



RGOS[®]

NMX “ ’ 3 1 ”A

V10.3(5b6)

Ω Λ ©2012

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Ω Λ ǂ ǃ Ǆ Æ a

ǎ 8 ǫ ǀ ǃ ˘ a ǂ ǃ

˙ Â

Ruijie
Networks

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Ruijie 锐捷网络

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锐捷网络

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Ruijie

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"А й' RGOS®10.3(5b6) Â

1 Ю " ≈

1.

$$E' \quad 5 \wedge \quad E \hat{A}$$

注意、说明 ã m 1 ¶ 6 Â

α Courier New $\tilde{E}$ 5 $\hat{\Lambda}$
 α $\hat{A}$ α $\ddot{y}$ $\hat{\omega}$ α $\tilde{\eta}$ E $\hat{A}$

2. 3

Ʒ E Arial é E Ω ∞ ∪

$$\frac{E'}{E} = \frac{\Omega}{\tilde{\omega}} \left(\frac{q}{a} \right)^{-1} \sim \frac{E}{A}$$

[x|y|...]
// ÿ ч ÿ ÿ a Â

3. ð

ð ð ð ð
ð ð
~ ð ð ð ð ð
&

CLI }

1.1 alias

$$\begin{array}{ccccccc} & & \mathfrak{z} & \vdots & \lambda^{\sim} & \downarrow \mathcal{L} & \tilde{\omega} \\ \mathbb{G} & & \mathfrak{z} & \text{no} & & \downarrow \mathcal{L} & \mathfrak{z} \\ \tilde{\omega} & & \mathfrak{z} & \vdots & \lambda & \hat{A} & \end{array} \quad \begin{array}{ccccccc} \mathbb{H}^{\mathbb{G}} & \text{alias} & \mathfrak{z} & & \hat{A} & & \\ & \mathfrak{z} & \vdots & \lambda & \mathfrak{z} & & \mathbb{H} \end{array}$$

alias

Ruijie(config)# **alias ?**

```
aaa-gs          AAA server group mode
acl             acl configure mode
bgp            Configure bgp Protocol
config         globle configure mode
.....
```

3:1 11a ~ 11m 11 *~ 1110

**command-alias=original-command*

R ~ EXEC 10 3:1"s" "show"Ω Â± ω"s?"
11 1's' Ω 11 11a '

Ruijie# **s?**

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

11 3 3a ' ~ ± G 11 3 ↑ ÂR
~ EXEC 10 11"sv"3 3"show version" ±'

Ruijie# **s?**

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

11 3 ω 3 ~ m a Â 3
R ~ 3 m ω ~ a 1 11'

Ruijie# **s?**

show start-chat start-terminal-service

3:1 ≠ 11 11 3 11 11a ~ R 11 10
3:1"ia"3 "ip address" ± 11 10'

Ruijie(config-if)# **ia ?**

```
A.B.C.D IP address
dhcp IP Address via DHCP
```

Ruijie(config-if)# **ip address**

" "ip address" 3 11 11a ~ 11
3 Â

3:1 G ω 11 ± a 11 Â

G **show aliases** 3 11 11 Â

ð R Ô

1110R ~ ω 10 G 3:1

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

$$\tilde{0} \quad \tilde{\Omega} \quad \tilde{\mathfrak{z}} \quad \hat{0}$$

show aliases	$\vdots$ 1
---------------------	------------

1.2 privilege

privilege no

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

Ồ 1 Ô

<i>mode</i> ' {	CLI {	Â
[all] ' {	{	~ √ ÷ √ ∴ Â
level <i>level</i> ' {	{	∴ ~ ∴ 0-15 Â
reset ' {	÷	∴ Â
<i>command-string</i> ' {	{	Â

Ồ Ơ Ô

$$\ddot{O} \quad \mathfrak{z} \quad \hat{O}$$
 ω'

Ồ G ' Ô

Ю | **privilege** | CLI | Ω |

a ↓ ~ ↓ 3 ↓ ↓ ↓ y ~ ǒ Ю
 ↓ √ √ privilege ? " m ↓ CLI 3 Â

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

ǒ R Ô

√ Ю R ~ CLI ∶ 1 √ 3 ǒ "test" reload 3
 ~ ↓ √ √ Â

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

~ √ ∶ 1 ǒ CLI ~ ↓ ↓ √ √ reload 3'

Ruijie> **reload ?**
 <cr>

reload ǒ 3 ∶ 1 ~ ‡ ↓ √ √ **all**
1 reload

~ √ ∶ 1 ǒ

1.3 show aliases

```

3:1 3 10 3:1~ 1 EXEC
Ruijie# show aliases 3 A

```

show aliases [mode]

0 1 0

mode ' : 1 3 3 3 A

0 0 0

0 3 0

EXEC

0 6 ' 0

0 3 ~ 3:1 A

0 R 0

10R ~ EXEC 10 3:1'

Ruijie# **show aliases exec**

exec mode alias:

```

h          help
p          ping
s          show
u          undebug
un         undebug

```

0 0 3 0

3	
alias	3:1

Y ' 3

2.1 Ω 3

. ð 3 4^ CLI~ ↑ ЛЮ Ω 3'

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

2.1.1 disable

ÿ ↑ æ| ~
3 disable Â

disable [*privilege-level*]

ð 1 Ô

privilege-level

ð 3 Ô

ð 6 ' Ô

G 3 ÿ ↑ Â ¶ 3 ~ ‡
m æ| Â

```
Ruijie# disable 10
```

enable	$\ddot{y}$ $\dot{\imath}$ $\vdots$ $\bar{A}$ $\acute{o}$ $\grave{u}$

3 enable A
 3 a 1 e 3 1 I A

a 1 : 1 3 ~ 5 3 enable password A
 3 no 7 : 1 3 A

```

Password '      ō      EXEC      ʌ ʒ Â
Level '      : Â
0!7 ' ʌ ʒ ʞ      ~ 0 ʞ ~ 7 ' ʞ Â
encrypted-password ' ʌ ʒ      Â

```

$$\begin{array}{ccccccc} \omega & \hat{A} & \alpha & \omega & 8 & & \\ \downarrow & & \downarrow & & & & \\ \omega & \hat{A} & & & & & \end{array}$$

~ 注意:

Ồ R Ô

$$\partial \quad \tau_{\Omega} \quad \mathfrak{z} \quad \hat{O}$$

3	
enable secret	ω 4 3 Â

2.1.4 enable secret

```
enable secret [level level] {secret | [0 | 5] encrypted-secret}
no enable secret
```

Ồ 1 Ô

Secret ω EXEC 4 3 Â

```

3 a      Â      15      password 1 3 ~  +      ~      ~
||  n security 1 3'      15      password 1 3 security 1
3 ǒ 1 ~  +      ~      ' 1 3  1 3  ǒ ~ password
1 3 G      '  1 ~ security 1 3 G      ǒ 1  Â

```

ð R Ô

Ю R ǒ 1 3 n pw10'

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

ð ǒ 3 Ô

3	
enable password	a 1 : 1 3 Â

2.1.5 password

```

line 1 3 ~ line 3 password Â 3
no 1 line 1 3 Â
password {password | [0|7] encrypted-password}
no password

```

ð 1 Ô

```

password ' line 1 3 Â
0|7 ' 1 3  1 ~ 0  1 ~ 7 '  1  Â
encrypted-password ' 1 3  Â

```

ð 3 Ô

line

ð G ' Ô
ð R Ô

3 line 1 3 Â

Ю R line 1 3 n red'

Ruijie(config)# **line vty 0**

Ruijie(config-line)# **password**

3

2.1.6 login

```
AAA 配置 用户 认证 方式 配置
login 配置 no 配置
```

login

no login

配置 用户

配置

配置 用户

line

配置 用户

```
配置 AAA 认证 方式 配置
配置 VTY console 配置
```

配置 用户

```
配置 VTY 配置
```

```
Ruijie(config)# no aaa new-model
```

```
Ruijie(config)# line vty 0
```

```
Ruijie(config-line)# password 0 normatest
```

```
Ruijie(config-line)# login
```

配置 用户

配置	配置
password	line 配置

2.1.7 login local

```
AAA 配置 用户 认证 方式 配置
login local 配置 no 配置
```

login local

no login local

配置 用户

配置

配置 用户

line

Step 1

```

Ruijie(config)# aaa
Ruijie(config)# username test

```

Step 2

```

Ruijie(config)# line vty 0
Ruijie(config-line)# login local

```

Step 3

username	test

2.1.8 login authentication

```

Ruijie(config)# aaa
Ruijie(config)# no login authentication

```

```

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

```

Step 1

```

default
list-name

```

Step 2

```

line

```

Step 3

```

Ruijie(config)# aaa
Ruijie(config)# radius

```

Step 4

```

Ruijie(config)# line vty 0
Ruijie(config-line)# login authentication default

```

配置命令

配置命令	配置说明
aaa new-model	启用AAA认证
aaa authentication login	配置登录认证

2.1.9 username

配置命令 username *name*

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

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

no username *name*

配置命令

name ' ' 用户名
password ' ' 密码
0/**7** ' ' 密码类型
encrypted-password ' ' 加密密码
privilege-level ' ' 特权级别

配置命令

配置命令

配置命令

配置命令

~ 注意:

配置命令

配置命令

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

2.1.11 lockable

	ᄃ ᄆ	lock	ᄃ ᄆ	line	ᄆ	lockable
ᄃ	ᄆ ᄆ	lock	ᄃ ᄆ ᄆ	no	ᄃ ᄆ	ᄆ

lockable

no lockable

Ồ Ơ Ô

$$\hat{O} \quad \hat{Z} \quad \hat{O}$$

line

Ồ G ' Ô

EXEC Ю lock 3 Â

Ồ R Ô

$$Y \stackrel{R}{\rightarrow} {}^8 J_1 \oplus {}^8 J'_1$$

```
Ruijie(config)# line console 0
```

```
Ruijie(config-line)# lockable
```

```
Ruijie(config-line)# end
```

Ruijie# lock

Password: <password>

Again: <password>

Locked

Password: <password>

Ruijie#

$$\tilde{0} \quad \tilde{\Omega} \quad \tilde{3} \quad \tilde{O}$$

lock	В $\hat{A}$

2.1.12 telnet

telnet

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

Ồ ư Ô

Host 的 IP 地址
 Port 为 TCP 的 23
 Keyword 为 telnet

命令	说明
/source-interface	指定 telnet 的源接口
/vrf	VRF

3. 配置

3.1 配置

通过 telnet 登录

~ 注意:

/vrf 命令只能在 RSR

3.2 配置

通过 telnet 登录 192.168.1.11 的 VRF 实例 vpn1

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

3.3 配置

命令	说明
Show session	显示 TTY 会话
Exit	退出

2.1.13 enable service

通过 SSH Server/Telnet Server/Web Server/Snmp Agent 登录

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

3.4 配置

Ω	
ssh-sesrver	6 Ω SSH Server
telnet-server	6 Ω Telnet Server
web-server	6 Ω Http Server
snmp-agent	6 Ω Snmp Agent

δ 3 Ô

ω

δ G ' Ô

3 6 Ω E Â G **no enable service** 3 Ω
E Â

δ R Ô

Ю R 3' **enable service ssh-sesrver,** SSH Server π '
Ruijie(Config~ # **enable service ssh-sesrver**

δ Ω 3 Ô

3	
show service	м E ,

2.2 Ω 3

↑ ЮЮ Ω 3'

- » **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

~ J U G 3

2.2.4 session-timeout

```

Ruijie(config-line)# session-timeout minutes [seconds]
Ruijie(config-line)# no session-timeout
Ruijie(config-line)# end
Ruijie# show running-config
Building configuration...

Current configuration : 107 bytes
!
line vty 0
exec-timeout 5 30
logging synchronous
no login
password 8 $P@ssw0rd$
transport input telnet
end

```

2.2.5 show clock

3 show clock $\hat{A}$
 show clock [detail]
 detail $\hat{A}$
 detail
 detail
 detail $\hat{A}$

```

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

```

3.2.6

3	
clock set	

2.2.6 show running-config

```

Ruijie# show running-config
show running-config

```

3.2.7

2.2.7 show startup-config

```

Ruijie# show startup-config
show startup-config

```

3.2.8

2.2.8 reload

```

Ruijie# reload
reload [ text | in [

```



```

text '          \  ~ 1-255      Â
in [ hh: ] mm '          \      ~      ñ 24
at hh:mm '          2
month '          ~      3      ~ Mar
day '          ~ ÿ 1† 31
cancel ' \      ,

```

ð 3 Ô

ð G ' Ô

```

G      3 \  \
2 ð \| ~      f      Â

```

ð R Ô

```

Ю      R      10†      \  \      '
Ruijie# reload in 10
Router will reload in 600 seconds.

```

2.2.9 show reload

```

reload Â
show reload

```

ð 1 Ô

ð 3 Ô

ð G ' Ô

```

G      3 \  \      ð \|      Â

```

ð R Ô

```

Ю      R      ð \|      '
Ruijie# show reload
Reload scheduled in 595 seconds.
At 2003-12-29 11:37:42
Reload reason: test.

