RG-S3250

RGOS 10.2(4)



RGOS® RGNOS®



锐捷®

RGOS®10.2(4)

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1.

5

Courier New 5

2.

Arial

[ ] [ ]

{ x | y | ... }

[x | y | ...]

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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
globle configure mode alias:
def-route          ip route 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
15 password
security 15 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

15

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

login local	

lock

EXEC **lock**

lock

1. **lock**
2. “ Locked ”
3. line

lockable line

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

```
Ruijie#
```

lockable	

lockable

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

lockable

no lockable

line

EXEC **lock**

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

lock	

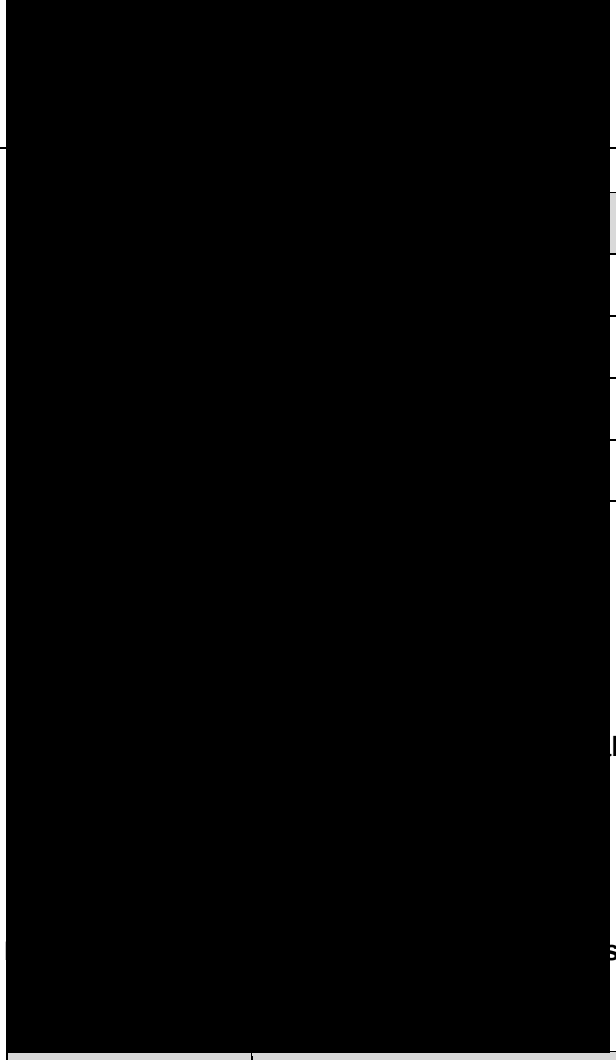
telnet

telnet EXEC

telnet

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

Host IP



ble service

SSH Server

sesrver

show service	

ip http authentication

Http Server Web
Web **ip http authentication**

ip http authentication { **enable** | **local** }

ssword0 1 Tf0 Tc 0 Tw 8.714 0.0062local

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*

hh:mm:ss		24	:	:
day	1-31			
month	1-12			
year	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 wy6n 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

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

show reload

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

speed *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*]

memory running-config NVRAM copy running-config startup-config

network TFTP copy running-config tftp

terminal **show running-config**

memory

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

show running-config	
copy	

LINE

LINE

line

LINE

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

First-line	first-line
Last-line	last-line

LINE

LINE VTY 1 3 LINE

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

line vty

VTY **no**
VTY

line vty *line-number*
no line vty *line-number*

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

VTY TTY NONE

default transport input

Line

Line VTY

VTY **show running** Line

default transport input **no transport input** LINE **transport input none**

line vty 0 4 telnet

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

show running	

RGOS10.1

access-class

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

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

access-list-number	access-list
in	
out	

Line

CLI

copy tftp

- **ping**
- **traceroute**

ping

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

ip-address	IPv4
length	
times	
timeout	
data	
source	IPv4

2 5 100Byte
IP

Ping
ping ping
ping

2 5 100Byte

IP ‘ ! ’

‘ . ’ ping

ping

ping

DNS

Ip-address	IPv4
number	

```
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

aggregate port aggregate port

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

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

show interfaces	

interface fastEthernet

interface fastEthernet *mod-num*/*port-num*

mod-num/port-num /

no **show interfaces** **show interfaces fastEthernet**

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

show interfaces	

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

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

carrier-delay

no

carrier-delay [*seconds*]

no carrier-delay

seconds 0 60

2

DCD Down Up

DCD

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

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

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
vlan-list

