



RGOS[®]

NMX

V10.3(5b6)

©2012

Ruijie
Networks



 锐捷网络

Ruijie

RGOS®10.3(5b6)

'
'
'

1.

5

注意、说明

Courier New

5

2.

Arial

[x|y|...]
//

3.

r 注意
/

CLI

1.1 alias

alias

no

alias *TM*

a

```
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

```

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	

1.2 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
time-range	Time-Range

CLI 1 "test" reload

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

1 CLI reload

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

reload 1 all
1 reload

1

1.3 show aliases

EXEC

show aliases**show aliases** [*mode*]*mode*

EXEC

EXEC

Ruijie# **show aliases exec**

exec mode alias:

h	help
p	ping
s	show
u	undebug
un	undebug

alias	

2.1

CLI

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

2.1.1 disable

disable

disable [*privilege-level*]*privilege-level*

/ 说明:

disable

Ruijie# **disable 10**

enable	

2.1.2 enable

enable

2.1.3 enable password

enable password

no

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

no enable password

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

```

1 26

```

r 注意:

EXEC

pw10

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

enable secret	

2.1.4 enable secret

enable secret

no

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

no enable secret

Secret

EXEC



```

15 password
security 15 password security
security password
security

```

pw10

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

enable password	

2.1.5 password

```

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

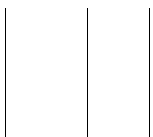
```

```

password line
0|7 0 7
encrypted-password

```

line



line

```

line red

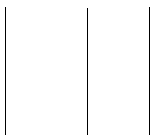
```

```

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

```

--	--



2.1.6 login

```

AAA
    login          no
login
no login

```

line

```

AAA
    VTY  console

```

VTY

```

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

```

password	line

2.1.7 login local

```

AAA
    login local    no
login local
no login local

```

line

AAA

username

VTY

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

username	

2.1.8 login authentication

AAA

AAA

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

line

AAA

VTY

radius

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

aaa new-model	AAA
aaa authentication login	

2.1.9 username

username

username *name* {**nopassword** | **password** { *password* | [**0**]**7**
encrypted-password }}

username *name* **privilege** *privilege-level*

no username *name*

name

password

0**7** 0 7

encrypted-password

privilege-level

r 注意:

7

7

7

15

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

login local	

2.1.10 lock

EXEC lock

lock

1. lock

2.

Locked w#01GE7905!OUg9!5BX5

2.1.11 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	

2.1.12 telnet

```

telnet EXEC
telnet
telnet host [port] [keyword]

```

Host IP
 Port TCP 23
 Keyword

/source-interface	telnet
/vrf	VRF

telnet

r 注意:

/vrf RSR

```

telnet 192.168.1.11
vlan 1 VRF vpn1
Ruijie# telnet 192.168.1.11 /source-interface vlan 1
/vrf vpn1
    
```

Show session	TTY
Exit	

2.1.13 enable service

SSH Server/Telnet Server/Web Server/Snmp Agent
enable service
enable service { ssh-sesrver | telnet-server | web-server | snmp-agent }

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

no enable service

enable service ssh-sesrver, SSH Server

```
Ruijie(Config) # enable service ssh-sesrver
```

show service	

2.2

```
' clock set  
' hostname  
' show clock  
' show running-config  
' show startup-config  
' reload  
' show reload  
' prompt  
' banner motd  
' banner login  
' speed  
' show line  
' write
```

2.2.1 clock set

LINE

minutes

seconds

10 min

LINE

LINE

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

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

2.2.3 hostname

hostname

hostname *name*

name

63

Ruijie

CHAP

BeiJingAgenda

```
Ruijie(config)# hostname BeiJingAgenda
```

```
BeiJingAgenda(config)#
```

2.2.4 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

2.2.5 show clock

show clock

show clock [detail]

detail

detail

show clock

```
Ruijie# show clock detail
clock: 2003-3-17 10:27:21
Clock read from calendar when system boot.
```

clock set	

2.2.6 show running-config

```
running-config show
show running-config
```

2.2.7 show startup-config

```
NVRAM
show startup-config
show startup-config
```

```
NVRAM
startup-config
```

2.2.8 reload

```
reload
reload [ text | in [
```

```
text          1-255
in [ hh: ] mm                24
at hh:mm
month          3      Mar
day           1  31
cancel
```

10

```
Ruijie# reload in 10
Router will reload in 600 seconds.
```

2.2.9 show reload

show

```
reload
show reload
```

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

2.2.10 prompt

	no prompt	prompt
prompt <i>string</i>		
<i>string</i>		32

EXEC

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

2.2.11 banner motd

	no banner motd	banner motd
banner motd <i>c message c</i>		
<i>c</i>		
<i>message</i>		

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

2.2.12 banner login

banner login
no banner login

9600

57600 bps

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

2.2.14 show line

show line

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

```
console  
aux      aux  
vty      vty  
line-num      line
```

console

```
Ruijie# show line console 0  
CON      Type      speed  Overruns  
* 0      CON      9600   45927  
Line 0, Location: "", Type: "vt100"  
Length: 24 lines, Width: 79 columns
```

```

Special Chars: Escape Disconnect Activation
                ^^x    none        ^M
Timeouts:      Idle EXEC    Idle Session
                never      never
History is enabled, history size is 10.
Total input: 53564 bytes
Total output: 395756 bytes
Data overflow: 27697 bytes
stop rx interrupt: 0 times

```

2.2.15 write

write

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

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

memory

```

Ruijie# write
Building configuration...
[OK]

```

show running-config	
copy	

.

3.1

CLI

3.1.2 copy tftp

tftp

tftp

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

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

4.1

- ' interface aggregateport
- ' interface fastEthernet
- ' interface vlan
- ' medium-type
- ' descriptionin
- ' shutdown
- ' speed
- ' duplex
- ' flowcontrol
- ' mtu
- ' clear counters
- ' clear interface
- ' switchport

4.1.1 interface aggregateport

no

interface aggregateport *port-number*

port-number *D@P*

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

show interfaces	

4.1.2 interface fastEthernet

```
interface fastEthernet mod-num/port-num
```

```
mod-num/port-num /
```

```
no show interfaces
show interfaces fastEthernet
```

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

show interfaces	

4.1.3 interface vlan

```
virtual interface SVI switch
no
```

SVI.

interface vlan *vlan-id*

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

show interfaces	

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

4.1.5 description

no

description *string*

no description

string

show interfaces

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

show interfaces	

4.1.6 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

4.1.7 speed

no

<i>10</i>	10Mbps
<i>100</i>	100Mbps
<i>1000</i>	1000Mbps
<i>10G</i>	10Gbps
<i>auto</i>	

Ap

Ap

Ap

show interfaces

SFP

auto
full
half

show interfaces

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

show interfaces	

4.1.9 flowcontrol

no

flowcontrol {auto | off | on}
no flowcontrol

auto
off
on

show interfaces

1/1

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

show interfaces	

4.1.10 mtu

mtu

Mtu num

num 64 9216(65536)

