w W Õ Å

8 - 9 2 x æ @ & ²

8 - 5 9 H

g é • ¯ Y u <

5 ,ÕG!5B	´
Q ¸ õ ã	< G!5B õ ã
S*ü Û Ð	Eî ´NO Eg 9 t š2O _ Ä Ô8 ™ ‰ ß È ¾ Ý ' á J2lC + A' Û t šE›,X · ¸ Ê È !LÔ ?UEg 9 t š2O _ Ä Ý · ¸ n V ß Ö ™NO Ù ÿ1 26 þ û ã m +!¡ ` D + +0ú Ä · ¸ !M6 Ã ¹ Ý ! Ð0N È >• Ñ+9 Ä KÈ ž4§ ,X0N í 0 · ¸,X ÔF¼ Ú Ä V p Û n Z t š2O _ È' âEg 9 Ô 5 â [· ¸ È í á6ÑG¡ „E¯ 9(M
"¼ ã	EXE[illegible]A' Û · ¸ Ä

0.02 27Tf 1.677 0.006 Tc

5 ,ÕG!5B ´

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð ·¸ Ú password ` security ·¸ ø/¡ Ä password 1T ) t š,X ·¸ È ¾6ÑA'5B 15 4{ ·¸ Ä security ·¸ ] < t š ·¸ È Ã ¹ 0 15 4{A'5B ·¸ Ä V p2Ï4³ È à4{ ÿ à Ê , ü ¹ Þ ø/¡ ·¸ È í password ·¸ á*ó Ä V pA'5BM2 15 4{,X password ·¸ È í î4- ÎA: ¤/ ÈJ7¾ |E@ security ·¸ ×V pA'5B 15 4{,X password ·¸ ` security ·¸ ` <,Ì à È í î4- ÎA: ¤/ × ·¸ ™NO ¹ t š 6 ã ± , È password ·¸ S*ü1T) t š È security ·¸ S*ü] < t š Ä

G!5B _ ßM6,X/ _A'5B] < ·¸ pw10 Ö

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

,Ì G Q ¸

Q ¸	£EÄ
enable password	A'5B á à L$4{ ÿ,X ·¸ Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

2.1.5 enable service

?U ' Ô â GKÁ Û n,X á u ÄSSH Server/Telnet Server/Web Server/Snmp Agent Å È üG!5B õ ã ß È Ã ¹ S*ü Q ¸ enable service Q ¸ Ö

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

– DAÈ â

– D	£EÄ
ssh-sesrver	' Ô â G KÁSSH Server ÈA¹ Q ¸ à Ê ' Ô IPv4 ` IPv6 á u ×
telnet-server	' Ô â G KÁTelnet Server ÈA¹ Q ¸ à Ê ' Ô IPv4 ` IPv6 á u ×
web-server	' Ô â G KÁHttp Server ÈA¹ Q ¸ à Ê ' Ô IPv4 ` IPv6 á u ×
snmp-agent	' Ô â G KÁSnmp Agent ÈA¹ Q ¸ à Ê ' Ô IPv4 ` IPv6 á u ×

interface *interface-name*	Û n Telnet v 0Ã S*ü,X$d y ·
/vrf *vrf-name*	Û n ¹A¶,X VRF CÃ+ ><

5 ,ÕG!5B

	message	G!5B,O) ÛNl µ C Y •

5 ,ÕG!5B ´

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð S*üA¹ Q ¸ Ã ¹G!5B,O) ÛNl µ C È '*ü ,O)2Ï4³ Ê ÈE- o µ C î>• / Î 9 Ä V p
K 94§ 3,X ÚLh0ú â ¡' Eg 9 +0ú È íE- o +0ú Ú>•2Ï4³ ö × Ä

G!5B _

ßM6,X/ _E¯> ,O) ÛNl µ C,XA'5B Ö

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

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

2.2.2 banner motd

?UG!5B!£ ¹Eî-¹ µ C ÈAË ü < G!5B õ ã ß ;> Q ¸ banner motd Ä?U ª#\!£ ¹Eî-¹,XG!5B µ C È S*ü no banner motd Q ¸ Ä

banner motd *c message c*

– DAÈ â

– D	£EÄ
c	!£ ¹Eî-¹ µ C,X ÚLh0ú È!£ ¹Eî-¹ µ C KÈ á AŒ Î)„KÈLh0ú
message	G!5B,X!£ ¹Eî-¹ µ C Y •

5 ,ÕG!5B ´

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð S*üA¹ Q ¸ Ã ¹G!5B!£ ¹Eî-¹ µ C È '*ü ,O)2Ï4³ Ê ÈE- o µ C î>• / Î 9 Ä V p

5 ,ÕG!5B ´

Q ¸ õ ã (M *ü õ ã

S*ü Û Đ

S*üA¹ Q ¸A'5B2Ï4³ ÊKÈ È • "1u)Ú Ä
Í b"u Ý ¤ o.@ Ê ÊJs,X5%4°A' Û È S*ü clock set A'5B5%4°A' Û Þ,X ÊKÈ ™ Í õE¤>
Ý È '5%4°A' Û ß+ â È ¹A'5B,X ÊKÈ Ú Ä

G!5B –

ßM6,X/ _A'5B ' ! ÊKÈ 2003 H 3 Ü 17 ¹ Þ 10 &• 20 Ú 30 /¦ Ö

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

,Ì G Q ¸

Q ¸	£EÄ
show clock	¹,ß ' ! ÊJs

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

2.2.5 clock update-calendar

Ú2Ï4³,X.@ Ê ÊJs È „ ' !EC Ê ÊJs Ä

clock update-calendar

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B ´

Q ¸ õ ã (M *ü õ ã

S*ü Û Đ

Ô o G ÄL8EC Ê ÊJs êE¬ K Û.@ Ê ÊJs Äalendar Å Ä.@ Ê ÊJs+ + "4PE | È G S üA' Û GKÁ êG¡ ,X ™ ‰ ß 36Ñ Õ4ÁCD Ê Ä
V p2Ï4³,XEC Ê ÊJs `.@ Ê ÊJs á à!9 È+ bEC Ê ÊJs È 2' š,X4ì ÈLÔ?UEîE›A¹ Q ¸ ÚEC Ê ÊJs š.B,X ÊKÈ ` ¹ ó á .@ Ê ÊJs • Ä

G!5B _

S*ü V ß Q ¸ Ã ¹ Ú ' !EC Ê ÊJs,X ÊKÈ ` ¹ ó á .@ Ê ÊJs Ä

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

,Ì G Q ¸

Q ¸	£EÄ

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

2.2.7 hostname

?U Û n ê Â A' Û,X á ÈAË ;> < G!5B Q ¸ hostname Ä

hostname *name*

– DAÈ â

– D	£EÄ
name	A' Û,X á È ¾6Ñ S*ü +0ú Ã D + ¹ žE² y0ú Ä Ô ûKS z 63 þ +0ú Ä

5 ,ÕG!5B 5 ,Õ,X á Ruijie Ä

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð á ?U*ü bAš ÿA' Û ¹ ž ü ¼ Ë ` CHAP AxA• 0 A' Û,X*ü á Ä

G!5B _ ßM6,X/ _ Û nA' Û,X á BeiJingAgenda Ö

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

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

2.2.8 prompt

?UA'5B2Ï4³,X Q ¸ ¤/ 0ú È ü < G!5B õ ã ß ;> Q ¸ prompt Ä?U ª#\ Q ¸ ¤/ 0ú,XG!5B È S*ü no prompt Q ¸ Ä

prompt *string*

5 ,ÕG!5B	´
Q ¸ õ ã	(M *ü õ ã
S*ü Û Ð	S*üA¹ Q ¸ Ã ¹ Û nA’ Û ü Û n,X Ê | È • “E¯> 1u)Ú Ä
G!5B _	ßM6,X/ _ Û n 10 ÚJs ¹ âG¡CK2Ï4³ Ö Ruijie# **reload in** *10* Router will reload in 600 seconds.

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â	´

Q ¸ Z Æ

(Ë	AÈ â
-	-

2.2.10 session-timeout

?UG!5B ' ! LINE Þ Æ4£ Î0Ÿ,X E°/ß4œ0Ã,X îA±,XCY Ê ÊKÈ ÈS*üsession-timeout Q ¸ Ä EîE› no session-timeout Q ¸ È#\ LINE ß E°/ß4œ0Ã,X îA±,XCY Ê ÊKÈ È¡A±" áCY Ê Ä session-timeout

[Failed]

```
Total input: 53564 bytes
Total output:  395756 bytes
Data overflow:  27697 bytes
stop rx interrupt:  0 times
```

5 ,ÕG!5B ´

Q ¸ õ ã (M *ü õ ã

S*ü Û Đ , | ü NVRAM ÄM2 ç ûLc , ª , | < Å ÞA' Û,XG!5B G startup-config A' Û | Ê ;> ,XG!5B Ä

startup-config Û,X ± , bA' Û Y5B Flash ,XT¬AxG!5B [Ê /config.text ,XG!5B Ä

G!5B _ ´

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

2.3.6 show version

?U ¹,ß Ô o2Ï4³,X µ C È Ã ¹(M õ ã ß ;> show version Q ¸ Ä

show version [slots | devices]

– DAÈ â

– D	£EÄ
slots	5%4°A' Û ' !,X ¦ Ñ ` õ + µ C
devices	5%4°A' Û ' !,XA' Û µ C

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã

S*ü Û Đ S*üA¹ Q ¸ Ã ¹ ¹,ß Ô o2Ï4³,X µ C È ?U Ù À2Ï4³,X | ÊKÈ È(µ C È2Ï4³ ,X A' Û µ C È c ë Ë1 Ä

G!5B _ ßM6,X/ _ ¹,ß Ô o2Ï4³,X µ C Ö

```
Ruijie# show version
System description : Ruijie Dual Stack Multi-Layer Switch(S3760-24)
```

```
By Ruijie Network
System start time: 1970-6-14 11:49:53
System uptime: 3:17:1:17
System hardware version: 2.0
System software version: RGOS 10.3.00(4), Release(34679)
System boot version: 10.2.34077
System CTRL version: 10.2.24136
System serial number: 1234942570001
```

¸Ì G Q ¸

Q ¸	£EÄ	
-	-	

	(Ë	AÈ â

A¹ Q ¸ Ã ¹ r t ' ! Ã ¹ S*ü,X VTY E² y D,Â ÄEîE›A¹ Q ¸,X no – D Ã ¹ £ å ' ! Ã ¹ S *ü,X VTY E² y D,Â Ä

line vty *line-number*

no line vty *line-number*

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B 5 ,Õ ™ ‰ß È Ã*ü,X VTY E² y D,Â 5 È4ê Ë 0--4 Ä

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð 'LÔ?U r t ê5Ù £ å Ã*ü,X VTY E² y D,Â Ê È Ã ¹ S*ü ÞEÄ Q ¸ r)„ Ä

G

LINE Q ¸

4 ّ ذ ﻫ ﻫ ﻫ ﻫ ﻫ ﻫ

4.1 ﻫ ﻫ ﻫ ﻫ ﻫ

4.1.1 ping

A¹ Q ¸*ü 9# A©5%4°,XE²Eî û È Ã ¹ Ý ,X }*ü Až • Ã n !5%4° ,XE²Eî ûKÂNl Ä Q ¸ ã V ß Ö

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

	– D	£EÄ
– DAÈ â	*vrf-name*	VRF á +
	ip-address	Û n IPv4 Ä
	length	Û n ¥EÕ D B Ù,XKS z
	times	Û n ¥EÕ D B Ù,X þ D
	seconds	Û nCY Ê,X ÊKÈ
	data	Û n ? Ö B
	source	Û n$d IPv4 ê$d y · ÄJ È)ƒ ² y · Ä _ V 127.0.0.1 Å á AŒ 0 $d Ä
	df-bit	A'5B IP ,X DF ÛAš! È ' DF !>•A'5B 1 Ê È></ á Í D B ÙE¯> Ú!‰ Ø)Ú ÈT¬Ax DF ! 0 Ä
	validate	A'5B ú õP` ¡ h y [

5 ,ÕG!5B	5 ,Õ ü Û n,X ÊKÈÄ5 ,Õ 2 /¦ Å Y ÈEÕ5 þKS z 100Byte ,X D B Ù Û n,X IP Ä
Q ¸ õ ã	(M *ü õ ã

S*ü Û Ð

length	Û n ¥EÕ D B Ù,XKS z
times	Û n ¥EÕ D B Ù,X þ D
seconds	Û nCY Ê,X ÊKÈ
data	Û n ? Ö B
source	Û n$d IPv6 ê$d y · ÄJ È)ƒ ² y · Ä _ V::1 Å á AŒ 0 $d Ä

5 ,ÕG!5B

5 ,Õ ü Û n,X ÊKÈÄ5 ,Õ 2 /¦ Å Y ÈEÕ5 þKS z 100Byte ,X D B Ù Û n,X IP Ä

Q ¸ õ ã

(M *ü õ ã

S*ü Û Ð

Ping ipv6 Q ¸E¤> ü BEî*ü õ ã `(M *ü õ ã ß È ü BEî*ü õ ã ß È ¾6ÑE¤> Î
,X ping ipv6 s6Ñ È5à ü(M *ü õ ã ß È íE¬ Ã ¹E¤> ping ipv6 ,X =) s6Ñ Ä BEî
,X ping ipv6 s6Ñ È Ã ¹ ü BEî*ü õ ã `(M *ü õ ã ß ;> È5 ,Õ ü Û n,X ÊKÈ Ä5
,Õ 2 /¦ Å Y ÈEÕ 5 þKS z 100Byte ,X D B Ù Û n,X IP È V p Ý h1(È í /
Ô þ‘!’ È V p"u Ý h1(È í / Ô þ‘. ’ È V p h1(,X D B Y • âAË" ,X D B Y • á G! È
í á Ô þ‘C’ È Ô âEg Î Ô þ4³Au µ C Ä =) ping ipv6 s6Ñ È ¾6Ñ ü(M *ü õ ã ß
;> È ü =) ping È Ã ¹ Û n ¥EÕ D B Ù,X þ D ÃKS z ÈCY Ê,X ÊKÈ1 1 È ` BEî,X
ping ipv6 s6Ñ Ô È Ô â 3Eg Î Ô þ4³Au µ C Ä?U S*ü ³ á s6Ñ È í?U G!5B ³ á á u
p3 0 Tc9192 0 Td[(7 N)-66 40 35 0 2 8 > 6 29 0 3 40 918 0 0 (4 5) E 2 > 6 0 E 0 3 0 4 6 B 6 0 8 4 5 7 0 0 0 0 1 d 3 6 <0

-	-

G ÄAÈ â A¹ Q ¸ ü Ý Õ ipv6 A' Û Þ Õ Ä

Q ¸ Z Æ

(Ë	AÈ â
-	-

4.1.3 traceroute

;> traceroute Q ¸ È Ã ¹ / *ü b# A©,X D B Ù ¢$d ,Â,X 4£E›,X Ý5% G.

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

– DAÈ â

– D	£EÄ
vrf-name	VRF á +
Ip-address	Û n IPv4 Ä
number	Û n ¥EÕ,X v# ,X DG£
source	Û n$d IPv4 ê$d y · ÄJ È)ƒ ² y · Ä _ V 127.0.0.1 Å á AŒ 0 $d Ä
seconds	Û nCY Ê ÊKÈ
minimum maximum	Û n Ô ã ` Ô û TTL

5 ,ÕG!5B ´

Q ¸ õ ã (M *ü õ ã

S*ü Û Ð Traceroute Q ¸ ?U*ü b " ¹5%4°,XE²Eî û È J ü5%4° Lp ¥*ó Ê È š.B,X n ! Lp ¥ *ó,X !5B Ä?U S*ü ³ á s6Ñ È í?U G!5B ³ á á u < È K 'G!5BAË –5× DNS G!5BF¼ Ú Ä

G!5B _

¹ ß h *ü traceroute ,X ø þ _ $ È Ô þ 5%4°E² y+ Eî È Ô þ 5%4°E² y , ü ¤ o5% G áEî,X ™ ‰ Ä

_ 1 Ö5%4°+ Eî,Xtraceroute _ $ Ö

```
Ruijie# traceroute 61.154.22.36
< press Ctrl+C to break >
Tracing the route to 61.154.22.36
1     192.168.12.1    0 msec  0 msec  0 msec
```

```
2     192.168.9.2     4 msec  4 msec 4 msec
3     192.168.9.1     8 msec  8 msec  4 msec
4     192.168.0.10    4 msec  28 msec  12 msec
5     202.101.143.130     4 msec  16 msec  8 msec
6     202.101.143.154    12 msec  8 msec  24 msec
7     61.154.22.36    12 msec  8 msec  22 msec
```

¢ ÞM6,X4§ p È Ã ¹#Ù . ,ß È ¢$d ?UA“KÂ IP 61.154.22.36 ,X È5%4° D B ÙFÑ4£E› Z ¾ o5% G ÆÉ6 Å È à Ê4- Î Z E’A¹5% G 8…C ,X ÊKÈ ÈE- Í b5%4° Ú d È M2 Ý*ü,X Ä

_ 2 Ö5%4° ¤ o5% G áEî,X traceroute _ $ Ö

```
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
```

¢ ÞM6,X4§ p È Ã ¹#Ù . ,ß È ¢$d ?UA“KÂ IP 202.108.37.42 ,X È5%4° D B ÙFÑ4£E› Z ¾ o5% G ÄÉ17 Å È J è5% G 4 Î)„ Z Lp Ä

```
Ruijie# traceroute www.ietf.org
Translating " www.ietf.org "...[OK]
< press Ctrl+C to break >
Tracing the route to 64.170.98.32
1     192.168.217.1   0 msec  0 msec  0 msec
2     10.10.25.1       0 msec  0 msec  0 msec
```

5 5 ¡ ﾃ ﾃ

5.1 ﾃ Ã ﾃ ﾃ

5.1.1 carrier-delay

ü y ·G!5B õ ã ß S*ü Q ¸ carrier-delay ü y ·A’5BEQ"¶ Ê Ê ÈS*ü Q ¸,X no 6 ãE¨ ² 5 ,Õ Ä

carrier-delay [*seconds*]

no carrier-delay

– DAÈ â	– D	£EÄ
	seconds	ÃEÝ – D È ¹/¦) ! È8× È 1 60 /¦ Ä

5 ,ÕG!5B EQ"¶ Ê Ê5 ,Õ 2 /¦ Ä

Q ¸ õ ã y ·G!5B õ ã Ä

S*ü Û Ð

A¹ – D Û y ·JÒCÃ,XEQ"¶ ”# µ Ë DCD ¢ Down (Š Õ Up (Š Õ,X ÊKÈ Ê Ê È V p DCD ü Ê Ê Y ¥*ó ¬ ê ÈFw 2Ï4³ Ú Ñ+9E-/¡,X(Š Õ,X ¬ ê5à á7Ç b Þ ,X D BJÒCÃ G¡ „ # Ä

V p DCD EQ"¶ • ÊKÈ!¨EWKS ÈFw ÚA¹ – DA’KS o È Ã ¹ ¿ tEóCÃ+ " 6. È ¹ “CÃ + >< Ã ¹EW ¿,X / Ä V p,Ì ¡ È DCD EQ"¶ • ÊKÈ ã bCÃ+ " 6. 8…,X ÊKÈ ÈFw h A¹ ÚA¹ – DA’5B,Ì Í,X û o È ¹ !Eô ä"u Ý ™?U,XCÃ+ 95 Ä

G!5B _

¹ ß,X _ $/ 8×G!5B y ·,XEQ"¶ Ê Ê 5 /¦ Ö

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

,Ì G Q ¸	Q ¸	£EÄ
	-	-

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â

Q ¸ õ ã (M õ ã

S*ü Û Đ A¹ Q ¸ ¾ Í Switch Port,L2 Aggregrate port ,X ä ,0Ã ·,Routed port,L3 Aggregate port ,X ä ,0Ã · Ý Ä ;> A¹ Q ¸,Ì ' b Í y ·4¥ n ;> shutdown ` no shutdown Q ¸ Ä

