RG-S12000

RGOS 10.4(3b17)p4

V2.0

4008-111-000
http://www.ruijie.com.cn

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

- http://webchat.ruijie.com.cn

  8:30 6 “ ”

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

- 7 × 24 4008-111-000
- http://support.ruijie.com.cn
- service@ruijie.com.cn

WEB	WEB

前

RGOS®10.4 (3b17)p4

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1.

[ ] [ ]

3.

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命　　考-系统配　　参

ĭ ’Ą ȝ ˘ ЛЬЮ ˙

1. CLI
2.
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17. Warm Reload&Upgrade
18. SRM
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1 CLI

1.1 alias

ʒ ¨ ˘ Λ Лъ Ю **alias** ʒ Â ʒ no Λ Лъ
ʒ ¨ Ю ʒ ¨ Â

alias *mode command-alias original-command*

no alias *mode*

ö Ô

mode	¨ Ʒ ʒ ʒ Â
command-alias	ʒ ¨ Â
original-command	¨ Ʒ ʒ Â

ö Ô EXEC Ю ˆ ʒ ¨ Â

ö ʒ Ô

ö Ô EXEC Ю ʒ ¨ й h àp às àu àun ¨ ˆ й help àping àshow àundebug àundebug Â
ʒ ¨ a no alias exec ʒ Â
ʒ ¨ ˘ Λ Лъ Ʒ ʒ Â ˘ ¨ Ʒ ʒ ˆ ˘
ɨ Λ Лъ ɨ ˆ Â
¨ Ʒ ʒ ʒ ʒ ˘ Ю alias ? Λ Лъ
Λ Лъ ¨ ʒ ‘

```
Ruijie(config)#alias ?
aaa-gs                AAA server group mode
acl                    acl configure mode
bgp                    Configure bgp Protocol
config                globle configure mode
```

ʒ ¨ ╠ ˘ ¨ ˆ *~ ˘ з ЛъЮ ‘

```
*command-alias=original-command
```

˘ EXEC Ю ʒ ¨ ”s” ”show” Â ”s?” Λ Лъ ʌ ’s’
¨ ╠ ‘

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

¨ Ʒ ʒ a ˘ ʒ Â ˘ EXEC Ю ¨ ”sv”
Ʒ ʒ **show version** ‘

```
Ruijie#s?
*s=show  *sv=”show version” show  start-chat
start-terminal-service
```

¨ ÿ ʒ ˘ a Â Э ˘ ʒ

˘ a ¨ ‘

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

ʒ ¨ ≠ Л Лъ ^ ʒ ╟ ˘ Ю ʒ ¨ ”ia” ʒ ”ip address”˝ Ю˙

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

ip address ʒ ł ˘ з ¨ ʒ Â ʒ ¨ ˘ a Â show aliases ʒ Л Лъ ¨ Â

ъ Ô ЛъЮ ˘ Ю˙ ʒ ¨ ”def-route” ʒ ”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
```

ъ ʒ Ô

ʒ	
show aliases	¨

ъ Л Ô -

1.2 privilege

ʒ ʒ ˘ Л Лъ Ю **privilege** ʒ Â ʒ **no** Л Лъ ʒ й Â

privilege *mode* [**all**] {**level** *level* **| reset**} *command-string*

no privilege *mode* [**all**] [**level** *level*] *command-string*

ъ Ô

mode	ʒ CLI ʒ
all	ʒ ʒ ˘ Л й ˘
level *level*	ʒ ʒ ˘ 0-15
reset	ʒ й
command-string	ʒ

ȍ Ô -

ȍ ʒ Ô

ȍ Ô Ю ǰ **privilege** ʒ Λ CLI ʒ ˘ a˚ ˘ Λ ʒ
Λ Λ ˘ Ю Λ Лъ **privilege ?** Λ CLI ʒ Â

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

ȍ Ô ЛъЮ ˘ CLI 1 ʒ ѝ "test"˚ reload ʒ ˘ Λ Лъ æ Â

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

˘ 1 CLI ˘ Λ Лъ reload ʒ˙

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

reload ʒ 1 ˘ Λ Лъ all ˙

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

˘ 1 CLI ˘ Λ Лъ reload ʒ˙

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

ȍ ʒ Ô

ʒ	
enable secret	CLI ʒ

ȍ Λ Ô -

1.3 show aliases

ʒ ˚ ʒ Ю ʒ ˚ ˘ Λ Лъ EXEC Ю **show aliases** ʒ Â

show aliases [*mode*]

ò Ô

2

2.1 banner login

˘ ЮO ʒ **banner login** Â ʌ ˘

no banner login ʒ Â

banner login *c message c*

ȍ Ô

c	ǂ ˘ a
message	

ȍ $ ˬ > É ȍ $

boot network	╟ ¨
service config	ÿ ╘ ╕ ╟
show boot	

ð Л Ô -

2.4 boot ip

╟ TFTP IP˝ ʒ no Â

boot ip *local-ip* [**gateway** *gateway-ip* **mask** *mask-ip*]

no boot ip

ð Ô

local-ip	╟ TFTP IP
gateway-ip	╟ TFTP IP
mask-ip	╟ TFTP IP

ð Ô -

ð ʒ Ô

ð Ô ʒ Л Лъ ╟ TFTP IP Â ╟ ˘ IP й IP TFTP Â ˚ ˘ ╟ TFTP ˘ IP IP a ˚ ˘ TFTP Â

> **boot ip** "H ╙ W ǫ **boot network** ŋ **boot system** ⁜ Ȣ ⁜ TFTP - ¢
>
> 9 T ⁜ Ȣ ⁜ ⁜ Boot ROM ئ ⁜ - ¢

ð Ô ЛЬЮ ╟ TFTP IP˝

```
Ruijie(config)# boot ip 192.168.7.11
```

ð ʒ Ô

ʒ	
show boot	Â

ð Л Ô -

2.5 boot network

╟ ¨ ˘ ʒ no ╟ ¨ Â

boot network tftp:// *location* / *filename*

no boot network

ȍ Ô

location	TFTP ╞
filename	TFTP ╞ Э ¨

ȍ Ô -

ȍ ʒ Ô

ȍ Ô ʒ Л Лȣ ╟ ¨ Â ╟ ˘ Ю ╗ ˙

- **service config** ʒ˘ ╗ ѝ˙ **boot config** ╟ ¨ ȁ flash:/config.text ȁ **boot network** ╟ ¨ ȁ ˆ ˜ Â
- **service config** ʒ˘ ╗ ѝ˙ **boot network** ╟ ¨ ȁ **boot config** ╟ ¨ ȁ flash:/config.text ȁ ˆ ˜ Â
- ╗ ˘ ╗ ╗˘ a ̈Ą ╗ ὲ Â ╗ Л Лȣ ὲ ў Â

---

boot ip ȝ Ȣ ⁄ ¨ 9 IP ̈H Ł ǫ TFTP ḿ - ¢ ǫ TFTP ǫ̇ ¢

9 T ȝ Ȣ ⁄ ⁄ Boot ROM ئ ⁄ - ¢

ȍ Ô ЛЬЮ ╟ ¨ ˙

```
Ruijie(config)# boot network tftp://192.168.7.24/config.text
```

ȍ ʒ Ô

ȍ Ô

priority	ў ˘ ѝ 1 10ʼ ѐ 1 ѝ
prefix:	Â ˘ 10.4ʼ 2˜ Лъ Э Æ Â ε ê Ì

ð ३ Ô

३	
boot ip	╟ TFTP IP
show boot	

ð Λ Ô -

2.7 clock set

˘ Λ Л ३ **clock set** ч ˙

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

ð Ô

hh:mm:ss

2.10 enable

ˇ ব **enable** Â

enable

ঠ Ô

-	-

ঠ Ô -

ঠ ব Ô -

ঠ Ô -

ঠ Ô -

ঠ ব Ô

ব	
-	-

ঠ /। Ô -

2.11 enable password

a ˇ ব ˇ ব **enable password** Â ব no

ব Â

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

no enable password [**level** *level*]

ঠ Ô

Password	EXEC ব
Level	
0|7	ব ˘ 0 ˘ 7
encrypted-password	ব

ঠ Ô -

ঠ ব Ô

ঠ Ô

⚡	EXEC

ò Ô Ю ʒ й pw10

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

ò ʒ Ô

ʒ	
enable secret	ʒ

ò Л Ô -

2.12 enable secret

a ʒ ʒ **enable secret** Â ʒ no ʒ Â

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

no enable secret [**level** *level*]

ò Ô

Secret	EXEC ʒ
Level	
0|5	ʒ ╗ ˘ 0 ╗ ˘ 5 ╗
encrypted-password	ʒ

ò Ô -

ò ʒ Ô

ò Ô ʒ↑ й password security ʒ ч Âpassword й ╗ ʒ˘ й 15 ʒ Âsecurity ʒ й ╗ ʒ˘ Л Лъ й 0 15 ʒ Â ˘˚ ˚ ЛъЭ ч ʒ˘ password ʒ a Â 15 password ʒ˘ ˘ ╟ й security ʒ' 15 password ʒ security ʒ ˚ ˘ ' ʒ Лъ╗ ˘ password ʒ ╗ ˘ security ʒ ╗ Â

ò Ô Ю ʒ й pw10

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

ò ʒ Ô

ʒ	
enable password	a ʒ

ò Л Ô -

2.13 enable service

б ╚ SSH Server/Telnet Server/Web Server/Snmp Agent˜ ˘ Ю Л Л ʒ **enable service** ʒ˙

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

ȍ Ô

ssh-server	б SSH Serverˇ ʒ˚ IPv4 IPv6 ╚
telnet-server	б Telnet Serverˇ ʒ˚ IPv4 IPv6 ╚
web-server [http | https | all]	б Web Serverˇ ʒ˚ IPv4 IPv6 ╚
snmp-agent	б Snmp Agentˇ ʒ˚ IPv4 IPv6 ╚

ȍ Ô -

ȍ ʒ Ô

ȍ Ô ʒ б ╚Â **no enable service** ʒ ╚Â

enable service web-server ȟ Ȣ˜Н ȣ 3 ʒ Ấ˙ [http | https | all] ¢ ị ȟ Ȣ ˜Н ȣ ȁ Ấ˙ ỵ all Ấ˙ ◖ http ȧ https Š ị http Ấ˙ ◖ http Š ị https

ȍ ȝ Ô LINE

ȍ Ô ˘ ˘ ˘ LINE ȉ Λ Â

ȍ Ô Ю line vty 0 ȉ 5ʃ 30 ˙

```
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 ʒ Ô

ʒ	
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ȍ Ʌ Ô -

2.16 hostname

ў ˝ ˘ ʒ **hostname** Â

hostname *name*

ȍ Ô

name	ў ˝ ˘ ȁ Ɲ Â ȉ 63 Â

ȍ Ô ў ˝ ȉ Ruijie Â

ȍ ʒ Ô

ȍ Ô ў ˝ ў Ɲ CHAP ȉ ˝ Â

ȍ Ô Ю ў ˝ ȉ BeiJingAgenda

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

ȍ ʒ Ô

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ȍ Ʌ Ô -

2.17 ip http authentication

Http Server A˘ Web Â Web ˘

Ю Ʌ Ɲ **ip http authentication** ʒ

ip http authentication { **enable** | **local** }

ð Ô

enable	**enable password** **enable secret** ʒ ʒ ˘ ʒ 15 Â enable Â
local	username ʒ ¨ ʒ ˘ 15 Â

ð Ô enable Â

ð ʒ Ô

ð Ô ʒ Web Â **no ip http authentication** ʒ й Â

ð Ô Ю ʒ˘ Web local ˙

```
Ruijie(config)# ip http authentication local
```

ð ʒ Ô

ʒ	
enable service	б ⊨

ð Л Ô -

2.18 ip http port

HTTP ⊨ ˘ Ю˙ ЛЪ **ip http port** ʒ˙

ip http port *number*

ð Ô

number	HTTP Server ˘ й 80 Â

ð Ô й 80 Â

ð ʒ Ô

ð Ô ʒ HTTP ⊨ Â **no ip http port** ʒ й Â

ð Ô Ю ʒ˘ HTTP ⊨ й 8080˙

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

ð ʒ Ô

ʒ	
enable service	б ⊨

ð Л Ô -

ð ʒ Ô

ʒ	
telnet	ʌ Telnet ⊢ Â

ð ʌ Ô -

2.21 lock

Э ʒˇ EXEC ʒ **lock** Â
lock

ð Ô

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ð Ô -

ð ʒ Ô

ð Ô ʒ ˘ ˚ ˘ в Лъ Â ЛъЮ в
ˈ

■ ˈ **lock**

2.22 lockable

Э **lock** ʒ˘ Л Лъ line Ю **lockable** ʒ˘ Ю a **lock** ʒ Â **no** ʒ ^ Â **lockable** **no lockable**

ö Ô

-	-

ö Ô -

ö ʒ Ô line

ö Ô ʒ Э в ˘ в Л Лъ EXEC Ю **lock** ʒ Â

ö Ô Ю Л Э в ˘ в Л˙

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

ö ʒ Ô

ʒ	

ৡ ৠ Ô line

ৡ Ô AAA ৷ ৠ ৠ Â ৠ VTY console ৠ Â

ৡ Ô Ю VTY Э ৠ Â

2.25 login local

AAA Ю Э ˘ ʒ

ৡ Ô ৠ line ৠ Â

ৡ Ô Ю line ৠ й red

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

ৡ ৠ Ô

ȣ ʎ Ô -

2.28 privilege mode

ê CLI ৡ Ì Â

ȣ Ô

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ȣ Ô ê CLI ৡ Ì Â

ȣ ৡ Ô ê CLI ৡ Ì Â

ȣ Ô ê CLI ৡ Ì Â

ȣ Ô ê CLI ৡ Ì Â

ȣ ৡ Ô

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ȣ ʎ Ô -

2.29 prompt

ৡ ˘ Ю ৡ **prompt** Â ʌ ৡ ˘ **no prompt** ৡ Â

prompt *string*

ȣ Ô

string	ৡ ˘ ʎ Ɓ 32

ȣ Ô -

ȣ ৡ Ô

ȣ Ô ৡ ˘ ̈ ȣ ˘ ̈ ʎ ʎ Â ৡ EXEC Â

ȣ Ô Ю ৡ ȣ RGOS̆

ȍ ʒ Ô

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2.30 reload

˘ ʒ **reload** Â

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

ȍ Ô

text	˘ 1-255
in [*hh:*] *mm*	ɨ ˘ й 24
at *hh:mm*	
month	˘ 3 ˘ Mar
day	˘ ÿ 1 31
year	ˆ 1993-2035˜ ˘ a
cancel	ʌ

ȍ Ô -

ȍ ʒ Ô

ȍ Ô ʒ ʎ Лȣ ╟˘ Â

ȍ Ô Ю 10ʈ Лȣ ɨ ʿ

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

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ȍ ʎ Ô -

2.31 secret

line MD5 a ʎ ╗ ʒ˘ line ʒ **secret** Â ʒ no line ʒ Â

secret { [**0**]

0	ˆ ʌ ˜ ʒ ˘ ɨ MD5 a ʌ ╗
password	ʒ
***5** encrypted-secret*	MD5 a ʌ ╗ ʒ ˘ ɨ й ╗ ɨ ʒ

ȍ Ô -

ȍ ʒ Ô line

ȍ Ô ʒ line MD5 a ʌ ╗ ʒ˙

ɨ ɨ ɨ 5 ä 24 ⁱ Ƨ 1 ¡ 3 ¡ 8 ”$” ¢
ɨ 5¢ ʎ ɨ ọ ⁱ Ƨ ɨ 5¢
line ʒ password ȧ secret ⁱ Ƨ ˜ ⁱ Ƨ ȧ ∂ ʒ ¢ password ȧ secret ˜ ⁱ Ƨ ˝I ɩ ⁱ Ƨ ɩ secret ⁱ Ƨ secret ⁱ Ƨ ɩ ȧ password ⁱ Ƨ ɨ ⁱ Ƨ ¢

ȍ Ô Ю line MD5 a ʌ ╗ ʒ й vty0˙

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

ʒ ɨ˘ vty0 MD5 a ʌ ╗ ˘

ৡ Ô ৠ **boot config** **boot network** ৠ Â ╟ ˘ Ю ╗

■ **service config** ৠ˘ ╗ й' **boot config**

ð ʒ Ô

ʒ	
enable password	a˚ ʒ

ð ʌ Ô -

2.34 session-timeout

LINE Э ˘ **session-timeout** ʒ Â **no session-timeout** ʒ˘ ʌ LINE Ю ˘ a Â

session-timeout *minutes* [**output**]

no session-timeout

ð Ô

minutes	ˆ
output	≠ й ˘

ð Ô й 0 min

ð ʒ Ô LINE

ð Ô ˘ ÿ LINE Э ˘ ˘ ˘ LINE й ʌ Â

ð Ô Ю line vty 0 й 5ˆ ˙

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

ð ʒ Ô

ʒ	
-	-

ð ʌ Ô -

2.35 show boot

Â

show boot {**config** | **network**

ȍ ʒ Ô

ȍ Ô ʒ

TFTP - ạ ȧ ỹ ¢ ỉ - ȧ ỹ ▬ ¯N/A ° Š

ị **show boot system** ȝ ȣ - - ȧ ỹ ạ ¯N/A °

ȍ Ô 1ʹ ЛЬЮ ╟ ʹ

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

2ʹ ЛЬЮ ╟ ʹ

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

3ʹ ЛЬЮ ў ʹ

```
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
3205120 2008-08-26 05:25:09 flash:/rgos_bak.bin
9           N/A                     N/A tftp://192.168.7.24/
                                        rgos.bin
10
==================================================
```

4ʹ ЛЬЮ ╟ IP ʹ

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

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2.36 show clock

ʒ **show clock** Â

show clock

ȍ Ô

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ȍ Ô -

ȍ ʒ Ô

ò Ô Ю console '

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

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2.38 show mainfile

ў ¨

show mainfile

ò Ô

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ò Ô -

ò ʒ Ô

ò Ô ʒ ў ¨ Â

ò Ô

```
Ruijie# show mainfile
MainFile name: /rgos.bin
```

ò ʒ Ô

ʒ	
boot system	╟ ў ¨

2.39 show reload

╟ ˘ Ю ৠ **show reload** Â

show reload

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ৡ Ô -

ৡ ৠ Ô

ৡ Ô ৠ ⁄ ⎍ ╟ Â

ৡ Ô Ю ╟ ˙

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

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ৡ ⁄ Ô -

2.40 show running-config

˘ ৠ **show running-config** Â

show running-config

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ৡ ৠ Ô

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ৡ Ô -

ৡ ৠ Ô

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ৡ ৲ Ô -

2.44 speed

˘ Ю ৡ **speed** *speed* Â ˘

no speed ৡ Â

speed *speed*

ৡ Ô

speed	˘ Æ bps Â ˘ й 9600 ৡ 19200 ৡ 38400 ৡ 57600 ৡ 115200 ˘ 9600 Â

ৡ Ô 9600

ৡ ৡ Ô

ৡ Ô ৡ Â

ৡ Ô Ю й 57600 bps˙

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

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2.45 telnet

৲ Telnet ╞ ˘ EXEC˜ ˜ Ю **telnet** ৡ Â

telnet [oob] *host* [*port*] [**/source** {**ip** *A.B.C.D* **| ipv6** *X:X:X:X::X* **| interface** *interface-name}*]

ৡ Ô

oob	ˆ out of band˜ è Telnet ╞ ˘ Mgmt è Telnet ╞
host	Telnet ╞ IPV4 ৡ IPV6 ў ¨
port	Telnet ╞ TCP ˘ й 23
/source	Telnet IP
ip *A.B.C.D*	Telnet IPV4

ipv6 *X:X:X:X::X*	Telnet IPV6
interface *interface-name*	Telnet

ৗ Ô -

ৗ ৄ Ô

ৗ Ô ৄ /ı telnet ╚ Â

ৗ Ô 1˙ Ю ˘ telnet IPV4 й 192.168.1.1˘ ˘ й Gi 0/1˘ VRF й vpn1

```
Ruijie# telnet 192.168.1.1 /source interface gigabitEthernet 0/1 /vrf vpn1
```

2˙ Ю ˘ telnet IPV6 й 2AAA:BBBB::CCCC

```
Ruijie# telnet 2AAA:BBBB::CCCC
```

ৗ ৄ Ô

ৄ	
ip telnet source-interface	Э IP й Telnet
show sessions	Telnet
exit	

ৗ /ı Ô **-**

2.46 username

˝ ˘ ৄ **username** Â

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

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

no username *name*

ৗ Ô

name	˝
password	ৄ
0|7	ৄ ╗ ˘ 0 ╗ ˘ 7 ╗
encrypted-password	ৄ
privilege-level	

ৗ Ô -

ৗ ৄ Ô

ৗ Ô ৄ ˘ Â

ǿ ǐ ǵ ǐ ǵ 7¢ ǿ ǐ ǵ ǿ ǐ ǵ ǿ ǐ ǵ 7¢

ǒ Ô Ю ǐ ʒ ǐ й 15 ʻ

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

ǒ ʒ Ô

ʒ	
login local	

ǒ Ô -

2.47 username secret

MD5 a Λ ╗ ʒ ǐ ʒ **username secret** Â

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

no username *name* **secret**

ǒ Ô

name	ǐ
0	^ Λ ~ ʒ ǐ ł MD5 a Λ ╗
password	ʒ
5 *encrypted-secret*	MD5 a Λ ╗ ʒ ǐ ł й ╗ ł ʒ

ǒ Ô -

ǒ ʒ Ô

ǒ Ô ʒ й ǐ MD5 a Λ ╗ ʒ Â

ǿ ǐ ǵ ǐ 5 ǐ ǿ 24 ǐ 1¡3¡8 ”$” ¢

ǿ ǐ ǵ ǐ 5¢ ǿ ǐ ǵ ǿ ǐ ǵ ǿ ǐ 5¢

ǿ ”I ǿ password ǐ L secret ǐ password ǐ ”H L secret ǐ ¢

ǒ Ô Ю ǐ test MD5 a Λ ╗ ʒ ʻ

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

ʒ ł pwd15 MD5 a Λ ╗ show Ю ʻ

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

ǒ ʒ Ô

ʒ	
login local	line Ю й

ȣ ʌ Ô -

2.48 write

ˆ running-config˜ Æ Â

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

ȣ Ô

memory	NVRAM˝ ˚ **copy running-config startup-config** Â
network	TFTP ˩ Ɜ˘ ˚ **copy running-config tftp** Â
terminal	˘ ˚ **show running-config** Â

ȣ Ô -

ȣ ʒ Ô

ȣ Ô ʒ ʒ ʒ˘ ȅ ʌ˘ Ʌʊ Ю Â

✗	**boot config** ʒ ʊ	˗	**write [memory]** ʒ ʊ	╟ ş

■ **boot config** ʒ ╟ ¨ ˘ Flash

ľ /config.text — T Ȯ › ȵ

```
0:1:1:38 Ruijie: USB-5-USB_DISK_REMOVED: USB Device <USB Mass Storage Device> Removed!
Ruijie# write
Building configuration...
Write to boot config file: [/mnt/usb1/config.text]
[Failed]
The device [usb1] does not exist, write to the default config file [/config.text]? [no] yes
Write to the default config file: [/config.text]
[OK]
```

ò ʒ Ô

ʒ	
copy	

ò Λ Ô **-**

3 LINE

3.1 access-class

Line IO ACL ~ Â **access-class** { *access-list-number* | *access-list-name* } { **in | out** } ৄ Line IO Â **no access-class** { *access-list-number* | *access-list-name* } {**in | out**} ৄ ৻ LINE IO ACL Â

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

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

ঁ Ô

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

ȍ Ô -

ȍ ʒ Ô

ȍ Ô LINE

ȍ Ô LINE VTY 1 3 LINE ˙

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

ȍ ʒ Ô

ʒ	
-	-

ȍ ʌ Ô -

3.3 line vty

ʒ ʌЛЪ ╗ ʌЛЪ VTY Â ʒ no ʌЛЪ ʌЛЪ VTY Â

line vty *line-number*

no line vty *line-number*

ȍ Ô

line-number	VTY

ȍ Ô ЮЗ ʌ VTY ȉй 5˜ ȉй 0--4Â

ȍ ʒ Ô

ȍ Ô ╗ ʌ VTY ˘ ʌЛЪ Э ʒ Â

ȍ Ô 1˙ ʌ VTY ╗ 20˜ ʌ VTY ȉй 0—19Â

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

2˙ ʌ VTY 10˜ ʌ VTY ȉй 0—9Â

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

ȍ ʒ Ô

ʒ	
-	-

ȍ Ʌ Ô -

3.4 transport input

Line Ю Ʌ Лъ ˘ **transport input** ʒ Line Ю Ʌ 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 ὲ TTY й NONE˘ a Â Ʌ Лъ ɨ˘ Ʌ Лъ **default transport input** ʒ й Â

ȍ ʒ Ô Line

ȍ Ô ʒ Line Ю ÂVTY Ю Â ɨ˘ Ʌ Лъ VTY Э ╗ Â **show running** ʒ Line Ю Â

> ṅ ک ⁺ **default transport input** ⁼ ʊ ¢ **no transport input** ⁼ ʊ ″ e LINE ᵉ ¢ £ ị **transport input none** ¢

ȍ Ô line vty 0 4 Ю telnet ˈ

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

ȍ ʒ Ô ʒ

4 UPGRADE

4.1 upgrade system

ƚ ` ˘ Ю **upgrade system** ʒ Â

upgrade system [*filename*]

ò Ô

filename	` ˝ Â ƛ ˘

ò Ô

ò ʒ Ô

ò Ô ʒ ƛ ` Â

🕮	ά ″ ά - ō₁ ǫ **copy tftp** ⇗ Ƅ Ŏ ¢
⚡	**upgrade system** ά ǫ ά - ¡ **upgrade system** ⇗ Ƅ ¡ ά ⇗ Ƅ ō **upgrade auto** Ŏ ¢
⚡	**upgrade system** ά ǫ ˽ ¡ Ŭ ¡ ˜Ḥ ¢
🕮	ɨ ά ǫ ȵ ǫ ¢
🕮	ά ˜H Ɩ ˝ ¢

ò Ô ˋ **upgrade system** ʒ ƛ ` Â

```
Ruijie#upgrade system rgos.bin
These images in linecard will be updated:
    Slot    image    linecard
    ----    -----    ----------------
       1    MAIN    M8600-24GT/12SFP
       6    MAIN    M8600-24SFP/12GT
------------------------------------
(Slot 1): Installing MAIN
(Slot 1): Download image!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!![OK - 8,003,872 bytes]
Waiting for image installed....Complete
(Slot 1): MAIN installed.
(Slot 1): All images have been installed.
(Slot 6): Installing MAIN
(Slot 6): Download image!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
```

```
!!!
```

```
(Slot 2/1): Installing MAIN
(Slot 2/1): Download image!!!
```

5 ISSU

5.1 issu abortversion

Â

issu abortversion [{**M2|M1**} *image*]

{**M2|M1**}	ŭ
image	ŭ Э

-

¢	ı ¢ ı ı ı

issu loadversion {**M1|M2**} *active-image* {**M2|M1**} *standby-image [force]*

ȍ Ô

{**M1|M2**}	ȳ Æ
active-image	ȳ Ɔ
{**M2|M1**}	ÿ Æ
standby-image	ÿ Ɔ
force	` ˘ a

ȍ Ô -

ȍ ʒ Ô

ȍ Ô

- active-image ȧ standby-image - ج ȧ ȡ √ ¢
- ″ ȧ Ạ ȣ -
- force Ȳ ` ọ ˝I ȧ ʎ ʒ ¢
  ư ‡ ئ ‟ Ẩ ȧ ˝Ω ذ ˝H ¨ ˝H ị ¢

ȍ Ô 1̇ ` ˘ ÿ ╗ ˘ ÿ Æ

```
Ruijie# issu loadversion M1 flash:install-s86-new.bin_ M2 flash:install-s86-new.bin_
```

ȍ ʒ Ô

ʒ	
show issu state [detail]	issu
show redundancy states	

ȍ ʌ Ô -

5.5 issu runversion

ʒ ȳ ſ ÿ Ɔ˘ Ɔ Â

issu runversion {**M2|M1**} *image*

ȍ Ô

{**M2|M1**}	ÿ
image	ÿ Ɔ

ȍ Ô -

ȍ ʒ Ô

ò Ô

ÜÏH show issu state show redundancy states Ã Ï Ç
Ã Ü - ¢

ò Ô 1 ÿ ÿ ù ÿ
Â ÿ ù ÿ Â

```
Ruijie# issu runversion M2 flash:install-s86-new.bin_
```

ò Ô

show issu state [detail]	issu
show redundancy states	

ò Ô -

5.6 issu set rollback-timer

Â

issu set rollback-timer {*seconds*| *hh:mm:ss*}

no issu set rollback-timer

ò Ô

seconds	Ò
hh:mm:ss	Ò
no	No

ò Ô 2700 (45)

ò Ô

ò Ô -

ò Ô 1 ù 1 10

```
Ruijie# issu set rollback-timer 01:10:00
```

```
Ruijie# issu set rollback-timer 4200
```

ò Ô

show issu state [detail]

5.7 show issu rollback-timer

Â

Show issu rollback-timer

ö Ô

-	-

ö Ô й 45↑

ö ʒ Ô

ö Ô -

ö Ô 1' Ю ISSU '

```
Ruijie# show issu rollback-timer
```

```
          RP State = Active
        ISSU State = Init
Boot Variable = flash:/rgos.bin

              Slot = M2
          RP State = Standby
        ISSU State = Init
Boot Variable = flash:/rgos.bin
```

ȍ ʒ Ô

ʒ	
Issu abortversion	˘
Issu acceptverion	
Issu commitversion	ʌ ˘ ч
Issu loadverion	ÿ
Issu runverion	ў ÿ

ȍ ʌ Ô -

6

6.1 cd

Â

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

ȍ Ô

filesystem	Â ľ ˙ Ł
directory	

ȍ Ô flash ЮÂ

ȍ ʒ Ô

ȍ Ô **cd** ʒ ʅ ˥ Â è ʒ ˘ ˆ a Лъ
ľ / Ł ˜ ˘ Â ˘ **pwd** ʒ Â
URL æ˘ ε URL copy ʒ Â

ȍ Ô 1˙ ѝ usb0

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

2˙ ѝ sd

```
Ruijie# cd sd0:/
```

ȍ ʒ Ô

ʒ	
pwd	

ȍ ʒ Ô

ȍ Ô copy ʒ ʌ Ɱ Ɱ Ɫ Â

URL ʿ

flash:	flash Â Ɜ ʌ Ɱ Â URL a Ą˘ flash Â ╟ Ж ɥ

ȝ ȝ ȝ

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

ò	ʒ Ô	ʒ	

dir	Э

ò /ˆ Ô URL Æ Э URL ˆ URL Æ ˜ ˘ a ˆ a recursive ˜ Â

6.4 dir

Ю Â

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

ò Ô

filesystem	˘ ":"
directory	

ò Ô Ю

ò ʒ Ô

ò Ô Ю ˘ Ю Â

📖 ⁄ ¢

ò Ô 1˙ ÿ Э

```
Ruijie# dir slave:/
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 ३ Ô

३	
pwd	

ò Ô -

ò ʒ Ô

ò Ô Â

ò Ô 1ˆ Ю Â

```
Ruijie# pwd
flash:/
```

ò ʒ Ô

ʒ	
cd	

ò Л Ô -

6.7 rename

╟ ¨

rename *url1 url2*

ò Ô

url1	╟ URL
url2	URL

ò Ô -

ò ʒ Ô

ò Ô ʒ˘ Л Лъ ˘ Ю ¨ ˘ ʒ a˘

╟ Â ʒ ╟ a˘ ╟˘ a

└ Э Â ˙ usb0/1, flash, slave˜ ˜ , sd0, Лъ VSU Ю sw1-m1-disk0

Â

ò Ô 1ˆ log.txt ╟ Э , ¨ й config.txt˜

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

2ˆ ÿ log.txt ╟ usb0 ˙

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

3ˆ log.txt ¨ й log.txt.bak

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

4ˆ sd Э rgos.bin ╟ flash Э

```
Ruijie# rename sd0:/rgos.bin flash:/rgos_bak.bin
```

5ˆ U test.txt ╟ sd Э

```
Ruijie# rename usb0:/test.txt sd0:/test2.txt
```

ð ʒ Ô

ʒ	
delete	
copy	

ð Л Ô -

6.8 rmdir

Â

rmdir *directory*

ð Ô

directory	¨ Â й

ð Ô -

ð ʒ Ô

ð Ô a , й Â

ð Ô Ю tmp ˘ з Â

```
Ruijie# rmdir tmp
```

ð ʒ Ô

ʒ	
mkdir	

ð Л Ô -

6.9 show file systems

show file systems

ð Ô

-	-

ð Ô -

ð ʒ Ô -

ð Ô ʒ˘ Л Лъ Э ˘ Лъ Э Л

Â

7

7.1 archive

ˆ archive˜ Â Л Ъ ʒ no Ю
Â

archive

no archive

ȍ Ô

-	-

ȍ Ô -

ȍ ʒ Ô

ȍ Ô archive ʒ ɨ Â
˘ end ʒ CTRL+C Â
˘ exit ʒ Â

ȍ Ô 1˙

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

ȍ ʒ Ô

ʒ	
-	-

ȍ Л Ô -

7.2 hidekeys

Â Л Ъ ʒ no Â

hidekeys

no hidekeys

ȍ Ô

-	-

ȍ Ô Ю Â

ò ʒ Ô

ò Ô -

ò Ô 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)# hidekeys
```

ò ʒ Ô

ʒ	
archive	
log config	
logging enable	ʌ ╗

ò ʌ Ô -

7.3 log config

ˈ ˆ log config˜ Â ʌ Л ʒ no Ю Â

log config

no log config

ò Ô

-	-

ò Ô -

ò ʒ Ô

ò Ô log config ʒ ɨ ˈ Â ˇ end ʒ CTRL+C Â archive ˇ exit ʒ Â

ò Ô 1˙ ˈ log config Â

ò ʒ Â

ò ⁄ Ô -

7.4 logging enable

1 ╗ Â ⁄ Л ʒ no 1 ╗ Â

logging enable

no logging enable

ò Ô

-	-

ò Ô Ю 1 ╗ Â

ò ʒ Ô

ò Ô -

ò 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
```

ò ʒ Ô

ò Ô -

ò Ô 1˙ 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
```

ò ʒ Ô

ʒ	
archive	
log config	

ò ʌ Ô -

7.6 notify syslog

ʌ ╚ Â ʌЛъ ʒ no ʌ ╚ Â

notify syslog

no notify syslog

ò Ô

-	-

ò Ô ЮЎ ʌ ╚ Â

ò ʒ Ô

ò Ô -

ò Ô 1˙ ʌ ╚ 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
```

ò ʒ Ô

ʒ	
archive	
log config	
logging enable	ʌ ╗

ò Ó Ô -

7.7 show archive log config

Â

show archive log config {{**all** | *start-num* [*end-num*]} [**provisioning** | **contenttype** [**plaintext**]] | **statistics**}

ò Ô

user@line

15

8.1 cpu-l

ȍ Ô

ȍ Ô

ȍ ʒ Ô

ȍ Ô

ȍ Ô

show cpu

ò Ô

-	-

ò Ô -

ò ʒ Ô

ò Ô ʒ Λ Л CPU ˘ 5 à 1ʈ à 5ʈ CPU ˘ Л ⊨ʈ 5 à 1ʈ à 5ʈ CPU Â

ò Ô Ю **show cpu** Â

```
Ruijie# show cpu
=====================================
     CPU Using Rate Information
CPU utilization in five seconds: 25%
CPU utilization in one minute  : 20%
CPU utilization in five minutes: 10%
  NO   5Sec   1Min   5Min   Process
  0     0%     0%     0%    LISR INT
  1     7%     2%     1%    HISR INT
  2     0%     0%     0%    ktimer
  3     0%     0%     0%    atimer
  4     0%     0%     0%    printk_task
  5     0%     0%     0%    waitqueue_process
  6     0%     0%     0%    tasklet_task
  7     0%     0%     0%    kevents
  8     0%     0%     0%    snmpd
  9     0%     0%     0%    snmp_trapd
 10     0%     0%     0%    mtdblock
 11     0%     0%     0%    gc_task
 12     0%     0%     0%    Context
 13     0%     0%     0%    kswapd
 14     0%     0%     0%    bdflush
 15     0%     0%     0%    kupdate
 16     0%     3%     1%    ll_mt
 17     0%     0%     0%    ll main process
 18     0%     0%     0%    bridge_relay
 19     0%     0%     0%    d1x_task
 20     0%     0%     0%    secu_policy_task
 21     0%     0%     0%    dhcpa_task
 22     0%     0%     0%    dhcpsnp_task
 23     0%     0%     0%    igmp_snp
```

24	0%	0%	0%	mstp_event
25	0%	0%	0%	GVRP_EVENT
26	0%	0%	0%	rldp_task
27	0%	2%	1%	rerp_task
28	0%	0%	0%	reup_event_handler
29	0%	0%	0%	tpp_task
30	0%	0%	0%	ip6timer
31	0%	0%	0%	rtadvd
32	0%	0%	0%	tnet6
33	2%	0%	0%	tnet
34	0%	0%	0%	Tarptime
35	0%	0%	0%	gra_arp
36	0%	0%	0%	Ttcptimer
37	8%	1%	0%	ef_res
38	0%	0%	0%	ef_rcv_msg
39	0%	0%	0%	ef_inconsistent_daemon
40	0%	0%	0%	ip6_tunnel_rcv_pkt
41	0%	0%	0%	res6t
42	0%	0%	0%	tunrt6
43	0%	0%	0%	ef6_rcv_msg
44	0%	0%	0%	ef6_inconsistent_daemon
45	0%	0%	0%	imid
46	0%	0%	0%	nsmd
47	0%	0%	0%	ripd
48	0%	0%	0%	ripngd
49	0%	0%	0%	ospfd
50	0%	0%	0%	ospf6d
51	0%	0%	0%	bgpd
52	0%	0%	0%	pimd
53	0%	0%	0%	pim6d
54	0%	0%	0%	pdmd
55	0%	0%	0%	dvmrpd
56	0%	0%	0%	vty_connect
57	0%	0%	0%	aaa_task
58	0%	0%	0%	Tlogtrap
59	0%	0%	0%	dhcp6c
60	0%	0%	0%	sntp_recv_task
61	0%	0%	0%	ntp_task
62	0%	0%	0%	sla_deamon
63	0%	3%	1%	track_daemon
64	0%	0%	0%	pbr_guard
65	0%	0%	0%	vrrpd
66	0%	0%	0%	psnpd
67	0%	0%	0%	igsnpd

68	0%	0%	0%	coa_recv
69	0%	0%	0%	co_oper
70	0%	0%	0%	co_mac
71	0%	0%	0%	radius_task
72	0%	0%	0%	tac+_acct_task
73	0%	0%	0%	tac+_task
74	0%	0%	0%	dhcpd_task
75	0%	0%	0%	dhcps_task
76	0%	0%	0%	dhcpping_task
77	0%	0%	0%	dhcpc_task
78	0%	0%	0%	uart_debug_file_task
79	0%	0%	0%	ssp_init_task
80	0%	0%	0%	rl_listen
81	0%	0%	0%	ikl_msg_operate_thread
82	0%	0%	0%	bcmDPC
83	0%	0%	0%	bcmL2X.0
84	3%	3%	3%	bcmL2X.0
85	0%	0%	0%	bcmCNTR.0
86	0%	0%	0%	bcmTX
87	0%	0%	0%	bcmXGS3AsyncTX
88	0%	2%	1%	bcmLINK.0
89	0%	0%	0%	bcmRX
90	0%	0%	0%	mngpkt_rcv_thread
91	0%	0%	0%	mngpkt_recycle_thread
92	0%	0%	0%	stack_task
93	0%	0%	0%	stack_disc_task
94	0%	0%	0%	redun_sync_task
95	0%	0%	0%	conf_dispatch_task
96	0%	0%	0%	devprob_task
97	0%	0%	0%	rdp_snd_thread
98	0%	0%	0%	rdp_rcv_thread
99	0%	0%	0%	rdp_slot_change_thread
100	4%	2%	1%	datapkt_rcv_thread
101	0%	0%	0%	keepalive_link_notify
102	0%	0%	0%	rerp_msg_recv_thread
103	0%	0%	0%	ip_scan_guard_task
104	0%	0%	0%	ssp_ipmc_hit_task
105	0%	0%	0%	ssp_ipmc_trap_task
106	0%	0%	0%	hw_err_snd_task
107	0%	0%	0%	rerp_packet_send_task
108	0%	0%	0%	idle_vlan_proc_thread
109	0%	0%	0%	cmic_pause_detect
110	1%	1%	1%	stat_get_and_send
111	0%	1%	0%	rl_con

| | | |

9

9.1 memory-lack exit-policy

ʒ lower ɨ˘ Ɔ ˘ Ɔ BGP ǎOSPF ǎRIP ǎ

ȣ Ô

-	-

ȣ Ô -

ȣ ʒ Ô

ȣ Ô ʒ Λ Лъ ˘ ˘ Лъ
ȧ Â

ȣ Ô Ю **show memory** Â

```
Ruijie#show memory
System Memory Statistic:
  Free pages: 1079
    watermarks : min 379, lower 758, low 1137, high 1516
  System Total Memory : 128MB, Current Free Memory : 5283KB
  Used Rate : 96%
```

Э Ю ˆ ˙

■ Λ ˘ ȕ 4k Â

˘ Ю ȕ Â

9.3 show memory protocols

ʒ . Â

show memory protocols

ö Ô

-	-

ö Ô -

ö ʒ Ô

ö Ô ʒ . Â

🕮	ʖ̣	ȸ	ȸ	BGP,OSPF,RIP,LDP,PIM,ISIS	¢

ö Ô 1' Ю й **show memory protocols**

```
Ruijie(config)# show memory protocols
==================================================
protocol        |memory(byte)
BGP               102000000
OSPF              24000000
RIP               10000000
PIM               50000000
LDP               20000000
Total             206000000
```

ö ʒ Ô

ʒ	
show memory	

ö Ⱥ Ô -

10 PoE

10.1 poe disconnect-mode

Â

poe disconnect-mode { **ac | dc** }

no poe disconnect-mode

ò Ô

ac	ù AC
dc	ù DC

ò Ô Ю ù AC Â

ò ʒ Ô

ò Ô Ю ʒ Л Лъ Â

ò Ô PoE ù dc

```
Ruijie# configure
Ruijie(config)# poe disconnect-mode dc
Ruijie(config)# end
```

ò ʒ Ô

ʒ	
-	-

ò Л Ô -

10.2 poe enable

/ Â

poe enable

no poe enable

ò Ô

-	-

ò Ô -

ò ʒ Ô

ȍ Ô ʒ ˘ /

ȍ Ô

```
Ruijie(config-if)# poe enable
Ruijie(config-if)# no poe enable
```

ȍ ʒ Ô

ʒ	
-	-

ȍ ʎ Ô -

10.3 poe mode

Â

poe mode auto

ȍ Ô

auto	ȉ ╟ ˘ ȉ PoE

ȍ Ô ╟

ȍ ʒ Ô

ȍ Ô Ю ʒ ʎ Ɱ Â

ȍ Ô PoE ȉ

```
Ruijie# configure
Ruijie(config)# poe mode energy-saving
Ruijie(config)# end
```

ȍ ʒ Ô

ʒ	
-	-

ȍ ʎ Ô -

10.4 poe-power lower

Â

poe-power lower *lower*

no poe-power lower

ȍ Ô

lower	ȉ ˘ ˥ 45-47˝ æ ȉ

ȍ Ô -

ȍ ʒ Ô

ȍ Ô Ю ʒ Λ Лъ

ȍ Ô PoE й 46

Ruijie# con ᶠ # M ijie# con ᶠ ъ }>

10.6 show poe interface

PoE Â

show poe interface *interface-type interface-number*

show poe interfaces

ö Ô

interface-type interface-number	¨

ö Ô -

ö ʒ Ô

ö Ô ʒ ΛЛ PoE

ö Ô

```
Ruijie# show poe interface gigabitethernet 0/2
Interface : Gi0/2
Port power enabled : ENABLE
Port connect status : OFF
Port PD Class : no PD devices
Port max power : 15.4 W
Port current power : 0 W
Port peak power : 0 W
Port current : 0 A
Port voltage : 48.0 V
Port trouble cause : normal
```

```
Ruijie# show poe interfaces
Interface  Power    Link    Max    Curr   Peak   Curr   Trouble  Pd     Port
           Control  Status  Power  Power  Power  Icut   Cause    Class  Voltage
---------- -------- ------- ------ ------ ------ ------ -------- ------ --------
Gi0/1      Disable  OFF     0.0W   0.0W   0.0W   0mA    normal   0      0.0V
Gi0/2      Disable  OFF     0.0W   0.0W   0.0W   0mA    normal   0      0.0V
Gi0/3      Disable  OFF     0.0W   0.0W   0.0W   0mA    normal   0      0.0V
Gi0/4      Disable  OFF     0.0W   0.0W   0.0W   0mA    normal   0      0.0V
Gi0/5      Disable  OFF     0.0W   0.0W   0.0W   0mA    normal   0      0.0V
Gi0/6      Disable  OFF     0.0W   0.0W   0.0W   0mA    normal   0      0.0V
Gi0/7      Disable  OFF     0.0W   0.0W   0.0W   0mA    normal   0      0.0V
Gi0/8      Disable  OFF     0.0W   0.0W   0.0W   0mA    normal   0      0.0V
Gi0/9      Disable  OFF     0.0W   0.0W   0.0W   0mA    normal   0      0.0V
Gi0/10     Disable  OFF     0.0W   0.0W   0.0W   0mA    normal   0      0.0V
Gi0/11     Disable  OFF     0.0W   0.0W   0.0W   0mA    normal   0      0.0V
Gi0/12     Disable  OFF     0.0W   0.0W   0.0W   0mA    normal   0      0.0V
```

11

11.1 clear logging

ă ˘ Ю ʒ Â

clear logging

ò Ô

-	-

ò Ô -

ò ʒ Ô

ò Ô ʒ ă Â a Â

ò Ô Ю ă Â

```
Ruijie# clear logging
```

ò ʒ Ô

ʒ	
logging on	
show logging	ă
logging buffered	ă

ò /l Ô -

11.2 logging buffered

level	ш ˘ ÿ 0 7 Â Л Лъ ¨ ˘ ≠ Л Лъ Â

ъ Ô ă б ε ˙
й 1M Bytes˙
й 256K Bytes˙
й 128K Bytes˙
ε й 4K Bytes˙
ш й 7 Â

ъ ʒ Ô

ъ Ô ă ˘ ˘ Â
ă ˘ ʒ **show logging** Â
ă ˘ ʒ **clear logging**˘ ă
Â ˘ FLASH Syslog Server Â
ǂ й ЛЬЮ 8 ˆ 1˜ ˙

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

˘ ˘ 0 Â
Лъ ł˘ æ Â

ı Ŭ ˝Н Ŭ ı Ŭ ˝Н Ʒ L ġ ġ
¢ Ŭ ı Ʒ ۔ ۔ ۔ Ŭ ¢ ,
Ŭ ¢

ъ Ô Ю й 6 Лъ æ 6 й 10000 ă ˙

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

ъ ʒ Ô

ʒ	
logging on	
show logging	ă
clear logging	ă

ъ Л Ô -

11.3 logging console

Л Э ˘ Ю ʒ Â ʒ no
Л Э Â

logging console [*level*]

no logging console

ȍ Ô

level	ш ˘ ÿ 0 7 Â Л Лъ ¨ ˘ ≠ Л Лъ Â ш ˘ 1 Â

ȍ Ô Debugging (7)

ȍ ʒ Ô

18 (local2)	Local use
19 (local3)	Local use
20 (local4)	Local use
21 (local5)	Local use
22 (local6)	Local use
23 (local7)	Local use

й (local7)23 Â

ò Ô Ю Syslog й kernel

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

ò ʒ Ô

ʒ	
logging console	Л Э

ò Л Ô -

11.6 logging file flash

FLASH ˘ Ю ʒ Â Л FLASH ˘ ʒ no Â

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

no logging file

ò Ô

filename	¨ Â a ˘ й txt Â
max-file-size	Â ÿ 128K 6M bytes˘ й 128K Â
level	Â Л Лъ ¨ ˘ ≠ Л Лъ Â FLASH й 6 Â ˘ 1 Â

ò Ô a FLASH Â

ò ʒ Ô

ò Ô Syslog Server txt

ð ʒ Ô

ʒ	
logging on	
show logging	ă ˘ Лъ
more flash	FLASH

ð Л Ô -

11.7 logging monitor

VTY ˆ telnet ä SSH ˜ Э ˘ Ю
ʒ Â ʒ no VTY Э Â

logging monitor [*level*]

no logging monitor

ð Ô

level	ш Â Л Лъ ¨ ˘ ≠ Л Лъ Â ш ˘ 1 Â

ð Ô Debugging (7)

ð ʒ Ô

ð Ô VTY Э ˘ ʒ **terminal monitor** VTY
Â **logging monitor** Â
Logging monitor VTY Â

ð Ô Ю VTY Э й 6˝

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

ð ʒ Ô

ʒ	
logging on	
show logging	ă ˘ Лъ

ð Л Ô -

11.8 logging on

a˚ Э ˘ ʒ Â ˘ ʒ no
Â

logging on

no logging on

ò Ô

-	-

ò Ô a˚ Э Â

ò ʒ Ô

ò Ô a Л Лъ Console ä VTY Э˘ ≠ Л Лъ a˚ Э' ă ä FLASH ä Syslog Server Â ʒ й ˘ ˘ a ˘ ш й 1 Log Â

ò Ô Ю Э '

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

ò ʒ Ô

ʒ	
logging buffered	ă
logging server	Syslog Server
logging file flash:	FLASH Э
logging console	Л Э
logging monitor	VTY (telnet) Э
logging trap	Syslog Server

ò Л Ô -

11.9 logging rate-limit

Ц ˘ ˘ Ю ʒ Â

Ц ˘ ʒ no Â

logging rate-limit {*number* | **all** *number* | **console** {*number* | **all** *number*}} [**except** [*severity*]]

no logging rate-limit

ò Ô

number	˘ й 1—10000
all	˘ 0—7
console	Л Э
except	ш ˘ a ' й error(3)˘ error a
severity	ш ˘ ˘ ш ˘ й 0—7

ò Ô Ю˘ a Â

ò ʒ Ô

ȍ Ô ʒ Â ʒ˘ ʌ Лƀ Â

ȍ Ô ˆ debug˜ й 10 ˘ warning ш a

```
Ruijie(config)#logging rate-limit all 10 except warnings
```

ȍ ʒ Ô

ʒ no Â

logging rd rate-limit *number* [**except** [*severity*]]

no logging rd rate-limit

ò Ô

number	˘ й 1—10000
except	ш ˘ а ' й error(3)˘ error а
severity	ш ˘ ˘ ш ˘ й 0—7

ò Ô Ю˘ ╖ 200 Â

ò ʒ Ô

ò Ô ʒ Â ʒ˘ Л Лъ ÿ ў Â

ò Ô ÿ ў ˆ debug˘ й 10 ˘ warning ш а '

```
Ruijie(config)#logging rd rate-limit 10 except warnings
```

ò ʒ Ô

ʒ	
show logging count	
show logging	б ă

ò Л Ô -

11.12 logging server

syslog serveř Ю ʒ Â syslog server

syslog serveř ʒ no Â

logging server {*ip-address* [**vrf** *vrf-name*

ȣ Ô ʒ Syslog server Â Λ Лъ 5 Syslog Server Â
ˇ Syslog Server Â

ȣ Ô 1ˆ Ю ѝ 202.101.11.1

11.14 logging source ip| ipv6

IP ˘ Ю ʒ Â ʒ no ʌ IP
Â

logging source {**ip** *ip-address* | **ipv6** *ipv6-address*}

no logging source [**ip** | **ipv6**]

ȍ Ô

ip-address	IPV4 ў IPV4
ipv6-address	IPV6 ў IPV6

ȍ Ô -

ȍ ʒ Ô

ȍ Ô Ю Syslog Server IP IP Â ѝ
˘ ʌ Лъ ʒ IP ѝ IP ˘
ÿ ʌ ˘ ˜ Э IP ˘ IP Ÿ ѝ
IP Â

ȍ Ô Ю 192.168.1.1 ѝ Syslog ˙

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

ȍ ʒ Ô

ʒ	
logging server	Syslog server

ȍ ʌ Ô -

11.15 logging synchronous

б ˚ ˥ ˘ ˘ Ю
ʒ Â б ˚ ˥ ˘ ʒ no Â

logging synchronous

no logging synchronous

ȍ Ô

-	-

ȍ Ô Ю б ˚ ˥ ȳ Ȯ

ò Ô

```
Ruijie(config)#line console 0
Ruijie(config-line)#logging synchronous
```

ʒ ˘ UP-DOWN ˘ ʒ ˙

```
Ruijie# configure terminal
Oct  9 23:40:55 %LINK-5-CHANGED: Interface GigabitEthernet 0/1, changed state to down
Oct  9 23:40:55 %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet 0/1, changed state to DOWN
Ruijie# configure terminal          //          ʒ          ˘     a
```

ò ʒ Ô

ʒ	
show running-config	

ò Λ Ô -

11.16 logging trap

syslog Server ˘ Ю ʒ Â ʒ no

syslog Server Â

logging trap [*level*]

no logging trap

ò Ô

level	ш Â Λ Лъ ¨ ˘ ≠ Λ Лъ Â ш ˘ Â

TT0

ò Ô م Ø

11.17 more flash

FLASH ˘ IO ʒ'

more flash:*filename*

ȍ Ô

filename	¨

ȍ Ô -

ȍ ʒ Ô

ȍ 669.2 71.52 15.6 re f Q 1

```
Ruijie(config)# service sequence-numbers
```

ö ʒ Ô

ʒ	
logging on	
service timestamps	

ö ʌ Ô -

11.19 service sysname

╗ Э ¨ ˘ Ю ʒ Â ʒ no ʌ ¨ Â

service sysname

no service sysname

ö Ô

-	-

ö Ô a ¨ Â

ö ʒ Ô

ö Ô ʒ˘ ʌ Л˘ ˘ α ╗ ¨ Â

ö Ô

default service timestamps [*message-type*]

ð Ô

message-type	ч ˘ ˆ log debug Â log ш 0˙ 6 ˘ debug ш й 7 Â
uptime	╟ ˘ ˙ * * ж ˆ * ˘ ˙ 07:00:10:41
datetime	˘ ˙ ˙ ˆ ˙ ˘ ˙ Jul 27 16:53:07
msec	˘ ˙ ˆ : . ˙ Jul 27 16:53:07.299
year	˘ ˙ ˙ ˆ ˙ ˙ 2007 Jul 27 16:53:07

ð Ô ˘ й Â RTC˘ ╟ й ╟ Â

ð ʒ Ô

ð Ô Uptime ÿ Э ╟ ˘ æ й Â Datetime й ˘ · · ˙ ˆ ˙ Â

ð Ô Ю Log Debug ˘ й Datetime˙ ˘ з ˙

```
Ruijie(config)# service timestamps debug datetime msec
Ruijie(config)# service timestamps log datetime msec
Ruijie(config)# end
Oct 8 23:04:58.301 %SYS-5-CONFIG_I: Configured from console by console
```

ð ʒ Ô

ʒ	
logging on	
service sequence-numbers	

ð Л Ô -

11.21 show logging

ä ˘ Лъ ă ˘ ʒ Â

show logging

ð Ô

-	-

ð Ô -

ð ʒ Ô

ð Ô -

ò Ô Ю **show logging** '

```
Ruijie# show logging
Syslog logging: enabled
  Console logging: level debugging, 15495 messages logged
  Monitor logging: level debugging, 0 messages logged
  Buffer logging: level debugging, 15496 messages logged
  Standard format: false
  Timestamp debug messages: datetime
  Timestamp log messages: datetime
  Sequence-number log messages: enable
  Sysname log messages: enable
  Count log messages: enable
  Trap logging: level informational, 15242 message lines logged,0 fail
    logging to  202.101.11.22
    logging to  192.168.200.112
Log Buffer (Total 131072 Bytes): have written 1336,
015487: *Sep 19 02:46:13: Ruijie %LINK-3-UPDOWN: Interface FastEthernet 0/24, changed state to up.
015488: *Sep 19 02:46:13: Ruijie %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet 0/24, changed state to up.
015489: *Sep 19 02:46:26: Ruijie %LINK-3-UPDOWN: Interface FastEthernet 0/24, changed state to down.
015490: *Sep 19 02:46:26: Ruijie %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet 0/24, changed state to down.
015491: *Sep 19 02:46:28: Ruijie %LINK-3-UPDOWN: Interface FastEthernet 0/24, changed state to up.
015492: *Sep 19 02:46:28: Ruijie %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet 0/24, changed state to up.
```

'

Syslog logging	' enabled, disabled
Console logging	Л Э ˘ Лъ
Monitor logging	VTY Э ˘ Лъ
Buffer logging	ă ˘ Лъ
Standard format	
Timestamp debug messages	Debug

logging on	
clear logging	ă

ȍ Ô

-	-

ȍ Ô Ю VTY Э a Â

ȍ ʒ Ô

ȍ Ô ʒ VTY Â й ˘ a Â VTY
ɨ˘ Â Л Э ≠ Л Лȣ ʒ˘ a Â

ȍ Ô Ю ˘ VTY Â

