



RGOS[®]

NMX

V10.3(5b6)

©2012

山

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山

Ruijie
Networks

4

Ruijie 锐捷网络

4

锐捷网络

4

Ruijie

4

RGOS® 10.3(5b6) Ⅲ

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1.

5 Ⅲ

注意、说明

Ⅲ

Ⅲ Courier New 5 Ⅲ

2.

Arial

Ю

§

Ⅲ

[x|y|...]
//

山

山

3.

~ 注意

4

4

山

&

CLI

1.1 alias

alias 山

no 山

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"    山    "s?"
's'
```

Ruijie# **s?**

*s=show show start-chat start-terminal-service

山

```
EXEC          "sv"    "show version"
```

Ruijie# **s?**

*s=show *sv="show version" show start-chat
start-terminal-service

山

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"
```

山

山

show aliases

山

「 4

```

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

```

Г Д

show aliases	

1.2 privilege

privilege ▮ **no**
▮

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

Г Д

mode CLI ▮

[all] ▮

level *level* 0-15▮

reset ▮

command-string ▮

Г Д

Г Д

Г Д

privilege

CLI

privilege ?

CLI

Ш

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

r A

CLI

1

"test"

reload

Ш

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]*

Г Д

mode



Г Д

Г Д

EXEC

Г Д



Г Д

EXEC

Ruijie# **show aliases exec**

exec mode alias:

h	help
p	ping
s	show
u	undebug
un	undebug

Г Д

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 $\Downarrow$ **disable** [*privilege-level*] $\Uparrow$ **A***privilege-level* $\Uparrow$ **A** $\Uparrow$ **A** $\Downarrow$ $\Downarrow$

& 说明:

disable

山

г д

Ruijie# **disable 10**

г д

enable	山

2.1.2 enable

enable山

Э

山

2.1.3 enable password

enable password山

no

山

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

no enable password

г д

Password

EXEC

山

Level

山

0|7

0

7

山

encrypted-password

山

г д

г д

山

山

```

o          1  26          山
o          山
          山

```

~ 注意:

```

EXEC  山
      山

```

Г Д

pw10

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

Г Д

enable secret	山

2.1.4 enable secret

enable secret山

no 山

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

no enable secret

Г Д

Secret EXEC 山 *M*

```

security 15 password security
security 15 password password
security

```

г д

pw10

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

г д

enable password	

2.1.5 password

```

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

```

г д

```

password line
0|7 0 7
encrypted-password

```

г д

line

г д

line

line red

```

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

```

--	--

2.1.6 login

```

AAA
login
no login

Ruijie(config)# login
Ruijie(config)# no login

line

Ruijie(config-line)# login
Ruijie(config-line)# no login

AAA
VTY console

Ruijie(config-line)# login
Ruijie(config-line)# no login

VTY

```

```

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

```

```

Ruijie(config-line)# login

```

password	line

2.1.7 login local

```

AAA
login local
no login local

Ruijie(config)# login local
Ruijie(config)# no login local

line

Ruijie(config-line)# login
Ruijie(config-line)# no login

```

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 no	AAA
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	

Г Д

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*

Г Д

name

password

0|7 0 7

encrypted-password

privilege-level

Г Д

Г Д

~ 注意:

7

7

7

Г Д

15

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

Г Д

login local	Ш

2.1.10 lock

EXEC

lockШ

lock

Г Д

Г Д

Г Д

Ш

1. lock

2. Ш

Locked Ł w#NIG7965Ug9!5BXf

2.1.11 lockable

```

lock
lock
line
no
lockable

lockable
no lockable

r      A

r      A

line

r      A

EXEC      lock

r      A

```

```

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

```

```

r      A

```

lock	

2.1.12 telnet

```

telnet
telnet EXEC
telnet

telnet host [port] [keyword]

r      A

```

Host IP
Port TCP 23
Keyword

/source-interface	telnet
/vrf	VRF

Г А

Г А

telnet 山

~ 注意:

/vrf RSR

Г А

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

Г А

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}

Г А

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

Г А

Г А

⏏ no enable service

⏏

Г А

enable service ssh-sesrver, SSH Server

Ruijie(Config # **enable service ssh-sesrver**

Г А

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
r      d
      minutes
      seconds
r      d
      10 min
r      d
      LINE
r      d
      LINE
r      d
      line vty 0      5 30 :
Ruijie(config-line)# exec-timeout 5 30

```

2.2.3 hostname

```

hostname
hostname name
r      d
      name
      63
r      d
      Ruijie
r      d
      CHAP
r      d
      BeiJingAgenda
Ruijie(config)# hostname BeiJingAgenda
BeiJingAgenda(config)#

```

2.2.4 session-timeout

```

LINE
session-timeout 0 no session-timeout LINE
session-timeout minutes [seconds]
no session-timeout

r      A
minutes
seconds

r      A
0 min

r      A
LINE

r      A
LINE
LINE
LINE

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

```

2.2.5 show clock

```

show clock
show clock detail

r      A
detail

r      A

r      A
detail

r      A

```

show clock

```
Ruijie# show clock detail
```

```
clock: 2003-3-17 10:27:21
```

```
Clock read from calendar when system boot.
```

```
r      A
```

clock set	

2.2.6 show running-config**show**

```
running-config
```

```
show running-config
```

```
r      A
```

2.2.7 show startup-config

NVRAM

```
show startup-config
```

```
show startup-config
```

```
r      A
```

```
r      A
```

NVRAM

```
startup-config
```

2.2.8 reload**reload**

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

```

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

```

```

r      A

```

```

r      A

```

```

3

```

```

r      A

```

```

10

```

```

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

```

2.2.9 show reload

```

show

```

```

reload 3

```

```

show reload

```

```

r      A

```

```

r      A

```

```

r      A

```

```

3

```

```

r      A

```

```

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

```

2.2.10 prompt

```

                                prompt
                                no prompt
                                prompt string
r      A
                                string 32
r      A
r      A
                                EXEC
r      A
                                rgnos
                                Ruijie(config)# prompt rgnos
                                Ruijie(config)# end
                                rgnos

```

2.2.11 banner motd

```

                                banner motd
                                no banner motd
                                banner motd c message c
r      A
                                c
                                message
r      A
r      A
                               
                               
r      A

```

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

2.2.12 banner login

	banner login	␣
no banner login		␣

```

r      A
          9600

r      A
          57600 bps

r      A
          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*]

```

r      A
          console
          aux      aux
          vty      vty
          line-num      line

r      A

r      A

r      A
          57600 bps

r      A
          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*]

```

r      A

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

network                TFTP              copy
running-config tftp▯

terminal                show running-config▯

```

```

r      A

```

```

r      A

```

▯

memory **▯**

```

r      A

```

```

Ruijie# write
Building configuration...
[OK]

```

```

r      A

```

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
- description
- shutdown
- speed
- duplex
- flowcontrol
- mtu
- clear counters
- clear interface
- switchport

4.1.1 interface aggregateport

no

interface aggregateport *port-number*

配置

port-number 聚合端口编号

「 A

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

「 A

show interfaces	⌵

「 A

4.1.2 interface fastEthernet

⌵

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

「 A

```
mod-num/port-num /
⌵
```

「 A

「 A

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

「 A

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

「 A

show interfaces	⌵

「 A

4.1.3 interface vlan

switch

virtual interface SVI

⌵

no

SVI.

interface vlan *vlan-id*