1500

mtu

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

show interfaces	

4.1.11 carrier-delay

carrier-delay

no

carrier-delay [*seconds*]

no carrier-delay

seconds 1 60

2

DCD

DCD Down Up

DCD

DCD

5

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

Ruijie(config)# **carrier-delay** 5

4.1.12 clear counters

clear counters [*interface-id*]

interface-id

show interfaces

clear counters

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

show interfaces	

4.1.13 clear interface

```
clear interface interface-id
```

interface-id

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

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

shutdown	

4.1.14 switchport

```
2 switchport  
3 no switchport  
switchport  
no switchport
```

switchport

2

3

2

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

show interfaces	

2K IP

4.1.15 switchport mode

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

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

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

4.1.16 switchport access

access port VLAN
no VLAN

switchport access vlan *vlan-id*
no switchport access vlan

vlan-id VLAN ID

switch port access VLAN VLAN 1

VLAN ID VLAN ID
VLAN VLAN
VLAN ID VLAN
trunkport

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

LinkTrap Ap SVI Link SNMP
 LinkTrap,

Link trap:

```
Ruijie(config)# interface gigabitEthernet 1/1
Ruijie(config-if)# no snmp trap link-status
```

Link trap:

```
Ruijie(config)# interface gigabitEthernet 1/1
Ruijie(config-if)# snmp trap link-status
```

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

4.2

4.2.1 show interfaces

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

interface-id aggregateport SVI
 loopback
counters
description link
status

Aggregate Port

5.1

5.1.1 port-group

```
Aggregate Port
Aggregate Port no
```

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

Aggregate Port

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

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

```
1/3 AP 3
```

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

5.1.2 aggregateport load-balance

```
AP no
```

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

no aggregateport load-balance

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

show aggregateport load-balance	aggregateport

5.2

5.2.1 show aggregateport

aggregateport

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

aggregate-port-number	Aggregate Port
load-balance	
summary	

aggregateport load-balance	AP

VLAN

6.1

6.1.1 vlan

VLAN VLAN no
VLAN VLA88(N)JTJ 0 1 -id8 54.00003 Tc -3.611 D2 13.98 D2410.5-VLA88ANN É7 CE ~jç

name *vlan-name***no name**

<i>vlan-name</i>	VLAN

VLAN

VLAN

show vlan vlan

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

sho vlan	VLAN

6.1.3 switchport mode

access port trunk port, switch port 802.1Q no

sitchport mode {**access** | **trunk**}**no sitchport mode**

--	--

access

```
switch port      access      VLAN
  switchport access vlan      VLAN

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

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

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

6.1.5 switchport trunk

trunkport native VLAN Trunk VLAN
no trunk

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

no switchport trunk {allowed vlan | native vlan }

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

VLAN all Native VLAN VLAN 1

Native VLAN

```

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

VLAN

```

Trunk VLAN 1 4094
      Trunk VLAN VLAN
Trunk
    
```

show interfaces switchport

```
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

name	VLAN
switchport access	Vlan

MAC

7.1

```
' 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-manage-learning uniform
' mac-manage-learning uniform learning-synchronization
' mac-manage-learning dispersive
```

7.1.1 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	

7.1.2 clear mac-address-table dynamic

7.1.3 clear mac-address-table filtering

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

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

show mac-address-table filtering

00d0.f800.0c0c

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

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

7.1.4 clear mac-address-table static

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


```

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	

7.1.6 mac-address-table filtering

no

```

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

```

```

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

```

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


```
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

7.1.8 snmp trap mac-notification

MAC

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

7.1.9 address-bind

```
ip mac .
```

address-bind *ip-address mac-address*

no address-bind *ip-address*

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

```

IP MAC IP
IP MAC IP
MAC
```

```
ip 3.3.3.3 mac 00d0.f811.1112
```

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

show address-bind	

7.1.10 address-bind ip-address

```
ip mac .
```

address-bind *ip-address mac-address*

no address-bind *ip-address*

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

```

IP          IP          MAC
IP          IP          MAC          IP
MAC
    
```

```

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

show address-bind	

7.1.11 address-bind uplink

```

        ip          mac          .
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	

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7.1.12 address-bind install

/

address-bind install
no address-bind install

fa 0/1

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

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

show address-bind uplink	

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7.1.13 mac-manage-learning uniform

MAC

uniform .

MAC

MAC

uniform

uniform MAC
 no MAC

show mac-address-table mac-manage-learning	MAC

S8600 S9600

7.1.15 mac-manage-learning dispersive

MAC dispersive .

MAC dispersive
 MAC

show mac-address-table mac-manage-learning	MAC

S8600 S9600

7.2

- ' **show mac-address-table address**
- ' **show mac-address-table aging-time**
- ' **show mac-address-table count**
- ' **show mac-address-table dynamic**
- ' **show mac-address-table filtering**
- ' **show mac-address-table interface**
- ' **show mac-address-table notification**
- ' **show mac-address-table static**
- ' **show mac-address-table vlan**
- ' **show address-bind**
- ' **show mac-address-table mac-manage-learning**

7.2.1 show mac-address-table address

MAC

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

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

```
Ruijie# show mac-address-table address 00d0.f800.1001
Vlan      MAC Address          Type      Interface
-----  -
1         00d0.f800.1001     STATIC   Gi1/1
```

show mac-address-table static	

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

7.2.2 show mac-address-table aging-time

show mac-address-table aging-time

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

mac-address-table aging-time	

7.2.3 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*]



```

1      0007.95c7.dff9      DYNAMIC  gigabitethernet 1/1
1      0007.95cf.eee0      DYNAMIC  gigabitethernet 1/1
1      0007.95cf.f41f      DYNAMIC  gigabitethernet 1/1
1      0009.b715.d400      DYNAMIC  gigabitethernet 1/1
1      0050.bade.63c4      DYNAMIC  gigabitethernet 1/1

```

clear mac-address-table dynamic	

7.2.5 show mac-address-table filtering

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

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

```

Ruijie# MAststacE5f5HR0DC#W3T5HR0DC(HB)1515A5W154AfcR15C65C

```

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

```
Ruijie# show mac-address-table interface
gigabitethernet 1/1
```

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

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

7.2.8 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)

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

7.2.10 show address-bind

show address-bind

```
Ruijie# show address-bind
IP Address      Binding MAC Addr
-----
3.3.3.3         00d0.f811.1112
3.3.3.4         00d0.f811.1117
```

address-bind	

7.2.11 show mac-address-table mac-manage-learning

MAC

```
Ruijie# show mac-address-table mac-manage-learning  
#####MAC manage-learning  
running mode: uniform  
configuration mode: uniform  
dynamic address learning-synchronization: off.
```

MSTP

8.1

8.1.1 spanning-tree

```

MSTP
no
MSTP
spanning-tree
MSTP
no
spanning tree

```

```

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

```

```

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

```

```

forward-time seconds

```

```

hello-time seconds          BPDU

```

```

max-age seconds    BPDU

```

```

spanning-tree

```

```

forward-time hello-time max-age

```

```

2*(Hello Time+1.0snd) <= Max-Age Time <= 2*(Forward-Delay
1.0snd)

```

```

spanning-tree

```

```

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
```

8.1.2 spanning-tree bpdudfilter

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

enabled BPDU filter
Disabled BPDU filter
```

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

```
show spanning-tree interface
```


spanning-tree max-hops *hop-count*

no spanning-tree max-hops

hop-count BPDU 1 40

hop-count 20

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

max-hops

n Hop

íÇPa @à

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

```
show spanning-tree
```