```
Ruijie# terminal monitor
```

ȍ ʒ Ô

ʒ	
-	-

ȍ Л Ô -

12

12.1 install *slot-num moduletype*

Э ╟ ╟ Â

install *slot-num moduletype*

ȍ Ô

slot-num	
moduletype	

ȍ $ ى ١ ڼ ˜ ى ١ ڼ ȝ ē Į î

12.3 remove configure module *slot-num*

Â

remove configure module *slot-num*

ò Ô

slot-num	

ò Ô -

ò ʒ Ô

ò Ô ʒ ʌ Л Ъ ˘ Æ Э ˘ ˚ Æ Â

ò Ô

```
Ruijie(config)# remove configure module 4
```

ò ʒ Ô

ʒ	
-	-

ò ʌ Ô -

12.4 reset module *slot-num*

Æ Â

reset module *slot-num*

ò Ô

slot-num	

ò Ô -

ò ʒ Ô

ò Ô ʒ ʌ Л Ъ Æ Â

ò Ô

```
Ruijie# reset module 4
```

ò ʒ Ô

ʒ	
-	-

ò ʌ Ô -

12.5 show version module detail [*module-num*]

Â

show version module detail [*module-num*]

ö Ô

module-num	˘ Λ

ö Ô -

ö ʒ Ô

ö Ô ʒ Λ Л Â

ö Ô

```
Ruijie# show version module detail 2
Device  : 1
Slot    : 2
User Status :     none
```

ò ʒ Ô

ò Ô ʒ Λ Л Â

ò Ô

```
Ruijie# show version slots
Dev Slot  Configured Module Online Module  User Status   Software Status
--- ----  -----------------   -----  --------------
1 1     none           none
1 2 M8606-24SFP/12GT M8606-24SFP/12GT installed none
1 3 M8606-2XFP M8606-2XFP uninstalled  cannot startup
1 4 M8606-24GT/12SFP M8606-24GT/12SFP installed ok
1 M1 M8606-CM  M8606-CM                master
1   M2                                     none
```

ò ʒ Ô

ʒ	
show version moduel detail	

ò Λ Ô -

13 USB/SD

13.1 sd remove

SD Â

sd remove *device-id*

ò Ô

device-id	ù Â SD ID Â Л Лъ **show sd** Л Â

ò Ô -

ò Ô

ò Ô SD ˘ ˘ Лъ Â ˘ Л Â ˘ SD ˘ Ą Â

ò Ô Ю ù Э SD Â

```
Ruijie# sd remove 1
OK, now you can pull out the device 1
```

Ą Л Лъ SD Â

ò Ô

-	-

ò Л Ô -

13.2 show sd

SD Â

show sd

ò Ô

-	-

ò Ô -

ò Ô

ò Ô SD ˘ ˘ Â

ȍ Ô ƗO SD ˙

```
Ruijie# show sd
Device: Mass Storage:
ID: 1
URL prefix: sd0
Disk Partitions:
SD(type:FAT32)
Size : 131,072,000B(125MB)
Available size˙ 1,260,020B˜ 1.2MB˜
```

ЛЪ Э ˘ Mass Storage Device ¨ Â

URL	SD Л ЛЪ SD Â
Size	SD Э Л Â

Лъ Э ˘ Mass Storage Device ¨ Â

URL	U Л Лъ U Â
Size	U Э Л Â
Available size	U Э Â

ö ʒ Ô

ʒ	
-	-

14

14.1 power priority

˘ й . Э Ю Â ˈ ╟ ˘
. Э ˘ æ . ł Э ’ ˘ ╥ a ˘ ľ ╟
Ю ╥ Ł ˈ ╟Ю ╥ ˘ ╟ ť Ю Лъ
’ ╥ ˘ ╥ ╥ ˘ Â
ʒ **no** ˘ Â

power priority [**switch** *devid*] **slot1** *prio1* **slot2** *prio2* **slot3** *prio3* **slot4** *prio4* [**slot5** *prio5* **slot6** *prio6* **slot7** *prio7* **slot8** *prio8*]

no power priority [**switch** *devid*]

slot priority *devid* **slot1** *prio1* **slot2** *prio2* **slot3** *prio3* **slot4** *prio4* [**slot5** *prio5* **slot6** *prio6* **slot7** *prio7* **slot8** *prio8*]

no slot priority *devid* ˘ a ˜

ȣ Ô

switch *devid*	˘ Ю ˘ VSU Ю й 1 2 Â
slot1~8 *prio1*	prio1 slot1 ˘ ʌ й 1-8˘ ˘ ˘ Â

ȣ Ô ˈ ˘ Â S12010 I Э˘ slot1 slot8 й 8 1˘ S12006 I Э˘ slot1 slot4 й 4 1˘ Â

ȣ ʒ Ô

ȣ Ô a˚ slot ʌ Лъ ˚ Â ˚ slot˘ ε slot Э slot Â slot1 slot2

Â

S12006 I Series ˘ slot1-slot4 ˘ S12006 I Series ˘ slot1-slot8 Â

14.2 power redundancy enable

Â Ю ╗ ˘ ὲ ╗ й ╗ ˘ ╗ й Â ʒ **no** ˘ ʌ Â

power [**switch** *devid*] **redundancy enable**

no power [**switch** *devid*] **redundancy enable**

power *devid* **redundancy enable**

no power *devid* **redundancy enable**ˆ ˘ a ˜

ȍ Ô

switch *devid*	˘ Ю ˘ VSU Ю й 1 2 Â

ȍ Ô ╗ Â

ȍ ʒ Ô

ȍ Ô й ˘ ʒ Â

˘ a ˘ ч ˘ ʒ Â ˘

. Ю ˆ a . Ю a ˜ ˘

ɨ Â

ȍ Ô 1˙ й

```
Ruijie(config)#power redundancy enable
```

ȍ ʒ Ô

ʒ	
show power	╗ ȁ ȁ ˘ Лȣ . ȁ ╗

ȍ ʌ Ô -

14.3 power slot enable

╟ . Э Â ʒ **no** ˘ . Ю Â Â

power [**switch** *devid*] **slot** *slotid* **enable**

no power [**switch** *devid*] **slot** *slotid* **enable**

power enable *devid* **module** *slotid*˘ ˘ a ˜

no power enable *devid* **module** *slotid*

slotid	. slot ˘ 1-8 . ˘ M1 ˘ M2 ʒ ɣ Âˆ ѝ M1 ȁ M2 ˜

ȍ Ô

ȍ ʒ Ô

ȍ Ô Ю æ . ˘ ˘ ł Â ʒ ў VSL . Â

ȍ Ô 1ˈ ў 1 . ╟Ю Â

Ʊ ك Ä ӝ ɑ

show power voltage-mode	

ȍ Ʌ Ô -

14.5 show power priority

˘ ȁ ȁ ˘ Лъ . ȁ
Э Â
show power priority
show priority ˆ ˘ a ˜

ȍ Ô

-	-

ȍ Ô -

ȍ ȝ Ô

ȍ Ô -

ȍ Ô 1˙ slot ˙

```
Ruijie#show power priority
Chassis-type: S12006 I Series
slot  priority      status
---   --------     ----------
 1       8          power-on
 2       7          wait-on
 3       6          power-off
 4       5          power-off
 M1      N/A        N/A
 M2      N/A        power-on
```

2˙ VSU Ю ˙

```
Ruijie#show power priority
Switch 1: S12006 I Series
Switch 2: S12006 I Series
slot    priority      status
---     --------     ----------
 1/1       8          power-on
 1/2       7          wait-on
 1/3       6          power-off
 1/4       5          N/A
 1/M1      N/A        N/A
 1/M2      N/A        power-on
 2/1       8          power-on
```

ò Ô -

ò Ô 1' ^ ~ '

```
Ruijie# show power
Chassis-type: S12006 I Series
power-id   power-type    supply(W)      status
------     -------        -----------    ------
1          N/A             N/A             ok
2          N/A             N/A             ok
```

2' VSU ^ ~ '

```
Ruijie# show power
Switch 1: S12006 I Series
Switch 2: S12006 I Series
power-id   power-type    supply(W)     status
------     -------      -----------    ------
1/1          N/A         N/A             ok
1/2          N/A         N/A             N/A
2/1          N/A         N/A             ok
2/2          N/A         N/A             ok
```

3' ╗ ^ ~ '

```
Ruijie#show power
Chassis-type: S12006 I Series
power-redun' yes

power-id   power-type    supply(W)     status
------     ----------   -----------    ------
1          RG_PA2000I      2000          ok
2          N/A             1400          ok

power-id     power-type     vol-in/out(V)   cur-out(mA)     supply-out(W)
---------   ------------    ----------      ------------    ---------------
1            RG_PA2000I       220/220          3000            660
```

```
------------  -------------    ------------   -----------   -----------
2000           900             150             950           950
```

4' VSU ˆ ~ '

```
Ruijie#show power
Switch 1: S12006 I Series
power-redun' yes
Switch 2: S12006 I Series
power-redun' yes

power-id     power-type    supply(W)       status
------     ----------      ------------    ------
1/1          RG_PA2000I      2000            ok
1/2          RG_PA1200I      1400            ok
2/1          RG_PA2000I      2000            ok
2/2          RG_PA1200I      1400            ok

power-id  power-type   vol-in/out(V)  cur-out(mA)  supply-out(W)
--------- ----------   ----------     -------      --------------
1/1        RG_PA2000I   220/220        3000         660
1/2        RG_PA1200I   N/A            N/A          N/A
2/1        RG_PA2000I   220/220        3000         660
2/2        RG_PA1200I   N/A            N/A          N/A

slot    card_type                require(W)     allocate(W)
----    -------------------    ------------    -----------
 1/1    M12000-48GT/4SFP-EA      200              200
 1/2    M12000-48GT/4SFP-EA      200              200
 1/3    M12000-4XFP-EA           180              180
 1/4    M12000-24GT/12SFP-EA     120              120
 1/M1   M12000-CMI               200              200
 1/M2   N/A                      N/A              N/A
 2/1    M12000-48GT/4SFP-EA      200              200
 2/2    M12000-48GT/4SFP-EA      200              200
 2/3    M12000-4XFP-EA           180              180
 2/4    M12000-24GT/12SFP-EA     120              120
 2/M1   M12000-CMI               200              200
 2/M2   N/A                      N/A              N/A

Switch  system-supply   card_allocate    fan-allocate   poe-used    free-supply
-----   -------------   -------------    ------------   ---------  -----------
1       2000             900               150           950         950
2       2000             900               150           950         950
```

Chassis-type/Switch	˘ VSU Ю Â
redundancy	
power-id	id
power-type	
supply	╗ ˆ Æ W˜
status	˘ ЛЬЮ ˙ plugout˙ N/A˜ ˙ insert_lineoff˙ ˘ insert_switchoff˙ ˘ ˘ insert_power˙ ok˜ ˙ ˘ ˘ ˘ insert_nopower˙ ˘ ˘ ˘
vol-int/out	à ˘ Æ V
cur-out	˘ Æ mA
supply-out	╗ ˘ Æ W
slot	slot ˘ M1/M2 ч
card-type	. ˘ Ль . й
require	. ╗ ˆ Æ W˜
alocate	ł ╗ ˆ Æ W˜
system-supply	╗ ˆ Æ W˜
card_allocate	. ł ╗ ˆ Æ W˜
fan-allocate	ł ╗ ˆ Æ W˜
free-supply	╗ ˆ Æ W˜

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ò Л Ô S12000 Э ˆ ł ˜ ˘ Л a ╗ ╗ ˘ Â

14.7 show power version

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show power version

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ò Ô ˘ a a Â

ò Ô 1˙ ‘

```
Ruijie# show power version
Chassis-type: S12006 I Series
Power Module: 1
    Serial Number:      1234567890ABCDRF
    Type:               PA3200I
    Hardware Version:   2.0
    Software Version:   2.0
    Temperature:        38C
Power Module: 2
    Serial Number:      3334567890ABCDRE
    Type:               PA2000I
    Hardware Version:   2.0
    Software Version:   2.0
    Temperature:        38C
```

2˙ VSU ‘

```
Ruijie#show power priority
Ruijie# show power version
Switch 1: S12006 I Series
Switch 2: S12006 I Series
Power Module: 1/1
    Serial Number:      1234567890ABCDRF
    Type:               PA3200I
    Hardware Version:   2.0
    Software Version:   2.0
    Temperature:        38C
Power Module: 1/2
    Serial Number:      3334567890ABCDRE
    Type:               PA2000I
    Hardware Version:   2.0
    Software Version:   2.0
    Temperature:        38C
Power Module: 2/1
    Serial Number:      1234567890ABCDRF
    Type:               PA3200I
    Hardware Version:   2.0
    Software Version:   2.0
    Temperature:        38C
Power Module: 2/2
    Serial Number:      3334567890ABCDRE
    Type:               PA2000I
```

```
Hardware Version:   2.0
Software Version:   2.0
Temperature:        38C
```

Chassis-type/Switch	˘ VSU IO Â
Power Module	ID
Serial Number	
Type	
Hardware Version	
Software Version	

```
Current voltage-mode: Standard
```

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14.9 show fan

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show fan

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```
Ruijie#show fan
Fan-type: M12006-FAN I
Hardware version : 1.00
Software version : 1.00

fan-id    status     speed    speed-level
```

speed-level	

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14.10 show fan version

ã ã Â

show fan version

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ò Ô 1˙ ˙

```
Ruijie#show fan version
    Fan type:               M12006-FAN I
    Serial Number:          347856792928JK89
    Module Num:             4
    Hardware version :      1.00
    Software version :      1.00
    Temperature˙            38C
```

2˙ VSU ˙

```
Ruijie#show power priority
Ruijie#show fan version
Switch 1:
    Fan-type:             M12006-FAN I
    Serial Number:        347856792928JK89
    Module Num:           4
    Hardware version :    1.00
    Software version :    1.00
    Temperature˙          38C
Switch 2:
    Fan-type:             M12006-FAN I
    Serial Number:        347856792928JK89
    Module Num:           4
    Hardware version :    1.00
    Software version :    1.00
```

Temperature' 38C

Fan-type	
Switch	
Serial Number	
Module Num	
Hardware version	
Software version	
Temperature	

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14.11 show temperature

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show temperature

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ȍ ʒ Ô

ȍ Ô ججي Ę

```
Ruijie#show temperature
Switch 1: S12006 I Series
Switch 2: S12006 I Series
slot   card_type              current(℃)        warning(℃)
----  -------------------     ------------------  -----------
1/1    M12000-48GT/4SFP-EA     20|20|23|23          50
```

ò ʒ Ô

ò Ô -

ò Ô 1' ЮO ЮO'

```
Ruijie#show manuinfo
Device 1
    Location:                   Chassis
    Device name:                RG S12006
    Device Serial Number:       62150129A8B0DAF0F0321
    Hardware Version:           V1.0
    Mac Address:                00.D0.F8.00.11.22

Device 2
    Location:                   Slot-M1
    Device name:                M12000 CM
    Device Serial Number:       32150129A8B0DAF0F0321
    Hardware Version:           V1.0
    Software Version:           RGOS 10.4(3b17) Release 129646
    Mac Address:                00.D0.F8.00.11.34

Device 3
    Location:                   Slot-1
    Device name:                M12000-04XFP-EA
    Device Serial Number:       32150129A8B0DAF0F0322
    Hardware Version:           V1.0
    Software Version:           RGOS 10.4(3b17) Release 129646

Device 4
    Location:                   Slot-2
    Device name:                M12000-04XFP-EA
    Device Serial Number:       32150129A8B0DAF0F0323
    Hardware Version:           V1.0
    Software Version:           RGOS 10.4(3b17) Release 129646

Device 5
    Location:                   Power 1
    Device name:                RG PD1200I
    Device Serial Number:       42150129A8B0DAF0F0321
    Hardware Version:           V1.0

Device 6
    Location:                   Power 2
    Device name:                RG PD1200I
```

```
    Device Serial Number:        42150129A8B0DAF0F0322
    Hardware Version:            V1.0

Device 7
    Location:                    FAN
    Device name:                 M12000 FAN
    Device Serial Number:        52150129A8B0DAF0F0321
    Hardware Version:            V1.0
```

2. VSU IO IO

```
Ruijie#show manuinfo
Device 1
    Location:                    Chassis 1
    Device name:                 RG S12006
    Device Serial Number:        62150129A8B0DAF0F0321
    Hardware Version:            V1.0
    Mac Address:                 00.D0.F8.00.11.22

Device 2
    Location:                    Slot-1/M1
    Device name:                 M12000 CM
    Device Serial Number:        32150129A8B0DAF0F0321
    Hardware Version:            V1.0
    Software Version:            RGOS 10.4(3b17) Release 129646
    Mac Address:                 00.D0.F8.00.11.56

Device 3
    Location:                    Slot-1/1
    Device name:                 M12000-04XFP-EA
    Device Serial Number:        32150129A8B0DAF0F0322
    Hardware Version:            V1.0
    Software Version:            RGOS 10.4(3b17) Release 129646

Device 4
    Location:                    Slot-1/2
    Device name:                 M12000-04XFP-EA
    Device Serial Number:        32150129A8B0DAF0F0323
    Hardware Version:            V1.0
    Software Version:            RGOS 10.4(3b17) Release 129646

Device 5
    Location:                    Power 1/1
    Device name:                 RG PD1200I
    Device Serial Number:        42150129A8B0DAF0F0321
    Hardware Version:            V1.0
```

```
Device 6
    Location:                   Power 1/2
    Device name:                RG PD1200I
    Device Serial Number:       42150129A8B0DAF0F0322
    Hardware Version:           V1.0

Device 7
    Location:                   FAN 1
    Device name:                M12000 FAN
    Device Serial Number:       52150129A8B0DAF0F0322
    Hardware Version:           V1.0

Device 8
    Location:                   Chassis 2
    Device name:                RG S12006
    Device Serial Number:       62150129A8B0DAF0F0322
    Hardware Version:           V1.0
    Software Version:           RGOS 10.4(3b17) Release 129646
    Mac Address:                00.D0.F8.00.11.33

Device 9
    Location:                   Slot-2/M1
    Device name:                M12000 CM
    Device Serial Number:       32150129A8B0DAF0F0324
    Hardware Version:           V1.0
    Software Version:           RGOS 10.4(3b17) Release 129646
    Mac Address:                00.D0.F8.00.11.22

Device 10
    Location:                   Slot-2/1
    Device name:                M12000-04XFP-EA
    Device Serial Number:       32150129A8B0DAF0F0325
    Hardware Version:           V1.0
    Software Version:           RGOS 10.4(3b17) Release 129646

Device 11
    Location:                   Slot-2/2
    Device name:                M12000-04XFP-EA
    Device Serial Number:       32150129A8B0DAF0F0326
    Hardware Version:           V1.0
    Software Version:           RGOS 10.4(3b17) Release 129646

Device 12
```

Location:	Power 2/1
Device name:	RG PD1200I

ò Ó Ô -

15

15.1 threshold set

˘ **no** Â

threshold set temperature [**switch** *id*] [**M1** | **M2 | slot** *n*] *warning_value* [*critical_value*]

no threshold set temperature

ò Ô

temperature	˘ **temperature** ù
switch *id*	VSU ˘ Э
M1 | **M2** | **slot** *n*	æ˘ Э ˘ *n* ù .
warning_value	˘ **temperature** ù 0 ~ 200
critical_value	γ ˘ ш ˘ Â **temperature** ù 0 ~ 200

ò Ô ù Â

ù 90˝ γ ù 100 Â

ò ʒ Ô

ò Ô Â ˘ ў MIB ˛˘ syslog Â

ò Ô 1˙ 1 M1 Â

```
Ruijie(config)# threshold set temperature switch 1 slot M1 70
```

ò ʒ Ô

ʒ	
show threshold	ʒ

ò ˛ Ô S12000 ˘ a ш Â

S12000 ˙

		ш
EA	56	68
DA	60	90
SECM M12000-NMM	62	68

15.2 show threshold

Â

show threshold temperature [**switch** *id*] [**M1** | **M2** | **slot** *n*]

ò Ô

temperature	˘ **temperature** ì
switch *id*	VSU ˘ Э
**M1	M2	slot** *n*	˝H ˘

R/TrTò

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16

16.1 auto-sync

ʒ ৲ runing-config б startup-config ˘ й Â

auto-sync { **standard | running-config | startup-config**}

no auto-sync { **standard | running-config** | **startup-config**}

ȣ Ô

ȍ Ô ╟ˇ ˘ з ╟ˇ й 1 ˆ 3600 ˜

ȍ ʒ Ô

ȍ Ô ˘ standardˇ

ȍ Ô 1ˉ ˇ startup-config

```
Ruijie(config)# redundancy
Ruijie(config-red)# auto-sync time-period 60
Redundancy auto-sync time-period: enabled (60 seconds).
Ruijie(config-red)# exit
```

2ˉ ╟ˇ

```
Ruijie(config)# redundancy
Ruijie(config-red)# no auto-sync time-period
Redundancy auto-sync time-period: disabled.
Ruijie(config-red)# exit
```

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ȍ Л Ô -

16.3 redundancy

Ю **redundancy** ʒ Л Лȣ ˘ Â **redundancy**

ȍ Ô

-	-

ȍ Ô -

ȍ ʒ Ô

Лȣ Л

ò ʌ Ô -

16.4 redundancy forceswitch

privileged EXEC Ю Slave switchover ʃ Â

redundancy forceswitch

ò Ô

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ò Ô й Â

ò ʒ Ô

ò Ô ʃ ˘ ÿ й ў ˘ Æ Â

ò Ô

```
Ruijie# redundancy forceswitch
This operation will reload the active unit and force switchover to the standby unit which is
inserted in slot M1. Are you sure to continue? [N/y] y
```

ò ʒ Ô

ʒ	
reload	ў Æ ʒ

ò ʌ Ô -

16.5 redundancy reload

privileged EXEC Ю ʌ **redundancy reload** ʒ Æ Slave Master Slave Æ Â

redundancy reload {**peer** | **shelf** [*switchid*]}

ò Ô

peer	Æ Slave
shelf	Ю Master б Slave Æ' VSU Ю Æ
switchid	VSU ˘ VSU Ю ˘ ʌ 1 2 Â Ю a ˘ VSU Ю **redundancy reload shelf** ʒ Â

ò Ô й Â

ò ʒ Ô

ò Ô **redundancy reload peer** ˘ ÿ Æ a
Â
VSU Ю Æ ʒ ѝ **redundancy reload shelf** *switchid* Æ

ò Ô

```
Ruijie# redundancy reload peer
This operation will reload the current standby unit which is inserted in slot M2. Are you sure to continue? [N/y] y
Preparing to reload peer!
```

‘

```
Ruijie# redundancy reload peer
This operation will reload the current standby unit which is inserted in slot 2/M1. And this operation may cause switch 2 to be reloaded. Are you sure to continue? [N/y] y
Preparing to reload peer!
```

ò ʒ Ô

ʒ	
reload	ў Æ ʒ

ò Л Ô -

16.6 show redundancy auto-sync

Л Лъ user EXEC privileged EXEC Ю **show redundancy auto-sync** ʒ Л Лъ redundancy ‖ Â (ε auto-sync ʒ) Â **show redundancy auto-sync**

ò Ô

-	-

ò Ô ѝ

ò ʒ Ô

ò Ô -

ò Ô

```
Ruijie> enable
Ruijie# show redundancy auto-sync
Redundancy auto-sync mode: auto-sync standard.
...
```

ò ʒ Ô

ʒ	

-

16.7 show redundancy states

Λ Л user EXEC privileged EXEC Ю **show redundancy** Λ Л redundancy Â

show redundancy states

ö Ô

states	Master Slave

ö Ô й Â

ö ʒ Ô

ö Ô VSU Ю 1:1

ò Ô -

ò Ô

```
Ruijie> enable
Ruijie# show redundancy switchtimeout
Redundancy switch timeout is : 4000 ms.
...
```

ò ʒ Ô

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ò ʌ Ô -

16.9 switchover timeout

redundancy Ю˜ **switchover timeout** ʒ ʌ Лъ switchover Â й ˘ ʌ Лъ ʒ **no** Â

switchover timeout *timeout-period*

no switchover timeout

ò Ô

timeout-period	Лъ й æ ˘ ʌ 160 25,000˜ ˜ Â

ò Ô 4000

ò ʒ Ô

ò Ô Slave Master heartbeat ˘ ˛ Â Ю a Â

ò Ô

```
Ruijie# config terminal
Ruijie(config)# redundancy
Ruijie(config-red)#
Ruijie(config-red)# switchover timeout 4000
Ruijie(config-red)# exit
Ruijie(config)# exit
Ruijie(config)#
```

ò ʒ Ô

ʒ	
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ò ʌ Ô -

17 Warm Reload & Upgrade

17.1 reload warm

IO **reload warm** Warm Reload ` Â

reload [**warm**] [*text* | **in** [*hh:*

ö Л Ô -

17.3 show warm-reload

Ю **show warm-reload** Warm Reload à Лъ

Â

show warm-reload

ö Ô

```
Ruijie#show warm-reload
Warm reload configuration state:
        Warm reload is enabled.
        Max reload count: 5
        Min uptime: 0(s)
Warm reload running state:
        Warm reload is available.
        Warm reload count: 0
        Uptime: 1761(s)

Slot warm reload running state:
Slot 3:
        Warm reload is available.
        Warm reload count: 1
        Uptime: 843(s)
```

max reload count	ч Warm Reload Â
min uptime	ÿ ɨ Warm Reload Â
warm reload count	Warm Reload Â
uptime	Â

ȍ ʒ Ô

ʒ	
warm-reload {enable | count *number*] | **uptime** *minutes*}	Warm Reload ╗
reload warm	Warm Reload/Upgrade
reset warm module *slot*	. Warm Reload
show warm-reload	Warm Reload ȁ Лȣ

ȍ Л Ô -

17.4 warm-reload

Ю **warm-reload** ʒ Warm Reload ╗ Â

warm-reload {**enable** | **count** *count-value* | **uptime** *uptime-value*]

no warm-reload {**enable** | **count** | **uptime**}

ȍ Ô

	˘ й 0˙ 120¦ ˘ й 5¦
no	

ò Ô Warm Reload ˘ **count** 5 ˘ **uptime** 5¦ Â

ò Ô

ò Ô

Warm Reload ⊥ Reload ¨Н L ¢

ò Ô 1˙ Warm Reload ╗ ˘ й 10 ˘ й 8¦

```
Ruijie(config)#warm-reload enable
To activate warm-reload, please save the configuration and restart the system.
And 2693212 Bytes of memory will be taken when warm-reload activated.
Ruijie(config)#warm-reload count 10
Ruijie(config)#warm-reload uptime 8
```

ò Ô

show warm-reload

18 SRM

18.1 cpu

srm-policy ЮҐ **cpu** ৠ owner-cpu Â

cpu

ৡ Ô

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ৡ Ô -

ৡ ৠ Ô srm-policy

ৡ Ô -

ৡ Ô 1ˆ srm-policy ЮҐ cpu ৠ owner-cpu Â

```
Ruijie(config-srm-policy)#cpu
Ruijie(config-owner-cpu)#
```

ৡ ৠ Ô

ৠ	
resource manager	srm
policy policy-name [**global**]	srm-policy

ৡ ৸ Ô -

18.2 instance

config-res-group ЮҐ

ò Ô 1' ¨ й rgos_group ˘ snmpd ╗ ˘ ł Â

```
Ruijie#configure terminal
Ruijie(config)#resource manager
Ruijie(config-srm)#user group rgos_group
Router(config-res-group)#instance snmpd
```

ò ৠ Ô

ৠ	
resource manager	srm

ò ⁄ Ô -

18.3 memory

srm-policy Ю **memory** ৠ owner-memory Â

memory

ò Ô

-	-

ò Ô -

ò ৠ Ô srm-policy

ò Ô -

ò Ô 1' srm-policy Ю memory ৠ owner-memory Â

```
Ruijie(config-srm-policy)#memory
Ruijie(config-owner-memory)#
```

ò ৠ Ô

ৠ	
resource manager	srm
policy policy-name [**global**]	srm-policy

ò ⁄ Ô -

18.4 policy

srm Ю **policy** ৠ srm-policy Â

policy *policy-name* [**global**]

no policy *policy-name*

ò Ô

policy-name	policy-name˙ ¨ Â
global	╗ global ˘ ˘ Â
no	Â

```
Ruijie(config-srm)#user group rgos_group
Router(config-res-group)#instance snmpd
Router(config-res-group)#policy rgos_policy
```

ȍ ʒ Ô

ʒ	
resource manager	srm

ȍ ʌ Ô -

18.6 resource manager

Ю srm Â

interval-value	˘ Лъ й æ˘ й 5˜ й 86400˜ 24 ˜ Â
falling	falling
falling-waterline-value	falling ˘ й 1 100˜ з falling value rising value
no	

ъ Ô -

ъ ʒ Ô owner-memory owner-cpu

ъ Ô

major

```
-----------------------------------------------------------------
Cpu                                 0x0
Memory                              0x1
Resource Users                ID                Priority
-----------------------------------------------------------------
Ktimer                              0x1                 PROT_TASK
Atimer                              0x2                 APP_TASK
printk_task                     0x3                 APP_TASK_TS
waitqueue_process             0x4               PROT_TASK
tasklet_task                0x5             PROT_TASK
cmic_pause_detect             0x6               PROT_TASK
idle                            0x7                 IDLE
kevents                         0x8                 PROT_TASK
snmpd                           0x9                 PROT_TASK
snmp_trapd                      0xa                 APP_TASK
mtdblock                        0xb                 PROT_TASK
gc_task                         0xc                 PROT_TASK
Context                         0xd                 PROT_TASK
kswapd                              0xe                 PROT_TASK
--More—
```

Resource Owners	
ID	
Resource User Groups	
Resource Users	
Priority	Ł ˘ ˛ й PROT_TASK˙ HAPP_TASK_TS˙ APP_TASK˙ APP_TASK_TS˙ IDLE: ж

ȍ ʒ Ô

ʒ	
-	-

ȍ Л Ô -

18.9 show resource notification

SRM Y Â

show resource notification owner {**all | cpu | memory**} [**slot** *slot-id* [**subsystem** *subsystem-id*]]

ȍ Ô

all	RO
cpu	CPU
memory	Memory
slot *slot-id*	.
subsystem *subsystem-id*	˘ ˄ 0-1˙ show version cpu id

ȍ Ô -

ȍ ʒ Ô

ȍ Ô -

ȍ Ô 1˙ SRM

```
Ruijie#show resource notification owner all
Owner: cpu
Global                    Global Notif.(cr(U/D):ma(U/D):mi(U/D))
-------------------------------------------------------------
global                                Not in monitored
Multi-User Group        User Notif.(cr(U/D):ma(U/D):mi(U/D))
-------------------------------------------------------------
rgnos_group                           (cr(0 ' '       '     '   (U/D):mi(U/?
Single-User Group       User Notif.(cr(Zma(U/DŰ  ʊ î          Ł    Mr     -       ʌ       ʌn  L
-------------------------------------------------------------
ktimer                                (cr(0/0):ma(0/0):mi(0/0))
Owner: memory
RU Global                    Global Notif.(cr(U/D):ma(U/D):mi(U/D))
-------------------------------------------------------------
global                                Not in monitored
```

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-	-

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18.10 show resource owner

SRM Â

show resource owner {**all | cpu | memory**} [**slot** *slot-id* [**subsystem** *subsystem-id*]]

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all	
cpu	cpu
memory	memory
slot *slot-id*	.

subsystem *subsystem-id*

1Min	1ʅ . cpu ʅ
5Min	5ʅ . cpu ʅ

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18.11 show resource policy

SRM Â

show resource policy {**all |** *policy-name*} [**slot** *slot-id* [**subsystem** *subsystem-id*]]

ȍ Ô

all	
policy-name	ɛ ˝
slot *slot-id*	.
subsystem *subsystem-id*	˘ ʌ 0-1˘ show version cpu id

ȍ Ô -

ȍ ʒ Ô

ȍ Ô -

ȍ Ô 1˙ SRM

```
Ruijie#show resource policy all
policy Name: rgnos_global_policy
----------------------------------------------------------------
Type: Global
In Use: No
RO memory:
critical rising 98 interval 2600 falling 40 interval 2600
major rising 80 interval 4000 falling 30 interval 4000
minor rising 45 interval 6600 falling 10 interval 6600
RO cpu:
critical rising 99 interval 1800 falling 20 interval 1800
major rising 85 interval 3800 falling 40 interval 3800
minor rising 60 interval 6900 falling 10 interval 6900
policy Name: rgnos_policy4
----------------------------------------------------------------
Type: User
In Use: No
```

```
RO memory:
critical rising 92 interval 2500 falling 20 interval 2500
major rising 79 interval 3000 falling 40 interval 3000
minor rising 63 interval 5000 falling 10 interval 5000
RO cpu:
critical rising 89 interval 2900 falling 20 interval 2900
major rising 86 interval 3800 falling 40 interval 3800
minor rising 61 interval 5900 falling 10 interval 5900
Policy Name: rgnos_policy3
-----------------------------------------------------------------
Type: User
In Use: No
RO memory:
critical rising 92 interval 2500 falling 20 interval 2500
major rising 79 interval 3000 falling 40 interval 3000

RO cpu:
critical rising 89 interval 2900 falling 20 interval 2900
major rising 86 interval 3800 falling 40 interval 3800
minor rising 61 interval 5900 falling 10 interval 5900
```

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ȍ Ô -

ȍ Ô 1ˈ SRM

```
Ruijie#show resource relationship
Policy                    Resource User      User Type
-----------------------------------------------------------
global                    global                 Global Group
rgnos_policy1          rgnos_group        Multi-User Group
rgnos_policy           ktimer                 Single-User Group
```

Policy	
Resource User	ˆ ˜
User Type	ˇ ˆ й Global Groupˇ Multi-User Groupˇ Single-User Groupˇ ˆ ˇ ˇ Â

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ȝ	
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18.13 show resource user

RU Â

show resource user {**all** | **group** {**all** | *group-name*} | *resource-user-name*} [**slot** *slot-id* [**subsystem** *subsystem-id*]]

ȍ Ô

all	
group {**all**	*group-name*}	groupˈ allˈ group-nameˈ ¨
resource-user-name	¨
slot *slot-id*	.
subsystem *subsystem-id*	ˇ ȴ 0-1ˇ show version cpu id

ȍ Ô -

ȍ ȝ Ô

ò Ô -

ò Ô 1' RU group

```
Ruijie#show resource user all
Total resource user group: 2.
Multi-User Group: rgnos_group
-------------------------------------------------------
        Policy: rgnos_policy1
        User:
        Resource Owner: memory
                Allocated Size(B): 0
```

ȣ Л Ô -

18.14 user

srm Ю **user** ʒ Э Â

user *resource-user-name resource-policy-name*

no user *resource-user-name*

ȣ Ô

resource-user-name	¨ ˘ Л Лȣ ʒ show resouce database Â
resource-policy-name	¨ Â
no	Â

ȣ Ô -

ȣ ʒ Ô srm

ȣ Ô -

ȣ Ô 1' ¨ й rgos_policy ˘ snmpd Э Â

```
Ruijie#configure terminal
Ruijie(config)#resource manager
Ruijie(config-srm)#policy rgos_policy
Ruijie(config-srm-policy)#exit
Ruijie(config-srm)#user snmpd rgos_policy
```

ȣ ʒ Ô

ʒ	
resource manager	srm
policy *policy-name*	srm-policy

ȣ Л Ô -

18.15 user global

srm Ю **user global** ʒ Э Â

user global *global-policy-name*

no user global

ȣ Ô

global-policy-name	¨
no	б

ò Ô -

ò ʒ Ô srm

ò Ô -

ò Ô 1˙ ¨ й rgos_policy ˘ Э

```
Ruijie#configure terminal
Ruijie(config)#resource manager
Ruijie(config-srm)#policy rgos_policy global
Ruijie(config-srm-policy)#exit
Ruijie(config-srm)#user global rgos_policy
```

ò ʒ Ô

ʒ	
resource manager	srm
policy *policy-name*	srm-policy

ò Л Ô -

18.16 user group

srm Ю˘ **user group** ʒ config-res-group Â

user group *resource-group-name*

no user group *resource-group-name*

ò Ô

resource-group-name	¨
no	

ò Ô -

ò ʒ Ô srm

ò Ô -

ò Ô 1˙ ¨ й rgos_group

```
Ruijie#configure terminal
Ruijie(config)#resource manager
Ruijie(config-srm)#user group rgos_group
Router(config-res-group)#
```

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ʒ	
resource manager	srm

ò Ó Ô -

19

19.1 fw-transparent support

ЮO ʒ Â **no** ʒ Â

fw-transparent support

no fw-transparent

ò Ô

support	Â

ò Ô S12000 DA . a Â

ò ʒ Ô

ò Ô S12000 DA . ˘ ʒ Â

ʒ˚ IPv4 IPv6 Â

ò Ô Â

```
Ruijie(config)# fw-transparent support
```

ò ʒ Ô

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ò /l Ô -

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1.
2. MAC ھ ک
3. Aggregate Port
4. ˎ　　8
5. VLAN
6. Super VLAN
7. Protocol VLAN
8. Private VLAN
9. SHARE VLAN
10. Voice VLAN
11. MSTP
12. GVRP
13. LLDP
14. QinQ
15. Лъ

1

1.1 carrier-delay

ƒƫ Ю Ƀ ३ **carrier-delay** ƒƫ ˘ Ƀ ३ **no** ني Â

carrier-delay [*seconds*]

no carrier-delay

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seconds	ʌ ˘ Лȣ ȉ ˘ نز 1˙ 60 Â

ȍ Ô 2 Â

ȍ Ƀ ३ Ô Â

ȍ Ô DCD ÿ Down Up ˘ DCD ƒƫ

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DCD ˘ ж ˘ ʌ Лȣ ╗ ˘ Лȣ ʌ Лȣ

Â ʌ˘ DCD ˘ ж ˘ Лȣ

Â

ȍ Ô 1˙ ȉ 5

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

ȍ Ƀ ३ Ô

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-	-

5 DHCPv6

5.1 clear ipv6 dhcp binding

DHCPv6 clear ipv6 dhcp binding

clear ipv6 dhcp binding [ipv6-address]

ipv6-address	IPv6

-

ipv6-address DHCPv6 ipv6-address

DHCPv6

```
Ruijie# clear ipv6 dhcp binding
```

-	-

-

5.2 clear ipv6 dhcp client

DHCPv6 clear ipv6 dhcp client

clear ipv6 dhcp client interface-type interface-number

interface-type interface-number	

-

clear ipv6 dhcp client DHCPv6

DHCPv6

```
Ruijie# clear ipv6 dhcp client vlan 1
```

-	-

-

5.3 clear ipv6 dhcp conflict

DHCPv6 IPv6 Decline DHCPv6 Server

DHCPv6 Server

clear ipv6 dhcp conflict

clear ipv6 dhcp conflict {ipv6-address | *}

ipv6-address	IPv6
*	IPv6

-

* IPv6 ipv6-address

DHCPv6

```
Ruijie# clear ipv6 dhcp conflict 2008:50::2
```

show ipv6 dhcp conflict	

-

5.4 clear ipv6 dhcp relay statistics

DHCPv6 Relay

clear ipv6 dhcp relay statistics

-

DHCPv6 Relay

DHCPv6 Relay Agent

0

```
Ruijie#clear ipv6 dhcp relay statistics
```

show ipv6 dhcp relay statistics	

-

5.5 clear ipv6 dhcp server statistics

DHCPv6 clear ipv6 dhcp server statistics

clear ipv6 dhcp server statistics

-	-

-

DHCPv6

DHCPv6

```
Ruijie# clear ipv6 dhcp server statistics
```

-	-

-

5.6 dns-server

DHCPv6 Server DNS Server DHCPv6 dns-server

no DNS Server

dns-server ipv6-address

no dns-server ipv6-address

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5.8 iana-address prefix

DHCPv6 Server IANA iana-address prefix no IANA

iana-address prefix ipv6-prefix/prefix-length [lifetime {valid-lifetime | preferred-lifetime}]

no iana-address prefix

DHCPv6 Server

```
Ruijie# configure terminal
Ruijie(config)# ipv6 dhcp pool pool1
Ruijie(config-dhcp)#
```

ipv6 dhcp server	DHCPv6 Server
show ipv6 dhcp pool	DHCPv6

-

5.11 ipv6 dhcp relay destination

DHCPv6 relay ipv6 dhcp relay destination

no

ipv6 dhcp relay destination ipv6-address [interface-type interface-number]

no ipv6 dhcp relay destination ipv6-address [interface-type interface-number]

ipv6-address	
interface-type interface-number	

DHCPv6 DHCPv6

DHCPv6 DHCPv6

relay relay reply

a DHCPv6 Relay Destination a } 8 ˙ h s

a DHCPv6 Relay Destination a } 8 ˙ h s

a ò Destination " ¾f Ì ¤ K ¡ G { ˙ ' Ü

```
Ruijie(config)# interface fastethernet 0/1
Ruijie(config-if)# ipv6 dhcp relay destination 2008:1::1
```

Interface VLAN 1 DHCPv6 Relay 3001::2

```
Ruijie#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)#interface vlan 1
Ruijie(config-if)#ipv6 dhcp relay destination 3001::2
Ruijie(config-if)#end
```

show ipv6 dhcp interface	DHCPv6
show ipv6 dhcp relay destination { all | interface interface-type interface-number }	

Re 0.422 Tc 7.29 0 03 Tw 0<CA18DB11E108

ipv6 dhcp pool	DHCPv6
show ipv6 dhcp interface	DHCPv6

-

5.13 prefix-delegation

DHCPv6 Server prefix-delegation no

prefix-delegation ipv6-prefix/prefix-length client-DUID [lifetime]
no prefix-delegation ipv6-prefix/prefix-length client-DUID [lifetime]

ipv6-prefix/prefix-length	IPv6
client-DUID	DUID
lifetime	

DHCPv6

prefix-delegation IAPD

client-DUID IAPD
DHCPv6 Server request
Server

```
Ruijie(config-dhcp)# prefix-delegation 2008:2::/64 0003000100d0f82233ac
```

ipv6 dhcp pool	DHCPv6
ipv6 local pool	
prefix-delegation pool	DHCPv6
show ipv6 dhcp pool	DHCPv6

-

5.14 prefix-delegation pool

DHCPv6 Server prefix-delegation pool no

prefix-delegation pool poolname [lifetime {valid-lifetime | preferred-lifetime}]

no prefix-delegation pool poolname

poolname	
lifetime	valid-lifetime preferred-lifetime
valid-lifetime	
preferred-lifetime	

DUID

DUID

```
Ruijie# show ipv6 dhcp
This device's DHCPv6 unique identifier(DUID): 00:03:00:01:00:d0:f8:22:33:b0
```

-	-

-

5.16 show ipv6 dhcp binding

DHCPv6 show ipv6 dhcp binding

show ipv6 dhcp binding [ipv6-address]

ipv6-address	IPv6

show ipv6 dhcp conflict

-	-

-

DHCPv6 Server

DHCPv6

```
Ruijie# show ipv6 dhcp conflict
2008:50::2    declined
2108:50::2    declined
2008:50::3    declined
2008:50::4    declined
2108:50::4    declined
2008:50::5    declined
```

clear ipv6 dhcp conflict	

-

5.18 show ipv6 dhcp interface

DHCPv6 show ipv6 dhcp interface

show ipv6 dhcp interface [interface-type interface-number]

interface-type interface-number	

-

/ /

interface-type interface-number DHCPv6

interface-type interface-number

```
Ruijie# show ipv6 dhcp interface
VLAN 1 is in server mode
```

```
Server pool dhcp-pool
Rapid-Commit: disable
```

-	-

interface-number	

-

Relay Agent Relay DHCPv6

1 Relay

```
Ruijie# show ipv6 dhcp relay destination all
Interface: Vlan1   //     Relay
Destination address(es)                        Output Interface
3001::2
FF02::1:2      //                               Vlan2   //
```

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```
    RENEW                    :  0
    REBIND                   :  0
    RELEASE                  :  0
    DECLINE                  :  0
    INFORMATION-REQUEST      :  14
    RELAY-FORWARD            :  0
    RELAY-REPLY              :  14
Packets sent                 :  16    //        DHCPv6
    ADVERTISE                :  0
    RECONFIGURE              :  0
    REPLY                    :  8
    RELAY-FORWARD            :  8
    RELAY-REPLY              :  0
```

clear ipv6 dhcp relay statistics	

-

5.22 show ipv6 dhcp server statistics

DHCPv6 show ipv6 dhcp server statistics show ipv6 dhcp server statistics

-	-

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```
Release received:                    0
Decline received:                    0
Relay-forward received:             0
Information-request received:      0
Unknown message type received:     0
Error message received:             0

DHCPv6 packet sent:                  0
Advertise sent:                      0
Reply sent:                           0
Relay-reply sent:                    0
Send reply error:                    0
Send packet error:                   0

Binding statistics:
Bindings generated:                 0
IAPD assigned:                       0
IANA assigned:                       0

Configuration statistics:
DHCPv6 server interface:           1
DHCPv6 pool:                         0
DHCPv6 iapd binding:                0
```

ipv6 dhcp pool	DHCPv6

-

6 DNS

6.1 clear host

clear host [host-name]

host-name	“ *”

-

〃 ip host ipv6 host

〃 DNS DNS

DNS DNS

DNS

```
Ruijie(config)# ip domain-lookup
```

show hosts	DNS

B T 0 . 1 9

ipv6-address	IPV6

DNS Server IP/IPv6 DNS Server
Server Server DNS
6 DNS Server ip-address ipv6-address
DNS

```
Ruijie(config)# ip name-server 192.168.5.134
Ruijie(config)# ip name-server
2001:0DB8::250:8bff:fee8:f800 2001:0DB8:0:f004::1
```

show hosts	DNS

-

6.5 ipv6 host

IPV6 no

ipv6 host host-name ipv6-address

no ipv6 host host-name ipv6-addres

host-name	
Ipv6-address	IPV6

-

no ipv6 host host-name ipv6-address

```
Ruijie(config)# ipv6 host ruijie 2001:0DB8:700:20:1::12
```

show hosts	DNS

-

6.6 show hosts

DNS

show hosts [hostname]

-	-

-

DNS

```
Ruijie# show hosts
Name servers are:
192.168.5.134 static

Host                type          Address                TTL(sec)
switch              static       192.168.5.243            ---
www.ruijie.com    dynamic       192.168.5.123            126
```

ip host	

7 FTP Server

7.1 debug ftpserver

FTP no

debug ftpserver

no debug ftpserver

-	-

debug ftpserver FTP

1

```
Ruijie# debug ftpserver
FTPSRV_DEBUG:(RECV)   SYST
FTPSRV_DEBUG:(REPLY)  215 RGOS Type: L8
FTPSRV_DEBUG:(RECV)   PORT 192,167,201,82,7,120
FTPSRV_DEBUG:(REPLY)  200 PORT Command okay.
```

2

```
Ruijie# no debug ftpserver
```

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-

7.2 ftp-server enable

FTP no FTP

ftp-server enable

no ftp-server enable

FTP FTP

a ¡ ‰ ¤ " fi a ä ftp-server topdir a ì ° FTP " j À9 FTP ß ‘ v h 3 Ñd

1 FTP syslog

```
Ruijie(config)# ftp-server topdir /syslog
Ruijie(config)# ftp-server enable
```

2 FTP

```
Ruijie(config)# no ftp-server enable
```

-	-

-

7.3 ftp-server password

FTP no

ftp-server password [type] password

no ftp-server password

type	0 7, 0 0 7
password	

FTP

1 25 4

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1 pass

```
Ruijie(config)# ftp-server password pass
```

```
Ruijie(config)# ftp-server password 0 pass
```

2 8001

```
Ruijie(config)# ftp-server password 7 8001
```

3

```
Ruijie(config)# no ftp-server password
```

-	-

-

7.4 ftp-server timeout

FTP Session idle timeout no 30

ftp-server timeout time

no ftp-server timeout

time	1-3600

30

FTP FTP

a V % ´ ¤ • ¾ } ¢ Q FTP V % / ¶ h – FTP · ß N þ – FTP · ‡ • ¤ • d ß ‘ v } ¢ Q FTP a ß ‘ ß N " ¢ Q 3 Ñææ Ûß ¶ 0 ‡ 8 V % ´ ¤ • "} Q a þÿ ¤ · 8 V % ´ ¤ • d Ùfi V % ´ ¤ « " ÉâV s v ÔÛ¤ 3 Ñ Û · Ûÿ åı „ d

1 5

```
Ruijie(config)# ftp-server timeout 5
```

2 30

```
Ruijie(config)# no ftp-server timeout
```

-	-

-

7.5 ftp-server topdir

FTP no FTP

ftp-server topdir directory

no ftp-server topdir

directory	FTP

FTP FTP

FTP

FTP

1 FTP syslog

```
Ruijie(config)# ftp-server topdir /syslog
Ruijie(config)# ftp-server enable
```

2

```
Ruijie(config)# no ftp-server topdir
```

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-	-

7.6 ftp-server username

FTP no

FTP

64

FTP

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1 user

```
Ruijie(config)# ftp-server username user
```

2

```
Ruijie(config)# no ftp-server username
```

-	-

-

7.7 show ftp-server

FTP

show ftp-server

-	-

-

FTP

〃

〃 IP Port

〃 IP Port

〃

〃

〃

〃

FTP

```
Ruijie# show ftp-server
ftp-server information
=====================================
enable : Y
topdir : /
timeout: 20min
username config : Y
password config : Y
type: BINARY
control connect : Y
ftp-server: ip=192.167.201.245  port=21
ftp-client: ip=192.167.201.82  port=4978
port data connect : Y
ftp-server: ip=192.167.201.245  port=22
ftp-client: ip=192.167.201.82  port=4982
passive data connect : N
```

-	-

-

8 FTP CLIENT

8.1 copy ftp

CLI copy ftp FTP Client
copy ftp:url flash:url copy flash:url ftp:url

copy ftp: //username:password@dest-address [/remote-directory]/remote-file flash: [local-directory/]local-file [vrf vrfname]
copy flash: [local-directory/]local-file ftp: //username:password@dest-address [/remote-directory]/remote-file [vrf vrfname]

username	FTP Server 40 “ : ” “ @ ” “ / ”
password	FTP Server 32 “ : ” “ @ ” “ / ”
dest-address	FTP Server IP
remote-directory	FTP Server 255 FTP
remote-file	255
local-directory	255
local-file	255
vrfname	VRF

-

copy ftp:url flash:url
copy flash:url ftp: url

user pass IP 192.168.23.69 FTP Server root remote-file home local-file

```
Ruijie# copy ftp://user:pass@192.168.23.69/root/remote-file flash:home/local-file
```

home local-file FTP Server root remote-file

```
Ruijie# copy flash:home/local-file ftp://user:pass@192.168.23.69/root/remote-file
```

copy tftp	tftp

-

8.2 default ftp-client

default ftp-client FTP Client PASV BINARY IP

default ftp-client [vrf vrfname]

vrfname	VRF

PASV BINARY IP

FTP Client

FTP Client

```
Ruijie (config)# default ftp-client
```

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-

8.3 ftp-client ascii

ASCII FTP ftp-client ascii no

ftp-client [vrf vrfname] ascii

no ftp-client [vrf vrfname] ascii

vrfname	VRF

FTP BINARY

ASCII

```
Ruijie (config)# ftp-client ascii
```

-	-

-

8.4 ftp-client port

FTP PORT ftp-client port no

ftp-client [vrf vrfname] port
no ftp-client [vrf vrfname] port

vrfname	VRF

FTP PASV

FTP

```
Ruijie (config)# ftp-client port
```

-	-

-

8.5 ftp-client source-address

FTP Client IP IP IP
no IP

9 Tunnel / L

9.1 keepalive (tunnel interface)

GRE

keepalive [seconds [retries]]

no keepalive

seconds	1 32767 10

retries

down 1

-

GRE show running

1 GRE

```
Ruijie# show tunnel gre
Tunnel1:
Mode:GRE/IP, Destination 192.168.2.2, Source vlan 100
```

show interfaces tunnel	tunnel

-

9.4 tunnel mode gre

GRE , no IPv6

tunnel mode gre ip

no tunnel mode

ip	IPv4

IPv6

tunnel mode gre ip gre

tunnel source, tunnel destination, destination gre UP

gre

```
Ruijie(config)# interface tunnel 1
Ruijie(config-if)# tunnel mode gre  ip
Ruijie(config-if)# tunnel source vlan 1
Ruijie(config-if)# tunnel destination 1.1.1.1
```

tunnel source	
tunnel destination	
tunnel ttl	TTL

-

9.5 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

-

9.6 tunnel mode ipv6ip

IPV6 , no IPv6

tunnel mode ipv6ip [6to4 | isatap]

no tunnel mode

6to4	6to4
isatap	ISATAP

IPv6

tunnel mode ipv6ip

6to4

```
Ruijie(config)# interface tunnel 1
Ruijie(config-if)# tunnel mode ipv6ip 6to4
```

tunnel source	
tunnel destination	
tunnel ttl	TTL

-

9.7 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
```


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

-

9.9 tunnel ttl

tunnel ttl tunnel ttl no tunnel ttl hop-count

no tunnel ttl

hop-count	tunnel ttl

ttl 255

Tunnel hop RGOS Tunnel TTL tunnel TTL TTL TTL 0

1 tunnel 0 ttl 16

```
Ruijie(config)# interface tunnel 0
Ruijie(config-if)# tunnel ttl 16
```

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10.1 ping

ping [ip] [ip-address [length

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

```
Sending 100, 1500-byte ICMP Echoes to 2000::1, timeout is 3 seconds:
  < press Ctrl+C to break >
!!!
```

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
```

IP 202.108.37.42

1 17 4

```
Ruijie# traceroute www.ietf.org
Translating "www.ietf.org"...[64.170.98.32]
< press Ctrl+C to break >
Tracing the route to 64.170.98.32
1   191.168.217.1 0 msec  0 msec  0 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
```

-	-

-

10.4 traceroute ipv6

traceroute ipv6

traceroute [ipv6] [ip-address [probe number] [timeout seconds] [ttl minimum maximum]]

Ip-address	IPv6
number	
seconds	
minimum maximum	TTL

-

Traceroute ipv6

DNS

traceroute ipv6

1 traceroute ipv6

```
Ruijie# traceroute ipv6 3004::1
  < press Ctrl+C to break >
Tracing the route to 3004::1
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       3004::1          4 msec  28 msec  12 msec
```