```

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

```

```

Ruijie(config-if)#

```

```

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

```

```

Ruijie(config-if)#

```

show interfaces	

```

Ruijie(config-if)#

```

```

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

```

4.1.5 description

```

Ruijie(config-if)# description string
Ruijie(config-if)# no description

```

```

Ruijie(config-if)#

```

```

string

```

```

Ruijie(config-if)#

```

```


```

```

Ruijie(config-if)#

```

```

Ruijie(config-if)#

```

```

show interfaces

```

```

Ruijie(config-if)#

```

```

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

```

「 4

show interfaces	」

4.1.6 shutdown

」 no

shutdown
no shutdown

「 4

「 4

4 Ap 4 SVI
」 show interfaces

」

「 4

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

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

「 4

clear interface	」
show interfaces	」

& 说明:

no shutdown

」

		<i>auto</i>		⏏				
		<i>full</i>	⏏					
		<i>half</i>	⏏					
└	┐							
			⏏					
└	┐							
└	┐							
			⏏	show interfaces				
			⏏					
└	┐							
		Ruijie(config-if)# duplex full						
└	┐							
		<table><tr><td></td><td></td></tr><tr><td>show interfaces</td><td>⏏</td></tr></table>					show interfaces	⏏
show interfaces	⏏							

4.1.9 flowcontrol

			⏏	no
		flowcontrol {auto off on} no flowcontrol		
└	┐			
		<i>auto</i>	⏏	
		<i>off</i>	⏏	
		<i>on</i>	⏏	
└	┐			
			⏏	
└	┐			
└	┐			
		show interfaces		⏏

Г А

1/1

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

Ruijie(config-if)# **flowcontrol on**

Г А

show interfaces	Ш

4.1.10 mtu

mtu

Mtu num

Г А

num 64 9216(65536)

Г А

1500Ш

Г А

Г А

mtu Ш

Г А

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

Ruijie(config-if)# **mtu 9216**

Г А

show interfaces	Ш

4.1.11 carrier-delay

carrier-delay

no Ш

```

    carrier-delay [ seconds ]
    no carrier-delay

Ruijie(config)# seconds 1 60

Ruijie(config)# 2

Ruijie(config)#

Ruijie(config)#

Ruijie(config)# DCD Down Up
                DCD
                W
                DCD
                W
                DCD
                W

Ruijie(config)# 5

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

```

4.1.12 clear counters

```

    clear counters [interface-id]

Ruijie(config)# interface-id W

Ruijie(config)#

Ruijie(config)#

Ruijie(config)# show interfaces
                clear counters W
                W

```

Г Д

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

Г Д

show interfaces	Ш

4.1.13 clear interface

clear interface *interface-id*

Г Д

interface-id Ш

Г Д

Г Д

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

Г Д

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

Г Д

shutdown	Ш

4.1.14 switchport

switchport
2 Ш
3 **no switchport**

switchport
no switchport

Г Д

```

2
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
switchport mode {access | trunk}
no switchport mode
access
switch port
switch port access
switch port access VLAN

```

г А

г А

ч Ap ч SVI
LinkTrap Link SNMP
LinkTrap, Ш

г А

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
```

г А

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]

г А

interface-id ч aggregateport ч SVI ч
loopback
counters Ш
description link Ш
status ч Ш

Aggregate Port

5.1

5.1.1 port-group

Aggregate Port

Aggregate Port

port-group port-group-number

no port-group

Aggregate Port

Aggregate Port

port-group-number	Aggregate Port Aggregate Port

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

Г Д

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 ▮

Г А

show aggregateport load-balance	aggregateport Ш

Г А

5.2

5.2.1 show aggregateport

aggregateport Ш

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

Г А

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

aggregateport load-balance	AP Ⅲ

VLAN

6.1

6.1.1 vlan

VLAN	Ш	no
VLANШ VLA88(N)JTJ 0 1 -id8 54.00003 Tc -3.611 D2 13.98 D2410.5-VLA88ANN É7 Ǝ ~j		

name *vlan-name*

no name

Г Д

<i>vlan-name</i>	VLAN

Г Д

VLAN

Г Д

VLAN

Г Д

show vlan vlan

Г Д

Ruijie(config)# **vlan 10**

Ruijie(config-vlan)# **name vlan10**

Г Д

sho vlan	VLAN ▯

6.1.3 switchport mode

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

sitchport mode {access | trunk}

no sitchport mode

Г Д

--	--

access

Г Д

```

switch port      access      VLAN
└─ switchport access vlan      VLAN
└─
switch port      trunk      VLAN └─
      VLAN      VLAN      VLAN      trunk port
      VLAN      VLAN      └─ switchport trunk
      VLAN

```

Г Д

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

Г Д

trunkport

r A

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

r A

switchport mode	switch port Ⅲ
switchport trunk	trunkport native VLAN Trunk VLAN Ⅲ

6.1.5 switchport trunk

trunkport native VLAN Trunk VLAN
Ⅲ no trunk Ⅲ

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

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

r A

	Trunk VLAN Ⅲ
	vlan-list VLAN
	VLAN VLAN ID VLAN
	ID - Ⅲ 10-20Ⅲ
	,
	1-10,20-25,30,33
allowed vlan vlan-list	all VLAN
	VLAN
	add VLAN VLAN
	remove VLAN VLAN
	except VLAN
	VLAN VLAN
native vlan vlan-id	Native VLANⅢ

r A

VLAN all Native VLAN VLAN 1

r A

Г Д

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

Trunk

Trunk

VLAN 1 4094

VLAN

VLAN

```
show interfaces switchport
```

Г Д

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
```

Г Д

show interfaces	
switchport access	statics accessport VLAN

show vlan [id vlan-id]

└ A

<i>vlan-id</i>	VLAN ID 。

└ A

└ A

└ A

end

Ctrl+C

⏏

exit

~ 注意:

VLAN

show

esw

show esw vlan⏏

└ A

Ruijie# **show vlan id 1**

VLAN[1] "VLAN0001"

GigabitEthernet 3/1

GigabitEthernet 3/2

GigabitEthernet 3/3

GigabitEthernet 3/4

GigabitEthernet 3/5

GigabitEthernet 3/6

GigabitEthernet 3/7

GigabitEthernet 3/8

GigabitEthernet 3/9

GigabitEthernet 3/10

GigabitEthernet 3/11

GigabitEthernet 3/12

└ A

--	--

name	VLAN Ⅲ
switchport access	VlanⅢ

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 <i>seconds</i>		
		no mac-address-table aging-time		
⌈	⌋			
		<i>seconds</i>	⏏	⏏
⌈	⌋			
		300	⏏	
⌈	⌋			
⌈	⌋			
		show mac-address-table aging-time	⏏	
		show mac-address-table dynamic		⏏

Г Д

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

Г Д

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

7.1.2 clear mac-address-table dynamic

Ш

7.1.3 clear mac-address-table filtering

▮

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

Г Д

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

Г Д

Г Д

show mac-address-table filtering

Г Д

00d0.f800.0c0c

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

Г Д

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

Г Д

7.1.4 clear mac-address-table static

▮

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

Г Д

▮

Г Д

Г Д

▮

▮

▮

show

mac-address-table static

clear

mac-address-table static

Г Д

00d0.f800.073c VLAN 4

gigabitethernet 1/1

Ruijie(config)# **mac-address-table static**

00d0.f800.073c vlan 4 interface gigabitethernet 1/1

Г Д

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

Г Д

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*

Г Д

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

Г Д

▮

Г Д

- show mac-address-table filtering

```
Ruijie(config)# mac-address-table filtering 00d0f80000
000 vlan 1
```

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

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

interval	value	MAC	Trap
1	0	0	0

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

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

Г А

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

7.1.8 snmp trap mac-notification

MAC Ш

