RGOS 10.4(3b18)

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

http://webchat.ruijie.com.cn

http://www.ruijie.com.cn/service.aspx

7 × 24 e 4008-111-000

http://bbs.ruijie.com.cn/portal.php

service@ruijie.com.cn

	6
WEB	6 WEB

[ ] [ ]

{ x | y | ... }

[x | y | ...]

//

2)

---

3)

-

ǰ ”Ą Ƒ ȝ ˘ ЛЮ ˈ

1. CLI
2. لجي
3. LINE
4. UPGRADE
5.
6.
7. CPU-LOG
8.
9.
10. USB
11.
12.
13. SRM
14.

1 CLI

1.1 alias

Ѣ ३ ¨ ˘ Λ Лъ ƒ Ю **alias** Ѣ ३ Â Ѣ ३ **no** Λ Лъ
Ѣ ३ ¨ Ю Ѣ ३ ¨ Â

alias *mode command-alias original-command*

no alias *mode*

ö Ô

mode	¨ ३ Ѣ ३ Ѣ ३ Â
command-alias	Ѣ ३ ¨ Â
original-command	¨ ३ Ѣ ३ Â

ö Ô ƒ EXEC Ю ˆ Ѣ ३ ƒ ¨ Â

ö Ѣ ३ Ô

ö Ô EXEC Ю Ѣ ३ ¨ й h àp às àu àun Ѣ¨ ˆ й help àping àshow àundebug àundebug Â
Ѣ ३ ¨ a **no alias exec** Ѣ ३ Â

˘ a ˄ ¨ ،

```
Ruijie# s?
show  start-chat  start-terminal-service
```

Ƒ ३ ¨ ≠ ⁄ ⊥ ∧ Ƒ ३ ╟ ˘ Ю Ƒ ३ ¨ ”ia” ३ ”ip address”˝

ƒ Ю˙

```
Ruijie(config-if)#ia ?
A.B.C.D  IP address
dhcp     IP Address via DHCP
Ruijie(config-if)#ip address
```

ip address Ƒ ३ ł ˘ ɜ ¨ Ƒ ३ Â

Ƒ ३ ¨ ƒ ˘ ˘ a Â

show aliases Ƒ ३ ⁄ ⊥ ¨ Â

ö Ô ⊥Ю ˘ Ю˝ Ƒ ३ ¨ ”def-route” ३ ”ip route 0.0.0.0 0.0.0.0 192.168.1.1”˝

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

ö Ƒ ३ Ô

Ƒ ३	
show aliases	¨

ö ⁄ Ô -

1.2 privilege

ö Ъ ३ Ô

ö Ô Ю ǂ ƒ **privilege** Ъ ३ Λ CLI Ъ ३ ˘ a˚ ˘ Λ Ъ ३
Λ Λ ˘ ƒ Ю Λ Лъ **privilege ?** Λ CLI Ъ ३ Â

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

ö Ô ЛъЮ ˘ CLI 1 ३ й ”test”˚ reload Ъ ३ ˘ Λ Лъ æ Â

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

˘ 1 CLI ˘ Λ Лъ reload Ъ ३ ˙

```
Ruijie>reload ?
LINE    Reason for reload
<cr>
```

reload Ъ ३ 1 ˘ Λ Лъ all ˙

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

˘ 1 CLI ˘ Λ Лъ reload Ъ ३ ˙

```
Ruijie>reload ?
LINE    Reason for reload
at                  reload at a specific time/date
cancel              cancel pending reload scheme
in                  reload after a time interval
```

ö Ъ ३ Ô

Ъ ३	
enable secret	CLI ३

ȍ Ô -

ȍ Ƀ ३ Ô EXEC

ȍ Ô Ƀ ३ ˘ Ƀ ३ ¨ Â

ȍ Ô ЛЬЮ ˘ EXEC Ю Ƀ ३ ¨ ˙

```
Ruijie#show aliases exec
exec mode alias:
h                    help
p                    ping
s                    show
u                    undebug
un                   undebug
```

ȍ Ƀ ३ Ô

Ƀ ३	
alias	Ƀ ३ ¨

ȍ Ʌ Ô

2

2.1 banner login

ˇ فخ Ю Ƃ ३ **banner login** Â ٨ ˇ

no banner login Ƃ ३ Â

banner login *c message c*

ȍ Ô

c	ǂ ˇ a
message	

ȍ Ô -

ȍ Ƃ ३ Ô

ȍ Ô Ƃ ३ ٨ Ɲ ˇ ˇ Â ǂ

ɨ Ÿ ˇ Â

ȍ Ô Ю ʻ

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

ȍ Ƃ ३ Ô

Ƃ ३	
-	-

ȍ ٨ Ô -

2.2 banner motd

ˇ فخ Ю Ƃ ३ **banner motd** Â ٨ ˇ

no banner motd Ƃ ३ Â

banner motd *c message c*

ȍ Ô

c	ǂ ˇ a
message	

ȍ Ô -

ȍ Ƃ ३ Ô

ȍ Λ Ô -

2.4 boot system

í ╟ ў ¨ ˘ Ƃ ३ **no** ў ¨ Â

boot system [**switch all** | *switchid*] *priority* prefix:/[directory/]filename

no boot system [*priority*] [**switch all** | *switchid*]

ȍ Ô

priority	ў ˘ ز й 1 10' è 1 й
all	VSU Ю VSU
switchid	VSU Ю
prefix:	Â ˘ 10.4' 2˜ Лъ Э æ Â é ê Ì
/[directory/]filename	ў ¨ Â ˘ prefix ˘ ľ' Ł ł

ȍ Ô Λ ў ¨ й' ľ flash:/rgos.bin Ł' й 5 Â

ȍ Ƃ ३ Ô

ȍ Ô Ƃ ३ Λ Лъ й Λ ў ¨ Â ف ÿ æ ^ 1 й ˘ 10 й æ˜ ў Â˝ ╗ Λ Лъ ف ў ھس Â

boot ip IP TFTP TFTP TFTP flash flash

no boot system [*priority*] *priority*

no boot system

" flash:/rgos.bin "

5

Boot ROM

VSU

ȍ Ô 1' ЛЬЮ ў й ľ flash:/rgos.bin Ł˘ ў й ľ flash:/rgos_bak.bin Ł'

```
Ruijie(config)# boot system 5 flash:/rgos.bin
Ruijie(config)# boot system 8 flash:/rgos_bak.bin
```

فخ ľ flash:/rgos.bin Ł ˘ Â

ľ flash:/rgos.bin Ł سم ˘ ╟ ÿ æ ľ flash:/rgos_bak.bin Ł Â

2˝ ЛЬЮ ÿ TFTP ئۇ ˙

```
Ruijie(config)# boot system 9 tftp://192.168.7.24/rgos.bin
```

3˝ ЛЬЮ ÿ U ˙

```
Ruijie(config)# boot system 1 usb1:/rgos.bin
```

4˝ ЛЬЮ ѝ 8 ў ¨ ˙

```
Ruijie(config)# no boot system 8
Delete boot system config: [Priority: 8; File Name: flash:/rgos_bak.bin]? [no] yes
```

5˝ ЛЬЮ ї ╟ ў ¨ ˙

```
Ruijie(config)# no boot system
Clear ALL boot system config? [no] yes
```

6˝ ЛЬЮ VSU Ю ŋ ˆ Э ѝ 1

ѝ ľ flash:/rgos.bin Ł ˜ ˙

```
Ruijie(config)# boot system switch 3 1 flash:/rgos.bin
```

ò Ƃ ३ Ô

Ƃ ३	
show boot	

ò Л Ô a ÿ U 10.4˝ 3b16˜ RGOS Â

a TFTP Â

2.5 clock set

˘ Л Ль Ƃ ३ **clock set** ч ˙

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

ò Ô

hh:mm:ss	˘ ѝ ˆ 24 ˜ : ţ :
day	ˆ 1-31˜ ˘
month	ˆ 1-12˜ ˘
year	ˆ 1993-2035˜ ˘ a

ò Ô -

ò Ƃ ३ Ô

ò Ô Ƃ ३ ˘ Â

˘ **clock set** Э ˘

Ю ł˘ Â

ò Ô Ю ѝ 2003 3 17 Э´ 10 20ţ 30 ˙

```
Ruijie# clock set 10:20:30 3 17 2003
Ruijie# show clock
clock: 2003-3-17 10:20:32
```

ȍ Ƃ ३ Ô

Ƃ ३	
show clock	

ȍ ʌ Ô -

2.6 clock update-calendar

й Â

clock update-calendar

ȍ Ô

-	-

ȍ Ô -

ȍ Ƃ ३ Ô

ȍ Ô ʌ ɛ ˆ calendar˜ Â ‖˘ ƒƫ í
Ю ≠ Â
p a˚ ˘ й ˘ Ƃ ३
p Â

ȍ Ô Ю Ƃ ३ ʌ Ɲ p Â

```
Ruijie# clock update-calendar
```

ȍ Ƃ ३ Ô

Ƃ ३	
-	-

ȍ ʌ Ô -

2.7 disable

ƫ Ю æ ƫ ˘ Ƃ ३ **disable** Â

disable [*privilege-level*]

ȍ Ô

privilege-level	

ȍ Ô -

ö Ƒ ३ Ô

ö Ô Ƒ ३ ÿ Â ╗ Ɔ ˘ æ
Â

	disable

ö Ô Ю æ ˙

```
Ruijie# disable 10
```

ö Ƒ ३ Ô

Ƒ ३	
enable	ÿ ˘ Â

ö ʌ ̃Ω ȳ ȣ ӝ ǂ Ô

ò	Ô	
	Password	EXEC ३
	Level	
	0|7	३ ╗ تشخ 0 ╗ ˘
		¡QSÊÑu0Ñpp¡ÿÖT ÊYíT¾|ÊUEg}¡QÊÑÊÑ¾€]p

ð Ô ३ˆ й password n security ३ ч Âpassword й ╗ ३˘ й 15 ३ Âsecurity ३ й ╗ ३˘ Л Лъ й 0 15 ३ Â ˘˚ ˚ ффЛъ Э ч ३˘ password ३ a Â 15 password ३˘ ъ ˘ ╟ й security ३ˇ 15 password ३ n security ३ ˚ ˘ ъ ˇ ३ Лъ╗ ˘ password ३ ╗ ˘ security ३ ╗ Â

ð Ô Ю ३ й pw10˙

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

ð Ъ ३ Ô

Ъ ३	
enable password	a˚ ३

ð Л Ô -

2.11 enable service

б ╙ SSH Server/Telnet Server/Web Server/Snmp Agent˜ ˘ фф Ю˙ Л Лъ Ъ ३ **enable service** Ъ ३ˇ

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

ð Ô

ssh-server	б SSH Server˘ Ъ ३˚ IPv4 n IPv6 ╙
telnet-server	б Telnet Server˘ Ъ ३˚ IPv4 n IPv6 ╙
web-server [**http** | **https** | **all**]	б Web Server˘ Ъ ३˚ IPv4 n IPv6 ╙
snmp-agent	б Snmp Agent˘ Ъ ३˚ IPv4 n IPv6 ╙

ð Ô -

ð Ъ ३ Ô

ð Ô Ъ ३ б ╙Â **no**

ȍ ⁄ Ô -

2.12 exec-timeout

LINE Ю ˘ **exec-timeout** Ƒ ३ Â **no exec-timeout** Ƒ ३˘ ⁄

LINE Ю ˘ a Â

exec-timeout *minutes* [*seconds*]

no exec-timeout

ȍ Ô

Â ˘ Ƃ ३˘ فخ ˘
Ƃ ३ Â

128K
128K

ȍ Ô Ю line_rcms_script.textť Э ʌ ȃ Telnet ╗ ˘
Юť

```
configure terminal
line tty 1 16
transport input all
no exec
end
```

```
Ruijie# execute flash:line_rcms_script.text
executing script file line_rcms_script.text ......
executing done
Ruijie# configure terminal
Enter configuration commands, one per line.  End with  CNTL/Z.
Ruijie(config)# line tty 1 16
Ruijie(config-line)# transport input all
Ruijie(config-line)# no exec
Ruijie(config-line)# end
```

ȍ Ƃ ३ Ô

Ƃ ३	
-	-

ȍ ʌ Ô -

2.14 hostname

ў ̈ ˘ Ƃ ३ **hostname** Â
hostname *name*

ȍ Ô

name	ў ̈ ˘ ȁ Лȣ Â ȉ 63 Â

ȍ Ô ў ̈ ȉ Ruijie Â

ȍ Ƃ ३ Ô

ȍ Ô ў ̈ ў þ ş Ȯ? $

ò Ô ƗƟ ў ˝ й BeiJingAgenda˙

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

ò ƑƆ ३ Ô

ƑƆ ३	
-	-

ò ʌ Ô -

2.15 ip http authentication

ƒƣ Http Server

ȍ Ƃ ३ Ô

ȍ Ô Ƃ ३ HTTP ╚ Â **no ip http port** Ƃ ३ й Â

ȍ Ô Ю Ƃ ३ˇ HTTP ╚ й 8080ʹ

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

ȍ Ƃ ३ Ô

Ƃ ३	
enable service	б ╚

ȍ Л Ô -

2.17 ip http secure-port

HTTPS ╚ ˇ ڤ Юʹ Л Лȣ **ip http secure-port** Ƃ ३ˊ

ip http secure-port *number*

ȍ Ô

number	HTTPS Server ˇ й 443 Â

ȍ Ô й 443 Â

ȍ Ƃ ३ Ô

ȍ Ô Ƃ ३ HTTPS ╚ Â **no ip http secure-port** Ƃ ३ й Â

ȍ Ô Ю Ƃ ३ˇ HTTPS ╚ й 4443ʹ

```
Ruijie(config)# ip http secure-port 4443
```

ȍ Ƃ ३ Ô

Ƃ ३	
enable service	б ╚
show web-server status	web ╚ ئۇ

ȍ Л Ô -

2.18 ip telnet source-interface

Э IP ھ ھ й Telnet ھ ھˇ ڤ Юʹ Л Лȣ **ip telnet source-interface** Ƃ ३ˊ

ip telnet source-interface *interface-name*

ȍ Ô

interface-name	Э IP هه كه й Telnet كه هه Â

ȍ Ô -

ȍ Ѣ ३ Ô

ȍ Ô Ѣ ३ Э IP هه كه й Telnet كه هه Âفخ telnet Ѣ ३ Л Telnet ئؤ ط Ą˘ й كه هه˘ Â **no ip telnet source-interface** Ѣ ३ й Â

ȍ Ô Ю Ѣ ३˘ Loopback 1 Э IP هه كه й Telnet كه هه˙

```
Ruijie(config)# ip telnet source-interface Loopback 1
```

ȍ Ѣ ३ Ô

Ѣ ३	
telnet	Л Telnet ئؤ ط Â

ȍ Л Ô -

2.19 lock

فخ Э ३˘ EXEC Ѣ ३ **lock** Â **lock**

ȍ Ô

-	-

ȍ Ô -

ȍ Ѣ ३ Ô

ȍ Ô ३ ˘ فخ ˘ в Лъ Â ЛъЮ в ˙

˙ **lock** Ѣ ३˘ ३˙

Y ˙ ३˘ Л Лъ Â ъ˘ ३˘ ъ˘ ˘ Ľ Locked Ł ˙

˘ ३ Â

فخ Э в ╖ ˘ فخ line Ю **lockable** Ѣ ३˘ فخ line Э в Â

ȍ Ô Ю й в ˙

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

```
Ruijie# lock
Password: <password>
Again: <password>
Locked
Password: <password>
```

ò Ƒ ३ Ô

Ƒ ३	
lockable	ফ Э в

ò ʌ Ô -

2.20 lockable

2.21 login

ƒƫ AAA Ю ƒƫ Ɔ ३ ˘ Ƀ ३ **login** Â Ƀ ३ **no** ৲ ३ Â

login

no login

ȍ Ô

-	-

ȍ Ô -

ȍ Ƀ ३ Ô line

ò Ô í AAA ᒪ Ƃ ३ Â

ò Ô Ю ف VTY Э radius Â

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

ò Ƃ ३ Ô

Ƃ ३	
aaa new-model	AAA ᒪ
aaa authentication login	

ò ʌ Ô -

2.23 login local

ف AAA Ю ف Э ك ˘ Ƃ ३ **login local** Â Ƃ ३ **no** ʌ ك Â

login local

no login local

2.24 password

line ३˘ line Ƀ ३ **password** Â Ƀ ३ **no** line ३ Â

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

no password

ȍ Ô

ȍ Ƀ ३ Ô

ȍ Ô

string	Ƃ ३ ˘ ʌ Ɲ 32

ȍ Ô -

ȍ Ƃ ३ Ô

ȍ Ô Ƃ ३ ˘ ̈ ѝ ˘ ̈ ʌ ʌ Â Ƃ ३
EXEC Â

ȍ Ô Ю Ƃ ३ ѝ RGOS̆

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

ȍ Ƃ ३ Ô

Ƃ ३	
-	-

ȍ ʌ Ô -

2.28 reload

ȉ ˘ Ƃ ३ **reload** Â

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

ȍ Ô


```
Router will reload in 600 seconds
```

ȍ Ƃ ३ Ô

Ƃ ३	
-	-

ȍ ʌ Ô -

2.29 Secret

line MD5 a ʌ ╗ ३˘ line Ƃ ३ **secret** Â Ƃ ३ no line ३ Â

secret { [**0**] *password* | **5** *encrypted-secret* }

no secret

ȍ Ô

0	ˆ ʌ ˜ ३ ˘ ɨ MD5 a ʌ ╗
password	३
5 *encrypted-secret*	MD5 a ʌ ╗ ३ ˘ ɨ ȉ ╗ ɨ ३

ȍ Ô -

ȍ Ƃ ३ Ô line

ȍ Ô Ƃ ३ يي line MD5 a ʌ ╗ ३˙

5 24 1 3 8 "$"

5 5

line password secret password secret secret secret password

ȍ Ô Ю line MD5 a ʌ ╗ ३ ȉ vty0˙

```
Ruijie(config)# line vty 0
Ruijie(config-line)# secret vty0
```

login	فخ Э й ३

ȍ ⁄ Ô -

2.30 service password-encryption

३ ╗ ˘ **service password-encryption** Ƃ ३˘ Ƃ ३ **no** ˘
⁄ a й Â
service password-encryption

ȍ Ô

-	-

ȍ Ô -

ȍ Ƃ ३ Ô

ȍ Ô **service password-encryption** Ƃ ३ ˘ Ƃ ३ ˘ ثر password ھ Лȣ
˘ ’ **service password-encryption** Ƃ ३ Лȣ ł˘ **show running**
write Лȣ ł˘ password ⁄ ’ Ą **service password-encryption**˘ ⁄ й
a й Â

ȍ Ô Ю ३ ╗ ‘

```
Ruijie(config)# service password-encryption
```

ȍ Ƃ ३ Ô

Ƃ ३	
enable password	a˘ ३

ȍ ⁄ Ô -

2.31 session-timeout

LINE ȏ Ȣ

ȍ Ƃ ३ Ô LINE

ȍ Ô ƒȍ ˘ ÿ LINE Э ˘ ˘
˘ LINE й Л Â

ȍ Ô Ю line vty 0 й 5ʃ ʻ

```
Ruijie(config-line)# session-timeout 5 output
```

ȍ Ƃ ३ Ô

Ƃ ३	
-	-

ȍ Л Ô -

2.32 show boot

Â

show boot {**config** | **system** [**switch all** | *switched*] | **ip**}

ȍ Ô

config	í ╟ ̈
system	í ╟ ў ̈
all	VSU Ю VSU
switchid	VSU Ю VSU
ip	ƒȍ í ╟ ȍ IP

ȍ Ô -

ȍ Ƃ ३ Ô

ȍ Ô Ƃ ३

TFTP
“ N/A ”

show boot system
“ N/A ”

ȍ Ô 1ʹ ЛЬЮ í ╟ ̈ ʻ

```
Ruijie# show boot config
Boot config file: [/config_main.text]
Service config: [Disabled]
```

2ʹ ЛЬЮ í ╟ ̈ ʻ

```
Ruijie# show boot network
Network config file: [tftp://192.168.7.24/config.text]
```

```
Service config: [Enabled]
```

3 ЛЬЮ ў ̈ p ʻ

```
Ruijie# show boot system
Boot system config:
==================================================
Prio      Size               Modified  Name
---- --------- ------------------- ------------------
 1           N/A                     N/A usb1:/rgos.bin
 2
 3
 4
 5   3205120 2008-08-26 05:22:46 flash:/rgos.bin
 6
 7
 8   3205120 2008-08-26 05:25:09 flash:/rgos_bak.bin
 9           N/A                     N/A tftp://192.168.7.24/rgos.bin
10
==================================================
```

4 ЛЬЮ فخ í ╟ كم IP ʻ

```
Ruijie# show boot ip
System boot ip: [192.168.7.11]
System boot gateway: None
System boot mask: None
```

5 ЛЬЮ VSU Ю ў ̈ p ʻ

```
Ruijie# show boot system switch 3
Switch 3:
Boot system config:
==================================================
Prio      Size               Modified  Name
---- --------- ------------------- ------------------
 1           N/A                     N/A usb1:/rgos.bin
 2
 3
 4
 5   3205120 2008-08-26 05:22:46 flash:/rgos.bin
 6
 7
 8   3205120 2008-08-26 05:25:09 flash:/rgos_bak.bin
 9           N/A                     N/A tftp://192.168.7.24/rgos.bin
10
==================================================
```

ö Ƃ ३ Ô

Ƃ ३	
-	-

ȍ ⁄ Ô -

2.33 show clock

˘ Ƃ ३ **show clock** Â

show clock

ȍ Ô

-	-

ȍ Ô -

ȍ Ƃ ३ Ô

ȍ Ô Ƃ ३ ⁄ Ɱ Â

ȍ Ô ƗO **show clock** Ƃ ३ ˈ

```
Ruijie# show clock
clock: 2003-3-17 10:27:21
```

ȍ Ƃ ३ Ô

Ƃ ३	
clock set	

ȍ ⁄ Ô -

2.34 show line

˘ ƒƫ ƗƠ Ƃ ३ **show line** Â

show line {**console** *line-num* **|** **aux** *line-num* **|** **vty** *line-num* **|** *line-num*}

ȍ Ô

console	⁄
aux	aux
vty	vty
line-num	line

ȍ Ô -

ȍ Ƃ ३ Ô

ȍ Ô Ƃ ३˘ Â

ò Ô IO console '

ȍ ⁄ Ô -

2.38 show this

Ю ˘ ڤڎ Ю Ƀ ३ **show this Â**

ȍ Ô -

ȍ Ƀ ३ Ô

ȍ Ô Ƀ ३ ʌ Ɲ ˘ ў í ╟ ˘ ˘ ˘
Â

ȍ Ô Ю ʻ

```
Ruijie# show version
System description : Ruijie Dual Stack Multi-Layer Switch(S3760-24) By Ruijie Network
System start time: 1970-6-14 11:49:53
System uptime: 3:17:1:17
System hardware version: 2.0
System software version: RGOS 10.3.00(4), Release(34679)
System boot version: 10.2.34077
System CTRL version: 10.2.24136
System serial number: 1234942570001
```

ȍ Ƀ ३ Ô

Ƀ ३	
-	-

ȍ ʌ Ô -

2.40 show web-server status

Web Ł ŋ ˘ Ƀ ३ **show web-server status** Â
show web-server status

ȍ Ô

-	-

ȍ Ô -

ȍ Ƀ ३ Ô Ƃ Դ

ȍ Ƀ ३ Ô

Ƀ ३	
-	-

ȍ ʌ Ô -

2.41 show zcm mode

˘ ʌ Ɱ **show zcm mode** Ƀ ३ Â

show zcm mode

ȍ Ô

-	-

ȍ Ô -

ȍ Ƀ ३ Ô - Ï S *

â

ȍ Ô Ю й 57600 bps˙

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

ȍ Ƃ ३ Ô

Ƃ ३	
-	-

ȍ ʌ Ô -

2.43 telnet

ʌ Telnet ᄂᄋᄋ ᄒᄒ EXEC˜ ˜ Ю˙ **telnet** Ƃ ३ Â

telnet *host* [*port*] [**/source** {**ip** *A.B.C.D* **| interface** *interface-name}*]

ȍ Ô

host	Telnet ᄂᄋᄋ IPV4 ᄒᄒ ä IPV6 ᄒᄒ ў ˜
Port	Telnet ᄂᄋᄋ TCP ˘ й 23
/source	Telnet IP
ip *A.B.C.D*	Telnet IPV4 ᄒᄒ
interface *interface-name*	Telnet

ȍ Ô -

ȍ Ƃ ३ Ô

ȍ Ô

2.44 username

ƕ ॅ ॅ Ƃ ३ **username** Â

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

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

no username *name*

ȍ Ô

name	ॅ
password	३
0|7	३ ╗ ॅ 0 ╗ ॅ 7 ╗
encrypted-password	३
privilege-level	

ȍ Ô -

ȍ Ƃ ३ Ô

ȍ Ô Ƃ ३ ƕ ॅ Â

7

7

7

ȍ Ô Ю ॅ n ३ॅ й 15 ॅ

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

ȍ Ƃ ३ Ô Ƃ ३

login local ƕ

ȍ ʌ Ô -

2.45 username permission

ƕ ॅ Ƃ ३ **username permission** Â

username *name* **permission** *oper-mode filename*

no username *name* **permission** *oper-mode filename*

ȍ Ô

name	ॅ
oper-mode	
filename	ॅ

ö Ô -

ö Ƀ ३ Ô

ö Ô

ö Ô Ю test ά n ˙

```
Ruijie(config)# username test permission rw /
```

Ю test n ˙

```
Ruijie(config)# username test permission null /
```

Ю test config.text ˘ ὲ n ά ἂ ἂ ˙

```
Ruijie(config)# username test permission 0 /config.text
Ruijie(config)# username test permission rwx /
```

ö Ƀ ३ Ô Ƀ ३

- -

ö ⁄ Ô -

2.46 username secret

ﻫ MD5 a ⁄ ╗ ३˘ Ƀ ३ **username secret** Â **username** *name*

secret

ȍ Ô Ю ̈ test̆ MD5 a ʌ ╗ ३ ̇

```
Ruijie(config)# username test secret 0 pw15
```

३ ɨ ̆ pwd15 MD5 a ʌ ╗ ̆ show Ю ̇

```
username test secret 5 $1$323T$A7q8FF9xy6rrF3r6
```

ȍ Ƀ ३ Ô

Ƀ ३	
login local	line Ю й ك

ȍ ʌ Ô -

2.47 write

ˆ running-confiğ Æ Â

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

ȍ Ô

memory	NVRAM̆ ̊ **copy running-config startup-config** Â
network	TFTP ╘ ئؤ Ɜ̆ ̊ **copy running-config tftp** Â
terminal	̆ ̊ **show running-config** Â

ȍ Ô -

ȍ Ƀ ३ Ô

ȍ Ô Ƀ ३ ३ Ƀ ३̆ ȅ n̲ ʌ̆ Лȣ Ю Â

ڤ̆ ╟ ,

a ڤ̂ ʌ й̇ í ╟ ڤ ∪ ʌ ╟ Ɜ̆

ڤ **write [memory]** Ƀ ३ ╗ ̃ ̆ ȣ̆ í ╟

ľ /config Ł ̆ تي Â

ȍ Ô 1̇ ЛЮ ڤ Ɜ ̇

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

ȍ Ƀ ३ Ô

Ƀ ३	
copy	
show running-config	

ȍ ʌ Ô **-**

2.48 zcm

ᑊ ˘ ᐱ Ʌ ᑊ Ю **zcm enable** Ƒ ३ Â
zcm enable
ᑊ ˘ ᐱ Ʌ ᑊ Ю **zcm disable** Ƒ ३ Â
zcm disable

ȍ Ô

enable	ᑊ Â
disable	ᑊ Â

ȍ Ô ث CONFIG_ZCM_ENABLE Ю й ’ ȕ
й Â

ȍ Ƒ ३ Ô

ȍ Ô n ᑊ ᐱ Ʌ Ƒ ३ Â í í DHCP CLIENT ╗
╗ ȍ ╗

3 LINE

3.1 access-class

Line Ю ACL ˜ Â **access-class** { *access-list-number* | *access-list-name* } { **in** | **out** } Ƒ ३ Line Ю Â **no access-class** { *access-list-number* | *access-list-name* } {**in | out**} Ƒ ३ ৲ LINE Ю ACL Â

access-class { *access-list-number* | *access-list-name* } {**in | out**}

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

ȍ	Ô		a c c | access(Li)-3(n)(out)]TJ/TT0 4 50 Tc 0.94 0 Td(

console	
tty	
vty	˘ telnet/ssh
First-line	first-line
Last-line	last-line

ȍ Ô -

ȍ Ƀ ३ Ô

ȍ Ô LINE

ȍ Ô LINE VTY 1 3 LINE '

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

ȍ Ƀ ३ Ô

Ƀ ३	
-	-

ȍ ʌ Ô -

3.3 line vty

Ƀ ३ ʌ Лъ ╗ ʌ Лъ VTY Â Ƀ ३ **no** ʌ Лъ ʌ Лъ VTY Â

line vty *line-number*

no line vty *line-number*

ȍ Ô

line-number	VTY

ȍ Ô Ю ʌ VTY й 5 й 0--4 Â

ȍ Ƀ ३ Ô

ȍ Ô ╗ ʌ VTY ˘ ʌ Лъ Э Ƀ ३ Â

ȍ Ô 1 ʌ VTY ╗ 20 ʌ VTY نز й 0—19 Â

```
Ruijie(config)# line vty 19
```

2 ʌ VTY 10 ʌ VTY نز й 0—9 Â

```
Ruijie(config)# no line vty 10
```

ȍ Ƀ ३ Ô

Ƀ ३	
-	-

ȍ ʌ Ô -

3.4 transport input

Line Ю Λ Лъ ˘ **transport input** Ƃ ३ Line Ю Λ Лъ Â **default transport input** й LINE Ю й Â

transport input {all | ssh | telnet | none}

default transport input

ȍ Ô

all	Line Ю Â
ssh	Line Ю SSH Â
telnet	Line Ю Telnet Â
none	Line Ю a Â

ȍ Ô ˘ VTY Â ȅ ش TTY й NONE a Â Λ Лъ ɨ˘ Λ Лъ **default transport input** Ƃ ३ й Â

ȍ Ƃ ३ Ô Line

ȍ Ô Ƃ ३ Line Ю ÂVTY ف Ю Â ɨ˘ Λ Лъف VTY Э ╗ Â **show running** Ƃ ३ Line Ю Â

default transport input **no transport input** LINE **transport input none**

ȍ Ô ف line vty 0 4 Ю telnet ˙

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

ȍ Ƃ ३ Ô

Ƃ ३	
show running	

ȍ ʌ Ô -

4 UPGRADE

4.1 upgrade system

` ˘ ƒ Ю **upgrade system** Ƀ ३ Â

5

5.1 cd

Â

cd [*filesystem:*][*directory*]

ȍ Ô

filesystem	Â ľ ˙ Ł
directory	

ȍ Ô ف flash Ю Â

ȍ Ƀ ३ Ô

ȍ Ô **cd** Ƀ ३ ৷ ľ Â è Ƀ ३ ˘ ˆ a Лъ ľ / Ł ~ ˘ Â ˘ **pwd** Ƀ ३ Â

ȍ Ô 1˙ й usb0

```
Ruijie# cd usb0:/
```

ȍ Ƀ ३ Ô

Ƀ ३	
pwd	

ȍ ৷ Ô -

5.2 copy

ÿ Â

copy *source-url destination-url*

ȍ Ô

source-url	URL Â Э Ю ╟ ˘ ک ھ ৷ Лъ ک Â
destination-url	URL Â Э Ю ╟ ˘ ک ھ ৷ Лъ ک Â

ȍ Ô -

ȍ Ƀ ३ Ô

ȍ Ô copy Ƀ ३ ৷ Лъ ک Лъ n ئؤ Â

URL '

flash:	flash Â ﻫﺫ Э Л Лъ Â URL a Ąˇ flash Â í ╟ ў ﻫﺫ flash Э Â
tftp:	TFTP ╘ ﻫﺫ
xmodem:	xmodem ä̃ α
usb0:	usb
usb1:	ɣ usb

U R

```
startup-config  Copy to startup configuration
usb0:           Copy to usb0 file system
usb1:           Copy to usb1 file system
```

ö Ƒ ३ Ô

Ƒ ३	
del	
rename	"
dir	

5.4 dir

Ю Â

dir [*filesystem:*][*directory*]

ò Ô

filesystem	ÿ ˘ ":"
directory	ÿ

ò Ô Ю

ò Ъ ३ Ô

ò Ô Ю ˘ Ю Â

ò Ô 1˙ ÿ Э

```
Ruijie# dir slave0:/
Directory of slave:/
    Mode Link      Size                MTime Name
-------- ---- --------- ------------------- ------------------
            1  10838016 2008-01-01 00:01:53 rgos.bin
            1       399 2008-01-01 00:01:37 config.text
            1       399 2008-01-01 00:17:58 cfg.txt
-------------------------------------------------------------
3 Files (Total size 11210782 Bytes), 0 Directories.
Total 33030144 bytes (31MB) in this device, 20463616 bytes (19MB) available.
```

2˙ Ю

```
Ruijie# dir
Directory of temp:/
    Mode Link      Size                MTime Name
-------- ---- --------- ------------------- ------------------
            1       399 2008-01-01 00:17:58 a.dat
-------------------------------------------------------------
1 Files (Total size 399 Bytes), 0 Directories.
Total 33030144 bytes (31MB) in this device, 20463616 bytes (19MB) available.
```

ò Ъ ३ Ô

Ъ ३	
pwd	
cd	

ò Л Ô -

5.5 mkdir

Â

mkdir *directory*

ö Ô

directory	¨

ö Ô -

ö Ɗ ३ Ô

```
flash:/
```

ȍ Ѣ ҅ Ô

Ѣ ҅	
cd	

ȍ Ѧ Ô -

5.7 rename

‖ ̈ Â

rename *url1 url2*

ȍ Ô

url1	‖ URL
url2	URL

ȍ Ô -

ȍ Ѣ ҅ Ô

ȍ Ô Ѣ ҅ ̆ Ѧ Ѣ ̊ Ю ̈ ̆ Ѣ ҅ ̊ a ̊
‖ Â Ѣ ҅ ‖ Â a ҉ Э Â ̇
usb0/1, flash, slave Â

ȍ Ô 1̇ log.txt ‖ Э , ̈ й config.txṫ

```
Ruijie# rename tmp/log.txt ../config.txt
```

2̇ ÿ log.txt ‖ usb0 ̇

```
Ruijie# rename slave:/log.txt usb0:/log.txt
```

3̇ log.txt ̈ й log.txt.bak

```
Ruijie# rename log.txt log.txt.bak
```

ȍ Ѣ ҅ Ô

Ѣ ҅	
del	
copy	

ȍ Ѧ Ô -

5.8 rmdir

Â

rmdir *directory*

ȍ Ô

directory	‟ , й̀

ȍ Ô -

ȍ Ֆ ३ Ô

ȍ Ô a , й̀ Â

ȍ Ô Ю tmp ˘ з Â

```
Ruijie# rmdir tmp
```

ȍ Ֆ ३ Ô

Ֆ ३	
mkdir	

ȍ Ʌ Ô -

5.9 show file systems

show file systems

ȍ Ô

-	-

ȍ Ô -

ȍ Ֆ ३ Ô -

ȍ Ô Ֆ ३˘ Ʌ Ռ Э ˘ Ռ Э Ʌ Â

ȍ Ô 1̇

```
Ruijie#show file systems
```

ȍ Ֆ ३ Ô

Ֆ ३	
-	-

ȍ Ʌ Ô -

tftp

copy flash to tftp ڈ ڊ

copy flash: *source-filename* tftp*://server-ip/ destination-filename* **tftp-source-address** *source-ip*

copy tftp to other
copy tftp: *//server-ip/ source-filename other: destination-filename* **tftp-source-address** *source-ip*

tftp
tftp-client source-addr *source-ip*

tftp
tftp-client source-intf *source-interface*

ȍ Ô

source-filename	̈
destination-filenam	̈
source-ip	Tftp ip
other	ὲ
Source-interface	

ȍ Ô -

ȍ Ƃ ३ Ô -

ȍ Ô tftp Â

ȍ Ô 1 copy tftp to flash

```
Ruijie#copy flash:/rgos.bin tftp://192.168.201.54/rgos.bin tftp-source-address
192.168.201.56
```

2 copy tftp to flash

```
Ruijie#copy tftp://192.168.201.54/rgos.bin flash:/rgos.bin  tftp-source-address
192.168.201.56
```

3

```
Ruijie (config)# tftp-client source-addr 192.168.201.56
```

4

```
Ruijie (config)# tftp-client source-intf loopback 1
```

ȍ Ƃ ३ Ô

Ƃ ३	
-	-

ȍ ʌ Ô -

6

6.1 archive

ƒ ˆ archive˜ Â Λ Лъ Ƃ ३ **no** Ю
Â

archive

no archive

ъ Ô

-	-

ъ Ô -

ъ Ƃ ३ Ô

ъ Ô archive Ƃ ३ ɨ ƒ Â
ني ˘ end Ƃ ३ CTRL+C Â
ني ˘ exit Ƃ ३ Â

ъ Ô 1˙ ƒ

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# archive
```

ъ Ƃ ३ Ô

Ƃ ३	
-	-

ъ Λ Ô -

6.2 hidekeys

ƒƫ Â Λ Лъ Ƃ ३ **no** ƒƫ Â

hidekeys

no hidekeys

ъ Ô

-	-

ъ Ô Ю˜ ƒƫ Â

ȍ Ƃ ३ Ô

ȍ Ô -

ȍ Ô 1˙ فخ Â

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# archive
Ruijie(config-archive)# log config
Ruijie(config-archive-log-config)# hidekeys
```

ȍ Ƃ ३ Ô

Ƃ ३	
archive	
log config	
logging enable	⅄ ╗

ȍ ⅄ Ô -

6.3 log config

ᵖ ˆ log config˜ Â ⅄ Ɱ Ƃ ३ **no** ⅠO Â

log config

no log config

ȍ Ô

-	-

ȍ Ô -

ȍ Ƃ ३ Ô

ȍ Ô **log config** Ƃ ३ ɨ ᵖ Â

تي ˘ **end** Ƃ ३ CTRL+C Â

تي **archive** ˘ **exit** Ƃ ३ Â

ȍ Ô 1˙ ᵖ log config Â

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# archive
Ruijie(config-archive)# log config
```

ȍ Ƃ ३ Ô

Ƃ ३	
archive	

ȍ ⁄ Ô -

6.4 logging enable

1 ╗ Â ⁄ Л Ɓ ३ **no** 1 ╗ Â

logging enable

no logging enable

ȍ Ô

-	-

ȍ Ô Ю 1 ╗ Â

ȍ Ɓ ३ Ô

ȍ Ô -

ȍ Ô 1 1 ╗ Â

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# archive
Ruijie(config-archive)# log config
Ruijie(config-archive-log-config)# logging enable
```

ȍ Ɓ ३ Ô

Ɓ ३	

log config

ȍ Ô -

ȍ Ô 1ʹ й 50Â

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# archive
Ruijie(config-archive)# log config
Ruijie(config-archive-log-config)# logging size 50
```

ȍ Ƃ ३ Ô

Ƃ ३	
archive	
log config	

ȍ ʌ Ô -

6.6 notify syslog

ʌ ᄂ ئؤ Â ʌ Лъ Ƃ ३ **no** ʌ ᄂ ئؤ Â

notify syslog

no notify syslog

ȍ Ô

-	-

ȍ Ô Ю ʌ ᄂ ئؤ Â

ȍ Ƃ ३ Ô

ȍ Ô -

ȍ Ô 1ʹ ʌ ᄂ ئؤ Â

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# archive
Ruijie(config-archive)# log config
Ruijie(config-archive-log-config)# notify syslog
```

ȍ Ƃ ३ Ô Ƃ ३

9 IPv6

9.1 tunnel destination

tunnel destination tunnel **no** tunnel

tunnel destination *ip-address*

no tunnel destination

ip-address	IP

1 tunnel 0 IP 61.154.101.3

```
Ruijie(config)# interface tunnel 0
Ruijie(config-if)# tunnel destination 61.154.101.3
```

show interfaces tunnel	tunnel

-

9.2 tunnel mode ipv6

IPv6 IPv4 IPv6 no

tunnel mode ipv6

no tunnel mode

-	-

ipv6ip

4over6 6over6

```
Ruijie(config)# interface tunnel 1
Ruijie(config-if)# tunnel mode ipv6
Ruijie(config-if)# tunnel source vlan 1
```

tunnel source	
tunnel destination	
tunnel ttl	TTL

9.3 tunnel mode ipv6ip

IPV6 , no IPv6

tunnel mode ipv6ip [**6to4** | **isatap**]

no tunnel mode

	6to4	6to4
6to4ion	**isatap** 0 Tc	0 ISATAP Tw 8.64 0

IPv6

tunnel mode ipv6ip

ھ ک ۶ ں

9.4 tunnel source

tunnel source tunnel **no** tunnel

tunnel source { *ip-address* | *interface-type interface-number* }
no tunnel source

ip-address	tunnel IP IP
interface-type	Async Dialer Ethernet FastEthernet Loopback Null Tunnel
interface-number	

tunnel

1 tunnel 0 **tunnel source** 1/0

```
Ruijie(config)# interface tunnel 0
Ruijie(config-if)# tunnel source serial 1/0
```

show interfaces tunnel	tunnel

-

9.5 tunnel tos

tunnel IPv4 ToS IPv6 traffic class 8

tunnel tos [*num*]
no tunnel tos

num	

GRE tunnel tos

10.4 2

1 interface tunnel 1 GRE ToS 20 00010100

```
Ruijie(config)# interface tunnel 1
Ruijie(config-if)# tunnel tos 20
```

show interfaces tunnel	tunnel

-

9.6 tunnel ttl

tunnel ttl tunnel ttl **no**

tunnel ttl *hop-count*

no tunnel ttl

hop-count	O

10

10.1 ping

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

ip-address	IPv4
length	
times	
seconds	
data	
source	IPv4 127.0.0.1
df-bit	IP DF DF 1 DF 0
validate	

2 5 100Byte IP

Ping ping

ping ping

2 5 100Byte IP

‘ ! ’ ‘ . ’ ping

ping

ping

DNS

1 ping

```
Ruijie# ping 192.168.5.1
Sending 5, 100-byte ICMP Echos to 192.168.5.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max=1/1/1 ms
```

```
< press Ctrl+C to break >
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 2/2/3 ms
```

-	-

-

10.2 ping ipv6

ping [**ipv6**] [*ip-address* [**length** *length*] [**ntimes** *times*] [**timeout** *seconds*] [**data** *data*] [**source** *source*]]

ip-address	IPv6
length	
times	
seconds	
data	
source	IPv6 ::1

2 5 100Byte IP

Ping ipv6 ping ipv6 ping ipv6 ping ipv6 2 5 100Byte IP '!' '.' 'C' ping ipv6 ping ping ipv6

DNS

1 ping ipv6

```
Ruijie# ping ipv6 2000::1
Sending 5, 100-byte ICMP Echoes to 2000::1, timeout is 2 seconds:
  < press Ctrl+C to break >
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/10 ms
```

2 ping

```
Ruijie# ping  ipv6 2000::1 length 1500 ntimes 100 timeout 3 data ffff source 2000::2
```

```
Sending 100, 1500-byte ICMP Echoes to 2000::1, timeout is 3 seconds:
  < press Ctrl+C to break >
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 2/2/3 ms
```


-

10.3 traceroute

traceroute

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

ip-address	IPv4
number	
source	IPv4 127.0.0.1
seconds	
minimum maximum	TTL

-

Traceroute

DNS

traceroute

1 traceroute

```
Ruijie# traceroute 61.154.22.36
< press Ctrl+C to break >
Tracing the route to 61.154.22.36
1       192.168.12.1     0 msec  0 msec  0 msec
2       192.168.9.2      4 msec  4 msec 4 msec
3       192.168.9.1      8 msec  8 msec  4 msec
4       192.168.0.10     4 msec  28 msec  12 msec
5       202.101.143.130     4 msec  16 msec  8 msec
6       202.101.143.154    12 msec  8 msec  24 msec
7       61.154.22.36     12 msec  8 msec  22 msec
```

IP 61.154.22.36

1 6

2 traceroute

```
Ruijie# traceroute 202.108.37.42
< press Ctrl+C to break >
Tracing the route to 202.108.37.42
1      192.168.12.1     0 msec  0 msec  0 msec
2      192.168.9.2        0 msec  4 msec 4 msec
3      192.168.110.1     16 msec  12 msec  16 msec
4      *  *  *
5      61.154.8.129      12 msec  28 msec  12 msec
6      61.154.8.17        8 msec  12 msec  16 msec
7      61.154.8.250      12 msec  12 msec  12 msec
8      218.85.157.222    12 msec  12 msec  12 msec
9      218.85.157.130    16 msec  16 msec  16 msec
10      218.85.157.77    16 msec  48 msec  16 msec
11      202.97.40.65     76 msec  24 msec  24 msec
12      202.97.37.65     32 msec  24 msec  24 msec
13      202.97.38.162    52 msec  52 msec  224 msec
14      202.96.12.38      84 msec  52 msec  52 msec
15      202.106.192.226    88 msec  52 msec  52 msec
16      202.106.192.174    52 msec  52 msec  88 msec
17      210.74.176.158    100 msec  52 msec  84 msec
18      202.108.37.42     48 msec  48 msec  52 msec
```

```
15     222.35.65.18       40 msec 40 msec 40 msec
16     222.35.15.109      50 msec 50 msec 50 msec
17     *       *       *
18    64.170.98.32      40 msec 40 msec 40 msec
```

-	-

[illegible]

```
1      3000::1        0 msec  0 msec  0 msec
2      3001::1        4 msec  4 msec 4 msec
3      3002::1        8 msec  8 msec  4 msec
4      * * *
5      3004::1        4 msec  28 msec  12 msec
```

IP 3004::1

1 5 4

-	-

-

TCP TCP TCP reset
TCP TCP
reset

```
Ruijie(config)# ip tcp not-send-rst
```

-	-

-

11.3 ip tcp path-mtu-discovery

TCP (PMTU) **ip tcp path-mtu-discovery**
no

ip tcp path-mtu-discovery [**age-timer** *minutes* **| age-timer infinite**]

no ip tcp path-mtu-discovery

age-timer *minutes*	TCP PMTU 10-30 10
age-timer infinite	TCP PTMU

PMTU

TCP RFC1191
TCP
TCP TCP
IPv4 IPv6 TCP
RFC1191 TCP PMTU MSS PMTU
age-timer PMTU TCP MSS
PMTU PMTU MSS
age-timer infinite

```
Ruijie(config)# ip tcp path-mtu-discovery
```

show tcp pmtu	TCP PMTU

-

11.4 ip tcp syntime-out

SYN SYN

ip tcp syntime-out no

ip tcp syntime-out *seconds*

no ip tcp syntime-out

seconds	SYN 5-300 20

20s

SYN SYN SYN

SYN telnet

```
Ruijie(config)# ip tcp syntime-out 10
```

-	-

-

11.5 ip tcp window-size

TCP **ip tcp window-size** no

ip tcp window-size *size*

no ip tcp window-size

size	0-65535 4096

4096

Ø »

TCP

TCP

TCP

TCP

TCP

```
Ruijie(config)# ip tcp window-size 16386
```

-	-

-

11.6 show tcp connect

TCP

show tcp connect

-	-

-

-

```
Ruijie#sh tcp connect
tcp connect status:
TCB        Local Address     Foreign Address          State
cf25000    0.0.0.0.2650      0.0.0.0.0                LISTEN
c441000    0.0.0.0.23        0.0.0.0.0                LISTEN
c441800    1.1.1.1.23        1.1.1.2.64201            ESTABLISHED
c444cc0    ::.23             ::.0                     LISTEN
c429980    3000::1.23        3000::2.64236            ESTABLISHED
```

TCB	
Local Address	“.” “2002::2.23” “192.168.195.212.23” “23”
Foreign Address	“.” “2002::2.23” “192.168.195.212.23” “23”

State	TCP 11 CLOSED LISTEN SYNSENT SYN SYNRCVD SYN ESTABLISHED FINWAIT1 FIN FINWAIT2 FIN CLOSEWAIT FIN LASTACK FIN FIN CLOSING FIN FIN ACK FIN TIMEWAIT FIN FIN

-	-

-

11.7 show tcp pmtu

TCP PMTU

show tcp pmtu

-	-

-

-

```
Ruijie# show tcp pmtu
No.      Local Address          Foreign Address        PMTU
[1]      2002::1.18946          2002::2.23             1440
[2]      192.168.195.212.23     192.168.195.112.13560  1440
```

No.	
Local Address	“.” “2002::2.23” “192.168.195.212.23” “23”

Foreign Address	“.” “2002::2.23” “192.168.195.212.23” “23”
PMTU	PMTU

Ip tcp path-mtu-discovery	TCP PMTU

-

11.8 show tcp port

TCP

show tcp port

-	-

TCB	TCP
Foreign Address	
Port	
State	TCP 11 CLOSED: LISTEN SYNSENT SYN SYNRCVD SYN ESTABLISHED FINWAIT1 FIN FINWAIT2 FIN CLOSEWAIT FIN LASTACK FIN FIN CLOSING FIN FIN ACK FIN TIMEWAIT FIN FIN

-	-

-

12 IPv4 REF

IPv4 REF Ruijie Express Forward IP

12.1 ip ref check

ip ref check

-	-

-

,

```
Ruijie(config)#ip ref check
```

```
Ruijie(config)#no ip ref check
```

-	-

-

12.2 ip ref ecmp load-balance

ECMP/WCMP

Q ¸ à4•eG! ï2”TrX G! ï „ „Y$„ „ï)EEqR ˜Enû»•!4•eEqQ˜f nû ™ ù ‘4•eF`c š4T

-	-

-

12.4 show ip logging

IP 3 1 0 2 1 127 3 E 255.255.255.255

show ip logging [**clear**]

clear	

-

IP 256 clear

```
Ruijie #show ip logging

Log buffer (Total 1024 Bytes): have written 1024.

REF-PACKET_DROP-Illegal destination address 0.0.0.0

REF-PACKET_DROP-Illegal destination address 0.0.0.0

REF-PACKET_DROP-Illegal destination address 127.0.0.1

REF-PACKET_DROP-Illegal destination address 250.250.250.10

REF-PACKET_DROP-Illegal destination address 250.250.250.10

REF-PACKET_DROP-Illegal destination address 127.0.0.1

REF-PACKET_DROP-Illegal destination address 127.0.0.1

REF-PACKET_DROP-Illegal destination address 0.0.0.0

REF-PACKET_DROP-Illegal destination address 0.0.0.0
```

```
REF-PACKET_DROP-Illegal destination address 0.0.0.0

REF-PACKET_DROP-Illegal destination address 250.250.250.10

REF-PACKET_DROP-Illegal destination address 0.0.0.0

REF-PACKET_DROP-Illegal destination address 127.0.0.1

REF-PACKET_DROP-Illegal destination address 127.0.0.1

REF-PACKET_DROP-Illegal destination address 250.250.250.10

REF-PACKET_DROP-Illegal destination address 250.250.250.10

REF-PACKET_DROP-Illegal destination address 127.0.0.1

REF-PACKET_DROP-Illegal destination address 0.0.0.0

REF-PACKET_DROP-Illegal destination address 0.0.0.0

REF-PACKET_DROP-Illegal destination address 250.250.250.10

REF-PACKET_DROP-Illegal destination address 127.0.0.1

REF-PACKET_DROP-Illegal destination address 127.0.0.1
```

ip ref check	

-

12.5 show ip ref

REF

show ip ref

-	-

-

REF

```
Ruijie# show ip ref
-----------statistic information-----------:
current     routes: 5
alloc weight_nodes: 5
alloc   bal_tables: 0
alloc    adj_nodes: 5
alloc      res_adj: 0
-------------------------------------------:
```

routes	REF
weight_nodes	
bal_tables	
adj_nodes	
res_adj	

	REF

```
adj_type      next_hop        mac             interface
local_adj     0.0.0.0         0000.0000.0000  NULL
glean_adj     0.0.0.0         0000.0000.0000
FastEthernet 1/1
local_adj     0.0.0.0         0000.0000.0000  NULL
glean_adj     0.0.0.0       0000.0000.0000  Loopback 0
forward_adj   192.168.17.1    0000.2004.094f
```

12.7 show ip ref route

REF

show ip ref route [**default** | *ip mask*]

]

4 REF

```
Ruijie#show ip ref route
Codes: * - default route
       # - zero route
 ip      mask    weight  path-id      next-hop        interface
 255.255.255.255 255.255.255.255 1  4   0.0.0.0     Local 0
 224.0.0.0        240.0.0.0         1  1   224.0.0.0
 224.0.0.0      255.255.255.0    1  4     0.0.0.0     Local 0
 192.168.50.0  255.255.255.0      1  6   0.0.0.0 FastEthernet 0/0
 192.168.50.255  255.255.255.255 1  2       0.0.0.0
 192.168.50.200 255.255.255.255 1 7 192.168.50.200 FastEthernet 0/0
 192.168.50.122  255.255.255.255 1 4 0.0.0.0         Local 0
 192.168.50.78  255.255.255.255 1 9 192.168.50.78  FastEthernet 0/0
```

IP	IP
MASK	
s	
path-id	
res	
weight	
adj_type	
next_hop	
mac	MAC 0
interface	

show ip ref exact-route	IP REF

-

-IP

ĭ ĀĄ IP Ƀ ȝ ЛЬЮ ˈ

1.
2. RIP
3. RIPng
4.
5. VRF

1

1.1 accept-lifetime

ফ ঃ Ֆ ২ **accept-lifetime** Â Ֆ ২ **no** Â

accept-lifetime *start-time* { **infinite** | *end-time* | **duration** *seconds* }

no accept-lifetime

ঃ Ô

start-time	Ю *hh:mm:ss month date year* *hh:mm:ss date month year* *hh*— *mm*— *ss*— *month*— *date*— *year*— ń Л й Jun 1 1993
infinite	ÿ Â
end-time	*start-time*
duration *seconds*	ÿ *start-time* ^ ন 1-2147483646

ঃ Ô

ঃ Ֆ ২ Ô

ঃ Ô Ֆ ২ Ю ঃ Â

ঃ Ô ЛЬЮ 1 Ω ÿ 2000 9 9 2011 10 12 Â

```
Ruijie(config)# key chain ripkeys

Ruijie(config-keychain)# key 1

Ruijie(config-keychain-key)#accept-lifetime 00:00:00 Sep 9 2000 00:00:00 Dec 12 2011
```

ȍ Ƀ ३ Ô

length][**le** *maximum-prefix- length*]

ò Ô

prefix-list-name	"

seq-number

1.4

ȍ Ƀ ३ Ô

Ƀ ३	
-	-

ȍ Ʌ Ô -

1.6 ip route

Ƀ ३ ip route Â Ƀ ३ no Â

ip route [**vrf** *vrf_name*] *network net-mask* { *ip-address* | *interface* [*ip-address*] } [*distance*] [**tag** *tag*] [**permanent**] [**weight** *number*] [**description** *description-text*] [**disable** | **enable**]

ȍ Ô

vrf_name	VRF
network	ھ ک
net-mask	
ip-address	Ю ھ ک
Interface	ˆ Ʌ ˜ Ю
distance	ˆ Ʌ ˜
tag	ˆ Ʌ ˜ Tag
permanent	ˆ Ʌ ˜
number	ˆ Ʌ ˜
description *description-text*	ˆ Ʌ ˜ *description-text* й 1˙ 60 Â
disable/enable	ˆ Ʌ ˜

ȍ Ô Â

ȍ Ƀ ३ Ô Â

ȍ Ô й 1 Ʌ Ƛ

a Â Ʌ Ƛ

й Â OSPF й 110 Ʌ Ƛ

й 125 OSPF Ʌ Ƛ Э Â

Ʌ Ƛ vrf ╗ vrf Â

й 1 Ʌ Ƛ **show ip route weight** Ƀ ३ Â

weight WCMP ╗ ڤ ھ Ʌ ھ ک

weight Â ئو

WCMP й 32 a Ƛ ȅ WCMP б شخ

, ھ n a Â

0/0˜ Â ƒ Fastethernet 0/0 ƫ ǔ
ARP CPU n Â Лъ a ǎ Лъ Â

ò Ô -

ò Ƃ ३ Ô

Ƃ ३	
show ip route	IP Â

ò Л Ô -

1.7 ip routing

í RGOS ˚ IP ╗ ƒ Ю Ƃ ३ Â Ƃ ३ no Л Лъ IP ╗ Â

ip routing

no ip routing

ò Ô

-	-

ò Ô í IP Â

ò Ƃ ३ Ô

ò Ô й й VOIP Л Лъ a RGOS ˚ IP ╗ Â
Л Лъ RGOS IP ╗ Â

ò Ô ЛъЮ RGOS ˚ IP ╗ Â

```
Ruijie(config)# no ip routing
```

ò Ƃ ३ Ô

Ƃ ३	
-	-

ò Л Ô -

1.8 ip static route-limit

Э Ƃ ३ **ip static route-limit** Â Ƃ ३ no Л Лъ ƭ
Â

ip static route-limit *number*

no ip static route-limit

ò Ô

number	Э ƫ 1-10000

ð Ô й 1024 Â

ð Ƀ ३ Ô Â

ð Ô Э й **ip static route-limit** Э
ł Ю a Э Â **show running-config** Λ Лъ
Э Â

ð Ô ЛъЮ Э й 900 ł Â

```
Ruijie(config)# ip static route-limit 900
Ruijie(config)# no ip static route-limit
```

ð Ƀ ३ Ô

Ƀ ३	
-	-

ð Λ Ô -

1.9-

interface	ˆ Л ˜ Ю
distance	ˆ Л ˜
number	(Л) فخ Â نز 1-128 ῏ a Â

ȍ Ô ipv6

ȍ Ф ҷ Ô

ȍ Ô й 1 Л Лъ
a Â Л Лъ
й Â OSPF й 110 Л Лъ
й 125 OSPF Л Лъ Э Â

ȍ Ô ЛъЮ ╗ 2001::/64 Ю й 2002::2 й 115 Â

```
ipv6 route 2001::/64 2002::2 115
```

Л ÿ ὲ Â
ÂЛъЮ 2001::/64 ÿ fastethernet 0/0
Â

```
ipv6 route 2001::/64 fastethernet 0/0 2002::2
```

ȍ Ф ҷ Ô

Ф ҷ	
show ipv6 route	IPv6 Â

ȍ Л Ô -

1.13 ipv6 static route-limit

Э Ф ҷ **ipv6 static route-limit** Â Ф ҷ no Л Лъ
تي Â

ipv6 static route-limit *number*

no ipv6 static route-limit

ȍ Ô

number	Э نز 1-10000

ȍ Ô й 1000

ȍ Ф ҷ Ô

ȍ Ô Э й **ipv6 static route-limit** Э
ɨ Ю a Э Â **show running config** Л Лъ

Э Â

ȍ Ô ЛЪЮ ipv6

no key *key-id*

ȍ Ô

key-id	ID ৲ ‘ 0-2147483647

ȍ Ô

ȍ Ֆ ३ Ô

ȍ Ô Ֆ ३ Ⓚ Â

ȍ Ô ЛЬЮ ripkeys 1 1 Â

```
Ruijie(config)# key chain ripkeys

Ruijie(config-keychain)# key 1
```

ȍ Ֆ ३ Ô

Ֆ ३	
-	-

ȍ ৲ Ô -

1.16 key chain

Ⓚ Ֆ ३ **key chain** Â Ֆ ३ **no** Ⓚ Â

key chain *key-chain-name*

no key chain *key-chain-name*

ȍ Ô

key-chain-name	“

ȍ Ô

ȍ Ֆ ३ Ô

ȍ Ô

ȍ Ô ЛЬЮ ripkeys Â

```
Ruijie(config)# key chain ripkeys
```

ȍ Ֆ ३ Ô

Ֆ ३	
-	-

ȍ ʌ Ô -

1.17 key-string

ف Ֆ ३ **key-string** Â Ֆ ३ **no** Â

key-string [**0 | 7**] *text*

no key-string

ȍ Ô

0	Лȣ
7	Лȣ
text	

ȍ Ô

ȍ Ֆ ३ Ô

ȍ Ô Ֆ ३ Ҩ Â

ȍ Ô ЛȣЮ ripkeys 1 1 Ҩ й abc Â

```
Ruijie(config)# key chain ripkeys

Ruijie(config-keychain)# key 1

Ruijie(config-keychain-key)#key-string abc
```

ȍ Ֆ ३ Ô

Ֆ ३	
-	-

ȍ ʌ Ô -

1.18 match interface

Ю й يي Ֆ ३ **match interface** Â Ֆ ३ **no** Â

match interface *interface-type interface-number* [*…interface-type interface-number*]

no match interface [*interface-type interface-number* [*…interface-type interface-number*]]

ȍ Ô

interface-type	ىشخ
interface-number	

ȍ Ô Â

ȍ Ѣ ३ Ô ىي Â

ȍ Ô **match interface** Ѣ ३ ŧ Λ Лъ Â
فخ ţ ىيˆ route maps˜ ةخ ţ
˚ Â
ىي Λ Лъ 1 **match** Ѣ ३ ŋ 1 **set** Ѣ ३ Â **match**
Ѣ ३ ’ **set** Ѣ ३ a Â

ȍ Ô ىي ţ Λ Лъ فخ ţ ŋ Э Â a ىي è
Ѣ ३ a˚ Â ˚ فخ ţ Э a˚ ىي
è Ѣ ३ ≠ a ˚ Â
ЛъЮ OSPF ţ RIP ţ Ю й fastethernet 0/0 RIP
Â

match ip address {*access-list-number* [*access-list-number...* |*access-list-name...*] |*access-list-name* [*access-list-number...*|*access-list-name*] | **prefix-list** *prefix-list-name* [*prefix-list-name...*]}

no match ip address [*access-list-number* [*access-list-number...* | *access-list-name...*] | *access-list-name* [*access-list-number...*| *access-list-name*] | **prefix-list** *prefix-list-name* [*prefix-list-name...*]]