```

2.2.10 prompt

```

    3 ~ ǒ  Ю 3 prompt^
    3 ~ G no prompt 3 ^

prompt string

δ 1  Ô
    string ' 3 ~ ǒ 32

δ 3  Ô
    ǒ

δ G  ' Ô
    æ 3 ~ ‡ ǒ m ò ~
    ǒ ǒ ǒ ^ 3 ǒ EXEC  ^

δ R Ô
    Ю R 3 ò rgnos'
Ruijie(config)# prompt rgnos
Ruijie(config)# end
rgnos

```

2.2.11 banner motd

```

    æ ~ ǒ  Ю 3 banner motd^
    ǒ ~ G no banner motd 3 ^

banner motd c message c

δ 1  Ô
    c ' æ ǒ ~ æ a ǒ
    message ' æ ǒ

δ 3  Ô
    ǒ

δ G  ' Ô
    G 3 ǒ æ ~ ~ æ
    ^ ǒ ǒ ǒ ǒ ǒ ~ ‡
    ^

δ R Ô

```

2.2.12 banner login

Aug 30 08:00 9 B 5 1 6 4 3 0 2 C 8 4 1 C B 0 C F C

```
Ruijie(config)#QosM5 motd$ double $ Tf-0.E
```

```

LINE 3
0 0
9600
0 G ' 0
G 3 A
0 R 0
Ю R 4 57600 bps'
Ruijie(config)#
Ruijie(config)# line console 0
Ruijie(config-line)# speed 57600
Ruijie(config-line)#

```

2.2.14 show line

```

a ~ Ю 3 show line A
show line [console line-num | aux line-num | vty line-num | line-num]
0 1 0
console ' 8 4 a
aux ' aux a
vty ' vty a
line-num ' line
0 3 0
0 0
0 G ' 0
G 3 a A
0 R 0
Ю R console 4 a '
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

```

^ 0 || ~ 7 5
3 write^

```

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

0 1 0

```

memory ' ^ running-config~ 7 5 NVRAM 4 copy
running-config startup-config^
network ' 4 7 TFTP 4 3 4 copy
running-config tftp^
terminal ' ~ 4 show running-config^

```

0 3 0

0 6 ' 0

```

3 3 3 7 8 6 4 7 4
Ю ~ 4 6 ^
3 a 7 4 7 memory ^

```

0 R 0

```

Ю R 4 '
Ruijie# write
Building configuration...
[OK]

```

0 9 3 0

3	
show running-config	
copy	8

˘

ʒ

ᵇ

˘

ʒ

3.1

Ω

ʒ

Ÿ

CLI

Π

3.1.2 copy tftp

~ { tftp ~ ~ { tftp ~ 3 Ю

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

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

4 3

4.1 4.1.1

4 3

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

4.1.1 interface aggregateport

3 3 ... 1 4 5 4

interface aggregateport port-number

8 4 0

port-number ' D@Py

8 R O

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

8 9 3 O

3	
show interfaces	4 a A

8 4 O

4.1.2 interface fastEthernet

3 3~ 7 4~ 5 4 A

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

8 4 O

```
mod-num/port-num 1/ 3 4 1~ a
```

8 3 O

5

8 G ' O

```
3 no ~ 4 a i A G show interfaces
show interfaces fastEthernet 3 4
```

8 R O

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

8 9 3 O

3	
show interfaces	4 a A

8 4 O

4.1.3 interface vlan

3 3~ ... || 4^ switch
virtual interface SVI~ 5 4 A G 3 no i

SVI.

interface vlan *vlan-id*

```

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

```

④ R ①

```

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

```

④ ② ③ ①

③	
show interfaces	④ ② ①

④ ④ ①

```

24SFP/12GT ④ 12 SFP ④ 12 10/100/1000M BASE-T
④ ④ ④ ④
a ④ ④ " ④ ④ SFP ④ 10/100/1000M
BASE-T ④ ④

```

4.1.5 description

④ ④ ④ ④ ④ no ④.

```

description string
no description

```

④ ④ ①

```

string ④ ④ ④ ④

```

④ ①

```

④ ④ ④

```

④ ③ ①

```

④

```

④ ④ ①

```

④ show interfaces ③ ④ ④ ④ ④ ④ ④ ④

```

④ R ①

```

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

```

4.1.6

命令	说明
show interfaces	查看接口状态

4.1.6 shutdown

```
 Ruijie(config-if)# shutdown
 Ruijie(config-if)# no shutdown
```

shutdown

no shutdown

4.1.6

4.1.6

4.1.6

```
 Ruijie(config-if)# shutdown
 Ruijie(config-if)# no shutdown
 Ruijie(config-if)# show interfaces
```

4.1.6

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

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

4.1.6

命令	说明
clear interface	清除接口配置
show interfaces	查看接口状态

& 说明:

```
 Ruijie(config-if)# no shutdown
 Ruijie(config-if)# show interfaces
```


8 R 0

~ "l 1 1 8'

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

8 2 3 0

3	
show interfaces	1 a Â

4.1.10 mtu

1 mtu

Mtu num

8 1 0

num' 64' 9216(65536 a 1 a 1)

8 0

h 1500 Â

8 3 0

1

8 G ' 0

1 mtu' ~ Â m 1 1

8 R 0

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

8 2 3 0

3	
show interfaces	1 a Â

4.1.11 carrier-delay

1 HO G 3 carrier-delay 1 ~ G
3 no h Â

carrier-delay [seconds]

no carrier-delay

④ ① ②

seconds ' 1 60

④ ②

h 2

④ ③ ②

4

④ ④ ②

4 4 4 1 DCD y Down ↑ Up
 ~ DCD 4 4 y ~ 8
 ↓ y a ③ ~ Â
 DCD ~ 8 4 ~ ↓ 8 7
 ~ 8 f ↓ 8 ~ Â ↓ ~ DCD ~ 8 0
 ~ 8

④ R ②

8Ю R 4 5 '

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

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

4.1.12 clear counters

4

clear counters [interface-id]

④ ① ②

interface-id ' 4 4 1 Â

④ ③ ②

④ ④ ②

4 h ↓ 8 ③ show interfaces ~
 Ю ④ clear counters ③ ↓ 8 4 h Â a
 4 ± 4 Â

8 R O

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

8 Q 3 O

3	
show interfaces	4 a Â

4.1.13 clear interface

4 AE

clear interface interface-id

8 4 O

interface-id ' 4 4 1 Â

8 3 O

8 G ' O

3 4 Switch Port,L2 Aggregate port 4 ,Routed port,L3
Aggregate port 4 Â 3 4
shutdown no shutdown 3 Â

8 R O

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

8 Q 3 O

3	
shutdown	Q 4 Â

4.1.14 switchport

4 IO G a ! 4 **switchport 3** 4
ÿ 2 Â G a ! 4 **no switchport 3** 4
ÿ 3

switchport

no switchport

8 q O

4

$\mathfrak{z} \downarrow \tilde{\Omega}$
 $\downarrow$
 $\downarrow$
 $\hat{\text{A}}\text{switchport}$
 $\mathfrak{z}$
 $\circ$
 $\tilde{\Omega}$

$\downarrow$
 $\hat{\text{A}}$

$\downarrow \ddot{y} 2$
 $\uparrow$
 $\uparrow 3$
 $\sim$
 $\uparrow$
 $\downarrow$
 2
 $\hat{\text{A}}$

$$\tilde{O} \quad \tau_{\Omega} \quad \mathfrak{z} \quad \hat{O}$$

$\{$	
show interfaces	$\mathcal{A} \quad \mathfrak{a} \quad \hat{A}$

2K IP

access port trunk port, 802.1Q no

Ồ 1 Ô

access	switch port ñ access port Â
trunk	switch port ñ trunk port Â

switch port ì access

4

switch port	access	trunk	native VLAN	VLAN
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
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92				
93				
94				
95				
96				
97				
98				
99				
100				

在配置 VLAN 时，需要在接口上配置 **switchport access vlan** 命令，将接口加入到 VLAN 中。

配置步骤如下：
 1. 配置接口为 access 模式：
 Ruijie(config-if)# **switchport mode access**
 2. 配置接口加入 VLAN：
 Ruijie(config-if)# **switchport access vlan** *vlan-id*

配置完成后，接口即可加入 VLAN。

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

配置完成后，接口即可加入 VLAN。

命令	说明
switchport access	将接口配置为 access 模式，并加入指定的 VLAN。
switchport trunk	将接口配置为 trunk 模式，并加入指定的 VLAN。

4.1.16 switchport access

在配置 VLAN 时，需要在接口上配置 **switchport access** 命令，将接口加入到 VLAN 中。

配置步骤如下：
 1. 配置接口为 access 模式：
 Ruijie(config-if)# **switchport mode access**
 2. 配置接口加入 VLAN：
 Ruijie(config-if)# **switchport access vlan** *vlan-id*

配置完成后，接口即可加入 VLAN。

vlan-id 为 VLAN ID，取值范围为 1-4094。

配置完成后，接口即可加入 VLAN。

配置步骤如下：
 1. 配置接口为 access 模式：
 Ruijie(config-if)# **switchport mode access**
 2. 配置接口加入 VLAN：
 Ruijie(config-if)# **switchport access vlan** *vlan-id*

配置完成后，接口即可加入 VLAN。

配置完成后，接口即可加入 VLAN。

配置完成后，接口即可加入 VLAN。

配置步骤如下：
 1. 配置接口为 access 模式：
 Ruijie(config-if)# **switchport mode access**
 2. 配置接口加入 VLAN：
 Ruijie(config-if)# **switchport access vlan** *vlan-id*

配置完成后，接口即可加入 VLAN。

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

4.3.1 配置

1

4.3.2 验证

1. 配置命令：
 Ruijie(config)# **interface gigabitEthernet 1/1**
 Ruijie(config-if)# **no snmp trap link-status**
 Ruijie(config-if)# **snmp trap link-status**

4.3.3 结果

1. 配置命令：
 Ruijie(config)# **interface gigabitEthernet 1/1**
 Ruijie(config-if)# **no snmp trap link-status**
 Ruijie(config-if)# **snmp trap link-status**

4.3.4 结果

命令	结果
Ruijie(config-if)# snmp trap link-status	成功配置
Ruijie(config-if)# no snmp trap link-status	成功取消配置

4.2 配置

4.2.1 show interfaces

1. 配置命令：

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

4.2.2 结果

interface-id：指定要查看的接口，可以是物理接口、聚合接口、SVI、loopback 接口等。
counters：显示接口的计数器信息。
description：显示接口的描述信息。
status：显示接口的状态信息。

Aggregate Port 3

5.1 配置

5.1.1 port-group

在配置 Aggregate Port 时，使用 `no` 命令配置 Aggregate Port 的端口成员。

port-group *port-group-number*

no port-group

配置示例

配置 Aggregate Port

配置示例

命令	说明
<i>port-group-number</i>	Aggregate Port 的端口成员。Aggregate Port 的端口成员为 1/3。

配置示例

配置

配置示例

配置 Aggregate Port 的端口成员。Aggregate Port 的端口成员为 1/3。配置 trunk port 的 native VLAN 为 1/3。配置 Aggregate Port 的端口成员为 1/3。

配置示例

配置 Aggregate Port 的端口成员。Aggregate Port 的端口成员为 1/3。配置 Aggregate Port 的端口成员为 1/3。

Ruijie(config)# **interface gigabitethernet 1/3**

Ruijie(config-if)# **port-group 3**

配置示例

5.1.2 aggregateport load-balance

配置 Aggregate Port 的负载平衡。Aggregate Port 的负载平衡为 1/3。配置 Aggregate Port 的负载平衡为 1/3。

ÿ ã

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

no aggregateport load-balance

ð ¶ Ò

¶	
dst-mac	ð MAC ¶ ã AP ¶ ã MAC ¶ ã MAC a ¶ ¶ a ¶
src-mac	ð MAC ã AP ¶ ã a ¶ MAC ¶ ¶ ¶ a ¶ ã MAC ¶
ip	IP 6 IP ¶ ã a ¶ IP— IP a ¶ ¶ ¶ ¶ IP— IP ¶ ¶ ã ¶ ã ã
dst-ip	ð IP ¶ ã AP ¶ ã IP ¶ ¶ ¶ ã IP a ¶ ¶ ¶ a ¶
src-ip	ð IP ¶ ã AP ¶ ã a ¶ IP ¶ ¶ a ¶ ¶ IP ¶ ¶

ð ʒ ʒ Ô

ʒ	
show aggregateport load-balance	aggregateport ʒ Â

ð ʒ Ô

5.2 ʒ ʒ

5.2.1 show aggregateport

aggregateport ʒ Â

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

ð ʒ Ô

ʒ	
aggregate-port-number	Aggregate Port ʒ ʒ Â
load-balance	
summary	

{	
aggregateport load-balance	AP Â

Ω VLAN 3

6.1 3

6.1.1 vlan

3 ω VLAN 3 Â 3 no 3

VLAN Â

vlan *vlan-id*

no vlan *vlan-id*

ð 1 Ô

1	
<i>vlan-id</i>	VLAN ID 1 Â VLAN VLAN 1~ a 3 3 Â

ð 3 Ô

ω

ð 6 ' Ô

3 ~ ω **end** 3 ~ ω **Ctrl+C** 1 Â
3 ω ~ ω **exit** 3

ð R Ô

Ruijie(config)# **vlan 1**

Ruijie(config-vlan)#

ð 3 3 Ô

3	
show vlan	VLAN 3 1 3 Â

ð 1 Ô

6.1.2 name

VLAN 1 Â 3 no h Â

no name

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1	
<i>vlan-name</i>	VLAN 1

Ồ Ô

VLAN 1

Ồ 3 Ô

VLAN

Ổ G ' Ô

G **show vlan** { vlan

Ồ R Ô

```
Ruijie(config)# vlan 10
```

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

$$\tilde{0} \quad \tilde{\Omega} \quad \tilde{3} \quad \tilde{0}$$

3	
sho vlan	VLAN 1 2 3 4

6.1.3 switchport mode

access port trunk port, 802.1Q no

sitchport mode {access | trunk}

no sitchport mode

Ồ 1 Ô

1	
---	--

access

4

8 6 ' 0

switch port access 4 4 5 VLAN
 8 6 0 **switchport access vlan** 3 4 VLAN
 8 6 0

switch port trunk 4 4 5 VLAN 8 6 0
 4 4 5 VLAN 4 4 VLAN " 5 5 trunk port
 4 VLAN " VLAN 8 6 0 **switchport trunk**
 3 4 4 4 VLAN "

8 R 0

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

8 9 3 0

1 trunkport 2 3

8 R 0

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

8 9 3 0

3	
switchport mode	γ 1^ switch port~ 1
switchport trunk	1 trunkport native VLAN Trunk 1 2 VLAN " 1

6.1.5 switchport trunk

1 trunkport native VLAN Trunk 1 2 VLAN
" 1 3 no 1 trunk 1 1

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

no switchport trunk {allowed vlan | native vlan }

8 1 0

1	
allowed vlan vlan-list	Trunk 1 2 VLAN " 1 vlan-list 2 VLAN 1 2 VLAN 2 VLAN ID 2 VLAN ID 2 1 10-20 1 1-10,20-25,30,33 all 1 2 VLAN " 1 VLAN add VLAN " 1 2 VLAN " , remove VLAN " 1 2 VLAN " 1 except " VLAN " VLAN 1 2 VLAN " ,
native vlan vlan-id	Native VLAN 1

8 0

2 VLAN " all Native VLAN 2 VLAN 1

8 3 0

1

8.6.2.1

Native VLAN

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

上 VLAN 上

Trunk 上 上 VLAN 1 4094 上
 上 上 Trunk 上 上 VLAN 上 上 VLAN
 a Trunk 上 上

上 **show interfaces switchport** 上 上

8.6.2.2

上 VLAN 2 上 上 1/15 上 上

```
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
```

8.6.2.3

上	上
show interfaces	上 上 上
switchport access	上 上 statics accessport 上 VLAN 上 上 上

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Ồ Ô

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Ồ G ' Ô

◊ ˆ ˆ **exit** ˆ