```
Protected is disabled
Vlan lists is
1,3-4094
```


show interfaces

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

show interfaces

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

interface-id aggregateport SVI loopback

counters

Aggregate Port

port-group

Aggregate Port no
Aggregate Port

port-group *port-group-number*

no port-group

Aggregate Port

port-group-number	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	MAC AP MAC MAC
src-mac	MAC AP MAC MAC
ip	IP IP IP—— IP IP—— IP
dst-ip	IP AP IP IP
src-ip	IP AP IP IP
src-dst-mac	MAC MAC MAC—— MAC MAC—— MAC

MAC 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**}

aggregate-port-number	Aggregate Port aggregaye port aggregate port
load-balance	
summary	

aggregate port aggregate port

```
Ruijie# show aggregateport 1 summary
AggregatePort  MaxPorts     SwitchPort Mode   Ports
-------------  --------       --------------   ------
Ag1              8                Enabled     ACCESS
```

aggregateport load-balance	AP

name

VLAN **no**

name *vlan-name*

no name

vlan-name	VLAN

VLAN

VLAN

show vlan vlan

switch port access

switch port access VLAN
switchport access vlan VLAN

switch port trunk VLAN
VLAN VLAN trunk port
VLAN VLAN **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

vlan-id	VLAN ID

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

switchport trunk

trunkport native VLAN Trunk VLAN
no trunk

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

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

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

VLAN all Native VLAN VLAN 1

Native VLAN

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

VLAN

Trunk VLAN 1 4094 Trunk VLAN VLAN Trunk

show interfaces switchport

show vlan

VLAN

show vlan [**id** *vlan-id*]

vlan-id	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

switchport access	Vlan

Super-vlan

supervlan

VLAN **supervlan**

supervlan

no supervlan

no subvlan [*vlan-id-list*]

Vlan-id-list	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

start-ip	SubVLAN IP
end-ip	SubVLAN IP

VLAN

end **Ctrl+C**

exit

```
Ruijie(config)#
```

show supervlan

SuperVLAN SubVLAN

show supervlan

show supervlan id *vlan-id*

vlan-id	VLAN ID

ă

```
Ruijie# show supervlan
supervlan id  supervlan arp-proxy  subvlan id  subj/TT174.per5 -0.000
```

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

addr IP x.x.x.x

id 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 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 ψ ∫ ʎ ƈ ƾ

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]** v*list*

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 *mac-addr*	
interface *interface-id*	
vlan *vlan-id*	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*

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

show

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

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*

mac-address	
vlan *vlan-id*	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 *value* 1	MAC Trap
history-size *value*	MAC 50

1 50

MAC

Trap **snmp-server**

enable traps mac-notification MAC Trap

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

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
```

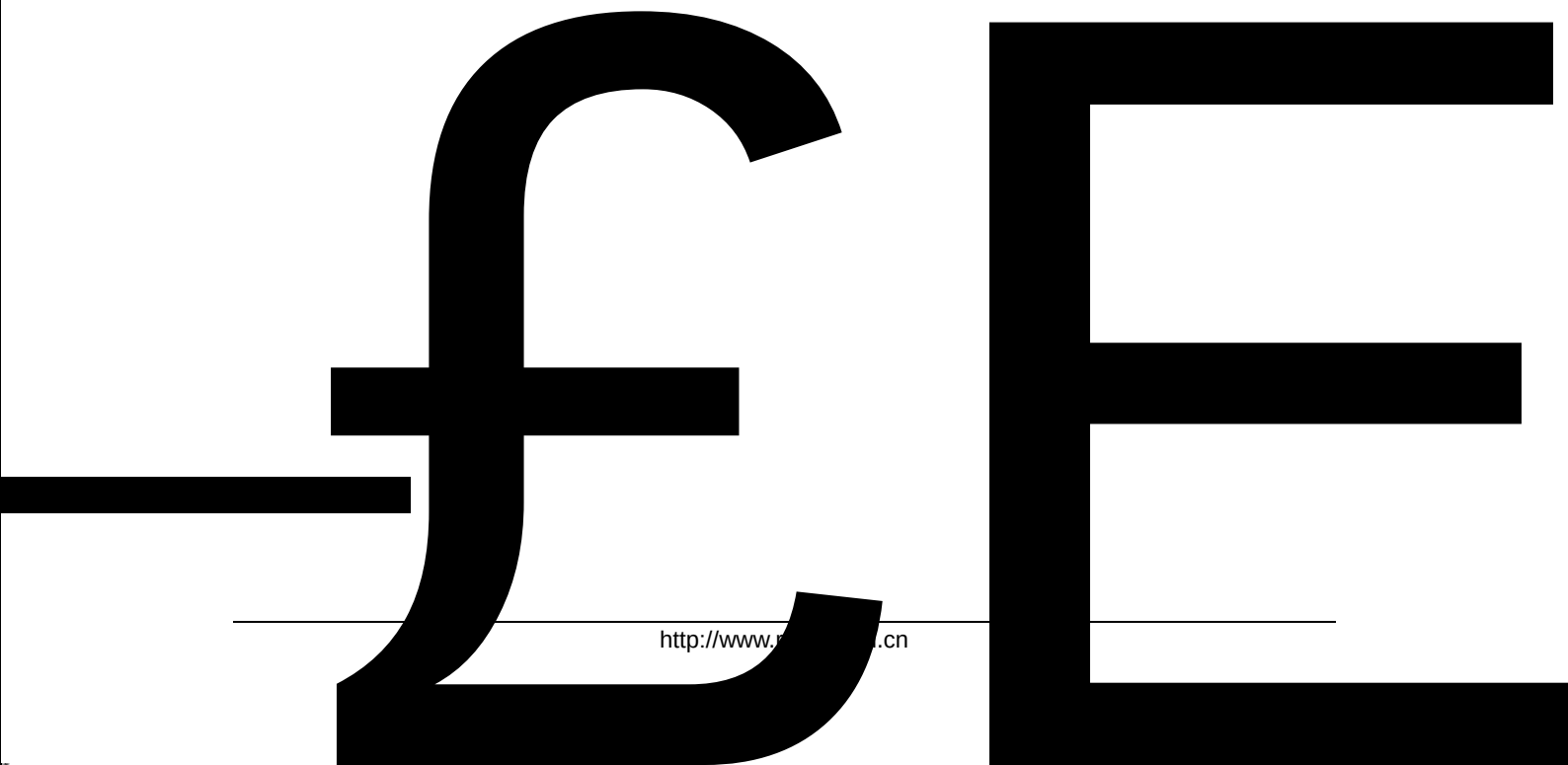
mac-address-table notification	MAC
show mac-address-table notification	MAC