```
show mac-address-table
notification
```

MAC


7.1.9 address-bind

ip mac .

address-bind *ip-address mac-address*

no address-bind *ip-address*

Г Д

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

Г Д

Г Д

IP MAC IP
 IP MAC IP
 MAC

Г Д

ip 3.3.3.3 mac 00d0.f811.1112

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

Г Д

show address-bind	

Г Д

7.1.10 address-bind ip-address

ip mac .

address-bind *ip-address mac-address*

no address-bind *ip-address*

Г Д

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

Г Д

Г Д

IP IP MAC
IP IP MAC IP
MAC

Г Д

ip 3.3.3.3 mac 00d0.f811.1112

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

Г Д

show address-bind	

Г Д

7.1.11 address-bind uplink

ip mac .

address-bind uplink *intf-id*
no address-bind uplink *intf-id*

Г Д

<i>intf-id</i>	

Г Д

Г Д

IP IP MAC
IP IP MAC IP

MAC
(address-bind install) Ⅲ

Г Д

fa 0/1

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

Г Д

show address-bind uplink	

Г Д

RGOS10.1

7.1.12 address-bind install

/

address-bind install
no address-bind install

Г Д

Г Д

Г Д

Ⅲ

Г Д

fa 0/1

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

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

Г Д

show address-bind uplink	

Г Д

RGOS10.1

7.1.13 mac-manage-learning uniform

MAC uniform .

г д

г д

г д

MAC uniform
MAC

ψ

Г Д

uniform

MAC

no

MAC

Г Д

Г Д

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

Г Д

S8600 4 S9600

7.1.15 mac-manage-learning dispersive

MAC

dispersive .

Г Д

Г Д

Г Д

MAC
MAC

dispersive

Г Д

Г Д

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

Г Д

S8600 4 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*]

Г Д

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

Г Д

Г Д

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

Г Д

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

└ A

└ A

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

└ A

mac-address-table aging-time	▮

7.2.3 show mac-address-table count

▮

show mac-address-table count

└ A

└ A

```
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

```

r **A**

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 ▮

7.2.4 show mac-address-table dynamic

▮

```

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

```

r **A**

--	--

```

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

```

Г Д

clear mac-address-table dynamic	Ш

7.2.5 show mac-address-table filtering

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

Г Д

<i>mac-addr</i>	MAC Ш
<i>vlan-id</i>	VLANШ

Г Д

Г Д

```

Ruijie# show mac-address-table static 0007.95c7.dff9

```

Г Д

<i>interface-id</i>	(AggregatePort)Ш
<i>vlan-id</i>	VLANШ

Г Д

Г Д

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

Г Д

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

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

Г Д

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

7.2.10 show address-bind

Ш

show address-bind

Г Д

Г Д

Г Д

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

Г Д

address-bind	Ш

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

MAC

Г Д

Г Д

Г Д

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

Г Д

MSTP

8.1

8.1.1 spanning-tree

```

MSTP
└── no spanning-tree
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]

```

```

r      A

```

```

forward-time seconds
hello-time seconds
max-age seconds
BPDU
BPDU
BPDU

```

```

r      A

```

```

spanning-tree

```

```

r      A

```

```


```

```

r      A

```

```

forward-time 4 hello-time 4 max-age

```

```


```

```

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

```

```


```

```

r      A

```

```

spanning-tree

```

```

Ruijie(config)# spanning-tree

```

```

BridgeForwardDelay

```

```

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

r      A

show spanning-tree      STP      11
spanning-tree mst cost      STP      PathCost11
spanning-tree tx-hold-count STP      TxHoldCount      11

```

8.1.2 spanning-tree bpdudfilter

```

BPDU filter      11      enabled
disabled      BPDU filter      11

spanning-tree bpdudfilter [enabled | disabled]

r      A

enabled      BPDU filter      11
Disabled      BPDU filter      11

r      A

11

r      A

11

r      A

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

r      A

show spanning-tree interface

```


spanning-tree max-hops *hop-count*

no spanning-tree max-hops

Г А

hop-count BPDU 1 40

Г А

hop-count 20

Г А

Г А

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

max-hops

z eHop

íÇPa @à

└─ Ruijie

└─ Ruijie

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

└─ Ruijie

```
show spanning-tree
```

8.1.7 spanning-tree mst configure

```
no spanning-tree mst configuration
spanning-tree mst configuration
```

└─ Ruijie

```
instance 0 vlan 1-100 name instance0 revision 0
```

└─ Ruijie

└─ Ruijie

```
end
```

```
exit
```

MST

```
instance 0 vlan 1-100 name instance0 revision 0
instance 10 vlan 2,3,6-9 name instance10 revision 10
```

```

name name MST 32
no name
revision version MST 0 65535 no revision
show MST region

```

Г А

```

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

Г А

```

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

r      A

instance-id  Instance          0  64
cost                1  200  000  000

```

⏏ **no** ⏏

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

Г А

<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	

Г А

Instance-id 0
priority 128

Г А

.

Г А

Region ⏏

Г А

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*

Г А

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**

```

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

r      A
      instance-id      0
      priority      32768

r      A
      .

r      A
      Instance 20      8192
Ruijie(config-if)# spanning-tree mst 20 priority 8192
show spanning-tree mst instance interface interface-id

r      A
show spanning-tree mst      MSTP  1
spanning-tree mst cost
spanning-tree mst port-priority      Instance

```

8.1.11 spanning-tree reset

```

      spanning-tree      1      no  1
spanning-tree reset

r      A
      1

r      A
      1

r      A
Ruijie(config)# spanning-tree reset

r      A
show spanning-tree      STP      1
show spanning-tree interface      STP      1

```

8.1.12 spanning-tree tx-hold-count

```

                STP          TxHoldCount          BPDU          10
                no
                spanning-tree tx-hold-count tx-hold-count
                no spanning-tree tx-hold-count

r      A
        tx-hold-count TxHoldCount 1 10

r      A
        3

r      A
        10

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

r      A
        show spanning-tree MSTP

```

8.1.13 spanning-tree pathcost method

```

                10          no
                10

                spanning-tree pathcost method [long | short]
                no spanning-tree pathcost method

r      A
        long      802.1t      path-cost 10
        short     802.1d      path-cost 10

r      A
        802.1T      Path-cost 10

r      A
        10

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

```

8.1.14 spanning-tree portfast

spanning-tree portfast [disabled]

Г Д Ш

```

r      d
      show spanning-tree interface      STP      W

```

8.1.15 spanning-tree portfast bpduguard default

spanning-tree portfast bpduguard default
no spanning-tree portfast bpduguard default

Г Д Ш

86
<http://www.ruijie.com.cn>

BPDU guard

BPDU

no spanning-tree portfast default

```

Ruijie(config)#

```

```

    spanning-tree

```

```

Ruijie(config)#

```

```

    spanning-tree portfast

```

```

Ruijie(config)#

```

```

    spanning-tree

```

```

Ruijie(config)#

```

Ruijie(config)# spanning-tree portfast default

```

Ruijie(config)#

```

```

show spanning-tree interface interface STP

```

8.1.18 spanning-tree tc- protection

```

Ruijie(config)# spanning-tree tc- protection

```

```

Ruijie(config)# spanning-tree tc- protection
Ruijie(config)# no spanning-tree tc- protection

```

```

Ruijie(config)#

```

```

    spanning-tree

```

```

Ruijie(config)#

```

```

    spanning-tree tc- protection

```

```

Ruijie(config)#

```

```

    spanning-tree

```

```

Ruijie(config)#

```

Ruijie(config)# spanning-tree tc- protection**8.1.19 spanning-tree tc-protection tc-guard**

```

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

```

```

Ruijie(config)# spanning-tree tc- protection tc-guard
Ruijie(config)# no spanning-tree tc- protection tc-guard

```

```

Ruijie(config-if)#

```

```

spanning-tree

```

```

Ruijie(config-if)#

```

```

spanning-tree tc-guard

```

```

Ruijie(config-if)#

```

```

spanning-tree

```

```

Ruijie(config-if)#

```

```

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

```

8.1.20 spanning-tree tc-guard

```

Ruijie(config-if)# spanning-tree tc-guard
Ruijie(config-if)# no spanning-tree tc-guard

```

```

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

```

```

Ruijie(config-if)#

```

```

spanning-tree

```

```

Ruijie(config-if)#

```

```

spanning-tree tc-guard

```

```

Ruijie(config-if)#

```

```

spanning-tree

```

```

Ruijie(config-if)#

```

```

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

```

8.1.21 spanning-tree autoedge

```

Ruijie(config-if)# spanning-tree autoedge
Ruijie(config-if)# no spanning-tree autoedge

```

```

spanning-tree autoedge [disabled]

```


interface-id

Г

Д

spanning-tree forward-time	BridgeForwardDelay	W
spanning-tree hello-time	BridgeHelloTime	W
spanning-tree max-age	BridgeMaxAge	W
spanning-tree max-hops	instance	
spanning-tree tx-hold-count	TxHoldCount	W