ȍ Ô

access-list-number	ˈنز 1-99 1300-1999 ˈنز 100-199 2000-2699
access-list-name	ˑ
prefix-list *prefix-list-name*	ˑ

ȍ Ô Â

ȍ Ƀ ३ Ô يي

ȍ Ƀ ३ ۱ ɲ لم

match route-type	شخ
match tag	
set metric	ٲ
set metric-type	ٲ شخ
set tag	ٲ

ȍ ⁄ Ô -

1.20 match ip next-hop

ٲ ƗO IP ھ ک ٔ يي Ƀ ३ **match ip next-hop** Â Ƀ ३ **no** Â

match ip next-hop {*access-list-number* [*access-list-number...* |*access-list-name...*] |*access-list-name* [*access-list-number...*| *access-list-name*] | **prefix-list** *prefix-list-name* [*prefix-list-name...*]}

no match ip next-hop [*access-list-number* [*access-list-number...* | *access-list-name...*] | *access-list-name* [*access-list-number...*| *access-list-name*] | **prefix-list** *prefix-list-name* [*prefix-list-name...*]]

ȍ Ô

access-list-number	٬نز 1-99 1300-1999 ٬نز 100-199 2000-2699
access-list-name	ٔ
prefix-list *prefix-list-name*	ٔ

ȍ Ô Â

ȍ Ƀ ३ Ô يي Â

ȍ Ô **match ip next-hop set1-99**

```
Ruijie(config-route-map)# match ip next-hop 10 20
```

ȍ Ƃ ३ Ô

Ƃ ३	
access-list	ƗƘ
match ip address	ھ ھ
match interface	ƗO
match ip route-source	ھ ھ
match metric	
match route-type	ش
match tag	
set metric	ʔ
set metric-type	ʔ ش
set tag	ʔ

ȍ ʌ Ô -

1.21 match ip route-source

ʔ IP ھ ھ ˜ ي Ƃ ३ **match ip route-source** Â Ƃ ३ **no** Â

match ip route-source {*access-list-number* [*access-list-number...* |*access-list-name...*] |*access-list-name* [*access-list-number...*| *access-list-name*] | **prefix-list** *prefix-list-name* [*prefix-list-name...*]}

no match ip route-source [*access-list-number* [*access-list-number...* | *access-list-name...*] | *access-list-name* [*access-list-number...*| *access-list-name*] | **prefix-list** *prefix-list-name* [*prefix-list-name...*]]

ȍ Ô

access-list-number	
access-list-name	˜
prefix-list *prefix-list-name*	˜

ȍ Ô Â

ȍ Ƃ ३ Ô ي Â

ȍ Ô **match ip route-source** Ƃ ३ ɨ ʌ Ɱ Â

ڤ ʔ ˆي route maps˜ ھ ʔ

˘ Â

ي ʌ Ɱ 1 **match** Ƃ ३ n 1 **set** Ƃ ३ Â **match** Ƃ ३ ʼ **set** Ƃ ३ a Â

ȍ Ô OSPF ʔ RIP Â RIP IP ھ ھ ˜ 5 OSPF è ʔ

Â

```
Ruijie(config)# router ospf
Ruijie(config-router)# redistribute rip subnets
Ruijie(config-router)# route-map redrip
Ruijie(config-router)# network 192.168.12.0 0.0.0.255 area 0
Ruijie(config-router)# exit
Ruijie(config)# access-list 5 permit host 192.168.100.1
Ruijie(config)# route-map redrip permit 10
Ruijie(config-route-map)# match ip route-source 5
```

ö Ъ ъ Ô

Ъ ъ	
access-list	Ł
match ip address	هم كه
match interface	Ю
match ip next-hop	Ю هم كه
match metric	
match route-type	شخ
match tag	
set metric	ĭ
set metric-type	ĭ شخ
set tag	ĭ

ö /ı Ô -

1.22 match ipv6 address

Ł IPv6 PBR IPv6 ACL Â

Ł ĭ IPv6 يي Ъ ъ **match ipv6 address** Â Ъ ъ **no** Â

match ipv6 address { *access-list-name* | **prefix-list** *prefix-list-name* }

no match ipv6 address

ö Ô

access-list-name	ّ
prefix-list *prefix-list-name*	IPv6 ّ

ö Ô Â

ö Ъ ъ Ô يي Â

ö Ô route map sequence IPV6 ACL’

Route map sequence й 10’

IPv6 PBR ╗ a б prefix-list يم a Â

ফ ؟ ييˆ route maps˜ ه ؟
˚ Â
يي Л Лъ 1 match Ֆ ३ n 1 set Ֆ ३ Â match
Ֆ ३ ’ set Ֆ ३ a Â

ö Ô يي ؟ Л Лъ ফ ؟ n Э Â a يي è
Ֆ ३ a˚ Â ˚ ফ ؟ Э a˚ يي
è Ֆ ३ ≠ a ˚ Â
ЛъЮ OSPF ؟ RIP ؟ ˉ v6acl RIP
ফ OSPF ه й 30 Â
1˙ ؟

```
Ruijie(config)# ipv6 router ospf
```

1.23 match ipv6 next-hop

ƚ Ю IPv6 ھ ک ˎ ي Ƃ ३ **match ipv6 next-hop** Â Ƃ ३ **no** Â

match ipv6 next-hop { *access-list-name* | **prefix-list** *prefix-list-name* }

no match ipv6 next-hop

ȍ Ô

access-list-name	ˎ
prefix-list *prefix-list-name*	IPv6 ˎ

ȍ Ô Â

ȍ Ƃ ३ Ô ي Â

ȍ Ô ڂ ƚ ي route maps˜ ھ ƚ ˇ Â

ي Λ Ƛ 1 **match** Ƃ ३ n 1 **set** Ƃ ३ Â **match** Ƃ ३ ’ **set** Ƃ ३ a Â

ȍ Ô ي ƚ Λ Ƛ ڂ ƚ n Э Â a ي ȅ Ƃ ३ aˇ Â ˇ ڂ ƚ Э aˇ ي ȅ Ƃ ३ ≠ a ˇ Â

ЛЬЮ OSPF ƚ RIP ƚ ˎ v6acl RIP ڂ OSPF ھ й 40 Â

```
Ruijie(config)# ipv6 router ospf
Ruijie(config-router)# redistribute rip subnets route-map redrip
Ruijie(config-router)# exit
Ruijie(config)# ipv6 access-list v6acl
Ruijie(config-ipv6-acl)# 10 permit ipv6 2720::/64 any
Ruijie(config-ipv6-acl)# exit
Ruijie(config)# route-map redrip permit 10
Ruijie(config-route-map)# match ipv6 next-hop v6acl
Ruijie(config-route-map)# set metric 40
```

ȍ Ƃ ३ Ô

Ƃ ३	
ipv6 access-list	ЬЖ IPv6
match interface	Ю
match ipv6 address	IPv6 Ю ھ ک
match ipv6 route-source	IPv6 ھ ک
match metric	
match route-type	شخ
match tag	

match interface	Ю
match ipv6 address	IPv6 Ю ھ ک
match ipv6 route-source	IPv6 ھ ک
match metric	
match route-type	شخ
match tag	
set metric	ٲ
set metric-type	ٲ شخ
set tag	ٲ

ȍ ʌ Ô -

1.25 match metric

يي Ѣ ३ **match metric** Â Ѣ ३ **no** Â

match metric *metric*

no match metric

ȍ Ô

metric	ʌ ٲنز 0-4294967295

ȍ Ô Â

ȍ Ѣ ३ Ô يي Â

ȍ Ô فخ ٲ ييٰ route maps˜ ھخ ٲ ˇ Â

يي ʌ Ѣ 1 **match** Ѣ ३ n 1 **set** Ѣ ३ Â **match** Ѣ ३ ’ **set** Ѣ ३ a Â

ȍ Ô ѢЮ OSPF ٲ RIP Â й 10 RIP OSPF ٲ Â

```
Ruijie(config)# router ospf
Ruijie(config-router)# redistribute rip subnets route-map redist-rip
Ruijie(config-router)# network 192.168.12.0 0.0.0.255 area 0
Ruijie(config-router)# exit
Ruijie(config)# route-map redist-rip permit 10
Ruijie(config-route-map)# match metric 10
```

ȍ Ѣ ३ Ô

Ѣ ३	
access-list	Ѭ
match ip address	ھ ک
match interface	Ю

match ip next-hop	IO ھ ک
match ip route-source	ھ ک

match interface	Ю
match ip next-hop	Ю هم کم
match ip route-source	هم کم
match metric	
match tag	
set metric	ٲ
set metric-type	ٲ شخ
set tag	ٲ

ȍ ʌ Ô -

1.27 match tag

يي Ƃ ३ **match tag** Â Ƃ ३ **no** Â

match tag *tag* [*…tag*]

no match tag [*tag* [*…tag*]]

ȍ Ô

tag	

ȍ Ô Â

ȍ Ƃ ३ Ô يي Â

ȍ Ô **match tag** Ƃ ३ ɨ ʌ Ɓ tag Â

فخ ٲ يي route maps˜ ھه ٲ

˘ Â

يي ʌ Ɓ 1 **match** Ƃ ३ n 1 **set** Ƃ ३ Â **match**

Ƃ ३ ’ **set** Ƃ ३ a Â

ȍ Ô ƂЮ RIP ٲ OSPF ÂRIP ٲ OSPF ھه й 50 n 80

Â

```
Ruijie(config)# router rip
Ruijie(config-router)# redistribute ospf 100 route-map redrip
Ruijie(config-router)# network 192.168.12.0
Ruijie(config-router)# exit
Ruijie(config)# route-map redrip permit 10
Ruijie(config-route-map)# match tag 50 80
```

ȍ Ƃ ३ Ô

Ƃ ३	
access-list	ƂЖ
match ip address	هم کم
match interface	Ю

match ip route-source	هم كه
match metric	
match ip next-hop	Ю هم كه
match route-type	شخ
set metric	أ
set metric-type	أ شخ
set tag	أ

ö Λ Ô -

1.28 maximum-paths

ƃ ३ **maximum-paths** Â ƃ ३ **no** Λ Лъ تي

Â

maximum-paths *number*

no maximum-paths

ö Ô

number	٬ نز 1 ˙ 8 Â

ö Ô ٬ 8

ö Ƃ ३ Ô Â

ö Ô **maximum-paths** ٬ ɨ فخ ئهـ Ю ئهـ أ a

Â

ƃ ३ IPv4 n IPv6˚ Â

ö Ô ٬ й 4 ɨ Â

```
Ruijie(config)# maximum-paths 4
Ruijie(config)# no maximum-paths
```

ö ƃ ३ Ô

ƃ ३	
-	-

ö Λ Ô -

1.29 route-map

Ƙ يي يي ƃ ३ **route-map** Â ƃ ३ **no**

يي Ƙ Â

route-map *route-map-name* [**permit** | **deny**] [*sequence-number*]

no route-map *route-map-name* [{**permit** | **deny**} *sequence-number*]

Redistribute	ţ

ȍ ʌ Ô -

1.30 send-lifetime

ƶȍ ȃ Ƃ ३ **send-lifetime** Â Ƃ ३ **no**
Â

send-lifetime *start-time* { **infinite** | *end-time* | **duration** *seconds* }
no send-lifetime

ȍ Ô

start-time	Ю *hh:mm:ss month date year* *hh:mm:ss date month year* *hh—*
infinite	ÿ Â
end-time	*start-time*
duration *seconds*	ÿ *start-time*

ţ

ȍ Ô

ȍ Ƃ ३ Ô

ȍ Ô Ƃ ३ Ƙ ȃ Â

ȍ Ô ЛЮ 1 Ƣ ÿ

ȍ Ƀ ३ Ô

ò /l Ô -

1.32 set ip dscp

match DSCP يي Ɗ ३ **set ip dscp** Â Ɗ ३ **no**
Â

set ip dscp

Ю weight WCMP ﻫﻫ Â
set ip next-hop Ƃ ३ ɨ Λ Л IP ﻫﻫ a 32 Â
ﻫﻫ ip address ɨ ╗ weight Λ Л a 4 nexthop ﻫﻫ Â

---

next-hop weight **set** WCMP
WCMP weight nexthop
weight 1

set ip next-hop >
>

ﻫﻫ ╗ Â
ﻫﻫ ﻫﻫ Ю Â
ﻫﻫ ﻫﻫ Â ﻫﻫ ﻫﻫ
Ж 1 n Â ɨ
a ﻫﻫ ﻫﻫ ﻫﻫ
Ж Â
ﻫﻫ Λ Л set Â

ö Ô ﻫﻫ serial 1/0 Э í Â ﻫﻫ ﻫﻫ 10.0.0.0/8 ﻫﻫ
192.168.100.1’ й 172.16.0.0/16 ﻫﻫ 172.16.100.1 Â

```
Ruijie(config)#interface serial 1/0
Ruijie(config-if)#ip policy route-map load-balance
Ruijie(config)#access-list 10 permit 10.0.0.0 0.255.255.255
Ruijie(config)#access-list 20 permit 172.16.0.0 0.0.255.255
Ruijie(config)#route-map load-balance permit 10
Ruijie(config-route-map)#match ip address 10
Ruijie(config-route-map)#set ip next-hop 192.168.100.1
Ruijie(config)#route-map load-balance permit 20
Ruijie(config-route-map)#match ip address 20
Ruijie(config-route-map)#set ip next-hop 172.16.100.1
```

ö Ƃ ३ Ô

Ƃ ३	
route-map	Ж ﻫﻫ
match ip address	ﻫﻫ

ö Λ Ô -

1.34 set ip next-hop verify-availability

Ю IP ﻫﻫ Λ ﻫﻫ Ƃ ३ **set ip next-hop verify-availability** Â Ƃ ३ **no** Â Ƃ ३ Â

set ip next-hop verify-availability *ip-address* **track** *track-obj-num*

no set ip next-hop verify-availability *ip-address* **track** *track-obj-num*

ȍ Ô ȕ

```
Ruijie(config)#interface FastEthernet 0/0
Ruijie(config-if)#ip policy route-map name
```

ö Ֆ ३ Ô

Ֆ ३	
match interface	Ю
match ip address	ھ ک
match ip next-hop	Ю ھ ک
match ip route-source	ھ ک
match metric	
match route-type	شخ
match tag	
set metric-type	أ شخ
set tag	أ

ö ۸ Ô -

1.36 set ipv6 next-hop

match IPv6 Ю IPv6 ھ ک يي Ֆ ३ **set ipv6 next-hop** Â Ֆ ३ no Â Ֆ ३ Â

set ipv6 next-hop *global-ipv6-address* [*weight*] [*global-ipv6-address* [*weight*]...]

no set ipv6 next-hop global-ipv6-address [*weight*] [*global-ipv6-address* [*weight*]...]

ö Ô

global-ipv6-address	Ю IPv6 ھ ک Â Ю ئۇ ئۇ Â
weight	ئۈچ Ю 1˙ 8.

й 2002:0db8:2003:1::95 Â

```
Ruijie(config)# ipv6 access-list acl_for_pbr
Ruijie(config -ipv6-acl)#permit ipv6 any 2001:0db8:2001:1760::/64
Ruijie(config)#route-map rm_if_0_0
Ruijie(config-route-map)#match ip address acl_for_pbr
Ruijie(config-route-map)# set ipv6 next-hop 2002:0db8:2003:1::95
Ruijie(config)#interface FastEthernet 0/0
Ruijie(config-if)#ipv6 policy route-map rm_if_0_0
```

ò Ƃ ३ Ô

Ƃ ३	
match ipv6 address	Ƙ
ipv6 policy route-map	ف Э

ò Л Ô -

1.37 set metric

match يي Ƃ ३ **set metric** Â Ƃ ३ **no** Â

set metric [+ *metric-value* | **-** *metric-value* | *metric-value*]

no set metric

ò Ô

+	╗ ^ ف metric Э ╗ ˜
-	^ ف metric Э ˜
metric-value	ǂ

ò Ô a ˚ ǂ a Â

ò Ƃ ३ Ô يي Â

ò Ô ط ثز كه Â è set metric à Лъ ị + Ľ ị - Ľ metric ЭЮ Â RIP ǂ è

```
Ruijie(config-router)# redistribute static route-map redrip
Ruijie(config-router)# exit
Ruijie(config)# route-map redrip permit 10
Ruijie(config-route-map)# set metric 40
```

ò ƑƆ ३ Ô

ƑƆ ३	
match interface	ЮO
match ip address	هم کم
match ip next-hop	ЮO هم کم
match ip route-source	هم کم
match metric	
match route-type	شخ
match tag	
set metric-type	أ شخ
set tag	أ

ò /ا Ô -

1.38 set next-hop

match ЮO IP هم کم يي ƑƆ ३ **set next-hop** Â ƑƆ ३ **no** Â ƑƆ ३ Â

set next-hop *ip-address*

no set next-hop

ò Ô

match interface	Ю
match ip address	هم كه
match ip next-hop	Ю هم كه
match ip route-source	هم كه
match metric	
match route-type	شخ
match tag	
set metric-type	ٲ شخ
set tag	ٲ

ȍ ٨ Ô -

1.39 set tag

match يي Ֆ ३ **set tag** Â Ֆ ३ **no** Â

set tag *tag*

no set tag

ȍ Ô

tag	ٲ

ȍ Ô a ٨ Â

ȍ Ֆ ३ Ô يي Â

ȍ Ô Ֆ ३ ٲ Â Ֆ ३ Â

ȍ Ô ЛЬЮ OSPF ٲ RIP ٲ й 100 Â

```
Ruijie(config)# router ospf
Ruijie(config-router)# redistribute rip subnets route-map redrip
Ruijie(config-router)# network 192.168.12.0 0.0.0.255 area 0
Ruijie(config-router)# exit
Ruijie(config)# route-map redrip permit 10
Ruijie(config-route-map)# set tag 100
```

ȍ Ֆ ३ Ô

Ֆ ३	
match interface	Ю
match ip address	هم كه
match ip next-hop	Ю هم كه
match ip route-source	هم كه
match metric	
match route-type	شخ
match tag	

set metric	؟
set metric-type	؟ شخ

ȍ ⁄ Ô -

1.40 show ip prefix-list

show ip prefix-list Ɗ ३ Â

show ip prefix-list [*prefix-name*]

ȍ Ô

prefix-name	ّ

ȍ Ô Â

ȍ Ɗ ३ Ô ȁ ȁ ȁ ȁ يي Â

ȍ Ô ّ ȕ Â

ȍ Ô

```
Ruijie# show ip prefix-list
ip prefix-list pre: 2 entries
seq 5 permit 192.168.64.0/24
seq 10 permit 192.2.2.0/24
```

ȍ Ɗ ३ Ô

Ɗ ३	
-	-

ȍ ⁄ Ô -

1.41 show ip route

IP **show ip route** Ɗ ३ Â

show ip route [[**vrf** *vrf_name*] [*network* [*mask* [**longer-prefix**]] | **count** | *protocol* [*process-id*] | **weight**]]

ȍ Ô

vrf *vrf_name*	ˆ ⁄ ˜ VRF
network	ˆ ⁄ ˜
mask	ˆ ⁄ ˜
longer-prefix	(⁄)
count	ˆ ⁄ ˜ ˆ ECMP/WCMP ˜

	Ю ' **bgp**, **isis**, **ospf**, **rip**
process-id	ˆ Λ ˜
weight	ˆ Λ ˜

ȍ Ô Â

ȍ Ƃ ३ Ô ȁ ȁ ȁ ȁ ي Â

ȍ Ô Ƃ ३ Λ Лȣ ك Â

ȍ Ô 1' ЛȣЮ й **show ip route** Ƃ ३ '

```
Ruijie# show ip route
Codes:  C - connected, S - static, R - RIP, B - BGP
O - OSPF, IA - OSPF inter area
N1-OSPF NSSA external type 1,N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2
i - IS-IS,su - IS-IS summary,L1 - IS-IS level-1,L2 - IS-IS level-2
ia - IS-IS inter area, * - candidate default
Gateway of last resort is no set
S    20.0.0.0/8 is directly connected, VLAN 1
S    22.0.0.0/8 [1/0] via 20.0.0.1
O E2 30.0.0.0/8 [110/20] via 192.1.1.1, 00:00:06, VLAN 1
R    40.0.0.0/8 [120/20] via 192.1.1.2, 00:00:23, VLAN 1
B    50.0.0.0/8 [120/0] via 192.1.1.3, 00:00:41
C    192.1.1.0/24 is directly connected, VLAN 1
C    192.1.1.254/32 is local host.
```

show ip route Ƃ ३ Ю'

O

E2	Â ش Λ ۸ й' E1' OSPF ش , E2' OSPF ش , N1' OSPF NSSA ش 1' N2' OSPF NSSA ش 2' IA' OSPF ھ , su' IS-IS , L1' IS-IS 1 , L2' IS-IS 2 , ia' IS-IS ھ Â
20.0.0.0/8	ھ ھ n
[1/0]	,
Via 20.0.0.1	Ю IP ھ ھ
00:00:06	
VLAN 1	Ю

2' ЛЮ й **show ip route** *network* Ƃ ३ '

```
Ruijie# show ip route 30.0.0.0
Routing entry for 30.0.0.0/8
Distance 110, metric 20
Routing Descriptor Blocks:
*192.1.1.1, 00:01:11 ago, via VLAN 1, generated by OSPF, extern 2
```

Routing Descriptor Blocks	Ю IP ھ ھ à à à ۱ à à ش à BGP ش

3' ЛЮ й **show ip route count** Ƃ ३ '

```
Ruijie# show ip route count
--------- route info ----------
the num of active route: 5
```

4' ЛЮ й **show ip route weight** Ƃ ३ '

```
Ruijie# show ip route weight
------------[distance/metric/weight]-----------
S     23.0.0.0/8 [1/0/2] via 192.1.1.20
S     172.0.0.0/16 [1/0/4] via 192.0.0.1
```

5' ЛЮ й show ip route *network mask* longer-prefixes Ƃ ३ '

```
Ruijie#show ip route 192.1.1.0 255.255.255.0 longer-prefixes

Codes:  C - connected, S - static, R - RIP, B - BGP
        O - OSPF, IA - OSPF inter area
        N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
        E1 - OSPF external type 1, E2 - OSPF external type 2
        i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
        ia - IS-IS inter area, * - candidate default
```

```
Gateway of last resort is no set
C    192.1.1.0/24 is directly connected, GigabitEthernet 1/0/48
C    192.1.1.1/32 is local host.
```

ò Ъ ३ Ô

Ъ ३	
-	-

ò Λ Ô -

1.42 show ip route summary

IO Ъ ३

[illegible] 3 [illegible] [vrf *vrf_name*] **summary** [illegible]

```
Entries: 70
  Connected:6,Static:0,RIP:0,OSPF:0,ISIS:0,BGP:64
```

è Ľ Total Ł ي p Â

ò Ɓ ३ Ô

Ɓ ३	
-	-

ò ⁄ Ô -

1.43 show ipv6 prefix-list

IPv6 **show ipv6 prefix-list** Ɓ ३ Â

show ipv6 prefix-list [*prefix-name*]

ò Ô

prefix-name	IPv6 ّ

ò Ô IPv6 Â

ò Ɓ ३ Ô ã ã ã ã ي

ò Ô ّ ّ Â

ò Ô

```
Ruijie# show ipv6 prefix-list
ipv6 prefix-list p6: 2 entries
permit 13::/20
permit 14::/20
```

ò Ɓ ३ Ô

Ɓ ३	
-	-

ò ⁄ Ô -

1.44 show ipv6 route

IPv6 **show ipv6 route** Ɓ ३ Â

show ipv6 route [[*network/prefix-length*] | **summary** | *protocol* | **weight**]

ò Ô

network/prefix-length	ˆ ⁄ ˜
summary	ˆ ⁄ ˜ ipv6 ţ
protocol	ˆ ⁄ ˜ ‘ **connected**, **static**’ Ю ‘ **bgp**, **isis**, **ospf**, **rip**

weight	ˆ ⁄ ˜

ȍ Ô

ȍ Ƃ ३ Ô à à à à ي

ȍ Ô Ƃ ३ ⁄ Ƛ ك

ȍ Ô ƛЮ ȉ **show ipv6 route** Ƃ ३ '

```
Ruijie(config)# show ipv6 route
IPv6 routing table -  Default - 7 entries
Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP
I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea, IS - ISIS summary
O - OSPF intra area, OI - OSPF inter area,  OE1 - OSPF external type 1, OE2 - OSPF external
type 2
 ON1 - OSPF NSSA external type 1, ON2 - OSPF NSSA external type 2
L      ::1/128  via Loopback, local host
C      10::/64  via Loopback 1, directly connected
L      10::1/128  via Loopback 1, local host
S      20::/64  [20/0] via 10::4, VLAN 1
L      FE80::/10  via ::1, Null0
C      FE80::/64  via Loopback 1, directly connected
L    FE80::2D0:F8FF:FE22:33AB/128  via Loopback 1, local host
```

O	Â ⁄ ٧ ȉ' C' ' L' ك ȳ ' S' ' R' RIP ' B' BGP ' O' OSPF ' ï IS-IS Â
E2	شخ Â ⁄ ٧ ȉ' E1' OSPF شخ' ' E2' OSPF شخ' ' N1' OSPF NSSA شخ 1' N2' OSPF NSSA شخ 2' IA' OSPF Ł . شخ ב

N28TƒC40.4Tf0.78 0 TdL>TƒTT0 1 Tf0.0004 Tc 0.0018 Tw (OSPF NSSA)6ƒC2_0 16Tf0 .473 >TƒTT0 1

N28TƒC5.4TT00.78 0 TdL>TƒTT0 1 Tf0.0004 Tc 0.0018 Tw (OSPF NSSA)6ƒC2_0 16Tf0 .473 >TƒTT0 1 Tf0.0004 43C325.4TT0 1 Tf[<34

N1OSPF NSSA0 Tc 3.473 0 Td<43C32B0501C4>T405324E>-7<0DTT0 1 Tf53.0 TTd<43TJ/TT0 1 TfC ET2

[1/0]	ˀ
via 10::4	Ю IPv6 ھ ک
VLAN 1	Ю

ö Ƃ ३ Ô

-	-

ȍ ʌ Ô -

1.46 show route-map

يي Ɓ ३ **show route-map** Â

show route-map *route-map-name*

ȍ Ô

route-map-name	ˆ ʌ ˜ يي

ȍ Ô يي Â

ȍ Ɓ ३ Ô ȁ ȁ ȁ ȁ يي Â

ȍ Ô يّي يي ŭ يي Â

ȍ Ô

```
Ruijie# show route-map
route-map AAA, permit, sequence 10
Match clauses:
ip address 2
Set clauses:
metric 10
```

route-map	يّي
Permit	يي ŭ permit
sequence 10	يي
Match clauses	ƛ Â يي permit deny ŭ set
Set clauses	ƛ ˎ match ɨ

ȍ Ɓ ३ Ô

Ɓ ३	
-	-

ȍ ʌ Ô -

2 RIP

2.1 address-family

ھ ک RIP ھ ک Ƀ ३ **address-family**

ھ ک Ƀ ३ **no** Â

address-family ipv4 vrf *vrf-name*

no address-family ipv4 vrf *vrf-name*

ö Ô

vrf *vrf-name*	Ƀ ३ VRF ¨ Â

ö Ô a RIP ھ ک Â

ö Ƀ ३ Ô Â

ö Ô **address-family** Ƀ ३ ھ ک ˆ й ' (config-router-af)#˜ Â

VRF RIP VRF RIP Â ڤ Ю Л Ль VRF

CÃÂG5BãÐ2À

╗ Â

auto-summary

no auto-summary

ȍ Ô

-	-

ȍ Ô í ╗ Â

ȍ Ƃ ३ Ô Â

ȍ Ô RIP ÂRIPv1 ŋ RIPv2

Ю Â

RIP ╗ ŋ Â ƒ ƒ a

ȣ ƒ Λ Лъ Â

ъ ъ ў ЛъЮ ƫ ʻ

ʻ RIP ,

ɣ ʻ RIP ,

Ь ʻ Λ ɛ́ a ɨ

╗ Â RIPv2 Λ Лъ ╗ RIPv1 Â

ƫ Лъ Ƃ ३ Â

ȍ Ô ЛъЮ RIPv2 Â

```
Ruijie(config)# router rip
Ruijie(config-router)# version 2
Ruijie(config-router)# no auto-summary
```

ȍ Ƃ ३ Ô	Ƃ ३	
		Ҩ RIP ʼ Â v1 ŋ v2 ʼ
	version	

ȍ Ƀ ২ Ô Â

ȍ Ô ƒ RIP Э í BFD ╗ ł й RIP (RIP ھ ک) BFD
BFD RIP a Ą б Â
≠ Л Ль Ƀ ২ **ip rip bfd** [**disable**] í BFD ╗
Ю **bfd all-interfaces** Ƀ ২ Â

ȍ Ô --

ȍ Ƀ ২ Ô

Ƀ ২	
router rip	í RIP Â
ip rip bfd [**disable**]	RIP í BFD Â

ȍ Л Ô -

2.4 default-information originate

ƒ RIP Л Ль Ƀ ২ **default-information originate** Ƀ ২
Ƀ ২ **no** Л Â

default-information originate [**always**] [**metric** *metric-value*] [**route-map** *map-name*]

no default-information originate [**always**] [**metric**] [**route-map** *map-name*]

ȍ Ô

always	ˆ Л ~ RIP ˚ a ک ŭ ƒ Â
metric *metric-value*	ˆ Л ~ *metric-value* Л ˙ز 1-15 Â
route-map *map-name*	ˆ Л ~ route-map ˚ , route-map

ȍ Ô ’ metric й 1 Â

ȍ Ƀ ২ Ô

ȍ Ô

RIP Â

ò Ô ЛЪЮ RIP Â

```
Ruijie(config-router)# default-information originate always
```

ò Ѣ ҳ Ô

Ѣ ҳ	
ip rip default-information	ƒ ъ
redistribute	è RIP

ò Л Ô -

2.5 default-metric

Ѭ RIP Ѣ ҳ **default-metric** Â Ѣ ҳ **no** Â

default-metric *metric-value*

no default-metric

ò Ô

metric-value	й 1 16 Â *metric-value* 16 й а Л Â

ò Ô й 1 Â

ò Ѣ ҳ Ô Â

ò Ô Ѣ ҳ б Ѣ ҳ **redistribute** Â ÿ ї RIP а а Â ƒ ѣ ї ƒ RIP ѣ Â ї Ѭ RIP default-metric Ѭ ' Ѭ default-metric Ѭ Â а Ѣ ҳ default-metric й 1 Â

ò Ô ЛЪЮ RIP ї ї й 3 Â

```
Ruijie(config)# router rip
Ruijie(config-router)# default-metric 3
Ruijie(config-router)# redistribute static
```

ò Ѣ ҳ Ô

Ѣ ҳ	
redistribute	ÿ ѣ ї ѣ Â

ò Л Ô -

interface-type *interface-number*	(Λ) ţ ف Â

ȍ Ô ЬЖ Â

ȍ Ƃ ३ Ô Â

ȍ Ô ѝ Λ Лȣ ţ Â
Â

ȍ Ô ЛЬЮ RIP ÿ Fastethernet 0/0 172.16
Â

```
Ruijie(config)# router rip
Ruijie(config-router)# network 200.168.23.0
Ruijie(config-router)# distribute-list 10 in fastethernet 0/0
Ruijie(config-router)# no auto-summary
Ruijie(config)#access-list 10 permit 172.16.0.0 0.0.255.255
```

ȍ Ƃ ३ Ô Ƃ ३

rip	(Л) ↑ ㄅ ﻫ rip Â
static	(Л) ↑ ㄅ ﻫ ÿ Â

ö Ô ㄅ Â

ö Ѣ ३ Ô Â

ö Ô Ѣ ३ a Л ㄅ ' ㄅ
' è ㄅ Â

ö Ô ЛЬЮ RIP ㄅ 192.168.12.0/24 Â

```
Ruijie(config)# router rip
Ruijie(config-router)# network 200.4.4.0
Ruijie(config-router)# network 192.168.12.0
Ruijie(config-router)# distribute-list 10 out
Ruijie(config-router)# version 2
Ruijie(config)# access-list 10 permit 192.168.12.0 0.0.0.255
```

ö Ѣ ३ Ô

Ѣ ३	
access-list	Ю Â
prefix-list	Ю Â
redistribute	↑ Â

ö Л Ô -

2.9 exit-address-family

ﻫ ﻫ ﻫ ﻫ Ю **exit-address-family** Ѣ ३ Â
exit-address-family

ö Ô

-	-

ö Ô Ѣ ३ й
A ж i QQ - ¸ ą

ȍ Ƃ ३ Ô

Ƃ ३	
address-family	ھ ھ Â

ȍ ʌ Ô -

2.10 graceful-restart

RIP í (Graceful Restart GR) ╖ Ƃ ३ **graceful-restart** Â
graceful-restart grace-period í grace period ˇ í ╖ Â
Ƃ ३ **no** ѝ Â

graceful-restart [**grace-period** *grace-period*]

no graceful-restart [**grace-period**]

ȍ Ô

graceful-restart	í í (Graceful Restart GR) ╖
grace-period	ˆ ʌ ˜ grace-period
grace-period	ˆ ʌ ˜ GR í Ω Â ѝ 2 n 60s Â ز ѝ 1-1800 Â

ȍ Ô GR Restart Â

ȍ Ƃ ३ Ô Â

ȍ Ô í ╖ اجي RIP aˇ RIP ʌ Ль aˇ Â
í Ω ѝ RIP í RIP í فز ѝ í
RIP RIP í Â í Ω ł RIP GR
RIP Â

graceful-restart grace-period í Ω Â فز RIP
GR í RIP Ω Â a ʌ í
a ή شخ ˙ í Ω فز
GR ą̈ ط فز ł
Â Ль ŭ a í Ω Â ˇ **timers basic** Ƃ ३
í Ω Â
فز RIP í Â

ȍ Ô Ю RIP GR ╖ Ль GR ╖ í Ω ˙

```
Ruijie(config)# router rip
Ruijie(config-router)# graceful-restart grace-period 90
```

ȍ Ƃ ३ Ô

Ƃ ३	
timers basic	RIP ئؤ

ö Ô GR Helper Â VSU GR Restarter GR Helper Â

[illegible]

í RIP RIP Ƒ ३ **ip rip authentication key-chain** Â

Ƒ ३ **no** Â

ip rip authentication key-chain *name-of-keychain*

no ip rip authentication key-chain

ö Ô		

no ip rip authentication mode

ò Ô

text	RIP ù Â
md5	RIP ù MD5 Â

ò Ô ù Â

ò Ѣ ३ Ô Â

ò Ô RIP RIP RIP ŭ RIP Â

a ù Â

˚ MD5 ≠ a ù Â

RIPv1 a RIP RIPv2 Â

ò Ô ЛЪЮ fastEthernet 0/1 RIP ù MD5 Â

```
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if-FastEthernet 0/1)# ip rip authentication mode md5
```

ò Ѣ ३ Ô

Ѣ ३	
ip rip authentication key-chain	í RIP RIP Â RIPv2 RIP Â
ip rip authentication text-password	í RIP RIP Â RIPv2 RIP Â
key chain	Â

ò Л Ô -

2.13 ip rip authentication text-password

í RIP RIP Ѣ ३ **ip rip authentication text-password** Â Ѣ ३ **no** Â **ip rip authentication text-password**

ȍ Ѣ ३ Ô Â

ȍ Ô Ѣ ३ ॐ Ю Â
í RIP ╗ ΛЛЪ Ѣ ३ ≠ ΛЛЪ ^
ł Â
RIPv1 a RIP RIPv2 Â

ȍ Ô ЛЪЮ fastEthernet 0/1 í RIP ѝ hello Â

```
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if-FastEthernet 0/1)# ip rip authentication text-password hello
```

ȍ Ѣ ३ Ô

Ѣ ३	
ip rip authentication mode	ЮЖ RIP Â
ip rip authentication key-chain	í RIP RIP Â RIPv2 RIP Â

ȍ Λ Ô -

2.14 ip rip bfd

RIP í BFD Ѣ ३ **ip rip bfd** [**disable**] Â Ѣ ३ no Э **ip rip bfd** Â
ip rip bfd [**disable**]
n RIP/UDP 36 89 020 1 10.0-07 -0.01P ¶A0314409964194812D01D0 1 15.807 0 0 UDP 0.6q12 0.43773 2 - 0.65.287efB34 9

2.15 ip rip default-information

ƒƫ RIP ƫ Ƃ ३ **ip rip default-information** Â Ƃ ३ **no** ৸ ƒƫ ƫ Â

ip rip default-information **only** **originate** [**metric** *metric-value*]

no ip rip default-information

ȍ Ô

only	ƫ a ƫ ȅ
originate	ƫ ≠ ƫ ȅ
metric *metric-value*	৸ ƫ 1-15

ȍ Ô - Â *metric* ȍ 1 Â

ȍ Ƃ ३ Ô Â

ȍ Ô ƒƫ Ƃ ३ ɨ ÿ ƫ Â ˇ Ю

ip rip default-information n RIP **default-information originate** ƫ Â

ip rip default-information RIP a Ą ˉ ƫ Â

ȍ Ô ЛЬЮ ƒƫ ethernet0/1 Э ƫ Â

```
Ruijie(config)# interface ethernet 0/1
Ruijie(config-if-Ethernet 0/1)# ip rip default-information only
```

ȍ Ƃ ३ Ô

Ƃ ३	
default-information originate	ƒƫ RIP

ȍ ৸ Ô -

2.16 ip rip receive enable

RIP ƒƫ Э RIP Ƃ ३ **ip rip receive enable** Â Ƃ ३ **no** RIP ƒƫ Э RIP Â

ip rip receive enable

no ip rip receive enable

ȍ Ô

-	-

ȍ Ô RIP

ȍ Ƃ ३ Ô Â

ȍ Ô RIP

2.18 ip rip send enable

RIP ƒƫ Ɔ RIP Ƀ ३ **ip rip send enable** Â Ƀ ३ **no** RIP ƒƫ Ɔ RIP Â

ip rip send enable

no ip rip send enable

ȍ Ô

-	-

ȍ Ô RIP

ȍ Ƀ ३ Ô

ȍ Ô RIP ƒƫ Ю Ƀ ३ **no** Â Ƀ ३ Ƀ ३ Â ʌ Ƀ ३ **default** RIP Â

ȍ Ô ЛЬЮ fastEthernet 0/0 RIP Â

```
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if-FastEthernet 0/1)# no ip rip send enable
```

ȍ Ƀ ३ Ô

Ƀ ३	
ip rip receive enable	RIP
passive-interface	RIP

ȍ ʌ Ô -

2.19 ip rip send supernet-routes

RIP ƒƫ Ɔ RIP Ƀ ३ **ip rip send supernet-routes** Â Ƀ ३ **no** RIP ƒƫ Ɔ RIP Â

ip rip send supernet-routes

no ip rip send supernet-routes

ȍ Ô

-	-

ȍ Ô RIP

ȍ Ƀ ३ Ô

ȍ Ô RIPv1 ŭ RIPv2 ط ŭ RIPv1 ÿ ˜ Â Лƫ Ю ƒƫ RIPv2 Ƀ ३

ȍ Ô

ip-address	IP ھ ک
ip-network-mask	ѝ IP ھ ک

ȍ Ô RIP

ȍ Ƀ ३ Ô Â

ȍ Ô Ƀ ३ **ip rip summary-address** ف Ю ھ ک ÂRIP
Â Â
Ƀ ३ ز a a Â

ȍ Ô ЉЮ RIPv2 Â fastEthernet 0/1 ٹ ɨ
172.16.0.0/16 Â

[redacted]

ȍ Ô í RIP ╗

ȍ Ƃ ३ Ô Â

ȍ Ô RIP ╗ ^ TRIP Triggered RIP˜ RIP ƒز ھه ^ WAN Wide Area Network˜ Э
ў Â
í RIP ╗ RIP a ̈Ą ƒز ЛЬЮ Y ̊ RIP ą̃
ھه ‘
Â
RIP ∧ Â
∧ Â
í Â
∧ RIP ثز p ƒز ھه Э ╗ p Â
∧ Лъ **retransmit-timer** p **retransmit-count** p p Â
ƒز ЛЬЮ Ю í ╗ ‘ A. ƒز ’ B. ƒز Лъ Â
ƒز PPP ä ä X.25 Э í ╗ ’
ƒز ╗ Э í ╗ ╗ ŭ ∧ ’
̊ í ╗ ŭ ╗ ’
a ╗ б BFD RIP ╗ ̊ í ’
í ╗ RIP ‘ RIP RIP ’
í ╗ ŭ í ھه ╗ ^ **validate-update-source˜**
ھه Â

ȍ Ô ЛЬЮ í RIP ╗ Update Request ä Update Response
й 10s й 18 Â

```
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if-FastEthernet 0/1)# ip rip triggered
Ruijie(config-if-FastEthernet 0/1)# ip rip triggered retransmit-timer 10
Ruijie(config-if-FastEthernet 0/1)# ip rip triggered retransmit-count 18
```

ȍ Ƃ ३ Ô

Ƃ ३	
show ip rip database	RIP
show ip rip interface	RIP
ip rip split-horizon	RIP ↑

ȍ ∧ Ô -

2.24 ip rip v2-broadcast

RIP version 2 Лъ ƒز Э ∧ Лъ Ƃ ३ **ip rip v2-broadcast** Ƃ ३ Â Ƃ ३ **no** Â

ip rip v2-broadcast

no ip rip v2-broadcast

ȍ Ô

-	-

passive-interface	й passive

ȍ Л Ô -

2.26 network

Ѣ RIP ȟ Ƃ ३ **network** Â Ƃ ३ **no** Ѣ Â

network *network-number* [*wildcard*]

no network *network-number* [*wildcard*]

ȍ Ô

network-number	Â й IP ھ Л n RIP Â
wildcard	Ѣ IP ھ æ 0 1 a Â

ȍ Ô -

ȍ Ƃ ३ Ô Â

ȍ Ô Л Лȟ *network-number* n *wildcard* ڤ ھ ڭ ھ б RIP Â *wildcard* RGOS ھ ڭ ڤ ھ ڭ ھ б RIP Â ھ ڤ RIP Ѣ Л Лȟ RIP RIP Â

ȍ Ô ЛЬЮ Ѣ б RIP ڤ 192.168.12.0/24 n 172.16.0.0/24 ڭ ھ б RIP ،

```
Ruijie(config)# router rip
Ruijie(config-router)# network 192.168.12.0
Ruijie(config-router)# network 172.16.0.0 0.0.0.255
```

ȍ Ƃ ३ Ô

Ƃ ३	
-	-

ȍ Л Ô -

2.27 offset-list

╗ RIP metric Л Лȟ Ƃ ३ **offset-list** Ƃ ३ **no** offset

offset-list {*access-list-number* | *name*} {**in** | **out**} *offset* [*interface-type interface-number]*

aID 7fac <</M25| metric0.013 E¯7 Â°Ð } Û nA“KÂ ë><

ȍ	Ô		
		access-list-number | *name*	

Â **output-delay** Ƃ ३ ╗ æ
Â

ȍ Ô ЛЪЮ RIP й 30

```
Ruijie(config)# router rip
Ruijie(config-router)# output-delay 30
```

ȍ Ƃ ३ Ô

Ƃ ३	
-	-

ȍ ʌ Ô -

2.29 passive-interface

ʌ ƒƫ Э ╗ Ƃ ३ **passive-interface** Ƃ ३ Â Ƃ ३ **no**
í ╗ Â

passive-interface {**default** | *interface-type interface-num*}

no passive-interface {**default** | *interface-type interface-num*}

ȍ Ô

default	й passive
interface-type interface-num	ƺ б

ȍ Ô Ю й passive Â

ȍ Ƃ ३ Ô Â

ȍ Ô **passive-interface default** Ƃ ३ й passive ʌ Лъ **no passive-interface** *interface-type interface-num* Ƃ ३ й passive Â
й passive ł a Ąą RIP Ÿ RIP Â
ƒƫ Э ʌ Лъ neighbor Ƃ ३ ąą Â
ŭ n Ƃ ३ ip rip send enable n ip rip receive enable Â

ȍ Ô ЛЪЮ й passive ł ethernet0/1 й passive

```
Ruijie(config-router)# passive-interface default
Ruijie(config-router)# no passive-interface ethernet 0/1
```

ȍ Ƃ ३ Ô

Ƃ ३	
ip rip receive enable	RIP
ip rip send enable	RIP

ȍ ʌ Ô -

2.30 redistribute

ţ ڤڎ Ю **redistribute** Ƒ ३ Â ٨ ţ Ƒ ३ **no** Â

redistribute { **connected** | **static**} [**metric** *metric-value*] [**route-map** *route-map-name*]

no redistribute { **connected** | **static**} [**metric** *metric-value*] [**route-map** *route-map-name*]

ȍ Ô

ȍ Ô

-	-

ȍ Ô RIP فخ Â

ȍ Ֆ ३ Ô Â

ȍ Ô RIP ЦЖ Â Э فخ

async default routing Â

ȍ Ô ЛЬЮ RIP Â

```
Ruijie(config)# router rip
Ruijie(config-router)#
```

ȍ Ֆ ३ Ô

Ֆ ३	
network (**RIP**)	ЦЖ RIP Â

ȍ Л Ô -

2.32 show ip rip

RIP لجي **show ip rip** Â

show ip rip [**vrf** *vrf-name*]

ȍ Ô

vrf *vrf-name*	ˆ Л ˜ VRF RIP

ȍ Ô -

```
Redistributing: connected
Default version control: send version 2, receive version 2
Interface              Send  Recv
FastEthernet 0/1       2     2
FastEthernet 0/2       2     2
Routing for Networks:
192.168.26.0 255.255.255.0
192.168.64.0 255.255.255.0
Distance: (default is 50)
Graceful-restart disabled
```

2 ЛЪЮ vrf RIP اجي '

```
Ruijie(config-router)# sh ip rip vrf 1
VRF 1  VRF-id:1
Routing Protocol is "rip"
Sending updates every 30 seconds
Invalid after 180 seconds, flushed after 120 seconds
Outgoing update filter list for all interface is: not set
Incoming update filter list for all interface is: not set
Default redistribution metric is 1
Redistributing:
Default version control: send version 1, receive any version
Routing for Networks:
Distance: (default is 120)
Graceful-restart disabled
```

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ö Ô ھ ک فخ RIP Â ھ ک
ł ۱ й ھ ک ≠ ÿ Â

ö Ô 1' ЛЬЮ RIP ھ ک Â

```
Ruijie# show ip rip database
192.168.1.0/24    auto-summary
192.168.1.0/30    directly connected, Loopback 3
192.168.1.8/30    directly connected, FastEthernet 0/1
192.168.121.0/24    auto-summary
192.168.121.0/24    redistributed
[1] via 192.168.2.22, FastEthernet 0/2
192.168.122.0/24    auto-summary
192.168.122.0/24
    [1] via 192.168.4.22, Serial 0/1  00:28    permanent
```

2' ЛЬЮ RIP 192.168.121.0/24 ھ ک Â

```
Ruijie# show ip rip database 192.168.121.0 255.255.255.0
192.168.121.0/24    redistributed
[1] via 192.168.2.22, FastEthernet 0/1
```

3' ЛЬЮ RIP شخ

```
Ruijie# show ip rip database count
                All     Valid   Invalid
database        5       5       0
auto-summary    5       5       0

connected       1       1       0
rip              4       4       0
```

ö Ƃ ३ Ô

Ƃ ३	
show ip rip	Â

ö ۱ Ô -

2.34 show ip rip external

RIP ţ **show ip rip external** Ƃ ३ Â

show ip rip external [**bgp** | **connected** | **isis** [*process-name*] | **ospf** <*1-65535*>| **static**] [**vrf** *vrf-name*]

ö Ô

bgp | connected | isis | ospf | static	ˆ ۱ ˜ ţ

vrf *vrf-name*	ˆ ʌ ˜ VRF RIP
process-name	ISIS ˝
<1-65535>	OSPF

ȍ Ô -

ȍ Ƀ ३ Ô ȁ ȁ Â

ȍ Ô -

ȍ Ô ЛЬЮ RIP ˆ Â

```
Ruijie# show ip rip external connected
Protocol connected route:
[connected] 1.0.0.0/8 metric=0
nhop=0.0.0.0, if=2
[connected] 3.0.0.0/8 metric=0
nhop=0.0.0.0, if=16391
[connected] 4.4.0.0/16 metric=0
nhop=0.0.0.0, if=16388
[connected] 5.0.0.0/8 metric=0
nhop=0.0.0.0, if=16386
[connected] 192.168.195.0/24 metric=0
nhop=0.0.0.0, if=1
```

ȍ Ƀ ३ Ô

Ƀ ३	
show ip rip	Â

ȍ ʌ Ô -

2.35 show ip rip interface

RIP show ip rip interface Â

show ip rip interface [**vrf** *vrf-name*] [*interface-type interface-number*]

ȍ Ô

vrf *vrf-name*	ˆ ʌ ˜ VRF RIP
[*interface-type interface-number*]	ˆ ʌ ˜ شخ ɲ

ȍ Ô -

ȍ Ƀ ३ Ô ȁ ȁ Â

ȍ Ô Ƀ ३ RIP a ڤز RIP a Â

```
2.2.2.111/24, next update due in 14 seconds
```

ȍ Ƀ ३ Ô

Ƀ ३	
show ip rip	

ȍ ʌ Ô -

2.36 show ip rip peer

RIP ȕ ˜ RIP (RIP ھ ک) Ƚ
ȕ RIP RIP **show ip rip peer** Â
show ip rip peer [*ip-address*] [**vrf** *vrf-name*]

ȍ Ô

ip-address	ˆ ʌ ˜ RIP ھ ک
vrf *vrf-name*	ˆ ʌ ˜ VRF RIP

ȍ Ô -

ȍ Ƀ ३ Ô ȁ ȁ Â

ȍ Ô Ƀ ३ RIP a ڤ RIP a Â

ȍ Ô ȽЮ RIP Â

```
Ruijie# show ip rip peer
Peer 192.168.3.2:
  Local address: 192.168.3.1
  Input interface: GigabitEthernet 0/2
  Peer version: RIPv1
  Received bad packets: 3
  Received bad routes: 0
  BFD session state up
```

ȍ Ƀ ३ Ô

Ƀ ३	
show ip rip	

ȍ ʌ Ô -

2.37 timers basic

RIP Ƀ ३ **timers basic** Â Ƀ ३ **no** Â
timers basic *update invalid flush*
no timers basic

ò Ô

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ȍ Ô í ھ ھ Â

ȍ Ƀ ३ Ô Â

ȍ Ô Λ Л RIP ھ ھ Â й RIP
ॅ IP Â
ফ Э ʅ RIP ھ ھ a ŭ̆
Ƀ ३ **validate-update-source** Â
ip unnumbered RIP a ھ ھ a ŭ̆
Ƀ ३ **validate-update-source** Â

ȍ Ô ЛЬЮ ھ ھ Â

```
Ruijie(config)# router rip
Ruijie(config-router)# no validate-update-source
```

ȍ Ƀ ३ Ô

ȍ Ƒ ३ Ô

Ƒ ३	
ip rip receive version	Ƒ RIP ƒƨ Ɔ ١ RIP Â
ip rip send version	Ƒ RIP ƒƨ Ɔ ١ RIP Â
show ip rip	**rip** Â

ȍ ٨ Ô -

3 RIPNG

3.1 default-metric

Ƙ ǂ RIPng Ƀ ३ **default-metric** Â Ƀ ३ **no** Â

default-metric *metric*

no default-metric

ȍ Ô

metric	й 1 16 Â metric 16 RGOS й a Λ Â

ȍ Ô й 1

ȍ Ƀ ३ Ô

ȍ Ô Ƀ ३ б Ƀ ३ **redistribute** ˇ Â ǂ RIP a ˇ ش a Â ز ف Ƙ ǂ ف RIP ه Â Ƙ RIPng **default-metric** Ƙ ’ Ƙ **default-metric** Ƙ Â a Ƀ ३ **default-metric** й 1 Â

ȍ Ô ǂ RIP й 3 Â

```
Ruijie(config-router)# default-metric 3
Ruijie(config-router)# redistribute static
```

ȍ Ƀ ३ Ô

Ƀ ३	
redistribute	ǂ

ȍ Λ Ô -

3.2 distance

RIPng Ƀ ३ **distance** Â Ƀ ३ **no** Â

distance *distance*

no distance

ȍ Ô

distance	RIPng <1-254>

ȍ Ô й 120

ȍ Ƒ ३ Ô

ȍ Ô й RIPng Ƒ ३ Â

ȍ Ô RIPng й 160

```
Ruijie(config)# ipv6 router rip
Ruijie(config-router)# distance 160
```

ȍ Ƒ ३ Ô

3.4 ipv6 rip default-information

IPv6 RIPng Ƀ ३ **default-information** Â Ƀ ३ no Â

ipv6 rip default-information { **only** | **originate** } [**metric** *metric-value*]

no ipv6 rip default-information

ö Ô

only	ƚ ipv6 a ƚ è
originate	ƚ ipv6 ≠ ƚ è
metric *metric-value*	৲ ʼnr 1-15 Â й 1 Â

ö Ô

ö Ƀ ३ Ô

ö Ô ƒƣ Ɔ Ƀ ३ ɨ ÿ ƚ IPv6 a ╗ n RIPng Ú

ö Ô $D ३ б RIPng Âفذ $D ३ RIPng
$D ३ RIPng ö ᴱ ३ Â

ö Ô ethenet 0/0 ╗ RIPng Â

```
Ruijie(config)# interface ethernet 0/0
```

ipv6 router rip

no ipv6 router rip

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ȍ ʌ Ô -

3.9 redistribute

è ǂ RIPng Ƃ ३ **redistribute** Ƃ ३ Â Ƃ ३ **no** ʌ ǂ Â

redistribute { **connected | static** } [**metric** *metric-value* | **route-map** *route-map-name*]

no redistribute { **connected | static** } [**metric** *metric-value* | **route-map** *route-map-name*]

ȍ Ô

connected	ÿ ǂ
static	ÿ ǂ
metric *metric-value*	ǂ ɨ metric
route-map *route-map-name*	ǂ

ȍ Ô ǂ شخ ’

ǂ ɨ metric ȉй 1’

a route-map Â

ȍ Ƃ ३ Ô

ȍ Ô Ƃ ३ ǂ RIPng Â

ǂ ثز ȉй a˚

a˚ Â RIP اجي OSPF اجي ثز

ʌ Â

ǂ ǽ ÿ ١ ǂ RIPng Â

ȍ Ô ÿ ǂ يي *mymap* ȉй 8 Â

```
Ruijie(config)# ipv6 router rip
Ruijie(config-router)# redistribute static route-map mymap metric 8
```

ȍ Ƃ ३ Ô

Ƃ ३	
default-metric	ЬЖ ǂ è RIPng
distribute-list	RIPng ǂ

ȍ ʌ Ô -

3.10 show ipv6 rip

RIPng n **show ipv6 rip** Ƃ ३ Â

show ipv6 rip

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ò Ð ¾ Ô ä

ò Ô -

ò Ô

```
Ruijie# show ipv6 rip
Routing Protocol is "RIPng"
  Sending updates every 10 seconds with +/-50%, next due in 8 seconds
  Timeout after 30 seconds, garbage collect after 60 seconds
  Outgoing update filter list for all interface is:
    distribute-list prefix aa out
  Incoming update filter list for all interface is: not set
  Default redistribution metric is 1
  Default distance is 120
  Redistribution:
      Redistributing protocol connected route-map rm
      Redistributing protocol static
      Redistributing protocol ospf 1
  Default version control:  send version 1, receive version 1
  Interface                 Send   Recv
      VLAN 1                1      1
      Loopback 1            1      1
  Routing Information Sources:
      None
```

ò Ð ¾ Ô

Ð ¾	
show ipv6 rip	RIPng б

ò Ô -

3.11 show ipv6 rip database

RIPng **show ipv6 rip database** Ð ¾ Â **show ipv6 rip database**

ò Ô

-	-

ò Ô -

ö ƀ ३ Ô ä

ö Ô ƀ ३ RIPng Â

ö Ô

```
Ruijie# show ipv6 rip database
Codes: R - RIPng,C - Connected,S - Static,O - OSPF,B - BGP
sub-codes:n - normal,s - static,d - default,r - redistribute,
          i - interface, a/s - aggregated/suppressed
S(r)   2001:db8:1::/64, metric 1, tag 0
          Loopback 0/::
S(r)   2001:db8:2::/64, metric 1, tag 0
          Loopback 0/::
C(r)   2001:db8:3::/64, metric 1, tag 0
          VLAN 1/::
S(r)   2001:db8:4::/64, metric 1, tag 0
          Null 0/::
C(i)   2001:db8:5::/64, metric 1, tag 0
          Loopback 1/::
S(r)   2001:db8:6::/64, metric 1, tag 0
          Null 0/::
```

ö ƀ ३ Ô

ƀ ३	
-	-

ö ʌ Ô -

3.12 split-horizon

í RIPng ţ ╗ ƀ ३ **split-horizon** Â ƀ ३ **no** RIP ţ ╗ Â í ţ ƀ ३ **split-horizon poisoned-reverse** ƀ ३ **no** ʌ ţ Â

split-horizon [**poisoned-reverse**]

no split-horizon [**poisoned-reverse**]

ö Ô

poisoned-reverse	í ţ

ö Ô й í a ţ Â

ö ƀ ३ Ô

ö Ô ƒ ţ ʌ Л ÿ ˜ ъ ' ţ ÿ ˜ ъ *metric* й 16 Â

RIPng α̈ ϕϑ ϯ Â a RIPng ŭ
í ϯ Λ Лъ **show ipv6 rip** Ѣ ҇ Â

ъ Ô RIPng ϯ ╗ Â

```
Ruijie(config)# ipv6 router rip
Ruijie(config-router)# no split-horizon
```

ъ Ѣ ҇ Ô

Ѣ ҇	
-	-

ъ Λ Ô -

3.13 timers

RIPng Ѣ ҇ **timers** Â Ѣ ҇ **no** Â
timers *update invalid flush*
no timers

ъ Ô

update	Лъ Â update Ѭ Ω invalid n flush æ Â 30 Â
invalid	Лъ ÿ Â invalid Ѭ ŭ Λ й Â й Ь ϕϑ Λ й invalid ' invalid æ Â Invalid й 180 Â
flush	Лъ ÿ RIPng invalid Â flush invalid Â flush й 120 Â

ъ Ô Ю й 30 й 180 й 120 Â

ъ Ѣ ҇ Ô

ъ Ô Лъ Э Λ ╗ Лъ Â ϕϑ Э RIPng
Â a RIP Â
RIPng Λ Лъ **show ipv6 rip** ҇ Â

2Mbps

ъ Ô RIP 10 Â 30 Λ й
invalid ' invalid ѣ 90 Â

```
Ruijie(config)# ipv6 router rip
Ruijie(config-router)# timers 10 30 90
```

ȍ Ƀ ३ Ô

Ƀ ३	
show ipv6 rip	RIPng б
show ipv6 rip database	RIPng

ȍ ʌ Ô -

4

4.1 ip local policy route-map

كه Ƀ ३ **ip local policy route-map** Â Ƀ ३ **no**

Â

ip local policy route-map *route-map*

no ip local policy route-map

ȍ Ô

route-map	ي Â

ȍ Ô Â

ȍ Ƀ ३ Ô Â

ȍ Ô Ƀ ३ كه IP كه IP a ৲ Ƀ ३ Â

ي ي Â ي

Ƕ 1 n Â ɨ

a ي ي

Ƕ Â

ȍ Ô Ɓ 192.168.217.10 ȍ كه ھه 10.0.0.1 Â

1 Ƕ IP ACL

```
Ruijie(config)#access-list 1 permit host 192.168.217.10
```

2 Ƕ ي

```
Ruijie(config)#route-map lab1 permit 10
Ruijie(config-route-map)#match ip address 1
Ruijie(config-route-map)#set ip next-hop 10.0.0.1
Ruijie(config-route-map)#exit
```

3 فد Ɔ

```
Ruijie(config)#ip local policy route-map lab1
```

ȍ Ƀ ३ Ô

Ƀ ३	
access-list	Ƀ
route-map	Ƀ ي
set ip next-hop	Ƀ Ю
set ip tos	IP TOS
set ip dscp	IP DSCP
match ip address	

ȍ ⁄ Ô -

4.2 ip policy

set ip [**default**] **nexthop** Ю ङ ङ Ю **ip policy** Â Ƒ ३ **no** Â

ip policy { **load-balance | redundance** }

no ip policy

ȍ Ô

load-balance	ङ
redundance	

ȍ Ô Â

ȍ Ƒ ३ Ô Â

ȍ Ô ङ **set ip next-hop** ⁄ Ɱ Ю ⁄ Ɱ Ю , ङ Ю WCMP ⁄ Ɱ 8 Ȣ Ƣ Ю ECMP ⁄ Ɱ 32 Ɒ

```
Ruijie(config-if)#ip policy route-map lab1
Ruijie(config-if)#exit
Ruijie(config)#ip policy redundance
```

ȍ Ƃ ३ Ô

Ƃ ३	
-	-

ȍ ʎ Ô -

4.3 ip policy route-map

ƒ Ƃ ३ **ip policy route-map** Ƃ ३ **no** Э
Â

ip policy route-map *route-map*

no ip policy route-map

ȍ Ô

route-map	ّي Â

ȍ Ô Â

ȍ Ƃ ३ Ô Â

ȍ Ô ƒ Э
a Â

ي Âي ي
Ƕ 1 p Â ɨ
a ˎ ي ˎ ي
Ƕ Â
Э ّƒ ي Э ي ɨ ي
يÂ

ȍ Ô Ɲ FastEthernet 0/0 ھ ھ ك й 10.0.0.1 Ю й
196.168.4.6 ھ ھ ك й 20.0.0.1 Ю й 196.168.5.6 ȣ Â
1 IP ACL

```
Ruijie(config)#access-list 1 permit host 10.0.0.1
Ruijie(config)#access-list 2 permit host 20.0.0.1
```