G!5B _

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

,Ì G Q ¸

Q ¸	£EÄ

shutdown %™h B NöbY—c @QBWf!5˜ ï6 1ˆ • ï6 ĞKÁ²Íy ·

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

5.1.5 duplex

ü y ·G!5B õ ã ß È S*üA¹ Q ¸E¯> y ·,X ¹A'5B Ä S*üA¹ Q ¸,X no EÝNM ÚA¹A'5B 6 á 5 ,Õ Ä

duplex {auto | full | half}

no duplex

– DAÈ â	– D	£EÄ
	auto	></ < ¹ ` ¹7¾EÖ h Ä
	full	></ < ¹ Ä
	half	></ ¹ Ä

5 ,ÕG!5B

A¹ Q ¸ ' Ô ê GKÁ# G£ { Ä S*üA¹ Q ¸,X no EÝNM ÚA¹A'5B 6 á 5 ,Õ Ä

flowcontrol {auto | off | on}

no flowcontrol

– DAÈ â

– D	£EÄ
auto	7¾ # # G£ { Ä
off	GKÁ# G£ { Ä
on	' Ô# G£ { Ä

5 ,ÕG!5B 5 ,Õ G KÁ# G£ { Ä

Q ¸ õ ã y ·G!5B õ ã

S*ü Û Ð S*ü show interfaces ¹,ß y ·# G£ { ` rL ,X# G£ { Ä

G!5B _

' Ô ¹ þ5% y · 1/1 ,X# G£ { Ö

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

,Ì G Q ¸

Q ¸	£EÄ
show interfaces	¹,ß y ·A'5B `4³Au µ C Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

5.1.7 interface aggregateport

A¹ Q ¸ õ ã Ð7þ Q ¸ È ï Î êA"KÂ Ô þ6. ÜJÒCÃ y · È JE¯ 9 y ·G!5B õ ã Ä S*üA¹ Q ¸ ,X no EÝNM ôL8A¹ y · Ä

interface aggregateport *port-number*

– DAÈ â

– D	£EÄ
port-number	Aggregate port Ë È8× È+ A' Û ` =) õ + ‡ n Ä

5 ,ÕG!5B ´

Q ¸ õ ã

< G!5B õ ã

S*ü Û Ð

Ã ¹ B Ô n?˜ í È Ú J ª y · t 9 Ô þ aggregate port Ä aggregate port ,X Ý ä , y · Ú>•?š Ô þ H ' È ä , y ·,X 2 û Ú+ aggregate port ,X 2 û ‡ n ÄS*ü show interfaces ê show interfaces aggregateport Q ¸ ¹,ß y ·A'5B Ä

G!5B _

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

,Ì G Q ¸

Q ¸	£EÄ
show interfaces	¹,ß y ·A'5B `4³Au µ C Ä

G ÄAÈ â

A¹ Q ¸ õ ã Ð7þ Q ¸ Èï Î êA“KÂ Ô þ | Õ x 6<. ³ y ·Äswitch virtual interface È SVIÅÈ JE¯ 9 y ·G!5B õ ã Ä S*üA¹ Q ¸,X no EÝNM ôL8ÆSVI Ä

interface vlan *vlan-id*

no interface vlan *vlan-id*

– DAÈ â

– D	£EÄ
vlan-id	VLAN ID È8× È+ A’ Û ‡ n Ä

5 ,ÕG!5B ´

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð S*ü show interfaces ê show interfaces vlan Q ¸ ¹,ß y ·A’5B Ä

G!5B _

```
Ruijie(config)# interface vlan 2
Ruijie(config-if)#
```

,Ì G Q ¸

Q ¸	£EÄ
show interfaces	¹,ß y ·A’5B `4³Au µ C Ä

G ÄAÈ â

Q ¸ Z Æ

(Ë	AÈ â
-	-

5.1.11 line-detect

;> line-detect Q ¸ È Ã ¹*ü b# A©E² y4“4Ú,X(Š Õ Ä

line-detect

Q ¸ õ ã y ·G!5B õ ã

S*ü Û Ð line-detect Q ¸ ?U*ü b ” ¹4“4Ú,X(Š Õ È J ü4“4Ú Î)„ Lp Ä V •CÃ Å Ê È*ü b n ! Lp ¥*ó,X !5B Ä

G!5B _

```
Ruijie(config)#interface gigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)#line-detect
Interface : GigabitEthernet 0/1
```

```
start cable-diagnoses,please wait...
cable-daignoses end!this is result:
4 pairs
pair state     length(meters)
---- ---------- --------------
A    Ok        1
pair state     length(meters)
---- ---------- --------------
B    Ok        2
pair state     length(meters)
---- ---------- --------------
C    Short     1
pair state     length(meters)
---- ---------- --------------
D    Short     1
```

/ NM	?·Gž
pairs	Û4“4ÚG M6 Ù ÿ,X4“ Í D,Â È V 4²4“ + ¯ Í4“4˜ Ü5à ä Ä
state	' !4“ Í ,X(Š Õ È E Ý Ý þ ÖOK Ä!7 Å ÈShort Ä-ÁCÃ Å ÈOpen Ä •CÃ Å Ä!7 ™ ‰ ß È,R 4²4“ A ÃB ø Í OK ÈC ÃD ø Í Short Ä 4²4“ A ÃB ÃC ÃD ¯ Í OK Ä
length	4“4Ú,XKSz È) ! 2G Ä ¾ Ý state OK ,X4“ Í,XKS z ! Ý Ä º ê È + b4“4ÚKS z B µ Ë,X ôEæ ÊKÈ 9Au1k,X È ¹ Ã6Ñ , ü Ô n,X AÃ Â Ä(Š Õ Short ê5Ù Open Í h,X length Û0Ã · 4“4Ú Lp&• ,XKS z Ä

,Ì G Q ¸	Q ¸	£EÄ
	-	-

G ÄAÈ â

5.1.12 medium-type

EÝ ½ y ·,X2O _ Ä S*üA¹ Q ¸,X no EÝNM ÚA¹A’5B 6 á ä5 ,Õ Ä

medium-type { fiber | copper }

no medium-type

– DAÈ â

– D	£EÄ
fiber	></ EÝ ½ ·
copper	></ EÝ ½+ ·

5 ,ÕG!5B

5 ,Õ + · Ä

Q ¸ õ ã

y ·G!5B õ ã Ä(=)Ú y · È á Ù À Ap ` SVI Å

S*ü Û Ð

V p à Ô 0Ã · Ã ¹EÝ ½ · `+ · ø/¡ ŸBü2O _ È | ¾6Ñ S*ü J Ô Ä Ô º.B n ŸBü 2O _ â È üG!5B0Ã ·,X 2 û È _ V(Š Õ Ã ¹ Ã# G£ { `Eó z1 ÈFÑ Û0Ã · ' ! EÝ ½2O _,X 2 û Ä ¬0Ã ·2O _ â È „2O _ Í h,X0Ã ·,X 2 û JT¬Ax 2 û È | Ã ¹ BLÔ?UG¡ „G!5B Ä

G!5B _

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

,Ì G Q ¸

Q ¸	£EÄ
show interfaces	¹,ß y ·A'5B `4³Au µ C Ä

G ÄAÈ â

24SFP/12GT 4“ 5,X 12 þ SFP y · ` 12 þ 10/100/1000M BASE-T y · AŒ | Õ Û 6 Ä SFP 0

S*ü Û Ð A’5B y · Õ,X mtu Ä Ô û ôEg ûKS Å Ä,Â ! A’ Û ¾ Õ Í(=)Ú y ·,XA’5B Ä

G!5B _

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

¸Ì G Q ¸

Q ¸	£EÄ
show interfaces	¹,ß y ·A’5B `4³Au µ C Ä

G ÄAÈ â ´

(Ë	AÈ â

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

¸Ì G Q ¸

Q ¸	£EÄ
clear interface	y ·.@ Ê á ! Ä
show interfaces	¹,ß y ·A'5B `4³Au µ C Ä

G ÄAÈ â ´

```
Acsess vlan is 1,Native vlan is 1
Protected is disabled
Vlan lists is
1,3-4094
```

,Ì G Q ¸

Q ¸	£EÄ
show interfaces	/ y · µ C Ä
switchport access	Ú Ô 0þÃ · A ’ 5 B statics accessport ÈJ Ú W Û# Ô þ VLAN ,X ä ,0Ã · Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

5.2 Ấ ₹ Ƈ

5.2.1 show interfaces

¹,ß y ·A’5B `4³Au µ C È ¹ ž õ + µ C Ä

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

– DAÈ â

– D	£EÄ
interface-id	y · Ä Ù À ¹ þ5% y · Ãaggregateport y · ÃSVI y · Ãloopback y · Å Ä
counters	y ·,X4³Au µ C Ä y ·,X £EÄ µ C È Ù À link (Š Õ Ä

	diagnosis	¹,ß õ +,XAž • – D,X ' !# G£ Ä

5 ,ÕG!5B 5 ,Õ / Ý y · µ C Ä

Q ¸ õ ã (M õ ã

S*ü Û Đ V p á t – D È í / y ·,X Î µ C Ä

G!5B _

```
Ruijie# show interfacesgigabitEthernet 0/1 switchport
Interface Switchport ModeAccess Native Protected VLAN lists
--------- ---------- --------- ------ ------ ---------
GigabitEthernet 0/1 enabled Access 11  Disabled  ALL
```

Q ¸	

S*ü Û Ð	S*ü show aggregateport load-balance

G ÄAÈ â

Q ¸ Z Æ	(Ë	AÈ â
	-	-

6.2 Ấ ₹ Ƈ

6.2.1 show aggregateport

/ aggregateport A'5B µ C Ä

– DAÈ â

– D	£EÄ
aggregate-port-number	Aggregate Port y · Ë Ä
load-balance	/ aggregaye port ,X# G£ G>51k"© Ä
summary	/ aggregate port ,X!£ 5JÒCÃ,X ,?U µ C Ä

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã

S*ü Û Đ V p"u Ý Û n aggregate port y · Ë È í Ý aggregate port

7 VLAN ﻳﺠ ﻟﻚ

7.1 ﻳﺒ Ẩ ﻳﺠ ﻟﻚ

7.1.1 name

A’5B VLAN ,X á + Ä S*üA¹ Q ¸,X no EÝNM ÚA¹A’5B 6 á ä5 ,Õ Ä

name *vlan-name*

no name

– DAÈ â	– D	£EÄ
	vlan-name	VLAN ,X á +

5 ,ÕG!5B	VLAN 5 ,Õ á + VLAN ÇVLAN ID È V VLAN 2 5 ,Õ á + ”VLAN0002”
Q ¸ õ ã	VLAN G!5Bõ ã
S*ü Û Đ	S*ü show vlan Q ¸ ¹,ß vlan G!5B
G!5B _	`Ruijie(config)# vlan 10` `Ruijie(config-vlan)# name vlan10`

,Ì G Q ¸	Q ¸	£EÄ
	show vlan	/ VLAN ,X ä ,0Ã ·1 µ C Ä

switchport access vlan *vlan-id*

no switchport access vlan

– DAÈ â

– D	£EÄ
vlan-id	0Ã ·?U t 9,X VLAN ,X ID Ä

5 ,ÕG!5B switch port 5 ,Õ õ ã access È5 ,Õ,X VLAN VLAN 1

Q ¸ õ ã y ·G!5B õ ã

S*ü Û Ð Eg 9 Ôþ VLAN ID Ä V pEg 9,X Ôþ „,X VLAN ID È íA' Û î ï Î Ôþ VLAN È J Ú A¹0Ã ·A'5B A¹ VLAN ,X ä , Ä V pEg 9,X Æ4£ , ü,X VLAN ID È í r t VLAN ,X ä ,0Ã · Ä

V pA¹0Ã · Ôþ trunk port È á6Ñ ;> A¹ ¡ 0

G!5B –

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

,Ì G Q ¸

Q ¸	£EÄ
switchport mode	Û n Ôþ ` y ·Äswitch port ÅX õ ã Ä
switchport trunk	Ôþ trunk port Û n Ôþ native VLAN `G!5BE- þ Trunk ·,XÆ Ã VLAN ë>< Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

7.1.3 switchport mode

S*üA¹ Q ¸ Û n Ôþ ` y · Äswitch port Å,X õ ã È Ã ¹ Û nA¹ y · access port Ãtrunk port Ãhybrid port Ã uplink port È ê5ÙA' 802.1Q L{F' Ä S*üA¹ Q ¸,X no EÝNM ÚA¹ y ·,X õ ã 6 á 5 ,Õ Ä

switchport mode {access | trunk | hybrid | uplink | dot1q-tunnel }

no switchport mode

VLAN VLANVLAN } F5F5EM 62 P34.6MCID515-0.00090F5F55F5w 10.02 f 0 10.02 135.36F725.66<0A5104 F5F5EM 62ET q 296.tio3

,Ì G Q ¸

Q ¸	£EÄ
show interfaces	/ y · µ C Ä
switchport access	Ú Ô þ0Ã ·A'5B access port È J Ú W Û# Ô þ VLAN ,X ä ,0Ã · Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

7.1.5 vlan

G!5BA¹ Q ¸E¯ 9 VLAN G!5B õ ã Ä S*üA¹ Q ¸,X no EÝNM ôL8 Æ , ü,XVLAN Ä

vlan *vlan-id*

no vlan *vlan-id*

– DAÈ â

– D	£EÄ
vlan-id	VLAN ID Ë Ä "¼ ã Ö5 ,Õ,X VLAN ÄVLAN 1 Å á AŒ ôL8 Ä

5 ,ÕG!5B ´

Q ¸ õ ã

8 Super-vlan ﻳﺠ ﻟ

8.1 ﻳ Ã ﻳﺠ ﻟ

8.1.1 subvlan

S*üA¹ Q ¸A'5BA¹ super vlan ,X subvlan ê5Ù ôL8 subvlan Ä

subvlan *vlan-id-list*

no subvlan [*vlan-id-list*]

– DAÈ â	– D	£EÄ
	Vlan-id-list	A¹ VLAN ,X subvlan ,X ID, Õ à ÊA'5B î þ vlan

5 ,ÕG!5B	´
Q ¸ õ ã	VLAN G!5Bõ ã
S*ü Û Ð	S*ü no s ubvlan ôL8A¹ supevlan Ý,X subvlan

G!5B _	`Ruijie(config)# vlan 3`
	`Ruijie(config-vlan)# supervlan`
	`Ruijie(config-vlan)# subvlan 5`
	`Ruijie(config-vlan)# subvlan 7-19`

,Ì G Q ¸	Q ¸	£EÄ
	show supervlan	/ supervlan µ C Ä

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

8.1.2 subvlan-address-range

Q ¸ õ ã	VLAN G!5Bõ ã
S*ü Û Ð	?UE¨ ² (M õ ã ÈEg 9 end Q ¸ È êK 9 Ctrl+C 4˜ ÜK Ä ?UE¨ ² < G!5B õ ã ÈEg 9 exit Q ¸

BDC 0.2-14.371 0 0 1 0 T( )Tj EMC /P <</MCID 6 >1>BDC /TT0016 T3 10.0.1733001 9 T( )TRuijie(config-vlan)#j EMC0 13Tf -0.12.575

9 Protocol VLAN ﻳﺠ ﻟﻚ

9.1 ﻳ Ẩ ﻳﺠ ﻟﻚ

9.1.1 protocol-vlan ipv4 addr mask addr vlan id

G!5BIP Ã $5% }-Õ ¹ ž VLAN Ú2O

	– D	£EÄ
– DAÈ â	*addr*	IP ÈAË ¹ x.x.x.x 6 ãEg 9
	id	VLAN ID È1- { • Õ,X Ô û VLAN

5 ,ÕG!5B	´
Q ¸ õ ã	< G!5B õ ã
S*ü Û Ð	´
G!5B _	Ruijie(config)# **protocol-vlan ipv4** *192.168.100.3* **mask** *255.255.255.0* **vlan** *100*

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	´
Q ¸ õ ã	y · õ ã
S*ü Û Ð	´
G!5B _	Ruijie(config-if)# **protocol vlan ipv4**

,Ì G Q ¸	Q ¸	£EÄ
	no protocol vlan ipv4	-

,Ì G Q ¸	Q ¸	£EÄ
	show protocol-vlan profile	-
	show protocol-vlan profile *num*	-
	no protocol-vlan profile	-
	no protocol-vlan profile *num*	-

G ÄAÈ â EC Ê(RGOS10.1 ¹ Þ

Q ¸ Z Æ	(Ë	AÈ â
	-	-

9.1.4 protocol-vlan profile num vlan id

h*ü ¤ profile A¹ y ·

– DAÈ â	– D	£EÄ
	num	profile 2ö é
	id	VLAN ID È1- { • Õ,X Ô û VLAN

5 ,ÕG!5B ´

Q ¸ õ ã y · õ ã

S*ü Û Ð ´

G!5B _

```
Ruijie(config-if)# protocol-vlan profile 1 vlan 101
```

Q ¸	

10 Private VLAN ﻳﺠ ﻟﺮ

10.1 ﻳﻠ Ẩ ﻳﺠ ﻟﺮ

10.1.1 private-vlan association

G6(secondary VLAN â primary VLAN G!5B Q ¸

private-vlan association {*svlist* | add *svlist* | remove *svlist*}

no private-vlan association

	– D	£EÄ
– DAÈ â	*svlist*	secondary VLAN list
	no	ª#\ primary VLAN â Ý,X secondary VLAN G6(

5 ,ÕG!5B	´ G6(
Q ¸ õ ã	Primary VLAN G!5B õ ã
S*ü Û Ð	´
G!5B _	`Ruijie(config)# vlan 22` `Ruijie(config-vlan)# private-vlan association add 24-26`

5 ,ÕG!5B	´/• Ý VLAN
Q ¸ õ ã	VLAN G!5Bõ ã
S*ü Û Ð	´
G!5B _	Ruijie(config)# **vlan** *22*

,Ì G Q ¸	Q ¸	£EÄ
	show vlan private-vlan	-

G ÄAÈ â	EC Ê(RGOS10.1 ¹ Þ

Q ¸ Z Æ	(Ë	AÈ â
	-	-

10.1.5 switchport private-vlan host-association

G6(private VLAN õ ã y · G6(,X primary VLAN ž ü,X secondary VLAN

switchport private-vlan host-association *p_vid s_vid*

no switchport private-vlan host-association

	– D	£EÄ
	p_vid	

show vlan private-vlan [community | primary | isolated]

– DAÈ â

– D	£EÄ
primary	/ primary VLAN µ C
community	/ community VLAN µ C
isolated	/ isolated VLAN µ C

5 ,ÕG!5B ´ private VLAN

Q ¸ õ ã (M õ ã

S*ü Û Ð ´

G!5B _ Ruijie# **show vlan private-vlan**

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â EC Ê(RGOS10.1 ¹ Þ

Q ¸ Z Æ

(Ë	AÈ â

10.3 Hybrid ₹ Ƈ

10.3.1 switchport hybrid allowed vlan

switchport hybrid allowed vlan [[add][tagged | untagged] | remove] v*list*

no switchport hybrid allowed vlan

G!5Bhybrid 0Ã ·,XEg Î?˜ í

– D	£EÄ
no	6 á hybrid T¬AxEg Î?˜ í

5 ,ÕG!5B þG!5B

Q¸õã y·õã

S*üÛÐ ´

G!5B _ Ruijie(config-if)# **switchport hybrid allowed vlan add untagged** *3-5*

¸Ì G Q¸

Q¸	£EÄ
-	-

G ÄAÈâ EC Ê(RGOS10.1 ¹Þ

Q¸ZÆ

(Ë	AÈâ
-	-

10.3.2 switchport hybrid native vlan

switchport hybrid native vlan *vid*

no switchport hybrid native vlan

G!5Bhybrid 0Ã·,XT¬Axvlan

–DAÈâ

–D	£EÄ
no	6á hybrid T¬AxVLAN

5,ÕG!5B þG!5B

Q¸õã y·õã

S*üÛÐ ´

G!5B _ Ruijie(config-if)# **switchport hybrid native vlan** *3*

¸Ì G Q¸

Q¸	£EÄ
-	-

G ÄAÈâ EC Ê(RGOS10.1 ¹Þ

Q ¸ Z Æ	(Ë	AÈ â
	-	-

10.3.3 switchport mode hybrid

switchport mode hybrid

no switchport mode

G!5B0Ã · hybrid ·

– DAÈ â	– D	£EÄ
	no	ôL8 hybrid õ ã

5 ,ÕG!5B þG!5B

Q ¸ õ ã y · õ ã

S*ü Û Ð ´

G!5B _

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

,Ì G Q ¸	Q ¸	£EÄ
	-	-

G ÄAÈ â EC Ê(RGOS10.1 ¹ Þ

Q ¸ Z Æ	(Ë	AÈ â
	-	-

	-	-

11.1.2 dot1q relay-vid vid translate local-vid v-list

ü access Ètrunk Èhybrid Èuplink 0Ã · Þ ÈA'5B Î b #A,,X êF¼ vid Â 1*+9><

dot1q relay-vid *vid* translate local-vid *v-list*

no dot1q relay-vid *vid* translate local-vid *v-list*

– DAÈ â

– D	£EÄ
v_list	Eg 9 y [êF¼ ,X vid ë><
vid	Â â,X êF¼ tag ,X vid
no	ª#\1*+9><A'5B

5 ,ÕG!5B 1*+9><0N

Q ¸ õ ã y · õ ã

S*ü Û Ð ´

G!5B _

ßM6 _ $A'5B 'Eg 9 y [êF¼ tag ,X vid 10-20 Ê È Â A¹ vid 100

```
ruijie(config)# interface gigabitEthernet 0/1
ruijie(config-if)# switchport mode access
ruijie(config-if)# dot1q relay-vid 100 translate local-vid 10-20
ruijie(config-if)# end
```