IP 3004::1

1 4

2 traceroute ipv6

```
Ruijie# traceroute ipv6 3004::1
  < press Ctrl+C to break >
Tracing the route to 3004::1
```

```
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

4

11 TCP

11.1 ip tcp mss

TCP MSS ip tcp mss no

ip tcp mss max-segment-size

no ip tcp mss

max-segment-size	MSS 68-10000

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

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

-	-

-

Q , 5×IP C^+

Ú ` Ÿ4¡ IP CÃ+ Q ¸ –5×,Ì G Y • È Ù À ¹ ß0´8V Ö

1. IP CÃ+ Ä #A, ´ G Å
2. ECMP/WCMP 1*+9
3. RIP
4. RIPng
5. OSPF
6. OSPFv3
7. IS-IS
8. BGP
9. 1*+9CÃ+
10. VRF

1IP · Ò c " ` x » d

11 accpetfn

?U ü šJyJÒ šJy õ ã Û nA¹ šJy,X y • å,X*ó , ó ÈAË S*ü Q ¸ **accpetfn** ÄA¹ Q ¸,X **o** 6 ã 6 á5 ,Õ Ä

accpetfn start-time {**fa** | end-time | **dab** seconds}

accpetfn

Ï – DAÈ â Ð

– D	£EÄ
start-time	Û n*ó , ó,X Ô Ÿ ÊKÈ ÈAÁ"© V ß Ö hh:mm:ss month date year hh:mm:ss date month year „ hh— Ê „ mm— Ú „ ss—/¦ „ month— Ü „ date— ¹ „ year— H 5 ,Õ Ô Ÿ ÊKÈ È ` Ô ½,X Ã Û n ÊKÈ Jun 1 È1993
fa	A¹ – D></ A¹ šJy ¢ Ô Ÿ ÊKÈ Ô,È Ý Ä
end-time	šJy Ý ó4§ 3 ÊKÈ È ™NO . b start-time

dab seconds

Ï G ÄAÈ â Ð -

12 [illegible]

S*üA¹ Q ¸ n ¶ ' ë>< È J { Í W,XA“KÂ Ä S*ü no Q ¸ 9 Ú J ôL8 Ä

[illegible] { { [illegible] | [illegible] } community-list-name | community-list-number } { [illegible] | [illegible] } [community-number..]

[illegible] { { [illegible] | [illegible] } community-list-name | community-list-number }

Ï – DAÈ â Ð

– D	£EÄ
[illegible]	Û š ¶ ' ë><
[illegible]	=) ¶ ' ë><
community-list-name	¶ ' ë>< á + ¶ ' ë>< á áCYE› 80 +0ú
community-list-number	¶ ' ë>< Ë Û š ¶ ' ë>< Ö4ê Ë8× È 1-99 =) ¶ ' ë>< Ö4ê Ë8× È 100-199
[illegible]	AŒA“KÂ
[illegible]	¦4±A“KÂ
×4- J W,X7¾"•2Ï4³ $7¾"•2Ï4³ Ä no-advertise [illegible] community-number	¶ ' 2 û Ä ã AA:NN(7¾"•2Ï4³ Ë Ö2 +8V D +) È ê5Ù Ô þ D È8× È [illegible] 2 bA¹ ¶ ' Ä [illegible] peerS î6Ñ ó ÕA’5B 32 Ä

Ï5"¸ÕÉ¹5B¶Ð ë><

Ï Q¸Â•ÓÓ¹5B ÕÕ ã

Ï SS¹ÛÂÐÐÂ•Ó‘ àAÒ¯ÀF BGP ,X ¶ ' ë>< Ä

ÏG!5B _ Ð

```
5XLMLH FRQILJ LS FRPPXQLW\ OLVW VWDQGDUG WHVW GHQ\
5XLMLH FRQILJ LS FRPPXQLW\ OLVW VWDQGDUG WHVW SHUPLW LQV
```

Ï,Ì G QÂ€

QÂ€	£EÄ
[illegible]	G! ¶ ' ë><
[illegible]	B ¶ ' ë>< ôL8 BGP 2 û ,X ¶ ' 2 û
[illegible]	/ ¶ ' ë>< µ C

[illegible]	/ G! Û n ¶ ' ë><,X BGP CÃ+ µ C

Ï G ÄAÈ â Ð -

13 [illegible]

?UG!5B5 ,Õ5%4° ÈAË S*ü < G!5B Q [illegible] ÄA¹ Q ¸,X no 6 ã Ã ¹ ôL85 ,Õ5%4° Ä

[illegible] network

[illegible] network

Ï – DAÈ â Ð

– D	£EÄ
network	5 ,Õ5%4°,X5%4° Ë Ä

Ï5 ,ÕG!5B Ð 5 ,Õ 0.0.0.0/0

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð G!5B5 ,Õ5%4°,X,Â,X Z {*ó5 ,ÕCÃ+ ÈEîE› [illegible] {*ó5 ,ÕCÃ+ LÔ?U$µC‡ ¹ ß 5 Ê ÖA¹ 5 ,Õ5%4° á ,ÈE² y ·5%4° È üCÃ+ >< Ã E' Ä

5 ,Õ5%4° ¹"*" Ë Ô È></ W 5 ,ÕCÃ+ ,X íEÝ5Ù Ä V p5 ,Õ5%4° Ý connected CÃ+ `"u Ý ß Ô CÇ,XCÃ+ È í5 ,ÕCÃ+ ?U" M- ÕCÃ+ Ä

ÏG!5B _ Ð Ú 192.168.100.0 A' 5 ,Õ5%4° ÈG!5B A¹5%4°,XM- ÕCÃ+ È íA' Û Ú7¾ | {*ó5 ,ÕCÃ+ Ä

```
5XLMLH FRQILJ LS URXWH VHULDO
5XLMLH FRQILJ LS GHIDXOW QHWZRUN
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	/ IP CÃ+ >< Ä

Ï G ÄAÈ â Ð -

14 [illegible]

?UG!5B *üM- Õ ¿EóG¡CÃ+ ÈAË S*ü < G!5B Q [illegible] ÄA¹ Q ¸,X [illegible] 6 ã Ã ¹ ª#\ *üM- Õ ¿EóG¡CÃ+ Ä

[illegible] [[illegible] vrf-name] [illegible] route-map-name

[illegible] [[illegible] vrf-name]

Ï – DAÈ â Ð

– D	£EÄ
[illegible]	

Ï5 ,ÕG!5B Ð 5 ,Õ þ *üM- Õ ¿EóG¡CÃ+

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð ¿EóG¡CÃ+ EîE› à Ê ß ¥ JÒCÃCÃ+ ` Û ÑJÒCÃCÃ+ È ' JÒCÃ Lp Ê,È y Û 6 Û ÑJÒCÃCÃ+ E@ ¥ È ¢5à £ å î u • ÊKÈ Ä
Z ¤P¬ ¿EóG¡CÃ+ ,X Û 6 û6Ñ È Ã ¹J\ Í JÒCÃ ß ÔCÇ Ô BFD ”# ÄJ\ Í y · up Ãdown ,X C È
ZL! " ¿EóG¡CÃ+ ,XE@ ¥ • ÊKÈ È Ã ¹ ü JÒCÃ Î ·,X y · õ ã ßG!5B **caie dlay** 0 È ¹E’ Ô ¿,X Û 6 û6Ñ Ä
Í bM- Õ ¿EóG¡CÃ+ È ' ß ÔCÇ È V p Û Ñ ß ÔCÇ Ý È í Û Ñ ß ÔCÇ ¬ ß ÔCÇ*ü bE@ ¥ Ä

ÏG!5B _ Ð Ú ÝM- ÕCÃ+ ,X Û Ñ ß ÔCÇA’5B 192.168.1.2 ÈEîE› y · GigabitEthernet 0/1 Ä

```
5XLMLH FRQILJ URXWH PDS IDVW UHURXWH
5XLMLH FRQILJ URXWH PDS VHW IDVW UHURXWH EDFNXS QH[WKRS *
5XLMLH FRQILJ URXWH PDS H[LW
5XLMLH FRQILJ LS IDVW UHURXWH VWDWLF URXWH PDS IDVW UHURX
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
áts ta	G!5BOSPF ¿EóG¡CÃ+

Ï G ÄAÈ â Ð -

15 **þ ts**

?U ï Î Ô þ !4Ô ë><ê5Ù r t Ô 5 !4Ô ë><><NM È S*ü **jp ts** Q ¸ ÄA¹ Q ¸,X **o** 6 ã ôL8 Ô þ !4Ô ë><ê !4Ô ë><><NM Ä

jp ts prefix-list name [**q** seq-number] { **dy** | **jn** } ip-prefix [**g** minimum-prefix-length] [**le** maximum-prefix-length]

no jp ts prefix-list name [**q** seq-number] { **dy** | **jn** } ip-prefix [**g** minimum-prefix-length] [**le** maximum-prefix-length]

Ï – DAÈ â Ð

– D	£EÄ
prefix-list name	!4Ô ë><á +
seq-number	4- Ô 5 !4Ô ë><><NMC ¹ c ë Ë Ä J8× È 1 2147483647 Ä V p Q ¸ "u Ý Ù ÿE- þ c ë Ë È í2Ï4³ î E- 5 !4Ô ë><><NM ÚG! Ô þT¬Ax ,X c ë Ë Ä1 Ô þ><NM,XT¬Ax c ë Ë 5 È â4Á!£ Ô þ þC ,X><NM,X T¬Ax c ë Ë D !¨ ! Ô þ c ë Ë û,X1 Ô þ 5 ,X á D,X D
dy	Í b G! ™ ‰ ¦4±A“KÂ
jn	Í b G! ™ ‰ AŒA“KÂ
ip-prefix	G!5B5%4° ¹ ž }-Õ Ä }-ÕKS z ¢ 0 32 Ä
minimum-prefix-length	Û n,X Ô ã8× È (G8× È,XCK ŸKS z)

Ï5 ,ÕG!5B Ð "u Ý#Ï t !4Ô ë>< [+ £EÄ

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð IP !4Ô ë><#Ï t [+ £EÄ Deny routes from Net-A Ä

```
5XLMLH FRQILJXUH WHUPLQDO
5XLMLH FRQILJ LS SUHIL[ OLVW SUH GHVFULSWLRQ 'HQ\ URXWHV IU
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

17 [illegible]

?U !4Ô ë>< *ü f c s6Ñ ÈAË S*ü [illegible] Q ¸ ÄA¹ Q ¸,X [illegible] 6 ã ª#\ !4Ô ë><,X f c s6Ñ Ä

[illegible]

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð "u Ý *ü !4Ô ë>< f c s6Ñ

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð !4Ô ë>< *ü f c s6Ñ Ä

ip hash - balance [**crc32_lower** | **crc32_upper**] [**dip**] [**tcp**] [**udf**]

Ï – DAÈ â Ð

– D	£EÄ
crc32_upper	A'5B hash 1k"© crc32_upper Ä EÝ ½crc32 ,XP¬!¨(M !*ü b ‡ n Î · ß ÔCÇ Ä
crc32_lower	A'5B hash 1k"© crc32_lower Ä EÝ ½crc32 ,X "!¨(M !*ü b ‡ n Î · ß ÔCÇ Ä
dip	A'5B hash GK + ª*ü y [,Â,X Ä
tcp	A'5B hash GK + ª*ü ª*ü tcp/udp 0Ã · Ä
udf number	A'5B hash GK + ª*ü*ü 7¾ n ,X +!‰ Ènumber ª 8× È 0-127 Ä

Ï5 ,ÕG!5B Ð 5 ,Õ hash 1k"© CRC32_Upper Èhash GK + y [$d Ä

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð !8 Q ¸ à ÊEÖ*ü b ipv4 ` ipv6 Ä
S*ü no Q ¸ 6 á5 ,Õ,X hash 1k"© ` GK + Ä
V p no Q ¸ ú **dip** Ã**tcp** Ã**udf** È></ GK + •L8!8 – D Ä
V p no Q ¸ ú,X – D â ' !2Ï4³A'5B á G! È í Ñ+9A¹ – D Ä

ÏG!5B _ Ð G!5B Úhash 1k"©A'5B CRC32_Lower ÈEÝ ª y [,X GK + SIP + DIP+TCP/UDP 0Ã ·+UDF Ä
5XLMLH FRQILJ LS UHI HFPS ORDG EDODQFH FUF BORZHU GLS SRUV

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
simple	G!5B1 ËCÃ X,X Ô û 5,Â D

Ï G ÄAÈ â Ð -

19 ip

?UG!5BM- ÕCÃ+ ÈAË S*ü < G!5B Q ¡ip route ÄA¹ Q ¸,X no 6 ã ôL8 ÆG!5B,XM- ÕCÃ+ Ä

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

Ï – DAÈ â Ð

– D	£EÄ
vrf_name	CÃ+ VRF Ä
network	,Â Û5%4°,X5%4°
net-mask	,Â Û5%4°,X }-Õ
ip-address	M- ÕCÃ+ ,X ß ÔCÇ
Interface	M- ÕCÃ+ ,X ß ÔCÇ Î ·
distance	M- ÕCÃ+ ,X1u)ÚC±/•
tag	M- ÕCÃ+ ,XTag
permanent	" CÃ+ ÛAš

number	M- ÕCÃ+ ,X G¡
disable	M- ÕCÃ+ ,X S6Ñ ÛAš

Ï5 ,ÕG!5B Ð 5 ,Õ ´M- ÕCÃ+

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð M- ÕCÃ+ ,X5 ,Õ1u)ÚC±/• 1 ÈEîE›A'5B1u)ÚC±/• È Ã ¹ AŒ | ÕCÃ+ : ,XCÃ+ ?Z,ªM- ÕCÃ+ È ¾ Ý ' | ÕCÃ+ : á Ê È ! S*üM- ÕCÃ+ ÄEîE›A'5BM- ÕCÃ+ ,X1u)ÚC±/• Ã ¹ r)„4"CÃ,X Û Ñ È!8 Ê,XM- Õ CÃ+ È Ô8 œ/Ä #B |CÃ+ Ä!¨ V OSPF CÃ+ #A,,X1u)ÚC±/• 110 È Ã ¹ ÚM- ÕCÃ+ ,X1u)ÚC±/•A'5B 125 ÈE- 'C¥ OSPF ,X4"CÃ Lp Ê È D B# G£7¾' Ã ¹ Û 6 M- ÕCÃ+ ,X4"CÃ Þ Ä Ã ¹ Û nM- ÕCÃ+ 2 b,X vrf È V p"u Ý Û n í#Ï t T¬Ax vrf Ä M- ÕCÃ+ ,XT¬Ax G¡ 1 È Ã ¹ S*ü Q ¸ ¹,ßM2T¬Ax G¡,XM- ÕCÃ+ Ä G¡ – D weight *ü b r)„ WCMP s6Ñ È' , üBóEQ >5CÃ+ Ã E' ¤ Ê È5%4°A' Û î B Ø 5CÃ+ ,X G¡ ÚG! D B# G£ È weight EW û,XCÃ+ î Ú ™EW î,X D B y [ÈEW ã5Ù î Ú ™EW å,X D B y [ÄCÃ+ <,X WCMP L$ Ô8 32 È5à x 6 í+ b Ø! 8ƒ(6Ñ Õ,X G¡ á à È ¹ J WCMP L$ DG£ â _ Ë Ý G × 'BóEQ >5CÃ+ ,X G¡ ` û bA¹L$ Ê ÈCY ÎL$,XCÃ+ á î*ó Ä M- ÕCÃ+ ,X S6Ñ Û « { M- ÕCÃ+ ú Ý È V p ´ í á î*ü bE@ ¥ Ä" CÃ+ G!5BE¯E@ ¥>< ÈL8M2 EîE›5%1u 9 ôL8] È ú í Ú Ô,È , ü Ä ?UEîE› ¹ þ5% y ·G!5BM- ÕCÃ+ Ê È G£FS ! ß ÔCÇ,È y y ·Ä V ip route 0.0.0.0 0.0.0.0 Fastethernet 0/0 Å ÄE- îA}A' Û?• k Ý þ-¹,Â Û5%4° ÈFÑ ,ÈE² ü Fastethernet 0/0 y · È ´!8 Í!£ þ,Â Û FÑ ¥EÕ Ô þARP AË" È î 4*üAŒ î CPU ` Y ,C $d Ä ¹ Ô8 á ÎA, ÚM- ÕCÃ+ ,È y Û å ¹ þ5% y · Ä

ÏG!5B _ Ð -

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
	/ IP CÃ+ >< Ä

Ï G ÄAÈ â Ð -

10 þ

?U *ü RGOS EC Ê,XIP CÃ+ s6Ñ È ü < õ ã ß ;> A¹ Q ¸ ÄA¹ Q ¸,X no 6 ã Ã ¹ GKÁ IP CÃ+ s6Ñ Ä

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð *ü IP CÃ+

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð 'A' Û ¾ 0 9 yA' Û È ê5Ù ¾ 0 VOIP 5% GA' Û Ê È Ã ¹ áLÔ?URGOS EC Ê,XIP CÃ+ E@ ¥ s6Ñ ÄE-

Ê Ã ¹ GKÁ RGOS ,X IP CÃ+ s6Ñ Ä

ipv6 prefix-list prefix-list-name [**seq** seq-number] { **deny** | **permit** } ipv6-prefix [**ge** minimum-prefix- length] [**le** maximum-prefix-length]

Ï – DAÈ â Ð

– D	£EÄ
prefix-list-name	!4Ô ë>< á + Ä
seq-number	4- Ô 5 !4Ô ë><><NMC ¹ c ë Ë Ä J8× È 1 2147483647 Ä V p Q ¸ "u Ý Ù ÿE- þ c ë Ë È í2Ï4³ î E- 5 !4Ô ë><><NM ÚG! Ô þT¬Ax ,X c ë Ë Ä1 Ô þ><NM,XT¬Ax c ë Ë 5 È â4Á!£ Ô þ þC ,X><NM,X T¬Ax c ë Ë D !¨ ! Ô þ c ë Ë û,X1 Ô þ 5 ,X á D,X D
deny	Í b G! ™ ‰ ¦4±A“KÂ
permit	Í b G! ™ ‰ AŒA“KÂ
ipv6-prefix	G!5B5%4° ¹ ž }-Õ Ä }-ÕKS z 0 128 Ä
minimum-prefix-length	Û n,X Ô ã8× È (G8× È,XCK ŸKS z) **ge** ‘ Ï “ Ý ¶ ¾ Ö n 8
maximum-prefix- length	Û n,X Ô û8× È (G8× È,X4œ!6KS z) **le** ‘ Ï “ Ý ¶ ¾ Ì n 8

Ï5 ,ÕG!5B Ð "u Ý ï Î Ï) !4Ô ë><

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð **ipv6 prefix-list** Q ¸*ü bG!5B IPv6 !4ÔE›$¸ Ä !4Ô ë><*ü permit ê5Ù deny GK + 9 ‡ n ü G!,X ™ ‰ ß,X ¦4± ` y «,X | 0 Ä
!4Ô ë><>•*ü 9 n Í b Ô þ !4Ô,X2’.B G! ê5Ù8× È G! Ä ge ê5Ù le GK +*ü 9 n Ô þ*ü b G!,X !4Ô,X8× È È ¤ o Z!¨)4ƒEg 9 ipv6-prefix È t&I# ,X G!G!5B Ä V p Q ¸ "u Ý ge ê5Ù le GK + È í ipv6-prefix ¤ o Z2’.B,X !4Ô8× È G! ÄV p ™Eg 9 ge È G!8× È minimum-prefix-length 128 Ä V p ™Eg 9 le È í G!8× È ipv6-prefix ,X }-ÕKS z maximum-prefix- length Ä V p `5ÙFÑ ÝEg 9 È í G ! 8 × È ¢minimum-prefix-length maximum-prefix-length Ä G ipv6-prefix } - Õ Ã minimum-prefix-length ` maximum-prefix-length , X G 2 Ï Ö ipv6-prefix } - Õ K S ≤ minimum-prefix-length < maximum-prefix-length <= 128 Ä

ÏG!5B _ Ð Í RIP #A, G¡ Ú ¥ OSPF E¯/ß1 ÊEg Î,XCÃ+ Ú ¥ µ C Ý';,Â,X IP E¯> E›$¸ È›$¸?˜ í ü G6(,X IPv6 !4Ô ë>< n (¾ AŒ,Â,X IP ü 2222::/64 Y,XCÃ+ µ C>• Ú ¥ Î •) Ä

```
5XLMLH FRQILJXUH WHUPLQDO
5XLMLH FRQILJ LSY SUHIL[ OLVW SUH SHUPLW
5XLMLH FRQILJ LSY URXWHU ULS
5XLMLH FRQILJ URXWHU UHGLVWULEXWH RVSI
5XLMLH FRQILJ URXWHU GLVWULEXWH OLVW SUHIL[ SUH RXW
5XLMLH FRQILJ URXWHU HQG
```

Ï,Ì G Q ¸ Ð

-	-

Ï G ÄAÈ â Ð -

13 [illegible]

?U Ô þ IPv6 !4Ô ë><#Ï t [+ £EÄ ÈAË S*ü [illegible] Q ¸ ÄA¹ Q ¸,X [illegible] 6 ã ô L8 Ô þ !4Ô ë><,X £EÄ Ä

[illegible] prefix-list-name [illegible] descripton-text

Ï – DAÈ â Ð

– D	£EÄ
prefix-list-name	IPv6 !4Ô ë>< á +
descripton-text	IPv6 !4Ô ë>< [+ £EÄ

Ï5 ,ÕG!5B Ð "u Ý#Ï t !4Ô ë>< [+ £EÄ

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð IPv6 !4Ô ë>< pre #Ï t [+ £EÄ Deny routes from Net-A Ä

```
5XLMLH FRQILJXUH WHUPLQDO
5XLMLH FRQILJ LSY SUHIL[ OLVW SUH GHVFULSWLRQ 'HQ\ URXWHV
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

14 [illegible]

?U IPv6 !4Ô ë>< *ü f c s6Ñ ÈAË S*ü [illegible] Q ¸ ÄA¹ Q ¸,X [illegible] 6 ã ª#\ !4Ô ë>><,X f c s6Ñ Ä

[illegible]

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð "u Ý *ü !4Ô ë>< f c s6Ñ

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð ¹ ß _ $ IPv6 !4Ô ë>< *ü f c s6Ñ Ö

5 X L M L H F R Q I L J X U H W H U P L Q D O

5 X L M L H F R Q I L J L S Y S U H I L [O L V W V H T X H Q F H Q X P E H U

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

15 ïß ta

?UG!5Bipv6 M- ÕCÃ+ ÈAË S*ü < G!5B Q ¸ ipv6 route ÄA¹ Q ¸,X no 6 ã ôL8 ÆG!5B,XM- ÕCÃ+ Ä

ïß ta ipv6-prefix / prefix-length { ipv6-address | interface [ipv6-address] } [distance] [tag number]

Ï – DAÈ â Ð

– D	£EÄ
ipv6-prefix	IPv6 !4Ô È ™NOFI ~RFC4291 ,X ></ 6 ã Ä
prefix-length	IPv6 !4Ô,XKS z È"¼ ã !M6 ™NO t Þ'/'
Ipv6-address	M- ÕCÃ+ ,X ß ÔCÇ
interface	M- ÕCÃ+ ,X ß ÔCÇ Î ·
distance	M- ÕCÃ+ ,X1u)ÚC±/•
number	M- ÕCÃ+ ,X G¡ È üG!5B1 ËCÃ X Ê Û âA¹CÃ X,X G¡ ÄG!5B8× È Ö 1-128 ÈÔ 5CÃ+ ,X Ý1 ËCÃ X,X G¡ ` á6ÑCYE›A¹ 5CÃ+ 6ÑG!5B ,X Ô û1 ËCÃ X 5,Â D È à Ô 5CÃ+ ,X1 ËCÃ X KÈ,X G¡!¨ Û â ZE- oCÃ X KÈ,X# G£!¨)[G2Ï Ä

Ï5 ,ÕG!5B Ð 5 ,Õ ´ ipv6 M- ÕCÃ+

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð M- ÕCÃ+ ,X5 ,Õ1u)ÚC±/• 1 ÈEîE›A'5B1u)ÚC±/• È Ã ¹ AŒ | ÕCÃ+ : ,XCÃ+ ?Z,ªM- ÕCÃ+ È ¾ Ý ' | ÕCÃ+ : á Ê È ! S*üM- ÕCÃ+ ÄEîE›A'5BM- ÕCÃ+ ,X1u)ÚC±/• Ã ¹ r),,4"CÃ,X Û Ñ È!8 Ê,XM- Õ CÃ+ È Ô8 œ/Ä #B |CÃ+ Ä!¨ V OSPF CÃ+ #A,,X1u)ÚC±/• 110 È Ã ¹ ÚM- ÕCÃ+ ,X1u)ÚC±/•A'5B 125 ÈE- 'C¥ OSPF ,X4"CÃ Lp Ê È D B# G£7¾' Ã ¹ Û 6 M- ÕCÃ+ ,X4"CÃ Þ Ä

ÏG!5B _ Ð r t Ô 5 2001::/64 ,Â Û5%4°,XM- ÕCÃ+ È ß ÔCÇ 2002::2 È1u)ÚC±/• 115 Ä

L S Y U R X W H

" ´ A _ ¾ G Ç ò þ (Ÿ " Ç ƒ Ð ¨ ¶ Ÿ V ° ô l h ¶ c Q Ç Ÿ " d ' ¥

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
ipv6	/ IPv6 CÃ+ >< Ä

Ï G ÄAÈ â Ð -

1.6 ipv6 statistics

?UG!5BM- ÕCÃ+ ,X 5 D ÞL$ ÈAË S*ü < G!5B Q ¸**ipv6 statistics** ÄA¹ Q ¸,X no 6 ã Ã ¹A'5B ²T¬AxCÃ+ 5 D Ä

ipv6 statistics number

ipv6 statistics

Ï – DAÈ â Ð

– D	£EÄ
number	CÃ+ ÞL$ È8× È1-10000 È5 ,Õ 1000

Ï5 ,ÕG!5B Ð – D5 ,Õ

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð G!5BM- ÕCÃ+ D ÞL$,X,Â,X Z { M- ÕCÃ+ ,X 5 D ÈîE› **ipv6 statistics** G!5BM- ÕCÃ+ D ÞL$ â î {*ó V ß p ÈG!5B,XM- ÕCÃ+ D á îCYE›A'5B,X ÞL$ ÄEîE› **ipv6** Ã ¹ ¹,ß,Â !G!5B,XM2T¬AxM- ÕCÃ+ D ÞL$ Ä

ÏG!5B _ Ð A'5B ipv6 M- ÕCÃ+ D ÞL$ 900 5 È' â 6 áT¬Ax

Ï5 ,ÕG!5B Ð *ü IPv6 CÃ+

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð 'A' Û ¾ 0 9 yA' Û È ê5Ù ¾ 0 VOIP 5% GA' Û Ê È Ã ¹ áLÔ?URGOS EC Ê,XIPv6 CÃ+ E@ ¥ s6Ñ Ä E- Ê Ã ¹ GKÁ RGOS ,X IPv6 CÃ+ s6Ñ Ä

ÏG!5B _ Ð GKÁRGOS EC Ê,XIPv6 CÃ+ s6Ñ Ä

```
5 X L M L H  Q R  L S Y  X Q L F D V W  U R X W L Q J
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	G!5Bipv6 M- ÕCÃ+
[illegible]	/ IPv6 CÃ+ >< Ä

Ï G ÄAÈ â Ð -

18 [illegible]

?U ü šJyJÒ n Ô þ šJy È JE¯ 9 šJyJÒ šJyG!5B õ ã ÈAË S*ü Q ¸ [illegible]ÄA¹ Q ¸,X [illegible] 6 ã ôL8 Û n šJy Ä

[illegible] key-id

[illegible]ey-id

Ï – DAÈ â Ð

– D	£EÄ
key-id	šJyJÒ AxA• šJy,X ID È ª 8× È Ö0-2147483647

Ï5 ,ÕG!5B Ð šJyJÒ ´ šJy

Ï Q ¸ õ ã Ð šJyJÒG!5B õ ã

Ï S*ü Û Ð Ð S*üA¹ Q ¸ n šJy Ä

ÏG!5B _ Ð ¹ ßG!5B ÈG!5B šJyJÒ ripkeys È JE¯ 9 šJyJÒG!5B õ ã ÈG!5B šJy 1 È JE¯ 9 šJy 1 G!5B õ ã Ä

```
5 X L M L H  F R Q I L J  N H \  F K D L Q  U L S N H \ V
5 X L M L H  F R Q I L J  N H \ F K D L Q  N H \
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

19 [illegible]

?U n šJyJÒ È JE¯ 9 šJyJÒG!5B õ ã ÈAË S*ü < G!5B Q ¸ [illegible] ÄA¹ Q ¸,X [illegible] 6 ã ôL8 Û n š JyJÒ,X n Ä

[illegible] key-chain-name

[illegible] key-chain-name

Ï – DAÈ â Ð

– D	£EÄ
key-chain-name	šJyJÒ á

Ï5 ,ÕG!5B Ð ´ šJyJÒ

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð

a ‘ ¾ A b] “ Ò ¡ " r ¢ Q A b d

ÏG!5B _ Ð ¹ ßG!5B ÈG!5B šJyJÒ ripkeys È JE¯ 9 šJyJÒG!5B õ ã Ä

5 X L M L H F R Q I L J N H \ F K D L Q U L S N H \ V

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

120 [illegible]

?U ü šJyJÒ šJy õ ã Û nAxA• ÈAË S*ü Q ¸ [illegible] ÄA¹ Q ¸,X [illegible] 6 ã ôL8 šJyAxA• Ä

[illegible] [0|7] text

[illegible]

Ï – DAÈ â Ð

– D	£EÄ
0	Û n šJy ¹ â [/
7	Û n šJy ¹ š [/
text	Û n,XAxA• +0ú

Ï5 ,ÕG!5B Ð šJyJÒ šJy ´AxA•

Ï Q ¸ õ ã Ð šJyJÒ šJyG!5B õ ã

Ï S*ü Û Ð Ð S*üA¹ Q ¸ n šJy Ä

ÏG!5B _ Ð ¹ ßG!5B ÈG!5B šJyJÒ ripkeys ÈE¯ 9 šJyJÒG!5B õ ã ÈG!5B šJy 1 ÈE¯ 9 šJy 1 G!5B õ ã È J n šJy

abc Ä

```
5XLMLH FRQILJ NH\ FKDLQ ULSNH\V
5XLMLH FRQILJ NH\FKDLQ NH\
5XLMLH FRQILJ NH\FKDLQ NH\ NH\ VWULQJ DEF
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

1.21 as-path

?UG¡ Ú ×A“KÂ ë>< AŒ,XAS_PATH 2 ûCÃ+ ÈAË S*üCÃ+ ÒG!5B Q ¸as-path ÄA¹ Q ¸,X o
6 ã ôL8 Æ ÝG!5B Ä

as-path as-path-acl-list-number [as-path-acl-list-number…..]

as-path-list as-path-acl-list-num……]

Ï – DAÈ â Ð

– D	£EÄ
as-path-acl-list-number	A“KÂ ë>< Ë Ä ë>< Ë,X8× È1…500

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û Ð Ð as-path Q ¸ âM6 Ã ¹C³ î þA“KÂ ë>< Ë Ä
Ô þCÃ+ Ò?˜ íG!5B ÈÃ ¹ ;> 1 þ ê î þ,X path Q ¸ ` 1 þ ê î þ,X to Q ¸ ÄV p"u Ý path
Q ¸ È í G! Ý × V p"u Ý to Q ¸ È í á . Ï) ¡ 0 Ä

ÏG!5B _ Ð

```
5XLMLH FRQILJ URXWH PDS 5287(0$3 ,%*3
5XLMLH FRQILJ URXWH PDS PDWFK DV SDWK
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
match	G!CÃ+ ,X ¶ '
match	G!CÃ+ ,XG£ z
match	G!CÃ+ ,X$d ¥
as-path	A’5BG¡ Ú ×CÃ+ ,XAS_PATH 2 û
to	A’5BG¡ Ú ×CÃ+ ,XG£ z
to-ip	A’5BG¡ Ú ×CÃ+ ,X2O _

Ï G ÄAÈ â Ð -

1.22 **match**

?UG¡ Ú ×A“KÂ ë>< AŒ,XCOMMUNITY 2 ûCÃ+ ÈAË S*üCÃ+ ÒG!5B Q ¸**match** ÄA¹ Q ¸,X **no** 6 ã ôL8 Æ ÝG!5B Ä

match **community** { community-list-number | community-list-name } [**exact-match**] [{ community-list-number | community-list-name } [**exact-match**] …]

no match community { community-list-number | community-list-name } [**exact-match**] [{ community-list-number | community-list-name } [**exact-match**] …]

Ï – DAÈ â Ð

– D	£EÄ
community-list-number	¶ ' ë>< Ë Û š ¶ ' ë>< Ö4ê Ë8× È 1-99 =) ¶ ' ë>< Ö4ê Ë8× È 100-199
communitys-list-name	¶ ' ë>< á + ¶ ' ë>< á áCYE› 80 +0ú
exact-match	` < G! ë><

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û Ð Ð **match** Q ¸ âM6 Ã ¹C³ î þ ¶ ' ë>< Ë ê5Ù ¶ ' ë>< á + È ø5Ù D,Â ` á û b 6 Ä !£ þ **exact-match** GK + ™ ÂOD ! Ô þ ë>< È5à á ÂOD Ý,X G! ë>< Ä Ô þCÃ+ Ò?˜ íG!5B È Ã ¹ ;> 1 þ ê î þ,X **match** Q ¸ ` 1 þ ê î þ,X **to** Q ¸ ÄV p"u Ý **match** Q ¸ È í G! Ý × V p"u Ý **to** Q ¸ È í á . Ï) ¡ 0 Ä

ÏG!5B _ Ð

1.23 [illegible]

S*üA¹ Q ¸ 9 n BGP =) ¶ ' 2 û ë>< 2 û,X G!?˜ í ÄS*ü [illegible] Q ¸*ü 9 ª #\A¹A’5B Ä

Ï G ÄAÈ â Ð -

1.24 [illegible]

?U G! ß ÔCÇ Î · Û n y · È AË S*üCÃ+ ÒG!5B Q ¸[illegible] ÄA¹ Q ¸,X [illegible] 6 ã ôL8 ÆG! 5B Y • Ä

[illegible] interface-type interface-number […interface-type interface-number]

tag	A’5BG¡ Ú ×CÃ+ ,X2O _
tag	A’5BG¡ Ú ×CÃ+ ,X ÛA„

Ï G ÄAÈ â Ð -

1.25 **ospf** **add**

?UG¡ Ú ×A“KÂ ë>< ê !4Ô ë>< AŒ,X,Â Û5%4°CÃ+ ÈAË S*üCÃ+ ÒG!5B Q **ospf** **add** ÄA¹ Q ¸,X **o** 6 ã ôL8 Æ ÝG!5B Ä

ospf **add** { access-list-number [access-list-number... | access-list-name...] | access-list-name [access-list-number...| access-list-name] | **prefix** prefix-list-name [prefix-list-name...] }

no **ospf** **add** [access-list-number [access-list-number... | access-list-name...] | access-list-name [access-list-number... | access-list-name] | **prefix** prefix-list-name [prefix-list-name...]]

Ï – DAÈ â Ð

– D	£EÄ
access-list-number	A“KÂ ë>< Ë Û šA“KÂ ë>< Ë8× È Ö1-99È1300-1999 =)A“KÂ ë>< Ë8× È Ö100-199 È2000-2699
access-list-name	A“KÂ ë>< á +
prefix prefix-list-name	?U G!,X !4Ô ë>< á +

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û Ð Ð **ospf** **add** Q ¸ âM6 Ã ¹C³ î þA“KÂ ë>< Ë ê5ÙA“KÂ ë>< á + Ä CÃ+ µ C Ã ¹ ¢ Ô þCÃ+ E¯/ßG¡ Ú × º ê Ô þCÃ+ E¯/ß,X s6Ñ Ä!¨ V Ã ¹ Ú OSPF CÃ+ ³,XCÃ+ G¡ „ Ú × âEî RIP CÃ+ ³Ã# C0œ0K‘ RIP CÃ+ ³,XCÃ+ G¡ „ Ú × âEî OSPF CÃ+ ³Ã# ÄCÃ+ ,X,Ì fG¡ Ú × Ã ¹ ü Ý,X IP CÃ+ #A, KÈE¯> Ä üCÃ+ G¡ Ú × # 4£ EîE›CÃ+ Ò Äroute maps Å,X h*ü È Í ø þCÃ+ ³Ã KÈ,XCÃ+ ,Ì f Ú ×E¯> Ý 5 Ê,X { Ä Ô þCÃ+ Ò?˜ íG!5B # S Ã ¹ ;> 1

º ê Ô þCÃ+ E¯/ß,X s6Ñ Ä!¨ V Ã ¹ Ú OSPF CÃ+ ³,XCÃ+ G¡ „ Ú × âEî RIP CÃ+ ³ È 3 Ã ¹ Ú RIP CÃ+ ³,XCÃ+ G¡ „ Ú × âEî OSPF CÃ+ ³ ÄCÃ+ ,X,Ì fG¡ Ú × Ã ¹ ü Ý,X IP CÃ+ #A, KÈE¯> Ä

üCÃ+ G¡ Ú × È4£ EîE›CÃ+ Ò Äroute maps Å,X h*ü È Í ø þCÃ+ ³ KÈ,XCÃ+ ,Ì f Ú ×E¯> Ý 5 Ê,X { Ä Ô þCÃ+ Ò?˜ íG!5B È Ã ¹ ;> 1 þ ê î þ,X **auth** Q ¸ ` 1 þ ê î þ,X **to** Q ¸ Ä V p "u Ý **auth** Q ¸ È í G! Ý × V p"u Ý **to** Q ¸ È í á . Ï) ¡ 0 Ä

ÏG!5B _ Ð G!5BOSPF CÃ+ #A,G¡ Ú × RIP CÃ+ Ä ¾?URIP CÃ+ ,X ß ÔCÇ 0ú ÜA“KÂ ë><10 ê 20 ÈOSPF AŒ JG¡ Ú × Ä

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU UHGLVWULEXWH ULS VXEQHWV URXWH PDS
5XLMLH FRQILJ URXWHU QHWZRUN DUHD
5XLMLH FRQILJ URXWHU H[LW
5XLMLH FRQILJ DFFHVV OLVW SHUPLW KRVW
5XLMLH FRQILJ DFFHVV OLVW SHUPLW KRVW
5XLMLH FRQILJ URXWH PDS UHGULS SHUPLW
5XLMLH FRQILJ URXWH PDS PDWFK LS QH[W KRS
```

Ï,Ì G Q ¸ Ð

```
Q ¸
```

Ï – DAÈ â Ð

– D	£EÄ
access-list-number	A“KÂ ë>< Ë
access-list-name	A“KÂ ë>< á +
ip asprefix-list-name	?U G!,X !4Ô ë>< á +

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û Ð Ð **ntipace** Q ¸ âM6 Ã ¹C³ î þA“KÂ ë>< Ë Ä
CÃ+ µ C Ã ¹ ¢ Ô þCÃ+ E¯/ßG¡ Ú × º ê Ô þCÃ+ E¯/ß,X s6Ñ Ä!¨ V Ã ¹ Ú OSPF CÃ+ ³,XCÃ+ G¡ „ Ú × âEî RIP CÃ+ ³ È 3 Ã ¹ Ú RIP CÃ+ ³,XCÃ+ G¡ „ Ú × âEî OSPF CÃ+ ³ ÄCÃ+ ,X,Ì fG¡ Ú × Ã ¹ ü Ý,X IP CÃ+ #A, KÈE¯> Ä
üCÃ+ G¡ Ú × È4£ EîE›CÃ+ Ò Äroute maps Å,X h*ü È Í ø þCÃ+ ³ KÈ,XCÃ+ ,Ì f Ú ×E¯> Ý 5 Ê,X { Ä Ô þCÃ+ Ò?˜ íG!5B È Ã ¹ ;> 1 þ ê î þ,X **ath** Q ¸ ` 1 þ ê î þ,X **te** Q ¸ Ä V p "u Ý **ath** Q ¸ È í G! Ý × V p"u Ý **te** Q ¸ È í á . Ï) ¡ 0 Ä

ÏG!5B _ Ð G!5BOSPF CÃ+ #A,G¡ Ú × RIP CÃ+ Ä¾?URIP CÃ+ ,XCÃ+ $dP 0ú ÜA“KÂ ë>< 5 ÈOSPF AŒ J G¡ Ú × Ä

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU UHGLVWULEXWH ULS VXEQHWV 5XLMLH FRQ
5XLMLH FRQILJ URXWHU QHWZRUN DUHD
5XLMLH FRQILJ URXWHU H[LW
5XLMLH FRQILJ DFFHVV OLVW SHUPLW KRVW
5XLMLH FRQILJ URXWH PDS UHGULS SHUPLW
5XLMLH FRQILJ URXWH PDS PDWFK LS URXWH VRXUFH
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
acce s	n A“KÂ ë><?˜ í
ntipadde	G!A“KÂ ë>< ,X
ntiace	G!CÃ+ ,X ß ÔCÇ y ·
ntip p	G!A“KÂ ë>< ,X ß ÔCÇ
ntin	G!CÃ+ ,XG£ z
ntin p	G!CÃ+ ,X2O _
ntin g	G!CÃ+ ,X ÛA„
in	A’5BG¡ Ú ×CÃ+ ,XG£ z
in p	A’5BG¡ Ú ×CÃ+ ,X2O _
in g	A’5BG¡ Ú ×CÃ+ ,X ÛA„

Ï G ÄAÈ â Ð -

128 ipv6 access-class

n ?UG¡ Ú ×A“KÂ ë><ê !4Ô ë>< AŒ,X,Â Û IPv6 5%4°CÃ+ ÈAË S*üCÃ+ ÒG!5B Qipv6 access-class ÄA¹ Q ¸,X no 6 ã ôL8 Æ ÝG!5B Ä

ipv6 access-class { access-list-name | prefix-list prefix-list-name }

ipv6 access-class

Ï – DAÈ â Ð

– D	£EÄ
access-list-name	A“KÂ ë><á +
prefix-list prefix-list-name	?U G!,X IPv6 !4Ô ë><á +

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û Ð Ð Ô þ route map ,X sequence ¾6Ñ óC³ Ô þ IPV6 ACL ×

Route map ,X sequence 5 ,Õ c Ë 10 ×

IPv6 PBR s6Ñ á6Ñ ó â – D prefix-list Ô + S*ü È J , ÊA¹ – D á*ó Ä

CÃ+ µ C Ã ¹ ¢ Ô þCÃ+ E¯/ßG¡ Ú × º ê Ô þCÃ+ E¯/ß,X s6Ñ Ä!¨ V Ã ¹ Ú OSPF CÃ+ ³,XCÃ+ G¡ „ Ú × âEî RIP CÃ+ ³ È 3 Ã ¹ Ú RIP CÃ+ ³,XCÃ+ G¡ „ Ú × âEî OSPF CÃ+ ³ ÄCÃ+ ,X,Ì fG¡ Ú × Ã ¹ ü Ý,X IP CÃ+ #A, KÈE¯> Ä

üCÃ+ ð Ä<2°ü ³ï> Ä

ath	G! IPv6 A“KÂ ë>< ,XCÃ+ $d
ath	G!CÃ+ ,XG£ z
ath	G!CÃ+ ,X2O _
ath	G!CÃ+ ,X ÛA„
ts	A’5BG¡ Ú ×CÃ+ ,XG£ z
ts	A’5BG¡ Ú ×CÃ+ ,X2O _
ts	A’5BG¡ Ú ×CÃ+ ,X ÛA„
ts	A’5B5 ,ÕE@ ¥ y [,X ß ÔCÇ Ä
ts	A’5BE@ ¥ y [,X ß ÔCÇ Ä
ts	/ ' !A’ Û h*ü,X1*+9CÃ+ ™ ‰ Ä

Ï G ÄAÈ â Ð -

129 ath

?UG¡ Ú × ß ÔCÇIPv6 0ú ÜA“KÂ ë>< ê !4Ô ë><?˜ í,X,Â Û5%4°CÃ+ ÈÄÈ S*üCÃ+ ÒG!5B Q ¸ **ath**

ts add ÄA¹ Q ¸,X **no** 6 ã ôL8 Æ ÝG!5B Ä

ath { access-list-name | **ts** prefix-list-name }

ath

Ï – DAÈ â Ð

– D	£EÄ
access-list-name	A“KÂ ë>< á +
ts prefix-list-name	?U G!,X IPv6 !4Ô ë>< á +

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û Ð Ð CÃ+ µ C Ã ¹ ¢ Ô þCÃ+ E¯/ßG¡ Ú × º ê Ô þCÃ+ E¯/ß,X s6Ñ Ä!¨ V Ã ¹ Ú OSPF CÃ+ ³,XCÃ+ G¡ „ Ú × âEî RIP CÃ+ ³ È 3 Ã ¹ Ú RIP CÃ+ ³,XCÃ+ G¡ „ Ú × âEî OSPF CÃ+ ³ ÄCÃ+ ,X,Ì fG¡ Ú × Ã ¹ ü Ý,X IP CÃ+ #A, KÈE¯> Ä
üCÃ+ G¡ Ú × È4£ EîE›CÃ+ Ò Äroute maps Å,X h*ü È Í ø þCÃ+ ³ KÈ,XCÃ+ ,Ì f Ú ×E¯> Ý 5
Ê,X { Ä Ô þCÃ+ Ò?˜ íG!5B È Ã ¹ ;> 1 þ ê î þ,X **ath** Q ¸ ` 1 þ ê î þ,X **ts** Q ¸ Ä V p
"u Ý **ath** Q ¸ È í G! Ý × V p"u Ý **ts** Q ¸ È í á . Ï) ¡ 0 Ä
CÃ+ Ò,XG!5B Ú&I# È Ã ¹ h*ü üCÃ+ G¡ Ú × `1*+9CÃ+ ,XG!5B Þ Ä á1u V) h*üCÃ+ Ò È JG!5B s
)Ú Ô ,X È ¾ EÖ*ü,X Q ¸Lš á à5à Æ Ä G S à h*ü üCÃ+ G¡ Ú × Þ È á à,XCÃ+ #A, h*üCÃ+ Ò È
J6Ñ ó S*ü,X Q ¸ 3 á ,Ì à Ä

ÏG!5B _ Ð G!5BOSPF CÃ+ #A,G¡ Ú × RIP CÃ+ È?U" ¾G¡ Ú ×0ú ÜA“KÂ ë>< ¢6acl ,X RIP CÃ+ È ü OSPF CÃ+ ³
È ñ ŸG£ z 40 Ä

```
5XLMLH FRQILJ LSY URXWHU RVSI
5XLMLH FRQILJ URXWHU UHGLVWULEXWH ULS VXEQHWV URXWH PDS
5XLMLH FRQILJ URXWHU H[LW
```

```
5XLMLH FRQILJ LSY DFFHVV OLVW Y DFO
5XLMLH FRQILJ LSY DFO SHUPLW LSY DQ\
5XLMLH FRQILJ LSY DFO H[LW
5XLMLH FRQILJ URXWH PDS UHGULS SHUPLW
5XLMLH FRQILJ URXWH PDS PDWFK LSY QH[W KRS Y DFO
5XLMLH FRQILJ URXWH PDS VHW PHWULF
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
ipv6 access-list	n IPv6 A“KÂ ë><?˜ í
match interface	G!CÃ+ ,X ß ÔCÇ y ·
match ipv6 address	G! IPv6 A“KÂ ë>< ,X ß ÔCÇ
match ipv6 route-source	G! IPv6 A“KÂ ë>< ,XCÃ+ $d
match tag	G!CÃ+ ,XG£ z
match type	G!CÃ+ ,X2O _
match tag	G!CÃ+ ,X ÛA„
tag	A’5BG¡ Ú ×CÃ+ ,XG£ z
tag type	A’5BG¡ Ú ×CÃ+ ,X2O _
tag	A’5BG¡ Ú ×CÃ+ ,X ÛA„

Ï G ÄAÈ â Ð -

1.3 match route-source

?UG¡ Ú × ß ÔCÇ IPv6 0ú ÜA“KÂ ë>< ê !4Ô ë><?˜ í,X,Â Û5%4°CÃ+ ÈÄÈ S*üCÃ+ ÒG!5B Q ¸ **match ipv6 address** ÄA¹ Q ¸,X **no** 6 ã ôL8 Æ ÝG!5B Ä

match route-source { access-list-name | **ipv6** prefix-list-name }

match route-source

Ï – DAÈ â Ð

– D	£EÄ
access-list-name	A“KÂ ë>< á +
ipv6 prefix-list-name	></ ?U G!,X IPv6 !4Ô ë>< á +

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û Ð Ð CÃ+ µ C Ã ¹ ¢ Ô þCÃ+ E¯/ßG¡ Ú × º ê Ô þCÃ+ E¯/ß,X s6Ñ Ä!¨ V Ã ¹ Ú OSPF CÃ+ ³,XCÃ+ G¡ „ Ú × âEî RIP CÃ+ ³ È 3 Ã ¹ Ú RIP CÃ+ ³,XCÃ+ G¡ „ Ú × âEî OSPF CÃ+ ³ ÄCÃ+ ,X,Ì fG¡ Ú × Ã ¹ ü Ý,X IP CÃ+ #A, KÈE¯> Ä
üCÃ+ G¡ Ú × È4£ EîE›CÃ+ Ò Äroute maps Å,X h*ü È Í ø þCÃ+ ³ KÈ,XCÃ+ ,Ì f Ú ×E¯> Ý 5 Ê,X { Ä Ô þCÃ+ Ò?˜ íG!5B È Ã ¹ ;> 1 þ ê î þ,X **match** Q ¸ ` 1 þ ê î þ,X **to** Q ¸ Ä V p "u Ý **match** Q ¸ È í G! Ý × V p"u Ý **to** Q ¸ È í á . Ï) ¡ 0 Ä
CÃ+ Ò,XG!5B Ú&I# È Ã ¹ h*ü üCÃ+ G¡ Ú × `1*+9CÃ+ ,XG!5B Þ Ä á1u V) h*üCÃ+ Ò È JG!5B s

)Ú Ô ,X È ¾ EÖ*ü,X Q ¸Lš á à5à Æ Ä G S à h*ü üCÃ+ G¡ Ú × Þ È á à,XCÃ+ #A, h*üCÃ+ Ò È J6Ñ ó S*ü,X Q ¸ 3 á ,Ì à Ä

ÏG!5B _ Ð G!5BOSPF CÃ+ #A,G¡ Ú × RIP CÃ+ È?U" ¾G¡ Ú ×0ú ÜA“KÂ ë><?6acl ,X RIP CÃ+ È ü OSPF CÃ+ ³ È ñ ŸG£ z 50 Ä

```
5XLMLH FRQILJ LSY URXWHU RVSI
5XLMLH FRQILJ URXWHU UHGLVWULEXWH ULS VXEQHWV URXWH PDS
5XLMLH FRQILJ URXWHU H[LW
5XLMLH FRQILJ LSY DFFHVV OLVW Y DFO
5XLMLH FRQILJ LSY DFO SHUPLW LSY DQ\
5XLMLH FRQILJ LSY DFO H[LW
5XLMLH FRQILJ URXWH PDS UHGULS SHUPLW
5XLMLH FRQILJ URXWH PDS PDWFK LSY URXWH VRXUFH Y DFO
5XLMLH FRQILJ URXWH PDS VHW PHWULF
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
ipv6 access-list	n IPv6 A“KÂ ë><?˜ í
match source	G!CÃ+ ,X ß ÔCÇ y ·
match dest-address	G! IPv6

Ï S*ü Û Ð Ð CÃ+ µ C Ã ¹ ¢ Ô þCÃ+ E¯/ßG¡ Ú × º ê Ô þCÃ+ E¯/ß,X s6Ñ Ä!¨ V Ã ¹ Ú OSPF CÃ+ ³,XCÃ+ G¡ „ Ú × âEî RIP CÃ+ ³ È 3 Ã ¹ Ú RIP CÃ+ ³,XCÃ+ G¡ „ Ú × âEî OSPF CÃ+ ³ ÄCÃ+ ,X,Ì fG¡ Ú × Ã ¹ ü Ý,X IP CÃ+ #A, KÈE¯> Ä
üCÃ+ G¡ Ú × È4£ EîE›CÃ+ Ò Äroute maps Å,X h*ü È Í ø þCÃ+ ³ KÈ,XCÃ+ ,Ì f Ú ×E¯> Ý 5
Ê,X { Ä Ô þCÃ+ Ò?˜ íG!5B È Ã ¹ ;> 1 þ ê î þ,X **nth** Q ¸ ` 1 þ ê î þ,X **te** Q ¸ Ä V p
"u Ý **nth** Q ¸ È í G! Ý × V p"u Ý **te** Q ¸ È í á . Ï) ¡ 0 Ä

ÏG!5B _ Ð OSPF CÃ+ #A,G¡ Ú × RIP CÃ+ Ä ¾ ÝG£ z 10 ,X RIP CÃ+ ÈOSPF ! îG¡ Ú × Ä

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU UHGLVWULEXWH ULS VXEQHWV URXWH PDS
5XLMLH FRQILJ URXWHU QHWZRUN DUHD
5XLMLH FRQILJ URXWHU H[LW
5XLMLH FRQILJ URXWH PDS UHGLVW ULS SHUPLW
5XLMLH FRQILJ URXWH PDS PDWFK PHWULF
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
acce ts	n A“KÂ ë><?˜ í
nth addre	G!A“KÂ ë>< ,X
nth ce	G!CÃ+ ,X ß ÔCÇ y ·
nth p	G!A“KÂ ë>< ,X ß ÔCÇ
nth ce	G!A“KÂ ë>< ,XCÃ+ $d
nth p	G!CÃ+ ,X2O _
nth g	G!CÃ+ ,X ÛA„

tn A’8 z }¡=qCÃ+ ,[z1z@a

Ï S*ü Û Ð Ð A¹ Q ¸ ™ ü [illegible] Q ¸ G6(,XCÃ+ Ò h*ü Ä*ü 91u)Ú BGP Í1 ' y ,X 9 • å
,XCÃ+ È Í b Î • å,XCÃ+ A¹?˜ í á*ó Ä 'CÃ+ Ò n ,X?˜ í V p"u Ý Ù ÿA¹ Q ¸ È í ´AŽ>• G!
,XCÃ+ ú ú Û1R ¾?U$µC‡CÃ+ Ò n ,X J W match 5 Ê 1k G! Ä
A¹ Q ¸ Í VPNv4 ,XCÃ+ áCK 0*ü È ¾*ü b IPv4 CÃ+ ú Û1R,X ™ ‰ Ä

ÏG!5B _ Ð ßM6,X _ $ ï Î Z Ô þCÃ+ Ò È ¾ Ý$µC‡ V ß ø þ 5 Ê È JCÃ+ !6Ñ>• y Ö
1) CÃ+ !4Ô0ú Üacl1 n ,X?˜ í
2) A¹CÃ+ Ù ÿ MPLS Û1R

```
5XLMLH FRQILJ URXWH PDS LQILOWHU SHUPLW
5XLMLH FRQILJ URXWH PDS PDWFK LS DGGUHVV DFO
5XLMLH FRQILJ URXWH PDS PDWFK PSOV ODEHO
5XLMLH FRQILJ URXWH PDS H[LW
5XLMLH FRQILJ URXWHU EJS
5XLMLH FRQILJ URXWHU QHLJKERU URXWH PDS LQILOWHU LQ
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	' Ô BGP Í1 ' KÈ x 6 ú MPLS Û1R,XCÃ+ s6Ñ
[illegible]	1u)ÚBGP ¥EÕCÃ+ 4- Í1 ',X1*+9
[illegible]	1u)ÚBGP ¢ Í1 ' y CÃ+ ,X1*+9
[illegible]	$µC‡CÃ+ ÒE›$¸ 5 Ê,XCÃ+ ÚG! MPLS Û1RLcCÃ+ Ô CK ¥EÕ

Ï G ÄAÈ â Ð -

13 [illegible]

?UG¡ Ú ×A“KÂ ë>< AŒ,X 9$d,XCÃ+ ÈAË S*üCÃ+ ÒG!5B Q[illegible] ÄA¹ Q ¸,X [illegible] 6 ã ôL8
Æ ÝG!5B Ä
[illegible] { [illegible] | [illegible] | [illegible] }
[illegible] [illegible] | [illegible] | [illegible]]

Ï – DAÈ â Ð

– D	£EÄ
[illegible]	9$d E°0Ã,X EGP
[illegible]	9$d ,X IGP
[illegible]	9$d á ` H2O _

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û Ð Ð ¾6Ñ ó G! Ô/¡ 9$d,XCÃ+ È á6Ñ ó à Ê G! î/¡ 9$d2O _ Ä
A¹ Q ¸*ü 9A’5B G!,XCÃ+ 9$d,X 5 Ê Ä

ÏG!5B _ Ð

```
5XLMLH FRQILJ URXWH PDS 0<B0$3 SHUPLW
```

```
5XLMLH FRQILJ URXWH PDS   PDWFK RULJLQ HJS
5XLMLH FRQILJ URXWH PDS   VHW FRPPXQLW\
5XLMLH FRQILJ URXWH PDS   H[LW
5XLMLH FRQILJ   URXWH PDS 0$3      SHUPLW
5XLMLH FRQILJ URXWH PDS   PDWFK RULJLQ LQFRPSOHWH
5XLMLH FRQILJ URXWH PDS   VHW FRPPXQLW\ QR H[SRUW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	G!CÃ+ ,X AS_PATH 2 û
[illegible]	G!CÃ+ ,XG£ z
[illegible]	G!CÃ+ ,X$d ¥
[illegible]	A’5BG¡ Ú ×CÃ+ ,XAS_PATH 2 û
[illegible]	A’5BG¡ Ú ×CÃ+ ,XG£ z
[illegible]	A’5BG¡ Ú ×CÃ+ ,X2O _

Ï G ÄAÈ â Ð -

13 [illegible]

