

RG-S2300

RGOS 10.2(5)

©2009



RGOS®10.2(5)

'
'
'

1.

5



Courier New

5

2.

Arial

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

3.

/

/

CLI

alias

alias

no

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

mode
command-alias
original-command

EXEC

EXEC

h	help
p	ping
s	show
u	undebug
un	undebug

no alias exec**alias ?**

```
Ruijie(config)# 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"
```

Ruijieig)# 9ff)# **ia ?**

A.B.C.D IP address

dhcp IP Address via DHCP

Ruijieig)# 9ff)# **ip address**


```
"ip address"
```

show aliases

dhcp IP Address via DHCP

Ruijie)# 9ff)#

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



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

CLI 1 "test" reload

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

1 CLI reload

```
Ruijie> reload ?
<cr>
```

reload 1 all

```
Ruijie(config)# privilege exec all level 1 reload
```

1 CLI reload

```
Ruijie> reload ?
at reload at a specific time/date
cancel cancel pending reload scheme
in reload after a time interval
<cr>
```

enable secret	CLI

show aliases

EXEC

show aliases

show aliases [mode]

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**

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

' 1 26
'

EXEC

```

15          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
```

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

VTY

radius

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

aaa new-model	AAA
aaa authentication login	

username

username

```
username name { nopassword | password { secret | encrypted | none } }
username name { nopassword | password { 6667#z$MBi0KAP%imZc@username
```

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

lockable

no lockable

line

EXEC **lock**

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

lock	

telnet

telnet

EXEC

telnet

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

Host

IP

Port

TCP

23

Keyword

--	--

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

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*

clock set

2008 1 30 05 54 43

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

Ruijie# **show clock**

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

show clock	

clock update-calendar

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

calendar

clock

clock

Ruijie# **clock update-calendar**

exec-timeout

```
LINE                               exec-timeout
no exec-timeout                   LINE
```

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

minutes

seconds

10 min

LINE

LINE

```
line vty 0                        5 30 :
```

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

hostname

hostname

hostname *name*

name

63

Ruijie

CHAP

BeiJingAgenda

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

session-timeout

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

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

minutes
seconds

0 min

LINE

LINE

LINE

line vty 0 5 30 :

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

show clock

show clock

show clock [detail]

detail

detail

show clock

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

clock set	

show cpu

CPU

show cpu

CPU

show cpu

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

```

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

```

show cpu

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

--	--

show cpu slot

CPU

show cpu slot [*slot-number*]

slot-number

CPU

CPU

1 1 CPU

Ruijie# **show cpu slot 1**

CPU utilization for five seconds: 3%

CPU utilization for one minute : 2%

CPU utilization for five minutes: 1%

2 CPU

Ruijie# **show cpu slot**

slot 1 CPU information

CPU utilization for five seconds: 3%

CPU utilization for one minute : 2%

CPU utilization for five minutes: 1%

slot 3 CPU information

CPU utilization for five seconds: 5%

CPU utilization for one minute : 2%

CPU utilization for five minutes: 1%

show cpu	CPU

show memory

show memory

795

0200

slot-number

1 1

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

2

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

show memory	

show running-config

show running-config

show running-config

show startup-config

NVRAM

show startup-config

show startup-config

NVRAM

startup-config

reload

reload

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

text 1-255

in [*hh:*] *mm* 24

at *hh:mm*

month 3 Mar

day 1 31

cancel

10

Ruijie# **reload in 10**

Router will reload in 600 seconds.

show reload

reload

show

show reload

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

prompt

no prompt

prompt

prompt *string*

string

32

EXEC

RGOS

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

RGOS

banner motd

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

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

banner login

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

memory

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

show running-config	
copy	

LINE

LINE

line

LINE

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

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

LINE

LINE VTY 1 3 LINE

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

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

LINE

none	Line
------	------

NONE VTY TTY
default transport input

Line

Line VTY
VTY **show running** Line

ut **default transport input** **no transport inp**
rt input none LINE transpo

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

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

Line

Line

Line

access list **access-class**
Line **show running**

line vty 0 4 access-list 10

```
Ruijie# configure terminal
Ruijie(config)# line vty 0 4
Ruijie(config-line)# access-class 10 in
```

show running	

RGOS10.1

	CLI	COPY
' Xmodem		copy xmodem
' Tftp		copy tftp

copy xmodem

xmodem

xmodem

copy flash: filename xmodem

copy xmodem flash: filename

filename

Xmodem

Xmodem

:

xmodem

xmodem

:

Ruijie# **copy xmodem flash: config.text**

Ruijie# **copy flash: config.text xmodem**

copy tftp

tftp

tftp

copy flash: *filename* **tftp://** *location / filename*

copy tftp:// *location/filename* **flash:** *filename*

filename

TFTP

TFTP

```
          :                               ip 192.168.12. 1  
          config.bak      ;                               switch.bin  
ip 192.168.12.1 :
```

```
Ruijie# copy tftp://192.168.12.1/config.bak flash:  
config.text
```

```
Ruijie# copy flash: swich.bin tftp://192.168.12.1/
```

-
- ' ping
 - ' traceroute

ping

Q

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

<i>ip-address</i>	IPv4
<i>length</i>	
<i>times</i>	
timeout	
<i>data</i>	

source

IPv4

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

ping

```
Ruijie# ping 192.168.5.1
Sending 5, 100-byte ICMP Echoes to 192.168.5.1, timeout
is 2 seconds:
 < press Ctrl+C to break >
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max
= 1/2/10 ms
```

ping

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

Sending 100, 1000-byte ICMP Echoes to 192.168.5.197,
timeout is 3 seconds:
 < press Ctrl+C to break >
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip
min/avg/max = 2/2/3 ms
```

<i>ip-address</i>	IPv4
<i>number</i>	
<i>source-address</i>	IPV4
<i>seconds</i>	
<i>minimum maximum</i>	TTL

traceroute

DNS

traceroute

1 traceroute

Ruijie# **traceroute** 61.154.22.36

< press Ctrl+C to break >

Tracing the route to 61.154.22.36

```

1    192.168.12.1    0 msec  0 msec  0 msec
2    192.168.9.2    4 msec  4 msec  4 msec
3    192.168.9.1    8 msec  8 msec  4 msec
4    192.168.0.10   4 msec  28 msec 12 msec
5    202.101.143.130 4 msec  16 msec 8 msec
6    202.101.143.154 12 msec 8 msec 24 msec
7    61.154.22.36  12 msec 8 msec 22 msec

```

Ruijie#

```

                                     IP
61.154.22.36                          1 6

```

2 traceroute

Ruijie# **traceroute** 202.108.37.42

< press Ctrl+C to break >

Tracing the route to 202.108.37.42

```

1    192.168.12.1    0 msec  0 msec  0 msec

```

```
2      192.168.9.2      0 msec  4 msec  4 msec
3      192.168.110.1   16 msec 12 msec 16 msec
4      * * *
5      61.154.8.129   12 msec 28 msec 12 msec
6      61.154.8.17    8 msec 12 msec 16 msec
7      61.154.8.250   12 msec 12 msec 12 msec
8      218.85.157.222 12 msec 12 msec 12 msec
9      218.85.157.130 16 msec 16 msec 16 msec
10     218.85.157.77  16 msec 48 msec 16 msec
11     202.97.40.65   76 msec 24 msec 24 msec
12     202.97.37.65   32 msec 24 msec 24 msec
13     202.97.38.162  52 msec 52 msec 224 msec
14     202.96.12.38   84 msec 52 msec 52 msec
15     202.106.192.226 88 msec 52 msec 52 msec
16     202.106.192.174 52 msec 52 msec 88 msec
17     210.74.176.158 100 msec 52 msec 84 msec
18     202.108.37.42  48 msec 48 msec 52 msec
```

Ruijie#

```
                                     IP
202.108.37.42                         1 17
4
```

Ruijie# **traceroute** *www.ietf.org*

TranslatiniT2 1 Tf-0 1 Tf-0.0013 -6(84)Tj/TT4.org 84

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

interface aggregateport

no

interface aggregateport *port-number*

port-number Aggregate port

aggregate port

aggregate port

aggregate port
interfaces aggregateport

show interfaces show

mod-num/port-num /

no **show interfaces**
show interfaces gigabitEthernet

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

show interfaces	

interface vlan

virtual interface SVI **switch**
SVI. **no**

interface vlan *vlan-id*
no interface vlan *vlan-id*

vlan-id VLAN ID

show interfaces **show interfaces vlan**

