



RG-S2700

©2009

RGOS®10.2(4)

-
-
-

1.

5

注意、说明

Courier New

5

2.

Arial

[] []

{x|y|...}

[x|y|...]

//

3.

r 注意:

📖 说明:

📖 说明:

1)

2)

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"
Ruijie(config-if)# ia ?
A.B.C.D IP address
dhcp    IP Address via DHCP
Ruijie(config-if)# ip address
"ip address"
show aliases
"def-route"
"ip route 0.0.0.0 0.0.0.0 192.168.1.1"
Ruijie# configure terminal
Ruijie(config)# alias config def-route ip route 0.0.0.0
0.0.0.0 192.168.1.1
Ruijie(config)# def-route?
```

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

show aliases	

privilege

privilege **no**

privilege *mode* [**all**] {**level level** | **reset**} *command-string*
no privilege *mode* [**all**] [**level level**] *command-string*

mode CLI

[**all**]

level level 0-15

reset

command-string

privilege CLI

privilege ? CLI

config	

exec	
interface	
ip-dhcp-pool	DHCP
keychain	KeyChain
keychain-key	KeyChain-key

mode

CLI

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

disable

 说明:

disable

Ruijie# **disable** 10

enable	

enable

enable

(Mp@

```

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**

--	--

line

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 |007 Tc 0.611 0 Td[(.5Y Td[(5-1 Tf3.9.611 0 Td[(.5Y Td[(1(
```

15

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

login local	

lock

EXEJTJC1 Tf00 Tc 2 Tr 10.5 0.97.88 567<1FF514

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

/source-interface	telnet

telnet

telnet 192.168.1.11

vlan 1

Ruijie# **telnet** 192.168.1.11 /**source-interface** vlan 1

Show session	TTY
exit	

enable service

SSH Server/Telnet Server/Web Server/Snmp

Agent

enable service

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

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

no enable service

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



Web

no ip http authentication

ip http authentication local, Web

local

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

enable service	

ip http port

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

clock set

clock set

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

hh:mm:ss

24



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%	bufcopy
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



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 memory

show memory

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

show memory

Physical Memory	
Image	
Application Memory	used available available
Utilization	

56 2242398

103d()TQ0.852 g33

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 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**

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

speed

```
no speed
speed speed
```

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

9600

57600 bps

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

show line

```
show line console 0
```

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

console

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

write

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
VTY
no
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
default transport input
Line
LINE

transport input {all | ssh | telnet | none}
default transport input

```

all	Line
ssh	Line SSH
telnet	Line Telnet

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

VTY TTY
 NONE
default transport input

Line

Line VTY
 VTY **show running** Line

r 注意:

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

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

show running	

RGOS10.1

-
- | | | | |
|---|--------|------------------|--------------------|
| | | 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**

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
```

Traceroute

traceroute

```
traceroute [ip ip-address][ip-adress [probe number ] [source
source-address] [timeout seconds] [ttl minimum maximum]]
```

<i>ip-address</i>	IPv4
<i>number</i>	
<i>source-address</i>	IPV4

```

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
```

```
Translating " www.ietf.org "...[OK]
```

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

```
Tracing the route to 64.170.98.32
```

```

1      192.168.217.1   0 msec  0 msec  0 msec
2      10.10.25.1      0 msec  0 msec  0 msec
3      10.10.24.1      0 msec  0 msec  0 msec
4      10.10.30.1     10 msec  0 msec  0 msec
5      218.5.3.254    0 msec  0 msec  0 msec
6      61.154.8.49    10 msec  0 msec  0 msec
7      202.109.204.210 0 msec  0 msec  0 msec
8      202.97.41.69   20 msec 10 msec 20 msec
9      202.97.34.65   40 msec 40 msec 50 msec
10     202.97.57.222   50 msec 40 msec 40 msec
11     219.141.130.122 40 msec 50 msec 40 msec
12     219.142.11.10   40 msec 50 msec 30 msec
13     211.157.37.14   50 msec 40 msec 50 msec
14     222.35.65.1     40 msec 50 msec 40 msec
15     222.35.65.18   40 msec 40 msec 40 msec
16     222.35.15.109  50 msec 50 msec 50 msec
17     * * *
18     64.170.98.32   40 msec 40 msec 40 msec

```

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

interface aggregateport

no

interface aggregateport *port-number* ô O – È

S2700

interface giagbitEthernet

interface gigabitEthernet *mod-num/port-num*

mod-num/port-num /

no
show interfaces gigabitEthernet

show interfaces

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



no
show interfaces tenGigabitEthernet

show interfaces

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

show interfaces	

interface vlan

virtual interface SVI
SVI.

switch
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	

S2700

- 1 SVI
- 1 IP

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	

descriptoin

no

description *string*

no description

string

show interfaces

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

show interfaces	

shutdown

no

shutdown
no shutdown

Ap SVI

show interfaces

Ap 1

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

Ap 1

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

clear interface	
show interfaces	

 **说明:**

no shutdown

speed

no

10 10Mbps
100 100Mbps
1000 1000Mbps
10G 10Gbps
auto

```

                Ap                Ap
                Ap
show interfaces
                SFP                10M
100M

```

```

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

```

show interfaces	

duplex

auto
off
on

show interfaces

1/1

```
Ruijie(config)# interface gigabitethernet 1/1  
Ruijie(config-if)# flowcontrol on
```



show interfaces

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

show interfaces	

carrier-delay

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

seconds 1 60

2

DCD DCD Down Up
DCD

DCD

5

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

clear counters

clear counters [*interface-id*]

interface-id

show interfaces

clear counters

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

show interfaces	

clear interface

clear interface *interface-id*

interface-id

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

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

shutdown	

switchport

```

2
3
switchport
no switchport

```

2

switchport

2

3

2

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

show interfaces	

S2700

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 **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

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

VLAN all Native VLAN VLAN 1

Native VLAN

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

VLAN

Trunk VLAN 1 4094
 Trunk VLAN VLAN
 Trunk

show interfaces switchport

VLAN 2 1/15