8.2.2 show spanning-tree interface

STP W W

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

r A

interface-id

bpdufilter bpdufilter W

portfast portfast W

bpduguard bpduguard W

/link-type linktype

r A

W

r A

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

r A

spanning-tree bpdufilter BPDU filter BPDU filter ≈

instance-id Instance
interface-id

└ A

InstanceⅢ

└ A

└ A

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

└ A

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

r

A

<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

Г Д

Г Д

Г Д

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
```

Г Д

'


IP

10.1

- **ip address**
- **ip unnumbered**

10.1.1 ip address

IP no IP

Ш

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

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

Г Д

<i>ip-address</i>	32	IP	8	Ш
<i>network-mask</i>	32	Ш 8	“1”	“0”
		Ш		
secondary		IP	Ш	

Г Д

IP Ш

Г Д

Г Д

IP IP IP

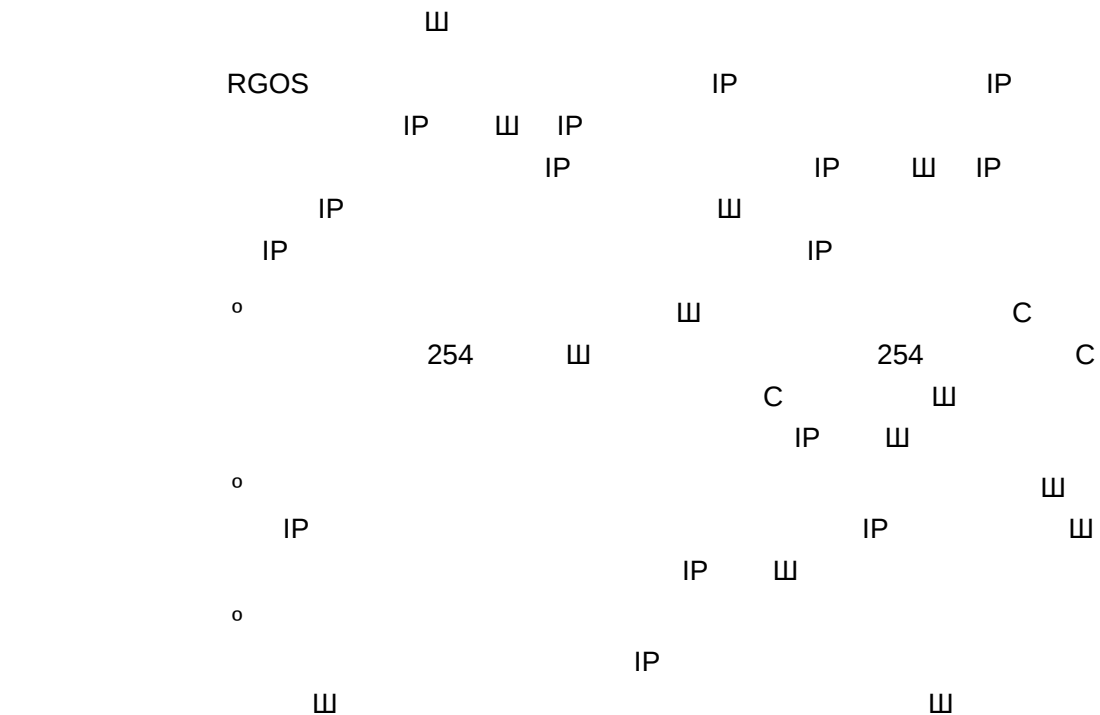
IP IP Ш

32 IP

Ш IP

1 0 1 IP Ш

А 255.0.0.0 Ш



Г Д

```

IP 10.10.10.1
255.255.255.0
ip address 10.10.10.1 255.255.255.0

```

Г Д

show interface	

Г Д

```

IP
secondary

```

10.1.2 ip unnumbered

```

IP IP Ш no
Ш
ip unnumbered interface-type interface-number
no ip unnumbered interface-type interface-number

```

Г Д

IP IP

$$\mathbb{P}^1 \quad \mathbb{P}^1 \quad \mathbb{P}^1$$

IP IP III

IP III

W

0 SLIP 4 HDLC 4 PPP 4 LAPB 4 Frame-relay

W

0 ping

w

FastEthernet 0/0/23

IP Ш

```
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**

~ 注意:

```

                                arp
esw                               arp
esw arp [ keyword ...]

```

10.2.1 arp

```

                                ARP
                                IP
                                MAC
no                               MAC

```

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

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

Γ Δ

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

Γ Δ

ARP

Γ Δ

Γ Δ

RGOS ARP 32 IP 48

MAC

ARP

ARP

clear arp-cache

ARP

ARP

arp 1.1.1.1 4e54.3800.0002 arpa

clear arp-cache	ARP

10.2.2 arp retry interval

arp

IP

2

ARP

no

1

ARP

arp retry interval seconds

no arp retry interval

seconds	<1-3600>,ARP 1 3600 1

ARP

1

ARP

ARP

ARP

ARP

30s

arp retry interval 30

г д

10.2.4 arp trusted

ARP

10000

no

10000

arp trusted *number*

no arp trusted

10000

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

10000

10000

10000

10000

ARP

10000

ARP

ARP

10000

10000

10000

1000

ARP

arp trusted 1000

10000

service trustedarp	ARP

10.2.5 arp unresolve

ARP

10000

no

8192

arp unresolve *number*

no arp unresolve

10000

ARP

1.

2.

SVI 1

ARP

3.

```
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
```

4.

10.2.7 arp timeout

ARP

ARP

1.

no

2.

```
arp timeout seconds
```

```
no arp timeout
```

3.

seconds	0-2147483

4.

3600

5.

6.

7.

ARP

IP

MAC

8.

ARP

ARP

9.

ARP

10.

11.

FastEthernet 0/0

ARP

120

12.

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

Г Д

clear arp-cache	ARP
show interface	

10.2.8 ip proxy-arp

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

Г Д

ARP

Г Д

Г Д

```
ARP
IP MAC
IP IP
IP ARP
MAC
MAC ARP
MAC ARP
```

Г Д

FastEthernet 0 ARP

```
interface fastEthernet 0
ip proxy-arp
```

Г Д

ARP

10.2.9 service trustedarp

```
no ARP service trustedarp
```

service trustedarp

no service trustedarp

Г Д

ARP

Г Д

Г Д

ARP

ARP

GSN

GSN

Ш

Г Д

service trustedarp Ш

config

service trustedarp

Г Д

s32

Ш

10.3 IP

IP

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

~ 注意:

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

10.3.1 clear arp-cache

ARP

ARP

IP

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

r A

show arp

Ruijie# show arp

Total Numbers of Arp: 7

Protocol	Address	Age(min)	Hardware
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
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
```

Г Д

Ш

10.3.3 show arp counter

ARP arp

```
show arp counter
```

Г Д

Г Д

Г Д

```
show arp counter
```

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

ARP

Г Д

Ш

10.3.4 show arp timeout

ARP

show arp timeout

Г Д

Г Д

Г Д

show arp timeout

Ruijie# **show arp timeout**

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

VLAN 1	3600

ARP

г д

Ш
Ш

г д

192.168.12.0 Ш

clear ip route 192.168.12.0

г д

show ip route	IP

г д

Ш

10.3.6 show ip arp

ARP

Ш

show ip arp

г д

г д

г д

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

г А

Ш

10.3.7 show ip redirects

Ш

show ip redirects

г А

Ш

г А

г А

Ш

г А

show ip redirects Ш

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*

└ A

└ A

└ A

└ A

1 ⏏

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

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

Г Д

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

11.1.2 rmon collection history

Ш no Ш

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

Г Д

Г Д

Г Д

RGOS
 owner Чbuckets interval

Г Д

1 Ш

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

Г Д

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

11.1.3 rmon alarm

MIB Ш no Ш

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

Г Д

4 trap 山

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

Г Д

--	--

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
```