```
Ruijie(config)# interface vlan 2  
Ruijie(config-if)#
```

--	--

show interfaces	
-----------------	--

medium-type

no

medium-type { fiber | copper }

no medium-type

fiber

copper

Ap SVI

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

```
Ruijie(config-if)# medium-type copper
```

show interfaces	

BASE-T

SFP

10/100/1000M

descriptoin

no

description *string*

no description

string

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

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

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 1 60

2

DCD

DCD Down Up

DCD

DCD

```
Ruijie(config)# interface gigabitethernet 1/1  
Ruijie(config)# 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 Aggregate port ,Routed port,L3
 Aggregate port
shutdown no shutdown

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

shutdown	

switchport

2 **switchport**
 3 **no switchport**
switchport
no switchport

2

switchport

2

3

2

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

show interfaces	

switchport mode

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

switchport mode {access | trunk}

no switchport mode

access	switch port access port
trunk	switch port trunk port

switch port access

switch port access VLAN
switchport access vlan VLAN

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

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

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

line-detect

line-detect

line-detect

line-detect

```
Ruijie(config)#interface gigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)#line-detect
```

```
Interface : GigabitEthernet 0/1
start cable-diagnoses,please wait...
cable-daignoses end!this is result:
4 pairs
pair state      length(meters)
-----
A   Ok          1
pair state      length(meters)
-----
B   Ok          2
pair state      length(meters)
-----
C   Short       1
pair state      length(meters)
-----
D   Short       1
```

pairs	

Aggregate Port

port-group

```
Aggregate Port
Aggregate Port no
```

```
port-group port-group-number
no port-group
```

Aggregate Port

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

```
AP VLAN trunk port
native VLAN AP
```

```
1/3 AP 3
```

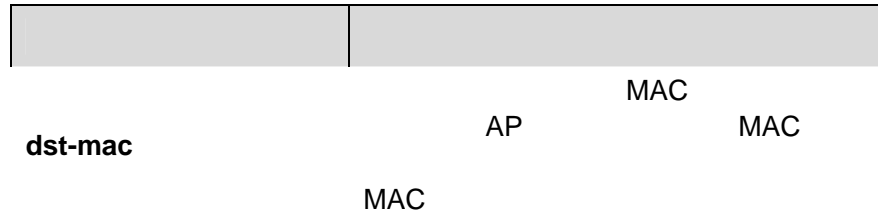
```
Ruijie(config)# interface gigabitethernet 1/3
Ruijie(config-if)# port-group 3
```

aggregateport load-balance

```
AP no
```

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

no aggregateport load-balance



no name

<i>vlan-name</i>	VLAN

VLAN

VLAN

show vlan vlan

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

show vlan	VLAN

switchport mode

access port trunk port, switch port 802.1Q no

switchport mode {access | trunk}

no switchport mode

access	switch port access port
trunk	switch port trunk port

switch port access

trunkport

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

switchport mode	switch port
switchport trunk	trunkport native VLAN Trunk VLAN

switchport trunk

trunkport native VLAN Trunk VLAN
no trunk

switchport trunk {allowed vlan { all | [add | remove | except] vlan-list } | native vlan vlan-id}
no switchport trunk {allowed vlan | native vlan }

	Trunk VLAN
	vlan-list VLAN
	VLAN ID VLAN ID
	VLAN ID -
	10-20 ,
	1-10,20-25,30,33
allowed vlan vlan-list	all VLAN
	VLAN
	add

Native VLAN

```

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

VLAN

```

Trunk VLAN 1 4094
      Trunk VLAN VLAN
      Trunk
  
```

show interfaces switchport

```

VLAN 2 1/15
  
```

```

Ruijie(config)# interface fastethernet 1/15
Ruijie(config-if)# switchport trunk allowed vlan remove
2
Ruijie(config-if)# end
Ruijie# show interfaces fastethernet1/15 switchport
Switchport is1 TUuSed
Mode isltrunk port
Acess vlan is11,Native vlan is11
Protected isldisUuSed
Vlan lists is1
1,3-4094
  
```

show interfaces	
switchport access	statics accessport VLAN

show vlan

VLAN

show vlan [id *vlan-id*]

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

PrivateVLAN

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

private-vlan type

VLAN VLAN

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

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

community community VLAN

isolated isolated VLAN

primary primary VLAN

no VLAN

VLAN

VLAN

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

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

show vlan private-vlan

RGOS10.1

private-vlan association

secondary VLAN primary VLAN

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

no private-vlan association

svlist secondary VLAN list

no primary VLAN secondary VLAN

Primary VLAN

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

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

show vlan private-vlan

RGOS10.1

private-vlan mapping

secondary VLAN SVI

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

no private-vlan mapping

svlist secondary VLAN list

no

Primary VLAN

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

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

show vlan private-vlan

RGOS10.1

switchport mode private-vlan

private VLAN

switchport mode private-vlan{host|promiscuous}

no switchport mode

host VLAN

promiscuous VLAN

no VLAN

```
Ruijie(config)# interface gigabitEthernet0/2
```

```
Ruijie(config-if)# switchport mode private-vlan host
```

show vlan private-vlan

RGOS10.1

switchport private-vlan host-association

private VLAN

primary VLAN

secondary VLAN

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

no switchport private-vlan host-association

p_vid: primary VID

s_vid: secondary VID

no: VLAN

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

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
```

show vlan private-vlan

RGOS10.1

' **show vlan private-vlan**

show vlan private-vlan

private VLAN

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

primary	primary VLAN
community	community VLAN
isolated	isolated VLAN

private VLAN

Ruijie# **show vlan private-vlan**

RGOS10.1

Hybrid

' **switchport mode hybrid**
' **switchport hybrid native vlan**
' **switchport hybrid allowed vlan**

switchport mode hybrid

switchport mode hybrid

no switchport mode

hybrid

no

hybrid

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

switchport hybrid allowed vlan

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

vlist

no switchport hybrid allowed vlan

hybrid

no hybrid

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

RGOS10.1

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**
- ' **nmp trap mac-notification**
- ' **address-bind**

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

Ruijie(config)# **mac-address-table aging-time** 150

show mac-address-table aging-time	
show mac-address-table dynamic	

clear mac-address-table dynamic

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

clear mac-address-table filtering

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

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

show mac-address-table filtering

00d0.f800.0c0c

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

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

clear mac-address-table static

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

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

show mac-address-table static

MAC 00d0.f800.073c

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

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

mac-address-table static

no

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

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

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

%Hr ft H4w 8SHã H IÒ IÒ 2Hr fm H G m 2 G) ãn Hq 1e %2 Úf X)B K H (Ch G 42 PA 4 B, A, B, 5) 4U 4. A N C È V

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

1

50

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

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

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 *ip-address*

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

```

      IP          MAC          IP          IP
      IP          MAC          IP
MAC

```

ip 3.3.3.3 mac 00d0.f811.1112

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

show address-bind	

address-bind ip-address

ip mac .

address-bind *ip-address mac-address*

no address-bind *ip-address*

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

	IP	MAC	
IP	IP	MAC	IP
MAC			

ip 3.3.3.3 mac 00d0.f811.1112

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



MAC

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

RGOS10.1

- ' **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 mac-address-table mac-manage-learning**

show mac-address-table address

MAC

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

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

Ruijie# **show mac-address-table address 00d0.f800.1001**

```

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

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

show mac-address-table aging-time

show mac-address-table aging-time

```

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

mac-address-table aging-time	

show mac-address-table count

show mac-address-table count

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

Dynamic Address Count : 51

Static Address Count : 0

Filter Address Count : 0

Total Mac Addresses : 51

Total Mac Address Space Available: 8139

show mac-address-table static	

show mac-address-table filtering

A>le'NÀQ€<q:#4tPÄ

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

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

clear mac-address-table dynamic	

show mac-address-table filtering

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

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

MAC



clear mac-address-table filtering

MAC

show mac-address-table count	
-------------------------------------	--

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

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

Ruijie# **show mac-address-table vlan 1**

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

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

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*]

DHCP Snooping

DHCP snooping

DHCP snooping

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

ip dhcp snooping

DHCP Snooping

no

DHCP snooping

[no] ip dhcp snooping

DHCP snooping

DHCP snooping

show ip dhcp snooping

DHCP snooping

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



```
Ruijie# show ip dhcp snooping

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

show ip dhcp snooping	DHCP snooping

ip dhcp snooping verify mac-address