```
Ruijie(config)# interface fastethernet 1/15
Ruijie(config-if)# switchport trunk allowed vlan remove
2
Ruijie(config-if)# end
Ruijie# show interfaces fastethernet1/15 switchport
Switchport is enabled
Mode is trunk port
Access vlan is 1,Native vlan is 1
```

GigabitEthernet 0/1 enabled Access 11 Disabled ALL

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

Aggregate Port

port-group

Aggregate Port no
Aggregate Port

port-group *port-group-number*

no port-group

Aggregate Port

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

AP

aggregateport load-balance

AP

no

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

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

aggregate port

aggregate port

Ruijie# **show aggregateport 1 summary**

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

--	--

VLAN

vlan

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

<i>vlan-id</i>	VLAN ID VLAN VLAN 1

end **Ctrl+C**
exit

Ruijie(config)# **vlan** 1
Ruijie(config-vlan)#

show vlan	VLAN

S2700 4094 vlan

name

VLAN **no**

name *vlan-name*

no name

<i>vlan-name</i>	VLAN

VLAN

VLAN

show vlan **vlan**

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

show vlan	VLAN

chport mode

access port trunk port, switch port 802.1Q no

switchport mode {access | trunk}

no switchport mode

access	switch port	access port

switch port

access

switch port

access

```

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

```

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

switchport mode	switch port
switchport trunk	trunkport native VLAN Trunk VLAN

switchport trunk

```

                trunkport        native VLAN        Trunk        VLAN
                no                trunk
    
```

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

no switchport trunk {allowed vlan | native vlan }

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

VLAN all Native VLAN VLAN 1

Native VLAN

```

Trunk                                    native VLAN                    native VLAN
                                          UNTAG                                    VLAN
VLAN    VLAN ID                    IEEE 802.1Q                    PVID                    native
Trunk                                    native VLAN
VLAN    VLAN ID                    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 is enabled
Mode is trunk port
Access vlan is 1,Native vlan is 1
Protected is disabled
Vlan lists is
1,3-4094
  
```

show interfaces	
switchport access	statics accessport VLAN

show vlan

VLAN

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

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

--	--

VLAN

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

Protocol VLAN

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

num profile

id VLAN ID 1- VLAN

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

show protocol-vlan profile

show protocol-vlan profile *num*

no protocol-vlan profile

no protocol-vlan profile *num*

RGOS10.1

- **show protocol-vlan**

show protocol-vlan

Protocol VLAN

show vlan protocol-vlan

```
Ruijie# show protocol-vlan
```

RGOS10.1

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 gigabitEthernet**

show

RGOS10.1

no:

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
```

RGOS10.1

switchport hybrid native vlan

switchport hybrid native vlan *vid*

no switchport hybrid native vlan

hybrid vlan

no hybrid VLAN

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

RGOS10.1

switchport hybrid allowed vlan

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

vlist

no switchport hybrid allowed vlan

hybrid

no hybrid

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

RGOS10.1

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*]

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

show mac-address-table dynamic

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

show mac-address-table dynamic	


```

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

```

                                00d0.f800.073c    VLAN
4
gigabitethernet 1/1
    
```

```

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

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

S2700

- MAC 16K
- MAC 1K

mac-address-table filtering

no

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

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

MAC

mac-address

MAC

```

Trap
enable traps mac-notification
snmp-server
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	

address-bind uplink

address-bind uplink *intf-id*

no address-bind uplink *intf-id*

<i>intf-id</i>	

```

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

```

fa 0/1

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

show address-bind uplink	

RGOS10.1

address-bind install

address-bind install

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

show address-bind uplink	
show address-bind summary	

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

show mac-address-table dynamic

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


MAC

```
1    00d0.f800.1001  STATIC  gigabitethernet 1/1
1    00d0.f800.1002  STATIC  gigabitethernet 1/1
1    00d0.f800.1003  STATIC  gigabitethernet 1/1
1    00d0.f800.1004  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 vlan	VLAN
show mac-address-table count	

show mac-address-table notification

MAC

```
show mac-address-table notification [interface[interface-id] |
history ]
```

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

MAC

```
Ruijie# show mac-address-table notification interface
Interface          MAC Added Trap  MAC Removed Trap
-----
GigabitEthernet1/14  Disabled        Disabled
```

```
Ruijie# show mac-address-table notification
MAC Notification Feature : Disabled
Interval between Notification Traps : 1 secs
Maximum Number of entries configured in History Table :1
Current History Table Length : 0
```

```
Ruijie# show mac-address-table notification history
History Index : 0
MAC Changed Message :
Operation:ADD Vlan : 1 MAC Addr: 00f8.d012.3456
GigabitEthernet 3/1
```

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

show mac-address-table static

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

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

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


System Address bind status:SUCCESS

address-bind	

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

IP MAC

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

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

address-bind	

DHCP Snooping

DHCP snooping

DHCP snooping

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

ip dhcp snooping

DHCP Snooping

no

DHCP snooping

[no] ip dhcp snooping

DHCP snooping

DHCP snooping

show ip dhcp snooping

DHCP snooping

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

```
Ruijie# show ip dhcp snooping

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

show ip dhcp snooping	DHCP snooping

ip dhcp snooping bootp-bind

```

DHCP Snooping      Bootp
                   no          DHCP snooping      Bootp
```

[no] ip dhcp snooping bootp-bind

```

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

```
DHCP Snooping      Bootp
```

```
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping bootp-bind
Ruijie(config)# end
```

```

Ruijie# show ip dhcp snooping

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

show ip dhcp snooping	DHCP snooping

ip dhcp snooping verify mac-address

```

MAC
no          MAC
    
```

```

[no] ip dhcp snooping verify mac-address
    
```

```
Ruijie# show ip dhcp snooping

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

show ip dhcp snooping	DHCP snooping

ip dhcp snooping binding

```
DHCP snooping
no
```

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

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

```
DHCP                      DHCP snooping
```

