ruijie# show arp timeout
Interface          arp timeout(sec)
-----
VLAN 1             3600

ARP
```

clear ip route

```
IP          IP
clear ip route
clear ip route { * | networ* | f..P8pIU0D
```

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
```

	"_"
Hardware	IP
Type	ARPA
Interface	IP

show ip interface

IP

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

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

RGOS

RGOS

RGOS

" UP"

" UP"

show ip interface

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
 Route horizontal-split is: ON
 Help address is: 0.0.0.0
 Proxy ARP is: ON
 Outgoing access list is not set.
 Inbound access list is not set.

IP interface state is:	"UP"
IP interface type is:	
IP interface MTU is:	MTU
IP address is:	IP
IP address negotiate is:	IP
Forward direct-boardcast is:	
ICMP mask reply is:	ICMP
Send ICMP redirect is:	ICMP
Send ICMP unreachableled is:	ICMP
DHCP relay is:	DHCP
Fast switch is:	IP
Route horizontal-split is:	
Help address is:	helper IP
Proxy ARP is:	ARP
Outgoing access list is	
Inbound access list is	

show ip redirects**show ip redirects****show ip redirects**

```
Ruijie# show ip redirects  
Default Gateway: 192.168.195.1
```

ip default-gateway	

IP

IP

IP

- **ip default-gateway**
- **ip mask-reply**
- **ip mtu**
- **ip redirects**
- **ip source-route**
- **ip unreachable**

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	

ip mask-reply

RGOS

ICMP
ip mask-reply

ICMP

no ip mtu

<i>bytes</i>	IP 68~1500

mtu

```

IP          IP MTU      RGOS
                IP MTU
                mtu
                MTU          IP MTU
MTU          IP MTU

```

```

FastEthernet 0/1      IP MTU      512

```

```

interface fastEthernet 0/1
ip mtu 512

```

mtu	

ip redirects

```

RGOS          ICMP          ip
redirects      no          ICMP
ip redirects
no ip redirects

```

IP

ICMP

RGOS

IP

no ip source-route

ip unreachable

RGOS	ICMP		ip
unreachables	no	ICMP	
ip unreachable			
no ip unreachable			

RGOS

ICMP

RGOS

ICMP

ICMP

FastEthernet 0/1

ICMP

interface fastEthernet 0/1

no ip unreachable

DHCP

DHCP

DHCP

- bootfile
- client-identifier
- client-name
- default-router
- dns-server
- domain-name
- hardware-address
- host
- ip address dhcp
- ip dhcp excluded-address
- ip dhcp ping packet
- ip dhcp ping timeout
- ip dhcp pool
- lease
- netbios-name-server
- netbios-node-type
- network DHCPn 0s ~~0ED~~ Td.002os-node-type
 - lea2_1 1 Tf0 Tc 0 Tw -2.011 -1.731 Td<007A>Tj/TT0 1 Tf0.749 0 Td()Tj/TT

<i>file-name</i>	

DHCP

DHCP

DHCP

TFTP

DHCP

next-server

router.conf

bootfile router.conf

ip dhcp pool	DHCP DHCP
next-server	DHCP IP

client-identifier

DHCP

DHCP

client-identifier

no

client-identifier *unique-identifier*

no client-identifier

<i>unique-identifier</i>	DHCP 0100.d0f8.2233.b467.6967.6162.6974.4574.686 5.726e.6574.302f.31

DHCP

	DHCP	DHCP	IP	MAC
0/1	MAC	00d0.f822.33b4		GigabitEthernet

<i>client-name</i>	DHCP ASCII river DHCP river.i-net.com.cn

DHCP

DHCP

DHCP

DHCP

DHCP DHCP DHCP
DHCP IP

192.168.12.1

default-router 192.168.12.1

ip dhcp pool	DHCP DHCP

dns-server

DHCP DNS DHCP
dns-server no DNS

dns-server { *ip-address* [*ip-address2...ip-address8*] |
use-dhcp-client *interface-type interface-number* }

no dns-server

<i>ip-address</i>	DNS IP
<i>ip-address2...ip-address8</i>	8 DNS
use-dhcp-client <i>interface-type</i> <i>interface-number</i>	RGOS DHCP DNS DHCP DNS

DNS

DHCP

DNS
DNS

DHCP
DNS

RGOS

DHCP
DHCP

DNS

DHCP

DNS

192.168.12.3

dns-server 192.168.12.3

domain-name	DHCP
ip address dhcp	DHCP IP
ip dhcp pool	DHCP DHCP

DHCP
no

DHCP
no

domain-name

DHCP

i-net.com.cn

domain-name i-net.com.cn

dns-server	DHCP DNS
ip dhcp pool	DHCP DHCP

hardware-address

DHCP

DHCP

hardware-address no**hardware-address** *hardware-address type***no hardware-address**

<i>hardware-address</i>	DHCP MAC
<i>type</i>	DHCP ✧ ethernet ✧ ieee802 ✧ 1 10M ethernet ✧ 6 IEEE 802

ethernet

DHCP

DHCP

ethernet MAC 00d0.f838.bf3d
 hardware-address 00d0.f838.bf3d

client-identifier	DHCP
host	IP DHCP
ip dhcp pool	DHCP DHCP

host

DHCP IP DHCP DHCP
host no DHCP IP

host *ip-address* [*netmask*]
no host

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

IP

DHCP

IP

A

0Tr &011 0 Td()1Tc4.171 0 Td<02D7>Tj/TT0 1 Tf10 Td5(B)Tj/C2_0 1 Tf0.92 0 Td[<324F0D

```

IP 192.168.12.91
255.255.255.240
host 192.168.12.91 255.255.255.240

```

client-identifier	DHCP
hardware-address	DHCP
ip dhcp pool	DHCP DHCP

ip address dhcp

```

PPP HDLC FR DHCP IP
ip address dhcp no

```

```

ip address dhcp
no ip address dhcp

```

```

DHCP IP

```

```

RGOS DHCP IP DHCP
1 DHCP 1 2 DHCP
3 3 DHCP 6 DNS
4 DHCP 15 DHCP 44 WINS
RGOS PPP FR HDLC dhcp

```

```

FastEthernet 0 IP

```

```

interface fastEthernet 0
ip address dhcp

```

dns-server	DHCP DNS
ip dhcp pool	DHCP DHCP

ip dhcp excluded-address

IP

DHCP

DHCP

network DHCP	DHCP
---------------------	------

ip dhcp ping packet

DHCP
ip dhcp ping packet

ping
no

ip dhcp ping packet [*number*]
no ip dhcp ping packet

--	--



no lease

<i>days</i>	
<i>hours</i>	
<i>minutes</i>	
infinite	

DHCP

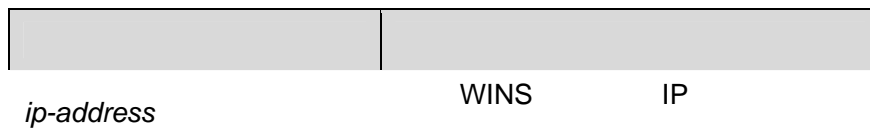
DHCP

DHCP

DHCP

1

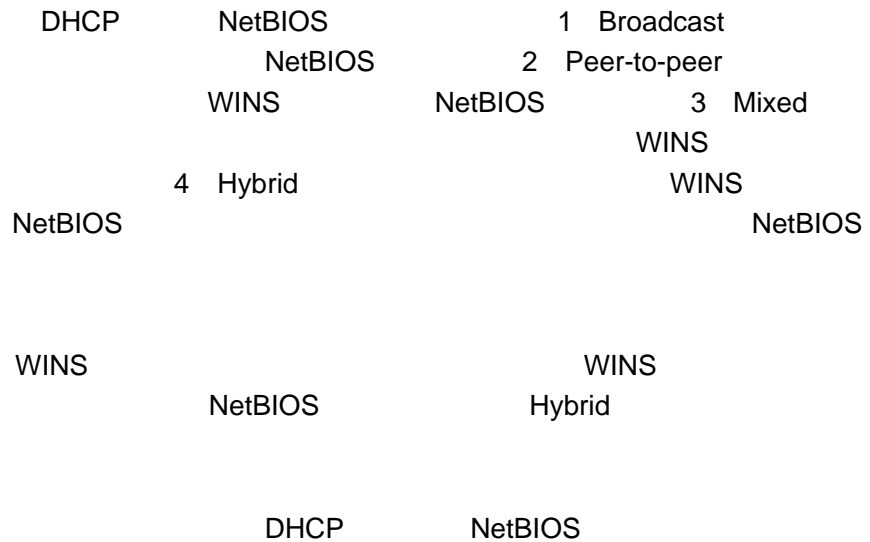
no netbios-name-server



	NetBIOS
	0~FF
<i>type</i>	<ul style="list-style-type: none"> ◇ 1 b-node ◇ 2 p-node ◇ 4 m-node ◇ 8 h-node
	<ul style="list-style-type: none"> ◇ b-node ◇ p-node ◇ m-node ◇ h-node

NetBIOS

DHCP



netbios-node-type h-node

	DHCP	DHCP
ip dhcp pool		
netbios-name-server	WINS	NETBIOS

next-server

DHCP

DHCP

next-server no**next-server** *ip-address* [*ip-address2...ip-address8*]**no next-server**

<i>ip-address</i>	TFTP IP
<i>ip-address2...ip-address8</i>	8

DHCP

DHCP

DHCP

192.168.12.4

next-server 192.168.12.4

bootfile	DHCP
ip dhcp pool	DHCP DHCP
ip help-address	Helper
option	RGOS DHCP

option

DHCP DHCP option
no option

option *code* { **ascii string** | **hex string** | **ip ip-address** }
no option

<i>code</i>	DHCP
ascii string	ASCII
hex string	
ip ip-address	IP

DHCP TCP/IP
DHCP option DHCP 312 option
DHCP DHCP RFC 2131
DHCP option
19 DHCP
IP 0 IP 1 IP
DHCP IP
option 19 hex 1
33 DHCP
DHCP 1
172.16.12.0 192.168.12.12 2 172.16.16.0
192.168.12.16
option 33 ip 172.16.12.0 192.168.12.12 172.16.16.0
192.168.12.16

ip dhcp pool	DHCP DHCP

service dhcp

dhcp DHCP **service**
 no DHCP

service dhcp
no service dhcp

DHCP

DHCP IP DNS
 DHCP DHCP DHCP
 DHCP DHCP DHCP

 DHCP

- clear ip dhcp binding
- clear ip dhcp conflict
- debug ip dhcp client
- debug ip dhcp server
- clear ip dhcp server statistics
- show dhcp lease
- show ip dhcp binding
- show ip dhcp conflict
- show ip dhcp server statistics

clear ip dhcp binding

DHCP

clear ip dhcp binding

```
clear ip dhcp binding { * | ip-address }
```

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

```

DHCP          DHCP          no ip
dhcp pool

```

```

IP          192.168.12.100  DHCP
clear ip dhcp binding 192.168.12.100

```

--	--

show ip dhcp binding	DHCP
-----------------------------	------

clear ip dhcp conflict

DHCP

clear ip dhcp conflict

```
clear ip dhcp conflict { * | ip-address }
```

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

DHCP

ARP ping DHCP
clear ip dhcp conflict

```
clear ip dhcp conflict *
```

ip dhcp ping packets	DHCP

IP

clear ip dhcp server statistics

DHCP

DHCP
DHCP

clear

ip dhcp server statistics

DHCP

clear ip dhcp server statistics

show ip dhcp server statistics	DHCP

debug ip dhcp client

DHCP Client

debug ip dhcp client

debug ip dhcp client

no debug ip dhcp client

dhcp client

dhcp

debug ip dhcp client

debug ip dhcp server

DHCP Server

debug ip dhcp server

debug ip dhcp server

no debug ip dhcp server

dhcp server

dhcp

debug ip dhcp server

show dhcp lease

DHCP

EXEC

show dhcp lease

show dhcp lease

IP IP
IP

show dhcp lease

Ruijie# **show dhcp lease**

Temp IP addr: 192.168.5.71 for peer on Interface:
FastEthernet0/0

Temp sub net mask: 255.255.255.0

2.[(Gse)T: 6 Tsecs, R6()enewal: 3 Tsecs, Rebind195 Twsecs

show ip dhcp binding

```
Ruijie# show ip dhcp binding
IP address      Client-Id/      Lease expiration  Type
                Hardware address
192.168.1.2    00d0.f866.4777  IDLE              Manual
```

	DHCP	IP
IP address	DHCP	IP
Client-Id/ Hardware address	DHCP	client identifier
Lease expiration	IDLE	Infinite DHCP
Type	Manual	Automatic

	DHCP
clear ip dhcp binding	DHCP

show ip dhcp conflict

DHCP

EXEC

show ip dhcp conflict**show ip dhcp conflict**

DHCP

show ip dhcp conflict

```
Ruijie# show ip dhcp conflict
IP address      Detection Method
192.168.12.1    Ping
```

```
dhcpd excluded ipaddress
192.168.12.100
```

IP address	DHCP IP
Detection Method	
dhcpd excluded ipaddress	

clear ip dhcp confict	DHCP

show ip dhcp server statistics

```

DHCP EXEC show ip dhcp
server statistics
show ip dhcp server statistics
```

DHCP

show ip dhcp server statistics

```
Ruijie# show ip dhcp server statistics
```

```

Address pools          4
Automatic bindings    4
Manual bindings       0
Expired bindings      0
Malformed messages 2

Message                Received
BOOTREQUEST           216
DHCPCDISCOVER         33
DHCPCREQUEST         25
DHCPCDECLINE          0
DHCPCRELEASE          1
DHCPCINFORM          150

Message                Sent
BOOTREPLY             16
DHCPCOFFER            9
DHCPCACK              7
DHCPCNAK              0