2 Ƕ ي

```
Ruijie(config)#route-map lab1 permit 10
Ruijie (config-route-map)#match ip address 1
Ruijie(config-route-map)#set ip next-hop 196.168.4.6
Ruijie(config-route-map)#exit
Ruijie(config)#route-map lab1 permit 20
Ruijie(config-route-map)#match ip address 2
```

```
Ruijie(config-route-map)#set ip next-hop 196.168.5.6
Ruijie(config-route-map)#exit
```

3 ف Э

```
Ruijie(config)#interface FastEthernet 0/0
Ruijie(config-if)#ip policy route-map lab1
Ruijie(config-if)#exit
```

ö Ֆ ३ Ô

Ֆ ३	
access-list	HX

TP AD 13 9D 20 1 10 0 -1W 0.007 41 16 E41D412A2B 943 2B5 DEFDE 48 2 1 1 0.602 g119.46 645.24119.4 0.48 ref539.46 645.645

```
Ruijie(config)# ipv6 access-list 2
Ruijie(config-ipv6-acl )# permit ipv6 2000::1 any
```

2 ⊢⊼ ⊻

```
Ruijie(config)# route-map lab1 permit 10
```

Ⱨ 1 ɲ Â ɨ

a ˎ ي ˎ ي

ȣ Ô

route-map-name	̈ й *route-map-name* يي ١ فخ Э

ȣ Ô -

ȣ Ƀ ३ Ô Â

ȣ Ô й Λ Лъ Ƀ ३ Â

ȣ Ô Â

```
Ruijie# show ip policy
Banlance Mode: redundance
Interface          Route map
local              test
FastEthernet 0/0   test
```

ȣ Ƀ ३ Ô

Ƀ ३	
ip policy route-map	فخ Э Â
ip local policy route-map	فخ Э Â

ȣ Λ Ô -

4.8 show ipv6 policy

IPv6 Э يي ̈ Â

show ipv6 policy [*route-map-name*]

ȣ Ô

route-map-name	̈ й *route-map-name* يي ١ فخ Э

ȣ Ô -

ȣ Ƀ ३ Ô Â

ȣ Ô й ١ Ь IPv6 Λ Лъ Ƀ ३

ȣ Ô Э Â

```
Ruijie#show ipv6 policy
Banlance Mode: redundance
Interface          Route map
VLAN 1             RM_for_Vlan_1
VLAN 2             RM_for_Vlan_2
```

Banlance Mode	
Interface	ّ
Route map	Э ّيي

ö Ƀ ३ Ô

Ƀ ३	
show route-map	يي Â

ö /ı Ô -

5 VRF

5.1 ip vrf

VRF’ è no VRF Â

ip vrf *vrf-name*

no ip vrf *vrf-name*

ò Ô

vrf-name	VRF “ Â 31 Â

ò Ô -

ò Ô

ò Ô VRF IPv4

ò Ô VRF

```
Ruijie(config)# ip vrf redvrf
Ruijie(config-vrf)#
```

ò Ô

-	-

ò /l Ô -

5.2 ip vrf forwarding

VRF Â no Â

ip vrf forwarding *vrf-name*

no ip vrf forwarding *vrf-name*

ò Ô

vrf-name	VRF “

ò Ô IO a VRF

ò Ô

ò Ô ƒ VRF Э VRF ˚ í IPv6 ƒ Э IPv6 Â

ò Ô ╗ VRF

```
Ruijie(config-if)# ip vrf forwarding redvrf
```

ò Ƃ ३ Ô

Ƃ Q 1• NÎ3Eg % %¹™G #™Q`H™”p,5(A˜à•! ”i& ‰	
-	-

ò ⁄ Ô -

5.3 show ip vrf

VRF

show ip vrf [**brief** | **detail** | **interfaces**] [

1 IGMP Snooping

1.1 clear ip igmp snooping gda-table

╟ ৲

clear ip igmp snooping gda-table

ȍ ৲ Ô

৲	
-	-

ȍ Ô -

ȍ Ƃ ३ Ô

ȍ ᴳ Ô IGMP Snooping ৲ è ̂ ȕ̈ VLAN ৴ ȁ ک ھ ȁ ৴ ȁ Ш ৴ Â
VLAN ৴ p̲ ک ھ ڈ У ɞ У э ৲ Â
У э ৲ è ৴ Лȣ ̂ ȕ̈ э ৴ˆ ৴ ╟ ৴ ৴˜ Â
৴ a˵ ◻ Â
У э ৲ è ৴ Лȣ ̂ ȕ̈ э Ш ৴ˆ ৴ ╟ Ш ৴ Ш ৴˜ Â Ш ৴ a˵ ◻ Â ᴳ
clear ip igmp snooping gda-table Ƃ ३ a ї Ш ৴ Â

ȍ w ᴿ Ô

```
Ruijie# clear ip igmp snooping gda-table
```

ȍ ˜Ω Ƃ ३ Ô

Ƃ ३	
ip igmp snooping vlan static interface	Ш ৴

ȍ ৴ Ô -

1.2 debug igmp-snp

ᴳ **debug** Ƃ ३ б IGMP Snooping ˜Ω ˜Ω Â ᴳ **undebug** Ƃ ३ ˜Ω ˜Ω Â

debug igmp-snp[**event** | **packet** | **msf** | **warning**]

undebug igmp-snp[**event** | **packet** | **msf** | **warning**]

ȍ ৲ Ô

৲	
event	IGMP Snooping ˜Ω Y˘ ৻
packet	IGMP Snooping ˜Ω ৻
msf	IGMP Snooping б Ӌ ৻
warning	IGMP Snooping ˜Ω ϟ ৻

ȍ Ô -

ȍ Ƃ ३ Ô

ȍ G Ô a ˙ ı ৲ ˘ ‡ б IGMP Snooping ˜Ω ˜Ω Â

ȍ w R Ô

```
Ruijie# debug igmp-snp
```

ȍ ˜Ωƃ ३ Ô

Ƃ ३	
-	-

ȍ ৴ Ô -

1.3 deny

ȝ

deny

ȍ ৲ Ô

৲	
-	-

ȍ Ô profile **deny**

ȍ Ƃ ३ Ô profile

ȍ G Ô profile У ľ ȝ Ł˘ k ȅ ╗ Â ˙

1˘ G **ip igmp profile** Ƃ ३ … У ə profile˘ ȫ profile

2˘ G **range** Ƃ ३ Ł У ə ȝ

3˘ G **permit** Ƃ ३ ĭ ȝ ȟ ȝ ȟ ȝ ȟ à G **deny** Ƃ ३ ȝ ȟ Â **deny** Â

ȍ w R Ô profile 1˘ 224.2.2.2˙ 224.2.2.244 Â

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

ȍ ˜Ωƃ ३ Ô

Ƃ ३	
ip igmp profile	… У ə profile
range	Ł ȝ
permit	ĭ ȝ

ȍ ৴ Ô -

1.4 ip igmp profile

… У э profile˘ ώ profile Â G Ƃ ३ **no** ˘ ʔ profile Â

ip igmp profile *profile-number*

no ip igmp profile *profile-number*

ȍ ৲ Ô

৲	
profile-number	profile ৸˘ ন 1-1024

ȍ Ô -

ȍ Ƃ ३ Ô ȍ

ȍ G Ô profile У ľ ঠ Ł˘ k ȅ ╗ Â ˙

1˘ G **ip igmp profile** Ƃ ३ … У э profile˘ ώ profile

2˘ G **range** Ƃ ३ Ƙ У э ন

3˘ G **permit** Ƃ ३ ĭ ন ঞ ঠ ȁ G **deny** Ƃ ३ ন ঞ Â **deny** Â

ȍ w R Ô profile 1˘ ĭ 224.2.2.2˙ 224.2.2.244 Â

```
Ruijie(config)# ip igmp profile 1
Ruijie(config-profile)# range 224.2.2.2 224.2.2.244
Ruijie(config-profile)# permit
```

ȍ ˘Ω Ƃ ३ Ô

Ƃ ३	
range	Ƙ ন
permit	ĭ ন
deny	ন

ȍ ৸ Ô -

1.5 ip igmp snooping

ȍ ί ╟ IGMP Snooping ȅ Â G Ƃ ३ **no** ˘Ω IGMP Snooping Â

ip igmp snooping { **ivgl | svgl | ivgl-svgl** }

no ip igmp snooping

ȍ ৲ Ô

৲	
ivgl	IVGL
svgl	SVGL
ivgl-svgl	IVGL-SVGL

ȍ Ô ˘Ω IGMP Snooping

ȍ Ƃ ३ Ô ȍ

ȍ ᴳ Ô

ȶ IVGL Ю ⅃ VLAN ц Â ў ৲ б ц˘ У э VLAN
৲ ' Ц ȶ ↑ ˙ ı У э VLAN ˘ ৲ ˘ VLAN ȷ Ш
৲ ৲ Â

ȶ SVGL Ю ⅃ VLAN ў ˜Ω м˘ У ˘ ў ৲ Лъ VLAN Â У э
shared VLAN˜ й VLAN1˜ ˘ Ѳ shared VLAN ˘ ৲ Лъ ৲ ھ ھ
Ш ৲˘ ҭ Ш ৲ ৲ ц ⅃ э VLAN Â profile ,↑ У э ھ ھ ȶ SVGL˘ Ѳ ȶ
ȷ ৲ Лъ VLAN ৲˘ ȶ x Â

ȶ IVGL-SVGL Ю IVGL ȁSVGL ч Â Profile ,↑ У э ھ ھ ȶ SVGL˘
ȶ ȶ ȷ SVGL ˘ ȶ IVGL Â

SVGL IVGL-SVGL IP

PIM Snooping IGMP Snooping IVGL IVGL-SVGL **no ip igmp snooping** IGMP Snooping PIM Snooping
PIM Snooping

ȍ w ᴿ Ô ᴿ 1˙ ї ╟ IGMP Snooping IVGL Â

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

ᴿ 2˙ ї ╟ IGMP Snooping SVGL ˘ shared VLAN й VLAN1˘ SVGL ȶ й profile 1 Â

```
Ruijie(config)# ip igmp snooping svgl
Ruijie(config)# ip igmp snooping svgl profile 1
```

ᴿ 3˙ ї ╟ IGMP Snooping IVGL-SVGL ˘ shared VLAN й VLAN1˘ SVGL ȶ й profile 1 Â

```
Ruijie(config)# ip igmp snooping ivgl-svgl
Ruijie(config)# ip igmp snooping svgl profile 1
```

ȍ ˜Ω Ƃ ३ Ô

Ƃ ३	
ip igmp snooping svgl vlan	У э Shared VLAN Â
ip igmp snooping svgl profile	У э SVGL ˜Ω profile Â

ȍ ৲ Ô -

1.6 ip igmp snooping dyn-mr-aging-time

╟ ৲ ◘ Â ᴳ Ƃ ३ **no** ḥ Â

ip igmp snooping dyn-mr-aging-time *seconds*

no ip igmp snooping dyn-mr-aging-time

ȍ ৲ Ô

৲	

seconds	╟ ৲ ◘ ˘ ` æ й ˘ ৲ ḣ ز 1-3600ʊ ḣ 300

ȍ Ô ৲ ḣ

ȍ Ƒ ३ Ô ȫ

ȍ ᴳ Ô ╟ ৲ ڤ è ◘ ṃ ʃ IGMP PIM Hello ˘ Ɱ
৲ ÿ ৲ ʷ è ̃ Â
ڤ í ╟ ˜ ৲ ╗ ɑ Ю ʊ ৲ Лъ Ƒ ३ ╟ ৲ ◘ Â
◘ ৲ ˚ ৲ ╗ Ц ̃ Â

ȍ w ᴿ Ô ╟ ৲ ◘ й 100s Â

```
Ruijie(config)# ip igmp snooping dyn-mr-aging-time 100
```

ȍ ʔΩƑ ३ Ô

Ƒ ३	
-	-

1.8 ip igmp snooping filter

8 ৻ ╗ ώ Â G Ƀ ३ **no** ৻ 8 Â

ip igmp snooping filter *profile-number*

no ip igmp snooping filter *profile-number*

ȍ ৻ Ô

৻	
profile-number	profile ৻˘ ৻ ḣ ɷ 1-1024

DŽ

Snooping Ш ৲ è ĩ Â Ƒ ३ ˘ ł ĵ IGMP ╗ ώ ╟ Ш ৲ ◘ ۿ ḣ ѝ host-aging-time Â ۿ Ю У ĵ ╗ ώ ˘ ṃ í ╟ Ш ৲ ۿ a ̥ Â

ȍ w R Ô IGMP ╟ ৲ ◘ ѝ 30s

```
Ruijie(config)# ip igmp snooping host-aging-time 30
```

ȍ ̃Ω Ƒ ३ Ô

Ƒ ३	
-	-

ȍ ৲ Ô -

1.10 ip igmp snooping limit-ipmc

ѝ VLAN/ ۵ ۵ IP Â G Ƒ ३ **no** ĩ Â

ip igmp snooping limit-ipmc vlan *vid* **address** *group-address* **server** *source-address*

no ip igmp snooping limit-ipmc vlan *vid* **address** *group-address* **server** *source-address*

ȍ ৲ Ô

1.11 ip igmp snooping max-groups

8 ৲ ╟ ╗ ώ Â Ƀ ३ no ৲ 8 Â

ip igmp snooping max-groups *number*

no ip igmp snooping max-groups

ȍ ৲ Ô ৲

no ip

1.14 ip igmp snooping preview interval

Â G Ƀ ३ **no** ḣ Â

ip igmp snooping preview interval *seconds*

no ip igmp snooping preview interval

ȍ ৻ Ô

৻	
seconds	˘ ` Æ ȉ ˘ ৻ ḣ ȝ 1-300 ḣ 60

ȍ Ô ৻ ḣ

ȍ Ƀ ३ Ô ȫ

ȍ G Ô -

ȍ w R Ô ȉ ˘ 100 Â

Ȍ G

ᴿ 2ʹ й` ɜ VLAN í ئۇ ╗ ˈ

```
Ruijie(config)# ip igmp snooping vlan 2 querier
```

ȍ ʼΩƂ ३ Ô

Ƃ ३	

ȍ ৺ Ô -

1.16 ip igmp snooping querier address

IGMP Snooping ئۇ IP ھ ک Â Ƃ ३ no ʼ ھ ک Â

ip igmp snooping [**vlan** *vid*] **querier address** *a.b.c.d*

no ip igmp snooping [**vlan** *vid*] **querier address**

ȍ ৺ Ô

৺	
vlan *vid*	vlan
a.b.c.d	IP ھ ک

ȍ Ô -

ȍ Ƃ ३ Ô ŏ

ȍ ᴳ Ô í ╟ ئۇ ╗ ɨˇ й ئۇ У ɜ IP ھ ک ˇ ŭ ‡ ئۇ ╗ a Â

VLAN Э ɑ ئۇ IP ھ ک ˇ . ʼI ᴳ Ƚ ʼΩ VLAN Э Â

ȍ w ᴿ Ô ᴿ 1ʹ IGMP Snooping ئۇ IP ھ ک

```
Ruijie(config)# ip igmp snooping querier address 1.1.1.1
```

ᴿ 2ʹ й` ɜ VLAN IGMP Snooping ئۇ IP ھ ک ˈ

```
Ruijie(config)# ip igmp snooping vlan 3 querier address 1.1.1.1
```

ȍ ʼΩƂ ३ Ô

Ƃ ३	
-	-

ȍ ৺ Ô -

1.17 ip igmp snooping querier max-response-time

IGMP Snooping ئۇ ط Â Ƃ ३ no ḣ Â

ip igmp snooping [**vlan** *vid*] **querier max-response-time** *seconds*

no ip igmp snooping [**vlan** *vid*] **querier max-response-time**

ȍ ৺ Ô

৺	

vlan *vid*	vlan
seconds	ط Â` æ й ˘ ৲ ḣ ز 1-25˘ ˘ ḣ 10

ȍ Ô ৲ ḣ

ȍ Ƀ ২ Ô ȍ̈

ȍ G Ô VLAN Э ɞ ؤ ط ˘ . ˝I G VLAN Э Â

ȍ w R Ô R

-	-

ȍ ৲ Ô -

1.19 ip igmp snooping querier timer expiry

IGMP Snooping ئۇ Â Ƀ ३ no

ȍ Ô IGMPv2

ȍ Ƀ ३ Ô ȏ

ȍ ᴳ Ô ئۇ IGMPv1 IGMPv2 Â
VLAN Э ɞ ئۇ IGMP ˘ ˙ ˝I ᴳ VLAN Э Â

ȍ w ᴿ Ô ᴿ 1˙ ئۇ IGMP

```
Ruijie(config)# ip igmp snooping querier version 1
```

ᴿ 2˙ й` э VLAN ئۇ IGMP

```
Ruijie(config)# ip igmp snooping vlan 3 querier version 1
```

ȍ ˝Ω Ƀ ३ Ô

Ƀ ३	
-	-

ȍ ৲ Ô -

1.21 ip igmp snooping query-max-response-time

ط Â Ƀ ३ **no** ḣ Â

ip igmp snooping query-max-response-time *seconds*

no ip igmp snooping query-max-response-time

ȍ ৲ Ô

৲	
seconds	ط ˘ ` æ й ˘ ৲ ḣ ز 1-65535˘ ḣ 10

ȍ Ô ৲ ḣ

ȍ Ƀ ३ Ô ȏ

ȍ ᴳ Ô ڂ ↑ IGMP ɨ˘ ˚ ╟ Ԉ ৲ ◘ ئۇ˘ ئۇ й query-max-response-time Â ئۇ ˘ ‡ й ৲ Ю a ڂ ў ˘ ˚ ৲ ÿ IGMP Snooping Ԉ ৲ è˥ Â
ڂ ↑ IGMP ɨ˘ ˚ ╟ Ԉ ৲ ◘ ئۇ˘ ئۇ й query-max-response-time Â ئۇ ˘ ‡ й ৲ Ю a ڂ ў ˘ ˚ ৲ ÿ IGMP Snooping Ԉ ৲ è˥ Â
ڂ Ю У ↑ ˘ ṁ í ╟ ئۇ a˚ Â ɣ IGMPv3 ˘ a ṁ ئۇ Â

no ip igmp snooping svgl subvlan [*vid-range*]

ö ৲	Ô	৲	

ȍ ৸ Ô -

1.27 ip igmp snooping tunnel

ȋ QinQ · IGMP ╗ Â Ƀ ३ **no** ˜Ω ╗ Â

ip igmp snooping tunnel

no ip igmp snooping tunnel

ȍ ৺ Ô

৺	
-	-

ȍ Ô ˜Ω ╗

ȍ Ƀ ३ Ô ŏ

ȍ G Ô ȋ ๏

no ip igmp snooping vlan *vid*

ȍ ৲ Ô

৲	
vid	VLAN ৴˘ ৲ ḣ ȝ 1-4094

ȍ Ô ŏ í ╟ IGMP Snooping˜ IVGL ˜ ˘ ‡ VLAN ȝ í ╟ IGMP Snooping˜ IVGL ˜ Â
ŏ í ╟ IGMP Snooping˜ IVGL ˜ ˘ ‡ VLAN ȝ í ╟ IGMP Snooping˜ IVGL ˜ Â

ȍ Ƃ ३ Ô ŏ

ȍ G Ô ƒ ŏ í ╟ IGMP Snooping˜ IVGL ˜ α Ю˜ G **no ip igmp snooping vlan** *vid* Ƃ ३˘ ৴ Ɲ
ƒ VLAN è ы VLAN Ɔ í ╟ IGMP Snooping˜ IVGL ˜ Â
PIM Snooping ŋ ¥ IGMP Snooping˜ ƒ G **no ip igmp snooping vlan** ˜Ω VLAN Ɔ IGMP Snooping ╥ ˘ VLAN Ɔ í ɞ PIM Snooping˜ ‡ ˜Ω a ╥˘ ˜I ˜Ω PIM Snooping Â

ȍ w R Ô ŏ í ╟ IGMP Snooping˜ IVGL ˜ ˘ ƒ vlan 2 Ɔ ˜Ω IGMP Snooping˜ IVGL ˜

```
Ruijie(config)# ip igmp snooping ivgl
Ruijie(config)# no ip igmp snooping vlan 2
```

ȍ ˜Ω Ƃ ३ Ô

Ƃ ३	
ip igmp snooping	í ╟ IGMP Snooping è Â

ȍ ৴ Ô -

1.29 ip igmp snooping vlan mrouter interface

ȝ

ȍ w ᴿ Ô ৲'

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

ȍ ˜Ω Ƒ ३ Ô

Ƒ ३	
ip igmp snooping mrouter learn pim-dvmrp	í ╟ ¯ ৲ ╗

ȍ ৲ Ô -

1.30 ip igmp snooping vlan static interface

Ц ৲ Â Ƒ ३ **no** ĩ Ц ৲ Â

ip igmp snooping vlan *vid* **static** *group-address* **interface** *interface-type interface-number*

no ip igmp snooping vlan *vid* **static** *group-address* **interface** *interface-type interface-number*

ȍ ৲ Ô

৲	
vid	VLAN ৲˘ ৲ ḣ ز 1-4094
group-address	ک ھ
interface-type *interface-number*	৲ˆ

ȍ Ô Ц ৲

ȍ Ƒ ३ Ô ŏ

ȍ ᴳ Ô IGMP Snooping ৲ è ˆ ȕ' VLAN ৲ ȁ ک ھ ȁ ৲ ȁ Ц ৲ Â

VLAN ৲ ŋ ک ھ ڈ У ۞ У ɜ ৲ Â

У ɜ ৲ è ৲ Лȣ ˆ ȕ ɜ ৲^ ৲ ╟ ৲ ৲˜ Â

৲ a˚ ◻ Â

У ɜ ৲ è ৲ Лȣ ˆ ȕ ɜ Ц ৲^ ৲ ╟ Ц ৲ Ц ৲˜ Â Ц ৲ a˚ ◻ Â ᴳ

clear ip igmp snooping gda-table Ƒ ३ a ĩ Ц ৲ Â

ȍ w ᴿ Ô GigabitEthernet 0/1 й vlan 1 225.1.1.1 Ц ৲'

```
Ruijie(config)# ip igmp snooping vlan 1 static 225.1.1.1 interface GigabitEthernet 0/1
```

ȍ ˜Ω Ƒ ३ Ô

Ƒ ३	
clear ip igmp snooping gda-table	╟ ৲

ȍ ৲ Ô -

1.31 permit

ĭ ز Â

permit

ȍ ৺ Ô

৺	
-	-

ȍ Ô profile **deny**

ȍ Ƒ ३ Ô profile

ȍ ᴳ Ô profile У ľ ئؤ Ľ ˇ ᵏ ὲ ╗ Â ˙

1ˇ ᴳ **ip igmp profile** Ƒ ३ … У ɜ profileˇ ώ profile

2ˇ ᴳ **range** Ƒ ३ ⱧⱦУ ɜ ىز

3ˇ ᴳ **permit** Ƒ ३ ĭ ىز ةؤ ئؤ ȁ ᴳ **deny** Ƒ ३ ىز ةؤ Â **deny** Â

ȍ ʷ ᴿ Ô profile 1ˇ ĭ

ȍ w ᴿ Ô profile 1˘ ĭ 224.2.2.2˙ 224.2.2.244

```
Ruijie(config)# ip igmp profile 1
Ruijie(config-profile)# range 224.2.2.2 224.2.2.244
Ruijie(config-profile)# permit
```

ȍ ˜ȷƂ ३ Ô

Ƃ ३	
ip igmp profile	… У ɜ profile
permit	ĭ ȝ
deny	ȝ

ȍ ৲ Ô -

1.33 show ip igmp profile

profile ɚ

show ip igmp profile [*profile-number*]

ȍ ৲ Ô

৲	

2 MLD Snooping

2.1 clear ipv6 mld snooping gda-table

‖ ৲

clear ipv6 mld snooping gda-table

ȍ ৲ Ô

৲	
-	-

ȍ Ô -

ȍ Ƃ ३ Ô

ȍ ᴳ Ô MLD Snooping ৲ è ̂ ȕ̈ VLAN ৴ ȁ ک ھ ȁ ৴ ȁ Ɯ ৴ Â

VLAN ৴ ṇ ک ھ ڈ У ɞ У э ৲ Â

У э ৲ è ৴ Ɲ ̂ ȕ э ৴ˆ ৴ ‖ ৴ ৴˜ Â

৴ a ̊ ◻ Â

У э ৲ è ৴ Ɲ ̂ ȕ э Ɯ ৴ˆ ৴ ‖ Ɯ ৴ Ɯ ৴˜ Â Ɯ ৴ a ̊ ◻ Â ᴳ

clear ipv6 mld snooping gda-table Ƃ ३ a ̄ Ɯ ৴ Â

ȍ w ᴿ Ô

```
Ruijie# clear ipv6 mld snooping gda-table
```

ȍ ʔΩƂ ३ Ô

Ƃ ३	
ipv6 mld snooping vlan static interface	Ɯ ৴

ȍ ৴ Ô -

2.2 debug mld-snp

ᴳ **debug** Ƃ ३ б MLD Snooping ʔΩ ʔΩ Â ᴳ **undebug** Ƃ ३ ʔΩ ʔΩ Â

debug mld-snp [**event** | **packet** | **msf** | **warning**]

undebug mld-snp [**event** | **packet** | **msf** | **warning**]

ȍ ৴ Ô

৲	
event	MLD Snooping ʔΩ Y ˇ ৷

ȍ Ô -

ȍ Ƃ ३ Ô

ȍ G Ô -

ȍ w R Ô

```
Ruijie# debug mld-snp
```

ȍ ˜Ω Ƃ ३ Ô

Ƃ ३	
-	-

ȍ ৺ Ô -

2.3 deny

ন্ত

deny

ȍ ৺ Ô

৺	
-	-

ȍ Ô profile **deny**

ȍ Ƃ ३ Ô profile

ȍ G Ô profile У ľ ন্তŁ˘ k è ╗ Â '

1˘ G **ipv6 mld profile** Ƃ ३ … У э profile˘ ώ profile

2˘ G **range** Ƃ ३ ⊠ У э ন্ত

3˘ G **permit** Ƃ ३ ĭ ন্ত ą̈ ন্তà G **deny** Ƃ ३ ন্ত ą̈ Â

ȍ w R Ô profile 1˘ FF77::1˙ FF77::100 Â

```
Ruijie(config)# ipv6 mld profile 1
Ruijie(config-profile)# range FF77::1 FF77::100
Ruijie(config-profile)# deny
```

ȍ ˜Ω Ƃ ३ Ô

Ƃ ३	
ipv6 mld profile	… У э profile
range	⊠ ন্ত
permit	ĭ ন্ত

ȍ ৺ Ô

2.4 ipv6 mld profile

… У э profile ˇ ώ profile Â G Ƃ ३ **no** ˇ profile Â

ipv6 mld profile *profile-number*

no ipv6 mld profile *profile-number*

ȍ ৲ Ô

৲	
profile-number	profile ৸ˇ ɷ 1-1024

ȍ Ô -

ȍ Ƃ ३ Ô ȍ

ȍ G Ô profile У ľ ɷ Ł ˇ k ȅ ╖ Â ˙

1ˇ G **ipv6 mld profile** Ƃ ३ … У э profile ˇ ώ profile

2ˇ G **range** Ƃ ३ Ł У э ɷ

3ˇ G **permit** Ƃ ३ ĭ ɷ ϟ ɷ ȁ G **deny** Ƃ ३ ɷ ϟ Â **deny** Â

ȍ w R Ô profile 1ˇ ĭ FF77::1˙ FF77::100 Â

```
Ruijie(config)# ipv6 mld profile 1
Ruijie(config-profile)# range FF77::1 FF77::100
Ruijie(config-profile)# permit
```

ȍ ˇΩ Ƃ ३ Ô

Ƃ ३	
range	Ł ɷ
permit	ĭ ɷ
deny	ɷ

ȍ ৸ Ô -

2.5 ipv6 mld snooping

ȍ ί ╟ MLD Snooping ȅ Â G Ƃ ३ **no** ˇΩ MLD Snooping Â

ipv6 mld snooping { **ivgl | svgl | ivgl-svgl** }

no ipv6 mld snooping

ȍ ৲ Ô

৲	
ivgl	IVGL
svgl	SVGL
ivgl-svgl	IVGL-SVGL

ȍ Ô ˇΩ MLD Snooping

ð Ð ३ Ô ŏ

ð G Ô IVGL Ю ˩ VLAN ц Â ў Л б ҷ У э VLAN
Л ' Ц IVGL ˆ ˙ ı У э VLAN ˘ Л ˚ VLAN ğ Ш Л Л Â
IVGL SVGL Ю ˩ VLAN ў Ω м ˚ У ˘ ў Л Ль VLAN Â У э shared
VLAN˜ й VLAN1˜ ˘ Θ shared VLAN ˘ Л Ль Л ھ ک Ш Л˘ Ę
Ш Л Л ҷ ˩ э VLAN Â profile ,ˆ У э ھ ک ز SVGL˘ Θ ز ğ Л Ль
VLAN Л˘ ز x Â
IVGL-SVGL Ю˘ IVGL ä SVGL ч Â Profile ,ˆ У э ھ ک ز SVGL˘
ز ğ SVGL ˘ ز IVGL Â

ð w R Ô R 1˘ í ╟ MLD Snooping IVGL Â

```
Ruijie(config)# ipv6 mld snooping ivgl
```

R 2˘ í ╟ MLD Snooping SVGL ˘ shared VLAN й VLAN1˘ SVGL ز й profile 1 Â

```
Ruijie(config)# ipv6 mld snooping svgl
Ruijie(config)# ipv6 mld snooping svgl profile 1
```

R 3˘ í ╟ MLD Snooping IVGL-SVGL ˘

ȍ Ô ĭ ৲ ·

ȍ Ƀ ३ Ô ৲

ȍ G Ô ˝I … profile˘ ƒƫ **ipv6 mld snooping filter** Ƀ ३ è profile Â
8 ৲ ɨ˘ ৲ ˆ Report ˘ ‡ ˚ ɜ ৲ ╗ ώ
ھ ھ ŭ ƫ profile ĭ ǯ ǯ ǫ Â ‡ ĭ ╗ ώ Â ŭ ‡ a ĭ ╗ ώ Â

ȍ w R Ô profile 1 8 ৲ Â

2.10 ipv6 mld snooping query-max-response-time

ط ˘ ˝ ╟ Ԉ ৲ ◘ Â Ƀ ३ **no** ḣ Â

ipv6 mld snooping query-max-response-time *seconds*

no ipv6 mld snooping query-max-response-time

ȍ ৲ Ô

৲	
seconds	ط ˘ ` æ ȉ ˘ ৲ ḣ ȝ 1-65535˝ ḣ 10

ȍ Ô ৲ ḣ

ȍ Ƀ ३ Ô ȫ

ȍ ᴳ Ô ƒ ↑ MLD ɨ˘ ˟ Ԉ ৲ ◘ ȝ˘ ȝ ȉ ط ˘ ȝ ḣ ˝ ȉ 0 ˘ ‡ ȉ ৲ a Ą Ԉ ˘ ɣ ˟ ৲ ÿ MLD Snooping ৲ è ˥ Â

ƒ ↑ MLD ɨ˘ ˟ Ԉ ৲ í ╟ ◘ ȝ˘ ȝ ȉ ط ˘ ȝ ḣ ˝ ȉ 0 ˘ ‡ ȉ ৲ a Ą Ԉ ˘ ˟ ৲ ÿ MLD Snooping ৲ è ˥ Â

ɣ MLDv2 ˘ a ṁ ȝ Â

ȍ w ᴿ Ô ط ȉ 100s˝

```
Ruijie(config)# ipv6 mld snooping query-max-response-time 100
```

ȍ ˝Ω Ƀ ३ Ô

Ƀ ३	
-	-

ȍ ৴ Ô -

2.11 ipv6 mld snooping suppression enable

í Report ⁸ ╗ Â Ƀ ३ **no** ˝Ω ╗ Â

ipv6 mld snooping suppression enable

no ipv6 mld snooping suppression enable

ȍ ৲ Ô

৲	
-	-

ȍ Ô ˝Ω ╗

ȍ Ƀ ३ Ô ȫ

ȍ ᴳ Ô í Report ⁸ ╗ ɨ˘ ˟ ƒ У э ą̈ ৴˟ У э ↑ vlan n Report

৷ ৷˘ ɨ Report a ą̈ ৷ ৷˘ ৷ ℳ ˆ è Â
৷ ⁸ MLDv1 Report ˘ MLDv2 Report Â

ò w ᴿ Ô í Report ⁸ ╗ Â

```
Ruijie(config)# ipv6 mld snooping suppression enable
```

ò ˆΩ Ð ३ Ô

Ð ३	
-	-

ò ৷ Ô -

2.12 ipv6 mld snooping svgl profile

ƒ SVGL Ю ɲ Â Ð ३ **no** ৲ Â

ipv6 mld snooping svgl profile *profile-number*

no ipv6 mld snooping svgl profile

ò ৲ Ô

৲	
profile-number	profile ৷˘ ৲ ḣ ɲ 1-1024

ò Ô SVGL ɲ

ò Ð ३ Ô ŏ

ò ᴳ Ô ⁸–8È

ȍ Ô ৺ ḣ

ȍ Ƒ ३ Ô ȍ

ȍ G Ô MLD Snooping ȉ SVGL IVGL-SVGL ˘ ʌ Ɲ Ƒ ३ Â

ȍ w R Ô ‘Ω ɱ VLAN ȉ VLAN3

2.15 ipv6 mld snooping vlan mrouter interface

৲ Â Ƃ ३ **no** ৲ Â

ipv6 mld snooping vlan *vid* **mrouter interface** *interface-type interface-number*

no ipv6 mld snooping vlan *vid* **mrouter interface** *interface-type interface-number*

ȍ ৲ Ô

৲	
vid	VLAN ৴ ৲ ḣ ز 1-4094
interface-type *interface-number*	৴

ȍ Ô ৴

ȍ Ƃ ३ Ô ȍ

ȍ G Ô **ipv6 mld snooping vlan mrouter learn** Ƃ ३ ৴ ৴ Ɲ ╟ ৴ Â

ipv6 mld snooping vlan mrouter interface Ƃ ३ ৴ ৴ Ɲ ৴ Â

৴ ȉ ৴ ‡ Ц Э ↑ ৴ Ɲ ৴ ৲ ৲ Â

ȍ w R Ô ৴

```
Ruijie(config)# ipv6 mld snooping vlan 1 mrouter interface fastEthernet 0/1
```

ȍ Ω Ƃ ३ Ô

Ƃ ३	
ipv6 mld snooping vlan mrouter learn	ї ╟ ৴ ╥

ȍ ৴ Ô -

2.16 ipv6 mld snooping vlan mrouter learn

ї ╟ ৴ ╥ Â Ƃ ३ no Ω ╥ Â

ipv6 mld snooping vlan *vid* **mrouter learn pim-dvmrp**

no ipv6 mld snooping vlan *vid* **mrouter learn pim-dvmrp**

ȍ ৲ Ô

৲	
vid	VLAN ৴ ৲ ḣ ز 1-4094

ȍ Ô ї ╥

ȍ Ƃ ३ Ô ȍ

ȍ G Ô ৴ б ȅ ৴ Â ї ╟ ৴ ╥ ɨ ৴ Ц

╟ ш ȕ MLD Query/Dvmrp/IPv6 PIM Hellp ╟ ⁞ ৴ Â

ї ╟ ৴ ╥ ^ ї ~ ৴ ৴ Ɲ ╟ ৴ Â

ipv6 mld snooping vlan mrouter interface Ɗ ३˘ ৲ Ɱ ৲ Â

ȍ w ᴿ Ô ফ VLAN1 Ɜ ̃Ω ╟ ˜ ৲ ╥ ˙

```
Ruijie(config)# no ipv6 mld snooping vlan 1 mrouter learn pim-dvmrp
```

ȍ ̃ΩƊ ३ Ô

Ɗ ३	
ipv6 mld snooping vlan mrouter interface	৲

ȍ ijie(con ق

ȍ ৲ Ô

৲	
-	-

ȍ Ô profile **deny**

ȍ Ƃ ३ Ô profile

ȍ ᴳ Ô profile У ľ ȣ Ľ ˇ ᵏ ȅ ╗ Â ˙

1˘ ᴳ **ipv6 mld profile** Ƃ ३ … У ɜ pro7 ᵐile˘ profile

2˘ ᴳ **range** Ƃ ३ Ħ У ɜ ন

3˘ ᴳ **permit** Ƃ ३ ĭ ন ȟ ȣ ȁ ᴳ **deny** Ƃ ३ ন ȟ Â **deny** Â

ȍ ʷ ᴿ Ô profile 1˘ ĭ FF77::1˙ FF77::100

```
Ruijie(config)# ipv6 mld profile 1
Ruijie(config-profile)# range FF77::1 FF77::100
Ruijie(config-profile)# permit
```

ȍ ˇΩƂ ३ Ô

Ƃ ३	
ipv6 mld profile	… У ɜ profile
range	Ħ ন
deny	ন

ȍ ৲ Ô -

2.19 range

Ħ У ɜ ন Â ᴳ Ƃ ३ **no** ȉ ন Â

range *low-ip-address* [*high-ip-address*]

no range *low-ip-address* [*high-ip-address*]

ȍ ৲ Ô

৲	
low-ip-address	ন ھ ک
high-ip-address	ন ھ ک

ȍ Ô Ħ ন

ȍ Ƃ ३ Ô profile

ȍ ᴳ Ô

ȍ w ᴿ Ô profile 1˜ ĭ FF77::1˙ FF77::100

```
Ruijie(config)# ipv6 mld profile 1
Ruijie(config-profile)# range FF77::1 FF77::100
Ruijie(config-profile)# permit
```

ȍ ˜ȣƑ ३ Ô ˘

gda-table	MLD Snooping ৷ Â
interfaces	MLD Snooping filtring Â
mrouter	MLD Snooping ৷ Â
statistics	MLD Snooping ৯ Â
vlan *vid*	VLAN

ȍ Ô -

ȍ Ƒ ३ Ô

ȍ G Ô a ৲ ˘ ৷ MLD Snooping ৷ Â

ȍ w R Ô R 1: MLD Snooping ৷

```
Ruijie# show ipv6 mld snooping
MLD-snooping mode        : IVGL
SVGL vlan-id             : 1
SVGL profile number      : 0
Source check port        : Disabled
```

R 2: MLD Snooping ৯

ʳ 5 MLD Snooping filtering

```
Ruijie# show ipv6 mld snooping interface GigabitEthernet 0/7
Interface             Filter Profile number   max-groups
-------------------   ----------------------  -----------
GigabitEthernet 0/7              1            4294967294
```

ò ʼΩƂ ३ Ô

Ƃ ३	
-	-

ò ৲ Ô -

1. AAA
2. RADIUS
3. TACACS+
4. 802.1x
5. Web
6. SSH
7. URPF
8. GSH
9.
10. CPU
11. DoS
12. DHCP Snooping
13. DAI
14. IP Source Guard
15. ND Snooping
16. DHCPv6 Snooping
17. ARP
18. NFPP
19.

NAS **aaa accounting exec** **no** Exec

aaa accounting exec {**default** | *list-name*} **start-stop** *method1* [*method2*...]

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

default	Exec
list-name	Exec
method	“ **none** **group** ” 4
none	
group	RADIUS TACACS+

RGOS Exec

none Exec

NAS CLI Start

Stop Start

Stop

Exec

RADIUS NAS

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

aaa new-model	AAA
aaa authentication	AAA
accounting commands	Exec

-

1.3 aaa accounting network

aaa accounting network **no**

aaa accounting network {**default** | *list-name*} **start-stop** *method1* [*method2*...]

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

default	Network
list-name	

start-stop	
method	4
none	
group	RADIUS TACACS+

RGOS **start-stop**

RADIUS

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

aaa new-model	AAA
aaa authorization network	AAA
aaa authentication	AAA
username	

-

1.4 aaa accounting update

aaa accounting update

no

aaa accounting update

no aaa accounting update

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

aaa new-model	AAA
aaa accounting network	

-

1.5 aaa accounting update periodic

aaa accounting update periodic

no

aaa accounting update periodic *interval*

no aaa accounting update periodic

interval	1

5 minutes

AAA AAA

1

```
Ruijie(config)# aaa new-model
Ruijie(config)# aaa accounting update
Ruijie(config)# aaa accounting update periodic 1
```

aaa new-model	AAA
aaa accounting network	

-

1.6 aaa authentication dot1x

AAA 802.1X **aaa authentication dot1x** 802.1X

no 802.1X

aaa authentication dot1x {**default** | *list-name*} *method1* [*method2*...]

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

default	802.1X
list-name	802.1X
method	“ local none group ” 4
local	
none	
group	RADIUS

group	RADIUS TACACS+

-

AAA Enable AAA Enable **aaa**

n

authentication login Login

Login Login

list-1 AAA Login RADIUS

RADIUS

```
Ruijie(config)# aaa authentication login list-1 group radius local
```

aaa new-model	AAA
username	Stá zü

aaa new-model	AAA
ppp authentication	PPP

username

1.11 aaa authorization config-commands

AAA **aaa authorization config-commands** **no** AAA

aaa authorization config-commands

no aaa authorization config-commands

-	-

no

```
Ruijie(config)# aaa authorization config-commands
```

aaa new-model	AAA	

```
Ruijie(config)# aaa authorization console
```


-

1.14 aaa authorization network

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

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

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

default	Network
method	“ none group ” 4
none	
group	RADIUS TACACS+

AAA Network

RGOS PPP SLIP

RADIUS TACACS+

RADIUS

```
Ruijie(config)# aaa authorization network default group radius
```

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

-

1.15 aaa domain

no

aaa domain {**default** | *domain-name*}

no aaa domain {**default** | *domain-name*}

default	
domain-name	

AAA default

domain-name

32

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

aaa new-model	AAA
aaa domain enable	AAA
show aaa domain	

-

1.16 aaa domain enable

AAA AAA

no

aaa domain enable

no aaa domain enable

-	-

AAA

AAA

AAA

```
Ruijie(config)# aaa domain enable
```

aaa new-model	AAA
show aaa domain	

-

1.17 aaa group server

AAA **no**

aaa group server {**radius** | **tacacs+**} *name*

no aaa group server {**radius** | **tacacs+**} *name*

name	“ radius ” “ tacacs+ ” RADIUS TACACS+

-

AAA RADIUS TACACS+

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

show aaa group	aaa

-

1.18 aaa local authentication attempts

login

aaa local authentication attempts *max-attempts*

max-attempts	1~2147483647

3

Login

```
Ruijie# configure terminal
Ruijie(config)# aaa local authentication attempts 6
```

show running-config	
show aaa lockout	login

-

1.19 aaa local authentication lockout-time

login

aaa local authentication lockout-time *lockout-time*

lockout-time	1~2147483647

15

login

```
Ruijie# configure terminal
Ruijie(config)# aaa local authentication lockout-time 5
```

show running-config	
show aaa lockout	login

-

1.20 aaa new-model

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

aaa new-model

ruijie.com 20

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

aaa new-model	AAA
aaa domain enable	AAA
show aaa domain	

-

1.22 accounting commands

accounting commands

no

accounting commands *level* {**default** | *list-name*}

no accounting commands *level*

level	0~15
default	
list-name	

cmd 15 TACACS+

none VTY 0 – 4

```
Ruijie(config)# aaa accounting commands 15 cmd group tacacs+ none
Ruijie(config)# line vty 0 4
Ruijie(config-line)# accounting commands 15 cmd
```

aaa new-model	AAA
aaa accounting commands	AAA

-

1.23 accounting exec

Exec **accounting exec** **no** Exec

accounting exec {**default** | *list-name*}

no accounting exec

default	Exec
list-name	Exec

Exec Exec

Exec Exec

exec-1 Exec RADIUS none VTY 0 – 4

```
Ruijie(config)# aaa accounting exec exec-1 group radius none
Ruijie(config)# line vty 0 4
Ruijie(config-line)# accounting exec exec-1
```

aaa new-model	AAA
aaa accounting commands	AAA Exec

-

1.24 accounting network

Network **no**

accounting network {**default |** *list-name*}

no accounting network

default	
list-name	

default

Network

Network

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

aaa new-model	AAA
aaa domain enable	AAA
show aaa domain	

-

1.25 authentication dot1x

IEEE802.1x **no**

authentication dot1x {**default** | *list-name*}

no authentication dot1x

default	
list-name	

default

IEEE802.1x

IEEE802.1x

```
Ruijie(config)# aaa domain ruijie.com
Ruijie(config-aaa-domain)# authentication dot1x default
```

aaa new-model	AAA

aaa domain enable	AAA
show aaa domain	

-

1.26 aaa authorization commands

NAS CLI AAA

aaa authorization commands **no**

AAA

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

no aaa authorization commands *level* {**default** | *list-name*}

level	0~15
default	
list-name	
method	“ none group ” 4

none в ж Ä CACS+.007 -

1.27 authorization exec

Exec **authorization exec** **no** Exec

authorization exec {**default** | *list-name*}

no authorization exec

default	Exec
list-name	Exec

AAA Exec

Exec Exec

Exec Exec

exec-1 Exec RADIUS none VTY 0 – 4

```
Ruijie(config)# aaa authorization exec exec-1 group radius none
Ruijie(config)# line vty 0 4
Ruijie(config-line)# authorization exec exec-1
```

aaa new-model	AAA
aaa authorization commands	AAA Exec

-

1.28 authorization network

Network **no**

authorization network {**default** | *list-name*}

no authorization network

default	
list-name	

default

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

aaa new-model	AAA

-	-

-

EXEC

-

-

-	-

-

1.31 ip vrf forwarding

AAA vrf **no**

ip vrf forwarding *vrf_name*

no ip vrf forwarding

vrf_name	vrf

-

vrf

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

aaa group server	aaa
show aaa group	aaa

-

1.32 login authentication

Login **login authentication**

Login **no**

login authentication {**default** | *list-name*}

no login authentication

default	Login
list-name	Login

-

Login Login

Login Login

list-1 AAA Login

VTY 0 - 4

```
Ruijie(config)# aaa authentication login list-1 local
Ruijie(config)# line vty 0 4
Ruijie(config-line)# login authentication list-1
```

aaa new-model	AAA
username	
login authentication	Login

-

1.33 server

AAA **no**

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

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

ip-addr	ip
port1	RADIUS

port2	RADIUS

```
Ruijie(config)# aaa group server radius ss
Ruijie(config-gs-radius)# server 192.168.4.12 acct-port 5 auth-port 6
Ruijie(config-gs-radius)# end
Ruijie# show aaa group
Type       Reference  Name
---------- ---------- ----------
radius     1          radius
tacacs+    1          tacacs+
radius     1          ss
```

aaa group server	aaa
show aaa group	aaa

-

1.34 show aaa domain

show aaa domain [**default** | *domain-name*]

default	
domain-name	

-

domain.com

```
Ruijie# show aaa domain domain.com


=============Domain domain.com=============
State: Active
```

1.36 show aaa method-list

AAA

show aaa method-list

-	-

-

AAA

AAA

```
Ruijie# show aaa method-list
Authentication method-list
aaa authentication login default group radius
aaa authentication ppp default group radius
aaa authentication dot1x default group radius
```

-

```
Ruijie# show aaa user lockout
```


1.39 username-format

NAS **no**

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

no username-format

without-domain	
with-domain	

NAS

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

aaa new-model	AAA
aaa domain enable	AAA
show aaa domain	

-

2 RADIUS

2.1 debug radius

RADIUS **no** RADIUS

debug radius [**event | detail**]

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

-	-

-

EXEC

-

-

-	-

-

2.2 ip radius source-interface

RADIUS **ip radius source-interface** **no** RADIUS

ip radius source-interface *interface*

no radius source-interface

interface	radius

radius

radius nas radius

ip radius

radius fastEthernet 0/0 ip radius

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

radius-server host	RADIUS
ip address	ip

-

2.3 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**

id	id <1-255>
type	type

Ò$ ৯

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

max up-rate 211

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

-	-

id

radius attribute dot1x

acl

```
Ruijie(config)# radius vendor-specific extend
```

radius attribute	
radius set qos cos	qos cos

-

2.6 radius-server attribute 31

RADIUS Calling-Station-ID MAC **radius-server attribute 31** **no**

radius-server attribute 31 mac format {ietf | normal | unformatted}

no radius-server attribute 31 mac format

ietf	ETF RFC3580 ‘ - ’ 00-D0-F8-33-22-AC
normal	MAC ‘ . ’ 00d0.f833.22ac
unformatted	00d0f83322ac

unformatted

RADIUS 802.1x IETF Calling-Station-ID IETF

RADIUS Calling-Station-ID IETF

```
Ruijie(config)# radius-server attribute 31 mac format ietf
```


radius-server deadtime *minutes*

no radius-server deadtime

minutes	RADIUS 1-1440 24

minutes mq(mi)-8(nute)-7(s)]TJ /C2_0 1 Tf 0 5.807 0 T54AC4178>TcF561]TJ2C58>]TJ11CD03D247 9.46 6

	60 1-1440 24
ignore-auth-port	RADIUS
ignore-acct-port	RADIUS

RADIUS

RADIUS AAA RADIUS **radius-server host**
RADIUS

IPv4 RADIUS

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

IPv4 RADIUS 60
UDP

```
Ruijie(config)# radius-server host 192.168.100.1 test username viven idle-time 60
ignore-acct-port
```

IPv6 RADIUS

```
Ruijie(config)# radius-server host 3000::100
```

aaa authentication	AAA
radius-server key	RADIUS
radius-server retransmit	RADIUS
radius-server timeout	RADIUS
radius-server dead-criteria	RADIUS
radius-server deadtime	RADIUS

-

2.10 radius-server key

RADIUS

radius-server key **no**

radius-server key [*0* | *7*] *text-string*

no radius-server key

text-string	
0	*7*	0 7

RADIUS RADIUS
RADIUS

RADIUS aaa

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

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

-

2.11 radius-server retransmit

RADIUS

radius-server retransmit **no**

radius-server retransmit *retries*

no radius-server retransmit

retries	RADIUS

3

AAA

RADIUS

4

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

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

-

2.12 radius-server timeout

RADIUS **radius-server timeout** **no**

radius-server timeout *seconds*

no radius-server timeout

seconds	1-1000

5

10

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

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

-

2.13 show radius parameter

```
Server Timout:   5 Seconds
Server Deadtime: 0 Minutes
Server Retries:  3
Server Dead Critera:
Time:        10 Seconds
Tries:       10
```


```
Authen: request 15, timeouts 1
Author: request 0, timeouts 0
Account: request 0, timeouts 0

Server IP:    192.168.4.13
Accounting Port:  45
Authen  Port:     74
Test Username:    <Not Configured>
Test Idle Time:   60 Minutes
Test Ports:        Authen and Accounting
Server State:     Active
Current duration 765s, previous duration 0s
Dead: total time 0s, count 0
Statistics:
Authen: request 0, timeouts 0
Author: request 0, timeouts 0
Account: request 20, timeouts 0
```

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

-

2.15 show radius vendor-specific

RADIUS

show radius vendor-specific


```
id    vendor-specific      type-value
----- -------------------- ----------
1     max-down-rate        1
2     port-priority        2
3     user-ip              3
4     vlan-id              4
5     last-supplicant-vers 5
      ion
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          16
17    current-supplicant-v 17
      ersion
18    flux-max-high32      18
19    flux-max-low32       19
20    proxy-avoid          20
21    dialup-avoid         21
22    ip-privilege         22
23    login-privilege      42
26    ipv6-multicast-addre 79
      ss
27    ipv4-multicast-addre 87
      ss
```

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

-

3 TACACS+

3.1 aaa group server tacacs+

TACACS+ TACACS+

aaa group server tacacs+ *group-name*

no aaa group server tacacs+ *group-name*

group-name	TACACS+

TACACS+

TACACS+

tac1 TACACS+ 1.1.1.1 TACACS+

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

server	TACACS+ server
ip vrf forwarding	TACACS+ VRF

-

3.2 debug tacacs+

TACACS+ **no** TACACS+

debug tacacs+

no debug tacacs+

-	-

-

-

-

-	-

-

3.3 iw3oDcacs source-interface

TACACS+

iwoDcacs source-interface *interface*

no iw3oDcacs source-interface

interface	TACACS+

TACACS+

TACACS+ nas TACACS+ ip TACACS+

TACACS+ fastEthernet 0/0 ip TACACS+

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

tacacs-server host	TACACS+
ip address	ip

-

3.4 ip vrf forwarding(TACACS+)

TACACS+ vrf (VRF)

ip vrf forwarding *vrf-name*

no ip vrf forwarding

vrf-name	vrf

-

TACACS+

TACACS+ vrf

TACACS+ VRF vpn1

```
Ruijie(config)# aaa group server tacacs+ tac1
Ruijie(config-gs-tacacs+)# server 1.1.1.1
Ruijie(config-gs-tacacs+)# ip vrf forwarding vpn1
```

aaa group server tacacs+	TACACS+
server	TACACS+ server

-

3.5 server(TACACS+)

TACACS+

server {*ip-address* | *ipv6-address*}

no server {*ip-address* | *ipv6-address*}

ip-address	TACACS+ IP
ipv6-address	TACACS+ IPV6

-

TACACS+

aaa group server tacacs+ TACACS+

TACACS+ **tacacs-server host**

TACACS+

tac1 TACACS+ 1.1.1.1 TACACS+

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


Ip-address	TACACS+ IP
ipv6-address	TACACS+ IPV6
port *integer*	TACACS+ TCP
timeout *integer*	TACACS+
key *string*	TACACS+ client

TACACS+

TACACS+ AAA TACACS+ **tacacs-server host** TACACS+

TACACS+

```
Ruijie(config)# tacacs-server host 192.168.12.1
Ruijie(config)# tacacs-server host 2001::1
```

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

-

3.8 tacacs-server key

key

4 802.1X

4.1 dot1x auth-address-table

802.1X **no**

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

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

mac-addr	
interface	

802.1X **show dot1x auth-address table**

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

show dot1x auth-address-table	802.1X

-

4.2 dot1x authentication

AAA AAA

no

dot1x authentication {**default** | *list-name*}

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

default	
list-name	

-

4.4 dot1x auth-fail vlan

802.1x vlan

dot1x auth-fail vlan *vid*

no dot1x auth-fail vlan

vid	vlan vid

vlan

show dot1x interface

802.1x vlan

```
Ruijie# configure terminal
Ruijie(config)# interface fa 0/1
Ruijie(config-if)# dot1x auth-fail vlan 2
Ruijie(config-if)# end
Ruijie#write
```

show dot1x interface	802.1x

-

4.5 dot1x auth-mode

802.1x

dot1x auth-mode {**eap-md5** | **chap** | **pap**}

no dot1x auth-mode

eap-md5	802.1x EAP-MD5
chap	802.1x CHAP
pap	802.1x PAP

EAP-MD5

-

4.7 dot1x auto-req packet-num

no

dot1x auto-req packet-num *num*

no dot1x auto-req packet-num

num	

num = 0;

show dot1x auto-req

802.1x

```
Ruijie# configure terminal
Ruijie(config)# dot1x auto-req packet-num 0
Ruijie(config)# end
Ruijie# show dot1x auto-req
Auto-Req: Enabled
User-Detect : Enabled
Packet-Num  : 0
Req-Interval: 30 Second
```

show dot1x auto-req

802.1x 60s

```
Ruijie# configure terminal
Ruijie(config)# dot1x auto-req req-interval 60
Ruijie(config)# end
Ruijie# show dot1x auto-req
Auto-Req: Enabled
User-Detect : Enabled
Packet-Num  : 0
Req-Interval: 60 Second
```

show dot1x auto-req	

-

4.9 dot1x auto-req user-detect

no

dot1x auto-req user-detect

no dot1x auto-req user-detect

show dot1x auto-req	

no dot1x client-probe enable

-	-

```
Ruijie# configure terminal
Ruijie(config)# dot1x client-probe enable
Ruijie(config)# end
Ruijie# show dot1x
802.1X Status:        Enabled
Authentication Mode:  EAP-MD5
Authed User Number:   0
Re-authen Enabled:    Enabled
Re-authen Period:     1000 sec
Quiet Timer Period:   1000 sec
Tx Timer Period:      10 sec
Supplicant Timeout:   10 sec
[redacted]
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
```

no dot1x critical

-	-

IAB 802.1x RADIUS
RADIUS IAB
EAPOL-SUCCESS
802.1x RADIUS IAB
aaa authentication dot1x default group radius none RADIUS none

IAB

AAA 802.1x IAB
802.1x RADIUS
AAA

RADIUS

```
Ruijie# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# interface fa 0/10
Ruijie(config-if)# dot1x port-control auto
Ruijie(config-if)# dot1x critical recovery action reinitialize
Ruijie(config-if)# end
```

-	-

-

4.13 dot1x critical vlan

VLAN VLAN

no

dot1x critical vlan *vlan-id*

no dot1x critical vlan

vlan-id	VLAN

VLAN

RADIUS

VLAN

VLAN

```
Ruijie# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# interface fa 0/10
Ruijie(config-if)# dot1x port-control auto
Ruijie(config-if)# dot1x critical vlan 100
Ruijie(config-if)# end
```


-	-

-

4.14 dot1x default

802.1x

dot1x default

-	-

-

show dot1x 802.1x

802.1x

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

show dot1x	802.1x

-

4.15 dot1x dynamic-vlan enable

vlan **no**

dot1x dynamic-vlan enable

no dot1x dynamic-vlan enable

-	-

show dot1x dynamic-vlan 802.1x

802.1x vlan

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

show dot1x	802.1x

-

4.16 dot1x eapol-tag

EAPOL TAG

dot1x eapol-tag

no dot1x eapol-tag

-	-

show dot1x 802.1x

802.1X tag

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

show dot1x	802.1x

-

4.17 dot1x guest-vlan

guest vlan **no**

dot1x dynamic-vlan *vid*

no dot1x guest-vlan

show running-config	SYSLOG

-

4.18 dot1x mac-auth-bypass

MAC

dot1x mac-auth-bypass

no dot1x mac-auth-bypass

-	-

MAC

show dot1x port-control interface

show running-config

MAB

```
Ruijie# configure terminal
Ruijie(config)# interface fa 0/1
Ruijie(config-if)# dot1x mac-auth-bypass multi-user
Ruijie(config-if)# end
Ruijie#write
```

show running-config	

-

4.20 dot1x mac-auth-bypass timeout-activity

802.1x MAC

dot1x mac-auth-bypass timeout-activity *value*

no dot1x mac-auth-bypass timeout-activity

value	, 1-65535

show run 802.1x

802.1x MAC

4.21 dot1x mac-auth-bypass violation

802.1x MAC

dot1x mac-auth-bypass violation

no dot1x mac-auth-bypass violation

-	-

show run 802.1x

802.1x MAC

```
Ruijie# configure terminal
Ruijie(config)# interface fa 0/1
Ruijie(config-if)# dot1x mac-auth-bypass violation
Ruijie(config-if)# end
Ruijie#write
```

show dot1x port-control interface	802.1x

-

4.22 dot1x mac-move permit

802.1x

no

dot1x mac-move permit

no dot1x mac-move permit

-	-

MAC

802.1x

```
Ruijie# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# dot1x mac-move permit
Ruijie(config)# end
```

show dot1x	802.1x

-

4.23 dot1x max-req

DOT1X DOT1X DOT1X **no**

dot1x max-req *count*

no dot1x max-req

count	

3

show dot1x 802.1x

802.1x 7

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

show dot1x	802.1x

-

4.24 dot1x multi-account enable

no

dot1x multi-account enable

no dot1x multi-account enable

-	-

AD

```
Ruijie# configure terminal
Ruijie(config)# dot1x multi-account enable
Ruijie(config)# end
```

show dot1x	802.1x

-

4.25 dot1x multi-mab quiet-period

mab **no**

dot1x multi-mab quiet-period *seconds*

no dot1x multi-mab quiet-period

seconds	mab 0 65535 s

30

mab **show running-config**

100s

```
Ruijie# configure terminal
Ruijie(config)# dot1x timeout quiet-period 100
Ruijie(config)# end
```

show running-config	

-

4.26 dot1x port-control auto

no

dot1x port-control auto

no dot1x port-control

-	-

802.1x

show dot1x 802.1x

802.1x

```
Ruijie# ]  ‡ "          ¾&
Ruijie(]  ‡        &ᵐ l ᴰ  ]e        ‘ ‘
Ruijie(]  ‡   ¾ ¾       я         я    !  я  "    ώ      я
Ruijie(]  ‡   ¾ ¾         M
Ruijie#
```

show dot1x	802.1x

-

4.27 dot1x port-control-mode

802.1x ë MAC

ë ë

ë

dot1x port-control-mode {**mac-based** | {**port-based** [**single-host**]} }

no dot1x port-control-mode

mac-based	mac 802.1X
port-based	802.1X
single-host	802.1x

mac-based

show dot1x port-control 802.1x

single-host 802.1x **show dot1x port-control**

no	

```
Client Oline Probe:   Disabled
Eapol Tag Enable:     Disabled
Authorization Mode:   Group Server
```

show dot1x	802.1x

-

4.31 dot1x reauth-max

no

dot1x reauth-max *count*

no dot1x reauth-max

count	

3

show dot1x 802.1x

```
Ruijie# configure terminal
Ruijie(config)# dot1x reauth-max 5
Ruijie(config)# end
Ruijie# show dot1x
802.1X Status:        Enabled
Authentication Mode:  EAP-MD5
Authed User Number:   0
Re-authen Enabled:    Enabled
Re-authen Period:     1000 sec
Quiet Timer Period:   1000 sec
Tx Timer Period:      10 sec
Supplicant Timeout:   10 sec
Server Timeout:       10 sec
Re-authen Max:        5 times
Maximum Request:      3 times
Filter Non-RG Supp:   Disabled
Client Oline Probe:   Disabled
Eapol Tag Enable:     Disabled
```

```
Authorization Mode:   Group Server
```

show dot1x	802.1x

-

4.32 dot1x stationarity enable

802.1x

802.1X

dot1x stationarity enable

no dot1x stationarity enable

-	-

802.1x

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

-	-

-

4.33 dot1x timeout quiet-period

no

dot1x timeout quiet-period *seconds*

no dot1x timeout quiet-period

seconds	0 65535 s

10

show dot1x

1000s

```
Ruijie# configure terminal
Ruijie(config)# dot1x timeout quiet-period 1000
Ruijie(config)# end
Ruijie# show dot1x
802.1X Status:        Enabled
Authentication Mode:  EAP-MD5
Authed User Number:   0
Re-authen Enabled:    Disabled
Re-authen Period:     3600 sec
Quiet Timer Period:   1000 sec
Tx Timer Period:      3 sec
Supplicant Timeout:   3 sec
Server Timeout:       5 sec
Re-authen Max:        3 times
Maximum Request:      3 times
Filter Non-RG Supp:   Disabled
Client Oline Probe:   Disabled
Eapol Tag Enable:     Disabled
Authorization Mode:   Group Server
```

show dot1x	802.1x

-

4.34 dot1x timeout re-authperiod

no

dot1x timeout re-authperiod *seconds*

no dot1x timeout re-authperiod

seconds	0 65535 s

3600

show dot1x 802.1x

1000s

```
Ruijie# configure terminal
Ruijie(config)# dot1x timeout re-authperiod 1000
Ruijie(config)# end
Ruijie# show dot1x
802.1X Status:        Enabled
Authentication Mode:  EAP-MD5
Authed User Number:   0
Re-authen Enabled:    Disabled
Re-authen Period:     1000 sec
Quiet Timer Period:   1000 sec
Tx Timer Period:      3 sec
Supplicant Timeout:   3 sec
Server Timeout:       5 sec
Re-authen Max:        3 times
Maximum 2Request:      3 times
Filter Non-RG Supp:   Disabled
Client Oline Probe:   Disabled
Eapol Tag Enable:     Disabled
Authorization Mode:   Group Server
```

show dot1x	802.1x

show dot1x 802.1x

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```
Ruijie# configure terminal
Ruijie(config)# dot1x timeout tx-period 10
Ruijie(config)# end
Ruijie# show dot1x
802.1X Status:        Enabled
Authentication Mode:  EAP-MD5
Authed User Number:   0
Re-authen Enabled:    Disabled
Re-authen Period:     1000 sec
Quiet Timer Period:   1000 sec
Tx Timer Period:      10 sec
Supplicant Timeout:   10 sec
Server Timeout:       10 sec
Re-authen Max:        3 times
Maximum Request:      3 times
Filter Non-RG Supp:   Disabled
Client Oline Probe:   Disabled
Eapol Tag Enable:     Disabled
Authorization Mode:   Group Server
```

show dot1x	802.1x

-

4.38 mac-auth-bypass direct-site

no

mac-auth-bypass direct-site *ip-address* [*ip-mask*][dport port-num] [arp]

no mac-auth-bypass direct-site *ip-address* [*ip-mask*][dport port-num]

ip-address	IPv4
ip-mask	IPv4
port-num	
arp	ARP CHECK ARP arp

^

AQ6qÄ