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

```

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

show ip dhcp snooping binding	DHCP snooping

ip dhcp snooping information option

```

DHCP          option82
              no
    
```

[no] ip dhcp snooping information option

```

              DHCP          option82          DHCP
option82
    
```

```

DHCP          option82
    
```

```

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

```

Ruijie# show ip dhcp snooping

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

```

DHCP snooping Support Bootp bind status: ENABLE
Interface                Trusted
-----                -
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
    
```

```
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

no TRUST

UNTRUST

[no

show ip dhcp snooping

DHCP Snooping

show ip dhcp snooping

DHCP Snooping

DHCP Snooping

```
Ruijie# show ip dhcp snooping

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

ip dhcp snooping	DHCP snooping
ip dhcp snooping verify	

show ip dhcp snooping binding

DHCP Snooping DH<01CF0996>-6<1.5 41C81BE201D0> /C22 13Tf 0 Tc 0r 2 41

clear ip dhcp snooping binding

DHCP Snooping

clear ip dhcp snooping binding

DHCP snooping

DHCP snooping

```
Ruijie# clear ip dhcp snooping binding
```

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

```
Total number of bindings: 0
```

```
MacAddress IpAddress Lease(sec) Type VLAN Interface
```

```
-----
```

show ip dhcp snooping binding	DHCP snooping

debug ip dhcp snooping

DHCP Snooping

debug ip dhcp snooping {event | packet}

DHCP snooping

DHCP snooping

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

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

IGMP Snooping

deny

```

profile
deny
deny
profile
    
```

deny	profile

```

profile deny
    
```

```

profile
    
```

```

profile range
profile profile
224.2.2.2 profile :
    
```

```

Ruijie(config)# ip igmp profile 1
Ruijie(config-profile)# range 224.2.2.2
Ruijie(config-profile)# deny
    
```

ip igmp profile	profile

range	
--------------	--

permit

profile
profile

profile

permit

permit

permit	profile

profile deny

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

```

disable

VLAN igmp

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

ip igmp snooping limit-ipmc vlan server

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

vid ip vlan id
gaddress
saddress ())

igmp snooping max-groups no

ip igmp snooping max-groups *number*

no ip igmp snooping max-groups

number 0 – 4294967294

IGMP Report

0/1 100

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

Ruijie(config-if)# **ip igmp snooping max-group 100**

ip igmp snooping filter	

ip igmp snooping vlan mrouter interface

ip igmp snooping vlan mrouter
interface no

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

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

vid vlan id

interface-id id

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*

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

ip igmp snooping query-max-resposne-time

show ip igmp snooping

igmp snooping

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

igmp snooping

gda-table

interfaces igmp snooping filtering

mrouter

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

EXEC

show ip igmp profile [profile-number]

profile

profile-number profile

EXEC

debug igmp

igmp no

debug igmp

undebug igmp

EXEC


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

```
BridgeForwardDelay
```

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

```
show spanning-tree STP
```

```
spanning-tree mst cost STP PathCost
```

```
spanning-tree tx-hold-count STP TxHoldCount
```

spanning-tree bpdudfilter

```
disabled BPDU filter enabled  
BPDU filter
```

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

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 mode

STP no

spanning-tree mode [stp | rstp | mstp]

no spanning-tree mode

stp Spanning tree protocol(IEEE 802.1d)

rstp Rapid spanning tree protocol(IEEE 802.1w)

mstp Multiple spanning tree protocol(IEEE 802.1s)

MSTP

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

show spanning-tree

spanning-tree mst configure

no MST MSTP Region
name revision vlan map

spanning-tree mst configuration

no spanning-tree mst configuration

instance vlan Vlan Instance 0
name
revision 0

end Ctrl+C

exit

MST

```

instance instance-id vlan vlan-range      Vlan                   MST Instance
                  instance-id                    0 64 vlan                1 4095
vlan-range                    vlan                    VLAN ID
VLAN ID                        ' '                    VLAN ID                    instance
10 vlan 2,3,6-9                VLAN 2 3 6 7 8 9           Instance 10
                                  VLAN    Instance 0            VLAN    Instance
                                  no            no instance instance-id [vlan
vlan-range] (            no            Instance            1 64)
name name                    MST                        32
                  no name
revision version            MST                        0 65535

```

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

```
Instance 1
```

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

```
MST show
```

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

Region

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

spanning-tree portfast

Portfast disabled
Portfast

spanning-tree portfast [disabled]

disabled Portfast

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

show spanning-tree interface STP

spanning-tree portfast bpduguard default

BPDU guard no
BPDU guard

spanning-tree portfast bpduguard default

no spanning-tree portfast bpduguard default

BPDU Guard.

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

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

show spanning-tree interface STP

spanning-tree portfast 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

no spanning-tree tc-protection tc-guard

tc-guard

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

spanning-tree tc-guard

```
tc-guard no tc-guard  
tc-guard tc
```

```
spanning-tree tc-guard
```

```
no spanning-tree tc-guard
```

```
tc-guard
```

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

spanning-tree guard root

```
root guard no root guard  
root guard
```

```
spanning-tree guard root
```

```
no spanning-tree guard root
```

```
root guard
```

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

spanning-tree loopguard default

loop guard	no	loop guard
loop guard		bpdu

spanning-tree loopguard default

no spanning-tree loopguard default

loop guard

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

spanning-tree guard loop

loop guard	no	loop guard
loop guard		bpdu

spanning-tree guard loop

no spanning-tree guard loop

loop guard

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

spanning-tree guard none

```
guard no guard
```

```
spanning-tree guard none
```

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

```
guard
```

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

spanning-tree autoedge

```
Autoedge disabled  
Autoedge
```

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

```
disabled Autoedge
```

```
Ruijie(config)# 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			block
forward-time	BridgeForwardDelay		
hello-time	BridgeHelloTime		
max-age	BridgeMaxAge		
max-hops	instance		
tx-hold-count	TxHoldCount		
pathcost method			

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