```

Address pools	
Automatic bindings	
Manual bindings	
Expired bindings	
Malformed messages	DHCP
Message Received or Sent	DHCP

clear ip dhcp server statistics	DHCP

DHCP Relay

DHCP Relay

DHCP

- **service dhcp**
- **ip helper-address**

service dhcp

```
no          DHCP          service dhcp
          DHCP
service dhcp
no service dhcp

DHCP

DHCP          DHCP          DHCP
DHCP          DHCP          DHCP

DHCP

service dhcp
```

ip helper-address [vrf] <i>A.B.C.D</i>	DHCP server

ip helper-address

DHCP no

DHCP

/

dhcp DHCP

vrf

vrf

vrf

vrf

vrf

vrf

61.154.26.49 vrf local 192.168.197.1

ip helper-address 61.154.26.49

ip helper-address vrf local 192.168.197.1

service dhcp	DHCP

ip dhcp relay information option dot1x

dhcp option dot1x no

dhcp option dot1x

DHCP relay

802.1x

Ip dhcp relay information option dot1x

service dhcp	DHCP
ip dhcp relay information option dot1x access-group	option dot1x acl

ip dhcp relay information option dot1x access-group

dhcp option dot1x acl no
 dhcp option dot1x acl

ACL

ACL ACE

Ip dhcp relay information option dot1x access-group
 acl-name

service dhcp	DHCP
ip dhcp relay information option dot1x	DHCP option dot1x

ip dhcp relay information option82

no ip dhcp relay information option82
ip dhcp relay information option82

option dot1x

Ip dhcp relay information option82

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

ip dhcp relay check server-id

no ip dhcp relay check *server-id*
ip dhcp relay information check *server-id*

server-id option DHCP REQUEST
server

Ip dhcp relay check server-id

Service dhcp	DHCP

ip dhcp relay suppression

```

DHCP                DHCP                no
DHCP                DHCP relay
    
```

```

DHCP request        relay
    
```

```

1 relay
    
```

```

Ruijie#
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

DNS

ip domain-lookup

DNS

no

DNS

ip domain-lookup

no ip domain-lookup

DNS

DNS

DNS

DNS

Ruijie(config)# **ip domain-lookup**

no

ip name-server *ip-address*

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

<i>ip-address</i>	IP

DNS Server IP

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

no ip host host-name ip-address

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

show hosts	DNS

RGOS10.1

clear host

clear host [*host-name*]

<i>host-name</i>	“*”

DNS

1 ip host 2
DNS

NTP

NTP

NTP

- **no ntp**
- **ntp authenticate**
- **ntp authentication-key**
- **ntp disable**
- **ntp server**
- **ntp synchronize**
- **ntp trusted-key**

no ntp

ntp

ntp

no ntp

NTP

NTP
NTP

NTP

NTP

NTP

no ntp

ntp server	NTP

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	

ntp authentication-key

NTP

NTP

ntp authentication-key *key-id* **md5** *key-string* [*enc-type*]

no ntp authentication-key *key-id* **md5** *key-string* [*enc-type*]

<i>key-id</i>	ID
<i>key-string</i>	
<i>enc-type</i>	7 0

md5
ntp trusted-key key-id key-id

1024

ID 6

ntp authentication-key 6 md5 woooooop

ntp authenticate	
ntp trusted-key	

ntp server

NTP

ntp disable

NTP

ntp disable

NTP

NTP

<i>version</i>	NTP	1-3	NTPv3
<i>if-name</i>	NTP		
<i>keyid</i>			
prefer	Prefer		

NTP

NTP

8

NTP

Ntp synchronize

ntp server	NTP

ntp trusted-key

ID

ntp trusted-key *key-id*

no ntp trusted-key *key-id*

<i>key-id</i>	ID

NTP

ID

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

NTP

debug ntp

show ntp status

NTP

show ntp status

NTP

NTP

NTP

show ntp status

UDP-Helper

udp-helper enable

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

ip helper-address

UDP

no

UDP

ip helper-address *address*

no ip helper-address *address*

<i>address</i>	UDP 20

UDP

20

UDP-Helper

UDP

no ip helper-address

UDP

:

Ruijie(config-if)# **ip helper-address** 192.168.100.1

ip forward-protocol	UDP

RGOS10.1

ip forward-protocol

UDP

UDP

no

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*]

<i>port</i>	69,53,37,137,138,49
<i>tftp</i>	Trivial File Transfer Protocol(69) UDP 69
<i>domain</i>	Domain Name System(53) UDP 53
<i>time</i>	Time service(37) UDP 37
<i>netbios-ns</i>	NetBIOS Name Service(137) UDP 137
<i>netbios-dgm</i>	NetBIOS Datagram Service(138) UDP 138
<i>tacacs</i>	TAC Access Control System(49) UDP 49

UDP

UDP-Helper

69,53,37,137,138,49

UDP

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

udp-helper enable	UDP
ip forward-protocol	UDP

RGOS10.1

SNMP

SNMP

- **no snmp-server**
- **show snmp**
- **snmp-server chassis-id**
- **snmp-server community**
- **snmp-server contact**
- **snmp-server enable traps**
- **snmp-server host**
- **snmp-server location**
- **snmp-server packetsize**
- **snmp-server queue-length**
- **snmp-server system-shutdown**
- **snmp-server trap-source**
- **snmp-server trap-timeout**

no snmp-server

SNMP

no snmp-server

no snmp-server

SNMP

SNMP

SNMP

Ruijie(config)# **no snmp-server**

snmp-server chassis-id

```
SNMP                                     snmp-server
chassis-id                               no
snmp-server chassis-id text
no snmp-server chassis-id

text
```

```

ro          NMS  MIB
rw          NMS  MIB
number     0-99
           MIB  NMS
ipaddr     NMS          MIB  NMS
    
```

```

SNMP
MIB  NMS
SNMP          no snmp-server
    
```

```

MIB          192.168.12.1
NMS  MIB
    
```

```

Ruijie(config)# access-list 2 permit 192.168.12.1
Ruijie(config)# access-list 2 deny any
Ruijie(config)# snmp-server community public ro 2
    
```

access-list	

snmp-server contact

```

SNMP          snmp-server
contact       no          SNMP
snmp-server contact text
no snmp-server contact
text
    
```

SNMP

i-net800@i-net.com.cn

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

show snmp-server	SNMP
no snmp-server	SNMP

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

snmp-server

SNMP

```
Ruijie(config)# snmp-server enable traps snmp
Ruijie(config)# snmp-server host 192.168.12.219 public
snmp
```

snmp-server host	SNMP

snmp-server host

```

snmp-server host          SNMP          NMS
                        no              SNMP

snmp-server host host-addr traps [vrf vrfname] [version {1 | 2c | 3
[auth | noauth | priv]] community-string [udp-port
port-num][notification-type]

```

```

no snmp-server host host-addr

```

```

host-addr      SNMP
vrfname        vrf      UDP      snmp      V1  V2C  V3
                  auth | noauth | priv      V3

```

SNMP

SNMP

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

snmp-server enable traps	

snmp-server location

SNMP

snmp-server

```
location no SNMP
```

```
snmp-server location text
```

```
no snmp-server location
```

```
text
```

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

snmp-sever contact	SNMP

snmp-server packetsize

```
location
```

```
snmp-servesnmp-8
```

no snmp-server packetsize

byte-count 484 17876

1500

SNMP 1492

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

snmp-server queue-length	SNMP

snmp-server queue-length

snmp-server

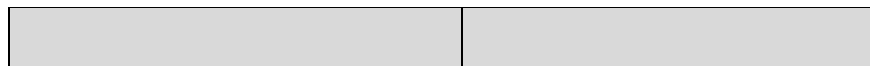
queue-length

snmp-server queue-length *length*

length 1 1000

10

```
Ruijie(config)# snmp-server queue-length 4
```



snmp-server packetsize

SNMP

SNMP IP
 SNMP IP
 0 IP SNMP

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

snmp-server enable traps	
snmp-server enable host	NMS

snmp-server trap-timeout

snmp-server
trap-timeout no
snmp-server trap-timeout *seconds*
no snmp-server trap-timeout

seconds

30

60

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

snmp-server queue-length	

show snmp user	SNMP

snmp-server group

SNMP	snmp-server group
no	
snmp-server group <i>groupname</i> {v1 v2c v3 { <i>auth</i> <i>noauth</i> <i>priv</i> }}	
[<i>read readview</i>][<i>write writeview</i>] [<i>access {num name}</i>]	
no snmp-server group <i>groupname</i> {v1 v2c v3 }	
v1 v2c v3	SNMP
<i>auth</i>	v3
<i>noauth</i>	v3
<i>priv</i>	v3
<i>readview</i>	
<i>writeview</i>	

```
Ruijie(config)# snmp-server group mib2user v3 priv read mib2
```

show snmp group	SNMP

snmp-server view

```
SNMP                                snmp-server view  
no  
snmp-server view view-name oid-tree {include | exclude}  
no872135423p-server vieww
```

show snmp SNMP
show snmp mib snmp mib
show snmp user snmp
show snmp view snmp
show snmp group snmp

SNMP

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

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

RMON

RMON

- **rmon collection stats** *index* [**owner** *owner-string*]
- **rmon collection history** *index* [**owner** *owner-string*] [**buckets** *bucket-number*] [**interval** *seconds*]
- **rmon alarm** *number* *variable* *interval* {**absolute** | **delta** }
- **rising-threshold** *value* [**overhead** *overhead*] [**threshold** *threshold*] [**bucket** *bucket*]

rmon alarm

MIB no

rmon alarm *number variable interval {absolute | delta }
rising-threshold value [event-number] **falling-threshold** value
[event-number] [owner ownername]
no rmon alarm *number**

RGOS

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

MIB ifInNUcastPkts.6

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



trap

```
Ruijie(config)# rmon event 1 log trap rmon description  
"ifInNUcastPkts is too much " owner zhangsan
```



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

```

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 owner-string]	

show rmon history

show rmon history

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



```

Event : 1
Description : firstevent
Event type : log-and-trap
Community : public
Last time sent : 0d:0h:0m:0s
Owner : zhangsan
Log : 1
Log time : 0d:0h:37m:47s
Log description : ipttl
Log : 2
Log time : 0d:0h:38m:56s
Log description : ipttl
    
```

rmon alarm <i>number variable</i> <i>interval {absolute delta }</i> rising-threshold <i>value</i> <i>[event-number]</i> falling-threshold <i>value [event-number] [owner</i> <i>ownername]</i>	

show rmon event

```
show rmon event
```

```

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

RIP

address-family RIP

RIP

address-family

no

address-family ipv4 vrf *vrf-name***no address-family ipv4 vrf** *vrf-name*

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

RIP

address-family

(config-router-af)#

VRF RIP

VRF RIP

VRF RIP

exit-address-family **exit**

vpn1 VRF vrf

RIP

Ruijie(config)#

```

Ruijie(config-if)# ip vrf forwarding vpn1
Ruijie(config-if)# ip address 192.168.1.1
255.255.255.0
Ruijie(config)# router rip
Ruijie(config-router)# address-family ipv4 vrf vpn1
Ruijie(config-router)# network 192.168.1.0
Ruijie(config-router)# exit-address-family

```

exit-address-family	
ip vrf	VRF

auto-summary (RIP)

RIP
no

auto-summary

auto-summary

no auto-summary

RIP

RIPv1 RIPv2

RIP

- RIP

- RIP
-

RIPv1

RIPv2

RIPv2

```
Ruijie(config)# router rip
Ruijie(config-router)# version 2
Ruijie(config-router)# no auto-summary
```

version	RIP v1&v2	v1	v2

default-metric (RIP)

RIP
no

default-metric

default-metric *metric*

no default-metric

<i>metric</i>	16 RGOS	1 16	metric

1

redistribute
RIP

```
RIP
RIP default-metric
default-metric 1
```

```
RIP OSPF RIP
Ruijie(config)# router rip Ruijie(co
Ruijie(config-router
```



default-information originate(RIP)

```
RIP no default-information
default-information originate no default-information originate
```

```
RIP Ruijie(config-rout
```

distance

RIP
no

distance

distance *distance* [*ip-address wildcard*]

no distance [*distance ip-address wildcard*]

<i>distance</i>	RIP <1-255>
<i>ip-address</i>	IP
<i>wildcard</i>	IP

120

RIP

RIP

RIP

RIP

160,

192.168.12.1

123

Ruijie(config)# **router rip**

Ruijie(config-router)# **distance 160**

Ruijie(config-router)# **distance 123 192.168.12.1
0.0.0.0**

distribute-list in RIP

distribute-list in no

distribute-list {[*access-list-number* | *name*] | **prefix** *prefix-list-name*
[**gateway** *prefix-list-name*]} **in** [*interface-type interface-number*]

no distribute-list {[*access-list-number* | *name*] | **prefix** *prefix-list-name*
[**gateway** *prefix-list-name*]} **in** [*interface-type interface-number*]

<i>access-list-number</i>	
prefix <i>prefix-list-name</i>	
gateway <i>prefix-list-name</i>	
<i>interface-type interface-number</i>	()

RIP Fastethernet 0/0
172.16

```
Ruijie(config)# router rip
Ruijie(config-router)# network 200.168.23.0
Ruijie(config-router)# distribute-list 10 in
fastethernet 0/0
Ruijie(config-router)# no auto-summary
```

```
Ruijie(config)#access-list 10 permit 172.16.0.0  
0.0.255.255
```

access-list	
prefix-list	

RIP 192.168.12.0/24

```
Ruijie(config)# router rip
Ruijie(config-router)# network 200.4.4.0
Ruijie(config-router)# network 192.168.12.0
Ruijie(config-router)# distribute-list 10 out
Ruijie(config-router)# version 2
Ruijie(config)# access-list 10 permit 192.168.12.0
0.0.0.255
```

access-list	
prefix-list	
redistribute	

exit-address-family

exit-address-family

exit-address-family

no

exit

```
Ruijie(config-router)# address-family ipv4 vrf vpn1
Ruijie(config-router-af)# exit-address-family
```

address-family	

ip rip authentication key-chain

```

RIP          RIP          ip rip
authentication key-chain      no
ip rip authentication key-chain name-of-keychain
no ip rip authentication key-chain

```

<i>name-of-keychain</i>	RIP

RIP

key chain

```

RIPv1      RIP          RIPv2
          RIP

```

Serial 0

RIP

ripchain

```
Ruijie(config)# interface serial 0/0
```

```
Ruijie(config-if)# ip rip authentication key-chain  
ripchain
```

ip rip authentication mode	RIP

RIPv1 RIP RIPv2

 Serial 0 RIP MD5

```
Ruijie(config)# interface serial 0/0
Ruijie(config-if)# ip rip authentication mode md5
```

ip rip authentication key-chain	RIP	RIPv2	RIP RIP
key chain			

ip rip receive enable

RIP RIP **ip rip**

receive enable no RIP RIP

ip rip receive enable

no ip rip receive enable

RIP

no RIP

default RIP

Fastethernet 0/0 RIP