```
Authed User Number:   0
Re-authen Enabled:    Disabled
Re-authen Period:     3600 sec
Quiet Timer Period:   10 sec
Tx Timer Period:      3 sec
Supplicant Timeout:   3 sec
Server Timeout:       5 sec
Re-authen Max:        3 times
Maximum Request:      3 times
Filter Non-RG Supp:   Disabled
Client Oline Probe:   Disabled
Eapol Tag Enable:     Disabled
Authorization Mode:   Group Server
MAC Move Permit        Enabled
```

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

dot1x auth-mode	802.1x
dot1x max-req	
dot1x port-control auto	
dot1x reauth-max	
dot1x re-authentication	
dot1x tim1m1m1m1m1m1m1m1f qui1t-p1rioA5BÕ[XXÊ¥e4AĚT–¥ee8n88X 3ŽZ88ÊÓÄ| MAX25ÉDR0trol auxt	

dot1x timeout tx-period	

-

4.43 show dot1x port-control

show dot1x port-control [

show dot1x probe-timer

-	-

-

```
Ruijie# show dot1x probe-timer
Hello Interval: 20 Seconds
Hello Alive: 250 Seconds
```

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

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

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

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

-

4.47 show dot1x summary

802.1X

show dot1x summary

-	-

-

```
Ruijie# show dot1x summary
ID        User         MAC             Interface VLAN Auth-State
Backend-State Port-Status User-Type Time
-------- ---------- --------------  --------- ---- --------------- ------------- -----------
--------- ------------------
2         ts-user    0023.aeaa.4286  Fa0/5      1     Authenticated
Idle            Authed       static     0days 0h 8m 8s
```

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

-

4.48 show dot1x timeout

802.1X

show dot1x timeout quiet-period

show dot1x timeout re-authperiod

show dot1x timeout server-timeout

show dot1x timeout supp-timeout

show dot1x timeout tx-period

-	-

-

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

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

-

4.49 show dot1x user id

-

4.50 show mac-auth-bypass direct-site

MAB

show mac-auth-bypass direct-site

-	-

-

-

MAB

1 MAB

```
Ruijie# show mac-auth-bypass direct-site

Mac-auth-bypass direct-site:

  Address          MASK             DPORT ARP Binding

  ---------------- ---------------- ----- -----------

  172.18.1.0       255.255.255.0          Off

  172.18.1.1       255.255.255.255        Off

  172.18.1.2       255.255.255.255  80    Off

  172.18.1.3       255.255.255.255        On
```

MAB	
Address	IP
MASK	IP
DPORT	
ARP Binding	ARP

mac-auth-bypass direct-site	MAB

-

5 Web

1.3 clear web-auth portal statistics

portal Web

clear web-auth portal statistics

-	-

-

Web

	IP				

1 IP 172.250.22.14 Web

show http redirect	HTTP

-

5.2 http redirect

HTTP IP **http redirect** **no** HTTP IP

http redirect {*ip-address* | *ipv6-address*}

no http redirect

ip-address	HTTP IPv4
ipv6-address	HTTP IPv6

HTTP IP IPv4 IPv6

Web HTTP IP IPv4 IPv6 HTTP HTTP IP IP

1 HTTP IP 172.16.0.1

```
Ruijie(config)# http redirect 172.16.0.1
```

show http redirect	HTTP
http redirect homepage	

-

5.3 http redirect direct-site

no

http redirect direct-site { *ipv6-address* | *ipv6-prefix/prefix-length* |

ip-address	IPv4
ip-mask	IPv4
arp	ARP CHECK ARP **arp** IPv4

Web Web

50

1 IP 172.16.0.1

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

show http redirect	HTTP

-

5.4 http redirect homepage

no

http redirect homepage *url-string*

no http redirect homepage

url-string	“http://” “https://” 255

Web

1 “ http://www.web-auth.net/login ”

```
Ruijie(config)#http redirect homepage http://www.web-auth.net/login
```

show http redirect	HTTP
http redirect	IP

-

5.5 http redirect port

HTTP WEB **http redirect port** **no** HTTP WEB

http redirect port *port-num*

no http redirect port *port-num*

port-num	HTTP WEB

80 HTTP

HTTP HTTP

80 HTTP

HTTP

10 80

1 8080 HTTP WEB

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

2 80 HTTP WEB

```
Ruijie(config)# no http redirect port 80
```

show http redirect	HTTP

http redirect session-limit *session-num* [**port** *port-session-num*]

no http redirect session-limit

session-num	HTTP 1-255
port-session-num	HTTP 1-65535

HTTP 255 HTTP

300

HTTP TCP

HTTP

HTTP HTTP

HTTP 1

1 HTTP 4

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

show http redirect	HTTP

-

5.7 http redirect timeout

no 3

http redirect timeout *seconds*

no http redirect timeout

seconds	*seconds* 1-10

3

HTTP GET/HEAD

HTTP GET/HEAD

TCP

5.8 show http redirect

HTTP

show http redirect

-	-

-

-

-

1 HTTP

```
Ruijie# show http redirect
HTTP redirection settings:
[redacted]
  port:            80  8000
  homepage:        http://192.168.32.123:8888/ePortal/index.jsp
[redacted]
```

ngs:

homepage

```
Allow-vlan list  :  1-3,5
```

web-auth allow-vlan	VLAN Web VLAN

-

5.10 show web-auth direct-host

web

show web-auth direct-host

-	-

-

-

1

```
Ruijie# show web-auth direct-host
Direct hosts:
  Address            Mask               Port         ARP Binding
  ---------------- ---------------- ---------- ------------
  192.168.0.1      255.255.255.255   Fa0/                                        ‘ ‘
```

1.6 show web-auth portal

portal Web

show web-auth portal [v2 [parameters | aaa | statistics | by-name eportalv2]

parameters	Web
aaa	Web AAA
statistics	Web
by-name	- Portal

-

-

1 Web

```
Ruijie# show web-auth portal v2 statistics
V2 Portal User Statistics
    Current Online User Count:        20
    Max. Online User Count:            23000
    Online User Limit:                  24576

V2 Portal Communication Statistics
    Challenge Req Count:                67000
    Challenge Rsp Count:                67000
    Challenge Passed Count:             66950
    Challenge Failure Count:            50
    Challenge Rsp Send Succ Count:     67000
    Auth Req Count:                       66950
    Auth Rsp Count:                       66950
    Auth Passed Count:                   57000
    Auth Failure Count:                  9950
    Auth Rsp Send Succ Count:           66950
```

V2 Portal User Statistics	Web
Current Online User Count	
Max. Online User Count	
Online User Limit	

V2 Portal Communication Statistics	Portal
Challenge Req Count	Challenge
Challenge Rsp Count	Challenge
Challenge Passed Count	Challenge
Challenge Failure Count	Challenge
Challenge Rsp Send Succ Count	Challenge
Auth Req Count	
Auth Rsp Count	
Auth Passed Count	
Auth Failure Count	
Auth Rsp Send Succ Count	

clear web-auth portal statistics	Web

10.4(3b18)

5.11 show web-auth port-control

show web-auth port-control

1 AAA network comm_acct RADIUS radius Web

Ruijie# configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

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

```
Ruijie(config)# web-auth accounting v2 comm_acct
Ruijie(config)# exit
```

aaa accounting network	AAA network

10.4(3b18)

1.1 web-auth acct-update-interval

Web **no**

web-auth acct-update-interval *minutes*

no web-auth acct-update-interval

minutes	[0 60] 0

0

ō Access-Accept Ŏ Š	0
Web	

1 Web 3

```
Ruijie# configure terminal
```

10.4(3b18)

1.2 web-auth authentication v2

Web **no**

web-auth authentication v2 *list-name*

no web-auth authentication v2

list-name	AAA Web AAA

Web Web

list	VLAN web VLAN *list*

VLAN Web VLAN

VLAN VLAN VLAN
VLAN VLAN
VLAN Web
TRUNK

1 VLAN VLAN1 2 3 5

```
Ruijie(config)# web-auth allow-vlan 1-3,5
```

show web-auth allow-vlan	VLAN Web VLAN

-

5.14 web-auth direct-host

IP **no**

web-auth direct-host { *ipv6-address* | *ipv6-prefix/prefix-length* | *ip-address* [*ip-mask*] [**arp**] } [**port** *interface-name*]

no web-auth direct-host { *ipv6-address* | *ipv6-prefix/prefix-length* | *ip-address* [*ip-mask*] }

ipv6-address	IPv6
ipv6-prefix/prefix-length	IPv6 IPv6
ip-address	IPv4
ip-mask	IPv4
port *interface-name*	IP
arp	ARP CHECK IP ARP **arp** IPv4

Web

Web

50

1 IP 172.16.0.1

```
Ruijie(config)# web-auth direct-host 172.16.0.1
```

show web-auth direct-host	web

-

5.15 web-auth offline-detect flow

no

web-auth offline-detect flow

no web-auth offline-detect flow

1 *web-auth*

```
Ruijie(config)# web-auth portal key web-auth
```

http redirect	IP
http redirect homepage	
web-auth port-control	Web

-

5.17 web-auth portal

Web Web Portal **no**

web-auth portal {**eportalv1 | eportalv2** }
no web-auth portal

eportalv1	Web
eportalv2	Web

Web

portal Web

1 Web Portal

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)#portal-server eportalv2 ip 172.20.1.1 url http://172.20.1.1:7080/index.php
Ruijie(config)# web-auth portal eportalv2
```

portal-server	Web Portal

10.4(3b18)

5.18 web-auth port-control

Web **no** Web

web-auth port-control [**ip-only-mode**]

no web-auth port-control

ip-only-mode	Web IP MAC IP MAC IP

Web

Web

FastEthernet 0/14 Web

```
Ruijie(config)# interface FastEthernet 0/14
Ruijie(config-if)# web-auth port-control
```

show web-auth port-control	Web
http redirect	IP
http redirect homepage	
web-auth portal key	#

1 30

```
Ruijie(config)# !    !            ate-interval
```

-	-

-

6 SSH

6.1 crypto key generate

crypto key generate {**rsa | dsa**}

rsa	RSA
dsa	DSA

SSH Server

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

w 5 DSA RSA ٧
w w L u ,
DSA RSA ~ ÷ ¢

RSA ÷ DSA ÷ ج 512 2048 ¢ SSH2
w ō SCP - w Ŏ ÷ 768 ¢
, ÷ RSA DSA ÷ ″ ÷ ج 768 768 ¢

÷ ح ٦ **no crypto key generate** ح ٦ **crypto key zeroize** ح ٦ ÷
¢

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

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

-

6.2 crypto key zeroize

SSH

crypto key zeroize {**rsa** | **dsa**}

rsa	RSA
dsa	DSA

-

SSH Server DISABLE

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

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

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

-

6.3 disconnect ssh

SSH

disconnect ssh [**vty**] *session-id*

session-id	SSH 0~35

-

SSH

show ssh	SSH
clear line vty *line-number*	VTY

-

1.9 disconnect ssh-session

SSH Client (discon)-4(nect ss)-4(n)(t)-7(y)]TJ/TT0 1 Tf0 _0 33 Tc 5.273 0 T0BT0.1

5 Web

1.3 clear web-auth portal statistics

portal Web

clear web-auth portal statistics

-	-

-

Web

	IP				

1 IP 172.250.22.14 Web

show http redirect	HTTP

-

5.2 http redirect

HTTP IP **http redirect** **no** HTTP IP

http redirect {*ip-address* | *ipv6-address*}

no http redirect

ip-address	HTTP IPv4
ipv6-address	HTTP IPv6

HTTP IP IPv4 IPv6

Web HTTP IP IPv4 IPv6 HTTP HTTP IP IP

1 HTTP IP 172.16.0.1

```
Ruijie(config)# http redirect 172.16.0.1
```

show http redirect	HTTP
http redirect homepage	

-

5.3 http redirect direct-site

no

http redirect direct-site { *ipv6-address* | *ipv6-prefix/prefix-length* |

ip-address	IPv4
ip-mask	IPv4
arp	ARP CHECK ARP **arp** IPv4

Web Web

50

1 IP 172.16.0.1

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

show http redirect	HTTP

-

5.4 http redirect homepage

no

http redirect homepage *url-string*

no http redirect homepage

url-string	“http://” “https://” 255

Web

1 “ http://www.web-auth.net/login ”

```
Ruijie(config)#http redirect homepage http://www.web-auth.net/login
```

Q，5×ACL&QOS

ACL&QOS

1. ACL
2. QOS

1 ACL

1.1 w W × k T =

id	IP ACL 1-99 1300-1999 IP ACL 100-199 2000-2699 MAC ACL 700–799 ACL 2700–2899
name	ACL
sn	ACL ( )
start-sn	
inc-sn	
deny	
permit	
port	IPv6 ipv6 icmp tcp udp 0-255 IPv4 eigrp gre ipinip igmp nos ospf icmp udp tcp esp pcp pim ip IP 0-255 icmp/tcp/udp
interface idx	
src	
src-wildcard	0.255.0.32
src-ipv6-pfix	IPv6
dst-ipv6-pfix	IPv6
pfix-len	
src-ipv6-addr	IPv6

precedence	0-7
range	

time-range tm-rng-name

	id	1-99 100-199 1300-1999 2000-2699 2700 – 2899 700 - 799
	deny	
	permit	
	source	
	source-wildcard	0.255.0.32
	protocol	IP EIGRP GRE IPINIP IGMP NOS OSPF TCP
	destination	
	destination-wildcard	0.255.0.32
precedence		
	precedence	0-7
range		
	lower	
	upper	
	time-range-name	
		0-15
	icmp-type	ICMP 0-255
	icmp-code	ICMP 0-255
	icmp-message	ICMP
	operator	lt- eq- gt- neq- range-
[ ]	range	
host source-mac-address		
host destination-mac-address		
vid	vid	
	ethernet-type	
	tcp flag	
	tcp-flag	tcp flag
established	tcp flag	rst ack

IP 1-99 1300-1999

IP 100-199 2000-2699

MAC 700-799 MAC Expert

2700-2899 VLAN ID

precedence precedence/tos tos/fragments /range lower upper/time-range time-range-name

TCP Flag

urg

ack

psh

rst

syn

fin

critical

flash

flash-override

immediate

internet

network

priority

routine

max-reliability

max-throughput

min-delay

min-monetary-cost

normal

ICMP

administratively-prohibited

dod-host-prohibited

dod-net-prohibited

echo

echo-reply

fragment-time-exceeded

general-parameter-problem

host-isolated

host-precedence-unreachable

host-redirect

host-tos-redirect

host-tos-unreachable

host-unknown

host-unreachable

information-reply

information-request

mask-reply

mask-request

mobile-redirect

net-redirect

net-tos-redirect

net-tos-unreachable

net-unreachable

network-unknown

no-room-for-option

option-missing

packet-too-big

parameter-problem

port-unreachable

precedence-unreachable

protocol-unreachable

redirect

router-advertisement

router-solicitation

source-quench

source-route-failed

time-exceeded

timestamp-reply

timestamp-request

ttl-exceeded

unreachable

TCP TCP

bgp

chargen

cmd

daytime

discard

domain

echo

exec

finger

ftp

ftp-data

gopher

hostname

ident

irc

klogin

kshell

login

nntp

pim-auto-rp

pop2

pop3

smtp

sunrpc

syslog

tacacs

talk

telnet

time

uucp

whois

www

UDP UDP

biff

bootpc

bootps

discard

dnsix

domain

echo

isakmp

mobile-ip

nameserver

netbios-dgm

netbios-ns

netbios-ss

ntp

pim-auto-rp

rip

snmp

snmptrap

sunrpc

syslog

tacacs

talk

tftp

time

who

xdmcp

ACL ACL 0

```
                    2700    ACL
Ruijie #show access-lists 2700
expert access-list extended 2700
    10 permit ip VID 4 host 192.168.3.55 any host 192.168.99.6 any  (88 matches)
    20 deny tcp any any eq login any any (33455 matches)
    30 permit tcp any any host 192.168.6.9 any (10 matches)

Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# clear counters access-list 2700
Ruijie(config)# end
Ruijie #show access-lists 2700
expert access-list extended 2700
    10 permit ip VID 4 host 192.168.3.55 any host 192.168.99.6 any
    20 deny tcp any any eq login any any
    30 permit tcp any any host 192.168.6.9 any
```

access-list	ACL
show access-lists	ACL

1.4 deny

(deny)

IP

[sn] deny {source source-wildcard | host source | any| interface idx }[time-range tm-range-name] [log]

IP

[sn] deny protocol source source-wildcard destination destination-wildcard [precedence precedence] [tos tos] [fragment] [range lower upper] [time-range time-range-name] [log]

IP

Internet Control Message Protocol (ICMP)

[sn] deny icmp {source source-wildcard | host source | any} {destination destination-wildcard | host destination | any} [icmp-type] [[icmp-type [icmp-code]] | [icmp-message]] [precedence precedence] [tos tos] [fragment] [time-range time-range-name]

Transmission Control Protocol (TCP)

[sn] deny tcp { source source-wildcard | host Source | any} [operator port [port]] {destination destination-wildcard | host destination | any} [operator port [port]] [precedence precedence] [tos tos] [fragment] [range lower upper] [time-range time-range-name] [match-all tcp-flag | established]

User Datagram Protocol (UDP)

[sn] deny udp {source source –wildcard | host source | any} [operator port [port]] {destination destination-wildcard | host destination | any} [operator port [port]] [precedence precedence] [tos tos] [fragment] [range lower upper] [time-range time-range-name]

MAC

[sn] deny {any | host source-mac-address}{any | host destination-mac-address} [ethernet-type][cos [out] [inner in]]

Expert

[sn] deny [protocol | [ethernet-type][cos [out] [inner in]]] [[VID [out][inner in]]] {source source-wildcard | host source | any}{host source-mac-address | any } {destination destination-wildcard | host destination [illegible]

Expert½ +!‰ U ÿ ¹ þFS$ôOôr[in63.0071.242 Tc 5.89.00/TTs

0.0131 1 [s7] deny Td (o[illegible]) [illegible] (h)Tj 0.199 g0.0014 Tc 3.007w 06953 0 .873 0 Td[}5/TT0 1 Tf-0..01

any}{host destination-mac-address | any} [operator port [port]] [precedence precedence] [tos tos] [fragment] [range lower upper] [time-range time-range-name]

Address Resolution Protocol (ARP)

[sn] deny arp { vid vlan-id}[source-mac-address source-wildcard |host source-mac-address | any] [host destination –mac-address | any] {sender-ip sender-ip–wildcard | host sender-ip | any} {sender-mac sender-mac-wildcard | host sender-mac | any} {target-ip target-ip–wildcard | host target-ip | any}

IPV6

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

IPV6

Internet Control Message Protocol (ICMP)

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

Transmission Control Protocol (TCP)

[sn] deny tcp { source-ipv6-prefix / prefix-length | host source-ipv6-address | any}[operator port [port]] {destination-ipv6-prefix /prefix-length | host destination-ipv6-address | any} [operator port [port]] [dscp dscp] [flow-label flow-label] [fragment] [range lower upper] [time-range time-range-name] [match-all tcp-flag | established]

0</MCI/TTTD<01CF09961B441C81B201D0>-0.0028 Tc 0 >>BC 0 TcETq126] [XbEBu

User Datagram Protocol (UDP)

[sn] deny udp {source-ipv6-prefix/prefix-length | host source-ipv6-address | any} [operator port [port]] {destination-ipv6-prefix /prefix-length | host destination-ipv6-address | any}[operator port [port]] [dscp dscp] [flow-lab] [fragment ( )Tj/T 1 Tf-0.0028 Tc 0.267 0 T 022 Tc -0.0134 Tw 2.553] ()Tj

ACL

ACL ž

ƀ ƀ

```
Ruijie(config-ext-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# ip access-group 34 in
```

5 IPV6 ACL IP 192.168.4.12 gigabitethernet 1/1

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

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

-

1.5 expert access-group

EXPERT ACL no

expert access-group {id | name} {in | out}

no expert access-group {id | name} {in | out}

id	Expert 2700-2899
name	Expert
in	
out	

Expert ACL

ACL show access-group

access-list accept_00d0f8xxxxxx_only Gigabit 0/1

```
Ruijie(config)# interface GigaEthernet 0/1
Ruijie(config-if)# expert access-group accept_00d0f8xxxxxx_only in
```

show access-group	ACL

-

1.6 expert access-list

ACL no ACL

expert access-list extended {id | name}

no expert access-list extended {id | name}

id	Expert 2700-2899
name	ACL

Expert ACL

show expert access-lists

1 ACL

```
Ruijie(config)# expert access-list extended exp-acl
Ruijie(config-exp-nacl)# show access-lists
expert access-list extended exp-acl
Ruijie(config-exp-nacl)#
```

2 ACL

```
Ruijie(config)# expert access-list extended 2704
Ruijie(config-exp-nacl)# show access-lists
expert access-list extended 2704
Ruijie(config-exp-nacl)#
```

show access-lists	

-

1.7 expert access-list new-fragment-mode

no

expert access-list new-fragment-mode { id | name }

no expert access-list new-fragment-mode { id | name }

id	expert 2700-2899
name	ACL

ACL fragment

ACL fragment

ACL

```
Ruijie(config)# expert access-list counter exp-acl
Ruijie(config)# show access-lists
expert access-list extended 2700
 10 permit ip VID 4 host 192.168.3.55 any host 192.168.99.6 any (16 matches)
 20 deny tcp any any eq login any any (78 matches)
```

2 ACL

```
Ruijie(config)#no expert access-list counter exp-acl
Ruijie(config)# show access-lists
expert access-list extended 2700
 10 permit ip VID 4 host 192.168.3.55 any host 192.168.99.6 any
 20 deny tcp any any eq login any any
```

show access-lists	

-

1.9 ip access-group

ip access-group

no

ip access-group {id | name} {in | out}

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

id	IP 1-199 1300-2699
name	IP
in	
out	

ACL

ip access-group

-

1.10 ip access-list

IP ACL IP ACL no ACL

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

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

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

ACL

ACL ACL deny permit show access-lists ACL

1 ACL

```
Ruijie(config)# ip access-list standard std-acl
Ruijie(config-std-nacl)# show access-lists
ip access-list standard std-acl
Ruijie(config-std-nacl)#
```

2 ACL

```
Ruijie(config)# ip access-list extended 123
Ruijie(config-ext-nacl)# show access-lists
ip access-list extended 123
```

show access-lists	IP

-

1.11 ip access-list log-update interval

IPv4 ACL no

ip access-list log-update interval time

no ip access-list log-update interval

time	ACL ACL logging

		[0, 1440]	5	5
	ACL	0	ACL logging	

id	ACL
name	ACL
start-sn	
inc-sn	

start-sn 10

inc-sn 10

show access-lists

ACL

```
Ruijie# show access-lists
ip access-list standard 1
10 permit host 192.168.4.12
20 deny any any
Ruijie# config
```

show access-lists

IPV6 ACL

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

show access-lists	IPV6

-

1.16 ipv6 access-list log-update interval

IPv6 ACL no

ipv6 access-list log-update interval time

no ipv6 access-list log-update interval

	ACL ACL logging
time	[0, 1440] 5 5 1

1.17 ipv6 access-list counter

IPv6 ACL ACE no ACL ACE

ipv6 access-list counter name

no ipv6 access-list counter name

name	ACL

-

show access-lists

in	
out	

out

show access-lists	
ip access-list	IP

-

1.20 mac access-group

MAC ACL no

mac access-group {id | name}{in | out}

no mac access-group

MAC ACL

show access-lists

1 MAC ACL

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

2 MAC ACL

```
Ruijie(config)# mac access-list extended 704
Ruijie(config-mac-nacl)# show access-lists
mac access-list extended 704
```

show access-lists	mac

-

1.22 mac access-list counter

MAC ACL ACE no ACL ACE

mac access-list counter { id | name }
no mac access-list counter { id | name }

id	MAC 700-799
name	MAC

MAC ACL

show access-lists

1 MAC ACL ACE

```
Ruijie(config)# mac access-list extended mac-acl
Ruijie(config-mac-nacl)# show access-lists
mac access-list extended mac-acl
 10 permit host 0023.56ac.8965 any (170 matches)
 20 deny any any etype-any cos 6 (239 matches)
```

2 MAC ACL ACE

source-mac-address | any } {destination destination-wildcard | host destination | any} {host destination-mac-address | any} [precedence precedence] [tos tos] [fragment] [range lower upper] [time-range time-range-name]

Expert

Internet Control Message Protocol (ICMP)

[sn] permit icmp [VID [out][inner in]] {source source-wildcard | host source | any} {host source-mac-address | any } {destination destination-wildcard | host destination | any} {host destination-mac-address | any}[icmp-type] [[icmp-type [icmp-code]] | [icmp-message]] [precedence precedence] [tos tos] [fragment] [time-range time-range-name]

Transmission Control Protocol (TCP)

[sn] permit tcp [VID [out][inner in]]{source source-wildcard | host Source | any} {host source-mac-address | any } [operator port [port]] {destination destination-wildcard | host destination | any} {host destination-mac-address | any} [operator port [port]] [precedence precedence] [tos tos] [fragment] [range lower upper] [time-range time-range-name] [match-all tcp-flag | established]

User Datagram Protocol (UDP)

[sn] permit udp [VID [out][inner in]]{source source –wildcard | host source | any} {host source-mac-address | any } [operator port [port]] {destination destination-wildcard | host destination | any} {host destination-mac-address | any} [operator port [port]] [precedence precedence] [tos tos] [fragment] [range lower upper] [time-range time-range-name]

Address Resolution Protocol (ARP)

[sn] permit arp {vid vlan-id} [host source-mac-address | any] [host destination –mac-address | any] {sender-ip sender-ip–wildcard | host sender-ip | any} {sender-mac sender-mac-wildcard | host sender-mac | any} {target-ip target-ip–wildcard | host target-ip | any}

IPV6

[sn] permit protocol {source-ipv6-prefix / prefix-length | any | host source-ipv6-address} {destination-ipv6-prefix / prefix-length | any| hostdestination-ipv6-address} [dscp dscp] [flow-label flow-label] [fragment] [range lower upper] [time-range time-range-name]

IPV6

Internet Control Message Protocol (ICMP)

[sn] permit icmp {source-ipv6-prefix / prefix-length | any source-ipv6-address | host } {destination-ipv6-prefix / prefix-length| host destination-ipv6-address | any} [icmp-type] [[icmp-type [icmp-code]] | [icmp-message]] [dscp dscp] [flow-label flow-label][fragment] [time-range time-range-name]

Transmission Control Protocol (TCP)

[sn] permit tcp {source-ipv6-prefix / prefix-length | host source-ipv6-address | any} [operator port [port]] {destination-ipv6-prefix / prefix-length | host destination-ipv6-address

-	-

ACL

ACL ACL

1 Expert Extended ACL ACL IP 192.168.4.12 MAC 001300498272 TCP

```
Ruijie(config)# expert access-list extended exp-acl
Ruijie(config-exp-nacl)# permit tcp  host  192.168.4.12 host 0013.0049.8272 any any
Ruijie(config-exp-nacl)# deny any any any any
Ruijie(config-exp-nacl)# show access-lists
expert access-list extended exp-acl
10 permit tcp  host  192.168.4.12 host 0013.0049.8272 any any
20 deny any any any any
Ruijie(config-exp-nacl)#
```

2 IP ACL IP 192.168.4.12 TCP 100 gigabitethernet 1/1

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

3 MAC ACL MAC 0013.0049.8272 100 gigabitethernet 1/1

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

4 ip ACL IP 192.168.4.12 1

```
Ruijie(config)# ip access-list standard std-acl
```

```
Ruijie(config-std-nacl)# permit host 192.168.4.12
Ruijie(config-ipv6-nacl)# show access-list
ip access-list standard std-acl
10 permit host 192.168.4.12
Ruijie(config-ipv6-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# ip access-group std-acl in
```

5	IPV6	ACL	IP	192.168.4.12

gigabitethernet 1/1

```
Ruijie(config)# ipv6 access-list extended v6-acl
Ruijie(config-ipv6-nacl)# 11 permit ipv6
```

ACE

100 ACL 2

ace ace ace remark

```
Ruijie# ip access-list extended 102
Ruijie(config-ext-nacl)# remark first_remark
Ruijie(config-ext-nacl)# permit tcp 1.1.1.1 0.0.0.0 2.2.2.2 0.0.0.0
Ruijie(config-ext-nacl)# remark second_remark
Ruijie(config-ext-nacl)# permit tcp 3.3.3.3 0.0.0.0 4.4.4.4 0.0.0.0
Ruijie(config-ext-nacl)# end
Ruijie#
```

show access-lists	
ip access-list	IP

-

1.26 security access-group

security access-group {id|name}

no security access-group

id	ACL id
name	ACL

-

```
Ruijie(config-if)#security access-group 1
```

show running	

-

1.27 security global access-group

security global access-group {id|name}
no security global access-group

id	ACL id
name	ACL

-

```
Ruijie(config)#security global access-group 1
```

show running	

-

1.28 security uplink enable

security uplink enable
no security uplink enable

-	-

-

```
Ruijie(config-if)#security uplink enable
```

show running	

-

1.29 show access-group

ACL

show access-group [interface interface]

interface	

-

ACL ACL

```
Ruijie# show access-group
ip access-list standard ipstd3
Applied On interface GigabitEthernet 0/1.
ip access-list standard ipstd4
Applied On interface GigabitEthernet 0/2.
ip access-list extended 101
Applied On interface GigabitEthernet 0/3.
ip access-list extended 102
Applied On interface GigabitEthernet 0/8.
```

ip access-group	ip
mac access-group	mac
expert access-group	expert
ipv6 traffic-filter	ipv6

-

1.30 show access-lists

ACL ACL

show access-lists [id | name]

id	
name	

-

acl id name ACL

```
Ruijie# show access-lists n_acl
ip access-list standard n_acl
```

```
Ruijie# show expert access-group interface gigabitethernet 0/2
expert access-group ee in
Applied On interface GigabitEthernet 0/2.
```

expert access-list	Expert ACL

-

1.32 show ip access-group

IP ACL

show ip access-group [interface interface]

interface	

-

IP ACL IP ACL

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

ip access-list	IP ACL

-

1.33 show ipv6 traffic-filter

IPV6

show ipv6 traffic-filter [interface interface]

interface	

-

IPv6 ACL IPv6 ACL

```
Ruijie# show ipv6 traffic-filter interface gigabitethernet 0/4
ipv6 traffic-filter v6 in
Applied On interface GigabitEthernet 0/4.
```

ipv6 access-list	IPV6 ACL

-

1.34 show mac access-group

MAC

show mac access-group [interface interface]

	è	ɒ

no	svi router-acls

SVI Router ACLs

-

```
Ruijie(config)#svi router-acls enable
```

-	-

-

2 IP QOS

2.1 - þ ´

QoS QoS

1 policy-map

policy-map class-map

class-map 1 ACL ACL ACE

ACE “ ACL”

QoS Policy Map

QoS QoS Policy Map

Off QOS

	CoS	0
		8
		WRR
	QueueWeight	1:1:1:1:1:1:1:1
	WRR Weight Range	1:254
	DRR Weight Range	1:254
		No Trust

Cos

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

CoS to DSCP

CoS to DSCP	CoS	DSCP
	0	0
	1	8
	2	16
	3	24
	4	32

	5	40
	6	48
	7	56

IP-Precedence to DSCP

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

DSCP to CoS

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

2.2 class maps

ACL

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

mac access-list extended {acl-id | acl-name}

expert access-list extended {acl-id | acl-name}

ipv6 access-list extended acl-name

access-list acl-id ACL

class map class map

[no] class-map class-map-name

class map

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

[no] match ip dscp dscp-value1 [dscp-value2 [dscp-valueN]]

[no] match ip precedence ip-pre-value1 [ip-pre-value2 [ip-pre-valueN]]

acl-name	ACL
acl-id	ACL id
class-map-name	class map
dscp-vlaueN	ip dscp
ip-pre-valueN	ip precedence
no class-map class-map-name	class map
no match access-group acl-name| acl-id	
no match ip dscp dscp-value1 [dscp-value2 [dscp-valueN]]	ip dscp
no match ip precedence ip-pre-value1 [ip-pre-value2 [ip-pre-valueN]]	ip precedence

-

-

1 MAC ACL, me

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

2 ACL

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

3 ACL

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

4 class-map, cm

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

5 ACL

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

6 class-map

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

7 class-map cm-dscp DSCP 8 16 24

```
Ruijie(config)# class-map cm-dscp
Ruijie(config-cmap)# match ip dscp 8 16 24
Ruijie(config-cmap)# exit
```


2.3 drr-queue bandwidth

```
Ruijie(config-if)# rate-limit input 1000000 4096
```


-

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

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

-

2.7 mls qos map dscp-cos

DSCP CoS

mls qos map dscp-cos dscp-list to cos

no mls qos map dscp-cos

dscp-list	
cos	0 7
no	

-

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

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

-

2.8 mls qos map ip-prec-dscp

ippre DSCP

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

no mls qos map ip-prec-dscp

dscp	

no	

-

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

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

-

2.9 mls qos scheduler

mls qos scheduler [sp | wrr | drr]
no mls qos scheduler

sp	
wrr	
drr	
no	

wrr

-

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

show mls qos scheduler	-

-

2.10 mls qos trust

Qos

mls qos trust {cos | dscp | ip-precedence }
no mls qos trust

cos	Qos CoS
dscp	Qos DSCP
ip-precedence	Qos IP-PRE
no	

-

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

show mls qos interface interface-id	-

-

2.11 policy maps

policy map policymap
[no] policy-map policy-map-name
policy map class-map ,
[no] class class-map-name
IP ip dscp IP
set ip dscp new-dscp
no set ip dscp
cos none-tos CoS DSCP
set cos new-cos [none-tos]
no set cos

police rate-bps burst-byte[exceed-action {drop | dscp dscp-value | cos cos-value [none-tos] }]
no police

policy-map-name	policymap
no policy-map policy-map-name	policy map
class-map-name	class map

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

show mls qos queueing	-

-

2.13 priority-queue cos-map

CoS

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

no priority-queue cos-map

qid	id
cos7	cos0 ... CoS
no	

-

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

show mls qos queueing	-

2.14 service-policy

policy map

service-policy {input | output

-

```
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# service-policy input po
Ruijie(config)# virtual-group 3
Ruijie(config-if)# service-policy input po
```

show mls qos interface	-

virtual-group output

2.15 show class-map

class map

show class-map [class-name]

class-name	class map

class map

-

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

-	-

-

2.16 show mls qos interface

QoS

show mls qos interface interface-id [policers]

interface-id	

policers	police

QOS

-

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

-	-

-

2.17 show mls qos maps

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

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

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

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

-

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

-	-

-

2.18 show mls qos queueing

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

show mls qos queueing

-	-

-

-

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

-	-

-

2.19 show mls qos rate-limit

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

interface	interface-id rate-limit

-

-

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

-	-

-

2.20 show mls qos scheduler

show mls qos scheduler

-	-

-

-

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

-	-

-

2.21 show policy-map

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

policy-name	policy name
class-name	class map

policy name

-

```
Ruijie# show policy-map
```

-	-

-

2.22 show virtual-group

show virtual-group [virtual-group-number | summary]

virtual-group-number	128
summary	

-

-

```
Ruijie# show virtual-group 1
Ruijie# show virtual-group summary
```

virtual-group	

-

2.23 wrr-queue bandwidth

WRR

wrr-queue bandwidth weight1 ... weightn

no wrr-queue bandwidth

weight1...weightn	n n
no	

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

-

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

show mls qos queueing	-

virtual-group virtual-group-number

no virtual-group virtual-group-number

virtual-group-number	128

Aggregate Port (
) ( ) 48
24 24

1/3 3

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

show virtual-group	

-

Q ¸ –5×- ÃM4 û

Ú ` Ÿ4¡ ÃM4 û Q ¸ –5×,Ì G Y • È Ù À ¹ ß0´8V Ö

1. CFM
2. REUP
3. RLDP
4. DLDP
5. VRRP
6. VRRP Plus
7. TPP
8. BFD
9. RNS & Track
10. IP Event Dampening
11. GRTD
12. SEM
13. VSU

1 CFM

1.1 cfm alarm-priority service-instance

G!5BMEP {*ó A:,X Ô "5 LK1 4{ Ä*ü Ã ¹ S*ü no EÝNM 6 á {*ó A:,X Ô "5 LK1 4{ T¬Ax Ä

cfm alarm-priority priority-value service-instance instance-id [mep mep-id]

no cfm alarm-priority

Ï – DAÈ â Ð

– D	£EÄ
priority-value	></ ' ”# 5 LK1 4{ û b1 bA¹ Ê å5%1u ¥EÕ A: µ C Ä ª 8× È[1,5] ÈT¬Ax 2 Ä
instance-id	á u r _ ID È ª 8× È [1,32767]
mep-id	MEP ID È ª 8× È[1,8191]
no	A¹EÝNM></ 6 á {*ó A:,X Ô "5 LK1 4{ T¬Ax Ä

Ï5 ,ÕG!5B Ð 5 ,Õ MEP {*ó A:,X Ô "5 LK1 4{ 2

Ï Q ¸ õ ã Ð (M õ ã Ä

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð 5 X L M L H F R Q I L J F I P D O D U P S U L R U L W \

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show cfm mep service-instance	/ 4È x0Ã&• µ C ÈJ Ù ÿ MEP {*ó A:,X Ô "5 LK 1 4{ µ C Ä

Ï G ÄAÈ â Ð -

1.2 cfm cc interval service-instance

G!5BCCM ,X ¥EÕKÈLh Ä*ü Ã ¹ S*ü no EÝNM 6 áA¹KÈLh T¬Ax Ä

cfm cc interval interval-type service-instance instance-id

no cfm cc interval service-instance instance-id

Ï – DAÈ â Ð

– D	£EÄ
interval-type	KÈLh < ó2O _ Ä ª 8× È 4-7 ÈT¬Ax 4 Ä Ø/¡KÈLh2O _ ·><,X CCM ¥EÕKÈLh V ß Ö Interval-type CCM ¥EÕKÈLh 4 1s 5 10s

	6 60s 7 600s
instance-id	á u r _ ID Ä ª 8× È 1-32767 Ä
no	A¹EÝNM></ 6 áKÈLh < ó2O _ T¬Ax Ä

Ï5 ,ÕG!5B Ð interval-type 5 ,Õ 4 Ä

Ï Q ¸ õ ã Ð G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð 5 X L M L H F R Q I L J F I P F F L Q W H U Y D O V H U Y L F H L Q V W D Q F H

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
cfm cc service-instance enable	Ô CCM ¥EÕ s6Ñ Ä
show cfm service-instance	/ á u r _ µ C È J Ù ÿ CCM ¥EÕ < ó µ C Ä

Ï G ÄAÈ â Ð -

1.3 cfm cc service-instance enable

' Ô á u r _ Y Ý MEP ê ¤ þ MEP ,X CC s6Ñ Ä*ü Ã ¹ S*ü no EÝNM GKÁA¹ s6Ñ Ä

cfm cc service-instance instance-id [mep mep-id] enable

no cfm cc service-instance instance-id [mep mep-id] enable

Ï – DAÈ â Ð

– D	£EÄ
instance-id	á u r _ ID Ä ª 8× È 1-32767 Ä
mep-id	MEP ID Ä ª 8× È 1~8191
no	A¹EÝNM></ GKÁ4È x0Ã&•ØCCM ¥EÕ s6Ñ Ä

Ï5 ,ÕG!5B Ð 5 ,Õ GKÁ Ä

Ï Q ¸ õ ã Ð (M õ ã Ä

Ï S*ü Û Ð Ð

ÏG!5B _ Ð 5 X L M L H F R Q I L J F I P F F V H U Y L F H L Q V W D Q F H H Q D E O H

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
cfm cc interval service-instance	G!5BCCM ¥EÕ < ó Ä
show cfm mep service-instance	/ 4È x0Ã&• µ C È J Ù ÿ CCM ,X ¥EÕ s6Ñ(Š Õ µ C Ä

Ï G ÄAÈ â Ð -

1.4 cfm linktrace auto-detection

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð

5 X L M L H F I P O L Q N W U D F H V H U Y L F H L Q V W D Q F H P H S U H P R W H P H S
5 X L M L H F I P O L Q N W U D F H V H U Y L F H L Q V W D Q F H P H S U H P R W H P D F

Ï,Ì G Q ¸ Ð	Q ¸	£EÄ

Ï – DAÈ â Ð

– D	£EÄ
ma-name	4È xLš á ÄKS z8× È 1-43 È J è?U" 4È xLš áKS z â4È x ³ áKS z ` áCYE›44 Ä
md-name	4È xLš ü,X4È x ³ á Ä
no	A¹EÝNM></ ôL8 Û n,X4È xLš Ä

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð G!5B õ ã Ä

Ï S*ü Û Ð Ð 4È xLš á â4È x ³ á,XKS z ` á6ÑCYE› 44 þ +0ú È ú í4È xLš ï Î á ä s Ä º ê È ï Î4È xLš ! È ™ NO ï Î4È x ³ Ä

ÏG!5B _ Ð

```
5XLMLH FRQILJ FIP PD 0$B$B0'B$ PG 0'B$
5XLMLH FRQILJ QR FIP PD 0$B$B0'B$ PG 0'B$
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show cfm ma md	/ 4È xLš µ C Ä

Ï G ÄAÈ â Ð -

1.8 cfm md level

ï Î4È x ³ Ä*ü Ã ¹ S*üA¹ Q ¸,X no EÝNM ôL84È x ³ Ä

cfm md md-name level level

no cfm md md-name

Ï – DAÈ â Ð

– D	£EÄ
md-name	4È x ³ á ÈKS z8× È 1-43 Ä
level	4È x ³4{ ÿ È ª 8× È 0-7 Ä
no	EÝNM></ ôL84È x ³ Ä

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð

```
5XLMLH FRQILJ FIP PG 0'B$ OHYHO
5XLMLH FRQILJ QR FIP PG 0'B$
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show cfm md	/ 4È x ³ µ C

Ï G ÄAÈ â Ð -

1.9 cfm mep service-instance

G!5B4È x0Ã&• Ä*ü Ã ¹ S*ü no EÝNM ôL84È x0Ã&• Ä

cfm mep mep-id service-instance instance-id { inward | outward }

no cfm mep mep-id service-instance instance-id

Ï – DAÈ â Ð

– D	£EÄ
mep-id	4È x0Ã&•ID Ä ª 8× È 1-8191
instance-id	á u r _ ID Ä ª 8× È 1-32767
inward	G!5BA¹4È x0Ã&• Y å4È x0Ã&• Ä
outward	G!5BA¹4È x0Ã&• ê å4È x0Ã&• Ä
no	A¹EÝNM></ ôL8 Û n,X4È x0Ã&• Ä

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð

5 X L M L H F R Q I L J L Q W H U I D F H J L J D E L W H W K H U Q H W
5 X L M L H F R Q I L J L I F I P P H S V H U Y L F H L Q V W D Q F H L Q Z D U G

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show cfm mep service-instance	/ 4È x0Ã&• µ C Ä
show cfm mp	/ 4È x&• µ C Ä

Ï G ÄAÈ â Ð -

1.10 cfm mep-list service-instance

G!5B4È x0Ã&• Ä*ü Ã ¹ S*ü no EÝNM ôL84È x0Ã&• Ä

cfm mep-list mep-list service-instance instance-id

no cfm mep-list mep-list service-instance instance-id

Ï – DAÈ â Ð

– D	£EÄ
mep-list	4È x0Ã&• ë>< Ämep-list Ã ¹ Ô þ4È x0Ã&• È 3 Ã ¹ Ô2Ï ë4È x0Ã &• È¹ ã,X4È x0Ã&• ID Ô È¹ û,X4È x0Ã&• ID 4§ È KÈ*ü - ËE² y È V Ö10 "20 Ä Î b(M ?š Ò Ä4È x0Ã&• ID ª 8× È 1-8191
instance-id	á u r _ ID Ä ª 8× È 1-32767
no	A¹EÝNM></ ôL8 Û n,X4È x0Ã&• ë>< Ä ôL8 Ê È Î bA¹4È ë>><,X 4È

	x0Ã&•G!5B >• ôL8 Ä

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð G!5B õ ã Ä

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð 5 X L M L H F R Q I L J F I P P H S O L V W V H U Y L F H L Q V W D Q F H

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show cfm mep-list service-instance	/ 4È x0Ã&• ë>< µ C Ä

Ï G ÄAÈ â Ð -

1.11 cfm mip-rule service-instance

_ 2 Ö / 10 õJÒCÃC³Cþ7¾ | ;> 4§ p µ C

5 X L M L H V K R Z F I P O L Q N W U D F H L Q I R D X W R G H W H F W L R Q V L] H

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
cfm linktrace auto-detection size	G!5BJÒCÃC³Cþ7¾ | ;> s6Ñ Ä

Ï G ÄAÈ â Ð -

1.14 show cfm linktrace-info

/ JÒCÃC³Cþ4§ p µ C Ä

Ï G ÄAÈ â Ð -

1.17 show cfm mep service-instance

/ 4È x0Ã&•G!5B µ C Ä

show cfm mep mep-id service-instance instance-id

Ï – DAÈ â Ð

– D	£EÄ
mep-id	4È x0Ã&•ID Ä ª 8× È 1-8191 Ä
instance-id	á u r _ ID Ä ª 8× È 1-32767 Ä

Ï5 ,ÕG!5B Ð -

Ï G ÄAÈ â Ð -

1.19 show cfm mp

/ 4È x&• µ C Ä

show cfm mp [interface interface-id]

Ï – DAÈ â Ð

– D	£EÄ
interface-id	0Ã · Ë

Ï5 ,ÕG!5B Ð 5 ,Õ / Ý0Ã ·,X4È x&• Ä ÿ4È x0Ã&• `4È x KÈ&• Å µ C Ä

Ï Q ¸ õ ã Ð Ï ã õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð 5XLMLH VKRZ FIP PS LQWHUIDFH JLJDELWHWKHUQHW

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
cfm mep service-instance	G!5B4È x0Ã&• Ä
cfm mip-rule service-instance	G!5B4È x KÈ&•*ó ä?˜ í Ä

Ï G ÄAÈ â Ð -

-	-

Ï G ÄAÈ â Ð -

1.21 show cfm service-instance

/ á u r _G!5B µ C Ä

show cfm service-instance [instance-id]

Ï – DAÈ â Ð

2 REUP

2.1 link state track

*üJÒCÃ(Š ÕC³Cþ4˜ Ä S*üA¹ Q ¸,X no EÝNM GKÁJÒCÃ(Š ÕC³Cþ4˜ Ä

link state track [num]

no link state track [num]

Ï – DAÈ â Ð

– D	£EÄ
num	JÒCÃ6. Ü4˜,XID

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð ™NO ï ÎJÒCÃC³Cþ4˜ È' â !6Ñ Ú0Ã · t 9 Û n,XC³Cþ4˜ Ä

ÏG!5B _ Ð ï ÎJÒCÃ(Š ÕC³Cþ4˜

5 X L M L H F R Q I L J O L Q N V W D W H W U D F N

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
link state group	Ú0Ã · t 9 Û n,XJÒCÃ(Š ÕC³Cþ4˜

Ï G ÄAÈ â Ð -

2.2 link state group

Ú0Ã · t 9 Û n,XJÒCÃ(Š ÕC³Cþ4˜ Ä S*üA¹ Q ¸,X no EÝNM Ú0Ã · ¢ Û nC³Cþ4˜ EÔ Î Ä

link state group num { upstream | downstream }

no link state group

Ï – DAÈ â Ð

– D	£EÄ
num	JÒCÃ(Š ÕC³Cþ4˜
upstream	G!5BA¹0Ã · C³Cþ4˜ ,X Þ$ ·
downstream	G!5BA¹0Ã · C³Cþ4˜ ,X ß$ ·

Ï5 ,ÕG!5B Ð T¬Ax0Ã · á î t 9 Ï),XC³Cþ4˜ Ä

Ï Q ¸ õ ã Ð y · õ ãA'5B

Ï S*ü Û Ð Ð ™NO ï ÎJÒCÃC³Cþ4˜ È' â !6Ñ Ú0Ã · t 9 Û n,XC³Cþ4˜ Ä

ÏG!5B _ Ð ^0Ã · fa 0/2 t 9 JÒCÃC³Cþ4˜

5 X L M L H F R Q I L J O L Q N V W D W H W U D F N
5 X L M L H F R Q I L J L Q W H U I D F H I D
5 X L M L H F R Q I L J L I O L Q N V W D W H J U R X S X S V W U H D P

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
link state track	*üJÒCÃ(Š ÕC³Cþ4˜

Ï G ÄAÈ â Ð -

2.3 mac-address-table move update max-update-rate

G!5B!£/¦ ¥EÕ,X Ô û MAC È „ y [DG£ Ä

mac-address-table move update max-update-rate pkts-per-second

no mac-address-table move update max-update-rate

Ï – DAÈ â Ð

– D	£EÄ
pkts-per-second	!£/¦ ¥EÕ,X Ô û MAC È „ y [DG£ Ä ÃEÝ8× È 0-32000 ÈT¬Ax 150 þ Ä

-

-	-

Ï5 ¸ÕG!5B Đ á y

Ï Q ¸ õ ã Đ < G!5B õ ã Ä

Ï S*ü Û Đ Đ

2.6 mac-address-table move update transit

' Ô ¥EÕ MAC È „#\ C,X Ô G Ä

mac-address-table move update transit

no mac-address-table move update transit

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð 5 ,Õ á î å ê ¥EÕ È „ y [Ä

Ï Q ¸ õ ã Ð < G!5B õ ã Ä

Ï S*ü Û Ð Ð Z £ åJÒCÃ Û 6 Ê È ß> D B# ,X ö ÈLÔ?U ü ¥*ó Û 6,X x 6 Þ ' Ô ¥EÕ MAC È „#\ C,X s 6Ñ Ä

ÏG!5B _ Ð ' Ô MAC È „#\ C

5XLMLH FRQILJ PDF DGGUHVV WDEOH PRYH XSGDWH WUDQVLW

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
mac-address-table move update transit	' Ô x 6 ¥EÕ MAC È „#\ C,X Ô G Ä

Ï G ÄAÈ â Ð -

2.7 mac-address-table move update transit vlan

A’5B0Ã · ¥EÕMAC È „#\ C,X VLAN Ä

mac-address-table move update transit vlan vid

no mac-address-table move update transit vlan

Ï – DAÈ â Ð

– D	£EÄ
vid	¥EÕMAC È „#\ C,X VLAN ID Ä

Ï5 ,ÕG!5B Ð T¬Ax ü0Ã ·,XT¬AxVLAN ¥EÕ MAC È „#\ C Ä

Ï Q ¸ õ ã Ð y · õ ãA’5B Ä

Ï S*ü Û Ð Ð JÒCÃ Û 6 Ê È ' Ô ¥EÕMAC È „#\ C,X s6Ñ Ê È î å ÞJÒA’ Û ¥ Î MAC È „#\ C Ä

ÏG!5B _ Ð G!5B0Ã · ¥EÕMAC È „#\ C,X VLAN

5XLMLH FRQILJ LI PDF DGGUHVV WDEOH PRYH XSGDWH WUDQVLW YC

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ

mac-address-table move update transit	' Ô REUP ¥EÕMAC È „#\ C,X Ô G Ä

Ï G ÄAÈ â Ð -

2.8 mac-address-table update group

A’5B x 6 ,X MAC È „4˜ Ä

mac-address-table update group [group-num]

no mac-address-table update group

Ï – DAÈ â Ð

– D	£EÄ
group-num	MAC È „4˜,X ID

Ï5 ,ÕG!5B Ð T¬Ax,X È „4˜ ID 1 Ä

"u Ý Ï),X MAC È „4˜ Ä

Ï Q ¸ õ ã Ð y · õ ãA’5B Ä

Ï S*ü Û Ð Ð Z £ å ´ MAC È „5à Ð7È,X ûG£"¯"þ È E ¡ x 6 ,X!7 D B ôEg È å À r t Z Ô þ MAC È „4˜,XA’5B Ä¾ Ý ^ Û 6CÃ X Þ,X Ý0Ã · t 9 à Ô þ MAC È „4˜ È!6ÑE’ ¿Eó 6 á ß > D B ôEg,X s6Ñ Ä

ÏG!5B _ Ð ^0Ã · t 9 MAC È „4˜

5XLMLH FRQILJ LI PDF DGGUHVV WDEOH XSGDWH JURXS

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show mac-address-table update group	/ x 6 Þ,X MAC È „4˜ µ C Ä

Ï G ÄAÈ â Ð -

2.9 switchport backup interface

G!5BREUP ,X JÒCÃ Û Ñ Ä

switchport backup interface interface-id

no switchport backup

Ï – DAÈ â Ð

– D	£EÄ
interface interface-id	Û ÑJÒCÃ,X0Ã ÐD Ä

Ï5 ,ÕG!5B Ð "u Ý Ï) JÒCÃ Û Ñ Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

Ï S*ü Û Ð Ð õ ã ü,X0Ã · 0Ã · È – D ,X interface-id Í h,X0Ã · Û Ñ0Ã · Ä '# |JÒCÃ ¥*ó Lp â È ¿ Eó 6 á Û ÑJÒCÃ,X ôEg Ä

ÏG!5B _ Ð A'5B Ô þ JÒCÃ Û Ñ ÈA'5Bfa 0/1 0Ã · Èfa 0/2 Û Ñ0Ã ·

```
5XLMLH FRQILJ LQWHUIDFH ID
5XLMLH FRQILJ LI VZLWFKSRUW EDFNXS LQWHUIDFH ID
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show interface switchport backup	/ x 6 Þ,X JÒCÃ Û ÑA'5B Ä

Ï G ÄAÈ â Ð -

2.10 switchport backup interface preemption

G!5BREUP ,XJÒCÃ v 4 s6Ñ Ä

switchport backup interface interface-id preemption mode { forced | bandwidth | off }

switchport backup interface interface-id preemption delay delay-time

no switchport backup interface interface-id preemption delay

Ï – DAÈ â Ð

– D	£EÄ
interface interface-id	Û ÑJÒCÃ,X0Ã ÷D Ä
mode { forced | bandwidth | off }	A'5B v 4 õ ã Ö forced ></ õ ã bandwidth ></ ú ' õ ã off ></ GKÁ õ ã
delay delay-time	A'5B v 4,X ÊE³ ÊKÈ Ä

Ï5 ,ÕG!5B Ð v 4 s6ÑT¬Ax GKÁ(Š Õ Ä
v 4 ÊE³T¬Ax 35 /¦ Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

Ï S*ü Û Ð Ð v 4 õ ã Ú Ã ú ' ` GKÁ Ý/¡ õ ã È J ú ' õ ã ì EÝ ½ ú 'EW û,X0Ã · 9 ôEg D B × õ ã ì EÝ ½ 0Ã · 9 ôEg D B × GKÁ õ ã í á v 4 ÄT¬Ax GKÁ õ ã Ä v 4 ÊE³ Û LpJÒCÃ 6 á â È JÒCÃG¡ „ Û 6,X ÊE³ ÊKÈ Ä

ÏG!5B _ Ð A'5B Ô þ JÒCÃ Û Ñ ÈA'5B 0Ã · fa0/1 È Û Ñ0Ã · fa0/2 È v 4 õ ã ú ' õ ã È v 4 ÊE³ 40 /¦ Ä

```
5XLMLH FRQILJ LQWHUIDFH ID
5XLMLH FRQILJ LI VZLWFKSRUW EDFNXS LQWHUIDFH ID SUHHPSW
5XLMLH FRQILJ LI VZLWFKSRUW EDFNXS LQWHUIDFH ID SUHHPSW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show interface switchport backup	/ x 6 Þ,X JÒCÃ Û ÑA'5B Ä

Ï G ÄAÈ â Ð -

2.11 switchport backup interface prefer

G!5BREUP ,XJÒCÃ/LAN BóEQ >5 Ä S*üA¹ Q ¸,X no EÝNM ôL8G!5B,Xlan BóEQ1*+9 Ä

switchport backup interface interface-id prefer instance instance-range

no switchport backup interface interface-id prefer

Ï – DAÈ â Ð

– D	£EÄ
interface interface-id	Û ÑJÒCÃ,X0Ã ‹D Ä
instance instance-range	Û Ñ0Ã ·BóEQ r _8× È Ä

Ï5 ,ÕG!5B Ð 5 ,Õ ™ ‰ ß Û Ñ0Ã ·"u Ý VLAN BóEQ Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

Ï S*ü Û Ð Ð Ã ¹EîE› MSTP ,X r _ ô Ø s6Ñ 9 Â r _ ` VLAN ,X Í h G2Ï Ä

ÏG!5B _ Ð A’5B Ô þ JÒCÃ Û Ñvlan BóEQ >5

```
5XLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
5XLMLH FRQILJ LI VZLWFKSRUW EDFNXS LQWHUIDFH JLJDELW(WKHU
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show interface switchport backup	/ x 6 Þ,X JÒCÃ Û ÑA’5B Ä
spanning-tree mst configuration	MSTP ,X r _G!5B Ä

Ï G ÄAÈ â Ð -

2.12 show interfaces switchport backup

/ 0Ã ·,X JÒCÃ Û Ñ(Š Õ µ C Ä

show interfaces [interface-id] switchport backup [detail]

Ï – DAÈ â Ð

– D	£EÄ

interface-id

ÏG!5B _ Ð / JÒCÃ Û Ñ µ C

```
5XLMLH VKRZ LQWHUIDFHV VZLWFKSRUW EDFNXS GHWDLO
6ZLWFK %DFNXS ,QWHUIDFH 3DLUV
$FWLYH ,QWHUIDFH %DFNXS ,QWHUIDFH 6WDWH

*L *L $FWLYH 8S %DFNXS 6WDQGE\
,QWHUIDFH 3DLU *L *L
3UHHPSWLRQ 0RGH 2II
3UHHPSWLRQ 'HOD\ VHFRQGV
%DQGZLGWK *L 0ELWV *L 0ELWV
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

2.13 show link state group

/ JÒCÃ(Š ÕC³Cþ4˜,X µ C Ä

show link state group num

Ï – DAÈ â Ð

– D	£EÄ
num	JÒCÃ(Š ÕC³Cþ4D

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M EXEC G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð / JÒCÃ(Š ÕC³Cþ4˜

```
5XLMLH VKRZ OLQN VWDWH JURXS
/LQN 6WDWH *URXS 6WDWXV (QDEOHG 83
8SVWUHDP ,QWHUIDFHV *L 8S
'RZQVWUHDP ,QWHUIDFHV *L 'ZQ *L 'ZQ
/LQN 6WDWH *URXS 6WDWXV 'LVDEOHG 'RZQ
8SVWUHDP ,QWHUIDFHV
'RZQVWUHDP ,QWHUIDFHV
8S ,QWHUIDFH XS 'ZQ ,QWHUIDFH 'RZQ 'LV ,QWHUIDFH GLVDEOHG
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

2.14 show mac-address-table update group

/ È „4˜,X µ C Ä

show mac-address-table update group [detail]

Ï – DAÈ â Ð

– D	£EÄ
detail	/ È „4˜,XAº4š µ C

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M EXEC G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð / È „4˜