address-bind

ip mac .

address-bind *ip-address mac-address*

no address-bind



address-bind =C-ßÿRQA@ÕØßA€X4ß8y”A•lÅÑfw58-141.96-1bi68 Tc W* nTj852 Tf

```
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 *mac-addr*	MAC
interface *interface-id*	
vlan *vlan-id*	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*]

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

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

clear mac-address-table dynamic	

show mac-address-table filtering

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

mac-addr	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 **show ip dhcp snooping**
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 snooping

DHCP

```
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
Œ

```
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 Snooping FLASH
IP

flash 3600

```
Ruijie#
```

```
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

DHCP TRUST
TRUST DHCP UNTRUST
DHCP

fastethernet *0/1* TRUST

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

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

show ip dhcp snooping	DHCP snooping

ip dhcp snooping address-bind

no

[**no**] **ip dhcp snooping address-bind**

DHCP Snooping IP MAC IP VLAN ID

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

profile profile

deny

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 ė Ŷ

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

VLAN igmp snooping 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
```

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

address

ip IPMC

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 *vid* **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 **ip igmp snooping fast-leave enable** no igmp snooping fast-leave

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

ip igmp snooping suppression enable

no ip igmp snooping suppression enable

disable

suppression IGMP v1/v2 report

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 filtring

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 MSTP MSTP
no spanning-tree 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 bpdufilter

BPDU filter enabled disabled BPDU filter

spanning-tree bpdufilter [**enabled** | **disabled**]

enabled BPDU filter

Disabled BPDU filter

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

show spanning-tree interface STP

spanning-tree bpduguard

BPDU Guard enabled disabled 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

BPDU Max-hops Count BPDU Region Instance no

spanning-tree max-hops *hop-count*

no spanning-tree max-hops

hop-count BPDU 1 40

hop-count 20

.

Region Root Bridge BPDU Hot Count Root Bridge Hop Count 1 0 BPDU Hops 0 BPDU

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

MST MSTP Region
no 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* v**lan** *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.

BPDU guard BPDU error-disabled

show spanning-tree

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

show spanning-tree interface STP

spanning-tree portfast bpdufilter default

BPDU filter no BPDU filter

spanning-tree portfast bpdufilter default

no spanning-tree portfast bpdufilter default

BPDU filter

BPDU Filter BPDU **show spanning-tree**

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

show spanning-tree interface STP

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-ag***e* | **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

switch	

switch port routed port SPAN
SPAN disabled port
SPAN

show monitor SPAN

SPAN 1.
1 1
8

```
Ruijie(config)# no monitor session 1
Ruijie(config)# monitor session 1 source interface
gigabitEthernet 1/1 both
Ruijie(config)# monitor session 1 destination interface
gigabitEthernet 1/8
```

show monitor	SPAN

show monitor

SPAN

show monitor [**session** *session_number*]

SPAN

session *session_number* SPAN

show monitor SPAN 1

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

monitor session	SPAN

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**]

“ 255.0.0.0 ”

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

arp

ARP IP MAC
no MAC

arp *ip-address MAC-address type* [**alias**]

no arp *ip-address MAC-address type* [**alias**]

ip-address	MAC IP
MAC-address	48
type	ARP arpa
alias	RGOS IP arp

ARP

RGOS ARP 32 IP 48
MAC

ARP ARP
clear arp-cache ARP

ARP