```
Ruijie(config)# interface fastethernet 0/0  
Ruijie(config-if)# no ip rip receive enable
```

ip rip send enable	RIP
passive-interface	RIP

ip rip receive version

RIP	RIP
ip rip receive version	no

version	RIP

ip rip send enable

```

RIP
send enable      no      RIP      ip rip
RIP

```

```
ip rip send enable
```

```
no ip rip send enable
```

```
RIP
```

```

RIP
no
default      RIP

```

```
Fastethernet 0/0      RIP
```

```
Ruijie(config)# interface fastethernet 0/0
```

```
Ruijie(config-if)# no ip rip send enable
```

ip rip receive enable	RIP
passive-interface	RIP

ip rip send version

```
RIP
ip rip receive version RIP
no
```

```
ip rip send version [1] [2]
```

```
no ip rip send version
```

1	RIPv1
2	RIPv2

version

```
RIP
vesion
RIPv1 RIPv2
version
```

```
Fastethernet 0/0 RIPv1 RIPv2
```

```
Ruijie(config)# interface fastethernet 0/0
Ruijie(config-if)# ip rip send version 1 2
```

version	RIP

ip rip v2-broadcast

RIP version 2

ip rip v2-broadcast

no

ip rip v2-broadcast**no ip rip v2-broadcast****version****vesion**

RIP

RIPv1 RIPv2
version

Fastethernet 0/0

RIPv2

Ruijie(config)# **interface fastethernet 0/0**Ruijie(config-if)# **ip rip v2-broadcast**

version	RIP

ip split-horizon (RIP)

RIP

ip split-horizon

no

RIP

ip split-horizon

no ip split-horizon

IP

X.25

IP

RIP

neighborshow ip rip
RIP

Fastethernet 0/0

RIP

```
Ruijie(config)# interface fastethernet 0/0
Ruijie(config-if)# no ip split-horizon
```

neighbor RIP	RIP IP
validate update source	RIP

ip summary-address rip

```
summary-address rip          RIP          ip  
                             no
```

```
ip summary-address rip ip-address ip-network-mask
```

```
no ip summary-address rip ip-address ip-network-mask
```



network (RIP)

```

RIP
network          no
network network-number
no network network-number

```

<i>network-number</i>	IP RIP

```

network-number          IP          RGOS
172.16.16.1  172.16.0.0
RIPv2
IP
RIPv2
passive-interface
RIP          IP          RIP
RIP          RIP
RIP
Ruijie(config)# router rip
Ruijie(config-router)# network 192.168.12.0
Ruijie(config-router)# network 172.16.0.0

```

neighbor (RIP)

```

RIP      IP      neighbor
no
neighbor ip-address
no neighbor
```

<i>ip-address</i>	IP

```

RIPv1      IP      255.255.255.255      RIPv2
           224.0.0.9
           passive-interface
           RIP
passive
```

offset-list(RIP)

```

RIP      metric
```

offset-list no offset

offset-list access-list-number {*in* | *out*} *offset* [*interface-type*
interface-number]

no offset-list access-list-number {*in* | *out*} *offset* [*interface-type*
interface-number]

<i>access-list-number</i>	acl	
<i>in</i>	acl	metric
<i>out</i>	acl	metric
<i>offset</i>	metric	
<i>interface-type</i>	acl	
<i>interface-number</i>		

offset

```

RIP
offset-list 7 out 7
acl 7
RIP
metric 7
fastEthernet1/0
acl 8
RIP
metric 7
Ruijie(config-router)# offset-list 7 in 7
Ruijie(config-router)# offset-list 8 in 7 fastEthernet
1/0

```

output-delay

```
RIP
output-delay no
```

```
output-delay delay
```

```
no output-delay
```

<i>delay</i>	<8-50>

```
RIP          512          25
           25
```

output-delay

```
RIP          30
```

```
Ruijie(config)# router rip
```

```
Ruijie(config-router)# output-delay 30
```

passive-interface

```
passive-interface
```

passive-interface {*default* | *interface-type interface-num*}

no passive-interface {*default* | *interface-type interface-num*}

redistribute RIP

redistribute

no

redistribute {**bgp** | **isis** [*process-name*] | **ospf** <1-65535> | **connected** | **static**}[**metric** *value*] [**route-map** *route-map-name*] [**match** **internal** | **external** *type* | **nssa-external** *type*]

no redistribute {**bgp** | **isis** [*process-name*] | **ospf** <1-65535> | **connected** | **static**}[**metric** *value*] [**route-map** *route-map-name*] [**match** **internal** | **external** *type* | **nssa-external** *type*]

<i>bgp</i> <i>isis</i> <i>ospf</i> <i>connected</i> <i>static</i>	
<i>metric</i>	metric
<i>route-map</i>	
<i>match</i>	ospf
<i>process-name</i>	ISIS
<1-65535>	OSPF

OSPF

ISIS

level-2

metric 1

route-map

RIP

RIP

OSPF

isis level level-2
level level-2
level-1-2 level 1, level 2
ospf match match
ospf match match
match no

RIP

Ruijie(config-router)# **redistribute static**

default-metric <i>metric</i>	

router rip

RIP
router rip no RIP
router rip
no router rip

RIP

RIP

RIP

async default routing

RIP

RIP

RIP

RIP

RIP

RIP
RIP

IP

RIP

RIPv1 RIPv2

RIPv1

RIP **ip rip receive version**
ip rip send version RIP

RIP 2

```
Ruijie(config)# router rip
Ruijie(config-router)# version 2
```

ip rip receive version	RIP RIP
ip rip send version	RIP RIP
show ip rip	rip

show ip rip

RIP **show ip rip**
show ip rip [vrf vrf-name]

vrf vrf-name	VRF RIP

```
                RIP
            rip    rip          metric  distance
            VRF    VRF          VRF-id
```

RIP

```
Ruijie# show ip rip
Routing Protocol is "rip"
Sending updates every 10 seconds, next due in 4 seconds
Invalid after 20 seconds, flushed after 10 seconds
Outgoing update filter list for all interface is: not
set
Incoming update filter list for all interface is: not
set
Default redistribution metric is 2
Redistributing: connected
Default version control: send version 2, receive version
2
Interface          Send  Recv  Key-chain
FastEthernet 1/1    2     2     ripkey1
FastEthernet 1/0    2     2     ripkey2
Routing for Networks:
192.168.26.0
192.168.64.0
Distance: (default is 50)
```

vrf RIP

```
Ruijie(config-router)# sh ip rip vrf 1
VRF 1 VRF-id:1
Routing Protocol is "rip"
Sending updates every 30 seconds, next due in 4 seconds
Invalid after 180 seconds, flushed after 120 seconds
Outgoing update filter list for all interface is: not
set
Incoming update filter list for all interface is: not
set
```

Default redistribution metric is 1
Redistributing:
Default version control: send version 1, receive any version
Routing for Networks:
Distance: (default is 120)

show ip rip database

RIP

show ip rip database**show ip rip database [vrf *vrf-name*] [*network-number* {*network-mask*}]**

vrf <i>vrf-name</i>	VRF RIP
<i>network-number</i>	
<i>network-mask</i>	


```
Ruijie# show ip rip external connected
Protocol connected route:
[connected] 1.0.0.0/8 metric=0
nhop=0.0.0.0, if=2
[connected] 3.0.0.0/8 metric=0
nhop=0.0.0.0, if=16391
[connected] 4.4.0.0/16 metric=0
nhop=0.0.0.0, if=16388
[connected] 5.0.0.0/8 metric=0
nhop=0.0.0.0, if=16386
[connected] 192.168.195.0/24 metric=0
nhop=0.0.0.0, if=1
```

show ip rip	

show ip rip interface

RIP

show ip rip interface**show ip rip interface [vrf *vrf-name*]**

VRF <i>vrf-name</i>	VRF RIP

RIP

```
Ruijie# show ip rip interface
FastEthernet 1/1 is down, line protocol is down
```

```
RIP is not enabled on this interface
FastEthernet 1/0 is up, line protocol is up
Routing Protocol: RIP
Receive RIPv2 packets only
Send RIPv2 packets only
Passive interface: Disabled
Split horizon: Enabled
V2 Broadcast: Disabled
Multicast registe: Registered
Interface Summary Rip:
Not Configured
IP interface address:
192.168.64.100/24
```

show ip rip	

istribute-list in

istribute-list in **no**

istribute-list {[*access-list-number* | *name*] | **prefix** *prefix-list-name*
[**gateway** *prefix-list-name*]} **in** [*interface-type* *interface-number*]

no istribute-list {[*access-list-number* | *name*] | **prefix** *prefix-list-name*
[**gateway** *prefix-list-name*]} **in** [*interface-type* *interface-number*]

<i>access-list-number</i>	
prefix <i>prefix-list-name</i>	
gateway <i>prefix-list-name</i>	
<i>interface-type</i> <i>interface-number</i>	()

OSPF

OSPF

RIP Fastethernet 0/0
172.16

```
router rip
network 200.168.23.0
distribute-list 10 in fastethernet 0/0
no auto-summary
access-list 10 permit 172.16.0.0 0.0.255.255
```

OSPF
OSPF

RIP

192.168.12.0/24

```
router rip
network 200.4.4.0
network 192.168.12.0
distribute-list 10 out
version 2
access-list 10 permit 192.168.12.0
```

access-list	
prefix-list	
redistribute	

ip default-network

default-network

connected

192.168.100.0

```
ip route 192.168.100.0 255.255.255.0 serial 0/1
ip default-network 192.168.100.0
```

200.200.200.0

200.200.200.0

```
ip default-network 200.200.200.0
```

show ip route	IP

ip prefix-list

ip prefix-list

no

```
ip prefix-list prefix-lis-name [ seq seq-number ] { deny | permit }
ip-prefix [ ge minimum-prefix-length ][ le maximum-prefix-length ]
no ip prefix-list prefix-lis-name [ seq seq-number ] { deny | permit }
ip-prefix [ ge minimum-prefix-length ][ le maximum-prefix-length ]
```

<i>prefix-lis-name</i>	

1 2147483647

seq-number

5

```
Ruijie(config)# ip prefix-list pre1 permit 201.1.1.0/24  
Ruijie(config)# router ospf  
Ruijie(config-router)# distribute-list prefix pre1 out  
rip  
Ruijie(config-router)# end
```

ip prefix-list description

```
no ip prefix-list description  
ip prefix-list prefix-lis-name description descripton-text
```

```
                                OSPF          RIP
                                IP              IP
(                                IP  201.1.1.0/24                                )
```

```
Ruijie# configure terminal
Ruijie(config)# ip prefix-list pre description Deny
routes from Net-A hp poutes
```

disable/enable	
-----------------------	--

```

1
OSPF 110
125 OSPF
vrf vrf
1 show ip route weight
weight weight WCMP
WCMP 32
WCMP

route 0.0.0.0 0.0.0.0 FastEthernet 0/0 ip
FastEthernet 0/0
ARP CPU

172.16.100.0/24
192.168.12.1 115
ip route 172.16.100.0 255.255.255.0 192.168.12.1 115

172.16.100.0/24 fastEthernet 0/0

ip route 172.16.100.0 255.255.255.0 fastEthernet 0/0
192.168.12.1

```



<i>number</i>	1-10000

1000

route-limit

ip static

show running config

900

ip static route-limit 900

ipv6 prefix-list

IPv6

ipv6

prefix-list

no

ipv6 prefix-list *prefix-lis-name* [**seq** *seq-number*] { **deny** | **permit** }

ipv6-prefix [**ge** *minimum-prefix-length*][**le** *maximum-prefix-length*]

no ipv6 prefix-list *prefix-lis-name*[**seq** *seq-number*] { **deny** | **permit** }

ipv6-prefix [**ge** *minimum-prefix-length*][**le** *maximum-prefix-length*]

<i>prefix-lis-name</i>	
<i>seq-number</i>	1 2147483647 5 5

deny

ipv6 prefix-list description

IPv6 **ipv6 prefix-list**
description **no**
ipv6 prefix-list *prefix-lis-name* **description** *descripton-text*

<i>prefix-lis-name</i>	IPv6

```

                                OSPF          RIP
                                IP             IP
                                (             )
                                IP 201.1.1.0/24

```

```

Ruijie# configure terminal
Ruijie(config)# ipv6 prefix-list pre description Deny
routes from Net-A

```

match as-path

```

                                AS_PATH
match as-path          no
match as-path as-path-acl-list-num as-path-acl-list-num.....
no match as-path as-path-acl-list-num.....

```

<i>as-path-acl-list-num</i>	1...500

match as-path

```

                                1          match          1
                                set          match          set

```

```

route-map ROUTEMAP2IBGP
match as-path 20 30

```

--	--

match community	
match metric	
match origin	
set as-path prepend	AS_PATH
set metric	
set metric-type	

match community

COMMUNITY

match community **no**

match community {*standard-list-number* | *expanded-list-number* | *community-list-name*} [**exact-match**] [{*standard-list-number* | *expanded-list-number* | *community-list-name*} [**exact-match**] ...]

no match community {*standard-list-number* | *expanded-list-number* | *community-list-name*} [**exact-match**] [{*standard-list-number* | *expanded-list-number* | *community-list-name*} [**exact-match**] ...]

<i>standard-list-number</i>	1...99
<i>expanded-list-number r</i>	100...199

communitys-list-name

set **match** 1 **match** 1 **set**

```
ip community-list 1 permit 100:2 100:30
route-map set_lopref
match community 1 exact-match
set local-preference 20
```

match as-path	AS_PATH

match interface

OSPF

RIP

RIP

OSPF

route maps

set

match

1

match

1
set

match ip address

match ip address no

match ip address {

```

      OSPF          RIP
    10  RIP      OSPF
type-1          40

```

```

router ospf
redistribute rip subnets route-map redrip
network 192.168.12.0 0.0.0.255 area 0

```