```
5XLMLH  FRQILJXUH WHUPLQDO
5XLMLH  FRQILJ  PDF DGGUHVV WDEOH PRYH XSGDWH UHFHLYH
5XLMLH  FRQILJ  LQWHUIDFH UDQJH JLJDELW(WKHUQHW
5XLMLH  FRQILJ LI UDQJH  PDF DGGUHVV WDEOH XSGDWH JURXS
5XLMLH  FRQILJ LI UDQJH  HQG
5XLMLH  VKRZ PDF DGGUHVV WDEOH XSGDWH JURXS GHWDLO
0DF DGGUHVV WDEOH 8SGDWH *URXS
5HFHLYHG PDF DGGUHVV WDEOH XSGDWH PHVVDJH FRXQW
*URXS PHPEHU        5HFHLYH &RXQW  /DVW 5HFHLYH 6ZLWFK ,'  5HFH

*LJDELW(WKHUQHW
*LJDELW(WKHUQHW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

3 RLDP

3.1 debug rldp

' Ô rldp á uA×A© Ô G ÄA¹ Q ¸,X no 6 ã GKÁA×A© Ô G Ä

debug rldp [packet | event | error]

undebug rldp [packet | event | error]

Ï – DAÈ â Ð

– D	£EÄ
packet	¥ rldp y [,XA×A© µ C Ä
event	0Ã ·(Š Õ ¬ ê,XA×A© µ C Ä
error	”# E›/ß ¥*óJíAÃ,XA×A© µ C Ä

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M EXEC G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð -

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

3.2 rldp detect-interval

S*üA¹ Q ¸G!5B RLDP ü0Ã · Þ ¥EÕ v# y [,XKÈLh Ä

rldp detect-interval interval

no rldp detect-interval

Ï – DAÈ â Ð

– D	£EÄ
interval	v# KÈLh È ª 8× È 2-15 /¦

Ï5 ,ÕG!5B Ð 3 /¦ Ä

Ï Q ¸ õ ã Ð < G!5B õ ã Ä

Ï S*ü Û Ð Ð V p ü Ô Z stp ,X)ƒ W ß ÊA,A’5B,XKÈLh h Ô û v# õ D â k ,X ÊKÈ ã b stp ,X § % / ÊKÈ Ä

ÏG!5B _ Ð G!5B v# KÈLh 5s

5 X L M L H F R Q I L J U O G S G H W H F W L Q W H U Y D O

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
rldp detect-max	G!5B Ô û v# õ D

Ï G ÄAÈ â Ð -

3.3 rldp detect-max

S*üA¹ Q ¸G!5B RLDP ü0Ã · Þ ¥EÕ v# y [,X Ô û õ D È V pCYE›E- þ ”# õ D ÈF• 0Ã · ¡' ´ ¡ h È íJÒCÃ>•Až • LpJÒCÃ Ä

rldp detect-max num

no rldp detect-max

Ï – DAÈ â Ð

– D	£EÄ
num	Ô û v# õ D, ª 8× È 2-10

Ï5 ,ÕG!5B Ð 2

Ï Q ¸ õ ã Ð < G!5B õ ã Ä

Ï S*ü Û Ð Ð A¹ Q ¸ ` v# KÈLh4§ Ü S*ü,X È*ü b.B n Ô û v# ÊKÈ Ä

ÏG!5B _ Ð G!5B Ô û v# õ D 5

5 X L M L H F R Q I L J U O G S G H W H F W P D [

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
rldp detect-interval	G!5B v# KÈLh

Ï G ÄAÈ â Ð -

3.4 rldp enable

A¹ Q ¸ { RLDP ,X < s6Ñ Ô G Ä

rldp enable

no rldp enable

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð GKÁ Ä

Ï Q ¸ õ ã Ð < G!5B õ ã Ä

Ï S*ü Û Ð Ð ¾ Ý < RLDP ' Ô È0Ã · RLDP !6ÑE¤> Ä

ÏG!5B _ Ð 5 X L M L H F R Q I L J U O G S H Q D E O H

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
rldp port	G!5B0Ã ·,X RLDP s6Ñ

Ï G ÄAÈ â Ð -

3.5 rldp port

A¹ Q ¸G!5B0Ã ·,X rldp ”# È à Ê Û n ”# 2O _ ` Lp Ø)Ú •"© Ä

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

no rldp port { unidirection-detect | bidirection-detect | loop-detect }

Ï – DAÈ â Ð

– D	£EÄ
unidirection-detect	) åJÒCÃ ”# 2O _
bidirection-detect	åJÒCÃ ”# 2O _
loop-detect	)ƒCÃ ”# 2O _
warning	A: Ø)Ú
shutdown-svi	shutdown 0Ã · ü svi
shutdown-port	shutdown 0Ã ·
block	GKÁ0Ã ·,X : 4E@ ¥

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

3.6 rldp reset

A¹ Q ¸ S Ý>• rldp shutdown ê disable ‚X0Ã ·G¡ „E¯ 9 rldp ”# Ä
rldp reset

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ‚ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã Ä

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð 5 X L M L H U O G S U H V H W

Ï‚Ì G Q ¸ Ð

Q ¸	£EÄ
rldp enable	Rldp < G!5B Q ¸

Ï G ÄAÈ â Ð -

4 DLDP

4.1 clear dldp

#ÙL8dldp Ø þ,¥# &• G b up/down õ D,X4³Au µ C È JG¡ „ Ô ŸE¯> 4³Au Ä

clear dldp [interface interface-name [ip-address]]

Ï – DAÈ â Ð

– D	£EÄ
interface-name	Ý y · á/Ä
ip-address	Í0ÃA’ Û,X IP

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð DLDP ÝA„)JÒCÃup/down õ D,X4³Au µ C ÈEîE› ;> Q ¸ Ã ¹#ÙL8 Û n,¥# &•,X up/down 4³Au õ D È J èG¡ „ Ô Ÿ4³Au ÄEîE› Û n Ý y · êA’ Û IP È Ã ¹#ÙL8 Û n Ý y · Þ Ý,¥# &• ê ¤ Ô,¥# &•,X up/down 4³Au õ D Ä ' þ Û n Ý y · `A’ Û IP Ê È></ #ÙL8 Ý,¥# &•,X up/down 4³Au õ D Ä

ÏG!5B _ Ð _ 1 Ö#ÙL8 Ý,¥# &•,X up/down 4³Au õ D Ö

```
5XLMLH FOHDU GOGS
```

_ 2 Ö#ÙL8nterface vlan 1 y · Þ Ý,¥# &•,X up/down 4³Au õ D Ö

```
5XLMLH FOHDU GOGS LQWHUIDFH YODQ
```

_ 3 Ö#ÙL8nterface vlan 1 y · Þ G b Í0ÃA’ Û 10.83.132.1 ,X up/down 4³Au õ D Ö

```
5XLMLH FOHDU GOGS LQWHUIDFH YODQ
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

4.2 dldp

Ô DLDP ”# s6Ñ ÄA¹ Q ¸,X no 6 ã GKÁ Û n IP ,X DLDP ”# s6Ñ Ä

dldp ip-address route-switch [mac-address mac-address | next-hop ip-address [mac-address nexthop-mac-address]] [interval tick] [retry retry-num] [resume resume-num]

no dldp ip-address

Ï – DAÈ â Ð

– D	£EÄ
ip-address	>• ”# Í0ÃA’ Û,X IP Ä
route-switch	âM- ÕCÃ+ 6(| s6Ñ È Ã r)„M- ÕCÃ+ Û 6
mac-address mac-address	>• ”# Í0ÃA’ Û,X IP 4¥ n,X MAC Ä
next-hop ip-address	8¹>• ”# Í0ÃA’ Û Ø bC¼5%!‰ È*ü ¹ Û n ß ÔCÇ IP Ä
mac-address nexthop-mac-address	ß ÔCÇIP 4¥ n,X MAC Ä
interval tick	v# KÈLh ÊKÈ Ä ª 8× È 5~6000 È) ! tick È ™NO 5 ,X H D á ÄÄ1tick= 10ms Å
retry retry-num	G¡ ô õ D ÈA¹ – D8× È 1~3600 Ä
resume resume-num	A’5BJÒCÃ ŒDOWN (Š Õ ¬ UP ! ÈLÔ?U E²4Á,X DLDP ”# y [þ D Ä ª 8× È 1~10 Ä

Ï5 ,ÕG!5B Ð tick 100tick Ä1s Å Èretry-num 4 õ Èresume-num 3 þ Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

Ï S*ü Û Ð Ð EîE›G!5B Q ¸ | DLDP ”# s6Ñ È Ã ¹ r)„ Í ¹ þ5%JÒCÃ Lp,X ¿Eó ”# Ä

ÏG!5B _ Ð _ 1 Ö Ô ÍA’ Û 10.83.132.10 ,X DLDP ”# s6Ñ Ö

```
5 X L M L H  F R Q I L J
```

À ` ÀÀ H0 9

_ 5 Ö GKÁ ÍA’ Û 10.83.132.10 ,X DLDP ”# s6Ñ Ö

```
5XLMLH FRQILJ
5XLMLH FRQILJ LQWHUIDFH YODQ
5XLMLH FRQILJ LI 9/$1 QR GOGS
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

4.3 dldp passive

A’5B dldp ”# õ ã >• | õ ã ÄA¹ Q ¸,X no 6 ã 6 á5 ,Õ ”# õ ã Ä

dldp passive

no dldp passive

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð | õ ã

Ï Q ¸ õ ã Ð y ·G!5B õ ã

51c 14.253 0D390172298445EE43C3 1.48 0 02C8>33<45AD-1011B8D (no)12C0CFC/C2E31636-3048 r4E3>3341923<052D47A1/C

show dldp [interface interface-name] [statistic]

Ï – DAÈ â Ð

– D	£EÄ
interface-name	Ý y · á/Ä
statistic	4³Au µ C

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð EîE› Û n statistic GK + 9 / Ý,¥# &• ê Û n Ý y · Þ Ý,¥# &•,X4³Au µ C Ä Û n Ý y · á /Ä È*ü ¹ / (M n Ý y · Þ Ý,¥# &•,XG!5B `4³Au µ C Ä

ÏG!5B _ Ð _ 1 Ö / Ý,¥# &•,XG!5B µ C Ö

```
5XLMLH VKRZ GOGS
,QWHUIDFH 7\SH ,S 1H[W KRS ,QWHUYDO 5HWU\ 5HVXP

9O 3DVVLYH 8S
9O 3DVVLYH 8S
9O 3DVVLYH 8S
```

_ 2 Ö / Ý y · vlan 2 Þ Ý,¥# &•,XG!5B µ C Ö

```
5XLMLH VKRZ GOGS LQWIDFH YODQ
,QWHUIDFH 7\SH ,S 1H[W KRS ,QWHUYDO 5HWU\ 5HVXP
```

Up-count	Í h,¥# &•A„),X #A,(Š Õ up õ D Ä
Down-count	Í h,¥# &•A„),X #A,(Š Õ down õ D Ä

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

5 VRRP

5.1 debug vrrp

Q ¸ ' Ô VRRP ÎJí ¤/ Ã VRRP _ Ê ÃVRRP y [¹ ž(Š ÕA×A© Ô G Ä J no 6 ã Ú GKÁA¹ s6Ñ Ä

Ï – DAÈ â Ð

– D	£EÄ
ipv6	h*ü b IPv6 Ä5 ,Õ IPv4 Ä

Ï5 ,ÕG!5B Ð GKÁA¹A×A© Ô G

Ï Q ¸ õ ã Ð (M *ü õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð ' Ô VRRP ÎJí ¤/ A×A© Ô G Ä

```
5XLMLH GHEXJ YUUS HUURUV
5XLMLH GHEXJ LSY YUUS HUURUV
9553 ,3Y 9553 *US $GYHUWLVHPHQW IURP KDV ZURQJ FKH
9553 ,3Y 9553 *US $GYHUWLVHPHQW IURP KDV ZURQJ FKH
9553 ,3Y 9553 *US $GYHUWLVHPHQW IURP KDV ZURQJ FKH
```

ÞM6,X / µ C>< â y 97¾ 192.168.1.1 J\ Í IPv4 VRRP 4˜ 1 ,X VRRP Eî õP` `JíAÃ Ä

Ï,Ì G Q ¸ Ð rqx#E \L K€

a UÝ/Ô2_0 1V/CA_0 1 Tf 132 0.4Tc T25<01C84 VRRP ' SaN0 ÚÂKÁA¹Ü 0' P` `@ ×' ÂP r¯Á2¡UÞ[ðÃ,qMB ×' E g

5.5 debug vrrp state

Q ¸ ' Ô VRRP (Š Õ,XA×A© Ô G Ä Ɉo 6 ã Ú GKÁA¹A×A© Ô G Ä

debug [ipv6] vrrp state

no debug [ipv6] vrrp state

Ï – DAÈ â Ð

– D	£EÄ
ipv6	h*ü b IPv6 Ä5 ,Õ IPv4 Ä

Ï5 ,ÕG!5B Ð GKÁA¹A×A© Ô G

Ï Q ¸ õ ã Ð (M *ü õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð ' Ô VRRP (Š Õ,XA×A© Ô G Ä

```
5XLMLH GHEXJ YUUS VWDWH
5XLMLH GHEXJ LSY YUUS VWDWH
9553 ,3Y 9553 *US DGG SULPDU\ YLUWXDO ,3 VWDUWXS
5XLMLH GHEXJ LSY YUUS VWDWH
9553 ,3Y 9553 *US DGG SULPDU\ YLUWXDO ,3 VWDUWXS
```

ÞM6,X / µ C>< â Fastethernet 0/0 Þ,X IPv4 VRRP 4˜ ` IPv6 VRRP 4˜G!5B Z IP È | VRRP Û Ñ4˜ Ä

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

5.6 show vrrp

Q ¸ / IPv4 VRRP ê5Ù IPv6 VRRP ,X V ‰ ê5Ù4š8V Ä

show [ipv6] vrrp [brief | group]

Ï – DAÈ â Ð

– D	£EÄ
ipv6	h*ü b IPv6 Ä5 ,Õ IPv4 Ä
brief	/ VRRP ,X V ‰
group	Y / ,X VRRP 4˜ Ë

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M *ü õ ã

Ï S*ü Û Ð Ð V p á S*ü ÃEÝ – D È Ú / Ý,X VRRP 4˜,X ™ ‰ Ä

ÏG!5B _ Ð _ 1

```
5XLMLH  VKRZ YUUS EULHI
,QWHUIDFH  *US 3UL 7LPH  2ZQ 3UH 6WDWH  0DVWHU DGGU    *URXS
)D                        3  %DFNXS
)D                        3  0DVWHU
5XLMLH VKRZ LSY  YUUS EULHI
,QWHUIDFH     *US 3UL WLPHU 2ZQ 3UH 6WDWH 0DVWHU DGGU  *URXS
*L                        3  0DVWHU )(                 )(
5XLMLH
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
vrrp ip	*ü VRRP s6Ñ JA'5B<. ³A' Û,X IP
vrrp ipv6	*ü VRRP s6Ñ JA'5B<. ³A' Û,X IPv6

Ï G ÄAÈ â Ð -

5.7 show vrrp interface

Q ¸ / Û n y · Þ,X IPv4 VRRP 4˜ ê5Ù IPv6 VRRP 4˜,X ™ ‰ Ä

show [ipv6] vrrp interface type number [brief]

Ï – DAÈ â Ð

– D	£EÄ
ipv6	h*ü b IPv6 Ä5 ,Õ IPv4 Ä
type	y ·,X2O _
number	y ·,X c Ë
brief	/ V?U µ C

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M *ü õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð _ 1 Ö / ¹ þ5% · FastEthernet 0/0 Þ,X IPv4 VRRP ™ ‰

```
5XLMLH  VKRZ YUUS LQWHUIDFH IDVWHWKHUQHW
)DVW(WKHUQHW      *URXS
6WDWH LV %DFNXS
9LUWXDO ,3 DGGUHVV LV            FRQILJXUHG
9LUWXDO 0$& DGGUHVV LV      H
$GYHUWLVHPHQW LQWHUYDO LV   VHF
3UHHPSWLRQ LV HQDEOHG
PLQ GHOD\ LV   VHF
3ULRULW\ LV
0DVWHU 5RXWHU LV                SULRULW\ LV
0DVWHU $GYHUWLVHPHQW LQWHUYDO LV   VHF
```

```
0DVWHU 'RZQ LQWHUYDO LV      VHF
)DVW(WKHUQHW      *URXS
6WDWH LV 0DVWHU
9LUWXDO ,3 DGGUHVV LV            FRQILJXUHG
9LUWXDO 0$& DGGUHVV LV      H
$GYHUWLVHPHQW LQWHUYDO LV   VHF
3UHHPSWLRQ LV HQDEOHG
PLQ GHOD\ LV   VHF
3ULRULW\ LV
0DVWHU 5RXWHU LV              ORFDO   SULRULW\ LV
0DVWHU $GYHUWLVHPHQW LQWHUYDO LV   VHF
0DVWHU 'RZQ LQWHUYDO LV      VHF
```

_ 2 Ö / ¹ þ5% · gigabitEthernet 0/13 Þ,X IPv6 VRRP ™ ‰

```
5XLMLH VKRZ LSY  YUUS LQWHUIDFH JLJDELW(WKHUQHW
*LJDELW(WKHUQHW       *URXS
  6WDWH LV 0DVWHU
  9LUWXDO ,3Y  DGGUHVV LV DV IROORZV
    )(

  9LUWXDO 0$& DGGUHVV LV      H
  $GYHUWLVHPHQW LQWHUYDO LV   VHF
  $FFHSWB0RGH LV HQDEOHG
  3UHHPSWLRQ LV HQDEOHG
    PLQ GHOD\ LV   VHF
  3ULRULW\ LV
  0DVWHU 5RXWHU LV )(      ORFDO   SULRULW\ LV
  0DVWHU $GYHUWLVHPHQW LQWHUYDO LV   VHF
  0DVWHU 'RZQ LQWHUYDO LV      VHF
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
vrrp ip	*ü VRRP s6Ñ JA'5B<. ³A' Û,X IP
vrrp ipv6	*ü VRRP s6Ñ JA'5B<. ³A' Û,X IPv6

Ï G ÄAÈ â Ð -

5.8 show vrrp packet statistics

A¹ Q ¸*ü 9 ¹,ß VRRP y [¥,X4³Au µ C Ä

show vrrp packet statistics [interface-type interface-number]

Ï – DAÈ â Ð

– D	£EÄ
interface-type interface-number	y ·2O _ ` y ·4ê Ë

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M *ü õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð _ 1 Ö ¹,ß Ý y · Þ,X VRRP y [4³Au µ C Ä

```
5 X L M L H   V K R Z  Y U U S  S D F N H W  V W D W L V W L F V

7 R W D O
  , Q 5 H F H L Y H V        S D F N H W V   , Q 2 F W H W V        , Q ( U U R U V
  2 X W 7 U D Q V P L W V        2 X W 2 F W H W V
9 / $ 1
  , Q 5 H F H L Y H V        S D F N H W V   , Q 2 F W H W V        , Q ( U U R U V
  2 X W 7 U D Q V P L W V        2 X W 2 F W H W V
9 / $ 1
  , Q 5 H F H L Y H V        S D F N H W V   , Q 2 F W H W V        , Q ( U U R U V
  2 X W 7 U D Q V P L W V        2 X W 2 F W H W V
```

_ 2 Ö ¹,ß y · VLAN 2 ,X VRRP y [4³Au µ C Ä

```
5 X L M L H   V K R Z  Y U U S  S D F N H W  V W D W L V W L F V  Y O D Q

9 / $ 1
  , Q 5 H F H L Y H V        S D F N H W V   , Q 2 F W H W V        , Q ( U U R U V
  2 X W 7 U D Q V P L W V        2 X W 2 F W H W V
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

5.9 vrrp accept_mode

Q ¸ *ü IPv6 VRRP <. ³CÃ+ <,X y [y s6Ñ Ä J no 6 ã Ú GKÁA¹ s6Ñ Ä

vrrp ipv6 group accept_mode

no

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð ü5%4° y ·G!5B È ÍG!5B,X Ø b Master (Š Õ,X<. ³CÃ+ <*ó Ä
¾ Ý IPv6 VRRP ! Ý!8G!5B õ ã Ä

ÏG!5B _ Ð VRRP 4˜ 1 *ü IPv6 VRRP <. ³CÃ+ <,X y [y s6Ñ Ä
5 X L M L H F R Q I L J L I Y U U S L S Y D F F H S W B P R G H

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
vrrp ipv6	*ü VRRP s6Ñ JA’5B<. ³A’ Û,X IPv6

Ï G ÄAÈ â Ð -

5.10 vrrp authentication

Q ¸ *ü VRRP D B ÙP`A• s6Ñ Ä J no 6 ã Ú GKÁA¹ s6Ñ Ä
vrrp group authentication string
no vrrp group authentication

Ï – DAÈ â Ð

– D	£EÄ
group	VRRP 4˜ Ë
string	*ü b VRRP 4˜P`A•,X +0ú ( á6ÑCYE› 8 þ +8V È-G ,XP`A• · ¸ â [· ¸)

Ï5 ,ÕG!5B Ð y · Þ"u Ý *ü VRRP s6Ñ Ä
G “ *ü VRRP s6Ñ È2Ï4³"u Ý5 ,ÕA’5B Ï)P`A• · ¸ Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð ü à Ô þ VRRP 4˜ ,XA’ Û ™NOA’5B,Ì à,XP`A• · ¸ Ä â [P`A• · ¸ á6Ñ ±A•] < û È W ¾ *ü 9L !6/
¤/ JíAÃ,X VRRP G!5B Ä!8 Q ¸ ¾ Í VRRPv2 y [EÖ*ü È Í b VRRPv3 áEÖ*ü Ä

a VRRPv3 IPv4 VRRP ä IPv6 VRRP ¸ < Ì , t _ Ÿ " ´ } IPv4 VRRP * ” ¾
VRRPv2 • s VRRPv2 “ Ò " ´ * ” ¾ VRRPv3 • s VRRPv3 â “ Ò d

ÏG!5B _ Ð VRRP 4˜ 1 A’5B ZP`A• · ¸ Ä
5 X L M L H F R Q I L J L I Y U U S D X W K H Q W L F D W L R Q [G Q N

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
vrrp ip	*ü VRRP s6Ñ JA’5B<. ³A’ Û,X IP

Ï G ÄAÈ â Ð -

5.11 vrrp delay

Q ¸G!5B ¤ þ y · Þ VRRP Û Ñ4˜,X ÊE³ | ÊKÈ Ä J no 6 ã Ú ª#\G!5B Ä ÊE³ ÊKÈ Ý ø/¡ Ö2Ï4³ | Ê,X ÊE³ ÊKÈ È â y ·(Š Õ ¬ # | Ê,X ÊE³ ÊKÈ È Ã ¹ Ú ÿG!5B È 3 Ã à ÊG!5B Ä

vrrp delay { minimum min-seconds | reload reload-seconds }

no vrrp delay

Ï – DAÈ â Ð

– D	£EÄ
minimum min-seconds	2Ï4³ | Ê,X ÊE³ ÊKÈ
reload reload-seconds	y ·(Š Õ ¬ # | Ê,X ÊE³ ÊKÈ

Ï5 ,ÕG!5B Ð y ·"u ÝG!5B VRRP Û Ñ4˜ ÊE³ | Ä ø/¡ VRRP Û Ñ4˜ ÊE³ | ÊKÈ,X ª 8× È 0~60 /¦ Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð G!5B Q ¸ â È '2Ï4³ | È ê5Ù y ·(Š Õ ¬ # | Ê ÈA¹ y · Þ,X VRRP Û Ñ4˜ á î0Ÿ G | ×5à 1 Y,Ì h,X ÊE³ ÊKÈ â a | VRRP Û Ñ4˜ È ±A•M2 v 4G!5B á î Ä V p ü ÊE³ | VRRP ÊA¹ y · Þ y VRRP y [È í î ª#\ ÊE³ È0Ÿ G | VRRP #A, Ä5%4° y ·G!5B!8 Q ¸ È Ú Í IPv4 VRRP ` IPv6 VRRP à Ê*ó Ä

ÏG!5B _ Ð ü y · Þ | Z VRRP Û Ñ4˜,X ÊE³ |

5XLMLH FRQILJ LI YUUS GHOD\ PLQLPXP UHORDG

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
vrrp ip	*ü IPv4 VRRP s6Ñ JA’5B<. ³A’ Û,X IP
vrrp ipv6	*ü IPv6 VRRP s6Ñ JA’5B<. ³A’ Û,X IPv6

Ï G ÄAÈ â Ð -

5.12 vrrp description

Q ¸ IPv4 VRRP ê5Ù IPv6 VRRP Û n Ô þ £EÄ0ú Ä J no 6 ã Ú 6 á2Ï4³5 ,ÕA’5B Ä

vrrp [ipv6] group description text

no vrrp [ipv6] group description

Ï – DAÈ â Ð

– D	£EÄ
ipv6	h*ü b IPv6 Ä5 ,Õ IPv4 Ä
group	VRRP 4˜ Ë
text	VRRP 4˜ £EÄ0ú

Ï5 ,ÕG!5B Ð y · Þ"u Ý *ü VRRP s6Ñ Ä

G “ *ü Z VRRP s6Ñ È2Ï4³ 3"u Ý5 ,ÕA’5B Ï) VRRP 4˜ £EÄ0ú Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð VRRP 4˜A’5B £EÄ0ú È Ã ¹ “ b Ú VRRP 4˜ Ä

ÏG!5B _ Ð ü y · Fa 0/0 Þ,X IPv4 VRRP 4˜ 1 Building A – Marketing and Administration ÈIPv6 VRRP 4˜ 1 Building B – Marketing and Administration Ä

```
5XLMLH FRQILJ LQWHUIDFH )DVW(WKHUQHW
5XLMLH FRQILJ LI LS DGGUHVV
5XLMLH FRQILJ LI YUUS LS
5XLMLH FRQILJ LI YUUS %XHOORFNLQJ&RQ'UNHWLQJ DQG $GPLQLVWUD
5XLMLH FRQILJ LI YUUS LSY IH
5XLMLH FRQILJ LI YUUS LSY %XHOORFNLQJ&RQ'UNHWLQJ DQG $GPLQLV
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
vrrp ip	*ü VRRP s6Ñ JA’5B<. ³A’ Û,X IP
vrrp ipv6	*ü VRRP s6Ñ JA’5B<. ³A’ Û,X IPv6

Ï G ÄAÈ â Ð -

5.13 vrrp ip

Q ¸ ü y · Þ *ü IPv4 VRRP s6Ñ JA’5B Í h,X<. ³ IPv4 Ä J no 6 ã Ú/U!6A¹ y · Þ,X IPv4 VRRP s6Ñ J ª#\<. ³ IPv4 ,XA’5B Ä

vrrp group ip ipaddress [secondary]

no vrrp group ip ipaddress [secondary]

Ï – DAÈ â Ð

– D	£EÄ
group	<. ³A’ Û,X VRRP 4˜ Ë
ipaddress	<. ³A’ Û,X IP
secondary	Û â A¹<. ³A’ Û,X õ IP

Ï5 ,ÕG!5B Ð y · Þ"u Ý *ü VRRP s6Ñ Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð V p á S*ü secondary – D È w A’5B,X IP Ú ä <. ³A’ Û,X IP Ä LÔ?U"¼ ã,X È V p VRRP 4˜ S*ü ¹ þ5% ·,X IP È ü S*ü no Q ¸ ª#\A¹ VRRP 4˜,X IP È2Ï4³ îAx Î)„ ZJíAÃG!5B È´ ü ³5% Þ , ü ø þ,Ì à,X IP Ä

ÏG!5B _ Ð ü y · Fa 0/0 Þ *ü VRRP s6Ñ ÄA¹ VRRP 4˜ Ë 1 È<. ³A’ Û,X IP 10.0.1.20 È õ IP 10.0.2.20 Ä

```
5XLMLH FRQILJ LQWHUIDFH )DVW(WKHUQHW
 ‘QR VZLWFKSRUW
5XLMLH FRQILJ LI QR VZLWFKSRUW
```

```
5XLMLH FRQILJ LI LS DGGUHVV
5XLMLH FRQILJ LI LS DGGUHVV                    VHFRQGDU\
5XLMLH FRQILJ LI YUUS LS
5XLMLH FRQILJ LI YUUS LS          VHFRQGDU\
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show vrrp	/ ' !,X VRRP A'5B

Ï G ÄAÈ â Ð -

5.14 vrrp ipv6

Q ¸ ü y · Þ *ü IPv6 VRRP s6Ñ JA'5B Í h,X<. ³ IPv6 Ä J no 6 ã Ú/U!6A¹ y · Þ,X IPv6 VRRP s6Ñ J ª#\<. ³ IPv6 ,XA'5B Ä

vrrp group ipv6 ipv6-address

no vrrp group ipv6 ipv6-address

Ï – DAÈ â Ð

– D	£EÄ
group	<. ³A' Û,X VRRP 4˜ Ë
ipv6-address	<. ³A' Û,X IPv6

Ï5 ,ÕG!5B Ð y · Þ"u Ý *ü IPv6 ,X VRRP s6Ñ Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð IPv6 ,X VRRP â IPv4 ,X VRRP E*ü 1 255 ,X4˜ Ë Ä à Ô þ y · Ô þ,Ì à,X VRRP 4˜ Ë Ã ¹ à ÊEÖ*ü b IPv4 VRRP ` IPv6 VRRP Ä1 Ô þG!5B,X ™NO JÒCÃ ÈJÒCÃ ™NO ü J W<. ³ ôL8 â !6Ñ ôL8 Ä

ÏG!5B _ Ð ü y · Fa0/0 Þ *ü IPv6 ,X VRRP s6Ñ ÄA¹ VRRP 4˜ Ë 1 È<. ³ IPv6 FE80::1 ` 2001::1 Ä

5.15 vrrp preempt

Q ¸A’5B IPv4 VRRP 4˜ ê5Ù IPv6 VRRP Ø b v 4 õ ã Ä J no 6 ã Ú/U!6 VRRP v 4 s6Ñ Ä

vrrp [ipv6] group preempt [delay seconds]

no vrrp [ipv6] group preempt [delay]

Ï – DAÈ â Ð

– D	£EÄ
ipv6	h*ü b IPv6 Ä5 ,Õ IPv4 Ä
group	VRRP 4˜ Ë
delay seconds	š Û w 7¾ Å ¹ Ý Master D• Ñ !,X ÊE³ Ä5 ,Õ 0 /¦ Ä

Ï5 ,ÕG!5B Ð y · Þ"u Ý *ü VRRP s6Ñ Ä

Ô º *ü VRRP s6Ñ ÈVRRP 4˜T¬Ax ¹ 0 ü v 4 õ ã ß Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð V p VRRP 4˜ ¹ 0 ü v 4 õ ã ß ÈÔ º W ¥)„7¾ Å,X ì 4{P¬ b ' ! Master ,X ì 4{ ÈW Ú v 4 ä A¹ VRRP 4˜,X A’ Û Ä V p VRRP 4˜ ¹ 0 üM2 v 4 õ ã ß È G “ W ¥)„7¾ Å,X ì 4{P¬ b ' ! Master ,X ì 4{ È W 3 á î v 4 ä A¹ VRRP 4˜,X A’ Û Ä VRRP 4˜ S*ü ¹ þ5% y · IP ™ ‰ ß È v 4 õ ã úA’5B ã á û È ´ !8 ÊA¹ VRRP 4˜ K Ý Ô û ì 4{ È W7¾ | ä A¹ VRRP 4˜ ,X A’ Û Ä

ÏG!5B _ Ð _ 1 Ö Ô º IPv4 VRRP 4˜ ¥)„7¾ Å,X ì 4{(200) P¬ b ' ! A’ Û,X ì 4{ È W î ü1 Y 15 /¦ â w 7¾ Å v 4 A’ Û Ä

```
5XLMLH FRQILJ LI YUUS SUHHPSW GHOD\
5XLMLH FRQILJ LI YUUS SULRULW\
```

_

no vrrp [ipv6] group priority

Ï – DAÈ â Ð	– D	£EÄ

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð V p ' !A' Û ä VRRP 4˜ ,X A' Û ÈW Ú ¹A' n,XKÈLh ¥EÕ VRRP Eî 9Eî 7¾ Å,X VRRP (Š Õ Ãì 4{ ¹ ž J W µ C Ä

ÏG!5B _ Ð _ 1 ÖA'5BIPv4 VRRP Eî ¥EÕKÈLh 4 /¦ Ä

```
5XLMLH FRQILJ LI YUUS WLPHUV DGYHUWLVH
```

_ 2 ÖA'5BIPv6 VRRP Eî ¥EÕKÈLh 4 /¦ Ä

```
5XLMLH FRQILJ LI YUUS LSY WLPHUV DGYHUWLVH
```

_ 3 ÖA'5BIPv4 VRRP Eî ¥EÕKÈLh 50 l/¦ Ä

```
5XLMLH FRQILJ LI YUUS WLPHUV DGYHUWLVH FVHF
```

_ 4 ÖA'5BIPv6 VRRP Eî ¥EÕKÈLh 50 l/¦ Ä

```
5XLMLH FRQILJ LI YUUS LSY WLPHUV DGYHUWLVH FVHF
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
vrrp ip	*ü VRRP s6Ñ JA'5B<. ³A' Û,X IP
vrrp ipv6	*ü VRRP s6Ñ JA'5B<. ³A' Û,X IPv6
vrrp timers learn	*ü IPv4 VRRP 4˜ n Ê < : 4 s6Ñ
vrrp ipv6 timers learn	*ü IPv6 VRRP 4˜ n Ê < : 4 s6Ñ

Ï G ÄAÈ â Ð -

5.18 vrrp timers learn

Q ¸ *ü IPv4 VRRP ê5Ù IPv6 VRRP ,X n Ê < : 4 s6Ñ Ä J no 6 ã Ú GKÁA¹ s6Ñ Ä

vrrp [ipv6] group timers learn

no vrrp [ipv6] group timers learn

Ï – DAÈ â Ð

– D	£EÄ
ipv6	h*ü b IPv6 Ä5 ,Õ IPv4 Ä
group	VRRP 4˜ Ë

Ï5 ,ÕG!5B Ð y · Þ"u Ý *ü VRRP s6Ñ Ä

G " *ü VRRP s6Ñ È2Ï4³T¬Ax ™ ‰ ßE¬ GKÁ Z n Ê < : 4 s6Ñ Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð Ô º *ü Z n Ê < : 4 s6Ñ È V p ' !A' Û VRRP Û ÑA' Û È üA'5B Z n Ê < : 4 s6Ñ â È W î ¢ A' Û,X VRRP Eî : 4 VRRP Eî ¥EÕKÈLh È J+ !8 9Au1k Master A' Û KÈLh È5à á S*ü7¾ Å A'5B,X VRRP Eî ¥EÕKÈLh 9Au1k Ä Q ¸ Ã ¹ r)„ â Master A' Û,X VRRP Eî ¥EÕ n Ê < à!9 Ä

ÏG!5B _ Ð _ 1 Ö ü IPv4 VRRP 4˜ 1 Þ *ü Z n Ê < : 4 s6Ñ Ä

```
5XLMLH FRQILJ LI YUUS WLPHUV OHDUQ
```

_ 2 Ö ü IPv6 VRRP 4˜ 1 Þ *ü Z n Ê < : 4 s6Ñ Ä

```
5XLMLH FRQILJ LI YUUS LSY WLPHUV OHDUQ
```

Ï,Ì G Q ¸ Ð

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
vrrp ip	*ü VRRP s6Ñ JA’5B<. ³A’ Û,X IP
vrrp ipv6	*ü VRRP s6Ñ JA’5B<. ³A’ Û,X IPv6
vrrp priority	A’5B IPv4 VRRP 4˜,X ì 4{
vrrp ipv6 priority	A’5B IPv6 VRRP 4˜,X ì 4{

Ï G ÄAÈ â Ð -

5.20 vrrp version

Q ¸G!5B IPv4 VRRP ,X VRRP 4˜ • y [,X ¥EÕ Û š ÄJ no 6 ã Ú ª#\G!5B ÄÍ b IPv4 VRRP È/VRRP 4˜ • y [,X ¥EÕ Û š Ý ø/¡ VRRPv2 ` VRRPv3 Ä

vrrp group version { 2 | 3 }

no vrr7.007 Ver 0.013 5 Td [(07 1 Td <41-1 g 24 [(9 2 5 9 8 c 7.9 0 7 1 C 0 4 0 1 3 /4 d T 0 n 1 T f 0 1 T c (0) T j 0 7 5 2 7 <1 4 - 0 0 8 0 A 5 1 0 4 B 8 0 7 B 3 E 7 1 6 2 A 8 C 4 2 0

6 VRRP Plus

6.1 debug vrrp balance

' ÔA×A© Ô G È,¥ { VRRP Plus µ C Ä

debug vrrp balance [errors | messages | packets | state | timer | event]

Ï – DAÈ â Ð

– D	£EÄ
errors	,¥ {JíAÃ µ C
messages	,¥ { â VRRP ÃTRACK õ +KÈ,X#\ C
packets	,¥ { VRRP Plus #A, y [
state	,¥ { VRRP Plus 4˜(Š Õ
timer	,¥ { VRRP Plus 4˜,X n Ê <#\ C
event	,¥ { VRRP Plus 4˜,X _ Ê

Ï5 ,ÕG!5B Ð GKÁ!8A×A© Ô G

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð V p á ú Ï) – D È Ã,¥ { VRRP Plus ,X Ý µ C Ä

ÏG!5B _ Ð -

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

6.2 show vrrp balance

/ VRRP Plus ,X V ‰ ê5Ù4š8V Ä

show vrrp balance [brief | group]

Ï – DAÈ â Ð

– D	£EÄ
brief	/ VRRP Plus ,X V ‰
group	/ Û n4˜ Ë,X VRRP Plus µ C

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð V p á S*ü ÃEÝ – D È Ú / Ý,X VRRP Plus 4˜,XAº4š ™ ‰ Ä

ÏG!5B _ Ð _ 1 Ö / Ý,X VRRP Plus 4˜,XAº4š ™ ‰ Ö

```
5XLMLH VKRZ YUUS EDODQFH
9/$1      *URXS
  6WDWH LV %9*
  9LUWXDO ,3 DGGUHVV LV
  +HOOR WLPH   VHF  KROG WLPH   VHF
  /RDG EDODQFLQJ  KRVW GHSHQGHQW
  5HGLUHFW WLPH    VHF  IRUZDUGHU WLPH RXW      VHF
  :HLJKWLQJ     FRQILJXUHG       WKUHVKROGV  ORZHU    XSSHU
    7UDFN REMHFW    VWDWH  GRZQ  GHFUHPHQW ZHLJKW
  7KHUH DUH   IRUZDUGHUV
  )RUZDUGHU    ORFDO
    0$& DGGUHVV
          H
    2ZQHU ,' LV   G  I      DE
  )RUZDUGHU
    0$& DGGUHVV
        D D
    2ZQHU ,' LV   G  I
```

_ 2 Ö / VRRP Plus 4˜,X V ‰

```
5XLMLH  VKRZ YUUS EDODQFH EULHI
,QWHUIDFH      *US   6WDWH      *URXS $GGU      0$& DGGU
9/$1                %9*                          H
```

Ï,Ì G Q ¸ Ð

	£EÄ
vrrp balance	*ü VRRP Plus s6Ñ
vrrp load-balancing	A’5B VRRP Plus ,XBóEQ >51*+9
show vrrp balance interface	/ Û n y ·,X VRRP Plus E¤> (Š Õ

Ï G ÄAÈ â Ð -

6.3 show vrrp balance interface

/ Û n y · Þ,X VRRP Plus 4˜ Þ,X j /TT0 1 Tf -0.00104B801D0>T8 re f 0.009961B4-

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð

Ï5 ,ÕG!5B Ð y · Þ"u Ý *ü VRRP Plus s6Ñ

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð ™NO G!5B VRRP s6Ñ â È !6Ñ *ü VR 6Ñ Ä

ÏG!5B _ Ð ü Ý y · interface FastEthernet 0/0 Þ *ü us s6Ñ

```
5XLMLH FRQILJ LQWHUIDF V(WK W
5XLMLH FRQILJ LI YUUS L
5XLMLH FRQILJ LI YUUS ED H
```

Ï,Ì G Q ¸ Ð	Q ¸	£EÄ
	vrrp load-balancing	

Ï G ÄAÈ â Ð -

6.6 vrrp load-balancing

A¹ Q ¸*ü bA’5B VRRP Plus ,XBóEQ >51*+9 Ä J no 6 ã Ú 6 á5 ,ÕG!5B Ä

vrrp group load-balancing { host-dependent | round-robin |

group	VRRP Plus Û Ñ4˜,X4˜ Ë È ª 8× È 1 255
redirect	G¡ n å ÊKÈ ÈT¬Ax 300 /¦ Ä G 5 ÚJs Å È ª 8× È 0 3600
timeout	CY Ê ÊKÈ ÈT¬Ax 14400 /¦ Ä G 4 ã Ê Å È ª 8× È Äredirect + 600 Å 64800

Ï5 ,ÕG!5B Ð VRRP Plus Û Ñ4˜,X ·)Ú<. MAC ,XG¡ n å ÊKÈKÈLh 300 /¦ ÈG¡ n å,XCY Ê ÊKÈ 14400 /¦ Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð ™NO *ü VRRP Plus s6Ñ È â !6ÑA’5B VRRP Plus Û Ñ4˜,X ·)Ú<. MAC ,XG¡ n å ÊKÈKÈLh ` G¡ n å,XCY Ê ÊKÈ Ä

5XLMLH FRQILJ LI YUUS EDODQFH

5XLMLH FRQILJ LI YUUS ZHLJKWLQJ ORZHU XSSHU 6-7 VRRP Plus

7 TPP

7.1 show tpp

/ L § %,XG!5B ž(Š Õ Ä

show tpp

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M Q ¸ õ ã

Ï S*ü Û Ð Ð A¹ Q ¸*ü b ¹,ß ' !,X tpp G!5B ž0Ã · ”# ™ ‰ Ä

ÏG!5B _ Ð / § %L x s6Ñ µ C Ö

5 X L M L H V K R Z W S S

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
topology guard	S6Ñ < § %L x s6Ñ

Ï G ÄAÈ â Ð -

7.2 topology guard

Ô § %L x s6Ñ,X < Ô G Ä S*üA¹ Q ¸,X no EÝNM 9/U!6 § %L x s6Ñ Ä

[no] topology guard

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð § %L x s6Ñ5 ,Õ ' Ô

Ï Q ¸ õ ã Ð < G!5B Q ¸ õ ã

Ï S*ü Û Ð Ð § %L x s6ÑT¬Ax ' Ô,X ÈE- Ã ¹ È Q,X ± x5%4° È ¹ !5%4° ´ « Ï5àEô ä § % 95 Ä WLÔ?U â Q ¸ cpu topology-limit G! Ü S*ü Ä

ÏG!5B _ Ð Ô ` GKÁ < § %L x s6Ñ Ö

```
5XLMLH FRQILJ WRSRORJ\ JXDUG
5XLMLH FRQILJ QR WRSRORJ\ JXDUG
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
tp-guard port enable	S6ÑA¹0Ã ·,X § %L x s6Ñ Ä
cpu topology-limit	A’5B CPU ý*ü)[NXA: Ä

Ï G ÄAÈ â Ð -

7.3 tp-guard port enable

S6Ñ0Ã ·,X § %L x s6Ñ Ä S*üA¹ Q ¸,X no EÝNM/U!60Ã ·,X § %L x s6Ñ Ä

[no] tp-guard port enable

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð y ·G!5B Q ¸ õ ã

Ï S*ü Û Ð Ð ü < § %L x s6Ñ Ô ,X ™ ‰ ß È8¹A¹0Ã · Ô § %L x s6Ñ È í ' A’ Û Î)„ CPU ý*ü)[E›P¬ ê J ª Ö)„B5 Ê È ÚEî A¹0Ã ·,X Í0ÃA’ Û ÄA¹ Q ¸EÖ*ü b ` x 6 · `CÃ+ · È J ª y ·(Ù À AP ä , ·) á ÕA¹ Q ¸ Ä

ÏG!5B _ Ð G!5B0Ã ·,X § %L x s6Ñ Ö

```
5XLMLH FRQILJ LI WS JXDUG SRUW HQDEOH
5XLMLH FRQILJ LI QR WS JXDUG SRUW HQDEOH
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
topology guard	S6Ñ < § %L x s6Ñ

Ï G ÄAÈ â Ð -

8 BFD

8.1 bfd

G!5BBFD îA±,X – D Ä*ü Ã ¹EîE› no Q ¸E¯> ôL8 BFD îA± – D Ä

bfd interval milliseconds min_rx milliseconds multiplier multiplier-value

no bfd interval

Ï – DAÈ â Ð

– D	£EÄ
Interval milliseconds	G!5B ¥EÕ4ÐBFD îA±F• ,X BFD { y [KÈLh < ó È– D milliseconds ÃG!5B,X8× È 50ms 10000ms Ä
min_rx milliseconds	G!5B BFD îA± ó ï y F• ,X BFD { y [KÈLh < ó È – D milliseconds ÃG!5B,X8× È 50ms 10000ms Ä
multiplier multiplier-value	G!5B ü # ,XKÈLh < ó Y"u Ý Í0Ã,X BFD { y [,X D,Â È – D multiplier-value ÃG!5B,X8× È 3 50 Ä

Ï5 ,ÕG!5B Ð îA± – D"u Ý5 ,Õ È ü | BFD îA± ! ™NOG!5BE- o – D

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð A¹ Q ¸ á AŒ ü L3 AP y · ßE¯> G!5B Ä

üCÃ+ < Þ *ü BFD s6Ñ ! È ™NO *ü ¿E@ s6Ñ Ä

ÏG!5B _ Ð ü Routed Port y · FastEthernet 0/2 ÞG!5BBFD îA± – D Ä

```
5XLMLH FRQILJ LQWHUIDFH IDVW(WKHUQHW
5XLMLH FRQILJ LI EIG LQWHUYDO PLQBU[ PXOWLSOLHU
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
bfd all-interfaces	S6Ñ AŒ Ý y · Þ,X RIP â BFD 6(| Ä
ip rip bfd	S6Ñ AŒRIP â BFD 6(|

Ï G ÄAÈ â Ð -

8.2 bfd all-interfaces

S6Ñ Ý y · Þ,X RIP â BFD 6(| Ä S*ü no Q ¸ GKÁA¹ s6Ñ Ä

bfd all-interfaces

no bfd all-interfaces

Ï – DAÈ â Ð

– D	£EÄ

-	-

Ï5 ,ÕG!5B Ð GKÁ Ý y · Þ,X RIP â BFD 6(|

Ï Q ¸ õ ã Ð CÃ+ G!5B õ ã

Ï S*ü Û Ð Ð ø/¡ • ã Ã ¹ S6Ñ ê5Ù GKÁ y · AŒ RIP â BFD 6(| Ö
1 È ü RIP CÃ+ õ ã ßEîE›[no] bfd all-interfaces Q ¸ S6Ñ ê GKÁ Ý y · AŒ RIP â BFD 6(| Ä
2 È ü y · õ ã ßEîE› ip rip bfd [disable] Q ¸ S6Ñ ê GKÁ Û n y · AŒ RIP â BFD 6(| Ä

ÏG!5B _ Ð ü RIP CÃ+ G!5B õ ã ß S6Ñ Ý y · â BFD 6(| Ä

```
5XLMLH FRQILJ URXWHU ULS
5XLMLH FRQILJ URXWHU EIG DOO LQWHUIDFHV
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
bfd	G!5BBFD îA± – D Ä
ip rip bfd	S6Ñ AŒRIP â BFD 6(	

Ï G ÄAÈ â Ð -

8.3 bfd cpp

ü BFD ± x1+9 Ä S*ü no Q ¸ GKÁ BFD ± x1*+9 Ä
bfd cpp
no bfd cpp

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð 5 ,Õ ™ ‰ ßBFD ± x1*+9 *ü

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð BFD M2 # ó,X #A, È V p *ü BFD s6Ñ,XA' Û « Ï È Ã ¹EîE› *ü BFD ± x1*+9E¯> ± x Ä
V p *ü BFD s6Ñ,X à Ê ' Ô ± x1*+9 È î Ð7È Þ ÔCÇA' Û ¥ Î,X BFD y [4£E›A¹A' Û Ê ÈA¹A' Û
î Ú BFD y [ö × È ¢5à E ¡ Þ ÔCÇA' Û â J ªA' Û,X BFD îA± Î0Ÿ ÄA¹ s6Ñ žL$ ™ Í x 6 *ó Ä

ÏG!5B _ Ð *ü BFD ± x1*+9 Ä

```
5XLMLH FRQILJ EIG FSS
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

8.4 bfd slow-timer

G!5BBFD { y [,X 6Eó n Ê,X ÊKÈ ÄG›*ü no Q ¸ Ú 6 á5 ,Õ Ä

bfd slow-timer milliseconds

no bfd slow-timer

Ï – DAÈ â Ð

– D	£EÄ
milliseconds	BFD ,X 6Eó n Ê < ÊKÈ È) ! !¿/¦ ÄÃG!5B8× È ¢ 1000 30000, þG!5B 5 ,Õ 1000 Ä

Ï5 ,ÕG!5B Ð 5 ,Õ 1000ms

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð G!5Bslow-timer 14000 !¿/¦ Ä

5XLMLH FRQILJ EIG VORZ WLPHU

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

8.5 bfd up-dampening

G!5BEî 4- G6(h*ü îA± UP (Š Õ ! LÔ UP (Š Õ0 n,X ÊKÈ ÄEîE› no Q ¸ Ú 6 á ä5 ,Õ Ä

bfd up-dampening [milliseconds]

no bfd up-dampening

Ï – DAÈ â Ð

– D	£EÄ
milliseconds	Eî 4- G6(h*ü îA± UP (Š Õ ! LÔ UP (Š Õ0 n,X ÊKÈ È) ! !¿/¦ ÄÃG! 5B8× È ¢0 300000, G!5B0, G ' îA±,X(Š Õ ¢ DOWN Û 6 UP Ê Ú0Ÿ GEî 4- h*ü . 5 ,Õ 0 Ä

Ï5 ,ÕG!5B Ð 5 ,Õ 0ms È 3 0 n,X ÊKÈ 0 È Î)„ UP 0Ÿ GEî

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð ÚEî 4- G6(h*ü îA± UP (Š Õ ! LÔ UP (Š Õ0 n,X ÊKÈG!5B 60,000 !¿/¦

5 X L M L H F R Q I L J L I E I G X S G D P S H Q L Q J

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

8.6 ip rip bfd

S6Ñ y · Þ,X RIP â BFD 6(| Ä*ü disable GK + GKÁ y · Þ,X RIP #A, â BFD 6(| ÄEîE› no Q ¸ ôL8A¹G!5B Ä

ip rip bfd [disable]

no ip rip bfd

Ï – DAÈ â Ð

– D	£EÄ
disable	GKÁA¹ y · Þ AŒ RIP #A, â BFD 6(| Ä

Ï5 ,ÕG!5B Ð '"u ÝEg 9 disable È5 ,Õ,X> S6Ñ y · AŒ RIP #A, â BFD 6(|

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð ø/¡ • ã Ã ¹ S6Ñ ê5Ù GKÁ y · AŒ RIP â BFD 6(| Ö

1 È ü RIP CÃ+ õ ã ßEîE›[no] bfd all-interfaces Q ¸ S6Ñ ê GKÁ Ý y · Þ,X RIP â BFD 6(| Ä

2 È ü y · õ ã ßEîE› ip rip bfd [disable] Q ¸ S6Ñ ê GKÁ Û n y · Þ,X RIP â BFD 6(| Ä

ÏG!5B _ Ð ü Routed Port y · FastEthernet 0/2 Þ GKÁRIP #A, â BFD 6(| Ä

5 X L M L H F R Q I L J L Q W H U I D F H) D V W (W K H U Q H W

5 X L M L H F R Q I L J L I Q R V Z L W F K S R U W CÃ+ < ´!8 Q ¸ È Ã Ñ+9

5 X L M L H F R Q I L J L I L S U L S E I G G L V D E O H

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
bfd	G!5BBFD îA± – D Ä
bfd all-interfaces	S6Ñ Ý y ·CÃ+ #A, â BFD 6(|

Ï G ÄAÈ â Ð -

8.7 ip route static bfd

G!5BIPv4 M- ÕCÃ+ âBFD 6(| ÄEîE› no Q ¸ ôL8G!5B Ä

ip route static bfd [vrf vrf-name] interface-type interface-number gateway [source ip-address]

no ip route static bfd [vrf vrf-name] interface-type interface-number gateway [source ip-address]

Ï – DAÈ â Ð	– D	£EÄ
	vrf vrf-name	G!5BM- ÕCÃ+ < 2,X VRF á/Ä Ä
	interface-type interface-number	G!5B y ·2O _ ` y ·4ê Ë Ä
	gateway	G!5B5% GP

interface-type interface-number	G!5B y ·2O _ ` y ·4ê Ë
gateway	G!5B5% GP È G BFD ,XF• IP ÄM- ÕCÃ+ G!5B ß ÔCÇ A¹F• ,X ÚEîE› BFD E¯> ”# A¹E@ ¥CÃ X,X ÃE’ û Ä

Ï5 ,ÕG!5B Ð 5 ,Õ 1*+9CÃ+ á G6(BFD s6Ñ

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û Ð Ð G!5B ÊOj .B ±F• IP Í h,X y ·,X BFD îA± – D Æ4£G!5B

ÏG!5B _ Ð S6Ñ1*+9CÃ+ G6BFD h*ü ÈEîE› BFD ”# â 172.16.0.2 F• KÈ,XE@ ¥CÃ X

```
5XLMLH FRQILJXUH WHUPLQDO
(QWHU FRQILJXUDWLRQ FRPPDQGV RQH SHU OLQH (QG ZLWK &17/ =
5XLMLH FRQILJ URXWH PDS ([DPSOH SHUPLW
5XLMLH FRQILJ URXWH PDS PDWFK LS DGGUHVV
5XLMLH FRQILJ URXWH PDS VHW LS SUHFHGHQFH SULRULW\
5XLMLH FRQILJ URXWH PDS VHW LS QH[W KRS YHULI\ DYDLODELOLW\

5XLMLH FRQILJ URXWH PDS HQG
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
bfd	G!5BBFD îA± – D Ä

Ï G ÄAÈ â Ð -

8.9 show bfd neighbors

/ BFD îA± µ C

show bfd neighbors [vrf vrf-name] [client { rip | vrrp | vrrp-balance | static-route | pbr }] [ipv4 ip-addess] [details]

Ï – DAÈ â Ð

– D	£EÄ
vrf vrf-name	F• 2,X VRF á/Ä
client	Û n h*ü #A, /
rip	Û n / RIP 6(|,X BFD îA± µ C
vrrp	Û n / VRRP 6(|,X BFD îA± µ C
vrrp-balance	Û n / VRRP+6(|,X BFD ,X îA± µ C
static-route	Û n / StaticRoute 6(|,X BFD îA± µ C
pbr	Û n / PBR 6(|,X BFD îA± µ C
ipv4 ip-addess	Û n / IPv4 (M n îA±,X îA± µ C
details	Aº4š /

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð ü show bfd neighbors Q ¸,X / µ C ÈOurAddr ></ îA±,X$d È ' / ü Ê í></ þ
Û n$d ÄA¹ / ™ ‰ î Î)„ ü LSP ¡ å IP 6(|,X BFD îA± Ä

ÏG!5B _ Ð ;> show bfd neighbors Q ¸ / V ß Ö

```
5XLMLH  VKRZ EIG QHLJKERUV
2XU$GGU      1HLJK$GGU     /' 5'  5+ 56  +ROGRZQ PXOW   6WDWH  ,Q
                              8S                 8S      *H
```

;> show bfd neighbors details Q ¸ / V ß Ö

```
5XLMLH  VKRZ EIG QHLJKERUV GHWDLOV
2XU$GGU      1HLJK$GGU     /' 5'  5+ 56  +ROGRZQ PXOW   6WDWH  ,Q
                              8S                 8S      *H
/RFDO 'LDJ    'HPDQG PRGH    3ROO ELW
0LQ7[,QW        0LQ5[,QW        0XOWLSOLHU
5HFHLYHG 0LQ5[,QW        5HFHLYHG 0XOWLSOLHU
+ROGRZQ KLWV          +HOOR KLWV
5[ &RXQW        5[ ,QWHUYDO PV PLQ PD[ DYJ
7[ &RXQW        7[ ,QWHUYDO PV PLQ PD[ DYJ          5HJLVWHUHG
8SWLPH
/DVW SDFNHW 9HUVLRQ        'LDJQRVWLF
, +HDU <RX ELW             'HPDQG ELW
3ROO ELW                   )LQDO ELW
0XOWLSOLHU                 /HQJWK
0\ 'LVFU                  <RXU 'LVFU
0LQ W[ LQWHUYDO             0LQ U[ LQWHUYDO
0LQ (FKR LQWHUYDO
```

+!‰	AÈ â
OurAddr	îA± ,X IP
NeighAddr	îA±F• ,X IP
LD/RD	îA± `E°0Ã ÛAš
RH/RS	îA± Í0Ã ' !(Š Õ
Holdown(mult)	îA± þ y hello y [,X ÊKÈ ž îA±CY Ê ”# õ D
State	îA± ' !(Š Õ
Int	îA± ü,X y · Ë
Local Diag	îA±,XAž • µ C

Demand mode ,X ÊK•aB Ÿ à`! ,D pHï± %€H fâ F ‡ H nò F ‡ H fâ F ‡ H Æic• b %™@:Ý- 3 aX•Â ðÜ

Multiplier	îA± G!5B,XCY Ê ”# õ D
Received MinRxInt	îA±E°0ÃG!5B,X Ô ã ¥EÕKÈLh
Received Multiplier	îA±E°0ÃG!5B,XCY Ê ”# õ D
Holdown (hits)	îA± ”# ÊKÈ ž ”# CY Ê,X õ D
Hello (hits)	îA± # â hello ± [,X y Ô ãKÈLh
Rx Count	îA± y BFD y [,X þ D
Rx Interval (ms) min/max/avg	îA± y ,X Ô ãKÈLh È Ô ûKÈLh È G KÈLh
Tx Count	îA± ¥EÕ BFD y [,X þ D
Tx Interval (ms) min/max/avg	îA± ¥EÕ,X Ô ãKÈLh È Ô ûKÈLh È G KÈLh
Registered protocols	"¼ ` A¹ îA±,X h*ü #A,2O _
Uptime	îA± ± Õ UP ,X ÊKÈ
Last packet	îA± ,X Ô â Ô þ BFD y [µ C

Ï,Ì G Q ¸ Ð

```
5XLMLH FRQILJ LI YUUS LS
5XLMLH FRQILJ LI YUUS EIG
5XLMLH FRQILJ LI HQG
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
bfd	G!5BBFD îA± – D Ä

Ï G ÄAÈ â Ð -

9 RNS & Track

ÏG!5B _ Ð G!5Bip rns ?U ¥EÕdns y [ÈAË" ³ á www.ruijie.com.cn ,X ip Ä
5XLMLH FRQILJ LS UQV GQV ZZZ UXLMLH FRP FQ QDPH VHUYHU

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

9.3 frequency

A'5B y [,X ¥EÕ ÊKÈKÈLh È W,X ™NO û b1 bCY Ê ÊKÈ Ä
frequency milliseconds

Ï – DAÈ â Ð

– D	£EÄ
milliseconds	y [,X ¥EÕ ÊKÈKÈLh Ä) !/¦ È ª 8× È 10-604800000

Ï5 ,ÕG!5B Ð 60s

Ï Q ¸ õ ã Ð icmp ehco G!5B õ ã ê5Ù dns G!5B õ ã Ä

Ï S*ü Û Ð Ð á1uG!5B,X ¥EÕ icmp echo y [E¬ ¥EÕ dns y [È*ü FÑ Ã ¹EîE›A¹ Q ¸G!5B ¥EÕA¹ y [2O _,X Ê KÈKÈLh ÄG!5B,XE- þ ÊKÈ ™NO û b1 b*ü G!5B,X y [CY Ê ÊKÈ Ä ÎA,A¹ á?UG!5B,XE› ã ÈG!5B,X ¥EÕ ÊKÈKÈLhE› ã È î Í cpu Eô ä \ ü _ o Ä

ÏG!5B _ Ð -

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
timeout	n ¥EÕ y [,XCY Ê ÊKÈ Ä

Ï G ÄAÈ â Ð -

9.4 icmp-echo

G!5B Ô þip rns ÍB5*ü 9 ¥EÕ icmp echo y [È ;> A¹ Q ¸ âE¯ 9 ip rns icmp echo õ ã Ä
icmp-echo destination-hostname [source-ipaddr ip-address]

Ï – DAÈ â Ð

– D	£EÄ
destination-hostname	icmp echo y [,X,Â,X ip
ip-address	icmp echo y [,X$d ip

Ï5 ,ÕG!5B Ð ip rns G!5B õ ã Ä

Ï Q ¸ õ ã Ð A¹ Q ¸,XG!5B4§ p È SA¹ ip rns ÍB5 Ô Ÿ ¥EÕ icmp echo y [È,Â,X ip *ü G!5B,X ip Ä

Ï S*ü Û Ð Ð G!5Bip rns ¥EÕicmp echo y [È,Â,X ip 10.1.1.1

5 X L M L H F R Q I L J L S U Q V L F P S H F K R

ÏG!5B _ Ð -

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

9.5 ip rns

n Ô þ ip rns ¡ 0 ÍB5 È ;> A¹ Q ¸ â ÈE¯ 9 ip-rns õ ã ÄA¹ Q ¸ no 6 ã ôL8 Ô þ ip rns ÍB5 Ä

ip rns operation-number

no ip rns operation-number

Ï – DAÈ â Ð

– D	£EÄ
operation-number	ip rns ¡ 0 ÍB5,X4ê Ë È ¢ 1 700

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð < G!5B õ ã Ä

Ï S*ü Û Ð Ð ;> A¹ Q ¸ â ÈE¯ 9 ip-rns õ ã Ä

üE- þ õ ã Y)„ ü Ã ¹ .,XG!5B Ý Ö ¥EÕ icmp y [× ¥EÕ dns AË" y [Ä

ÏG!5B _ Ð G!5B4ê Ë 1 ,X ip rns ÍB5 Ä

5 X L M L H F R Q I L J L S U Q V

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show ip rns statistics	/ ip rns ÍB5,X4³Au D B

Ï G ÄAÈ â Ð -

9.6 set ip next-hop verify-availability track

1*+9CÃ+ È Ã ¹ ü route-map G A'5B ß ÔCÇ4¥ n Ô þtrack ÍB5 Ä 'A¹ track ÍB5 down Ê ÈA¹ ß Ô CÇ á î*ó Ä

set ip next -hop verify -availability [ip-address] track [track-number]

Ï – DAÈ â Ð

– D	£EÄ

ip-address	ß ÔCÇ,XIP
track-number	TRACK ÍB5,X4ê Ë È ¢ 1 700

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð route-map õ ã

Ï S*ü Û Ð Ð EîE›A¹ Q ¸ È*ü Ã ¹ S1*+9CÃ+ ß ÔCÇ ` Ô þ track ÍB54¥ n Ätrack ÍB5(Š Õ,X ¬ ê î ‡ nA¹ ß Ô CÇ ú*ó Ä

ÏG!5B _ Ð -

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

9.7 show ip rns configuration

/ RNS ÍB5,XG!5B µ C Ä

show ip rns configuration [operation-number]

Ï – DAÈ â Ð

– D	£EÄ
operation-number	ip rns ¡ 0 ÍB5,X4ê Ë È ¢ 1 700

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (700 õ ã / RNS

Ï – DAÈ â Ð

– D	£EÄ
operation-number	ip rns ¡ 0 ÍB5,X4ê Ë È ¢ 1 700

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð EîE›A¹ Q ¸ È*ü Ã ¹ / ¤ Ô þ RNS ÍB5,X4³Au µ C Ä Í b á à,X y [2O _ È4³Au µ C á,Ì à Ä

ÏG!5B _ Ð -

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

9.9 show track

/ TRACK ÍB5,X4³Au µ C Ä

show track [track-number]

Ï – DAÈ â Ð

– D	£EÄ
track-number	TRACK ÍB5,X4ê Ë È ¢ 1 700

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð EîE›A¹ Q ¸ È*ü Ã ¹ / ¤ Ô þ TRACK ÍB5,X4³Au µ C Ä

ÏG!5B _ Ð -

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

9.10 timeout

A’5B y [,X ¥EÕ,XCY Ê ÊKÈ Ä

timeout millisecond

Ï – DAÈ â Ð

– D	£EÄ

milliseconds	CY Ê ÊKÈ È) ! !¿/¦ Ä

Ï5 ,ÕG!5B Ð icmp echo y [,X5 ,ÕCY Ê ÊKÈ 5 /¦ È dns y [,X5 ,ÕCY Ê ÊKÈ 9 /¦

Ï Q ¸ õ ã Ð icmp ehco G!5B õ ã ê5Ù dns G!5B õ ã Ä

Ï S*ü Û Ð Ð EîE›A¹ Q ¸ È*ü Ã ¹G!5B y [,XCY Ê ÊKÈ È V p üE- þ ÊKÈ Y"u Ý ¡ h y [È íAx "u Ý ¡ h y [Ä

ÏG!5B _ Ð -

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
frequency seconds	A’5B y [,X ¥EÕ ÊKÈKÈLh

Ï G ÄAÈ â Ð -

9.11 track interface li ne-protocol

G!5B Ô þtrack ÍB5 È9C³Cþ Ô þ y ·,X(Š Õ È !8 ¡ 0 ` ä âE¯ 9 track õ ã ÄW,X no 6 ã ôL8 Ô þ track ÍB5

track object-number interface type number line-protocol

no track object-number

Ï – DAÈ â Ð

– D	£EÄ
object-number	track ÍB5,X4ê Ë È Ý 1 700
type number	y ·2O _ Ã y ·4ê Ë

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð < G!5B õ ã Ä

Ï S*ü Û Ð Ð A¹ Q ¸G!5B Ô þ track ÍB5 È*ü 9C³Cþ Ô þ y ·,XJÒCÃ(Š Õ Ä ' y ·JÒCÃ(Š Õ up ,X È,Ì h,X track Í B5(Š Õ up Ä

ÏG!5B _ Ð *ó ä Ô þ4ê Ë 3 ,X track ÍB5 È*ü 9C³Cþ y · ethernet 0/1 ,XJÒCÃ(Š Õ Ä

5 X L M L H F R Q I L J W U D F N L Q W H U I D F H H W K H U Q H W O L Q H S U R W R F R C

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
track rns	G!5B Ô þtrack ÍB5 È 9C³Cþ Ô þ rns ÍB5 ¡ 0,X(Š Õ
show track	/ track ÍB5,Ì G µ C

Ï G ÄAÈ â Ð -

9.12 track rns

G!5B Ô þtrack ÍB5 È 9C³Cþ Ô þ rns ÍB5 ¡ 0,X(Š Õ È!8 ¡ 0 ` ä âE¯ 9 track õ ã Ä W,X no 6 ã ô L8 Ô þ track ÍB5 Ä

track object-number rns entry-number

no track object-number

Ï – DAÈ â Ð

– D	£EÄ
object-number	track ÍB5,X4ê Ë È Ý 1 700 Ä
entry-number	rns ÍB5,X4ê Ë È Ý 1 700 Ä

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð < G!5B õ ã Ä

Ï S*ü Û Ð Ð B ú ¡ h y [9.B n Ô þ rns ÍB5,X(Š Õ È V p Ý ¡ h y [ÈFw rns ÍB5,X(Š Õ up È ,Ì h,XC³CþE- þ rns ÍB5,X track ÍB5,X(Š Õ 3 up Ä

ÏG!5B _ Ð *ó ä Ô þ4ê Ë 123 ,X track ÍB5 È*ü 9C³Cþ4ê Ë 1 ,X rns ÍB5 Ä

5 X L M L H F R Q I L J W U D F N U Q V

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
track interface line-protocol	C³Cþ Ô þ y ·,X(Š Õ È J èE¯ 9 track õ ã
show track	/ track ÍB5,Ì G µ C

Ï G ÄAÈ â Ð -

9.13 vrf

A’5B y [¢ ¾ Ô þ VRF ¥ Î Ä

vrf name

Ï – DAÈ â Ð

– D	£EÄ
name	vrf ,X á +

Ï5 ,ÕG!5B Ð icmp echo y [5 ,ÕCDT¬AxCÃ+ ><NM Ä

Ï Q ¸ õ ã Ð icmp ehco G!5B õ ã Ä

Ï S*ü Û Ð Ð EîE›A¹ Q ¸ È*ü Ã ¹G!5B y [S*ü ¾ Ô þ vrf CÃ+ ><NM 9EÝCÃ Ä

ÏG!5B _ Ð -

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
frequency seconds	A’5B y [,X ¥EÕ ÊKÈKÈLh

Ï G ÄAÈ â Ð -

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
clear counters	#Ù0N y ·Au D
show dampening interface	/ Ý y · e s6Ñ,X4³Au µ C
show interfaces dampening	/ Ý y · e s6Ñ,XAº4š µ C

Ï G ÄAÈ â Ð -

10.2 show dampening interface

/ >• damening ,X y · ,X4³Au µ C Ä

show dampening interface

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã Ä

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð / >• damening ,X y · ,X µ C Ä

```
5XLMLH VKRZ GDPSHQLQJ LQWHUIDFH
 LQWHUIDFHV DUH FRQILJXUHG ZLWK GDPSHQLQJ
1R LQWHUIDFH LV EHLQJ VXSSUHVVHG
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
dampening	G!5B y · _ Ê e s6Ñ
clear counters	#Ù0N y ·Au D
show interfaces dampening	/ Ý y · e s6Ñ,XAº4š µ C

Ï G ÄAÈ â Ð -

10.3 show interfaces dampening

/ Ý y ·,X dampening Aº4š µ C Ä

show interfaces [interface-id] dampening

Ï – DAÈ â Ð

– D	£EÄ
interface-id	y · á/Ä Ä _ V gigabitEthernet 0/1 Å

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã Ä

Ï S*ü Û Ð Ð 8¹ Û n Z interface-id È Ú ™ / A¹ Û n y ·,X dampening µ C Ä

ÏG!5B _ Ð / Ý y ·,X dampening Aº4š µ C Ä

```
5XLMLH VKRZ LQWHUIDFHV GDPSHQLQJ
(WKHUQHW
)ODSV 3HQDOW\ 6XSS 5HXVH7P +DOI/ 5HXVH9 6XSS9 0D[67P 0D[
                )$/6(
```

+!‰	AÈ â
Flaps	y ·5ÏE@ õ D
Penalty	y · ' ! ½5. û ã
Supp	' ! ú>• e
ReuseTm	NXAu?·L8 e E¬LÔ î å ÊKÈ(s)
HalfL	>D ó(s)
ReuseV	?·L8 e K¼L$
SuppV	Ô Ÿ e K¼L$
MaxSTm	Ô û e ÊKÈ
MaxP	Ô û e ÊKÈ Í h,X ½5.
Restart	ñ Ÿ ½5.