?U G!CÃ+ ,XCÃ+ 2O _ ÈAË S*üCÃ+ ÒG!5B Q[illegible] ÄA¹ Q ¸,X [illegible] 6 ã ôL8 Æ ÝG!5B Ä
[illegible] [illegible] [illegible] [illegible] }
[illegible] [illegible] [illegible] [illegible]]

Ï – DAÈ â Ð

– D	£EÄ
[illegible]	*ó ä,XCÃ+
[illegible]	OSPF ,X YF¼CÃ+
[illegible]	êF¼CÃ+ (BGPê OSPF ,X êF¼CÃ+)
[illegible]	OSPF ,X2O _1 ê2O _ 2 êF¼CÃ+
[illegible]	ISIS 1 ê 2 CÃ+

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û Ð Ð CÃ+ µ C Ã ¹ ¢ Ô þCÃ+ E¯/ßG¡ Ú × º ê Ô þCÃ+ E¯/ß,X s6Ñ Ä!¨ V Ã ¹ Ú OSPF CÃ+ ³,XCÃ+ G¡ „ Ú × âEî RIP CÃ+ ³ È 3 Ã ¹ Ú RIP CÃ+ ³,XCÃ+ G¡ „ Ú × âEî OSPF CÃ+ ³ ÄCÃ+ ,X,Ì fG¡ Ú × Ã ¹ ü Ý,X IP CÃ+ #A, KÈE¯> Ä
üCÃ+ G¡ Ú × È4£ EîE›CÃ+ Ò Äroute maps Å,X h*ü È Í ø þCÃ+ ³ KÈ,XCÃ+ ,Ì f Ú ×E¯> Ý 5 Ê,X { Ä Ô þCÃ+ Ò?˜ íG!5B È Ã ¹ ;> 1 þ ê î þ,X [illegible] Q ¸ ` 1 þ ê î þ,X [illegible] Q ¸ Ä V p "u Ý [illegible] Q ¸ È í G! Ý × V p"u Ý [illegible] Q ¸ È í á . Ï) ¡ 0 Ä

ÏG!5B _ Ð G!5BRIP CÃ+ #A,G¡ Ú × OSPF CÃ+ ÄRIP ¾G¡ Ú × OSPF CÃ+ ³,X YF¼CÃ+ Ä

```
5XLMLH FRQILJ   URXWHU ULS
```

```
5XLMLH FRQILJ URXWHU UHGLVWULEXWH RVSI URXWH PDS UHGUL
5XLMLH FRQILJ URXWHU QHWZRUN
5XLMLH FRQILJ URXWHU H[LW
5XLMLH FRQILJ URXWHU PDS UHGULS SHUPLW
5XLMLH FRQILJ URXWH PDS PDWFK WDJ
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
access	n A“KÂ ë><?˜ í
add	G!A“KÂ ë>< ,X
advice	G!CÃ+ ,X ß ÔCÇ y ·
apply	G!A“KÂ ë>< ,XCÃ+ $d
attach	G!CÃ+ ,XG£ z
apply p	G!A“KÂ ë>< ,X ß ÔCÇ
attach p	G!CÃ+ ,X2O _
tch	A’5BG¡ Ú ×CÃ+ ,XG£ z
tch p	A’5BG¡ Ú ×CÃ+ ,X2O _
tag	A’5BG¡ Ú ×CÃ+ ,X ÛA„

Ï G ÄAÈ â Ð -

1 3 **rainpla**

?UG!5B1 ËCÃ+ ,X Ô ûCÃ X D ÈAË S*ü < G!5B Q ¸ **rainpla** ÄA¹ Q ¸,X **o** 6 ã Ã ¹A’5B ²
T¬Ax Ä
rainpla number
rainpla

Ï – DAÈ â Ð

– D	£EÄ
number	1 ËCÃ+ ,X Ô ûCÃ X D È8× È 1 32 Ä

Ï5 ,ÕG!5B Ð Ô 51 ËCÃ+ Ô û Õ 32 5CÃ X Ä

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð EîE› **rainpla** G!5B1 ËCÃ+ ,X Ô ûCÃ X D â È üBóEQ >5 õ ã ß ÈBóEQ >5,X ÚCÃ D á îCY
E›G!5B,X1 ËCÃ+ D Ä
A¹ Q ¸,XG!5B Í IPv4 ` IPv6 à *ó Ä

ÏG!5B _ Ð A’5B1 ËCÃ+ Ô î 10 5 È' â 6 áT¬Ax Ä

```
5XLMLH FRQILJ PD[LPXP SDWKV
5XLMLH FRQILJ QR PD[LPXP SDWKV
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ

-	-

Ï G ÄAÈ â Ð -

13 route-map

?U n CÃ+ Ò È JE¯ 9CÃ+ ÒG!5B õ ã ÈAË S*ü < G!5B Q ¸ **route-map** ÄA¹ Q ¸,X **no** 6 ã ôL8 Û n CÃ+ Ò,X n Ä

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

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

Ï – DAÈ â Ð	– D	£EÄ

route-map-name

ÏG!5B _ Ð G!5BOSPF CÃ+ #A,G¡ Ú × RIP CÃ+ È?U" ¾G¡ Ú ×CÇ D 4 ,X RIP CÃ+ È ü OSPF CÃ+ ³ ÈA¹CÃ+ ,X2O _ êF¼CÃ+ type-1 È ñ ŸG£ z 40 ÈCÃ+ ÛA„ A' 40 Ä

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU UHGLVWULEXWH ULS VXEQHWV URXWH PDS
5XLMLH FRQILJ URXWHU QHWZRUN DUHD
5XLMLH FRQILJ URXWHU H[LW
5XLMLH FRQILJ URXWH PDS UHGULS SHUPLW
5XLMLH FRQILJ URXWH PDS PDWFK PHWULF
5XLMLH FRQILJ URXWH PDS VHW PHWULF
5XLMLH FRQILJ URXWH PDS VHW PHWULF W\SH W\SH
5XLMLH FRQILJ URXWH PDS VHW WDJ
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	;> CÃ+ G¡ Ú ×

Ï G ÄAÈ â Ð -

13 [illegible]

?U ü šJyJÒ šJy õ ã Û nA¹ šJy,X ¥EÕ • å,X*ó , ó ÈAË S*ü Q ¸ [illegible] ÄA¹ Q ¸,X [illegible] 6 ã 6 á5 ,Õ Ä

[illegible] start-time {[illegible] | end-time | [illegible] seconds}

[illegible]

Ï – DAÈ â Ð

– D	£EÄ
start-time	Û n*ó , ó,X Ô Ÿ ÊKÈ ÈAÁ"© V ß Ö hh:mm:ss month date year

Ï5 ,ÕG!5B Ð šJyJÒ šJy" E° Ý

Ï Q ¸ õ ã Ð šJyJÒ šJyG!5B õ ã

Ï S*ü Û Ð Ð S*üA¹ Q ¸ n šJy ¥EÕ • å,X*ó , ó Ä

ÏG!5B _ Ð ¹ ßG!5B ÈG!5B šJy 1 ,X ¥EÕ*ó , < ó ¢ 2000 H 9 Ü 9 ¹LÊ&• 2011 H 10 Ü 12 ¹LÊ&• Ä

```
5XLMLH FRQILJ NH\ FKDLQ ULSNH\V
5XLMLH FRQILJ NH\FKDLQ NH\
5XLMLH FRQILJ NH\FKDLQ NH\ VHQG OLIHWLPH 6HS
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

19 bgp as

?U Í G! match ?˜ í,XCÃ+ Û nCÃ+ ,X6. Ü5Ù,X AS 2 û ÈÄÈ S*üCÃ+ ÒG!5B Q ¸ bgp as Ä A¹ Q ¸,X o 6 ã ôL8 Æ ÝG!5B Ä Q ¸ ™*ü b1*+9CÃ+ G!5B Ä

bgp as as-number ip-address

bgp as [as-number ip-address]

Ï – DAÈ â Ð

– D	£EÄ
as-number	6. Ü5Ù,X AS ³ Ë ü 10.4(3) ê ¹ â,X(È r t Õ 4 +8V AS Ë È G „,X AS Ë8× È 1..4294967295 È*ü Ú&• õ ã></ 1..65535.65535 Ä
Ip-address	6. Ü5Ù,X

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û Ð Ð A¹ Q ¸ ü BGP E¯> S*ü È*ü 9A'5BCÃ+ ,X6. Ü 2 û Ä
A¹ Q ¸,X – D ¾ Ý Ô4˜ Äas-number,ip-address Å È á Õ à ÊA'5B î4˜ – D

ÏG!5B _ Ð

```
5XLMLH FRQILJ URXWH PDS VHW DV SDWK
5XLMLH FRQILJ URXWH PDS PDWFK DV SDWK
5XLMLH FRQILJ URXWH PDS VHW DJJUHJDWRU DV
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
as path	G!CÃ+ ,X AS_PATH
origin	G!CÃ+ ,X ¶ '

[illegible]	G!CÃ+ ,XG£ z
[illegible]	G!CÃ+ ,X$d ¥
[illegible]	A’5BG¡ Ú ×CÃ+ ,XCOMMUNITY 2 û
[illegible]	A’5BG¡ Ú ×CÃ+ ,XG£ z
[illegible]	A’5BG¡ Ú ×CÃ+ ,X2O _

Ï G ÄAÈ â Ð -

1.4 [illegible]

?U Í G! match ?˜ í,XCÃ+ r t Û n,X AS_PATH 2 û ÈAË S*üCÃ+ ÒG!5B Q ¸**[illegible]**
[illegible] ÄA¹ Q ¸,X **[illegible]** 6 ã ôL8 Æ ÝG!5B Ä Q ¸ ™*ü b1*+9CÃ+ G!5B Ä
[illegible] as-number
[illegible]

Ï – DAÈ â Ð

– D	£EÄ
	š Û t 9 AS_PATH 2 û,X AS Ë
as-number	ü 10.4(3) ê ¹ â,X(È r t Õ 4 +8V AS Ë È G „,X AS Ë8× È

14 ip community-list

?U Í G! match ?˜ í,XCÃ+ ôL8 COMMUNITY_LIST ,X Ý,X community 2 û ÈAË S*üCÃ+ ÒG! 5B Q ¸ ip community-list ÄA¹ Q ¸,X no 6 ã ôL8 Æ ÝG!5B Ä Q ¸ ™*ü b1*+9CÃ+ G!5B Ä

ip community-list { community-list-number | community-list-name } delete

no ip community-list { community-list-number | community-list-name } delete

Ï – DAÈ â Ð

– D	£EÄ
community-list-number	¶ ' ë>< Ë Û š ¶ ' ë>< Ö4ê Ë8× È 1-99 =) ¶ ' ë>< Ö Û Ë8× È 100-199
community-list-name	¶ ' ë>< á + ¶ ' ë>< á áCYE› 80 +0ú

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û Ð Ð A¹ Q ¸*ü 9A’5B ôL8 G!,X ¶ ' 2 û Ä

ÏG!5B _ Ð

```
5XLMLH FRQILJ URXWHU EJS
5XLMLH FRQILJ URXWHU QHLJKERU UHPRWH DV
5XLMLH FRQILJ URXWHU QHLJKERU URXWH PDS 5287(0$3,1
5XLMLH FRQILJ URXWHU QHLJKERU URXWH PDS 5287(0$32
5XLMLH FRQILJ URXWHU H[LW
5XLMLH FRQILJ LS FRPPXQLW\ OLVW SHUPLW
5XLMLH FRQILJ LS FRPPXQLW\ OLVW SHUPLW
5XLMLH FRQILJ LS FRPPXQLW\ OLVW GHQ\
5XLMLH FRQILJ LS FRPPXQLW\ OLVW SHUPLW
5XLMLH FRQILJ URXWH PDS 5287(0$3,1 SHUPLW
5XLMLH FRQILJ URXWH PDS VHW FRPP OLVW GHOHWH
5XLMLH FRQILJ URXWH PDS H[LW
5XLMLH FRQILJ URXWH PDS 5287(0$3287 SHUPLW
5XLMLH FRQILJ URXWH PDS VHW FRPP OLVW GHOHWH
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
origin	G!5B ¶ ' ë><
as-path	G!CÃ+ ,X AS_PATH 2 û
next-hop	G!CÃ+ ,X ¶ ' 2 û
med	G!CÃ+ ,XG£ z
local-pref	G!CÃ+ ,X$d ¥
atomic-aggregate	A’5BG¡ Ú ×CÃ+ ,XAS_PATH 2 û
community	A’5B ôL8 G!,X ¶ ' 2 û

ta l- ¡e	A’5BG¡ Ú ×CÃ+ ,X ì 4{

Ï G ÄAÈ â Ð -

1 2 4 **tin**

?U Í G! match ?˜ í,XCÃ+ Û n COMMUNITY 2 û ÈAË S*üCÃ+ ÒG!5B Q ¸ **tin** ÄA¹ Q ¸,X **o** 6 ã ôL8 Æ ÝG!5B

tin { community-number [community-number …] **addit** | **o** }

to]**t**0 T **t**. 8 2 7 0 / T T 0 1 T 0 . 0 0 0 5 - c 0 T **t** C 2 _ 0 0 . 0 C 1 **B**

ig	A’5BG¡ Ú ×CÃ+ ,X 9$d
tmp	A’5BG¡ Ú ×CÃ+ ,X2O _

Ï G ÄAÈ â Ð -

18 **tmign**

?U Í G! match ?˜ í,XCÃ+ ,XCÃ+ 95 – D ÈAË S*üCÃ+ ÒG!5B Q ¸ **tmign** ÄA¹ Q ¸,X **o** 6 ã ôL8 Æ ÝG!5B Ä

tmign half-life reuse suppress max-suppress-time

tmign

Ï – DAÈ â Ð ! ‹ %

Ï G ÄAÈ â Ð -

14 tijn

?U Í G! match ?˜ í,XCÃ+ Û n =) ¶ ' 2 û ÈAË S*üCÃ+ ÒG!5B Q ¸ tijn ÄA¹ Q ¸ ,X o 6 ã ôL8 Æ ÝG!5B Ä Q ¸ ™*ü b1*+9CÃ+ G!5B Ä

tijn { t extend-community-value | e extend-community-value }

tijn { t | e }

Ï – DAÈ â Ð

– D	£EÄ
t	A'5BCÃ+ ,XRT 2 û
e	A'5BCÃ+ ,XSOO 2 û
extend-community-value	=) ¶ ',X extend_community_value Ã ¹ Ý Ý/¡ á à,X – D Ö Ä1 Åextend_community _value Ùas_num Önn an_num @ E,X7¾"• ³2Ï4³ Ë Ä2 +8V AS Å Ènn *ü 7¾ Å n È8× È 0..4294967295 Ä2 Åextend_community_value Ùip_addr Önn ip_addr ™NO < ,X IP È nn *ü 7¾ Å n È8× È 0..65535 Ä3 Åextend_community_value Ùas4_num Önn an4_num @ E,X7¾"• ³2Ï4³ Ë Ä4 +8V AS Å Ènn *ü 7¾ Å n È8× È 0..65535

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û Ð Ð S*üA¹ Q ¸ 9G!5B G! ,XCÃ+ ,X =) ¶ ' 2 û Ä

[AS4 ô º Ö ˜ ë ÿ " m " 4 " AS ô º Ö ˜ ë ÿ d4 " AS ô º Ö ˜ ë ÿ L ´ ¾ AS4:NN dc / AS4 [¥) % ¶ µ ä U $ f ´ d AS4 ³ 1..4294967295 U $ f ´ ¶ µ 1..65535.65535 dNN ³ 0..65535 d

1..65535 · AS Ü â • ¾ ° ¥) % ¶ µ . ¾ U $ f ´ ¶ µ [¾ 1..65535 d Ù ® } l É ¨ ° 2 " AS ÿ ¶ µ d

ÏG!5B _ Ð

```
5XLMLH FRQILJ DFFHVV OLVW SHUPLW
5XLMLH FRQILJ URXWH PDS 0$3B1$0( SHUPLW
5XLMLH FRQILJ URXWH PDS PDWFK LS DGGUHVV
5XLMLH FRQILJ URXWH PDS VHW H[WFRPPXQLW\ UW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
aslas path	G!CÃ+ ,X AS_PATH

origin	G!CÃ+ ,X ¶ '
origin	G!CÃ+ ,XG£ z
origin	G!CÃ+ ,X$d ¥
as-path	A’5BG¡ Ú ×CÃ+ ,XAS_PATH 2 û
med	A’5BG¡ Ú ×CÃ+ ,XG£ z
local-pref	A’5BG¡ Ú ×CÃ+ ,X2O _

Ï G ÄAÈ â Ð -

1.5 ip extcommunity-list

?U Í G! match ?˜ í,XCÃ+ ôL8 EXTCOMMUNITY_LIST ,X Ý,X extcommunity 2 û ÈAË S*üCÃ + ÒG!5B Q ¸ ip extcommunity-list ÄA¹ Q ¸,X no 6 ã ôL8 Æ ÝG!5B Ä

ip extcommunity-list { extcommunity-list-number | extcommunity-list-name } delete

ip extcommunity-list { extcommunity-list-number | extcommunity-list-name } delete

Ï – DAÈ â Ð

– D	£EÄ
extcommunity-list-number	=) ¶ ' ë>< Ë =) Û š ¶ ' ë>< Ö4ê Ë8× È 1-99 =) ¶ ' ë>< Ö Û Ë8× È 100-199
extcommunity-list-name	=) ¶ ' ë>< á + =) ¶ ' ë>< á È áCYE› 80 +0ú

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û Ð Ð A¹ Q ¸*ü 9A’5B ôL8 G!,X =) ¶ ' 2 û Ä
Q ¸ ™*ü b1*+9CÃ+ G!5B Ä

ÏG!5B _ Ð

```
5XLMLH FRQILJ URXWHU EJS
5XLMLH FRQILJ URXWHU QHLJKERU UHPRWH DV
5XLMLH FRQILJ URXWHU DGGUHVV IDPLO\ YSQY XQLFDVW
5XLMLH FRQILJ URXWHU DI QHLJKERU DFWLYDWH
5XLMLH FRQILJ URXWHU DI QHLJKERU URXWH PDS 5287(0$
5XLMLH FRQILJ URXWHU DI QHLJKERU URXWH PDS 5287(0$
5XLMLH FRQILJ URXWHU H[LW
5XLMLH FRQILJ LS H[WFRPPXQLW\ OLVW SHUPLW UW
5XLMLH FRQILJ LS H[WFRPPXQLW\ OLVW SHUPLW UW
5XLMLH FRQILJ LS H[WFRPPXQLW\ OLVW GHQ\
5XLMLH FRQILJ LS H[WFRPPXQLW\ OLVW SHUPLW
5XLMLH FRQILJ URXWH PDS 5287(0$3,1 SHUPLW
5XLMLH FRQILJ URXWH PDS VHW H[WFRPP OLVW GHOHWH
5XLMLH FRQILJ URXWH PDS H[LW
```

5XLMLH FRQILJ URXWH PDS 5287(0$3287 SHUPLW
5XLMLH FRQILJ URXWH PDS VHW H[WFRPP OLVW GHOHWH

ï,Ì G Q ¸ Ð	Q ¸	rEÄ¿ÏÊ¶ W ë><@

Ï G ÄAÈ â Ð -

14 [illegible] þ

?U Í G! match ?˜ í,X D B Ù Û nT¬Ax ß ÔCÇ IP ÈÄË S*üCÃ+ ÒG!5B Q ¸ [illegible] Ä A¹ Q ¸,X [illegible] 6 ã ôL8 Æ ÝG!5B Ä

[illegible] ip-address [weight] […ip-address [weight]]

[illegible] [ip-address [weight] […ip-address [weight]]]

Ï – DAÈ â Ð

– D	£EÄ
ip-address	ß ÔCÇIP
weight	ß ÔCÇ,X G¡

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û Ð Ð 5 set Q ¸ Ý ø/¡E¤> õ ã ÖWCMP BóEQ >5E¤> õ ã ÈM2WCMP BóEQ >5E¤> õ ã Ä ü ! Ô/¡E¤> õ ã ß È2Ï4³ Ú B*ü Eg 9,X weight D Í# G£E¯> WCMP BóEQ >5 Ä

[illegible] Q ¸ âM6 Ã ¹C³ î þ IP È Ô î áCYE› 32 þ Ä

V p ü ip address â r t weight D È í Ô î Ã ¹G!5B áCYE› 4 þ,X nexthop Ä

a } å ¢ Q next-hop U ; weight ô Ü ° ‡ set a — n û f ´ ‘ N - 0 WCMP { ˆ ù n û f ´ d } WCMP { ˆ ù n û f ´ • s Š Ô " s ë weight nexthop c weight ì ˜ 1 d

[illegible] ` [illegible] Q ¸,X ÿ ü b Ö G!5B Z [illegible] Q ¸,X2Ï4³ üE@ ¥ y [ì S*ü1*+9CÃ+ ×G!5B Z [illegible] ,X2Ï4³ î üE@ ¥ y [Ê ì S*üCÃ+ E@ ¥><Ä S*ü 5 Q ¸ (M n*ü ¤ oA’5B Ô 5 n T¬AxCÃ+ ,X s6Ñ Ä V pEC Ê Þ ´"© YE@ ¥,X y [R E@ ¥ CÃ+ È í ÚA¹ y [E@ ¥ Q ¸G!5B,X ß ÔCÇ(nexthop) Þ Ä

h*ü1*+9CÃ+ È ™NO?U Û n1*+9CÃ+ S*ü,XCÃ+ Ò È J è?U ï ÎCÃ+ Ò Ä Ô þCÃ+ Ò+ \ î 51*+94˜ ä È !£ þ1*+9FÑ n Z 1 þ ê î þ,X G!?˜ í ` Í h ¡ 0 Ä Ô þ y · h*ü1*+9CÃ+ â È Ú ÍA¹ y · y ,X Ý ÙE¯> ” ¹ È á0ú ÜCÃ+ Ò Ï)1*+9,X D B Ù Ú Ý';Eî ,XCÃ+ E@ ¥E¯> Ø)Ú È0ú ÜCÃ+ Ò ¤ þ 1*+9,X D B Ù Ý';A¹1*+9 n ,X ¡ 0E¯> Ø)Ú Ä

Ô þCÃ+ Ò1*+9 Ã ¹ Ý î þ set ¡ 0 Ä

ÏG!5B _ Ð ü à!9 y · 1 Þ y ,X ¢ 1.1.1.1 ¥ Î,X y [È V pEC Ê R á E@ ¥CÃ+ Ê È >•E@ ¥ A’ Û 6.6.6.6 • × 5à y ,X ¢ 2.2.2.2 ¥ Î,X y [È V pEC Ê R á E@ ¥CÃ+ Ê È >•E@ ¥ A’ Û 7.7.7.7 • Ä

```
5XLMLH FRQILJ DFFHVV OLVW SHUPLW
5XLMLH FRQILJ DFFHVV OLVW SHUPLW
5XLMLH FRQILJ LQWHUIDFH DV\QF
5XLMLH FRQILJ LI LS SROLF\ URXWH PDS HTXDO DFFHVV
5XLMLH FRQILJ URXWH PDS HTXDO DFFHVV SHUPLW
5XLMLH FRQILJ URXWH PDS PDWFK LS DGGUHVV
```

```
5XLMLH FRQILJ URXWH PDS VHW LS GHIDXOW QH[W KRS
5XLMLH FRQILJ URXWH PDS HTXDO DFFHVV SHUPLW
5XLMLH FRQILJ URXWH PDS PDWFK LS DGGUHVV
5XLMLH FRQILJ URXWH PDS VHW LS GHIDXOW QH[W KRS
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	n CÃ+ Ò
[illegible]	G!A“KÂ ë>< ,X
[illegible]	A’5B D B Ù,X ß ÔCÇIP È V pCÃ+ >< "u Ý â.B,XCÃ+
[illegible]	A’5B D B Ù IP ì

Ï G ÄAÈ â Ð -

1.4 [illegible]

?U Í G! match ?˜ í,X y [A’5B DSCP ÈAË S*üCÃ+ ÒG!5B Q ¸ **[illegible]** ÄA¹ Q ¸X **o** 6 ã ôL8 Æ ÝG!5B Ä

[illegible] dscp_value

[illegible]

Ï – DAÈ â Ð

– D	£EÄ
dscp_value	A’5B IP y [IP DSCP

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð -

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	n CÃ+ Ò
[illegible]	G!A“KÂ ë>< ,X
[illegible]	A’5B D B Ù,X ß ÔCÇIP

o 6 ã ôL8 Æ ÝG!5B Ä Q ¸ ™*ü b1*+9CÃ+ G!5B Ä

þþ ip-address [weight] […ip-address [weight]]

þþ [ip-address [weight] […ip-address [weight]]]

Ï – DAÈ â Ð

– D	£EÄ
ip-address	ß ÔCÇIP
weight	ß ÔCÇ,X G¡

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û Ð Ð 5 **b** Q ¸ Ý ø/¡E¤> õ ã ÖWCMP

ip 3 (ip 3 (+ ip 3] T JC2_0 T 1 0 T c 0 T W 5 7 0 T d [0 5 1 0 4

eeieieheeÄÀÉˆ

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	n CÃ+ Ò
[illegible]	G!A“KÂ ë>< ,X
[illegible]	A’5B D B Ù,X ß ÔCÇIP È V pCÃ+ >< "u Ý â.B,XCÃ+
[illegible]	A’5B D B Ù IP ì

Ï G ÄAÈ â Ð -

150 [illegible]

?U Û n.BAx ß ÔCÇIP ,X ÃE’ û ÈAË S*üCÃ+ ÒG!5B Q ¸ [illegible] ÄA¹ Q ¸,X [illegible] 6 ã ôL8 Æ ÝG!5B Ä Q ¸ ™*ü b1*+9CÃ+ G!5B Ä

[illegible] ip-address [illegible] track-obj-number

[illegible] ip-address [illegible] track-obj-number

Ï – DAÈ â Ð

– D	£EÄ
ip-address	ß ÔCÇIP
track-obj-number	C³Cþ ÍB54ê Ë

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð Û n.BAx ß ÔCÇ192.168.1.2 ,X ÃE’ û ÈC³Cþ ÍB54ê Ë 1 Ä

```
5XLMLH FRQILJ URXWH PDS UPDS SHUPLW
5XLMLH FRQILJ URXWH PDS VHW LS QH[W KRS YHULI\ DYDLODELOLW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	n CÃ+ Ò
[illegible]	G!A“KÂ ë>< ,X
[illegible]	A’5B D B Ù,X ß ÔCÇIP
[illegible]	A’5B D B Ù,X ß ÔCÇIP È V pCÃ+ >< "u Ý â.B,XCÃ+
[illegible]	A’5B D B Ù IP ì

Ï G ÄAÈ â Ð -

151 [illegible]

?U Í G! match ?˜ í,X y [A’5B IP ,X ì 4{ ÈAË S*üCÃ+ ÒG!5B Q ¸ [illegible] ÄA¹ Q ¸,X [illegible] 6 ã È J Û nG!5B,X ì 4{ ôL8 Æ ÝG!5B Ä

[illegible] { number | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

Ï – DAÈ â Ð	– D	£EÄ

number

Ï G ÄAÈ â Ð -

152 þ

?U Í G! match ?˜ í,X y [A’5B y [IP ,X TOS ÈAË S*üCÃ+ ÒG!5B Q þ ÄA¹ Q ¸,X ¤ 6
ã È J Û nG!5B,X tos ôL8 Æ ÝG!5B Ä
þ { number |

þ¤ þ	A’5B1*+9CÃ+ ,X ß ÔCÇ

Ï G ÄAÈ â Ð -

154 **þ¤ þ**

?U Í G! match ?˜ í,X IPv6 y [Û n ß ÔCÇ IPv6 ÈAË S*üCÃ+ ÒG!5B Q ¸ **þ¤ þ**Ä
A¹ Q ¸,X no 6 ã ôL8 Æ ÝG!5B Ä Q ¸ ™*ü b1*+9CÃ+ G!5B Ä

þ¤ þ global-ipv6-address [weight] [global-ipv6-address [weight] ...]

þ¤ þ global-ipv6-address [weight] [global-ipv6-address [weight] ...]

Ï – DAÈ â Ð

– D	£EÄ
global-ipv6-address	y [E@ ¥,X ß ÔCÇIPv6 Ä ß ÔCÇCÃ+ < ™NO F• yCÃ+ < Ä
weight	BóEQ >5 õ ã ß,X G¡ È1 8

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã Ä

Ï S*ü Û Ð Ð 5 set Q ¸ Ý ø/¡E¤> õ ã ÖWCMP BóEQ >5E¤> õ ã ÈM2WCMP BóEQ >5E¤> õ ã Ä ü ! Ô/¡E¤
> õ ã ß È2Ï4³ Ú B*ü Eg 9,X weight D Í# G£E¯> WCMP BóEQ >5 Ä

þ¤ þ Q ¸ âM6 Ã ¹C³ î þ IP È Ô î áCYE›

2-D0(%)TJ/F5BC7 1 0 0 1 Tf 0 TcCF411C 0 Td [1307DC0CBj / 0 987-7<0D1B3E3501C4

ÿ ÿ ÿ ÿ	A’5B1*+9CÃ+ ,XT¬Ax ß ÔCÇv6

Ï G ÄAÈ â Ð -

[illegible]	/ ' !,XCÃ+ ÒG!5B ™ ‰ Ä

Ï G ÄAÈ â Ð -

156 [illegible]

?U Í G! match ?˜ í,XCÃ+ Û â?U Ð 9,X,Â Û ³2O _ ÈAË S*üCÃ+ ÒG!5B Q ¸ [illegible]Ä¹ Q ¸,X [illegible]
6 ã ôL8 Æ ÝG!5B Ä

[illegible] { [illegible] 1 | [illegible] 2 | [illegible] 1 2 | [illegible] - [illegible] | [illegible] }

[illegible]

Ï – DAÈ â Ð AË R``AË R`CÁVïAÈ•àl‰ Þðp [illegible] —H ÒCÇHïUPp R``AÂ•$Žõ88uE)EtX %& ' Ä £E€Hï ”gU •Vï8 $ b rx€0 $ œD •¾

Ï G ÄAÈ â Ð -

157 local-pref

?U Í G! match ?˜ í,XCÃ+ A’5BLOCAL_PREFERENCE ÈAË S*üCÃ+ ÒG!5B Q ¸ local-pref ÄA¹ Q ¸,X o 6 ã ôL8 Æ ÝG!5B Ä

local-pref number

local-pref

Ï – DAÈ â Ð

– D	£EÄ
number	ì z,X zG£ Ä ª 8× È 0-4294967295

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û Ð Ð A¹ Q ¸*ü 9A’5B G! ,XCÃ+ ,X ì 4{ Ä
¾6ÑA’5B Ô þlocal-preference È á6ÑA’5B î þ local-preference 2 û Ä

ÏG!5B _ Ð

```
5XLMLH FRQILJ URXWH PDS 6(7B35() SHUPLW
5XLMLH FRQILJ URXWH PDS PDWFK DV SDWK
5XLMLH FRQILJ URXWH PDS VHW ORFDO SUHIHUHQFH
5XLMLH FRQILJ URXWH PDS H[LW
5XLMLH FRQILJ URXWH PDS 6(7B35() SHUPLW
5XLMLH FRQILJ URXWH PDS PDWFK DV SDWK
5XLMLH FRQILJ URXWH PDS VHW ORFDO SUHIHUHQFH
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
as-path	G!CÃ+ ,X AS_PATH 2 û
origin	G!CÃ+ ,XG£ z
tag	G!CÃ+ ,X$d ¥
as-path	A’5BG¡ Ú ×CÃ+ ,XAS_PATH 2 û
origin	A’5BG¡ Ú ×CÃ+ ,XG£ z
tag	A’5BG¡ Ú ×CÃ+ ,X2O _

Ï G ÄAÈ â Ð -

158 metric

?U Í G! match ?˜ í,XCÃ+ A’5BG£ z ÈAË S*üCÃ+ ÒG!5B Q ¸ **metric** ÄA¹ Q ¸,X o 6 ã ôL8 Æ ÝG!5B Ä

metric [+ metric-value | -metric-value | metric-value]

metric

Ï – DAÈ â Ð

– D	£EÄ
+	r t Ä ü sCÃ+ ,X metric Þ r t Å
-	£ å Ä ü sCÃ+ ,X metric Þ £ å Å
metric-value	A’5BG¡ Ú ×CÃ+ ,XG£ z

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B °Í8LÔ?U ÑrLgt3RS[Q5ÕuÞU7ÉÐ@ÞÓ¯Ãg/ô#A15BÊG1´Ã÷ê ,X á ÔZòÿt6‡m !¨/V Ã XG£ zF

159 [redacted]

?U Í G! match ?˜ í,XCÃ+ A’5B zG£ 2O _ ÈAË S*üCÃ+ ÒG!5B Q ¸ [redacted] ÄA¹ Q ¸,X [redacted] 6 ã ôL8 Æ ÝG!5B Ä

[redacted] type

[redacted]

Ï – DAÈ â Ð

– D	£EÄ
type	A’5BG¡ Ú ×CÃ+ ,X2O _ Ä OSPF G¡ Ú ×CÃ+ ,X2O _5 ,Õ type-2 Ä

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û ÐÏ Q ¸õ ã ÐÈÕ› î =‘þÅ„<2µ¯/ß°R 6ÑÐ!¨ Bœ:Q˜Û§!r-4(5(ute maps4(e)]TJ /C2_0 1 Tf 0 Tc 0 2 Td8.14 0 Td 4B84B82CC4>7968

1 6 0[illegible]

' å BGP Í1 ' ¥EÕCÃ+ È „ Ê È?U $µC‡CÃ+ ÒE›$¸ 5 Ê,XCÃ+ ÚG! MPLS Û1RLcCÃ+ ÔCK ¥EÕ ÈÃ
S*ü [illegible] Q ¸ Ä S*ü [illegible] Q ¸ 9 ª#\A¹ s6Ñ Ä
[illegible]
[illegible]

Ï – DAÈ â Ð	– D	£EÄ
	-	-

Ï5 ,ÕG!5B Ð G6(,XCÃ+ Ò1*+9 V p"u Ý n A¹?˜ í È å BGP Í1 ' ¥EÕ,X IPv4 CÃ+ á î ú MPLS Û1R Ä

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û Ð Ð A¹ Q ¸ ™ ü [illegible] Q ¸ G6(,XCÃ+ Ò h*ü Ä Q ¸ [illegible] ü BGP *ü 91u)Ú å BGP Í1 ' ¥EÕ IPv4 CÃ+ Ê Î • å Þ,XE›$¸1*+9 Ä
¾ S*ü Q ¸ [illegible] ü BGP Í1 ' KÈ ' Ô Z x 6 MPLS Û1RCÃ+ ,X s6Ñ È A¹ Q ¸ üCÃ+ Ò !6ÑCK 0*ü × ú í 1kG!5B ZA¹ Q ¸ ÈFw 0ú ÜCÃ+ ÒE›$¸ 5 Ê,XCÃ+ 3 ¾ J Ú ¥CÃ+ 5à á ú Û 1R Ä V p Æ4£ S*ü Q ¸ [illegible] ü BGP Í1 ' KÈ ' Ô Z x 6 MPLS Û1RCÃ+ ,X s6Ñ È G6(,XCÃ+ Ò"u ÝG!5B [illegible] Q ¸ ÈFw 0ú ÜCÃ+ ÒE›$¸ 5 Ê,XCÃ+ 3 ¾ Ú ¥ IPv4 CÃ+ 5à á ú MPLS Û1R Ä

ÏG!5B _ Ð ßM6,X _ $ ï Î Z Ô þCÃ+ Ò È CÃ+ !4Ô 1.1.1.1/32 E- 5CÃ+ Ú J Ú ¥ MPLS Û1R È CÃ+ !4Ô 1.1.1.2/32 E- 5CÃ+ ¾ Ú ¥ BEî,X IPv4 CÃ+ È „5à á ú Û1R ×FÑ á0ú Ü acl1 ` acl2 n ,X?˜ í,XCÃ+ Ú á î ¥EÕ CÃ+ È „4-F• Ä

```
5XLMLH FRQILJ LS DFFHVV OLVW VWDQGDUG DFO
5XLMLH FRQILJ VWG QDFO SHUPLW KRVW
5XLMLH FRQILJ VWG QDFO H[LW
5XLMLH FRQILJ LS DFFHVV OLVW VWDQGDUG DFO
5XLMLH FRQILJ VWG QDFO SHUPLW KRVW
5XLMLH FRQILJ VWG QDFO H[LW
5XLMLH FRQILJ URXWH PDS RXW DV SHUPLW
5XLMLH FRQILJ URXWH PDS PDWFK LS DGGUHVV DFO
5XLMLH FRQILJ URXWH PDS VHW PSOV ODEHO
5XLMLH FRQILJ URXWH PDS H[LW
5XLMLH FRQILJ URXWH PDS RXW DV SHUPLW
5XLMLH FRQILJ URXWH PDS PDWFK LS DGGUHVV DFO
```

Ï,Ì G Q ¸ Ð	Q ¸	£EÄ
	[illegible]	' Ô BGP Í1 ' KÈ x 6 ú MPLS Û1R,XCÃ+ s6Ñ
	[illegible]	1u)ÚBGP ¥EÕCÃ+ 4- Í1 ',X1*+9
	[illegible]	1u)Ú ¢ BGP Í1 ' y CÃ+ ,X1*+9 È¾ AŒ y ú Û1R ,XCÃ+
	[illegible]	¹,ß BGP

Ï G ÄAÈ â Ð -

1 61 ta þ

?U Í G! match ?˜ í,XCÃ+ µ C Û n ß ÔCÇ IP ÈAË S*üCÃ+ ÒG!5B Q ¸ **ta þ** ÄA¹ Q ¸,X **o** 6 ã ôL8 Æ ÝG!5B Ä Q ¸ ™*ü bCÃ+ 1*+9G!5B Ä

ta þ ip-address

ta þ

Ï – DAÈ â Ð

– D	£EÄ
ip-address	ß ÔCÇIP

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û Ð Ð CÃ+ µ C Ã ¹ ¢ Ô þCÃ+ E¯/ßG¡ Ú × º ê Ô þCÃ+ E¯/ß,X s6Ñ Ä!¨ V Ã ¹ Ú OSPF CÃ+ ³,XCÃ+ G¡ „ Ú × âEî RIP CÃ+ ³ È 3 Ã ¹ Ú RIP CÃ+ ³,XCÃ+ G¡ „ Ú × âEî OSPF CÃ+ ³ ÄCÃ+ ,X,Ì fG¡ Ú × Ã ¹ ü Ý,X IP CÃ+ #A, KÈE¯> Ä

üCÃ+ G¡ Ú × È4£ EîE›CÃ+ Ò Äroute maps Å,X h*ü È Í ø þCÃ+ ³ KÈ,XCÃ+ ,Ì f Ú ×E¯> Ý 5 Ê,X { Ä Ô þCÃ+ Ò?˜ íG!5B È Ã ¹ ;> 1 þ ê î þ,X **ath** Q ¸ ` 1 þ ê î þ,X **ts** Q ¸ Ä V p "u Ý **ath** Q ¸ È í G! Ý × V p"u Ý **ts** Q ¸ È í á . Ï) ¡ 0 Ä

ÏG!5B _ Ð Ú G!A“KÂ { >< 1 ,XCÃ+ ,X ß ÔCÇA’5B 192.168.1.2 Ä

```
5XLMLH FRQILJ URXWH PDS UHGULS SHUPLW
5XLMLH FRQILJ URXWH PDS PDWFK LS DGGUHVV
5XLMLH FRQILJ URXWH PDS VHW QH[W KRS
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
ath ce	G!CÃ+ ,X ß ÔCÇ y ·
ath addre	G!A“KÂ ë>< ,X
ath p	G!A“KÂ ë>< ,X ß ÔCÇ
ath pace	G!A“KÂ ë>< ,XCÃ+ $d
ath n	G!CÃ+ ,XG£ z
ath p	G!CÃ+ ,X2O _
ath g	G!CÃ+ ,X ÛA„
ts p	A’5BG¡ Ú ×CÃ+ ,X2O _
ts g	A’5BG¡ Ú ×CÃ+ ,X ÛA„

Ï G ÄAÈ â Ð -

1 6 2 ÿ

?U Í G! match ?˜ í,XCÃ+ µ C Û nCÃ+ 9$d 2 û ÈAË S*üCÃ+ ÒG!5B Q ¸ ÿÄA¹ Q ¸,X ¤ 6 ã ôL8 Æ ÝG!5B Ä

ÿ { ÿ |ÿ ïÿn }

ÿ

Ï – DAÈ â Ð

Ï – DAÈ â Ð

– D	£EÄ
ip-address	$d ¥5Ù,X

Ï5 ,ÕG!5B Ð -

ÏG!5B _ Ð G!5BOSPF CÃ+ #A,G¡ Ú × RIP CÃ+ È J ÚG¡ Ú ×CÃ+ ,X ÛA„A'5B 100 Ä

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU UHGLVWULEXWH ULS VXEQHWV URXWH PDS
5XLMLH FRQILJ URXWHU QHWZRUN DUHD
5XLMLH FRQILJ URXWHU H[LW
5XLMLH FRQILJ URXWH PDS UHGULS SHUPLW
5XLMLH FRQILJ URXWH PDS VHW WDJ
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
ntifice	G!CÃ+ ,X ß ÔCÇ y ·
ntipaddre	G!A"KÂ ë>< ,X
ntipp	G!A"KÂ ë>< ,X ß ÔCÇ
ntipace	G!A"KÂ ë>< ,XCÃ+ $d
ntien	G!CÃ+ ,XG£ z
ntiep	G!CÃ+ ,X2O _
ntiag	G!CÃ+ ,X ÛA„
ten	A'5BG¡ Ú ×CÃ+ ,XG£ z
ten p	A'5BG¡ Ú ×CÃ+ ,X2O _

Ï G ÄAÈ â Ð -

165**ly**

?U Í G! match ?˜ í,X BGP CÃ+ A'5B G¡ ÈAË S*üCÃ+ ÒG!5B Q ¸ **ly** ÄA¹ Q ¸,X **n** 6 ã ô L8 Æ ÝG!5B Ä

ly number

ly

Ï – DAÈ â Ð

– D	£EÄ
number	A'5BCÃ+ ,X G¡ Ä ª 8× È Ö0-65535

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ ÒG!5B õ ã

Ï S*ü Û Ð Ð A¹ Q ¸ ¾EÖ*ü b Â BGP CÃ+ ,X G¡ Ä
5 ,Õ ™ ‰ ß È ¢F• y ,XCÃ+ È B **lly** ,XG!5B k G¡ ,X ×5à *ó {CÃ+ ,X G¡ Î n,X 32768 Ä
Ã ¹EîE›A¹ Q ¸A'5B,X Â BGP 5 ,Õ Ú ¥,X G¡ Ä

ÏG!5B _ Ð BGP üF• in • å ÞA'5B G¡ È Ú ¢F• 1.1.1.1 y ,XCÃ+ ,X G¡ A'5B 100 Ä

```
5XLMLH FRQILJ URXWHU EJS
5XLMLH FRQILJ URXWHU QHLJKERU URXWH PDS QHL UPDS LQ L
```

```
5XLMLH FRQILJ URXWHU H[LW
5XLMLH FRQILJ URXWH PDS QHL UPDS LQ SHUPLW
5XLMLH FRQILJ URXWH PDS VHW ZHLJKW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
aths path	G!CÃ+ ,X AS_PATH
ath ign	G!CÃ+ ,X ¶ '
ath en	G!CÃ+ ,XG£ z
ath g	G!CÃ+ ,X$d ¥
ign	A'5BG¡ Ú ×CÃ+ ,XCOMMUNITY 2 û
en	A'5BG¡ Ú ×CÃ+ ,XG£ z
en p	A'5BG¡ Ú ×CÃ+ ,X2O _

Ï G ÄAÈ â Ð -

1 6 6 ist

S*üA¹ Q ¸ / ¶ ' ë><,X µ C Ä

ist [community-list-number | community-list-name]

Ï – DAÈ â Ð

– D	£EÄ
community-list-number	?U / µ C,X ¶ ' ë>< Ë Û š ¶ ' ë>< Ö4ê Ë8× È 1-99 =) ¶ ' ë>< Ö4ê Ë8× È 100-199
community-list-name	?U / µ C,X ¶ ' ë>< á + ¶ ' ë>< á áCYE› 80 +0ú

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð S*üA¹ Q ¸ 9 ¹,ß ¶ ' ë>><,X µ C Ä

ÏG!5B _ Ð

```
5XLMLH VKRZ LS FRPPXQLW\ OLVW
&RPPXQLW\ OLVW VWDQGDUG ORFDO
SHUPLW ORFDO $6
&RPPXQLW\ OLVW VWDQGDUG 5HG *LDQW
SHUPLW
GHQ\
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
ath ign	G! ¶ ' ë><
ent ite	B ¶ ' ë>< ôL8 BGP CÃ X 2 û ,X ¶ ' 2 û

Ï G ÄAÈ â Ð -

1 6 7 [illegible]

S*üA¹ Q ¸ / =) ¶ ' 2 û ë><,XG!5B µ C Ä

[illegible] [extcommunity-list-num | extcommunity-list-name]

Ï Q ¸ õ ã Ð (M *ü õ ã Ã < G!5B õ ã Ã y ·G!5B õ ã ÃCÃ+ #A,G!5B õ ã ÃCÃ+ ÒG!5B õ ã1 Ä

Ï S*ü Û Ð Ð V p"u Ý Û n !4Ô ë>< á + È î / Ý !4Ô ë><,XG!5B µ C È ú í ¾ / Û n !4Ô ë><,XG!5B µ C Ä

ÏG!5B _ Ð

```
5XLMLH VKRZ LS SUHIL[ OLVW
LS SUHIL[ OLVW SUH HQWULHV
VHT SHUPLW
VHT SHUPLW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

169

?U ¹,ß IP CÃ+ >< µ C È S*ü Q ¸ Ä

[[vrf-name] [network [mask] | | protocol [process-id] |]]

[vrf-name] [[| |] [network [mask]]

Ï – DAÈ â Ð

– D	£EÄ
vrf-name	¾ / A¹ VRF ,XCÃ+ µ C
Network	¾ / A¹,Â Û5%4°,XCÃ+ µ C
Mask	¾ / A¹ }-Õ,X,Â Û5%4°,XCÃ+
	/ ' !CÃ+ 5 D Ä Í b ECMP/WCMP CÃ+ È Ý Ô 5CÃ+ Au1k Å
Protocol	CÃ+ #A, ê5Ù GK A¡ Ö , × ' / (M n #A,CÃ+ Ê È S *ü ßEÄ GK A¡ Ö , , ,
process-id	CÃ+ #A,E¯/ß Ë
	¾ / M2T¬Ax G¡,XCÃ+
	/ BEîCÃ+ È á / 1 ËCÃ+ ` ¿EóG¡CÃ+
	¾ / 1 ËCÃ+
	¾ / ¿EóG¡CÃ+ ÛCÃ+

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M *ü õ ã Ã < G!5B õ ã Ã y ·G!5B õ ã ÃCÃ+ #A,G!5B õ ã ÃCÃ+ ÒG!5B õ ã1 Ä

Ï S*ü Û Ð Ð A¹ Q ¸ Ã ¹ Ý';EÝNM È&I# / Û nCÃ+ µ C Ä

*ü b / rL Ã ¹*ü bE@ ¥,X><NM È V p?U,ß Ø2O 2 û,X><NM ÈAË Û n Ã Ã

– D

ÏG!5B _ Ð _ 1 Ö

```
5XLMLH  VKRZ LS URXWH
&RGHV  &  FRQQHFWHG  6  VWDWLF  5  5,3  %  %*3
2  263)  ,$  263) LQWHU DUHD
1  263) 166$ H[WHUQDO W\SH  1  263) 166$ H[WHUQDO W\SH
(  263) H[WHUQDO W\SH  (  263) H[WHUQDO W\SH
L  ,6 ,6 VX  ,6 ,6 VXPPDU\ /  ,6 ,6 OHYHO  /  ,6 ,6 OHYHO
LD  ,6 ,6 LQWHU DUHD  FDQGLGDWH GHIDXOW
*DWHZD\ RI ODVW UHVRUW LV QR VHW
6          LV GLUHFWO\ FRQQHFWHG  9/$1
6          >  @ YLD
2 (        >    @ YLD              9/$1
5          >    @ YLD              9/$1
%          >   @ YLD
&            LV GLUHFWO\ FRQQHFWHG  9/$1
&              LV ORFDO KRVW
```

_ 2 Ö network Q ¸,X / 4§ p

```
5XLMLH  VKRZ LS URXWH
5RXWLQJ HQWU\ IRU
'LVWDQFH  PHWULF
5RXWLQJ 'HVFULSWRU %ORFNV
              DJR  YLD 9/$1  JHQHUDWHG E\ 263) H[WHUQ
```

Q ¸Eg Î µ C?·Gž V ß Ö

+!‰	AÈ â
Routing Descriptor Blocks	/ CÃ+ µ C,X ß ÔCÇ IP ÃCÃ+ 9$d Ã È „ ÊKÈ Ã 4£+ ¾ þ y · Ã$dCÃ+ #A, Ã2O _ ÃBGP ¶ ' 2 û 1

_ 3 Ö Q ¸,X / 4§ p

```
5XLMLH  VKRZ LS URXWH FRXQW
        URXWH LQIR
WKH QXP RI DFWLYH URXWH
```

_ 4 Ö Q ¸,X / 4§ p

```
5XLMLH  VKRZ LS URXWH ZHLJKW
        >GLVWDQFH PHWULF ZHLJKW@
6          >  @ YLD
6            >  @ YLD
```

_ 5 Ö Q ¸,X / 4§ p

```
5XLMLH VKRZ LS URXWH QRUPDO

&RGHV  &  FRQQHFWHG  6  VWDWLF  5  5,3  %  %*3
2  263)  ,$  263) LQWHU DUHD
1  263) 166$ H[WHUQDO W\SH  1  263) 166$ H[WHUQDO W\SH
```

```
(    263) H[WHUQDO W\SH    (    263) H[WHUQDO W\SH
L   ,6 ,6  VX   ,6 ,6 VXPPDU\  /    ,6 ,6 OHYHO    /    ,6 ,6 OHYHO
LD   ,6 ,6 LQWHU DUHD     FDQGLGDWH GHIDXOW

*DWHZD\ RI ODVW UHVRUW LV QR VHW
6            LV GLUHFWO\ FRQQHFWHG  9/$1
6            >   @ YLD
2 (          >     @ YLD                 9/$1
5            >     @ YLD                 9/$1
%             >    @ YLD
&              LV GLUHFWO\ FRQQHFWHG  9/$1
&                LV ORFDO KRVW
```

_ 6 Ö Q ¸,X / 4§ p

```
5XLMLH VKRZ LS URXWH HFPS

&RGHV   &   FRQQHFWHG  6   VWDWLF  5   5,3  %   %*3
2   263)  ,$   263) LQWHU DUHD
1    263) 166$ H[WHUQDO W\SH    1    263) 166$ H[WHUQDO W\SH
(    263) H[WHUQDO W\SH    (    263) H[WHUQDO W\SH
L   ,6 ,6  VX   ,6 ,6 VXPPDU\  /    ,6 ,6 OHYHO    /    ,6 ,6 OHYHO
LD   ,6 ,6 LQWHU DUHD     FDQGLGDWH GHIDXOW

*DWHZD\ RI ODVW UHVRUW LV           WR QHWZRUN
6            >   @ YLD
            >   @ YLD
2,$              >     @ YLD           9/$1
                 >     @ YLD            9/$1
```

_ 7 Ö Q ¸,X / 4§ p

```
5XLMLH VKRZ LS URXWH IDVW UHURXWH

&RGHV   &   FRQQHFWHG  6   VWDWLF  5   5,3  %   %*3
2   263)  ,$   263) LQWHU DUHD
1    263) 166$ H[WHUQDO W\SH    1    263) 166$ H[WHUQDO W\SH
(    263) H[WHUQDO W\SH    (    263) H[WHUQDO W\SH
L   ,6 ,6  VX   ,6 ,6 VXPPDU\  /    ,6 ,6 OHYHO    /    ,6 ,6 OHYHO
LD   ,6 ,6 LQWHU DUHD     FDQGLGDWH GHIDXOW
6WDWXV FRGHV  P   PDLQ HQWU\  EDFNXS HQWU\  D –

*DWHZD\ RI ODVW UHVRUW LV           WR QHWZRUN
6            >PD@ YLD
            >E@ YLD
2,$              >PD@ YLD            9/$1
```

```
                    > E DY@ D                    9 / $ 1
```

_ 8 Öp ás e network Q ¸,X / 4§ p

```
5 X L M L H   V K R Z  L S  U R X W H  I D V W  U H U R X W H
5 R X W L Q J  H Q W U \  I R U
' L V W D Q F H       P H W U L F
5 R X W L Q J  ' H V F U L S W R U  % O R F N V
> P @                    D J R   Y L D  9 / $ 1    J H Q H U D W H G  E \  2 6 3 )  H [ W H U Q
> E D @                    D J R   Y L D  9 / $ 1    J H Q H U D W H G  E \  2 6 3 )  H [ W H U Q
```

Q ¸Eg Î µ C?·Gž V ß Ö

+!‰	AÈ â
O	AÈ âA¹CÃ+ ,X$dCÃ+ #A, ÄA¹ +!‰ Ã6Ñ ª Ö C Ö,ÈE²CÃ+ × S ÖM- ÕCÃ+ × R ÖRIP CÃ+ × B ÖBGP CÃ+ × O ÖOSPF CÃ+ × i ÖIS-IS CÃ+ Ä
E2	CÃ+ 2O _ ÄA¹ +!‰ Ã6Ñ ª Ö E1 ÖOSPF êF¼CÃ+ 2O 1 × E2 ÖOSPF êF¼CÃ+ 2O 2 × N1 ÖOSPF NSSA êF¼CÃ+ 2O 1 × N2 ÖOSPF NSSA êF¼CÃ+ 2O 2 × IA ÖOSPF CÃ+ ³ YF¼CÃ+ × su ÖIS-IS " CÃ+ × L1 ÖIS-IS 1 4{CÃ+ × L2 ÖIS-IS 2 4{CÃ+ × ia ÖIS-IS CÃ+ ³ YF¼CÃ+ Ä
[ma]	AÈ âA¹CÃ+ ,X Û ß ÔCÇ 2 û ÄA¹ +!‰ Ã6Ñ ª Ö m Ö ß ÔCÇ b Ö Û Ñ ß ÔCÇ a Ö ' !# | Ä G*ü b rL E@ ¥,X Å ß ÔCÇ
20.0.0.0/8	,Â Û5%4°,X5%4° ` }-ÕKS z
[1/0]	1u)ÚC±/• Ë zG£
Via 20.0.0.1	ß ÔCÇIP
00:00:06	#A,CÃ+ ,# ÊKÈ
VLAN 1	ß ÔCÇE@ ¥ y ·

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

170

Ï – DAÈ â Ð

Ï5 ,ÕG!5B Ð

Ï Q ¸ õ ã Ð

Ï S*ü Û Ð Ð

ÏG!5B _ Ð

```
        %*3
        727$/

*OREDO
    0HPRU\      E\WHV
    (QWULHV    ÈEDVHG RQ URXWH SUHIL[HV
                          1250$/ (&03    )55    727$/
        &RQQHFWHG
        6WDWLF
        5,3
        263)
        ,6,6
        %*3
        727$/