Г Д

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

11.2.2 show rmon history

Ш

show rmon history

Г Д

Г Д

Г Д

Г Д

```
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
 CRCAlignErrors : 0
 UndersizePkts : 0
 OversizePkts : 0
 Fragments : 0
 Jabbers : 0
 Collisions : 0
 Utilization : 0

r A

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

W

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

no

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

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

no

broadcast

multicast

unicast

percent

20 20%

pps

pps

packets per second

Rate-bps

64k-2M

64k

2-100M

1M

100M

8M

no

no

The diagram illustrates a network configuration for Ruijie switches. It shows a series of switches connected in a ring topology. The configuration steps are as follows:

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

A table at the bottom summarizes the configuration:

show storm-control	Ш

Г Д

3
show interfaces

Г Д

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

Г Д

show interfaces	

Г Д

S32 S37
acl
Ш

12.1.3 protected-ports route-deny

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

Г Д

Г Д

Г Д

3
3 Ш show running-config

Г Д

Ruijie(config)# protected-ports route-deny

г А

show running-config	3

г А

10.2 S32/S37 S25 S57 Ш

12.1.4 switchport port-security

Ш no
Ш

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

no switchport port-security [violation]

г А

port-security	
violation protect	Ш
violation restrict	trapШ
violation shutdown	Ш 4 Trap

г А

Ш

г А

г А

IP() Ш MAC ()

Ш

1

M

W

Г Д

Gigabitethernet 1/1

shutdown

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

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

Ruijie(config-if)# **switchport port-security**
violation shutdown

Г Д

show port-security	W

12.1.5 switchport port-security aging

W

W

no

W

switchport port-security aging {static | time time }

no switchport port-security aging {static | time }

Г Д

Static	W
time time	1440 W 0 0 W

Г Д

Г Д

Г Д

no switchport port-security aging

```

time
port-security aging static
    1
show port-security

```

Г Д

```

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

```

Г Д

show port-security	1

12.1.6 switchport port-security mac-address

```

1
no
1

```

```

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

```

Г Д

mac-address mac-address	1
ip-address ip-address	IP 1
maximum value	1

Г Д

Г Д

Г Д

```

ACL
ACL      IP      MAC
ACL      802.1x
IP

```

```

r      d
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

```

```

r      d

```

show port-security	Ш

```

r      d
S8600      IP      1K      IP
84
S2900      IP      1K      IP
500

```

12.1.7 switchport port-security arp-check

```

ARP      Ш      no
[no] switchport port-security arp-check [cpu]
r      d
cpu      CPU
r      d
Ш
r      d
Ш

```

г д

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

г д

show port-security	Ш

г д

S8600

Gi1/1 Disabled Disabled Disabled

Г Д

storm-control	Ш

12.2.2 show port-security

Ш

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

Г Д

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

Г Д

Г Д

Ч

Ш

Г Д

```
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
```

Г Д

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

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                                         1
[no] dot1x auto-req

r      A

r      A

r      A

                                     1
r      A

802.1X                                     show dot1x auto-req

r      A

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

```

└─┬─



no dot1x auto-req user-detect

W

Г Д

W

Г Д

auto-req

Г Д

```
Ruijie(config)# dot1x auto-req user-detect
```

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

```
User-Detect : Enabled
```

Req-Interval: 60 Second

Г Д

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

### 13.2.1 dot1x timeout quiet-period

```

no
dot1x timeout quiet-period seconds
no dot1x timeout quiet-period

r A
seconds
0 65535
r A
10
r A
r A
show dot1x
r A
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
Authenticated 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

```

└─ A

| <b>show dot1x</b> | 802.1x |
|-------------------|--------|

### 13.2.2 dot1x timeout re-authperiod

```

┌───────────┐ ┌───────────┐ ┌───────────┐
│ │ │ │ │ │
└───────────┘ └───────────┘ └───────────┘
no
dot1x timeout re-authperiod seconds
no dot1x timeout re-authperiod

```

└─ A

```
seconds 0 65535
```

└─ A

```
3600
```

└─ A

```
┌───────────┐
```

└─ A

```
show dot1x 802.1x
```

└─ A

```
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

```

```

r A

```

| show dot1x | 802.1x |
|------------|--------|

### 13.2.4 dot1x timeout supp-timeout

```

 W no

```

```

 W

```

```
dot1x timeout supp-timeout seconds
```

```
no dot1x timeout supp-timeout
```

```

r A

```

```

seconds 0
65535W

```

```

r A

```

```

 3 W

```

```

r A

```

```

 W

```

```

r A

```

```

 show dot1x 802.1x W

```

```

r A

```

```

 10s

```

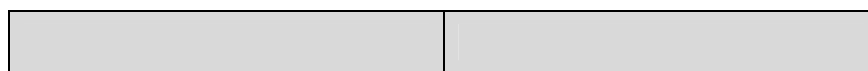
```
Ruijie# configure terminal
Ruijie(config)# dot1x timeout supp-timeout 10
Ruijie(config)# end
Ruijie# show dot1x
```

```
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
```

---

r

A

**show dot1x**

802.1x

dot344 4Tf-0344 41 16333C

**show dot1x**                      802.1x                      山

Г                      Д

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
Authenticated 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
```

Г                      Д

| <b>show dot1x</b> | 802.1x |
|-------------------|--------|

## 13.3 dot1x

- dot1x re-authentication
- dot1x reauth-max

### 13.3.1 dot1x re-authentication

山                      no

山

**[no] dot1x re-authentication**





Г Д

Of.RTgFp3D)AnRD0X16Vp8Vpa5H85PF8F4HgF805VqXEg

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

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

```
┌ A
```

| Show dot1x probe-timer |  |
|------------------------|--|

### 13.4.2 dot1x client-probe enable

```
[no] dot1x client-probe enable
```

```
┌ A
```

```
┌ A
```

```
┌ A
```

```
└
```

```
┌ A
```

```
┌ A
```

```
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

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

Ruijie# configure terminal
Ruijie(config)# dot1x auth-address-table address mac-addr interface interface
Ruijie(config)# end
Ruijie#
```

Ш

Г

Д

**show dot1x**

802.1x

r A

802.1x

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

Ruijie#

r A

| <b>show dot1x</b> | 802.1x 山 |
|-------------------|----------|

### 13.5.4 dot1x default

802.1x

山

**dot1x default**

r A

山

r A

r A

山

r A

**show dot1x**

802.1x

山

r A

802.1x

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

r A

| <b>show dot1x</b> | 802.1x 山 |
|-------------------|----------|



Г Д

Ш

Г Д

**show dot1x** 802.1x Ш

Г Д

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#

```

Г Д

| show dot1x | 802.1x Ш |
|------------|----------|

### 13.5.8 dot1x private-supplicant-only

no

Ш

```

dot1x private-supplicant-only
no dot1x private-supplicant-only

```

Г Д

Ш

Г Д

Ш

Г Д

Ш

Г Д

```

show dot1x private-supplicant-only 802.1x

```

Ш

Г Д

```

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

```

Г Д

| show dot1x private-supplicant-only | Ш |
|------------------------------------|---|

### 13.5.9 dot1x port-control auto

[illegible]

|            |               |
|------------|---------------|
|            |               |
| show dot1x | 802.1x      山 |

### 13.5.10 dot1x port-control-mode

802.1x MAC

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

г д

**mac-based** mac 802.1X  
**port-based** 802.1X

г д

mac-based

г д

Ш

г д

**show dot1x port-control** 802.1x Ш  
 802.1X  
 802.1X  
 Ш

г д

802.1x  
 802.1x Ш  
 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#

г д

|                                |  |
|--------------------------------|--|
|                                |  |
| <b>show dot1x port-control</b> |  |

### 13.5.11 dot1x stationarity enable

802.1x

802.1X

Ш

**dot1x stationarity enable**  
**no dot1x stationarity enable**

г д

г д

Г Д

Ш

Г Д

Ш

Г Д

802.1x

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

Г Д

## 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

Ш

show dot1x

Г Д

1.

2.