,Ì G Q ¸

Q ¸	£EÄ
show translation-table [interface *intf-id*]	-

G ÄAÈ â EC Ê(RGOS10.3 ¹ Þ

Q ¸ Z Æ

(Ë	AÈ â
-	-

11.1.3 dot1q relay-vid vid translate inner-vid v-list

ü access Ètrunk Èhybrid Èuplink 0Ã · Þ ÈA'5B Î b #A,,X êF¼ vid Â 1*+9><

dot1q relay-vid *vid* translate inner-vid *v-list*

no dot1q relay-vid *vid* translate inner-vid *v-list*

– DAÈ â

– D	£EÄ
v_list	Eg 9 y [êF¼ ,X vid ë><
vid	Â â,X êF¼ tag ,X vid
no	ª#\1*+9><A'5B

5 ,ÕG!5B 1*+9><0N

Q ¸ õ ã y · õ ã

S*ü Û Ð ´

G!5B _

ßM6 _ $A'5B 'Eg 9 y [êF¼ tag ,X vid 10-20 Ê È Â A¹ vid 100

```
ruijie(config)# interface gigabitEthernet 0/1
ruijie(config-if)# switchport mode access
ruijie(config-if)# dot1q relay-vid 100 translate inner-vid 10-20
ruijie(config-if)# end
```

,Ì G Q ¸

Q ¸	£EÄ
show translation-table [interface *intf-id*]	-

G ÄAÈ â EC Ê(RGOS10.4 ¹ Þ

Q ¸ Z Æ

(Ë	AÈ â
-	-

11.1.4 dot1q-Tunnel cos inner-cos-value remark-cos outer-cos-value

h*ü/ ª#\ y · y [ê tag ì 4{+ Y tag ô Ø

dot1q-Tunnel cos inner-cos-value remark-cos outer-cos-value

no dot1q-Tunnel cos inner-cos-value remark-cos outer-cos-value

– DAÈ â

– D	£EÄ
no	ª#\ y · y [,X ì 4{ ô Ø

```
ruijie(config-if)# frame-tag tpid 0x9100
ruijie(config-if)# end
ruijie# show frame-tag tpid
Ports   tpid
------  ---------
Gi0/3    0x9100
```

,Ì G Q ¸

Q ¸	£EÄ
show frame-tag tpid	-

G ÄAÈ â EC Ê(RGOS10.1 ¹ Þ

Q ¸ Z Æ

(Ë	AÈ â
-	-

11.1.6 inner-priority-trust enable

h*ü/ ª#\ y · y [ê tag ì 4{+ Y tag á

inner-priority-trust enable

no inner-priority-trust enable

– DAÈ â

– D	£EÄ
no	ª#\ y · y [ê tag ì 4{+ Y tag á

5 ,ÕG!5B ´

Q ¸ õ ã y · õ ã

S*ü Û Ð ´

G!5B _

```
ßM6 _ $G!5B ê  tag  ,X ì 4{+ YF¼  tag  á
ruijie#configure
ruijie(config)# interface gigabitEthernet 0/2
ruijie(config-if)# inner-priority-trust enable
ruijie(config-if)#end
```

,Ì G Q ¸

Q ¸	£EÄ

	show inner-priority-trust	-

G ÄAÈ â EC Ê(RGOS10.1 ¹ Þ

Q ¸ Z Æ

(Ë	AÈ â
-	-

11.1.7 mac-address-mapping x source-vlan src-vlan-list destination-vlan dst-vlan-id

Ú$d vlan : 4 ,X | Õ mac á ,Â,X vlan

mac-address-mapping x destination-vlan dst-vlan-id source-vlan src-vlan-list

no mac-address-mapping x destination-vlan dst-vlan-id source-vlan src-vlan-list

– DAÈ â

– D	£EÄ
no	ª#\ y · Þ ¢ Û n$d vlan Û n,Â,X vlan ,X á

5 ,ÕG!5B ´

Q ¸ õ ã y · õ ã

S*ü Û Ð ´

G!5B _ ßM6 _ $G!5B ê X

,Ì G Q ¸	Q ¸	£EÄ
	show traffic-redirect	-

G ÄAÈ â EC Ê(RGOS10.3 ¹ Þ

Q ¸ Z Æ	(Ë	AÈ â
	-	-

11.1.13 traffic-redirect access-group acl inner-vlan

Í access,trunk,hybrid, uplink 0Ã ·Eg Î y [ÈA'5B Î b# ,X YF¼ vid Â 1*+9

traffic-redirect access-group *acl* inner-vlan *vid* out

no traffic-redirect access-group *acl* inner-vlan

– DAÈ â	– D	£EÄ
	acl	*ü b G!# ,X acl
	vid	Â â,X YF¼ vid
	no	ª#\ Î b# ,X YF¼ vid Â 1*+9

5 ,ÕG!5B 1*+9><0N

Q ¸ õ ã y · õ ã

S*ü Û Ð ´

G!5B _

ßM6 _ $A'5B Ú y ·$d 1.1.1.2 Eg Î y [,X êF¼ vid Â 6

```
ruijie#configure
ruijie(config)#ip access-list standard to_6
ruijie(config-acl-std)#permit host 1.1.1.2
ruijie(config-acl-std)#exit
```

,Ì G Q ¸	Q ¸	£EÄ
	show traffic-redirect	-

G ÄAÈ â EC Ê(RGOS10.3 ¹ Þ

Q ¸ Z Æ	(Ë	AÈ â
	-	-

11.1.14 traffic-redirect access-group acl nested-vlan

Í dot1q-tunnel 0Ã ·Eg 9 y [ÈA'5B Î b# ,X vid #Ï t1*+9

traffic-redirect access-group *acl* nested-vlan *vid* in

no traffic-redirect access-group *acl* nested -vlan

– DAÈ â	– D	£EÄ
	acl	*ü b G!# ,X acl
	vid	?U#Ï t vid
	no	ª#\ Î b# ,X vid #Ï t1*+9

5 ,ÕG!5B 1*+9><0N

Q ¸ õ ã y · õ ã

S*ü Û Ð ´

G!5B _

ßM6 _ $A'5B Ú y ·$d 1.1.1.3 Eg 9 y [#Ï t vid 9

```
ruijie# configure
ruijie(config)# ip access-list standard 20
ruijie(config-acl-std)# permit host 1.1.1.3
ruijie(config-acl-std)# exit
ruijie(config)# interface gigabitEthernet 0/1
ruijie(config-if)# switchport mode dot1q-tunnel
ruijie(config-if)# traffic-redirect access-group 20 nested-vlan 10
in
ruijie(config-if)# end
```

¸Ì G Q ¸	Q ¸	£EÄ
	show traffic-redirect	-

G ÄAÈ â	EC Ê(RGOS10.1 ¹ Þ

Q ¸ Z Æ	(Ë	AÈ â
	-	-

11.1.15 l2protocol-tunnel

G!5Bdot1q-tunnel 0Ã · y ` #A, y [

l2protocol-tunnel {stp|gvrp }

no l2protocol-tunnel {stp|gvrp }

– DAÈ â	– D	£EÄ
	stp	y stp y [
	gvrp	y gvrp y [
	no	ª#\ y y [A'5B

5 ¸ÕG!5B	´

Q ¸ õ ã	< õ ã

S*ü Û Ð	´

G!5B _	ßM6,X _ $ ' Ô ` #A, gvrp ` stp ,X y s6Ñ

```
ruijie#configure
ruijie(config)# l2protocol-tunnel stp
ruijie(config)# l2protocol-tunnel gvrp
ruijie(config)#end
```

¸Ì G Q ¸	Q ¸	£EÄ
	show l2protocol-tunnel {gvrp|stp }	-

G ÄAÈ â	EC Ê(RGOS10.3 ¹ Þ

Q ¸ Z Æ	(Ë	AÈ â
	-	-

11.1.16 l2protocol-tunnel ***proto-type*** enable

G!5B0Ã · S6Ñ ` #A, y [Eã ô s6Ñ

l2protocol-tunnel { stp|gvrp } enable

no l2protocol-tunnel { stp|gvrp } enable

	– D	£EÄ
	stp	Eã ô stp y [

G!5B,Ì h #A,,XEã ô

l2protocol-tunnel { stp|gvrp } tunnel-dmac *mac-address*

no l2protocol-tunnel { stp|gvrp } tunnel-dmac *mac-address*

– DAÈ â

– D	£EÄ
stp	G!5Bstp ,XEã ô
gvrp	G!5Bgvrp ,XEã ô
no	ÚEã ô 6 á 5 ,Õ

5 ,ÕG!5B ´

Q ¸ õ ã < õ ã

S*ü Û Ð ´

G!5B –

ßM6,X _ $ ü y · Þ S6Ñ ` #A,Eã ô s6Ñ

```
ruijie#configure
ruijie(config-if)#l2protocol-tunnel gvrp tunnel-dmac 011AA9 000005
ruijie(config-if)#end
```

,Ì G Q ¸

Q ¸	£EÄ
show l2protocol-tunnel { gvrp|stp }	-

G ÄAÈ â EC Ê(RGOS10.4 ¹ Þ

(Ë	AÈ â

	intf-id	(M n,X y ·

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã

S*ü Û Đ ´

G!5B _

```
ruijie# show dot1q-tunnel
Ports   Dot1q-tunnel
-----   ---------
Gi0/1   Enable
```

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â EC Ê(RGOS10.3 ¹ Þ

Q ¸ Z Æ

(Ë	AÈ â
-	-

(M n, ìõ— X€

11.2.2 show frame-tag tpid

/ y · tpid ,XG!5B

show frame-tag tpid [interface *intf-id*]

(M n, ìõ ... á Â ÍĐ ¬? Q

– DAÈ â

– D	£EÄ
intf-id	(M n,X y ·

```
-----  ---------
Gi0/1   0x9100
```

11.2.8 show traffic-redirect

/ Î b# ,X vid

S*üA¹ Q¸ ¹,ß (Š Õ È V p ><,X Status NM original È í></ A¹ s Ÿ ×
V p ><,X Status NM duplicated È‡></ A¹ á Î 9,X ›V p ><,X Status
NM 0N È í></ "u ÝG!5B share vlan Ä

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B

´

Q¸ õ ã

Ï ãG!5B õ ã

S*ü Û Ð

?UE¨ ² (M õ ã ÈEg 9 end Q¸ È êK 9 Ctrl+C 4˜ ÜK Ä
?UE¨ ² < G!5B õ ã ÈEg 9 exit Q¸

G!5B _

```
Ruijie# show mac-address-table share
Vlan  MAC Address     Type    Interface   Status
----  --------------- ------- ----------- ----------
   1   0040.4650.1e1e DYNAMIC Gigabit 0/1 original
   2   0040.4650.1e1e DYNAMIC Gigabit 0/1 duplicated
```

,Ì G Q¸

Q¸	£EÄ
-	-

G ÄAÈ â

´

Q¸ Z Æ

(Ë	AÈ â
-	-

¸Ì G Q¸	Q¸	£EÄ
	show gvrp configuration	/ GVRP G!5B µ C

G ÄAÈ â ´

Q¸Z Æ	(Ë	AÈ â
	-	-

13.1.4 gvrp registration mode

A¹ Q¸A'5B0Ã ·,X,OA„ õ ã È { ú AŒ | Õ ï Î Ã,OA„ ê"¼JÔ0Ã · Þ,X VLAN Ä S*üA¹ Q¸,X no EÝNM 6 á5 ,ÕA'5B

gvrp registration mode {normal | disabled }

no gvrp registration mode

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B AŒ | Õ ï Î Ã,OA„ ê"¼JÔ0Ã · Þ,X VLAN

Q¸õ ã y ·G!5B õ ã

S*ü Û Ð S*ü show gvrp configuration Q¸¹,ßA'5B

G!5B _

```
Ruijie(config-if)# gvrp registration mode normal
```

¸Ì G Q¸	Q¸	£EÄ
	show gvrp configuration	/ GVRP G!5B µ C

G ÄAÈ â ´

Q¸Z Æ	(Ë	AÈ â
	-	-

13.1.5 gvrp timer

13.2 Ẩ ـ Ƈ

13.2.1 clear gvrp statistics

#ÙL8GVRP ,X4³Au È S JG¡ „ Ô ŸAu D

clear gvrp statistics { *interface-id* | all}

– DAÈ â

– D	£EÄ
interface-id	5%4° y · ID

5 ,ÕG!5B

Q ¸ õ ã (M õ ã

S*ü Û Đ S*ü show gvrp statistics Q ¸ ¹,ß4³Au

G!5B _ Ruijie# **clear gvrp statistics all**

,Ì G Q ¸

Q ¸	£EÄ
show gvrp statistics	/ GVRP 4³Au µ C

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â

-

Q¸õã (M õã

S*üÛÐ S*ü show gvrp configuration Q¸¹,ßG!5B µC

G!5B _

```
Ruijie# show gvrp configuration
Global GVRP Configuration:
GVRP Feature:enabled
GVRP dynamic VLAN creation:enabled
Join Timers(ms):200
Join Timers(ms):600
Join Timers(ms):10000
Port based GVRP Configuration:
Port:GigabitEthernet 3/1 app mode:normal reg mode:normal
Port:GigabitEthernet 3/2 app mode:normal reg mode:normal
Port:GigabitEthernet 3/3 app mode:normal reg mode:normal
Port:GigabitEthernet 3/4 app mode:normal reg mode:normal
Port:GigabitEthernet 3/5 app mode:normal reg mode:normal
Port:GigabitEthernet 3/6 app mode:normal reg mode:normal
Port:GigabitEthernet 3/7 app mode:normal reg mode:normal
Port:GigabitEthernet 3/8 app mode:normal reg mode:normal
Port:GigabitEthernet 3/9 app mode:normal reg mode:normal
Port:GigabitEthernet 3/10 app mode:normal reg
mode:normal
Port:GigabitEthernet 3/11 app mode:normal reg
mode:normal
Port:GigabitEthernet 3/12 app mode:normal reg
mode:normal
```

¸Ì G Q¸

Q¸	£EÄ
-	-

G ÄAÈâ ´

Q¸ZÆ

(Ë	AÈâ
-	-

13.2.3 show gvrp statistics

/ Ô þ0Ã · ê Ý0Ã ·,X GVRP 4³Au

show gvrp statistics {*interface-id* | all}

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

13.2.4 show gvrp status

/ + GVRP *ó ä,X | Õ VLAN ,X Ý ä ,0Ã · ` t 9M- Õ VLAN ,X | Õ ä ,0Ã · Ä

show gvrp status

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B ´

Q¸õ ã (M õ ã

S*ü Û Ð S*ü show gvrp status Q¸ / GVRP (Š Õ

G!5B _ Ruijie# **show gvrp status**

,Ì G Q¸

Q¸	£EÄ
-	-

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

14 MAC ת ﺟ ﻟ

14.1 ﻳ Ẩ ﺟ ﻟ

14.1.1 address-bind

A’5B Ú Ô þ ip ` mac ,X4¥ n Ä

address-bind *ip-address mac-address*

no address-bind *ip-address*

– DAÈ â

– D	£EÄ
ip-address	?U4¥ n,XIP Ä
mac-address	?U4¥ n,Xmac Ä

5 ,ÕG!5B

´

Q ¸ õ ã

< G!5B õ ã

S*ü Û Ð

V p 4 Ú Ô þ IP ` Ô þ Û n,X MAC 4¥ n È í 'A’ Û $d IP E- þ IP ,X û Ê È' û,X$d MAC á E- þ IP 4¥ n,X MAC Ê ÈE- þ û Ú î>•A’ Û ö × Ä

G!5B _

ßM6 _ $ ip 3.3.3.3 ` mac 00d0.f811.1112 ,X4¥ n

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

,Ì G Q ¸

Q ¸	£EÄ
show address-bind	/ 4¥ n ><

G ÄAÈ â

Q ¸ Z Æ

(Ë	AÈ â
-	-

14.1.2 address-bind install

]>™/LEQ _ ê ·1*+9

address-bind install

no address-bind install

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	´

Q ¸ õ ã	< G!5B õ ã

S*ü Û Ð	V p |A' n _ ê · È ;> A¹ Q ¸]>™1*+9 ¶ Ã*ó Ä

G!5B _	ßM6 _ $ Ú fa 0/1 0Ã ·A'5B ,X4¥ n
	`Ruijie(config)# address-bind uplink fa0/1`
	`Ruijie(config)# address-bind install`

,Ì G Q ¸	Q ¸	£EÄ
	show address-bind uplink	/ 4¥ n _ ê ·

G ÄAÈ â	RGOS10.1 ¹ Þ

Q ¸ Z Æ	(Ë	AÈ â
	-	-

14.1.3 address-bind ip-address

A'5B Ú Ô þ ip ` mac ,X4¥ n .

address-bind *ip-address mac-address*

no address-bind *ip-address*

– DAÈ â	– D	£EÄ
	ip-address	?U4¥ n,XIP Ä
	mac-address	?U4¥ n,Xmac Ä

5 ,ÕG!5B	´

Q ¸ õ ã	< G!5B õ ã
S*ü Û Đ	V p 4 Ú Ô þ IP ` Ô þ Û n,X MAC 4¥ n Èí ' x 6 $d IP E- þ IP

ôL8 Ý

G!5B _

Q¸	£EÄ
	A’5BA’ Û trap

,Ì G Q ¸	Q ¸	£EÄ
	show mac-address-table static	/ M- Õ Ä
	clear mac-address-table static	#ÙL8M- Õ Ä

G ÄAÈ â

Q ¸ Z Æ	(Ë	AÈ â
	-	-

14.1.13 snmp trap mac-notification

' Ô y ·,X MAC Eî-¹ s6Ñ Ä S*üA¹ Q ¸,X no EÝNM GKÁA¹ s6Ñ Ä

snmp trap mac-notification {added | removed}

no snmp trap mac-notification {added | removed }

– DAÈ â	– D	£EÄ
	added	' r t ÊEî-¹ Ä
	removed	' >• ôL8 ÊEî-¹ Ä

5 ,ÕG!5B 5 ,Õ GKÁA¹ s6Ñ Ä

Q ¸ õ ã y ·G!5B õ ã

S*ü Û Ð S*ü show mac-address-table notification *interface* Q ¸ ¹,ßA'5B Ä

G!5B _

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# snmp trap mac-notification added
```

,Ì G Q ¸	Q ¸	£EÄ
	mac-address-table notification	' Ô MAC Eî-¹ s6Ñ Ä
	show mac-address-t able notification	/ MAC Eî-¹ s6ÑA'5B `Eî-¹ >< µ C Ä

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â

	-	

Q ¸ Z Æ	(Ë	AÈ â
	-	

14.1.14 mac-address-learning

G!5B0Ã · : 46Ñ o ' Ô/ GKÁ
mac-address-learning

– DAÈ â	– D	£EÄ
	´	

5 ,ÕG!5B	: 46Ñ o Ô
Q ¸ õ ã	y · õ ã
S*ü Û Ð	á6Ñ ü Ô] < s6Ñ,X0Ã · Þ GKÁ MAC : 46Ñ o ÈGKÁ : 46Ñ o,X0Ã · á6ÑG! 5B] < s6Ñ ×
G!5B _	_ 1 Ö GKÁ y · : 46Ñ o Ö Ruijie(config-if)# no mac-address-learning

G ÄAÈ â	´

14.2 Ấ ₹ Ƈ

14.2.1 show address-bind

¹,ß Ý4¥ n ><,X µ C Ä

show address-bind

– DAÈ â	– D	£EÄ

5 ,ÕG!5B	´
Q ¸ õ ã	(M õ ã

S*ü Û Ð ´

G!5B _

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

¸Ì G Q¸

Q¸	£EÄ
address-bind	A'5B4¥ n Ä

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

14.2.2 show address-bind uplink

¹,ß _ ê · µ C Ä

show address-bind uplink

– DAÈ â

– D	£EÄ

5 ,ÕG!5B ´

Q¸õ ã (M õ ã

S*ü Û Ð ´

G!5B _