```
arp 1.1.1.1 4e54.3800.0002 arpa
```

clear arp-cache	ARP

arp retry interval

arp IP
2 ARP no
1 ARP

arp retry interval *seconds*

no arp retry interval

seconds	<1-3600>,ARP 1 ——3600 1

ARP 1

ARP
ARP ARP

ARP 30s

```
arp retry interval 30
```

Arp retry times *number*	ARP

arp retry times

arp IP
ARP no
5 ARP

arp retry times *number*

no arp retry times

number	ARP <1-100> 1 ARP 1 ARP

ARP ARP 5

ARP
ARP

ARP

```
arp retry times 1
```

ARP 1

```
arp retry times 2
```

arp retry interval *seconds*	arp

arp trusted NUM

ARP no

arp trusted *number*

no arp trusted

hF(REbDbáDbR

GSN ARP

ARP ARP

500

```
arp unresolved 500
```

arp gratuitous-send interval

arp no

arp gratuitous-send interval *seconds*

no arp gratuitous-send

seconds	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

seconds	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

ARP **ip proxy-arp**
no ARP

ip proxy-arp

no ip proxy-arp

10.2 3 ARP

ARP
IP MAC ARP ARP
IP

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

RNFP(Ruijie Network Foundation Protection,)
mac (IP) ARP
clear 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** | *ƒ..@...P8ÐlUñÐ*

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*]

Interface-type	
Interface-number	

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 unreachabled 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 unreachabled 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 unreachables**

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 ICMP

ip mask-reply

no ip mtu

bytes	IP 68~1500

mtu

IP IP MTU RGOS
IP MTU

mtu IP MTU
MTU IP MTU
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

ICMP

RGOS

Ò ṅ R̂

IP

```
no ip source-route
```

ip unreachables

RGOS ICMP **ip unreachables** no ICMP

ip unreachables

no ip unreachables

RGOS

ICMP

RGOS
ICMP

ICMP

FastEthernet 0/1 ICMP

```
interface fastEthernet 0/1
no ip unreachables
```

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 AE0 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

file-name	

DHCP

DHCP DHCP
DHCP
TFTP **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

unique-identifier	DHCP 0100.d0f8.2233.b467.6967.6162.6974.4574.6865.726e.6574.302f.31

DHCP

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

client-name	DHCP ASCII river DHCP river.i-net.com.cn

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

ip-address	DNS IP
ip-address2…ip-address8	8 DNS
use-dhcp-client *interface-type* *interface-number*	RGOS DHCP DNS DHCP DNS

DNS

DHCP

DNS DHCP
DNS DNS

RGOS DHCP DNS
DHCP

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 DHCP **domain-name**
no ü

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

hardware-address	DHCP MAC
type	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
host **no** DHCP IP

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

ip-address	DHCP IP
netmask	DHCP

IP

DHCP

IP

A 0Tr 8.011 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 ping
ip dhcp ping packet **no**

ip dhcp ping packet [*number*]

no ip dhcp ping packet

no lease

days	
hours	
minutes	
infinite	

DHCP

DHCP DHCP

DHCP 1 Ṅ 1 ٧

no netbios-name-server

ip-address	WINS IP

type	NetBIOS 0~FF ✧ 1 b-node ✧ 2 p-node ✧ 4 m-node ✧ 8 h-node ✧ b-node ✧ p-node ✧ m-node ✧ h-node

NetBIOS

DHCP

DHCP NetBIOS 1 Broadcast
NetBIOS 2 Peer-to-peer
WINS NetBIOS 3 Mixed
WINS
4 Hybrid WINS
NetBIOS NetBIOS

WINS WINS
NetBIOS Hybrid

DHCP NetBIOS

```
netbios-node-type h-node
```

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

next-server

DHCP DHCP

next-server **no**

next-server *ip-address* [*ip-address2…ip-address8*]

no next-server

ip-address	IP TFTP
ip-address2…ip-address8	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

code	DHCP
ascii *string*	ASCII
hex *string*	
ip *ip-address*	IP

DHCP TCP/IP
DHCP option
DHCP 312 option
DHCP DHCP
DHCP option RFC 2131

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 **service dhcp** **no** DHCP

service dhcp

no service dhcp

DHCP

DHCP IP DNS
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
ip-address	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* }

*	DCHP
ip-address	IP

DHCP ping DHCP
ARP **clear ip dhcp conflict**

```
clear ip dhcp conflict *
```

ip dhcp ping packets	DHCP IP گ

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
```