```

esw ~Ω      Ю̣ ñ      Э  VLAN  ǎ  ʍ̣ ̣  show  ǎ  1  7  7  Э
              ʍ̣ ̣ ̣  show esw vlan ǂ

```

Ồ R Ô

$$\partial \quad \Omega \quad \partial$$

3	
---	--

name	VLAN 1 A
switchport access	1 2 3 Vlan A

MAC 3

7.1 7.1.1 3

↑ 0 7 10 3

- , 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

|| 7 10 3 no h 10

mac-address-table aging-time seconds

no mac-address-table aging-time

0 1 0

seconds ' || 7 10 3 10 10 h 10

0 0

h 300 10

0 3 0

0

0 6 ' 0

6 show mac-address-table aging-time 3 10

6 show mac-address-table dynamic 3 || 10

8 R Ô

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

8 Ω 3 Ô

3	
show mac-address-table aging-time	√ Â
show mac-address-table dynamic	a Â

7.1.2 clear mac-address-table dynamic

|| Â

7.1.3 clear mac-address-table filtering

^

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

ð ¶ Ô

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

ð ¶ Ô

ð G ' Ô

↓ ∪ G **show mac-address-table filtering** ¶
 ǻ

ð R Ô

ǻ 00d0.f800.0c0c'

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

ð ǻ ¶ Ô

¶	
mac-address-table filtering	^
show mac-address-table filtering	ǻ ^

ð ¶ Ô

7.1.4 clear mac-address-table static

^

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

ð ¶ Ô

! ^

3 3 0

ω

3 G 3 0

a y ^ ^ || π ^ ^ || ^
 ≠ a ^ a ñ ^ G show
mac-address-table static 3 clear
mac-address-table static 3

3 R 0

Ю R ! 00d0.f800.073c VLAN 4

^ ^ ñ ^ ^ ^ ^ ^

gigabitethernet 1/1 3'

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

3 3 3 0

3	
show mac-address-table static	^
clear mac-address-table static	^

3 ^ 0

7.1.6 mac-address-table filtering

^ G 3 no ^

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

3 1 0

1	
<i>mac-address</i>	^
vlan <i>vlan-id</i>	VLAN ID ^ ā ^

3 0

! ^

3 3 0

Ồ G ' Ô

$$\hat{A}$$

Ồ R Ô

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clear mac-address-table filtering	^
show mac-address-table filtering	q ^

7.1.7 mac-address-table notification

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

Ồ 1 Ô

4	
---	--

interval	value	MAC	Trap
1	1	1	1


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

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

δ Ω 3 Ô

3	
snmp-server enable traps	trap Â
show mac-address-table notification	MAC π α Â
snmp trap mac-notification	4 MAC π Â

7.1.8 snmp trap mac-notification

4 MAC π Â G 3

show mac-address-table notification	MAC a A T
--	--------------

7.1.9 address-bind

ip mac .

address-bind *ip-address mac-address*

no address-bind *ip-address*

3 1 Ô

1	
<i>ip-address</i>	IP A
<i>mac-address</i>	mac A

3 3 Ô

ŵ

3 G ' Ô

∞ IP MAC ~ ‡ ↑ IP
 ñ IP ~ MAC a ñ IP
 MAC ~

3 R Ô

Ю R ip ñ 3.3.3.3 mac 00d0.f811.1112

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

3 3 3 Ô

3	
show address-bind	

3 1 Ô

7.1.10 address-bind ip-address

ip mac .

address-bind *ip-address mac-address*

no address-bind *ip-address*

3 1 Ô

1	
<i>ip-address</i>	IP 1
<i>mac-address</i>	mac 1

3 1

3

3 1

IP 1 IP 1 MAC 1
IP 1 IP 1 MAC 1
MAC 1

3 R 1

Ю R ip 1 3.3.3.3 mac 00d0.f811.1112

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

3 1 1

3	
show address-bind	

3 1 1

7.1.11 address-bind uplink

ip mac .

address-bind uplink *intf-id*

no address-bind uplink *intf-id*

3 1 1

1	
<i>intf-id</i>	1 R 1 1

3 1 1

3

3 1 1

IP 1 IP 1 MAC 1
IP 1 IP 1 MAC 1
MAC 1

Ồ R Ô

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Ồ 1 Ô

7.1.12 address-bind install

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7.1.13 mac-manage-learning uniform

配置 MAC 地址学习 uniform 模式。

配置步骤

配置步骤

1

配置步骤

配置 MAC 地址学习 uniform 模式。在配置模式下，执行以下命令：
 [Ruijie] mac-manage-learning uniform
 [Ruijie] quit

8.6.3.1

uniform 100% MAC 1 1/2 Y
' 1/2 no 3 1/2 MAC 1

8.6.3.2

8.6.3.3

3	
show mac-address-table mac-manage-learning	MAC 1

8.6.3.4

S8600 à S9600 " 3

7.1.15 mac-manage-learning dispersive

MAC 1 1/2 dispersive .

8.6.3.5

8.6.3.6

ω

8.6.3.7

MAC 1 1/2 dispersive 1 1/2 1
MAC ,

8.6.3.8

8.6.3.9

3	
show mac-address-table mac-manage-learning	MAC 1

8.6.3.10

S8600 à S9600 " 3

7.2 7.2 3

↑ 0 7 10 3

- › **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 3 ^ ↑ || ~ ^

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

0 1 0

1	
address <i>mac-addr</i>	MAC ^
interface <i>interface-id</i>	1 1
vlan <i>vlan-id</i>	VLAN 1

0 3 0

0 R 0

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

0 7 3 0

3	
show mac-address-table static	^

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

7.2.2 show mac-address-table aging-time

|| v ^

show mac-address-table aging-time

ð 3 Ô

ð R Ô

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

ð Ω 3 Ô

3	
mac-address-table aging-time	v ^

7.2.3 show mac-address-table count

^

show mac-address-table count

ð 3 Ô

ð R Ô

```
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

ð Ω 3 Ô

3	
show mac-address-table static	Â
show mac-address-table filtering	Â
show mac-address-table dynamic	Â
show mac-address-table address	â Â
show mac-address-table interface	â Â ¹
show mac-address-table vlan	VLAN â Â

7.2.4 show mac-address-table dynamic

|| â Â

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

ð 1 Ô

1	
---	--

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

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$\mathfrak{z}$	
clear mac-address-table dynamic	$\hat{A}$

7.2.5 show mac-address-table filtering

ॐ

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

Ồ ƠỒ

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

$$\tilde{O} \quad \{ \quad \hat{O}$$

Ồ R Ô

Ruijie# MAststYdsE6G(R0D4#W)3T5Hr6Dc7HnflsU5AftW45\$A)crB9p6BcC

3 1 Ô

1	
<i>interface-id</i>	1 (1 1 AggregatePort) ^
<i>vlan-id</i>	VLAN ^

3 3 Ô

3 R Ô

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

3 3 Ô

3	
show mac-address-table static	^
show mac-address-table filtering	^
show mac-address-table dynamic	^
show mac-address-table address	^ ^
show mac-address-table vlan	VLAN ^ ^

show mac-address-table count

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

3 3

MAC Trap

3 3 3

3 R 3

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

3 3 3

3	
mac-address-table notification	MAC Trap
snmp trap mac-notification	MAC Trap

7.2.8 show mac-address-table static

3

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

3 3 3

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

显示命令

命令	说明
show mac-address-table static	显示静态 MAC 地址表
show mac-address-table filtering	显示 MAC 地址表过滤规则
show mac-address-table dynamic	显示动态 MAC 地址表
show mac-address-table address	显示 MAC 地址表地址
show mac-address-table interface	显示 MAC 地址表接口
show mac-address-table count	显示 MAC 地址表计数

7.2.10 show address-bind

显示命令

show address-bind

显示命令

显示命令

显示命令

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

显示命令

命令	说明
address-bind	显示地址绑定

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

显示命令

显示命令

显示命令

8 R 0

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

8 9 3 0

8.1 MSTP 3

8.1 8.1.1

8.1.1 spanning-tree

MSTP 3 no spanning-tree 3
 spanning-tree [forward-time seconds | hello-time seconds |
 max-age seconds]
 no spanning-tree [forward-time | hello-time | max-age]

8.1.1

forward-time seconds ' 3
 hello-time seconds ' 3 BPDUs
 max-age seconds ' BPDUs

8.1.1

spanning-tree 3

8.1.1

3

8.1.1

forward-time 3 hello-time 3 max-age 3 3
 3 3 3 3 3 3 3 3

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

a 3 h 3 a 3

8.1.1

spanning-tree 3

Ruijie(config)# spanning-tree

BridgeForwardDelay


```

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

show spanning-tree      STP  0      1
spanning-tree mst cost  STP  1      PathCost 1
spanning-tree tx-hold-count STP  0      TxHoldCount 1

```

8.1.2 spanning-tree bpdudfilter

```

    disabled          BPDU filter      enabled
    spanning-tree bpdufilter [enabled | disabled]

    enabled '         BPDU filter      ^
    Disabled '        BPDU filter      ^

    ^
    ^

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

    show spanning-tree interface

```


spanning-tree max-hops *hop-count*

no spanning-tree max-hops

δ 1 Ô

hop-count ' BPDU 7h ↓ 7u ~ ñ 1' 40

δ Ô

hop-count h ñ 20

δ 3 Ô

ω .

δ 6 ' Ô

Region ă~ Root Bridge ↓ BPDU ↑ ð Hot Count ~ ý Root
 Bridge ~ Hop Count 1~ ↑ ñ 0 ‡
 BPDU ă ~ ↑ Hops h ñ 0 BPDU Â

↓ **max-hops**

z Ô Hop λ

íÇPa @à

⑧ 3 ①

② .

⑧ R ①

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

⑧ ③ 3 ①

show spanning-tree

8.1.7 spanning-tree mst configure

② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿

spanning-tree mst configuration

no spanning-tree mst configuration

⑧ ①

instance *vlan* ③ Vlan Instance 0 ④
name ⑤ ⑥
revision ⑦ ⑧

⑧ 3 ①

② .

⑧ ④ ①

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿

instance *instance-id* **vlan** *vlan-range* Vlan ① MST Instance
 ② *instance-id* ③ ④ ⑤ *vlan* ⑥ ⑦ ⑧ *vlan-range*
 ⑨ *vlan* ⑩ ⑪ VLAN ID ⑫ ⑬ VLAN ID ⑭ ⑮
 ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿

instance 10 vlan 2,3,6-9
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿

```

name name' MST 1 ~ 1/2 1/2 0 32 Â 1/2
no name è h Â
revision version' MST ~ 0 65535 Â 1/2 no revision
è h Â
show' m MST region a Â

```

8 R 0

```

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)#

```

```

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 y Instance 1 i ~ x w MST 1~
Ruijie(config-mst)# no instance 1 vlan 3

```

```

Ruijie(config-mst)# no instance 1

```

```

Instance 1 i ~ R

```

```

Ruijie(config-mst)# no instance 1

```

```

1/2 MST 3 show 3 Â

```

8 Q 3 0

```

show spanning-tree mst ' MST region

```

```

instance instance-id vlan vlan-range ' Vlan 1/2 MST Instance

```

```

name ' MST 1

```

```

revision ' MST 1

```

```

show ' MST R MST

```

8.1.8 spanning-tree mst cost

И	Ю	Instance	$\hat{A}^G$	no
3	h	$\hat{A}$		

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

no spanning-tree [mst instance-id] cost

Ồ 1 Ô

<i>instance-id</i>	Instance	Λ	0	64
<i>cost</i>	$\tilde{h}$	1	200	000

Â 6 no ↓ ∪ 3 h Â

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

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

δ 4 Ô

Instance-id ' Instance 1~ h 0 64

priority ' 4 "I ~ ↓ 0 16 32 48 64 80 96 112 128
144 160 176 192 208 224 240 "Ω 16 ~ h 16 "

δ Ô

Instance-id h h 0

priority h h 128

δ 3 Ô

4 .

δ 6 ' Ô

Region 6~ "I "I 4 ↓ Â "I
↓ ~ ∪ 4 1 4

δ R Ô

Ю R Instance 20 Gigabitethernet 1/1 4 "I h h h
10

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

Ruijie(config-if)# **spanning-tree mst 20 port-priority
0**

↓ ∪ ω **show spanning-tree mst instance interface interface-id**
3 3

δ "Ω 3 Ô

show spanning-tree mst ' 4 MSTP 6 Â

spanning-tree mst cost ' 4

spanning-tree mst priority ' a ↓ Instance "I

8.1.10 spanning-tree mst priority

ω Ю 6 3 ↓ ∪ Instance "I Â 6 no
↓ ∪ 3 h Â

spanning-tree [mst instance-id] priority priority

no spanning-tree [mst instance-id] priority

8.1.10 MSTP 3

```
instance-id ' Instance 17
priority ' 0, 4096, 8192, 12288, 16384, 20480,
24576, 28672, 32768, 36864, 40960, 45056, 49152, 53248, 57344
61440
Ω 16
~
~ 4096
```

8.1.11 spanning-tree reset

```
instance-id h
priority h 32768
```

8.1.12 spanning-tree reset

ω .