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
dampening	G!5B y · _ Ê e s6Ñ
clear counters	#Ù0N y ·Au D
show dampening interface	/ Ý y · e s6Ñ,X µ C

Ï G ÄAÈ â Ð -

11 GRTD

11.1 diagnostic bootup level

A’5B bootup # A©(CK # A©),X1 4{ Ä

diagnostic bootup level { bypass | minimal | complete }

Ï – DAÈ â Ð

– D	£EÄ
GK + bypass	áE¯> bootup # A©
GK ‡ momplet-4(lte]TJ /TT0 1 Tf 0 Tc 34 3930 Td ( )Tj /C2_0 1 Tf 7652 70 Td <1CD410EFBC24147A>Tj /TT0 1 Tf -0	
GK ‡ minimal	Ó aL$ z bootup # A©

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð A¹ Q ¸ ¾J\ Í È ÝAž • _ ÊFÑ ± , ü Þ Ä

ÏG!5B _ Ð _ 1 Ö ÚAž •# A© _ ÊA„) 5 DA’5B 1000 5 Ö

U X L M L H F R Q I L J G L D J Q R V W L F H Y H Q W O R J V L] H

_ 2 Ö ÚAž •# A© _ ÊA„) 5 D 6 á ä5 ,Õ

U X L M L H F R Q I L J Q R G L D J Q R V W L F H Y H Q W O R J V L] H

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show diagnostic events	/ Až •# A© _ Ê

Ï G ÄAÈ â Ð -

11.3 diagnostic loopback-test

A’5B0Ã ·# A© Ê,X0Ã · ID ž0Ã ·)ƒ ² õ ã Ä

diagnostic loopback-test [slot slot_id [sub_sysytem subsys_id]] port { all | range potr_range

-	-

Ï G ÄAÈ â Ð -

11.4 diagnostic monitor active

Ú ¤ õ + Þ ¤ Ô# A©NM,X 9 ‹,¥ {# A©(Š ÕA’5B %”# (Š Õ Ä S*ü Q ¸,X no 6 ãA’5B/U!6(Š Õ Ä diagnostic monitor active [slot

test-range } hh:mm:ss day day_count
no diagnostic monitor interval [slot slot_id [sub_sysytem subsys_id]] test { all | test-id | range test-range }

Ï – DAÈ â Ð

– D	£EÄ
slot slot_id	S 5 ÛAš Ä
sub_sysytem subsys_id	$2Ï4³ Ë È ª 8× È 0-1 È ÿ ,Ì ' b show version / µ C ,X cpu id Ä
test { all | test-id | range test-range }	# A©NM È Ã ¹ all È></ Ý# A©NM È 3 Ã ¹ Ô þ8× È È!¨ V1 m NM 1 n NM Ä
hh:mm:ss	Ê: Ú:/¦ È!¨ V 00:00:40 Ä Ô ã) ! /¦ Ä
day_count	ý D Ä ª 8× È 0-20

Ï5 ,ÕG!5B Ð EîF'# A©T¬AxKÈLh 30 /¦

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð . # û# A© á 0 2Ï4³ 9 ‹(Š Õ,¥ {# A©NM È ¹ á6ÑA'5B. # û# A©NM,X# A© ÊKÈKÈLh Ä
Ã ¹EîE› Q ¸ show diagnostic content ¹A¶ Ø õ + Ø# A©NM,X 2 û Ä
VSU 2Ï4³ ß Õ – D slot slot_id [sub_sysytem subsys_id] Ä

ÏG!5B _ Ð _ 1 Ö) ™ ‰ ß È Ú1 2 # A©NM,X# A© ÊKÈ !£10 ý,X 12 Ê 12 Ú 12 /¦ Ä
U X L M L H F R Q I L J G L D J Q R V W L F P R Q L W R U L Q W H U Y D O W H V W G D

_ 2 ÖVSU 2Ï4³ ß È Ú õ + 2 ,X1 2 # A©NM,X# A© ÊKÈKÈLh 6 á ä5 ,Õ Ä
U X L M L H F R Q I L J Q R G L D J Q R V W L F P R Q L W R U L Q W H U Y D O V O R W W H V W

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show diagnostic content	/ Až •# A© µ C

Ï G ÄAÈ â Ð -

11.6 diagnostic monitor syslog

A'5B ' Ý Ï) Ô þ,¥ {# A© Bù Ê {*ó Ô þ2Ï4³ ¹ «#\ C Ä
diagnostic monitor syslog
no diagnostic monitor syslog

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð ' Ý Ï) Ô þ,¥ {# A© Bù ÊFÑ Ý2Ï4³#\ C ¹ « {*ó Ä

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð _ 1 ÖA’5B ' Ý Ï) Ô þ,¥ {# A© Bù Ê {*ó Ô þ2Ï4³ ¹ «#\ C Ä

```
U X L M L H  F R Q I L J   G L D J Q R V W L F  P R Q L W R U  V \ V O R J
```

_ 2 ÖA’5B ' Ý Ï) Ô þ,¥ {# A© Bù Ê á {*ó Ô þ2Ï4³ ¹ «#\ C

```
U X L M L H  F R Q I L J   Q R  G L D J Q R V W L F  P R Q L W R U  V \ V O R J
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

11.7 diagnostic monitor threshold

A’5B ¤ õ + ¤ o# A©NM 9 ‹,¥ {# A©E²4Á# A© Bù,X Ô û# A© õ D Ä

diagnostic monitor threshold [slot slot_id [sub_sysytem subsys_id]] test { all | test-id | range test-range } failure-count count-value

no diagnostic monitor threshold [slot slot_id [sub_sysytem subsys_id]] test { all | test-id | range test-range }

Ï – DAÈ â Ð

– D	£EÄ
slot slot_id	Ñ ! ÛAš Ä
sub_sysytem subsys_id	$2Ï4³ Ë È ª 8× È 0-1 È ÿ ,Ì ' b show version / µ C ,X cpu id Ä
test { all | test-id | range test-range }	# A©NM È Ã ¹ all È></ Ý# A©NM È 3 Ã ¹ Ô þ8× È È!¨ V1 m NM 1 n NM Ä
failure-count count-value	E²4Á# A© Bù,X Ô û õ D È ª 8× È 1 99 Ä

```
UXLMLH FRQILJ
7KH WHVW FDQ QRW EH XVHG DV KHDOWK PRQLWRULQJ WHVW
7KH WHVW FDQ QRW EH XVHG DV KHDOWK PRQLWRULQJ WHVW
```

_ 2 Ö) ™ ‰ ß È Ú Ý# A©NM,X 9 ‹,¥ {# A©E²4Á# A© Bù,X Ô û# A© õ D 6 á ä5 ,Õ Ä

```
UXLMLH FRQILJ QR GLDJQRVWLF PRQLWRU WKUHVKROG WHVW DOO
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show diagnostic content	/ Až •# A© µ C

Ï G ÄAÈ â Ð -

11.8 diagnostic packet

A’5B ¥ Ù# A© Ê# A© Ù,XKS z Ã ¥EÕ# A© û þ D Ã ² # A© û,X1 YCY Ê ÊKÈ Ä

diagnostic packet [slot slot_id [sub_sysytem subsys_id]] [length lengtn_size] [num num_count] [time_out tick_count]

Ï – DAÈ â Ð

– D	£EÄ
slot slot_id	Ñ ! ÛAš Ä
sub_sysytem subsys_id	$2Ï4³ Ë È ª 8× È 0-1 Ä ÿ ,Ì ' b show version / µ C ,X cpu id Ä
length	#A©ûKS Ä ÈÂ ñÈC ô ²? Ò1G d@ý YCY Ê ÊK0Ÿá)Ñ[^G @

11.10 diagnostic start

Ô Ÿ Q ¸> # A© Ä

diagnostic start [slot slot_id [sub_sysytem subsys_id]] test { all | test-id | range test-range }

Ï – DAÈ â Ð

– D	£EÄ
slot slot_id	Ñ ! Ë Ä
sub_sysytem subsys_id	$2Ï4³ Ë È ª 8× È 0-1 È ÿ ,Ì ' b show version / µ C ,X cpu id Ä
test {all | test-id | range test-range}	# A©NM È Ã ¹ all È></ Ý# A©NM È 3 Ã ¹ Ô þ8× È È!¨ V1 m NM 1 n NM Ä

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð Ô8 Q ¸> # A© Ê # A©M2. # û# A©NM È a# A©. # û# A©NM
ü Ô Ÿ Q ¸> # A© !LÔ 0!62Ï4³ 9 ‹(Š Õ,¥ {# A© ž E¥ ÊKÈ,XAu æ# A© Ä
VSU 2Ï4³ ß Õ – D slot slot_id [sub_sysytem subsys_id] Ä

ÏG!5B _ Ð _ 1 ÖVSU 2Ï4³ ß È Ô Ÿ õ + 2 Ý# A©NM# A©

U X L M L H G L D J Q R V W L F V W D U W V O R W W H V W D O O
5 X Q Q L Q J W H V W V P D \ G L V U X S W Q R U P D O V \ V W H P
' R \ R X Z D Q W W R F R Q W L Q X H " > Q R @ \ H V

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show diagnostic result	/ Q ¸> # A©4§ p

Ï G ÄAÈ â Ð -

11.11 diagnostic stop

0!6 ¤ õ +,XAž •# A© Ä

diagnostic stop [slot slot_id [sub_sysytem subsys_id]]

Ï – DAÈ â Ð

– D	£EÄ
slot slot_id	Ñ ! Ë Ä

Ï S*ü Û Ð Ð VSU 2Ï4³ ß Õ – D slot slot_id [sub_sysytem subsys_id] Ä

ÏG!5B _ Ð _ 1 ÖVSU 2Ï4³ ß È 0!6 õ + 5 ,X Q ¸> Až •# A©

U X L M L H G L D J Q R V W L F V W R S V O R W

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

11.12 show diagnostic bootup

/ bootup # A©1 4{ Ä

show diagnostic bootup level

Ï – DAÈ â Ð

– D	£EÄ
level	bootup # A©1 4{

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð

U X L M L H V K R Z G L D J Q R V W L F E R R W X S O H Y H O

& X U U H Q W E R R W X S G L D J Q R V W L F O H Y H O & R P S O H W H

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

11.13 show diagnostic content

/ õ +,XAž •# A© µ C È Ù ÀA¹ õ +,X Ý# A©NM Ã Ø# A©NM 2 û Ã Ø# A©NM,XG!5B1 µ C Ä

show diagnostic content [slot slot_id [sub_sysytem subsys_id]]

Ï – DAÈ â Ð

– D	£EÄ
sub_sysytem subsys_id	$2Ï4³ Ë È ª 8× È 0-1 È ÿ ,Ì ' b show version / µ C ,X cpu id Ä
slot slot_id	Ñ ! ÛAš

diagnostic monitor interval	A’5B,¥ { ÊKÈKÈLh
diagnostic monitor threshold	A’5B,¥ {# A© Bù Ô û õ D

Ï G ÄAÈ â Ð -

11.14 show diagnostic description

/ Ø# A©NM,XAº4šAÈ â Ä

show diagnostic description [slot slot_id [sub_sysytem subsys_id]] test { all | test-id | range test-range }

Ï – DAÈ â Ð

– D	£EÄ
slot slot_id	Ñ ! ÛAš Ä
sub_sysytem subsys_id	$2Ï4³ Ë È ª 8× È 0-1 È ÿ ,Ì ' b show version / µ C ,X cpu id Ä
test {all | test-id | range test-range}	# A©NM È Ã ¹ all È></ Ý# A©NM È 3 Ã ¹ Ô þ8× È È!¨ V1 m NM 1 n NM Ä

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð VSU 2Ï4³ ß Õ – D slot slot_id [sub_sysytem subsys_id] Ä

ÏG!5B _ Ð _ 1 ÖVSU 2Ï4³ ß È / õ + 2 # A©NM1 ,XAº4šAÈ â Ä

```
UXLMLH VKRZ GLDJQRVWLF GHVFULSWLRQ VORW WHVW
7HVW/RRSEDFN
    7KLV WHVW YHULILHV WKH GDWD SDWK EHWZHHQ WKH PDLQERUG
```

_ 2 ÖVSU 2Ï4³ ß È / õ + 2 Ý# A©NM,XAº4šAÈ â Ä

```
UXLMLH VKRZ GLDJQRVWLF GHVFULSWLRQ VORW WHVW DOO
  3RUW/RRSEDFN7HVW
      7KLV WHVW YHULILHV WKH GDWD SDWK EHWZHHQ WKH GHYLFH D
      7KH WHVW SDFNHW LV ORRSHG EDFN>PDF RU SKE@FNQRQ WKH WDUJH
EXV IDEULF
  0DF6HOI7HVW
      7KLV WHVW YHULILHV WKH FSX FDQ RSHUDWH WKH PDF FKLS H[D
```

```
      7KLV WHVW YHULILHV WKH L F EXV ZRUN H[DFWO\ RU QRW
  7HVW3&,
      7KLV WHVW YHULILHV WKH SFL EXV ZRUN H[DFWO\ RU QRW
  7HVW'GU
      7KLV WHVW YHULILHV WKH GGU ZRUN H[DFWO\ RU QRW
      %XW VRPH GGU IDLOXUH LV GLIILFXOW WR GLDJQRVH RQO\ WKU
      2Q WKLV FRQGLWLRQ \RX PXVW WU\ VRPH RWKHU PHWKRGV VX
5XLMLH
```

Ï,Ì G Q ¸ Ð	Q ¸	£EÄ

% p ?ànñ “F0$ @ åfRFaF •VåfRFaF •VåfRFaF •Vï° • ` • ‡Vw‘ à`%f 4c A” ŽV` †0 H ŽV` †0 H >û ™Â ðÉ W “ ùÄAÈ âp¥ K€

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
diagnostic event-log size	A’5B _ ÊA„) þ D

Ï G ÄAÈ â Ð -

11.16 show diagnostic result

/ ÝAž •# A©4§ p Ä

show diagnostic result [slot slot_id [sub_sysytem subsys_id]] [test { all | test-id | range test-range }]

Ï – DAÈ â Ð

– D	£EÄ
slot slot_id	Ñ ! ÛAš
sub_sysytem subsys_id	$2Ï4³ Ë È ª 8× È 0-1 È ÿ ,Ì ' b show version / µ C ,X cpu id Ä
test { all | test-id | range test-range }]	# A©NM

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð VSU 2Ï4³ ß Õ – D slot slot_id

-	-

Ï G ÄAÈ â Ð -

11.17 show diagnostic schedule

/ Ø õ +A’5B Q,XAu æ# A© ÊKÈ>< Ä

show diagnostic schedule [slot slot_id [sub_sysytem subsys_id]]

Ï – DAÈ â Ð

– D	£EÄ
slot slot_id	Ñ ! ÛAš
sub_sysytem subsys_id	$2Ï4³ Ë È ª 8× È 0-1 È ÿ ,Ì ' b show version / µ C ,X cpu id Ä

Ï5.Tr 5B Ð -

Ï¥ KØ ñN2 Ð (M •ÿ ã@

ÌÝSHdr TBd&ïÑ TBd&ï 4Q TBd&ï%FC ,X U * ü Û

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð

```
5XLMLH VKR GLD VWDWXV
  %8 %RRWXS 'LDJQRVWLFV +0 +HDOWK 0RQLWRULQJ 'LDJQRVWLF
  2' 2Q'HPDQG 'LDJQRVWLFV 6&+ 6FKHGXOHG 'LDJQRVWLFV

 'HY 6ORW 'HVFULSWLRQ &XUUHQW 5XQQLQJ 7HVW 5

        6      *7  6)3 6        1 $              1 $
        6      *7  6)3 6        1 $              1 $

5XLMLH
```

+!‰	AÈ â
Dev	A’ Û Ë
Slot	Ñ ! Ë È0 ></
Description	õ + á/Ä
Current Running Test	!7 üE¤> ,X# A©NM
Run by	£ò ¾# ¡A2 ÷ ¤

Q ¸ â3E`ï(qBD •9D fe88 ò‡ $@H ä •aN@H Ç Nó”C¦B/‘Vï 4V 'B †`Vï° œ • 4V "H0 £E@

Ï,Ì G Q ¸ Ð

12 SEM

12.1 action cli

ü SEM G!5B õ ã ßG!5B1*+9 | 0 È ;> A’ Û,X Q ¸> ÄA¹ Q ¸,X no 6 ã*ü b ôL8 Û n Û1R,X> | Ä

action label cli command cli-string [pattern pattern-string]

no action label

Ï – DAÈ â Ð

– D	£EÄ
label	> |,X Û1R
command cli-string	LÔ?U ;> ,X Q ¸ Y •
pattern pattern-string	Q ¸LÔ?U x f Ê,X x f ² á Y • Ä

Ï5 ,ÕG!5B Ð 5 ,Õ áG!5B> |

Ï Q ¸ õ ã Ð SEM G!5B õ ã

Ï S*ü Û Ð Ð 1*+9 ;> Q ¸,X õ ã *ü õ ã È ¹Eî ;> ,X1 Ô þ Q ¸ enable E¯ 9(M õ ã Äü action cli ;> ,X enable Q ¸ ´LÔ*ü ¤ o š-Õ È,È yEîE›AxA• Ä

pattern-string + 0N Ú F,X î þ ²1(Y • Ä ' ²1(Y • Ý0N ,X ™ ‰ ß È S*ü E¯> 4˜ Ü Ä

;> 1*+9 ;> Q ¸> > | {*ó,X Q ¸Eg Î Ã ¹>•A„) A’ Û [Ê2Ï4³ È ÃEîE› policy record Q ¸ Ô A„) s6Ñ È `A’5BA„) [Ê,X û ã È JEîE› smart manager policy record clean Q ¸#ÙL8 {*ó,X Q ¸ Eg ÎA„) Ä K 'AË –5× Q ¸ policy record Ä

ÏG!5B _ Ð ï Î Ô þ+ smart manager run E¤> ,X none event á + clear_cache Ä J ` ä#Ù0N arp >< ` ip CÃ+ >< | 0 È J ü ¡ 04§ 3 ¹ â ÈEî-¹4-*ü Ä

```
5XLMLH FRQILJ VPDUW PDQDJHU DSSOHW FOHDUBFDFKH
5XLMLH FRQILJ DSSOHW HYHQW WDJ PRQLWRUBFPG QRQH
5XLMLH FRQILJ DSSOHW DFWLRQ FOL FRPPDQG HQDEOH
5XLMLH FRQILJ DSSOHW DFWLRQ FOL FRPPDQG FOHDU DUS FDFKH
5XLMLH FRQILJ DSSOHW DFWLRQ FOL FRPPDQG FOHDU LS URXWH
5XLMLH FRQILJ DSSOHW FRPPLW
5XLMLH FRQILJ DSSOHW H[LW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
smart manager applet	n Î „$ `ébÈ Àár}ÂA ¢³” `, $

12.2 action counter

ü SEM G!5B õ ã ßG!5B1*+9 | 0 È ¡ 0 SEM Q áAu D < ÄA¹ Q ¸,X no 6 ã*ü b ôL8 Û n Û1R,X> | Ä

action label counter name counter-name value counter-value op { dec | inc | nop | set }

no action label

Ï – DAÈ â Ð

– D	£EÄ
label	> |,X Û1R
name counter-name	¡ 0Au D <,X á +
value counter-value	¡ 0 S*ü,X D
op { dec | inc | nop | set }	¡ 0 S*ü,X •"©

Ï5 ,ÕG!5B Ð 5 ,Õ áG!5B> |

Ï Q ¸ õ ã Ð SEM G!5B õ ã

Ï S*ü Û Ð Ð – D name counter-name Û n,XAu D < È ´LÔ n È,È y S*ü G Ã Ä

ÏG!5B _ Ð ,¥ { ¹ « È ' ¥)„ ¹ « Ý login faile Y • È4-Au D < Authenticate_Faile t 1 Ä

```
5XLMLH FRQILJ VPDUW PDQDJHU DSSOHW 7HVWB
5XLMLH FRQILJ DSSOHW HYHQW WDJ PRQLWRUBORJ V\VORJ SDWWHU
5XLMLH FRQILJ DSSOHW DFWLRQ FRXQWHU QDPH $XWKHQWLFDWHE
5XLMLH FRQILJ DSSOHW FRPPLW
5XLMLH FRQILJ DSSOHW H[LW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
smart manager applet	n Î b Q ¸> ,X SEM 1*+9

Ï G ÄAÈ â Ð -

12.3 action exit

ü SEM G!5B õ ã ßG!5B1*+9 | 0 È4œ!61*+96î È JA'5BEÔ Î(Š Õ ÄA¹ Q ¸,X no 6 ã*ü b ôL8 Û n Û 1R,X> | Ä

action label exit [result]

no action label

Ï – DAÈ â Ð

– D	£EÄ
label	> |,X Û1R
result	Exit ,XE¨ ² ÈT¬Ax 1

Ï5 ,ÕG!5B Ð T¬Ax ™ ‰ ß ;> 1*+9 ÿ ÊE¨ ² 1 Ä

Ï Q ¸ õ ã Ð SEM G!5B õ ã

Ï S*ü Û Ð Ð ü à!9 • ã ß È?º ¥1*+9,X ¡ 0 î1 Y1*+9 ¡ 0 ` ä Ä J B1*+9,XE¨ ² ‡ n ú4»4Á ;> Ä V pE¨ ² 0 í 0!6E¤> Ä J ª 4»4ÁE¤> Ä
1*+9,XE¨ ² + action exit Û n ÈT¬Ax ™ ‰ ß 1 Ä

ÏG!5B _ Ð _ 1 Ö à!9 • ã,¥ { Q ¸> È '*ü Eg 9 write memory È/U!6*ü ¡ 0 J ¤/ *ü

```
5XLMLH FRQILJ VPDUW PDQDJHU DSSOHW 7HVWB
5XLMLH FRQILJ DSSOHW HYHQW WDJ PRQLWRUBFOL FOL SDWWHUQ Z
5XLMLH FRQILJ DSSOHW DFWLRQ SXWV FDQ QRW GR WKLV
5XLMLH FRQILJ DSSOHW DFWLRQ H[LW
5XLMLH FRQILJ DSSOHW FRPPLW
5XLMLH FRQILJ DSSOHW H[LW
```

_ 2 Ö à!9 • ã,¥ { Q ¸> È '*ü Eg 9 line È ü*ü Q ¸ ! ;> aaa new-model È' â ;
> *ü Q ¸ Ä

```
5XLMLH FRQILJ VPDUW PDQDJHU DSSOHW 7HVWB
5XLMLH FRQILJ DSSOHW HYHQW WDJ PRQLWRUBFOL FOL SDWWHUQ C
5XLMLH FRQILJ DSSOHW DFWLRQ FOL FRPPDQG HQDEOH
5XLMLH FRQILJ DSSOHW DFWLRQ FOL FRPPDQG DDD QHZ PRGHO
5XLMLH FRQILJ DSSOHW FRPPLW
5XLMLH FRQILJ DSSOHW H[LW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
smart manager applet	n Î b Q ¸> ,X SEM 1*+9

Ï G ÄAÈ â Ð -

12.4 action publish-event

ü SEM G!5B õ ã ßG!5B1*+9 | 0 È ;> Application Event ¥EÕ | 0 ÄA¹ Q ¸,X no 6 ã*ü b ôL8 Û n Û 1R,X> | Ä

action label publish-event subset subset-id type event-type [arg1 argument-data] [arg2 argument-data] [arg3 argument-data] [arg4 argument-data]

no action label

Ï – DAÈ â Ð

– D	£EÄ
label	> |,X Û1R
subset subset-id	¥ × _ Ê,X $Lš
type event-type	¥ × _ Ê,X $2O _
arg1 argument-data	_ Ê,X – D 1
arg2 argument-data	_ Ê,X – D 2

arg4 argument-data	_ Ê,X – D 4

Ï5 ,ÕG!5B Ð 5 ,Õ áG!5B> |

Ï Q ¸ õ ã Ð SEM G!5B õ ã

Ï S*ü Û Ð Ð !8G!5B â event application G! Ü S*ü Ä 'E¤> action publish-event ,X1*+9 {*ó Z#\ C ¹ â È b J subset ` type ,Ì Ô7È,X event application Ú>•?º ¥ Ä

ÏG!5B _ Ð ,¥ {+ action publish-event ¥ ×,X _ Ê È?U" $Lš ID 100 È2O _ ID 50 È?º ¥ ¹ âA„) ¹ «

```
5XLMLH FRQILJ VPDUW PDQDJHU DSSOHW 7HVWB
5XLMLH FRQILJ DSSOHW HYHQW WDJ PRQLWRUBHYHQW QRQH
5XLMLH FRQILJ DSSOHW DFWLRQ SXEOLVK HYHQW VXEVHW W\SH
5XLMLH FRQILJ DSSOHW FRPPLW
5XLMLH FRQILJ DSSOHW H[LW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
smart manager applet	n Î b Q ¸> ,X SEM 1*+9
event application	

Ï G ÄAÈ â Ð -

12.5 action reload

ü SEM G!5B õ ã ßG!5B1*+9 | 0 È ;> A' ÛG¡ ¡ 0 ÄA¹ Q ¸,X no 6 ã*ü b ôL8 Û n Û1R,X> | Ä

action label reload

no action label

Ï – DAÈ â Ð

– D	£EÄ
label	> |,X Û1R

Ï5 ,ÕG!5B Ð 5 ,Õ áG!5B> |

Ï Q ¸ õ ã Ð SEM G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð ' H Y , áC‡ 20M ÊG¡ „ |A' Û Ä

```
5XLMLH FRQILJ VPDUW PDQDJHU DSSOHW 7HVWB
5XLMLH FRQILJ DSSOHW HYHQW WDJ PRQLWRUBPHPRU\ V\VPRQ PHPR
HQWU\ YDO
5XLMLH FRQILJ DSSOHW DFWLRQ UHORDG
5XLMLH FRQILJ DSSOHW FRPPLW
5XLMLH FRQILJ DSSOHW H[LW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
smart manager applet	n Î b Q ¸> ,X SEM 1*+9

Ï G ÄAÈ â Ð -

12.6 action set

ü SEM G!5B õ ã ßG!5B1*+9 | 0 È ;> 1*+9 F¼ ¬G£A'5B ¡ 0 ÄA¹ Q ¸,X no 6 ã*ü b ôL8 Û n Û1R,X > | Ä

action label set variable-name variable-value

no action label

Ï – DAÈ â Ð

– D	£EÄ
label	> |,X Û1R
variable-name	F¼ ¬G£,X á +
variable-value	F¼ ¬G£,X

Ï5 ,ÕG!5B Ð 5 ,Õ áG!5B> |

Ï Q ¸ õ ã Ð SEM G!5B õ ã

Ï S*ü Û Ð Ð A'5B,X F¼ ¬G£ Ã ¹ ` < ¬G£G¡ á Ä 'A'5B,X F¼ ¬G£ â < ¬G£G¡ á ¹ â È *ü!8 ¬G£ áA"KÂ ¬G£ ,X Ê í È F¼ ¬G£*ó Ä

ÏG!5B _ Ð ü none event 2O _,X1*+9 A'5B ¬G£ È J Ú ¬G£ ¥EÕ ¹ « Ä

```
5XLMLH FRQILJ VPDUW PDQDJHU DSSOHW 7HVWB
5XLMLH FRQILJ DSSOHW HYHQW WDJ QRQHBHYHQW QRQH
5XLMLH FRQILJ DSSOHW DFWLRQ VHW YDUBIRUBWHVW 7HVWB UX
5XLMLH FRQILJ DSSOHW DFWLRQ V\VORJ PVJ YDUBIRUBWHVW
5XLMLH FRQILJ DSSOHW FRPPLW
5XLMLH FRQILJ DSSOHW H[LW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
smart manager applet	n Î b Q ¸> ,X SEM 1*+9

Ï G ÄAÈ â Ð -

12.7 action switchover

ü SEM G!5B õ ã ßG!5B1*+9 | 0 È;> Û æ 6 | 0 ÄA¹ Q ¸,X no 6 ã*ü b ôL8 Û n Û1R,X> | Ä

action label switchover

no action label

Ï – DAÈ â Ð

– D	
label	> |,X Û1R

Ï5 ,ÕG!5B Ð 5 ,Õ áG!5B> |

Ï Q ¸ õ ã Ð SEM G!5B õ ã

Ï S*ü Û Ð Ð VSU 2Ï4³ Õ Û æ 6 Ä
;> > |,X ! ¤ ' !A' Û Û)ƒ W Ä V p Û S"u Ý š Û Q È í1*+9,X ;> î ¥*óJíAÃ J !6 Ä

ÏG!5B _ Ð V p,¥ { ¹ « Î)„ memory fail È ;> Û æ 6 Ä
5 X L M L H F R Q I L J V P D U P • Ðõa× ÊQ—±»'V !5B _ Ð

```
5XLMLH FRQILJ DSSOHW HYHQW WDJ PRQLWRUBFSX V\VPRQ FSX VFRS
5XLMLH FRQILJ DSSOHW DFWLRQ V\VORJ PVJ V\VWHP EXV\
5XLMLH FRQILJ DSSOHW FRPPLW
5XLMLH FRQILJ DSSOHW H[LW
```

a Y š ø ‘ 4 þ 32 Q Ö ß “ { ä • # ¬ ¦ N d' ´ " Y š ø 1 { h í ³ Action syslog Ü â Ÿ " N _ d

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
smart manager applet	n Î b Q ¸> ,X SEM 1*+9

Ï G ÄAÈ â Ð -

12.9 action wait

ü SEM G!5B õ ã ßG!5B1*+9 | 0 È;> 1*+96î V 0 ¡ 0 ÄA¹ Q ¸,X no 6 ã*ü b ôL8 Û n Û1R,X> | Ä

action label wait wait-seconds

no action label wait

Ï – DAÈ â Ð

– D	£EÄ
label	> |,X Û1R
wait-seconds	1 Y,X ÊKÈKS z

Ï5 ,ÕG!5B Ð 5 ,Õ áG!5B> |

Ï Q ¸ õ ã Ð SEM G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð ;> show arp Q ¸ ! È ;> clear arp-cache J1 Y 5 /¦Js Ä

```
5XLMLH FRQILJ VPDUW PDQDJHU DSSOHW 7HVWB
5XLMLH FRQILJ DSSOHW HYHQW WDJ PRQLWRUBFOL FOL SDWWHUQ V
5XLMLH FRQILJ DSSOHW DFWLRQ FOL FRPPDQG HQDEOH
5XLMLH FRQILJ DSSOHW DFWLRQ ZDLW
5XLMLH FRQILJ DSSOHW DFWLRQ H[LW
5XLMLH FRQILJ DSSOHW FRPPLW
5XLMLH FRQILJ DSSOHW H[LW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
smart manager applet	n Î b Q ¸> ,X SEM 1*+9

Ï G ÄAÈ â Ð -

12.10 commit

ü SEM G!5B õ ã ß ¤ x ' !1*+9,XG!5B Ä
commit

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð 5 ,Õ á ¤ x1*+9G!5B

Ï Q ¸ õ ã Ð SEM G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð ¤ x1*+9G!5B _ Ä

```
5XLMLH FRQILJ VPDUW PDQDJHU DSSOHW 7HVWB
5XLMLH FRQILJ DSSOHW HYHQW WDJ QRQH HYHQW QRQH
5XLMLH FRQILJ DSSOHW DFWLRQ VHW YDUBIRUBWHVW 7HVWB UX
5XLMLH FRQILJ DSSOHW FRPPLW
5XLMLH FRQILJ DSSOHW H[LW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
rollback	²EÔ1*+9G!5B

Ï G ÄAÈ â Ð -

12.11 description

ü SEM G!5B õ ã ßG!5B SEM 1*+9,X £EÄ µ C ÄA¹ Q ¸,X no 6 ã*ü b#ÙL8 SEM 1*+9,X £EÄ µ C Ä
description string
no description

Ï – DAÈ â Ð

– D	£EÄ
string	*ü £EÄ SEM 1*+9,X [µ C

Ï5 ,ÕG!5B Ð 5 ,Õ áG!5B SEM 1*+9,X £EÄ µ C

Ï Q ¸ õ ã Ð SEM G!5B õ ã

Ï S*ü Û Ð Ð

s Û M í ð o “ Ò â ‘ ” ì d

ÏG!5B _ Ð _ 1 ÖG!5B ' ! SEM 1*+9 £EÄ µ C Descrption_For_SEM_Applet

5XLMLH FRQILJ DSSOHW GHVFULSWLRQ 'HVFUSWLRQB)RUB6(0B$SSOH

_ 2 Ö#ÙL8 ' ! SEM 1*+9 £EÄ µ C

5XLMLH FRQILJ DSSOHW QR GHVFULSWLRQ

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
smart manager applet	n Î b Q ¸> ,X SEM 1*+9

Ï G ÄAÈ â Ð -

12.12 event application

ü SEM G!5B õ ã ßG!5B,¥ { <,¥ { action publish-event ¥ ×,X _ Ê ÄA¹ Q ¸,X no 6 ã*ü b ôL8 Û n á/Ä,X _ Ê Ä

event tag event-name [correlate { andnot | and | or }] application subset subset-id type event-type

no event tag event-name

Ï – DAÈ â Ð

– D	£EÄ
event-name	_ Ê,X á/Ä

correlate { andnot d-0.08.38 480.5 0.48 15.6 r0133<41B90D <3ETf F0ET3E2074732CT02C8 0.0006 Tc 0.0005 T2Tj

```
5XLMLH FRQILJ DSSOHW DFWLRQ V\VORJ PVJ +DYH HYHQW VXEVH
 BDSSOLFDWLRQBW\SH
5XLMLH FRQILJ DSSOHW FRPPLW
5XLMLH FRQILJ DSSOHW H[LW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
smart manager applet	n Î b Q ¸> ,X SEM 1*+9
action publish-event	¥ × application event ,X action

Ï G ÄAÈ â Ð -

12.13 event cli

ü SEM G!5B õ ã ßG!5B,¥ { <,¥ { Q ¸> ÄA¹ Q ¸,X no 6 ã*ü b ôL8 Û n á/Ä,X _ Ê Ä

event tag event-name [correlate { andnot | and |or }] cli pattern regular-expression [sync { yes [default wait-time] | no skip { yes | no } }] [mode variable] [occurs num-occurrences] [period period-value]

no event tag event-name

Ï – DAÈ â Ð

– D	£EÄ
event-name	_ Ê,X á/Ä
correlate { andnot | and | or }	î þ _ Ê ™ ‰ ß ' ! _ Ê â !E• Ý _ Ê4˜ Ü KÈ,X 5 Ê G2Ï Äand ></ â G2Ï Èor ></ ê G2Ï Èandnot ></ J è á G2Ï
pattern regular-expression	*ü Q ¸> õ ã G!,X +0ú
sync { yes | no }	ú à!9 • ã ;> 1*+9 È G1 1*+9 ;> ` ä JE¨ ² ä s â È Q ¸> ! ;> ÄT¬Ax à!9 Ä
skip { yes | no }	ú Ñ+9 Q ¸ È!8 s6Ñ ™6Ñ S*ü üM2 à!9 ™ ‰ ß ÄT¬Ax no
default wait-time	Q ¸> 1 Y1*+9E¤> 4§ 3,X Ô û ÊKÈ È ü Q ¸> â1*+9 à!9,X ™ ‰ ß S*ü ÄT¬Ax 30 /¦
mode variable	G! Q ¸,X õ ã ÄT¬Ax Ý õ ã Ä
occurs num-occurrences	?º ¥ Event LÔ?U,X G! õ D ÄT¬Ax 1
period period-value	Q ¸,X occurs < ó È Z ÊCYE› period-value ,X occurs ¡ 0 Ú>• CY Ê Äoccurs 1 Ê!8 – D ´ Ä

Ï5 ,ÕG!5B Ð 5 ,Õ áG!5B _ Ê

Ï Q ¸ õ ã Ð SEM G!5B õ ã

Ï S*ü Û Ð Ð S*ü õ ã E¯> G! Ê*ü b!¨ Í,X Q ¸ Q ¸> =) ¹ â,X Q ¸ È5à á *ü Eg 9,X1T m È¨ V pattern write memory Ê*ü Eg 9,X write memory ` write mem FÑ î>• G! Ä

Í b Q ¸,X =) ?U Ù À ¹ ß ™ ‰ Ö

„ 0N

*ü Eg 9,X Q ¸ 2ô KÈ ´AŽEg 9 Ê ú Ý î å þ0N È Ô âFÑ Ú>• =) ä Ô þ0N Ä _ V ÖEg 9 show

smart manager version Ú>• =) ä show smart manager version Ä

„ GK +

Q ¸ –5× S*ü t2k £EÄ,XF¼ Ú È*ü üEg 9F¼ Ú +0ú Ý Tab K Ã ¹7¾ |>9U$,X Q ¸ 2ô Ä <F¼FÑ =) ä GK +,X ã m 6 ã È G =) Eg 9KÂ Ë Ê4- Î,X ¤/ GK + Ä _ V ÖEg 9 SHOW Smart Manager Version Ú>• =) ä show smart manager version Ä

„ y · á

y · á,X y ·2O _ â y ·4ê Ë Ú ÿ>• =) È y ·2O _,X =) 6 ã â interface â ¤/ ,X y ·2O _ £EÄ Ô7È È y ·4ê Ë,X =) â*ü bEg 9,X y ·4ê Ë Ô7È Ä _ V ÖEg 9 show ip interface fa 0/1 Ú>• =) ä show ip interface FastEthernet 0/1 Ä

„ ÃEg 9 – D

Q ¸ *ü Ã ¹Eg 9F¼ Ú ÈÔ8 Q ¸,X – D È=) 6 ã â*ü Eg 9 Ô7È Ä_ V ÖEg 9 HostName Ruijie Ú>• =) ä hostname Ruijie Ä

„ [Ê2Ï4³CÃ X

[Ê2Ï4³CÃ Ú ŸBüF¼ Ú `CÃ XF¼ Ú È J ŸBüF¼ Ú Ú>• =) ä ã m 6 ã ÈCÃ XF¼ Ú,X =) 6 ã â*ü Eg 9 Ô7È Ä
_ V ÖEg 9 more Flash:/config.text Ú>• =) ä more flash:/config.text Ä
Ô8 ™ ‰ ß Ö ü,X GK + V p üEg 9KÂ Ë ¹A¶ Ê È Ý â.B ¤/ Eg 9 Y • È í J =) 6 ã â ¤/ Y • Ô 7È È V p"u Ý â.BEg 9 Y • È V WORD ê <0-15> 1 J =) 6 ã â*ü Eg 9 Ô7È Ä
sync EÝNM yes ,X Ê í È Q ¸> Ú V Ê 0!6 ¡ h È1 Y1*+9 ;> 4§ 3 Ä V p1*+9,XE¨ ² M2 0 È í Q ¸ '; ;> Ä V p1*+9,XE¨ ² 0 È í Q ¸ Ú á î>• ;> Ä
sync EÝNM no ,X Ê í È*ü Ý skip EÝNM Ã ¹EÝ ½ È V p skip EÝNM no È í Q ¸'; ;> Ä V p skip EÝNM yes í Q ¸ á î>• ;> Ä
mode EÝNM Û n Q ¸ G!,X õ ã È V p*ü Eg 9 Ê Ø,X õ ã â!8EÝNM á à È í Q ¸ îE¯> G! ¡ 0 Ä
default EÝNM Û n Z Q ¸> 1 Y1*+9E¤> 4§ 3,X Ô û ÊKÈ Ä !8EÝNM ¾ üsync EÝNM yes ,X Ê íCK 0 *ü Ä
occurs EÝNM _ Ê?º ¥1*+9 LÔ?U,X õ D Ä V p ü Ô n < ó Y _ Ê ¥*ó D,ÂE' num-occurrences È í1*+9 ! î>•?º ¥ Ä
period EÝNM occurs EÝNM ¤ oCY Ê < ó Ä

½ SEM Ÿ " ¹ Ñ 6 , SEM Action cli û N a — û V „ a — û ¿ v Û â) û ¿ d

a — û « % pattern õ ô • þ • ¶ Ò ´ M ¥ Û & 9 Ü ' ° c P ¶ Ò r Ý ™ " ! ¹ ø P " ø g à " ø ³ d

½ ' Ï a — „ ¿ þ É Û û ý ! " M ¥ K d s " • a — â ³ ¿ Û ! enable **c** configure terminal **c**

_cli_mode	*ü ü,X Q ¸ õ ã

ÏG!5B _ Ð _ 1 Ö,¥ { Q ¸> Eg 9 È*ü Eg 9 show ip route ÊA„) ¹ « Ä

```
5XLMLH FRQILJ VPDUW PDQDJHU DSSOHW 7HVWB
5XLMLH FRQILJ DSSOHW HYHQW WDJ PRQLWRUBLQSXW FOL SDWWHUC
5XLMLH FRQILJ DSSOHW DFWLRQ V\VORJ PVJ VKRZ LS URXWH UXQ
5XLMLH FRQILJ DSSOHW DFWLRQ H[LW
5XLMLH FRQILJ DSSOHW FRPPLW
5XLMLH FRQILJ DSSOHW H[LW
```

_ 2 Ö,¥ { Q ¸> Eg 9 È*ü ü y · õ ã ßEg 9 shutdown ÊL !6*ü ¡ 0 Ä

```
5XLMLH FRQILJ VPDUW PDQDJHU DSSOHW 7HVWB
5XLMLH FRQILJ DSSOHW HYHQW WDJ PRQLWRUBLQSXW FOL SDWWHUC
5XLMLH FRQILJ DSSOHW DFWLRQ SXWV FDQ QRW GR WKLV
5XLMLH FRQILJ DSSOHW DFWLRQ H[LW
5XLMLH FRQILJ DSSOHW FRPPLW
5XLMLH FRQILJ DSSOHW H[LW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
smart manager applet	n Î b Q ¸> ,X SEM 1*+9

Ï G ÄAÈ â Ð -

12.14 event counter

ü SEM G!5B õ ã ßG!5B,¥ { <,¥ { SEM Au D < ÄA¹ Q ¸,X no 6 ã*ü b ôL8 Û n á/Ä,X _ Ê Ä

event tag event-name [correlate { andnot | and | or }] counter name counter-name entry-op operator entry-val entry-value exit-op operator exit-val exit-value

no event tag event-name

Ï – DAÈ â Ð

– D	£EÄ
event-name	_ Ê,X á/Ä
correlate { andnot | and | or }	î þ _ Ê ™ ‰ ß ' ! _ Ê â !E• Ý _ Ê4˜ Ü KÈ,X 5 Ê G2Ï Äand ></ â G2Ï Èor ></ ê G2Ï Èandnot ></ J è á G2Ï
name counter-name	Û n>•,¥ {,XAu D <,X á +
entry-op operator	?º ¥!¨EW S*ü,X!¨EW •"© Ö eq 1 b ge û b1 b gt û b le ã b1 b lt ã b ne á1 b
entry-val entry-value	?º ¥!¨EW S*ü,X!¨EW

exit-op operator	6 á!¨EW S*ü,X!¨EW •"© Ö eq 1 b ge û b1 b gt û b le ã b1 b lt ã b ne á1 b
exit-val exit-value	6 á!¨EW S*ü,X!¨EW

Ï5 ,ÕG!5B Ð 5 ,Õ áG!5B _ Ê

Ï Q ¸ õ ã Ð SEM G!5B õ ã

Ï S*ü Û Ð Ð event counter ,¥ { SEM ,X Q áAu D < È5à Q áAu D <,X,X Eî + action counter ¬ Ä
' Q áAu D < â entry-op ` entry-val 4˜ Ü!¨EWEîE› ¹ â È _ Ê>•?º ¥ Ä
EîE›G!5Bexit-op ` exit-val Ã e _ ÊNe4 ?º ¥ È8 Ê V p _ Ê?º ¥ Èü?º ¥ â _ Ê ÚE¯ 9 (Š Õ È
á aE¯> „,X?º ¥ Ä ' Q áAu D <,X â exit-op ` exit-val 4˜ ÜE¯> !¨EWEîE› Ê È _ Ê Ú ¢ (Š Õ
6 á Èentry-op ` entry-val 4˜ Ü!¨EW Ú Ã ¹G¡ „?º ¥ Ä
Ã S*ü,X event ¬G£ Ö

¬G£ á	*üEè
_counter_name	Q áAu D <,X á +
_counter_value	Q ¸Au D <,X

ÏG!5B _ Ð G!5B1*+9,¥ {Au D < Test_Counter È ' Test_Counter ,X û b1 b 10 Ê?º ¥1*+9A„) ¹ « Ä à Ê Ú
Test_Counter 5B0 È ' Test_Counter ,X û b 5 ÊG¡ „ 6 á,¥ { Ä

```
5XLMLH FRQILJ VPDUW PDQDJHU DSSOHW 7HVWB
5XLMLH FRQILJ DSSOHW HYHQW WDJ PRQLWRUBFRXQWHU FRXQWHU
HQWU\ YDO H[LW RS JW H[LW YDO
5XLMLH FRQILJ DSSOHW DFWLRQ FRXQWHU QDPH 7HVWB&RXQWHU
5XLMLH FRQILJ DSSOHW FRPPLW
5XLMLH FRQILJ DSSOHW H[LW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
smart manager applet	n Î b Q ¸> ,X SEM 1*+9
action counter	

Ï G ÄAÈ â Ð -

12.15 event cpp

ü SEM

Ï – DAÈ â Ð

– D	£EÄ
event-name	_ Ê,X á/Ä
correlate { andnot | and | or }	î þ _ Ê ™ ‰ ß ' ! _ Ê â !E• Ý _ Ê4˜ Ü KÈ,X 5 Ê G2Ï Ä and ></ â G2Ï Èor ></ ê G2Ï Èandnot ></ J è á G2Ï
parameter {counter-name | any }	y [2O _
type { pps | total l drop }	y [Au D2O _
op operator	!¨EW • ã Ö eq 1 b ge û b1 b gt û b le ã b1 b lt ã b ne á1 b
value value	!¨EW
slot { slotid | mboard }	”# ,X S 5 Èmboard ></ 1u)Ú S
poll-interval poll-int-value	” ¹ < óKS z

Ï5 ,ÕG!5B Ð 5 ,Õ áG!5B _ Ê

pps ts{slotid | mboard }

Ï Q ¸ õ ã Ð

12.16 event grtd

ü SEM G!5B õ ã ßG!5B Î b GRTD ,X _ Ê ÄA¹ Q ¸,X no 6 ã*ü b ôL8 Û n á/Ä,X _ Ê Ä

event tag event-name [correlate { andnot | and | or }] grtd slot { slot-num | all | master | slave } [testing-type { bootup | ondemand | schedule | monitoring }] [test-name test-name] [test-id test-id] [severity-major] [severity-minor] [severity-normal]

no event tag event-name

Ï – DAÈ â Ð

– D	£EÄ
event-name	_ Ê,X á/Ä

correlate { andnot | and | or }

5 X L M L H F R Q I L J D S S O H W H [L W

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
smart manager applet	n Î b Q ¸> ,X SEM 1*+9

Ï G ÄAÈ â Ð -

12.17 event interface

ü SEM G!5B õ ã ßG!5B,¥ { <,¥ { y · Ø/¡4³AuAu D ÄA¹ Q ¸,X

exit-type { value | increment | rate }	6 á!¨EW S*ü,X D 6 ã
exit-time exit-time-value	¢1*+9>•?º ¥ ,¥ {G¡ „ S6Ñ,X Ô ã ÊKÈ
average-factor average-factor-value	>• rate S*ü È ` poll-int-value ,Ì , ¬ ê4³Au < ó

Ï5 ,ÕG!5B Ð 5 ,Õ áG!5B _ Ê

Ï Q ¸ õ ã Ð SEM G!5B õ ã

Ï S*ü Û Ð Ð event interface parameter ¤ o,X – D Ý Ö

– D á	AÈ â
input_errors	Number of damaged packets received
input_errors_crc	Number of packets received with CRC errors
input_errors_frame	Number of framing ERR packets received
input_errors_overrun	Number of overruns and resource errors
input_packets_dropped	Number of packets dropped from input Q
interface_resets	Number of times an interface has been reset
output_buffer_failures	Number of failed buffers
output_buffer_swappedout	Number of packets swapped to DRAM
output_errors	Number of packets errored on output
output_errors_underrun	Number of underruns on output
output_packets_dropped	Number of packets dropped from output Q
receive_broadcasts	Number of broadcast packets received
receive_giants	Number of too large packets received
receive_rate_bps	Interface receive rate in bits/sec
receive_rate_pps	Interface receive rate in pkts/sec
receive_runts	Number of too small packets received
receive_throttle	Number of times the receiver was disabled
reliability	Interface reliability as a fraction of 255
rxload	Receive rate as a fraction of 255
transmit_rate_bps	Interface transmit rate in bits/sec
transmit_rate_pps	Interface transmit rate in pkts/sec
txload	Transmit rate as a fraction of 255

EîE›G!5Bexit-op ` exit-val Ã e _ ÊNe4 ?º ¥ È8 Ê V p _ Ê?º ¥ Èü?º ¥ â _ Ê ÚE¯ 9 (Š Õ È
á aE¯> „,X?º ¥ Ä ' Û n y ·4³AuAu D,X â exit-op ` exit-val 4˜ ÜE¯> !¨EWEîE› Ê È _ Ê Ú ¢
(Š Õ 6 á Èentry-op ` entry-val 4˜ Ü!¨EW Ú Ã ¹G¡ „?º ¥ Ä
exit-comb ` exit-time üG!5B Z exit-op ` exit-val ,X ™ ‰ ß S*ü,exit-comb ·>< exit-op ,X ™ ‰#2 „UqÂ ðÄ•0Ð¦ e

_interface_is_increment	Í y ·,X ”# < • ã
_interface_name	y ·,X á +
_interface_parameter	”# y ·,X – D2O _
_interface_value	y ·Au D,X

ÏG!5B _ Ð !£ 5 /¦ ”# Ô õ È V p GigabitEthernet3/0 ,X interface_resets Ý rKS íA„) ¹ « Ä

```
5XLMLH FRQILJ VPDUW PDQDJHU DSSOHW 7HVWB
5XLMLH FRQILJ HYHQW WDJ PRQLWRUBLQWHUIDFH LQWHUIDFH QDPH
LQWHUIDFHBUHVHWV HQWU\ RS JH HQWU\ YDO HQWU\ W\SH LQFUHPH
LQFUHPHQW SROO LQWHUYDO
5XLMLH FRQILJ DSSOHW DFWLRQ V\VORJ PVJ BLQWHUIDFHBQDPH
5XLMLH FRQILJ DSSOHW FRPPLW
5XLMLH FRQILJ DSSOHW H[LW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
smart manager applet	n Î b Q ¸> ,X SEM 1*+9
show interfaces	³,ß y · µ C

Ï G ÄAÈ â Ð -

12.18 event none

ü SEM G!5B õ ã ßG!5B,¥ { <,¥ { smart manager run Q ¸ ÄÀ¹ Q ¸,X no 6 ã*ü b ôL8 Û n á/Ä,X _ Ê Ä

event tag event-name [correlate { andnot | and | or }] none [sync { yes [default wait-time] | no }]

no event tag event-name

Ï – DAÈ â Ð

– D	£EÄ
event-name	_ Ê,X á/Ä
correlate { andnot | and | or }	î þ _ Ê ™ ‰ ß ' ! _ Ê â !E• Ý _ Ê4˜ Ü KÈ,X 5 Ê G2Ï Äand ></ â G2Ï Èor ></ ê G2Ï Èandnot ></ J è á G2Ï
sync { yes | no }	ú à!9 • ã ;> 1*+9 È G1 1*+9 ;> ` ä â È Q ¸> !4»4Á ;> Ä T¬Ax à!9 Ä
default wait-time	Q ¸> 1 Y1*+9E¤> 4§ 3,X Ô û ÊKÈ È ü Q ¸> â1*+9 à!9,X ™ ‰ ß S*ü ÄT¬Ax 30 /¦

Ï5 ,ÕG!5B Ð 5 ,Õ áG!5B _ Ê

Ï Q ¸ õ ã Ð SEM G!5B õ ã

Ï S*ü Û Ð Ð A¹ Q ¸A’5B,X,¥ { <,¥ {*ü Eg 9,X smart manager run Q ¸ Ä*ü ¹ ;> Q ¸,X • ãPE |1*+9 ÄE’ ¹ ;> MG£6î ,Â,X Ä

Ã S*ü,X event ¬G£ Ö

¬G£ á	*üEè
_policy_name	1*+9,X á +
_none_argc	– D,X þ D
_none_arg1	– D 1
_none_arg2	– D 2
_none_arg3	– D 3
_none_arg4	– D 4
_none_arg5	– D 5

ÏG!5B _ Ð G!5Bnone 2O _,X event È á/Ä Test_1 È?º ¥ ¹ âA„) ¹ « Ä

```
5XLMLH FRQILJ VPDUW PDQDJHU DSSOHW 7HVWB
5XLMLH FRQILJ DSSOHW HYHQW WDJ PRQLWRUBFPG QRQH
5XLMLH FRQILJ DSSOHW DFWLRQ V\VORJ PVJ QRQH HYHQW WULJJ
5XLMLH FRQILJ DSSOHW FRPPLW
5XLMLH FRQILJ DSSOHW H[LW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
smart manager applet	n Î b Q ¸> ,X SEM 1*+9
smart manager run	E¤> none event

Ï G ÄAÈ â Ð -

12.19 event oir

ü SEM G!5B õ ã ß,¥ { <,¥ {A' Û,X&Á ¦ ¨ _ Ê ÄA¹ Q ¸,X no 6 ã*ü b ôL8 Û n á/Ä,X _ Ê Ä

event tag event-name [correlate { andnot | and | or }] oir [type { plugin | remove }] [slot { slot-num | slave }]

no event tag event-name

Ï – DAÈ â Ð

– D	£EÄ
event-name	_ Ê,X á/Ä
correlate { andnot | and | or }	î þ _ Ê ™ ‰ ß ' ! _ Ê â !E• Ý _ Ê4˜ Ü KÈ,X 5 Ê G2Ï Äand ></ â G2Ï Èor ></ ê G2Ï Èandnot ></ J è á G2Ï
type { plugin | remove }	,¥ {,X K ' ¦ ¨ _ Ê

_oir_event	plugin ¦ 9 Èremove ¨ Î
_oir_slot	Ñ ! Ë

ÏG!5B _ Ð _ 1 ÖG!5B,¥ { <,¥ {A' Û,X S ¦ ¨ _ Ê È ' Ý S ¦ ¨ ÈA„) ¹ « Ä

```
5XLMLH FRQILJ VPDUW PDQDJHU DSSOHW 7HVWB
5XLMLH FRQILJ DSSOHW HYHQW WDJ PRQLWRUBRLU RLU
5XLMLH FRQILJ DSSOHW DFWLRQ V\VORJ PVJ SOXJLQ RU UHPRYH
5XLMLH FRQILJ DSSOHW FRPPLW
5XLMLH FRQILJ DSSOHW H[LW
```

_ 2 ÖG!5B,¥ { <,¥ { Ñ ! 1 Ä ' Ñ ! 1 ¨ Î Ê ÈA„) ¹ « Ä

```
5XLMLH FRQILJ VPDUW PDQDJHU DSSOHW 7HVWB
5XLMLH FRQILJ DSSOHW HYHQW PRQLWRUBRLU RLU W\SH UHPRYH VO
5XLMLH FRQILJ DSSOHW DFWLRQ V\VORJ PVJ 6ORW BRLUBVORW K
5XLMLH FRQILJ DSSOHW FRPPLW
5XLMLH FRQILJ DSSOHW H[LW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
smart manager applet	n Î b Q ¸> ,X SEM 1*+9

Ï G ÄAÈ â Ð -

12.20 event snmp

ü SEM G!5B õ ã ßG!5B,¥ { <,¥ { snmp ÍB5 ÄA¹ Q ¸,X no 6 ã*ü b ôL8 Û n á/Ä,X _ Ê Ä

event tag event-name [correlate { andnot | and | or }] snmp oid oid-value get-type { exact | next } entry-op operator entry-val entry-value entry-type { value | increment | rate } poll-interval poll-int-value [exit-op operator exit-val exit-value exit-type { value | increment | rate } [exit-comb { or | and } exit-time exit-time-value]] [average-factor average-factor-value]

no event tag event-name

Ï – DAÈ â Ð

– D	£EÄ

	ne á1 b
entry-val entry-value	?º ¥!¨EW S*ü,X D
entry-type { value | increment | rate }	?º ¥!¨EW S*ü,X D 6 ã
exit-comb { or | and }	exit-op â exit-time ,X J ë G2Ï
exit-op operator	6 á!¨EW S*ü,X •"© Ö eq 1 b ge û b1 b gt û b le ã b1 b lt ã b ne á1 b
exit-val exit-value	6 á!¨EW S*ü,X D
exit-type { value | increment | rate }	6 á!¨EW S*ü,X D 6 ã
exit-time exit-time-value	¢ Policy >•?º ¥ ,¥ {G¡ „ S6Ñ,X Ô ã ÊKÈ
average-factor average-factor-value	>• rate S*ü È ` poll-int-value ,Ì , ¬ ê4³Au < ó

poll-interval po (474C [(a)-12(v)15.0028 Tc 5.94 0 Td [(po ( )]TJ /Tl-)8(interv)18(al)C.2 re f 290.41 07 -7634176>Tj /

Ï G ÄAÈ â Ð -

12.21 event snmp-notification

ü SEM G!5B õ ã ßG!5B,¥ { <,¥ { snmp trap µ C ÄA¹ Q ¸,X no 6 ã*ü b ôL8 Û n á/Ä,X _ Ê Ä event tag

12.22 event snmp-object

ü SEM

12.23 event syslog

ü SEM G!5B õ ã ßG!5B,¥ { <,¥ { log ÄA¹ Q ¸,X no 6 ã*ü b ôL8 Û n á/Ä,X _ Ê Ä

event tag event-name [correlate { andnot | and | or }] syslog pattern regular-expression [priority priority-level] [occurs num-occurrences] [period period-value] [skip { yes | no }]

no event tag event-name

Ï – DAÈ â Ð

– D	£EÄ
event-name	_ Ê,X á/Ä
correlate { andnot | and | or }	î þ _ Ê ™ ‰ ß ' ! _ Ê â !E• Ý _ Ê4˜ Ü KÈ,X 5 Ê G2Ï Äand ></ â G2Ï Èor ></ ê G2Ï Èandnot ></ J è á G2Ï
pattern regular-expression	¹ « Y • õ ã G!,X +0ú
priority priority-level	G! ¹ «,X4{ ÿ
occurs num-occurrences	?º ¥ _ Ê LÔ?U,X G! õ D
period period-value	Q ¸,X occurs < ó ÈZ ÊCYE› period-value ,X occurs ¡ 0 Ú>• CY Ê Äoccurs Í Ê!8 – D ´
skip { yes | no }	ú Ñ+9 Syslog _ ð (ÊH ,X4˜ þ h×ˆÔ2|!ðÇ s=>BðàüX7(o_0 1 Tf 0 Tc 3 0 Td <0TD.