```

access-list 10 permit 200.168.23.0

```

```

route-map redrip permit 10
match ip address 10
set metric 40
set metric-type type-1

```

access-list	
match interface	
match ip next-hop	
match ip route-source	
match metric	
match route-type	
match tag	
set metric	
set metric-type	
set tag	

match ip next-hop

IP

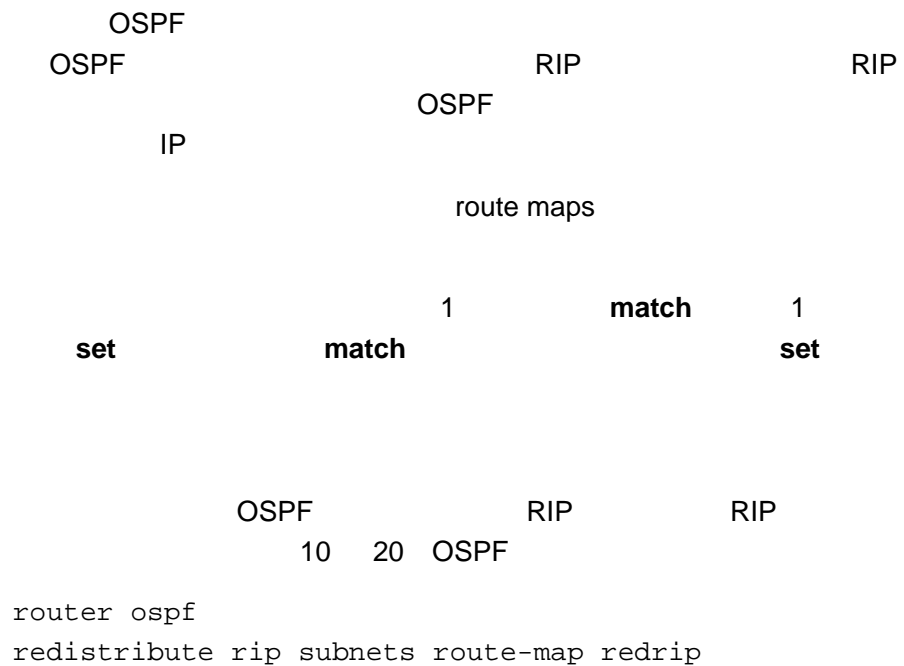
match ip next-hop no

match ip next-hop {*access-list-number* [*access-list-number...* |
access-list-name...] |*access-list-name* [*access-list-number...* |
access-list-name] | **prefix-list** *prefix-list-name* [*prefix-list-name...*]}

no match ip next-hop {*access-list-number* [*access-list-number...* |
access-list-name...] | *access-list-name* [*access-list-number...* |
access-list-name] | **prefix-list** *prefix-list-name* [*prefix-list-name...*]}

<i>access-list-number</i>	
<i>access-list-name</i>	
prefix-list <i>prefix-list-name</i>	

match ip next-hop



```
access-list 10 permit 192.168.100.1
access-list 20 permit 172.16.10.1
```

```
route-map redrip permit 10
match ip next-hop 10 20
```

access-list	
match ip address	
match interface	
match ip route-source	
match metric	
match route-type	
match tag	
set metric	
set metric-type	
set tag	

match ip route-source

IP

match ip route-source **no**

match ip route-source {*access-list-number* [*access-list-number...* | *access-list-name...*] | *access-list-name* [*access-list-number...* | *access-list-name*] | **prefix-list** *prefix-list-name* [*prefix-list-name...*]}

no match ip route-source {*access-list-number* [*access-list-number...* | *access-list-name...*] | *access-list-name* [*access-list-number...* | *access-list-name*] | **prefix-list** *prefix-list-name* [*prefix-list-name...*]}

--	--	--

access-list-number

match interface	
match ip next-hop	
match metric	
match route-type	
match tag	
set metric	
set metric-type	
set tag	

match ipv6 address

match ipv6 address	IPv6
	no

```

set match 1 match 1
set match 1 set

```

```

type-1 10 RIP OSPF 40 OSPF RIP
ipv6 router ospf
redistribute rip subnets route-map redrip

ipv6 access-list v6acl
10 permit ipv6 2620::/64 any

route-map redrip permit 10
match ipv6 address v6acl
set metric 30

```

ipv6 access-list	IPv6
match interface	
match ipv6 next-hop	IPv6
match ipv6 route-source	IPv6
match metric	
match route-type	
match tag	
set metric	
set metric-type	
set tag	

match ipv6 next-hop

IPv6

match ipv6 address **no**

match ipv6 next-hop { *access-list-name* | **prefix-list** *prefix-list-name* }

no match ipv6 next-hop

<i>access-list-name</i>	
prefix-list <i>prefix-list-name</i>	IPv6

OSPF

RIP

RIP

OSPF

IP

route maps

set

match

1

match

1

set

OSPF

RIP

10 RIP

OSPF

type-1

40

ipv6 router ospf

```
redistribute rip subnets route-map redrip
```

```
ipv6 access-list v6acl  
10 permit ipv6 2720::/64 any
```

```
route-map redrip permit 10  
match ipv6 next-hop v6acl  
set metric 40
```

ipv6 access-list	IPv6
match interface	
match ipv6 address	IPv6
match ipv6 route-source	IPv6
match metric	
match route-type	
match tag	
set metric	
set metric-type	
set tag	

match ipv6 route-source

IPv6

match ipv6 address **no**

```
match ipv6 route-source { access-list-name | prefix-list  
prefix-list-name }
```

```
no match ipv6 route-source
```

--	--

<i>access-list-name</i>	
-------------------------	--

prefix-list

match interface	
match ipv6 address	IPv6
match ipv6 route-source	IPv6
match metric	
match route-type	
match tag	
set metric	
set metric-type	
set tag	

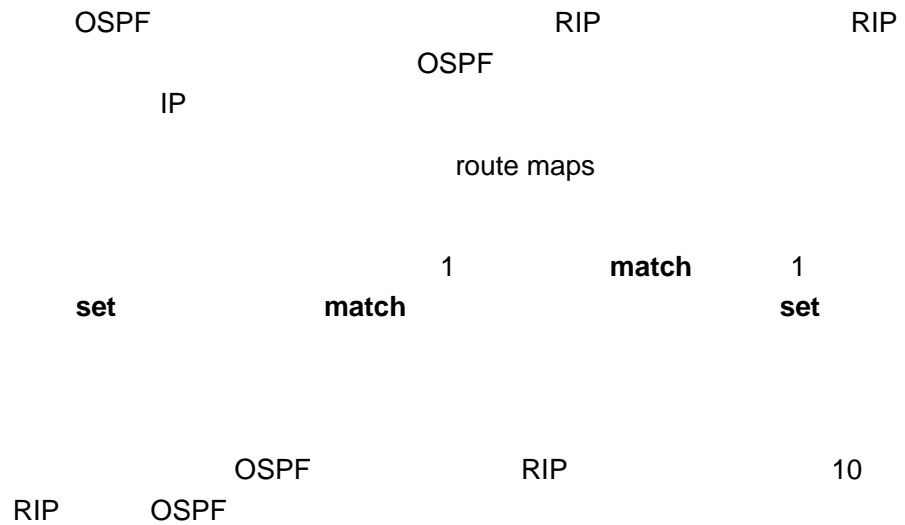
match length

length **IP** **match**
no

match length *min-length max-length*
no match length *min-length max-length*

<i>min-length</i>	IP
<i>max-length</i>	IP

<i>Metric</i>	0-4294967295
---------------	--------------



```

router ospf
redistribute rip subnets route-map redist-rip
network 192.168.12.0 0.0.0.255 area 0

route-map redist-rip permit 10
match metric 10

```

access-list	
match ip address	
match interface	
match ip next-hop	
match ip route-source	
match route-type	
match tag	

set metric	
set metric-type	
set tag	

match origin

match

origin **no**

match origin {egp | igp | incomplete}

no match origin {egp | igp | incomplete}}

egp	EGP
igp	IGP
Incomplete	

```
route-map MY_MAP 10 permit
match origin egp
set community 109
```

```
route-map MAP20 20 permit
match origin incomplete
set community no-export
```

match as-path	AS_PATH
match metric	
match origin	
set as-path prepend	AS_PATH
set metric	
set origin	

match route-type

match route-type

no

match route-type {local | internal | external [type-1 | type-2] | level-1 | level-2}

no match route-type {local | internal | external [type-1 | type-2] | level-1 | level-2}

local	
Internal	OSPF
external	(BGP OSPF)
type-1 type-2	OSPF 1 2
level-1 level-2	ISIS 1 2

OSPF

RIP

RIP

IP OSPF
route maps
1 match 1
set match set

RTd<041F4BC82C5842D7>86<0Ftch

match tag

match tag **no**

match tag *tag* [...*tag*]

no match tag *tag* [...*tag*]

<i>tag</i>	

match tag

tag

OSPF

RIP

RIP

IP

OSPF

show running

config

10

```
maximum-paths 10  
no maximum-paths
```

route-map

route-map

no

```
route-map route-map-name [permit | deny] [sequence-number]  
no route-map route-map-name [permit | deny] [sequence-number]
```

<i>route-map-name</i>	
permit	match permit set set permit match set
deny	match deny deny match set
<i>sequence-number</i>	

RGIOS

OSPF

IP

OSPF

RIP

RIP

Redistribute	

set aggregator as

```

match                               AS
set aggregator as                    no

```

```
set aggregator as as-num ip_addr
```

```
no set aggregator as [as-num ip_addr]
```

<i>as-number</i>	AS
<i>ip_addr</i>	

BGP

as,ip-addr

```

route-map set-as-path
match as-path 1
set aggregator as 3 2.2.2.2

```

match as-path	AS_PATH
match community	

match metric	
match origin	
set community	COMMUNITY
set metric	
set metric-type	

set as-path prepend

match AS_PATH
set as-path prepend no

set as-path prepend *as-number*

no set as-path prepend [*as-number*]

match metric	
match origin	
set community	COMMUNITY
set metric	
set metric-type	

set comm-list delete

```

match          COMMUNITY_LIST
community
no
set comm-list delete

```

```

set comm-list community-list-number | community-list-name delete
no comm-list community-list-number | community-list-name delete

```

<i>community-list-number</i>	
<i>community-list-name</i>	

```

router bgp 100
neighbor 172.16.233.33 remote-as 120
neighbor 172.16.233.33 route-map ROUTEMAPIN in
neighbor 172.16.233.33 route-map ROUTEMAPOUT out

ip community-list 500 permit 100:10
ip community-list 500 permit 100:20

ip community-list 120 deny 100:50
ip community-list 120 permit 100:.*

```

```

route-map ROUTEMAPIN permit 10
set comm-list 500 delete

```

```

route-map ROUTEMAPOUT permit 10
set comm-list 120 delete

```

match as-path	AS_PATH
match metric	
match origin	
set as-path prepend	AS_PATH
set local-preference	
set metric-type	

set community

```

match          COMMUNITY
set community  no

```

```

set community {community-number[community-number ...] additive |
none}

```

```

no set community { community-number[community-number ...]
additive | none}

```

<i>community-number</i>	AA NN internet local-AS no-export no-advertise
additive	community
none	

```

route-map SET_COMMUNITY 10 permit
match as-path 1
set community 109:10
route-map SET_COMMUNITY 20 permit
match as-path 2
set community no-export

```

match as-path	AS_PATH
match community	
match metric	
match origin	
set as-path prepend	AS_PATH
set origin	
set metric-type	

set dampening

```

match
dampening no set

```

```

set dampening half-life reuse suppress max-suppress-time
no set dampening

```

<i>half-life</i>	1..45() 15

<i>reuse</i>	750	1..20000
<i>suppress</i>	1..20000	2000
<i>max-suppress-time</i>	1..255() half-life	4*

```
route-map tag
match as path 10
set dampening 30 1500 10000 120
```

```
router bgp 100
neighbor 172.16.233.52 route-map tag in
```

match as-path	AS_PATH
match community	
match metric	
match origin	
set as-path prepend	AS_PATH
set metric	
set local-preference	

set extcommunity

match

set as-path prepend	AS_PATH
set metric	
set metric-type	

set ip default next-hop

match IP
set ip next-hop no

set ip default next-hop *ip-address* [*weight*] [...*ip-address* [*weight*]]
no set ip default next-hop *ip-address* [*weight*] [...*ip-address* [*weight*]]

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

set WCMP WCMP weight
WCMP
set ip default next-hop IP 32
ip address weight 4
nexthop
next-hop weight set
WCMP WCMP
weight nexthop weight
1
set ip next-hop set ip default next-hop
set ip next-hop set ip
default next-hop

(nexthop)

1

set

```
1      1.1.1.1
      6.6.6.6      2.2.2.2
                    7.7.7.7
```

```
access-list 1 permit ip 1.1.1.1 0.0.0.0
access-list 2 permit ip 2.2.2.2 0.0.0.0
```

```
interface async 1
ip policy route-map equal-access
```

```
route-map equal-access permit 10
match ip address 1
set ip default next-hop 6.6.6.6
route-map equal-access permit 20
match ip address 2
set ip default next-hop 7.7.7.7
route-map equal-access permit 30
set default interface null0
```

route-map	
match ip address	
set default interface	
set default interface	
set interface	

set ip next-hop IP
set ip precedence IP

set ip dscp

dscp match DSCP **set ip**
no
~~set ip dscp~~ **no set ip dscp**

dscp_value DSCP

route-map
match ip address
set default interface
set default interface
set interface
set ip default next-hop IP
set ip precedence IP

set ip next-hop

match IP
set ip next-hop no

set ip next-hop *ip-address* [*weight*] [...*ip-address* [*weight*]]
no set ip next-hop *ip-address* [*weight*] [...*ip-address* [*weight*]]

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

set WCMP WCMP
 WCMP weight
set ip next-hop IP 32
 ip address weight 4
 nexthop
 next-hop weight **set**
 WCMP WCMP weight
 1 weight nexthop weight
 match

set

serial 1/0

10.0.0.0/8

192.168.100.1

172.16.0.0/16

172.16.100.1

```
interface serial 1/0
```

```
ip policy route-map load-balance
```

```
access-list 10 permit 10.0.0.0 0.255.255.255
```

```
access-list 20 permit 172.16.0.0 0.0.255.255
```

```
route-map load-balance permit 10
```

```
match ip address 10
```

```
set ip next-hop 192.168.100.1
```

```
route-map load-balance permit 20
```

```
match ip address 20
```

```
set ip next-hop 172.16.100.1
```

```
route-map load-balance permit 30
```

```
set interface Null0
```

route-map	

match ip address

set ip next-hop verify-availability

IP set ip
next-hop verify-availability no

set ip next-hop verify-availability *ip-address* track *track-object-num*
no set ip next-hop *ip-address* [*weight*] [...*ip-address* [*weight*]

<i>ip-address</i>	IP
<i>track-object-num</i>	