```
MAC
no          MAC
```

[no] ip dhcp snooping verify mac-address

```
MAC          DHCP CLIENT
MAC          DHCP   CLIENT MAC
MAC

DHCP        MAC
```

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

```
Ruijie# show ip dhcp snooping

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

show ip dhcp snooping	DHCP snooping

ip dhcp snooping binding

```
DHCP snooping
no
```

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

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

```
DHCP                      DHCP snooping
```

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

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

--	--

```

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# configure terminal
Ruijie(config)# ip dhcp snooping database write-delay
3600
Ruijie(config)# end
Ruijie# show ip dhcp snooping

Switch DHCP snooping status  ENABLE
Verification of hwaddr field status  DISABLE
DHCP snooping database write-delay time: 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 database write-to-flash

```
                                DHCP Snooping
FLASH
ip dhcp snooping database write-to-flash
```

```
                                DHCP Snooping
FLASH

                                DHCP                               flash
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping database
write-to-flash
Ruijie(config)# end
```

DHCP snooping

DHCP snooping

ip dhcp snooping trust

ip dhcp snooping address-bind

ip dhcp snooping trust

```
DHCP snooping          TRUST
                        no          UNTRUST
```

[no] ip dhcp snooping trust

UNTRUST

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

fastethernet 0/1 TRUST

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

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

FastEthernet0/11 yes

show ip dhcp snooping	DHCP snooping

ip dhcp snooping address-bind

no

[no] ip dhcp snooping address-bind

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

fastethernet 0/1

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

DHCP snooping

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

show ip dhcp snooping binding

DHCP Snooping

show ip dhcp snooping binding

DHCP Snooping

```
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
```

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

DHCP snooping

DHCP Snooping

clear ip dhcp snooping binding

debug ip dhcp snooping

clear ip dhcp snooping binding

DHCP Snooping DHCing

DHCP snooping

DHCP snooping

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

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

IGMP Snooping

deny

profile profile
deny
deny

deny	profile

profile deny

profile

profile range
profile profile

profile
deny permit

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	

permit

profile
profile

profile

permit

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

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

```

ip igmp profile	profile
deny	profile deny
permit	profile permit

ip igmp profile

```

profile-number igmp profile

```

ip igmp profile *profile-number*
no ip igmp profile *profile-number*

profile-number profile 1-65535

profile

1 profile profile

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

range	profile
ip igmp snooping filter <i>profile-num</i>	

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

IGMP Snooping VLAN VLAN

igmp snooping ivgl

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

--	--

ip igmp snooping max-groups

```

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

```

```

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 filter	

ip igmp snooping vlan mrouter interface

```

ip igmp snooping vlan mrouter
no ip igmp snooping vlan mrouter

```

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

ip igmp snooping source-check port	

ip igmp snooping vlan mrouter interface profile

VLAN

IGMP Profile

interface profile

```
ip igmp snooping vlan mrouter  
A
```

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 learr2w0 Td()Tj/58vmrp1 Tf0 Tc 0 Tw 10.617 0 Td19Td/TT1 1 Tf-2 Tr 10.5 re

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

vid vlan id

ip-addr

interface-id id

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

ip igmp snooping vlan mrouter interface	

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

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-snp


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

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

spanning-tree bpdudfilter

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

```
enabled    BPDU filter  
Disabled
```

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

“ ” no

spanning-tree link-type [point-to-point | shared]**no spanning-tree link-type**

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

Shared	shared
---------------	--------

	point-to-point
shared	

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

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

spanning-tree max-hops

Count	BPDU Instance	BPDU Region	Max-hops
		no	

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

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

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

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

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

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

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

```
show spanning-tree mst
```

```
show spanning-tree MSTP
```

spanning-tree mode

STP no

spanning-tree mode [stp | rstp | mstp]

no spanning-tree mode

stp Spanning tree protocol(IEEE 802.1d)

rstp Rapid spanning tree protocol(IEEE 802.1w)

mstp Multiple spanning tree protocol(IEEE 802.1s)

MSTP

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

show spanning-tree

spanning-tree mst configure

no MST MSTP Region
name revision vlan map

spanning-tree mst configuration

no spanning-tree mst configuration

instance vlan Vlan Instance 0
name
revision 0

end Ctrl+C

exit

MST

instance	<i>instance-id</i>	vlan	<i>vlan-range</i>	Vlan	MST Instance
	instance-id		0 64	vlan	1 4095
	<i>vlan-range</i>	vlan		VLAN ID	
	VLAN ID	' '		VLAN ID	

0 115

7 -1.9. Tc 0.36spanning-tree mst configuration)0

```
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
```

show spanning-tree mst interface interface-id

show spanning-tree mst MSTP

spanning-tree mst port-priority

spanning-tree mst priority instance

spanning-tree mst port-priority

Instance
Region
no

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

<i>Instance-id</i>	Instance	0	64							
<i>priority</i>		0	16	32	48	64	80	96	112	
	128	144	160	176	192	208	224	240	16	16

Instance-id 0

priority 128

Region

```

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

```

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

```

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

```

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

Ruijie(config)# **spanning-tree reset**

show spanning-tree STP

show spanning-tree interface STP

spanning-tree tx-hold-count

STP TxHoldCount BPDU

no

spanning-tree tx-hold-count *tx-hold-count*

no spanning-tree tx-hold-count

tx-hold-count TxHoldCount 1 10

3

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

show spanning-tree MSTP

spanning-tree pathcost method

no

spanning-tree pathcost method [long | short]

no spanning-tree pathcost method

long 802.1t path-cost

short 802.1d path-cost

802.1T Path-cost

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

show spanning-tree interface STP

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 BPDU
error-disabled **show spanning-tree**

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

show spanning-tree interface STP

spanning-tree portfast bpdudfilter default

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

BPDU filter

BPDU Filter BPDU **show**
spanning-tree

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

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

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

bpdu src-mac-check

```
bpdu mac no
bpdu mac
bpdu src-mac-check H.H.H
no bpdu src-mac-check
```

```
H.H.H mac bpdu
no bpdu
```

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

clear spanning-tree detected-protocols

```
RSTP BPDU BPDU
clear spanning-tree detected-protocols [interface interface-id]
```

```
interface-id
```

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

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

spanning-tree compatible enable

MSTI

```
spanning-tree compatible enable
```

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

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

show spanning-tree

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

```
summary          MSTP    instance
```

```
Inconsistentports
```

show spanning-tree interface

STP

```
show spanning-tree interface interface-id [{bpdufilter | portfast |  
bpduguard | link-type } ]
```

interface-id

bpdufilter bpdufilter

portfast portfast

bpduguard bpduguard

link-type linktype

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

spanning-tree bpdufilter BPDU filter

spanning-tree portfast portfast

spanning-tree bpduguard BPDU guard

spanning-tree link-type

Instance

switch	
---------------	--

switch port	routed port		SPAN	SPAN
port	SPAN			disabled

show monitor

SPAN

SPAN

1.

1

1

8

Ruijie(config)# **no monitor session**

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

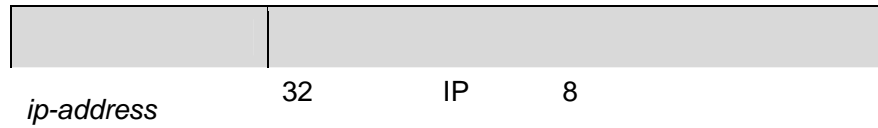
IP

ip address

IP no IP

ip address *ip-address network-mask*

no ip address *ip-address network-mask*



IP 10.10.10.1
255.255.255.0

```
ip address 10.10.10.1 255.255.255.0
```



show interface

```

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

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

```

ARP      1
    
```

```

                ARP      ARP
      ARP      ARP
    
```

ARP

30s

arp retry interval 30

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

arp retry times

arp

IP

ARP

no

5 ARP

arp retry times *number*

no arp retry times

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

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

arp trusted NUM

ARP no

arp trusted *number*

no arp trusted

<i>number</i>	ARP , <10-4096>

ARP ARP
ARP

1000 ARP

arp trusted 1000

service trustedarp	ARP

arp trusted aging

ARP no

arp trusted aging

no arp trusted aging

GSN ARP

ARP

ARP

arp timeout

service trustedarp	ARP

arp unresolve

ARP
8192

no

arp unresolve *number*

no arp unresolve

<i>number</i>	ARP 1-8192 > 8192 <

ARP

8192

IP

ARP

500

arp unresolved 500

arp gratuitous-send interval

arp

no

arp gratuitous-send interval *seconds*

no arp gratuitous-send



```
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 0/0      ARP
```

```
120
```

```
interface fastEthernet 0/0
arp timeout 120
```