```
spanningtree pathcost method  
spanning-tree forward-time      BridgeForwardDelay  
spanning-tree hello-time        BridgeHelloTime  
spanning-tree max-age           BridgeMaxAge  
spanning-tree max-hops          instance  
spanning-tree tx-hold-count      TxHoldCount
```

show spanning-tree interface

STP

```
show spanning-tree interface interface-id [{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** “ ”

show spanning-tree mst

MST Instance

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

configuration mst*instance-id* *Instance**interface-id*

Instance

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

```
spanning-tree mst configuration      MST region
```

```
spanning-tree mst cost              instance
```

```
spanning-tree mst max-hops          instance
```

```
spanning-tree mst priority :        instance
```

```
spanning-tree mst port-priority     instance
```

SPAN

monitor session

SPAN

no

```
monitor session session_number {source interface interface-id  
[both | rx | tx] | destination interface interface-id { encapsulation |  
switch } |
```


session *session_number* SPAN

show monitor SPAN 1

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

monitor session	SPAN

IP

- ip address

ip address

IP

no

IP

ip address *ip-address network-mask*

no ip address *ip-address network-mask*



ip-address

```

                IP          10.10.10.1
255.255.255.0
ip address 10.10.10.1 255.255.255.0

```

show interface	

IP

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

arp

```

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

```

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

ARP

1

ARP

ARP

ARP

ARP

30s

arp retry interval 30

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

arp retry times

arp

IP

ARP

no

5 ARP

arp retry times *number*

no arp retry times

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

ARP

ARP

5

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 no
8192

arp unresolve number

no arp unresolve

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

ARP

8192

ARP

500

arp unresolved 500

arp gratuitous-send interval

arp

no

arp gratuitous-send interval *seconds***no arp gratuitous-send**


ARP

SVI 1

ARP

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

SVI 1

ARP

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

arp timeout

ARP

ARP

no

arp timeout *seconds***no arp timeout**

<i>seconds</i>	0-2147483

3600

FastEthernet 0/0

ARP

120

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

clear arp-cache	ARP
show interface	

IP

clear arp-cache

ARP

ARP

IP

clear arp-cache

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

ARP

ARP

clear arp-cache

ARP 1.1.1.1

clear arp-cache 1.1.1.1

SVI1 ARP

clear arp-cache interface Vlan 1

arp	ARP

show ip interface

IP

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

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

RGOS

RGOS

RGOS

" UP"

" UP"

show ip interface

```
Ruijie# show ip interface FastEthernet 0/1
IP interface state is: UP
IP interface type is: BROADCAST
IP interface metric is: 0
IP interface MTU is: 1500
IP address is:
192.168.5.133/24 (primary)
IP address negotiate is: OFF
Forward direct-boardcast is: ON
ICMP mask reply is: ON
Send ICMP redirect is: ON
Send ICMP unreachableled is: ON
DHCP relay is: OFF
Fast switch is: ON
Route horizontal-split is: ON
Help address is: 0.0.0.0
```

Proxy ARP is: ON
Outgoing access list is not set.
Inbound access list is not set.

IP interface state is:	“UP”
IP interface type is:	
IP interface MTU is:	MTU
IP address is:	IP
IP address negotiate is:	IP
Forward direct-boardcast is:	
ICMP mask reply is:	ICMP
Send ICMP redirect is:	ICMP
Send ICMP 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



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

DHCP relay

802.1x

Ip dhcp relay information option dot1x



ip dhcp relay check server-id

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

server-id option DHCP REQUEST
server

Es 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100

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

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

RGOS10.1

ip host

IP

no

ip host *host-name ip-address*

no ip host *host-name ip-address*

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

no ip host host-name ip-address

Ruijie(config)#

DNS

-IP

SNTP

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

sntp enable

```
SNTP                               no
—Disable
```

[no] sntp enable

```
SNTP      Disable
```

```
show sntp      SNTP
```

```
RedGiant(config)# sntp enable
```



RGOS10.0

sntp server

	SNTP Server	SNTP	NTP
Server	internet		NTP Server

sntp server ip-addr**no sntp server**

<i>ip-addr</i>	NTP/SNTP	IP
----------------	----------	----

NTP/SNTP

show sntp	SNTP
------------------	------

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

show sntp	SNTP
sntp enable	SNTP

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
```

snmp enable	SNTP
show snmp	SNTP

RGOS10.0

NTP

NTP

NTP

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

no ntp

ntp

ntp

no ntp

NTP

NTP
NTP

NTP

NTP

NTP

no ntp

ntp server	NTP

ntp authenticate

NTP NTP

ntp authenticate

no ntp authenticate

NTP

ntp authentication-key ntp trusted-key

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

ntp authentication-key	
ntp trusted-key	

ntp disable

NTP

ntp disable

NTP

NTP

NTP

r 注意:

IP

NTP

no ntp

ntp server

NTP

NTP

ntp server *ip-addr* [**version** *version*] [**source** *if-name*] [**key** *keyid*][**prefer**]

no ntp server *ip-addr*

<i>ip-addr</i>	NTP IP

<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

8

NTP

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-server chassis-id

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

text

60FF60

SNMP

show snmp

SNMP 123456:

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



```

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

```

SNMP
MIB  NMS
SNMP          no snmp-server
    
```

```

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

access-list	

snmp-server contact

```

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

SNMP

i-net800@i-net.com.cn

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

show snmp-server	SNMP
no snmp-server	SNMP

snmp-server enable traps

SNMP NMS Trap

snmp-server enable traps

no SNMP NMS Trap

snmp-server enable traps [snmp]**no snmp-server enable traps****snmp SNMP****snmp-server**

SNMP

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

snmp

snmp-server host	SNMP

snmp-server host

```

snmp-server host          SNMP          NMS
snmp-server host          no           SNMP
snmp-server host host-addr traps [version {1 | 2c | 3 [auth | no
auth | 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 SNMP
	Ruijie(config)# snmp-server host 192.168.12.219 public snmp
	snmp-server enable traps

snmp-server location