```
serial 1/0
 10.0.0.0/8          192.168.100.1
 172.16.0.0/16     172.16.100.1

interface serial 1/0
ip policy route-map load-balance

access-list 10 permit 10.0.0.0 0.255.255.255
access-list 20 permit 172.16.0.0 0.0.255.255

route-map load-balance permit 10
match ip address 10
set ip next-hop 192.168.100.1

route-map load-balance permit 20
match ip address 20
```

```
set ip next-hop 172.16.100.1
```

```
route-map load-balance permit 30  
set interface Null0
```



set level {level 1 | level 2 | level 1-2 | stub-area | backbone}
no set level

OSPF RIP backbone

```
router ospf
redistribute rip subnets route-map redrip
network 192.168.12.0 0.0.0.255 area 0

route-map redrip permit 10
set level backbone
```

match interface	
match ip address	
match ip next-hop	
match ip route-source	
match metric	
match route-type	
match tag	
set metric-type	
set tag	

set local-preference

match LOCAL_PREFERENCE
set local-preference **no**

set local-preference *number*
no set local-preference

<i>number</i>	0-4294967295

local-preference

local-preference

```
route-map SET_PREF permit 10
match as-path 1
set local-preference 6800
```

```
route-map SET_PREF permit 20
match as-path 2
set local-preference 50
```

		AS_PATH
match metric		
match origin		

set as-path prepend

set metric [+

route maps

set **match** 1 **match** 1 **set**

 OSPF RIP
 type-1

```
router ospf
redistribute rip subnets route-map redrip
network 192.168.12.0 0.0.0.255 area 0

route-map redrip permit 10
set metric-type type-1
```

match interface	
match ip address	
match ip next-hop	
match ip route-source	
match metric	
match route-type	
match tag	
set metric	
set tag	

set next-hop

 match IP
set next-hop **no**

set next-hop *ip-address*

match tag	
set metric-type	
set tag	

set origin

match
set origin **no**

set origin {egp | igp | incomplete}

no set origin

egp	EGP
igp	IGP
Incomplete	

```
route-map SET_ORIGIN 10 permit
match as-path 1
set origin igp
route-map SET_ORIGIN 20 permit
match as-path 2
set origin egp
```

--	--

match as-path	AS_PATH
match metric	
match origin	
set as-path prepend	AS_PATH
set metric	
set local-preference	

set originator-id

```

match
set originator-id no
set originator-id ip-addr
no originator-id [ip-addr]

```

<i>ip-addr</i>	

```

route-map SET_ORIGIN 10 permit
match as-path 1
set originator-id 5.5.5.5
route-map SET_ORIGIN 20 permit
match as-path 2
set originator-id 5.5.5.6

```

--	--

match as-path	AS_PATH
match metric	

match origin

```
Ruijie# show ip prefix-list
ip prefix-list pre: 2 entries
seq 5 permit 192.168.64.0/24
seq 10 permit 192.2.2.0/24
```

show ip route

IP

show ip route

show ip route [[vrf *vrf_name*] [*network* [*mask*] | **count** | **protocol** [*process-id*] | **weight**]]

vrf <i>vrf_name</i>	VRF
<i>network</i>	
<i>mask</i>	

show ip route

Ruijie# **show ip route**

Codes: C - connected, S - static, R - RIP, B - BGP
O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external
type 2
E1 - OSPF external type 1, E2 - OSPF external type 2
i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2
- IS-IS level-2
ia - IS-IS inter area, * - candidate default

Gateway of last resort is no set

S 20.0.0.0/8 is directly connected, VLAN 1

S 22.0.0.0/8 [1/0] via 20.0.0.1

O E2 30.0.0.0/8 [110/20] via 192.1.1.1, 00:00:06, VLAN
1

R 40.0.0.0/8 [120/20] via 192.1.1.2, 00:00:23, VLAN
1

B 50.0.0.0/8 [120/0] via 192.1.1.3, 00:00:41

C 192.1.1.0/24 is directly connected, VLAN 1

C 192.1.1.254/32 is local host.

show ip route

O	C S R RIP B BGP O OSPF i IS-IS
E2	E1 OSPF E2 OSPF N1 OSPF NSSA 1 N2 OSPF NSSA 2 IA OSPF su IS-IS L1 IS-IS 1 L2 IS-IS 2 ia IS-IS

20.0.0.0/8

[1/0]

prefix-name	IPv6

IPv6

```
Ruijie# show ipv6 prefix-list  
ipv6 prefix-list p6: 2 entries  
permit 13::/20  
permit 14::/20
```

show storm-control

GigabitEthernet 1/1
4M

```
Ruijie# configure terminal  
Ruijie(config)# interface GigabitEthernet 1/1  
Ruijie(config-if)# storm-control multicast 4096  
Ruijie(config-if)# end
```



show storm-control

3

show interfaces

```
Ruijie(config)# interface gigabitethernet 1/1  
Ruijie(config-if)# switchport protected
```

show interfaces	

S32 S37

acl

switchport port-security

no

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

no switchport port-security [violation]

port-security	
violation protect	
violation restrict	trap
violation shutdown	Trap

IP()
)

MAC
(

1

M

Gigabitethernet 1/1
shutdown

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# switchport port-security
Ruijie(config-if)# switchport port-security
violation shutdown
```

show port-security	

switchport port-security aging

no

**no switchport port-security aging
time no switchport
port-security aging static**

show port-security

```
Ruijie(config)# interface gigabitethernet 1/1  
Ruijie(config-if)# switchport port-security aging time  
8  
Ruijie(config-if)# switchport port-security aging  
static
```

show port-security	

switchport port-security mac-address

no

**switchport port-security [mac-address *mac-address* [ip-address
ip-address]] | [maximum *value*]**
**no switchport port-security [mac-address *mac-address*] |
[maximum]**

--	--

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Arp-check

Arp

arp

Ruijie(config-if)# **arp-check**

show port-security	

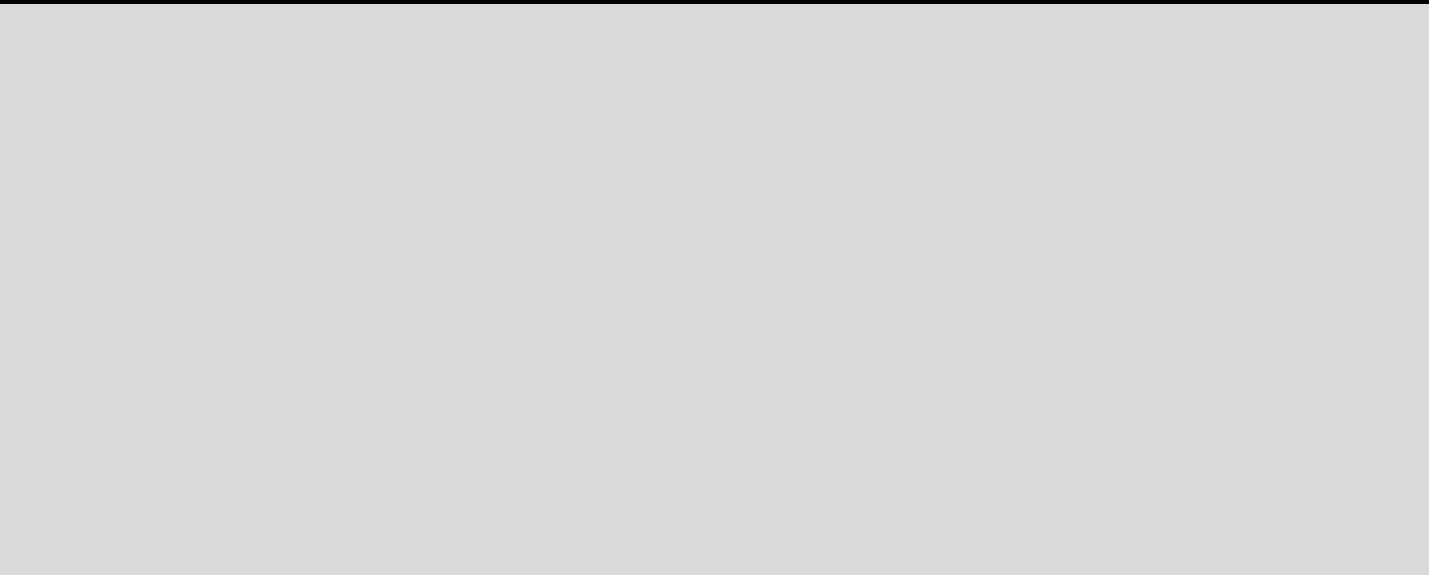
- **show storm-control**
- **show port-security**

show storm-control

show storm-control [*interface-id*]

<i>interface-id</i>	

```
Ruijie# show storm-control gigabitethernet 1/1  
Interface Broadcast Control Multicast Control Unicast  
Control  
-----
```



```
switchport port-security  
mac-address
```


802.1X

show dot1x auto-req	
---------------------	--

dot1x auto-req req-interval

no

dot1x auto-req req-interval *interval*

no dot1x auto-req req-interval

interval

s

30

show dot1x auto-req

802.1x

60s

Ruijie# **configure terminal**Ruijie(config)# **dot1x auto-req req-interval 60**Ruijie(config)# **end**Ruijie# **show dot1x auto-req**

Auto-Req: Enabled

User-Detect : Enabled

Packet-Num : 0

Req-Interval: 60 Second

show dot1x auto-req	
---------------------	--

dot1x auto-req user-detect

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

dot1x timeout quiet-period

no

dot1x timeout quiet-period *seconds*

no dot1x timeout quiet-period

seconds

0 65535 s

10

show dot1x

1000s

Ruijie# **configure terminal**

Filter Non-RG Supp: Disabled
Client Oline Probe: Disabled
Eapol Tag Enable: Disabled
Authorization Mode: Group Server

show dot1x	802.1x

dot1x timeout re-authperiod

no

dot1x timeout re-authperiod *seconds*
no dot1x timeout re-authperiod

seconds 1 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 Request: 3 times
Filter Non-RG Supp: Disabled
Client Oline Probe: Disabled
Eapol Tag Enable: Disabled
Authorization Mode: Group Server

```

show dot1x	802.1x

dot1x timeout server-timeout

no

dot1x timeout server-timeout *seconds*

no dot1x timeout server-timeout

seconds

1

65535

5

show dot1x

802.1x

10s

Ruijie# **configure terminal**

Ruijie(config)# **dot1x timeout server-timeout 10**

Ruijie(config)# **end**

Ruijie# **show dot1x**

802.1X Status: Enabled

Authentication Mode: EAP-MD5

Authed User Number: 0
Re-authen Enabled: Disabled
Re-authen Period: 1000 sec
Quiet Timer Period: 1000 sec
Tx Timer Period: 3 sec
Supplicant Timeout: 3 sec
Server Timeout: 10 sec
Re-authen Max: 3 times
Maximum Request: 3 times
Filter Non-RG Supp: Disabled
Client Oline Probe: Disabled
Eapol Tag Enable: Disabled
Authorization Mode: Group Server



```
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: 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

dot1x timeout tx-period

no

dot1x timeout tx-period *seconds*

no dot1x timeout tx-period

seconds 0 65535

3

show dot1x 802.1x

10s

```
Ruijie# configure terminal
Ruijie(config)# dot1x timeout tx-period 10
Ruijie(config)# end
Ruijie# show dot1x
```

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

show dot1x 802.1x

```
Ruijie# configure terminal  
Ruijie(config)# dot1x re-authentication  
Ruijie(config)# end  
Ruijie# show dot1x
```

```
802.1X Status:    cz9-0.1029o7Csled-0.10
```

```
czo7Csle cd0  
cc0  
cec0
```

```
cz9-0.10293n
```

```
upps: 9DisCsl ced0  
ced0  
cd0
```

dot1x reauth-max *count*
no dot1x reauth-max

count

3

show dot1x 802.1x

```
Ruijie# configure terminal  
Ruijie(config)# dot1x reauth-max 5  
Ruijie(config)# end  
Ruijie# show dot1x
```

```
802.1X Status:            Enabled  
Authentication Mode:    EAP-MD5  
Authed User Number:    0  
Re-authen Enabled:     Enabled  
Re-authen Period:      1000 sec  
Quiet Timer Period:    1000 sec  
Tx Timer Period:       10 sec  
Supplicant Timeout:    10 sec  
Server Timeout:        10 sec  
Re-authen Max:         5 times  
Maximum Request:       3 times  
Filter Non-RG Supp:    Disabled  
Client Oline Probe:    Disabled  
Eapol Tag Enable:      Disabled
```

dot1x

- dot1x probe-timer
- dot1x client-probe enable

dot1x probe-timer

```
dot1x probe-timer{interval | alive}interval  
no dot1x probe-timer
```

```
no
```

```
interval hello
```

```
alive
```

```
interval
```

```
Hello          20  
                250
```

```
show dot1x      802.1x
```

```
hello          30 ,          120
```

```
Ruijie# configure terminal  
Ruijie(config)# dot1x probe-timer interval 30  
Ruijie(config)# dot1x probe-timer alive 120  
Ruijie(config)# end  
Ruijie# show dot1x probe-timer
```

```
Hello Interval: 30 Seconds  
Hello Alive: 120 Seconds
```

Show dot1x probe-timer	

dot1x client-probe enable

[no] dot1x client-probe enable

```
Ruijie# configure terminal  
Ruijie(config)# dot1x client-probe enable  
Ruijie(config)# end  
Ruijie# show dot1x
```

```
802.1X Status:      Enabled  
Authentication Mode: EAP-MD5  
Authed User Number: 0  
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: Enabled
```