IP

clear arp-cache

ARP ARP IP
clear arp-cache

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

RGOS
RGOS
RGOS

" UP"

" UP"

show ip interface

```
Ruijie# show ip interface FastEthernet 0/1  
IP interface state is: UP  
IP interface type is: BROADCAST
```

IP address is:	IP
IP address negotiate is:	IP
Forward direct-boardcast is:	
ICMP mask reply is:	ICMP
Send ICMP redirect is:	ICMP
Send ICMP unreachable 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 default-gateway

no

ip default-gateway

no ip default-gateway

ip default-gateway

DHCP Relay

DHCP Relay

DHCP

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

service dhcp

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

DHCP

```
DHCP          DHCP          DHCP
DHCP          DHCP          DHCP
```

DHCP

service dhcp

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

ip helper-address

DHCP no

DHCP

/

dhcp DHCP

61.154.26.49

ip helper-address 61.154.26.49

service dhcp	DHCP

ip dhcp relay information option dot1x

dhcp option dot1x no
dhcp option dot1x

DHCP relay 802.1x

option dot1x

ip dhcp relay suppression

```
DHCP          DHCP          no
              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)#
```

0/1

DNS

ip domain-lookup

DNS

no

DNS

ip domain-lookup

no ip domain-lookup

DNS

DNS

DNS

DNS

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

show hosts	DNS

RGOS10.1

ip name-server

IP

no

ip name-server *ip-address*

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

<i>ip-address</i>	IP

	DNS Server	IP	
DNS Server			Server
Server	DNS		
	6	DNS Server	
ip-address			DNS

Ruijie(config)# **ip name-server** 192.168.5.134

show hosts	DNS

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

no ip host host-name ip-address

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

show hosts	DNS

RGOS10.1

clear host

clear host [*host-name*]

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

DNS

1 ip host 2
DNS

SNTP

- ' **sntp enable**
- ' **sntp server**
- ' **sntp interval**

sntp enable

SNTP **no**
 —Disable
[no] sntp enable

SNTP Disable

show sntp SNTP

RedGiant(config)# **sntp enable**

show sntp	SNTP
clock update-calendar	
clock set	

RGOS10.0

sntp server

Server SNTP Server SNTP NTP
 internet

seconds " " 60 --65535

1800s

show sntp SNTP

RedGiant(config)# **sntp interval 3600**

sntp enable	SNTP
show sntp	SNTP
clock update-calendar	

RGOS10.0

:

show sntp

show sntp

SNTP

show sntp SNTP

```
RedGiant# show sntp
SNTP state           : Enable
SNTP server          : 192.168.4.12
SNTP sync interval  : 60
Time zone            : +8
```

sntp enable	SNTP
show sntp	SNTP

RGOS10.0

NTP

ntp server	NTP

ntp authenticate

NTP

NTP

ntp authentication-key

NTP

NTP

ntp disable

NTP

ntp disable

NTP

NTP

NTP

IP

NTP

no ntp

ntp server

NTP

NTP

ntp server *ip-addr* [**version** *version*] [**source** *if-name*] [**key**
keyid][**prefer**] **8c903 T6 2.129 Td[(p1(-add)-5(r))]T/C2_0 1 Tf0 Tc 0 Tf2 Tr 4 2.128 -2.143**

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

NTP

20

prefer

NTP
IP

NTP

NTP server

ntp server 192.168.210.222

no ntp	NTP

ntp synchronize

NTP

ntp synchronize

no ntp synchronize


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

ntp authenticate	
ntp authentication-key	NTP
ntp server	NTP

- ' **debug ntp**
- ' **show ntp status**

debug ntp

```
NTP
debug ntp
no debug ntp
```

NTP

NTP

NTP

debug ntp

show ntp status

NTP

show ntp status

NTP

NTP

NTP

show ntp status

SNMP

SNMP

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

no snmp-server

SNMP

no snmp-server

no snmp-server

SNMP

SNMP

SNMP

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

snmp-server chassis-id

```

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

```

text

60FF60

SNMP

show snmp

SNMP 123456:

Ruijie(config)# **snmp-server chassis-id 123456**

show snmp	SNMP

snmp-server community

```

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

```

string NMS SNMP

view-name

```

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

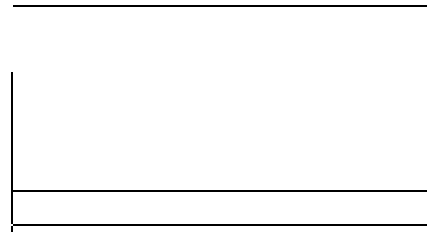
```

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
```



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 public 2.219
```

show snmp-server

SNMP

<http://www.ruijie.com.cn>

snmp

snmp-server host	SNMP

snmp-server host

SNMP NMS
snmp-server host **no** SNMP
snmp-server host *host-addr* **traps** [**version** {**1** | **2c** | **3** [**auth** | **noauth** | **priv**]}] *community-string* [**udp-port** *port-num*][*notification-type*]

no snmp-server host *host-addr*

host-addr SNMP

version snmp V1 V2C V3

auth | **noauth** | **priv** V3

community-string V3

port-num snmp

notification-type snmp

SNMP

snmp-server enable traps

NMS

SNMP

vrf

[vrf]

SNMP

SNMP

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

no snmp-server packetsize

byte-count 484 17876

1500

SNMP 1492

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

snmp-server queue-length	SNMP

snmp-server queue-length

snmp-server

queue-length

snmp-server queue-length *length*

length 1 1000

10

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



```
md5 authpassstr priv des56 despassstr
```

show snmp user	SNMP

snmp-server group

SNMP
no

snmp-server group

```
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 {auth | noauth | priv} [read readview][write writeview] [access {num | name}]
```

show snmp group	SNMP

snmp-server view

```

SNMP                                snmp-server view
no
snmp-server view view-name oid-tree {include | exclude}
no snmp-server view view-name [oid-tree]

view-name
oid-tree          MIB          MIB
include           MIB
exclude          MIB

default          MIB

MIB-2    oid    1.3.6.1
Ruijie(config)# snmp-server view mib2 1.3.6.1 include

```

show snmp view	SNMP

show snmp

```

SNMP                                show snmp
show snmp [mib | user | view | group]

```

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

SNMP

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

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

RMON

RMON

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

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

' **rmon alarm** *number variable interval* {**absolute** | **delta** }

rising-threshold *value* [*event-number*rmon f0/TT131 Tf21(w)9(w)2(w)69(.)-9(ru49 Tc 1

```
Ruijie(config-if)# rmon collection stats 1 zhansan
```

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

rmon collection history

no

```
rmon collection history index [owner ownername] [buckets  

bucket-number] [interval seconds]  

no rmon collection history index
```

```
owner  buckets  interval  

      RGOS
```

1

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

Ruijie(config-if)# rmon collection history 1 zhansan  

buckets 10 interval 10
```

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

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-threshold/falling-threshold			event	

MIB ifInNUcastPkts.6

```
Ruijie(config)# rmon alarm 10 1.3.6.1.2.1.2.2.1.12.6 30
delta rising-threshold 9.315 0 Td00 Td(rising-t30.377 -1.4
```

trap

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



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

```

Octets : 1884085
Pkts : 3096
BroadcastPkts : 161
MulticastPkts : 97
CRCAlignErrors : 0
UndersizePkts : 0
OversizePkts : 1200
Fragments : 0
Jabbers : 0
Collisions : 0
Pkts64Octets : 128
Pkts65to127Octets : 336
Pkts128to255Octets : 229
Pkts256to511Octets : 3
Pkts512to1023Octets : 0
Pkts1024to1518Octets : 1200
Owner : zhangsan
    
```

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

show rmon history

show rmon history

```

Ruijie# show rmon history
Entry : 1
Data source : Gil/1
Buckets requested : 65535
    
```

```

Buckets granted : 10
Interval : 1
Owner : zhangsan
Sample : 198
Interval start : 0d:0h:15m:0s
DropEvents : 0
Octets : 67988
Pkts : 726
BroadcastPkts : 502
MulticastPkts : 189
CRCAlignErrors : 0
UndersizePkts : 0
OversizePkts : 0
Fragments : 0
Jabbers : 0
Collisions : 0
Utilization : 0
    