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

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
DHCPDISCOVER             33
DHCPREQUEST              25
DHCPDECLINE              0
DHCPRELEASE              1
DHCPINFORM               150

Message                 Sent
BOOTREPLY                16
DHCPOFFER                9
DHCPACK                  7
DHCPNAK                  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

DHCP **service dhcp**
no DHCP

service dhcp

no service dhcp

DHCP

DHCP DHCP
DHCP DHCP DHCP

DHCP

```
service dhcp
```

ip helper-address [**vrf**] *A.B.C.D*	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

ip dhcp relay information option82

no **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

ip dhcp relay check *server-id*

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

DHCP REQUEST

server-id option server

```
Ip dhcp relay check server-id
```

Service dhcp	DHCP

ip dhcp relay suppression

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*]

ip-address	IP

DNS Server IP Ń Ń ų ’

host-name	
ip-address	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*]

host-name	“*”

1 ip host 2
DNS 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 wooooop
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*]

key-id	ID
key-string	
enc-type	0 7

md5 key-id

ntp trusted-key key-id

1024

ID 6

```
ntp authentication-key 6 md5 wooooop
```

ntp authenticate	
ntp trusted-key	

ntp server NTP

ntp disable

NTP

ntp disable

NTP

NTP

version	NTP 1-3 NTPv3
if-name	NTP
keyid	
prefer	Prefer

NTP

W ' ' ך

NTP 8

NTP

```
Ntp synchronize
```

ntp server	NTP

ntp trusted-key

ID

ntp trusted-key *key-id*

no ntp trusted-key *key-id*

key-id	ID

NTP ID

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

```
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*

address	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 **no** UDP

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

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

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

SNMP

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 NMS

snmp-server host 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 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-c
ity 4F of A Buliding
```

snmp-sever contact	SNMP

snmp-server packetsize

location ש ف

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

4

4

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

snmp-server packetsize	SNMP

SNMP IP

IP

SNMP

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 *groupname* {*v1* | *v2c* | *v3* {*auth* | *noauth* | *priv*}} [**read** *readview*][**write** *writeview*] [**access** {**num** | **name**}]

no snmp-server group *groupname* {*v1* | *v2c* | *v3* }

v1 | *v2c* |*v3* SNMP

auth v3

noauth v3

priv v3

readview

writeview

```
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 *chassis-id*	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* [*event-number*

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

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

RIP

address-family RIP

RIP

address-family

no

address-family ipv4 vrf *vrf-name*

no address-family ipv4 vrf *vrf-name*

vrf *vrf-name*	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 **auto-summary**
no

auto-summary

no auto-summary

RIP
RIPv1 RIPv2

RIP

- RIP

- RIP
-

RIPv2

RIPv1

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 **default-metric**

no

default-metric *metric*

no default-metric

metric	1 16 metric 16 RGOS

1

redistribute

RIP

RIP

RIP default-metric

default-metric

default-metric 1

RIP OSPF RIP

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

redistribute	r

default-information originate(RIP)

RIP no **default-informatio**

default-information originate no default-information originate

RIP Ruijie(config-rout

distance

RIP distance
no

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

no distance [*distance ip-address wildcard*]

distance	RIP <1-255>
ip-address	IP
wildcard	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*]

access-list-number	
prefix *prefix-list-name*	
gateway *prefix-list-name*	
i*nterface-type interface-number*	( )

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

name-of-keychain	RIP

RIP

key chain

RIP

RIPv1 RIP RIPv2

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 RIP RIPv2 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

RIP

no

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 RIP **ip rip send enable** **no** 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 RIP
ip rip receive version no

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

no ip rip send version

1	RIPv1
2	RIPv2

version

vesion

RIP 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

show ip rip

neighbor 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

RIP **ip summary-address rip** 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*

network-number	IP RIP

network-number IP RGOS

172.16.16.1 172.16.0.0

RIPv2

IP

RIPv2

passive-interface

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

ip-address	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*]

access-list-number	acl
in	acl metric
out	acl metric
offset	metric
interface-type	acl
interface-number	

offset

RIP offset-list
offset-list RIP offset-list metric

acl 7 RIP metric 7

```
Ruijie(config-router)# offset-list 7 out 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

delay	<8-50>

RIP 512 25

25

output-delay

RIP 30

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

passive-interface

passive-interface d

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*]

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

OSPF

ISIS level-2

metric 1

route-map

RIP

RIP

OSPF

isis level level-2
level level
level 1, level 2
level-1-2

ospf match
ospf match match
no
match

RIP

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

default-metric *metric*	

router rip

RIP
router rip no RIP

router rip

no router rip

RIP

RIP

async default routing

RIP RIP

RIP

RIP

RIP IP

RIP

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 *vrf-name*	VRF RIP
network-number	
network-mask	