8.1.13 spanning-tree reset

```
Instance 20
~ h 8192
Ruijie(config-if)# spanning-tree mst 20 priority 8192
↓ ω show spanning-tree mst instance interface interface-id
3
Θ
```

8.1.14 spanning-tree reset

```
show spanning-tree mst ' MSTP a
spanning-tree mst cost '
spanning-tree mst port-priority ' a ↓ Instance ~
```

8.1.11 spanning-tree reset

```
spanning-tree h h
no
```

spanning-tree reset

8.1.15 spanning-tree reset

h

8.1.16 spanning-tree reset

ω

8.1.17 spanning-tree reset

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

8.1.18 spanning-tree reset

```
show spanning-tree ' STP ω a
show spanning-tree interface ' STP ~
```


8.1.12 spanning-tree tx-hold-count

STP 的 TxHoldCount 值 4 BPDU 的 6
 3 no 的 1

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

no spanning-tree tx-hold-count

8 1 0

tx-hold-count ' TxHoldCount 1 10

8 0

3

8 3 0

的 1

8 R 0

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

8 9 3 0

show spanning-tree ' MSTP 的 1

8.1.13 spanning-tree pathcost method

1 1 6 3 no
 的 1

spanning-tree pathcost method [long | short]

no spanning-tree pathcost method

8 1 0

long ' 802.1t 1 path-cost 的 1

short ' 802.1d 1 path-cost 的 1

8 0

802.1T 1 Path-cost 的 1

8 3 0

的 1

8 R 0

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

8.1.13 查看配置

```
show spanning-tree interface ' ' STP 1 1
```

8.1.14 spanning-tree portfast

1 Portfast 1 1 1 disabled 1
1 Portfast 1 1

spanning-tree portfast [disabled]

8.1.14 配置

```
disabled 1 1 Portfast 1 1
```

8.1.14 配置

1 1

8.1.14 配置

1 1

8.1.14 配置

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

8.1.13 查看配置

```
show spanning-tree interface ' ' 1 STP 1 1
```

8.1.15 spanning-tree portfast bpduguard default

BPDU guard 1 1 1 no 1 1
BPDU guard 1

spanning-tree portfast bpduguard default

no spanning-tree portfast bpduguard default

8.1.15 配置

1 1 1

8.1.15 配置

1 BPDU Guard.

8.1.15 配置

1 1

8.1.15 配置

BPDU guard

4 3 1 BPDU

no spanning-tree portfast default

```

<1>

```

```

    <1>

```

```


```

```

    Portfast

```

```

    <1>

```

```

    <1>

```

```

    R

```

```

Ruijie(config)# spanning-tree portfast default

```

```

    <1>

```

```

show spanning-tree interface STP

```

8.1.18 spanning-tree tc- protection

```

    tc- protection
    no
    tc-

```

```

spanning-tree tc- protection

```

```

no spanning-tree tc- protection

```

```

<1>

```

```

    <1>

```

```


```

```

    tc- protection

```

```

    <1>

```

```

    <1>

```

```

    R

```

```

Ruijie(config)# spanning-tree tc- protection

```

8.1.19 spanning-tree tc-protection tc-guard

```

    tc- guard
    no
    tc- guard

```

```

spanning-tree tc- protection tc-guard

```

```

no spanning-tree tc- protection tc-guard

```

```

Ruijie(config)#

```

```

spanning-tree

```

```

Ruijie(config)#

```

```

spanning-tree tc-guard

```

```

Ruijie(config)#

```

```

spanning-tree

```

```

Ruijie(config)#

```

```

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)#

```

```

spanning-tree

```

```

Ruijie(config)#

```

```

spanning-tree tc-guard

```

```

Ruijie(config)#

```

```

spanning-tree

```

```

Ruijie(config)#

```

```

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]

```

```

Ruijie(config)#

```

```

spanning-tree autoedge disabled

```

```

Ruijie(config)#

```

```

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

show spanning-tree interface '1/1' STP

```

8.1.22 bpdu src-mac-check

```

    1  bpdu mac ^
    2  bpdu mac ^
    3  no bpdu src-mac-check
    4
    5  H.H.H ^ mac ^ bpdu ^
    6  no ^ ! bpdu ^
    7
    8  ^ ^
    9  ^ ^
    10
    11  Ruijie(config)# interface gigabitethernet 1/1
    12  Ruijie(config-if)# bpdu src-mac-check 00d0.f800.1e2f
    13

```

8.1.23 clear spanning-tree detected-protocols

```

8  4 RSTP BPDU      BPDU      8  A
clear spanning-tree detected-protocols [interface interface-id]
8  4  O

```

interface-id 4

đ Ô

```

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

```

8.2.2 show spanning-tree interface

STP 4 ^ ↑ ↓ ^

```

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

```

ð 4 Ô

```

interface-id ' 4 1
bpdufilter '    bpdufilter    ^
portfast '      portfast      ^
bpduguard '     bpduguard     ^
/link-type '    4 linktype

```

ð 3 Ô

^

ð R Ô

```

Ruijie# show spanning-tree interface gigabitethernet
1/5

```

ð 3 Ô

```

spanning-tree bpdufilter '      4 BPDU filter BPDU filter 1 8

```



```
instance-id ' Instance 1
```

```
interface-id ' 1 1
```

```
Ø Ø
```

```
Instance 1
```

```
Ø 3 Ø
```

```
Ø R Ø
```

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

```
Ø 3 Ø
```

```
spanning-tree mst configuration ' 1 MST region
```

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

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

```
spanning-tree mst priority : instance "1
```

```
spanning-tree mst port-priority ' instance 1 "1
```

SPAN 3

9.1 monitor session

```
... SPAN 1 2 3 4 .
G 3 no 1 2 3 4
```

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

8 1 0

1	
<i>session_number</i>	SPAN 1 2
source interface <i>interface-id</i>	1 2 <i>interface-id</i> 1 2 3 4 1 2 a 3 4 5 AP SVI 2
destination interface <i>interface-id</i>	1 2 <i>interface-id</i> 1 2 3 4 1 2 a 3 4 5 AP SVI 2
mac source <i>mac-addr</i>	6 MAC
mac destination <i>mac-addr</i>	6 MAC
both acl <i>name</i>	3 4 5 2 acl <i>name/id</i>
rx	1 2 2
tx	1 2
all	1
encapsulation	6 7 8 9 8 9 6 7 tag 5 a

3 3 0

3 G 0

3 R 0

IO R ! show monitor 3 SPAN 1
 00

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

3 0 3 0

'
 [REDACTED]

IP 3

10.1 4 3

4 ↑ 7Ю 3'

- ip address
- ip unnumbered

10.1.1 ip address

3 4 IP ~ 7Ю no 7 4 IP
Â 3 Ю'

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

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

ð 4 Ô

4	
<i>ip-address</i>	32 ~ Æ IP ~ 8 Æ ~ 7Ю 8 Â
<i>network-mask</i>	32 Æ Æ ~ "1" Æ ~ "0" ÿ Æ Â 8 Æ ~ 7Ю 8 Æ ~ Â
secondary	IP Â

ð 4 Ô

4 IP Â

ð 3 Ô

4

ð 6 ' Ô

4 IP ~ 7Ю 4 IP ~ 4
IP ~ 4 7 IP ~ Â

≠ 32 Æ Æ ~ IP Ó Æ
7 Â ~ Æ 7 1 Æ IP Æ Æ
7 ~ Æ 7 0 Æ IP Æ Æ Æ 7 Â
A Æ 7 255.0.0.0 Æ 7Ю ~

Ồ R Ô

$$\partial \quad \tau_{\Omega} \quad \mathfrak{z} \quad \hat{O}$$

Ồ 1 Ô

10.1.2 ip unnumbered

Ồ Ơ Ô

1	
<i>interface-type</i>	Ω 1
<i>interface-number</i>	Ω 1 1

δ α Ô

α Ю 1 1 Â

δ 3 Ô

1

δ 6 ˘ Ô

1 1 1 1 1 IP ~ 1 a 1 IP 1 1
 1 Ω é IP 1 Â 1 1 IP 1
 1 IP 1 Ω 1 IP Â 1 ~ ≠ Ω
 1 IP 1 α 1 1 1 1 Â
 1 1 1 Ю 8
 , 1 1 a 1 1 Â
 , 1 SLIP à HDLC à PPP à LAPB à Frame-relay 1 1
 1 1 Â 1 1 1 1 1
 1 1 Â X.25 a 1 1 1 Â
 , a ping 3 1 1 1 1 1 1
 1 IP Â 1 SNMP 1 1 1 1 Â
 , a 1 1 1 1 Â

δ R Ô

1 Ю 1 1 1 1 1 Ω 1 1 FastEthernet 0/0 Â
 Ω 1 IP Â
 ip unnumbered fastEthernet 0/0

δ Ω 3 Ô

3	
show interface	1 1

δ 1 Ô

3 1 3 a Â

10.2

~

3

~ 3 1 1

MAC ˆ

ˆ ˆ ARP ˆ ˆ a ARP
 ˆ - **clear arp-cache** ˆ ˆ ˆ ARP ˆ

ˆ R ˆ

ˆ ˆ ˆ ˆ ARP ˆ

arp 1.1.1.1 4e54.3800.0002 arpa

ˆ ˆ ˆ ˆ

ˆ	
clear arp-cache	ARP ˆ

10.2.2 arp retry interval

ˆ ˆ ˆ ˆ arp ˆ ˆ ˆ IP
 ˆ ˆ 2 ARP ˆ ˆ ˆ no ˆ ˆ
 ˆ 1 ARP ˆ

arp retry interval *seconds*

no arp retry interval

ˆ ˆ ˆ

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

ˆ ˆ ˆ

ARP ˆ ˆ 1 ˆ

ˆ ˆ ˆ

ˆ

ˆ ˆ ˆ

ˆ ˆ ˆ ARP ˆ ˆ ˆ
 ˆ ˆ ARP ˆ ˆ a ˆ ARP
 ˆ ˆ

ˆ R ˆ

ˆ ˆ ARP ˆ ˆ 30s

arp retry interval 30

IP 3

ð Ω 3 Ô

10.2.4 arp trusted

G $\text{3}^{\sim}$ $\downarrow \text{JL}$ $\downarrow \text{a}$ ARP $\hat{\text{A}}$ 3 **no**
 $\text{h} \hat{\text{A}}$

arp trusted *number*

no arp trusted

ð 1 Ô

1	
<i>number</i>	$\downarrow \text{JL}$ $\downarrow \text{a}$ ARP , $\downarrow \text{h}$ $<10-4096> \hat{\text{A}}$

ð α Ô

$\text{a} \downarrow$ $\text{h} \text{a} \downarrow \hat{\text{A}}$

ð 3 Ô

ω

ð G ' Ô

G $\text{3}^{\sim}$ $\text{I} \text{ü}$ $\downarrow \text{a}$ ARP π $\hat{\text{A}} \downarrow \text{a}$ ARP é
 $\text{Ω} \text{ä}$ $\downarrow \text{a}$ $\downarrow$ $\parallel$ ARP a
 $\hat{\text{A}}$ a $\hat{\text{A}}$

ð R Ô

$\text{JL} \text{ü}$ $\downarrow \text{JL}$ 1000 $\downarrow \text{a}$ ARP $\hat{\text{A}}$

arp trusted 1000

ð Ω 3 Ô

3	
service trustedarp	ü $\downarrow \text{a}$ ARP π

10.2.5 arp unresolve

G $\text{3}^{\sim}$ $\downarrow \text{JL}$ ARP $\hat{\text{A}}$ 3
no $\downarrow \text{JL}$ $\text{h} 8192 \hat{\text{A}}$

arp unresolve *number*

no arp unresolve

ð 1 Ô

~ 1/2 1 ARP ~ 1
1

8 R 0

1/2 ~ 1 SVI 1 1 1 ARP 1
Ruijie(config)# interface vlan 1
Ruijie(config-if)# arp gratuitous-send interval 1
1/2 ~ 1 1 SVI 1 1 1 ARP
Ruijie(config)# interface vlan 1
Ruijie(config-if)# no arp gratuitous-send

8 1 3 0

10.2.7 arp timeout

ARP 1/2 ARP ~ 1/2 1
3 no 1 1

arp timeout seconds

no arp timeout

8 1 0

1	
seconds	~ 1/2 1 1 1 0-2147483

8 1 0

1 3600 1

8 3 0

1

8 1 0

ARP 1/2 1 IP MAC 1 1
~ ARP 1/2 1 ~ 1 ARP
1 ~ 1 1 1 1 1 1
ARP 1

8 R 0

1/2 ~ 1/2 FastEthernet 0/0 1 1 ARP
1 120 1

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

δ Ω 3 Ô

3	
clear arp-cache	ARP ǎ
show interface	4 a

10.2.8 ip proxy-arp

4 3 ǔ 3 ARP 7 ~ 4 7 **ip proxy-arp** 3 Â 3
no 4 7 7 3 ARP 7 Â

ip proxy-arp

no ip proxy-arp

δ α Ô

ǔ 3 ARP Â

δ 3 Ô

4

δ G ˘ Ô

3 ARP 7 4 7 ǁ a ǎ ~ é
IP MAC Â ↑ ARP ~ ARP
4 IP 6 IP a 4 ~ 4
IP ~ 4 ARP ~ MAC ı
7 MAC Â 7 3 ARP 7 Â

δ R Ô

7 7 7 FastEthernet 0 ǔ 3 ARP 7 Â

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

δ 4 Ô

3 7 3 a Â

10.2.9 service trustedarp

ǔ 4 a ARP 7 ~ 4 7 **service trustedarp** 3 Â 3
no

service trustedarp

no service trustedarp

δ α Ô

Ω ↓ a ARP Â

δ 3 Ô

ω

δ G ' Ô

↓ a ARP π ARP π ~ 3 ñ GSN
↑ ~ G Â

δ R Ô

πЮ ~ ω Ю Ů service trustedarp π Â

config

service trustedarp

δ 4 Ô

3 γ π 1 s32 3 a Â

10.3 IP 3

6 IP Ω 3 ↑ ,

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

~ 注意:

Ю ñ 3 arp a ψ ~ arp Ω ñ π
3 esw Ω ψ ~ . show esw [ip] arp [keyword ...] Â

10.3.1 clear arp-cache

清除 ARP 表项。清除 ARP 表项时，系统会清除所有 ARP 表项。
命令格式：
clear arp-cache

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


```
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
```

```
ルЮ 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
```

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10.3.3 show arp counter

ARP "Ω arp

show arp counter

ð ¼ Ô

ð 3 Ô

ð R Ô

```
ルЮ ì show arp counter
```

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

ARP ă ¼ Û ⅈ Ю

⑧ ④ ⑥

③ ④ ⑤ a ⑥

10.3.4 show arp timeout

④ ⑤ ARP ⑥

show arp timeout

⑧ ④ ⑥

⑧ ③ ⑥

⑧ R ⑥

⑦Ю ⑧ show arp timeout

Ruijie# show arp timeout

Interface arp timeout(sec)

VLAN 1 3600

ARP ③

④⑤⑥⑦⑧⑨⑩⑪⑫⑬⑭⑮⑯⑰⑱⑲⑳㉑㉒㉓㉔㉕㉖㉗㉘㉙㉚㉛㉜㉝㉞㉟㊱㊲㊳㊴㊵㊶㊷㊸㊹㊺㊻㊼㊽㊾㊿

8.6.1 配置

在 R1 上配置 IP 地址 192.168.12.1，并配置默认网关 192.168.12.254。

8.6.2 验证

在 R1 上使用 `show ip route` 命令查看路由表。

清除 IP 路由 192.168.12.0/24。

8.6.3 配置

命令	说明
<code>show ip route</code>	IP 路由表

8.6.4 验证

在 R1 上使用 `show ip route` 命令查看路由表。

10.3.6 show ip arp

~ ^ ARP ~ 显示 ARP 表

`show ip arp`

8.6.1 配置

8.6.2 验证

8.6.3 配置

在 R1 上使用 `show ip arp` 命令查看 ARP 表。

Ruijie# `show ip arp`

Protocol	Address	Age(min)	Hardware	Type
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 3 1 0 18 10'

Protocol	~ ~ ÿ Internet Â
Address	б IP Â
Age (min)	ARP 3 ~ Луj Â h "- Â
Hardware	б IP Â
Type	~ Лу ÿ ARPA Â
Interface	б IP 7Ω 1 Â

δ 1 Ô

3 γ 3 a Â

10.3.7 show ip redirects

3 7Ω Â 3 10'

show ip redirects

δ 1 Ô

Â

δ 3 Ô

δ G ' Ô

3 γ 3 Â

δ R Ô

10 ÿ show ip redirects Â

Ruijie# show ip redirects

Default Gateway: 192.168.195.1

RMON 3

11.1 11.1 3

RMON 1 3

- › **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

3 1 3 1 3 no 1 1

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

1 1

1 3 1

1

1 3 1

1 R 1

3 1 3 1 3 1 1 1

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

8 R Ô

ルЮ R ~ ㄖ Y || ɔ' Y à ɹ trap Â

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

8 ㄒ 3 Ô

3	
---	--

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

71 ~

```
Fragments : 0
Jabbers : 0
Collisions : 0
Pkts64Octets : 128
Pkts65to127Octets : 336
Pkts128to255Octets : 229
Pkts256to511Octets : 3
Pkts512to1023Octets : 0
Pkts1024to1518Octets : 1200
Owner : zhangsan
```