```

SNMP
location no SNMP snmp-server
snmp-server location text
no snmp-server location

```

text

no snmp-server packetsize

byte-count 484 17876

1500

SNMP 1492

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

snmp-server queue-length	SNMP

snmp-server queue-length

snmp-server

queue-length

snmp-server queue-length *length*

length 1 1000

10

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


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

snmp-server user

```

SNMP                               snmp-server user
no
snmp-server user username groupname {v1 | v2 | v3 [encrypted]
[auth {md5 | sha} auth-password ] [priv des56 priv-password]}
[access {num | name}]
no snmp-server user username groupname {v1 | v2c | v3 }

username
groupname
v1 | v2 | v3           SNMP           v3
encrypted
                20           MD5           16           SHA
auth
  SHA
auth-password:           32
priv
  des56           56           DES
priv-password           32

snmpV3           md5           DES
Ruijie(config)# snmp-server user user-2 mib2user v3 auth

```


show snmp group	SNMP

snmp-server view

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*] **falling-threshold** *value*
[*event-number*] [**owner** *ownername*]
- **rmon event** *number* [**log**] [**trap** *community*] [*description-string*]
- **show rmon statistics**
- **show rmon history**
- **show rmon events**
- **show rmon alarms**

rmon collection stats

no

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

no rmon collection stats *index*

```
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
```

```
RGOS  

owner buckets interval
```

1

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

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

buckets 10 interval 10
```

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

rmon alarm

MIB no

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

RGOS

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

MIB ifInNUcastPkts.6

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



trap

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

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

show rmon statistics

show rmon statistics

```
Ruijie# show rmon statistics
Statistics : 1
Data source : Gil/1
DropEvents : 0
```

```

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

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

show rmon history

```
show rmon history
```

```
ftp
```

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 *index*
[owner *ownername* **]** **[buckets**

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



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

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>]	

show storm-control

GigabitEthernet 1/1
4M

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

show storm-control	

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

show port-security

```

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

```

show port-security	

switchport port-security mac-address

no

**switchport port-security [mac-address *mac-address* [ip-address
ip-address]] | [maximum *value*]**

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

cpu
auto

CPU

Arp-check

Arp

arp

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

show port-security	

```

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 interface-id	

```

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 packet-num**
- **dot1x auto-req req-interval**
- **dot1x auto-req user-detect**

dot1x auto-req

802.1X
no

dot1x auto-req

[no] dot1x auto-req

802.1x

show dot1x auto-req

802.1x

```
Ruijie# configure terminal
Ruijie(config)# dot1x auto-req
Ruijie(config)# end
Ruijie# show dot1x auto-req
Ruijie(config)# dot1x auto-req
Auto-Req: Enabled
User-Detect : Enabled
```

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

show dot1x auto-req	

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
```

--	--

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

dot1x auto-req req-interval

no

dot1x auto-req req-interval *interval*

no dot1x auto-req req-interval

interval

s

30

show dot1x

auto-req

802.1x

60s

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

Auto-Req: Enabled

User-Detect : Enabled

Packet-Num : 0

Req-Interval: 60 Second

show	

dot1x auto-req 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

- **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)# **end**

Ruijie# **show dot1x**

```
802.1X Status:      Enabled
Authentication Mode: EAP-MD5
Authed User Number: 0
Re-authen Enabled:  Disabled
Re-authen Period:   3600 sec
Quiet Timer Period: 1000 sec
Tx Timer Period:    3 sec
Supplicant Timeout: 3 sec
Server Timeout:     5 sec
Re-authen Max:      3 times
Maximum Request:    3 times
```

```

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

```

show dot1x	802.1x

dot1x timeout re-authperiod

no

```

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

```

```
seconds          0  65535  s
```

3600

```
show dot1x      802.1x
```

1000s

```

Ruijie# configure terminal
Ruijie(config)# dot1x timeout re-authperiod 1000
Ruijie(config)# end
Ruijie# show dot1x

```

```

802.1X Status: Enabled
Authentication Mode: EAP-MD5
Authed User Number: 0
Re-authen Enabled: Disabled
Re-authen Period: 1000 sec
Quiet Timer Period: 1000 sec

```



```

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

802.1x

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

802.1X

dot1x

- dot1x probe-timer
- dot1x client-probe enable

dot1x probe-timer

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

```
no
```

```
interval hello
```

```
alive
```

```
interval
```

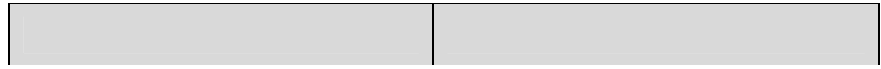
```
Hello          20  
                250
```

```
show dot1x      802.1x
```

```
hello          30 ,          120
```

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

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



Eapol Tag Enable: Disabled
 Authorization Mode: Group Server

show dot1x	dot1x

dot1x

dot1x

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

dot1x authentication

AAA

AAA
no

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

default

list-name

AAA

AAA

```

AAA                                     dot1x
enable AAA                             aaa domain
dot1x authentication auth              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                             aaa domain
dot1x accounting                       "

AAA "

group radius

Ruijie# configure terminal
Ruijie(config)# aaa new-model
Ruijie(config)#aaa accounting network acct start-stop
group radius
Ruijie(config)# dot1x accounting acct
Ruijie(config)# end
Ruijie#

```

aaa new-model	AAA
aaa authentication dot1x	

dot1x auth-address-table

802.1X

no

```

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

```

*mac-addr**Interface*

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

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

show dot1x	802.1x

dot1x default

802.1x

dot1x default

dot1x port-control auto**no**

```
dot1x port-control auto
no dot1x port-control
```

802.1x

```
show dot1x      802.1x
```

802.1x

```
Ruijie# configure terminal
Ruijie(config)# interface g0/1
Ruijie(config-if)#
Ruijie(config-if)# end
Ruijie#
```

show dot1x	802.1x

ruije.com.cn-mode

802.1x

MAC

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

no dot1x port-control-mode

mac-based mac 802.1X

port-based 802.1X

mac-based

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 User Number05BPeriodNumber: 0 Re-auth
```