Eapol Tag Enable: Disabled
 Authorization Mode: Group Server

show dot1x	dot1x

dot1x

dot1x

- dot1x authentication
- dot1x auth-address-table
- dot1x auth-mode
- dot1x default
- dot1x dynamic-vlan enable
- dot1x eapol-tag
- dot1x max-req
- dot1x private-supPLICANT-only
- dot1x port-control auto
- dot1x port-control-mode
- dot1x stationarity enable

dot1x authentication

AAA

AAA

no

dot1x authentication {default | *list-name*}

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

default

list-name

AAA

q


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



show dot1x	802.1x

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 enable

vlan

no

dot1x dynamic-vlan enable

no dot1x dynamic-vlan enable

802.1X tag

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

show dot1x	802.1x

dot1x max-req

```
DOT1X          DOT1X          DOT1X
                DOT1X
                no
```

dot1x max-req *count*

show dot1x	802.1x

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	

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

dot1x port-control-mode

802.1x

MAC

dot1x port-control-mode {mac-based | port-based}

no dot1x port-control-mode

mac-based mac 802.1X

port-based 802.1X

mac-based


```

Ruijie# show dot1x
802.1X Status:      Enabled
Authentication Mode: EAP-MD5
Authed User Number: 0
Re-authen Enabled:  Disabled
Re-authen Period:   3600 sec
Quiet Timer Period: 10 sec
Tx Timer Period:    3 sec
Supplicant Timeout: 3 sec
Server Timeout:     5 sec
Re-authen Max:      3 times
Maximum Request:    3 times
Filter Non-RG Supp: Disabled
Client Oline Probe: Disabled
Eapol Tag Enable:   Disabled
Authorization Mode:  Group Server
Ruijie#

```

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

show dot1x auth-address-table

802.1X

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

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

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

dot1x timeout quiet-period

dot1x timeout supp-timeout	
dot1x timeout tx-period	

show dot1x auto-req

802.1x

show dot1x auto-req

```
Ruijie# show dot1x auto-req
```

```
Auto-Req: Disabled  
User-Detect : Enabled  
Packet-Num : 0  
Req-Interval: 30 Seconds  
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 re-authentication	
dot1x timeout quiet-period	
dot1x timeout re-authperiod	
dot1x timeout server-timeout	

dot1x reauth-max	
dot1x re-authentication	A5BUGA5B0GAX AÄ
dot1x timeout quiet-period	A5BxABA00GAX AX1Ä
dot1x timeout re-authperiod	A5BA5B0GAXAÄhÄ
dot1x timeout server-timeout	
dot1x timeout supp-timeout	A5B0GA5B0XAXfX CÄ
dot1x timeout tx-period	A5B0Äh0Gp <Ä

show dot1x port-control

/ - äAxA•,X0Ä · Ä

show dot1x port-control [interface *interface*]

ÄDAÄ

interfaceÄx

5,08

Ä

QÄ

(MÄ

5*0Ä

Ä

ÄÄ

M6/_\$

```
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	

show dot1x probe-timer

show dot1x probe-timer

```
Ruijie# show dot1x probe-timer
```

Hello Interval: 20 Seconds
Hello Alive: 250 Seconds
Ruijie#

dot1x auth-mode	802.1x

dot1x max-req

```
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	

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

A'5B GAË5Ù Ô ûGj „

```

Ruijie# show dot1x summary
ID      MAC          Interface VLAN Auth-State
Backend-State Port-Status Type
-----
-----
1 00d0f8000000 Gi0/1      1 Authenticated Idle
Authed      Static
Ruijie#

```

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

show dot1x user id

802.1X

show dot1x user id <id>

id

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	

AAA

- **aaa authentication dot1x**
- **aaa authentication enable**
- **aaa authentication login**
- **aaa authentication ppp**
- **login authentication**

aaa authentication dot1x

```
AAA      802.1X      aaa
authentication dot1x 802.1X      no
      802.1X
```

```
aaa authentication dot1x {default | list-name} method1 [method2...]
```

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

```
default      802.1X
list-eult 65 802.1X
```

C

```
AAA 802.1X AAA 802.1X
aaa authentication dot1x
802.1X
```

```
rds_d1x AAA 802.1X
RADIUS RADIUS
```

```
Ruijie(config)# aaa authentication dot1x rds_d1x group
radius local
```

```
M6X/aa1WQ
```


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

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

default PPP

list-name PPP

method 4

local	
none	
group	RADIUS

AAA PPP

AAA PPP

aaa authentication ppp

PPP

rds_ppp AAA PPP

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- **aaa authorization commands**
- **aaa authorization config-commands**
- **aaa authorization console**
- **aaa authorization exec**
- **aaa authorization network**
- **authorization commands**
- **authorization exec**

aaa authorization commands

	NAS	CLI	AAA
		aaa authorization commands	no
AAA			
		aaa authorization commands <i>level</i> { default <i>list-name</i> } <i>method1</i> [<i>method2...</i>]	
		no aaa authorization commands <i>level</i> { default <i>list-name</i> }	
	<i>level</i>		0~15
	default		
	<i>list-name</i>		
	<i>method</i>		4



AAA

14

14

TACACS+ 15

```
Ruijie(config)# aaa authorization commands 15 default  
group tacacs+
```

aaa new-model	AAA
authorization commands	

aaa authorization config-commands

AAA

aaa authorization config-commands**no AAA****aaa authorization config-commands****no aaa authorization config-commands**

no

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

aaa new-model	AAA
aaa authorization commands	AAA

aaa authorization console

AAA

aaa authorization console

no

AAA

aaa authorization console

no aaa authorization console

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

aaa new-model	AAA
aaa authorization commands	AAA
authorization commands	

aaa authorization exec

AAA	NAS	CLI	Exec	
		aaa authorization exec		no
AAA Exec				
aaa authorization exec	{ default <i>list-name</i> }	<i>method1</i> [no

RADIUS Exec

```
Ruijie(config)# aaa authorization exec default group
radius
```

aaa new-model	AAA
authorization exec	
username	

aaa authorization network

```
AAA PPP SLIP
aaa authorization network no
AAA
```

```
aaa authorization network {default | list-name} method1 [method2...]
no aaa authorization network {default | list-name}
```

```
default Network
```

```
method 4
```

none	
group	RADIUS

AAA Network

PPP SLIP

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

authorization exec

Exec
authorization exec no Exec

authorization exec {default | list-name}

no authorization exec

default Exec

list-name Exec

AAA Exec

Exec

AAA

Exec

Exec

Exec

exec-1 Exec

level 0~15

default

list-name

method 4

none	

group TACACS+

AAA

group radius



aaa new-model

AAA

aaa new model

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

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

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	

aaa accounting update periodic

periodic aaa accounting update
no

aaa accounting update periodic *interval*

no aaa accounting update periodic

interval 1

5 minutes

AAA

AAA

1

```
Ruijie(config)# aaa new-model
Ruijie(config)# aaa accounting update
Ruijie(config)# aaa accounting update periodic 1
```

aaa new-model	AAA
aaa accounting network	

accounting commands

accounting commands no

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

no accounting commands *level*

level 0~15

default

list-name

```
TACACS+          cmd          15          none
VTY 0 - 4
```

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

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

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

aaa new-model	AAA
aaa accounting commands	AAA

accounting exec

```
Exec
accounting exec          no          Exec
```

accounting exec {default | *list-name*}

no accounting exec

default Exec

list-name Exec

Exec

Exec

Exec

Exec

exec-1 Exec

RADIUS

none

VTY 0 –

4

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

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

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

aaa new-model	AAA
aaa accounting commands	AAA Exec

- **accounting network**
- **authentication dot1x**
- **authorization network**
- **state**
- **show aaa domain**
- **username-format**

aaa domain

no

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

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

default

domain-name

AAA

default

domain-name

32

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

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

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

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	

access-limit

IEEE802.1x

no

access-limit num

no access-limit

num

IEEE802.1x

ruijie.com

20

Ruijie(config)# **aaa domain** *ruijie.com*Ruijie(config-aaa-domain)# **access-limit** 20

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

accounting network

Network

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

default

AAA

Network

Network

state

no

state {block | n o a t

domain.com

Ruijie# **show aaa domain domain.com**

=====
Domain domain.com=====

State: Active

Username format: Without-domain

Access limit: No limit

802.1X Access statistic: 0

Selected method list:

authentication dot1x default

username-format

NAS

no

username-format {without-domain

```
Ruijie(config)# aaa domain ruijie.com
Ruijie(config-aaa-domain)# username-domain
without-domain
```

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

AAA

- **aaa group server**
- **ip vrf forwarding**
- **server**
- **show aaa group**

aaa group server

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

name                               " radius" " tacacs+"
RADIUS  TACACS+
```

```
AAA                                RADIUS  TACACS+
```

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

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

Ruijie# show aaa group

Group Name: ss

Group Type: radius

Referred: 1

Server List:

show aaa group	aaa



AAA

- **aaa local authentication attempts**
- **aaa local authentication lockout-time**
- **aaa new-model**
- **clear aaa local user lockout**
- **debug aaa**
- **show aaa method-list**
- **show aaa user lockout**

aaa local authentication attempts

login

aaa local authentication attempts

aaa local authentication logout-time

login

aaa local authentication logout-time *logout-time*

logout-time

1~2147483647

15

login

```
Ruijie# configure terminal
```

```
Ruijie(config)# aaa local authentication logout-time
```

```
5
```

show running-config	
show aaa logout	h

AAA

AAA

AAA
aaa new-model AAA AAA AAA AAA

AAA

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

aaa authentication	
aaa authorization	
aaa accounting	

show running-config	
show aaa lockout	login

debug aaa

AAA

no

debug aaa event

no debug aaa event

EXEC

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	

show aaa user logout

show aaa user logout {all | user-name <word> | G Q , D

AAA

show aaa lockout	login
-------------------------	-------

RADIUS

RADIUS

RADIUS

- **ip radius source-interface**
- **radius-server host**
- **radius-server key**
- **radius-server retransmit**
- **radius-server timeout**
- **radius-server dead-time**
- **radius attribute**
- **radius set qos cos**
- **radius vendor-specific extend**

ip radius source-interface

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

Interface DAA5 radius

```

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

radius-server host	RADIUS
ip address	ip

radius-server host

```

RADIUS                radius-server
no                    RADIUS

radius-server host {hostname | ip-address} [auth-port port-number]
[acct-port port-number]
no radius-server host {hostname | ip-address}
    
```

```

hostname: RADIUS                DNS
ip-address: RADIUS                IP
auth-port: RADIUS                UDP
port-number: RADIUS                UDP                0

acct-port: Radius                UDP
port-number: RADIUS                UDP                0
    
```

RADIUS

```

RADIUS    AAA                RADIUS
radius-server                RADIUS
    
```

RADIUS

```
Ruijie(config)# radius-server host 192.168.12.1
```

aaa authentication	AAA
radius-server key	RADIUS
radius-server retransmit	RADIUS
radius-server timeout	RADIUS

radius-server key

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

```
radius-server key text-string
no radius-server key
```

text-string

```
RADIUS
RADIUS RADIUS
```

```
RADIUS aaa
```

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

--	--

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

radius-server retransmit

RADIUS

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

3

AAA

RADIUS

4

Ruijie(config)# **radius-server retransmit 4**

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

radius-server timeout

RADIUS
radius-server timeout **no**

radius-server timeout *seconds*

no radius-server timeout

seconds

1-1000

5

10

Ruijie(config)# **radius-server timeout** 10

radius-server host	RADIUS
radius-server retransmit	RADIUS

minutes

1-1000

5

10

Ruijie(config)# **radius-server deadtime 10**

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

radius attribute

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

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

id *id* <1-255>

type *type*

id		type
1	max down-rate	1
2	qos	2

RADIUS

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

max up-rate 211

Ruijie(config)# radius attribute 16 vendor-type 211

radius set qos cos	radius qos cos

radius set qos cos

radius qos cos

radius set qos cos
no radius set qos cos

qos dscp

qos cos dscp

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

radius vendor-specific extend	Radius id

radius vendor-specific extend

id

radius vendor-specific extend
no radius vendor-specific extend

id

id

Ruijie(config)# radius vendor-specific extend

radius attribute	
radius set	qos cos

RADIUS

- debug radius [event | detail 1 Tf0 Tc 0 Tw 6.554 0 Td-0.0004089Td[<01CF0412>7 1

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

show radius parameter

RADIUS

show radius parameter

radius

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

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

show radius vendor-specific

RADIUS

show radius vendor-specific

RADIUS

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

SSH

SSH

SSH

- **crypto key generate**
- **crypto key zeroize**
- **ip ssh version**
- **ip ssh time-out**
- **ip ssh authentication-retries**
- **transport input**

crypto key generate

crypto key generate {rsa | dsa}

rsa	RSA
dsa	DSA

SSH Server

```

SSH Server
enable service ssh-server
SSH 1  RSA  SSH 2  RSA
      RSA  SSH1  SSH2
DSA      SSH2
SSH
SSH Server
DSA

```



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

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

RGOS10.1

ip ssh version

```
SSH server no
```

```
ip ssh version {1 / 2}
no ip ssh version
```

1	SSH Server	SSH1
2	SSH Server	SSH2

```
SSH SSH 1 2
no ip ssh version
```

```
SSH Server SSH
SSH Server SSH1 SSH2 SSH 1
SSH 2 1 2
SSH show ip ssh SSH Serv
er
```

2

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

show ip ssh	SSH Server

RGOS10.1

ip ssh time-out

SSH Server **no**

ip ssh time-out *time*
no ip ssh time-out

<i>time</i>	

time-out 120s **no ip ssh**

SSH Server
120s
show ip ssh SSH server

100s

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

show ip ssh	ssh-server

RGOS10.1

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

ip ssh

SSH Server

show

2

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

show ip ssh	SSH Server

RGOS10.1

SSH

SSH

- **show ip ssh**
- **show ssh**
- **show crypto key mypubkey**
- **disconnect ssh**

show ip ssh

SSH Server

show ip ssh

SSH Server
Server

SSH

SSH

SSH

Ruijie# **show ip ssh**

ip ssh version {1 2}	SSH Server
ip ssh time-out time	SSH Server

Ip ssh authentication-retries retry times
--

SSH Server

RGOS10.1

show ssh

SSH

show ssh

SSH

VTY

SSH

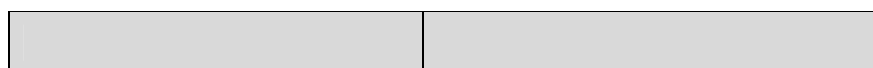
Ruijie# **show ssh**

RGOS10.1

show crypto key mypubkey

SSH Server

show crypto key mypubkey {rsa/dsa}



VTY SSH SSH SSH

Ruijie# **disconnect ssh 1**
Ruijie# **disconnect ssh vty 1**

show ssh	SSH
Clear line vty <i>line_number</i>	VTY

RGOS10.1

GSN

- **security gsn enable**
- **security community**
- **snmp-server host**
- **scurity event interval**

- **security address-bind enable**

security gsn enable

GSN no

security gsn enable
no security gsn enable

GSN

GSN

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

RGOS10.1

security community

smp

security { [

no smp-server host

ip-address smp server ip

smp server

show smp-server

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

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

show security event interval	

RGOS10.1

security address-bind enable

security address-bind enable

RGOS10.1

:

show smp-server
show security event interval

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

show security evnet interval

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



security event interval *interval*

DAI

VLAN DAI

- ip arp inspection vlan

ip arp inspection vlan vlan-id