```
Ruijie# show address-bind uplink
Ports        State
------------ ------
Fa0/1        Disabled
Fa0/2        Disabled
```

	……

,Ì G Q ¸	Q ¸	£EÄ
	address-bind uplink	A’5B _ ê ·

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

14.2.3 show mac-address-table address

/ Ý2O _,X MAC µ C Ä Ù À | Õ ÈM- Õ `E›$¸ Å Ä

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

– DAÈ â	– D	£EÄ
	address *mac-addr*	Û n,X MAC Ä
	interface *interface-id*	y · Ë
	vlan *vlan-id*	VLAN Ë

5 ,ÕG!5B	´

Q ¸ õ ã	(M õ ã

S*ü Û Ð	´

G!5B _

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

,Ì G Q ¸	Q ¸	£EÄ
	show mac-address-table static	/ M- Õ Ä
	show mac-address-table filtering	/ E›$¸ Ä
	show mac-address-table dynamic	/ | Õ Ä

vlan-id	Û n><NM Í h,X VLAN Ä

5 ,ÕG!5B ´

Q ¸õ ã (M õ ã

S*ü Û Ð ´

G!5B _

```
Ruijie# show mac-address-table interface gigabitethernet 1/1
Vlan       MAC Address         Type     Interface
------  ---------------       -----    -----------
1     00d0.f800.1001  STATIC   gigabitethernet 1/1
1     00d0.f800.1002  STATIC   gigabitethernet 1/1
1     00d0.f800.1003  STATIC   gigabitethernet 1/1
1     00d0.f800.1004  STATIC   gigabitethernet 1/1
```

,Ì G Q ¸

Q ¸	£EÄ
show mac-address-table static	/ M- Õ Ä
show mac-address-table filtering	/ E›$¸ Ä
show mac-address-table dynamic	/ | Õ Ä
show mac-address-table address	/ Û n ,X Ý2O _,X µ C
show mac-address-table vlan	/ Û n VLAN ,X Ý2O _,X µ C Ä
show mac-address-table count	/ Í >< þ D,X4³Au Ä

G ÄAÈ â ´

Q ¸Z Æ

(Ë	AÈ â
-	-

interface *interface-id*	y · Ë Ä / y · Þ,X MAC Eî-¹ s6ÑA'5B Ä
history	/ MAC Eî-¹ Z ÆA„)>< µ C Ä

5 ,ÕG!5B 5 ,Õ / Ý MAC Eî-¹ s6ÑA'5B µ C Ä

Q¸õã (M õã

S*ü Û Ð ´

G!5B _

```
Ruijie# show mac-address-table notification interface
Interface        MAC Added Trap  MAC Removed Trap
---------         --------------      --------------
GigabitEthernet1/14   Disabled        Disabled
Ruijie# show mac-address-table notification
MAC Notification Feature :  Disabled
Interval between Notification Traps : 1 secs
Maximum Number of entries configured in History Table :1
Current History Table Length : 0
Ruijie# show mac-address-table notification history
History Index : 0
MAC Changed Message :
Operation:ADD Vlan : 1 MAC Addr: 00f8.d012.3456 GigabitEthernet 3/1
```

,Ì G Q¸

Q¸	£EÄ
mac-address-table notification	' Ô MAC Eî-¹ s6Ñ Ä
snmp trap mac-notification	' Ô y ·,X MAC Eî-¹ s6Ñ Ä

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

14.2.10 show mac-address-table static

/ M- Õ Ä

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

– DAÈ â

– D	£EÄ
mac-addr	Û n><NM Í h,X,Â,X MAC Ä
vlan-id	Û n><NM Í h,X VLAN Ä
interface-id	Ù ÚE@ ¥,X y ·(Ã¹ (=)Ú0Ã · ê AggregatePort)

5 ,ÕG!5B ´

Q¸õã (M õã

S*ü Û Ð ´

G!5B _

/ Ý M-Õ µC Ö

```
Ruijie# show mac-address-table static
Vlan    MAC Address     Type        Interface
-----  -----------   --------  ------------------
1    00d0.f800.1001   STATIC   gigabitethernet 1/1
1    00d0.f800.1002   STATIC   gigabitethernet 1/1
1    00d0.f800.1003   STATIC   gigabitethernet 1/1
```

,Ì G Q¸

Q¸	£EÄ
mac-address-table static	A’5BM-Õ Ä
clear mac-address-table static	#ÙL8M-Õ Ä

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

14.2.11 show mac-address-table vlan

/ Û n VLAN ,X Ý2O _,X µC Ä

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

– DAÈ â

– D	£EÄ
vlan-id	Û n,X VLAN ID Ä

S*ü Û Ð ´

G!5B _

_ 1 Ö / 0Ã · : 46Ñ o Ö

Ruijie# show mac-address-learning

,Ì G Q ¸

Q ¸	£EÄ

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â

15 DHCP Snooping ﾈ ﾋ

15.1 DHCP snooping ﾈ ﾋ ﾊ

15.1.1 ip dhcp snooping

?U ' Ô DHCP Snooping < s6Ñ ÈLÔ?U ü < G!5B õ ã ßG!5BA¹ Q ¸ Ä ;> A¹ Q ¸,X no 6 ã È Ú < GKÁ DHCP Snooping s6Ñ Ä

[no] ip dhcp snooping

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	A¹ s6Ñ5 ,Õ GKÁ
Q ¸ õ ã	< G!5B õ ã
S*ü Û Ð	' Ô DHCP Snooping < s6Ñ â È Ã ¹ S*ü show ip dhcp snooping Q ¸ ¹,ß DHCP snooping s6Ñ ú ' Ô Ä
	✎ "¼ ã DHCP Snooping â Private VLAN s6Ñ á Õ E*ü Ä
G!5B _	ßM6 ' Ô DHCP snooping < s6Ñ Ô G,X _ $ Ö Ruijie# **configure terminal** Ruijie(config)# **ip dhcp snooping** Ruijie(config)# **end** Ruijie# **show ip dhcp snooping** Switch DHCP snooping status ÖENABLE Verification of hwaddr field status ÖDISABLE DHCP snooping database write-delay time: 0 seconds DHCP snooping option 82 status: ENABLE DHCP snooping Support Bootp bind status: ENABLE Interface Trusted Rate limit (pps) ---------- ------- ----------

,Ì G Q ¸	Q ¸	£EÄ

show ip dhcp snooping	¹,ß DHCP snooping ,XG!5B µ C Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

15.1.2 ip dhcp snooping bootp-bind

?U ' Ô DHCP Snooping Õ Bootp 4¥ n s6Ñ ÈLÔ?U ü < G!5B õ ã ßG!5BA¹ Q ¸ Ä ;> A¹ Q ¸,X no 6 ã È Ú GKÁ DHCP snooping Õ Bootp 4¥ n s6Ñ Ä

[no] ip dhcp snooping bootp-bind

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B A¹ s6Ñ5 ,Õ GKÁ Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð 5 ,Õ ™ ‰ß È DHCP Snooping s6Ñ ™ Í Bootp y [E¯> E@ ¥ Ä ' ÔA¹ s6Ñ â ÈDHCP Snooping s6Ñ Í Bootp #A, y [E¯> 0y v Ä ' Bootp v 0Ã ä s+ AË â ÈDHCP Snooping Ú Bootp *ü #Ï t M- Õ4¥ n D B g Ä

G!5B _

ßM6 ' Ô DHCP Snooping Õ Bootp 4¥ n,X _ $ Ö

```
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping bootp-bind
Ruijie(config)# end
Ruijie# show ip dhcp snooping
Switch DHCP snooping status ÖENABLE
```

------------------------ ------- ------------

Q ¸	£EÄ`0¥ K€

	-	-

15.1.5 ip dhcp snooping information option

?U ' Ô ü DHCP AË" y [t 9 option82 EÝNM s6Ñ ÈLÔ?U ü < G!5B õ ã ßG!5BA¹ Q ¸ Ä ;> A¹ Q ¸,X no

	-	-

15.1.6 Ip dhcp snooping vlan

?U ' Ô Û n VLAN ,X DHCP Snooping s6Ñ ÈLÔ?U ü < G!5B õ ã ßG!5BA¹ Q ¸ Ä ;> A¹ Q ¸,X no 6 ã È Ú GKÁ Í h VLAN ,X DHCP Snooping s6Ñ Ä

[no] ip dhcp snooping vlan {*vlan-rng* | {*vlan-min* [*vlan-max*]}}

	– D	£EÄ
™aA0+â @	*vlan-rng*	dhcp snooping s6Ñ*ó ,X vlan 8× È Ä
	vlan-min	dhcp snooping s6Ñ*ó ,X vlan ßL$ Ä

?UG!5BA¹0Ã · y DHCP y [,XEó)[ÈLÔ?U ü y ·G!5B õ ã ß ;> !8 Q ¸ Ä ;> A¹ Q ¸,X no 6 ã È ª#\A¹0Ã ·,XEó)[L$ Ä

[no] ip dhcp snooping limit rate *rate-value*

– DAÈ â

– D	**£EÄ**
rate-value	A’ n y [y Eó)[ÈPPS[Packet Per Second]

15.3 DHCP snooping ﻳﺠ ﻟﻲ

15.3.1 show ip dhcp snooping

?U ¹,ß DHCP Snooping ' !,XG!5B ™ ‰ ÈLÔ?U ü(M õ ã ß ;> !8 Q ¸ Ä

show ip dhcp snooping

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã

S*ü Û Ð ;> !8 Q ¸ È Ã ¹ ¹,ß ' ! DHCP Snooping ,XG!5B ™ ‰ Ä

G!5B _

ßM6 ¹ ,ß ' ! DHCP Snooping G!5B ™ ‰,X _ $ Ö

```
Ruijie# show ip dhcp snooping
Switch DHCP snooping status ÖENABLE
Verification of hwaddr field status ÖDISABLE
DHCP snooping database write-delay time: 0 seconds
DHCP snooping option 82 status: ENABLE
DHCP snooping Support Bootp bind status: ENABLE
Interface                 Trusted    Rate limit (pps)
------------------------  -------    ------------
```

,Ì G Q ¸

Q ¸	£EÄ
ip dhcp snooping	DHCP snooping < G!5B Ô G Ä
ip dhcp snooping verify mac-address	DHCP snooping y [$d mac " ¹ Ô G Ä
ip dhcp snooping write-delay	G!5B n Ê mflash ,X ÊKÈKÈLh Ä
Ip dhcp snooping information option	ü DHCP AË" y [t 9 option82 EÝ NM Ä
ip dhcp snooping bootp-bind	' Ô DHCP Snooping Õ Bootp 4¥ n s6Ñ Ä
ip dhcp snooping trust	A'5B0Ã · DHCP snooping trust · Ä

debug ip dhcp snooping {event | packet }

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	5 ,Õ GKÁ
Q ¸ õ ã	(M õ ã
S*ü Û Ð	;> A¹ Q ¸ È ¹,ß DHCP snooping s6Ñ,XA×A© µ C Ä

G!5B _	ßM6 ' Ô DHCP snooping A×A© Ô G,X _ $ Ö Ruijie# **debug ip dhcp snooping event** Ruijie# **debug ip dhcp snooping packet**

,Ì G Q ¸	Q ¸	£EÄ
	-	-

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

16 IGMP Snooping ﺟﻴ ﻧ

16.1 ﻳ Ẩ ﺟﻴ ﻧ

16.1.1 deny

?U/U!6E@ ¥profile Û n8× È,X4˜ •# ÈAË ;>

G!5B _

ßM6,X/ _$è/ üA' Û vlan 2 Þ ' Ô igmp snooping Ö

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

,Ì G Q ¸

Q ¸	£EÄ
ip igmp snooping ivgl	' Ô igmp snooping JG!5B ivgl õ ã Ä
ip igmp snooping ivgl-svgl	' Ô igmp snooping JG!5B#Ë Ü õ ã Ä

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

16.1.7 ip igmp snooping svgl vlan

?U Û n(M n vlan

Q ¸ Z Æ	(Ë	AÈ â
	-	-

16.1.8 ip igmp snooping svgl profile

?U Û n ü(M n profile 4˜8× ÈE¤> SVGL õ ã ÈAË ;> < G!5B Q ¸ ip igmp snooping svgl profile ÄA¹ Q ¸,X no 6 ã ª#\G!5B Ä

ip igmp snooping svgl profile *profile-number*

no ip igmp snooping svgl profile

– DAÈ â	– D	£EÄ
	profile-number	profile ,X4ê Ë È ª 8× È<1-65536>

5 ,ÕG!5B

no ip igmp snooping dyn-mr-aging-time

IGMP Snooping Q ¸

16.1.15 ip igmp snooping vlan mrouter learn pim-dvmrp

?UG!5BA} x 6 | Õ,X z IGMP Query/Dvmrp/PIM Hellp y [È ¹7¾ |Aš ÿCÃ+ E² y · È AË ;> < G!5B Q ¸ ip igmp snooping vlan mrouter learn ÄA¹ Q ¸,X no 6 ã ª#\ | Õ : 4 Ä

ip igmp snooping vlan *vid* mrouter learn pim-dvmrp

no ip igmp snooping vlan *vid* mrouter learn pim-dvmrp

– DAÈ â

– D	£EÄ
vid	CÃ+ E² y ·,X vlan id Ä

5 ,ÕG!5B A¹ s6Ñ5 ,Õ GKÁ Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð CÃ+ E² y · 4˜ •A’ Û â J4˜ •F• A’ Û,È y,ÌE²,X0Ã · Ä5 ,Õ,X ™ ‰ ß È Í b Ô þ VLAN 6Ñ óE¯> | ÕCÃ+ E² y ·,X : 4 È | Ã ¹G!5B GKÁ,Ì G VLAN Y,X | ÕCÃ+ E² y · : 4 s6Ñ Ëü,Ì h,X no EÝNM Q ¸ GKÁ | Õ : 4 ÈJ#Ù0N Ý | Õ : 4 ,XCÃ+ E² y · Ä $d0Ã · ” ¹ ' Ô Ê È ¾ Ý ¢CÃ+ E² y ·E¯ 9,X4˜ •# ! Ü"©,X È4˜ •A’ Û ^ D B# E@ ¥ å Æ"¼ `,X0Ã · ×5à ¢M2CÃ+ E² y ·E¯ 9,X4˜ •# >•?š M2"©,X È Ú>• ö × Ä ü$d 0Ã · ” ¹ s6Ñ ' Ô,X ™ ‰ ß È S*ü | ÕCÃ+ E² y · : 4 È Ã ¹ ¤P¬ igmp snooping ,X h *ü&I# û Ä

G!5B _ ßM6,X/ _$è/ üA’ Û ' Ô vlan 1 | ÕCÃ+ E² y · : 4 s6Ñ Ö

```
Ruijie(config)# ip igmp snooping vlan 1 mrouter learn pim-dvmrp
```

,Ì G Q ¸

Q ¸	£EÄ
ip igmp snooping mrouter learn pim-dvmrp	G!5B < ' Ô4˜ •CÃ+ ·	Õ : 4 s 6Ñ

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

16.1.16 ip igmp snooping vlan static interface

ü igmp snooping ' Ô,X ™ ‰ ß ÈM- Õ,XG!5B Ô þ0Ã · y ¤ þ4˜ •# È íA¹0Ã · Ú á « Ø /¡ IGMP y [,X E ¡ ÄAË ;> < G!5B Q ¸ ip igmp snooping vlan static interface ÄA¹ Q ¸,X no 6 ã ôL8 Ô þM- ÕG!5B Ä

ip igmp snooping vlan *vid* static *ip-addr* interface *interface-id*

no ip igmp snooping vlan *vid* static *ip-addr* interface *interface-id*

– D	

profile-number	profile ,X4ê Ë È ª 8× È<1-65536>

5 ,ÕG!5B ´5 ,Õ Ä

Q ¸ õ ã y ·G!5B õ ã Ä

S*ü Û Ð ^ IGMP Profile h*ü ü Ô þ0Ã · ß È V pA¹0Ã · IGMP Report y [È íA' Û î ¹ RE- þ0Ã · ?U t 9,X4˜ • ú ü IGMP Profile AŒ8× È Y Ä8¹ È í AŒ t 9 È â !E¯> â4Á Ø)Ú Ä ™NO ï Î Û n,X profile È' â !6Ñ ;> filter G6(Ä

G!5B _ ßM6,X/ _$è/ ü,R 0Ã · 0/1 Þ G6(profile 1 Ö

```
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ip igmp snooping filter 1
```

,Ì G Q ¸

Q ¸	£EÄ
ip igmp profile	ï Î Ô þ profile

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

16.1.18 ip igmp snooping max-groups

?UG!5B y · AŒ Ô î ´ þ4˜ | Õ,X t 9A¹0Ã ·, AË ;> y ·G!5B Q ¸ ip igmp snooping max-groups Q ¸ ÄA¹ Q ¸,X no 6 ã ª#\ Ô û4˜L$ Ä

ip igmp snooping max-groups *number*

no ip igmp snooping max-groups

– DAÈ â

– D	£EÄ
number	– D8× È <0 – 1024>

5 ,ÕG!5B y ·4˜ • G£ þ D á «L$ Ä

Q ¸ õ ã y ·G!5B õ ã Ä

S*ü Û Ð V pG!5B Z AŒ : 4,X Ô û4˜ DG£ È í üA¹ y · Þ È '4˜ | Õ : 4 ,X4˜A„) þ DCYE›

Ô û AŒ DG£ Ê È x 6 Ú á a : 4 IGMP Report y [ï Î „,XE@ ¥><NM Ä

G!5B _

ßM6,X/ _G!5B,R · 0/1 Þ ¾6Ñ Ø)Ú100 þ î •4˜ Ö

```
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ip igmp snooping max-group 100
```

,Ì G Q ¸

Q ¸	£EÄ
ip igmp snooping filter	0Ã · î •4˜E›$¸ Ä

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

16.2 Ú ↓ ¯ Ò

16.2.1 show ip igmp snooping

/ igmp snooping ,X,Ì G µ C Ä

Show ip igmp snooping [gda-table | interfaces | mrouter | statistics [vlan *vlan-id*]]

– DAÈ â

– D	£EÄ
´	/ igmp snooping ,X s6ÑG!5B Ä
gda-table	/ 4˜ •E@ ¥?˜ í>< Ä
interfaces	/ igmp snooping filtring ,XG!5B Ä
mrouter	/ 4˜ •CÃ+ E² y · µ C Ä

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â

17 MSTP ﾈﾞ ﾈﾞ

17.1 ﾋ Ẩ ﾈﾞ ﾈﾞ

17.1.1 bpdu src-mac-check

' Ô ¤ þ y ·,X bpdu $d mac ” ¹ Ä*ü Ã ¹*üA¹ Q ¸,X no EÝNM GKÁ y ·,X bpdu $d mac ” ¹ s6Ñ Ä

bpdu src-mac-check *H.H.H*

no bpdu src-mac-check

	– D	£EÄ
– DAÈ â	*H.H.H*	></ ¾ y $d mac A¹ ,X bpdu û Ä
	no	EÝNM></ 0Ã · y Ï),X bpdu û Ä

5 ,ÕG!5B	5 ,Õ G KÁ,X Ä
Q ¸ õ ã	y ·G!5B õ ã Ä
S*ü Û Ð	´
G!5B _	Ruijie(config)# **interface gigabitethernet** *1/1* Ruijie(config-if)# **bpdu src-mac-check** *00d0.f800.1e2f*

1 0

G!5B –

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

,Ì G Q¸

Q¸	£EÄ
show spanning-tree interface	/ 0Ã · STP G!5B µ C Ä

	-	-

17.1.6 spanning-tree bpduguard

' Ô ¤ þ y ·,X BPDU Guard Ô G Ä*ü Ã ¹*üA¹ Q ¸,X enabled ê disabled EÝNM ' Ô ê GKÁ y ·,X BPDU Guard Ô G Ä

spanning-tree bpduguard [enabled

Q¸õã	y·G!5B õãÄ
S*üÛÐ	´
G!5B _	Ruijie(config)# **interface gigabitethernet** *1/1* Ruijie(config-if)# **spanning-tree link-type point-to-point**

,Ì G Q¸		
	Q¸	£EÄ
	show spanning-tree interface	/ STP 0Ã·G!5B

G ÄAÈâ	´

Q¸Z Æ		
	(Ë	AÈâ
	-	-

17.1.12 spanning-tree loopguard default

< 'Ô loop guard (M û Ä S*üA¹ Q¸,X no EÝNM GKÁoop guard (M û Ä *ü loop guard s 6Ñ È6ÑL !6 0Ã·ê Û Ñ·´ á bpdu 5à {*ó,X Ã6Ñ,X)ƒCÃ Ä

spanning-tree loopguard default

no spanning-tree loopguard default

– DAÈâ		
	– D	£EÄ
	-	-

5 ,ÕG!5B	5 ,Õ GKÁloop guard s6Ñ Ä

Q¸õã	< G!5B õã

S*üÛÐ	´

G!5B _	Ruijie(config)# **spanning-tree loopguard default**

,Ì G Q¸		
	Q¸	£EÄ
	-	-

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

17.1.13 spanning-tree max-hops

ü < G!5B õ ã ß S*ü!8 Q¸Ã ¹A'5B BPDU û,X Ô ûCÇ D ÄMax-hops Count Å È W Û n Z BPDU ü Ô þ Region Y4£E› î å ÄA' Û â>• ö × È J Í Ý,X Instance Ý Ä S*ü no EÝNM Ã ¹ ÚA¹ Q¸6 á7Ç5 ,Õ Ä

spanning-tree max-hops *hop-count*

no spanning-tree max-hops

– DAÈ â

– D	£EÄ
hop-count	BPDU ü>• ö × ! Ã ¹4£E›A' Û,X õ D È8× È 1 É40

5 ,ÕG!5B *hop-count* ,X5 ,Õ 20

Q¸õ ã < G!5B õ ã

S*ü Û Ð ü Region Y ÈRoot Bridge ¥EÕ,XBPDU Ù ÿ Ô þ Hot Count NM È¢Root Bridge Ô Ÿ È !£4£E› Ô þA' Û ÈHop Count î £ 1 È,È 0 í></ A¹ BPDU µ CCY Ê ÈA' Û Hops 0 ,X BPDU ?U ö × W Ä

¬ max-hops Ú E¡ Ý Instance Ä

G!5B _ ß _ Ú ^ Ý MST Instance ,X Max-hops A' 10 Ö