显示命令

命令	说明
rmon collection stats index [owner owner-string]	显示指定索引的统计信息

11.2.2 show rmon history

命令

show rmon history

显示命令

显示命令

显示命令

显示命令

```
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

8 9 3 0

3	
rmon collection history <i>index</i> <i>[owner ownername] [buckets</i> <i>bucket-number] [interval</i> <i>seconds]</i>	7 7 4 8

11.2.3 show rmon alarm

a Â

3	
rmon event <i>number</i> [log] [trap <i>community</i>] [<i>description-string</i>]	7 Y

Y 1 8 3

12.1 12.1

1 0 1 0 3

- , 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

1 8 1 2 3 no 1 8
1 1
storm-control {broadcast | multicast | unicast} [{level percent |
pps packets | rate-bps}]
no storm-control {broadcast | multicast | unicast} [{level percent |
pps packets | rate-bps}]

1 1 1

broadcast ' 8 1
multicast ' 1 8 1
unicast ' 1 8 1
percent ' 1 20 20%
pps ' 1 1 packets per second
Rate-bps ' 1
64k-2M ' 1 64k 1 1
2-100M ' 1 1M 1 1
100M 1 1 1 8M 1 1

1 1

1 1 1 1 1 1

8. 配置

```

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

```

9. 验证

```

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

```

10. 查看

命令	说明
show interfaces	查看接口配置

11. 清除

```

 Ruijie(config)# interface gigabitethernet 1/1
 Ruijie(config-if)# no switchport protected

```

12.1.3 protected-ports route-deny

```

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

```

```

 Ruijie(config-if)# protected-ports route-deny
 Ruijie(config-if)# no protected-ports route-deny

```

12. 配置

```

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

```

13. 验证

```

 Ruijie

```

14. 清除

```

 Ruijie(config-if)# no protected-ports route-deny
 Ruijie(config-if)# show running-config

```

15. 验证

```

 Ruijie(config)# protected-ports route-deny

```

8 9 3 0

3	
show running-config	3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

8 1 0

10.2 3 4 S32/S37 S25 S57 7 8

12.1.4 switchport port-security

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

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

no switchport port-security [violation]

8 1 0

1	
port-security	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
violation protect	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
violation restrict	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
violation shutdown	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

8 0

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

8 3 0

1

8 6 7 0

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

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Ю R 1 Gigabitethernet 1/1 Э 1 ŵ 1
R ŵ shutdown

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

ð 3 Ô

3	
show port-security	1 ŵ 3 ŵ Â

12.1.5 switchport port-security aging

3 ŵ 1 Э ŵ 1 Â 1 1
ŵ 1 1 1 1 1 1
1 Э ŵ Â 3 no 1 1
1 1 3 1 Â

switchport port-security aging {static | time time }
no switchport port-security aging {static | time }

ð 1 Ô

1	
Static	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
time time	1 Э ŵ 1 0 1440 1 1 1 1 1 1 1 Э 3 1 1 1 1 1

ð Ô

a 1 1 ŵ

ð 3 Ô

1

ð 6 Ô

1 1 Ю 3 no switchport port-security aging

time 8 1 0 3 no switchport
port-security aging static 3 1 0 0
A

G show port-security 3

8 R 0

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

8 9 3 0

3	
show port-security	1 0 2 0 A

12.1.6 switchport port-security mac-address

1 0 A G 3 no 1 0
h A

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

8 1 0

1	
mac-address mac-address	1 0 A
ip-address ip-address	h 0 IP A
maximum value	1 0 A

8 0

! 0

8 3 0

1

8 G ' 0

0 R 0

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

0 2 3 0

3	
show port-security	1 0 0 0

0 1 0

S8600

Gi1/1 Disabled Disabled Disabled

8 9 3 0

3	
storm-control	1 8 9 Â

12.2.2 show port-security

1 3 2 3 Â

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

8 1 0

1	
address	3 3 ~ 1
interface interface-id	1 1 3 2 Â

8 3 0

8 6 0

6 3 a 1 ~ ‡ 1 3 à R
2 ~ 1 3 2 Â

8 R 0

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

8 9 3 0

3	
switchport port-security	R 1 3 1 ~ 1 3
switchport port-security aging	1 1 3 3
switchport port-security	1 3 Â

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

Б 802.1Х 3

13.1 dot1x ý ||- 3

dot1x ы || 3 ^ лЮ

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

13.1.1 dot1x auto-reg

802.1X ȳ || π ˘ ǫ ȳ dot1x auto-req Â

```
[no] dot1x auto-req
```

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Ồ Ơ Ô

a ŷ ||

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 $\ddot{\omega} \quad \hat{A}$

Ổ G ' Ô

```

y || v 802.1x ~ J L G show dot1x auto-reg

```

3 11

Ồ R Ô

Ю ы ||-ч 802.1x R ' 1

```
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

```

3.1.2

3	
show dot1x auto-req	3 4 5

13.1.2 dot1x auto-req packet-num

3 4 5 no 6 7

```

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

```

3.1.2

num 3 4

3.1.2

num = 0; 3 4

3.1.2

3 4

3.1.2

```

3 4 5 6 7 show dot1x
auto-req 3 4 5

```

3.1.2

```

3 4 5 6 7 8 9
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

```

3.1.2

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13.1.4 dot1x auto-req user-detect

~ no h

dot1x auto-req user-detect

no dot1x auto-req user-detect

0 1 Ô

3 1 Â

0 2 Ô

0 3 Ô

ô Â

0 6 Ô

~ 1 2 3 4

~ 1 2 3 4 **show dot1x**

auto-req 3 1

0 R Ô

Ю 3 3 1 2 3 4 5

Ruijie# **configure terminal**

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

Ruijie(config)# **end**

Ruijie# **show dot1x auto-req**

Auto-Req: Enabled

User-Detect : Enabled

Packet-Num : 0

Req-Interval: 60 Second

0 7 3 Ô



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

13.2.1 dot1x timeout quiet-period

802.1X 3 ^ R 4 3 ~ 11 ĭ
^ ~ Â G 3 no ĭ ħ

dot1x timeout quiet-period *seconds*

no dot1x timeout quiet-period

ð 1 Ô

seconds' 11 ĭ Â ħ
0 ĭ 65535 Â' Æ S

ð 4 Ô

ħ 10 Â

ð 3 Ô

ŵ Â

ð G ' Ô

11 a ĭ . 4 ~ Â 4
11 G **show dot1x** 3 Â

ð R Ô

Ю ĭ 1000s'

Ruijie# **configure terminal**

Ruijie(config)# **dot1x timeout quiet-period 1000**

Ruijie(config)# **end**

Ruijie# **show dot1x**

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

```
Maximum Request:      3 times
Filter Non-RG Supp:   Disabled
Client Oline Probe:   Disabled
Eapol Tag Enable:     Disabled
Authorization Mode:    Group Server
```

$$\partial \quad \tau_{\Omega} \quad \{ \quad \hat{O}$$

3	
show dot1x	802.1x a

13.2.2 dot1x timeout re-authperiod

$\tilde{\Omega}$ $\mathcal{M}^G$ $\mathfrak{z}$
 $\hat{A}^G$ $\mathfrak{z}$ **no** $\mathfrak{y}$
 $\mathfrak{h} \hat{A}$

dot1x timeout re-authperiod *seconds*

no dot1x timeout re-authperiod

Ồ 1 Ô

seconds' $\hat{A} \cdot \hat{h}$ 0 65535 $\hat{A}'$ $\hat{A} \in \mathcal{S} \hat{A}$

Ồ Ờ Ô

3600

0 3 0

 $\hat{\omega} \quad \hat{A}$

Ồ G ' Ô

↓ ∪^G **show dot1x** } 802.1x Â

Ồ R Ô

Ю й 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

```

8 9 3 0

3	
show dot1x	802.1x 2

13.2.4 dot1x timeout supp-timeout

3 2 6 3 no

```

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

```

8 1 0

```

seconds' 2 h 0 j
65535 2

```

8 2 0

h 3 2

8 3 0

2 2

8 6 0

```

J L 6 show dot1x 3 802.1x 2

```

8 R 0

Ю 2 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

```

8 9 3 0

3	
---	--

show dot1x

802.1x

9

dot344 4Tf-0344 41 16333C

↓ 7.6 **show dot1x** 3 802.1x Â

8 R 0

Ю . ñ 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
```

8 9 3 0

3	
show dot1x	802.1x а

13.3 dot1x 3

7.6 3

- , **dot1x re-authentication**
- , **dot1x reauth-max**

13.3.1 dot1x re-authentication

Г 3 ĩ Â Г 3 no
h Â

[no] dot1x re-authentication

8 2 3 0

3	
show dot1x	802.1x 2

13.4 dot1x 2 3

2 ↑ 300

- dot1x probe-timer
- dot1x client-probe enable

13.4.1 dot1x probe-timer

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

8 1 0

no' h

interval hello

alive'

interval' h

8 2 0

Hello h 20

h h 250

8 3 0

ω Â

8 6 0

~ ↓ 30 6 show dot1x 3 802.1x

Â

8 R 0

hello h 30 , h 120 '

Ruijie# configure terminal

Ruijie(config)# dot1x probe-timer interval 30

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

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

8 9 3 0

3	
Show dot1x probe-timer	

13.4.2 dot1x client-probe enable

11

[no] dot1x client-probe enable

8 1 0

11

8 2 0

9

8 3 0

0 1

8 6 0

11 9

8 R 0

11

```
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

```

δ Ω 3 Ô

3	
show dot1x	dot1x

13.5 dot1x è 3

```

è dot1x ↑ 3
, 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 α 10 AAA 1 ~ G
3 Ω " Â 3 no 1 "
Â

```

```

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

```

δ 1 Ô

```

default " 1

```

list-name' ↓ " ↓

δ α Ô

AAA ~ ‡ G AAA L Â

δ 3 Ô

∕ Â

δ G ' Ô

Ü AAA ŵ L ‡ 3 dot1x G 8 "

δ R Ô

Ю R ∕ ∅ Ω " group radius Â

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#

δ Ω 3 Ô

3	
aaa new-model	G AAA ŵ L
aaa authentication dot1x	"

13.5.2 dot1x auth-address-table

3 802.1X ĭ Â G 3 **no** † ↓

dot1x auth-address-table address mac-addr interface interface

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

δ ∕ Ô

mac-addr' ↓ Â

Interface' ∕ ∕ Â

δ α Ô

h ! J Â

ð 3 Ô

Û Â

ð G ' Ô

↓ ĭ G 802.1X Â G **show dot1x**
auth-address table 3 Â

ð R Ô

Ю R 4 3 7 Â

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

ð ʹΩ 3 Ô

3	
show dot1x auth-address-table	802.1X ĭ Â

13.5.3 dot1x auth-mode

802.1x Â

```
dot1x auth-mode {eap-md5 | chap | pap}
no dot1x auth-mode
```

ð 1 Ô

eap-md5 802.1x EAP-MD5

ĭ Ô

epdö

↓ 图 6-13 **show dot1x** 3 802.1x

8 R 0

```

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

```

8 图 6-14 3 0

3	
show dot1x	802.1x 表 6-1

13.5.4 dot1x default

802.1x 1 1 h 表 6-1

dot1x default

8 1 0

3 1 表 6-1

8 表 6-1 0

8 3 0

表 6-1 表 6-1

8 6 1 0

↓ 图 6-15 **show dot1x** 3 802.1x 表 6-1

8 R 0

```

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

```

8 图 6-16 3 0

3	
show dot1x	802.1x 表 6-1

Ω ñ Ω

ð 3 Ô

ŵ Â

ð G ´ Ô

↓ ∪ G **show dot1x** 3 802.1x Â

ð R Ô

Ю 802.1X tag R ´

Ruijie# **configure terminal**

Ruijie(config)# **dot1x eapol-tag**

Ruijie(config)# **end** Ruijie(config)#

```

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

```

3.5.8 802.1X

命令	作用
show dot1x	显示 802.1X 配置

13.5.8 dot1x private-supplicant-only

```

Ruijie# configure terminal
Ruijie(config)# dot1x private-supplicant-only
Ruijie(config)# no dot1x private-supplicant-only
Ruijie#

```

3.5.8 802.1X

命令

3.5.8 802.1X

命令

3.5.8 802.1X

命令

3.5.8 802.1X

```

Ruijie# show dot1x private-supplicant-only
Ruijie#

```

3.5.8 802.1X

```

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

```

3.5.8 802.1X

命令	作用
show dot1x private-supplicant-only	显示 802.1X 配置

13.5.9 dot1x port-control auto

配置命令如下：

```

Ruijie(config-if)# dot1x port-control {auto | none}

```

dot1x port-control auto

no dot1x port-control

命令格式：

命令参数：

命令作用：

配置命令如下：

命令格式：

命令参数：

命令作用：

验证命令如下：

命令格式：

命令参数：

Ruijie# **configure terminal**

Ruijie(config)# **interface g0/1**

Ruijie(config-if)# **dot1x port-control auto**

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

Ruijie#

命令格式：

命令	作用
show dot1x	显示 802.1x 配置信息

13.5.10 dot1x port-control-mode

配置命令如下：

```

Ruijie(config-if)# dot1x port-control-mode {mac-based | port-based}

```

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

no dot1x port-control-mode

Ồ 1 Ô

mac-based [†]	mac	802.1X	8
port-based [†]	✓	802.1X	8

$$\tilde{O} \quad \alpha \hat{O}$$

⇒ mac-based 8

$$\tilde{O} \quad \mathfrak{z} \quad \hat{O}$$
 $\hat{A}$

Ồ G ' Ô

1. **show dot1x port-control** 3 4 802.1x 5
 2. 6 7 802.1X 9 a 10
 3. 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032