8.1.7 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
```

```

name name          MST          32
no name

revision version   MST          0 65535    no revision

```

```

show              MST region

```

```

MST          VLAN 3, 5-10    MST

```

```

Instance 1

```

```

Ruijie(config)# spanning-tree mst configuration

```

```

Ruijie(config-mst)# instance 1 vlan 3 5-10

```

```

Ruijie(config-mst)# name region 1

```

```

Ruijie(config-mst)# revision 1

```

```

Ruijie(config-mst)# show

```

```

MST configuration

```

```

Name [region1]

```

```

Revision 1

```

```

Instance Vlan Mapped

```

```

-----

```

```

0          1-2,4,11-4094

```

```

1          3,5-10

```

```

-----

```

```

Ruijie(config-mst)# exit

```

```

Ruijie(config)#

```

```

VLAN 3 Instance 1          MST

```

```

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

```

```

Instance 1

```

```

Ruijie(config-mst)# no instance 1

```

```

MST          show

```

```

show spanning-tree mst          MST region

```

```

instance instance-id vlan vlan-range Vlan          MST Instance

```

```

name          MST

```

```

revision      MST

```

```

show          MST          MST

```

8.1.8 spanning-tree mst cost

Instance

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

<i>instance-id</i>	Instance	0	64
<i>cost</i>		1	200 000 000

no

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

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

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

Instance-id 0

priority 128

Region

Instance 20 Gigabitethernet 1/1

10

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

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

0

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

show spanning-tree mst MSTP

spanning-tree mst cost

spanning-tree mst priority Instance

8.1.10 spanning-tree mst priority

Instance

no

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

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

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

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

```
Instance 20          8192
```

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

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

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

8.1.11 spanning-tree reset

```
spanning-tree          no
```

```
spanning-tree reset
```

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

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

8.1.12 spanning-tree tx-hold-count

STP TxHoldCount BPDU
no

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

no spanning-tree tx-hold-count

tx-hold-count TxHoldCount 1 10

3

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

show spanning-tree MSTP

8.1.13 spanning-tree pathcost method

no

spanning-tree pathcost method [long | short]

no spanning-tree pathcost method

long 802.1t path-cost

short 802.1d path-cost

802.1T Path-cost

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

show spanning-tree interface STP

8.1.14 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

8.1.15 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

no spanning-tree portfast default

Portfast

Ruijie(config)# **spanning-tree portfast default****show spanning-tree interface** STP**8.1.18 spanning-tree tc- protection**

tc- protection	no	tc-
protection		

spanning-tree tc- protection**no spanning-tree tc- protection****tc- protection**Ruijie(config)# **spanning-tree tc- protection****8.1.19 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
```

8.1.20 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
```

8.1.21 spanning-tree autoedge

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

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

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

8.1.22 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
```

8.1.23 clear spanning-tree detected-protocols

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

interface-id

spanning-tree forward-time	BridgeForwardDelay
spanning-tree hello-time	BridgeHelloTime
spanning-tree max-age	BridgeMaxAge
spanning-tree <i>max-hops</i>	instance
spanning-tree tx-hold-count	TxHoldCount

8.2.2 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 BPDU filter
---------------------------------	-------------------------

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

9.1 monitor session

SPAN

no

monitor session *session_number* {**source interface** *interface-id* [**both** | **rx** | **tx**] | **destination interface** *interface-id* { **encapsulation** | **switch** } | **mac** {**source** *mac-addr*| **destination** *mac-addr* } [**both** | **rx** | **tx**]} [**acl** *name*]

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

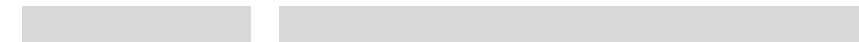
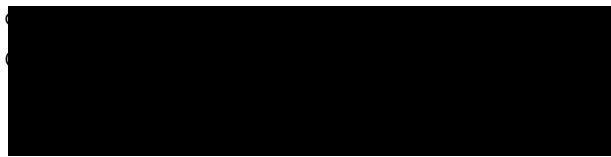
no monitor session all

<i>session_number</i>	SPAN
source interface <i>interface-id</i>	<i>interface-id</i> AP SVI
destination interface <i>interface-id</i>	<i>interface-id</i> AP SVI
mac source <i>mac-addr</i>	MAC
mac destination <i>mac-addr</i>	MAC
both acl <i>name</i>	acl <i>name/id</i>
rx	
tx	
all	
encapsulation	' tag

show monitor

SPAN 1

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




```

RGOS
IP      IP      IP      IP
      IP      IP      IP
    IP      IP      IP
      '
      254      254      C      C
      '
      IP      IP      C      IP
      '
      IP      IP
      '
      IP
      '
      IP      IP      10.10.10.1
255.255.255.0
ip address 10.10.10.1 255.255.255.0

```

show interface	

```

IP
secondary

```

10.1.2 ip unnumbered

```

IP      IP      no

```

```

ip unnumbered interface-type interface-number
no ip unnumbered interface-type interface-number

```

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

```

      IP          IP          IP          IP
    IP          IP          IP          IP
  IP          IP          IP          IP

,
,
      SLIP HDLC PPP LAPB Frame-relay

      X.25

,
  ping
  IP          SNMP

,

      FastEthernet 0/0

      IP

ip unnumbered fastEthernet 0/0

```

show interface	

10.2

```

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

```

r 注意:

```

esw arp [ keyword ...]

```

10.2.1 arp

```

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

```

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

ARP

```

RGOS ARP 32 IP 48

```

MAC

ARP
clear arp-cache ARP ARP

ARP

arp 1.1.1.1 4e54.3800.0002 arpa

clear arp-cache	ARP

10.2.2 arp retry interval

arp IP
 2 ARP no
 1 ARP

arp retry interval *seconds*

no arp retry interval

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

ARP 1

ARP ARP ARP

ARP 30s

arp retry interval 30

10.2.4 arp trusted

ARP

no

arp trusted *number*

no arp trusted

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

ARP

ARP
ARP

1000

ARP

arp trusted 1000

service trustedarp	ARP

10.2.5 arp unresolve

ARP

no

8192

arp unresolve *number*

no arp unresolve

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

```

10.2.7 arp timeout

```

ARP ARP
no

```

```

arp timeout seconds
no arp timeout

```

<i>seconds</i>	0-2147483

3600

```

ARP IP MAC ARP
ARP ARP
ARP
FastEthernet 0/0 ARP
120

```

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

clear arp-cache	ARP
show interface	

10.2.8 ip proxy-arp

```

no ARP ARP ip proxy-arp
ip proxy-arp
no ip proxy-arp

ARP

IP ARP MAC ARP ARP
IP IP IP ARP MAC
IP MAC ARP ARP

FastEthernet 0 ARP

interface fastEthernet 0
ip proxy-arp
```

10.2.9 service trustedarp

```

no ARP service trustedarp
```

service trustedarp
no service trustedarp

ARP

ARP
GSN

ARP

GSN

service trustedarp

config
service trustedarp

s32

10.3 IP

IP

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

r **注意:**

esw arp arp
 show esw [ip] arp [keyword ...]

10.3.1 clear arp-cache

ARP

ARP

IP

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

show arp

```

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

```

ARP

Protocol	Internet
Address	IP
Age (min)	ARP “_”
Hardware	IP
Type	ARPA
Interface	IP

show arp 192.168.195.68

```

Ruijie# show arp 192.168.195.68
Protocol Address    Age(min)  Hardware      Type
Interface
Internet 192.168.195.68    1    0013.20a5.7a5f  arpa
VLAN 1

```

show arp 192.168.195.0 255.255.255.0