```

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

```

ip arp inspection vlan *vlan-id*

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

<i>vlan-id</i>	vlan

VLAN DAI

DAI

VLAN 1 ARP

Ruijie(config)# **ip arp inspection**

Ruijie(config)# **ip arp inspection vlan 1**

--	--

show ip arp inspection vlan	VLAN	DAI
------------------------------------	------	-----

ip arp inspection trust

```

trust          no
ip arp inspection trust
no ip arp inspection trust
    
```

```

ARP          DAI
            ARP
    
```

gigabitEthernet 0/19

```

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

show ip arp inspection interface	DAI

```

NFPP(          )
DAI          NFPP
    
```

ARP

- ip arp inspection limit-rate

ip arp inspection limit-rate limit-rate

```

                                ARP                                ip arp
inspection limit-rate          no
ip arp inspection limit-rate {limit-rate | none }
no ip arp inspection limit-rate

```

none	
limit-rate	1 2048

```

                                15 ARP /
0

```

DAI
(Network Foundation Protection Policy)

```

                                VLAN 2          gigabitEthernet 0/2
10 ARP /

Ruijie(config)# ip arp inspection
Ruijie(config)# interface gigabitEthernet 0/2
Ruijie(config-if)# ip arp inspection limit-rate 10

```

DHCP Snooping

VLAN	DAI	ARP
DHCP Snooping	ARP	
	DHCP Snooping	DHCP Snooping

arp

arp

arp

anti-arp-spoofing ip

anti-arp-spoofing ip

arp

no

anti-arp-spoofing ip *ip-address*

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

ip-address

IP

show anti-arp-spoofing

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

```
Ruijie(config-if)#anti-arp-spoofing ip 192.168.1.1
```

show anti-arp-spoofing	arp

arp

arp

ARP

ACL

id	IP ACL: 1-99,1300-1999 IP ACL: 100-199,2000-2699 MAC ACL: 700-799 ACL: 2700-2899
name	ACL
sn	ACL ()
start-sn	
inc-sn	
deny	
permit	
prot	IPv6 ipv6, icmp, tcp,udp 0-255 IPv4 eigrp, gre, ipinip, igmp, nos, ospf, icmp, udp, tcp, ip IP 0-255 icmp/tcp/udp
interface idx	
src	
src-wildcard	0.255.0.32
src-ipv6-pfix	IPv6
dst-ipv6-pfix	IPv6
pfix-len	
src-ipv6-addr	IPv6
dst-ipv6-addr	IPv6
dscp dscp	, 0-63
flow-label flow-label	0-1048575
dst	
dst-wildcard	0.255.0.32
fragment	
precedence precedence	0-7

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
src-mac-addr	
dst-mac-addr	
VID vid	vlan id
VID inner vid	tag vid
ethernet-type	0x

match-all tcpf

tcp flag

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		24	W		54
J	IP	26	XY	IP	58
K	TOS				

- ipv6 traffic-filter

access-list

no

1) 1 IP 1 - 99 1300 - 1999

access-list *id* {deny | permit} {source source-wildcard | host source | any}

2) IP 100 - 199 2000 - 2699

access-list *id* {deny | permit} protocol {source source-wildcard | host source | any} {destination destination-wildcard | host destination | any} [precedence precedence] [tos tos] [fragments] [time-range time-range-name]

3) MAC 700 - 799

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

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] [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] [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] [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] [time-range time-range-name]

5)

access-list *list-remark text*

id 1-99 100-199 1300-1999 2000-2699 È

precedence 0-7

time-range
time-range-name

tos
tos 0-15

icmp-type ICMP 0-255

icmp-code ICMP 0-255

icmp-message ICMP

operator lt- eq- gt- neq- range-

port [*port*] *range*

host *source-mac-address*

- **syn**
- **fin**

- **critical**
- **flash**
- **flash-override**
- **immediate**
- **internet**
- **network**
- **priority**
- **routine**

- **max-reliability**
- **max-throughput**
- **min-delay**
- **min-monetary-cost**
- **normal**

ICMP

- **administratively-prohibited**
- **dod-host-prohibited**
- **dod-net-prohibited**
- **echo**
-
-



- **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
- appletalk
- decnet-iv
- diagnostic
- etype-6000
- etype-8042
- lat
- lavc-sca
- mop-console
- mop-dump
- mumps
- netbios
- vines-echo
- xns-idp

1) IP

IP 192.168.1.64 - 192.168.1.127

```
Ruijie(config)# access-list 1 permit 192.168.1.64  
0.0.0.63
```

2) IP

IP DNS ICMP

```
Ruijie(config)# access-list 102 permit tcp any any eq  
domain
```

```
Ruijie(config)# access-list 102 permit udp any any eq  
domain
```

```
Ruijie(config)# access-list 102 permit icmp any any echo
```

```
Ruijie(config)# access-list 102 permit icmp any any
```

echo-reply

3) MAC

```

MAC 00d0f8000c0c
100 1

```

```

Ruijie(config)# access-list 702 deny host 00d0f8000c0c
any aarp

```

```

Ruijie(config)# interface gigabitethernet 1/1

```

```

Ruijie(config-if)# mac access-group 702 in

```

4) Expert

```

Expert Extended ACL ACL
IP 192.168.12.3 MAC 00d0.f800.0044
TCP

```

```

Ruijie(config)# access-list 2702 deny tcp host
192.168.12.3 mac 00d0.f800.0044 any any

```

```

Ruijie(config)# access-list 2702 permit any any any any

```

```

Ruijie(config)# show access-lists

```

```

expert access-list extended 2702

```

```

10 deny tcp host 192.168.12.3 mac 00d0.f800.0044 any
any

```

```

10 permit any any any any

```

show access-lists	
mac access-group	MAC

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ip access-list

```

no IP ACL IP ACL
ACL

```

```

ip access-list {extended | standard} {id | name}

```

```

no ip access-list {extended | standard} {id | name}

```

```

id IP 1-99 1300-1999 100-199
2000-2699

```

name IP

ACL

ACL
access-lists **deny** **permit** ACL **show ip**

ACL

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

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)#
```

show ip access-lists	IP

RGOS10.0

MAC access-list

MAC ACL **no**
 ACL

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

id MAC 700-799

show ipv6 access-lists

ACL

IPV6

ACL

```
Ruijie# show access-lists
ip access-list standard 1
10 permit host 192.168.4.12
20 deny any any
Ruijie# config
Ruijie(config)# ip access-list resequence 1 21 43
Ruijie(config)# exit
Ruijie# show access-lists
ip access-list standard 1
21 permit host 192.168.4.12
64 deny any any
Ruijie#
```



[sn] deny tcp {source source-wildcard | **host** Source | **any**} [operator port [port]] {destination destination-wildcard | **host** destination | **any**} [operator port [port]] [**precedence** precedence] [**tos** tos] [**fragments**] [**time-range** time-range-name] [**match-all** tcp-flag]

User Datagram Protocol (UDP)

[sn] deny udp {source source-wildcard | **host** source | **any**} [operator port [port]] {destination destination-wildcard | **host** destination | **any**} [operator port [port]] [**precedence** precedence] [**tos** tos] [**fragments**] [**time-range** time-range-name]

3) MAC

[sn] deny {**any** | **host** source-mac-address}{**any** | **host** destination-mac-address} [ethernet-type][**cos** [out] [inner in]]

4) Expert

[sn] deny[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**] [**time-range** time-range-name]

ethernet-type cos

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

protocol

[sn] 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**] [**time-range** time-range-name]

expert

Internet Control Message Protocol (ICMP)

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

Transmission Control Protocol (TCP)

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

User Datagram Protocol (UDP)

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

5) 5 IPV6

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

IPV6

Internet Control Message Protocol (ICMP)

[sn]deny icmp {source-ipv6-prefix / prTu Tf8.994 j/TT0 1 Tf0.0022 Tc y

```

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

```

ACL

ACL ACL

```

Expert Extended ACL                      ACL
IP            192.168.4.12            MAC            001300498272
TCP

```

```

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

```

```

IP            ACL                      IP    192.168.4.12
TCP            100                                  1

```

```

Ruijie(config)# ip access-list extended (Ruijie(conf51 exte5V9Zi7)

```

```
Ruijie(config-ext-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# ip access-group ip-ext-acl in
Ruijie(config-if)#

          MAC      ACL                      MAC      0013.0049.8272
                100
```

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	

RGOS10.0

permit

ACL (permit) ACL

1) 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**]

[**time-range** *time-range-name*]

IP

Internet Control Message Protocol (ICMP)

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

{*destination destination-wildcard* | **host destination** | **any**}

[*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**precedence precedence**] [**tos tos**] [**fragments**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)

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

port [*port*] {*destination destination-wildcard* | **host destination** | **any**}

[*operator port* [*port*]] [**precedence precedence**] [**tos tos**] [**fragments**]

[**time-range** *time-range-name*] [**match-all tcp-flag**]

User Datagram Protocol (UDP)

[sn] permit udp

precedence] [**tos** *tos*] [**fragments**] [**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**] [**time-range** *time-range-name*]

5) IPV6

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

ACL

ACL

ACL

Expert Extended ACL

ACL

IP 192.168.4.12 MAC 001300498272

TCP

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

```
IP ACL IP 192.168.4.12
TCP 100 1
```

```
Ruijie(config)# ip access-list extended 102
Ruijie(config-ext-nacl)# permit tcp host 192.168.4.12
eq 100 any
Ruijie(config-ext-nacl)# show access-lists
ip access-list extended 102
10 permit tcp host 192.168.4.12 eq 100 any
Ruijie(config-ext-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# ip access-group 102 in
Ruijie(config-if)#
```

```
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
arp
Ruijie(config-mac-nacl)# show access-lists
mac access-list extended
10 permit host 0013.0049.8272 any arp702
Ruijie(config-mac-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# mac access-group 702 in
```

```
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
```

list-remark textACL **no****list-remark text***Text*

ACL

ACL

```

Ruijie# ip access-list extended 102
Ruijie(config-ext-nacl)# list-remark this acl is to
filter the host 192.168.4.12
Ruijie(config-ext-nacl)# show access-lists
ip access-list extended 102
deny ip host 192.168.4.12 any
1000 hits
this acl is to filter the host 192.168.4.12
Ruijie(config-ext-nacl)#

```

show access-lists	
ip access-list	IP

RGOS10.0

no sn

ACL

no sn*sn* 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)#

```

show access-lists	
ip access-list	ip ACL
ipv6 access-list	IPV6 ACL
deny	ACL
permit	ACL

RGOS10.0

ip access-group

ip

```

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

```

id IP

1-199 1300-2699

out

ACL

ACL

show running-config

1 access-list accept_00d0f8xxxxxx_only Gigabit

```
Ruijie(config)# interface GigaEthernet 1/1
Ruijie(config-if)# mac access-group
accept_00d0f8xxxxxx_only in
```

show access-group	ACL

RGOS10.0

expert access-group

EXPERT ACL

no

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

id Expert 2700-2899

name Expert

in

out

Expert ACL

ACL
show access-group

1 access-list accept_00d0f8xxxxxx_only Gigabit

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

show access-group	ACL

RGOS10.0

ipv6 traffic-filter

IPV6 ACL no

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

name IPV6
in
out

IPV6 ACL

ACL
show access-group

```

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

show ipv6 traffic-filter	ACL

RGOS10.0

:

- **show access-lists**
- **show ip access-group**
- **show mac access-group**
- **show ipv6 traffic-filter**
- **show expert access-group**
- **show access-group**

show access-lists

```

ACL          ACL
show access-lists [id | name]
    
```

id

name

```

acl          id name          ACL
    
```

```
Ruijie# show access-lists n_acl  
ip access-list standard n_acl  
Ruijie# show access-lists 102  
ip access-list extended 102  
Ruijie# show access-lists  
ip access-list standard n_acl  
ip access-list extended 10jie#
```

ip access-list	IP ACL

RGOS10.0

show expert access-group

Expert

show expert access-group [interface <interface>]

<interface>

Expert ACL

Expert ACL

```
Ruijie# show expert access-group interface
gigabitethernet 0/2
expert access-group ee in
Applied On interface GigabitEthernet 0/2.
```

expert access-list	Expert ACL

RGOS10.0

show mac access-group

MAC

show mac access-group[interface <interface>]

<interface>

MAC ACL

MAC ACL

```
Ruijie# show mac access-group interface gigabitethernet
0/3
mac access-group mm in
Applied On interface GigabitEthernet 0/3.
```

mac access-list	MAC ACL

RGOS10.0

show ipv6 traffic-filter

IPV6

show ipv6 traffic-filter [interface <interface>]

<interface>

IPv6 ACL

IPv6

ACL

```
Ruijie# show ipv6 traffic-filter interface
gigabitethernet 0/4
ipv6 access-group v6 in
```

Applied On interface GigabitEthernet 0/4.

ipv6 access-list	IPV6 ACL

RGOS10.0

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

RGOS10.0

:

- **show security [interface *idx*]**
- **security global access-group**
- **security access-group**
- **security uplink enable**

show security

show security [interface *idx*]

interface idx