95)
    0HPRU\      E\WHV
    (QWULHV    ÈEDVHG RQ URXWH SUHIL[HV
                          1250$/ (&03    )55    727$/
        &RQQHFWHG
        6WDWLF
        5,3
        263)
        ,6,6
        %*3
        727$/
```

Total Ô8V £EÄ ÝCÃ+ ><,X4³Au µ C `Ä

Q ¸Eg Î µ C?·Gž V ß Ö

+!‰	AÈ â

NORMAL

Connected	AÈ âA¹> ><NM #A,2O _ ÄA¹ +!‰ Ã6Ñ ª Ö Connected Ö,ÈE²CÃ+ ><NM Static ÖM- ÕCÃ+ ><NM RIP ÖRIP CÃ+ ><NM OSPF ÖOSPF CÃ+ ><NM ISIS ÖISIS CÃ+ ><NM BGP ÖBGP CÃ+ ><NM TOTAL Ö Ý #A,><NM 5,Â ÜAu
IP routing table count	CÃ+ >< þ D
Global	AÈ â ' !CÃ+ >< á/Ä ÄA¹ +!‰ Ã6Ñ ª Ö Global Ö < Ä G5 ,Õ VRF Å VRF1 ÖVRF á/Ä TOTAL Ö Ý VRF CÃ+ >< ÜAu µ C

E2	CÃ+ 2O _ ÄA¹ +!‰ Ã6Ñ ª Ö E1 ÖOSPF êF¼CÃ+ 2O _ Í × E2 ÖOSPF êF¼CÃ+ 2O _ Î × N1 ÖOSPF NSSA êF¼CÃ+ 2O 1 × N2 ÖOSPF NSSA êF¼CÃ+ 2O 2 × IA ÖOSPF CÃ+ ³ YF¼CÃ+ × su ÖIS-IS " CÃ+ × L1 ÖIS-IS 1 4{CÃ+ × L2 ÖIS-IS 2 4{CÃ+ × ia ÖIS-IS CÃ+ ³ YF¼CÃ+ Ä
20::/64	,Â Û5%4°,X5%4° ` }-ÕKS z
[1/0]	1u)ÚC±/• Ë zG£
via 10::4	ß ÔCÇPv6
VLAN 1	ß ÔCÇE@ ¥ y ·

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ

text	šJyAxA•
accept-lifetime	y • å*ó , ó
send-lifetime	¥EÕ • å*ó , ó

Q ¸	£EÄ
-	-

-

?U / CÃ+ Ò,XG!5B µ C ÈAË S*ü(M *ü õ ã Q ¸ [redacted]Ä

[redacted] [route-map-name]

2 RIP

2.1 address-family

?UE¯ 9 £ $ õ ãG!5B RIP CÃ+ #A, È S*ü £ $ õ ã Q ¸ **address-family** È?U ôL8G!5BCÃ+ #A, ,X £ $ õ ã È S*üA¹ Q ¸,X **no** 6 ã Ä

address-family **ipv4** vrf vrf-name

no address-family **ipv4** vrf vrf-name

Ï – DAÈ â Ð

– D	£EÄ
ipv4 vrf vrf-name	Û n $ õ ã Q ¸ G6(,X VRF ,X á + Ä

Ï5 ,ÕG!5B Ð 5 ,Õ áG!5B RIP #A,,X £ Ä

Ï Q ¸ õ ã Ð CÃ+ G!5B õ ã Ä

Ï S*ü Û Ð Ð S*ü **address-family** Q ¸ SA' ÛE¯ 9 £G!5B $ õ ã Ä ¤/ Ö (config-router-af)# Å Ä '1 Ô õ Û n $ õ ã G6(,X VRF Ê ÈRIP î ï Î Í hA¹ VRF ,X RIP r _ Ä üA¹ $ õ ã ß È Ã ¹G!5B,Ì h,X VRF ,X RIP CÃ+ µ C Ä

?U ôL8 £G!5B $ õ ã JE¨ ²CÃ+ G!5B õ ã È S*ü **address-family** ê5Ù **ipv4** Q ¸ Ä

ÏG!5B _ Ð ï Î Ô þ á vpn1 ,X VRF È J A¹ vrf ï Î,Ì h,X RIP r _ Ä

```
5XLMLH FRQILJ LS YUI YSQ
5XLMLH FRQILJ YUI H[LW
5XLMLH FRQILJ LQWHUIDFH IDVW(WKHUQHW
5XLMLH FRQILJ LI )DVW(WKHUQHW LS YUI IRUZDUGLQJ YSQ
5XLMLH FRQILJ LI )DVW(WKHUQHW LS DGGUHVV
5XLMLH FRQILJ URXWHU ULS
5XLMLH FRQILJ URXWHU DGGUHVV IDPLO\ LSY YUI YSQ
```

" s6Ñ Ä

ate ay

ate ay

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð 5 ,Õ *ü7¾ |" s6Ñ Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð RIP CÃ+ 7¾ |" È ' $5%CÃ+ 0SC^ Ý2O5%4°E•+ Ê È Ú7¾ |" ä Ý2O5%4°CÃ+ Ä RIPv1 ` RIPv2 5 ,Õ ™ ‰ ß ÚE¯> CÃ+ 7¾ |" Ä

RIP ,XCÃ+ 7¾ |" s6Ñ È ¤P¬ Z5%4°,X 4ý û ` Ý û Ä V p Ý" CÃ+ , ü È üCÃ+ >< Ú,ß á Ù ÿ ü" CÃ+ Y,X $CÃ+ ÈE- Ã ¹ û û4ý ãCÃ+ ><,X?˜ õ Ä

Eî " CÃ+ î!¨Eî)(À,X!£ 5CÃ+ Ú È Ý)[È ?U Ý ¹ ß ´2ô Ö

1 Ô&• Ö ' ¹ R RIP D B g Ê È" CÃ+ î k ì Ø)Ú ×

1 `&• Ö ' ¹ R RIP D B g Ê È ï) $CÃ+ Ú>• Ñ+9 È £ å Z Ø)Ú ÊKÈ ×

1 Ý&• Ö Ý Ê Ã6Ñ à ï : K ',X $5%CÃ+ È5à á ã ¾,ß " â,X5%4°CÃ+ ÈE- ÊLÔ?U GKÁCÃ+ 7¾ |" s6Ñ Ä ¾ ÝG!5B RIPv2 Ê È ! Ã ¹ GKÁCÃ+ 7¾ |" s6Ñ ÈRIPv1 h*üCÃ+ 7¾ |" Ä CY5%CÃ+ 8× È!¨ Ý2O5%4° È û È ¹A¹ Q ¸ ÍCY5%CÃ+ ´ Ä

ÏG!5B _ Ð GKÁRIPv2 ,XCÃ+ 7¾ |" Ä

```
5XLMLH FRQILJ URXWHU ULS
5XLMLH FRQILJ URXWHU YHUVLRQ
5XLMLH FRQILJ URXWHU QR DXWR VXPPDU\
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
ia	n RIP ,XEC Ê(Ä Ý v1 ` v2 ø þ(È5 ,Õ à Ê Õ v1&v2 Ä

Ï G ÄAÈ â Ð -

2.3 bfal- ace

G!5BE¤> RIP ,X Ý y · S*ü BFD E¯> JÒCÃ "# ÈAË üRIP CÃ+ G!5B õ ã ß ;> **bf al- ace** Ä S*üA¹ Q ¸,X no 6 ã 6 á5 ,ÕG!5B Ä

bfal- ace

bfal- ace

Ï – ÂÁ 8€pÞ QSˆ'FÑSˆ ã F4yQaVà„ …•! ' ™C21ˆ ™ Q3# , nû $v Q3h`@¢RÑSˆ è,å8‰õ81Sˆ ã F4yQaVà„ ,Î '••! ™C2%- ™(0

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð ü RIP Þ | BFD ”# s6Ñ â È Ú î RIP CÃ+ µ C$d(RIPCÃ+ È „ y [,X$d) Î0Ÿ BFD îA± È
Ô º BFD F• ÈRIP CÃ+ µ C Ú,È yE¯ 9 (Š Õ È á a – âCÃ+ E@ ¥ Ä
ü RIP #A, Î0Ÿ BFD F• ”# Ê È?U" – â RIP E¤> ,X ø ÄA’ Û,X$d IP ü à Ô þ5%!‰ Y È
E- !6Ñ üF• KÈ Î0Ÿ BFD îA± Ä

f BT 2E073 0 1.@ 0075•TQ±Ô0]F,•w 0 15>ÞS/TOEq(,ÑadÂ$P Aa¡Ò ãÂIu ec ÕÑ05Ô 1 p•Ar«2Td-<Q80w•2=ÁÔ5E1]262•84/438Â$25 NBT

Í b *ó ä,X5 ,ÕCÃ+ È ¡' LÔ?U S*ü Q ¸ !6Ñ ó>•
é 9 RIP Ä

ÏG!5B _ Ð {*ó Ô 55 ,ÕCÃ+ RIP CÃ+ >< Ä

5XLMLH FRQILJ URXWHU GHIDXOW LQIRUPDWLRQ RULJLQDWH DOZD\

Ï,Ì G Q ¸ Ð

2.6 distance

?UA’5BRIP CÃ+ ,X1u)ÚC±/• ÈAË S*üCÃ+ E¯/ßG!5B Q¸distance ÄA¹ Q ¸,X o 6 ã 6 á5 ,ÕA’5B Ä

distance distance [ip-address wildcard]

distance [distance ip-address wildcard]

Ï – DAÈ â Ð

– D	£EÄ
distance	A’5B RIP CÃ+ 1u)ÚC±/• È1-255 KÈ,X H D
ip-address	CÃ+ 9$dIP !4Ô
wildcard	n IP !¨EW!¨(M ! È0 ></ 2’.B G! È1 >< á .!¨EW Ä

Ï5 ,ÕG!5B Ð 5 ,Õ 120 Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð S*üA¹ Q ¸A’5B RIP CÃ+ ,X1u)ÚC±/• Ä

Ã ¹ S*ü!8 Q ¸ ï Î î 5 ú$d !4Ô,X1u)ÚC±/• È ' RIP CÃ+ $d üE- o !4Ô8× È Y È í h*ü,Ì h ,X1u)ÚC±/• È ú íA¹CÃ+ h*ü RIP A’5B,X1u)ÚC±/• Ä

ÏG!5B _ Ð G!5BRIP CÃ+ 1u)ÚC±/• 160 È Û n ¢ 192.168.12.1 : 4 ,XCÃ+ ,X1u)ÚC±/• 123

```
5 X L M L H  F R Q I L J  U R X W H U  U L S
```

EnRIP(M ! È0‰C•€0‰CpïSpïS•…•S•…•Sp• Sp• S•, ˜å€

Ï5 ,Õ G!5B Ð 5 ,Õ"u Ý n Ú × ë><Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð Z ¦4± y ¤ o Û nCÃ+ È Ã ¹EîE›G!5BCÃ+ Ú × { ë><È Í Ý y ,XCÃ+ È „ y [E¯> Ø)Ú Ä
V p"u Û n y · È Í Ý,X y · y ,XCÃ+ È „ y [E¯> Ø)Ú Ä

ÏG!5B _ Ð RIP Í ¢ Fastethernet 0/0 0Ã · y ,XCÃ+ E¯> { Ø)Ú È ¾ AŒ y 172.16 Ô ,XCÃ+ Ä

```
5 X L M L H F R Q I L J U R X W H U U L S
5 X L M L H F R Q I L J U R X W H U Q H W Z R U N
5 X L M L H F R Q I L J U R X W H U G L V W U L E X W H O L V W L Q I D V W H W K H U Q H W
5 X L M L H F R Q I L J U R X W H U Q R D X W R V X P P D U \
5 X L M L H F R Q I L J D F F H V V O L V W S H U P L W
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
access-list	n A“KÂ ë><?˜ í Ä
prefix-list	n !4Ô ë><Ä

Ï G ÄAÈ â Ð -

2.8 distribute-list

?U { CÃ+ È „Eî È ¹ r)„CÃ+ E›$¸ ÈAË S*üCÃ+ E¯/ßG!5B Q ¸ **distribute-list** ÄA¹ Q ¸,X **in** 6 ã ôL8A¹ n Ä

distribute-list { [access-list-number | name] | **prefix** prefix-list-nam

Ï5 ,ÕG!5B Ð 5 ,Õ"u Ý { CÃ+ È „Eî Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð V pA¹ Q ¸ áC³ Ï) ÃEÝ – D ÈCÃ+ È „Eî { Í Ý y ·CK 0*ü × V pC³ y ·EÝNM ÈCÃ+ È „Eî { ¾ Í Û n y ·CK 0*ü × V pC³ J WCÃ+ E¯/ß – D È íCÃ+ È „Eî { ¾ Í Û nCÃ+ E¯/ßCK 0*ü Ä

ÏG!5B _ Ð RIP CÃ+ E¯/ß ¾ Í êEî 192.168.12.0/24 CÃ+ Ä

```
5XLMLH FRQILJ URXWHU ULS
5XLMLH FRQILJ URXWHU QHWZRUN
5XLMLH FRQILJ URXWHU QHWZRUN
5XLMLH FRQILJ URXWHU GLVWULEXWH OLVW RXW
5XLMLH FRQILJ URXWHU YHUVLRQ
5XLMLH FRQILJ DFFHVV OLVW SHUPLW
```

Ï,Ì G Q ¸ Ð

Ï G ÄAÈ â Ð -

2.10 gracefulrestart

?UG!5BA' Û,XRIP ìL™G¡ (Graceful RestartÈGR) s6Ñ È S*üG!5B Q gracefulrestart Ä*ü gracefulrestartgrace-period ãG!5B ìL™G¡ ,X grace period – D È à Ê S6Ñ #A,,X ìL™G¡ s6Ñ Ä S*üA¹ Q ¸,X o EÝNM 6 á T¬AxG!5B Ä

gracefulrestart [grace-period grace-period]

gracefulrestart [grace-period]

Ï – DAÈ â Ð

– D	£EÄ
gracefulrestart	*ü ìL™G¡ (Graceful Restart ÈGR) s6Ñ.
grace-period	ãG!5B grace-period
grace-period	*ü A'5B,X GR G¡ < ó Ä ª 8× È 1-1800 /¦ Ä 5 ,Õ È „ ÊKÈ,X 2 á ` 60s ø5Ù ,XEW ã5Ù Ä

Ï5 ,ÕG!5B Ð 5 ,Õ"u Ý S6Ñ GR Restart 6Ñ o Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð ìL™G¡ s6Ñ Î b RIP r _G!5B È á à,X RIP r _ Ã ¹ B ™ ‰G!5B á à,X – D Ä
ìL™G¡ < ó ;> RIP G¡ RIP ` ä ìL™G¡ ,X ÔKS ÊKÈ È üE-!‰ ÊKÈ YE@ ¥><4È Õ G¡ !,XE@ ¥>< È J ;> RIP CÃ+ 6 á ¹ 0 È S RIP 6 á #A,G¡ !,X(Š Õ Ä'G¡ < ó ó â È RIP ÚEÔ Î GR (Š Õ È ;> BEî,X RIP ¡ 0 Ä
gracefulrestartgrace-period AŒ*ü ã Â G¡ < ó Ä"¼ ã È?U6Ñ ó ±A• ü RIP CÃ+ ´ ÊKÈ Y ` ä GR G¡ È J4£E› Ô õ RIP CÃ+ È „ < ó Ä V pA¹ A'5B á ' È Ã6Ñ ´"© ±A• ìL™G¡ E›/ß D BE@ ¥,X áKÈ • È L _,X ™ ‰ V Ö VG¡ < ó û bF• ,XCÃ+ ´ ÊKÈ È üCÃ+ ´ ÊKÈ ó ÊE¬"u Ý ` ä GR È'u ÝG¡ „ åF• Eî CÃ+ ÈF• ,XCÃ+ ü´ ÊKÈ ó â 0!6E@ ¥ È Ð7È5%4°,X D BE@ ¥ • Ä ¹L8M2 Ý â.B,XLÔ" È ú í á ÎA,A× H ìL™G¡ < ó Ä V pLÔ?UA× H ÈAË4§ Ü bais Q ¸ ,XG!5B È.B nG¡ < ó,X û bCÃ+ È „ ÊKÈ È è ã bCÃ+ ´ ÊKÈ Ä
ü RIP ìL™G¡ E¤> E›/ß ÈAË ± Õ5%4°)ƒ W,X0 n Ä

ÏG!5B _ Ð S6ÑRIP ,X GR s6Ñ ¹ žG!5B GR s6Ñ,XG¡ < ó – D Ö

```
5XLMLH FRQILJ URXWHU ULS
5XLMLH FRQILJ URXWHU JUDFHIXO UHVWDUW JUDFH SHULRG
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
bais	G!5BRIP n Ê <

Ï G ÄAÈ â Ð -

2.1 [illegible]chain

?U *ü RIP AxA• È J Û n RIP AxA• S*ü,X šJy È*ü y ·G!5B Q ¸ [illegible]chain Ä
A¹ Q ¸,X [illegible] 6 ã ôL8 Û n,X šJy Ä
[illegible]chain name-of-keychain
[illegible]chain

Ï – DAÈ â Ð

– D	£EÄ
name-of-keychain	šJy á + È Û n RIP AxA• S*ü,X šJy Ä

Ï5 ,ÕG!5B Ð 5 ,Õ þ G6(šJy Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

Ï S*ü Û Ð Ð V p šJy ü y ·G!5B Û n Z ÈAË S*ü [illegible] < G!5B Q ¸E¯> A¹ šJy ,X n È ú í Ú Ã6Ñ Ð
7ÈRIP D B ÙAxA• Bù Ä
RIPv1 á Õ RIP D B ÙAxA• È ¾ Ý RIPv2 Õ Ä

ÏG!5B _ Ð fastEthernet 0/1 y · *ü RIP AxA• È G6(,X šJy ripchain Ö

```
5XLMLH FRQILJ LQWHUIDFH IDVW(WKHUQHW
5XLMLH FRQILJ LI )DVW(WKHUQHW LS ULS DXWKHQWLFDWLRQ NH
```

S*ü [illegible] n A¹ šJy Ö

```
5XLMLH FRQILJ NH\ FKDLQ ULSFKDLQ
5XLMLH FRQILJ NH\FKDLQ NH\
5XLMLH FRQILJ NH\FKDLQ NH\ NH\ VWULQJ +HOOR
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	n RIP AxA•,X õ ã Ä
[illegible]	*ü RIP AxA• ÈJA'5B RIP â [AxA• +0ú Ä¾ Ý RIPv2 Õ RIP D B ÙAxA• Ä
[illegible]	RIP ü Ô þ y · Þ Ú y ¾ þ(,X RIP D B Ù Ä
[illegible]	RIP ü Ô þ y · Þ Ú ¥EÕ ¾ þ(,X RIP D B Ù Ä
[illegible]	ï Î šJy È JE¯ 9 šJy G!5B õ ã Ä

Ï G ÄAÈ â Ð -

2.2 [illegible]

?U n RIP AxA•,X õ ã ÈAË S*ü y ·G!5B Q ¸ [illegible] ÄA¹ Q ¸,X [illegible] 6 ã 6 á5
,Õ RIP AxA• õ ã Ä
[illegible] { [illegible] | [illegible] }
[illegible]

Ï S*ü Û Ð Ð A¹ Q ¸ ™ ü â [AxA• õ ã ß*ó Ä
V p?U *ü RIP â [AxA• s6Ñ È Ã ¹,È y S*ü Q ¸G!5B â [AxA• +0ú È 3 Ã ¹EîE› G6(šJy 9‹ ª
â [AxA• +0ú È â5Ù ì 4{P¬ b !5Ù Ä
RIPv1 á Õ RIP D B ÙAxA• È ¾ Ý RIPv2 Õ Ä

ÏG!5B _ Ð fastEthernet 0/1 y ·,X *ü RIP â [AxA• ÈA'5B â [AxA• +0ú hello Ä
5XLMLH FRQILJ LQWHUIDFH IDVW(WKHUQHW
5XLMLH FRQILJ LI)DVW(WKHUQHW LS ULS DXWKHQWLFDWLRQ WH

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	n RIP AxA•,X õ ã Ä
[illegible]	*ü RIP AxA• È J Û n RIP AxA• S*ü,X šJy Ä ¾ Ý RIPv2 Õ RIP D B ÙAxA• Ä

Ï G ÄAÈ â Ð -

2.4 [illegible]

G!5BE¤> RIP ,X Û n y · | ê5Ù GKÁ S*ü BFD E¯> JÒCÃ "# ÈAË S*ü y ·G!5B Q ¸ **[illegible]**
[**disable**] Ä S*üA¹ Q ¸,X no 6 ã ôL8 y · Þ **[illegible]** G!5B Ä
[illegible] [**disable**]
[illegible]

Ï – DAÈ â Ð

– D	£EÄ
disable	GKÁE¤>RIP ,X Û n y · S*ü BFD E¯> JÒCÃ "# Ä

Ï5 ,ÕG!5B Ð 5 ,Õ"u ÝG!5B È ¹ RIP E¯/ßG!5B õ ã ß,X BFD G!5B š Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

Ï S*ü Û Ð Ð y ·G!5B,X ì 4{P¬ bE¯/ßG!5B õ ã ß,X **bifal-face** Q ¸ Ä
| Ã ¹ B rL)ƒ W ÈEîE› **[illegible]** Q ¸EÝ ½ Û n,X y · S*ü BFD E¯> JÒCÃ "# È 3 Ã ¹ S*ü RIP E¯ /ßG!5B õ ã ß,X Q ¸ **bifal-face** G!5B – â RIP E¤> ,X Ý y ·EîE› BFD E¯> JÒCÃ "# È S*ü **[illegible]** **[illegible]disable** EÝ ½ GKÁ Û n y ·,X BFD "# s6Ñ Ä

ÏG!5B _ Ð -

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	| RIP CÃ+ E¯/ß JE¯ 9CÃ+ E¯/ßG!5B õ ã Ä
bifal-face	G!5BE¤> RIP ,X Ý y · S*ü BFD E¯> JÒCÃ "# Ä

Ï G ÄAÈ â Ð -

2.5 [illegible]

?U ü ¤ RIP y ·E¯> 5 ,ÕCÃ+ Eî ÈAË S*ü y ·G!5B Q ¸ [illegible] ÄA¹ Q ¸,X [illegible] 6 ã ª#\ üA¹ y ·Eî 5 ,ÕCÃ+ Ä

[illegible] { [illegible] | [illegible] } [[illegible] metric-value]

[illegible]

Ï – DAÈ â Ð

– D	£EÄ
[illegible]	Eî 5 ,ÕCÃ+ È áEî J WCÃ+
[illegible]	Eî 5 ,ÕCÃ+ È 3Eî J WCÃ+
[illegible] metric-value	5 ,ÕCÃ+ ,XG£ z È ª 8× È Ö1-15

Ï5 ,ÕG!5B Ð T¬Ax"u Ý5 ,ÕCÃ+ G!5B Ämetriðî¬Ax 1 Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

Ï S*ü Û Ð Ð ü ¤ y ·G!5B ZA¹ Q ¸ â È î {*ó Ô 55 ,ÕCÃ+ È J ¢A¹ y ·Eî !8CÃ+ Ä V p à ÊG!5B Z y · ß,X [illegible] ` RIP E¯/ß,X [illegible] È í ¾Eî y ·G!5B,X5 ,ÕCÃ + Ä

¾?U Ý Ô þ y ·G!5B Z [illegible] È RIP á a : 4F• Eî ,X5 ,ÕCÃ+ Ä

ÏG!5B _ Ð ü y · ethernet0/1 Þ ï Î Ô 55 ,ÕCÃ+ ÈA¹ y · ¾Eî A¹5 ,ÕCÃ+ Ä

```
5XLMLH FRQILJ LQWHUIDFH HWKHUQHW
5XLMLH FRQILJ LI (WKHUQHW LS ULS GHIDXOW LQIRUPDWLRQ RQ
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	ü RIP E¯/ß {*ó5 ,ÕCÃ+

Ï G ÄAÈ â Ð -

2.16 [illegible]

?U AŒRIP ü Ô þ Û n y · Þ y RIP D B Ù È*ü y ·G!5B Q ¸ [illegible] ÄA¹ Q ¸,X [illegible] 6 ã/U!6 RIP ü Ô þ Û n y · Þ y RIP D B Ù Ä

[illegible]

[illegible]

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð 5 ,Õ AŒ y · y RIP D B Ù

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

Ï S*ü Û Ð Ð V p?U/U!6 ¤ y · y RIP D B Ù È üA¹ y ·,X y · õ ã ß S*üA¹ Q ¸,X [illegible] 6 ãG!5B Ä Q ¸ ™ 0*ü b G!5B Z!8 Q ¸,X y · Ä Ã S*üA¹ Q ¸,X [illegible] 6 ã 6 á y · y RIP D B Ù Ä

ÏG!5B _ Ð fastEthernet 0/1 y ·/U!6 y RIP ,X D B Ù Ä

```
5XLMLH FRQILJ LQWHUIDFH IDVW(WKHUQHW
5XLMLH FRQILJ LI )DVW(WKHUQHW QR LS ULS UHFHLYH HQDEOH
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	AŒ ê/U!6 y · ¥EÕ RIP D B Ù
[illegible]	G!5BRIP >• | y ·

Ï G ÄAÈ â Ð -

2.1 [illegible]

?U n RIP ü Ô þ y · Þ Ú y ¾ þ(,X RIP D B Ù È*ü y ·G!5B Q ¸ [illegible] ÄA¹ Q ¸,X [illegible] 6 ã 6 á5 ,ÕG!5B Ä

[illegible] [1] [2]

[illegible]

Ï – DAÈ â Ð

– D	£EÄ
1	¾ y RIPv1 ,X D B Ù Ä
2	¾ y RIPv2 ,X D B Ù Ä

Ï5 ,ÕG!5B Ð 5 ,Õ> ª ‡ b [illegible] Q ¸,XG!5B Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

Ï S*ü Û Ð Ð A¹ Q ¸,XG!5B4§ p È Ã ¹?Z,ª*ü [illegible] Q ¸,X5 ,ÕG!5B ÄA¹ Q ¸ ¾ E ¡ y · y RIP y [,X> È Ã ¹ AŒA¹ y · à Ê y RIPv1 ` RIPv2 ,X D B Ù Ä!8 Q ¸G!5B Ê á ú – D í y > ª ‡ b version ,X G!5B Ä

ÏG!5B _ Ð S fastEthernet 0/1 y · Ã ¹ y RIPv1 ` RIPv2 ,X D B Ù Ä

```
5XLMLH FRQILJ LQWHUIDFH IDVW(WKHUQHW
5XLMLH FRQILJ LI )DVW(WKHUQHW LS ULS UHFHLYH YHUVLRQ
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	n Ý y · ¥,X RIP D B Ù,X5 ,Õ(Ä

Ï G ÄAÈ â Ð -

2.3 [illegible]

?U AŒRIP ü Ô þ Û n y · Þ ¥EÕ RIP D B Ù È*ü y ·G!5B Q ¸ [illegible] ÄA¹ Q ¸,X [illegible] 6 ã /U!6 RIP ü Ô þ Û n y · Þ ¥EÕ RIP D B Ù Ä

[illegible]

[illegible]

Ï – DAÈ â Ð	– D	£EÄ
	-	-

Ï5 ,ÕG!5B Ð 5 ,Õ AŒ y · ¥EÕ RIP D B Ù

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð V p?U/U!6 ¤ y · ¥EÕ RIP D B Ù È üA¹ y ·,X y · õ ã ß S*üA¹ Q ¸,X [illegible] 6 ãG!5B Ä Q ¸ ™ 0*ü b G!5B Z!8 Q ¸,X y · Ä Ã S*üA¹ Q ¸,X [illegible] 6 ã 6 á y · ¥EÕ RIP D B Ù Ä

ÏG!5B _ Ð S R I P

,X ▯ 6 ã/U!6 ü,Ì h y ·Eî CY5%CÃ+ Ä Q ¸ ™ 0*ü bG!5B Z!8 Q ¸,X y · Ä
A¹ Q ¸ ™ ü y · ¥EÕ RIPv2 y [Ê Ý È*ü b { CY5%CÃ+ ,X ¥EÕ Ä

ÏG!5B _ Ð S fastEthernet 0/1 y ·/U!6 ¥EÕ RIP ,XCY5%CÃ+ Ä

```
5XLMLH FRQILJ LQWHUIDFH IDVW(WKHUQHW
5XLMLH FRQILJ LI )DVW(WKHUQHW QR LS ULS VHQG VXSHUQHW U
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	AŒ ê/U!6 y · ¥EÕ RIP D B Ù
▯	G!5BA' ÛE¤> ,XRIP (

Ï G ÄAÈ â Ð -

2.20 [illegible]

?U n RIP ü Ô þ y · Þ Ú ¥EÕ ¾ þ(,X RIP D B Ù ÈAË S*ü y ·G!5B Q ¸ [illegible] Ä
A¹ Q ¸,X ▯ 6 ã 6 á5 ,ÕG!5B Ä
[illegible] [**1**] [2]
[illegible]

Ï – DAÈ â Ð

– D	£EÄ
1	¾ y RIPv1 ,X D B Ù Ä
2	¾ y RIPv2 ,X D B Ù Ä

Ï5 ,ÕG!5B Ð 5 ,Õ> ª ‡ b ▯ Q ¸,XG!5B Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

Ï S*ü Û Ð Ð A¹ Q ¸,XG!5B4§ p È Ã ¹?Z,ª*ü ▯ Q ¸,X5 ,ÕG!5B ÄA¹ Q ¸ ¾ E ¡ y · ¥EÕ RIP y [,X> È Ã ¹ AŒA¹ y · à Ê ¥EÕ RIPv1 ` RIPv2 ,X D B Ù Ä!8 Q ¸G!5B Ê á ú – D í y > ª ‡ b version ,X G!5B Ä

ÏG!5B _ Ð S fastEthernet 0/1 y · Ã ¹ ¥EÕ RIPv1 ` RIPv2 ,X D B Ù Ä

```
5XLMLH FRQILJ LQWHUIDFH IDVW(WKHUQHW
5XLMLH FRQILJ LI )DVW(WKHUQHW LS ULS VHQG YHUVLRQ
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
▯	n Ý y · ¥,X RIP D B Ù,X5 ,Õ(Ä

Ï G ÄAÈ â Ð -

2.21 þb

?U *ü RIP " G Ú F s6Ñ ÈAË S*ü y ·G!5B Q ¸ ïþb ÄA¹ Q ¸,X ïo 6 ã GKÁ RIP " G Ú F s6Ñ Ä

þb [ïþ-ïo]

þb [ïþ-ïo]

Ï – DAÈ â ad<t< e2l &# ŸVS&$òfS&Â Rb0 • # õc•'%@Rb? Æ8 ˜PRb?ï° œ ÆBV 1Ï – Ä

Ï – DAÈ â Ð

– D	£EÄ
ip-address	?U>•" 6.,X IP
ip-network-mask	Û n IP E¯> CÃ+ " 6.,X $5% }-Õ

Ï5 ,ÕG!5B Ð RIP 7¾ |" 6. Ý2O5%4°E•+

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

Ï S*ü Û Ð Ð Q ¸ [illegible] adde *ü 9 ü ¤ þ Û n y · ß" 6. Ô þ ê $5% Ä RIP 7¾ |" 6. Ý2O5%4°E•+ Ä ¾ Ý y ·" 6.6ÑG!5B!£ þ Ý2O $5% Ä

A¹ Q ¸ G!5B,X" 8× È á6Ñ CY2O5%4° È GG!5B,X }-ÕKS z á6Ñ ã b5%4°,X7¾' }-ÕKS z Ä

ÏG!5B _ Ð GKÁRIPv2 ,XCÃ+ 7¾ |" ÄG!5B y ·" 6. ÈfastEthernet 0/1 ÚEî " 6. â,XCÃ+ 172.16.0.0/16 Ä

```
5XLMLH FRQILJ LQWHUIDFH IDVW(WKHUQHW
5XLMLH FRQILJ LI )DVW(WKHUQHW LS ULS VXPPDU\ DGGUHVV
5XLMLH FRQILJ LI )DVW(WKHUQHW LS DGGUHVV
5XLMLH FRQILJ URXWHU ULS
5XLMLH FRQILJ URXWHU QHWZRUN
5XLMLH FRQILJ URXWHU YHUVLRQ
5XLMLH FRQILJ URXWHU QR DXWR VXPPDU\
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	*ü RIP ,XCÃ+ 7¾ |"

Ï G ÄAÈ â Ð -

2.23 [illegible]

?U *ü ÝLÔJÒCÃ,XRIP ?º ¥ =) s6Ñ È ü y ·G!5B õ ã ß S*ü Q ¸ [illegible] Ä S*üA¹ Q ¸,X [illegible] 6 ã GKÁ RIP ?º ¥ =) s6Ñ Ä

[illegible]

[illegible] timer

[illegible] count

[illegible]

[illegible] [illegible]

[illegible]

Ï – DAÈ â Ð

– D	£EÄ
[illegible] timer	G!5BG¡ ôUpdate Request ÃUpdate Response y [,X ÊKÈKÈLh È5 ,Õ 5 /¦ È ª 8× È Ö1-3600
[illegible] count	G!5BUpdate Request ÃUpdate Response y [,X Ô ûG¡ ô õ D È5 ,Õ 36 õ È ª 8× È Ö1-3600

Ï5 ,ÕG!5B Ð 5 ,Õ þ *ü RIP ?º ¥ =) s6Ñ

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

Ï S*ü Û Ð Ð RIP ?º ¥ =) s6Ñ ÄTRIP ÈTriggered RIP Å RIP #A, ü S ³5% ÄWAN ÈWide Area Network Å Þ,X = RIP á a n Ïº EOOC+ ÀE „) E¾pÄ œPýÄýÏû –,0, ÌµíÉ
) È ?U h*ü b ÝLÔJÒCÌQ24MÂ ÷ 3ÑRp 6,¯Å¥ #DÔ&"pÜ 2 ?º ¥ = p‡3`,€

-	-

Ï5 ,ÕG!5B Ð 5 ,Õ> ª ‡ b [illegible] Q ¸,XG!5B Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

Ï S*ü Û Ð Ð A¹ Q ¸,XG!5B4§ p È Ã ¹?Z,ª*ü [illegible] Q ¸,X5 ,ÕG!5B ÄA¹ Q ¸ ¾ E ¡ y · ¥EÕ RIP y [,X> È Ã ¹ AŒA¹ y · à Ê ¥EÕ RIPv1 ` RIPv2 ,X D B Ù Ä!8 Q ¸G!5B Ê á ú – D í y > ª ‡ b version ,X G!5B Ä

ÏG!5B _ Ð S fastEthernet 0/1 y · ¹ S • ¥EÕ RIPv2 y [Ä

```
5XLMLH FRQILJ LQWHUIDFH IDVW(WKHUQHW
5XLMLH FRQILJ LI )DVW(WKHUQHW LS ULS Y EURDGFDVW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
V [illegible]	n Ý y · ¥,X RIP D B Ù,X5 ,Õ(Ä

Ï G ÄAÈ â Ð -

2.25 [illegible]

?U n RIP F• ,X IP È Ã ¹*üCÃ+ E¯/ßG!5B Q ¸ [illegible] ÄA¹ Q ¸,X [illegible] 6 ã ôL8F• n Ä

[illegible] ip-address

[illegible] ip-address

Ï – DAÈ â Ð

– D	£EÄ
ip-address	F• ,X IP Ä hA¹ A' Û,ÈE²5%4° Ä

Ï5 ,ÕG!5B Ð 5 ,Õ"u Ý n F• Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã

Ï S*ü Û Ð Ð RIPv1 5 ,Õ S*ü IP S • Ä255.255.255.255 ÅEî CÃ+ µ C È RIPv2 5 ,Õ S*ü4˜ • Ä224.0.0.9 Å Eî CÃ+ µ C Ä V p á à ï S •5% êM2 S • îCÃA"KÂ5% Þ,X <F¼A' Û È Ã y CÃ+ µ C È Ã ¹*üCÃ + E¯/ßG!5B Q ¸ [illegible] Ú,Ì h y ·A'5B >• | y · È â ¾ n ¤ oF• Ã ¹ y CÃ+ µ C ÄA¹ Q ¸ á î E ¡ RIP µ C y [,X y ÄA'5B Z passive 2 û,X y · ÈG¡ â 3 á î ¥EÕAË" y [Ä

ÏG!5B _ Ð n RIP ¾ åF• 192.168.1.2 Eî CÃ+ µ C Ä

```
5XLMLH FRQILJ URXWHU ULS
5XLMLH FRQILJ URXWHU SDVVLYH LQWHUIDFH GHIDXOW
5XLMLH FRQILJ URXWHU QHLJKERU
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	Ú y ·A'5B

Ï G ÄAÈ â Ð -

2.26 [illegible]

?U n RIP CÃ+ E¯/ß?UEî ,X5%4° ë>< ÈAË S*üCÃ+ E¯/ßG!5B Q[illegible] ÄA¹ Q ¸,X [illegible] 6 ã ôL8 Æ n ,X5%4° Ä

[illegible] network-number [wildcard]

[illegible] network-number [wildcard]

Ï – DAÈ â Ð	– D	£EÄ
		E²5%4°,X5%4° Ë ÄA¹5%4° Ë 7¾' 2O5%4° ËIÈ 2 bA¹7¾' 5%4° Ý y ·FÑ Ã ¥EÕ ` y RIP D B Ù Ä
		IP !¨EW!¨(M ! È0 >< / 2'.B G! È1 >< á .!¨EW Ä

Ï5 ¸ÕG!5B Ð -

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð *ü Ã ¹ à ÊG!5B network-number ` wildcard – D È S: üA¹ 8× È Y,X y · – â RIP E¤> Ä V p þG!5B wildcard – D È RGOS ÚT¬Ax Ý'; Ý2O 8× È 9 Ø)Ú È S: üA¹ Ý2O 8× È Y,X y · – â RIP E¤> Ä

offset-list —•K€ ïð %• ßü 0¦ SaN43As= ¾ ôL8 Û ï PÞÂ ðÀ i= A< þ ‰G'Ò ÿà Á9GÐ¦ ? Ä ÔZÌëà) `Ð ðÀ ¾ Ý y · : ü RIP n ,X5%4° ë>< ÈA¹ y · ! Ã ¹ Í ê ¥EÕ RIP CÃ+ È „ y [È J y RIP CÃ+ È „ y [Ä

ÏG!5B _ Ð AŒ: ü 192.168.12.0/24 ` 172.16.0.0/24 8× È Y,X y · – â RIP E¤> Ö

```
5 X L M L H F R Q I L J U R X W H U U L S
5 X L M L H F R Q I L J U R X W H U Q H W Z R U N
5 X L M L H F R Q I L J U R X W H U Q H W Z R U N
```

Ï,Ì G Q ¸ Ð	Q ¸	£EÄ
	-	-

Ï G ÄAÈ â Ð -

2.27 [illegible]

?U r t y ê ¥EÕ,X ¹ Í: *¹ âòý T A K€

access-list-number | name	Û nA“KÂ ë><
in	h*ü acl Í y ,XCÃ+ ,X metric E¯> Â
to	h*ü acl Í ¥EÕ,XCÃ+ ,X metric E¯> Â
offset	Â ,X metric ,X ¬ | È ª 8× È Ö0-16
interface-type	h*ü acl Û n y ·
interface-number	Û n y ·4ê Ë

Ï5 ,ÕG!5B Ð 5 ,Õ"u Ý Û n offset Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð 8¹ ¤ 5 RIP CÃ+ à Ê$µC‡ Û n y ·,X offset-list ¹ ž þ Û n y ·,X < offset-list È íA¹ RIP CÃ+ Ú î r t Û n y ·,X offset-list ,X metric Ä

ÏG!5B _ Ð _ 1 Ö ü acl 7 Û n,X8× È Y,X RIP CÃ+ ! î Í metric r t 7 Ä

```
5XLMLH FRQILJ URXWHU RIIVHW OLVW RXW
```

_ 2 ÖEîE› fastethernet0/1 : 4,X ü acl 8 Û n,X8× È Y,X RIP CÃ+ ! î Í metric r t 7 Ä

```
5XLMLH FRQILJ URXWHU RIIVHW OLVW LQ IDVWHWKHUQHW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

2.28 **passive-interface** delay

?U ¬ RIP È „ y [,X ¥EÕ Ê Ê ÈAË S*üCÃ+ E¯/ßG!5B Q ¸ **passive-interface** ÈA¹ Q ¸,X **no** 6 ã ª#\ Í È „ y [,X ¥EÕ Ê ÊA’5B Ä

passive-interface delay

passive-interface

Ï – DAÈ â Ð

– D	£EÄ
delay	A’5B y [KÈ ¥EÕ Ê Ê È) ! !¿/¦ È8× È <8-50>

Ï5 ,ÕG!5B Ð 5 ,ÕA’5B ´ ¥EÕ Ê Ê Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð !7 ™ ‰ ß ÈRIP È „ y [û ã 512 +8V È Ã ¹ Ù ÿ 25 5CÃ+ È V p È „,XCÃ+ 5,Â û b 25 È î EîE› î þCÃ+ È „ y [¥EÕ È!7 ™ ‰ ß Ã6Ñ ¿,X ¥EÕ Ä

È 'P¬EóA’ Û å "EóA’ Û ¥EÕ ûG£ È „ y [Ê È "EóA’ Û Ã6Ñ 9 á ù Ø)Ú <F¼,X È „ y [ÈEô äCÃ + µ C ö Ä!8 Ê ÈLÔ?U S*ü **passive-interface** Q ¸ r tP¬EóA’ Û,X y [KÈ,X ¥EÕ Ê Ê È S "EóA’ Û6Ñ ó y

Ø)Ú <F¼ È „ y [Ä

ÏG!5B _ Ð Ú RIP ,X È „ y [¥EÕ Ê ÊA’5B 30 !¿/¦

```
5 X L M L H  F R Q I L J  U R X W H U  U L S
5 X L M L H  F R Q I L J  U R X W H U  R X W S X W  G H O D \
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

2.29 passive-interface

?U ª#\ ü Ô þ y · Þ ¥EÕ È „ y [,X s6Ñ ÈAË S*ü y ·G!5B Q ¸ **passive-interface** Q ¸ ÄA¹ Q ¸,X **no**
6 ãG¡ „ *ü ¥EÕ È „ y [,X s6Ñ Ä

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

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

Ï – DAÈ â Ð -(19.94 480.5 m h 246.96 480.5 -5.16 -15.7se>84 48038004 -5.16 -Tm <0999 g /TT0 1 Tf 6.7288 TTm <099 0 0 9 62.0

2.3 [illegible]

?UG!5BG¡ Ú × êF¼CÃ+ µ C ÈAË üCÃ+ G!5B õ ã ß S*[illegible] Q ¸ Ä?U ª#\G¡ Ú × êF¼CÃ+ ÈAË S*üA¹ Q ¸,X [illegible] 6 ã Ä

[illegible] bgp | [illegible] | isis [area-tag] | [illegible] process-id | [illegible] } [{ [illegible] }] [[illegible] [[illegible]] [illegible] }] [[illegible] metric-value] [[illegible] route-map-name]

[illegible] { bgp [illegible] | isis [area-tag] | [illegible] process-id | [illegible] } [{ [illegible] }] [[illegible] [[illegible]] [illegible] }] [[illegible] metric-value] [[illegible] route-map-name]

Ï – DAÈ â Ð

– D	£EÄ
bgp	¢ bgp G¡ Ú ×
[illegible]	¢,ÈE²CÃ+ G¡ Ú ×
isis area-tag	¢ isis G¡ Ú × Èarea-tag isis E¯/ß Ë
[illegible] process-id	¢ ospf G¡ Ú × Èprocess-id ospf E¯/ß Ë È ª 8× È 1-65535
[illegible]	¢M- ÕCÃ+ G¡ Ú ×
[illegible]	J\ ÍG¡ Ú × IS-IS CÃ+ È*ü b Û n(M n level ,XCÃ+ E¯> G¡ Ú ×
[illegible]	J\ ÍG¡ Ú × OSPF CÃ+ È*ü bE›$¸(M nCÃ+ E¯> G¡ Ú ×
[illegible] metric-value	A'5BG¡ Ú ×,XCÃ+ ,Xmetric È ª 8× È 1-16
[illegible] route-map-name	A'5BG¡ Ú ×E›$¸?˜ í

OSPF

2 Ê V p no Q ¸ á Û n Ï) – D È í Ú H þ Q ¸ ôL8 Ä

V ÆG!5B Öredistribute isis 112 level-2 È a ;> Öno redistribute isis 112 level-2 ÄA¹ no Q ¸ ™ Ú level-2 – D 6 á5 ,Õ È5à level-2 D• œ – D5 ,Õ È ¹ ÈG!5B ¡ ± , redistribute isis 112 level-2 Ä ?U Ú H þ Q ¸ ôL8AË ;> Q ¸ Öno redistribute isis 112 Ä

a	7 Ó ã a — â Ÿ Ü c P Ø Ð ì ˜ ¾ ä & þ RIP / " ´ ‘ ä & ì ˜ ¾ þ RIP È ° a — d

ÏG!5B _ Ð G¡ Ú ×M- ÕCÃ+ RIP

5 X L M L H F R Q I L J U R X W H U U H G L V W U L E X W H V W D W L F

Ï,Ì G Q ¸ Ð

2.3 [illegible]

?U / RIP CÃ+ #A,E¯/ß,X Î µ C ÈAË S*ü [illegible] Ä
[illegible] [[illegible] vrf-name]

Ï – DAÈ â Ð

– D	£EÄ
[illegible] vrf-name	Û n VRF ,X RIP µ C

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã Ã < G!5B õ ã ÃCÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð Ã*ü b ¿Eó / RIP CÃ+ #A,E¯/ß,X Ý þAu Ê < ÃCÃ+ Ú ¥ ÃCÃ+ G¡ Ú ×(Š Õ Ã y · rip (Ãrip y · â5%4°8× È Ãmetric â distance 1 Ä
V Û n VRF ÈE¬ î / VRF ,X á/Ä ž VRF-id

ÏG!5B _ Ð _ 1 Ö / RIP CÃ+ #A,E¯/ß,X Î µ C È V È „ ÊKÈ Ã1u)ÚC±/•1 Ä

```
5XLMLH VKRZ LS ULS
5RXWLQJ 3URWRFRO LV ULS
6HQGLQJ XSGDWHV HYHU\ VHFRQGV
,QYDOLG DIWHU VHFRQGV IOXVKHG DIWHU VHFRQGV
2XWJRLQJ XSGDWH ILOWHU OLVW IRU DOO LQWHUIDFH LV QRW VHW
,QFRPLQJ XSGDWH ILOWHU OLVW IRU DOO LQWHUIDFH LV QRW VHW
'HIDXOW UHGLVWULEXWLRQ PHWULF LV
5HGLVWULEXWLQJ FRQQHFWHG
'HIDXOW YHUVLRQ FRQWURO VHQG YHUVLRQ UHFHLYH YHUVLRQ
,QWHUIDFH 6HQG 5HFY
)DVW(WKHUQHW
)DVW(WKHUQHW
5RXWLQJ IRU 1HWZRUNV


'LVWDQFH GHIDXOW LV
*UDFHIXO UHVWDUW HQDEOHG
  5HVWDUW JUDFH SHULRG VHFV
  &XUUHQW 5HVWDUW UHPDLQLQJ WLPH VHFV
```

_ 2 Ö Û n vrf È / ,Ì h,X RIP r _,X Î µ C

```
5XLMLH FRQILJ URXWHU VK LS ULS YUI
95) 95) LG
5RXWLQJ 3URWRFRO LV ULS
6HQGLQJ XSGDWHV HYHU\ VHFRQGV
,QYDOLG DIWHU VHFRQGV IOXVKHG DIWHU VHFRQGV
2XWJRLQJ XSGDWH ILOWHU OLVW IRU DOO LQWHUIDFH LV QRW VHW
```

```
,QFRPLQJ XSGDWH ILOWHU OLVW IRU DOO LQWHUIDFH LV  QRW VHW
'HIDXOW UHGLVWULEXWLRQ PHWULF LV
5HGLVWULEXWLQJ
'HIDXOW YHUVLRQ FRQWURO  VHQG YHUVLRQ   UHFHLYH DQ\ YHUVLR
5RXWLQJ IRU 1HWZRUNV
'LVWDQFH   GHIDXOW LV
*UDFHIXO UHVWDUW GLVDEOHG
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

```
5XLMLH  VKRZ LS ULS GDWDEDVH
                UHGLVWULEXWHG
> @ YLD              )DVW(WKHUQHW
```

_ 3 Ö / RIP CÃ+ D B g Ø/¡2O _CÃ+ ,X4³Au µ C ,?U

```
5XLMLH  VKRZ LS ULS GDWDEDVH FRXQW
              $OO     9DOLG    ,QYDOLG
GDWDEDVH
DXWR VXPPDU\

FRQQHFWHG
ULS
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	/ ' !E¤> ,XCÃ+ #A,E¯/ß,X µ C Ä

Ï G ÄAÈ â Ð -

2.3 [illegible]

?U / RIP

```
>FRQQHFWHG@          PHWULF
QKRS          LI
>FRQQHFWHG@          PHWULF
QKRS          LI
>FRQQHFWHG@                PHWULF
QKRS          LI
```

Ï,Ì G Q ¸ Ð

Ï Q ¸ õ ã Ð (M õ ã Ã < G!5B õ ã ÃCÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð A¹ Q ¸*ü b / RIP F• µ C È8¹ á , ü RIP F• È í á / Ï) µ C Ä

ÏG!5B _ Ð / RIP ,XF• µ C Ä

```
5XLMLH VKRZ LS ULS SHHU
3HHU
  /RFDO DGGUHVV
  ,QSXW LQWHUIDFH *LJDELW(WKHUQHW
  3HHU YHUVLRQ 5,3Y
  5HFHLYHG EDG SDFNHWV
  5HFHLYHG EDG URXWHV
  %)' VHVVLRQ VWDWH XS
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
	/ ' !E¤> ,XCÃ+ #A,E¯/ß,X µ C

a } .] ¾ h Ü ¨ 2 • ó k Ü V Û ÿ ¢ G ä ¢ Ù Ö h W í q 3 V È Û Û Ú d ¢ N }
» ^ g à 2Mbps » h ¬ ¾ ¶ » Ü ¨ 2 • " k ¢ $ ã , ¶ » J k î ¾ Ì [¨ · d

ÏG!5B _ Ð G!5BRIP È „ y [!£Lh

Ï G ÄAÈ â Ð -

3RIPNG

31 défaut

?U n G¡ Ú × J WCÃ+ #A, Ê RIPng 5 ,Õ,X zG£ ÈAË S*üCÃ+ E¯/ßG!5B Q ¸ défaut ÄA¹ Q ¸ ,X o 6 ã 6 á5 ,ÕG!5B Ä

défaut metric

défaut

Ï – DAÈ â Ð

– D	£EÄ
metric	5 ,Õ,X zG£ È Ý 1 16 Ä V p metric û b1 b 16 ÈRGOS ÚAx A¹CÃ+ á ÃE' Ä

Ï5 ,ÕG!5B Ð 5 ,Õ 1

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã

Ï S*ü Û Ð Ð A¹ Q ¸LÔ?U âCÃ+ #A,G!5B Q ¸ défaut G! Ü S*ü Ä 'CÃ+ ¢ º ê Ô þCÃ+ #A,E¯/ß ÈG¡ „ Ú × RIP CÃ+ E¯/ß Ê È+ b á àCÃ+ #A,,X zG£Au1k ,X á P • û ÈCÃ+ zG£ ´"©E@ 6 Ä ´!8 üE@ 6 Ê È LÔ?U n G¡ Ú ×CÃ+ ü RIP CÃ+ ³ ,X zG£ Ä V pG¡ Ú × Ô þCÃ+ #A,E¯/ß Ê È'u Ý â.B n zG£ È RIPng Ú S*ü défaut n ,X zG£ × V p Ý â.B n zG£ ÈA¹ Ú?Z,ª défaut n ,X zG£ Ä áG!5BA¹ Q ¸ í défaut 5 ,Õ 1 Ä

ÏG!5B _ Ð G¡ Ú × OSPF 100 E¯/ß,XCÃ+ RIP CÃ+ E¯/ß Ê È zG£ A'5B 3 Ä

```
5XLMLH FRQILJ URXWHU GHIDXOW PHWULF
5XLMLH FRQILJ URXWHU UHGLVWULEXWH RVSI
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
défaut	ÚCÃ+ ¢ Ô þCÃ+ ³G¡ Ú × º ê Ô þCÃ+ ³ Ä

Ï G ÄAÈ â Ð -

32 distance

?UA'5BRIPng CÃ+ ,X1u)ÚC±/• ÈAË S*üCÃ+ E¯/ßG!5B Q distance ÄA¹ Q ¸,X o 6 ã 6 á5 ,ÕA'5B Ä

distance distance

distance

Ï – DAÈ â Ð

– D	£EÄ
distance	A'5B RIPng CÃ+ 1u)ÚC±/• È AŒA'5B<1-254>KÈ,X H D

Ï5 ,ÕG!5B Ð 5 ,Õ 120

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã

Ï S*ü Û Ð Ð RIPng CÃ+ A’5B1u)ÚC±/• È*ü!8 Q ¸ Ä

ÏG!5B _ Ð G!5BRIPng CÃ+ 1u)ÚC±/• 160

```
5XLMLH FRQILJ LSY URXWHU ULS
5XLMLH FRQILJ URXWHU GLVWDQFH
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

33 [illegible]

?U S*ü prefix-list ><ÍE¯/ Î È „CÃ+ E¯> E›$¸ ÈAË S*üCÃ+ E¯/ßG!5B Q ¸ [illegible] ÄA¹ Q ¸,X [illegible]
ª#\,Ì h,XE›$¸ Ä

[illegible] prefix-list-name { [illegible] [illegible][interface-type interface-name]

[illegible] prefix-list-name { [illegible] [illegible][interface-type interface-name]

Ï ^CÃ+ ¸È •‰y äZó¾,E›$² Ä

Ï – DAE â Ð – D

[illegible]	£EÄ
[illegible] prefix-list-name	[illegible] ,X á + È S*ü !4Ô ë><9E›$¸CÃ+ Ä
[illegible]	Û nA¹ Ú × ë><Í y ê ¥EÕ È „CÃ+ S*üE›$¸

interface-type interface-name A¹ Ú × ë><¾ h*ü ü Û n@x

34 [illegible]

?U {*ó Ô 5T¬Ax IPv6 ,XCÃ X RIPng ÈAË S*ü y ·G!5B Q ¸ [illegible] ÄA¹ Q ¸,X no 6 ã ô L8T¬AxCÃ X Ä

[illegible] { [illegible] | [illegible] } [[illegible] metric-value]

[illegible]

Ï – DAÈ â Ð

– D	£EÄ
[illegible]	Eî ipv6 T¬AxCÃ+ È áEî J WCÃ+
[illegible]	Eî ipv6 T¬AxCÃ+ È 3Eî J WCÃ+
[illegible] metric-value	T¬AxCÃ+ ,X zG£ È ª 8× È Ö1-15 ÄT¬Ax 1 Ä

Ï5 ,ÕG!5B Ð T¬Ax"u ÝT¬AxCÃ+ G!5B

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð ü y · ÞG!5B ZA¹ Q ¸ â È Ú ¢A¹ y · T êEî Ô 5 IPv6 5 ,ÕCÃ+ È A¹CÃ+ D• á#Ï t A' Û,XCÃ+ E@ ¥>< `RIPng ,XCÃ+ D B g Ä

FS ! 6 äCÃ+)ƒCÃ È Ô º Ý y ·G!5B ZA¹ Q ¸ ÈRIPng Ú ¦4± y F• Eî ,X5 ,ÕCÃ+ È „ Ä

ÏG!5B _ Ð ü y · ethernet0/0 Þ ï Î Ô 5T¬AxCÃ+ RIPng CÃ+ E¯/ß ÈA¹ y · ¾Eî A¹T¬AxCÃ+ Ä

```
5XLMLH FRQILJ LQWHUIDFH HWKHUQHW
5XLMLH FRQILJ LI LSY ULS GHIDXOW LQIRUPDWLRQ RQO\
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ

Ï S*ü Û Ð Ð A¹ Q ¸*ü bA’5B – â RIPng #A,E¤> ,X y · Ä üG!5BA¹ Q ¸ ! È V p"u ÝE¤> RIPng #A, È íG!5BA¹ Q ¸ î7¾ |E¤> RIPng CÃ+ #A, Ä

ÏG!5B _ Ð Ú y · ethenet 0/0 t 9 RIPng E¤> Ä

```
5XLMLH FRQILJ LQWHUIDFH HWKHUQHW
5XLMLH FRQILJ LI LSY ULS HQDEOH
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

3 6 [illegible]

?UA’5B y · Þ,X zG£ ÈAË S*ü y ·G!5B Q ¸ [illegible] value ÄA¹ Q ¸,X [illegible] 6 ã í#\,Ì h ,XA’5B Ä

[illegible] value

[illegible]

Ï – DAÈ â Ð

– D	£EÄ
value	y · zG£ È ª 8× È Ö1-16

Ï5 ,ÕG!5B Ð T¬Ax 1

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð üCÃ+ t 9CÃ+ >< ! ÈCÃ+ ,X metric ?U t Þ y · ÞA’5B,X zG£ Ä ¹ Ã ¹EîE›A’5B y ·,X zG£ E ¡ CÃ+ ,X S*ü Ä

ÏG!5B _ Ð Ú y · ethernet 0/1 y · zG£ XA’5

[illegible]
[illegible]