```
Ruijie# show arp 192.168.195.0 255.255.255.0
Protocol   Address           Age(min)   Hardware   Type
Interface
Internet  192.168.195.64    0          0018.8b7b.9106  arpa
VLAN 1
Internet  192.168.195.2     1          00d0.f8ff.f00e  arpa
VLAN 1
Internet  192.168.195.5     --         00d0.f822.33b1  arpa
VLAN 1
Internet  192.168.195.1     0          00d0.f8a6.5af7  arpa
VLAN 1
Internet  192.168.195.51    1          0018.8b82.8691  arpa
VLAN 1
```

show arp 001a.a0b5.378d

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

10.3.3 show arp counter

ARP arp

show arp counter

show arp counter

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

ARP

10.3.4 show arp timeout

ARP

show arp timeout

show arp timeout

Ruijie# **show arp timeout**

Interface	arp timeout(sec)
-----------	------------------

-----	-----
VLAN 1	3600

ARP

192.168.12.0

```
clear ip route 192.168.12.0
```

show ip route	IP

10.3.6 show ip arp

ARP

```
show ip arp
```

```
show ip arp
```

```
Ruijie# show ip arp
Protocol Address      Age(min) Hardware      Type
Interface
Internet 192.168.7.233  23      0007.e9d9.0488 ARPA
FastEthernet 0/0
Internet 192.168.7.112  10      0050.eb08.6617 ARPA
FastEthernet 0/0
Internet 192.168.7.79   12      00d0.f808.3d5c ARPA
FastEthernet 0/0
Internet 192.168.7.1   50      00d0.f84e.1c7f ARPA
FastEthernet 0/0
```

```

Internet 192.168.7.215 36 00d0.f80d.1090 ARPA
FastEthernet 0/0
Internet 192.168.7.127 0 0060.97bd.ebee ARPA
FastEthernet 0/0
Internet 192.168.7.195 57 0060.97bd.ef2d ARPA
FastEthernet 0/0
Internet 192.168.7.183 -- 00d0.f8fb.108b ARPA
FastEthernet 0/0

```

ARP

Protocol	Internet
Address	IP
Age (min)	ARP “_”
Hardware	IP
Type	ARPA
Interface	IP

10.3.7 show ip redirects

show ip redirects

show ip redirects

Ruijie# **show ip redirects**

Default Gateway: 192.168.195.1

RMON

11.1

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**

11.1.1 rmon collection stats

no

```
rmon collection stats index [owner owner-string]  
no rmon collection stats index
```

1

```
Ruijie(config)# interface fast-Ethernet 0/1  
Ruijie(config-if)# rmon collection stats 1 zhansan
```

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

11.1.2 rmon collection history

no

rmon collection history *index* [**owner** *ownername*] [**buckets** *bucket-number*] [**interval** *seconds*]
no rmon collection history *index*

RGOS
owner buckets interval

1

```
Ruijie(config)# interface fast-Ethernet 0/1
Ruijie(config-if)# rmon collection history 1 zhansan
buckets 10 interval 10
```

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

11.1.3 rmon alarm

MIB no

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

trap

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

--	--

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

```

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]	

11.2.2 show rmon history

show rmon history

```

Ruijie# show rmon history
Entry : 1
Data source : Gi1/1
Buckets requested : 65535
Buckets granted : 10
Interval : 1
Owner : zhangsan
Sample : 198
Interval start : 0d:0h:15m:0s
DropEvents : 0
Octets : 67988
    
```

```

Pkts : 726
BroadcastPkts : 502
MulticastPkts : 189
CRCAAlignErrors : 0
UndersizePkts : 0
OversizePkts : 0
Fragments : 0
Jabbers : 0
Collisions : 0
Utilization : 0
    
```

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

11.2.3 show rmon alarm

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

12.1

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

12.1.1 storm-control

no

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

no storm-control {broadcast | multicast | unicast} [{level *percent* |
pps packets | *rate-bps*}]

broadcast

multicast

unicast

percent

20 20%

packets

pps

packets per second

Rate-bps

64k-2M

64k

2-100M

1M

100M

8M

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	

86 **pps**

12.1.2 switchport protected

no

switchport protected
no switchport protected

3
show interfaces

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

show interfaces	

S32 S37
acl

12.1.3 protected-ports route-deny

3
3
protected-ports route-deny
no protected-ports route-deny

3
3 **show running-config**

```
Ruijie(config)# protected-ports route-deny
```

show running-config	3

10.2 S32/S37 S25 S57

12.1.4 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	

12.1.5 switchport port-security aging

no

switchport port-security aging {static | time time }

no switchport port-security aging {static | time }

Static	
time time	1440 0 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	

12.1.6 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]

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

```

ACL
ACL      IP      MAC
      802.1x
      IP

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

```

```

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

```

show port-security	

```

S8600      IP      1K      IP
      84

S2900      IP      1K      IP
      500

```

12.1.7 switchport port-security arp-check

```

ARP      no

[no] switchport port-security arp-check [cpu]

cpu      CPU

```

Ruijie(config-if)#switchport **port-security arp-check**

show port-security	

S8600

Gi1/1 Disabled Disabled Disabled

storm-control	

12.2.2 show port-security

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

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

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

switchport port-security	
switchport port-security aging	
switchport port-security	

mac-address	
--------------------	--

802.1X

13.1 dot1x

dot1x

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

13.1.1 dot1x auto-req

802.1X	dot1x auto-req
no	
[no] dot1x auto-req	

802.1x	show dot1x auto-req
--------	---------------------

```
802.1x
Ruijie# configure terminal
Ruijie(config)# dot1x auto-req
Ruijie(config)# end
Ruijie# show dot1x auto-req
Ruijie(config)# dot1x auto-req
```

```

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