```

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

show rmon alarm

show rmon alarm

```

Ruijie# show rmon alarm
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

Rising threshold : 10
Falling threshold : 22
Rising event : 0
Falling event : 0
Owner : zhangsan

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

```
' storm-control
' switchport protected
' switchport port-security
' switchport port-security aging
' switchport port-security mac-address
' port-security arp-check
```

storm-control

no

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

```
no storm-control {broadcast | multicast
```

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

show interfaces	

switchport port-security

no

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

no switchport port-security [violation]

port-security	
violation protect	
violation restrict	trap
violation shutdown	Trap

IP()
)

MAC
(

1

M

Gigabitethernet 1/1
shutdown

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

show port-security	

switchport port-security aging

no

switchport port-security aging {static | time time }

no switchport port-security aging {static | time }

Static	
time time	0 1440 0

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

gigabitethernet 1/1
00d0.f800.073c IP 192.168.12.202

```
Ruijie# configure terminal  
Ruijie(config)# interface gigabitethernet 1/1  
Ruijie(config-if)# switchport mode access  
Ruijie(config-if)# switchport port-security  
Ruijie(config-if)# switchport port-security  
mac-address 00d0.f800.073c ip-address 192.168.12.202
```

show port-security	

arp-check

ARP no

[no | default] arp-check [cpu | auto]

cpu CPU
auto

Arp-check
Arp arp

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

show port-security	

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

show storm-control

show storm-control [*interface-id*]

<i>interface-id</i>	

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

```
-----  
Gi1/1 Disabled Disabled Disabled
```

storm-control	

show port-security

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

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

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

switchport port-security	
switchport port-security aging	
switchport port-security mac-address	

802.1X

dot1x

dot1x

' dot1x auto-req

' dot1x auto-req p

```
Packet-Num : 0
Req-Interval: 30 Second
```

show dot1x auto-req	

dot1x auto-req packet-num

no

```
dot1x auto-req packet-num num
no dot1x auto-req packet-num
```

num

num = 0;

show dot1x

auto-req

802.1x

```
Ruijie# configure terminal
Ruijie(config)# dot1x auto-req packet-num 0
Ruijie(config)# end
Ruijie# show dot1x auto-req
```

```
Auto-Req: Enabled
User-Detect : Enabled
Packet-Num : 0
Req-Interval: 30 Second
```

--	--

<code>show dot1x auto-req</code>	
----------------------------------	--

dot1x auto-req req-interval

no

`dot1x auto-req req-interval interval`

`no dot1x auto-req req-interval`

dot1x auto-req user-detect

no

dot1x auto-req user-detect

no dot1x auto-req user-detect

show dot1x auto-req

```
Ruijie# configure terminal  
Ruijie(config)# dot1x auto-req user-detect  
Ruijie(config)# end  
Ruijie# show dot1x auto-req
```

```
Auto-Req: Enabled  
User-Detect : Enabled  
Packet-Num : 0  
Req-Interval: 60 Second
```

show dot1x auto-req	

dot1x

dot1x

' **dot1x timeout quiet-period**

```
' dot1x timeout re-authperiod  
' 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  
Ruijie(config)# dot1x timeout quiet-period 1000  
Ruijie(config)#
```

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 re-authperiod

no

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

```

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

```

show dot1x	802.1x

dot1x timeout supp-timeout

no

```

dot1x timeout supp-timeout seconds
no dot1x timeout supp-timeout

```

```

seconds                                0
65535

```

3

```

show dot1x

```

10s

```

Ruijie# configure terminal
Ruijie(config)# dot1x timeout supp-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: 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

```

show dot1x

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

dot1x

- ' **dot1x re-authentication**
- ' **dot1x reauth-max**

dot1x re-authentication

no

[no] dot1x re-authentication**show dot1x**

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

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

show dot1x	802.1x

dot1x reauth-max

no

dot1x reauth-max *count*

no dot1x reauth-max

count

3

show dot1x

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

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

show dot1x	802.1x

dot1x

- ' dot1x probe-timer
- ' dot1x client-probe enable

dot1x probe-timer

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

no

alive

interval

interval hello

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**

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

list-name

AAA

AAA

AAA

dot1x

```

AAA
enable AAA dot1x authentication auth
aaa domain auth

```

```

" AAA "

```

group radius

```

Ruijie# configure terminal
Ruijie(config)# aaa new-model
Ruijie(config)# aaa authentication dot1x default group
radius
Ruijie(config)# dot1x authentication default
Ruijie(config)# end
Ruijie#

```

aaa new-model	AAA
aaa authentication dot1x	

dot1x accounting

AAA

AAA

no

```

dot1x accounting {default | list-name}
no dot1x accounting {default | list-name}

```

default*list-name*

AAA default

AAA dot1x

enable AAA dot1x accounting aaa domain

AAA "

group radius

```
Ruijie# configure terminal  
Ruijie(config)# aaa new-model  
Ruijie(config)#aaa accounting network
```

802.1X

show dot1x

auth-address table

```

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

```

show dot1x auth-address-table	802.1X

dot1x auth-mode

802.1x

dot1x auth-mode {eap-md5 | chap | pap}**no dot1x auth-mode****eap-md5** 802.1x EAP-MD5**chap** 802.1x CHAP**pap** 802.1x PAP

EAP-MD5

show dot1x

802.1x

802.1x

dot1x dynamic-vlan enable

vlan no

```
dot1x dynamic-vlan enable
no dot1x dynamic-vlan enable
```

show dot1x dynamic-vlan

802.1x vlan

```
Ruijie# configure terminal
Ruijie(config)# dot1x dynamic-vlan enable
Ruijie(config)# end
Ruijie#
```

show dot1x	802.1x

dot1x eapol-tag

EAPOL TAG

```
dot1x eapol-tag
no dot1x eapol-tag
```

show dot1x

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***no dot1x max-req***count*

3

show dot1x

802.1x 7

Ruijie# **configure terminal**


```
dot1x port-control-mode {mac-based | port-based}  
no dot1x port-control-mode
```

```
mac-based      mac  802.1X
```

```
port-based      802.1X
```

```
mac-based
```

```
show dot1x port-control      802.1x
```

```
802.1x
```

```
Ruijie(config)#
```

802.1x

```
Ruijie# configure terminal
Ruijie(config)# dot1x stationarity enable
Ruijie(config)# end
Ruijie#
```

dot1x

```
' show dot1x
' show dot1x auth-address-table
' show dot1x auto-req
' show dot1x private-supPLICANT-only
' show dot1x max-req
' show dot1x port-control
' show dot1x probe-timer
' show dot1x re-authentication
' show dot1x reauth-max
' show dot1x summary
' show dot1x timeout
' show dot1x user id
```

show dot1x

802.1x

show dot1x

```
Ruijie# show dot1x
802.1X Status:      Enabled
Authentication Mode: EAP-MD5
Authed User Number: 0
Re-authen Enabled:  Disabled
Re-authen Period:   3600 sec
Quiet Timer Period: 10 sec
Tx Timer Period:    3 sec
```

802.1X 认证失败原因

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 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 timeout tx-period	

show dot1x max-req

show dot1x max-req

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

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 port-control

show dot1x port-control [*interface interface*]

interface

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



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

```
Hello Interval: 20 Seconds
```

```
Hello Alive: 250 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 timeout tx-period	

show dot1x re-authentication

```
show dot1x re-authentication
```

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

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

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	

```

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

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 timeout

802.1X

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

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

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

dot1x timeout quiet-period

802.1x
802.1x

HTTP IP 172.16.0.1

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

show http redirect	HTTP

http redirect direct-site

no

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

```
ip-address IP
ip-mask IP
arp ARP CHECK
ARP arp
```

802.1x

50

IP 172.16.0.1

```
Ruijie# configure terminal
Ruijie(config)# http redirect direct-site 172.16.0.1
```



show http redirect

HTTP

http redirect port *port-num*

no http redirect port *port-num*

80 HTTP

HTTP

HTTP

80 HTTP

PC

HTTP

10

80

PC

8080 HTTP

```
Ruijie# configure terminal
```

```
Ruijie(config)# http redirect port 8080
```

show http redirect	HTTP

http redirect session-limit

session-num HTTP 1-10

HTTP 3

HTTP TCP

HTTP

HTTP

HTTP

HTTP

1

HTTP 4

Ruijie# **configure terminal**

Ruijie(config)# **http redirect session-limit 4**

show http redirect	HTTP

http redirect timeout

no

3

http redirect timeout *seconds*

no http redirect timeout

seconds

1-10

3

HTTP GET/HEAD HTTP
GET/HEAD

TCP

4

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

show http redirect	HTTP

show http redirect

HTTP

show http redirect

HTTP

```
Ruijie# show http redirect
HTTP redirection settings:
  server:          192.168.32.123
  port:           80 8000
  homepage: http://192.168.32.123:8888/ePortal/index.jsp
  session-limit: 10
  timeout:       5
```