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð "u Ý RIPng CÃ+ E¯/ß üE¤>

Ï Q ¸ õ ã Ð < G!5B õ ã

Ï S*ü Û Ð Ð A¹ Q ¸*ü b ï Î RIPng CÃ+ E¯/ß JE¯ 9CÃ+ E¯/ßG!5B õ ã Ä

ÏG!5B _ Ð ï Î RIPng CÃ+ E¯/ß ÈE¯ 9CÃ+ E¯/ßG!5B õ ã Ä

```
5XLMLH FRQILJ LSY URXWHU ULS
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	ü Û n y · *ü RIPng Ä

Ï G ÄAÈ â Ð -

3 8 **[illegible]**

?U ª#\ ü Ô þ y · Þ ¥EÕ È „ y [,X s6Ñ ÈAË S*ü y ·G!5B Q ¸ **[illegible]** Q ¸ ÄA¹ Q ¸,X **[illegible]** 6 ãG¡ „ *ü ¥EÕ È „ y [,X s6Ñ Ä

[illegible] { **[illegible]** | interface-type interface-num }

[illegible] { **[illegible]** | interface-type interface-num }

30 [illegible]

?U / RIPng CÃ+ #A, #E¯/ß,X – D ` Ø þ4³Au D B ÈAË S*ü [illegible] Q ¸ Ä
[illegible]

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð *ü õ ã Ã(M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð

```
5XLMLH  VKRZ LSY  ULS
5RXWLQJ 3URWRFRO LV  5,3QJ
  6HQGLQJ XSGDWHV HYHU\   VHFRQGV ZLWK      QH[W GXH LQ   VH
  7LPHRXW DIWHU   VHFRQGV  JDUEDJH FROOHFW DIWHU   VHFRQGV
  2XWJRLQJ XSGDWH ILOWHU OLVW IRU DOO LQWHUIDFH LV
    GLVWULEXWH OLVW SUHIL[ DD RXW
  ,QFRPLQJ XSGDWH ILOWHU OLVW IRU DOO LQWHUIDFH LV  QRW VHW
  'HIDXOW UHGLVWULEXWLRQ PHWULF LV
  'HIDXOW GLVWDQFH LV
  5HGLVWULEXWLRQ
      5HGLVWULEXWLQJ SURWRFRO FRQQHFWHG URXWH PDS UP
      5HGLVWULEXWLQJ SURWRFRO VWDWLF
      5HGLVWULEXWLQJ SURWRFRO RVSI
  'HIDXOW YHUVLRQ FRQWURO   VHQG YHUVLRQ   UHFHLYH YHUVLRQ
  ,QWHUIDFH              6HQG   5HFY
      9/$1
      /RRSEDFN
  5RXWLQJ ,QIRUPDWLRQ 6RXUFHV
      1RQH
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	/ RIPng CÃ+ #A,E¯/ß,X – D â4³Au D B

Ï G ÄAÈ â Ð -

31 [illegible]

?U / RIPng CÃ+ ><,X ØNM,Â µ C ÈAË S*[illegible] Q ¸ Ä
[illegible]

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð *ü õ ã Ã(M õ ã

Ï S*ü Û Ð Ð S*üA¹ Q ¸ / RIPng CÃ+ ><,X ØNM µ C Ä

ÏG!5B _ Ð

```
5XLMLH VKRZ LSY ULS GDWDEDVH
&RGHV 5 5,3QJ & &RQQHFWHG 6 6WDWLF 2 263) % %*3
VXE FRGHV Q QRUPDO V VWDWLF G GHIDXOW U UHGLVWULEXWH
          L LQWHUIDFH D V DJJUHJDWHG VXSSUHVVHG
6 U GE PHWULF WDJ
          /RRSEDFN
6 U GE PHWULF WDJ
          /RRSEDFN
& U GE PHWULF WDJ
          9/$1
6 U GE PHWULF WDJ
          1XOO
& L GE PHWULF WDJ
          /RRSEDFN
6 U GE PHWULF WDJ
          1XOO
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

31 þb

?U *ü RIPng " G Ú F s6Ñ ÈAË S*üCÃ+ E¯/ßG!5B Q ¸ þbÄA¹ Q ¸,X ¤ 6 ã GKÁ RIP " G Ú F s6Ñ Ä?U *ü ú!¦ ûEÚE@,X" G Ú F ÈAË S*üCÃ+ E¯/ßG!5B Q ¸ þþ-¤ È A¹ Q ¸,X ¤ 6 ã ª#\ ú!¦ ûEÚE@,X" G Ú F Ä

þb [þ-¤]

þb [þ-þ

Ï – DAÈ â Ð

– D	£EÄ
þ-¤	*ü ú!¦ ûEÚE@,X" G Ú F

Ï5 ,ÕG!5B Ð 5 ,Õ y · *ü á ú!¦ ûEÚE@,X" G Ú F Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã

Ï S*ü Û Ð Ð ü È „ y [È" G Ú F Ã ¹L !6A' Û Ú ¤ oCÃ+ µ C ¢ : 4 E- oCÃ+ µ C,X y ·Eî Î • × ú!¦ û EÚE@,X" G Ú F Ú ¤ oCÃ+ µ C ¢ : 4 E- oCÃ+ µ C,X y ·Eî Î • È Ú,Ì h,X metric A'5B 16 Ä RIPng CÃ+ #A, 2 bC±/• åG£CÃ+ #A, È ü rL h*ü ?U"¼ ã" G Ú FKÂNl Ä V p á6Ñ.B n RIPng ú *ü Z" G Ú F È Ã ¹*ü Q ¸E¯> ø • Ä

ÏG!5B _ Ð GKÁRIPng " G Ú F s6Ñ Ä

```
5XLMLH FRQILJ LSY URXWHU ULS
5XLMLH FRQILJ URXWHU QR VSOLW KRUL]RQ
```

Ï,Ì G Q ¸ Ð Q ¸

4OSPF

41 area

G!5B Û n,X ³ È S*üA¹ Q ¸,X no 6 ã ôL8 Û n,X OSPF ³ Ä

area area-id

area area-id

Ï – DAÈ â Ð

– D	£EÄ
area-id	OSPF ³ Ë Ä ³ Ë Ã ¹ Ô þ E¯ H D È3 Ã ¹ Ô þ IP Ä

Ï5 ,ÕG!5B Ð 5 ,Õ"u ÝG!5B OSPF ³ Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð *ü Ã ¹ S*ü Q ¸,X no 6 ã È#ÙL8 Û nOSPF ³,XG!5B J ôL8A¹ ³ È Ù À#ÙL8 area area Ãarea area area area 1 Î b ³,XG!5B Q ¸ Ä
ü V ß ™ ‰ ß È*ü ´"©#ÙL8 OSPF ³,XG!5B Ö
?U#ÙL8 F ³,X ÝG!5B È , ü<.JÒCÃ,XG!5B Ä!8 Ê ™NO #ÙL8<.JÒCÃG!5B È !6Ñ ôL8 F ³ Ä
Ï) Ô þ ³ È , ü Í h,X area Q ¸ Ä!8 Ê ™NO #ÙL8 Ý t 9A¹ ³,X5%!‰ Q ¸ È !6Ñ ôL8 A¹ ³ Ä

ÏG!5B _ Ð ôL8 OSPF ³ 2 ,X,Ì GG!5B Ö

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU QR DUHD
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
area area	G!5B y · – â OSPF E¤> È J.B n 2,X ³

Ï G ÄAÈ â Ð -

42 area area

?U *ü OSPF ³AxA• ÈAË S*üCÃ+ E¯/ßG!5B Q ¸ area area ÄA¹ Q ¸,X no 6 ã GKÁ OSPF ³AxA• Ä

area area-id area [area area]

area area-id area

Ï – DAÈ â Ð

– D	£EÄ
area-id	Û n?U *ü OSPF AxA•,X ³ Ë Ä ³ Ë Ã ¹ Ô þ E¯ H D È 3 Ã ¹ Ô þ IP Ä

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

45 area

?U Ú Ô þOSPF ³A'5B NSSA ÈAË S*üCÃ+ E¯/ßG!5B Q area ÄA¹ Q ¸,X no 6 ã ôL8 NSSA ³ ê NSSA ³,XG!5B Ä

area area-id [default-cost] [default-information-originate] [metric value] [metric-type type]] [nssa-translate] [stability-interval seconds | stub]]

no area area-id [default-cost] [default-information-originate] [metric value] [metric-type type]] [nssa-translate] [stability-interval | stub]]

Ï – DAÈ â Ð

– D	£EÄ
area-id	NSSA ³,X ³ Ë Ä
default-cost	'A¹CÃ+ A' Û Ô þ NSSA ABR Ê ÈV p 4 ¾ Ç*üG¡ Ú × Q ¸ ÚCÃ+ µ C Ð 9 BEî KÈ5à áA} WE¯ 9 NSSA KÈ Ê ÈÃ ¹EÝ ÞA¹EÝNM Ä
default-information-originate	{*ó5 ,Õ,X2O _ 7 ,X LSA E¯ 9 NSSA KÈ ÈA¹EÝNM ¾ ÛNSSA ABR ê5Ù ASBR Þ Ý Ä
metric value	A'5B {*ó,X5 ,Õ LSA ,X zG£ Ämetric ª 8× È 0-16777214 È5 ,Õ 1 Ä
metric-type type	A'5B {*ó,X5 ,Õ LSA ,XCÃ+ 2O _ Ätype ª 1 ê 2 Ä1 ></ N-1 ×2 ></ N-2 Ä5 ,Õ 2
nssa-translate	L !6 NSSA ,XE•+ CÃ+ A' Û(ABR) ¥EÕ summary LSAs ÄType-3 LSA Å Ä
stub	G!5BNSSA ,XE•+ CÃ+ A' Û(ABR)E@ 65Ù Ä
stability-interval seconds	G!5B NSSA ,XE•+ CÃ+ A' Û(ABR)+ E@ 65Ù ¬ M2E@ 65Ù â ± Õ,X 0 nKÈLh Ä) ! Ö/¦ Ä5 ,Õ 40 Ä ª 8× È Ö0- 2147483647 Ä
stub	G!5B ' ! NSSA ,XE•+ CÃ+ A' Û(ABR) 0 E@ 65Ù?¦8F Ä5 ,Õ ÛEÝE@ 65Ù Ä

Ï5 ,ÕG!5B Ð 5 ,Õ"u Ý n NSSA ³ Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð – D default-information-originate *ü 9 {*óT¬Ax,X Type-7 LSA ÈA¹EÝNM ÛNSSA ,X ABR ` ASBR Þ Ý o Â ÿ È ü ABR Þ ´AŽCÃ+ >< ú , ü5 ,ÕCÃ+ ÈFÑ î {*ó Type-7 LSA 5 ,ÕCÃ+ È ü ASBR Þ(à Ê 3 á ABR) 'CÃ+ >< , ü5 ,ÕCÃ+ È ! î {*ó Type-7 LSA 5 ,ÕCÃ+ Ä

– D default-cost ü ASBR Þ S k OSPF EîE› redistribute Q ¸ é 9,X J W êF¼CÃ+ á ¥ × NSSA ÄA¹EÝNMEî *ü b NSSA ,XCÃ+ A' Û ¶ ASBR œ ABR ,X Ê í ÈW Ã ¹L !6 êF¼CÃ+ µ CE¯ 9 NSSA Ä ZE¯ Ô!9 £ å ¥EÕ NSSA ³ ,XJÒCÃ(Š Õ S • ÄLSA ÅX DG£ ÈÃ ¹ ü ABR ÞG!5Bnssa-translate 2 û È/U!6 ABR å NSSA ³ Y ¥EÕ summary LSAs ÄType-3 LSA Å Ä

º ê **ad6tu e** *ü üE² y üA¹ NSSA ³,X ABR/ASBR Þ Ä¹ Q ¸G!5B ABR/ASBR ¥EÕ NSSA

³,X5 ,ÕCÃ+ ,X8…C Ä5 ,Õ ™ ‰ ß È ¥EÕ NSSA 5 ,ÕCÃ+ ,X8…C 1 Ä

NSSA¹ÈÈ¹º 63BA<ÃÍ4 $mCA"ãÊÀÈ0 ÈÈ8 ¶ ts= p(s)5(12(-)9(7os)5(t)]TJ/NSSA 0 1 Tf3.56f 9.247<4540D40Tf 0 Tc 2.973 0D280.001.46f 9.2

Ï S*ü Û Ð Ð A¹ Q ¸ ¾6Ñ ü ABR Þ ;> Ý È*ü 9 Ú Ô þ ³,X î þCÃ+ Ü J ê" 6. ä Ô 5CÃ+ È' âEî J W
³ • ÄCÃ+ µ C,X Ü J> ¾ ¥*ó ü ³E•+ È ³ YF¼CÃ+ A' Û Þ,ß ,XFÑ K ',XCÃ+ µ C È J
W ³,XA' Û ¾6Ñ,ß Ô 5" 6.CÃ+ Ä J è Ã ¹EîE›A'5B advertise ` not-advertise

A’ Û ¾6Ñ : ³ Y,XCÃ+ È ¹ ž ABR {*ó,X YF¼5 ,ÕCÃ+ Ä
Ú Ô þ OSPF ³A’5B !_ ³ Ý ø 5 Q ¸ area stub ` area default-cost Ä ÝE² y !_ ³,XCÃ+ A’ Û Þ È
FÑ ™NOG!5B area stub Q ¸ È area default-cost Q ¸ ¾LÔ?U üStub ³,X ABR ÞG!5B Ä area default-cost
Q ¸ n Z YF¼5 ,ÕCÃ+ ,X ñ Ÿ8…C Ä GG£ z Å Ä

ÏG!5B _ Ð Ú ³ 1 A’5B !_ ³ È Ý 2 bA¹ ³,XCÃ+ A’ ÛFÑ ™NOG!5B Ä

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU QHWZRUN DUHD
5XLMLH FRQILJ URXWHU QHWZRUN DUHD
5XLMLH FRQILJ URXWHU DUHD VWXE
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
area default-cost	n Eî 4- STUB ³5 ,Õ" 6.CÃ+ ,X8…C ÄOSPF ,XG£ z Å Ä

Ï G ÄAÈ â Ð -

4 8 area stub-k

?U n OSPF <. ³JÒCÃ ÈAË S*üCÃ+ E¯/ßG!5B Q area stub-k

	0-65535 ÄA¹ r t LSA ,X ,# ÊKÈ È ' LSA ,X ,# ÊKÈE' Ô n ÊKÈ Ê ÈA¹ LSA Ú>• „ Ä
[0|7] key	n OSPF â [AxA•,X šJy ÄF• KÈ,X â [AxA•,X šJy ™NO Ô7È Ä service password-encryption Q ¸ Ã ¹ SA¹ šJy ¹ t š,X • ã / Ä 0 Û n šJy ¹ â [/ 7 Û n šJy ¹ š [/
key-id **[0|7]** key	n OSPF MD5 AxA•,X šJy ÛAš0ú ` šJy ÄF• KÈ,X MD5 AxA•,X š Jy ÛAš0ú ` šJy ™NO Ô7È Äservice password-encryptionQ ¸ Ã ¹ SA¹ šJy ¹ t š,X • ã / Ä 0 Û n šJy ¹ â [/ 7 Û n šJy ¹ š [/
	A'5BAxA•2O _ È S*ü â [AxA• Ä
	A'5BAxA•2O _ MD5 AxA• Ä
	A'5B áAxA• Ä

Ï5 ,ÕG!5B Ð Ö40 /¦ ×
Ö10 /¦ ×
Ö5 /¦ ×
Ö1 /¦ ×
5 ,Õ áAxA• ×
5 ,Õ á *ü Fast Hello s6Ñ ×
J - – D"u Ý5 ,Õ Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð ü OSPF CÃ+ ³ È Ý,X ³FÑ ™NO âP| F ³E² y È V pP| F ³ • y È LÔ?UG!5B<. ³JÒ y ÚP| F ³ y4ÁCK 9 È ú í5%4°EîAƒ Ú Î)„KÂNI Ä<. ³JÒ yLÔ?U ü ø þ ³E•+ CÃ+ A' Û Ä ABR Å KÈ ï Î È ø þ ABR E à 2,X ³ ä E›#õ ³ Ä!_ ³ ÄStub Area Å ` NSSA á6Ñ 0 E›#õ ³,X Ä<. ³JÒ y 3 Ã ¹*ü b y4Á J WM2P| F ³ Ä
router-id OSPF F• CÃ+ A' Û ÛAš0ú È V p á.B n router-id ,X ÈAË*ü Q ¸ E¯> .BAx Ä Ã ¹EîE›G!5B Loopback .CÃ+ ÛAš0ú Ä
Q ¸ ¾ n <. ³JÒCÃ,XAxA• šJy È?U *ü<. ³JÒCÃ E² y ³,X OSPF y [AxA• È*ü CÃ+ E¯/ßG!5B Q ¸ Ä
OSPF Õ Fast Hello s6Ñ Ö
*ü OSPF Fast Hello s6Ñ Ú tEó OSPF ¥)„F• È J ¿Eó "# F• ÄEîE› Û n ` GK + ` multiplier – D È *ü OSPF Fast Hello s6Ñ Ä GK + Ú!O u ÊKÈA' 5B 1s È Û n!£/¦Js ¥EÕ,X Hello y [,X õ D ÈE- Hello y [,X ¥ EÕKÈLh L! 1s ¹ Y Z Ä
' ¤ þ<.JÒCÃG!5B Z Fast Hello s6Ñ È ¢A¹<.JÒCÃEî ,X Hello y [,X Hello KÈLh +!‰A'5B 0 È ¢A¹<. JÒCÃ y ,X Hello y [,X Hello KÈLh +!‰>• Ñ+9 Ä
´AŽ ú *ü Fast Hello s6Ñ È<.JÒCÃ ø0Ã,XA' Û!O uKÈLh Ÿ4œ?U ± Õ Ô7È á ™A' 5B Ô7È È ¾?U ±A• ü!O uKÈLh Y6Ñ ó y 7Ç å 1 þ Hello y [G Ã Ä
S*ü Q ¸,¥ {<.JÒCÃG!5B,X!O uKÈLh ` Fast Hello KÈLh Ä
Fast Hello s6Ñ é 9,X – D ` – D á AŒ à

ÊG!5B Ä

ÏG!5B _ Ð _ 1 Ö ¹ ³ 1 0 E›#õ ³ È âF• 2.2.2.2 Î0Ÿ<. ³JÒCÃ Ä

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU QHWZRUN DUHD
5XLMLH FRQILJ URXWHU QHWZRUN DUHD
5XLMLH FRQILJ URXWHU DUHD YLUWXDO OLQN
```

_ 2 Ö ¹ ³ 1 0 E›#õ ³ È âF• 1.1.1.1 Î0Ÿ<. ³JÒCÃ ÄA¹<. ³JÒCÃE² y Z ³ 10

Ï S*ü Û Ð Ð 5 ,Õ ™ ‰ ß ÈOSPF y · cost 1 b7¾ | · Ë –5× / y · ú ‘ Ä

S*ü **ate** Q ¸7¾ | · Ë –5× Ä5 ,Õ 100Mbps Ä

S*ü **bad** Q ¸A’5B y · ú ‘ Ä

´/¡ L _4“CÃ,X OSPF y · cost 5 ,Õ Ö

64K > 4“CÃ Ècost 1562 ×

E1 4“CÃ Ècost 48 ×

10M ¹ þ5% Ècost 10 ×

100M ¹ þ5% È cost 1 Ä

V p*ü Q ¸ **ip** A’5B Z y ·,X cost È í Ú?Z,ª7¾ | · Ë1k Î,X cost Ä

ÏG!5B _ Ð Ú –5× ú ‘A’5B 10M Ä

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU QHWZRUN DUHD
5XLMLH FRQILJ URXWHU DXWR FRVW UHIHUHQFH EDQGZLGWK
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
ip	¹,ß ospf < G!5B,X,Ì G µ C
ip	A’5B ospf y ·,X cost
bad	A’5B y · ú ‘ ÄA¹A’5B á î E ¡ D B ôEgEó z Ä

Ï G ÄAÈ â Ð -

4.10 **bfd all-interface**

G!5BE¤>OSPF ,X Ý y · S*ü BFD E¯> JÒCÃ ”# ÈÄË üOSPF CÃ+ G!5B õ ã ß ;> **bfd all-interface** Ä

S*üA¹ Q ¸,X no 6 ã 6 á5 ,ÕG!5B Ä

bfd all-interface

bfd all-interface

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð GKÁ

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð OSPF #A,EîE› Hello y [| Õ ¥)„F• È ' OSPF | BFD ”# s6Ñ â È Ú î E’ FULL G2Ï,XF• Î0Ÿ BFD îA± ÈEîE› BFD ”# F• (Š Õ È Ô º BFD F• ÈOSPF î0Ÿ E¯> 5%4° / Ä

| 3 Ã ¹EîE› y ·G!5B õ ã Q ¸ **ipd** [**disable**] | ê5Ù GKÁ Û n y ·,X BFD ”# s6Ñ È y ·G!5B,X ì 4{P¬ bE¯/ßG!5B õ ã ß,X **bfd all-interface** Q ¸ Ä

ÏG!5B _ Ð -

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð S*ü rfc 2328 ,X?˜ í 9.B n Ô GCÃ+ Ä

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU QR FRPPSDWLEOH UIF
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
▶	¹,ß ospf < G!5B,X,Ì G µ C

OSPF Ý ø/¡ êF¼CÃ+ È2O _1 êF¼CÃ+ ,XCÃ+ G£ z î ¬ È5à2O _2 êF¼CÃ+ ,XCÃ+ G£ z Î n á ¬ Ä
Ô þ,Â Û5%4° , ü ø 5 J> CÃ X È à ,XCÃ+ G£ z È2O _ 1 î!¨2O _ 2 ì 4{P¬ È ¹ [illegible]
¾ / 2O _ 1 Fw 5CÃ+ Ä
STUB ³ ,XCÃ+ A' Û á Ã ¹ {*ó êF¼5 ,ÕCÃ+ ,X Ä
G6(,X route-map ,X set metric ª 8× È 0-16777214 È V pCY ÎA¹8× È È Ú ´"© é 9CÃ+ Ä

ÏG!5B _ Ð OSPF {*ó Ô 5 êF¼5 ,ÕCÃ+ È"¼ 9 OSPF CÃ+ ³ È2O _A'5B 1 ÈG£ z A'5B 50 Ä

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU QHWZRUN DUHD
5XLMLH FRQILJ URXWHU GHIDXOW LQIRUPDWLRQ RULJLQDWH DOZD\
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	/ OSPF JÒCÃ(Š Õ D B g Ä
[illegible]	/ IP CÃ+ >< Ä
[illegible]	G¡ Ú × J WCÃ+ E¯/ß,XCÃ+ Ä

Ï G ÄAÈ â Ð -

4.4 [illegible]

?UA'5BOSPF G¡ Ú ×CÃ+ ,X5 ,ÕG£ z ÈAË S*üCÃ+ E¯/ßG!5B Q ¸[illegible] ÄA¹ Q ¸,X [illegible] 6 ã 6 á5 ,ÕG!5B Ä
[illegible] metric
[illegible]

Ï – DAÈ â Ð

– D	£EÄ
metric	n OSPF G¡ Ú ×CÃ+ ,X5 ,ÕG£ z È ª 8× È Ö1-16777214 Ä

Ï5 ,ÕG!5B Ð 5 ,Õ þG!5B Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð [illegible] Q ¸ ™NO â[illegible] CÃ+ E¯/ßG!5B Q ¸G! Ü S*ü È Ã ¹ Â ÝG¡ Ú ×CÃ+ ,X ñ Ÿ êG£ z Ä
[illegible] Q ¸,XA'5B È Í ¹ [illegible] • ã"¼ 9 OSPF CÃ+ ³,X êF¼CÃ+ á CK 0*ü Ä

ÏG!5B _ Ð Ú OSPF G¡ Ú ×CÃ+ ,X ñ Ÿ ê zG£ A' 50 Ä

```
5XLMLH FRQILJ URXWHU ULS
5XLMLH FRQILJ URXWHU QHWZRUN
5XLMLH FRQILJ URXWHU YHUVLRQ
5XLMLH FRQILJ URXWHU H[LW
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU QHWZRUN DUHD
```

```
5XLMLH FRQILJ URXWHU GHIDXOW PHWULF
5XLMLH FRQILJ URXWHU UHGLVWULEXWH ULS VXEQHWV
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
distance	G¡ Ú × J WCÃ+ E¯/ß,XCÃ+ Ä
[p]	¹,ß ospf < G!5B,X,Ì G µ C Ä

Ï G ÄAÈ â Ð -

4.5 discard-route

AŒdiscard CÃ+ #Ï t —CÃ+ >< È S*ü no EÝNM Ã ¹/U!6discard CÃ+ #Ï t —CÃ+ >< Ä

discard-route { **tag** | **tag** }

discard-route **tag** | **tag**

Ï – DAÈ â Ð

– D	£EÄ
tag	AŒ#Ï t KÈCÃ+ " 6. Q ¸ area range *ó ä,X discard CÃ+ Ä
tag	AŒ#Ï t êF¼CÃ+ " 6. Q ¸ summary-address *ó ä,X discard CÃ+ Ä

Ï5 ,ÕG!5B Ð 5 ,Õ ™ ‰ AŒ#Ï t discard CÃ+ Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð üCÃ+ " 6. Ê È" 6. â,X8× È Ý Ã6ÑCY ÎCÃ+ >< rL ,X5%4°8× È È V p D B ¥ T" 6.8× È Y á , ü,X 5%4° ÈÚ Ý Ã6Ñ ¥*óCÃ+)ƒCÃ ê tG¡CÃ+ A' Û,X Ø)ÚBó ™ Ä L !6E-/¡ ™ ‰,X ¥*ó È.Ô?U üABR ê ASBR #Ï t Ô 5 discard CÃ+ CÃ+ >< ÄA¹CÃ+ 7¾ |*ó ä È J è á î>• ô • Ä

ÏG!5B _ Ð /U!6#Ï t area range *ó ä,X discard CÃ+ Ä

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU QR GLVFDUG URXWH LQWHUQDO
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
area range	G!5BOSPF KÈCÃ+ " 6. Ä
summary-address	G!5BOSPF êF¼CÃ+ " 6. Ä

Ï G ÄAÈ â Ð -

4.6 distance

A'5B á à2O _ OSPF CÃ+ Í h,X1u)ÚC±/•

distance { distance | **[p]** { **[a.b.c.d]** distance | **[a.b.c.d]** distance | **tag** distance } }

distance [**[p]**]

Ï – DAÈ â Ð

– D	£EÄ
distance	A’5BCÃ+ 1u)ÚC±/• È ª 8× È Ö1-255
ia-aa distance	A’5B YCÃ+ 1u)ÚC±/• È ª 8× È Ö1-255
ia aa distance	A’5B KÈCÃ+ 1u)ÚC±/• È ª 8× È Ö1-255
ial distance	A’5B êF¼CÃ+ 1u)ÚC±/• È ª 8× È Ö1-255

Ï5 ,ÕG!5B Ð 5 ,Õ 110 ×
YCÃ+ 1u)ÚC±/• Ö5 ,Õ 110 ×
KÈCÃ+ 1u)ÚC±/• Ö5 ,Õ 110 ×
êF¼CÃ+ 1u)ÚC±/• Ö5 ,Õ 110 ×

Ï Q ¸ õ ã Ð OSPF CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð 8¹?U Û n OSPF á à2O _CÃ+ Í h á à1u)ÚC±/• Ê È*ü!8 Q ¸ Ä

ÏG!5B _ Ð G!5BOSPF êF¼CÃ+ 1u)ÚC±/• 160

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU GLVWDQFH RVSI H[WHUQDO
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

4.7 distance

G!5B Í ,X LSA Au1k Î,XCÃ+ E¯> E›$¸ È S*ü no EÝNM ª#\E›$¸ Ä

distance { [access-list-number | name] | **ip** prefix-list-name [**gateway** prefix-list-name] | **route-map** route-map-name } **in** [interface-type interface-number]

distance { [access-list-number | name] | **ip** prefix-list-name [**gateway** prefix-list-name] | **route-map** route-map-name } **in** [interface-type interface-number]

Ï – DAÈ â Ð

– D	£EÄ
access-list-number | name	S*ü acl E›$¸?˜ í
gateway prefix-list-name	S*ü gateway E›$¸?˜ í
ip prefix-list-name	S*ü prefix-list E›$¸?˜ í
route-map route-map-name	S*ü route-map E›$¸?˜ í
interface-type interface-number	G!5B ¾J\ Í ¤ þ y ·E¯> LSA CÃ+ E›$¸

Ï5 ,ÕG!5B Ð 5 ,Õ ´G!5B È G <EîE› Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð Í ,X LSA Au1k Î,XCÃ+ E¯> E›$¸ È$µC‡E›$¸ 5 Ê,XCÃ+ !6Ñ*ü bE@ ¥ Ä W J á î E ¡JÒCÃ(Š Õ D B g È ÍF• ,XCÃ+ >< 3 á î {*ó Ï) E ¡ Ä ACL E›$¸?˜ í Ã prefix-list E›$¸?˜ í ` route-map E›$¸?˜ í á 6Ñ üA¹G!5B E , È G8¹ Í Û n y · S*ü ACL E›$¸?˜ í, í á6Ñ a ÍA¹ y ·G!5B prefix-list E¯> E›$¸ ê route-map E›$¸?˜ í Ä

!8 Q ¸ é*ü,X route-map Õ ¹ ß match Q ¸ Ö

match ce

match dde

match ddp s

match p

match p s

match n

match p

match g

a _ É ¶ Ò õ ¹ ‡ ¾ g Ÿ â õ ¹ LSA ™ 8 ¾ d Ù ® " ´ ò G ‘ } ABR h " ¶ Ò • LSA ö ¶ » ™ 8 { ¾ V “ ! Type-3 LSA c P Õ 7 ¹ A ã Ü ý ! ñ S ¾ É } d ã ¨ ¶ » } ABR h ° area filter-list g area range Û not-advertise * » ÿ ¥ G ! “ ñ S ¾ d

ÏG!5B _ Ð

```
5XLMLH FRQILJ DFFHVV OLVW SHUPLW
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU UHGLVWULEXWH ULS PHWULF
5XLMLH FRQILJ URXWHU GLVWULEXWH OLVW LQ HWKHUQHW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
distance	G!5BE›$¸G¡ Ú ×CÃ+ Ä
area s	G!5B ³E›$¸
area g	G!5B ³6. Ü

Ï G ÄAÈ â Ð -

4.3 distance

G!5BE›$¸G¡ Ú ×CÃ+ È s6Ñ2O **distance** Q ¸ È S*ü no EÝNM ª#\E›$¸ Ä

distance { [access-list-number | name] | **p** prefix-list-name } **to** [**bgp** | **connected** | **is** [area-tag] **p** process-id **pt**]

distance { [access-list-number | name] | **p** prefix-list-name } **to** [**bgp** | **connected** | **is** [area-tag] | **p** process-id | **pt**]

Ï – DAÈ â Ð

– D	£EÄ
access-list-number | name	S*ü acl E›$¸?˜ í
p prefix-list-name	S*ü prefix-list E›$¸?˜ í

bg| cat | is [area-tag] | **ip** process-id | **ip** | **tat**	YE›$¸CÃ+ ,X 9$d

Ï5 ,ÕG!5B Ð 5 ,Õ ´G!5B È G <EîE› Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð **data** â **data** Q ¸2O ÈÍ ¢ J ª #A,G¡ Ú × OSPF ,XCÃ+ E¯> E›
$¸ È W D• á ;> CÃ+ G¡ Ú × È Ô8 â **data** Q ¸G! Ü S*ü Ä ACL E›$¸?˜ í ` prefix-list E›$¸?˜
í á6Ñ üA¹G!5B E , È G8¹ Í ¤ Ô 9$d,XCÃ+ S*ü ACL E›$¸?˜ í, í á6Ñ aG!5B prefix-list E¯> E›$¸ Ä

ÏG!5B _ Ð ÍG¡ Ú ×,XM- ÕCÃ+ E¯> E›$¸

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU UHGLVWULEXWH VWDWLF VXEQHWV
5XLMLH FRQILJ URXWHU GLVWULEXWH OLVW RXW VWDWLF
5XLMLH FRQILJ URXWHU GLVWULEXWH OLVW SUHIL[ MMM RXW VWDW
  $FFHVV OLVW ILOWHU H[LVWV SOHDVH GH FRQILJ ILUVW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
data	G!5B Í ,X LSA Au1k Î,XCÃ+ E¯> E›$¸ Ä
data	G¡ Ú × J WCÃ+ E¯/ß,XCÃ+ Ä

Ï G ÄAÈ â Ð -

4.9 **enable** billing

enable billing Q ¸*ü 9 Ú MIB 4¥ n Û n,X OSPFv2 E¯/ß Þ ÄS*üA¹ Q ¸,X **o** 6 ã 6 á5 ,Õ4¥
n Ä
enable billing
enable billing

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð 5 ,Õ ™ ‰ ß ÈMIB4¥ n üE¯/ß Ë Ô ã,X OSPFv2 E¯/ß Þ Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð + b OSPFv2 MIB "u Ý OSPFv2 E¯/ß µ C È ¹*ü EîE› SNMP ¡ 0 OSPFv2 E¯/ß È ¾6Ñ ¡ 0 Ô,X
E¯/ß Ä5 ,Õ ™ ‰ ß ÈOSPFv2 MIB4¥ n üE¯/ß Ë Ô ã,X OSPFv2 E¯/ß Þ È*ü ,X ¡ 0FÑ ÍA¹E¯/ß*ó Ä
V p*ü à ï6Ñ óEîE› SNMP ¡ 0 Û n,X OSPFv2 E¯/ß È Ã ¹EîE› Q ¸ Ú MIB 4¥ n A¹E¯/ß Þ Ä

ÏG!5B _ Ð EîE› SNMP ¡ 0E¯/ß Ë 100 ,X OSPFv2 E¯/ß Ö

```
5XLMLH FRQILJ  URXWHU RVSI
5XLMLH FRQILJ URXWHU  HQDEOH PLE ELQGLQJ
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	¹,ß OSPF < G!5B,X,Ì G µ C
[illegible]	G!5BOSPF TRAP s6Ñ

Ï G ÄAÈ â Ð -

4.20 [illegible]

OSPFv2 E¯/ß,Â ! Õ ¥EÕ 16 /¡ TRAP µ C È Ú 4 /¡2O _ È S*ü V ß Q ¸ Ã ¹G!5B | Û n TRAP µ C,X ¥EÕ Ä S*üA¹ Q ¸,X [illegible] 6 ã Ã ¹ GKÁ Û n TRAP µ C,X ¥EÕ Ä

```
[illegible]
[illegible]
[illegible]
[illegible]
```

Ï – DAÈ â Ð

– D	£EÄ
[illegible]	G!5B Ý â error Ý G,X traps Ô G È¹ – DE¬ Ã ¹G!5B V ß(M n,X error traps Ô G Ö
[illegible]	[illegible] y ·AxA•JíAÃ
	[illegible] y · – DG!5BJíAÃ
	[illegible] y · y JíAÃ y [B
	[illegible] <. ³ y ·AxA•JíAÃ
	[illegible] <. ³ y · – DG!5BJíAÃ
	[illegible] <. ³ y · y JíAÃ y [B

	V ifT Rtn	<. y · Þ ¥*ó y [G¡ ô
ste chg	G!5B Ý â state-change Ý G,X traps Ô G ÈA¹ – DE¬ Ã ¹G!5B V ß(M n,X state-change traps Ô G Ö	
	IfaChg	y ·(Š Õ ¬ ê
	NbRtpMChg	F• GR E›/ß(Š Õ ¬ ê ×
	NbitaChg	F• (Š Õ ¬ ê
	NsTabtaChg	NSSA E@ 65Ù(Š Õ ¬ ê
	RtaChg	GR (Š Õ ¬ ê
	V ifaChg	<. ³ y ·(Š Õ ¬ ê
	V NbRtpMChg	<. ³F• GR E›/ß(Š Õ ¬ ê
	V NbitaChg	<. ³F• (Š Õ ¬ ê

Ï5 ,ÕG!5B Ð 5 ,Õ GKÁ <F¼traps Ô G Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð Q ¸ Í h s6Ñ « **pro** Q ¸,XL$ È ™NO ' ÔG!5B Ô G **prohibit**
aG!5B enable traps ¹ â È Í h,X ospf trap !6Ñ ó!7.B ¥EÕ Ä
Q ¸ á «E¯/ß4¥ n MIB ,XL$ È AŒ á àE¯/ß à Ê ' Ô TRAP Ô G Ä

ÏG!5B _ Ð ' Ô OSPFv2 E¯/ß 100 ,X <F¼TRAP Ô G Ö

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU HQDEOH WUDSV
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
ip v	¹,ß OSPF < G!5B,X,Ì G µ C

Ï5 ,Õ G!5B Ð 5 ,Õ"u Ý S6Ñ ¿EóG¡CÃ+ Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã

Ï S*ü Û Ð Ð G!5B – D È í *ü ´)ƒCÃ Û ÑCÃ XAu1k ÈE- Ê Ã ¹EîE› y · õ ã Q ¸ Û ¸ y ·,XCÃ X ± x • ã Ä
5%4° , ü ¹ ß ™ ‰ á ÎA, Ô lfa 7¾ |Au1k Û ÑCÃ X Ö
1. , ü<.JÒCÃ
2. , ü Alternative ABR
3. ' Ô þ ASBR 7¾D• œ ABR ?¦8F
4. , ü î þ ASBR Eî ,Ì à êF¼CÃ+
ü Î. ÞG! È í *ü ß$ CÃ XAu1k Ä
G!5B È Ã ¹EîE›CÃ+ Ò G! ä s,XCÃ+ Û n Û ÑCÃ X Ä

S*ü OSPF ¿EóG¡CÃ+ s6Ñ ÎA, à Ê S6Ñ BFD JÒCÃ ”# s6Ñ ÈA’ Û6Ñ ó È ¿ ”# JÒCÃ Lp È¢5àL! " E@ ¥ • ÊKÈ ÄJ\ Í y · up/down ,X C È ZL! " OSPF ¿EóG¡CÃ+ ,XE@ ¥ • ÊKÈ È Ã ¹ ü Ý y ·,X y · õ ã ßG!5B 0 È ¹E’ Ô ¿,X Û 6Eó z Ä

, • OSPF Ù . 7 ¾ _ Ÿ É } » • « % !
1 $ ¨ ¾ ' Ÿ “ N ¢ ¨ • Ú • ¢ « "
2 â Ÿ ECMP “ N • Ú • ¢ « "

ÏG!5B _ Ð S6ÑOSPF r _ 1 ,X FRR s6Ñ È J G6(CÃ+ Ò fast-reroute Ä

```
5XLMLH FRQILJ URXWH PDS IDVW UHURXWH
5XLMLH FRQILJ URXWH PDS PDWFK LS DGGUHVV
5XLMLH FRQILJ URXWH PDS VHW IDVW UHURXWH EDFNXS QH[WKRS *
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU IDVW UHURXWH URXWH PDS IDVW UHURXWH
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
bfal- face	G!5BOSPF Ý y · S6ÑJÒCÃ ”#
fas pb	G!5BOSPF y ·,X LFA ± x • ã

Ï G ÄAÈ â Ð -

4-22 gcÊa tat

S*ü gcÊa tat Q ¸ | OSPF Restarter 6Ñ o ÈA’5BG¡ < ó Ä S*ü no EÝNM GKÁSPF GR s

	ìL™G¡ ,X ÔKS ÊKÈ Ä grace-period ª 8× È 1-1800 /¦ È5 ,Õ 120s Ä

Ï5 ,ÕG!5B Ð GKÁGR Restarter 6Ñ o Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã

Ï S*ü Û Ð Ð ìL™G¡ s6Ñ Î b OSPF r _G!5B È á à,X r _ Ã ¹ B ™ ‰G!5B á à,X – D Ä
A¹ Q ¸*ü bG!5BA' Û,X GR Restarter 6Ñ o ÄG¡ < ó GR ¢ Ô Ÿ 4§ 3,X ÔKS ÊKÈ È üE-!‰ ÊKÈ Y ;
> JÒCÃ(Š ÕG¡ Î ¹ 0 È S OSPF 6 á s Ý(Š Õ Ä 'G¡ < ó ó â ÈOSPF ÚEÔ Î GR (Š Õ È ;> B
Eî,X OSPF ¡ 0 Ä
grace-period A'5B GR ,XG¡ < ó 120 /¦ È**grace-period** AŒ*ü ã Â G¡
< ó Ä
ü Fast Hello s6Ñ ß È á Õ *ü ìL™G¡ s6Ñ Ä

ÏG!5B _ Ð S6ÑOSPF r _ 1 ,X GR s6Ñ ¹ žG!5B GR s6Ñ,XG¡ < ó – D Ö

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU JUDFHIXO UHVWDUW
5XLMLH FRQILJ URXWHU JUDFHIXO UHVWDUW JUDFH SHULRG
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
grace-period	G!5BOSPF ìL™G¡ ,XEY } s6Ñ

Ï G ÄAÈ â Ð -

4.23 grace-period

S*ü **grace-period** Q ¸ | OSPF GR helper s6Ñ ÈA'5B,Ì G Ä
grace-period disable
grace-period disable
grace-period {**helper-lsa-only** **planned-lsa-only** }
grace-period { **helper-lsa-only** **planned-lsa-only** }

Ï – DAÈ â Ð

– D	£EÄ
disable	/U!6A' Û 0 EY }A' ÛEY } J ªA' Û ;> ìL™G¡ Ä
helper-lsa-only	GR Helper óKÈEîE› " ¹ types 1-5,7 ,X LSA ,X ¬ ê ø •5%4° ú ¥*ó ¬ ê È V p5%4° ¥*ó ¬ ê È ÚEÔ Î GR Helper Ä
planned-lsa-only	GR Helper óKÈEîE› " ¹ types 1-3 ,X LSA ,X ¬ ê ø •5%4° ú ¥*ó ¬ ê È V p5%4° ¥*ó ¬ ê È ÚEÔ Î GR Helper Ä

Ï5 ,ÕG!5B Ð | GR Help 6Ñ o Ä
A' ÛE¯ 9 GR Helper â È5 ,Õ á " ¹ LSA ¬ ê Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã

Ï S*ü Û Ð Ð A¹ Q ¸*ü bG!5BA’ Û,X GR Help 6Ñ o È'F• A’ Û r ‘ ìL™G¡ Ê ÈÚ ¥EÕ Grace-LSA Eî J Ý,XF• A’ Û È V p A’ Û S6Ñ GR Help 6Ñ o È ü Grace-LSA Ê È î ä GR Helper ÈEY }F• ` ä ìL™ G¡ Ä[illegible] EÝNM></ /U!6 Í Ï) ;> ìL™G¡ ,XA’ ÛE¯> GR EY } Ä
A’ Û ä GR Helper â ÈT¬Ax ™ ‰ ß á Í5%4° ¬ êE¯> ”# È V p5%4° ¥*ó ¬ ê È 3 Ú1 GR ` ä â ! îG¡ „E¯> / Ä V p*ü à ï ü GR E›/ß È Í b ¬ ê,X5%4°6Ñ ó ¿Eó v# È Ã ¹EîE›G!5B [illegible] ê5Ù [illegible] EÝNM | ”# È J !5Ù Í Ï)></ 5%4° µ C,X LSA(types 1-5,7)E¯> ”# È â5Ù Í></ AS ³ YCÃ+ ,X LSA(types 1-3)E¯> ”# Ä ü5%4°?˜ õEW û,X ™ ‰ ß È á ÎA,*ü | LSA ”# EÝNM È´ F¼5%4°,X ¬ ê î?º | GR 4§ 3 È¢5à Ð7È H5%,X /L! " Ä

ÏG!5B _ Ð /U!6 OSPF r _ 1 ,X GR EY } s6Ñ ¹ ž V) Â ”# 5%4° ¬ ê,X1*+9 Ö

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU JUDFHIXO UHVWDUW KHOSHU GLVDEOH
5XLMLH FRQILJ URXWHU QR JUDFHIXO UHVWDUW KHOSHU GLVDEOH
5XLMLH FRQILJ URXWHU JUDFHIXO UHVWDUW KHOSHU VWULFW OVD
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	S6ÑA’ Û,X OSPF #A, ìL™G¡ s6Ñ

Ï G ÄAÈ â Ð -

4.24 [illegible]

A¹ Q ¸G!5B y ·,XAxA• • ã È S*ü [illegible] EÝNM Ã ¹ ÚAxA• • ã 6 á 5 ,Õ Ä
[illegible] [[illegible] | [illegible]]
[illegible]

Ï – DAÈ â Ð

– D	£EÄ
[illegible]	A¹EÝNM></ üA¹ y · ÞE¯> MD5 t šAxA• Ä
[illegible]	A¹EÝNM></ áE¯> AxA• Ä

Ï5 ,ÕG!5B Ð 5 ,Õ y · Þ"u ÝA’5BAxA• • ã, !8 Ê y · ÞG›*ü,X ü,X ³,XAxA•2O _ Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

Ï S*ü Û Ð Ð V p Q ¸ âM6 áC³ Ï)EÝNM></ E¯> â [AxA•. "¼ ã üG!5BAxA• • ã Ê S*ü [illegible] EÝNM ÚAxA• • ã 6 á5 ,Õ Ê È rL úAxA• + A¹ y · ü KÈ ÞA’5B,XAxA• • ã ‡ n,X È V p ÚAxA• • ãA’5B [illegible] È í A’5B áAxA•, ' y · Þ,XAxA• • ã ` y · ü,X ³,XAxA• • ãFÑA’5B Ê , ì G›*ü y · Þ,XAxA• • ã Ä

ÏG!5B _ Ð A’5B fastEthernet 0/1 0Ã ·,X OSPF AxA•2O _ MD5 AxA• Ä

```
5XLMLH FRQILJ LQWHUIDFH IDVW(WKHUQHW
5XLMLH FRQILJ LI )DVW(WKHUQHW LS DGGUHVV
5XLMLH FRQILJ LI )DVW(WKHUQHW LS RVSI DXWKHQWLFDWLRQ PH
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
aeaatab	*ü OSPF ³AxA• J n AxA• õ ã Ä
jstab k	G!5BOSPF ,X â [AxA• šJy Ä
jsg dg k	G!5BOSPF ,X MD5 AxA• šJy Ä

Ï G ÄAÈ â Ð -

4.5 jstab k

?UG!5BOSPF ,X â [AxA• šJy ÈAË S*ü y ·G!5B Q ¸ **jstab k** ÄA¹ Q ¸,X **o** 6 ã ô L8 â [AxA• šJy Ä

jstab k [**0|7**] key

jstab k

Ï – DAÈ â Ð

– D	£EÄ
0	Û n šJy ¹ â [/
7	Û n šJy ¹ š [/
key	šJy È Ô î Ã ¹+ 8 þ +0ú4˜ ä Ä

Ï5 ,ÕG!5B Ð 5 ,Õ"u ÝG!5BAxA• šJy Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

Ï S*ü Û Ð Ð **jstab k** Q ¸G!5B,X šJy È Ú>• ¦ 9 Ý OSPF y Ä ´!8 šJy á Ô7È È ø Ä,È y E² y,XA' Û á6Ñ Î0Ÿ OSPF F• G2Ï È " 3 á6ÑE¯> CÃ+ µ C,X x 6 Ä
á à y ·,X šJy Ã ¹G!5B á Ô È ÝE² y ü à Ô(=)Ú5%!‰ Þ,XCÃ+ A' Û È ™NOG!5B Ô ,X šJy Ä
Ô þ OSPF ³ ú *üAxA• È*üCÃ+ E¯/ßG!5B Q ¸ **aa atab** E¯> G!5B Ä
ü y · Þ 3 Ã ¹)(À *üAxA•, S*ü y · õ ã ß,XG!5B Q ¸ **jstab** E¯> G!5B,' ³AxA•
` y ·AxA•FÑG!5B Ê ì ª y ·,XAxA•2O _ Ä

ÏG!5B _ Ð A'5B fastEthernet 0/1 0Ã ·,X OSPF AxA• šJy ospfauth Ä

```
5XLMLH FRQILJ LQWHUIDFH IDVWHWKHUQHW
5XLMLH FRQILJ LI )DVW(WKHUQHW LS DGGUHVV
5XLMLH FRQILJ LI )DVW(WKHUQHW LS RVSI DXWKHQWLFDWLRQ NH
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
aeaatab	*ü OSPF ³AxA• J n AxA• õ ã Ä
jstab	*ü y · Þ,XAxA• J n AxA• õ ã

Ï G ÄAÈ â Ð -

S*ü **ate cte** Q ¸7¾ | · Ë –5× Ä5 ,Õ 100Mbps Ä

S*ü **bandwidth** Q ¸A’5B y · ú ‘ Ä

´/¡ L _4“CÃ,X OSPF y · cost 5 ,Õ Ö

64K > 4“CÃ Ècost 1562 ×

E1 4“CÃ Ècost 48 ×

10M ¹ þ5% Ècost 10 ×

100M ¹ þ5% È cost 1 Ä

EîE› **ipo** Q ¸G!5B OSPF y · cost È î?Z,ª5 ,ÕG!5B Ä

ÏG!5B _ Ð A’5B fastEthernet 0/1 y · cost 100 Ä

```
5XLMLH FRQILJ LQWHUIDFH IDVW(WKHUQHW
5XLMLH FRQILJ LI )DVW(WKHUQHW LS RVSI FRVW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
ate cte	A’5B7¾ | · Ë –5× Ä
bandwidth	A’5B y · ú ‘ ÄA¹A’5B á î E ¡ D B ôEgEó z Ä
ip v	¹,ß OSPF < G!5B,X,Ì G µ C

Ï G ÄAÈ â Ð -

4.2.8 **ip ospf database-filter**

A¹ Q ¸A’5B y · á å ê = 7 LSA A(st)]TJ /C2_0 1 Tf 0 Tc 2.14 0 <54221C441C04B[<18791643>Tj /TT0 1 T,LSA

Ï G ÄAÈ â Ð -

4.29 ip ospf dead-interval

?UA'5BOSPF ø • Û n y ·F• !O u,X ÊKÈ ÈAË S*ü y ·G!5B Q ¸ ip ospf dead-interval Ä?U *ü OSPF ,X Fast Hello s6Ñ ÈAË S*ü y ·G!5B Q ¸ ip ospf dead-interval minimal hello-multiplier ÄA¹ Q ¸,X no 6 ã 6 á5 ,ÕG!5B Ä

ip ospf dead-interval { seconds | **minimal** | **hello-multiplier** multiplier }

no ip ospf dead-interval

Ï – DAÈ â Ð

– D	£EÄ
seconds	n ø •F• !O u,X ÊKÈ È ¹/¦) ! È ª 8× È Ö0-2147483647 Ä

minimal

_ 2 Ö *ü fastEthernet 0/1 y ·,X Fast Hello s6Ñ ÈG!5Bhello-multiplier 3 Ä

```
5XLMLH FRQILJ LQWHUIDFH IDVW(WKHUQHW
5XLMLH FRQILJ LI )DVW(WKHUQHW LS DGGUHVV
5XLMLH FRQILJ LI )DVW(WKHUQHW LS RVSI GHDG LQWHUYDO PLQ
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	OSPF ¥EÕHello y [ÊKÈKÈLh Ä
[illegible]	B

Ï – DAÈ â Ð

– D	£EÄ
de	*ü LFA 8V&• ± x
hide	*ü LFA JÒCÃ8V&• ± x
disable	/U*ü LFA ± x

Ï5 ,ÕG!5B Ð *ü LFA JÒCÃ ± x

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

Ï S*ü Û Ð Ð ü OSPF CÃ+ E¯/ßG!5B õ ã ß *ü **fast** Q ¸ È Ú S6Ñ OSPF ¿EóG¡CÃ+ Au1k s6Ñ È J B y ·G!5B õ ã ß Û n,X LFA ± x • ã È CÃ+ *ó ä Û ÑCÃ+ È5 ,Õ *ü!£ þ OSPF y ·,XJÒCÃ ± x È E-/¡ ± x 6 ã ß JÒCÃ,X Bù á î E ¡ Û ÑCÃ+ ,XE@ ¥ Ä

S*ü **de** – D Û n *üA¹ y ·,X8V&• ± x È G JÒCÃ Í h,XF• 8V&• Bù á î E ¡ Û ÑCÃ+ ,XE@ ¥ Ä

S*ü **hide** – D Ú à Ê Í CÃ+ Í h,XJÒCÃ `F• 8V&•E¯> ± x Ä

S*ü **disable** – D È Ú/U*üA¹ y ·,X LFA ± x s6Ñ È G á ß ÔCÇ4£E›A¹ y ·,XCÃ+ *ó ä Û Ñ><NM Ä

A¹ Q ¸ ü **fast trap** G!5B ß ´ Ä

Q ¿ E ó F y ·,X

A¹ Q ¸ ü **áts ta ap** G!5B ß ´ Ä

` Ð±À @7 Td ( )Tj /C2_1 Tc 10.98A5104B80CFC

4.3 [illegible]

?UG!5BOSPF y [MD5 AxA• šJy ÈAË S*ü y ·G!5B Q ¸ [illegible] ÄA¹ Q ¸,X no 6 ã ôL8 ÆG!5B,X OSPF y [MD5 AxA• šJy Ä

[illegible]

43 [illegible]

?U Ñ+9A¹ y · ü D B g £EÄ y [â Í mtu ,X õP` Ã ¹ S*üA¹ Q ¸ ÄA¹ Q ¸,X [illegible] 6 ã 6 á5 ,ÕG!5B Ä
[illegible]
[illegible]

Ï – DAÈ â Ð	– D	£EÄ 1 T770F7.6 r g 252.6 6534B8099635D7>Tj91B5B Tf 05 mtu-ignore

5 ,Õ"u Ý y · P2MP 2O _ Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

Ï S*ü Û Ð Ð S •2O _?U" y · K Ý S •6Ñ o Ä
P2P 2O _?U" y · 1 Í 1 f6(Ä
NBMA 2O _?U" <5%(ŠE² y È Ý f6(,XCÃ+ A' Û ™NO6Ñ ó,È yEîAƒ Ä
P2MP 2O _ ´?U" Ä

ÏG!5B _ Ð _ 1 Ö Ú û 4» y ·A' n P2P 2O _ ÈEÖ Ü1 Í 1 f6(,X Ä

```
5XLMLH FRQILJ LQWHUIDFH 6HULDO
5XLMLH FRQILJ 6HULDO LS DGGUHVV
5XLMLH FRQILJ 6HULDO HQFDSVXODWLRQ IUDPH UHOD\
5XLMLH FRQILJ 6HULDO LS RVSI QHWZRUN SRLQW WR SRLQW
```