```
Ruijie(config)# spanning-tree max-hops 10
```

3 Ã ¹K 9 show spanning-tree mst (M Q¸P`A• ÞEÄG!5B

,Ì G Q¸

Q¸	£EÄ
show spanning-tree	¹,ß MSTP µ C

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

17.1.14 spanning-tree mode

ü < õ ã ß S*ü!8 Q ¸ STP (Ä S*ü no EÝNM Ã ¹ Ú*ó ä å(6 á7Ç5 ,Õ Ä

spanning-tree mode [stp | rstp | mst *p*]

no spanning-tree mode

5 ,ÕG!5B

5 ,Õ instance ` vlan ,X Í h G2Ï Ý,X Vlan FÑ üInstance 0 Ä
name 0N +0ú Ä
revision 0 Ä

Q ¸ õ ã

< G!5B õ ã .

S*ü Û Ð

?UE¨ ² (M õ ã ÈEg 9 end Q ¸ È êK 9 Ctrl+C 4˜ ÜK Ä
?UE¨ ² < G!5B õ ã ÈEg 9 exit Q ¸ Ä
E¯ 9 MST G!5B õ ã â È Ã ¹ S*ü ¹ ß Q ¸E¯> G!5B – D Ö
instance *instance-id* vlan *vlan-range* Ö Ú Vlan 4˜#Ï t MST Instance ÄE-G instance-id ,X8× È 0 É64 Ävlan ,X8× È 1 É4095 Ävlan-range Ã ¹ Ô o vlan ,XLš Ü ÈVLAN ID ?•*üEë ËLh Ô ÈE²4Á,XVLAN ID Ã ¹ S*ü þ É ÿE² y ø þ VLAN ID E² y È_ -` instance 10 vlan 2,3,6-9 n Z Ú VLAN 2 È3 È6 È7 È8 È9 #Ï t Instance 10 Ä5 ,Õ,XG!5B Ý,X VLAN ü Instance 0 Ä Ú VLAN ¢ Instance ôL8,X •"© S*ü no Q ¸ Ö no instance *instance-id* [vlan *vlan-range*] Ä(?U"¼ ãno Q ¸ Instance ,X8× È 1 É64)
name *name* Ö Û n MST á/Ä È Ô î Ã ¹ Ã ¹ ÿ 32 +0ú,X +0ú Ä Ã ¹*ü no name Ú J 6 á7Ç5 ,Õ Ä
revision *version* ÖA'5B MST (D È8× È 0 É65535 ÄÃ ¹*ü no revision Ú J 6 á7Ç5 ,Õ Ä
show Ö / ' ! MST region µ C Ä

G!5B _

ßM6 _ 9AÈ â V)E¯ 9 MST õ ã È Ú VLAN 3, 5-10 ô Ø MST Instance 1.

```
Ruijie(config)# spanning-tree mst configuration
Ruijie(config-mst)# instance 1 3JU 1 f03401C8e3.4271BE20F53731 f25.40073e 0d(
```

V p?U Ú VLAN 3 ¢ Instance 1 ôL8 ÈFw E¯ 9 MST G!5B õ ã â È ;> V ß,XE›/ß

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

V p?U Ú H þ Instance 1 ôL8 È •"© V ß Ö

```
Ruijie(config-mst)# no instance 1
```

| Ã ¹EîE› MST G!5B Q¸ ,X show P`A• ÞEÄE›/ß Ä

Q¸	£EÄ
show spanning-tree mst	¹,ß MST region G!5B
instance instance-id vlan vlan-range	Vlan 4˜#Ï t MST Instance

S*ü Û Ð	cost C^ û>< âCÃ X8…C C^P¬
G!5B _	4- Ô þ ` Instance 3 ,Ì G6(,X y ·G!5BCÃ X8…C 400

S*ü Û Ð

	show spanning-tree interface	/ STP y·G!5B Ä

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

17.1.20 spanning-tree portfast

' Ô ¤ þ y·,X Portfast Ô G Äü Ã ¹*üA¹ Q¸,X disabled EÝNM GKÁ y·,XPortfast Ô G Ä

spanning-tree portfast [disabled]

–DAÈ â

–D	£EÄ
disabled	GKÁ y·,X Portfast Ô G Ä

5,ÕG!5B 5,Õ G KÁ,X Ä

Q¸õã y·G!5B õã Ä

S*ü ÛÐ -

G!5B –

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

,Ì GQ¸

Q¸	£EÄ
show spanning-tree interface	/0Ã· STP G!5B µC Ä

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

17.1.21 spanning-tree portfast bpdufilter default

< ,X ' Ô BPDU filter Ä*ü Ã ¹*üA¹ Q¸,X no EÝNM < ,X GKÁBPDU filter Ä

spanning-tree portfast bpdufilter default

– DAÈ â

– D	£EÄ
tx-hold-count	TxHoldCount A'5B Ä 8× È ¢ 1 10 Ä

5 ,ÕG!5B 5 ,Õ 3 Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð ´

G!5B _

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

S*ü Û Ð ´

G!5B _ Ruijie# **show spanning-tree mst configuration**

¸Ì G Q¸

Q¸	£EÄ
spanning-tree mst configuration	E¯ 9 MST region G!5B
spanning-tree mst cost	/ instance ¸XCÃ X8…C
spanning-tree mst max-hops	/ instance ¸X Ô ûCÇ D
spanning-tree mst priority	/ instance ¸XA’ Û ì
spanning-tree mst port-priority	/ instance ¸X0Ã · ì

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

1/2 // á Õ¡Ø·A'Û

```
Ruijie(config)# monitor session 2 destination remote vlan 7
interface gigabitEthernet 1/3 switch // Õ¡Ø·A'Û
Ruijie(config)# monitor session 2 destination remote vlan 7
reflector-port interface gigabitEthernet 1/1 switch
```

_ 2 Ö,Â,X x 6 G!5B

```
Ruijie(config)# monitor session 2 remote-destination
Ruijie(config)# monitor session 2 destination remote vlan 7
interface gigabitEthernet 1/1 switch
```

¸Ì G Q¸

Q¸	£EÄ
show monitor	/ K0 £ îA± µ C Ä

G ÄAÈ â á Õ¡ Ø·,X {•´LÔEg 9 reflector-port GK + Ä

¹ þ5% y · á6ÑG!5B ä´4ê Ë y · Ä

' > · Õ>™ SLIP ÃHDLC ÃPPP ÃLAPB ÃFrame-relay Ê È Ã ¹G!5B ä´4ê Ë y · Ä Õ>™ û 4» Ê È ¾ Ý&• &• $ y · ! AŒG!5B ´4ê Ë y · ÄX.25 Õ>™ á AŒG! 5B ´4ê Ë y ·,X Ä

á6Ñ*ü ping Q ¸ 9 ”# ´4ê Ë y · ú ¹ 0!7 È ´ ´4ê Ë y ·"u Ý IP Ä EîE› SNMP Ã ¹E°/ß,¥# ´4ê Ë y ·(Š Õ Ä

á6ÑEîE› ´4ê Ë y ·E¯> 5%4° | Ä

G!5B _

¹ ßG!5B È Ú y ·G!5B ´4ê Ë y · È G6(y · FastEthernet 0/1 Ä G6(,X y · ™NO ?UG!5BÞP Ä

```
ip unnumbered fastEthernet 0/1
```

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Đ RGOS S*ü ARP 4ç †>< È B 32 þ!¨(M ! IP ¹ R 48 þ!¨(M !,X MAC Ä + b û î D Õ | Õ ARP ?· d È ¹Eî áLÔ?UG!5BM- Õ ARP ô Ø Ä ý*ü clear arp-cache Q ¸ Ã ¹ ôL8 | Õ : 4 ,X ARP ô Ø Ä

G!5B _ ¹ ßG!5B È ¹ þ5% Þ,X A'5B Z ARP M- Õ ô ØA„) Ä

```
arp 1.1.1.1 4e54.3800.0002 arpa
```

,Ì G Q ¸

Q ¸	£EÄ
clear arp-cache	#ÙL8ARP 4ç †><

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

21.2.2 arp gratuitous-send interval

S*üA¹ Q ¸ È Ã ¹ ü Û n5%4° y · n Ê ¥EÕ !C arp AË" ÄA¹ Q ¸,X no 6 ã GKÁ y · Þ,X !8 s6Ñ Ä

arp gratuitous-send interval *seconds*

no arp gratuitous-send

– DAÈ â

– D	£EÄ
seconds	¥EÕ ! C ARP AË" ,X ÊKÈKÈLh È) !/¦ È ª 8× È <1-3600> Ä

5 ,ÕG!5B y ·"u Ý *ü n Ê ¥EÕ !C ARP AË" ,X s6Ñ Ä

Q ¸ õ ã y ·G!5B õ ã Ä

S*ü Û Đ 'A' Û,X 5%4° y · . ß6(A' Û,X5% G Ê È V p ß6(A' Û Ý f 5% G,X> È í Ã ¹ ü!8 y ·G!5B n Ê ¥EÕ !C ARP AË" È @ 7¾ Å ! ,ó!7,X5% G Ä

G!5B _ _ 1 Ö ¹ ßG!5B ÈA'5B å SVI 1 !£/¦Js ¥EÕ Ô õ !C ARP AË" Ä

```
Ruijie(config)# interface vlan 1
```

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

21.2.4 arp retry times

S*üA¹ Q ¸ ÈÃ ¹A'5B G¡ ô arp AË" y [,X õ D ÈG?· d à Ô þ IP ÈÆ²4Á ¥EÕ ARP AË" ,X õ D Ä S*ü!8 Q ¸,X no 6 ã Ã ¹ 6 áT¬Ax,XG¡ ô 5 õ ARP AË" Ä

arp retry times *number*

no arp retry times

– DAÈ â

– D	£EÄ
number	à Ô þ ARP AË" ,X ¥EÕ õ D È8× È<1-100>Ä'A'5B 1 Ê È></ áG¡ ô ARP AË" È ¾ ¥EÕ 1 õ ARP AË" y [Ä

5 ,ÕG!5B V p"u Ý ARP h1(y [ÈARP AË" y [î ¥EÕ 5 õ È' âCY Ê Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð ' ¥)„ A' Û ÝNe4 ,X å ê ¥EÕ ARP AË" È éCK5%4°4 -1 J WKÂNl Ê È Ã ¹ Ú ARP

21.2.5 arp timeout

G!5BARP 4ç † ARP M- Õ ô ØA„),XCY Ê ÊKÈ È Ã ¹ ;> A¹ Q ¸ ÄA¹ Q ¸,X no 6 ã Ã ¹ 6 á5 ,ÕG!5B Ä

arp timeout *seconds*

no arp timeout

– DAÈ â	– D	£EÄ
	seconds	CY Ê ÊKÈ È ¹/¦ Au1k) ! È8× È 0-2147483

5 ,ÕG!5B	5 ,ÕCY ÊÊKÈ 3600 /¦ Ä

Q ¸ õ ã	y ·G!5B õ ã Ä

S*ü Û Ð	ARP CY ÊA5B ¾ Í | Õ : 4 ,X IP ` MAC ô ØCK 0*ü ÆCY Ê ÊKÈA'5B kC^-Á È ARP 4ç † ± ,,X ô Ø>< C^,ó r È ARP #\5ë5%4° ú ' 3C^ î È ¹LÔ?U >5 ý Þ Ä L8M2 Ý(M ÿ,XLÔ?U È ú í Ô8 áLÔ?UG!5BARP CY Ê ÊKÈ Ä

G!5B –	¹ ßG!5B È Ú ¢ ¿Eó ¹ þ5% FastEthernet 0/1 : ,X | Õ ARP ô ØA„),XCY Ê ÊKÈA' 120 /¦ Ä
	`interface fastEthernet 0/1`
	`arp timeout 120`

,Ì G Q ¸	Q ¸	£EÄ
	clear arp-cache	#ÙL8ARP 4ç †><
	show interface	/ y ·,XG!5B4³Au µ C

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

21.2.6 arp unresolve

S*üA¹ Q ¸ È Ã ¹G!5B ARP ><NM þ?· d><NM,X Ô û þ D ÄA¹ Q ¸,X no 6 ã Ã ¹ 6 áT¬Ax 8192 Ä

arp unresolve *number*

no arp unresolve

– DAÈ â	– D	£EÄ
	number	þ?· d ARP ><NM,X Ô û þ D È ª 8× È < 1-8192 > ÄT¬Ax 8192

5 ,ÕG!5B	ARP 4ç †>< Ô î Ã ¹ •4‡

IP Q ¸

5 ,ÕG!5B ´

Q ¸ õ ã (M *ü õ ã

S*ü Û Ð

Ã ¹*üA¹ Q ¸ „ ARP 4ç ,>< Ä

"¼ ã	ü Õ NFPP(Network Foundation Protection Policy , Î. 5%4° ± x) A' Û Þ ÈT¬Ax!£/¦!£ þ mac (ê5Ù IP) ¾ Ô þ ARP y [ÈV p ø õ clear arp ÊKÈKÈLh ü1s Y È Ã6Ñ î Ð7È1 ` þ h1(y [>•E›$¸5à -Á ÊKÈARP ?· d á Z,X ™ ‰ Ä

G!5B _

_ 1 Ö ¹ ß _ $ È ôL8 Ý ARP | Õ ô ØA„)4ç †>< Ä

```
clear arp-cache
```

_ 2 Ö ¹ ß _ $ È ôL8 | Õ ARP ><NM1.1.1.1

```
clear arp-cache 1.1.1.1
```

_ 3 Ö ¹ ß _ $ È ôL8 y · SVI1 ß,X | Õ ARP ><NM

```
clear arp-cache interface Vlan 1
```

,Ì G Q ¸

Q ¸	£EÄ
arp	ü ARP >< r tM- Õ ô ØA„) Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

21.3C2_0 1 Tf 2 Tr .48 91/P <</MCI1B6.84 3d (c1 293 <<4 T44D2D1(show 1))-6(p) 0

mask	/ IP $5% Y,X ARP ><NM V p Û n trusted GK + È í ¾ / Ã µ Ï ARP ><NM È ú í / M2 Ã µ Ï ARP ><NM Ä
static	/ ÝM- Õ arp ><NM Ä
mac-address	/ Û n mac ,X ARP ><NM Ä
complete	/ Ý Æ4£?· d,X | Õ arp ><NM Ä
incomplete	/ Ý þ?· d,X | Õ arp ><NM Ä
oob	/ ú ê1u)Ú y ·(interface of mgmt) ,X ARP ><NM Ä

5 ,ÕG!5B ´

Q ¸ õ ã (M *ü õ ã Ä

S*ü Û Ð ´

_ 1 Ö ¹ ß show arp Eg Î4§ p Ö

_ 2 Ö ¹ ß show arp 192.168.195.68 ,XEg Î4§ p

```
Ruijie# show arp 192.168.195.68
```

¹ß show arp detail Eg Î4§ p Ö

```
Ruijie# show arp detail
```

IP Address	MAC Address	Type	Age(min)	Interface	Port
20.1.1.1	000f.e200.0001	Static	--	--	--
20.1.1.1	000f.e200.0001	Static	--	Vl3	--
20.1.1.1	000f.e200.0001	Static	--	Vl3	Gi2/0/1
193.1.1.70	00e0.fe50.6503	Dynamic	1	Vl3	Gi2/0/1
192.168.0.1	0012.a990.2241	Dynamic	10	Gi2/0/3	Gi2/0/3
192.168.0.1	0012.a990.2241	Dynamic	20	Ag1	Ag1
192.168.0.1	0012.a990.2241	Dynamic	30	Vl2	Ag2
192.168.0.39	0012.a990.2241	Local	--	Vl3	--
192.168.0.39	0012.a990.2241	Local	--	Gi2/0/3	--
192.168.0.1	0012.a990.2241	Local	--	Vl3	--
192.168.0.1	0012.a990.2241	Local	--	Gi2/3/2	--

G!5B _

ARP 4ç †>< Ø +!‰,X ÿ £EÄ V ß Ö

+!‰	£EÄ
IP Address	â.@ Ê Í h,X IP Ä
MAC Address	â IP Í h,X.@ Ê Ä
Type	ARP 2O _ È Ù ÀM- Õ Ã | Õ Ã Ã µ Ï Ã ¯/¡2O _ Ä
Age	ARP : 4 îKS ÊKÈ È) ! ÚJs Ä
Interface	â IP G 6(,X Ý y · Ä
Port	â ARP G6(,X ` 0Ã · Ä

,Ì G Q¸

Q¸	£EÄ
-	-

G ÄAÈ â

Q ¸ Z Æ	(Ë	AÈ â
	10.4 (	10.4 (Ô Ÿ Õ

21.3.5 show arp timeout

/ ¤ Ô y ·,X | Õ ARP ><NM5Õ ê ÊKÈ

show arp timeout

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B ´

Q ¸ õ ã ´?U"

S*ü Û Ð ´

G!5B _

-	-

21.3.7 show ip interface

A¹ Q ¸ Ã ¹ / y ·,X IP (Š Õ µ C Ä Q ¸ ã V ß Ö

show ip interface [*interface-type interface-number*]

	– D	£EÄ
– DAÈ â	*Interface-type*	Û n y ·2O _
	Interface-number	Û n y ·4ê Ë

5 ,ÕG!5B

```
Help address is: 0.0.0.0
Proxy ARP is: ON
Outgoing access list is not set.
Inbound access list is not set.
```

/ 4§ p Ø +!‰,X £EÄ V ß Ö

+!‰	AÈ â
IP interface state is:	5%4° y · Ø b Ã*ü(Š Õ È J ó ·.@ Ê(Š Õ `4“CÃ # A,(Š Õ “UP” Ä
IP interface type is:	/ y ·2O _ È V S • È&• Í&•1 Ä
IP interface MTU is:	/ y ·A’5B,X MTU Ä
IP address is:	/ y · IP `}-Õ µ C Ä
IP address negotiate is:	/ y · IP ú+ # 9‹ k Ä
Forward direct-boardcast is:	/ úE@ ¥ n å S • Ä
ICMP mask reply is:	/ ú ¥EÕ ICMP }-Õ h1(y [Ä
Send ICMP redirect is:	/ ú ¥EÕ ICMP G¡ n å y [Ä
Send ICMP unreachabled is:	/ ú ¥EÕ ICMP á ÃE’ y [Ä
DHCP relay is:	/ ú *ü DHCP 4» Ä
Fast switch is:	/ ú *ü IP ¿Eó x 6 s6Ñ Ä
Route horizontal-split is:	/ ú *ü" G Ú F È î E ¡C±/• åG£ #A,,XCÃ + È „> Ä
Help address is:	/ helper IP Ä
Proxy ARP is:	/ ú *ü ·)Ú ARP Ä
Outgoing access list is	/ y · úG!5B Z Î0-A“KÂ ë>< Ä
Inbound access list is	/ y · úG!5B Z 90-A“KÂ ë>< Ä

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

21.4 ـ ک Ấ

21.4.1 ip default-gateway

?U üA’ Û ÞG!5BT¬Ax5% G È*ü < G!5B Q ¸ip default-gateway ÄA¹ Q ¸,X no 6 ã ôL8 T¬Ax5% G Ä

ip default-gateway

no ip default-gateway

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B 5 ,Õ ÞG!5BT¬Ax5% G

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð V p üA’ Û á-¹F' Ú D B Ù ¥EÕ ¾ Ô þ,Â Û Ê È ÚA¹ D B Ù ¥EÕ T¬Ax5% G Ä Ã S*ü show ip redirects Q ¸ ¹,ßT¬Ax5% GA’5B Ä

G!5B _ ¹ ßG!5B _ $ ÈA’5BT¬Ax5% G 192.168.1.1 Ä