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

show dot1x auth-address-table

802.1X

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

mac-addr

interface

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

802.1x

show dot1x auto-req

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  
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	

```
ctrl-mode status
```

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

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

show dot1x probe-timer

```
show dot1x probe-timer
```

Ruijie# **show dot1x probe-timer**

Hello Interval: 20 Seconds

Hello Alive: 250 Seconds

Ruijie#

dot1x auth-mode	802.1x
dot1x max-req	
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

```
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	

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

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

show dot1x summary

802.1X

show dot1x summary

```

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

```

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

show dot1x user id

802.1X

show dot1x user id <id>

id show summary *id*

Ruijie# **show dot1x user id 1**

User name: caikov
id: 1
Type: static
Mac address is 0013.2049.8272
Vlan id is 217
Access from port Gi0/13
User ip address is 192.168.217.64
Max user number on this port is 6000
COS on this port is 5
Up-bandwidth is 1024 kbps
Down-bandwidth is 1024 kbps
Authorization vlan is dep7
Authorization session time is 1000000 seconds
Authorization ip address is 192.168.217.64
Start accounting
Permit proxy user
Permit dial user
IP privilege is 2

Ruijie#

dot1x auth-mode	802.1x
dot1x max-req	

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

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

no aaa authorization network {default | list-name}

method1

local	
none	
group	RADIUS

AAA

RGOS

PPP SLIP

RADIUS

RADIUS

RADIUS

RADIUS

RADIUS

RADIUS

Ruijie(config)# **aaa authorization network default radius**

aaa new-model	AAA
aaa accounting	AAA
aaa authentication	AAA
username	

RGOS RADIUS

- **aaa accounting network**
- **aaa accounting update**
- **aaa accounting update periodic**
- **show aaa method-list**
- **debug aaa**

aaa accounting network

aaa accounting network no

aaa accounting network {default | *list-name*} **start-stop group**
radius

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

network DOT1X PPP

resource

list-name

start-stop

group

radius RADIUS

RGOS

start-stop

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	

aaa accounting update periodic

periodic **aaa accounting update**
no

aaa accounting update periodic *interval*

show aaa method-list

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

EXEC

AAA

AAA

AAA
Ruijie(config)# **aaa domain enable**

aaa new-model	AAA
Show aaa domain	

aaa domain {default | *word*}

no

aaa domain {default | *word*}
no aaa domain {default | *word*}

default

word

AAA

default

Word

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

AAA

Ruijie(config-domain)#



the \mathbb{R}^n is a linear space over \mathbb{R} with the usual addition and scalar multiplication. The inner product is defined by

$$(x, y) = \sum_{i=1}^n x_i y_i \quad (1)$$

where $x = (x_1, \dots, x_n)$ and $y = (y_1, \dots, y_n)$ are vectors in \mathbb{R}^n .

The norm of a vector x is defined by

$$\|x\| = \sqrt{(x, x)} = \sqrt{\sum_{i=1}^n x_i^2} \quad (2)$$

The distance between two vectors x and y is defined by

$$d(x, y) = \|x - y\| = \sqrt{\sum_{i=1}^n (x_i - y_i)^2} \quad (3)$$

The angle between two vectors x and y is defined by

$$\cos \theta = \frac{(x, y)}{\|x\| \|y\|} \quad (4)$$

The orthogonal projection of a vector x onto a vector y is defined by

$$p_y(x) = \frac{(x, y)}{(y, y)} y \quad (5)$$

The orthogonal distance from a vector x to a vector y is defined by

$$d(x, y) = \|x - p_y(x)\| \quad (6)$$

The orthogonal distance from a vector x to a subspace S is defined by

$$d(x, S) = \inf_{y \in S} \|x - y\| \quad (7)$$

The orthogonal distance from a point x to a line L is defined by

$$d(x, L) = \inf_{y \in L} \|x - y\| \quad (8)$$

The orthogonal distance from a point x to a plane P is defined by

$$d(x, P) = \inf_{y \in P} \|x - y\| \quad (9)$$

default:

methodlist

default

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

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

state

no

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



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	

AAA

show aaa domain

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*

name

"radius" "tacacs+"

AAA

Radius

```
Ruijie(config)# aaa group server radius ss
Ruijie(config-gs-radius)# end
Ruijie# show aaa group
Group Name:  ss
Group Type:  radius
Referred:    1
Server List:
Ruijie#
```

```
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

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
new-model AAA no 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#
```

aaa authentication	
aaa authorization	
aaa accounting	

aaa local authentication attempts

login

aaa local authentication attempts <1-2147483647>

<1-2147483647>

3

login

Ruijie#configure ter 10.5 28.08 758.6603 Tm()Tal0.0027 T50.44 44.2251C4>TJT8.73091

Ruijie#**configure terminal**

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

Ruijie(config)#

Show running-config	
Show aaa lockout	login

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

ip radius

```

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

radius-server host	RADIUS
ip address	ip

radius-server host

```

RADIUS                               radius-server
no                                   RADIUS

radius-server host {hostname | ip-address} [auth-port port-number]
[acct-port port-number][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

7

```

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

15	file-name-4	15
16	max up-rate	16
17	version to server	17
18	flux-max-high32	18
19	flux-max-low32	19
20	proxy-avoid	20
21	dailup-avoid	21
22	ip privilege	22
23	login privilege	42

id		type
1	max down-rate	76
2	qos	77
3	user ip	3
4	vlan id	4
5	version to client	5
6	net ip	6
7	user name	7
8	password	8
9	file-diractory	9
10	file-count	10

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

RADIUS

qos

cos

dscp

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



RADIUS

- debug radius [

RADIUS

```
authen port: 77  
server state: ready  
server ip : 192.168.4.13  
acct port: 45  
authen port: 74  
server state: ready
```