Direct sites:

Address	MASK	ARP Binding
-----	-----	-----

61.233.3.215	255.255.255.255	On
61.233.3.220	255.255.255.255	Off
192.168.5.140	255.255.255.255	Off
218.30.66.101	255.255.0.0	Off
218.30.66.101	255.255.255.255	Off

default

**aaa authentication {dot1x | enable | ppp | login} default group
radius**

AAA

AAA

aaa authentication

RDS_D1X AAA

RADIUS

RADIUS

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

aaa new-model	AAA
dot1x authentication	DOT1x
ppp authentication	PPP
login authentication	Login
username	

RGOS

RADIUS

```
Ruijie(config)# aaa accounting network 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

show aaa method-list

```
method-list EXEC show aaa  
show aaa method-list
```

EXEC

```
Ruijie# show aaa method-list
```

AAA

```
AAA  
' aaa domain enable  
' aaa domain {default | WORD}  
' authentication  
' accounting  
' authorization  
' state {block | active}  
' username-format {without-domain | with-domain}  
' access-limit <1-1024>  
' show aaa domain [word]
```

aaa domain enable

```
AAA AAA no  
aaa domain enable  
no aaa domain enable
```


AAA

Ruijie(config-domain)#

Show aaa domain	
-----------------	--

accounting

no

accounting { update | network } { default | *methodlist* }**no accounting { update | network }****default:***methodlist*

default

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

aaa new-model	AAA
aaa domain enable	AAA
Show aaa domain	

authorization

no

authorization { ip-auth-mode | network } { default | *methodlist* }**no authorization { ip-auth-mode | network }**


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

aaa new-model	AAA
aaa domain enable	AAA
Show aaa domain	

username-format

NAS

no

username-format {without-domain | with-domain}

no username-format

without-domain:

with-domain

NAS

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

aaa new-model	AAA
aaa domain enable	AAA
Show aaa domain	

access-limit <1-1024>

1X

no

access-limit <1-1024>**no access-limit**

<1-1024>:

802.1X

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

aaa new-model	AAA
aaa domain enable	AAA
Show aaa domain	

show aaa domain

EXEC **show aaa domain**

show aaa domain {Domain name|Default}

Domain name

Default:

EXEC

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

```
=====Domain ruijie.com=====
```

```
State: Active
```

```
Username format: Without-domain
```

```
Access limit: No limit
```

```
802.1X Access statistic: 0
```

```
Selected method list:
```

```
authentication login default
```

```
Ruijie(config)#
```

AAA

- ' **show aaa group**
- ' **aaa group server**
- ' **server ip-addr authen-port port1 acct-port port2**
- ' **ip vrf forwarding**

show aaa group

AAA

show aaa group

AAA

```
Ruijie# show aaa group
Group Name:  ss
Group Type:  radius
Referred:    2
Server List:
IP Address:  192.168.217.64
Authentication Port: 1812
Accounting Port: 1813
Referred:    1
Ruijie#
```

aaa group server	AAA

aaa group server

AAA

no

aaa group server radius *name*

no aaa group server radius *name*

AAA

name

"radius" "tacacs+"

AAA

Radius

Ruijie(config)#

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

aaa group server	aaa
show aaa group	aaa

ip vrf forwarding

AAA vrf no

ip vrf forwarding *vrf_name*

no ip vrf forwarding

vrf_name vrf

vrf

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

aaa group server	aaa
show aaa group	aaa

AAA

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

aaa new-model

RGOS AAA

AAA

AAA
aaa new-model AAA AAA AAA

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

aaa authentication	

debug aaa

AAA no
debug aaa
no debug aaa

EXEC

show aaa method-list

AAA
show aaa method-list

AAA

AAA

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



login

Ruijie#**configure terminal**

Ruijie(config)#**aaa local authentication attempts 6**

Ruijie0(config)#

Show running-config	
Show aaa lockout	login

aaa local authentication lockout-time

login

aaa local authentication lockout-time <1-2147483647>

<1-2147483647>

15

login



Show running-config	
Show aaa lockout	login

show aaa user lockout

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

ID

Ruijie# **clear aaa local user lockout all**

Show running-config	
Show aaa lockout	login

RADIUS

RADIUS

RADIUS

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

ip radius source-interface

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

Interface radius

radius

```
radius nas
radius ip
radius
```

```

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

radius-server host	RADIUS
ip address	ip

radius-server host

```

RADIUS
no
RADIUS
radius-server
radius-server host {hostname | ip-address} [auth-port port-number]
[acct-port port-number][key [0|7] text]
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

text
0
7
    
```

RADIUS

RADIUS AAA
radius-server

RADIUS
RADIUS

0 7 0
0

7

service password-encryption

```

RADIUS
RADIUS
RADIUS
radius-server host ip key
0 7 0
0
service password-encryption RADIUS
7 show running RADIUS
show running 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
radius-server key	RADIUS

radius-server deadtime

```

t
t      t      RGOS      RADIUS
      deadtime
      radius-server deadtime
no
radius-server deadtime minutes
no radius-server deadtime

minutes      1-1000
```

5

10

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



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

radius attribute

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

RADIUS

15	file-name-4	15
----	-------------	----

19	flux-max-low32	19
20	proxy-avoid	20
21	dailup-avoid	21
22	ip privilege	22
23	login privilege	42
24	limit to user number	50

max up-rate 211

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

radius set qos cos	radius qos cos

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]**
- ' **show radius server**
- ' **show radius parameter**
- ' **show radius vendor-specific**

debug radius

RADIUS no RADIUS

- debug radius [event | detail]**
- no debug radius [event | detail]**

EXEC

show radius server

RADIUS

show radius server

radius

```
Ruijie# show radius server  
server ip : 192.168.4.12  
acct port: 23
```

RADIUS

authen port: 77

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

show radius vendor-specific

RADIUS

show radius vendor-specific

radius

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

RADIUS

16	max up-rate	75
17	version to server	17
18	flux-max-high32	18
19	flux-max-low32	19
20	proxy-avoid	20
21	dailup-avoid	21
22	ip privilige	22
23	login privilige	42
24	limit to user number	50

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

TACACS+

TACACS+

TACACS+

```
'  aaa group server tacacs+
'  ip tacacs source-interface
'  ip vrf forwarding(TACACS+)
'  server(TACACS+)
'  tacacs-server host
'  tacacs-server key
'  tacacs-server timeout
```

aaa group server tacacs+

TACACS+

TACACS+

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

```
group-name TACACS+
```

TACACS+

TACACS+

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

```
Ruijie(config-gs-tacacs+)# server 1.1.1.1
```

server	TACACS+	server
ip vrf forwarding	TACACS+	VRF

server(TACACS+)

TACACS+

server *ip-address*

no server *ip-address*

ip-address TACACS+

TACACS+

aaa group server tacacs+

TACACS+

TACACS+

tacacs-server host

ip vrf forwarding	TACACS+	VRF
--------------------------	---------	-----

ip vrf forwarding(TACACS+)

```

TACACS+
)

```

```
ip vrf forwarding vrf-name
```

```
no ip vrf forwarding
```

```
vrf-name vrf
```

```
TACACS+
```

```
TACACS+ vrf
```

```
TACACS+ VRF vpn1
```

```
Ruijie(config)# aaa group server tacacs+ tac1
```

```
Ruijie(config-gs-radius)# server 1.1.1.1
```

```
Ruijie(config-gs-radius)# ip vrf forwarding vpn1
```

aaa group server tacacs+	TACACS+
server	TACACS+ server

Interface TACACS+

TACACS+

TACACS+ nas
TACACS+
ip TACACS+

TACACS+ fastEthernet 0/0 ip
TACACS+

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

R06D! r T R0A c s c r

TACACS+ AAA
tacacs-server

TACACS+
TACACS+

TACACS+

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

TACACS+