א ó

```
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 *vrf-name*	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: Registed
Interface Summary Rip:
Not Configured
IP interface address:
192.168.64.100/24
```

show ip rip	

distribute-list in

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*]

access-list-number	
prefix *prefix-list-name*	
gateway *prefix-list-name*	
i*nterface-type interface-number*	( )

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*]

prefix-lis-name	

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

ip prefix-list description

no

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 WCMP

weight
WCMP 32
WCMP

ip
route 0.0.0.0 0.0.0.0 Fastethernet 0/0
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
```

number	1-10000

1000

ip static route-limit

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*]

prefix-lis-name	
seq-number	1 2147483647 5 5

deny

ipv6 prefix-list description

IPv6 **ipv6 prefix-list description** **no**

ipv6 prefix-list *prefix-lis-name* **description** *descripton-text*

prefix-lis-name	IPv6

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**] …]

standard-list-number	1…99
expanded-list-number r	100…199

communitys-list-name

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

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

0y ﷺ Ȯ $ í Ţ 0y p 0y

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...*]}

access-list-number	
access-list-name	
prefix-list *prefix-list-name*	

match ip next-hop

OSPF
OSPF RIP RIP
OSPF
IP

route maps

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

OSPF RIP RIP
10 20 OSPF

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

```
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

4<2°RÅ.ÌÀÉdz ¼= K8 Ãh •ÍÁ◂BÌÒÃ▪'À¢ê°_Zóâ ƒÀœ° ü Ã+▲G¡ Ú Ð ËA 4£ EïÉ▸CÃ+▲ÒA▲ ÃƒÀœ°route mapsnumber

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

match ipv6 address

IPv6

match ipv6 address **no** **ace{ix-li**

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

access-list-name	
prefix-list *prefix-list-name*	IPv6

OSPF RIP RIP

OSPF

IP

route maps

1 **match** 1

set **match** **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

access-list-name	

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

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

match length *min-length max-length*

no match length *min-length max-length*

min-length	IP
max-length	IP

Metric	0-4294967295

OSPF RIP RIP
OSPF
IP

route maps

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

OSPF RIP 10
RIP OSPF

```
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

OSPF

IP

route maps

1 **match** 1

set **match** **set**

R[(route map)7(s)012C8>Tj/T7ED4721354231AE84582>6<041F4BCD70

match tag

match tag **no**

match tag *tag* [*…tag*]
no match tag *tag* [*…tag*]

tag	

match tag tag

OSPF RIP RIP
OSPF
IP

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*]

route-map-name	
permit	permit match set set permit match set
deny	deny match deny match set
sequence-number	

RGIOS

OSPF RIP RIP

OSPF

IP

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*]

as-number	AS
ip_addr	

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 **set comm-list delete** **no**

set comm-list *community-list-number* | *community-list-name* **delete**

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

community-list-number	
community-list-name	

```
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**}

community-number	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 **set dampening** **no**

set dampening *half-life reuse suppress max-suppress-time*

no set dampening

half-life	1..45( ) 15

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

```
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*]]

ip-address	IP
weight	

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	

IP

set ip next-hop

set ip precedence IP

set ip dscp

match DSCP **set ip**

dscp **no**

set_ip_dscp **no set ip dscp**

dscp_value DSCP

route-map

match ip address

set default interface

set default interface

set interface

IP

set ip default next-hop

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*]]

ip-address	IP
weight	

set WCMP WCMP
weight
WCMP

set ip next-hop IP 32

ip address weight 4
nexthop

next-hop weight **set**
WCMP WCMP
weight nexthop weight
1

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*]]

ip-address	IP
track-object-num	

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 ip precedence

IP

fastEthernet 0/0

192.168.217.68 precedence 4

```
access-list 1 permit 192.168.217.68 0.0.0.0
route-map name
match ip address 1
set ip precedence 4
interface fa0/0
ip policy route-map name
```

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 ip tos	IP tos

set ip tos

match IP TOS,

set ip tos **no** tos

set ip tos {*<0-15>* | *max-reliability* | *max-throughput* | *min-delay* | *min-monetary-cost* | *normal* }

no set ip tos {*<0-15>* | *max-reliability* | *max-throughput* | *min-delay* | *min-monetary-cost* | *normal* }

IP TOS IP

IP TOS

fastEthernet 0/0
192.168.217.68 tos 4

```
access-list 1 permit 192.168.217.68 0.0.0.0
route-map name
match ip address 1
set ip tos 4
interface fa 0/0
ip policy route-map name
```

match interface	
match ip address	
match ip next-hop	

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

number	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 ł ł

set metric [+

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 metric-type

match

set metric-type **no** xxw / ˌ a ÷

route maps

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

no set next-hop *ip-address*

i*p-address*	IP

OSPF RIP RIP
OSPF
IP

route maps

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

192.168.1.2