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

show radius 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**
- **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+  
á u <4~ 0D“q ‘ÙAD Ö
```

server	TACACS+ server

server(TACACS+)

TACACS+

server *ip-address*

no server *ip-address*

ip-address TACACS+

TACACS+

aaa group server tacacs+

TACACS+

TACACS+

tacacs-server host

TACACS+

tac1 TACACS+

1.1.1.1 TACACS+

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

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

aaa group server tacacs+	TACACS+

ip tacacs source-interface

TACACS+

```
ip tacacs source-interface interface  
no ip tacacs source-interface
```

Interface TACACS+

TACACS+

```
TACACS+          nas  
TACACS+  
ip TACACS+
```

```
TACACS+          fastEthernet 0/0      ip  
TACACS+
```

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



port *integer* TACACS+ TCP
timeout *integer* TACACS+
key *string* TACACS+ client

TACACS+

TACACS+ AAA TACACS+
tacacs-server TACACS+

TACACS+

Ruijie(config)# **tacacs-server host** 192.168.12.1

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

tacacs-server key

TACACS+

tacacs-server key [0 | 7] *string*
no tacacs-server key

string

0 | 7 0 7

SSH

SSH

SSH

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

crypto key generate

crypto key generate {rsa | dsa}

rsa	RSA
dsa	DSA

SSH Server

```

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

```

r 注意:

no crypto key generate

crypto key zeroize

Ruijie# configure terminal

Ruijie(config)# crypto key generate rsa

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

RGOS10.1

crypto key zeroize

SSH

crypto key zeroize {rsa / dsa}

rsa	RSA
dsa	DSA

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

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

show ip ssh	SSH Server

2

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

show ip ssh	SSH Server

RGOS10.1

ip ssh time-out

SSH Server **no**

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

<i>time</i>	

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

SSH Server
120s
show ip ssh SSH server

100s

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

show ip ssh	ssh-server

RGOS10.1

ip ssh authentication-retries

SSH Server

no

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

<i>retry times</i>	

3

no ip ssh**authentication-retries**

SSH Server

SSH

Server

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

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

VTY SSH SSH SSH

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

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

RGOS10.1

CPU

- **cpu-protect type** *packet-type* **traffic-class** *traffic-class-num*
- **cpu-protect traffic-class id** *id_num* **bandwidth** *bandwidth_value*
- **cpu-protect traffic-class all** **bandwidth** *bandwidth_value*
- **cpu-protect cpu** **bandwidth** *bandwidth_value*
- **cpu-protect mac-address storm-control enable** *value*

cpu-protect type traffic-class

cpu-protect type *packet-type* **traffic-class** *traffic-class-num*

packet-type

traffic-class-num id 0 7

show cpu-protect

CPU BPDU

```
Ruijie(config)# cpu-protect type bpdu traffic-class 5
```

```
Ruijie(config)# end
```

```
Ruijie # show cpu-protect type bpdu traffic-class
```

```
%*****packet type            traffic-class*****
                                 bpdu                                            5
```



cpu-protect	traffic-class	id
<i>id_num</i>	bandwidth	
<i>bandwidth_value</i>		
cpu-protect	traffic-class	all
bandwidth	<i>bandwidth_value</i>	

cpu-protect cpu bandwiCd 13.9 0 0ph 2_0 1 Tf0 Tc 2.36 0 Ts 110.5.9 89.5.173

CPU

2000

CPU

2000 kbps

Ruijie#**configure terminal**

Ruijie(config)#

show cpu-protect type all

```

%*****packet type      traffic-class*****
      bpdu                6
      arp                 5
      igmp                3
      dot1x               3
      gvrp                3
      dhcp                2
      unicast             4
      multicast           1
      broadcast           0
      error_ttl           0
      co-operate          6
      other               0

```

show cpu-protect traffic-class	
id id_num	id_num 0 7
show cpu-protect traffic-class	
all	
show cpu-protect cpu	CPU

show cpu-protect traffic-class id

```
show cpu-protect traffic-class id id_num
```

```
id_num            0-7
```

+ Ä

1

1000

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

show cpu-protect traffic-class all

show cpu-protect traffic-class all

show cpu-protect traffic-class all

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

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

show cpu-protect cpu	CPU
----------------------	-----

show cpu-protect cpu

CPU
show cpu-protect cpu

CPU

CPU

```
Ruijie# show cpu-protect cpu
%cpu port bandwidth: 100000(kbps)
```

show cpu-protect type packet-type	
show cpu-protect traffic-class id id_num	id_num 0 7
show cpu-protect traffic-class all	

show cpu-protect mac-address storm-control

show cpu-protect mac-address storm-control

CPU

```
Ruijie# show cpu-protect mac-address storm-control  
%MAC address storm control state: enable  
%MAC address storm control rate: 2000(address/second)
```


RGOS10.1

security community

smp

security

smp-server host *ip-address*
no smp-server host

ip-address smp server ip

smp server

show smp-server

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

show smp-server	smp server

RGOS10.1

security event interval

security event interval *interval*
no security event interval

interval

5

show security event interval

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

show security event interval	

RGOS10.1

security address-bind enable

security address-bind enable
no security address-bind enable

AP AP

GSN

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

security gsn enable	GSN

RGOS10.1

:

show smp-server
show security event interval

show smp-server

smp server IP

smp server IP

Ruijie# **show smp-server**
SMP-Server IP 192.168.20.30

smp-server host	smp server ip

RGOS10.1

show security evnet interval

DAI

VLAN DAI

- ip arp inspection vlan

ip arp inspection vlan vlan-id

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

ip arp inspection vlan *vlan-id*

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



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

ip arp inspection trust

trust no

ip arp inspection

ip arp inspection trust

no ip arp inspection trust

ARP

A

J

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
(Network Foundation Protection Policy)