```
ip default-gateway 192.168.1.1
```

,Ì G Q ¸

Q ¸	£EÄ
show ip redirects	/ T¬Ax5% G È ™ ü ` A’ Û Õ Ä

G ÄAÈ â -

Q ¸ Z Æ

(Ë	AÈ â
-	-

22 DHCP ﻣﺪ ﻧ

22.1 DHCP ﻣﺪ Ã ﻣﺪ ﻧ

22.1.1 bootfile

?U n DHCP v 0Ã5 ,Õ | ô £ [Ê á È*ü DHCP "4G!5B Q ¸ bootfile ÄA¹ Q ¸,X no 6 ã Ã ¹ ª#\ n Ä

bootfile *file-name*

no bootfile

– DAÈ â	– D	£EÄ
	file-name	n *ü b |,X [Ê á Ä

5 ,ÕG!5B 5 ,Õ"u Ý n | [Ê á Ä

Q ¸ õ ã DHCP "4G!5B õ ã.

S*ü Û Ð Ý o DHCP v 0Ã ü |E›/ß LÔ?U ßEQ ¡ 02Ï4³ ÃG!5B [Ê1 È DHCP á u < ™NO ¤ o | ÊLÔ?U,X ô £ [Ê á È DHCP v 0Ã ! Ã ¹EîE›,Ì h,X á u < Ä V TFTP Å ßEQ [Ê Ä J W á u <EîE› next-server Q ¸E¯> n Ä

G!5B _ ¹ ßG!5B _ $ È n Z router.conf 0 | [Ê á Ä

```
bootfile router.conf
```

Q ¸	£EÄ
ip dhcp pool	n DHCP "4 á + È JE¯ 9 DHCP "4G!5B õ ã Ä

22.1.2 client-identifier

?U n DHCP v 0Ã,X Ô ÛAš Ä ¹&•Lh Ô,X AE¯ D></ Å È*ü DHCP "4G!5B Q ¸ client-identifier ÄA¹ Q ¸,X.B no 6 ã Ã ¹ ôL8 v 0Ã ÛAš Ä

client-identifier *unique-identifier*

no client-identifier

– DAÈ â	– D	£EÄ
	unique-identifier	DHCP v 0Ã,X ÛAš È¹&•Lh Ô,X AE¯ ></ Ä V Ö 0100.d0f8.2233.b467.6967.6162.6974.4574.6865.726e.6574.302f.31 Ä

5 ,ÕG!5B "u Ý5 ,Õ Ä

Q ¸ õ ã DHCP "4G!5B õ ã Ä

S*ü Û Ð

Ý o DHCP v 0ÃAË" DHCP á u < ÚG! IP Ê È*ü v 0Ã ÛAš5àM2.@ Ê *ü 9 ·>< v 0Ã Ä v 0Ã ÛAš+ f Ÿ2O _ ÃMAC ` y · á/Ä4˜ ä È V MAC 00d0.f822.33b4 Ã y · á/Ä GigabitEthernet 0/1 Í h,X v 0Ã ÛAš 0100.d0f8.2233.b467.6967.6162.6974.4574.6865.726e.6574.302f.31 È J 01 ·>< ¹ þ5% f Ÿ2O _ È 67.6967.6162.6974.4574.6865.726e.6574.302f.31 GigabitEthernet0/1 ,X AE¯ -Õ Ä G b f Ÿ ··Õ,X n È Ã ¹ –?• RFC1700 [7,X Address Resolution Protocol Parameters 0´8V Ä

¾ Ý üE¯> DHCP ¹4¥ n n Ê È ! Ã ¹ S*üA¹ Q ¸ Ä

G!5B _

¹ ßG!5B _ $ È n Z MAC 00d0.f822.33b4 ,X ¹ þ5% DHCP v 0Ã,X v 0Ã ÛAš Ä

```
client-identifier
0100.d0f8.2233.b467.6967.6162.6974.4574.6865.726e.6574.302f.31
```

,Ì G Q ¸

Q ¸	£EÄ
hardware-address	n DHCP v 0Ã,X.@ Ê Ä
host	n IP `5%4° }-Õ Ä*ü bG!5B DHCP ¹4¥ n Ä
ip dhcp pool	n DHCP "4 á + È JE¯ 9 DHCP "4G!5B õ ã Ä

22.1.4 default-router

?U n DHCP v 0Ã,X5 ,Õ5% G È*ü DHCP "4G!5B Q ¸ default-router ÄA¹ Q ¸,X no 6 ã Ã ¹ ôL85 ,Õ5% G,X n Ä

default-router *ip-address* [*ip-address2…ip-address8*]

no default-router

– D	£EÄ
ip-address	n A’ Û,X IP Ä?U" 7Ç åG!5B Ô þ Ä
ip-address2…ip-address8	Ä ÃEÝ Å Ô î Ã ¹G!5B 8 þ5% G Ä

– DAÈ â

5 ÕG!5B

T ±ÿV â

_°?Tr T

– DAÈ â

– D	£EÄ
domain-name	n DHCP v 0Ã,X â4Ô ³ á +0ú Ä

	type	ÛAšDHCP v 0Ã,X.@ Ê G Ä #A, ÈÃ ¹*ü +0ú ê D + n Ä +0ú EÝNM Ö ethernet ieee802 D +EÝNM Ö 1 Ä10M ethernet Å 6 ÄIEEE 802 Å

5 ,ÕG!5B

5 ,Õ"u Ý .@ Ê Ä
V p n .@ Ê Ê"uC³EÝNM È5 ,Õ ethernet Ä

Q ¸ õ ã

DHCP "4G!5B õ ã Ä

S*ü Û Ð

¾ Ý üE¯> DHCP ¹4¥ n n Ê È ! Ã ¹ S*üA¹ Q ¸ Ä

G!5B _

¹ ßG!5B _ $ È n Z2O _ ethernet ,X MAC 00d0.f838.bf3d Ä

```
hardware-address 00d0.f838.bf3d
```

,Ì G Q ¸

Q ¸	£EÄ
client-identifier	n DHCP v 0Ã,X Ô ÛAš Ä ¹&• Lh Ô,X AE¯ D></ Å Ä
host	n IP `5%4° }-Õ Ä*ü bG!5B DHCP ¹4¥ n Ä
ip dhcp pool	n DHCP "4 á + È JE¯ 9 DHCP "4G!5B õ ã Ä

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

22.1.8 host

?U n DHCP v 0Ã ,X IP `5%4° }-Õ È*ü DHCP "4G!5B Q ¸ host ÄA¹ Q ¸,X no 6 ã Ã ¹ ôL8 DHCP v 0Ã IP `5%4° }-Õ,X n Ä

host *ip-address* [*netmask*]

no host

5 ,ÕG!5B	5 ,Õ y · á6ÑEîE› DHCP 9‹ k IP Ä
Q ¸ õ ã	y ·G!5B õ ã
S*ü Û Ð	RGOS EC Ê,XDHCP v 0Ã È üAË" IP Ê ÈE¬?U" DHCP á u < ¤ o h þG!5B – ÃW)ˆ ÌÔ •ã Ó˜±V° ÃW)ˆ ÌÜ ã ÑÎ±V° ÃW)ˆ ŒÍÂ ð P •V°

G!5B _

¹ ßG!5B _ $ È Ú ping ¡ 0 ¥EÕ D B Ù DA' 3 þ Ä

```
ip dhcp ping packets 3
```

,Ì G Q ¸

Q ¸	£EÄ
clear ip dhcp conflict	#ÙL8DHCP Z Æ †0UA„) Ä
ip dhcp ping timeout	G!5BDHCP á u < ping ¡ 01 Y h1(,XCY Ê ÊKÈ Ä ü?˜ n ÊKÈ Y Ý,X ping ÙFÑ"u Ý k h1(ÈAÈ âA¹ Ã ÚG!,X × ú í A„) †0U Ä
show ip dhcp conflict	/ DHCP á u < ü ÚG! Ê È ” # ,X †0U Ä

G ÄAÈ â

´

,Ì G Q¸

Q¸	£EÄ
clear ip dhcp conflict	#ÙL8DHCP Z Æ †0UA„) Ä
ip dhcp ping packets	n DHCP á u < ü ÚG! Ê È ” # †0U,X ping ¡ 0 ¥EÕ,X D B Ù þ D Ä
show ip dhcp conflict	/ DHCP á u < ü ÚG! Ê È ” # ,X †0U Ä

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

22.1.13 ip dhcp pool

?U n Ô þ DHCP "4 á JE¯ 9 DHCP "4,XG!5B õ ã È*ü < G!5B Q¸ ip dhcp pool ÄA¹ Q¸,X no 6 ã Ã ¹ ôL8 DHCP "4 Ä

ip dhcp pool *pool-name*

no ip dhcp pool *pool-name*

– DAÈ â

– D	£EÄ
pool-name	Ã ¹+ +0ú `!7 H D4˜ ä Ä V mypool È ê5Ù 1 Ä

5 ,ÕG!5B 5 ,Õ"u Ý n DHCP "4 Ä

Q¸õ ã < G!5B õ ã Ä

S*ü Û Ð ;> A¹ Q ¸ È îE¯ 9 DHCP "4G!5B õ ã È / Ö

```
Ruijie(dhcp-config)#
```

üE- þG!5B õ ã È Ã ¹G!5B IP 8× È Ã DNS á u < Ã5 ,Õ5% G1 – D Ä

G!5B _ ¹ ßG!5B _ $ È n Z Ô þ á mypool0 ,X DHCP "4 Ä

```
ip dhcp pool mypool0
```

,Ì G Q¸

Q¸	£EÄ
host	n IP `5%4° }-Õ Ä*ü bG!5B DHCP ¹4¥ n Ä

ip dhcp excluded-address	n DHCP á u < á6Ñ ÚG!4- v 0Ã ,X IP Ä
network Ä DHCP Å	n DHCP "4,X5%4° Ë `5%4° } -Õ Ä

,Ì G Q ¸	Q ¸	£EÄ
	ip dhcp pool	n DHCP "4 á + È JE¯ 9 DHCP "4G!5B õ ã Ä

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

WINS á + á u < È*ü DHCP "4G!5B Q ¸ Ã ¹ ôL8 WINS á u < Ä

G!5B _

¹ ßG!5B _ $ È Ú ,EC DHCP v 0Ã,X NetBIOS 8V&•A' á Ü _8V&• Ä

```
netbios-node-type h-node
```

,Ì G Q ¸

Q ¸	£EÄ
ip dhcp pool	n DHCP "4 á + È JE¯ 9 DHCP "4G!5B õ ã Ä
netbios-name-server	G!5B , EŒDHCP v 0Ã NETBIOS ,X WINS á + á u <

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

22.1.17 network ō DHCP ǒ

?U n DHCP "4,X5%4° Ë `5%4° }-Õ È*ü DHCP "4G!5B Q ¸ network ÄA¹ Q ¸,X no 6 ã Ã ¹ ôL8 n Ä

network *net-number net-mask*

no network

– DAÈ â

– D	£EÄ
net-number	DHCP "4,X IP 5%4° Ë Ä
net-mask	DHCP "4,X IP 5%4° }-Õ Ä V p"u Ý n } -Õ È5 ,Õ 7¾' 5%4° }-Õ Ä

5 ,ÕG!5B

5 ,Õ"u Ý n 5%4° Ë `5%4° }-Õ Ä

Q ¸ õ ã

DHCP "4G!5B õ ã Ä

S*ü Û Ð

n „ Î "4,X $5% ž J }-Õ È DHCP á u < ¤ o Z Ô þ Ã ÚG!4- v 0Ã,X 0N KÈ ÄL8M2 Ý f yG!5B È ú í Ý "4 ,X FÑ Ý Ã6Ñ ÚG!4- v 0Ã Ä DHCP ü ÚG! "4 ,X È ÝNN cE¯> ,X È V pA¹ Æ4£ ü DHCP Fz n>< ê5Ù "# A¹ Æ4£ üA¹5%!‰ , ü È " ¹ ß Ô þ È,È ÚG! Ô þ Ý ,X Ä

,X ÚG! ™ ‰ Ã*ü show ip dhcp binding Q ¸ ¹,ß È "# †0U ™ ‰ Ã*ü show ip dhcp conflict Q ¸ ¹,ß Ä

bootfile	n DHCP v 0Ã5 ,Õ | ô £ [Ê á Ä
ip dhcp pool	n DHCP "4 á + È JE¯ 9 DHCP "4G!5B õ ã Ä
ip help-address	y · n Helper Ä
option	G!5BRGOS EC ÊDHCP á u <,XEÝ NM Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

22.1.19 option

?UG!5BDHCP á u <,XEÝNM È*üDHCP "4G!5B Q ¸ option ÄA¹ Q ¸,X no 6 ã Ã ¹ ô L8 option ,X n Ä

option *code* { ascii *string* | hex *string* | ip *ip-address* }

no option

– DAÈ â

– D	£EÄ
code	n DHCP EÝNM ··Õ Ä
ascii *string*	n Ô þ ASCII +0ú Ä
hex *string*	n AE¯ +0ú Ä
ip *ip-address*	n IP ë>< Ä

5 ,ÕG!5B ´5 ,ÕG! 5B Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð DHCP IP

service dhcp

,Ì G Q ¸

Q ¸	£EÄ
show ip dhcp server statistics	/ DHCP á u < Ø/¡4³Au µ C Ä

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

22.2 Ú ↓ ج Ĉ

22.2.1 clear ip dhcp binding

?U#ÙL8DHCP 4¥ n>< È ü(M *ü õ ã*ü clear ip dhcp binding Q ¸ Ä

clear ip dhcp binding { * | *ip-address* }

– DAÈ â

– D	£EÄ
*	ôL8 Ý,X DCHP 4¥ n Ä
ip-address	ôL8 Û n IP ,X4¥ n Ä

5 ,ÕG!5B

´5 ,Õ> Ä

Q ¸ õ ã

(M *ü õ ã

S*ü Û Ð

A¹ Q ¸ ¾ 6Ñ#ÙL8DHCP 7¾ |4¥ n È DHCP ¹4¥ n,X ôL8 Ã ¹EîE› no ip dhcp pool Q ¸ Ä

G!5B _

¹ ß _ $ È#ÙL8 ZIP 192.168.12.100 ,X DHCP 4¥ n Ä

clear ip dhcp binding 192.168.12.100

,Ì G Q ¸

Q ¸	£EÄ
show ip dhcp binding	/ DHCP á u <,X 4¥ n Ä

G ÄAÈ â

´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

22.2.2 clear ip dhcp conflict

?U#ÙL8DHCP †0UA„) È ü(M *ü õ ã*ü clear ip dhcp conflict Q ¸ Ä

clear ip dhcp conflict { * | *ip-address* }

– DAÈ â	– D	£EÄ
	*	ôL8 Ý,X DCHP †0UA„) Ä
	ip-address	ôL8 Û n IP †0UA„) Ä

5 ,ÕG!5B

?U á ! DHCP á u <,XAu D < Èü(M *ü õ ã *ü clear ip dhcp server statistics Q ¸ Ä

clear ip dhcp server statistics

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B ´5 ,Õ> Ä

Q ¸ õ ã (M *ü õ ã

S*ü Û Ð DHCP á u <4³AuAu D ÈA„) Z DHCP "4 Ã7¾ |4¥ n Ã ¹4¥ nE› ó4¥ n,X D,Â È E¬ Í y ` ¥EÕ,X DHCP Ø2O y [D,ÂE¯> Z4³Au Ä clear ip dhcp server statistics Q ¸ Ã ¹ ôL8 Z ÆAu DA„) È ¢ „ Ô Ÿ4³Au Ä

G!5B – ¹ ß _ $ È#ÙL8DHCP á u <,X4³AuA„) Ä

```
clear ip dhcp server statistics
```

,Ì G Q ¸

Q ¸	£EÄ
show ip dhcp server statistics	/ DHCP á u <,X4³AuA„) Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

22.2.4 debug ip dhcp client

?UE¯> DHCP Client ,XA×A© È ü(M *ü õ ã*ü debug ip dhcp client Q ¸ Ä

debug ip dhcp client

no debug ip dhcp client

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B 5 ,Õ GKÁ

Q ¸ õ ã (M *ü õ ã Ä

DHCP Q ¸

Q¸Z Æ	(Ë	AÈ â
	-	-

22.2.6 show dhcp lease

?U / DHCP v 9‹ k,X/³4z µ C È*ü EXEC Q¸ show dhcp lease Ä

show dhcp lease

	AÈ â £EÄÂ ! AÈ â

	-	-

22.2.9 show ip dhcp server statistics

?U / DHCP á u <,X Ø/¡4³Au D B È*ü EXEC Q¸ show ip dhcp server statistics Ä show ip dhcp server statistics

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B ´5 ,Õ> Ä

Q¸õã (M *ü õã

S*ü Û Ð A¹ Q¸Ã ¹ / DHCP á u < ' !,X ØNM4³Au D B Ä

G!5B _

¹ß show ip dhcp server statistics Q¸,XEg Î4§ p Ä

```
Ruijie# show ip dhcp server statistics
Address pools           4
Automatic bindings      4
Manual bindings         0
Expired bindings        0
Malformed messages 2
Message                 Received
BOOTREQUEST             216
DHCPDISCOVER            33
DHCPREQUEST             25
DHCPDECLINE             0
DHCPRELEASE             1
DHCPINFORM              150
Message                 Sent
BOOTREPLY               16
DHCPOFFER               9
DHCPACK                 7
DHCPNAK                 0
```

/ 4§ p Ø +!‰,X ÿ KäEÄ V ß Ä

+!‰	AÈ â
Address pools	"4 þ D
Automatic bindings	7¾ | 4¥ n,X D,Â Ä

Manual bindings	¹ 4¥ n,X D,Â Ä
Expired bindings	E› ó 4¥ n,X D,Â Ä
Malformed messages	DHCP y « á!7 y [,X D,Â Ä
Message Received or Sent	DHCP á u < y ` ¥EÕ!£/¡ y [,X D,Â Ä

,Ì G Q ¸

Q ¸	£EÄ
clear ip dhcp server statistics	ôL8 DHCP á u Ø/¡4³Au D B Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

23 DHCP Relay ﾈﾝ ﾋﾞ

23.1 ﾋﾞ Ã ﾈﾝ ﾋﾞ

23.1.1 ip dhcp relay check server-id

?U ' Ô DHCP Relay ,X check server-id s6Ñ È Ã ¹ S*üA¹ Q ¸ 9 ` ä Ä S*üA¹ Q ¸,X no 6 ã GKÁDHCP Relay ,X check server-id s6Ñ Ä

[no] ip dhcp relay check server-id

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	GKÁ
Q ¸ õ ã	< G!5B õ ã
S*ü Û Ð	EîE›G!5B18 Q ¸ È DHCP Relay üE@ ¥DHCP AË" y [Ê î B option server-id EÝ ½LÔ ?UE@ ¥,XDHCP á u < Ä V p"u ÝG!5BA¹ Q ¸ È Ï å ÝG!5B,X DHCP á u <E@ ¥DHCP AË" y [Ä
G!5B _	¹ ßG!5B _ $ È ' Ô DHCP relay ,X check server-id s6Ñ Ä Ruijie# **configure terminal** Ruijie(config)# **ip dhcp relay check server-id**

,Ì G Q ¸	Q ¸	£EÄ
	Service dhcp	' Ô DHCP 4» ·)Ú

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

23.1.2 ip dhcp relay information option dot1x

LÔ?U ' Ô DHCP Relay ,X option dot1x s6Ñ Ê È Ã ¹ S*ü!8 Q ¸ 9 ` ä Ä S*üA¹ Q ¸,X no 6 ã GKÁA¹ s6Ñ Ä

[no]

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð LÔ?U"¼ æK A¹ Q ¸ G!5B,X ACL â0Ã · Þ Æ4£G!5B,XACL ,X ACE á Ã , ü †0U Ä

¹ ßG!5B _ $ ÈG!5B h*ü dhcp option dot1x acl Ä