```

show dot1x auto-req	

13.1.2 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

```

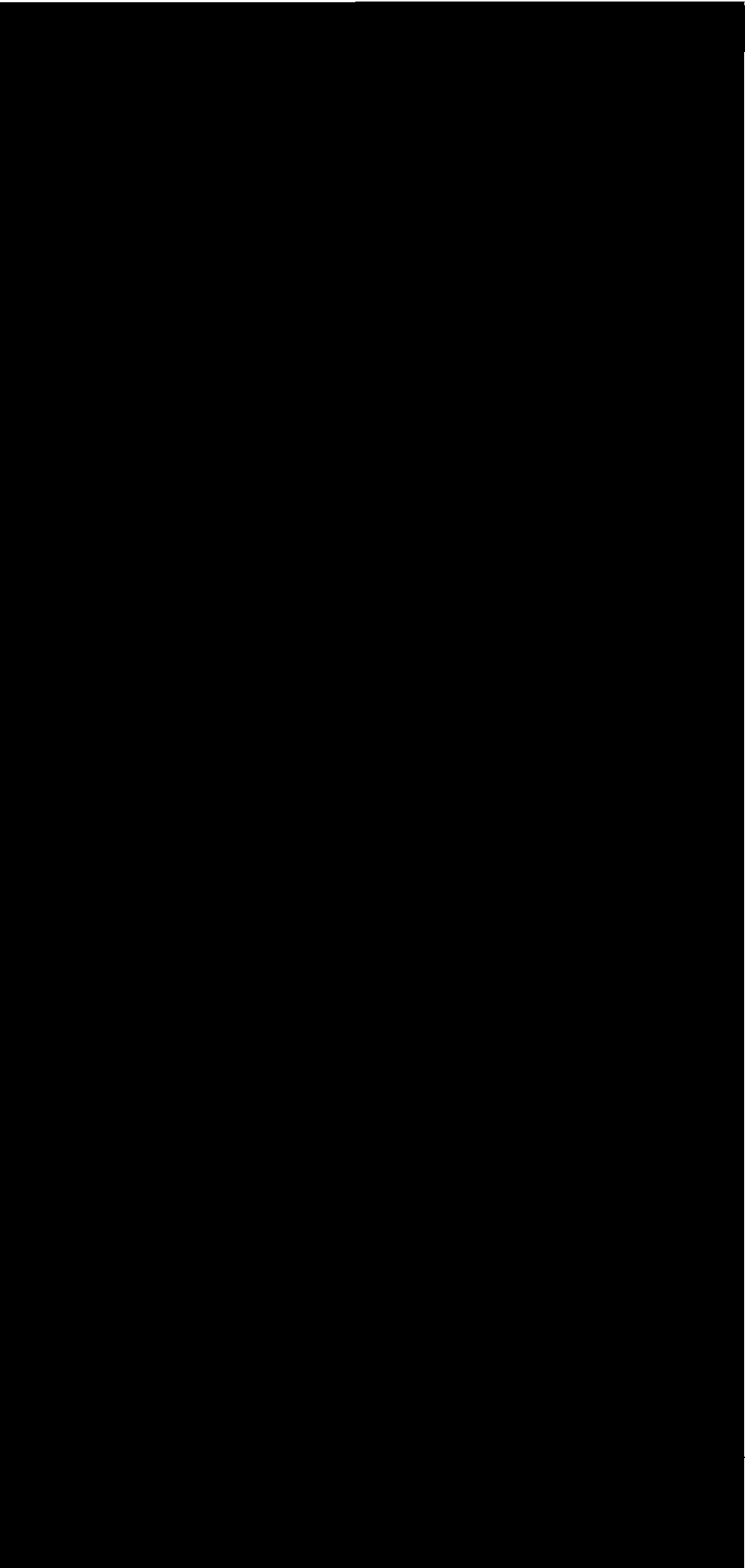
Ruijie# configure terminal
Ruijie(config)# dot1x auto-req packet-num 0
Ruijie(config)# end
Ruijie# show dot1x auto-req

```

```

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

```



13.1.4 dot1x auto-req user-detect

no


```
dot1x auto-req user-detect
no dot1x auto-req user-detect
```

show dot1x

auto-req

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

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



```
' dot1x timeout server-timeout
' dot1x timeout supp-timeout
' dot1x timeout tx-period
```

13.2.1 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

13.2.2 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

```



```

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

```

show dot1x	802.1x

13.2.4 dot1x timeout supp-timeout

no

dot1x timeout supp-timeout *seconds*

no dot1x timeout supp-timeout

seconds 0
65535

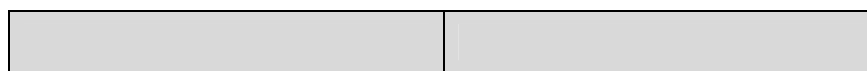
3

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

dot344 4Tf-0344 41 16333C

show dot1x 802.1x

10s

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

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

show dot1x	802.1x

13.3 dot1x

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

13.3.1 dot1x re-authentication

no

[no] dot1x re-authentication

802.1X

Of.RTgF(3D)A...RD0...Vp8...Vpa...8...F8...F4...F8...VqXEg

```
Ruijie(config)# dot1x probe-timer alive 120
Ruijie(config)# end
Ruijie# show dot1x probe-timer
```

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

Show dot1x probe-timer	

13.4.2 dot1x client-probe enable

[no] dot1x client-probe enable

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

```
802.1X Status:      Enabled
Authentication Mode: EAP-MD5
Authed User Number: 0
Re-authen Enabled:  Enabled
Re-authen Period:   1000 sec
Quiet Timer Period: 1000 sec
Tx Timer Period:    10 sec
```

```

Supplicant Timeout: 10 sec
Server Timeout:    10 sec
Re-authen Max:    5 times
Maximum Request:  3 times
Filter Non-RG Supp: Disabled
Client Oline Probe: Enabled
Eapol Tag Enable: Disabled
Authorization Mode: Group Server

```

show dot1x	dot1x

13.5 dot1x

```

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

```

13.5.1 dot1x authentication

```

AAA
AAA
no

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

default

```

list-name

AAA

AAA

AAA

dot1x

group radius

```
Ruijie# configure terminal
Ruijie(config)# aaa new-model
Ruijie(config)# aaa authentication dot1x default group
radius
Ruijie(config)# interface fastEthernet0/1
Ruijie(config-if)# dot1x authentication default
Ruijie(config-if)# end
Ruijie#
```

aaa new-model	AAA
aaa authentication dot1x	

13.5.2 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

show dot1x 802.1x

802.1x

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

show dot1x	802.1x

13.5.4 dot1x default

802.1x

dot1x default

show dot1x 802.1x

802.1x

```
Ruijie# configure terminal
Ruijie(config)# dot1x default
Ruijie(config)# end
Ruijie# end
```

show dot1x	802.1x

show dot1x 802.1x

802.1X tag

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

802.1x 7

```
Ruijie# configure terminal
Ruijie(config)# dot1x max-req 7
Ruijie(config)# end
Ruijie#
```

show dot1x	802.1x

13.5.8 dot1x private-supPLICANT-only

no

```
dot1x private-supPLICANT-only
no dot1x private-supPLICANT-only
```

show dot1x private-supPLICANT-only 802.1x

```
Ruijie# configure t
Ruijie(config)# dot1x private-supPLICANT-only
Ruijie(config)# end
Ruijie#
```

show dot1x private-supPLICANT-only	

13.5.9 dot1x port-control auto

no

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

802.1x

```
show dot1x      802.1x
```

802.1x

```
Ruijie# configure terminal
Ruijie(config)# interface g0/1
Ruijie(config-if)# dot1x port-control auto
Ruijie(config-if)# end
Ruijie#
```

show dot1x	802.1x

13.5.10 dot1x port-control-mode

802.1x

MAC

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

```

mac-based      mac  802.1X
port-based          802.1X

```

mac-based

```

show dot1x port-control      802.1x
                             802.1X
                             802.1X

```

```

802.1x
802.1x
Ruijie(config)# interface g 0/1
Ruijie(config-if)# dot1x port-control auto
Ruijie(config-if)# dot1x port-control-mode
port-based
Ruijie(config-if)# end
Ruijie#

```

show dot1x port-control	

13.5.11 dot1x stationarity enable

```

802.1x
802.1X

```

```

dot1x stationarity enable
no dot1x stationarity enable

```

802.1x

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

13.6 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
```

13.6.1 show dot1x

802.1x

show dot1x

Ruijie# **show dot1x**

```

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

```

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

dot1x re-authentication

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	

13.6.3 show dot1x auto-req

802.1x

show dot1x auto-req

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

```
Auto-Req: Disabled  
User-Detect : Enabled  
Packet-Num : 0  
Req-Interval: 30 Seconds  
Ruijie#
```



```
private-supPLICant-only:: disabled  
Ruijie#
```

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

13.6.5 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	
dot1x timeout server-timeout	
dot1x timeout supp-timeout	
dot1x timeout tx-period	