12.24 event sysmon

ü SEM G!5B õ ã ßG!5B,¥ { <,¥ {2Ï4³C $d ÄA¹ Q ¸,X no 6 ã*ü b ôL8 Û n á/Ä,X _ Ê Ä

event tag event-name [correlate { andnot | and | or }]event-0lysmo[nctypu{ system | task [| | eTdd (|)Tj /TT1

2Ï4³ Y , S*üG£ Ötype memory scope system-use percent

2Ï4³ Y , S*üG£ Ötype memory scope system-use absolute

2Ï4³ Y , = -G£ Ötype memory scope system-free percent

2Ï4³ Y , = -G£ Ötype memory scope system-free absolute

¤ þ Ï u Y , S*üG£ Ötype memory scope task task-name percent

¤ þ Ï u Y , S*üG£ Ötype memory scope task task-name absolute

EîE›G!5Bexit-op ` exit-val Ã e _ ÊNe4 ?º ¥ È8 Ê V p _ Ê?º ¥ Èü?º ¥ â _ Ê ÚE¯ 9 (Š Õ È

á aE¯> „,X?º ¥ Ä '2Ï4³C $d,X â exit-op ` exit-val 4˜ ÜE¯> !¨EWEîE› Ê È _ Ê Ú ¢ (Š Õ

6 á Èentry-op ` entry-val 4˜ Ü!¨EW Ú Ã ¹G¡ „?º ¥ Ä

VSU 2Ï4³ ß Õ – D slot { slot-num | slave [subsystem subsystem-id] } Ä

Ã S*ü,X event ¬G£ Ö

¬G£ á	*üEè
_sysmon_type	>• ”# ,X2O _
_sysmon_task	îEÔ %›G!5B ð þ hE,’@G ŽñQ,g2 •Vï5 Æs H nQ,g2 •Vï° • 0 É ‘94W

Ï – DAÈ â Ð

– D	£EÄ
event-name	_ Ê,X á/Ä
correlate { andnot | and | or }	î þ _ Ê ™ ‰ ß ' ! _ Ê â !E• Ý _ Ê4˜ Ü KÈ,X 5 Ê G2Ï Äand ></ â G2Ï Èor ></ ê G2Ï Èandnot ></ J è á G2Ï
absolute unix time-value	?º ¥ _ Ê S*ü Unix ã Û n ¹ ó ÊKÈ
absolute date date-value	?º ¥ _ Ê S*ü Date ã Û n ¹ ó ÊKÈ
countdown time time-value	?º ¥ _ Ê S*ü Ô þ Ô õ û n Ê <
cron cron-entry cron-entry	?º ¥ _ Ê S*ü Cron G!5B
watchdog time time-value	?º ¥ _ Ê S*ü Ô þ ~)ƒ n Ê <
name timer-name	Û n n Ê <,X á +

Ï5 ,ÕG!5B Ð 5 ,Õ áG!5B Event

Ï Q ¸ õ ã Ð SEM G!5B õ ã

Ï S*ü Û Ð Ð Î b ÊKÈ,X _ Ê Ú ¹ ß ¯/¡ Ö

1 Å ¤ Ô(M n ¹ ó ÊKÈ

2 Å üG!5B*ó CK,X Ô þ ÊKÈ&•

3 Åcron ã £EÄ,X ÊKÈ

4 Å+ ~)ƒ n Ê <?º ¥

ü ¤ Ô(M n ¹ ó ÊKÈ ÊKÈ Û n Ã ¹ Ú ø/¡ • ã ÈDate time • ã ` Unix ÊKÈ ã Ä

Ã S*ü,X event ¬G£ Ö

¬G£ á	*üEè
_timer_type	n Ê <2O _
_timer_time	n Ê <CY Ê ÊKÈ
_timer_remain	n Ê < ß õCY Ê ÊKÈÄcron 2O _ n Ê < á Õ!8 ¬G£ Å

ÏG!5B _ Ð _ 1 ÖUnix ÊKÈ1257831095 G¡ „ |A' Û Ä

```
5XLMLH FRQILJ VPDUW PDQDJHU DSSOHW 7HVWB
5XLMLH FRQILJ DSSOHW HYHQW WDJ PRQLWRUBWLPHU WLPHU DEVRC
5XLMLH FRQILJ DSSOHW DFWLRQ UHORDG
5XLMLH FRQILJ DSSOHW FRPPLW
5XLMLH FRQILJ DSSOHW H[LW
```

_ 2 Ö3600 /¦ ¹ â ¥EÕ ¹ « 3600 second arrival

```
5XLMLH FRQILJ VPDUW PDQDJHU DSSOHW 7HVWB
5XLMLH FRQILJ DSSOHW HYHQW WDJ PRQLWRUBWLPHU WLPHU FRXQW
5XLMLH FRQILJ DSSOHW DFWLRQ V\VORJ PVJ VHFRQG DUULYD
5XLMLH FRQILJ DSSOHW FRPPLW
5XLMLH FRQILJ DSSOHW H[LW
```

_ 3 Ö!£ 7200 #Ù0N Ô õarp 4ç ,

```
5XLMLH FRQILJ VPDUW PDQDJHU DSSOHW 7HVWB
5XLMLH FRQILJ DSSOHW HYHQW WDJ PRQLWRUBWLPHU WLPHU ZDWFK
```

```
5XLMLH FRQILJ DSSOHW DFWLRQ FOL FRPPDQG HQDEOH
5XLMLH FRQILJ DSSOHW DFWLRQ FOL FRPPDQG FOHDU DUS FDFKH
5XLMLH FRQILJ DSSOHW FRPPLW
5XLMLH FRQILJ DSSOHW H[LW
```

_ 4 Ö!£ ¹ 0 &•#Ù0NCÃ+

```
5XLMLH FRQILJ VPDUW PDQDJHU DSSOHW 7HVWB
5XLMLH FRQILJ DSSOHW HYHQW WDJ PRQLWRUBWLPHU WLPHU FURQ
5XLMLH FRQILJ DSSOHW DFWLRQ FOL FRPPDQG HQDEOH
5XLMLH FRQILJ DSSOHW DFWLRQ FOL FRPPDQG FOHDU LS URXWH
5XLMLH FRQILJ DSSOHW FRPPLW
5XLMLH FRQILJ DSSOHW H[LW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
smart manager applet	n Î b Q ¸> ,X SEM 1*+9

Ï G ÄAÈ â Ð -

12.26 list-config

ü SEM G!5B õ ã ß ¹,ß ' !1*+9,XG!5B Ä
list-config

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð ´5 ,ÕG!5B

Ï Q ¸ õ ã Ð SEM G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð -

Ï,Ì G Q ¸ Ð

policy record [per-instance record-size-per-policy] [per-policy record-size-per-policy]
no policy record

Ï – DAÈ â Ð

– D	£EÄ
per-instance record-size-per-policy	1*+9!£ õ>•?º ¥E¤> ,X CLI 4~) •G£ È) ! K +8V ÈT¬Ax 50
per-policy record-size-per-policy	1*+9 Ý?º ¥E¤> CLI 4~) k •G£ È) ! K +8V ÈT¬Ax 1000

Ï5 ,ÕG!5B Ð 5 ,Õ á4~) CLI > |,XEg Î

Ï Q ¸ õ ã Ð SEM G!5B õ ã

Ï S*ü Û Ð Ð T¬Ax ™ ‰ ß ÈSEM1*+9 ;> CLI > |,XEg Î á .A„) È 'G!5B policy record ¹ â È ' Ý CLI > |>• ;
> , X Ê í È CLI > | , X E g Î Ú > • A „) A ' Û [Ê 2 Ï 4 ³ Ä A „) [Ê , X C Ã X ã V ß Ö
/sem_record/policy_name/yyyy-mm-dd_hh-mm-ss_mspolicytriggerid.txt È J /sem_record/
Ý CLI > |,XEg ÎA„),X ,Â) È ! b [Ê2Ï4³,X ,Â) Ä policy_name 1*+9,X á + È ! b
/sem_record/ ,Â) ß È!£ þ1*+9FÑ Í h Ô þ)(À,X,Â) Ä
yyyy-mm-dd_hh-mm-ss_mspolicytriggerid.txt A„) [Ê,X á + È[Ê,X á ++ A„) {*ó,X ¹ ó ÊKÈ
`!¿/¦ b1*+9?º ¥ c ë Ë4˜ Ü4˜ ä Ä
S*ü more Q ¸ lÃ¹ © ãa,X³ lá R5ãùQIa´•R F

```
3URWRFRO  $GGUHVV     $JH PLQ   +DUGZDUH      7\SH   ,QWHUIDFH
,QWHUQHW                          H  E  DUSD   9/$1
,QWHUQHW                      G  I     E   DUSD   9/$1
7RWDO QXPEHU RI $53 HQWULHV
5XLMLH
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
action cli	;> A’ Û,X Q ¸>
smart manager policy record	#Ù)ÚSEM 1*+9E¤> {*ó,X CLI 4~)

Ï G ÄAÈ â Ð -

12.28 rollback

ü SEM G!5B õ ã ß ²EÔ ' !1*+9,XG!5B Ä rollback

Ï – DAÈ â Ð – D

Ï – DAÈ â Ð

– D	£EÄ
all | detector-name	/ Ý,¥ { < µ C ê / (M n,X,¥ { < µ C
detailed	/ Aº4š µ C
statistics	/ ”# <4³Au µ C

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð _ 1 Ö ;> show smart manager detector all Q ¸ / V ß

```
5XLMLH  VKRZ VPDUW PDQDJHU GHWHFWRU DOO
1R   1DPH                9HUVLRQ
     DSSOLFDWLRQ
     V\VORJ
     FOL
     FRXQWHU
     LQWHUIDFH
     V\VPRQ
     QRQH
     RLU
     VQPS
     VQPS QRWLILFDWLRQ
     WLPHU
     VQPS REMHFW
```

_ 2 Ö ;> show smart manager detector cli Q ¸ / V ß

```
5XLMLH  VKRZ VPDUW PDQDJHU GHWHFWRU FOL
1R   1DPH                9HUVLRQ
     FOL
```

_ 3 Ö ;> show smart manager detector cli detailed Q ¸ / V ß È J Ù ÿ _ Ê,XG!5B Q ¸ ` _ ÊA’5B,X F¼ ¬G£ Ä

```
5XLMLH  VKRZ VPDUW PDQDJHU GHWHFWRU FOL GHWDLOHG
1R            1DPH       9HUVLRQ
              FOL
$SSOHW &RQILJXUDWLRQ 6\QWD[ IRU FOL GHWHFWRU
        HYHQW WDJ  HYHQW QDPH! >FRUUHODWH ^DQG _ RU _ DQGQRW
 UHJXODU H[SUHVVLRQ! V\QF ^\HV >GHIDXOW  ZDLW WLPH!@ _ QR VNL
>RFFXUV  QXP RFFXUUHQFHV!@ >SHULRG  SHULRG YDOXH!@
        QR HYHQW WDJ  HYHQW QDPH!
        $SSOHW %XLOW LQ (QYLURQPHQW 9DULDEOHV
```

```
B H Y H Q W B W \ S H
B H Y H Q W B W \ S H B V W U L Q J
B H Y H Q W B S X E B W L P H
B H Y H Q W B S X E B V H F
B H Y H Q W B S X E B P V H F
B F O L B P V J
B F O L B P V J B F R X Q W
B F O L B P R G H
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

12.30 show smart manager environment

ü(M õ ã ß / < ¬G£ µ C Ä

show smart manager environment [all | variable-name]

Ï – DAÈ â Ð

– D

Y D O X H B D

_ 4 Ö ;> show smart manager environment var_none Ä á , ü,X < ¬G£ Å Q ¸ / V ß

5 X L M L H V K R Z V P D U W P D Q D J H U H Q Y L U R Q P H Q W Y D U B Q R Q H
1 R V X F K H Q Y L U R Q P H Q W Y D U L D E O H G H I L Q H G

Ï,Ì G Q ¸ Ð Q ¸

```
        WLPHU        7KX 2FW              7HVWB
&ODVV ÖGHIDXOWÈ3ROLF\ 7\SHÖ DSSOHW
        WLPHU        7KX 2FW              7HVWB
&ODVV ÖGHIDXOWÈ3ROLF\ 7\SHÖ DSSOHW
        WLPHU        7KX 2FW              7HVWB
&ODVV ÖGHIDXOWÈ3ROLF\ 7\SHÖ DSSOHW
```

Ï – DAÈ â Ð

– D	£EÄ
class class-options	EÝ ½1*+92O ÿ
detailed	/ Aº4š µ C

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð A¹ Q ¸ / !7 üE¤> ,X1*+9 r _ Ä

ÏG!5B _ Ð _ 1 Ö ;> show smart manager policy active Q ¸ / V ß

```
5XLMLH VKRZ VPDUW PDQDJHU SROLF\ DFWLYH
.H\ 3 3ULRULW\ / /RZ + +LJK 1 1RUPDO
    6 6FKHGXOLQJ PRGH $ $FWLYH 3 3HQGLQJ

 1R -RE ,G 3 6 6WDWXV 7LPH 2I (YHQW (YHQW 7\SH 3F
            1 $ UXQQLQJ :HG 1RY QRQH 7HVWB
            1 $ UXQQLQJ :HG 1RY QRQH 7HVWB
            1 $ UXQQLQJ :HG 1RY QRQH 7HVWB
            1 $ UXQQLQJ :HG 1RY QRQH 7HVWB
            1 $ UXQQLQJ :HG 1RY QRQH 7HVWB
            1 $ UXQQLQJ :HG 1RY QRQH 7HVWB
```

_ 2 Ö ;> show smart manager policy active detailed Q ¸ / V ß

```
5XLMLH VKRZ VPDUW PDQDJHU SROLF\ DFWLYH GHWDLOHG
.H\ 3 3ULRULW\ / /RZ + +LJK 1 1RUPDO
   6 6FKHGXOLQJ PRGH $ $FWLYH 3 3HQGLQJ

 1R -RE ,G 3 6 6WDWXV 7LPH 2I (YHQW (YHQW 7\SH 3F
            1 $ UXQQLQJ :HG 1RY QRQH 7HVWB
  H[HF WLPH :HG 1RY HODSVHG WLPH
  PD[UXQ
            1 $ UXQQLQJ :HG 1RY QRQH 7HVWB
  H[HF WLPH :HG 1RY HODSVHG WLPH ë €0@ ƒˆ1 ƒˆ1•A !Vï

            1 $ UXQQLQJ :HG 1RY QRQH 7HVWB
  H[HF WLPH :HG 1RY HODSVHG WLPH ë° ••00
  PD[UXQ
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ

Ï G ÄAÈ â Ð -

12.34 show smart manager policy pending

ü(M õ ã ß / 1 YE¤> ,X1*+9 Ä

show smart manager policy pending [class class-options] [detailed]

Ï – DAÈ â Ð

– D	£EÄ
class class-options	EÝ ½1*+92O ÿ
detailed	/ Aº4š µ C

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð A¹ Q ¸ / 1 YE¤> ,X1*+9 Ä

ÏG!5B _ Ð _ 1 Ö ;> show smart manager policy pending Q ¸ / V ß

```
5XLMLH VKRZ VPDUW PDQDJHU SROLF\ SHQGLQJ
.H\ 3 3ULRULW\ / /RZ + +LJK 1 1RUPDO
6 6FKHGXOLQJ PRGH $ $FWLYH 3 3HQGLQJ
1R -RE ,G 3 6 6WDWXV 7LPH 2I (YHQW (YHQW 7\SH 3F
```

-	-

Ï G ÄAÈ â Ð -

12.35 show smart manager policy registered

ü(M õ ã ß / "¼ `,X1*+9 Ä

show smart manager policy registered [statistics] [policy policy-name] [event-type event-name] [class class-options] [time-ordered | name-ordered]

Ï – DAÈ â Ð

– D	£EÄ
statistics	/ "¼ `1*+9,X4³Au µ C
policy policy-name	Û n1*+9 á +
event-type event-name	Û n1*+9,X event 2O _
class class-options	EÝ ½1*+92O ÿ
time-ordered | name-ordered	EÝ ½ / NN c

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð ;> show smart manager policy registered Q ¸ / V ß È J No / ,X c Ë È Name 1*+9,X á + ÈClass 1*+9,X2O ÿ ÈType 1*+9,X2O _ ÈEvent Type 1*+9,XOj þ _ Ê,X2O _ È Time Registered 1*+9"¼ `,X ÊKÈ Ä

```
5XLMLH VKRZ VPDUW PDQDJHU SROLF\ UHJLVWHUHG
1R 1DPH &ODVV 7\SH (YHQW 7\SH 7LPH 5HJLVWHUHG
7HVWB $ DSSOHW WLPHU 7KX 2FW
HYHQWB WLPHU ZDWFKGRJ WLPH
DFWLRQ V\VORJ PVJ $FWLRQB
DFWLRQ ZDLW
DFWLRQ V\VORJ PVJ $FWLRQB
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
smart manager applet	n Î b Q ¸> ,X SEM 1*+9

Ï G ÄAÈ â Ð -

12.36 show smart manager scheduler

ü(M õ ã ß ¹4"/ß"4) ! ¹,ß SEM A× z <,XE¤> (Š ‰ Ä

show smart manager scheduler thread [detailed]

Ï – DAÈ â Ð

– D	£EÄ
detailed	/ Aº4š µ C

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð _ 1 Ö ;> show smart manager scheduler thread Q ¸ / V ß È J total ></ 4“/ß"4 4“/ß,X D Èrunning ></ !7 üE¤> ,X4“/ß D Èidle ></ 0NKÆ k4“/ß D Ö

```
5XLMLH VKRZ VPDUW PDQDJHU VFKHGXOHU WKUHDG
  $SSOHW WKUHDGV VHUYLFH FODVV GHIDXOW Ö
  WRWDO UXQQLQJ LGOH
  $SSOHW WKUHDGV VHUYLFH FODVV $ % &Ö
  WRWDO UXQQLQJ LGOH
```

_ 2 Ö ;> show smart manager scheduler thread detailed Q ¸ / V ß Ö

```
5XLMLH VKRZ VPDUW PDQDJHU VFKHGXOHU WKUHDG GHWDLOHG
  $SSOHW WKUHDGV VHUYLFH FODVV GHIDXOW Ö
  WRWDO UXQQLQJ LGOH
  $SSOHW WKUHDGV VHUYLFH FODVV $ % &Ö
  WRWDO UXQQLQJ LGOH
FODVV $Ö
FDOVV %Ö
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
smart manager applet	n Î b Q ¸> ,X SEM 1*+9

Ï G ÄAÈ â Ð -

12.37 show smart manager version

ü(M õ ã ß / SEM ,X(µ C Ä

show smart manager version

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð ;> show smart manager version Q ¸ / V ß È*ü b Z?· SEM ` Ø þ ”# < ' !(È J.B n(
¤ o,X s6Ñ Ä

```
5XLMLH VKRZ VPDUW PDQDJHU YHUVLRQ
6PDUW (PEHGGHG 0DQDJHU 9HUVLRQ
(YHQW 'HWHFWRUV
QDPH                    YHUVLRQ
DSSOLFDWLRQ
V\VORJ
FOL
FRXQWHU
FSS
JUWG
LQWHUIDFH
QRQH
RLU
VQPS
VQPS REMHFW
VQPS QRWLILFDWLRQ
V\VPRQ
WLPHU
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

12.38 smart manager applet

ü < G!5B õ ã ß n SEM 1*+9 ÄA¹ Q ¸,X no 6 ã*ü b ôL8 SEM 1*+9 Ä

smart manager applet applet-name [class class-options]

no smart manager applet applet-name [reserve-record |clean-record]

Ï – DAÈ â Ð

– D	£EÄ

Ï S*ü Û Ð Ð Ô þ1*+9 Ã ¹ Ù ÿ ¹ ßG!5B Ö

_event_type	Û/ ?º ¥1*+9,X _ Ê ”# <2O _ ID
_event_type_string	Û/ ?º ¥1*+9,X _ Ê ”# < £EÄ µ C
_event_pub_time	_ Ê,X ¥*ó ÊKÈ
_event_pub_sec	_ Ê,X ¥*ó ÊKÈ ÄUnix ÊKÈ Å
_event_pub_msec	_ Ê ¥*ó ÊKÈ,X!¿/¦

ÏG!5B _ Ð _ 1 È ¹ ß _ $ ï Î Ô þ á + Test_A ,X Î b Q ¸> ,X1*+9

```
5XLMLH FRQILJ VPDUW PDQDJHU DSSOHW 7HVWB$
5XLMLH FRQILJ DSSOHW
```

_ 2 Ö ¹ ß _ $ ï Î Ô þ á + Test_B ,X1*+9 È J Ú1*+9 &2O 2O ÿ D Ä

```
5XLMLH FRQILJ VPDUW PDQDJHU DSSOHW 7HVWB% FODVV '
5XLMLH FRQILJ DSSOHW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show smart manager policy registered	/ "¼ `,X1*+9
smart manager policy bootup-delay	A’5B SEM 1*+9 ÊE³ h*ü,X ÊKÈ Ä

Ï G ÄAÈ â Ð -

12.39 smart manager environment

ü < G!5B õ ã ß n SEM < ¬G£ ÄA¹ Q ¸,X no 6 ã*ü b ôL8 Û n,X SEM < ¬G£ Ä
smart manager environment variable-name string
no smart manager environment variable-name

Ï – DAÈ â Ð

– D	£EÄ
variable-name	n ¬G£,X á +
string	n ¬G£,X

Ï5 ,ÕG!5B Ð 5 ,Õ á n SEM < ¬G£

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð Ý ¬G£,X2O _FÑ +0ú _ È ¬G£,X K ' ÿ B S*ü C.B n Ä
< ¬G£ Ã ¹ ü Ý,X1*+9 S*ü Ä 2Ï4³ `*ü 3 Ã ¹ ü1*+9 n à á,X F¼ ¬G£ Ä ü1*+9 <
¬G£ Ú î È+ F¼ ¬G£ ¥ ù 0*ü Ä

ÏG!5B _ Ð _ 1 È n Ô þ á + variable_name variable_value ,X < ¬G£ Ä

```
5XLMLH FRQILJ VPDUW PDQDJHU HQYLUQPHQW YDULDEOHBQDPH YI
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show smart manager environment	/ <)ƒ W ¬G£

Ï G ÄAÈ â Ð -

12.40 smart manager history

ü < G!5B õ ã ßG!5B SEM Z Æ µ C,X Ô û ± , DG£ ÄA¹ Q ¸,X no 6 ã*ü b 6 á Z Æ µ C,X Ô û ± , DG£ 2Ï4³T¬Ax Ä

smart manager history size events size

no smart manager history size events

Ï – DAÈ â Ð

– D	£EÄ
events	A'5B Event Z Æ µ C,X Ô û ± , DG£
size	A'5B,X K ' DG£ È Ô û 50 ÈT¬Ax 50

Ï5 ,ÕG!5B Ð T¬AxEvent Ô û ± , DG£ 50

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð V p Ú Z Æ µ C,X Ô û A' n 0 È í SEM Ú á îA„) Z Æ µ C Ä

ÏG!5B _ Ð G!5BSEM Event Ô û Z Æ µ C ± , DG£ 30

5 X L M L H F R Q I L J V P D U W P D Q D J H U K L V W R U \ V L] H H Y H Q W V

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show smart manager history events	/ _ Ê Z Æ µ C

Ï G ÄAÈ â Ð -

12.41 smart manager policy bootup-delay

üG!5B õ ã ßG!5BA'5B SEM 1*+9 ÊE³ h*ü,X ÊKÈ Ä

smart manager policy bootup-delay dealy-time

Ï – DAÈ â Ð

– D	£EÄ
dealy-time	¢A' Û { Ä Ã*ü SEM 1*+9>• h*ü,X ÊKÈKÈLh È8× È 60 /¦ 7Ç 900 /¦

Ï5 ,ÕG!5B Ð 5 ,Õ 60 /¦

Ï Q ¸ õ ã Ð G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð A' nA' Û | { Ä Ã*ü 120 /¦ ¹ â ! S SEM 1*+9*ó Ä

5 X L M L H F R Q I L J V P D U W P D Q D J H U V F K H G X O H U W K U H D G F O D V V % ' Q X F

_ 2 ÖG!5BPolicy T¬Ax2O ÿ,X4“/ß"4 Ô î Ý 10 þ4“/ß Ã*ü Ä

5 X L M L H F R Q I L J V P D U W P D Q D J H U V F K H G X O H U W K U H D G F O D V V G H I D X C

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show smart manager scheduler	/ SEM A× z ™ ‰

Ï G ÄAÈ â Ð -

12.45 smart manager scheduler clear

ü(M õ ã ß#ÙL8 SEM _ Ê Í ë Ä

smart manager scheduler clear { all | policy job-id | class class-options]

Ï – DAÈ â Ð

– D	£EÄ
all	Ý1*+9
policy job-id	Û n1*+9,X?º ¥ ID
class class-options	Û n1*+9E¤> ,X2O ÿ

Ï5 ,ÕG!5B Ð 5 ,Õ á#ÙL81*+9E¤> r _

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð _ 1 Ö#Ù0N Ý2O ÿ Í ë

5 X L M L H V P D U W P D Q D J H U V F K H G X O H U F O H D U D O O

_ 2 Ö#Ù0N Ý class B Èapplet 2O _1*+9,X Í ë

5 X L M L H V P D U W P D Q D J H U V F K H G X O H U F O H D U F O D V V %

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
smart manager applet	n Î b Q ¸> ,X SEM 1*+9

Ï G ÄAÈ â Ð -

12.46 smart manager scheduler hold

ü(M õ ã ß Ú SEM ,XA× z V 0 Ä

smart manager scheduler hold { all | policy job-id | class class-options }

Ï – DAÈ â Ð

– D	£EÄ

all	Ý1*+9
policy job-id	Û n1*+9,X?º ¥ ID
class class-options	Û n1*+9E¤> ,X2O ÿ

Ï5 ,ÕG!5B Ð 5 ,Õ áE¯> hold

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð _ 1 Ö V 0 Ý,¥ { < È V 0 ÝKó ë ôEÕ Ä

5 X L M L H V P D U W P D Q D J H U V F K H G X O H U K R O G D O O

_ 2 Ö V 02O _ applet J è class B ,X1*+9,X,¥ { < `Kó ë ôEÕ

5 X L M L H V P D U W P D Q D J H U V F K H G X O H U K R O G F O D V V %

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
smart manager applet	n Î b Q ¸> ,X SEM 1*+9

Ï G ÄAÈ â Ð -

12.47 smart manager scheduler modify

ü(M õ ã ß ¤P¬Kó ë ì 4{ Ä

smart manager scheduler modify class class-options queue-priority { high | low | normal } }

D	£EÄ
class Û n1*+9E¤> ,X2O ÿ	
queue-priority { high	low	normal } Û nKó ë,X ì 4{	

Ï5 ,ÕG!5B Ð 5 ,Õ1*+9,X ì 4{FÑ normal

}

(M õ ã

12.48 smart manager scheduler release

ü(M õ ã ß 6 áKó ë ôEÕ Ä

smart manager scheduler release { all | policy policy-id | class class-options }

Ï – DAÈ â Ð

– D	£EÄ
all	Ý1*+9
policy job-id	Û n1*+9,X?º ¥ ID
class class-options	Û n1*+9E¤> ,X2O ÿ

Ï5 ,ÕG!5B Ð 5 ,Õ release

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð !8 Q ¸ smart manager scheduler hold EÚE›/ß Ä

ÏG!5B _ Ð 6 á Ý,¥ { < È 6 á ÝKó ë ôEÕ Ä

5 X L M L H V P D U W P D Q D J H U V F K H G X O H U U H O H D V H D O O

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
smart manager applet	n Î b Q ¸> ,X SEM 1*+9

Ï G ÄAÈ â Ð -

12.49 smart manager scheduler suspend

ü < G!5B õ ã ß Ú SEM A× z ÖCK ÄA¹ Q ¸,X no 6 ã*ü b 6 á SEM A× z Ä

smart manager scheduler suspend

no smart manager scheduler suspend

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð 5 ,Õ þ ÖCK SEM A× z

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð Æ4£ üE¤> ,X4“/ß á «A× z < ÖCK E ¡ È üA× z < ÖCK ¹ â4»4ÁE¤> È,È 4§ 3 Ä

ÏG!5B _ Ð _ 1 Ö Ê ÖCK SEM A× z

5 X L M L H F R Q I L J V P D U W P D Q D J H U V F K H G X O H U V X V S H Q G

_ 2 Ö 6 á ÖCK SEM A× z

5XLMLH FRQILJ QR VPDUW PDQDJHU VFKHGXOHU VXVSHQG

Ï,Ì G Q ¸ Ð	Q ¸	£EÄ

13 VSU

13.1 dual-active detection

G!5B ”# s6Ñ ÈA¹ Q ¸,X no 6 ã 6 áT¬AxG!5B Ä

dual-active detection { aggregateport | bfd }

no dual-active detection { aggregateport | bfd }

Ï – DAÈ â Ð

– D	£EÄ
aggregateport	Û n6. Ü · v# • ã
bfd	Û n BFD v# • ã

Ï5 ,ÕG!5B Ð ”# A’ Û(Š Õ,X s6Ñ GKÁ,X Ä

Ï Q ¸ õ ã Ð config-vs-domain G!5B õ ã

Ï S*ü Û Ð Ð A¹ Q ¸ ¾6Ñ ü VSU õ ã ßE¯> G!5B Ä

ÏG!5B _ Ð # ' Ô BFD ”# A’ Û(Š Õ,X s6Ñ

```
5XLMLH FRQILJ VZLWFK YLUWXDO GRPDLQ
5XLMLH FRQILJ YV GRPDLQ GXDO DFWLYH GHWHFWLRQ EIG
```

GKÁBFD ”# A’ Û(Š Õ,X s6Ñ

```
5XLMLH FRQILJ VZLWFK YLUWXDO GRPDLQ
5XLMLH FRQILJ YV GRPDLQ QR GXDO DFWLYH GHWHFWLRQ EIG
```

' Ô6. Ü · ”# A’ Û(Š Õ,X s6Ñ

```
5XLMLH FRQILJ VZLWFK YLUWXDO GRPDLQ
5XLMLH FRQILJ YV GRPDLQ GXDO DFWLYH GHWHFWLRQ DJJUHJDWHS
```

GKÁ6. Ü · ”# A’ Û(Š Õ,X s6Ñ

```
5XLMLH FRQILJ VZLWFK YLUWXDO GRPDLQ
5XLMLH FRQILJ YV GRPDLQ QR GXDO DFWLYH GHWHFWLRQ DJJUHJDW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
dual-active bfd interface	G!5BBFD ”# y ·
dual-active interface	G!5B Î b6. Ü · • ã ”# y ·
dual-active exclude interface	G!5B A’ Û ”# ,X _ ê0Ã ·
show switch virtual dual-active	¹,ß A’ Û ”# s6Ñ,XG!5B `(Š Õ

Ï G ÄAÈ â Ð -

13.2 dual-active exclude interface

G!5BVSU ü recovery õ ã ß,X _ ê0Ã · ÄA¹ Q ¸,X no 6 ã ª#\ _ ê0Ã · Ä

dual-active exclude interface interface-name

no dual-active exclude interface interface-name

Ï – DAÈ â Ð

– D	£EÄ
interface-name	y ·2O _ ` y ·4ê Ë

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð config-vs-domain G!5B õ ã

Ï S*ü Û Ð Ð A¹ Q ¸ ¾6Ñ ü VSU õ ã ßE¯> G!5B

_ ê0Ã · ™NO CÃ+ 0Ã · È á6Ñ VSL 0Ã · Ä

*ü Ã ¹G!5B î þ _ ê0Ã · Ä

ÏG!5B _ Ð #G!5B0Ã · Gi 1/0/3 0 A' Û "# ,X _ ê0Ã ·

```
5XLMLH FRQILJ LQWHUIDFH *LJDELW(WKHUQHW
5XLMLH FRQILJ LI QR VZLWFKSRUW
5XLMLH FRQILJ VZLWFK YLUWXDO GRPDLQ
5XLMLH FRQILJ YV GRPDLQ GXDO DFWLYH H[FOXGH LQWHUIDFH *LJD
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
dual-active detection	G!5B "# A' Û(Š Õ,X s6Ñ Ô G
dual-active bfd interface	G!5BBFD "# y · È*ü b "# A' Û(Š Õ Ä
dual-active interface	G!5B6. Ü · • ã "# y · È*ü b "# A' Û (Š Õ Ä
show switch virtual dual-active	¹,ß A' Û "# s6Ñ,XG!5B `(Š Õ

Ï G ÄAÈ â Ð -

13.3 dual-active bfd interface

G!5Bbfd "# · ÈA¹ Q ¸,X no Q ¸ Ú ôL8 "# · Ä

dual-active bfd interface interface-name

no dual-active bfd interface interface-name

Ï – DAÈ â Ð

– D	£EÄ
interface-name	"# y ·2O _ `4ê Ë

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð config-vs-domain G!5B õ ã

Ï S*ü Û Ð Ð BFD ”# y · ™NO CÃ+ 0Ã · È è ü á à,XA’ Û Þ Ä

ÏG!5B _ Ð #G!5B0Ã · Gi 1/1/1 BFD ”# y ·

```
5XLMLH FRQILJ LQWHUIDFH *LJDELW(WKHUQHW
5XLMLH FRQILJ LI QR VZLWFKSRUW
5XLMLH FRQILJ VZLWFK YLUWXDO GRPDLQ
5XLMLH FRQILJ YV GRPDLQ GXDO DFWLYH EIG LQWHUIDFH *LJDELW(
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
dual-active detection	G!5B ”# A’ Û(Š Õ,X s6Ñ Ô G
show switch virtual dual-active	¹,ß A’ Û ”# s6Ñ,XG!5B `(Š Õ

Ï G ÄAÈ â Ð -

13.4 dual-active interface

G!5B Î b6. Ü ·,X ”# · ÈA¹ Q ¸,X no 6 ã ôL8 ”# · Ä

dual-active interface interface-name

no dual-active interface

Ï – DAÈ â Ð

– D	£EÄ
interface-name	y ·2O _ ` y ·4ê Ë È ™NO AP 2O _,X y ·

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð config-vs-domain G!5B õ ã

Ï S*ü Û Ð Ð Î b6. Ü ·,X ”# · ¾6ÑG!5B Ô þ ÈüA’5B AP · ”# y · !?U ï ÎA¹ y · ÈâG!5B,X ”# · î ^ ! Ô õG!5B,X ”# ·?Z,ª] Ä

ÏG!5B _ Ð G!5B6. Ü · aggregateport 1 0 ”# ·

```
5XLMLH FRQILJ LQWHUIDFH DJJUHJDWHSRUW
5XLMLH FRQILJ LI $JJUHJDWH3RUW H[LW
5XLMLH FRQILJ VZLWFK YLUWXDO GRPDLQ
5XLMLH FRQILJ YV GRPDLQ GXDO DFWLYH LQWHUIDFH DJJUHJDWHSR
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
dual-active detection	G!5B ”# A’ Û(Š Õ,X s6Ñ Ô G
show switch virtual dual-active	¹,ß A’ Û ”# s6Ñ,XG!5B `(Š Õ

Ï G ÄAÈ â Ð -

13.5 dad relay enable

G!5B Î b6. Ü · ”# ,XE@ ¥ s6Ñ ÈA¹ Q ¸,X no 6 ã GKÁE@ ¥ s6Ñ Ä

dad relay enable

no dad relay enable

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð 5 ,Õ GKÁ Î b6. Ü · ”# ,XE@ ¥(M û Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð A¹ Q ¸ ¾6Ñ ü AP y · Þ S*ü Ä

ÏG!5B _ Ð # ' Ô relay s6Ñ

```
5XLMLH FRQILJ LQWHUIDFH DJJUHJDWHSRUW
5XLMLH FRQILJ LI $JJUHJDWH3RUW GDG UHOD\ HQDEOH
```

GKÁrelay s6Ñ

```
5XLMLH FRQILJ LQWHUIDFH DJJUHJDWHSRUW
5XLMLH FRQILJ LI $JJUHJDWH3RUW QR GDG UHOD\ HQDEOH
5XLMLH FRQILJ LI $JJUHJDWH3RUW H[LW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
dual-active detection	G!5B ”#
dual-active bfd interface	G!5BBFD ”# y ·
dual-active interface	G!5B Î b6. Ü · ”# ,X ”# y ·
dual-active exclude interface	G!5B A’ Û ”# ,X _ ê0Ã ·
show switch virtual dual-active	¹,ß A’ Û ”# s6Ñ,XG!5B `(Š Õ

Ï G ÄAÈ â Ð -

13.6 port-member interface

G!5BVSL-AP ,X ä , · ÈA¹ Q ¸,X no 6 ã/ÏL8 ä , · Ä

port-member interface interface-name [copper | fiber]

no port-member interface interface-name

Ï – DAÈ â Ð

– D	£EÄ
interface-name	`4È y · á, V GigabitEthernet 0/1, GigabitEthernet 0/3
copper	+ · 2 û
fiber	· 2 û

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð config-vsl-ap G!5B õ ã

Ï S*ü Û Ð Ð A¹ Q ¸ Ã ¹ ü VSU õ ã ß È 3 Ã ¹ ü) õ ã ß Ä Q ¸G!5B âLÔ?U ± ,G!5B È JG¡ ä ,0Ã ·

```
Ruijie(config)# Y V O D J J U H J D W H S R U W
5 X L M L H F R Q I L J Y V O D S S R U W P H P E H U L Q W H U I D F H *L J D E L W (W K H U Q
5 X L M L H F R Q I L J Y V O D S Q R S R U W P H P E H U L Q W H U I D F H *L J D E L W (W K
```

#VSU õ ã ß È ÄÞ//ÏLa ,0Ã ·

```
5 X L M L H F R Q I L J Y V O D J J U H J D W H S R U W
5 X L M L H F R Q I L J Y V O D S S R U W P H P E H U L Q W H U I D F H *L J D E L W (W K H U
5 X L M L H F R Q I L J Y V O D S Q R S R U W P H P E H U L Q W H U I D F H *L J D E L W (W
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
vsl-aggregate,XG!5B È õ a	

Ï G ÄAÈ â Ð -

13.7 remove configuration switch

#ÙL8 Û nA' Û,XG!5B È J7¾ |E¯> G¡ Ä

remove configuration switch sw_id

Ï – DAÈ â Ð

– D

– D	£EÄ
sw_id	A' Û ü VSU Y,X4ê Ë È ª 8× È 1-8

13.8 session

G¡ n å ê Ï ã Ô ÄA' Û,X { Ä Ä
session { device sw_id | master }

Ï – DAÈ â Ð	– D	£EÄ

Ï S*ü Û Ð Ð A¹ Q ¸ ü) õ ã ` VSU õ ã ßFÑ Ã ¹ S*ü Ä VSU õ ã ß ¹,ß ' !,X switch_id,) õ ã ¹,ß ' !G!5B ,X switch_id

ÏG!5B _ Ð #) õ ã ß ¹,ß A' Û,XG!5B,X x 6 4ê Ë

```
5XLMLH VKRZ VZLWFK LG
6ZLWFK ,' LV
```

#VSU õ ã ß ¹,ß A' Û,XE¤> ,X x 6 4ê Ë

```
5XLMLH VKRZ VZLWFK LG
6ZLWFK ,' LV
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show switch virtual	¹,ß ³ ID È ¹ ž!£ ÄA' Û,X4ê Ë `?¦8F

Ï G ÄAÈ â Ð -

13.10 show switch virtual

¹,ß ³ ID È ¹ ž!£ ÄA' Û,X4ê Ë Ã(Š Õ `?¦8F Ä
show switch virtual

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð _ 1 Ö) õ ã Ä

```
5XLMLH VKRZ VZLWFK YLUWXDO
&XUUHQW V\VWHP LV UXQQLQJ LQ 67$1'$/21( PRGH
```

_ 2 ÖVSU õ ã È Ý Ý Ä ä , x 6 Ä

```
5XLMLH VKRZ VZLWFK YLUWXDO
6ZLWFKBLG 'RPDLQBLG 3ULRULW\ 6WDWXV 5ROH 'HV

2. $&7,9( VZLWFK
2. &$1','$7( VZLWFK
2. 67$1'%< VZLWFK
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
switch	G!5B x 6 4ê Ë

switch sw_id priority	G!5B x 6 ì 4{
switch sw_id renumber	Â x 6 4ê Ë
switch sw_id domain	Â domain_id
switch virtual domain	G!5BVSU ,X<. ³A’ Û ID

Ï G ÄAÈ â Ð -

13.11 show switch virtual balance

/ VSU õ ã ß,X# G£ >5 õ ãG!5B Ä

show switch virtual balance

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð #VSU õ ã ß ¹,ß A’ Û# G£ >5G!5B õ ã

```
5XLMLH VKRZ VZLWFK YLUWXDO EDODQFH
$JJUHJDWH SRUW /))ÖHQDEOH
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show switch virtual	¹,ß ³ ID È ¹ ž!£ ÄA’ Û,X4ê Ë `?¦8F

Ï G ÄAÈ â Ð -

13.12 show switch virtual config

/) ê VSU õ ã ß,X VSU G!5B µ C Ä

show switch virtual config [sw_id]

Ï – DAÈ â Ð

– D	£EÄ
sw_id	A’ Û4ê Ë Û nE- þ – D Ã ¹ ¾ / (M nA’ Û,X VSU G!5B µ C
-	-

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð #) õ ã ß ¹,ß A’ Û,X VSU G!5B µ C

```
5XLMLH VKRZ VZLWFK YLUWXDO FRQILJ
VZLWFKBLG PDF G I




VZLWFK
VZLWFK SULRULW\

YVO DJJUHJDWHSRUW
SRUW PHPEHU LQWHUIDFH *LJDELW(WKHUQHW
SRUW PHPEHU LQWHUIDFH *LJDELW(WKHUQHW

VZLWFK FRQYHUW PRGH VWDQGDORQH
```

#VSU õ ã ß ¹,ß VSU 2Ï4³,XG!5B µ C

```
5XLMLH VKRZ VZLWFK YLUWXDO FRQILJ
VZLWFK fD
```

[redacted]

ÏG!5B _ Ð # ¹,ß A’ Û ”# G!5B `(Š Õ

5XLMLH VKRZ VZLWFK YLUWXDO GXDO DFWLYH VXPPDU\
%)' GXDO DFWLYH GHWHFWLRQ HQDEOHG <HV
$JJUHJDWHSRUW

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð _ 1 Ö ¹,ß VSL 6. ÜJÒCÃ µ C Ä

```
5XLMLH  VKRZ VZLWFK YLUWXDO OLQN
96/ $3   6WDWH    3HHU 96/     5[      7[      8SWLPH

        83                                G   K    P
        83                                G   K    P

96/ 6WDWXV Ýøþ Ö'2:1`83Ä
```

_ 2 Ö ¹,ß VSL 0Ã · µ C Ä

```
5XLMLH  VKRZ VZLWFK YLUWXDO OLQN SRUW
96/ $3
3RUW                      6WDWH    3HHU SRUW          5[   7[   8SWL

*LJDELW(WKHUQHW        2.      *LJDELW(WKHUQHW              G   K
*LJDELW(WKHUQHW        2.      *LJDELW(WKHUQHW              G   K

96/ $3
3RUW                      6WDWH    3HHU SRUW          5[   7[   8SWL

*LJDELW(WKHUQHW        2.      *LJDELW(WKHUQHW              G   K
*LJDELW(WKHUQHW        2.      *LJDELW(WKHUQHW              G   K
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show switch virtual	¹,ß VSU 2Ï4³ µ C

Ï G ÄAÈ â Ð -

13.15 show switch virtual topology

¹,ß VSU 2Ï4³,X § %E² y(Š Õ Ä

show switch virtual topology

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð # ¹,ß § %(Š Õ

```
5XLMLH VKRZ VZLWFK YLUWXDO WRSRORJ\
,QWURGXFWLRQ >QXP@ PHDQV VZLWFK QXP QXP QXP PHDQV YV

5LQJ 7RSRORJ\
> @ > @ > @

6ZLWFK> @ $&7,9( 0$& G I G 'HVFULSWLRQ 6ZLWFK
6ZLWFK> @ 67$1'%< 0$& 'HVFULSWLRQ 6ZLWFK
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
switch sw_id priority	G!5B x 6 ü VSU Y ì 4{
switch virtual domain	G!5BVSU ,X<. ³A' Û ID
show switch virtual link	¹,ß VSL ,X µ C

Ï G ÄAÈ â Ð -

13.16 switch

EîE› switch

– D	£EÄ
sw_id	A' Û ü VSU Y,X4ê Ë È ª 8× È 1-8

Ï5 ,ÕG!5B Ð 5 ,Õ4ê Ë 1

Ï Q ¸ õ ã Ð config-vs-domain G!5B õ ã

Ï S*ü Û Ð Ð A' Û4ê Ë*ü 9 ü<. ³A' Û ÛAš!£ þ ä , È ü VSU õ ã ß È y · á/Ä,X ã ¢ slot/port E@ 6 switch/slot/port È J switch y · 2 x 6 ,X4ê Ë Ä
üEÝ A' Û,XE›/ß È V p ø ÄA' ÛFÑ Æ4£ A' Û È ê5ÙFÑ î |E¬"u Ý.B n?¦8F È J è ø Ä x 6 ,X ì 4{,Ì à ÈFw 4ê Ë ã,XA' Û ä A' Û Ä
A¹ Q ¸ ¾6Ñ ü) õ ã ß Â x 6 4ê Ë ÈVSU õ ã ßLÔ?UEîE› switch sw_id renumber new_sw_id Â x 6 4ê Ë Ä ´AŽ) õ ã ÈE¬ VSU õ ã È Â ,X4ê ËLÔ?UG¡ „ | !6Ñ*ó

ÏG!5B _ Ð # ^ x 6 ü ³ ID 1 ,X VSU ,X4ê Ë Û n 2

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
switch virtual domain	Û n VSU ,X<. ³A’ Û4ê Ë
switch sw_id priority priority_num	G!5B x 6 ü VSU Y,X ì 4{
show switch virtual	¹,ß ³ ID È ¹ ž!£ ÄA’ Û,X4ê Ë `?¦8F

Ï G ÄAÈ â Ð -

13.17 switch description

EîE› ¹ ß Q ¸G!5B x 6 ü VSU Y,XA’ Û £EÄ È Q ¸,X no 6 ã Ú £EÄ0ú#Ù0N Ä

switch sw_id description dev-name

no switch sw_id description

Ï – DAÈ â Ð

– D	£EÄ
sw_id	LÔ?UG!5B ì 4{,X x 6 4ê Ë
dev_name	A’ Û á/Ä £EÄ

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð config-vs-domain G!5B õ ã

Ï S*ü Û Ð Ð A¹ Q ¸ ü) õ ã ` VSU õ ãFÑ Ã ¹ S*ü ÈVSU õ ã ßG!5B0Ÿ G*ó Ä

ÏG!5B _ Ð _ Ö

```
5XLMLH FRQILJ VZLWFK YLUWXDO GRPDLQ
5XLMLH FRQILJ YV GRPDLQ VZLWFK GHVFULSWLRQ EXLOGLQJ$
5XLMLH FRQILJ YV GRPDLQ H[LW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
switch	G!5B x 6 4ê Ë
show switch virtual	¹,ß ³ ID È ¹ ž!£ ÄA’ Û,X4ê Ë `?¦8F

Ï G ÄAÈ â Ð -

13.18 switch domain

VSU õ ã ß ÈEîE› ¹ ß Q ¸ Ã ¹ Â Ï ã x 6 ,X domain È Q ¸,X no 6 ã Ú domain 6 á äT¬Ax Ä

switch sw_id domain new_domain_id

no switch sw_id domain

Ï – DAÈ â Ð

– D	£EÄ
sw_id	VSU õ ã ß ' !E¤> ,XA’ Û4ê Ë È ª 8× È 1-8

new_domain_id	Â â,X domain id È8× È 1-255

Ï5 ,ÕG!5B Ð 100

Ï Q ¸ õ ã Ð config-vs-domain G!5B õ ã

Ï S*ü Û Ð Ð A¹ Q ¸ ¾6Ñ ü VSU õ ã ß S*ü È á6Ñ ü) õ ã ß S*ü È èG¡ â !6Ñ*ó Ä
S*ü no Q ¸ Ú damain_id 6 á ä5 ,Õ 100 Ä

ÏG!5B _ Ð #VSU õ ã ß È ^ ' !E¤> ,X x 6 1 ,X domain_id Â 10

```
5XLMLH FRQILJ VZLWFK YLUWXDO GRPDLQ
5XLMLH FRQILJ YV GRPDLQ VZLWFK GRPLDQ
```

#VSU õ ã ß È ^ ' !E¤> ,X x 6 2 ,X domain_id Â 10

```
5XLMLH FRQILJ VZLWFK YLUWXDO GRPDLQ
5XLMLH FRQILJ YV GRPDLQ VZLWFK GRPLDQ
```

VSU õ ã ß È ^ ' !E¤> ,X x 6 2 ,X domain_id 6 á äT¬Ax

```
5XLMLH FRQILJ VZLWFK YLUWXDO GRPDLQ
5XLMLH FRQILJ YV GRPDLQ QR VZLWFK GRPDLQ
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
switch virtual domain	Û n VSU ,X<. ³A' Û4ê Ë
show switch virtual	¹,ß ³ ID È ¹ ž!£ ÄA' Û,X4ê Ë `?¡8F

Ï G ÄAÈ â Ð -

13.19 switch priority

EîE› ¹ ß Q ¸G!5B x 6 ü VSU Y,X ì 4{ È Q ¸,X no 6 ã Ú ì 4{ 6 á äT¬Ax Ä
switch sw_id priority priority_num
no switch sw_id priority

Ï – DAÈ â Ð

– D	£EÄ
sw_id	LÔ?UG!5B ì 4{,X x 6 4ê Ë
priority_num	Í h x 6 ,X ì 4{ È ª 8× È 1 255

Ï5 ,ÕG!5B Ð priority_num Ö5 ,Õ,X ì 4{ 100 Ä

Ï Q ¸ õ ã Ð config-vs-domain G!5B õ ã

Ï S*ü Û Ð Ð ì 4{,X D C^ û È></ ì 4{C^P¬ Ä üEÝ A' Û,XE›/ß È ì 4{P¬,XA' Û ä A' Û Ä
A¹ Q ¸ ü) õ ã ` VSU õ ãFÑ Ã ¹ S*ü Ä Â ,X ì 4{ ™NOG¡ ¹ â ! î*ó Ä
A¹ Q ¸ á î Â sw_id Ä) õ ã ß V pG!5B Z sw_id 1 È a ;> switch 2 priority 200 È í Q ¸ á î*ó

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
switch	) õ ã ßG!5BA’ Û4ê Ë
show switch virtual	¹,ß ³ ID È ¹ ž!£ ÄA’ Û,X4ê Ë `?¦8F

Ï G ÄAÈ â Ð -

13.21 switch convert mode

Q ¸*ü 9 ü) õ ã `<. ³A’ Û õ ã KÈ f,ÌE@ 6 Ä

switch convert mode { virtual | standalone [sw_id] }

Ï – DAÈ â Ð

– D	£EÄ

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
switch num	Û nA’ Û ü VSU Y,X4ê Ë
switch virtual domain	Û n VSU ,X<. ³A’ Û4ê Ë

switch number priority priority_num

Ï5 ,ÕG!5B Ð ³4ê Ë5 ,Õ 100

Ï Q ¸ õ ã Ð

Ï G ÄAÈ â Ð -

Q ¸ –5× 5%1u `,¥ {

Ú ` Ÿ4¡5%1u `,¥ { Q ¸ –5×,Ì G Y • È Ù À ¹ ß0´8V Ö

1. SNMP
2. RMON
3. NTP
4. SNTP
5. SPAN
6. RSPAN
7. IPFIX

1 SNMP

1.1 no snmp-server

?U #; A’ Û SNMP ·)Ú s6Ñ ÈAË ;> < G!5B Q ¸ no snmp-server

no snmp-server

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð #; SNMP ·)Ú s6Ñ

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð A¹ Q ¸ GKÁA’ Û Õ,X Ý(SNMP ,X ·)Ú á u Ä

ÏG!5B _ Ð #; SNMP ·)Ú á u Ö

5 X L M L H F R Q I L J Q R V Q P S V H U Y H U

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

1.2 show snmp

?U ¹,ß SNMP ,X(Š Õ µ C ÈAË ;> (M *ü õ ã Q ¸ show snmp

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

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M *ü õ ã

Ï S*ü Û Ð Ð show snmp Q ¸ / SNMP ,X,Ì G4³Au µ C ×

show snmp mib / 2Ï4³ Õ,X snmp mib µ C ×

show snmp user / snmp *ü µ C ×

show snmp view / snmp ?š Ò µ C ×

show snmp group / snmp *ü 4˜ µ C ×

show snmp host / *ü G!5B,X / µ C ×

ÏG!5B _ Ð ßM6,X/ _ SNMP ,X Ô þ4³Au µ C Ö

```
5XLMLH  VKRZ VQPS
&KDVVLV  ))
  6103 SDFNHWV LQSXW
  %DG 6103 YHUVLRQ HUURUV
  8QNQRZQ FRPPXQLW\ QDPH
  ,OOHJDO RSHUDWLRQ IRU FRPPXQLW\ QDPH VXSSOLHG
  (QFRGLQJ HUURUV
  1XPEHU RI UHTXHVWHG YDULDEOHV
  1XPEHU RI DOWHUHG YDULDEOHV
  *HW UHTXHVW 3'8V
  *HW QH[W 3'8V
  6HW UHTXHVW 3'8V
  6103 SDFNHWV RXWSXW
  7RR ELJ HUURUV  0D[LPXP SDFNHW VL]H
  1R VXFK QDPH HUURUV
  %DG YDOXHV HUURUV
  *HQHUDO HUURUV
  5HVSRQVH 3'8V
  7UDS 3'8V
6103 JOREDO WUDS  GLVDEOHG
6103 ORJJLQJ  GLVDEOHG
6103 DJHQW  HQDEOHG
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
snmp-server chassis-id	SNMP 2Ï4³ c ë Ë

Ï G ÄAÈ â Ð -

1.3 snmp trap link-status

üA' Û Ã ¹ Î b y ·G!5B ú ¥EÕA¹ y ·,X LinkTrap È ' s6Ñ ' Ô Ê È V p y · ¥*ó Link (Š Õ ¬ ê È SNMP Ú ¥ Î LinkTrap È ¡ í á ¥ Ä S*üA¹ Q ¸,X no EÝNÑSNMP Ú á ¥ Î LinkTrap Ä

snmp trap link-status

no snmp trap link-status

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð 5 ,Õ ™ ‰ ß ÈA¹ s6Ñ ' Ô È V p y · ¥*ó Link (Š Õ ¬ ê È SNMP Ú ¥ Î LinkTrap Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

Ï S*ü Û Ð Ð Í b y · Ä ¹ þ5% y · Ã Ap y · Ã SVI y · Å ÈA¹ Q ¸G!5B ú ¥EÕA¹ y ·,X LinkTrap È ' s6Ñ ' Ô Ê È V p y · ¥*ó Link (Š Õ ¬ ê È SNMP Ú ¥ Î LinkTrap È ¡ í á ¥ Ä

ÏG!5B _ Ð _ 1 Ö ßM6G!5B ÚG!5B y · á ¥EÕ Link trap Ö

```
5XLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
5XLMLH FRQILJ LI QR VQPS WUDS OLQN VWDWXV
```

_ 2 Ö ßM6G!5B ÚG!5B y · ¥EÕ Link trap Ö

```
5XLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
5XLMLH FRQILJ LI VQPS WUDS OLQN VWDWXV
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ

Ï G ÄAÈ â Ð -

1.4 snmp-server chassis-id

?U Û n SNMP ,X2Ï4³ c ë Ë ÈAË ;> < G!5B Q ¸ snmp-server chassis-id ÄA¹ Q ¸,X no 6 ãE¬ s ñ Ÿ Ä

snmp-server chassis-id text

no snmp-server chassis-id

Ï – DAÈ â Ð

– D	£EÄ
text	2Ï4³ c ë Ë,X [È Ã ¹ D + ê +0ú Ä

Ï5 ,ÕG!5B Ð c ë Ë5 ,Õ 60FF60

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð SNMP 2Ï4³ c ë Ë Ô8 S*ü <,X c ë Ë È ¹ " ÍA' ÛE¯> Aš ÿ Ä2Ï4³ c ë Ë Ã ¹EîE› show snmp Q ¸ ¹,ß Ä

ÏG!5B _ Ð ßM6,X/ _ Û n SNMP ,X2Ï4³ c ë Ë 123456:

```
5XLMLH FRQILJ VQPS VHUYHU FKDVVLV LG
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show snmp	¹,ß SNMP ,X4³Au µ C

Ï G ÄAÈ â Ð -

1.5 snmp-server community

?U Û n SNMP ¶ ',XA"KÂ +0ú ÈAË ;> < G!5B Q ¸ snmp-server community ÄA¹ Q ¸,X no 6 ã ª

#\ Û n SNMP ¶ ',XA“KÂ +0ú Ä

snmp-server community [0|7] string [view view-name] [[ro | rw] [host ipaddr]] [ipv6 ipv6-aclname][aclnum | aclname]

no snmp-server community [0|7] string

Ï – DAÈ â Ð

– D	£EÄ
0	></ Eg 9,X ¶ ' +0ú â [+0ú
7	></ Eg 9,X ¶ ' +0ú š [+0ú
string	¶ ' +0ú È,Ì ' b NMS ` SNMP ·)Ú KÈ,XEî µ š-Õ Ä
view-name	Û n?š Ò,X á/Ä È*ü b Î b?š Ò,X1u)Ú Ä
ro	Û n NMS Í MIB ,X ¬G£ ¾6ÑAï È á6Ñ Â Ä
rw	NMS Í MIB ,X ¬G£ ÃAï Ã m Ä
aclnum	A“KÂ ë>< c ë Ë È G6(Û n,XA“KÂ ë>< È Û n6ÑA“KÂMIB ,X ipv4 NMS 8× È Ä
aclname	A“KÂ ë>< á/Ä È G6(Û n,XA“KÂ ë>< È Û n6ÑA“KÂMIB ,X ipv4 NMS 8× È Ä
ipv6-aclname	ipv6 A“KÂ ë>< á/Ä ÈG6(Û n,XA“KÂ ë>< ÈÛ n6ÑA“KÂMIB ,X ipv6 NMS 8× È Ä
ipaddr	G6(NMS È Û nA“KÂ MIB ,X NMS Ä

Ï5 ,ÕG!5B Ð Ý ¶ '5 ,Õ ¾AÏ

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð A¹ Q ¸ *üA’ Û SNMP ·)Ú s6Ñ,X1 Ô þG¡?U Q ¸ È Û n Z ¶ ',X 2 û Ã AŒA“KÂ MIB ,X NMS 8× È 1 1 Ä

?U GKÁSNMP ·)Ú s6Ñ È ;> no snmp-server Q ¸ G Ã Ä

V p < G!5B Z service password-encryption Q ¸ È J èEg 9,X ¶ ' +0ú ÄCommunity-String Å â [È Ú Í ¶ ' +0ú E¯> t š,X / ` , Ä!8 Ê ªÁ\ service password-encryption G!5B â È ¶ ' +0ú ¡' ¹ š [ / ` , È á î 6 á â [Ä

ÏG!5B _ Ð ßM6,X/ _ S*üA“KÂ ë><L$ Í MIB ,XA“KÂ È ¾ AŒ 192.168.12.1 ,X NMS Í MIB ,XA“KÂ Ö

```
5XLMLH FRQILJ DFFHVV OLVW SHUPLW KRVW
5XLMLH FRQILJ DFFHVV OLVW GHQ\ DQ\
5XLMLH FRQILJ VQPS VHUYHU FRPPXQLW\ SXEOLF UR
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
access-list	n A“KÂ ë><
service password-encryption	· ¸ t š /

Ï G ÄAÈ â Ð -

1.6 snmp-server contact

?U Û n SNMP 2Ï4³6(2Ï • ã ÈAË ;> < G!5B Q ¸ snmp-server contact ÄA¹ Q ¸,X no 6 ã ôL8 Û n ,X SNMP 2Ï4³6(2Ï • ã Ä

snmp-server contact text

no snmp-server contact

1.9 snmp-server host

?U Û n ¥EÕLKL #\ C,X SNMP ÄNMS Å ÈAË ;> < G!5B Q ¸ snmp-server host ÄA¹ Q ¸,X no 6 ã ª#\ Û n SNMP Ä

snmp-server host { host-addr | ipv6 ipv6-addr } [vrf vrfname] [traps] [version { 1 | 2c | 3 { auth | noauth | priv }] community-string [udp-port port-num] [notification-type]

no snmp-server host { host-addr | ipv6 ipv6-addr } [vrf vrfname] [traps] [version { 1 | 2c | 3 { auth | noauth | priv }] community-string TJ /TT0 1 Tf 0.0041 DdB (<338c 4173(udp-p)5(o)-2(rt)]TJ /TT2 1 Tf 0.0022 Tc 4

Ï – DAÈ â Ð

– D	£EÄ
text	£EÄ2Ï4³ µ C,X +0ú Ä

Ï5 ,ÕG!5B Ð 2Ï4³ µ C 0N

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð ßM6,X/ _ Û n Ô þ2Ï4³ µ C Ö

5 X L M L H F R Q I L J V Q P S V H U Y H U O R F D W L R Q V W D U W W H F K Q R O R J \ F L W \

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
snmp-server contact	SNMP 2Ï4³6(2Ï • ã

Ï G ÄAÈ â Ð -

1.11 snmp-server logging

SNMP ¹ « s6Ñ ÚA„) NMS Í SNMP Agent ,X GET ÃGET-NEXT ` SET ¡ 0

snmp-server [illegible]

```
UXLMLH FRQILJ VQPS VHUYHU ORJJLQJ VHW RSHUDWLRQ
```

EîE› NMS Í sysname 8V&• Ä1.3.6.1.2.1.1.5.0 ÅE¯> GET ÃGET-NEXT ` SET ¡ 0 È { Ä î ' D ßM6,X ¹ « µ C

```
UXLMLH )HE 6103 *(7B23(5 106 VRXUFH LS RSHU
REMHFW LG

UXLMLH )HE 6103 *(71B23(5 106 VRXUFH LS RSHU
REMHFW LG

UXLMLH )HE 6103 6(7B23(5 106 VRXUFH LS RSHU
REMHFW LG YDOXH UXLMLH
```

2 Ö GKÁget ê5Ùset Ô G

```
UXLMLH FRQILJ QR VQPS VHUYHU ORJJLQJ JHW RSHUDWLRQ

UXLMLH FRQILJ QR VQPS VHUYHU ORJJLQJ VHW RSHUDWLRQ
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

1.12 snmp-server net-id

?UA'5BA' Û5% 4ê-Õ µ C ÈAË ;> < G!5B Q ¸ snmp-server net-id ÄA¹ Q ¸,X no 6 ã ôL85% 4ê-Õ µ C Ä

snmp-server net-id text

no snmp-server net-id

Ï – DAÈ â Ð

– D	£EÄ
net-id text	A'5BA' Û5% 4ê-Õtext Ètext KS z 1~255 ,X +0ú È Ú û ã m È Ã Ù ÿ0N

Ï5 ,ÕG!5B Ð A' Û5% 4ê-Õ µ C 0N

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð ßM6,X/ _A’5B Ô þA’ Û5% 4ê-ÕG!5B Ö

5 X L M L H F R Q I L J V Q P S V H U Y H U Q H W L G) = B & ' 0 $ B 0 6 &

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ

Ï G ÄAÈ â Ð -

1.13 snmp-server packetsize

?U { SNMP Ô û,X D B Ù û ã ÈAË ;> < G!5B Q ¸ snmp-server packetsize ÄA¹ Q ¸,X no 6 ã 6 áT¬Ax Ä

snmp-server packetsize byte-count

no snmp-server packetsize

Ï – DAÈ â Ð

– D	£EÄ
byte-count	T D B Ù û ã È ¢ 484 +8V 17876 +8V Ä

Ï5 ,ÕG!5B Ð 1472 +8V

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð ßM6,X/ _ Û n SNMP Ô û D B Ù û ã 1492 Ö

5 X L M L H F R Q I L J V Q P S V H U Y H U S D F N H W V L] H

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ

Ï5 ,ÕG!5B Ð 10

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð LKL #\ CKó ë*ü b , LKL #\ C È Ã ¹EîE›A¹ Q ¸A× H#\ CKó ë û ã 9 { #\ C ¥EÕEó z Ä
#\ C ¥EÕ Ô ûEó z 4 þ!£/¦ Ä

ÏG!5B _ Ð ßM6,X/ _ Û nLKL #\ CKó ë û ã 4 þ Ö
5 X L M L H F R Q I L J V Q P S V H U Y H U T X H X H O H Q J W K

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
snmp-server packetsize	Û n SNMP Ô û D B Ù û ã

Ï G ÄAÈ â Ð -

1.15 snmp-server system-shutdown

?U *ü SNMP 2Ï4³G¡ Eî-¹ s6Ñ ÈAË ;> < G!5B Q ¸ snmp-server system-shutdown ÄA¹ Q ¸,X no
6 ã GKÁ SNMP 2Ï4³G¡ Eî-¹ s6Ñ Ä
snmp-server system-shutdown
no snmp-server system-shutdown

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð GKÁSNMP 2Ï4³G¡ Eî-¹ s6Ñ

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð S*üA¹ Q ¸ *ü SNMP 2Ï4³G¡ Eî-¹ s6Ñ ÈRGOS î üA' Û reload /reboot ¹ !4- NMS ¥EÕLKL #\ C
Eî-¹2Ï4³G¡ Ä

ÏG!5B _ Ð ßM6,X/ _ *ü SNMP 2Ï4³G¡ s6Ñ Ö
5 X L M L H F R Q I L J V Q P S V H U Y H U V \ V W H P V K X W G R Z Q

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

1.16 snmp-server trap-format private

?UA’5BSNMP Trap #\ C ú/• Ý +!‰ ÈAË ;> < G!5B Q ¸ snmp-server trap-format ÄA¹ Q ¸,X no 6 ã 6 á5 ,ÕA’5B Ä

snmp-server trap-format private

no snmp-server trap- format private

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð á ú/• Ý +!‰

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð S*üA¹ Q ¸ ÃG!5B ¥EÕ Trap #\ C ú/• Ý ã +!‰ È Ù ÿ,X +!‰ Ý A:,X c ë Ë Ã5% ÛAš á Ã A: s Ÿ4{ ÿ Ã A: s Ÿ2O _ Ã A: s ´ Ë Ã A: s ´ Ã A: ¥*ó ÊKÈ Ã A:(Š Õ Ã A: ÛNl Ã A: Y • È Ø þ +!‰,X K ' D B2O _ ` D B8× È Ã –?• RUIJIE-TRAP-FORMAT-MIB.mib [ÊAÈ â Ä

ò ° SNMP v1 Q ‡ Ÿ " Trap 8r!ðÂ<o £¢ ð°Ã “ [illegible]

Ï S*ü Û Ð Ð 5 ,Õ ™ ‰ ß ÈSNMP y [¢ ¾ þ y · Î • È S*ü ¾ þ y ·,X IP 0 $d È Z “ b1u)Ú `Aš ÿ È
Ã ¹ S*üA¹ Q ¸ Î n S*ü Ô þ IP 0 SNMP ,X$d Ä

ÏG!5B _ Ð ßM6,X/ _ Û n ¹ þ5% · 0/1 IP 0 SNMP $d Ö
5 X L M L H F R Q I L J V Q P S V H U Y H U W U D S V R X U F H I D V W H W K H U Q H W

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
snmp-server enable traps	*ü | ¥EÕLKL #\ C
snmp-server host	Û n NMS ,X

Ï G ÄAÈ â Ð -

1.18 snmp-server trap-timeout

?U n LKL #\ CG¡ ¥,XCY Ê ÊKÈ ÈAË ;> < G!5B Q ¸ snmp-server trap-timeout ÄA¹ Q ¸,X no 6 ã
6 áT¬Ax Ä
snmp-server trap-timeout seconds
no snmp-server trap-timeout

Ï – DAÈ â Ð

– D	£EÄ
seconds	CY Ê ÊKÈ È) ! /¦ È ª 8× È Ö1 – 1000 Ä

Ï5 ,ÕG!5B Ð 30 /¦

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð ßM6,X/ _ Û nCY Ê ÊKÈ 60 /¦ Ö
5 X L M L H F R Q I L J V Q P S V H U Y H U W U D S W L P H R X W

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
snmp-server queue-length	Û nLKL #\ CKó ëKS z
snmp-server host	Û n NMS ,X
snmp-server trap-source	Û n SNMP TRAP #\ C,X$d

Ï G ÄAÈ â Ð -

1.19 snmp-server udp-port

?U Û n y SNMP y [,X #A,0Ã · Ë ÈAË ;> < G!5B Q ¸ snmp-server udp-port ÄA¹ Q ¸,X no 6 ã
ª#\ Û n y SNMP y [,X #A,0Ã · Ë È S*üT¬Ax,X 161 #A,0Ã ·E¯> y Ä

snmp-server udp-port port-num
no snmp-server udp-port

Ï – DAÈ â Ð

– D	£EÄ
port-num	Û n y SNMP y [,X #A,0Ã · Ë

Ï5 ,ÕG!5B Ð 5 ,Õ ™ ‰ ß È S*ü161 #A,0Ã · y SNMP y [

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð ßM6,X/ _ Û n 15000 #A,0Ã · y SNMP y [Ö
5 X L M L H F R Q I L J V Q P S V H U Y H U X G S S R U W

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

1.20 snmp-server user

?UA’5BSNMP *ü ÈAË ;> < G!5B Q ¸ snmp-server user ÄA¹ Q ¸,X no 6 ã ôL8*ü Ä
snmp-server user username groupname {v1 | v2c | v3 [encrypted] [auth {md5 | sha} auth-password] [priv des56 priv-password]} [access {ipv6 ipv6-aclname | aclnum | aclname}]
no snmp-server user username groupname {v1 | v2c | v3 }

Ï – DAÈ â Ð

– D	£EÄ
username	*ü á Ä
groupname	A¹*ü Í h,X4˜ á
v1 | v2c | v3	Û â SNMP (Ä ¾ Ý v3 Õ âM6,X] < – D Ä
encrypted	Û n,X š-ÕEg 9,X • ã š [Eg 9 Ä ú í È ¹ â [Eg 9 Ä V pEÝ ½ Z ¹ š [Eg 9 ÈíLÔ?UEg 9E²4Á,X 16 E¯ D + +0ú></ ,X šJy Ä"¼ ã S*ü MD5 ,XAxA• šJyKS z 16 +8V È5à SHA AxA• #A, šJyKS z 20 +8V Ä ¹ ø þ +0ú></ Ô þ +8V Ä t š></ ,X šJy ™ Í é ¢ Ý Ä
auth	Û n ú S*üP`A• Ä
md5	Û n S*ü MD5 AxA• #A, Äsha Û n S*ü SHA AxA• #A, Ä
auth-password	A’5BAxA• #A, S*ü,X · ¸ +0ú Ä áCYE› 32 þ +0ú Å Ä2Ï4³ ÚE- o · ¸ E@ 6 ä,Ì h,XAxA• šJy Ä
priv	Û n ú S*ü ± š Ädes56 Û â S*ü 56 !,X DES t š #A, Ä
priv-password	t š*ü,X · ¸ +0ú Ä áCYE› 32 þ +0ú Å Ä2Ï4³ ÚE- þ · ¸E@ 6 ä,Ì h,X t š šJy Ä

aclnum	A“KÂ ë>< c ë Ë È G6(Û n,XA“KÂ ë>< È Û n6ÑA“KÂMIB ,X ipv4 NMS 8× È Ä
aclname	A“KÂ ë>< á/Ä È G6(Û n,XA“KÂ ë>< È Û n6ÑA“KÂMIB ,X ipv4 NMS 8× È Ä
Ipv6-aclname	ipv6 A“KÂ ë>< á/Ä ÈG6(Û n,XA“KÂ ë>< ÈÛ n6ÑA“KÂMIB ,X ipv6 NMS 8× È Ä

Ï5 ,ÕG!5B Ð 5 ,Õ"u ÝA’5B*ü Ä

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð ßM6,X/ _A’5B Ô þ snmpV3 *ü È S*ü md5 AxA• È ` S*ü DES t š Ö
5 X L M L H F R Q I L J V Q P S V H U Y H U X V H U X V H U P L E X V H U Y D X W K P G D X

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show snmp user	/ SNMP *ü G!5B µ C

Ï G ÄAÈ â Ð -

..21 snmp-server view

?UA’5BSNMP ?š Ò ÈAË ;> < G!5B Q ¸ snmp-server view ÄA¹ Q ¸,X no 6 ã ôL8?š Ò Ä

snmp-server view view-name oid-tree {include | exclude } oic 0.0.28 [(view)-6(-name oid f BT 2 18>Tj /TT2] 1 Tf 0.00

show snmp view	/ SNMP ?š ÒG!5B µ C

Ï G ÄAÈ â Ð -

2 RMON

2.1 rmon alarm

?U,¥ { ¤ þ MIB ¬G£ S*üA¹ Q ¸ Ä S*ü no 6 ã ª#\A„) Ä

Ï G ÄAÈ â Ð -

rmon collection history

?UA„) ¤ þ ¹ þ5% y ·,X Z Æ µ C S*üA¹ Q ¸ Ä S*ü no 6 ã ª#\A„) Ä

rmon collection history index [owner ownername] [buckets bucket-number] [interval seconds]

no rmon collection history index

Ï – DAÈ â Ð

– D	£EÄ
index	Z Æ { ><NM,X2ö é Ë È ª 8× È Ö1~65535
owner ownername	A'5B><NM,X ï Î5Ùownername È owner name 1~64 þ +0ú,X +0ú È Ú û ã m È á Õ0N
buckets bucket-number	A'5B Z Æ { ><NM Í h,X Z Æ>< •G£ È GA'5B Z Æ>< Ô î Ã •4‡,XA„) D bucket-number È bucket-number ª 8× È Ö1~65535
interval seconds	A'5B4³Au < ó seconds È seconds ª 8× È Ö1~3600 È) ! /¦

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð ü RGOS EC Ê È AŒ Í Æ4£G!5B,X ¹ þ5%4°,X Z Æ µ CE¯> Â È Ù À owner Ãbuckets ¹ ž interval 1 G!5B µ C È LÔ?U"¼ ã,X E- oG!5B µ C J á G Ê*ó È5à Ê Ê ß Ô õ Z Æ µ CA„),X Ê í È ! î*ó .

ÏG!5B _ Ð ¹ ß _ $ È S | Ã ¹,¥ { ¹ þ5%0Ã · 1 ,X Z Æ µ C Ä

5 X L M L H F R Q I L J L Q W H U I D F H I D V W (W K H U Q H W

5 X L M L H F R Q I L J L I U P R Q F R O O H F W V W D W V [illegible] L Q W H U Y D O

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
rmon collection stats index [owner owner-name]	#Ï t Ô þ4³Au><NM

Ï G ÄAÈ â Ð -

rmon collection stats

?U,¥ { ¤ þ ¹ þ5% y · S*üA¹ Q ¸ Ä S*ü no 6 ã ª#\,¥ { Ä

rmon collection stats index [owner ownername]

no rmon collection stats index

Ï – DAÈ â Ð

– D	£EÄ
index	-4³Au µ C><,X2ö é Ë È ª 8× È Ö1~65535

owner ownername	A’5B><NM ï Î5Ùownername Èownername 1~64 þ +0ú,X +0ú È Ú û ã m È á Õ0N

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð ¹ ß _ $ È S | Ã ¹,¥ { ¹ þ5%0Ã · 1 ,X4³Au µ C Ä

5 X L M L H F R Q I L J L Q W H U I D F H I D V W (W K H U Q H W

5 X L M L H F R Q I L J L I U P R Q F R O O H F W L R Q V W D W V R Z Q H U] K D Q

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
rmon collection history index [owner owner-name] [buckets bucket-number] [interval seconds]	#Ï t Ô þ Z Æ { ><NM

Ï G ÄAÈ â Ð -

2.4 rmon event

?U n Ô þ _ Ê S*üA¹ Q ¸ Ä S*ü no 6 ã ª#\A„) Ä

rmon event number [log] [trap community] [description description-string] [owner owner-name]

no rmon alarm number

Ï – DAÈ â Ð

– D	£EÄ
number	_ Ê><,X2ö é Ë È ª 8× È Ö1~65535
log	¹ « _ Ê È ' _ Ê>•?º ¥ Ê È2Ï4³ îA„) ¹ «
trap community	Trap _ Ê È' _ Ê>•?º ¥ Ê È2Ï4³ î ¹ community ¶ ' á ¥EÕ Trap
description description-string	A’5B _ Ê,X £EÄ µ C description-string Èdescription-string 1~64 þ +0ú,X +0ú
owner owner-name	A’5B><NM ï Î5Ùownername Èownername 1~64 þ +0ú,X +0ú È

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð ¹ ß _ $ È / 4³Au>< µ C Ö

```
5XLMLH    VKRZ UPRQ HYHQW
UPRQ HYHQW WDEOH
                LQGH[
                GHVFULSWLRQ    LI,Q18FDVW3NWV
                W\SH
                FRPPXQLW\    UPRQ
                ODVW7LPH6HQW      G    K    P    V
                RZQHU    ]KDQJVDQ
                VWDWXV
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
rmon event number [log] [trap community] [description description-string] [owner ownername]	#Ï t Ô þ _ Ê><NM

-	-

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð ¹ ß _ $ È / 4³Au>< µ C Ö

```
5XLMLH    VKRZ UPRQ KLVWRU\
UPRQ KLVWRU\ FRQWURO WDEOH
                    LQGH[
                    LQWHUIDFH    )DVW(WKHUQHW
                    EXFNHWV5HTXHVWHG
                    EXFNHWV*UDQWHG
                    LQWHUYDO
                    RZQHU    ]KDQJVDQ
                    VWDWV

UPRQ KLVWRU\ WDEOH
                    LQGH[
                    VDPSOH,QGH[
                    LQWHUYDO6WDUW     G    K    P    V
                    GURS(YHQWV
                    RFWHWV
                    SNWV
                    EURDGFDVW3NWV
                    PXOWL3NWV
                    FUF$OLJQ(UURUV
                    XQGHU6L]H3NWV
                    RYHU6L]H3NWV
                    IUDJPHQWV
                    MDEEHUV
                    FROOLVLRQV
                    XWLOL]DWLRQ
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
rmon collection history index [owner ownername] [buckets bucket-number] [interval seconds]	#Ï t Ô þ Z Æ { ><NM

Ï G ÄAÈ â Ð -

2.8 show rmon statistics

?U / 4³Au>< µ C

show rmon statictics

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð ¹ ß _ $ È / 4³Au>< µ C Ö

```
5XLMLH    VKRZ UPRQ VWDWLVWLFV
HWKHU VWDWLVWLF WDEOH
                    LQGH[
                    LQWHUIDFH    )DVW(WKHUQHW
                    RZQHU    ]KDQJVDQ
                    VWDWXV
                    GURS(YHQWV
                    RFWHWV
                    SNWV
                    EURDGFDVW3NWV
                    PXOWL3NWV
                    FUF$OLJQ(UURUV
                    XQGHU6L]H3NWV
                    RYHU6L]H3NWV
                    IUDJPHQWV
                    MDEEHUV
                    FROOLVLRQV
                    SDFNHWV   2FWHWV
                    SDFNHWV   7R    2FWHWV
                    SDFNHWV    7R    2FWHWV
                    SDFNHWV    7R    2FWHWV
                    SDFNHWV    7R     2FWHWV
                    SDFNHWV     7R     2FWHWV
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
rmon collection stats index [owner ownername]	#Ï t Ô þ4³Au><NM

Ï G ÄAÈ â Ð -

3 NTP

3.1 debug ntp

/ NTP A×A© µ C Ä

debug ntp

no debug ntp

Ï – DAÈ â Ð	– D	£EÄ
	-	-

Ï5 ,ÕG!5B Ð 5 ,Õ GKÁ

Ï Q ¸ õ ã Ð (M *ü õ ã Ä

Ï S*ü Û Ð Ð ?UE¯> NTP s6ÑA×A© È Ã ¹EîE›A¹ Q ¸Eg Î ™?U,XA×A© µ C ÈE¯> LpAž • ` ` fL8 Ä

ÏG!5B _ Ð ¹ ß _ $ È ' Ô NTP A×A© Ô G

5 X L M L H F R Q I L J G H E X J Q W S

Ï,Ì G Q ¸ Ð

5XLMLH FRQILJ QR QWS

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
ntp server	Û n Ô þ NTP á u <

Ï G ÄAÈ â Ð -

ntp access-group

G!5BNTP á u,XA“KÂ { L$ ÈA¹ Q ¸,X no 6 ã ª#\A’5B,XA“KÂ { L$ Ä

ntp access-group { peer | serve | serve-only | query-only } access-list-number | access-list-name

no ntp access-group {peer | serve | serve-only | query-only } access-list-number | access-list-name

Ï – DAÈ â Ð

– D	£EÄ
peer	¶ AŒ Í NTP á uE¯> ÊKÈAË" ` { ¹A¶ È3 AŒ A’ Û â E°/ß2Ï4³ à!9 ÊKÈ Ä ` <A“KÂ L$ Å Ä
serve	AŒ Í NTP á uE¯> ÊKÈAË" ` { ¹A¶ È á AŒ A’ Û â E°/ß2Ï4³ à!9 ÊKÈ Ä
serve-only	™ AŒ Í NTP á uE¯> ÊKÈAË" Ä
query-only	™ AŒ Í NTP á uE¯> { ¹A¶ Ä

access-list-number

ip access-list	ï Î IP A“KÂ { ë>< Ä

Ï G ÄAÈ â Ð -

ntp authenticate

G!5BNTP á u S*ü NTP < AxA• Ä

ntp authenticate

no ntp authenticate

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð 5 ,Õ ™ ‰ ßNTP < AxA• GKÁ,X

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð V p þ S*ü <] <Aš ÿ È í á Í à!9Eî µE¯> t š Ø)Ú Ä ' Ô <] <Aš ÿ È à Ê ` ä J ª
,X < šJyG!5B È ! Ã6Ñ ¥CK â á u <,X t šEî µ Ä
P`A•,X Û š EîE› ntp authentication-key Ãntp trusted-key Û n,X µ Ï šJy Ä

ÏG!5B _ Ð üG!5B Z,Ì h,X < AxA• šJy J Ú J Û n < µ Ï šJy â È ' ÔAxA• Ä

```
5 X L M L H F R Q I L J Q W S D X W K H Q W L F D W L R Q N H \ P G Z R R R R R S
5 X L M L H F R Q I L J Q W S W U X V W H G N H \
5 X L M L H F R Q I L J Q W S D X W K H Q W L F D W H
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
ntp authentication-key	A’5B < AxA• šJy
ntp trusted-key	G!5B < µ Ï šJy Ä

Ï G ÄAÈ â Ð -

3.5 ntp authentication-key

NTP á uG!5B Ô þ < NTP AxA• šJy Ä

ntp authentication-key key-id md5 key-string [enc-type]

no ntp authentication-key key-id

Ï – DAÈ â Ð

– D	£EÄ
key-id	šJy ID ×
key-string	šJy +0ú ×
enc-type	Ä ÃEÝ ÅA¹ šJy ú t š,X È0 ></ ´ t š È7 ></ 1T) t š ×

Ï5 ,ÕG!5B Ð "u Ý šJy

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð G!5B < AxA• šJy È JG›*ü md5 E¯> t š È!£ þ šJy Ý Ô þ Ô,X key-id ÛAš È v Ã ¹*ü ntp trusted-key ÚA¹ key-id Í h,X šJyA'5B < µ Ï šJy Ä
šJy ÞL$ 1024 þ È !£ þ á u < ™ ™ Õ Ô þ šJy Ä

ÏG!5B _ Ð ¹ ß _ $G!5B Ô þ ID 6 ,XAxA• šJy Ö
5 X L M L H F R Q I L J Q W S D X W K H Q W L F D W L R Q N H \ P G Z R R R R R S

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
ntp authenticate	' Ô <] <Aš ÿ
ntp trusted-key	G!5B < µ Ï šJy

Ï G ÄAÈ â Ð -

3.6 ntp disable

GKÁ Í h y · y NTP y [,X s6Ñ Ä
ntp disable

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð 5 ,Õ ™ ‰ ß y ·FÑ Ã ¹ y « NTP y [

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð ü5 ,Õ ™ ‰ ß È Ï ã y · Þ y «,X NTP y [FÑ Ã ¹ ¤ o4- v 0ÃE¯> ÊJsA× H ÈEîE›A'5BE- þ s6Ñ È Ã ¹ #; Í h y · Þ ,X NTP

ð "À ™Â!ù 'F Sp Ÿ t) û » " Ç ¼ G ÞÀ Ÿ Ÿ ¢ 3 Ç } c P Ç h a —

ÏG!5B _ Ð ¹ ßG!5B _ $ È GKÁ y · y NTP y [Ö
5 X L M L H F R Q I L J Q R Q W S G L V D E O H

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ

Ï G ÄAÈ â Ð -

3.7 ntp master

A’5B ÊJs 0 NTP ÊJs Ä ÊJs –5×$d ÃM4 Å È J WA’ Û ¤ o à!9 ÊKÈ ÄA¹ Q ¸,X no 6 ã ª#\ NTP ÊJsA’5B Ä

ntp master [stratum]

no ntp master

â Ð – D	£EÄ
stratum	Û n ÊJs Ø,X D È8× È 1 15 ×8¹ á Û nA¹ – D íT¬Ax 8 Ä

Ï5 ,Õ G!5B Ð 5 ,Õ"u ÝG!5B NTP ÊJs s6Ñ

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð üEî ™ ‰ ß È 2Ï4³FÑ î,È y êKÈ y â êF¼,X ÊJs$dE¯> à!9 Ä 8¹+ b5%4°E² y Lp1 s ´5à Ð7È 2Ï4³ ´"© â êF¼ ÊJs$d à!9 Ê È Ã ¹EîE›A¹ Q ¸A’5B ÊJs –5×$d ÃM4 È J ªA’ Û ¤ o à !9 ÊKÈ Ä

Ô ºE¯> Z!8A’5B È2Ï4³ “ á î â!¨ J ÊJs D D ÈP¬,X ÊJs$dE¯> à!9 Ä

ip-addr	A’5B NTP á u <,X IP È Õ IPv4 ` IPv6 ×
version	Ä ÃEÝ Å Û n NTP ,X(Ä1-3 Å ÈT¬AxG›*üNTPv3 (×
if-name	Ä ÃEÝ Å Û n ¥EÕNTP

ÏG!5B _ Ð ¹ ßG!5B Ô þAxA• šJy È J ^!8 šJyA’5B Í h á u < µ Ï šJy

```
5 X L M L H  F R Q I L J   Q W S  D X W K H Q W L F D W L R Q  N H \   P G   Z R R R R R S
5 X L M L H  F R Q I L J   Q W S  W U X V W H G  N H \
5 X L M L H  F R Q I L J   Q W S  V H U Y H U                N H \
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
ntp authenticate	' Ô] <Aš ÿ Ä
ntp authentication-key	A’5B NTP AxA• šJy Ä
ntp server	Û n Ô þ NTP á u < Ä

Ï G ÄAÈ â Ð -

3.10 ntp update-calendar

A’5B NTP v 0Ã n ó S*ü ¢ êF¼ ÊJs$d à!9 k 9,X ÊJs È „A’ Û,X.@ Ê ÊJs ÄA¹ Q ¸,X no 6 ã ª#\ n ó È „.@ Ê ÊJs s6Ñ Ä

ntp update-calendar

no ntp update-calendar

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð T¬Ax þG!5B n ó È „.@ Ê ÊJs s6Ñ

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð S*ü!8 s6Ñ Ã ¹A} NTP v 0Ã n ó S*ü ¢ êF¼ ÊJs$d à!9 k 9,X ÊJs È „A’ Û,X.@ Ê ÊJs ÄA’ Û,X.@ Ê ÊJs G S üA’ Û G ê üA’ Û á !,X ™ ‰ ß ¡’ 6Ñ ó4»4ÁCD | Ä
ü5 ,Õ ™ ‰ ß"u ÝG!5BNTP È „.@ Ê ÊJs ÄG!5B â È NTP v 0Ã î ü!£ õ â êF¼ ÊJs$d à!9 ä s Ê 3 à Ê È „A’ Û,X.@ Ê ÊJs Ä

ÏG!5B _ Ð ¹ ß/ 8× V)G!5B NTP n ó È „.@ Ê ÊJs

```
5 X L M L H  F R Q I L J   Q W S  X S G D W H  F D O H Q G D U
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

3.11 show ntp status

/ NTP µ C Ä

show ntp status

Ï – DAÈ â Ð	– D	£EÄ
	-	-

4 SNTP

4.1 sntp enable

A¹ Q ¸A'5B ' Ô SNTP s6Ñ È S*ü Q ¸ ,X no EÝNM ÚA¹A'5B 6 á 5 ,Õ —Disable Ä

sntp enable

no sntp enable

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð 5 ,Õ SNTP (Š Õ Disable

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð S*ü show sntp Q ¸ ¹,ß SNTP ,Ì G – D Ä

ÏG!5B _ Ð 5 X L M L H F R Q I L J V Q W S H Q D E O H

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show sntp	/ SNTP ,XG!5B(Š Õ
clock update-calendar	EC Ê ÊJs à!9.@ Ê ÊJs
clock set	A'5BEC Ê ÊJs

Ï G ÄAÈ â Ð -

sntp interval

A¹ Q ¸A'5B SNTP Client LÔ?U n Ê ` NTP/SNTP Server à!9 ÊJs,X ÊKÈKÈLh Ä

sntp interval seconds

no sntp interval

Ï – DAÈ â Ð

– D	£EÄ
seconds	n Ê à!9,XKÈLh È) ! /¦ 8× È 60 /¦--65535 /¦ Ä

Ï5 ,ÕG!5B Ð 5 ,Õ 1800s

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð S*ü show sntp Q ¸ ¹,ß SNTP ,Ì G – D Ä

a ã : • " ¨ · · O â V K ‡ " Ò " ´ ' K ‡ " Ò È " û ¨ · · O û sntp enable a — d

ÏG!5B _ Ð 5 X L M L H F R Q I L J V Q W S L Q W H U Y D O

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
sntp enable	' Ô SNTP
show sntp	¹,ß SNTP ,X,Ì G – D
clock update-calendar	EC Ê ÊJs à!9.@ Ê ÊJs

Ï G ÄAÈ â Ð -

sntp server

A¹ Q ¸A'5B SNTP ServerÈ+b SNTP #A, ` NTP ` < P • È ¹E- þ Server ` < Ã ¹G!5B ä internet Þ @*ü,X NTP Server Ä

sntp server ip-address

no sntp server

Ï – DAÈ â Ð

– D	£EÄ
ip-address	NTP/SNTP á u <,X IP

Ï5 ,ÕG!5B Ð 5 ,Õ"u ÝA'5B Ï) NTP/SNTP á u <

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð S*ü show sntp Q ¸ ¹,ß SNTP ,Ì G – D

ÏG!5B _ Ð 5 X L M L H F R Q I L J V Q W S V H U Y H U

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show sntp	/ SNTP ,XG!5B(Š Õ
sntp enable	' Ô SNTP

Ï G ÄAÈ â Ð -

4.4 show sntp

A¹ Q ¸ / SNTP ,X,Ì G – D Ä

show sntp

Ï – DAÈ â Ð

– D	£EÄ

5 SPAN

5.1 monitor session

ï Î Ô þ SPAN îA± J Û n,Â,X0Ã · Ä,¥ { · Å `$d0Ã · Ä>•,¥ { · Å. S*üA¹ Q ¸,X no EÝNM ôL8 îA± ê5Ù)(À ôL8$d0Ã · ê,Â,X0Ã · Ä

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

no monitor session all

Ï – DAÈ â Ð	– D	£EÄ

ÏG!5B _ Ð ßM6E- þ _ $AÈ â V) ï Î Ô þ SPAN îA± Ö îA± 1 Ä V p s Æ4£A’5BA’5BE›A¹ îA± ÈAËOj Ú ' ! îA± 1 ,XG!5B#ÙL8] È' âA’5B0Ã · gigabitEthernet 1/1 ,X y [á 0Ã · gigabitEthernet 1/8 Ä

```
5XLMLH FRQILJ QR PRQLWRU VHVVLRQ
5XLMLH FRQILJ PRQLWRU VHVVLRQ VRXUFH LQWHUIDFH JLJDELW(W
5XLMLH FRQILJ PRQLWRU VHVVLRQ GHVWLQDWLRQ LQWHUIDFH JLJ
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show monitor	/ ' ! SPAN G!5B,X(Š Õ Ä

Ï G ÄAÈ â Ð -

5.2 show monitor

/ ' ! SPAN G!5B,X(Š Õ Ä

show monitor [session session_number]

Ï – DAÈ â Ð

– D	£EÄ
session session_number	SPAN îA± Ë

Ï5 ,ÕG!5B Ð 5 ,Õ / Ý SPAN îA±

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð ßM6E- þ _ $AÈ â Z V)EîE› show monitor (M Q ¸ / SPAN îA± 1 ,X ' !(Š Õ

```
5XLMLH VKRZ PRQLWRU VHVVLRQ
VHVV QXP
VUF LQWI
*LJDELW(WKHUQHW IUDPH W\SH %RWK
GHVW LQWI
*LJDELW(WKHUQHW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
monitor session	ï Î Ô þ SPAN îA± J Û n,Â,X0Ã · Ä,¥ { · Å `$d0Ã · Ä>•,¥ { · Å Ä

Ï G ÄAÈ â Ð -

5.3 mac-loopback

y · mac 7¾)ƒ s6Ñ 9 r)„ Ô Í îK0 £

mac-loopback

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð 5 ,Õ / Ý SPAN îA±

Ï Q ¸ õ ã Ð y · õ ã

Ï S*ü Û Ð Ð ü r)„ Ô Í îK0 £ Ê, LÔ?U ' Ô y · MAC 7¾)ƒ s6ÑAËEÝ ½ Ô þ DOWN (Š Õ,X0Ã · . MAC 7¾)ƒ ·, è á?U üA¹0Ã · Þ#Ï t J WG!5B) Ä

ÏG!5B _ Ð 1 Ô!9 ÖG!5BE°/ß VLAN

```
6ZLWFK$ FRQILJXUH WHUPLQDO

(QWHU FRQILJXUDWLRQ FRPPDQGV RQH SHU OLQH (QG ZLWK &17/ =

6ZLWFK$ FRQILJ YODQ

6ZLWFK$ FRQILJ YODQ UHPRWH VSDQ

6ZLWFK$ FRQILJ YODQ H[LW
```

1 `!9 ÖG!5B RSPAN $dA' Û Ä

ï Î RSPAN Session 1 È Û nA¹A' Û $dA' Û È J èG!5B0Ã · Gi 4/1 $d0Ã · ÈK0 £ å D B# Ä

```
6ZLWFK$ FRQILJ PRQLWRU VHVVLRQ UHPRWH VRXUFH

6ZLWFK$ FRQILJ PRQLWRU VHVVLRQ VRXUFH LQWHUIDFH JLJDELW(V
```

1 Ý!9 ÖÛ n Gi 4/2 K0 £Eg Î0Ã · È J t 9 Remote VLAN 100ÈG!5B MAC 7¾)ƒ È Ã ¹,ß s Down ,X0Ã ·,È y UP Ä

```
6ZLWFK$ FRQILJ PRQLWRU VHVVLRQ GHVWLQDWLRQ UHPRWH YODQ
```

```
VZLWFK

6ZLWFK$ FRQILJ  LQWHUIDFH JLJDELW(WKHUQHW

6ZLWFK$ FRQILJ LI *LJDELW(WKHUQHW     VZLWFKSRUW DFFHVV YOD

6ZLWFK$ FRQILJ LI *LJDELW(WKHUQHW     PDF ORRSEDFN
```

1 ¯!9 Ö Ú,ÈE² PC1 ` PC2 ,X0Ã · t 9 Remote VLAN Ä

G!5B0Ã · Gi 4/3 ` Gi 4/4 2 b Remote VLAN 100 Ä

```
6ZLWFK$ FRQILJ  LQWHUIDFH UDQJH JLJDELW(WKHUQHW

6ZLWFK$ FRQILJ LI UDQJH  VZLWFKSRUW DFFHVV YODQ
```

Ï G ÄAÈ â Ð -

6 RSPAN

6.1 monitor session

ï Î Ô þ RSPAN îA± J Û n,Â,X0Ã · Ä,¥ { · Å Ã$d0Ã · Ä>•,¥ { · Å Ä S*üA¹ Q ¸,X no Q ¸ ôL8 î A± ê5Ù)(À ôL8$d0Ã · Ã,Â,X0Ã · Ä

G!5BK0 £A’ Û 2 û Ö

monitor session session_num {remote-destination | remote-source }

no monitor session session_num { remote-destination | remote-source }

G!5B,Â,XK0 £ Ö

monitor session session-num destination remote vlan vlan-id interface interface-name [switch]

no monitor session session-num destination remote vlan vlan-id interface interface-name [switch]

A’5BE°/ß$dK0 £ Ö

monitor session session-num source interface interface-name [rx | tx | both]

no monitor session session-num source interface interface-name [rx | tx | both]

ôL8 îA± Ö

no monitor session session-num

Ï – DAÈ â Ð

– D	£EÄ
session-num	îA± Ë
vlan-id	remote span vlan id
interface-name	0Ã · á +

Ï5 ,ÕG!5B Ð 5 ,Õ "u Ý Ï)K0 £G!5B

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð ?UE¨ ² (M õ ã ÈEg 9 end Q ¸ È êK 9 Ctrl+C 4˜ ÜK Ä

?UE¨ ² < G!5B õ ã ÈEg 9 exit Q ¸ Ä

ÏG!5B _ Ð _ 1 Ö$d x 6 G!5B

```
5XLMLH FRQILJ PRQLWRU VHVVLRQ UHPRWH VRXUFH
5XLMLH FRQILJ PRQLWRU VHVVLRQ VRXUFH LQWHUIDFH JLJDELW(W
5XLMLH FRQILJ PRQLWRU VHVVLRQ GHVWLQDWLRQ UHPRWH YODQ L
```

_ 2 Ö,Â,X x 6 G!5B

```
5XLMLH FRQILJ PRQLWRU VHVVLRQ UHPRWH GHVWLQDWLRQ
5XLMLH FRQILJ PRQLWRU VHVVLRQ GHVWLQDWLRQ UHPRWH YODQ L
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show monitor	/ K0 £ îA± µ C Ä

Ï G ÄAÈ â Ð -

6.2 remote-span

S*üA¹ Q ¸ ü VLAN Þ Ô E°/ß0Ã ·K0 £ s6Ñ Ä S*ü no Q ¸ GKÁE°/ß0Ã ·K0 £ s6Ñ Ä

[no] remote-span

no remote-span

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð 5 ,Õ GKÁ(Š Õ

Ï Q ¸ õ ã Ð VLAN G!5B õ ã

Ï S*ü Û Ð Ð ?UE¨ ² (M õ ã ÈEg 9 end Q ¸ È êK 9 Ctrl+C 4˜ ÜK Ä

?UE¨ ² < G!5B õ ã ÈEg 9 exit Q ¸

ÏG!5B _ Ð

```
5XLMLH FRQILJ YODQ
5XLMLH FRQILJ YODQ UHPRWH VSDQ
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
show vlan	/ VLAN µ C Ä

Ï G ÄAÈ â Ð -

7 IPFIX

7.1 cache

ü IPFIX # 6. ÜG!5B õ ã ß, S*ü cache Q ¸ 9 ' !# 6. Ü õ ãG!5B ÃEÝ,XG!5B – D Ä S*üA¹ Q ¸,X
no EÝNM 9 6 á4ç ,G!5B – D,XT¬Ax Ä
cache { timeout { active minutes | inactive seconds } }
no cache {

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð S*üA¹ Q ¸ 4 hA¹ ±A• < IPFIX s6Ñ Æ4£ S6Ñ È S*ü show ip cache flow S*ü S6Ñ Q%|4 ¹ÙX ÅA ±A• ÕÉ ðï Rp, Å•(Âtp%%r3 <cJ0

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
ip flow-aggregation cache { destination-prefix | source-prefix | source-prefix-protocol-source-port | destination-prefix-protocol-destination-port } [ingress | egress]	E¯ 9# 6. ÜG!5B õ ã Ä
cache	G!5B6. Ü õ ã,X4ç , – D Ä
export destination (aggregation cache)	ü# 6. ÜG!5B õ ã ß È AŒ ÚA¹ õ ã,X# 6. ÜA„) EîE›5%4° ¥EÕ Ô þ,Â,X Ä
mask (IPv4)	!4Ô6. Ü õ ã Û n$d ê,Â,X ,X !4Ô-Õ Ä
show ip flow cache aggregation	/ ¤ þ6. Ü õ ã,X# 6. Ü4³Au µ C

Ï G ÄAÈ â Ð

1. Õ Î b • åG!5B6. Ü õ ã È á ú • å – D Ê È></ Eg 9Eg Î G›*üA¹6. Ü õ ã Ä
2. Î õ ã â6. Ü õ ã á6Ñ à Ê*ó È ü,Ì h • å S6Ñ Z6. Ü õ ã â È Î õ ã7¾ | Ä

7.4 export

ü IPFIX # 6. Ü õ ã ß È S*ü export Q ¸G!5B,Ì h,X# 6. ÜA„)Eg Î s6Ñ È S*üA¹ Q ¸,X no EÝNM ôL8 ¤ þ,Â,X É,Â,X0Ã · Í ê5Ù Ú ¤ o – D 6 á T¬Ax Ä

export { destination [ip-address | hostname] udp-port } | version [9 | 10] | template [refresh-rate packets | timeout-rate minutes]

no export { destination [ip-address | hostname] udp-port } | version | template [refresh-rate | timeout-rate]

Ï – DAÈ â Ð

– D	£EÄ
destination ip-address | hostname udp-port	G!5B# 4³Au µ C ¥EÕ,X,Â,X `,Â,X0Ã · Ë Ä
version [9 | 10]	y [Eg Î(ã Ä Version 9 Ý Netflow V9 ,X Û š È version 10 Ý IETF ,X Û š È5 ,Õ ã version 10 Ä
template	S6Ñ õ SEg ÎG!5B GK + refresh-rate ` timeout-rate
refresh-rate packets	Ä ÃEÝ Å Û n õ SG¡ ô,XNe)[È ¹ y [þ D) ! È ÃG!5B,X8× È 1 600 þ y [ÈT¬Ax 20
timeout-rate minutes	Ä ÃEÝ Å Û n õ SG¡ ô,XNe)[È ¹ ÊKÈ ÚJs) ! È ÃG!5B,X8× È 1 3600 ÚJs ÈT¬Ax 10 ÚJs Ä

Ï5 ,ÕG!5B Ð

T¬Ax"u ÝG!5BEg Î,X,Â,X `0Ã · ×
T¬Ax,Xrefresh-rate 20 þ y [×
T¬Ax,Xtimeout-rate 10 ÚJs ×

Ï Q ¸ õ ã Ð

IPFIX # 6. ÜG!5B õ ã

Ï S*ü Û Ð Ð

S*üA¹ Q ¸ 4 hA¹ ±A• < IPFIX s6Ñ Æ4£ S6Ñ Ä S*üexport destination Ã ¹ !£ þ# 6. Ü õ ãG!5B Ô î ø þEg Î,Â,X Ä

ÏG!5B _ Ð _ 1 Ö ßM6,X _ $ / V) protocol-port # 6. Ü õ ãG!5B ø þEg Î,Â,X Ä

```
5XLMLH FRQILJ LS IORZ DJJUHJDWLRQ FDFKH VRXUFH SUHIL[ SURWR
5XLMLH FRQILJ IORZ FDFKH H[SRUW GHVWLQDWLRQ
5XLMLH FRQILJ IORZ FDFKH H[SRUW GHVWLQDWLRQ
5XLMLH FRQILJ IORZ FDFKH HQDEOHG
```

_ 2 Ö ßM6 _ $ / V) protocol-port # 6. Ü õ ãG!5B y [Eg Î ã ¹ ž õ SG¡ ôEó)[Ä

```
5XLMLH FRQILJ LS IORZ DJJUHJDWLRQ FDFKH VRXUFH SUHIL[ SURWR
5XLMLH FRQILJ IORZ FDFKH H[SRUW WHPSODWH UHIUHVK UDWH
5XLMLH FRQILJ IORZ FDFKH H[SRUW WHPSODWH WLPHRXW UDWH
5XLMLH FRQILJ IORZ FDFKH HQDEOHG
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
ip flow-aggregation cache	E¯ 9# 6. ÜG!5B õ ã Ä
cache	G!5B6. Ü õ ã,X4ç , – D Ä
export destination (aggregation cache)	ü# 6. ÜG!5B õ ã ß È AŒ ÚA¹ õ ã,X# 6. ÜA„) EîE›5%4° ¥EÕ Ô þ,Â,X Ä
mask (IPv4)	!4Ô6. Ü õ ã Û n$d ê,Â,X ,X !4Ô-Õ Ä
show ip flow cache aggregation	/ ¤ þ6. Ü õ ã,X# 6. Ü4³Au µ C Ä

Ï G ÄAÈ â Ð -

7.5 ip flow egress

ü y ·G!5B õ ã ß È S*ü ip flow egress Q ¸ S6Ñ ÍA¹0Ã ·,XEg Î# E¯> # µ C4³Au È S*üA¹ Q ¸,X no EÝNM/U!6 ÍA¹0Ã ·,XEg Î# E¯> # 4³Au Ä

ip flow egress

no ip flow egress

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð Í b Ø þ0Ã · ÈT¬Ax GKÁ,X Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð S*üA¹ Q ¸ S6Ñ x 6 Þ,X IPFIX ,X < # 4³Au s6Ñ Ä7Ç å , ü Ô þ0Ã ·G!5B Z ip flow egres s ê ip flow Ingress ÈIPFIX < s6Ñ ! S6Ñ Ä

ÏG!5B _ Ð ßM6,X _ $ / V)G!5B0Ã · 0/1 ,XEg Î IP # 4³Au s6Ñ Ä

```
5XLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
5XLMLH FRQILJ LI LS IORZ HJUHVV
5XLMLH FRQILJ LI H[LW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
ip flow-aggregation cache	E¯ 9# 6. ÜG!5B õ ã Ä
cache	G!5B6. Ü õ ã,X4ç , – D Ä

export destination (aggregation cache) ü# 6. ÜG!5B õ ã ß È AŒ ÚA¹ õ ã,X# 6. ÜA„)

7.7 ip flow ingress

ü y ·G!5B õ ã ß È S*ü ip flow ingress Q ¸ S6Ñ ÍA¹0Ã ·,XEg 9# E¯> # µ C4³Au È S*üA¹ Q ¸,X no EÝNM/U!6 ÍA¹0Ã ·Eg 9# E¯> # 4³Au Ä

ip flow ingress

no ip flow ingress

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð Í b Ø þ0Ã · ÈT¬Ax GKÁ,X Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð S*üA¹ Q ¸ S6Ñ x 6 Þ,X IPFIX ,X < # 4³Au s6Ñ Ä7Ç å , ü Ô þ0Ã ·G!5B Z ip flow egress ê ip flow ingress ÈIPFIX < s6Ñ ! S6Ñ Ä

ÏG!5B _ Ð ßM6,X _ $ / V)G!5B0Ã · 0/1 ,XEg Î IP # 4³Au s6Ñ Ä

```
5XLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
5XLMLH FRQILJ LI LS IORZ LQJUHVV
5XLMLH FRQILJ LI H[LW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ

Ï – DAÈ â Ð

– D	£EÄ
destination-prefix	G!5Bdestination-prefix # 6. Ü õ ã Ä
source-prefix	G!5Bsource-prefix # 6. Ü õ ã Ä
source-prefix-protocol-source-port	G!5B source-prefix-protocol-source-por t # 6. Ü õ ã
destination-prefix-protocol-destination-port	G ! 5 Bdestination-prefix-protocol-destination-port # 6. Ü õ ã
ingress | egress	# 6. Ü õ ã,X • å

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð S6Ñ ¤ þ# 6. Ü õ ã È ™NO üA¹# 6. ÜG!5B õ ã ß È S*ü enabled Q ¸ !,ó!7 *üA¹# 6. Ü õ ã Ä S*ü no enabled Q ¸?elA¹# 6. Ü õ ã È I , XTr T)– DÑ ±+- á ¬0 @

ÅG!5BA$ ð Ð ðÖ0-[illegible]

EÝNM 6 áG!5B,X – D T¬Ax Ä

ip flow-cache timeout [active minutes | inactive seconds]

no ip flow-cache timeout

Ï – DAÈ â Ð

– D	£EÄ
destination { ip-address | hostname udp-port }	Eg Î,X# A„) hA¹ ¥ T Lš < ü á + ê Ip ,X0Ã · Ë Ä
version 9	A'5B IPFIX Eg Î y [ã(Netflow V9.
version 10	A'5B IPFIX Eg Î y [ã(IETF È,Â ! J(Ë 0x0A È5 ,Õ ã version 10 Ä
template	S6Ñ GK + refresh-rate ` timeout-rate ÍEg Î,X D B õ SE¯> – DG!5B Ä
refresh-rate packets	A'5B D B õ S `EÝNM õ S ¥EÕ,XNe)[È ¹ y [þ D) ! ÈA'5B8× È 1 600 ÄT¬Ax 20 Ä
timeout-rate minutes	A'5B D B õ S `EÝNM õ SG¡ ô,XNe)[ÈA'5B8× È 1 3600 ÚJs ÄT¬Ax 10 ÚJs Ä
options	S6Ñ GK + export-stats Ãrefresh-rate ` timeout-rate **È** ÍEg ÎEÝ NM D BE¯> G!5B
export-stats	S6ÑEg ÎEÝNM D B y [È Y • Ù À Ö IPFIX Eg Î y [þ D × IPFIX Eg Î# A„) D Ä
refresh-rate packets	A'5BEÝNM D B ¥EÕ,XNe)[È ¹ y [þ D) ! ÈA'5B8× È 1 600 Ä T¬Ax 20 Ä
timeout-rate minutes	A'5BEÝNM D BG¡ ô,XNe)[ÈA'5B8× È 3600 ÚJs ÄT¬Ax 10 Ú Js Ä

Ï5 ,ÕG!5B Ð T¬Ax ™ ‰ ß"u ÝG!5B Ï)Eg Î,Â,X `0Ã · ×
D B õ SG¡ ôNe)[20 þ y [È10 ÚJs Ä
"u Ý S6ÑEÝNMEg Î
/ / Eg Î(=)Ú y · µ C Ä

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð ' IPFIX s6Ñ S6Ñ â È| Ã ¹ S*ü ip flow-export destination Q ¸ 9G!5B IPFIX # A„),XEg Î á u < È Ô8 á u < ÞE¤> - # A„) Ø)ÚEC Ê È W ÍA' ÛEg Î,X# A„) µ CE¯> Ø)Ú ÄA¹ Q ¸ ÕG!5B Ô î ø þ ,Â,X IP `,Â,X0Ã ·,X4˜ Ü È ?U Z Ú# A„ ) µ CEg Î ø þ á à,X á u < Þ È ¹E' k - ÃM4 ,X,Â,X È ´!8 Ô8 ™ ‰ ß ÈG!5B ø þ á à,X,Â,X IP È " | Ã ¹G!5B,Ì à,X,Â,X IP ÈE- Ê | ™NOG!5B á à,X,Â,X0Ã · È J è | î A: #\ C ¤/ 4G!5B ø þ,Â,X IP ,Ì à,X á u < Ä Eg Î,X IPFIX y [,X$d È ª `,Â,X Ô G!,X Ä

ÏG!5B _ Ð _ 1 Ö ßM6,X _ $ / V) IPFIX õ ãG!5B# A„)Eg Î,Â,X Ä
5 X L M L H F R Q I L J L S I O R Z H [S R U W G H V W L Q D W L R Q
_ 2 Ö ßM6,X _ $ / V) IPFIX õ ãG!5B î þ# A„)Eg Î,Â,X È,Â ! ¾ Õ ø þ Ä
5 X L M L H F R Q I L J L S I O R Z H [S R U W G H V W L Q D W L R Q
5 X L M L H F R Q I L J L S I O R Z H [S R U W G H V W L Q D W L R Q
_ 3 Ö ßM6,X _ $ / V)G!5B õ ã,X D B õ SG¡ ôEó)[Ä
5 X L M L H F R Q I L J L S I O R Z H [S R U W W H P S O D W H U H I U H V K U D W H
5 X L M L H F R Q I L J L S I O R Z H [S R U W W H P S O D W H W L P H R X W U D W H

```
5XLMLH FRQILJ LS IORZ DJJUHJDWLRQ FDFKH GHVWLQDWLRQ SUHIL[
5XLMLH FRQILJ IORZ FDFKH PDVN GHVWLQDWLRQ PLQLPXP
5XLMLH FRQILJ IORZ FDFKH H[LW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
ip flow ingress	S6Ñ ¤ þ y ·,XEg 9# # 4³Au s6Ñ Ä
ip flow egress	S6Ñ ¤ þ y ·,XEg Î# # 4³Au s6Ñ Ä
ip flow-cache timeout	G!5B õ ã ß# A„) ü4ç ,,X5Õ ê – D Ä
show ip flow cache	/ õ ã ß ' !4ç , ,X# 4³Au µ C Ä
show ip flow interface	/ IPFIX ü Ø þ y ·,X s6Ñ(Š Õ Ä

Ï G ÄAÈ â Ð -

7.12

7 R W D O

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
clear ip flow stats	#ÙL82Ï4³ A„),X# 4³Au µ C
show ip flow interface	/ IPFIX ü Ø þ y ·,X s6Ñ(Š Õ Ä

Ï G ÄAÈ â Ð -

7.13 show ip flow cache aggregation

ü*ü ;> õ ã ß ÈS*ü show ip flow cache aggregation mode / ,Ì h,X# 6. Ü õ ã,X# 4³Au µ C Ä

show ip flow cache aggregation { destination-prefix | source-prefix | source-prefix-protocol-source-port | destination-prefix-protocol-destination-port } [ingress | egress] [sort-by { packet | byte }]

Ï – DAÈ â Ð

– D	£EÄ
destination-prefix	/ ,Â,X }-Õ# 6. Ü õ ã,Ì GG!5B µ C ž# 4³Au µ C Ä
source-prefix	/ $d }-Õ# 6. Ü õ ã,Ì GG!5B µ C ž# 4³Au µ C Ä
destination-prefix-protocol-destination-port	$d }-ÕKS z Ã$d !4Ô Ã #A, Ë Ã ¯ $d0Ã · Ã y ·2ö é Ä B IPFIX ,X Ô • å ‡ n y · • å ÈEg 9 IPFIX s6Ñ Í h,X 9 · ÈEg Î IPFIX s6Ñ Í h,X Î · Å Ä
source-prefix-protocol-source-port	$d }-ÕKS z Ã$d !4Ô Ã #A, Ë Ã ¯ $d0Ã · Ã y ·2ö é Ä B IPFIX ,X Ô • å ‡ n y · • å ÈEg 9 IPFIX s6Ñ Í h,X 9 · ÈEg Î IPFIX s6Ñ Í h,X Î · Å Ä
sort-by	n f c?˜ í Ä
packet | byte	Ý'; y [D ê +8V DE¯> f c Ä

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M ;> õ ã

Ï S*ü Û Ð Ð / Ø þ# 6. Ü õ ã ß4ç , A„),X IP # µ C ¹ ž4ç ,,X,Ì GG!5B µ C Ä

ÏG!5B _ Ð

```
5XLMLH VKRZ LS IORZ FDFKH DJJUHJDWLRQ VRXUFH SUHIL[ LQJUHVV
        ,39 )ORZ 6ZLWFKLQJ &DFKH E\WHV
          DFWLYH LQDFWLYH DGGHG
          IORZ DOORF IDLOXUHV
        /DVW FOHDULQJ RI VWDWLVWLFV 'D\V

6UF,I 'VW,I 6UF,3$GGUHVV 3NWV % 3
*LJDELW(WKHUQHW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ

-	-

Ï G ÄAÈ â Ð -

7.14 show ip flow export

ü*ü ;> õ ã ß È S*ü show ip flow export / # Eg Î,X,Ì GG!5B µ C È Ù À õ ã ¹ ž J ª S6Ñ,X # 6. Ü õ ã Ä

show ip flow export

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Ï5 ,ÕG!5B Ð -

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Ï S*ü Û Ð Ð / Ø þ S6Ñ,X IPFIX õ ã ß# Eg Î,X,Ì GG!5B µ C Ä

ÏG!5B _ Ð

```
5XLMLH  VKRZ LS IORZ H[SRUW

,39  PDLQ &DFKH
      ([SRUWLQJ IORZV WR
      ([SRUWLQJ XVLQJ VRXUFH ,3 DGGUHVV
      9HUVLRQ  IORZ UHFRUGV
      ,39  7HPSODWH ,'
            7HPSODWH WLPHRXW  0LQXWH V
            7HPSODWH UHIUHVK UDWH
        IORZV H[SRUWHG LQ  XGS GDWDJUDPV
        IORZV IDLOHG WR H[SRUW
        PHVVDJHV IDLOHG WR H[SRUW
```

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7.15 show ip flow interface

ü ;> õ ã ß S*ü show ip flow interface / IPFIX s6Ñ ü0Ã ·,XG!5B µ C Ä

show ip flow interface

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