```

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

DHCP Snooping

```

                                VLAN          DAI          ARP
                                DHCP Snooping .
Snooping                        DHCP Snooping          DHCP
    
```

arp

arp

arp

anti-arp-spoofing ip

anti-arp-spoofing ip

arp

no

anti-arp-spoofing ip *ip-address*

no anti-arp-spoofing ip *ip-address*

ip-address

IP

show anti-arp-spoofing

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

```
Ruijie(config-if)#anti-arp-spoofing ip 192.168.1.1
```

show anti-arp-spoofing	arp

arp

arp

QOS

mls qos trust

Qos

mls qos trust [cos | dscp]

no mls qos trust

cos	Qos	CoS
dscp	Qos	DSCP
no		

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

show mls qos interface *interface-id*

```
S2700                cos dscp
```

mls qos cos

CoS

mls qos cos *default-cos*

no mls qos cos

```
default-cos    0 7
```

QoS

no

CoS 0

[no] priority-queue

priority-queue SP
no priority-queue WRR

WRR

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

```
show mls qos queueing
```

priority-queue cos-map

fz CoS

```
priority-queue cos-map qid cos0 [cos1 [cos2 [cos3 [cos4 [cos5 [cos6  
[cos7]]]]]]]]
```

```
no priority-queue cos-map
```

qid id

cos0 ... cos7 CoS

no

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

```
show mls qos queueing
```

wrr-queue bandwidth

WRR

wrr-queue bandwidth *weight1 ... weightn*

no wrr-queue bandwidth

weight1...weightn n n

no

weight1: ...: weightn = 1:...:1

Ruijie(config)# wrr-queue bandwidth 1 2 3 4 5 6 7 8

show mls qos queueing

mls qos map cos-dscp

CoS DSCP

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

no mls qos map cos-dscp

dscp

no

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

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

mls qos map dscp-cos

output

bps

burst-size (Kbyte)dscp-list

no

```
Ruijie(config)# interface fastEthernet 0/1  
Ruijie(config-if)# rate-limit onput 1000000 4096
```

show mls qos interface

mls qos scheduler

mls qos scheduler [sp | wrr]

no mls qos scheduler

sp

wrr

no

wrr

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

show mls qos scheduler

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 interface

QoS

show mls qos interface *interface-id* [**policers**]

interface-id

policers

police

QoS

Ruijie# **show mls qos interface fastEthernet 0/1**

show mls qos queueing

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

show mls qos queueing

Ruijie# **show mls qos queueing**

S2700

cos-to-queue map,wrr weight

show mls qos scheduler

```
Ruijie# show mls qos scheduler
```

show mls qos maps

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

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

```
cos-dscp cos-dscp maps
```

```
dscp-cos dscp-cos maps
```

```
dscp-cos maps dscp-cos maps ip-prec-dscp maps
```

```
Ruijie# show mls qos maps
```

```
S2700 cos-dscp dscp-cos
```

show mls qos rate-limit

```
show mls qos rate-limit [interface interface-id]
```

```
interface interface-id rate-limit
```

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

RLDP

RLDP

- **rldp enable**
- **rldp detect-interval**
- **rldp detect-max**

- **rldp port {unidirection-detect | bidirection-detect | loop-detect}**
{warning | shutdown-svi | shutdown-port | block}

- **rldp reset**

rldp enable

RLDP

rldp enable
no rldp enable

RLDP

RLDP

:

Ruijie(config)# **rldp enable**

rldp port	RLDP

rldp detect-interval

RLDP

rldp detect-interval *interval*

no rldp detect-interval

interval 2-15

3

stp ×
stp

5s :

Ruijie(config)# **rldp detect-interval 5**

rldp detect-max	

rldp detect-max

RLDP

rldp detect-max *num*

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

- **show rldp [interface *interface-id*]**
- **debug rldp {packet | event | error}**

show rldp

rldp

show rldp [interface *interface-id*]

Interface-id

EXEC

debug rldp

rldp

no

- **debug rldp [packet | event | error]**
- **undebug rldp [packet | event | error]**

packet rldp

event

error

EXEC

TPP

topology guard

```
                topology guard
                no
[no] topology guard
```

cpu topology-limit

```
Ruijie(config)# topology guard
Ruijie(config)# no topology guard
```

tp-guard port enable

cpu topology-limit CPU

tp-guard port enable

no

[no] tp-guard port enable

CPU

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 ()

r 注意:

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 DEVNAME
```

```
DEVNAME          (          )
FSNAME
```

a

b

jffs2

dev/mtdblock/1

```
Ruijie# makefs dev /dev/mtdblock/1 fs jffs2
```

mkdir

```
mkdir DIRECTORY
```

```
DIRECTORY
```

()

test

```
Ruijie# mkdir test
```

mv

```
mv sour SOURCE_FILE dest {DESTINE_FILE | DIRECTORY}
```

Ruijie# **pwd**

rm

rm *FILE*

FILE ()

,

log.txt

Ruijie# **rm** *log.txt*

rmdir	, rm ,

rmdir

rmdir *DIRECTORY*

DIRECTORY ,

rm ,

tmp

Ruijie# **rmdir** tmp

Ruijie# **ls**

logging on

no

logging on

no logging on

RGOS Console VTU
Server FLASH Syslog
1 Log

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

logging buffered	
logging	Syslog Server
logging file flash:	FLASH

logging console	
------------------------	--

logging buffered [*buffer-size* | *level*]

no logging buffered

buffer-size 4K 128K Bytes

level 0 7

4k Bytes

7

show logging

clear logging

FLASH

Syslog Server

RGOS

8

1

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

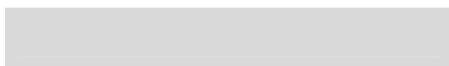
0

6

6

10000

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



FLASH

trace.txt

64K,

6

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

logging on	
show logging	

more flash

FLASH

6

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

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

1	user-level messages
2	mail system
3	system daemons
4	security/authorization messages
5	messages generated internally by syslogd
6	line printer subsystem
7	network news subsystem
8	UUCP subsystem
9	clock daemon
10	security/authorization messages
11	FTP daemon
12	NTP subsystem
13	log audit

logging console	

logging count

no

logging count

no logging count

no

logging count

Ruijie(config)# **logging count**

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

```
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

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

logging count	
show logging	
clear logging	