_ 2 Ö Ú û 4» y ·A' n NBMA 2O _ ÈEÖ Ü <5%(ŠE² y Ä

```
5XLMLH FRQILJ LQWHUIDFH 6HULDO
5XLMLH FRQILJ 6HULDO LS DGGUHVV
5XLMLH FRQILJ 6HULDO HQFDSVXODWLRQ IUDPH UHOD\
5XLMLH FRQILJ 6HULDO LS RVSI QHWZRUN QRQ EURDGFDVW
5XLMLH FRQILJ 6HULDO H[LW
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU QHLJKERU SULRULW\ SROO LQWH
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	n IP â ¼ Ë Ë-Õ,X ô Ø Ä
[illegible]	n [illegible] â û 4» DLCI ,X ô Ø Ä
[illegible] IP [illegible]	

pfpriorit p

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

Ï S*ü Û Ð Ð OSPF y ·,X ì Ù ÿ ü hello y [Ä ' OSPF S •2O _5%4° ¥*ó DR/BDR Ä Û nCÃ+ A' Û Ë Û Ñ Û nCÃ+ A' Û Å0²EÝ Ê ÈP¬ ì ,XCÃ+ A' Û È Ú ä DR ê BDR Ä V p ì Ô ÈCÃ+ A' Û ÛAš0úP¬,XCÃ+ A' Û Ú ä DR ê BDR Ä ì Ì,XCÃ+ A' Û È á – â DR/BDR 0²EÝ Ä A¹ Q ¸ ¾ Í OSPF S •2O _ ` NBMA 2O _ Ý Ä

ÏG!5B _ Ð Ú fastethernet 0/1 y ·,X ì A' 0 Ä

5 X L M L H F R Q I L J L Q) '% 5$ •Â ðÂ—0ÑE1¨ $ðÕð¦ %2OV—0Ñ S 5Ñ

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð ' ÔF• (Š Õ ¬ ê,X ¹ «A„) Ä

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU ORJ DGM FKDQJHV GHWDLO
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	¹,ß ospf < G!5B,X,Ì G µ C Ä

Ï G ÄAÈ â Ð -

4 [illegible] dd

A¹G!5B*ü bA’5B ' ! OSPF r _ à Ê J ¥ x f Ä ¥CK ê y « Å,XF• Ô û D,Â Ä

[illegible] dd number

[illegible] dd

Ï – DAÈ â Ð

– D	£EÄ
number	Û n J ¥ x f,XF• Ô û D,Â 8× È 1-65535

ôEg8V&• ÈAË üCÃ+ E¯/ßG!5B õ ã ß S*ü Q ¸ **max-metric** Ä S*üA¹ Q ¸,X **no** 6 ã ª#\Eî Ô û zG£ Ä
max-metric [**stub-links** [max-metric-value]] [**include-stubs**] [**external-lsa** seconds]]
[**summary-lsa** [max-metric-value]]
no max-metric [**stub-links** [max-metric-value]] [**include-stubs**] [**external-lsa**
[seconds]] [**summary-lsa** [max-metric-value]]

Ï – DAÈ â Ð

– D	£EÄ
external-lsa	G!5BRouter LSA ,XM2 stub links ,X zG£ Ô û Ä0xFFFF Å
stub-links	G!5BCÃ+ A' Û S*ü Ô û zG£ ª · êF¼ LSA Ä Ù À Type-5 ` Type-7 Å ,X zG£ Ä
max-metric-value	LSA ,X Ô û zG£ Ä5 ,Õ 16711680 Ä ª 8× È Ö1-16777215 Ä
include-stubs	G!5BCÃ+ A' ÛEî Router LSA ,X stub links Ô û zG£ Ä
external-lsa	G!5BCÃ+ A' Û ü | ÊEî Ô û zG£ Ä
seconds	Eî Ô û zG£,X Û n ÊKÈKÈLh Ä5 ,Õ 600s Ä ª 8× È Ö5-86400 Ä
summary-lsa	G!5BCÃ+ A' Û S*ü Ô û zG£ ª ·" LSA Ä Ù À Type-3 ` Type-4 Å ,X zG£ Ä

Ï5 ,ÕG!5B Ð 5 ,ÕEî !7 zG£,X LSAs Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð S6Ñ Q ¸ **max-metric** **stub-links** â ÈCÃ+ A' Û*ó ä,X Router LSA ,XM2 stub links ,X zG£ Ú>•A'5B
Ô û Ä0xFFFF Å Ä ü*ü ª#\A¹G!5B È ê5Ù n Ê < ó â È 6 áJÒCÃ,X!7 zG£ Ä
5 ,Õ ™ ‰ ß È' S6ÑA¹ Q ¸ È stub links ¡ ÚEî BEî zG£ ÈG Î y · · Ë ÈV pG!5B Z **include-stubs**
– D È stub links ÚEî Ô û zG£ ×
0 ABR A' Û È V p á à ï ôEg KÈ# G£ í S*ü **summary-lsa** – DA'5B" LSA Ô û zG£ ×
0 ASBR A' Û È V p á à ï ôEg êF¼# G£ í S*ü **stub-links** – DA'5B êF¼LSA Ô û zG£ Ä
max-metric Q ¸Eî ü ¹ ß C S*ü Ö
G¡ A' Û Ä 'A' ÛG¡ ÈIGP #A,Eî È ¿ / È J WA' ÛA© ÒEîE› „ |,XA' ÛE@ ¥# G£ Ä V p ' !
A' Û ¡' ü X Î BGP CÃ+ >< ÈF¼ ÚBGP CÃ+ E¬"u Ý>• : 4 È ¥ TE- o5%4°,X y [Ú>• ö × ÄE-/¡ ™
‰ Ã ¹ S*ü **external-lsa** – DA'5B Ô n,X Ê Ê È | â1 Y n Ê < ó â a Ô Ÿ 0 ôEg8V&• Ä
ÚA' Û t 95%4° á*ü b ôEg# G£ Ä ÚA' Û t 95%4° È V p , ü ÛEÝCÃ X È í ' !A' Û á*ü b ôEg# G£ ×
V p á , ü ÛEÝCÃ X È í ' !A' Û ¡' *ü b ôEg# G£ Ä
ÚA' Û ìL™,X ¢5%4° /ÏL8 ÄEîE› S6ÑA¹ Q ¸ È ' !A' ÛEî Ý Ô û zG£ ÈE- 6Ñ ó üA' Û GKÁ
! È S5%4° ,X J WA' ÛEÝ ½ Û ÑCÃ X ôEg# G£ Ä
ü »(OSPF r)„ ÄRFC 1247 ê È ½,X(Å ÈLSA Ô û zG£ Ä0xFFFF Å,X links á – â SPF
Au1k È G"u Ý# G£ ¥ T*ó äE- o LSAs ,XCÃ+ A' Û Ä

ÏG!5B _ Ð G!5B Ô âEî Ô û zG£ 100 /¦ Ö

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU PD[ PHWULF URXWHU OVD RQ VWDUWXS
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[no]	¹,ß ospf ,X,Ì GG!5B µ C

Ï G ÄAÈ â Ð -

4.3 [illegible]

?U n OSPF F• ÈAË S*üCÃ+ E¯/ßG!5B Q ¸ [illegible] ÄA¹ Q ¸,X [illegible] 6 ã ôL8 Û n,XF• Ä

[illegible] ip-address [[illegible] seconds] [[illegible] priority] [[illegible] cost]

[illegible] ip-address [[illegible]] [[illegible]] | [[illegible]]

Ï – DAÈ â Ð

– D	£EÄ
ip-address	F• y ·,X IP Ä
[illegible] seconds	F• EBA¶ ÊKÈKÈLh È ¹/¦) ! È ª 8× È Ö0-2147483647 Ä ¾ Ý NBMA 2O _ ÕA¹ – D Ä
[illegible] priority	F• ,X ì È ª 8× È Ö0-255 Ä ¾ Ý NBMA 2O _ ÕA¹ – D Ä
[illegible] cost	!£ þF• ?U,XC *ü È ´5 ,Õ È ª 8× È Ö0-65535 Ä ¾ Ý P2MP 2O _ ÕA¹EÝNM Ä

Ï5 ,ÕG!5B Ð 5 ,Õ"u Ý n F• ×
F• EBA¶ ÊKÈKÈLh Ö5 ,Õ120 /¦ ×
M2 S •5%4°F• ,X ì Ö5 ,Õ 0 Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð ™NO NBMA 2O _ y · ` P2MP 2O _M2 S • y · Û nF• ÄF• ,X IP È ™NO A¹F• y ·,X IP Ä

ü NBMA 5%4° Þ V pF• CÃ+ A' Û ¬ á# C— ÈG üCÃ+ A' Û!O u ÊKÈ YE¬"u Ý Hello y [È OSPF E¬ î TA¹F• ¥EÕ Hello y [È ¥EÕ Hello y [,X ÊKÈKÈLh/Ä EBA¶KÈLh Ä ' OSPF 1 Ô õ Ô ŸE¤> Ê È ¾ å ì á 0 ,XF• ¥EÕ Hello y [ÈE- ì A' 0 ,XF• á î – â DR/BDR ,X0²EÝ Ä 1 DR/BDR {*ó ¹ â ÈDR/BDR î å Ý,XF• ¥EÕ Hello y [Î0ŸF• G2Ï Ä

ü P2MP M2 S •5%4° Þ È ´ á K Û S •6Ñ o ¹ ´"© | Õ,X ¥)„F• È ´!8 ™NO S*üA¹ Q ¸ ¹ J G!5BF• Ä!8 ê P2MP 2O _,X5%4° Ã ¹EîE› cost EÝNM Û n E'!£ þF• ,X8…C Ä

ÏG!5B _ Ð ü NBMA 5%4° Þ Û n Ô þF• ÈIP 172.16.24.2 È ì 1 ÈEBA¶KÈLh 150 /¦ Ä

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU QHWZRUN DUHD
5XLMLH FRQILJ URXWHU QHLJKERU SULRULW\ SROO LQWH
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	A'5B OSPF CÃ+ A' Û,X ì Ä
[illegible]	A'5B OSPF 5%4°2O _

Ï G ÄAÈ â Ð -

44 [illegible]

n ¾ o y · ÚE¤> OSPF È ¹ ž 2 OSPF ³ ÈAË S*üCÃ+ E¯/ßG!5B Q ¸ [illegible] ÄA¹ Q ¸,X
[illegible] 6 ã ôL8 y ·,X OSPF ³ n Ä
[illegible] ip-address wildcard [illegible] area-id
[illegible] ip-address wildcard [illegible] area-id

Ï – DAÈ â Ð

– D	£EÄ
ip-address	y · Í h,X IP Ä
wildcard	n IP !¨EW!¨(M ! È0 ></ 2'.B G! È1 >< á .!¨EW Ä
area-id	OSPF ³ ÛAš Ä Ô þ OSPF ³ G6(Ô þ 8× È È Z " b1u)Ú È 3 Ã ¹*ü Ô þ $5% 0 OSPF ³ ÛAš Ä

Ï5 ,ÕG!5B Ð 5 ,Õ"u ÝG!5B OSPF ³ Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð ip-address ` wildcard ø þ – D,X n È AŒ*ü Ô 5 Q ¸ Ã ¹ Ú î þ y · G6(Ô þ OSPF ³ Ä?U ü Ô þ y · ÞE¤> OSPF È ™NO ÚA¹ y ·,X IP Ù À ü network area n ,X IP 8× È Y Ä V p network area n ,X IP 8× È È ¾ Ù À y ·,X õ IP ÈA¹ y · Ú á îE¤> OSPF Ä ' y · à Ê â î þ OSPF E¯/ß network Q ¸ n ,X IP 8× È,Ì G! Ê È Ý'; Ô ì G! • ã È B n y · – â,X OSPF E¯/ß Ä

ÏG!5B _ Ð n 3 þ ³ Ö 0 È1 È172.16.16.0 Ä Ú IP : ü 192.168.12.0/24 8× È Y,X y · n ³ 1 È Ú IP : ü 172.16.16.0/20 8× È Y,X y · n ³ 172.16.16.0 È Ú J - y · n ³ 0 Ä

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU QHWZRUN DUHD
5XLMLH FRQILJ URXWHU QHWZRUN DUHD
5XLMLH FRQILJ URXWHU QHWZRUN DUHD
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	ï Î OSPF CÃ+ E¯/ß Ä

Ï G ÄAÈ â Ð -

45 [illegible]

A¹ Q ¸*ü bG!5B ' ! OSPF r _ Õ,X LSA ,X Ô û D,Â Ä
[illegible] number [[illegible]]
[illegible]

Ï – DAÈ â Ð

– D	£EÄ
number	LSA Ô û D,Â È ª 8× È< 1-4294967294>

[illegible]	LSA CYE›A¹ D,Â Ê È GKÁAÊOSPF r _
[illegible]	LSA CYE›A¹ D,Â Ê È ¥ ÎA:

Ï5 ,ÕG!5B Ð 5 ,Õ áL$ ' ! OSPF r _ Õ,X LSA ,X Ô û D,Â Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð 8¹CYE› Û n D,ÂLÔ?U GKÁOSPF Ê È*ü hard – D È8¹ áLÔ GKÁOSPF È ¾LÔA: Ê È*ü soft – D

ÏG!5B _ Ð G!5B ' LSA CYE›10 5 Ê È GKÁOSPF 10 r _ Ä

```
5 X L M L H  F R Q I L J  U R X W H U  R V S I
5 X L M L H  F R Q I L J  U R X W H U  R Y H U I O R Z  G D W D E D V H  K D U G
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

4-6 [illegible]

A¹ Q ¸*ü bG!5B external LSA ,X Ô û D,Â â ¢$v Î(Š Õ 6 á!7 (Š Õ LÔ1 Y,X ÊKÈ Ä

[illegible] max-dbsize wait-time

[illegible]

Ï – DAÈ â Ð

– D	£EÄ
max-dbsize	external lsa ,X Ô û D,Â Ä à Ô AS Y ÝCÃ+ A' ÛA¹ LÔ,Ì à Å È ª 8× È Ö0-2147483647 Ä
wait-time	CÃ+ A' Û ¢ overflow (Š Õ ñA© ² á BEî(Š Õ LÔ1 Y,X ÊKÈ È ª 8× È Ö 0-2147483647 Ä

Ï5 ,ÕG!5B Ð 5 ,Õ áL$ external-LSA ,X Ô û D,Â Ä
V pL$ Z external-LSA Ô û D È ' external-LSA ,X D,ÂCYE›G!5B,X Ô û â È á a 6 á!7 (Š Õ Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð 'A' Û,X external-LSA D,ÂCYE›G!5B,X max-dbsize Ê È îE¯ 9$v Î(Š Õ ÈA¹(Š Õ ß È á a tEQ

ÏG!5B _ Ð G!5Bexternal lsa Ô û D,Â 10 ÈCYE› í ¬ overflow (Š Õ È ñA© ¢ overflow (Š Õ 6 á ,X ÊKÈKÈLh 3 /¦ Ä

```
5 X L M L H  F R Q I L J  U R X W H U  R V S I
5 X L M L H  F R Q I L J  U R X W H U  R Y H U I O R Z  G D W D E D V H  H [ W H U Q D O
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

44 [illegible]ack

A¹ Q ¸ AŒ ü Y , áC‡ Ê OSPF E¯ 9 OVERFLOW (Š Õ Ä S*üA¹ Q ¸,X no EÝNM GKÁA¹ s6Ñ Ä

[illegible]ack

[illegible]ack

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð Y , áC‡ ™ ‰ ß OSPF AŒE¯ 9OVERFLOW (Š Õ Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã

Ï S*ü Û Ð Ð OSPF E¯ 9 OVERFLOW (Š Õ ?U ö × „ : êF¼CÃ+ ÈA¹> 6Ñ ó Ý ±A• Y , á a rKS Ä
Ô A¹ s6Ñ È ü OSPF E¯ 9 OVERFLOW (Š Õ ö × „ : ,X êF¼CÃ+ È Ã6Ñ î éCK H5% Î)„CÃ+)ƒCÃ,X
)„B5 Ä Z £ å Î)„E-/¡)„B5,X {*ó ÈOSPF î*ó ä Ô 5 Û å NULL ·,X5 ,ÕCÃ+ È ¢5àL! "E-/¡)„B5
{*ó,X V)[ÈA¹CÃ+ ü OVERFLOW (Š Õ ß Ú Ô,È , ü Ä
*ü Ã ¹ S*ü [illegible] Q ¸G¡ „ á ! OSPF E¤> È#ÙL8OSPF OVERFLOW (Š Õ Ä
S*ü no EÝNM á AŒOSPF ü Y , áC‡ ÊE¯ 9 OVERFLOW (Š Õ ÈE- Ã6Ñ îEô ä Y ,C $d4»4Á
#\5ë È ü Y ,E¯ Ô!9#\5ë Ô n/ß z ÈOSPF r _ Ú 0!6E¤> È J ôL8 Ý : ,XCÃ+ Ä

ÏG!5B _ Ð ü Y , áC‡ ™ ‰ ß È áE¯ 9 OVERFLOW (Š Õ

```
5 X L M L H  F R Q I L J  U R X W H U  R V S I
5 X L M L H  F R Q I L J  U R X W H U  Q R  R Y H U I O R Z  P H P R U \  O D F N
```

Ï,Ì G Q ¸ Ð

4.8 passive-interface

S*üA¹ Q ¸G!5B CÃ+ A' Û,X Û n,X5%4° y · >• | y · ê5Ù Û n,X5%4° y ·,X >• | ÄA¹ Q ¸,X no 6 ã 6 á5 ,ÕG!5B Ä

passive-interface { **default** | interface-type interface-number | interface-type interface-number ip-address }

passive-interface { **default** | interface-type interface-number | interface-type interface-number ip-address }

Ï – DAÈ â Ð

– D	£EÄ
interface-type interface-number	?UG!5B >•	y ·,X y · Ä
default	A¹EÝNM></ Ú Ý y ·A'5B >•	y · Ä
interface-type interface-number ip-address	Û n y · ß,X >•	Ä

Ï5 ,ÕG!5B Ð 5 ,Õ ™ ‰ ß È"u Ý y ·>•A'5B >• | y · ê5Ù>• | È AŒ Ý y · ` ¥ OSPF y [Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð ZL !65%4° ,X J ªCÃ+ A' Û | Õ,X : 4 CÃ+ A' Û,XCÃ+ µ C È Ã ¹ Ú CÃ+ A' Û,X Û n5%4° y ·A' >• | y · ê5Ù>• | Ä

ÏG!5B _ Ð Ú y · fastEthernet 0/1 A'5B >• | y · Ä

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU SDVVLYH LQWHUIDFH IDVW(WKHUQHW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
passive	¹,ß y ·,X,Ì GG!5B µ C

Ï G ÄAÈ â Ð -

4.9 default-information

A¹ Q ¸*ü bG¡ Ú × êF¼CÃ+ µ C Ä

default-information { **originate** | **always** [area-tag] | **ospf** process-id | **ip** | **static** } [{ **route-map** | **route-map 1** | **route-map 2** }] [**metric** { **value** | **value 1** | **value 2** }] [**metric-type** { **1** | **2** }] | **external-type** [**1** | **2**] | **external-type** [**1** | **2**] }] [**metric** metric-value] [**metric-type** { **1** | **2** }] [**route-map** route-map-name] [**tag**] [**tag** tag-value]

no default-information { **originate** | **always** [area-tag] | **ospf** process-id | **ip** | **static** } [{ **route-map** | **route-map 1** | **route-map 2** }] [**metric** { **value** | **value 1** | **value 2** }] [**metric-type** { **1** | **2** }] | **external-type** [**1** | **2**] | **external-type** [**1** | **2**] }] [**metric** metric-value] [**metric-type** { **1** | **2** }] [**route-map** route-map-name] [**tag**] [**tag** tag-value]

Ï – DAÈ â Ð

– D	£EÄ

bgp	¢ bgp G¡ Ú ×
cate	¢,ÈE²CÃ+ G¡ Ú ×
isis [area-tag]	¢ isis G¡ Ú × ÈEîE› area-tag Û n K ' ¤ þ isis r _
ospf process-id	¢ ospf G¡ Ú × ÈEîE› process-id Û n K ' ¤ þ ospf r _ È ª 8× È Ö 1-65535
rip	¢ rip G¡ Ú ×
stat	¢M- ÕCÃ+ G¡ Ú ×
level-1 | level-1-2 | level-2	¾J\ ÍG!5BG¡ Ú × IS-IS CÃ+ Ê S*ü È*ü b Û n(M n level ,XCÃ+ E¯> G¡ Ú × ÈT¬Ax(Š Õ ¾ AŒlevel-2 ,X IS-IS CÃ+ E¯> G¡ Ú × Ä
path	¾J\ ÍG!5BG¡ Ú × OSPF CÃ+ Ê S*ü È*ü bE›$¸(M nCÃ+ E¯> G¡ Ú × È T¬Ax(Š Õ AŒ Ý,X OSPF CÃ+ E¯> G¡ Ú × ×
metric metric-value	A'5B OSPF external LSA ,X metric ÈEîE› metric-value Û n metric û ã È ª 8× È Ö0-16777214
metric-type {1 | 2 }	A'5B êF¼CÃ+ 2O _ E-1 ê E-2
route-map route-map-name	A'5BG¡ Ú ×E›$¸?˜ í
tag	ÃG¡ Ú ×M2 Û š2O5%4°
tag tag-value	A'5BG¡ Ú × OSPF YCÃ+ ,X tag È ª 8× È Ö0-4294967295

Ï5 ,ÕG!5B Ð 5 ,Õ ™ ‰ ß á ÕG¡ Ú ×G!5B Ä

8¹G!5BG¡ Ú × OSPF È íG¡ Ú ×A¹ r _,X Ý $2O _,XCÃ+ ×

8¹G!5BG¡ Ú × ISIS È íG¡ Ú ×A¹ r _,X level-2 $2O _,XCÃ+ ×

J ª ™ ‰ ß ÈG¡ Ú ×A¹2O _,X ÝCÃ+ ×

G¡ Ú × BGP CÃ+ 5 ,Õ metric 1 È J -2O _CÃ+ *ó ä,X LSA 5 ,Õ,X metric 20 ×

metric-type 5 ,Õ E-2 ×

5 ,Õ á G6(route-map Ä

Ï Q ¸ õ ã Ð CÃ+ G!5B õ ã

Ï S*ü Û Ð Ð G!5B `A¹ Q ¸ â ÈA¹CÃ+ A' Û Ú ¬ ASBR È Ú,Ì hCÃ+ µ C Ð 9 OSPF ³ Y È J ¹ type-5 LSA S • ³ Y J ª OSPF CÃ+ A' Û Ä

G!5BG¡ Ú × is CÃ+ Ê È á ú level – D Ê ÈT¬Ax ¾ AŒG¡ Ú ×level-2 ,XCÃ+ È8¹ ñ ŸG!5BG¡ Ú × Ê È ú level – D È í AŒG¡ Ú ×G!5B,X level – D,XCÃ+ ÄG!5B ± , Ê È Z • " È' à ÊG!5B level 1, level 2 Ê È Ü J level-1-2 – D ± , Ä –,ß _AÈ â Ä

G!5BG¡ Ú × ospf CÃ+ Ê È á ú match – D Ê ÈT¬Ax AŒG¡ Ú × Ý $2O _,X ospf CÃ+ × 5à â,X1 Ô õG!5B match – D 0 ñ Ÿ,X match – D È G¡ Ú × Ê ¾ AŒ G!,X $2O _,XCÃ+ E¯> G¡ Ú × ×S*ü no Q ¸ 6 á match – D T¬Ax Ä –,ß _AÈ â Ä

G!5BG¡ Ú × Ê È G!5B route-map E›$¸ Ê È route-map ,X match ?˜ í J\ ÍG¡ Ú ×,X s Ÿ – DE¯> G! × Í bG¡ Ú × OSPF ê ISIS CÃ+ È¾ ÝG¡ Ú ×,XCÃ+ $µC‡G!5B match ê level ,X?˜ í È aE¯> route-map ,X ø • Ä

G6(,X route-map ,X set metric ª 8× È h ' <0-16777214> È V pCY ÎA¹8× È È Ú ´"© é 9CÃ+ Ä

delete Q ¸,X no 6 ãG!5B,X?˜ í V ß Ö

1 Ê V p no Q ¸ Û n ¤ o – D È í ÚE- o – D 6 á5 ,ÕG!5B ×

2 Ê V p no Q ¸ á Û n Ï) – D È í Ú H þ Q ¸ ôL8 Ä

_ V Ö Æ-¹G!5B Z delete 2 ÈEîE› Q ¸ delete 2 Â G!5B È

íA¹ Q ¸ ™ Ú level-2 – D 6 á5 ,Õ Ä5à level-2 D• œ – D5 ,Õ È ¹ È ;> ÞEÄ no

fpv	/ ' ! ospf E¯/ß1T?U µ C Ä

Ï G ÄAÈ â Ð -

451 fpx cdta dd

A¹G!5B*ü bA’5B Ý OSPF CÃ+ E¯/ß à Ê J ¥ x f Ä ¥CK ê y « Å,XF• Ô û D,Â Ä

fpx cdta dd number

fpx cdta dd

Ï – DAÈ â Ð

```
   &RQGLWLRQ  RQ VWDUWXS IRU    VHFRQGV  6WDWH  LQDFWLYH
   $GYHUWLVH VWXE OLQNV ZLWK PD[LPXP PHWULF LQ URXWHU /6$V
   $GYHUWLVH VXPPDU\ /6$V ZLWK PHWULF
   $GYHUWLVH H[WHUQDO /6$V ZLWK PHWULF
   8QVHW UHDVRQ  WLPHU H[SLUHG  2ULJLQDWHG IRU    VHFRQGV
   8QVHW WLPH             7LPH HODSVHG
63) VFKHGXOH GHOD\  VHFV  +ROG WLPH EHWZHHQ WZR 63)V   VHFV
,QLWLDO /6$ WKURWWOH GHOD\  PVHFV
0LQLPXP KROG WLPH IRU /6$ WKURWWOH     PVHFV
0D[LPXP ZDLW WLPH IRU /6$ WKURWWOH     PVHFV
/VD 7UDQVPLW 3DFLQJ WLPHU   PVHFV    /6 8SG
0LQLPXP /6$ DUULYDO     PVHFV
3DFLQJ OVD JURXS     VHFV
1XPEHU RI LQFRPPLQJ FXUUHQW '' H[FKDQJH QHLJKERUV
1XPEHU RI RXWJRLQJ FXUUHQW '' H[FKDQJH QHLJKERUV
1XPEHU RI H[WHUQDO /6$   &KHFNVXP [   (
1XPEHU RI RSDTXH $6 /6$   &KHFNVXP [
1XPEHU RI QRQ GHIDXOW H[WHUQDO /6$
([WHUQDO /6$ GDWDEDVH LV XQOLPLWHG
1XPEHU RI /6$ RULJLQDWHG
1XPEHU RI /6$ UHFHLYHG
/RJ 1HLJKERU $GMHQF\ &KDQJHV  (QDEOHG
*UDFHIXO UHVWDUW GLVDEOHG
*UDFHIXO UHVWDUW KHOSHU VXSSRUW HQDEOHG
1XPEHU RI DUHDV DWWDFKHG WR WKLV URXWHU
%)' HQDEOHG
$UHD   %$&.%21(
1XPEHU RI LQWHUIDFHV LQ WKLV DUHD LV
1XPEHU RI IXOO\ DGMDFHQW QHLJKERUV LQ WKLV DUHD LV
$UHD KDV QR DXWKHQWLFDWLRQ
63) DOJRULWKP ODVW H[HFXWHG          DJR
63) DOJRULWKP H[HFXWHG  WLPHV
1XPEHU RI /6$   &KHFNVXP [   EI
$UHD   166$
1XPEHU RI LQWHUIDFHV LQ WKLV DUHD LV
1XPEHU RI IXOO\ DGMDFHQW QHLJKERUV LQ WKLV DUHD LV
1XPEHU RI IXOO\ DGMDFHQW YLUWXDO QHLJKERUV WKURXJK WKLV DU
$UHD KDV QR DXWKHQWLFDWLRQ
63) DOJRULWKP ODVW H[HFXWHG          DJR
63) DOJRULWKP H[HFXWHG  WLPHV
1XPEHU RI /6$   &KHFNVXP [
166$ 7UDQVODWRU 6WDWH LV GLVDEOHGÈ6WDELOLW\ ,QWHUYDO H[SL
```

+!‰	AÈ â

Router ID	CÃ+ A’ Û ÛAš0ú Ä
Process uptime	OSPF E¯/ß*ó ,X ÊKÈ Ärouter-id 0.0.0.0 ÊE¯/ß á*ó ,X Å Ä
Bound to VRF	OSPF E¯/ß 2,X VRF Ä
Conforms to RFC2328	â RFC2328 Ô7È Ä
RFC1583Compatibility flag	üAu1k êF¼CÃ+ ÊG›*ü,X RFC1583 ?˜ íE¬ RFC2328 ,X?˜ í × üEÝ ½ Ô G,X ASBR `CÃ+ !¨EW ÊA¹?˜ í Ú>•*ü Ä
Support Tos	¾ Õ TOS0 Ä

Number of LSA	2 bA¹ ³,X LSA ,X ,X DG£ Ä
Checksum Sum	A¹ ³,X LSA ,X õP` `,X ` Ä
NSSA Translator State	ú Ú NSSA LSA E@ 6 External LSA×™Í NSSA È J è ABR ,X OSPF E¯/ß Ý Ä
BFD enabled	></ *ü OSPF â BFD 6(|

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

454 [redacted]

?U / ABR/ASBR ,X OSPF YF¼CÃ+ >< ÈAË S*ü(M *ü õ ã Q ¸ [redacted] Ä [redacted] [process-id] [redacted]

Ï – DAÈ â Ð

– D	£EÄ
process-id	ospf E¯/ß Ë

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M *ü õ ã

Ï S*ü Û Ð Ð h*üA¹ Q ¸ È Ã ¹ / CÃ+ A' Û ABR ê ASBR CÃ+ A' Û,X OSPF YF¼CÃ+ ÄOSPFYF¼CÃ+ >< á à b [redacted] / ,XCÃ+ >< ÈOSPF YF¼CÃ+ ><,X,Â Û OSPF CÃ+ A' Û ÛAš È5à á ,Â Û5%4° Ä

ÏG!5B _ Ð

```
5XLMLH VKRZ LS RVSI ERUGHU URXWHUV
263) LQWHUQDO 5RXWLQJ 7DEOH
&RGHV L ,QWUD DUHD URXWH , ,QWHU DUHD URXWH
L > @ YLD )DVW(WKHUQHW $%5 $6%5 $UHD VH
```

+!‰	AÈ â
Codes	CÃ+ 2O _ ·-Õ n Äi ></ ³ YF¼CÃ+ ÈI ></ ³ KÈCÃ+ Ä
I	></ A¹CÃ+ ³ YF¼CÃ+ Ä
1.1.1.1	/ E•+ CÃ+ A' Û,X OSPF ÛAš0ú Ä
[2]	/ E'A¹E•+ CÃ+ A' Û,X8…C Äcost Å Ä
via 10.0.0.1	/ E'E•+ CÃ+ A' Û,X ß ÔCÇ5% G Ä
FastEthernet 0/1	/ E'E•+ CÃ+ A' Û,X y · Ä
ABR, ASBR	/ E•+ CÃ+ A' Û,X2O _ ÈÝ ABR ` ASBR ø/¡ ÈÃ ¹ à Ê ABR ` ASBR Ä
Area 0.0.0.1	/ : 4 A¹CÃ+ ,X ³ Ä
select	' Ý î 5CÃ X E' ASBR Ê È select ></ ' !EÝ ½,X Ô ìCÃ X Ä

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

455 database

?U / OSPF JÒCÃ(Š Õ D B g µ C ÈAË S*ü(M *ü õ ã Q ¸ database ÄA¹ Q ¸,X á à ã / á àJÒCÃ(Š Õ £EÄ ÄLSAs Å µ C Ä

show [process-id area-id] **database** [**adv-router** ip-address | { **asbr-summary** | **net** | **nssa** | **network** | **opaque-area** | **opaque-as** | **opaque-link** | **router** | **summary** } [link-state-id] [{ **adv-router** ip-address | **self-origin** }] | **database-summary** | **max-age** | **self-origin**]

Ï – DAÈ â Ð

– D	£EÄ
process-id	OSPF E¯/ß Ë
area-id	OSPF ³ Ë Ä
adv-router	/ + Û n @ CÃ+ A' Û*ó ä,XJÒCÃ(Š Õ £EÄ µ C Ä
link-state-id	¾ / Û n OSPF JÒCÃ(Š Õ ÛAš,XJÒCÃ(Š Õ £EÄ µ C Ä
self-origin	/ + CÃ+ A' Û7¾ Å*ó ä,XJÒCÃ(Š Õ £EÄ µ C Ä
max-age	/ Æ 5Õ ê ÊKÈ,X LSA
router	/ OSPF CÃ+ A' ÛJÒCÃ(Š Õ £EÄ µ C Ä
network	/ OSPF 5%4°JÒCÃ(Š Õ £EÄ µ C Ä
summary	/ OSPF ,?UJÒCÃ(Š Õ £EÄ µ C Ä
asbr-summary	/ G b ASBR ,X ,?UJÒCÃ(Š Õ £EÄ µ C Ä
net	/ OSPF êF¼JÒCÃ(Š Õ £EÄ µ C Ä
nssa-net	/ OSPF 1 ×2O êF¼JÒCÃ(Š Õ £EÄ µ C Ä
opaque-area	/ 1 2O LSA
opaque-as	/ 1 Ô2O LSA
opaque-link	/ 1 12O LSA
database-summary	/ OSPF JÒCÃ(Š Õ D B g Ø/¡LSA 4³Au µ C Ä

Ï5 ,ÕG!5B Ð - OSPF /

Tag	/ A¹JÒCÃ(Š Õ £EÄ,X ÛA„ Ä

_ 2 Ö [illegible] Q ¸,X / 4§ p

```
5XLMLH  VKRZ LS RVSI GDWDEDVH DVEU VXPPDU\
263) 5RXWHU ZLWK ,'          3URFHVV ,'
$6%5 6XPPDU\ /LQN 6WDWHV  $UHD
/6 DJH
2SWLRQV  [   _ _ _ _ _ _(_
/6 7\SH  $6%5 VXPPDU\ /6$
/LQN 6WDWH ,'          $6 %RXQGDU\ 5RXWHU DGGUHVV
$GYHUWLVLQJ 5RXWHU
/6 6HT 1XPEHU
&KHFNVXP  [EH F
/HQJWK
1HWZRUN 0DVN
726     0HWULF
```

+!‰	AÈ â
OSPF Router with ID	/ ¹ ß µ C Í h,XCÃ+ A' Û ÛAš0ú â OSPF Í h,XE¯/ß Ë
AS Summary Link States	></ ¹ ß / ,X AS ,?UJÒCÃ £EÄ µ C Ä
LS age	/ A¹JÒCÃ(Š Õ £EÄ,X , ü ÊKÈ Ä
Options	EÝNM Ä
LS Type	/ A¹JÒCÃ(Š Õ £EÄ,X2O _ Ä
Link State ID	/ A¹JÒCÃ(Š Õ £EÄ,XJÒCÃ ÛAš Ä
Advertising Router	/ A¹JÒCÃ(Š Õ £EÄ,XEî CÃ+ A' Û Ä
LS Seq Number	/ A¹JÒCÃ(Š Õ £EÄ,X c Ë Ä
Checksum	/ A¹JÒCÃ(Š Õ £EÄ,X õP` ` Ä
Length	/ A¹JÒCÃ(Š Õ £EÄ,XKS z È ¹ +8V) ! Ä
Network Mask	/ A¹JÒCÃ(Š Õ £EÄ Í hCÃ+ ,X5%4° }-Õ Ä
TOS	TOS È,Â ! ¾6Ñ 0 Ä
Metric	/ A¹JÒCÃ(Š Õ £EÄ Í hCÃ+ ,XG£ z Ä

_ 3 Ö [illegible] Q ¸,X / 4§ p

$ W W D F K H G 5 R X W H U
$ W W D F K H G 5 R X W H U

+!‰	AÈ â
OSPF Router with ID	/ ¹ ß µ C Í h,XCÃ+ A’ Û ÛAš0ú â OSPF Í h,XE¯/ß Ë Ä
Network Link States	></ ¹ ß 5%4°JÒCÃ(Š Õ £EÄ µ C Ä
LS age	/ A¹JÒCÃ(Š Õ £EÄ,X , ü ÊKÈ Ä
Options	EÝNM Ä
LS Type	/ A¹JÒCÃ(Š Õ £EÄ,X2O _ Ä
Link State ID	/ A¹JÒCÃ(Š Õ £EÄ,XJÒCÃ ÛAš Ä
Advertising Router	/ A¹JÒCÃ(Š Õ £EÄ,XEî CÃ+ A’ Û Ä
LS Seq Number	/ A¹JÒCÃ(Š Õ £EÄ,X c Ë Ä
Checksum	/ A¹JÒCÃ(Š Õ £EÄ,X õP` ` Ä
Length	/ A¹JÒCÃ(Š Õ £EÄ,XKS z È ¹ +8V) ! Ä
Network Mask	/ A¹JÒCÃ(Š Õ £EÄ Í h5%4°,X5%4° }-Õ Ä
Attached Router	/ A¹5%4° Þ E² y,XCÃ+ A’ Û Ä

_ 5 Ö Q ¸,X / 4§ p

Flag	router ,X Û «
LS Type	/ A¹JÒCÃ(Š Õ £EÄ,X2O _ Ä
Link State ID	/ A¹JÒCÃ(Š Õ £EÄ,XJÒCÃ ÛAš Ä
Advertising Router	/ A¹JÒCÃ(Š Õ £EÄ,XEî CÃ+ A’ Û Ä
LS Seq Number	/ A¹JÒCÃ(Š Õ £EÄ,X c Ë Ä
Checksum	/ A¹JÒCÃ(Š Õ £EÄ,X õP` ` Ä
Length	/ A¹JÒCÃ(Š Õ £EÄ,XKS z È ¹ +8V) ! Ä
Number of Links	/ A¹CÃ+ A’ Û G6(,XJÒCÃ D Ä
Link connected to	/ JÒCÃC³AÕE² y È ¹ ž5%4°2O _ Ä
(Link ID)	JÒCÃ ÛAš Ä
(Link Data)	JÒCÃ D B Ä
Number of TOS metrics	TOS È ¾ Õ TOS0 Ä
TOS 0 Metrics	TOS ÌG£ z Ä

_ 6 Ö Q ,,X / 4§ p

```
5XLMLH  VKRZ LS RVSI GDWDEDVH VXPPDU\
263) 5RXWHU ZLWK ,'          3URFHVV ,'
6XPPDU\ /LQN 6WDWHV  $UHD
/6 DJH
2SWLRQV  [   _ _ _ _ _ _(_
/6 7\SH  VXPPDU\ /6$
/LQN 6WDWH ,'          VXPPDU\ 1HWZRUN 1XPEHU
$GYHUWLVLQJ 5RXWHU
/6 6HT 1XPEHU
&KHFNVXP  [   H
/HQJWK
1HWZRUN 0DVN
726      0HWULF
```

+!‰	AÈ â
OSPF Router with ID	/ ¹ ß µ C Í h,XCÃ+ A’ Û ÛAš0ú â OSPF Í h,XE¯/ß Ë Ä
Summary Net Link States	></ ¹ ß ,?U5%4°JÒCÃ(Š Õ £EÄ µ C Ä
LS age	/ Hîô …•(A˜ì ü ÊKÈ C Ä

L/SHîô …•(A˜ä^à¡âÄ„<2°T !d0 @

Metric	/ A¹JÒCÃ(Š Õ £EÄ Í hCÃ+ ,XG£ z Ä

_ 7 Ö[illegible] Q ¸,X / 4§ p

```
5XLMLH  VKRZ LS RVSI GDWDEDVH QVVD H[WHUQDO
263) 5RXWHU ZLWK ,'          3URFHVV ,'
166$ H[WHUQDO /LQN 6WDWHV  $UHD        >166$@
/6 DJH
2SWLRQV  [   _ _ _ _ _ _ _
/6 7\SH  $6 166$ /6$
/LQN 6WDWH ,'          ([WHUQDO 1HWZRUN 1XPEHU )RU 166$
$GYHUWLVLQJ 5RXWHU
/6 6HT 1XPEHU
&KHFNVXP  [   F
/HQJWK
1HWZRUN 0DVN
0HWULF 7\SH    /DUJHU WKDQ DQ\ OLQN VWDWH SDWK
726
0HWULF
166$  )RUZDUG $GGUHVV
([WHUQDO 5RXWH 7DJ
```

+!‰	AÈ â
OSPF Router with ID	/ ¹ ß µ C Í h,XCÃ+ A' Û ÛAš0ú â OSPF Í h,XE¯/ß Ë Ä
NSSA-external Link States	></ ¹ ß µ C 1 ×2O7¾"• ³ êF¼JÒCÃ(Š Õ £EÄ µ C Ä
LS age	/ A¹JÒCÃ(Š Õ £EÄ,X , ü ÊKÈ Ä
Options	EÝNM Ä
LS Type	/ A¹JÒCÃ(Š Õ £EÄ,X2O _ Ä
Link State ID	/ A¹JÒCÃ(Š Õ £EÄ,XJÒCÃ ÛAš Ä
Advertising Router	/ A¹JÒCÃ(Š Õ £EÄ,XEî CÃ+ A' Û Ä
LS Seq Number	/ A¹JÒCÃ(Š Õ £EÄ,X c Ë Ä
Checksum	/ A¹JÒCÃ(Š Õ £EÄ,X õP` ` Ä
Length	/ A¹JÒCÃ(Š Õ £EÄ,XKS z È ¹ +8V) ! Ä
Network Mask	/ A¹JÒCÃ(Š Õ £EÄ Í hCÃ+ ,X5%4° }-Õ Ä
Metric Type	></ êF¼JÒCÃ2O _ Ä
TOS	TOS È,Â ! ¾6Ñ 0 Ä
Metric	/ A¹JÒCÃ(Š Õ £EÄ Í hCÃ+ ,XG£ z Ä
NSSA:Forward Address	A¹,Â Û5%4°,X D B# G£ È Ú>•E@ ¥ A¹ IP Ä V pA¹ 0.0.0.0 Èí D B# G£ î>•E@ ¥ {*ó A¹JÒCÃ(Š Õ,XCÃ+ A' Û Ä
External Route Tag	êF¼CÃ+ ÛA„ È!£ þ êF¼CÃ+ FÑ Ý82 þ!¨(MCÃ+ ÛA„ ÄOSPF D• á S*üA¹CÃ+ ÛA„ È ü J WCÃ+ E¯/ßCÃ+ G¡ Ú ×OSPF CÃ+ Ê î h*ü Ä

_ 8 Ö Q ¸,X / 4§ p

```
5XLMLH  VKRZ LS RVSI GDWDEDVH H[WHUQDO
263) 5RXWHU ZLWK ,'          3URFHVV ,'
$6 ([WHUQDO /LQN 6WDWHV
/6 DJH
2SWLRQV  [    _ _ _ _ _ _(_
```

```
3URFHVV ,'    5RXWHU ,'        1HWZRUN 7\SH %52$'&$67  &RVW
7UDQVPLW 'HOD\ LV   VHF  6WDWH '5  3ULRULW\   %)' HQDEOHG
'HVLJQDWHG 5RXWHU  ,'          ,QWHUIDFH $GGUHVV
%DFNXS 'HVLJQDWHG 5RXWHU  ,'          ,QWHUIDFH $GGUHVV
7LPHU LQWHUYDOV FRQILJXUHG +HOOR   'HDG   :DLW   5HWUDQVPL
+HOOR GXH LQ
1HLJKERU &RXQW LV   $GMDFHQW QHLJKERU FRXQW LV
&U\SW 6HTXHQFH 1XPEHU LV
+HOOR UHFHLYHG     VHQW     '' UHFHLYHG   VHQW
/6 5HT UHFHLYHG   VHQW   /6 8SG UHFHLYHG   VHQW
/6 $FN UHFHLYHG   VHQW    'LVFDUGHG
```

+!‰	AÈ â

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

457 [illegible]

?U / OSPF ,XF• >< ÈAË S*ü(M *ü õ ã Q ¸ [illegible] Ä

[illegible] [process-id] [illegible] [[illegible] [interface-type interface-number] [neighbor-id]]

Ï – DAÈ â Ð

– D	£EÄ
process-id	OSPF E¯/ß Ë
[illegible]	/ F• Aº4š,X µ C Ä
interface-type interface-number	/ Û n y ·,XF• µ C Ä
neighbor-id	/ Û nF• µ C Ä

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M *ü õ ã

Ï S*ü Û Ð Ð A¹ Q ¸ Ã ¹ / F• ,X µ C È4£ *üA¹ Q ¸ 9.BAx OSPF ú Æ4£!7 E¤> Ä

ÏG!5B _ Ð

```
5XLMLH VKRZ LS RVSI QHLJKERU
263) SURFHVV 1HLJKERUV LV )XOO
1HLJKERU ,' 3UL 6WDWH %)' 6WDWH 'HDG 7LPH $GGUHVV
)XOO %'5 8S )DVW(WKHUQH
```

```
5XLMLH VKRZ LS RVSI QHLJKERU GHWDLO
1HLJKERU LQWHUIDFH DGGUHVV
,Q WKH DUHD YLD LQWHUIDFH )DVW(WKHUQHW
1HLJKERU SULRULW\ LV 6WDWH LV )XOO VWDWH FKDQJHV
'5 LV %'5 LV
2SWLRQV LV [ _2_ _($_ _ _(_
'HDG WLPHU GXH LQ
1HLJKERU LV XS IRU
'DWDEDVH 6XPPDU\ /LVW
/LQN 6WDWH 5HTXHVW /LVW
/LQN 6WDWH 5HWUDQVPLVVLRQ /LVW
&U\SW 6HTXHQFH 1XPEHU LV
7KUHDG ,QDFWLYLW\ 7LPHU RQ
7KUHDG 'DWDEDVH 'HVFULSWLRQ 5HWUDQVPLVVLRQ RII
7KUHDG /LQN 6WDWH 5HTXHVW 5HWUDQVPLVVLRQ RII
```

```
7KUHDG /LQN 6WDWH 8SGDWH 5HWUDQVPLVVLRQ RII
7KUHDG 3ROO 7LPHU RQ
*UDFHIXO UHVWDUW KHOSHU GLVDEOHG
%)' VHVVLRQ VWDWH XS
```

+!‰	AÈ â
Neighbor ID	F• CÃ+ A’ Û ÛAš Ä
Pri	F• ì 4{ ÄEÝ DR *ü Å
State	F• (Š Õ
Dead Time	F• Dead (Š ÕE¬ = - ÊKÈ
Address	A¹F• Í h y ·
Interface	A¹F• Í h y ·
interface address	F• CÃ+ A’ Û,X y ·
In the area	/ : 4 A¹F• ,X ³
via interface	/ : A¹F• ,X y · Ä
Neighbor priority	F• OSPF ì Ä
State	OSPF F• E² y(Š Õ ÄFULL AÈ â Ø b0 n(Š Õ × DR AÈ âA¹F• Û nCÃ+ A’ Û ×BDR AÈ âA¹F• Û Ñ Û nCÃ+ A’ Û × DROTHER AÈ âA¹F• AÀ0 DR/BDR Ä&• &•5%4°2O _"u Ý DR ê BDR Ä
State changes times	F• (Š Õ ¬ ê,X õ D
Dead Time	/ w ×A¹F• ´ ÊKÈ Ö
DR	F• CÃ+ A’ ÛEÝ ,X DR ,X y · (G Hello y [,X DR +!‰)
BDR	F• CÃ+ A’ ÛEÝ ,X BDR ,X y · (G Hello y [,X BDR +!‰)
Options	Hello y [E !¨(MEÝNM Y • ÈAÈ âA¹ ³ STUB × 2 AÈ âA¹ ³ A STUB ³ Ä
Dead timer due in	F• CÃ+ A’ Û/•!O u,X ÊKÈ Ä
Neighbor up time	¥)„F• CÃ+ A’ Û)„ ü 4£E›,X ÊKÈ
Database Summary List	F• DD y [4³Au
Link State Request List	F• LS AË" y [4³Au
Link State Retransmission List	F• G¡ ô y [4³Au
Crypt Sequence Number	³ MD5 AxA•-Õ
Thread Inactivity Timer	F• ´ n Ê <(Š Õ
Thread Database Description Retransmission	!8 y · DD y [n Ê <(Š Õ
Thread Link State Request Retransmission	!8 y · LS AË" y [n Ê <(Š Õ
Thread Link State Update Retransmission	!8 y · LS È „ y [n Ê <(Š Õ
Thread Poll Timer	M- ÕG!5B,XF• ÈPoll Timer |(Š Õ
Graceful-restart helper	ú6Ñ ó ä Û nF• ,X GR Helper

ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

458 ÞÞ

/ OSPF CÃ+ Ä

ÞÞ [process-id] ÞÞ [ÞÞ ip-address net-mask]

Ï – DAÈ â Ð

– D	£EÄ
process-id	OSPF E¯/ß Ë
ÞÞ	/ Ø/¡ OSPF CÃ+ ,X4³Au µ C
ip-address net-mask	Û n,Â,X ip â $5% }-Õ

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð A¹ Q ¸*ü b / OSPF CÃ+ µ C Ècount EÝNM*ü b / OSPF CÃ+ ,X4³Au µ C Ëip-address net-mask *ü b / Û n5%4°,XCÃ+ µ C Ä

ÏG!5B _ Ð

```
5XLMLH VKRZ LS RVSI URXWH
263) SURFHVV
&RGHV & FRQQHFWHG ' %DLFNXSU G2 %2-63)
,$ 263) LQWHU DUHD 1 263) 166$ H[WHUQDO W\SH 1 263) 166
( 263) H[WHUQDO W\SH ( 263) H[WHUQDO W\SH
( > @ YLD )DVW(WKHUQHW
% YLD )DVW(WKHUQHW
& > @ LV GLUHFWO\ FRQQHFWHG )DVW(WKHUQHW $UHD
```

+!‰	AÈ â
codes	CÃ+ 2O _ ¹ ž Í h,X4ý m £EÄ
100.0.0.0/24	CÃ+ Í h,X !4Ô Ä
[1]	CÃ+ Í h,X cost
via	CÃ+ ß ÔCÇ â y ·

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

459 ÞÞ

/ OSPF ³,XCÃ+ Au1k õ D

þ [process-id] **þ**

Ï – DAÈ â Ð

– D	£EÄ
process-id	OSPF E¯/ß Ë

_ 2 Ö Q ¸,X / 4§ p

```
5XLMLH  VKRZ LS RVSI WRSRORJ\ VHOI RULJLQDWH
263) 5RXWHU ZLWK ,'          3URFHVV ,'
5RXWHU 7RSRORJ\ 6WDWHV  $UHD

  6HOI WR 'HVWLQDWLRQ 0HWULF
3DUHQW 1RGH
&KLOG 1RGH
  3ULPDU\ QH[W KRS
  %DFNXS QH[W KRS
  %DFNXS 1HLJKERU


  6HOI WR 'HVWLQDWLRQ 0HWULF
3DUHQW 1RGH
&KLOG 1RGH
  3ULPDU\ QH[W KRS  )DVW(WKHUQHW    YLD
  %DFNXS QH[W KRS  )DVW(WKHUQHW    YLD
  %DFNXS 1HLJKERU
1HLJKERU WR 'HVWLQDWLRQ 0HWULF
1HLJKERU WR 6HOI 0HWULF
1HLJKERU WR 3ULPDU\ 1HLJKERU
6HOI WR 1HLJKERU 0HWULF
```

+!‰	AÈ â
Self to Destination Metric	8V&• E’ ' !,Â,X8V&• zG£
Parent Node	' !,Â,X8V&•,X(8V&•

Child Node	' !,Â,X8V&•,X $8V&•
Primary next-hop	E' ' !,Â,X8V&•,X ß ÔCÇ
Backup next-hop	E' ' !,Â,X8V&•,X Ù8s• ÔCÇ

Transit area	/ <. ³JÒCÃ,XE›#õ ³ Ä
via interface	/ <. ³JÒCÃ,X G6(y · Ä
Local address	0Ã y ·
Remote Address	Í0Ã y ·
Transmit Delay	/ <. ³JÒCÃ,X ôEg Ê Ê Ä
State	y ·(Š Õ
Time intervals configured	y · Í h,X Hello ÈDead ÈWait ÈRetransmit ÊKÈ
Adjacency State	!«F•(Š Õ ÄFULL 0 n(Š Õ Ä

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
-	-

Ï G ÄAÈ â Ð -

4 6 3 area add

?UG!5BOSPF CÃ+ ³ êF¼CÃ+ ,X" 6.CÃ+ ÈAË S*üCÃ+ E¯/ßG!5B Q area add ÄA¹ Q ¸,X n 6 ã ôL86. ÜCÃ+ ,X n Ä

area add ip-address net-mask [to add tag value]

area add ip-address net-mask [to add | tag value]

Ï – DAÈ â Ð

– D	£EÄ
ip-address	" 6.CÃ+ ,X IP Ä
net-mask	" 6.CÃ+ ,X5%4° }-Õ Ä
to add	á @ " 6.,XCÃ+ È8¹ þG!5B í @ Ä
tag value	A'5B" 6.CÃ+ ,X tag È ª 8× È Ö0-4294967295

Ï5 ,ÕG!5B Ð 5 ,Õ"u ÝG!5B" 6.CÃ+ Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð 'CÃ+ ¢ J WCÃ+ E¯/ßG¡ „ Ú × È"¼ 9 OSPF CÃ+ E¯/ß Ê È!£ 5CÃ+ Ú ÿ ¹ Ô þ êF¼JÒCÃ(Š Õ,X • ã Eî 4- OSPF CÃ+ A' Û Ä V p"¼ 9,XCÃ+ Ô þE²4Á,X 0NKÈ È7¾"• ³E•+ CÃ+ A' Û Ã ¹ ¾Eî Ô þ " 6.CÃ+ È ¢5à û û £ ãCÃ+ ><,X?˜ õ Ä

area " 6.,X OSPF ³ KÈCÃ+ È5à area add " 6.,X OSPF CÃ+ ³,X êF¼CÃ+ Ä Í b NSSA È area add Q ¸,Â ! ¾ ü NSSA ,X ABR Þ ;> Ý È5à è ¾ ÍG¡ Ú ×CÃ+ E¯ > " 6. Ä

ÏG!5B _ Ð {*ó Ô 5 êF¼" 6.CÃ+ 100.100.0.0/16 Ä

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU VXPPDU\ DGGUHVV
5XLMLH FRQILJ URXWHU UHGLVWULEXWH VWDWLF VXEQHWV
5XLMLH FRQILJ URXWHU QHWZRUN DUHD
```

```
5XLMLH FRQILJ URXWHU QHWZRUN DUHD
5XLMLH FRQILJ URXWHU DUHD QVVD
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
aaag	ü OSPF ³E•+ CÃ+ A’ Û Þ .CÃ+ " 6. Ä
dbta	G¡ Ú × J WCÃ+ E¯/ß,XCÃ+ Ä

Ï G ÄAÈ â Ð -

4 6 4 **baizl**

?UG!5B LSA G¡ á y Ê Ê ÈAË S*üCÃ+ E¯/ßG!5B Q ¸ **baizl** ÄA¹ Q ¸,X **o** 6 ã 6 áT¬AxG! 5B Ä

baizl arrival-time

baizl

Ï – DAÈ â Ð

– D	£EÄ
arrival-time	G!5B y ,Ì à LSA Ê Ê Ê Ä ª 8× È Ö0-600000 È) ! Ö!¿/¦

Ï5 ,ÕG!5B Ð 5 ,Õ 1000 !¿/¦

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð G!5B Û n ÊKÈ Y y ,Ì à LSA Ê È á . Ø)Ú Ä

ÏG!5B _ Ð ¹ ß,XG!5B _ $ ÈG!5B,Ì à LSA Ê Ê ÊKÈ Ô å 2s

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU WLPHUV DUULYDO WLPH
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
jv	/ OSPF E¯/ß,X µ C È Ù ÀCÃ+ A’ Û ÛAš0ú Ä

Ï G ÄAÈ â Ð -

4 6 5 **jnlg - g**

A¹ Q ¸A’5B LSA >• Ú4˜' â Í H4˜E¯> „ ¹ ž5Õ ê,X,X ÊKÈJÒCÃ(Š Õ È „ ÊKÈ ÈA¹ Q ¸,X **o** 6 ã 6 á5 ,ÕG!5B Ä

jnlg - g seconds

jnlg - g

Ï – DAÈ â Ð

– D	£EÄ
seconds	LSA 4˜!9A× È „,X!9A× ÊKÈ È ª 8× È: 10-1800 È) ! Ö/¦ Ä

Ï5 ,ÕG!5B Ð	240 /¦
Ï Q ¸ õ ã Ð	CÃ+ E¯/ßG!5B õ ã
Ï S*ü Û Ð Ð	!£ þ LSA FÑ Ý7¾ Å,X*ó , ÊKÈ(LSA age)È '*ó , ÊKÈE' 1800 /¦ Ê ÈLÔ?UE¯> G¡ „ ¹L !6!7 ,X LSA Eî E' Ô û*ó , ÊKÈ5à>•#ÙL8] Ä V p Í!£ þ LSA FÑ(À0ŸE¯>LSA ,X È „ `5Õ êAu1k È Ú#\5ë ûG£,X CPU C $d Ä Z Ý ý*ü CPU

5XLMLH FRQILJ URXWHU WLPHUV SDFLQJ OVD WUDQVPLW

Ï,Ì G Q ¸ Ð	Q ¸	£EÄ
	▶	/ OSPF E¯/ß,X µ C È Ù ÀCÃ+ A’ Û ÛAš0ú Ä

4 6 8 timers lsa

?UG!5B LSA *ó ä Û DEÔFS1k"© ÈAË S*üCÃ+ E¯/ßG!5B Qiţmers throttle lsa all ÄA¹ Q ¸,X no 6 ã 6 á T¬AxG!5B Ä

timers lsa delay-time hold-time max-wait-time

timers lsa

Ï – DAÈ â Ð

– D	£EÄ
delay-time	LSA *ó ä,X Ô ã ÊE³ ÊKÈ È D B g ,X1 Ô Ñ LSA 0Ÿ G*ó ä,X Äª 8× È Ö0-600000 È) ! Ö!¿/¦
hold-time	G!5BOj õ â1 2 õ „ LSA Ê ÈÔ-Á,X ÊKÈKÈLh Äª 8× È Ö1-600000 È) ! Ö!¿/¦
max-wait-time	E²4Á „ LSA Ê È ø õ „ LSA ,X ÊKÈKÈLh Ô û Ä à Ê ÈE- þ ÊKÈ KÈLh 3 ø • LSA úE²4Á „,X Äª 8× È Ö 1-600000 È) ! Ö!¿ /¦

Ï5 ,ÕG!5B Ð 5 ,Õ ™ ‰ ß Ö

delay-time Ö0 !¿/¦ ×

hold-time Ö5000 !¿/¦ ×

max-wait-time Ö5000 !¿/¦ ×

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5Bh •P hïïSƒ†8 •] úP Â ðÆ,A” DDDDDDfÃÝ! aÀŽª Á°Á²ñ_³õR!dUu Â P€±¸@

Ï – DAÈ â Ð	– D	£EÄ
		n
	spf-delay	

4 7 0 tvray atain

*ü OSPF å4È Õ s6Ñ È S*üA¹ Q ¸,X no 6 ã/U*ü OSPF å4È Õ s6Ñ Ä

tvray atain

tvray atain

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð 5 ,Õ *ü OSPF å4È Õ s6Ñ Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð üEW û,X5%4° È Ã6Ñ î Î)„ ûG£,X y [¥ È 4*üEWP¬,X CPU ` Y ,C $d ÈEô äF¼ ÚF¼ Ú y [,X ÊE³ ê ö × È V p Hello y [,X Ø)ÚCY Î Z!O uKÈLh È Ú Ð7È Í h,XF• yCY Ê • Ô ÄE- Ê *ü å4È Õ s6Ñ È V p5%4° , ü ûG£,X y [ÈL8 Z Hello y [ê È 97¾ ¤ þF• ,X DD ÃLSU ÃLSR ÃLSAck y [36Ñ ó *ü b4È ÕA¹F• ,X å G2Ï ÈFS !+ b Hello y [,X ÊE³ ê ö ×5à Ð7ÈF• ,X Ä

ÏG!5B _ Ð /U*ü OSPF å4È Õ s6Ñ Ä

5XLMLH FRQILJ URXWHU RVSI

5XLMLH FRQILJ URXWHU QR WZR ZD\ PDLQWDLQ

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ

ipv6-prefix/prefix-length	" 6.,X 8× È Ä
adv	@ A¹" 6.8× È Ä
not-adv	á @ A¹" 6.8× È Ä 5 ,Õ @ Ä

Ï5 ,ÕG!5B Ð þ n KÈ" 6. 8× È

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã

Ï S*ü Û Ð Ð A¹ Q ¸ ¾ ü ABR Þ Ý È*ü 9 Ú Ô þ ³ Y,X î 5CÃ+ " 6. ä Ô 5CÃ+ ÈEî J ª ³ ÄCÃ+ µ C ,X Ü J> ¾ ¥*ó ü ³E•+ È ³ YF¼CÃ+ A' Û Þ,ß ,XFÑ K ',XCÃ+ µ C È J W ³,XA' Û ¾ 6Ñ,ß Ô 5" 6.CÃ+ ÄJ è Ã ¹EîE›A'5B advertise ` not-advertise EÝNM 9 ‡ n ú @ ×E- þ" 6.8× È È CK #; `E›$¸,X 0*ü È5 ,Õ å ê @ × Ä Ã ¹EîE› cost EÝNM 9A'5B" 6.CÃ+ ,X zG£ Ä Ã ¹ n î þ ³CÃ+ " 6. Q ¸ ÈE- H þ OSPF CÃ+ ³,XCÃ+ Ú k 1T ê È(M ÿ 5%4°?˜ õ û Ê È î ¤P¬5%4°E@ ¥ û6Ñ Ä
'G!5B Z î 5" ÈJ èNM,Â,È y Ý Ù ÿ G2Ï,X Ê í È CÃ+ B ÔKS G! s í.B n>•" ,X area range ,X Ä

ÏG!5B _ Ð Í ³ 1 ,XCÃ+ E¯> " 6. Ö

5 X L M L H F R Q I L J L S Y U R X W H U R V S I

5 XÁLXMLX (Hd ÷ HDQ€B2‰$ÅBB€W/+H.U (€ ÈÙÙÀÀ‘ ‰••UVÊ Q ¯M ù ‘ b µ 5 X1D°5 X µ Oõ€PP €P^2½+Ò² H D L• b

Ï S*ü Û Ð Ð V p Ô þ ³ Ø b H þ5%4°,X ÿ vF¼ Ú È Ã ¹ ÚA¹ ³A’Au stub ³ È stub ³ Y Ý,XCÃ+ A’ ÛFÑ
™NO ;> [illegible] Q ¸ Ä V p ³A’Au stub ³ È J Ú : 4 á AS êF¼CÃ+ µ C(type 5 LSAs)È
5à ü rL h*ü È êF¼CÃ+ µ C üJÒCÃ(Š Õ D B g œ 4 Ý \ û!¨G¡ È ¹ stub ³ YF¼A’ Û Ú ¾ : 4
\ å,XCÃ+ µ C È ¢5àL! " ZE¤> OSPFv3 #A, LÔ?U 4*ü,X2Ï4³C $d Ä
ü stub ³,X ABR Þ5 ,Õ*ó ä Ô 5></ 5 ,ÕCÃ+ ,X2O _ 3 ,X LSA @ stub ³ Y ÈE- Èstub
³ YF¼,XA’ Û Ã ¹ÆÇ’ AS êF¼ Ä SX ABR stub
V pLÔ?UG!5Ð totally stub Ä ` < stub Å ³ È ¾LÔ ü ABR Þ ;> [illegible] Q ¸ Ê ÈEÝ ½ [illegible]
stub E’

hello-interval 5 ,Õ 10 /¬Ýp

dead-interval 5 ,Õ hello-interval ,X ¯ áÝp

retransmit-interval 5 ,Õ 5 /¬Ýp

transmit-delay 5 ,Õ 1 /¬ @

ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð ü OSPFv3 [illegible] ™NO â F ³E² y È ¹ ±A•6Ñ ó!7.B : 4 H þ
[!—•Ü€œ0K•U2¯ÃÂá‹4[!—•U4 ••àÛ0ž @ñD`•àÛ2ÌÄ[@

Ãded - ial À iare FÑ ™NO Ô7È È ú í<. ³

5 X L M L H F R Q I L J L S Y • 0 P € p € P 0 ` 0 • 0 @ 0