13.6.6 show dot1x port-control

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

interface

Ruijie#

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

```
Hello Interval: 20 Seconds
```

```
Hello Alive: 250 Seconds
```

```
Ruijie#
```

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

13.6.8 show dot1x re-authentication

show dot1x re-authentication

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

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

13.6.9 show dot1x reauth-max

show dot1x reauth-max

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

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

dot1x timeout supp-timeout	
dot1x timeout tx-period	

13.6.10 show dot1x summary

802.1X

show dot1x summary

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

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

dot1x re-authentication	
dot1x timeout quiet-period	
dot1x timeout re-authperiod	

· dot1x timeoutserver-ttimeouX ·

```

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 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	

13.6.12 show dot1x timeout

```
802.1X
```

```

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

```

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

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

AAA

14.1

aaa authentication

14.1.1 aaa authentication

AAA

aaa authentication

no

aaa authentication {dot1x | enable | ppp | login} {default | list-name} method1 [method2...]

no aaa authentication {dot1x | enable | ppp | login} {default | list-name}

default

list-name

dot1x Dot1x

enable Enable

ppp PPP

login Login

method 1

4

1 AAA

local	
none	
group	RADIUS

default

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

method1

local	
none	
group	RADIUS

AAA

SA

Ö

14.3

RGOS RADIUS

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

14.3.1 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	

14.3.2 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	
------------------------	--

14.3.3 aaa accounting update periodic

```

periodic                                     aaa accounting update
                                             no

```

```
aaa accounting update periodic interval
```

```
no aaa accounting update periodic
```

```
interval                                     1
```

```
5 minutes
```

AAA

AAA

1

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

```
Ruijie(config)# aaa accounting update
```

```
Ruijie(config)# aaa accounting update periodic 1
```

aaa new-model	AAA
aaa accounting network	

14.3.4 show aaa method-list

EXEC

EXEC

Ruijie# **show aaa method-list**

14.4 AAA

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

14.4.1 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

14.4.2 aaa group server

AAA

no

aaa group server	aaa
show aaa group	aaa

14.4.4 ip vrf forwarding

AAA vrf no

ip vrf forwarding vrf_name

no ip vrf forwarding

vrf_name vrf

vrf

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

aaa group server	aaa
show aaa group	aaa

14.5 AAA

- ' **aaa new-model**
- ' **debug aaa**
- ' **show aaa method-list**

14.5.1 aaa new-model

```

RGOS AAA
new-model AAA no AAA
aaa new-model
no aaa new-model

```

AAA

```

AAA AAA
aaa new-model AAA AAA AAA

```

AAA

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

aaa authentication	

14.5.2 debug aaa

```

AAA no
debug aaa
no debug aaa

```

EXEC

14.5.3 show aaa method-list

AAA

show aaa method-list

AAA

AAA

```
Ruijie# show aaa method-list
Authentication method-list
aaa authentication login default group radius
aaa authentication ppp default group radius
aaa authentication dotlx default group radius
aaa authentication dotlx 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	

RADIUS

15.1 RADIUS

RADIUS

```
' ip radius source-interface  
' radius-server host  
' radius-server key  
' radius-server retransmit  
' radius-server timeout  
' radius-server dead-time  
'
```

radius

radius fastEthernet 0/0 ip

radius

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

radius-server host	RADIUS
ip address	ip

15.1.2 radius-server host

RADIUS

radius-server

no

RADIUS

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

```
no radius-server host {hostname | ip-address}
```

<i>hostname</i>	RADIUS	DNS	
<i>Ip-address</i>	RADIUS	IP	
<i>Auth-port</i>	RADIUS	UDP	
<i>Port-number</i>	RADIUS	UDP	0
<i>Acct-port</i>	Radius	UDP	
<i>Port-number</i>	RADIUS	UDP	0

RADIUS AAA
radius-server

RADIUS
RADIUS

RADIUS

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

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

15.1.3 radius-server key

RADIUS

aaa

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

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

15.1.4 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

15.1.5 radius-server timeout

RADIUS

radius-server timeout **no**

radius-server timeout *seconds*

no radius-server timeout

seconds

1-1000

5

10

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

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

15.1.6 radius-server deadtime

```

t
t      t      t      t      t
  t      t      t      t      t
    t      t      t      t      t
      t      t      t      t      t
        t      t      t      t      t
          t      t      t      t      t
            t      t      t      t      t
              t      t      t      t      t
                t      t      t      t      t
                  t      t      t      t      t
                    t      t      t      t      t
                      t      t      t      t      t
                        t      t      t      t      t
                          t      t      t      t      t
                            t      t      t      t      t
                              t      t      t      t      t
                                t      t      t      t      t
                                  t      t      t      t      t
                                    t      t      t      t      t
                                      t      t      t      t      t
                                        t      t      t      t      t
                                          t      t      t      t      t
                                            t      t      t      t      t
                                              t      t      t      t      t
                                                t      t      t      t      t
                                                  t      t      t      t      t
                                                    t      t      t      t      t
                                                      t      t      t      t      t
                                                        t      t      t      t      t
                                                          t      t      t      t      t
                                                            t      t      t      t      t
                                                              t      t      t      t      t
                                                                t      t      t      t      t
                                                                  t      t      t      t      t
                                                                    t      t      t      t      t
                                                                      t      t      t      t      t

```

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

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

15.1.7 radius attribute

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

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

id id <1-255>

type type

RADIUS

22

ip privilege

22

max up-rate

211

radius vendor-specific extend	Radius id

15.1.9 radius vendor-specific extend

id

show radius vendor-specific

15.2.1 debug radius

RADIUS no RADIUS

debug radius [event | detail]

no debug radius [event | detail]

EXEC

15.2.2 show radius server

RADIUS

show radius server

radius

```
Ruijie# show radius server
server ip : 192.168.4.12
acct port: 23
authen port: 77
server state: ready
```

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

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

15.2.3 show radius parameter

RADIUS

show radius parameter

radius

```
Ruijie# show radius parameter
Server Timeout: 5 Seconds
```

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

15.2.4 show radius vendor-specific

RADIUS

show radius vendor-specific

radius

```
Ruijie# show radius vendor-specific
id   vendor-specific      type-value
-----
1    max down-rate        76
2    qos                  77
3    user ip              3
4    vlan id              4
5    version to client    5
6    net ip               6
7    user name            7
8    password             8
9    file-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
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 privilege	22
23	login privilege	42
24	limit to user number	50

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

QoS

16.1

```

QoS
1 policy-map
policy-map
class-map 1 ACL ACL ACE
ACE "ACL"
QoS
Policy Map
QoS
Policy Map
QoS Off
QoS
    