Ồ R Ô

```

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#

```

$$\partial \quad \tau_{\Omega} \quad \mathfrak{z} \quad \hat{O}$$

3	
show dot1x port-control	

13.5.11 dot1x stationarity enable

[illegible]

dot1x stationarity enable

no dot1x stationarity enable

Ồ Ạ Ô

Ồ Ờ Ô

$\dot{N}$ || $\downarrow \cup$ $\downarrow$ $\downarrow$

$\dot{O}$ 3 $\dot{O}$

$\dot{\omega}$ $\hat{A}$

$\dot{O}$ G $\dot{O}$

$\dot{m}$ $\dot{z}$ $\dot{i}$ $\dot{z}$ $\hat{A}$

$\dot{O}$ R $\dot{O}$

$\dot{O}$ $\dot{A}$ 802.1x $\dot{A}$ 6 R $\dot{A}$

Ruijie# **configure terminal**

Ruijie(config)# **dot1x stationarity enable**

Ruijie(config)# **end**

Ruijie#

$\dot{O}$ $\dot{\Omega}$ 3 $\dot{O}$

13.6 dot1x 3

$\dot{O}$ **show dot1x**
 $\dot{O}$ **show dot1x auth-address-table**
 $\dot{O}$ **show dot1x auto-req**
 $\dot{O}$ **show dot1x private-supPLICANT-only**
 $\dot{O}$ **show dot1x max-req**
 $\dot{O}$ **show dot1x port-control**
 $\dot{O}$ **show dot1x probe-timer**
 $\dot{O}$ **show dot1x re-authentication**
 $\dot{O}$ **show dot1x reauth-max**
 $\dot{O}$ **show dot1x summary**
 $\dot{O}$ **show dot1x timeout**
 $\dot{O}$ **show dot1x user id**

13.6.1 show dot1x

802.1x $\dot{a}$ $\hat{A}$

show dot1x

$\dot{O}$ $\dot{A}$ $\dot{O}$

dot1x max-req	1 ~ 1000
dot1x port-control auto	enable disable auto
dot1x reauth-max	1 ~ 1000
dot1x re-authentication	enable disable
dot1x timeout quiet-period	1 ~ 1000
dot1x timeout re-authperiod	1 ~ 1000
dot1x timeout server-timeout	1 ~ 1000
dot1x timeout supp-timeout	1 ~ 1000
dot1x timeout tx-period	1 ~ 1000

13.6.3 show dot1x auto-req

显示 802.1x 认证配置

show dot1x auto-req

显示 802.1x 认证配置

1

显示 802.1x 认证配置

1

显示 802.1x 认证配置

1

显示 802.1x 认证配置

1

显示 802.1x 认证配置

1 1

Ruijie# **show dot1x auto-req**

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

8 2 3 0

```
private-supPLICant-only:: disabled
```

```
Ruijie#
```

```
0 0 3 0
```

3	
dot1x auth-mode	802.1x Â
dot1x max-req	ĩ Â
dot1x port-control auto	4 ĩ 4 7 Â
dot1x reauth-max	
dot1x re-authentication	Â ĩ
dot1x timeout quiet-period	4 ĩ Â
dot1x timeout re-authperiod	Â
dot1x timeout server-timeout	Â 4
dot1x timeout supp-timeout	Â
dot1x timeout tx-period	Â

13.6.5 show dot1x max-req

```
4 Â
```

```
show dot1x max-req
```

```
0 4 0
```

```
4
```

```
0 4 0
```

```
Â
```

```
0 3 0
```

```
Â
```

```
0 6 0
```

```
Â
```

```
0 R 0
```

```
IO R 4
```

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

8 9 3 0

3	
dot1x auth-mode	802.1x Â
dot1x max-req	ĩ Â
dot1x port-control auto	4 ĩ 4 ¶ Â
dot1x reauth-max	
dot1x re-authentication	Â ĩ
dot1x timeout quiet-period	1† ĩ Â
dot1x timeout re-authperiod	Â
dot1x timeout server-timeout	Â ¤
dot1x timeout supp-timeout	Â
dot1x timeout tx-period	Â

13.6.6 show dot1x port-control

4 6 4 Â

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

8 4 0

```
interface 4
```

8 4 0

Â

8 3 0

Â

8 6 0

Â

8 R 0

Ю R '

Ruijie# **show dot1x port-control**

interface	dyn-user	static-user	max-user	qos
ctrl-mode status				

interface	dyn-user	static-user	max-user	qos
Gi0/1	0	1	6000	dscp: 0
mac-base Authed				

Ruijie#

δ Ω 3 Ô



802.1X 3

802.1X 3

802.1X 3

802.1X 3

802.1X 3

Ruijie# show dot1x probe-timer

Hello Interval: 20 Seconds

Hello Alive: 250 Seconds

Ruijie#

802.1X 3

802.1X 3	802.1X 3
dot1x auth-mode	802.1X 3
dot1x max-req	802.1X 3
dot1x port-control auto	802.1X 3
dot1x reauth-max	802.1X 3
dot1x re-authentication	802.1X 3
dot1x timeout quiet-period	802.1X 3
dot1x timeout re-authperiod	802.1X 3
dot1x timeout server-timeout	802.1X 3
dot1x timeout supp-timeout	802.1X 3
dot1x timeout tx-period	802.1X 3

13.6.8 show dot1x re-authentication

13.6.9 show dot1x reauth-max

show dot1x reauth-max

显示配置

配置

显示配置

配置

显示配置

配置

显示配置

显示配置

配置

Ruijie# show dot1x reauth-max

reauth-max: 2 times

Ruijie#

显示配置

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

dot1x timeout supp-timeout	Â
dot1x timeout tx-period	Â

13.6.10 show dot1x summary

3 802.1X 2

show dot1x summary

0 1 0

Â

0 2 0

Â

0 3 0

Â

0 4 0

0 R 0

10 R 1

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#

0 5 0

3	
dot1x auth-mode	802.1x Â
dot1x max-req	ĩ Â
dot1x port-control auto	4 ĩ 4 ¶ Â
dot1x reauth-max	

dot1x re-authentication	Â ³
dot1x timeout quiet-period	11 ³ Â ³
dot1x timeout re-authperiod	Â ³

#(a[R4/ö@
M)R4

· dot1x timeoutserver-ttimeouX ·

Â

```

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#
```

8 9 3 0

3	
dot1x auth-mode	802.1x Â
dot1x max-req	ĩ Â
dot1x port-control auto	¶ ĩ ¶ ¶ Â
dot1x reauth-max	
dot1x re-authentication	Â ĩ
dot1x timeout quiet-period	¶ ĩ Â
dot1x timeout re-authperiod	Â
dot1x timeout server-timeout	Â ¶
dot1x timeout supp-timeout	Â
dot1x timeout tx-period	Â

13.6.12 show dot1x timeout

```
3 802.1X ¶ 8
```

```

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

```

8 ¶ 0

AAA 3

14.1 3

aaa authentication

14.1.1 aaa authentication

AAA 3 aaa authentication
" A 3 no 1 " A

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

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

1 1

default ' G 1 1 1 " 1 1
A

list-name ' 1 " 1 1 1 A

dot1x ' Dot1x

enable ' Enable

ppp ' PPP

login ' Login

method ' 1 1 " 1 1 " 4 A

1 AAA

3	
local	G 1
none	a
group	G 1 1 1 1 RADIUS 1

1 1

default " 1 1

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

3 3 0

3 3

3 3 0

3 AAA 3 3 3 AAA 3 3 3
 3 **aaa authentication** 3 3
 3 3

3 3 3 3 3 3 3

3 R 0

3 R 3 3 RDS_D1X AAA 3 3 3
 3 3 3 3 RADIUS 3 3 3 RADIUS
 3 3 3 3 3 3 3 3

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

3 3 3 0

3	
aaa new-model	3 AAA 3 3
dot1x authentication	DOT1x 3 3 3 3
ppp authentication	PPP 3 3 3
login authentication	Login 3 3 3
username	3

14.2 3 3

RGOS 3 3 3 3 3 3 3 3

3 **aaa authorization network**

14.2.1 aaa authorization network

3 AAA 3 3 3 PPP à SLIP 3 3
 3 3 3 3 **aaa authorization network** 3 3 **no**
 3 AAA 3 3 3

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

no aaa authorization network {default | list-name}

14.3 配置

RGOS 中配置 RADIUS 认证、计费、授权、计费回收的命令如下：

```

<RGOS>
<config>
  aaa accounting network
  aaa accounting update
  aaa accounting update periodic
  show aaa method-list
  debug aaa

```

14.3.1 aaa accounting network

该命令用于配置 AAA 计费网络。命令格式如下：

```

aaa accounting network {default | list-name} start-stop group
radius
no aaa accounting network {default | list-name}

```

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

no aaa accounting network {default | list-name}

命令参数说明：

network：指定计费网络。可以是 DOT1X、PPP 或 L2TP。

resource：指定计费资源。可以是 RADIUS、HWTACACS 或 TACACS+。

list-name：指定计费列表名称。可以是任意字符串。

start-stop：指定计费开始和结束时间。可以是 start-stop、start-stop-time、start-stop-time-range、start-stop-time-range-range 或 start-stop-time-range-range-range。

group：指定计费组。可以是任意字符串。

radius：指定计费资源为 RADIUS。

命令缺省值：

network：default

命令视图：

aaa accounting network

命令模式：

RGOS 中配置 RADIUS 认证、计费、授权、计费回收的命令如下：

```

<RGOS>
<config>
  aaa accounting network
  aaa accounting update
  aaa accounting update periodic
  show aaa method-list
  debug aaa

```

命令缺省值：

network：default

```
Ruijie(config)# aaa accounting network start-stop group
radius
```

δ Ω 3 Ô

3	
aaa new-model	G AAA ũ Ł
aaa authorization network	ℙ AAA
aaa authentication	ℙ AAA
username	ℙ

14.3.2 aaa accounting update

```

    ũ      ℙ      ũ      3 aaa accounting update
3~      3      G      ũ      Â G      3      no      Ω
    ℙ      Â

```

```
aaa accounting update
no aaa accounting update
```

δ 1 Ô

1

δ α Ô

ℙ Ω Â

δ 3 Ô

ũ Â

δ G ' Ô

```

    ũ      AAA      ũ      Ł      ‡      a      G      Â      ũ      AAA
ũ      Ł      ‡      3      Â

```

δ R Ô

Ю R G Â

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

δ Ω 3 Ô

3	
aaa new-model	AAA ũ Ł

aaa accounting network	1000
------------------------	------

14.3.3 aaa accounting update periodic

aaa accounting update periodic interval 1000 no

aaa accounting update periodic interval

no aaa accounting update periodic

1. 配置

interval 1000

2. 验证

5 minutes

3. 查看

aaa accounting update periodic 1

4. 清除

aaa accounting update periodic 1

5. 恢复

aaa accounting update periodic 1

Ruijie(config)# aaa new-model

Ruijie(config)# aaa accounting update

Ruijie(config)# aaa accounting update periodic 1

6. 配置

配置	配置
aaa new-model	aaa accounting update
aaa accounting network	aaa accounting update periodic 1

14.3.4 show aaa method-list

1. 配置

2. 验证

EXEC 1

⑧ 1 ①

Ω 1 Â

⑧ 3 ①

EXEC Â

⑧ R ①

Ruijie# show aaa method-list

14.4 AAA 4 3

- 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 4 Â

show aaa group

⑧ 1 ①

3 1 Ω Â

⑧ α ①

⑧ 3 ①

Â

⑧ G ' ①

3 AAA 8 4 Â

⑧ R ①

Ю R Â

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#

δ Ω 3 Ô

3	
aaa group server	AAA Ǝ

14.4.2 aaa group server

ω AAA Ǝ Â 3 **no** 7 Ǝ Â

r31474 0 Td[<1536 Ǝradius4 1 Tf50.0004 Tc 0.251 0Tw 1085 0 0Tm3()TƎTnameT4 1 T

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

AAA 配置命令如下：

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

命令格式：

```
ip-addr ' ' ip
port1 ' '
port2 ' '

```

命令说明：

1

aaa group server	aaa 1
show aaa group	aaa 1

14.4.4 ip vrf forwarding

在 AAA 1 下配置 vrf no 1 的

ip vrf forwarding vrf_name

no ip vrf forwarding

1 1 1

vrf_name 1 vrf 1

1 1 1

1 1 1

1 1

1 1 1

在 1 下配置 vrf 1

1 1 1

1 1 1

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#

1 1 1

1	
aaa group server	aaa 1
show aaa group	aaa 1

14.5 AAA 1 3

1 **aaa new-model**

1 **debug aaa**

1 **show aaa method-list**

14.5.1 aaa new-model

^G RGOS AAA ǒ Ǝ ʘ ǒ ʒ aaa
new-model ^G AAA Â ʒ no ʘ AAA ǒ Ǝ Â

aaa new-model

no aaa new-model

Ồ ư Ô

$$\{ \quad \nabla \quad \tilde{\Omega} \quad \hat{A}$$
 $\partial \quad \alpha \hat{O}$ $\tilde{\Omega} \quad AAA \quad \tilde{\omega} \quad \mathbb{E}$

Ồ 3 Ô

 $\ddot{\omega} \quad \hat{A}$

Ổ G ' Ô

[illegible]

Ồ R Ô

Ю R G AAA ѿ ₪ Â

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

$$\partial \quad \tau_{\Omega} \quad \mathfrak{z} \quad \hat{O}$$

3	
aaa authentication	177 "

14.5.2 debug aaa

AAA L $\tau_{\Omega} \hat{A}$ 3 **no** τ_{Ω} $\tau_{\Omega} \hat{A}$

debug aaa
no debug aaa

Ồ 1 Ô

 $\gamma \quad \tilde{\gamma}_{\Omega} \quad \hat{A}$

Ô 3 Ô

EXEC Â

14.5.3 show aaa method-list

AAA " Â

show aaa method-list

ð 1 Ô

3 1 Ω Â

ð α Ô

ð 3 Ô

Â

ð G ' Ô

3 AAA " Â

ð R Ô

Ю R AAA " Â

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#

ð Ω 3 Ô

3	
aaa authentication	℔ " "
aaa authorization	℔ " "
aaa accounting	℔ " "

RADIUS 3

15.1 RADIUS 3

RADIUS ↑ 3

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

o ñ radius ~ 3 6 Â

ð R Ô

Ю R radius ÿ fastEthernet 0/0 4 4 ip o
ñ radius

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

ð Ʊ 3 Ô

3	
radius-server host	Ɔ RADIUS 6
ip address	4 ip

15.1.2 radius-server host

RADIUS 6 ÿ 6 3 radius-server Â
3 **no** 7 RADIUS 6 ÿ Â

radius-server host {hostname | ip-address} [auth-port port-number]
[acct-port port-number]
no radius-server host {hostname | ip-address}

ð 4 Ô

hostname	RADIUS 6 ÿ DNS 4 Â
Ip-address	RADIUS 6 ÿ IP Â
Auth-port	RADIUS UDP 4
Port-number	RADIUS UDP 4 1~ ñ 0 ‡ ÿ a Â
Acct-port	Radius UDP 4
Port-number	RADIUS UDP 4 1~ ñ 0 ‡ a Â