```
' debug tacacs+'  
,
```

TACACS+

Socket Closes: 0
Total Packets Sent: 0
Total Packets Recv: 0
Reference Count: 0

tacacs-server host	TACACS+


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

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

RGOS10.1

ip ssh version

SSH server no

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

1	SSH Server	SSH1
2	SSH Server	SSH2

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

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


show ip ssh	ssh-server

RGOS10.1

ip ssh authentication-retries

SSH Server

no

ip ssh authentication-retries *retry times***no ip ssh authentication-retries**

<i>retry times</i>	

3

no ip ssh**authentication-retries**

SSH Server

SSH

Server

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}

--	--

rsa	RSA
dsa	DSA

SSH Server

Ruijie# **show crypto key mypubkey rsa**

crypto key generate {rsa dsa}	DSA RSA

RGOS10.1

disconnect ssh

SSH

disconnect ssh [vty] *session-id*

<i>session-id</i>	SSH

DAI

VLAN DAI

```
ip arp inspection vlan
```

ip arp inspection vlan vlan-id

```

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

```

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

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

<i>vlan-id</i>	vlan

```
VLAN DAI
```

```
DAI
```

```
VLAN 1 ARP
```

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

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

--	--

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

ip arp inspection trust

trust no ip arp inspection trust

no ip arp inspection trust

ip arp inspection

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

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	2048	1

```

                                15 ARP /
0

```

DAI

```

                                VLAN 2          gigabitEthernet 0/2
10 ARP /
Ruijie(config)# ip arp inspection
Ruijie(config)# interface gigabitEthernet 0/2
Ruijie(config-if)# ip arp inspection limit-rate 10

```

DHCP Snooping

```

                                VLAN          DAI          ARP
                                DHCP Snooping .
                                DHCP Snooping          DHCP
Snooping

```

arp

arp

arp

arp

anti-arp-spoofing ip

anti-arp-spoofing ip

Ruijie(config)#tag-support enable

ACL

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

text

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	27	Z	flags	59
L	IP	28	a	Windows size	60
M	ID	30	b		62
N	Flags	32			

SNAP tag 802.3

- ' **access-list**
- ' **ip access-list**
- ' **mac access-list**
- ' **ipv6 access-list**
- ' **ip access-list resequence**

ACL

- ' **deny**
- ' **permit**
- ' **list-remark text**
- ' **no sn**

- ' **ip access-group**
- ' **mac access-group**
- ' **ipv6 traffic-filter**

access-list

no

1) 1 IP 1 - 99 1300 - 1999

access-list

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 2700 - 2899 700 - 799

deny

permit

source

source-wildcard 0.255.0.32

protocol IP EIGRP GRE IPINIP IGMP
 NOS OSPF ICMP UDP TCP IP IP
 0-255 ICMP/TCP/UDP

destination

destination-wildcard

0.255.0.32

fragments

precedence

precedence 0-7
time-range
time-range-name
tos
tos 0-15
icmp-type ICMP 0-255
icmp-code ICMP 0-255
icmp-message ICMP
operator lt- eq- gt- neq- range-
port [*port*] *range*
host *source-mac-address*
host *destination-mac-address*
VID *vid* *vid*
ethernet-type
match-all *tcp flag*
tcp-flag tcp flag

ACL

access-list

IP 1-99 1300-1999
 IP 100-199 2000-2699
 MAC 700-799 MAC
 Expert 2700-2899
 VLAN ID
 TCP Flag
 ' urg
 ' ack
 ' psh
 ' rst

' **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**

'

,

' net-redirect
' net-tos-redirect
' net-tos-unreachable
' net-unreachable
' network-unknown
' no-room-for-option
' option-missing
' packet-too-big
' parameter-problem
' port-unreachable
' precedence-unreachable
' protocol-unreachable
' redirect
' router-advertisement
' router-solicitation
' source-quench
' source-route-failed
' time-exceeded
' timestamp-reply
' timestamp-request
' ttl-exceeded
' unreachable

TCP

TCP

' bgp
' chargen
' cmd
' daytime
' discard
' domain
' echo
' exec
' finger
' ftp
' ftp-data
' gopher
' hostname
' ident

' **irc**
' **klogin**
' **kshell**
' **login**
' **nntp**
' **pim-auto-rp**
' **pop2**
' **pop3**
' **smtp**
' **sunrpc**
' **syslog**
' **tacacs**
' **talk**
' **telnet**
' **time**
' **uucp**
' **whois**
' **www**

 UDP UDP

' **biff**
' **bootpc**
' **bootps**
' **discard**
' **dnsix**
' **domain**
' **echo**
' **isakmp**
' **mobile-ip**
' **nameserver**
' **netbios-dgm**
' **netbios-ns**
' **netbios-ss**
' **ntp**
' **pim-auto-rp**
' **rip**
' **snmp**
' **snmptrap**

```
' sunrpc
' syslog
' tacacs
' talk
' tftp
' time
' who
' xdmcp
```

Ethernet-type

```
' aarp
' 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 02Tst
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 2Tst 192.168.12.3 mac 00d0.f800.0044 any
any

```

```

10 permit any any any any

```

show access-lists	
mac access-group	MAC

S2300

ACL

ACL

ip access-list

```

no IP ACL IP ACL
ACL

```

```

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

```

```

no ip access-list {extended | standard} {id | name}

```

```

id IP 1-99 1300-1999 100-199
2000-2699
name IP

```

ACL

```

ACL deny permit ACL show ip
access-lists

```

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
name MAC

MAC ACL

name ACL

show access-lists ACL

IPV6 ACL

```
Ruijie(config)# ipv6 access-list v6-acl  
Ruijie(config-ipv6-nacl)# show access-lists  
ipv6 access-list extended v6-acl  
Ruijie(config-ipv6-nacl)#
```



show access-lists

ACL

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#

```

show access-lists	

RGOS10.0

deny

(deny)

ACL

ACL

1) IP

```
[sn] deny {source source-wildcard | host source | any}
```

2) IP

```
[sn] deny protocol source source-wildcard destination
destination-wildcard [precedence precedence] [tos tos] [fragments]
[time-range time-range-name]
```

IP

Internet Control Message Protocol (ICMP)

```
[sn] deny 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*] **deny tcp** {*source source-wildcard* | **host** *Source* | **any**} [*operator*
port [*port*]] {*destination destination-wildcard* | **host** *destination* | **any**}
[*operator* **port** [*port*]] [**precedence** *precedence*] [**ip** *ip*] [**udp** *udp*] [**tcp** *tcp*] [**port** *port*] [**time-range** *time-range-name*] [**match-all**]

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

Transmission Control Protocol (TCP)

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

User Datagram Protocol (UDP)

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

5) 5 IPV6

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

IPV6

Internet Control Message Protocol (ICMP)

[*sn*]**deny icmp** {*source-ipv6-prefix / prefix-length* | **any**
source-ipv6-address | **host**} {*destination-ipv6-prefix / prefix-length*
| **host** *destination-ipv6-address* | **any**} [*icmp-type*] [[*icmp-type*
[*icmp-code*]] | [*icmp-message*]] [**dscp** *dscp*] [**flow-label**] [**flow-label**] [**flow-la**

any][*operator port [port]*] [**dscp** *dscp*] [**flow-label** *flow-label*]
[fragments] [**time-range** *time-range-name*]

access-list

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

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

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

RGOS10.0

permit

ACL (permit) ACL

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**

Transmission Control Protocol (TCP)

[sn] **permit tcp** [VID [out][inner in]]{source source-wildcard | host Source | any} {host source-mac-address | any} [operator port [port]] {destination destination-wildcard | host destination | any} {host destination-mac-address | any} [operator port [port]] [precedence precedence] [tos tos] [fragments] [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] [

Internet CoT0 1ntr0 TM-0. age Pr Tf 0 0026 Tc 0.00

deny

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 any
Ruijie(config-exp-nacl)#

```

```

IP      ACL      IP      192.168.4.12
TCP      100      1

```

```

Ruijie(config)# ip access-list extended 102
Ruijie(config-ext-nacl)# permit tcp host 192.168.4.12
eq 100 any
Ruijie(config-ext-nacl)# show access-lists
ip access-list extended 102
10 permit tcp host 192.168.4.12 eq 100 any
Ruijie(config-ext-nacl)# exit
Ruijie(config)# interface gigabitEthernet 1/1
Ruijie(config-if)# ip access-group 102 in
Ruijie(config-if)#