3.

4.

5.

6.

7.

8.

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#

```

9.

| <b>dot1x auth-mode</b>         | 802.1x 1 |
|--------------------------------|----------|
| <b>dot1x max-req</b>           | 1        |
| <b>dot1x port-control auto</b> | 1        |
| <b>dot1x reauth-max</b>        |          |

**dot1x re-authentication** 1



|                                     |   |
|-------------------------------------|---|
| <b>dot1x max-req</b>                | ⏏ |
| <b>dot1x port-control auto</b>      | ⏏ |
| <b>dot1x reauth-max</b>             |   |
| <b>dot1x re-authentication</b>      | ⏏ |
| <b>dot1x timeout quiet-period</b>   | ⏏ |
| <b>dot1x timeout re-authperiod</b>  | ⏏ |
| <b>dot1x timeout server-timeout</b> | ⏏ |
| <b>dot1x timeout supp-timeout</b>   | ⏏ |
| <b>dot1x timeout tx-period</b>      | ⏏ |

### 13.6.3 show dot1x auto-req

802.1x

⏏

show dot1x auto-req

└─┬─┐  
A

└─┬─┐  
A

⏏

└─┬─┐  
A

⏏

└─┬─┐  
A

⏏

└─┬─┐  
A

Ruijie# show dot1x auto-req

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

Г Д

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

```
Г Д
```

| <b>dot1x auth-mode</b>              | 802.1x      Ш |
|-------------------------------------|---------------|
| <b>dot1x max-req</b>                | Ш             |
| <b>dot1x port-control auto</b>      | Ш             |
| <b>dot1x reauth-max</b>             |               |
| <b>dot1x re-authentication</b>      | Ш             |
| <b>dot1x timeout quiet-period</b>   | Ш             |
| <b>dot1x timeout re-authperiod</b>  | Ш             |
| <b>dot1x timeout server-timeout</b> | Ш             |
| <b>dot1x timeout supp-timeout</b>   | Ш             |
| <b>dot1x timeout tx-period</b>      | Ш             |

### 13.6.5 show dot1x max-req

Ш

```
show dot1x max-req
```

```
Г Д
```

```
Г Д
```

Ш

```
Г Д
```

Ш

```
Г Д
```

Ш

```
Г Д
```

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

Г Д

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

### 13.6.6 show dot1x port-control

Ш

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

Г Д

*interface*

Г Д

Ш

Г Д

Ш

Г Д

Ш

Г Д

Ruijie#

```

Ruijie# show dot1x
Ruijie# show dot1x
Ruijie# show dot1x
Ruijie# show dot1x
Ruijie# show dot1x

```

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

```
Hello Interval: 20 Seconds
```

```
Hello Alive: 250 Seconds
```

```
Ruijie#
```

```
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

Г А

Ш

Г А

Ш

Г А

Ш

Г А

Г А

Ruijie# **show dot1x re-authentication**

reauth-enabled: disabled

Ruijie#

Г А

| <b>dot1x auth-mode</b>              | 802.1x Ш |
|-------------------------------------|----------|
| <b>dot1x max-req</b>                | Ш        |
| <b>dot1x port-control auto</b>      | Ш        |
| <b>dot1x reauth-max</b>             |          |
| <b>dot1x re-authentication</b>      | Ш        |
| <b>dot1x timeout quiet-period</b>   | Ш        |
| <b>dot1x timeout re-authperiod</b>  | Ш        |
| <b>dot1x timeout server-timeout</b> | Ш        |
| <b>dot1x timeout supp-timeout</b>   | Ш        |
| <b>dot1x timeout tx-period</b>      | Ш        |

### 13.6.9 show dot1x reauth-max

show dot1x reauth-max

Ruijie#

show dot1x reauth-max

Ruijie#

show dot1x reauth-max

Ruijie#

show dot1x reauth-max

Ruijie#

Ruijie#

Ruijie# show dot1x reauth-max

reauth-max: 2 times

Ruijie#

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 | 30 |
| dot1x timeout tx-period    | 30 |

### 13.6.10 show dot1x summary

802.1X

**show dot1x summary**

Г Д

W

Г Д

W

Г Д

W

Г Д

Г Д

```
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#

Г Д

|                                |               |
|--------------------------------|---------------|
|                                |               |
| <b>dot1x auth-mode</b>         | 802.1x      Ⅲ |
| <b>dot1x max-req</b>           | Ⅲ             |
| <b>dot1x port-control auto</b> | Ⅲ             |
| <b>dot1x reauth-max</b>        |               |

|                                    |   |
|------------------------------------|---|
| <b>dot1x re-authentication</b>     | W |
| <b>dot1x timeout quiet-period</b>  | W |
| <b>dot1x timeout re-authperiod</b> | W |

```

Up-bandwidth is 1024 kbps
Down-bandwidth is 1024 kbps
Authorization vlan is dep7
Authorization seesion 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#
```

Г А

| <b>dot1x auth-mode</b>              | 802.1x      ▮ |
|-------------------------------------|---------------|
| <b>dot1x max-req</b>                | ▮             |
| <b>dot1x port-control auto</b>      | ▮             |
| <b>dot1x reauth-max</b>             |               |
| <b>dot1x re-authentication</b>      | ▮             |
| <b>dot1x timeout quiet-period</b>   | ▮             |
| <b>dot1x timeout re-authperiod</b>  | ▮             |
| <b>dot1x timeout server-timeout</b> | ▮             |
| <b>dot1x timeout supp-timeout</b>   | ▮             |
| <b>dot1x timeout tx-period</b>      | ▮             |

### 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

```

Г А

1. 配置 802.1X 认证模式。  
 Ruijie# **dot1x auth-mode**

2. 配置 802.1X 认证模式。  
 Ruijie# **dot1x max-req**

3. 配置 802.1X 认证模式。  
 Ruijie# **dot1x port-control auto**

4. 配置 802.1X 认证模式。  
 Ruijie# **dot1x reauth-max**

Ruijie# **show dot1x timeout quiet-period**

quiet-period: 60 sec

Ruijie#

5. 配置 802.1X 认证模式。  
 Ruijie# **dot1x re-authentication**

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

# 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}

r

A

**default**

⌵

list-name

⌵

**dot1x** Dot1x**enable** Enable**ppp** PPP**login** Login

method

1

4

⌵

#### 1 AAA

| <b>local</b> |        |
|--------------|--------|
| <b>none</b>  |        |
| <b>group</b> | RADIUS |

r

A

**default**

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



г д

*method1*

|       |        |
|-------|--------|
|       |        |
| local |        |
| none  |        |
| group | RADIUS |

г д

AAA ш

г д

ш:

õ

## 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**

**no**

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

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

```

r A
 network DOT1X PPP W
 resource W
 list-name W
 start-stop W
 group
 radius RADIUS

r A

r A
 W

r A
 RGOS W
 start-stop W

r A
 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

```

Ruijie#

```

```


```

```

Ruijie#

```

```

EXEC

```

```

Ruijie#

```

```

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

```

```

Ruijie#

```

```


```

```

Ruijie#

```

```

Ruijie#

```

```


```

```

Ruijie#

```

```

AAA

```

```

Ruijie#

```

```


```

```

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#

Г А

|                  |     |
|------------------|-----|
|                  |     |
| aaa group server | AAA |

## 14.4.2 aaa group server

AAA

Ш

no

Ш

g51 1r70C3C34F7c 0/50 gsB/s1 Tf-050004 Tc 0.051 0 T 10.580 0 1<43

### 14.4.3 server *ip-addr* authen-port *port1* acct-port *port2*

AAA no 山

server *ip-addr* [authen-port *port1*] [ acct-port *port2*]

no server *ip-addr* [authen-port *port1*] [acct-port *port2*]

г д

*ip-addr* ip

*port1*

*port2*

г д

][AFC18

|                         |     |
|-------------------------|-----|
| <b>aaa group server</b> | aaa |
| <b>show aaa group</b>   | aaa |