```
route-map redrip permit 10
match ip address 1
set next-hop 192.168.1.2
```

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 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*]

ip-addr	

```
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 AS_PATH2û

```
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 *vrf_name*	VRF
network	

mask ⌐ ┘

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

MAC

IP( ) (

)

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**]

	[

Arp-check

Arp arp

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

show port-security	

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 } ⌊ ⊀ Ḟ

```
Ruijie# configure terminal
Ruijie(config)# dot1x auth-address-table address
00d0f8000000 interface ehternet 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
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[*addressmac-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	**A5BUGAbGAx** **A**
dot1x timeout quiet-period	**A5BxA4EGAx** **A1**
dot1x timeout re-authperiod	**A5BAMGAxA**
dot1x timeout server-timeout	
dot1x timeout supp-timeout	**A5BGAxAxfX** **C**
dot1x timeout tx-period	**A5BGXGo** **<**

show dot1x port-control

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show dot1x port-control [**interface** *interface*]

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*interface*ÕX·

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```
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 لمي A’5B GAË5Ù Ô ûG¡ „

```
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 802.1X O

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
```


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

login authentication

Login

login authentication Login

no

login authentication {**default** | *list-name*}

no login authentication

default Login

list-name Login

Login

Login

Login

Login

list-1 AAA Login

VTY 0 - 4

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

aaa new-model	AAA
username **login authentication**	Login

- **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 *level* {**default** | *list-name*} *method1* [*method2*...]

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

level 0~15

default

list-name

method 4

none	
group	TACACS+

AAA

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

Ψ

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** | *list-name*} *method1* [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

Exec

Exec

Exec

exec-1 Exec

level 0~15

default

list-name

method 4

none	
group	TACACS+

aaa accounting exec

NAS

aaa accounting exec **no** Exec

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

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

default Exec

list-name Exec

method 4

none	
group	RADIUS TACACS+

Exec

none Exec

NAS CLI

Start Stop

Γ ⊥

group radius

aaa new-model	AAA

```
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

aaa accounting update periodic **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

cmd 15
TACACS+ none
VTY 0 – 4

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

aaa new-model	AAA
aaa accounting commands	AAA

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
```

- **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

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 group server	aaa
show aaa group	aaa

server

AAA **no**

server *ip-address* [**auth-port** *port1*] [**acct-port** *port2*]

no server *ip-address* [**auth-port** *port1*] [**acct-port** *port2*]

ip-address ip

port1 RADIUS

port2 RADIUS

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


AAA

- **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 lockout-time

login

aaa local authentication lockout-time *lockout-time*

lockout-time 1~2147483647

15

login

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

show running-config	

show aaa lockout t

AAA

AAA AAA

aaa new-model 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 authorizating network default group radius
```

aaa authentication	
aaa authorization	
aaa accounting	

show aaa user lockout

show aaa user lockout {**all** | **user-name** <*word* Ï‚Ì G Q ¸ Ð

show aaa lockout	login

RADIUS

RADIUS

RADIUS

- **ip raius 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 **ip radius source-interface** **no** RADIUS

ip radius source-interface *interface*

no radius source-interface

Interface D 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

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

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

id id <1-255>

type type

id		type
1	max down-rate	1
2	qos	2

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-0.00040/C2_0 1 Tf3.968f-0.00**

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 Timout:   5 Seconds
Server Deadtime: 5 Minutes
Server Retries:  3
Server Key:      ******
```

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

show radius vendor-specific

RADIUS

show radius vendor-specific

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

no crypto key generate **crypto key zeroize**

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

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

RGOS10.1

crypto key zeroize

SSH

crypto key zeroize {**rsa** | **dsa**}

rsa	RSA
dsa	DSA

SSH Server
DISABLE SSH Server **no enable service ssh-server**

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

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 1 2
SSH **no ip ssh version**

SSH Server SSH
SSH Server SSH1 SSH2 SSH 1
SSH 2 1 2
SSH **show ip ssh** SSH Server

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

time	

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

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

retry times	

3 **no ip ssh authentication-retries**

SSH Server SSH Server **show ip ssh** SSH Server

2

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

show ip ssh	SSH Server

RGOS10.1

SSH

SSH

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

show ip ssh

SSH Server

show ip ssh

SSH Server SSH Server

SSH

SSH

Ruijie# **show ip ssh**

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

Ip ssh authentication-retries retry times	SSH Server

RGOS10.1

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***}

SSH SSH
VTY SSH SSH

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

show ssh	SSH
Clear line vty *line_number*	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*]

vlan-id	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

ip arp inspection 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( ) NFPP

DAI

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
ARP
DHCP Snooping .
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*]] {**s***ource source-wildcard* | **host** *source* | **any**} {**host** *source-mac-address* | **any** } {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [**time-range** *time-range-name*]