```

```

MAC      ACL      MAC      0013.0049.8272
1

```

```

Ruijie(config)# ip access-list ethernet
102
host ig-ext-nacl# 8.6-0.0019 78.56 0 any 7019 7rp 0.6 0 102 100 any
Rmacie(config-ext-nacl)#

```

```

mac access-list extended
10 permit host 0013.0049.8272 any aarp702
Ruijie(config-mac-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# mac access-group 702 in

      ip      ACL                IP 192.168.4.12
      1

Ruijie(config)# ip access-list standard std-acl
Ruijie(config-std-nacl)# permit host 192.168.4.12
Ruijie(config-std-nacl)# show access-lists
ip access-list standard std-acl
10 permit host 192.168.4.12
Ruijie(config-std-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# ip access-group std-acl in

      IPV6    ACL                IP 192.168.4.12
      1

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

```

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

RGOS10.0

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

```
access-group           no
ip access-group {id | name} {in | out}
```

ip

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

id IP 1-199 1300-2699 1-1BT

id MAC 700-799

name MAC

in

out

IPV6 ACL

ACL

show ipv6 traffic-filter

access-list v6-acl Gigabit 1

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

Ruijie(config-if)# **ipv6 traffic-filter v6-acl in**

show access-group	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 101
mac access-list extended mac-acl
expert access-list extended exp-acl
ipv6 access-list extended v6-acl
```

ip access-list	IP ACL
mac access-list	MAC ACL
expert access-list	Expert ACL
ipv6 access-list	IPv6 ACL

RGOS10.0

show ip access-group

IP ACL

show ip access-group[interface <interface>]

<interface>

IP ACL

IP

ACL

```
Ruijie# show ip access-group interface gigabitethernet
0/1
ip access-group aaa in
Applied On interface GigabitEthernet 0/1.
```

ip access-list	IP 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

```
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

QoS

QoS

QoS

1 policy-map

IP-Precedence to DSCP

IP-Precedence	0	1	2	3	4	5	6	7
DSCP	0	8	16	24	32	40	48	56

DSCP to CoS

DSCP	0	8	16	24	32	40	48	56
CoS	0	1	2	3	4	5	6	7

mls qos trust

Qos

mls qos trust [cos | dscp | ip-precedence]**no mls qos trust**

cos	Qos	CoS
dscp	Qos	DSCP
<i>ip-precedence</i>	Qos	IP-PRE
no		

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

```
show mls qos interface interface-id
```

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

```

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

```

```

MAC ACL, me
Ruijie(config)# mac access-list extended me
ACL
Ruijie(config-ext-macl)# permit host 1111.2222.3333 any
ACL
Ruijie(config-ext-macl)# exit
class-map, cm
Ruijie(config)# class-map cm
ACL
Ruijie(config-cmap)# match access-group me
class-map
Ruijie(config-cmap)# exit

show mac access-lists
show ip access-lists
show class-map

```

Policy Maps

```

policy map          policymap
[no] policy-map policy-map-name
policy map          class-map ,
[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

WRR

```
Ruijie(config)# no priority-queue
```

show mls qos queueing

priority-queue cos-map

CoS

show mls qos queueing

mls qos map cos-dscp

CoS DSCP

mls qos map cos-dscp *dscp1...dscp8*

no mls qos map cos-dscp

dscp

no

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

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

p cos-dsp (J/csp/0s) # 10.006 0 Td<1173.88 679.4003 Tm2741801.)1mmj

wrr

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

```
show mls qos scheduler
```

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
```

show class-map

class map

show class-map [*class-name*]

class-name class map

class map

Ruijie# **show class-map**

show policy-map

QoS policy map [class *class-name*]

show policy-map [*policy-name* [**class** *class-name*]]

policy-name policy name

class-name class map

policy name

Ruijie# **show policy-map**

show mls qos maps

dscp-cos maps, dscp-cos maps ip-prec-dscp maps

show mls qos maps [cos-dscp | dscp-cos]

cos-dscp cos-dscp maps

dscp-cos dscp-cos maps

dscp-cos maps dscp-cos 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**


```
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

RLDP

RLDP

fas 0/1

rldp

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

rldp enable	rldp

rldp reset

rldp shutdown disable

rldp

rldp reset

```
Ruijie# rldp reset
```

rldp enable	Rldp

RLDP

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**

cat

cat type {bin | text} file path

cat file path type {bin | text}

bin	
text	
path	()

cp

cp dest {*DESTINE_FILE* | *DIRECTORY*} **sour** *SOURCE_FILE*
cp sour *SOURCE_FILE* **dest** {*DESTINE_FILE* | *DIRECTORY*}

DESTINE_FILE

DIRECTORY

SOURCE_FILE ()

cp

log.txt :

Ruijie# **cp sour** *log.txt* **dest** *../log_bak.txt*

ls

ls *PATHNAME*

PATHNAME

Ruijie# **ls**

tmp

Ruijie# **ls** tmp

makefs

makefs dev *DEVNAME* **fs** *FSNAME*

makefs fs *FSNAME* **dev**

b

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*

rmdir

rmdir *DIRECTORY*

DIRECTORY ,

logging on

no

logging on

no logging on

RGOS Console VTU
Server FLASH Syslog
1 Log

Ruijie(config)# **no logging on**

logging buffered	
logging	Syslog Server
logging file flash:	FLASH

logging console

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)

show logging

6

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

--	--

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
```

no

logging source interface *interface-type interface-number*

no logging source interface

interface-type

interface-number

Syslog Server

Loopback 0

Syslog

Ruijie(config)# **logging source interface loopback 0**

logging	Syslog Server

logging source ip

no

logging source ip *A.B.C.D*

no logging source ip

A.B.C.D IP

Syslog Server

Loopback 0 Syslog

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

logging	Syslog server

logging facility

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

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
0 6

Log Debug Log
Debug 7

uptime

* * * * 07:00:10:41

datetime
16:53:07

Jul 27

RTC

Uptime

Datetime

Log

Debug

Datetime

Ruijie(config)# **service timestamps debug datetime**

Ruijie(config)# **service timestamps log datetime**

logging on	
service sequence-numbers	

service sysname

no

service sysname

no service sysname

```
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
```

show logging	

more flash

FLASH

more flash:filename

Filename

FLASH

"/f2" "/f3"

FLASH

```
Ruijie# more flash://f2/log.txt
look up file in the extended flash://f2/log.txt
```

00004 2004-11-17 4:1:32 Ruijie: %5:Reload requested by Administrator. Reload Reason :Reload command

logging file flash:	FLASH

clear logging

clear logging

Ruijie# **clear logging**

logging on	
show logging	
logging buffered	

show logging

show logging

show logging

```
Ruijie# show logging
Syslog logging: enabled
Console logging: level debugging, 4 messages logged
Monitor logging: level informational, 0 messages logged
Buffer logging: level debugging, 6 messages logged
Timestamp debug messages: datetime
Timestamp log messages: disabled
Sequence log messages: enable
Trap logging: level debugging, 2 message lines logged, 0
reserved, 0 fail
logging to 202.101.11.22
logging to 192.168.200.112
Log Buffer (Total 4096 Bytes) : have written 680
00001 2004-11-17 10:20:59 Ruijie: %7:%LINK CHANGED:
Interface FastEthernet 0/0, changed state to up
00002 2004-11-17 10:20:59 Ruijie: %7:%LINE PROTOCOL
CHANGE: Interface FastEthernet 0/0, changed state to UP
00003 2004-11-17 10:57:18 Ruijie: %7:%LINK CHANGED:
Interface FastEthernet 0/1, changed state to
administratively down
00004 2004-11-17 10:57:21 Ruijie: %7:%LINK CHANGED:
Interface FastEthernet 0/1, changed state to down
00005 2004-11-17 10:57:41 Ruijie: %7:%LINK CHANGED:
Interface FastEthernet 0/1, changed state to
administratively down
00006 2004-11-17 10:57:43 Ruijie: %7:%LINK CHANGED:
Interface FastEthernet 0/1, changed state to down
```

Syslog logging	disabled enabled,
Console logging	

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

logging on	
clear logging	

show logging count

show logging count

count

show logging count

logging

```
=====
SYS          CONFIG_I          5  1          Jul 6 10:29:57
-----
SYS TOTAL                    1
```

logging count	
show logging	
clear logging	

- ' **device-priority**
- ' **device-description**
- ' **show member**

device-priority

device-priority [*member*] *priority*

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

```

10
1
1 10

```

write

```

2 8

```

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

show member	

device-description

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

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