#### 14.4.4 ip vrf forwarding

```

AAA vrf no 111

ip vrf forwarding vrf_name
no ip vrf forwarding

r A
 vrf_name vrf

r A

r A
 111

r A
 vrf111

r A
 111

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#

r A

```

|                         |     |
|-------------------------|-----|
|                         |     |
| <b>aaa group server</b> | aaa |
| <b>show aaa group</b>   | 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

r d
 W

r d
 AAA

r d
 W

r d
 AAA
aaa new-model AAA
 W
 AAA
 AAA

r d
 AAA
Ruijie(config)# aaa new-model

r d

```

|                    |  |
|--------------------|--|
|                    |  |
| aaa authentication |  |

### 14.5.2 debug aaa

```

AAA W no W

debug aaa
no debug aaa

r d
 W

r d
 EXEC W

```

### 14.5.3 show aaa method-list

```

AAA 1
show aaa method-list

r 1
 1

r 1

r 1
 1

r 1
 AAA 1

r 1
 AAA 1

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#
r 1

```

| 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

⏏

r A

radius

fastEthernet 0/0

ip

radius

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

r A

| 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}
```

r A

|             |        |     |   |
|-------------|--------|-----|---|
| hostname    | RADIUS | DNS | ⏏ |
| Ip-address  | RADIUS | IP  | ⏏ |
| Auth-port   | RADIUS | UDP |   |
| Port-number | RADIUS | UDP | 0 |
|             |        | ⏏   |   |
| Acct-port   | Radius | UDP |   |
| Port-number | RADIUS | UDP | 0 |
|             |        | ⏏   |   |

RADIUS      AAA  
**radius-server**

RADIUS      山  
RADIUS      山

Г      Д

RADIUS

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

Г      Д

| <b>aaa authentication</b>       | AAA    |
|---------------------------------|--------|
| <b>radius-server key</b>        | RADIUS |
| <b>radius-server retransmit</b> | RADIUS |
| <b>radius-server timeout</b>    | RADIUS |

### 15.1.3 radius-server key

RADIUS

aaa

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

```

r A

```

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

### 15.1.4 radius-server retransmit

RADIUS

radius-server retransmit

no

```

 3

```

```
radius-server retransmit retries
```

```
no radius-server retransmit
```

```

r A

```

```
retries RADIUS 3
```

```

r A

```

```

 3

```

```

r A

```

```

 3

```

```

r A

```

AAA

```

 3

```

RADIUS

```

 3

```

```

r A

```

4

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

```

r A

```

| 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 |

radius-server deadtime 10

Г Д

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

**r            A**

*id*                    id <1-255>

*type*                    type

**r            A**

RADIUS

---

22

ip privilege

22

Ш

г      д

Ш

г      д

max up-rate      211

|                                      |              |
|--------------------------------------|--------------|
|                                      |              |
| <b>radius vendor-specific extend</b> | Radius<br>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]**

  A

  A

EXEC       

### 15.2.2 show radius server

RADIUS       

**show radius server**

  A

  A

  A

  A

radius       

  A

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 配置

show radius vendor-specific

配置

配置

配置

配置

配置

配置

radius

配置

```
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
```

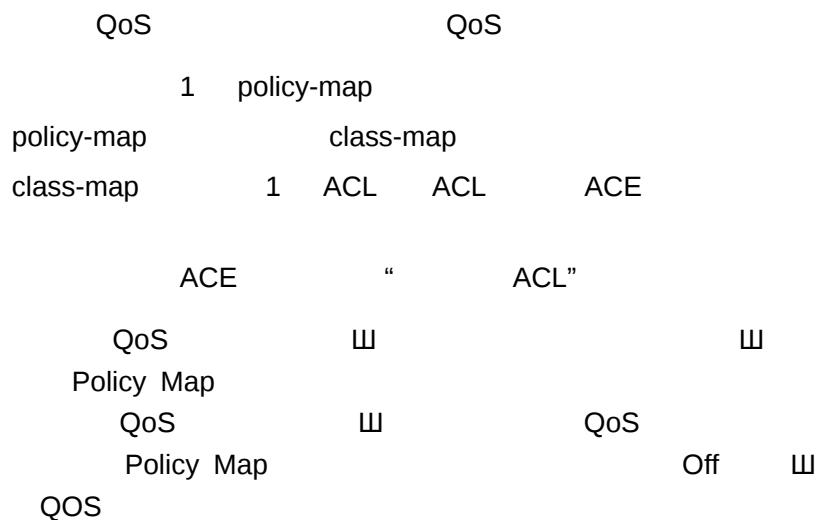
|    |                      |    |
|----|----------------------|----|
| 12 | file-name-1          | 12 |
| 13 | file-name-2          | 13 |
| 14 | file-name-3          | 14 |
| 15 | file-name-4          | 15 |
| 16 | max up-rate          | 75 |
| 17 | version to server    | 17 |
| 18 | flux-max-high32      | 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 |

**r      A**

| <b>radius-server host</b>       | RADIUS |
|---------------------------------|--------|
| <b>radius-server retransmit</b> | RADIUS |
| <b>radius-server key</b>        | RADIUS |
| <b>radius-server timeout</b>    | RADIUS |

# QoS

## 16.1



|                  |                 |
|------------------|-----------------|
| 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

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

```

r A
 S2900 cos dscp
 S8600 cos dscp ip-precedence

```

## 16.2.2 mls qos cos

CoS

```

mls qos cos default-cos
no mls qos cos

```

```

r A
 default-cos 0 7
 no

```

```

r A
 CoS 0

```

```

r A

```

```

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

```

```

r A
 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*

Г Д

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

Г Д

Г Д

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**

Г Д

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

Г Д

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**

Г

А

*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

Г

А

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**

Г Д

**show policy-map**

Г Д

S2900 S8600

### 16.2.5 service-policy

policy map

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

Г Д

*policy-map-name* policymap

**no** policy map

Г Д

Г Д

Ruijie(config)# **interface fastEthernet 0/1**  
Ruijie(config-if)# **service-policy input po**

Г Д

**show mls qos interface**

Г Д

S2900 input  
S8600 input output

### 16.2.6 priority-queue

**[no] priority-queue [out]**

```

r A
 priority-queue [out] SP (S2900
 ,S8600)
 no priority-queue [out] WRR

```

```

r A
 WRR

```

```

r A

```

```

r A
 Ruijie(config)# no priority-queue out

```

```

r A
 show mls qos queueing

```

## 16.2.7 wrr-queue bandwidth

```

 WRR
 wrr-queue bandwidth weight1 ... weightn
 no wrr-queue bandwidth
r A
 weight1...weightn n n
 no

```

```

r A
 weight1: ...: weightn = 1:...:1

```

```

r A

```

```

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

```

```

r A
 show mls qos queueing

```

```

r A

```

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**

**r**

**A**

**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**

Г Д

**dscp**

**no**

Г Д

Г Д

Г Д

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

Г Д

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

Г Д

S8600

### 16.2.15 wfq-queue bandwidth

wfq

Ш

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

**no wfq-queue queue-id bandwidth**

Г Д

*queue-id*

*min*

*max*

Г Д

min \*

```

max kbps

r A

r A

wfq
W

r A

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

```

```

r A

```

| show mls qos scheduler | QOS |
|------------------------|-----|

```

r A

```

RGOS10.1

## 16.2.16 wfq-queue sp

```

wfq
(sp)W

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

r A

queue-id
sp:

r A

sp

r A

```

```

r A
 wfq
 sp+wfq

```

```

r A
 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

```

```

r A

```

|                        |     |
|------------------------|-----|
|                        |     |
| show mls qos scheduler | QOS |

```

r A
 RGOS10.1

```

## 16.3

### 16.3.1 show class-map

```

 class map
 show class-map [class-name]
r A
 class-name class map
r A
 class map
r A
r A
Ruijie# show class-map

```

```

r A
 S2900 S8600

```

### 16.3.2 show policy-map

QoS policy map [ class class-name]

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