Protocol

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

RGOS10.0

ip access-list

IP ACL IP ACL
no 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 ACL
deny **permit** **show ip access-lists** ACL

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 Vp((ICMP))TJ Tc 5.a-0.0019Tc 0.537 0 Td-TT0 1 Tf0.0022**

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

IP ACL IP 192.168.4.12
TCP 100 1

```
Ruijie(config)#Ruijie(config-ex4.12 host p 0.6  0001 Tc 0.6  eq2AE
```

```
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 8 ~ 6 e 9

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

(**permit**)

ACL 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* / *prefix-length*

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

1

```
Ruijie(config)# ip access-list standard std-acl
Ruijie(config-std-nacl)# permit host 192.168.4.12
```

list-remark text

ACL **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**

access-list accept_00d0f8xxxxxx_only Gigabit 1

```
Ruijie(config)# interface GigaEthernet 1/1
Ruijie(config-if)# mac access-group
accept_00d0f8xxxxxx_only in
```

show access-group	ACL

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

access-list accept_00d0f8xxxxxx_only Gigabit

1

```
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

QoS QoS

1 policy-map

policy-map class-map

class-map 1 ACL ACL ACE

ACE “ ACL”

QoS
Policy Map
QoS QoS
Policy Map Off

QOS

CoS	0 0

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
ip-precedence	Qos	IP-PRE
no		

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

show mls qos interface *interface-id*

mls qos cos

CoS

mls qos cos *default-cos*

no mls qos cos

default-cos 0 7

no

CoS 0

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

show mls qos interface *interface-id*

Class Maps

ACL

ip access-list {**extended** | **standard**} { *acl-id* | *acl-name* }

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

expert access-list extended {*acl-id* | *acl-name*}

ipv6 access-list extended *acl-name*

access-list acl-id ACL

class map class map

[**no**] **class-map** *class-map-name*

class map

[**no**] **match access-group** *acl-name*| *acl-id*

acl-name ACL

[**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 qo map cos-dscp 8 10 16 18 24 26 32
34
```

show mls qos maps dscp-cos maps,dscp-cos maps ip-prec-dscp maps

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

drr-queue bandwidth *weight1...weight8*

no drr-queue bandwidth

weight1...weight8

no

```
Ruijie(config)# drr-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 qo 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
```


show mls qos scheduler	QOS

RGOS10.1

wfq-queue sp

wfq

w f

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,drr 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** *intervace-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

ls

ls *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

levelI 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 h*ost*

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

levelI

FLASH 6

1

FLASH

Syslog Server

FLASH

txt

FLASH FLASH

FLASH logging file flash

FLASH trace.txt
64K, 6

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

logging on	
show logging	
more flash	FLASH

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

Syslog Server

no Syslog Server

logging trap *level*

no logging trap

level

1

Informational(6)

Syslog Server logging

Syslog Server logging trap

show logging

6 202.101.11.22

Syslog Server

```
Ruijie(config)# logging 202.101.11.22
Ruijie(config)# logging trap informational
```

logging on	
logging	Syslog Server
show logging	

logging source interface

no logging *interface-type interface-number*

Syslog Server

Loopback 0 Syslog

```
Ruijie(config)# logging source ip 192.168.1.1
```

logging	Syslog server

logging facility

no (23)

logging facility *facility-type*

no logging facility

facility-type Syslog

Local7(23)

2 Syslog

2

Numerical Code	Facility
0	kernel messages

1	user-level messages
2	mail system
3	system daemons
4	security/authorization messages
5	messages generated internally by syslogd
6	line printer subsystem
7	network news subsystem
8	UUCP subsystem
9	clock daemon

logging console	

logging count

no

logging count

no logging count

no logging count

```
Ruijie(config)# logging count
```

show logging count	
show logging	

service sequence-numbers

no

service sequence-numbers

no service sequence-numbers

1

```
Ruijie(config)# service sequence-numbers
```

logging on	
service timestamps	

service timestamps

no default

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

no service timestamps *message-type* [**uptime** | **datetime**]

default service timestamps *message-type* [**uptime** | **datetime**]

message-type Log Debug Log
0 6 Debug 7

uptime * * * * 07:00:10:41

```
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	**enabled**, **disabled**
Console logging	
Monitor logging	VTY

Buffer logging	
Timestamp debug messages	Debug
Timestamp log messages	Log
Sequence log messages	
Trap logging	Syslog Server
Log Buffer	

logging on	
clear logging	

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*

member	ID member 1
priority	[1, 10]

1 10

10 1

write

2 8

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

show member	

device-description

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

member *member*	ID member 1
description	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*]

member	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
```