在配置 RADIUS AAA 时，需要指定 RADIUS 服务器的 IP 地址。
 在 Ruijie 设备上配置 RADIUS 服务器的命令如下：

配置 RADIUS

在 Ruijie 设备上配置 RADIUS 服务器的命令如下：

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

配置 RADIUS

配置项	说明
aaa authentication	配置 AAA 认证
radius-server key	配置 RADIUS 服务器的共享密钥
radius-server retransmit	配置 RADIUS 服务器的重传次数
radius-server timeout	配置 RADIUS 服务器的超时时间

15.1.3 radius-server key

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

3	
radius-server host	✕ RADIUS ǒ ƚ ǎ
radius-server key	✕ RADIUS "Ω ƚ 3
radius-server timeout	✕ RADIUS

15.1.5 radius-server timeout

↓ RADIUS ǒ ƚ ǎ
 3 radius-server timeout ^ 3 no ǎ h ^

radius-server timeout *seconds*

no radius-server timeout

ǎ ƚ Ô

seconds ^ ƚ Æ ǎ ~ ^ ↓ h ǎ 1-1000 ^

ǎ ƚ Ô

5

ǎ 3 Ô

ǒ ^

ǎ G ƚ Ô

G 3 ↓ ^

ǎ R Ô

Ю R ✕ ǎ 10 ƚ

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

ǎ "Ω 3 Ô

3	
radius-server host	✕ RADIUS ǒ ƚ ǎ
radius-server retransmit	✕ RADIUS ↓
radius-server key	✕ RADIUS "Ω ƚ 3

15.1.6 radius-server deadtime

radius-server deadtime *minutes* | no radius-server deadtime

radius-server deadtime minutes

no radius-server deadtime

1. 配置

minutes 取值范围：1-1000

2. 缺省

5

3. 查看

display radius-server deadtime

4. 恢复缺省

radius-server deadtime 5

5. 缺省

Ruijie(config)# radius-server deadtime 10

6. 缺省

配置	缺省
radius-server host	RADIUS 主机地址
radius-server retransmit	RADIUS 重传次数
radius-server key	RADIUS 共享密钥
radius-server timeout	RADIUS 超时时间

15.1.7 radius attribute

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

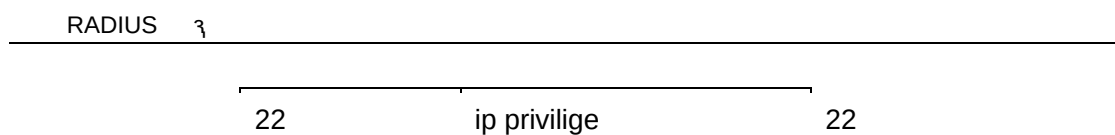
**no radius attribute {<id>|down-rate-limit | dscp | mac-limit |
up-rate-limit} vendor-type**

no radius attribute {<id>|down-rate-limit | dscp | mac-limit |

up-rate-limit} vendor-type

no radius attribute {<id>|down-rate-limit | dscp | mac-limit |

up-rate-limit} vendor-type



RADIUS 3			
	ω	Â	
ð G ' Ô	G	3	h Â
ð R Ô	Ю	R max up-rate	h 211'

3	
radius vendor-specific extend	Radius 3 id

15.1.9 radius vendor-specific extend

3 id

```
, show radius vendor-specific
```

15.2.1 debug radius

```
RADIUS 1000000 no RADIUS 1000000
```

```
debug radius [event | detail]
```

```
no debug radius [event | detail]
```

```
0 1 0
```

```
1 1000000 1000000
```

```
0 3 0
```

```
EXEC 1000000
```

15.2.2 show radius server

```
RADIUS 1000000 1000000
```

```
show radius server
```

```
0 1 0
```

```
1000000
```

```
0 1000000
```

```
0 3 0
```

```
1000000
```

```
0 1000000
```

```
1000000 1000000 radius 1000000 1000000
```

```
0 1000000
```

```
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

```

配置示例

配置项	配置值
radius-server host	192.168.4.13
radius-server retransmit	3
radius-server key	1234567890123456
radius-server timeout	5

15.2.3 show radius parameter

配置示例

show radius parameter

配置示例

配置示例

配置示例

配置示例

配置示例

配置示例

配置示例

配置示例

```

Ruijie# show radius parameter
Server Timeout: 5 Seconds

```

3	
radius-server host	✕ RADIUS ǒ 𐀀 ǎ
radius-server retransmit	✕ RADIUS 𐀀
radius-server key	✕ RADIUS 𐀀 𐀀 3
radius-server timeout	✕ RADIUS

15.2.4 show radius vendor-specific

RADIUS 𐀀

show radius vendor-specific

𐀀 𐀀 𐀀

𐀀

𐀀 𐀀 𐀀

𐀀 3 𐀀

𐀀

𐀀 𐀀 𐀀

𐀀 3 radius

𐀀 R 𐀀

```
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

ð ʒ ʒ Ô

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

16.1

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

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

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

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

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

⑧ ④ ⑥

```
S2900 " ④ cos dscp
S8600 " ④ cos dscp ip-precedence
```

16.2.2 mls qos cos

④ CoS ⑥

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

⑧ ④ ⑥

```
default-cos ⑥ 0 7
no ⑥ ⑥
```

⑧ ⑥

CoS ⑥ ⑥ 0

⑧ ③ ⑥

④

⑧ R ⑥

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

⑧ ⑦ ③ ⑥

```
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 " ③ ④ ACL ⑦
```

... class map ⑥ class map

```
[no] class-map class-map-name
```

... class map ③ ⑥

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

ð 1 Ô

acl-name ' ... ACL 1
acl-id ' ... ACL id
class-map-name ' ... class map 1
no class-map *class-map-name* ' 1 class map
no match access-group *acl-name*| *acl-id* ' 1 1

ð 3 Ô

ω

ð R Ô

... MAC ACL, 1 me
 Ruijie(config)# **mac access-list extended** *me*
 ACL 1
 Ruijie(config-ext-macl)# **permit host** *1111.2222.3333*
any
 ACL
 Ruijie(config-ext-macl)# **exit**
 ... class-map, 1 cm
 Ruijie(config)# **class-map** *cm*
 Ω ACL
 Ruijie(config-cmap)# **match access-group** *me*
 class-map
 Ruijie(config-cmap)# **exit**

ð Ω 3 Ô

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

ð 1 Ô

S2900 " S8600 "

16.2.4 Policy Maps

... policy map *policy-map-name* **policy-map**

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

... policy map *class-map-name* **class-map** *class-map-name* **class**

[no] class *class-map-name*

IP *ip-dscp* **ip dscp** *new-dscp*

set ip dscp *new-dscp*

no set ip dscp

rate-bps *burst-byte* **police** *rate-bps* *burst-byte* **police** *rate-bps* *burst-byte*

police *rate-bps* *burst-byte* **police** *rate-bps* *burst-byte* **police** *rate-bps* *burst-byte*

no police

3 1 0

policy-map-name **policy-map** *policy-map-name* **policy-map**

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

class-map-name **class-map** *class-map-name* **class-map**

no class *class-map-name* **no class** *class-map-name*

new-dscp **new-dscp** *new-dscp* **new-dscp** *new-dscp*

rate-bps **rate-bps** *rate-bps* **rate-bps** *rate-bps*

burst-byte **burst-byte** *burst-byte* **burst-byte** *burst-byte*

drop **drop** *drop* **drop** *drop*

dscp-value **dscp-value** *dscp-value* **dscp-value** *dscp-value*

a **a** *a* **a** *a*

3 3 0

0

dscp h n 10

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

n 1M, n 4096k, || c n dscp 16

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

δ Ω 3 Ô

show policy-map

δ 1 Ô

S2900 " S8600 "

16.2.5 service-policy

policy map ↑ 1 3

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

δ 1 Ô

policy-map-name ' ... policymap ↓
no ' policy map 1 3

δ 3 Ô

1

δ R Ô

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

δ Ω 3 Ô

show mls qos interface

δ 1 Ô

S2900 " 1 input
 S8600 " 1 input output

16.2.6 priority-queue

"

[no] priority-queue [out]

④ ① ②

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

no priority-queue [out] " " WRR

④ ②

" " WRR

④ ③ ②

ω

④ R ②

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

④ Ω ③ ②

show mls qos queueing

16.2.7 wrr-queue bandwidth

WRR " R

wrr-queue bandwidth *weight1 ... weightn*

no wrr-queue bandwidth

④ ① ②

weight1...weightn " n " h~ n h 1 √ h

no ' h

④ ②

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

④ ③ ②

ω

④ R ②

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

④ Ω ③ ②

show mls qos queueing

④ ④ ②

S2900 " S8600 " ¶ a ¶

16.2.8 wrr-queue cos-map

" Ω CoS h

wrr-queue cos-map *qid cos0* [

⑧ 3 ①

ω

⑧ R ①

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

⑧ Ω 3 ①

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

⑧ 4 ①

S2900 " S8600 "

16.2.10 mls qos map dscp-cos

ǻ DSCP h ↑ CoS h

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

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

⑧ 4 ①

```
dscp-list ' 4 h 7 a 4 a 4
cos ' 4 h 0 7
no ' h
```

⑧ ①

⑧ 3 ①

ω

⑧ R ①

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

⑧ Ω 3 ①

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

⑧ 4 ①

S2900 " S8600 "

16.2.11 interface rate-limit

4 8

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

no rate-limit

8 1 Ô

input ' ñ ò

output ' ñ

⑧ ⑧

⑧ wrr

⑧ ③ ⑧

⑧

⑧ R ⑧

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

⑧ ⑧ ③ ⑧

show mls qos scheduler

⑧ ④ ⑧

S8600 "

16.2.13 drr-queue bandwidth

DRR "

drr-queue bandwidth weight1...weight8

no drr-queue bandwidth

⑧ ④ ⑧

weight1...weight8 ' ④ ħ

no ' ħ

⑧ ⑧

⑧ ③ ⑧

⑧

⑧ R ⑧

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

⑧ ⑧ ③ ⑧

show mls qos queueing

⑧ ④ ⑧

86

16.2.14 mls qos map ip-prec-dscp

ipprec h ĩ ă DSCP h

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

no mls qos map ip-prec-dscp

ð 1 Ô

dscp ' ĩ h ĩ a ĩ a ĩ

no ' h

ð Ô

ð 3 Ô

ŵ

ð R Ô

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

ð Ų 3 Ô

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

ð 1 Ô

S8600 "

16.2.15 wfq-queue bandwidth

Ĝ wfq ă Ĩ 3 ĩ " Â

wfq-queue queue-id bandwidth min max

no wfq-queue queue-id bandwidth

ð 1 Ô

queue-id " 1

min ' ĩ

max ' ĩ

ð Ô

min * ĩ

max $\dot{\eta}$ $\wedge$ kbps

ð 3 Ô

$\wedge$

ð G ' Ô

" G wfq $\mathfrak{A}$ G 3 $\downarrow$ $\mathcal{L}$ $\wedge$ d
ĩ $\hat{A}$

ð R Ô

" G wfq '

Ruijie(config)# **mls qos scheduler wfq**

Ruijie(config)# **show mls qos scheduler**

d ĩ '

Ruijie(config-if)# **wfq-queue 2 bandwidth 10 10240**

Ruijie(config-if)# **wfq-queue 4 bandwidth 7 10240**

Ruijie(config-if)# **show running**

ð $\mathfrak{Q}$ 3 Ô

3	
show mls qos scheduler	QOS

ð $\mathcal{A}$ Ô

RGOS10.1 $\mathcal{L}$ $\mathfrak{A}$

16.2.16 wfq-queue sp

G wfq $\mathfrak{A}$ $\mathcal{H}$ 3 $\mathcal{A}$ " ĩ $\mathcal{W}$
"l (sp) $\hat{A}$

wfq-queue queue-id sp

no wfq-queue queue-id sp

ð $\mathcal{A}$ Ô

queue-id " $\mathcal{A}$
sp: $\mathcal{W}$ "l "

ð Ô

a G sp

ð 3 Ô

Ω

ð 6 ' Ô

" 6 wfq 3 6 3 ↓ 6 " 6 sp+wfq
 Â

ð R Ô

" 6 wfq '

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

" 1 3 ñ 3 " '

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

ð 3 3 Ô

3	
show mls qos scheduler	QOS

ð 4 Ô

RGOS10.1 6 3

16.3 3 3

16.3.1 show class-map

class map E 3

show class-map [*class-name*]

ð 4 Ô

class-name ' class map 4

ð Ô

class map

ð 3 Ô

ð R Ô

Ruijie# **show class-map**

⑧ ④ ⑥

S2900 " S8600 "

16.3.2 show policy-map

QoS policy map E [class class-name] ⑥

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

⑧ ④ ⑥

policy-name ' policy name ④
class-name ' class map ④

⑧ ⑥

policy name

⑧ ③ ⑥

⑧ R ⑥

Ruijie# **show policy-map**

⑧ ④ ⑥

S2900 " S8600 "

16.3.3 show mls qos interface

④ QoS ④

16.3.4 show mls qos queueing

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

show mls qos queueing

0 3 Ô

0 R Ô

Ruijie# **show mls qos queueing**

0 1 Ô

S2900 " cos-to-queue map, wrr weight

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

16.3.5 show mls qos scheduler

1 " "

show mls qos scheduler

0 3 Ô

0 R Ô

Ruijie# **show mls qos scheduler**

0 1 Ô

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]

0 1 Ô

cos-dscp ' cos-dscp maps

dscp-cos ' dscp-cos maps

ip-prec-dscp ' ip-prec-dscp maps

0 Ô

dscp-cos maps dscp-cos maps

$\Omega \quad \Omega$

17.1.1 topology guard

ω	$\mathfrak{z}$	$\mathcal{H}^G$	topology guard	$\mathfrak{z}$	$\mathfrak{U}$	$\mathbb{T}$
ω	$\mathfrak{Q}\hat{A}^G$	$\mathfrak{z}$	no	$\mathbb{T}$	$\hat{A}$	

[no] topology guard

Ồ 1 Ô

Ố Ô

П И

Ồ 3 Ô

 $\omega \quad \}$

Ổ G ' Ô

π $\hat{A}$ δ $\text{cpu topology-limit}$ λ G $\hat{A}$

Ồ R Ô

Ю R ! Ů Ź Ű

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

$$\partial \quad \tau_{\Omega} \quad \mathfrak{z} \quad \hat{O}$$