```

CoS	0
	8
	WRR
QueueWeight	1:1:1:1:1:1:1:1
WRR Weight Range	1:15
DRR Weight Range	1:15
	No Trust

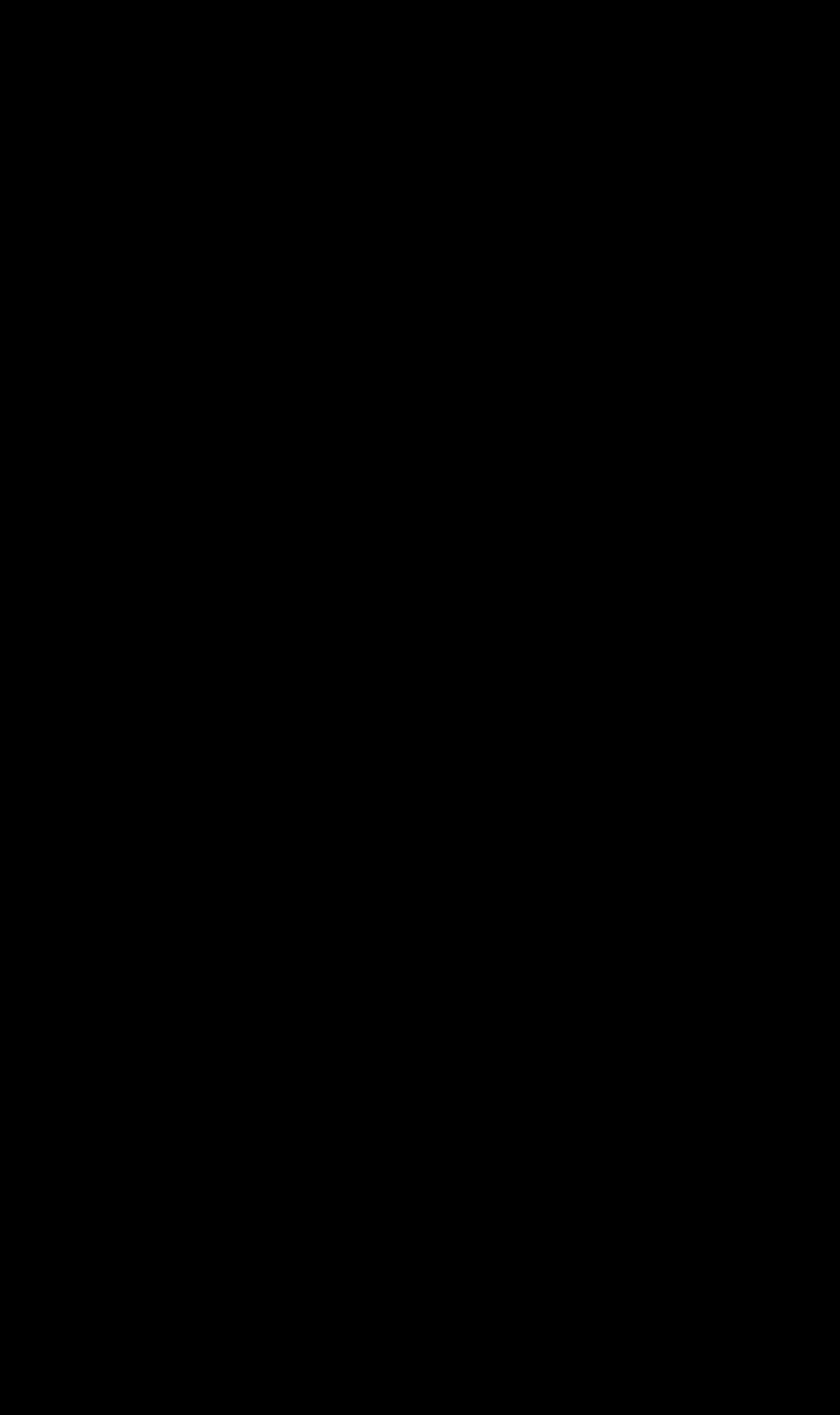
Cos

CoS	0	1	2	3	4	5	6	7
	1	2	3	4	5	6	7	8

CoS to DSCP

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

IP-Precedence to DSCP



Partial view of the right side of the page, showing a white background with faint horizontal lines, likely representing the edge of a document or a scanning artifact.

S2900	cos dscp
S8600	cos dscp ip-precedence

16.2.2 mls qos cos

CoS

```
mls qos cos default-cos  
no mls qos cos
```

```
default-cos 0 7  
no
```

```
CoS 0
```

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

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

16.2.3 Class Maps

ACL

```
ip access-list {extended | standard} { acl-id | acl-name }  
mac access-list extended {acl-id | acl-name}  
expert access-list extended {acl-id | acl-name}  
ipv6 access-list extended acl-name  
access-list acl-id ACL  
  
class map class map  
  
[no] class-map class-map-name  
  
class map
```

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

<i>acl-name</i>	ACL
<i>acl-id</i>	ACL id
<i>class-map-name</i>	class map
no class-map <i>class-map-name</i>	class map
no match access-group <i>acl-name acl-id</i>	

MAC ACL, me

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

ACL

Ruijie(config-ext-macl)# **permit host** *1111.2222.3333*
any

ACL

Ruijie(config-ext-macl)# **exit**

class-map, cm

Ruijie(config)# **class-map** *cm*

ACL

Ruijie(config-cmap)# **match access-group** *me*

class-map

Ruijie(config-cmap)# **exit**

show mac access-lists

show ip access-lists

show class-map

S2900

S8600

16.2.4 Policy Maps

policy map policymap

[no] policy-map *policy-map-name*

policy map class-map ,

[no] class *class-map-name*

IP ipdscp IP

set ip dscp *new-dscp*

no set ip dscp

police *rate-bps burst-byte*[**exceed-action** {**drop** | **dscp** *dscp-value*}]

no police

policy-map-name policymap

no policy-map *policy-map-name* policy map

class-map-name class map

no class *class-map-name*

new-dscp DSCP

rate-bps kbps

burst-byte kbyte

drop

dscp-value DSCP

dscp 10

Ruijie(config-pmap-c)# **set ip dscp 10**

1M, 4096k, dscp 16

Ruijie(config-pmap-c)# **police 1000000 4096**
exceed-action dscp 16

show policy-map

S2900 S8600

16.2.5 service-policy

policy map

service-policy {input | output} *policy-map-name*
no service-policy {input | output}

policy-map-name policymap

no policy map

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

Ruijie(config-if)# **service-policy input po**

show mls qos interface

S2900 input

S8600 input output

16.2.6 priority-queue

[no] priority-queue [out]

priority-queue [out] SP (S2900
 ,S8600)

no priority-queue [out] WRR

WRR

Ruijie(config)# **no priority-queue out**

show mls qos queueing

16.2.7 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

S2900

S8600

16.2.8 wrr-queue cos-map

CoS

wrr-queue cos-map *qid cos0* [

```
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
```

```
S2900          S8600
```

16.2.10 mls qos map dscp-cos

DSCP	CoS
------	-----

```
mls qos map dscp-cos dscp-list to cos
```

```
no mls qos map dscp-cos
```

```
dscp-list
```

```
cos          0 7
```

```
no
```

```
Ruijie(config)# mls qos map dscp-cos 8 10 16 18 to 0
```

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

```
S2900          S8600
```

16.2.11 interface rate-limit

rate-limit {input | output} *bps burst-size*

no rate-limit

input

output

WRR

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

```
show mls qos scheduler
```

S8600

16.2.13 drr-queue bandwidth

DRR

```
drr-queue bandwidth weight1...weight8
```

```
no drr-queue bandwidth
```

```
weight1...weight8
```

```
no
```

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

```
show mls qos queueing
```

86

16.2.14 mls qos map ip-prec-dscp

ippre DSCP

mls qos map ip-prec-dscp dscp1...dscp8

no mls qos map ip-prec-dscp

dscp

no

```
Ruijie(config)# mls qo map ip-prec -dscp 8 10 16 18 24
26 32 34
```

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

S8600

16.2.15 wfq-queue bandwidth

wfq

wfq-queue *queue-id* bandwidth *min max*

no wfq-queue *queue-id* bandwidth

queue-id

min

max

min †

max kbps

wfq

wfq