```
5XLMLH FRQILJ LSY URXWHU RVSI
5XLMLH FRQILJ URXWHU DXWR FRVW UHIHUHQFH EDQGZLGWK
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	A’5B y ·,X · Ë
[illegible]	/ OSPFv3 CÃ+ E¯/ß µ C

Ï G ÄAÈ â Ð -

5 . 6 [illegible]

G!5BE¤> OSPFv3 ,X Ý y · S*ü BFD E¯> JÒCÃ ”# ÈAË ÜOSPFv3 CÃ+ G!5B õ ã ß ;> **[illegible]**

[illegible] Ä S*üA¹ Q ¸,X no 6 ã 6 á5 ,ÕG!5B Ä

[illegible]

[illegible]

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð GKÁBFD ”#

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã

Ï S*ü Û Ð Ð OSPFv3 #A,EîE› Hello y [| Õ ¥)„F• È ' OSPFv3 | BFD ”# s6Ñ â È Ú î E’ FULL G2Ï ,XF• Î0Ÿ BFD îA± ÈEîE› BFD ”# F• (Š Õ È Ô º BFD F• È OSPFv3 î0Ÿ E¯> 5%4° / Ä

| 3 Ã ¹EîE› y ·G!5B õ ã Q ¸ **[illegible]** [**[illegible]**] | ê5Ù GKÁ Û n y ·,X BFD ”# s6Ñ È y · G!5B,X ì 4{P¬ bE¯/ßG!5B õ ã ß,X **[illegible]** Q ¸ Ä

ÏG!5B _ Ð -

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	| OSPFv3 E¯/ß È¯ 9 OSPFv3 CÃ+ E¯/ßG!5B õ ã Ä
[illegible]	G!5BOSPFv3 y · S*ü BFD E¯> JÒCÃ ”# Ä

Ï G ÄAÈ â Ð -

5 . 7 [illegible]

S*üA¹ Q ¸#ÙL8 JG¡ OSPFv3 r _ Ä

[illegible] [process-id] **[illegible]**

+ CÃ+ A’ Û Å Ä

´"© {*ó5 ,ÕCÃ+ È JEî 4- OSPFv3 CÃ+ ³ ,X ÝCÃ+ A’ Û ÄASBR {*ó5 ,ÕCÃ + È ™NO*ü CÃ+ E¯/ßG!5B Q ¸E¯> G!5B Ä

V pEÝ ½always – D È á1u —CÃ+ >< ú , ü5 ,ÕCÃ+ È OSPFv3 E¯/ßFÑ î åF• Eî Ô 5 êF¼5 ,Õ CÃ+ Ä CÃ+ A’ Û á î / A¹5 ,ÕCÃ+ È?U.BAx ú {*ó5 ,ÕCÃ+ È Ã ¹*ü ?– ³ OSPFv3 JÒCÃ(Š Õ D B g ÄOSPFv3¸XF• EîE› ;> Q ¸ È Ã ¹,ß 5 ,ÕCÃ+ ,X Ä

êF¼5 ,ÕCÃ+ ,XCÃ+ zG£ È ¾6Ñ Q ¸E¯> n È á6ÑEîE› Q ¸ A’5B Ä

OSPFv3 Ý ø/¡ êF¼CÃ+ È2O _ 1 êF¼CÃ+ ,XCÃ+ zG£ î ¬ È5à2O _ 2 êF¼CÃ+ ,XCÃ+ zG£ Î n á ¬ Ä Ô þ,Â Û5%4° , ü ø 5 J> CÃ X È à ,XCÃ+ zG£ È2O _ 1 î!¨2O _ 2 ì 4{P¬ È ¹ ¾ / 2O _ 1 Fw 5CÃ+ Ä

stub ³ ,XCÃ+ A’ Û á Ã ¹ {*ó êF¼5 ,ÕCÃ+ ,X Ä

ÏG!5B _ Ð G!5BG¡ Ú {*ó5 ,ÕCÃ+ Ö

```
5XLMLH FRQILJ LSY URXWHU RVSI
```

5.1 dbstats

G!5B Í ,X LSA Au1k Î,XCÃ+ E¯> E›$¸ È S*ü **o** EÝNM ª#\E›$¸ Ä

dbstats { name | **prefix** prefix-list-name } **int** interface-type interface-number]

dbstats { name | **prefix** prefix-list-name } **int** interface-type interface-number]

Ï – DAÈ â Ð

– D	£EÄ
name	S*ü ACL E›$¸?˜ í
prefix prefix-list-name	S*ü prefix-list E›$¸?˜ í
interface-type interface-number	G!5B ¾J\ Í ¤ þ y ·E¯> LSA CÃ+ E›$¸

Ï5 ,ÕG!5B Ð áE¯> E›$¸

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã

Ï S*ü Û Ð Ð Í ,X LSA Au1k Î,XCÃ+ E¯> E›$¸ È$µC‡E›$¸ 5 Ê,XCÃ+ !6Ñ*ü bE@ ¥ Ä W J á î E ¡JÒCÃ(Š Õ D B g È ÍF• ,XCÃ+ >< 3 á î {*ó Ï) E ¡ Ä ACL E›$¸?˜ í ` prefix-list E›$¸?˜ í á6Ñ üA¹G!5B E , È G 8¹ Í Û n y · S*ü ACL E›$¸?˜ í, í á6Ñ a ÍA¹ y ·G!5B prefix-list E¯> E›$¸ Ä A¹E›$¸ ¾ E ¡ CÃ+ E@ ¥ È á E ¡ LSA Au1kCÃ+ Ä ´!8 È V p.B nLÔ?U ü ABR ÞG!5BE›$¸ È í+ b LSA ¡' Ã ¹Au1k ÎCÃ+ È ¡ î*ó { ³KÈ !4Ô LSA T J ª ³Eî ÈE- Ú Ð7ÈT¥"òCÃ+ , ü ÄE- Ê Ã ¹ ü ABR Þ S*ü **area** ú **type** EÝNM 9FS ! {*óT¥"òCÃ+ Ä

ÏG!5B _ Ð

```
5XLMLH FRQILJ LSY SUHIL[ OLVW DDD VHT SHUPLW
5XLMLH FRQILJ LSY URXWHU RVSI
5XLMLH FRQILJ URXWHU UHGLVWULEXWH ULS PHWULF
5XLMLH FRQILJ URXWHU GLVWULEXWH OLVW SUHIL[ OLVW DDD LQ H
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
area	G!5B ³6. Ü

Ï G ÄAÈ â Ð -

5.2 dbstats

G!5BE›$¸G¡ Ú ×CÃ+ È s6Ñ2O **dbstat** Q ¸ È S*ü **o** EÝNM ª#\E›$¸ Ä

dbstats { name | **prefix** prefix-list-name } **to** [**bgp** |**ccnt** |**ipc** process-id |**ipv** | **stat**]

dbstats name | **prefix** prefix-list-name } **to** [**bgp** |**ccnt** |**ipc** process-id |**ipv** | **stat**]

DAÈ â Ð

– D	£EÄ
name	S*ü ACL E›$¸?˜ í
prefix prefix-list-name	S*ü prefix-list E›$¸?˜ í

[illegible] process-id | [illegible] | [illegible]	YE›$¸,XCÃ+ 9$d

Ï5 ,ÕG!5B Ð áE¯> E›$¸

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã

Ï S*ü Û Ð Ð [illegible] â [illegible] Q ¸2O È Í ¢ J ª #A,G¡ Ú × OSPFv3 ,XCÃ+ E¯> E›$¸ È W D• á ;> CÃ+ G¡ Ú × È Ô8 â [illegible] Q ¸G! Ü S*ü ÄACL E›$¸?˜ í ` prefix-list E›$¸?˜ í á6Ñ üA¹G!5B E , È G8¹ Í ¤ Ô 9$d,XCÃ+ S*ü ACL E›$¸?˜ í, í á6Ñ aG!5B prefix-list E¯> E›$¸ Ä

ÏG!5B _ Ð ÍG¡ Ú ×,XM- ÕCÃ+ E¯> E›$¸

```
5XLMLH FRQILJ LSY URXWHU RVSI
5XLMLH FRQILJ URXWHU UHGLVWULEXWH VWDWLF VXEQHWV
5XLMLH FRQILJ URXWHU GLVWULEXWH OLVW SUHIL[ OLVW MMM RXW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	G¡ Ú × J WCÃ+ E¯/ß,XCÃ+ Ä

Ï G ÄAÈ â Ð -

5.3 [illegible]

S*üA¹ Q ¸A'5B y · – â OSPFv3 CÃ+ E¯/ß È S*üA¹ Q ¸,X [illegible] EÝNM ª#\G!5B Ä

[illegible] process-id [illegible] area-id [[illegible] instance-id]

[illegible] process-id [illegible] [[illegible] instance-id]

Ï – DAÈ â Ð

– D	£EÄ
process-id	ospf E¯/ß Ë 8× È 1-65535 Ä
[illegible] area-id	y · – â,X OSPFv3 ³ Ä J Ã ¹ Û n Ô þ H D ê5Ù Ô þ IPv4 !4Ô Ä
[illegible] instance-id	Í y ·(M n OSPFv3 r 'E¯> G!5B 8× È 0-255 Ä

Ï5 ,ÕG!5B Ð y · þ | OSPFv3 CÃ+ E¯/ß

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð Ã ¹ ü y ·G!5B õ ã ß È S*ü Q ¸ | y · – â OSPFv3 È aEîE›

G!5B Q ¸ â È y · Þ Ý,X !4Ô µ CFÑ Ú – â OSPFv3 E¤> Ä

ÏG!5B _ Ð ü y · fastethernet 0/0 Þ | OSPFv3 E¯/ß È – â Û n,X r _,X Û n ³E¤> Ö

5 X L M L H F R Q I L J L Q W I D V W H W K H U Q H W

5.5 [illegible]

S*üA¹ Q ¸A'5B y ·,X · Ë È S*üA¹ Q ¸,X [illegible] EÝNM 6 á5 ,Õ Ä

[illegible] cost [[illegible] instance-id]

[illegible] [[illegible] instance-id]

Ï – DAÈ â Ð

– D	£EÄ
cost	y ·,X · Ë Ä 8× È 1-65535 Ä
[illegible] instance-id	Í y ·(M n OSPFv3 r 'E¯> G!5B È8× È 0-255 Ä

Ï5 ,ÕG!5B Ð 5 ,Õ,X y ·8…C –5× ú '/Bandwidth Ä –5× ú 'T¬Ax 100Mbps Å Ä

[redacted]

Ï S*ü Û Ð Ð 5 ,Õ ™ ‰ ß È OSPFv3 y ·8…C 100Mbps/Bandwidth È J Bandwidth y ·,X ú ' ÈEîE› y ·G!5B Q ¸ bandwidth E¯> A'5B Ä

´/¡ L _4"CÃ,X OSPFv3 5 ,Õ y ·8…C Ö

64K > 4"CÃ È cost 1562 ×

E1 4"CÃ È cost 48 ×

10M ¹ þ5% È cost 10 ×

100M ¹ þ5% È cost 1 Ä

EîE› [illegible] Q ¸G!5B,X OSPFv3 8…C È î?Z,ª5 ,ÕG!5B Ä

ÏG!5B _ Ð G!5B y ·,X · Ë 1 Ö

5XLMLH FRQILJ LQW IDVWHWKHUQHW

5XLMLH FRQILJ LI LSY RVSI FRVW

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	/ OSPFv3 y · µ C Ä
[illegible]	A'5B y · – â

ïah	**ïaÞn**	*ü Fast Hello	s6Ñ ÈF• !O u ÊKÈ	1s Ä
multiplier	multiplier	!£/¦Js ¥EÕ,X	Hello y [,X õ D Ä ª 8× È	3-20 Ä

	8× È 1-65535(/¦) Ä
area instance-id	Í y ·(M n OSPFv3 r 'E¯> G!5B 8× È 0-255 Ä

Ï5 ,ÕG!5B Ð S •5%4° â&• Í&•5%4° 10 /¦ ×&• Í î&•5%4° â NBMA 5%4°5 ,Õ 30 /¦ Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

Ï S*ü Û Ð Ð F• KÈ ¥EÕ Hello y [,X ÊKÈKÈLh ™NO,Ì à È ú í Ú ´"© Î0Ÿ!7 ,XF• y G2Ï Ä

> Fast Hello _ Ÿ ä & dead-interval minimal hello-multiplier õ ô ä hello-interval õ ô â m ½ ¨ " d

ÏG!5B _ Ð A'5B y · ¥EÕ hello y [,X ÊKÈKÈLh 20s Ö

```
5 X L M L H F R Q I L J L Q W I D V W H W K H U Q H W
5 X L M L H F R Q I L J L I L S Y R V S I K H O O R L Q W H U Y D O
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
ip ospf dead-interval	A'5B y · ÞAx F• ,X ÊKÈ Ä
ip ospf hello-interval	/ OSPFv3 y · µ C Ä
ip ospf hello-multiplier	A'5B y · – â OSPFv3 CÃ+ E¯/ß

Ï G ÄAÈ â Ð -

5.2.8 ip ospf mtu-ignore

S*üA¹ Q ¸ ü y · D B g £EÄ y [Ê Ã ¹ Ñ+9 Í MTU ,X õP` ÄA¹ Q ¸,X **o** 6 ã 6 á5 ,ÕG!5B Ä

ip ospf mtu-ignore [**area** instance-id]

ip ospf mtu-ignore [**area** instance-id]

Ï – DAÈ â Ð

– D	£EÄ
area instance-id	Í y ·(M n OSPFv3 r 'E¯> G!5B 8× È 0-255 Ä

Ï5 ,ÕG!5B Ð 5 ,Õ Í MTU E¯> õP` Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã Ä

Ï S*ü Û Ð Ð OSPFv3 ü D B g £EÄ y [Ê î õP`F• y ·,X MTU `7¾ Å y ·,X MTU ú,Ì à È V p ,X D B g £EÄ y [Û/ ,XF• y ·,X MTU û b7¾ Å y y ·,X MTU ÈFw F• y G2Ï Ú á6Ñ>• Î0Ÿ Ä!8 Ê Ã ¹EîE› GKÁ MTU ,X õP` 9?· ‡ Ä

ÏG!5B _ Ð ¹ ß,XG!5B _ $ È Ú ethernet 1/0 ,X MTU õP` s6Ñ GKÁ Ä

```
5XLMLH FRQILJ LQWHUIDFH HWKHUQHW
5XLMLH FRQILJ LI LSY RVSI PWX LJQRUH
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	| OSPFv3 CÃ+ E¯/ß Ä
[illegible]	A'5B y ·,X IPv6 MTU Ä

Ï G ÄAÈ â Ð -

5.9 [illegible]

S*üA¹ Q ¸ ¹G!5B OSPFv3 ,XF• È S*üA¹ Q ¸,X [illegible] EÝNM 6 á5 ,Õ Ä

[illegible] ipv6-address { [[illegible] cost] | [[illegible] seconds | [illegible] value] } [[illegible] instance-id]

[illegible] ipv6-address [illegible]

Ï G ÄAÈ â Ð -

5.20[illegible]

S*üA¹ Q ¸A'5B y ·,X5%4°2O _ È S*üA¹ Q ¸,X [illegible] EÝNM 6 á5 ,Õ Ä

[illegible] { [illegible] | [illegible]

[[illegible]] } [[illegible] instance-id]

[illegible] [illegible] | [illegible]

[[illegible]]] [[illegible] instance-id]

Ï – DAÈ â Ð

– D	£EÄ
[illegible]	A'5B S •5%4°2O _ Ä
[illegible]	A'5BM2 S •5%4°2O _
[illegible]	A'5B&• Í&•5%4°2O _ Ä
[illegible]	A'5B&• Í î&•5%4°2O _
[illegible] [illegible]	A'5B&• Í î&•M2 S •5%4°2O _
[illegible] instance-id	Í y ·(M n OSPFv3 r 'E¯> G!5B 8× È 0-255 Ä

Ï5 ,ÕG!5B Ð &• &•5%4°2O _ ÖPPP ÃSLIP Ã û 4»&• &• $ y · ÃX.25 &• &• $ y · Õ>™ ×
NBMA 5%4°2O _ Ö û 4» Ä&• &• $ y ·L8 ê Å ÃX.25 Õ>™ Ä&• &• $ y ·L8 ê Å ×
S •5%4°2O _ Ö ¹ þ5% Õ>™ ×
5 ,Õ5%4°2O _"u Ý &• î&•5%4°2O _ Ä

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð Ã ¹ B rL h*ü,XJÒCÃ2O _ ` § % G2Ï È A' n y ·,X5%4°2O _ Ä

ÏG!5B _ Ð ßM6 _ $ È*ü bA'5B – â OSPFv3 E¤> ,X y ·,X5%4°2O _ &• Í&• y · Ö

```
5XLMLH FRQILJ LQWHUIDFH HWKHUQHW
5XLMLH FRQILJ LI LSY RVSI QHWZRUN SRLQW WR SRLQW
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	A'5B y ·,X ì 4{ Ä
[illegible]	/ OSPFv3 y · µ C Ä
[illegible]	A'5B y · – â OSPFv3 CÃ+ E¯/ß

Ï G ÄAÈ â Ð -

5.21 ¡¾¾

S*üA¹ Q ¸A’5B y ·,X ì 4{ È S*üA¹ Q ¸,X ¾ EÝNM 6 á5 ,Õ Ä
¡¾¾ number-value [¾¾ instance-id]

Ï Q ¸ õ ã Ð y ·G!5B õ ã

Ï S*ü Û Ð Ð Z ±A•CÃ+ µ C ôEÕ,X ÃM4 û È ñF• ¥EÕ LSA Ê ÈFÑLÔ?U k F• .BAx Ä| Ã ¹ B rL E¤>)ƒ W È EîE› Q ¸A'5B AŒ1 YF• .BAx,X ÊKÈKÈLh È V p ü Û n,X ÊKÈ Y ´"© k .BAx È ÚG¡ ô LSA µ C Ä

ÏG!5B _ Ð ßM6 _ $ È*ü bA'5BG¡ ô LSA ,X ÊKÈKÈLh 10s Ö

```
5 X L M L H  F R Q I L J   L Q W H U I D F H  H W K H U Q H W
5 X L M L H  F R Q I L J  L I   L S Y  R V S I  U H W U D Q V P L W  L Q W H U Y D O
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	/ OSPFv3 y · µ C Ä
[illegible]	A'5B y · – â OSPFv3 CÃ+ E¯/ß

Ï G ÄAÈ â Ð -

5 . 23 [illegible]

S*üA¹ Q ¸A'5B ü y · Þ ôEÕ LSA Ê,X ÊE³ ÊKÈ È S*üA¹ Q ¸,X [illegible] EÝNM 6 á5 ,Õ Ä

[illegible] seconds [[illegible] instance-id]

[illegible] [[illegible] instance-id]

Ï – DAÈ â Ð

– D	£EÄ
seconds	¥EÕLSA ,X ÊE³ ÊKÈ Ä 8× È 1-65535(/¦) Ä
[illegible] instance-id	Í y ·(M n OSPFv3 r 'E¯> G!5B 8× È 0-255 Ä

) nð•!% RbR2 nú ™A ù '% RbX€ ó\@

5.24 ïßÞ

S*üA¹ Q ¸ ' Ô OSPFv3 CÃ+ E¯/ß È S*üA¹ Q ¸,X ¤ EÝNM GKÓ OSPFv3 CÃ+ E¯/ß Ä

ïßÞ [process-id]

ïßÞ process-id

Ï – DAÈ â Ð	– D	£EÄ
	process-id	OSPFv3 E¯/ß Ë Ä þG!5BE¯/ß Ë Ê È></ Ô E¯/ß 1 Ä

Ï5 ,ÕG!5B Ð "u Ý ' Ô OSPFv3 CÃ+ E¯/ß Ä

Ï Q ¸ õ ã Ð < G!5B õ ã Ä

Ï S*ü Û Ð Ð ' Ô OSPFv3 E¯/ß â È ÚE¯ 9CÃ+ E¯/ßG!5B õ ã Ä

,Â ! È å Ì { • Ô ï ÕG!5B

,X p ûG£F• x f,XE›/ß È A’ Û Ô û AŒ à Ê ¥CK â 4 þF• x f È J Ô û AŒ à Ê y « 4 þ F• ¥CK,X x f È G A’ Û Ô î Ã ¹ à Ê â 8 þF• E¯> x f Ö

5 X L M L H F R Q I L J L S Y U R X W H U R V S I P D [F R Q F X U U H Q W G G

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
ax cda dd	A’5BOSPFv3 CÃ+ E¯/ß à Ê J ¥ x f,XF• Ô û D ,Â

Ï G ÄAÈ â Ð -

5 . 2 6 lg adj- cbag

A¹ Q ¸A’5B úA„)F• y(Š Õ ¬ ê,X ¹ « ÈA¹ Q ¸,X no

Ï5 ,ÕG!5B Ð 5 ,Õ 5 Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð 'CÃ+ A' Û â î þF• à Ê x 6 D B È J û6Ñ « E ¡ Ê ÈG!5BA¹ Q ¸ È ÃL$!£ þ OSPFv3 r _ AŒ à Ê J ¥ x f Ä ¥CK ê y « Å,XF• Ô û D,Â Ä

ÏG!5B _ Ð V ß _ $ Ú ' ! OSPFv3 CÃ+ E¯/ß AŒ à Ê J ¥ x Ä ¥CK ê y « Å f,XF• Ô û D,ÂA'5B 4 ÈA¹G!5B ,X p ûG£F• x f,XE›/ß È A' Û Ô û AŒ à Ê ¥CK â 4 þF• x f È J Ô û AŒ à Ê y « 4 þ F• ¥CK,X x f È G A' Û Ô î Ã ¹ à Ê â 8 þF• E¯> x f Ö

```
5XLMLH FRQILJ LSY URXWHU RVSI
5XLMLH FRQILJ URXWHU PD[ FRQFXUUHQW GG
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
ipv6 ospf cost cost	A'5B Ý OSPFv3 CÃ+ E¯/ß AŒ à Ê J ¥ x f,XF• Ô û D,Â

Ï G ÄAÈ â Ð -

5.28 ipv6 interface

S*üA¹ Q ¸A'5B#\ U y · È S*üA¹ Q ¸,X **no** EÝNM ª#\A'5B,X#\ U y · Ä

ipv6 interface { **default** | interface-type interface-number }

ipv6 interface { **default** | interface-type interface-number }

Ï – DAÈ â Ð

– D	£EÄ
default	Ú Ý y ·A'5B #\ U y · Ä
interface-type interface-number	Ú Û n y ·A'5B #\ U y · Ä

Ï5 ,ÕG!5B Ð þA'5B#\ U y · Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð ' Ô þ y ·>•A'5B #\ U y · È Ú á a y ` ¥EÕ hello y [Ä A¹ Q ¸ ¾ Í – â OSPFv3 E¤> ,X y ·*ó È è Í<.JÒCÃ á*ó Ä

ÏG!5B _ Ð ¾ AŒVLAN1 y · – â OSPFv3 E¤> Ö

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU SDVVLYH LQWHUIDFH GHIDXOW
5XLMLH FRQILJ URXWHU QR SDVVLYH LQWHUIDFH YODQ
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ

[illegible]	A’5B y · – â OSPFv3 CÃ+ E¯/ß Ä
[illegible]	/ OSPFv3 CÃ+ E¯/ß µ C Ä
[illegible]	/ OSPFv3 F• µ C Ä

Ï G ÄAÈ â Ð -

5.29 [illegible]

S*üA¹ Q ¸ Ú |CÃ+ G¡ Ú ¥ È Ú J ªCÃ+ #A,,XCÃ+ µ C"¼ 9 OSPFv3 CÃ+ E¯/ß Ä S*üA¹ Q ¸,X

[illegible] EÝNM ª#\A¹ s6Ñ ê5Ù Â G¡ Ú ¥,X – D Ä

[illegible] bgp | [illegible] | [illegible] process-id | [illegible] | [illegible] } [[illegible] { [illegible] [[illegible] } | [illegible] metric-value [illegible] { 1 | 2 } | [illegible] route-map-name | [illegible] tag-value]

[illegible] { bgp | [illegible] | [illegible] process-id | [illegible] | [illegible] } [[illegible] { [illegible] [[illegible] 2] } [illegible] [illegible] { 1 | 2 } | [illegible] route-map-name | [illegible] tag-value]

Ï – DAÈ â Ð

– D	£EÄ
bgp	¢ bgp G¡ Ú ×
[illegible]	¢,ÈE²CÃ+ G¡ Ú ×
[illegible] process-id	¢ ospf G¡ Ú × ÈEîE› process-id Û n K ' ¤ þ ospf r _ È ª 8× È Ö 1-65535
[illegible]	¢ rip G¡ Ú ×
[illegible]	¢M- ÕCÃ+ G¡ Ú ×
[illegible]	¾J\ ÍG!5BG¡ Ú ¥ OSPFv3 CÃ+ Ê S*ü Ëü bE›$¸(M nCÃ+ E¯> G¡ Ú ¥ Ö internal Ö YCÃ+ â KÈCÃ+ × external [1|2] ÖE1 ÃE2 ê Ý,X êF¼CÃ+
[illegible] metric-value	A’5B OSPFv3 external 2 LSA ,X metric ÈEîE› metric-value Û n metric û ã È ª 8× È Ö0-16777214
[illegible] {1|2}	A’5B êF¼CÃ+ ,X zG£2O _ E-1 ê E-2
[illegible] route-map-name	G¡ Ú ¥CÃ+ G6(,XCÃ+ 1*+9 Ä map-tag ,X á + áCYE› 32 +0ú Ä
[illegible] tag-value	A’5BG¡ Ú × OSPFv3 YCÃ+ ,X tag È ª 8× È Ö0-4294967295

Ï5 ,ÕG!5B Ð "u Ý ' ÔA¹ s6Ñ ×
metric-type 5 ,Õ 2 ×
G¡ Ú ¥ OSPFv3 Ê È5 ,ÕG¡ Ú ¥ Ý $2O _,X OSPFv3 CÃ+ ×
5 ,Õ þ G6(route-map Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð 'A’ Û Õ Z î þCÃ+ #A, Ê È Ø #A, KÈ,X f,Ì Ü 0 Ô þM2 G¡?U,X Y • ÄA’ Û ü à Ô ÊKÈ?U6ÑE¤ > î þCÃ+ #A, È W ™NO6Ñ Ú Ô þ #A,,X µ CG¡ „ ÚG! º Ô þ #A, ÄE- Í ÝCÃ+ #A,FÑ EÖ*ü,X Ä G¡ Ú ¥ OSPFv3 #A,CÃ+ Ê È AŒ âM6G!5B match – D È></ G¡ Ú ¥ OSPFv3 CÃ+ È Í h $2O _,XCÃ + ÈT¬Ax ™ ‰ G¡ Ú ¥ Ý2O _,X OSPFv3 CÃ+ Ä

Í bG¡ Ú ¥ OSPFv3 ,X match – D È ¾ ÝCÃ+ $2O _!7.B,X È !E¯> route-map ,X G! ×
G!5BG¡ Ú ¥ Êroute-map ?˜ í ,X match – D J\ ÍCÃ+ ,X s Ÿ µ CE¯> G!,X ×G¡ Ú ¥G!5B ,X tag È
metric â metric-type – D ì 4{ " b route-map Í hA¹ – D set ?˜ í,X ì 4{ Ä
G6(,X route-map ,X set metric ª 8× È h ' <0-16777214> È V pCY ÎA¹8× È È Ú ´"© é 9CÃ+ Ä
Q ¸,X no 6 ãG!5B,X?˜ í V ß Ö
1 Ê V p no Q ¸ Û n ¤ o – D È í ÚE- o – D 6 á5 ,ÕG!5B ×
2 Ê V p no Q ¸ á Û n Ï) – D È í Ú H þ Q ¸ ôL8 Ä

ÏG!5B _ Ð G¡ Ú ¥,ÈE²CÃ+ È J G6(route-map test Ö

```
5XLMLH FRQILJ URXWHU RVSI
5XLMLH FRQILJ URXWHU UHGLVWULEXWH FRQQHFW PHWULF URXW
```

G6(,XCÃ+ ÒG!5B Ö

```
5XLMLH FRQILJ URXWH PDS WHVW SHUPLW
5XLMLH FRQILJ URXWH PDS PDWFK PHWULF
5XLMLH FRQILJ URXWH PDS VHW PHWULF
```

!8 Ê ¹ ÞG!5B,X s6Ñ È ÚG¡ Ú ¥,XCÃ+ metric 20 ,X È Ú J metric A'5B 30 ×G¡ Ú ¥,X J WCÃ + ,X metric A'5B 10 Ä

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	A'5B5 ,ÕCÃ+ G¡ Ú ¥ Ä
[illegible]	A'5BG¡ Ú ¥CÃ+ ,X5 ,Õ zG£ Ä
[illegible]	A'5B êF¼CÃ+ " 6. 8× È Ä
[illegible]	/ OSPFv3 CÃ+ E¯/ß µ C Ä
[illegible]	/ OSPFv3 JÒCÃ(Š Õ D B g µ C Ä

Ï G ÄAÈ â Ð -

5.3 [illegible]

S*üA¹ Q ¸A'5BA' Û,X ÛAš(Router ID) ÈS*üA¹ Q ¸,X [illegible] EÝNM ôL8A'5B,Router ID È6 á5 ,Õ,X Router ID Ä

[illegible] router-id

[illegible]

Ï – DAÈ â Ð

– D	£EÄ
router-id	A' Û,X ÛAš Ä S*ü IPv4 ã></ Ä

Ï5 ,ÕG!5B Ð OSPFv3 CÃ+ E¯/ßEÝ Ý ²)ƒ Äloopback Å y · IPv4 Ô û,X 0 CÃ+ A' Û ÛAš ×
V p"u ÝG!5B IPv4 ,X ²)ƒ Äloopback Å y · ÈFw OSPFv3 E¯/ß ÚEÝ ª J ª Ý y · IPv4 Ô
û,X 0 CÃ+ A' Û ÛAš Ä

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã Ä

Ï S*ü Û Ð Ð !£ ÄE¤> OSPFv3 E¯/ß,XA’ ÛFÑ ™NO S*ü Ô þRouter ID 9 ÛAš Ä Ã ¹G!5B Ï) Ô þ IPv4 0 A¹CÃ + A’ Û,XCÃ+ A’ Û ÛAš È ™NO ±A•7¾"•2Ï4³ !£ ÄCÃ+ A’ Û,XCÃ+ A’ Û ÛAš Ô È V p à Ô ÄA’ Û E¤> î þ OSPFv3 E¯/ß È 3 ™NO ±A•!£ þE¯/ß,XCÃ+ A’ Û ÛAš Ô Ä "¼ ãCÃ+ A’ Û ÛAš ¬ â È #A, YF¼ î . ûG£ Ø)Ú È ¹ á ôLc ã ¬CÃ+ A’ Û ÛAš È Â CÃ+ A’ Û ÛAš Ê î ¤/ ú.B n?U Â Ä ÎA, ü | OSPFv3 E¯/ß â È Û n Q Router ID È üG!5B OSPFv3 E¯ /ß J ª – D Ä

ÏG!5B _ Ð ßM6 _ $ È*ü bA’5B A’ Û – â OSPFv3 E¤> ,X ÛAš 1.1.1.1 Ö

5XLMLH FRQILJ URXWHU VXPPDU\ SUHIL['%	
Ï,Ì G Q ¸ Ð	Q ¸ £EÄ

ïÞ [process- id]**databa** [lsa-type [**adv** router-id]]

Ï – DAÈ â Ð

– D	£EÄ
process- id	OSPFv3 E¯/ß Ë
lsa-type	LSA 2O _ È Ý ¹ ß ´2O Ö AS-external-LSAs Ã Link-LSAs Ã Inter-Area-Prefix-LSAs Ã Inter-Area-Router-LSAs Ã Intra-Area-Prefix-LSAs ÃNetwork-LSAs ÃRouter-LSAs "uG!!8 – D Ê È / Ý LSA µ C

adv r router-id

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	| OSPFv3 CÃ+ E¯/ß Ä

Ï G ÄAÈ â Ð -

5.3 [illegible]ce

/ OSPFv3 y · µ C Ä

[illegible] interface-type interface-number]

Ï – DAÈ â Ð

– D	£EÄ
interface-type interface-number	Û n y ·2O _ `4ê Ë Ä

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð / OSPFv3 y · µ C

```
5XLMLH VKRZ LSY RVSI LQWHUIDFH
)DVW(WKHUQHW LV XS OLQH SURWRFRO LV XS
,QWHUIDFH ,'
,3Y 3UHIL[HV
IH G II IH /LQN /RFDO $GGUHVV
263)Y 3URFHVV $UHD ,QVWDQFH ,'
5RXWHU ,' 1HWZRUN 7\SH %52$'&$67 &RVW
7UDQVPLW 'HOD\ LV VHF 6WDWH %'5 3ULRULW\
'HVLJQDWHG 5RXWHU ,'
,QWHUIDFH $GGUHVV IH F HII IH F
%DFNXS 'HVLJQDWHG 5RXWHU ,'
,QWHUIDFH $GGUHVV IH G II IH
7LPHU LQWHUYDO FRQILJXUHG +HOOR 'HDG :DLW 5HWUDQVPLW
+HOOR GXH LQ
1HLJKERU &RXQW LV $GMDFHQW QHLJKERU FRXQW LV
+HOOR UHFHLYHG VHQW '' UHFHLYHG VHQW
/6 5HT UHFHLYHG VHQW /6 8SG UHFHLYHG VHQW
/6 $FN UHFHLYHG VHQW 'LVFDUGHG
```

V pA¹ y ·,XF• *ü â BFD 6(| È î / BFD enabled Ä

```
5XLMLH VKRZ LSY RVSI LQWHUIDFH
)DVW(WKHUQHW LV XS OLQH SURWRFRO LV XS
,QWHUIDFH ,'
,3Y 3UHIL[HV
```

```
IH     G    II IH          /LQN /RFDO $GGUHVV
263)Y  3URFHVV     $UHD        ,QVWDQFH ,'
5RXWHU ,'        1HWZRUN 7\SH %52$'&$67  &RVW
7UDQVPLW 'HOD\ LV   VHF  6WDWH %'5  3ULRULW\  È%)' HQDEOHG
'HVLJQDWHG 5RXWHU  ,'
,QWHUIDFH $GGUHVV IH    F    HII IH    F
%DFNXS 'HVLJQDWHG 5RXWHU  ,'
,QWHUIDFH $GGUHVV IH     G    II IH
7LPHU LQWHUYDO FRQILJXUHG +HOOR   'HDG   :DLW   5HWUDQVPLW
+HOOR GXH LQ
```

```
                    )XOO '5                )DVW(WKHUQHW
```

_ 2 Ö ¹,ß OSPFv3 F• Aº4š µ C

```
5XLMLH  VKRZ LSY  RVSI QHLJKERU GHWDLO
1HLJKERU        LQWHUIDFH DGGUHVV IH    F    HII IH    F
,Q WKH DUHD        YLD LQWHUIDFH )DVW(WKHUQHW
1HLJKERU SULRULW\ LV    6WDWH LV )XOO    VWDWH FKDQJHV
'5 LV        %'5 LV
2SWLRQV LV  [        _5_ _ _(_9
'HDG WLPHU GXH LQ
'DWDEDVH 6XPPDU\ /LVW
/LQN 6WDWH 5HTXHVW /LVW
/LQN 6WDWH 5HWUDQVPLVVLRQ /LVW
```

V p *üEîE› BFD ”# âA¹F• ,XE@ ¥CÃ X È î / BFD session state up Ä

```
5XLMLH  VKRZ LSY  RVSI QHLJKERU GHWDLO
1HLJKERU        LQWHUIDFH DGGUHVV IH    F    HII IH    F
,Q WKH DUHD        YLD LQWHUIDFH )DVW(WKHUQHW
1HLJKERU SULRULW\ LV    6WDWH LV )XOO    VWDWH FKDQJHV
'5 LV        %'5 LV
2SWLRQV LV  [        _5_ _ _(_9
'HDG WLPHU GXH LQ
'DWDEDVH 6XPPDU\ /LVW
/LQN 6WDWH 5HTXHVW /LVW
/LQN 6WDWH 5HWUDQVPLVVLRQ /LVW
%)' VHVVLRQ VWDWH XS
```

Ï,Ì G Q ¸ Ð	Q ¸	£EÄ
		| OSPFv3 CÃ+ E¯/ß Ä

5.8 [illegible]

/ OSPFv3 !£ þ ,X § % µ C Ä

[illegible] [process- id] [illegible] [[illegible] area-id]

Ï – DAÈ â Ð

– D	£EÄ
process- id	OSPFv3 E¯/ß Ë
area-id	Û n,X

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð / OSPFv3 !£ þ § % µ C

```
5XLMLH VKRZ LSY RVSI WRSRORJ\
263)Y 3URFHVV
263)Y SDWKV WR $UHD URXWHUV
5RXWHU ,' %LWV 0HWULF 1H[W +RS ,QWHUIDFH
        (%
        (                    )DVW(WKHUQHW
263)Y SDWKV WR $UHD URXWHUV
5RXWHU ,' %LWV 0HWULF 1H[W +RS ,QWHUIDFH
        %
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	| OSPFv3 CÃ+ E¯/ß Ä
[illegible]	G!5BOSPFv3 ,X 8× È

Ï G ÄAÈ â Ð -

5.9 [illegible]

/ OSPFv3 E¯/ß<.JÒCÃ µ C Ä

[illegible] [process- id] [illegible]

Ï – DAÈ â Ð

– D	£EÄ
process- id	OSPFv3 E¯/ß Ë

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð / OSPFv3 <. ³JÒCÃ,X µ C

```
5XLMLH VKRZ LSY RVSI YLUWXDO OLQNV
9LUWXDO /LQN 9/,1. WR URXWHU LV GRZQ
7UDQVLW DUHD YLD LQWHUIDFH )DVW(WKHUQHW LQVWDQFH
/RFDO DGGUHVV
5HPRWH DGGUHVV '%
7UDQVPLW 'HOD\ LV VHF 6WDWH 'RZQ
7LPHU LQWHUYDOV FRQILJXUHG +HOOR 'HDG :DLW 5HWUDQVPL
+HOOR GXH LQ LQDFWLYH
$GMDFHQF\ VWDWH 'RZQ
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	| OSPFv3 CÃ+ E¯/ß Ä
[illegible]	G!5BOSPFv3 <.JÒCÃ Ä

Ï G ÄAÈ â Ð -

5.4 [illegible]

A¹ Q ¸A× H LSA Ú4˜ „ ÊKÈ ÈA¹ Q ¸,X [illegible] 6 ã 6 á5 ,ÕG!5B Ä

[illegible] seconds

[illegible]

Ï – DAÈ â Ð	– D	£EÄ
	seconds	4˜!9A×KÈLh Ä) !/¦ È ª 8× È 10-1800 È5 ,Õ 240 Ä

Ï5 ,ÕG!5B Ð – D5 ,Õ

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã

Ï S*ü Û Ð Ð !£ þ LSA FÑ Ý7¾ Å,X*ó , ÊKÈ(LSA age)È '*ó , ÊKÈE' 1800 /¦ Ê ÈLÔ?UE¯> G¡ „ ¹L !6!7 ,X LSA Eî E' Ô û*ó , ÊKÈ5à>•#ÙL8] Ä V p Í!£ þ LSA FÑ(À0ŸE¯>LSA ,X È „ `5Õ êAu1k È Ú#\5ë ûG£,X CPU C $d Ä

Z Ý ý*ü CPU C $d È ÚA' Û Y LSA Ú4˜E¯> „ ¡ 0 ÄE-G /Ä Ô þ Ú4˜ „ ¡ 0,X ÊKÈKÈLh 4˜ !9A×KÈLh È Ú4˜ „ ¡ 0 G Ú Ô þ4˜!9A×KÈLh YLÔ?U „,X LSA 4ê ä Ô4˜4³ Ô „ Ä

ü LSA DG£ Ô n,X ™ ‰ ß È!9A× ÊKÈKÈLhC^ û È n Ê < ó$µ â Ø)Ú,X LSA DG£C^ î Ä Z ± Õ CPU ,X 0 n Èå À ÎA,!£ õ ó$µ Ø)Ú,X LSA DG£ á p þ î È ¹ V p LSA DG£EW û Èå À ÎA, |L! "!9A×KÈLh Ä !¨ V È D B g Ý 10000 5 LSA È Ã ¹L! "!9A× ÊKÈKÈLh È V p ¾ Ý 40 100 5 È í Ã ¹A× H 10~20 ÚJs Ä

ÏG!5B _ Ð ¹ ß,XG!5B _ $ È Ú!9A× ÊKÈA'5B 120 /¦ Ä

```
5XLMLH FRQILJ LSY URXWHU RVSI
5XLMLH FRQILJ URXWHU WLPHUV SDFLQJ OVD JURXS
```

Ï,Ì G Q ¸ Ð	Q ¸	£EÄ
	[illegible]	¹,ß OSPFv3 ,X,Ì GG!5B µ C

Ï G ÄAÈ â Ð -

5.4 [illegible]

?UG!5B LSA ¥EÕ Ú4˜ È „ ÈAË S*üCÃ+ E¯/ßG!5B Q ¸timers pacing lsa-transmit ÄA¹ Q ¸,X no 6 ã 6 á T¬AxG!5B Ä

[illegible] transmit-time transmit-count

[illegible]

Ï – DAÈ â Ð	– D	£EÄ
	transmit-time	LSA Ú4˜ ¥EÕKÈLh Ä) !!¿/¦ È ª 8× È 10-1000 È5 ,Õ 40 Ä

transmit-count	!£4˜ LS-UPD y [,X þ D Ä ª 8× È	1-200

5XLMLH FRQILJ URXWHU WLPHUV VSI

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	S*üA¹ Q ¸G¡ „ | OSPFv3 F¼ Ú s6Ñ Ä
[illegible]	/ OSPFv3 CÃ+ E¯/ß µ C Ä
[illegible]	G!5BSPF Au1k Û DEÔFS ÊE³ ÊKÈ

Ï G ÄAÈ â Ð -

5.4 [illegible]

?UG!5B LSA *ó ä Û DEÔFS1k"© ÈAË S*üCÃ+ E¯/ßG!5B Qtimers throttle lsa all ÄA¹ Q ¸,X no 6 ã 6 á T¬AxG!5B Ä

[illegible] delay-time hold-time max-wait-time

[illegible]

Ï – DAÈ â Ð

– D	£EÄ
delay-time	*ó ä LSA ,X Ô ã ÊE³ ÊKÈ Ä D B g ,X1 Ô Ñ LSA 0Ÿ G*ó ä,X Å Ä) !!¿/¦ Ä ª08Ä È È5 ,Õ
hold-time	Oj õ â1 2 õ „ LSA Ê,X Ô-Á ÊKÈKÈL ì Å•vÂ"q1s=) !!¿ @š a •pÌ€0-600000 È5 ,Ô

5.5 ¯ÈÑ

?UG!5BOSPFv3 ü y § %,X ¬ ê µ C ÈÊ¯> SPF Au1k,X Ê Ê ÊKÈ Ã ø õ SPF Au1k,X Ô ã ÊKÈKÈLh Ã Ô û ÊKÈKÈLh ÈAË S*üCÃ+ E¯/ßG!5B Q¯ÈÑA¹ Q ¸,X no 6 ã 6 á5 ,ÕG!5B Ä

¯È spf-delay spf-holdtime spf-max-waittime

¯È

Ï – DAÈ â Ð	– D	£EÄ

ers th-j /TT0 1354742010610 Tf -0.0028 Tc88 Tc -17.007 -1.2 Td ( )Tj7 /

spf-delay

Ï G ÄAÈ â Ð -

5 . 4 6 tvray atbin

tvray atbin Q ¸ *ü OSPFv3 å4È Õ s6Ñ Ä S*üA¹ Q ¸,X no 6 ã/U*ü OSPF å4È Õ s6Ñ Ä
tvray atbin
tvray atbin

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð *ü OSPF å4È Õ s6Ñ

Ï Q ¸ õ ã Ð CÃ+ E¯/ßG!5B õ ã

Ï S*ü Û Ð Ð üEW û,X5%4° È Ã6Ñ î Î)„ ûG£,X y [¥ È 4*üEWP¬,X CPU ` Y ,C $d ÈEô äF¼ Ú y [,X ÊE³ ê ö × È V p Hello y [,X Ø)ÚCY Î Z!O uKÈLh È Ú Ð7È Í h,XF• yCY Ê • Ô ÄE- Ê *ü å4È Õ s6Ñ È V p 5%4° , ü ûG£,X y [ÈL8 Z Hello y [ê È 97¾ ¤ þF• ,X DD ÃLSU ÃLSR ÃLSAck y [36Ñ ó*ü b 4È ÕA¹F• ,X å G2Ï ÈFS !+ b Hello y [,X ÊE³ ê ö ×5à Ð7ÈF• ,X Ä

ÏG!5B _ Ð /U*ü OSPF å4È Õ s6Ñ Ä

```
5XLMLH FRQILJ LSY URXWHU RVSI
5XLMLH FRQILJ URXWHU QR WZR ZD\ PDLQWDLQ
```

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	¹,ß OSPFv3 < G!5B,X,Ì G µ C

Ï G ÄAÈ â Ð -

6 IS-IS

6.1 adjacency check

S*üA¹ Q ¸G!5B ü Hello y [”# F• Õ,X #A, Ä S*üA¹ Q ¸,X ¤ 6 ã 9 ª#\A¹ ”# Ä

adjacency check

adjacency check

Ï – DAÈ â Ð	– D	£EÄ
	-	-

Ï5 ,ÕG!5B Ð *üA¹ ”#

Ï Q ¸ õ ã Ð IS-IS CÃ+ E¯/ßG!5B õ ã

Ï S*ü Û Ð Ð T¬Ax ™ ‰ ß ü

Ï Q ¸ õ ã Ð IS-IS CÃ+ E¯/ßG!5B õ ã

Ï S*ü Û Ð Ð A’5BE- 5 Q ¸ È ' Ô Í Level-1 area ,X LSP ÃCSNP ÃPSNP y ,XAxA• È ¥EÕ Ê 3 Ú ú ÞAxA• µ C
¥EÕ Ä ü à Ô Area È Ý,X IS-IS A’ Û ™NOA’5B,Ì à,X password Ä
8¹ !EîE› G!5B ZAxA• È í!8 Q ¸ ´"©G!5B ÈLÔ?U ôL8
Q ¸G!5B Ä
S*ü Q ¸ È í ôL8G!5B,X š-Õ Ä S*ü Q ¸ È ¾
] EÝNM Ä _ V È !G!5B c,Â !G!5B

Ï‚Ì G Q ¸ Ð	Q ¸	£EÄ

Ï G ÄAÈ â Ð -

6 . 6bfal- ãce

G!5BE¤> IS-IS #A,,X Ý y · S*ü BFD E¯> JÒCÃ ”# ÈAË üIS-IS CÃ+ E¯/ßG!5B õ ã ß ;> bfl al- ãce Ä S*üA¹ Q ¸,X o 6 ã 6 á5 ,ÕG!5B Ä

bfal- ãce

bfal- ãce

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð Ý y · þ *ü IS-IS #A, â BFD 6(|

Ï Q ¸ õ ã Ð IS-IS CÃ+ E¯/ßG!5B õ ã

Ï S*ü Û Ð Ð ø/¡ • ã Ã ¹ S6Ñ ê5Ù GKÁE¤> IS-IS #A,,X y · â BFD 6(| Ö

-	-

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð S*ü!8 Q ¸ Ã ¹0Ÿ G „ IS-IS ,XF• G2Ï><Ä

ÏG!5B _ Ð -

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
[illegible]	#ÙL8 Ý IS-IS*,X D B4§ X

Ï G ÄAÈ â Ð -

6 . 8 [illegible] *

A¹ Q ¸*ü b#ÙL8 Ý IS-IS ,X D B4§ X Ä
[illegible] *

Ï – DAÈ â Ð

– D	£EÄ
-	-

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð Q ¸*ü ü ¤ oLÔ?U0Ÿ G „ LSP ,X ™ ‰ ß Ä _ V ü ;> Z area-password ` domain-password ¹ â CÃ+ <E¬ , ÝE› •,X LSP Ã ¹ S*ü Q ¸ 9#ÙL8E- o LSP Ä

ÏG€0 ñDp1€0 ñDp5ìñDp5ì2 ,Ì p Ág(Œ ”qrÜ %• Ï ’@pò@pòY_Ö%•ýbD ,F–$@H$ibYRF–D,,A„H($ C'A% @p ÂD,€„ …’D •˜d> ™D2h p

tag	IS-IS r _

Ï5 ,ÕG!5B Ð -

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð -

Ï,Ì G Q ¸ Ð

Q ¸	£EÄ
debug	#ÙL8 Ý IS-IS*,X D B4§ X

Ï G ÄAÈ â Ð -

6 . 1 0 debug

S*ü!8 Q ¸ ' Ô IS-IS Í h,X DEBUG µ C Ô G ÄS*üA¹ Q ¸ **o** 6 ã 9 9 GKÁ,Ì h,X DEBUG µ C Ô G Ä

debug { **al** |**ab** |**g** | **ifn** |**p** |**fsn** | **nsm** | **pdu** | **ip** |**wan** }

undebug { **al** |**ab** |**g** | **ifn** | **p** |**fsn** | **nsm** | **pdu** | **ip** |**wan** }

Ï – DAÈ â Ð

– D	£EÄ
al	' Ô Ý IS-IS ,X DEBUG Ô G
ab	' Ô IS-IS ,X authentication AxA•DEBUG Ô G
ta	' Ô IS-IS ,X _ Ê,Ì G,X DEBUG Ô G
g	' Ô IS-IS ,X GR ,Ì G,X DEBUG Ô G
ifn	' Ô IS-IS ,X y ·(Š Õ,Ì G,X DEBUG Ô G
p	' Ô IS-IS ,X LSP ,Ì G,X DEBUG Ô G
fsn	' Ô IS-IS ,XF• (Š Õ,Ì G,X DEBUG Ô G
nsm	' Ô IS-IS ,X NSM ,Ì G,X DEBUG Ô G
pdu	' Ô IS-IS ,X y [,Ì G,X DEBUG Ô G
ip	' Ô IS-IS ,X SPF Au1k,Ì G,X DEBUG Ô G
wan	' Ô IS-IS ,XA: ,Ì G,X DEBUG Ô G

Ï5 ,ÕG!5B Ð Ý DEBUG µ C Ô G GKÁ

Ï Q ¸ õ ã Ð (M õ ã

Ï S*ü Û Ð Ð -

ÏG!5B _ Ð _ 1 Ö ' Ô IS-IS ,X GR ,Ì G,X DEBUG Ô G

5 X L M L H G H E X J L V L V J U

_ 2 Ö ' Ô IS-IS ,X SPF ,Ì G,X DEBUG Ô G