```
tp-guard port enable 'G' ^ \Pi Â
cpu topology-limit 'CPU' ^
```

17.1.2 tp-guard port enable

$$G \quad \mathcal{N} \quad \pi \quad \sim \quad G \quad \{ \quad \text{no} \quad \mathcal{N}$$

$$\pi \quad \hat{A}$$

[no] tp-guard port enable

8 R 0

Ю R ! П а '

Ruijie# **show tpp**

8 2 3 0

topology guard ' G 0 П

ˆ Ω G 3

18.1 Ω 3

k 3 ˆ

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

18.1.1 cat

γ 8 ð ñ Ǝ Â

cat type {bin

3	
ls	𐀀 𐀁

18.1.3 cp

𐀁, 𐀂 𐀃

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

𐀄 𐀅 𐀆

DESTINE_FILE 𐀇
DIRECTORY 𐀈𐀇
SOURCE_FILE 𐀈 𐀉 (𐀊)

𐀄 𐀋 𐀆

𐀌 𐀃

𐀄 𐀍 𐀆

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a

ð q Ô

 ↓ m c IO a Â

ð 3 Ô

 Â

ð G ' Ô

 ô IO a ~ 1

 IO a Â

 c ↓ a .

ð R Ô

 m IO a

Ruijie# ls

 tmp IO a

Ruijie# ls tmp

ð Ω 3 Ô

 Ω 3

18.1.5 makefs

 y ↑

makefs dev DEVNAME fs FSNAME

makefs fs FSNAME dev DEVNAME

ð 1 Ô

 DEVNAME y ↓ (↑ ð a)

 FSNAME 3 G ↓

ð q Ô

 h Â

ð 3 Ô

 Â

ð G ' Ô

makefs6.823 fs

18.1.10 rmdir

 $\hat{A}$ **rmmdir** *DIRECTORY*

Ồ Ạ Ô

DIRECTORY ' 7 1, 5

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 $\hbar \hat{A}$

Ô 3 Ô

 $\hat{A}$

Ồ G ' Ô

а џ, џ ѝ Ѡ ѣ ѣ,
 Ѡ Ѡ ѣ ѣ ѣ ѣ џ џ Ѡ

Ồ R Ô

μ Ю tmp $\sim$ $\hat{A}$

```
Ruijie# rmdir tmp
```

```
Ruijie# ls
```

$$\hat{O} \quad \hat{\Omega} \quad \hat{O}$$
 $\tilde{\Omega} \quad \{$

18.2

 $\hat{A}$

logging console	<pre> logging console logging console </pre>
logging monitor	<pre> logging monitor logging monitor </pre>
logging trap	<pre> logging trap logging trap </pre>

19.1.2 terminal monitor

$\{ \tilde{I} \quad m \text{ VTY} \quad \wedge \Theta \quad a \quad \hat{A} \quad \tilde{\Omega} \quad m \text{ VTY} \quad \wedge \Theta$
 $\Theta \quad a \quad \sim \quad G \quad \{ \quad \text{no} \quad \hat{A}$

terminal monitor

terminal no monitor

Ổ Ô

$$\alpha \text{ Ю } \quad \text{VTY} \quad \text{л } \text{Э } \text{а } \text{ї} \quad \text{VTY} \quad \text{л } \text{Э} \quad \text{а, } \hat{A}$$
$$\tilde{O} \quad \{ \quad \hat{O}$$

Ồ G ' Ô

$\{ \downarrow$ ∇ VTY $\hat{A} \circ \hat{y}$ $\sim$ a
 ∂ $\hat{A}$ VTY $\mathcal{L}$
 $\hat{A}$

& 说明:

Й Ғ Ү RGOS Ы 8 Җ Э 6 3 Â 8 Җ Э
3 no , Җ Ы Ш 3 Й О 1 Â

Ồ R Ô

Ю R~ m VTY 4 ĭ . a Â

```
Ruijie# terminal monitor
```

Ruijie#

19.1.3 logging buffered

ω a $\ddot{a}$ $\check{\alpha} \psi 1^{\wedge}$ a w $\grave{a}$ $\check{\alpha} \psi$ $\sim$
 $\exists \hat{A}$ $\exists$ **no** $\ddot{a}$ $\check{\alpha} \psi$
 a $\hat{A}$

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

no logging buffered

ð 1 Ô

buffer-size ' ă ʃ ~ ı ħ ÿ 4K↑ 128K Bytes Â
level ' ə ʃ ~ ÿ 0↑ 7 Â ↓ ʃ ʒ Ğ ı ʃ ~ ≠ ↓ ʃ ʒ
 Ğ Â

ð Ô

ă ʃ ñ 4k Bytes Â
 ə ʃ ñ 7 Â

ð ʒ Ô

ŵ

ð Ğ ' Ô

ǻ ă ʃ Ğ ~ ǻ ʃ ĩ ~ ‡
 ə Â ǻ ă ʃ ə ~ Ğ
 ʒ **show logging** Â

ǻ ă ʃ ə ~ ǻ ʃ ʒ
clear logging ă ʃ ə Â ~
 ĩ↑ FLASH ↓ Syslog Server Â

RGOS ə ↑ ñ ʃ ʒ 8 ı'

1

Ω		
Emergencies	0	ǻ a
Alerts	1	. ı
Critical	2	ǻ
Errors	3	ə
warnings	4	~ ə
Notifications	5	~ a Ω ə

logging on	Ω
show logging	Ω ǎ ψ ˘ ʌ 1 Ω ʌ
logging trap	ǐ ʌ syslog server ǎ ⋮

19.1.5 logging file flash

ǎ ǎ FLASH ˘ ǒ ʌ ǎ ǎ
ʌ FLASH ǎ ˘ ʌ ǎ no ǎ

logging file flash:filename [max-file-size] [level]

no logging file

ǎ ʌ ǎ

Filename ' ʌ ǎ a ˘ ʌ txt ǎ
max-file-size ' ʌ ǎ ʏ 128Kǐ 6M bytes˘ ʌ
128K ǎ
level ' ǐ ǐ ǎ ⋮ ǎ ʌ ʌ ʌ ⋮ ʌ ˘
≠ ʌ ʌ ʌ ǎ ǐǐ FLASH ⋮ ʌ 6 ǎ Ω
ǎ ⋮ ʌ 1 ǎ

ǎ ǎ

a ǎ ǐ FLASH ǎ

ǎ ǎ ǎ

ǒ

ǎ ʌ ǎ

Syslog Server ʌ ǒ a
ǎ ˘ ʌ ǎ ǎ FLASH ǎ
ʌ ʌ ʌ txt ʌ ʌ ǎ

˘ 注意:

ǎ ǐ FLASH ʌ FLASH
FLASH **logging file flash** ǐ ˘ a ǐ ǎ

ǎ R ǎ

ʌ R ǎ FLASH ˘ ʌ ʌ trace.txt
ʌ 64K, ǎ ⋮ ʌ 6 ǎ

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

$$\tilde{O} \quad \tau_{\Omega} \quad \mathfrak{z} \quad \hat{O}$$

logging on	
show logging	
more flash	

19.1.6 logging console

ĭ 8 1 Э ә ı̇ ӱ Ю
 3 Â 3 no 8 1 Э Â

logging console *level*

no logging console

Ồ Ơ Ô

$$\begin{array}{ccccccc} \textit{level} & ' & & \textcircled{\scriptsize\text{ш}} & \sim & \ddot{y} & 0\dot{\iota} \\ & & & & & 7\hat{A} & \downarrow \cup^G \\ & G & \hat{A} & \tilde{\Omega} & \partial_+ & \textcircled{\scriptsize\text{ш}} & \sim \\ & & & & & & \cap \\ & & & & & & 1\hat{A} \end{array}$$

Ố Ô

Debugging (7)

$$\tilde{O} \quad \{ \quad \hat{O}$$
 ω

Ổ G ' Ô

ш л л̃ ħ э æ ш :

8 л э â

show logging 3 4 5 6 7 8

Ồ R Ô

Ю R ĩ 8 4 ә ÷ ÿ 6'

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

0 Ω 3 Ô

3	
---	--

logging on	Ω
show logging	Ω ǎ ʍ ʘ ʌ 1 Ω ʌ

19.1.7 logging monitor

```

        ǐ      VTY  ʌ^ telnet  ʌ ǎ SSH  ʌ ʘ ʘ      ʌ
        ǐ~      ʘ      ʌ      ʌ ǎ      ʌ ʌ      ʌ
        ʌ ʘ .      ǎ

```

logging monitor level

no logging monitor

ǔ ʌ ǎ

```

level '      ʍ      ǎ ʌ ʌ ʌ      ǐ ʌ ʘ ≠ ʌ ʌ      ʌ
Ω      ʌ ʍ      ʘ      ʌ      1 ǎ

```

ǔ ǎ

Debugging (7)

ǔ ʌ ǎ

ʘ

ǔ ʌ ǎ

```

        VTY  ʌ ʘ .      ʌ ʘ      ʌ      ʌ terminal
monitor ǐ      ʌ VTY  ʌ .      ʌ ǎǐ      ʌ
ǐ ‡  logging monitor ʌ ǎ

```

Logging monitor ʌ ʌ ʌ ʌ VTY ʌ ǎ

ǔ ʌ ʌ

```

ʌ ʌ      ǐ      VTY  ʌ ʘ .      ʌ      ǐ ʌ 6

```

19.1.8 logging trap

Syslog Server ă ĩ ű
 Ի ă Ă ă no ă Syslog Server Ă

logging trap level

no logging trap

đ 1 Ô

level ' ԝ Ă Զ ĩ Զ ≠ Զ Ğ Ă
 Դ ă ԝ ă 1 Ă

đ Ô

Informational(6)

đ ă Ô

ű

đ Ğ ' Ô

ă ă Syslog Server ĩ Ğ ű ă logging
 Syslog Server Ă Զ logging trap ă ă
 ԝ ă Ă

show logging ă Զ Դ ă

đ R Ô

Ω

δ G ' Ô

α Ю √ Syslog Server √ √
 Â ñ ¢ √ √ √ √
 ñ √ √ √ √ √ √ √
 Â

δ R Ô

Ю R Loopback 0 ñ Syslog
 Ruijie(config)# **logging source ip 192.168.1.1**

δ Ω √ Ô

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 ħ ì (local7) 23 Â

ð R Ô

Ю Syslog ħ ì kernel

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

ð Ƨ Ƨ Ô

Ƨ	
logging console	ĩ ¸ ¼ Ƨ ə ∴

19.1.12 logging count

```

~Ω      π  ~      ō      Ю      3  Â
      π  ~      G      3  no      Â

```

logging count

no logging count

ð 4 Ô

4

ð Ô

~Ω

ð 3 Ô

ō

ð G Ô

```

      3      π  Â  ŷ      3      Â      no
logging count  3  ~      π      ~Ω  ~      Â

```

ð R Ô

π '

Ruijie(config)# logging count

ð ~Ω 3 Ô

ð Ô

ə a ʌ Â

ð ʒ Ô

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ð ɡ ʻ Ô

ə ɹ ɔ ə ʌ ʃ ʌ ə ɹ ɔ ʌ
 ʌ ʏ ɪ Â ɹ ɔ ʌ ʌ ʃ ʌ ʃ ʌ ʃ ʌ
 ʃ ʌ ʃ ʌ ʃ ʌ ʃ ʌ ʃ ʌ ʃ ʌ

ð ʀ Ô

ʏ ʀ ə ɹ ɔ ʌ

ω

Ồ G ' Ô

Uptime Datetime

Ồ R Ô

Ю R Ё Log а Debug а ~ и Datetime'

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

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

$$\mathcal{O} \quad \mathcal{Q} \quad \mathcal{O}$$

3	
logging on	τ_{Ω}
service sequence-numbers	$\bar{u} \quad a \quad /$

19.1.15 service sysname

no ə ʔ ɛ ɪ̃ ʊ̃ ɯ ʌ̃ ʌ

service sysname

no service sysname

Ồ Ạ Ô

Ồ Ô

$$\partial_a \quad \partial_{\hat{A}}$$
$$\partial \quad \{ \quad \partial$$
 ω

Ồ G ' Ô

$\mathfrak{z}$ $\downarrow \mathcal{L}$ $\sim \bar{\alpha}$ $\mathfrak{a}$ $\mathfrak{i}$ $\mathfrak{J}$ $\mathfrak{J} \hat{A}$

Ồ R Ô

Ю R а 7 Э 1'

```
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

δ Ω 3 Ô

3	
show logging	6 ă ʘ ă

19.1.16 more flash

FLASH

ă ~

Ю

3'

more flash:*filename*

19.1.17 clear logging

清除日志缓冲区的配置

clear logging

清除日志缓冲区

清除日志缓冲区

清除日志缓冲区的配置

清除日志缓冲区

清除日志缓冲区的配置

Ruijie# **clear logging**

清除日志缓冲区

清除日志缓冲区	清除日志缓冲区
logging on	清除日志缓冲区
show logging	清除日志缓冲区
logging buffered	清除日志缓冲区

19.2 清除日志缓冲区

19.2.1 show logging

清除日志缓冲区的配置

show logging

清除日志缓冲区

清除日志缓冲区

清除日志缓冲区

清除日志缓冲区的配置

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

а

Syslog logging	enabled, disabled
Console logging	VTY 4 3 а 1
Monitor logging	VTY 4 3 а 1
Buffer logging	а 1
Timestamp debug messages	Debug а

Timestamp log messages

Log а

$$\tilde{O} \quad \tilde{\Omega} \quad \tilde{\hat{O}}$$

19.2.2 show logging count

show logging count

$$\hat{O} \quad \{ \quad \hat{O}$$

count	show logging	count	show logging
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13
14	14	14	14
15	15	15	15
16	16	16	16
17	17	17	17
18	18	18	18
19	19	19	19
20	20	20	20
21	21	21	21
22	22	22	22
23	23	23	23
24	24	24	24
25	25	25	25
26	26	26	26
27	27	27	27
28	28	28	28
29	29	29	29
30	30	30	30
31	31	31	31
32	32	32	32
33	33	33	33
34	34	34	34
35	35	35	35
36	36	36	36
37	37	37	37
38	38	38	38
39	39	39	39
40	40	40	40
41	41	41	41
42	42	42	42
43	43	43	43
44	44	44	44
45	45	45	45
46	46	46	46
47	47	47	47
48	48	48	48
49	49	49	49
50	50	50	50
51	51	51	51
52	52	52	52
53	53	53	53
54	54	54	54
55	55	55	55
56	56	56	56
57	57	57	57
58	58	58	58
59	59	59	59
60	60	60	60
61	61	61	61
62	62	62	62
63	63	63	63
64	64	64	64
65	65	65	65
66	66	66	66
67	67	67	67
68	68	68	68
69	69	69	69
70	70	70	70
71	71	71	71
72	72	72	72
73	73	73	73
74	74	74	74
75	75	75	75
76	76	76	76
77	77	77	77
78	78	78	78
79	79	79	79
80	80	80	80
81	81	81	81
82	82	82	82
83	83	83	83
84	84	84	84
85	85	85	85
86	86	86	86
87	87	87	87
88	88	88	88
89	89	89	89
90	90	90	90
91	91	91	91
92	92	92	92
93	93	93	93
94	94	94	94
95	95	95	95
96	96	96	96
97	97	97	97
98	98	98	98
99	99	99	99
100	100	100	100

```

IO      R      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

```

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3	
logging count	π Ω
show logging	б ѡ ѡ а
clear logging	ѡ ѡ а