```
Ruijie(config)# mls qos scheduler wfq
Ruijie(config)# show mls qos scheduler
```

```
Ruijie(config-if)# wfq-queue 2 bandwidth 10 10240
Ruijie(config-if)# wfq-queue 4 bandwidth 7 10240
Ruijie(config-if)# show running
```

show mls qos scheduler	QOS

RGOS10.1

16.2.16 wfq-queue sp

wfq

(sp)

```
wfq-queue queue-id sp
no wfq-queue queue-id sp
```

queue-id

sp:

sp

wfq

sp+wfq

wfq

```
Ruijie(config)# mls qos scheduler wfq
Ruijie(config)# show mls qos scheduler
```

1 3

```
Ruijie(config)# wfq-queue 1 sp
Ruijie(config)# wfq-queue 3 sp
Ruijie(config)# show running
```

show mls qos scheduler	QOS

RGOS10.1

16.3

16.3.1 show class-map

class map

```
show class-map [class-name]
```

```
class-name class map
```

class map

```
Ruijie# show class-map
```

S2900 S8600

16.3.2 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**

S2900 S8600

16.3.3 show mls qos interface

QoS

show mls qos in51.3803C2_71.1i0 1 Tf0 Tc 0 T0A0Dti0M0A0

S2900 Ö %À ` f Ö JrÅ€

16.3.4 show mls qos queueing

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

show mls qos queueing

```
Ruijie# show mls qos queueing
```

```
S2900 cos-to-queue map, wrr weight
```

```
S8600 cos-to-queue map, wrr weight, drr weight
```

16.3.5 show mls qos scheduler

show mls qos scheduler

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

```
S8600
```

16.3.6 show mls qos maps

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

show mls qos maps [cos-dscp | dscp-cos / ip-prec-dscp]

cos-dscp Vtg! dscp maps

dscp-cos dscp-cos maps

ip-prec-dscp ip-prec-dscp maps

TPP

17.1

17.1.1 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
```

17.1.2 tp-guard port enable

no

[no] tp-guard port enable

```
Ruijie# show tpp
```

```
topology guard
```

18.1

- ' **cat**
- ' **cd**
- ' **cp**
- ' **ls**
- ' **makefs**
- ' **mkdir**
- ' **mv**
- ' **pwd**
- ' **rm**
- ' **rmdir**

18.1.1 cat

cat type {bin

```
      a      ( type file); b '?'
      ,      '?'

      tmp      log.txt
Ruijie# cat type text file tmp/log.txt

      bin      tmp.bin
Ruijie# cat type bin file bin/tmp.bin
```

18.1.2 cd

```
cd DIRECTORY
```

```
DIRECTORY
```

```
“ ”      “ ”
“ ”      “ ”
```

ls

```
tmp
Ruijie# cd tmp
```

ls	

18.1.3 cp

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

DESTINE_FILE

DIRECTORY

SOURCE_FILE ()

cp

log.txt :

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

18.1.4 ls

ls *PATHNAME*

PATHNAME

```
Ruijie# ls
      tmp
Ruijie# ls tmp
```

18.1.5 makefs

```
makefs dev DEVNAME fs FSNAME
makefs fs FSNAME dev DEVNAME
```

```
DEVNAME           (           )
FSNAME
```

makefs6.823 fs

b

jffs2

dev/mtdblock/1

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

18.1.6 mkdir

mkdir *DIRECTORY*

Ej UGQD iGQD

M 02D 0231E34Hr

SOURCE_FILE
DESTINE_FILE/DIRECTORY

```
          a          ( type file); b '?'  
                    '?'  
,  
          log.txt          ,          config.txt,  
,  
Ruijie# mv sour tmp/log.txt dest ../config.txt  
          log.txt          tmp  
Ruijie# mv dest /mnt/tmp sour tmp/log.txt
```

18.1.8 pwd

pwd

pwd	

18.1.10 rmdir

rmdir *DIRECTORY*

DIRECTORY ,

rm ,

tmp

Ruijie# **rmdir** *tmp*

Ruijie# **ls**

18.2

logging console	
logging monitor) VTY (telnet
logging trap	Syslog Server

19.1.2 terminal monitor

```

VTY
no
terminal monitor
terminal no monitor

```

```

VTY VTY

```

```

VTY VTY
VTY

```

/ 说明:

```

no RGOS
, 0 1

```

```

VTY
Ruijie# terminal monitor
Ruijie#

```

19.1.3 logging buffered

```
no
```

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	

logging on	
show logging	
logging trap	syslog server

19.1.5 logging file flash

```

FLASH
FLASH no
logging file flash:filename [max-file-size] [level]
no logging file

Filename txt
max-file-size 128K 6M bytes
128K
level1 FLASH 6
FLASH
FLASH

```

Syslog Server

FLASH

txt

r 注意:

```

FLASH FLASH
FLASH logging file flash

```

```

FLASH trace.txt
64K, 6

```

Ruijie(config)# logging file flash:trace

logging on	
show logging	
more flash	FLASH

19.1.6 logging console

no

logging console *level*

no logging console

level

0 7

1

Debugging (7)

show logging

6

Ruijie(config)# logging console informational

--	--

logging on	
show logging	

19.1.7 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

```

19.1.8 logging trap

```
Syslog Server
no
logging trap level
no logging trap

level
1

Informational(6)
```

```
Syslog Server
Syslog Server logging
logging trap
show logging
```

Syslog Server

Loopback 0 Syslog

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

2	mail system
3	system daemons
4	security/authorization messages
5	messages generated internally by syslogd
6	line printer subsystem
7	network news subsystem
8	UUCP subsystem
9	clock daemon
10	security/authorization messages
11	FTP daemon
12	NTP subsystem
13	log audit
14	log alert
15	clock daemon
16	local use 0 (local0)
17	local use 1 (local1)
18	local use 2 (local2)
19	local use 3 (local3)
20	local use 4 (local4)
21	local use 5 (local5)
22	local use 6 (local6)
23	local use 7 (local7)

RGOS (local7) 23

Syslog kernel

Ruijie(config)# logging facility kern

logging console	

19.1.12 logging count

no

logging count

no logging count

no

logging count

Ruijie(config)# **logging count**

1

Uptime

Datetime

Log

Debug

Datetime

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

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

logging on	
service sequence-numbers	

19.1.15 service sysname

no

service sysname

no service sysname

Mar 22 15:28:02 %SYS-5-CONFIG: Configured from console

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

show logging	

19.1.16 more flash

FLASH

more flash:*filename*

19.1.17 clear logging

clear logging

Ruijie# **clear logging**

logging on	
show logging	
logging buffered	

19.2

19.2.1 show logging

show logging

show logging

```

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

```

Syslog logging	disabled enabled,
Console logging	
Monitor logging	VTY
Buffer logging	
Timestamp debug messages	Debug
Timestamp log messages	Log

Trap logging	Syslog Server
Log Buffer	

logging on	
clear logging	

19.2.2 show logging count

show logging count

count show logging count logging

show logging

show logging count

```
Ruijie# show logging count
Module Name  Message Name Sev Occur    Last Time
=====
-SYS          CONFIG_I      5   1      Jul 6
10:29:57
-----
-SYS TOTAL           1
```

logging count	
show logging	
clear logging	