```

r A
 policy-name policy name
 class-name class map

```

```

r A
 policy name

```

```

r A

```

```

r A
 Ruijie# show policy-map

```

```

r A
 S2900 S8600

```

### 16.3.3 show mls qos interface

QoS

### 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** cos-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               |   |                    |                |   |
| Γ | Δ |                                   |   |                    |                |   |
| Γ | Δ |                                   |   |                    |                |   |
| Γ | Δ |                                   |   |                    |                |   |
| Γ | Δ |                                   |   |                    |                |   |
|   |   |                                   | ⏏ | cpu topology-limit |                | ⏏ |
| Γ | Δ |                                   |   |                    |                |   |
|   |   | Ruijie(config)# topology guard    |   |                    |                |   |
|   |   | Ruijie(config)# no topology guard |   |                    |                |   |
| Γ | Δ |                                   |   |                    |                |   |
|   |   | tp-guard port enable              |   |                    |                | ⏏ |
|   |   | cpu topology-limit                |   | CPU                |                |   |

### 17.1.2 tp-guard port enable

|  |   |  |    |
|--|---|--|----|
|  |   |  | no |
|  | ⏏ |  |    |

**[no] tp-guard port enable**

Г Д

Ruijie# **show tpp**

Г Д

**topology guard**

## 18.1

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

### 18.1.1 cat

山

cat type {bin

---

❏

a4 ( type file); b4 '?'  
'? '

, ❏

г д

tmp log.txt

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

bin tmp.bin

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

г д

## 18.1.2 cd

**cd** *DIRECTORY*

г д

*DIRECTORY*

г д

❏

г д

❏

г д

“ ”

“ ”  
.

❏

**ls**

❏

г д

tmp

Ruijie# **cd** *tmp*

г д

---

|    |  |
|----|--|
|    |  |
| ls |  |

### 18.1.3 cp

命令格式

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

参数说明

**dest** 目标文件或目录

**sour** 源文件或目录

选项

**-r** 递归复制目录及其内容

**-f** 强制覆盖目标文件

**-i** 交互式覆盖目标文件

**-p** 保留文件属性

**-d** 保留目录属性

**-L** 按符号链接处理

**-P** 按硬链接处理

**-s** 按符号链接处理

**-S** 按硬链接处理

**-t** 复制到目标目录

**-u** 只复制源文件比目标文件新的文件

**-v** 显示复制过程

**-w** 设置文件权限

**-x** 只复制同类型的文件

**-y** 交互式覆盖目标文件

**-Z** 按文件权限处理

示例

```
Ruijie# cp log.txt ../log_bak.txt
```

### 18.1.4 ls

命令格式

```
ls PATHNAME
```

参数说明

**PATHNAME** 要查看的文件或目录的路径

---

г Д

Ш

г Д

Ш

г Д

Ш

.

г Д

Ruijie# **ls**

tmp

Ruijie# **ls tmp**

г Д

## 18.1.5 makefs

**makefs dev DEVNAME fs FSNAME**

**makefs fs FSNAME dev DEVNAME**

г Д

*DEVNAME* ( )  
*FSNAME*

г Д

Ш

г Д

Ш

г Д

makefs6.823 fs

---

b4

Ш

г д

jffs2

dev/mtdblock/1

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

г д

### 18.1.6 mkdir

**mkdir** *DIRECTORY*

г д ~~Е~~UфGQф IфQф ~~И~~ D2D 023D34Hr

```

r A
 SOURCE_FILE
 DESTINE_FILE/DIRECTORY

r A
 W

r A
 W

r A
 W

r A
 W
 aЧ (type file); bЧ '?'
 ' ? '
 , W

r A
 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

r A

```

### 18.1.8 pwd

```

 pwd

r A

pwd	

r A
 W

r A

```

---

---

### 18.1.10 rmdir

❏

**rmdir** *DIRECTORY*

Г Д

*DIRECTORY* ,

Г Д

❏

Г Д

❏

Г Д

**rm** , ❏ ,

Г Д

**tmp** ❏

Ruijie# **rmdir tmp**

Ruijie# **ls**

Г Д

## 18.2

❏





---

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

**no logging buffered**

Г А

*buffer-size* 4K 128K BytesЩ

*level* 0 7Щ

Щ

Г А

4k BytesЩ

7Щ

Г А

Г А

Щ

**show logging**Щ

**clear logging**

Щ

FLASH

Syslog ServerЩ

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

r A
Filename txt
max-file-size 128K 6M bytes
128K
level
FLASH 6
1
r A
FLASH
r A
r A
r A
Syslog Server
FLASH
txt
~ 注意:
FLASH FLASH
FLASH logging file flash
FLASH
r A
FLASH trace.txt
64K, 6

```

---

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

```

r A

```

| logging on   |       |
|--------------|-------|
| show logging |       |
| more flash   | FLASH |

## 19.1.6 logging console

```

no

```

```
logging console level
```

```
no logging console
```

```

r A

```

```
level 0 7
```

```


```

```

r A

```

```
Debugging (7)
```

```

r A

```

```

r A

```

```


```

```
show logging
```

```

r A

```

```
6
```

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

```

r A

```

|  |  |
|--|--|
|  |  |
|--|--|

---

|              |  |
|--------------|--|
| logging on   |  |
| show logging |  |

### 19.1.7 logging monitor

```

VTY telnet 4 SSH
no VTY
logging monitor level
no logging monitor

r A
level 1
1

r A
Debugging (7)

r A

r A
VTY terminal
monitor VTY
logging monitor
Logging monitor VTY
r A
VTY 6

```

---

## 19.1.8 logging trap

```

Syslog Server
└─ no
Syslog Server└─

logging trap level
no logging trap

r d
level └─ 1└─

r d
Informational(6)

r d

r d
Syslog Server
Syslog Server└─ logging trap
└─
show logging └─

r d
```

---

---

Г Д

Syslog Server

Ш

Ш

Г Д

Loopback 0

Syslog

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

Г Д

|    |                                          |
|----|------------------------------------------|
| 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

Г Д

Syslog kernel

Ruijie(config)# **logging facility kern**

Г Д

|                        |  |
|------------------------|--|
|                        |  |
| <b>logging console</b> |  |

---

## 19.1.12 logging count

no ☐

logging count  
no logging count

☐ ☐

☐ ☐

☐ ☐

☐ ☐

logging count ☐ ☐ no  
☐

☐ ☐

Ruijie(config)# logging count

☐ ☐

Г Д

W

Г Д

Г Д

1       $\sqcup$

W

Г Д

---

Г Д

Г Д

Uptime  
Ш Datetime  
Ш

Г Д

Log Debug Datetime

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

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

Г Д

|                          |  |
|--------------------------|--|
|                          |  |
| logging on               |  |
| service sequence-numbers |  |

### 19.1.15 service sysname

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no Ш

**service sysname**

**no service sysname**

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Г Д

Ш

Г Д

Г Д

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Г Д

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
```

r

A

| show logging |  |
|--------------|--|

### 19.1.16 more flash

FLASH

**more flash:***filename*

---

# 19.1.17 clear logging

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clear logging

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Г Д

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Г Д

Ш

Ruijie# clear logging

Г Д

| logging on       |  |
|------------------|--|
| show logging     |  |
| logging buffered |  |

## 19.2

### 19.2.1 show logging

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show logging

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Г Д

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           | <b>disabled</b> <b>enabled,</b> |
|--------------------------|---------------------------------|
| Console logging          |                                 |
| Monitor logging          | VTY                             |
| Buffer logging           |                                 |
| Timestamp debug messages | Debug                           |
| Timestamp log messages   | Log                             |

|              |               |
|--------------|---------------|
| Trap logging | Syslog Server |
| Log Buffer   |               |

Г А

|               |  |
|---------------|--|
|               |  |
| logging on    |  |
| clear logging |  |

## 19.2.2 show logging count

Ш

show logging count

Г А

Г А

Г А

logging

count Ш show logging count

Ш

show logging

Ш

Г А

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
```

Г А

---

|               |  |
|---------------|--|
|               |  |
| logging count |  |
| show logging  |  |
| clear logging |  |