```
Ruijie# show security
Port      type
-----  -
Global    escape
Gi0/1     escape
Gi0/2     uplink
```

security global access-group	

security access-group	
security uplink enable	

RGOS10.2

security global access-group

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

no security global access-group

id ACL id

name ACL

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

show security	

RGOS10.2

security access-group

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

no security access-group

id ACL id

name ACL

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

show security	

RGOS10.2

security uplink enable

security uplink enable

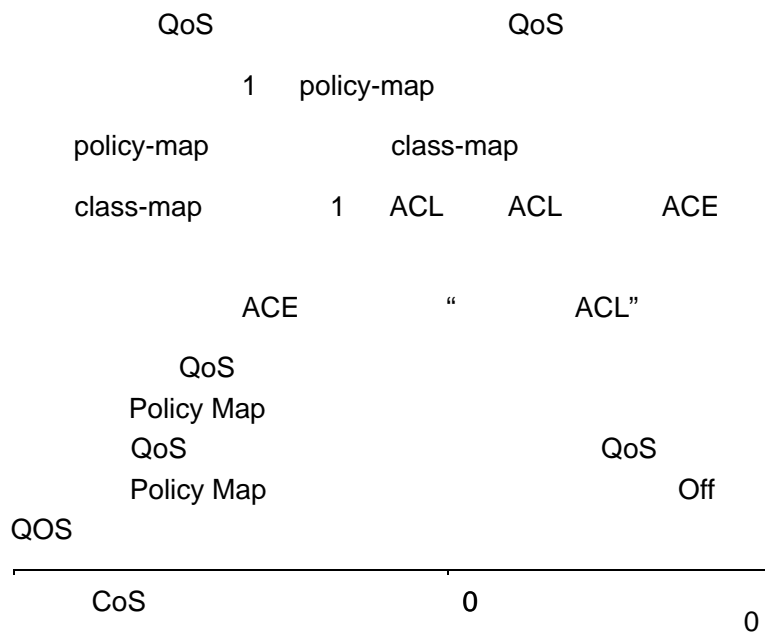
no security uplink enable

Ruijie(config-if)#**security uplink enable**

show security	

RGOS10.2

QoS



IP-Precedence to DSCP

IP-Precedence	0	1	2	3	4	5	6	7
DSCP	0	8	16	24	32	40	48	56

DSCP to CoS

DSCP	0	8	16	24	32	40	48	56
CoS	0	1	2	3	4	5	6	7

mls qos trust

Qos

mls qos trust [cos | dscp | ip-precedence]**no mls qos trust**

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

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

show mls qos interface interface-id

[no] class *class-map-name*

IP ipdscp IP

set ip dscp *new-dscp*

no set ip dscp

police *rate-bps burst-byte*[**exceed-action** {**drop** | **dscp** *dscp-value*}]

no police

policy-map-name policymap

no policy-map *policy-map-name* policy map

class-map-name class map

no class *class-map-name*

new-dscp DSCP

rate-bps kbps

burst-byte kbyte

drop

dscp-value DSCP

policy map, po

Ruijie(config)# **policy-map** po

class-map cm

Ruijie(config-pmap)# **class** cm

dscp 10

Ruijie(config-pmap-c)# **set ip dscp** 10

1M, 4096k, dscp 16

Ruijie(config-pmap-c)# **police** 1000000 4096

exceed-action dscp 16

show policy-map

service-policy

policy map

service-policy {input | output} *policy-map-name*

no service-policy {input | output}

policy-map-name policymap

no policy map

```
Ruijie(config)# interface fastEthernet 0/1  
Ruijie(config-if)# service-policy input po
```

show mls qos interface

priority-queue

[no] **priority-queue**

priority-queue SP

no priority-queue WRR

WRR

no

```
Ruijie(config)# wrr-queue cos-map 1 0 1
```

show mls qos queueing

mls qos map cos-dscp

CoS DSCP

mls qos map cos-dscp dscp1...dscp8

no mls qos map cos-dscp

dscp

no

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

show mls qos maps dscp-cos maps,dscp-cos maps
ip-prec-dscp maps

mls qos map dscp-cos

DSCP CoS

mls qos map dscp-cos *dscp-list* to *cos*

no mls qos map dscp-cos

dscp-list

cos 0 7

no

Ruijie(config)# **mls qos map dscp-cos** 8 10 16 18 to 0

show mls qos maps dscp-cos maps,dscp-cos maps
ip-prec-dscp maps

interface rate-limit

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

no rate-limit

```
Ruijie(config)# interface fastEthernet 0/1  
Ruijie(config-if)# rate-limit input 1000000 4096
```

show mls qos interface

mls qos scheduler

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

no mls qos scheduler

sp

rr

wrr

drr

no

wrr

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

show mls qos scheduler

drr-queue bandwidth

DRR

drp-queue bandwidth *weight1...weight8*

no drr-queue bandwidth

weight1...weight8

no

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

show mls qos queueing

86

mls qos map ip-prec-dscp

ippre DSCP

mls qos map ip-prec-dscp *dscp1...dscp8*

no mls qos map ip-prec-dscp

dscp

no

```
Ruijie(config)# mls qos map ip-prec -dscp 8 10 16 18 24  
26 32 34
```

show mls qos maps dscp-cos maps,dscp-cos maps
ip-prec-dscp maps

wfq-queue bandwidth

wfq

wfq-queue *queue-id* **bandwidth** *min max*

no wfq-queue *queue-id* **bandwidth**

queue-id

min

max

min kbps

max kbps

wfq

wfq

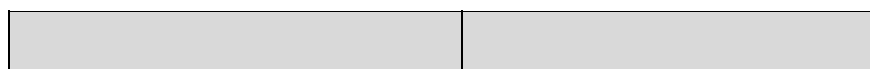
```
Ruijie(config)# mls qos scheduler wfq
```

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

```
Ruijie(config-if)# wfq-queue 2 bandwidth 10 10240
```

```
Ruijie(config-if)# wfq-queue 4 bandwidth 7 10240
```

```
Ruijie(config-if)# show running
```



QOS

show mls qos scheduler

QOS

RGOS10.1

wfq-queue sp

wfq

RGOS10.1

show mls qos interface

QoS

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

interface-id

policers

police

QoS

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

show mls qos queueing

QoS

(cos-to-queue map,wrr weight,drp weight)

show mls qos queueing

```
Ruijie# show mls qos queueing
```

show mls qos scheduler

show mls qos scheduler

```
Ruijie# show mls qos scheduler
```

show mls qos maps

```
dscp-cos maps,dscp-cos maps ip-prec-dscp maps
```

```
show mls qos maps [cos-dscp | dscp-cos | ip-prec-dscp]
```

```
cos-dscp cos-dscp maps
```

```
dscp-cos dscp-cos maps
```

```
ip-prec-dscp ip-prec-dscp maps
```

```
dscp-cos maps dscp-cos maps ip-prec-dscp maps
```

```
Ruijie# show mls qos maps
```

show mls qos rate-limit

```
show mls qos rate-limit [interface interface-id]
```

```
interface interface-id rate-limit
```

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

RLDP

RLDP

- **rldp enable**
- **rldp detect-interval**
- **rldp detect-max**

- **rldp port {unidirection-detect | bidirection-detect | loop-detect}**
{warning | shutdown-svi | shutdown-port | block}

- **rldp reset**

rldp enable

RLDP

rldp enable
no rldp enable

RLDP

RLDP

:

```
Ruijie(config)# rldp enable
```

no rldp detect-max

num , 2-10

2

5 :

Ruijie(config)# **rldp detect-max 5**

rldp detect-interval	

rldp port

rldp

**rldp port { unidirection-detect | bidirection-detect | loop-detect }
 { warning | shutdown-svi | shutdown-port | block }**

no rldp port { unidirection-detect | bidirection-detect | loop-detect }

unidirection-detect

bidirection-detect

loop-detect

warning

shutdown-svi shutdown svi

shutdown-port shutdown

block

- **show rldp** [interface *interface-id*]
- **debug rldp** {packet | event | error}

show rldp

rldp

show rldp [interface *interface-id*]

Interface-id

EXEC

debug rldp

rldp

no

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

packet rldp

event

error

EXEC

TPP

topology guard

```
                topology guard
                no
[no] topology guard
```

cpu topology-limit

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

tp-guard port enable

```
cpu topology-limit    CPU
```

tp-guard port enable

```
no
```

[no] tp-guard port enable

CPU

(AP)

```
Ruijie(config-if)# tp-guard port enable
```

```
Ruijie(config-if)# no tp-guard port enable
```

topology guard

TPP

show tpp

show tpp

tpp

Ruijie# **show tpp**

topology guard

-
- **cat**
 - **cd**
 - **cp**
 - **ls**
 - **makefs**
 - **mkdir**
 - **mv**
 - **pwd**
 - **rm**
 - **rmdir**

cd

cd *DIRECTORY*

DIRECTORY

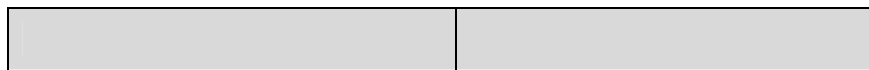
“ ”
..

“ ”
.

ls

tmp

Ruijie# **cd** tmp



ls

Is

Is *PATHNAME*

PATHNAME

a

b

jffs2

dev/mtdblock/1

```
Ruijie# makefs dev /dev/mtdblock/1 fs jffs2
```

mkdir

```
mkdir DIRECTORY
```

```
DIRECTORY
```

()

test

```
Ruijie# mkdir test
```

mv

```
mv sour SOURCE_FILE dest {DESTINE_FILE | DIRECTORY}
```

```
mv dest {DESTINE_FILE | DIRECTORY} sour SOURCE_FILE
```

SOURCE_FILE

DESTINE_FILE/DIRECTORY

```
          a          ( type file); b '?'  
          ' ? '  
,  
          log.txt          ,          config.txt,  
,  
Ruijie# mv sour tmp/log.txt dest ../config.txt  
          log.txt          tmp  
Ruijie# mv dest /mnt/tmp sour tmp/log.txt
```

pwd

pwd

pwd	

Ruijie# **pwd**

rm

rm *FILE*

FILE ()

,

log.txt

Ruijie# **rm** *log.txt*

rmdir	, rm ,

rmdir

rmdir *DIRECTORY*

DIRECTORY ,

rm , ,

tmp

Ruijie# **rmdir** tmp

Ruijie# **ls**

logging on

no

logging on

no logging on

RGOS

Console

VTY

logging console	
logging monitor) VTY (telnet
logging trap	Syslog Server

terminal monitor

VTY

VTY

no

terminal monitor

terminal no monitor

VTY

VTY

VTY

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

no logging buffered

buffer-size 4K 128K Bytes

level 0 7

4k Bytes

7

show logging

clear logging

FLASH

Syslog Server

RGOS

8

1

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**

logging on	
show logging	
clear logging	

logging

Syslog Sever

Syslog server **Syslog Server**

no

logging host

no logging host

Host syslog server

Syslog server

Syslog server RGOS

5 Syslog Server Syslog Server

202.101.11.1 syslog server

Ruijie(config)# **logging 202.101.11.1**

logging on	
show logging	
logging trap	syslog server

logging file flash

```

FLASH
FLASH no
logging file flash:filename [max-file-size] [level]
no logging file

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

FLASH

Syslog Server
FLASH
txt

```

```

FLASH FLASH
FLASH logging file flash

```

64K, FLASH trace.txt
6

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

logging on	
show logging	
more flash	FLASH

logging console

no

logging console *level*

no logging console

level 0 7

1

Debugging (7)

logging on	
show logging	

logging monitor

```

VTY telnet SSH
no VTY

```

logging monitor level

no logging monitor

level

1

Debugging (7)

```

VTY terminal
monitor VTY
logging monitor

```

Logging monitor VTY

VTY 6

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

logging on	
show logging	

logging trap

```
no Syslog Server
logging trap level
no logging trap
```

```
level
1
```

```
Informational(6)
```

```
Syslog Server Syslog Server logging
logging trap
```

```
show logging
```

```
6 202.101.11.22
Syslog Server
```

```
Ruijie(config)# logging 202.101.11.22
Ruijie(config)# logging trap informational
```

logging on	
logging	Syslog Server
show logging	

logging source interface

no login type interface number

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

logging console	

logging count

no

logging count

no logging count

count

no logging

Ruijie(config)# **logging count**

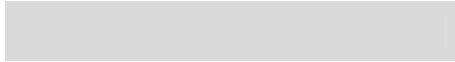
show logging count	
show logging	

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**
Ruijie#
Mar 22 15:35:57 S3250 %SYS-5-CONFIG: Configured from
console by console



logging file flash:	FLASH

clear logging

clear logging

Ruijie# clear logging

logging on	
show logging	
logging buffered	

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	disabled enabled,
Console logging	
Monitor logging	VTY

Buffer logging	
Timestamp debug messages	Debug
Timestamp log messages	Log
Sequence log messages	
Trap logging	Syslog Server
Log Buffer	

logging on	
clear logging	

show logging count

show logging count

logging

count show logging count

show logging

show logging count

```
Ruijie# show logging count
Module Name  Message Name Sev Occur      Last Time
=====
SYS          CONFIG_I      5   1      Jul 6 10:29:57
```

SYS TOTAL

1

logging count	
show logging	
clear logging	

POE

POE

- **Poe enable/no poe enable**
- **Poe-power lower lower/no poe-power lower**
- **Poe-power upper upper/no poe-power upper**
- **Poe disconnect-mode mode/no poe disconnect-mode**

Poe enable/no poe enable

/

```
Ruijie(config-if)#  
Ruijie(config-if)# poe enable  
Ruijie(config-if)# no poe enable  
Ruijie(config-if)#
```

Poe-power lower lower/no poe-power lower

lower

[45000-47000]

POE

46

```
Ruijie#  
Ruijie# configure  
Ruijie(config)# poe-power lower 46  
Ruijie(config)# end  
Ruijie#  
Ruijie#
```

Poe-power upper lower/no poe-power upper

upper

[55-57]

POE

56

```
Ruijie#  
Ruijie# configure  
Ruijie(config)# poe-power upper 56  
Ruijie(config)# end  
Ruijie#  
Ruijie#
```

Poe disconnect-mode mode/no poe disconnect-mode

mode

[ac/dc]

Ruijie# **show poe interface gigabitethernet 0/2**

- **device-priority**
- **device-description**
- **stack on**
- **show member**

device-priority

device-priority [*member*] *priority*

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

```

10
1
1 10

```

write

```

2 8

```

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



show member	
--------------------	--

device-description

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

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

write

2 red-giant

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

show member	

stack on

(no) stack on

no

S3750

GigabitEthernet 0/28

```
Ruijie(config)# interface GigabitEthernet 0/28
Ruijie(config-if)# stack on
```

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