```
Ruijie# configure terminal
```

G!5B _

LÔ?U ' ÔDHCP Relay A' Û,X DHCP Relay Aware VRF s6Ñ Ê È Ã ¹ S*üA¹ Q ¸ 9 ` ä Ä S*üA¹ Q ¸,X no 6 ã GKÁA¹ s6Ñ Ä

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	GKÁ

Q ¸ õ ã	< G!5B õ ã

S*ü Û Ð	A¹ s6Ñ ` option82 ž option dot1x á †0U Ä

G!5B _	¹ ßG!5B _ $ È ü DHCP 4»A' Û Þ *ü DHCP Relay Aware VRF s6Ñ Ö Ruijie# **configure terminal** Ruijie(config)#**Ip dhcp relay information option vpn**

,Ì G Q ¸	Q ¸	£EÄ
	ip dhcp relay information option82	G!5B ' Ô DHCP option82 s6Ñ
	ip dhcp relay information option dot1x	G!5B ' Ô DHCP option dot1x s6Ñ

G ÄAÈ â	´

Q ¸ Z Æ	[redacted]	AÈ â
	-	-

23.1.6 ip dhcp relay suppression

?U ü Û n0Ã · Þ ' Ô DHCP Relay e s6Ñ È Ã ¹ S*üA¹ Q ¸ 9 ` ä Ä S*üA¹ Q ¸,X no 6 ã GKÁ0Ã ·,X DHCP relay D

S*ü Û Ð G!5BA¹ Q¸ â È Ú #; A¹0Ã · Þ ,X DHCP AË" y [Ä

G!5B _

¹ ßG!5B _ $ È ' Ô0Ã · 1 Þ,X DHCP relay e s6Ñ Ä

```
Ruijie# configure terminal
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ip dhcp relay suppression
Ruijie(config-if)# exit
Ruijie(config)#
```

,Ì G Q ¸

Q ¸	£EÄ
service dhcp	' Ô DHCP 4» ·)Ú

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

23.1.7 ip helper-address

?U#Ï t Ô þ DHCP á u < È Ã ¹ S*üA¹ Q ¸ 9 ` ä Ä ;> A¹ Q ¸,X no 6 ã È ôL8 Ô þ á u < ÄDHCP á u < Ã ¹ ü < G!5B õ ã ` y ·G!5B õ ã ßG!5B Ä

[no] **ip helper-address** [**vrf** *vrf-name*]*A.B.C.D*

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B "u ÝG!5B á u < Ä

Q ¸ õ ã < G!5B õ ã / y ·G!5B õ ã Ä

S*ü Û Ð

< ê5Ù !£ þ Ý y · Þ Ô î Ã ¹G!5B 20 þ DHCP á u < Ä

ü y · þG!5B DHCP á u < ,X ™ ‰ ß È DHCP Relay G›*ü < DHCP á u < × V p y ·G!5B Z DHCP á u < ÈDHCP Relay ,È y S*ü y · ÞG!5B,X á u < È áG›*ü < á u < Ä

üG!5B vrf – D,X Ê í È Î b < ,XG!5B ` Î b y ·,XG!5B/á Ý á à Ä Î b < ,XG!5B V p á Û n vrf – D ÈT¬Ax á 2 b Ï ) vrf × Î b y ·,XG!5B V p á Û n vrf – D ÈT¬Ax ' ! á u < ` y · 2 b à Ô vrf Ä

G!5B _

¹ ßG!5B _ $ ÈG!5B ø þ á u < Ö

1 ÊG!5B < á u < 192.168.1.1 ×

2 ÊG!5B Î b vrf r _ dep1 ,X á u < 192.168.2.1 ×

```
Ruijie# configure terminal
Ruijie(config)# ip helper-address 192.168.1.1
Ruijie(config)# ip helper-address vrf dep1 192.168.2.1
```

,Ì G Q ¸

Q ¸	£EÄ
service dhcp	' Ô DHCP 4» Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

23.1.8 service dhcp

LÔ?U ü x 6 Þ *ü DHCP 4» s6Ñ Ê È Ã ¹ S*üA¹ Q ¸ 9 ` ä Ä ;> A¹ Q ¸,X no 6 ã G KÁA¹ s6Ñ Ä

[no] service dhcp

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B 5 ,Õ GKÁ

Q ¸ õ ã < G!5B õ ã

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

25 SNTP ﻳﺠ ﻟﻚ

25.1 ﻳ Ẩ ﻳﺠ ﻟﻚ

25.1.1 sntp enable

A¹ Q ¸A’5B ' Ô SNTP s6Ñ È S*ü Q ¸ ,X no EÝNM ÚA¹A’5B 6 á 5 ,Õ —Disable Ä

[no] sntp enable

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	5 ,Õ SNTP (Š Õ Disable
Q ¸ õ ã	< G!5B õ ã
S*ü Û Ð	S*ü show sntp Q ¸ ¹,ß SNTP ,Ì G – D
G!5B _	Ruijie(config)# **sntp enable**

,Ì G Q ¸	Q ¸	£EÄ
	show sntp	/ SNTP ,XG!5B(Š Õ
	clock update-calendar	EC Ê ÊJs à!9.@ Ê ÊJs
	clock set	A’5BEC Ê ÊJs

G ÄAÈ â	EC Ê(RGOS10.0 ¹ Þ

Q ¸ Z Æ	(Ë	AÈ â
	-	-

25.1.2 sntp interval

A¹ Q ¸A’5B SNTP Client LÔ?U n Ê ` NTP/SNTP Server à!9 ÊJs,X ÊKÈKÈLh Ä

sntp interval *seconds*

no sntp interval

– DAÈ â

– D	£EÄ
seconds	n Ê à!9 ,XKÈLh È) ! /¦ 8× È 60 /¦--65535 /¦ Ä

5 ,ÕG!5B 5 ,Õ 1800s

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð

S*ü show sntp Q ¸ ¹,ß SNTP ,Ì G – D Ä

"¼ ã	E-G A'5B¸X ÊKÈKÈLh á î0Ÿ G*ó È V p?U0Ÿ G*ó ÈAËG!5B ` ÊKÈ KÈLh â ;> sntp enable Q ¸ Ä

G!5B _

```
Ruijie(config)# sntp interval 3600
```

,Ì G Q ¸

Q ¸	£EÄ
sntp enable	' Ô SNTP
show sntp	¹,ß SNTP ,X,Ì G – D
clock update-calendar	EC Ê ÊJs à!9.@ Ê ÊJs

G ÄAÈ â EC Ê(RGOS10.0 ¹ Þ

Q ¸ Z Æ

(Ë	AÈ â
-	-

25.1.3 sntp server

A¹ Q ¸A'5B SNTP Server È+ b SNTP #A, ` NTP ` < P • È ¹E- þ Server ` < Ã ¹G! 5B ä internet Þ @*ü,X NTP Server Ä

sntp server ip-addr

no sntp server

– D	£EÄ

Q¸õã	< G!5B õã
S*ü Û Ð	S*ü show sntp Q¸¹,ß SNTP ,Ì G – D
G!5B _	`Ruijie(config)# sntp server 192.168.4.12`

,Ì G Q¸

Q¸	£EÄ
show sntp	/ SNTP ,XG!5B(Š Õ
sntp enable	' Ô SNTP

G ÄAÈ â	EC Ê(RGOS10.0 ¹ Þ

Q¸Z Æ

(Ë	AÈ â
-	-

25.2 Ẩ ڃ Ƈ

25.2.1 show sntp

A¹ Q¸ / SNTP ,X,Ì G – D Ä

X ıI

ntp access-group { peer | serve | serve-only | query-only }*access-list-number* | *access-list-name*

no ntp access-group {peer | serve | serve-only | query-only }*access-list-number* | *access-list-name*

– DAÈ â

– D	£EÄ
peer	¶ AŒ Í NTP á uE¯> ÊKÈAË" ` { ¹A¶ È 3 AŒ A' Û âE°/ß2Ï4³ à!9 ÊKÈ Ä ` <A"KÂ L$ Å Ä
serve	AŒ Í NTP á uE¯> ÊKÈAË" ` { ¹A¶ È á AŒ A' Û âE°/ß2Ï4³ à!9 ÊKÈ Ä
serve-only	™ AŒ Í NTP á uE¯> ÊKÈAË" Ä
query-only	™ AŒ Í NTP á uE¯> { ¹A¶ Ä
access-list-number	IP A"KÂ { ë>< Û Ë ×8× È 1 99 ` 1300 1999
access-list-name	IP A"KÂ { ë>< á Ä

5 ,ÕG!5B

5 ,Õ ™ ‰ß þG!5B Ï) NTP A"KÂ { ?˜ í Ä

Q ¸ õ ã

< G!5B õ ã Ä

S*ü Û Ð

A'5B Í A' Û NTP á u,XA"KÂ { L$ ÄE-G ¤ o Z Ô/¡ Ô ãL$ z,X] < ~ ' È È] <,X •"© S*ü NTP D• ÑP`A• Ä

' Ô þA"KÂAË" E' Ê ÈNTP á u Ý'; ¢ Ô ãA"KÂL$ Ô ûA"KÂL$,XNN c q õ G! ?˜ í È ¹1 Ô þ G! ,X?˜ í š Ä G!NN c peer Ãserve Ãserve-only Ãquery-only Ä

"¼ ã	,Â !2Ï4³ V þ Õ { ¹A¶ s6Ñ Ä<Q' Ý'; ÞEÄNN cE¯> ?˜ í G! È #] ž â { ¹A¶,Ì G,XAË" FÑ ´"© Õ Ä

V p þG!5B Ï)A"KÂ { ?˜ í È í ÝA"KÂFÑ AŒ,X Ä Ô ºG!5B ZA"KÂ { ?˜ í È í ™ Ý?˜ í AŒ,XA"KÂ !6ÑE¯> Ä

G!5B –

¹ ß/ 8× V) AŒ1 1 ËA"KÂ ë>< ,X Í0ÃA' Û Í A' ÛE¯> ÊKÈAË" Ã ¹A¶ { ` ÊKÈ à!9 × JL$ 1 2 ËA"KÂ ë>< ,X Í0ÃA' Û ™6Ñ Í A' ÛE¯> ÊKÈAË" Ä

```
Ruijie(config)# ntp access-group peer 1
Ruijie(config)# ntp access-group serve-only 2
```

¸Ì G Q ¸

Q ¸	£EÄ
ip access-list	ï Î IP A"KÂ { ë>< Ä

G ÄAÈ â

´

NTP

Q ¸ õ ã	< G!5B õ ã Ä
S*ü Û Ð	,Â ! å À ,X2Ï4³ ™ Õ v 0Ã"u Ý á u <0Ã È Õ,X à!9 á u < ÞL$ 20 þ Ä ?UE¯> â á u <,X t šEî µ ÈOj kA'5B < t š šJy ¹ ž < µ Ï šJy È' â Û n Í h,X šJy á u < µ Ï šJy È ! Ã ¹ ¥CK b á u <,X t šEî µ È?U ` ä â á u <,X t š Eî µ?U" á u < Ý,Ì à,X < t š šJy â < µ Ï šJy ü,Ì à ™ ‰ Ä2'.B z Å ß È ì EÝ ½ prefer ÊJsE¯> à!9 G!5BNTP ¥EÕ y [,X$d y ·,X Ê í hA¹"¼ ã Ô ß ÈG!5B,X y · ™NO G!5B Z IP ,X J Ã ¹ ` Í h NTP á u <Eî µ,X y · Ä
G!5B _	¹ ßG!5B _ $ ÈG!5B5%4° Þ,XA' Û NTP server

ü7¾ | à!9,XKÈLh óKÈ È V pLÔ?U ` ä G Ê à!9 È í Ã ¹ S*üA¹ Q ¸ Ä

G!5B _

¹ ßG!5B _ $ ÈE¯> NTP r Ê à!9 Ä

```
Ntp synchronize
```

,Ì G Q ¸

Q ¸	£EÄ
ntp server	Û n Ô þ NTP á u < JE¯> à!9

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

26.1.9 ntp trusted-key

Ú Ô þ ID Í h,X šJyG!5B < µ Ï šJy

ntp trusted-key *key-id*

no ntp trusted-key *key-id*

– DAÈ â

– D	£EÄ
key-id	< µ Ï šJy ID Ä

5 ,ÕG!5B

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B ´5 ,Õ> Ä

Q ¸ õ ã (M *ü õ ã

S*ü Û Đ V p2Ï4³,X NTP á u ' Ô È# / ' !,X NTP µ C È ü1 Ô õ#Ï t à!9 á u < !A¹ Q ¸ á î ' D Ï) µ C Ä

G!5B _ ¹ ß _ $ È / ' !2Ï4³,X NTP µ C Ä

```
show ntp status
```

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

	-	-

27.1.2 ftp-server enable

*ü FTP á u < È S*üA¹ Q ¸,X no 6 ã GKÁ FTP á u < Ä

ftp-server enable

no ftp-server enable

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	T¬Ax GKÁ(Š Õ Ä
Q ¸ õ ã	< G!5B õ ã Ä
S*ü Û Đ	' FTP á u < *ü Ê ÈEîE› FTP v 0Ã Ã ¹ â E² y È JE¯> [Ê Þ ô ê ßEQ1 ¡ 0 Ä "¼ ã ™NO à Ê!5B!8 Q ¸ ` ftp-server topdir Q ¸ !6Ñ S FTP v 0ÃA“KÂ FTP á u < Þ,X [Ê Ä

G!5B _	_ 1 Ö ¹ ß/ 8× V) | FTP á u < JL$ v 0Ã ™6ÑA“KÂ syslog $,Â) Ö
	`Ruijie(config)# ftp-server topdir /syslog`
	`Ruijie(config)#`

ftp-server password [*type*] *password*

no ftp-server password

– DAÈ â

– D	£EÄ
type	n š-Õ ,X t š2O _ Ö 0 ê 7 Ä0 ·>< š-Õ þ t šÄ â [Å × 7 ·>< š-Õ t šE›,X š [Ä
password	á u <,O) š-Õ

5 ,ÕG!5B

T¬Ax ´ š -Õ Ä

Q ¸ õ ã

< G!5B õ ã Ä

S*ü Û Ð

FTP á u < ™NOG!5B,O)*ü á `,O ) š-Õ ¹ " Í v 0ÃE² yE¯> D• ÑP`A• È Ô î ¾6Ñ G!5B Ô þ š-Õ Ä

š-Õ ™NO Ù ÿ +!¡ ê D + È š-Õ ! â Ã ¹ Ý0N È Ú>• Ñ+9 × š-Õ KÈ,X0N 0 š -Õ,X ÔF¼ Ú Ä

â [š-Õ,X Ô ãKS z 1 þ +0ú Ã Ô ûKS z 25 þ +0ú × š [š-Õ,X Ô ãKS z 4 þ + 0ú Ã Ô ûKS z 52 þ +0ú Ä

"¼ ã	FTP á u < á Õ0N š-Õ È V p#ÙL8 Z š-ÕG!5B v 0Ã Ú ´"©EîE› á u <,XD• ÑP`A• Ä

G!5B _

_ 1 Ö ¹ ß/ 8× V)G!5B â [š-Õ pass Ö

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

ê Ö

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

_ 2 Ö ¹ ß/ 8× V)G!5B š [š-Õ 8001 Ö

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

_ 3 Ö ¹ ß/ 8× V) ª#\ š-ÕG!5B Ö

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

¸Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

27.1.4 ftp-server topdir

L$ FTP v 0Ã6Ñ óE¯> [ÊAÏ m ¡ 0,X,Â)8× È Ä S*üA¹ Q ¸,X no 6 ã O i/U!6 v 0Ã A“KÂFTP á u < Þ Ï) [Ê Ä

ftp-server topdir *directory*

no ftp-server topdir

– DAÈ â	– D	£EÄ
	directory	FTP v 0Ã6Ñ óE¯> ¡ 0,XNJ ,Â)

5 ,ÕG!5B T¬Ax ´NJ ,Â)A’5B Ä á AŒAÏ m Ï),Â) Å Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð FTP á u <NJ ,Â)L$ n Z v 0Ã,O) â Ã ¹A“KÂ,X [Ê,Â)8× È Ä ™NO!7.B Û nNJ ,Â) !6ÑA} FTP v 0ÃA“KÂ FTP á u < Þ,X [Ê Ä
8¹"u ÝG!5BA¹ Q ¸ ÈFTP v 0Ã Ú ´"©A“KÂ á u < Þ Ï) [Ê ê,Â) Ä

G!5B _ _ 1 Ö ¹ ß/ 8× V) | FTP á u < JL$ v 0Ã ™6ÑA“KÂ syslog $,Â) Ö

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

er 1.930e

no ftp-server timeout

– DAÈ â

– D	£EÄ
time	0NKÆ ÊL$ Ä) ! Ö ÚJs ×8× È Ö1-3600Å

5 ,ÕG!5B T¬Ax ÊL$ 30 ÚJs Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð

G!5BFTP îA±,X0NKÆ ÊL$ ÄV p ' ! îA± ü Û n,X ÊL$ "u ÝE¯> Ï) ¡ 0Ä îA±0NKÆ ÅÈ FTP á u < G ÃAx E² y Æ4£ È5à • Ô âA¹*ü ,XE² y Ä

"¼ ã îA±,X0NKÆ ÊKÈ Û ü Ô þFTP îA± ¢ Þ õ FTP ¡ 0 ` ä â ß õ FTP ¡ 0 Ô Ÿ KÈ,X ÊKÈ Ä á u < ü Ô þ FTP Q ¸ á u ` ä â Ä V Ô þ [Ê <F¼ ôEg `!© â Å ¢ 0 Ô ŸAu1k îA±0NKÆ ÊKÈ × ü ß þ Q ¸ 9,X Ê í 0!6Au1k îA±0NKÆ ÊKÈ Ä ´!8 îA±0NKÆ ÊL$,XG!5B J á î Í ¤ o5ë Ê,X [Ê ôEg ¡ 0 ú 9 Ï) E ¡ Ä

G!5B –

_ 1 Ö ¹ ß/ 8× V)G!5B0NKÆ ÊL$ 5 ÚJs Ö

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

_ 2 Ö ¹ ß/ 8× V) 6 á0NKÆ ÊL$ T¬Ax Ä30 ÚJs Å Ö

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

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

27.1.6 ftp-server username

G!5BFTP á u <,X,O)*ü á È S*üA¹ Q ¸,X no 6 ã ª#*ü áG!5B Ä

ftp-server username *username*

no ftp-server username

– DAÈ â

– D	£EÄ
username	,O)*ü á

5 ,ÕG!5B T¬Ax ´*ü á Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð

G!5B v 0Ã,OL FTP á u < ÊLÔ?U ¤ o,X*ü á Ä v 0Ã,O) ÊLÔ?U à Ê ¤ o!7.B,X*ü á ` š-Õ !6Ñ,O) Ä

*ü á Ô ûKS z 64 þ +0ú È KÈ á AŒ Ý0N Ä*ü á Ã ¹+ 8Å [+!¡ Ã ?¦ D + ` ?¦0ú Ë4˜ ä ÄFTP á u < Ô î ¾6ÑG!5B Ô þ*ü á Ä

"¼ ã FTP á u < á Õ á*ü ,O) È V p#ÙL8 Z*ü áG!5B v 0Ã Ú ´ "©EîE› á u <,XD• ÑP`A• Ä

G!5B _

_ 1 Ö ¹ ß/ 8× V)G!5B*ü á user Ö

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

_ 2 Ö ¹ ß/ 8× V) ª#*ü áG!5B Ö

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

,Ì G Q ¸

Q ¸	£EÄ

Q¸õã (M *ü õã Ä

S*ü Û Ð

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

28.1.3 udp-helper enable

udp-helper enable Q ¸*ü 9 | UDP S • y [,X 4»E@ ¥ s6Ñ Äno udp-helper enable Q ¸*ü 9 GKÁ UDP S • y [,X 4»E@ ¥ s6Ñ Ä

5 ,Õ ™ ‰ ß ÈUDP S • y [,X 4»E@ ¥ Ø b GKÁ(Š Õ Ä

udp-helper enable

no udp-helper enable

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	5 ,Õ UDP S • y [,X 4»E@ ¥ Ø b GKÁ(Š Õ

Q ¸ õ ã	< G!5B õ ã

S*ü Û Ð	' Ô UDP-Helper ,X 4»E@ ¥ s6Ñ È íT¬Ax Í 69,53,37,137,138,49 ,X UDP S • y [E¯ > 4»E@ ¥ Ä

G!5B _	ßM6,X _ $	UDP 4»E@ ¥ s6Ñ Ö `Ruijie(config)# udp-helper enable`

,Ì G Q ¸	Q ¸	£EÄ
	ip forward-protocol	G!5BLÔ?U 4»E@ ¥,ØDP 0Ã ·

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

no snmp-server chassis-id

– DAÈ â

– D	£EÄ
text	2Ï4³ c ë Ë,X [È Ã ¹ S D + ê +0ú Ä

5 ,ÕG!5B c ë Ë5 ,Õ 60FF60

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð SNMP 2Ï 4³ c ë Ë Ô8 S*ü <,X c ë Ë È ¹ " ÍA' ÛE¯> Aš ÿ Ä2Ï4³ c ë Ë Ã ¹EîE›
show snmp Q ¸ ¹,ß Ä

G!5B _ ßM6,X/ _ Û n SNMP ,X2Ï4³ c ë Ë 123456:

```
Ruijie(config)# snmp-server chassis-id 123456
```

,Ì G Q ¸

Q ¸	£EÄ
show snmp	¹,ß SNMP ,X4³Au µ C

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

29.1.3 snmp-server community

?U Û n SNMP ¶ ',XA"KÂ +0ú ÈAË ;> < G!5B Q ¸ snmp-server community ÄA¹ Q ¸,X no 6 ã ª#\ Û n SNMP ¶ ',XA"KÂ +0ú Ä

snmp-server community *string* [view *view-name*] [[ro | rw] [host *ipaddr*]] [number ipv6 ipv6-aclname][aclnum | aclname]

no snmp-server community *string*

– DAÈ â

– D	£EÄ
string	¶ ' +0ú Ê ' b NMS ` SNMP ·)Ú KÈ,XEî µ š-Õ Ä
view-name	Û n?š Ò,X á/Ä È*ü b Î b?š Ò,X1u)Ú Ä
ro	Û n NMS Í MIB ,X ¬G£ ¾6ÑAÏ È á6Ñ Â Ä
rw	NMS Í MIB ,X ¬G£ ÃAÏ Ã m Ä

aclnumber	A“KÂ ë>< c ë Ë Ä1-99 Å È G6(Û n,XA“KÂ ë>< È Û n6ÑA“KÂMIB ,X ipv4 NMS 8× È Ä
aclname	A“KÂ ë>< á/Ä È G6(Û n,XA“KÂ ë>< È Û n6ÑA“KÂ MIB ,X ipv4 NMS 8× È Ä
ipv6_aclname	ipv6 A“KÂ ë>< á/Ä È G6(Û n,XA“KÂ ë>< È Û n6ÑA“ KÂMIB ,X ipv6 NMS 8× È Ä
ipaddr	G6(NMS È Û nA“KÂ MIB ,X NMS Ä

5 ,ÕG!5B Ý ¶ ' 5 ,Õ ¾AÏ

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð A¹ Q ¸ *üA' Û SNMP ·)Ú s6Ñ,X1 Ô þG¡?U Q ¸ È Û n Z ¶ ',X 2 û Ã ÆA“KÂ MIB ,X NMS 8× È1 1 Ä

?U GKÁSNMP ·)Ú s6Ñ È ;> no snmp-server Q ¸ G Ã Ä

G!5B _ ßM6,X/ _ S*üA“KÂ ë><L$ Í MIB ,XA“KÂ È ¾ AŒ 192.168.12.1 ,X NMS Í MIB ,XA“KÂ Ö

```
Ruijie(config)# access-list 2 permit 192.168.12.1
Ruijie(config)# access-list 2 deny any
Ruijie(config)# snmp-server community public ro 2
```

,Ì G Q ¸

Q ¸	£EÄ
access-list	n A“KÂ ë><

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

29.1.4 snmp-server contact

?U Û n SNMP 2Ï4³6(2Ï • ã ÈAË ;> < G!5B Q ¸ snmp-server contact ÄA¹ Q ¸,X no 6 ã ôL8 Û n,X SNMP 2Ï4³6(2Ï • ã Ä

snmp-server contact *text*

no snmp-server contact

– D	

S*ü Û Ð A¹ Q¸™NO â< G!5B Q¸ snmp-server host ÔCK S*ü È !6Ñ ¥EÕLKL #\ C Ä

G!5B _

ßM6,X/ _ *ü |¥EÕ SNMP _ ÊLKL #\ C Ö

```
Ruijie(config)# snmp-server enable traps snmp
Ruijie(config)# snmp-server host 192.168.12.219 public snmp
```

,Ì G Q¸

Q¸	£EÄ
snmp-server host	Û n SNMP

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

29.1.6 snmp-server group

?UA'5BSNMP *ü 4˜ ÈAË ;> < G!5B Q¸ snmp-server group ÄA¹ Q¸,X no 6 ã ôL8*ü 4˜ Ä

snmp-server group *groupname* {v1 | v2c | v3 {auth | noauth | priv}} [read *readview*][write *writeview*] [access {[ipv6 ipv6_aclname] [aclnum | aclname]num | name}]

no snmp-server group *groupname* {v1 | v2c | v3 }

– DAÈ â

– D	£EÄ
v1 | v2c |v3	Û â SNMP (Ä
auth	A¹4˜,X*ü ôEg,X#\ CLÔ?UP`A• D B áLÔ?U ± š È ¾ Í v3 Ý Ä
noauth	A¹4˜*ü ôEg,X#\ C áLÔ?UP`A• D B 3 áLÔ?U ± š È ¾ Í v3 Ý Ä
priv	A¹4˜*ü ôEg,X#\ CLÔ?UP`A• à Ê ôEg,X D BLÔ?U ± š È ¾ Í v3 Ý Ä
readview	G6(Ô þ ¾AÏ,X?š Ò Ä
writeview	G6(Ô þAÏ m?š Ò Ä
aclnum	A"KÂ ë>< c ë Ë È G6(Û n,XA"KÂ ë>< È Û n6ÑA"KÂ MIB ,X ipv4 NMS 8× È Ä
aclname	A"KÂ ë>< á/Ä È G6(Û n,XA"KÂ ë>< È Û n6ÑA"KÂ MIB ,X ipv4 NMS 8× È Ä

ipv6 A“KÂ ë>< á/Ä È G6(Û n,XA“KÂ ë>< È Û n6ÑA“ KÂMIB ,X

Q ¸ õ ã	< G!5B õ ã
S*ü Û Đ	´

SNMP

?U *ü SNMP 2Ï4³G¡CKEî-¹ s6Ñ ÈAË ;> < G!5B Q¸ snmp-server system-shutdown Ä A¹ Q¸,X no 6 ã ª#\ GKÁ SNMP 2Ï4³Eî-¹ s6Ñ Ä

snmp-server system-shutdown

no snmp-server system-shutdown

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B GKÁSNMP 2Ï4³G¡CKEî-¹ s6Ñ

Q¸õ ã < G!5B õ ã

S*ü Û Ð S*üA¹ Q¸ *ü SNMP 2Ï4³G¡CKEî-¹ s6Ñ È RGOS î üA' Û reload/reboot ¹ !4- NMS ¥EÕLKL #\ CEî-¹2Ï4³G¡CK Ä

G!5B – ßM6,X/ _ *ü SNMP 2Ï4³G¡CK s6Ñ Ö

```
Ruijie(config)# snmp-server system-shutdown
```

,Ì G Q¸

Q¸	£EÄ
-	-

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

29.1.12 snmp-server trap-source

?U Û n SNMP ,X$d ÈAË ;> < G!5B Q¸ snmp-server trap-source ÄA¹ Q¸,X no 6 ã 6 á5 ,ÕA'5B Ä

snmp-server trap-source *interface*

no snmp-server trap-source

– DAÈ â

– D	£EÄ
interface	*ü b 0 SNMP $d ,X y ·

5 ,ÕG!5B SNMP y [¢ ¾ þ y · Î • È S*ü ¾ þ y ·,X IP 0 $d Ä

Q¸õã	< G!5B õã
S*üÛÐ	5,Õ™ ‰ß È SNMP y[¢¾þy·Î•È S*ü¾þy·,X IP 0 $d È Z “b1u)Ú `Aš ÿ È Ã¹ S*üA¹ Q¸Î n S*ü Ô þ IP 0 SNMP ,X$d Ä
G!5B _	ßM6,X/ _Û n¹þ5%· 0 IP 0 SNMP $d Ö `Ruijie(config)# snmp-server trap-source fastethernet 0`

,Ì G Q¸

Q¸	£EÄ
snmp-server enable traps	*ü |¥EÕLKL #\ C
snmp-server enable host	Û n NMS ,X

G ÄAÈâ	´

Q¸Z Æ

(Ë	AÈâ
-	-

29.1.13 snmp-server trap-timeout

?U n LKL #\ CG¡¥,XCY Ê ÊKÈ ÈAË ;> < G!5B Q¸ snmp-server trap-timeout ÄA¹ Q¸ ,X no 6ã6 áT¬Ax Ä

snmp-server trap-timeout *seconds*

no snmp-server trap-timeout

– DAÈâ

– D	£EÄ
seconds	CY Ê ÊKÈ È)! /¦ È ª 8× È Ö1 – 1000 Ä

5,ÕG!5B	30 /¦
Q¸õã	< G!5B õã
S*üÛÐ	´
G!5B _	ßM6,X/ _Û nCY Ê ÊKÈ 60 /¦ Ö `Ruijie(config)# snmp-server trap-timeout 60`

Q¸	£EÄ
snmp-server queue-length	Û nLKL #\ CKó ëKS z

aclnum	A“KÂ ë><c ë Ë È G6(Û n,XA“KÂ ë>< È Û n6ÑA“KÂ MIB ,X ipv4 NMS 8× È Ä
aclname	A“KÂ ë><á/Ä È G6(Û n,XA“KÂ ë>< È Û n6ÑA“KÂ MIB ,X ipv4 NMS 8× È Ä
Ipv6_aclname	ipv6 A“KÂë>< á/Ä È G6(Û n,XA“KÂ ë>< È Û n6ÑA“ KÂMIB ,X ipv6 NMS 8× È Ä

5 ,ÕG!5B 5 ,Õ"u Ý A’5B*ü Ä

Q¸õã < G!5B õã

S*ü Û Ð ´

G!5B _ ßM6,X/ _A’5B Ô þ snmpV3 *ü È S*ü md5 AxA• È ` S*ü DES t š Ö

```
Ruijie(config)# snmp-server user user-2 mib2user v3 auth md5 authpassstr priv des56 despassstr
```

,Ì G Q¸

Q¸	£EÄ
show snmp user	/ SNMP *ü G!5B µ C

G ÄAÈâ ´

Q¸Z Æ

(Ë	AÈâ
-	-

29.1.15 snmp-server view

?UA’5BSNMP ?š Ò ÈAË ;> < G!5B Q¸ snmp-server view ÄA¹ Q¸,X no 6 ã ôL8?š Ò Ä

snmp-server view *view-name oid-tree* {include | exclude }

no snmp-server view *view-name* [*oid-tree*]

–DAÈâ

–D	£EÄ
view-name	?š Ò á Ä
oid-tree	?š Ò G6(,X MIB ÍB5 È Ô É MIB $ å Ä
include	Û âA¹ MIB ÍB5 $ å>• Ù ÿ ü?š Ò Y Ä
exclude	Û âA¹ MIB ÍB5 $ å>• fL8 ü?š Ò ê Ä

5 ,ÕG!5B 5 ,ÕA'5B Ô þ default ?š Ò È AŒA"KÂ Ý,X MIB ÍB5 Ä

Q¸õã < G!5B õ ã

S*ü Û Ð ´

G!5B _ ßM6,X/ _A'5B Ô þ?š Ò È Ù À Ý,X MIB-2 $ å Äoid 1.3.6.1 Å Ö

```
Ruijie(config)# snmp-server view mib2 1.3.6.1 include
```

,Ì G Q¸

Q¸	£EÄ
show snmp view	/ SNMP ?š ÒG!5B µ C

G ÄAÈ â ´

(Ë	AÈ â

show snmp mib / 2Ï4³ Õ,X snmp mib µ C ×
show snmp user / snmp *ü µ C ×
show snmp view / snmp ?š Ò µ C ×
show snmp group / snmp *ü 4˜ µ C ×
show snmp host / *ü G!5B,X / µ C ×

ßM6,X/ _ SNMP ,X Ô þ4³Au µ C Ö

G!5B _

```
Ruijie# show snmp
Chassis: 60FF60
0 SNMP packets input
0 Bad SNMP version errors
0 Unknown community name
0 Illegal operation for community name supplied
0 Encoding errors
0 Number of requested variables
0 Number of altered variables
0 Get-request PDUs
0 Get-next PDUs
0 Set-request PDUs
0 SNMP packets output
0 Too big errors (Maximum packet size 1500)
0 No such name errors
0 Bad values errors
0 General errors
0 Response PDUs
0 Trap PDUs
SNMP global trap: disabled
SNMP logging: disabled
SNMP agent: enabled
```

,Ì G Q¸

Q¸	£EÄ
snmp-server *chassis-id*	SNMP 2Ï4³ c ë Ë

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

30 RMON ﻳﺠ ﻟ

30.1 ﻳ Ẩ ﻳﺠ ﻟ

30.1.1 rmon alarm

?U,¥ { ¤ þ MIB ¬G£ S*üA¹ Q ¸ Ä S*ü no 6 ã ª#\A„) Ä

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

no rmon alarm *number*

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	´
Q ¸ õ ã	< G!5B õ ã
S*ü Û Ð	ü RGOS ECÊ È AŒ Í Æ4£G!5B,X ¹ þ5%4°,X Z Æ µ CE¯> Â È Ù À variable Ã absolute/delta Ãowner Ãinterval Ãrising-threadhold/falling-threadhold ž J Í h,X event 1 G!5B µ C È LÔ?U"¼ ã,X E- oG!5B µ C J á G Ê*ó È5à Ê Ê ß Ô õ,¥ { _ Ê?º ¥,X Ê í È ! î*ó ×
G!5B _	¹ ß _ $ È,¥ { MIB ¬G£ r _ ifInNUcastPkts.6 Ä `Ruijie(config)#` **`rmon alarm`** *`10 1.3.6.1.2.1.2.2.1.12.6 30`* **`delta rising-threshold`** *`20 1`* **`falling-threshold`** *`10 1`* **`owner`** *`zhangsan`*

,Ì G Q ¸	Q ¸	£EÄ
	rmon event *number* [log] [trap *community*] [*description-string*]	#Ï t Ô þ _ Ê n

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B ´

Q ¸ õ ã y ·G!5B õ ã

S*ü Û Ð ´

G!5B _

¹ ß _ $ È S | Ã ¹,¥ { ¹ þ5%0Ã · 1 ,X4³Au µ C Ä

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

,Ì G Q ¸

Q ¸	£EÄ
rmon collection history *index* [owner *owner-name*]buckets *bucket-number* interval *seconds*	#Ï t Ô þ Z Æ { ><NM

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â

S*ü Û Ð ´

¹ ß _ $

G!5B _

```
Event type : log-and-trap
Community : public
Last time sent : 0d:0h:0m:0s
Owner : zhangsan
Log : 1
Log time : 0d:0h:37m:47s
Log description : ipttl
Log : 2
Log time : 0d:0h:38m:56s
Log description : ipttl
```

Q ¸	£EÄ
rmon alarm *number variable interval* {absolute | delta } rising-threshold *value* [*event-number*] falling-threshold *value* [*event-number*] [owner *ownername*]	#Ï t Ô þA: ><NM

G ÄAÈ â ´

(Ë	AÈ â
-	-

30.2.2 show rmon event

?U / 4³Au>< µ C Ä

show rmon event

show rmon ..56 Tw4 -19.62 r..5604n q 0 841.98 595.2 -841.98 re W n 0.852 g 141.6 404.48 155.

```
Ruijie#  show rmon event
Alarm : 1
Interval : 1
Variable : 1.3.6.1.2.1.4.2.0
Sample type : absolute
Last value : 64
Startup alarm : 3
Rising threshold : 10
Falling threshold : 22
Rising event : 0
Falling event : 0
Owner : zhangsan
```

G!5B _

¹ß_$ È /4³Au>< µC Ö

```
Ruijie#  show rmon history
Entry : 1
Data source : Gi1/1
Buckets requested : 65535
Buckets granted : 10
Interval : 1
Owner : zhangsan
Sample : 198
Interval start : 0d:0h:15m:0s
DropEvents : 0
Octets : 67988
Pkts : 726
BroadcastPkts : 502
MulticastPkts : 189
CRCAlignErrors : 0
UndersizePkts : 0
OversizePkts : 0
Fragments : 0
Jabbers : 0
Collisions : 0
Utilization : 0
```

,Ì G Q¸

Q¸	£EÄ
rmon collection history *index* [owner *ownername*] [buckets *bucket-number*] [interval *seconds*]	#Ï t Ô þ Z Æ { ><NM

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

30.2.4 show rmon statistics

?U /4³Au>< µC Ä

show rmon statictics

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B

TCP

Foreign Address	E°0Ã â0Ã · Ë Ä Ô â Ô þ“.” âM6,X D + 0Ã · Ë Ä!¨ V “2002::2.23” â“192.168.195.212.23” ,X “23” 0Ã · Ë Ä
PMTU	PMTU ,X

,Ì G Q¸

Q¸	£EÄ
Ip tcp path-mtu-discovery	' Ô TCP ,X PMTU ¥)„ s6Ñ

G ÄAÈ â

Ý G ÄFÑ Õ Ä

Q¸Z Æ

(Ë	AÈ â
10.4	„ r Q¸

32 RIP ﻣﻴ ﻟ

32.1 ﻳ Ẩ ﻣﻴ ﻟ

32.1.1 auto-summary (RIP)

?U *ü RIP CÃ+ 7¾ |" s6Ñ È*üCÃ+ #A,G!5B Q ¸ auto-summary ÄA¹ Q ¸,X no 6 ã G KÁCÃ+ 7¾ |" s6Ñ Ä

auto-summary

no auto-summary

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	5 ,Õ *ü 7¾ |" s6Ñ Ä
Q ¸ õ ã	CÃ+ E¯/ßG!5B õ ã Ä
S*ü Û Đ	RIP CÃ+7¾ |" È ' $5%CÃ+ 0SC^ Ý2O5%4°E•+ Ê È Ú7¾ \|" ä Ý2O5%4°CÃ+ Ä RIPv1 ` RIPv2 5 ,Õ ™ ‰ ß ÚE¯> CÃ+ 7¾ \|" Ä RIP ,XCÃ+ 7¾ \|" s6Ñ È¤P¬ Z5%4°,X 4ý û ` Ý û ÄV p Ý" CÃ+ , ü È ü)pĐ± tÝBÅc,Õ ž60 > €K Ù + Đ x6) AD.Æ$r&5,Õ ™AR_ <2¼ü' ÁP4´ð Á$,×>À!'`ĐĐ¡4,Õ + 7¾ |" Ä

,Ì G Q ¸

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

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

32.1.2 bfd all-interfaces (RIP)

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

bfd all-interfaces

no bfd all-interfaces

– DAÈ â

– D	£EÄ

5 ,ÕG!5B GKÁ

Q ¸ õ ã CÃ+ E¯/ßG!5B õ ã Ä

S*ü Û Ð

ü RIP Þ | BFD ”# s6Ñ â È Ú î RIP CÃ+ µ C$đRIP CÃ+ È „ y [,X$d) Î 0ŸBFD îA± È Ô º BFD F• È RIP 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 ÈE- !6Ñ üF• KÈ Î0Ÿ BFD îA± Ä

| 3 Ã ¹EîE› y ·G!5B õ ã Q ¸ ip rip bfd [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-interfaces Q ¸ Ä

G!5B _ ´

Q ¸	£EÄ

ip rip bfd [disable]	G!5BE¤ RIP ,X Û n y · | ê5Ù G KÁ S*üBFD E¯> JÒCÃ ”# Ä

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

32.1.3 default-metric (RIP)

?U n RIP 5 ,Õ,XG£ z ÈAË S*üCÃ+ G!5B Q¸ default-metric ÄA¹ Q¸,X no 6 ã 6 á5 ,ÕG!5B Ä

default-metric *metric-value*

no default-metric

– DAÈ â

– D	£EÄ
metric-value	5 ,Õ,XG£ z È Ý 1 16 Ä V p *metric-value* û b1 b 16 ÈRGOS ÚAx A¹CÃ+ á ÃE’ Ä

5 ,ÕG!5B 5 ,Õ 1 Ä

Q¸õ ã CÃ+ E¯/ßG!5B õ ã Ä

S*ü Û Đ A¹ Q¸LÔ?U âCÃ+ #A,G!5B Q¸ redistribute 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,,XG£ zAu1k ,X á P • û ÈCÃ+ G£ z ´"©E@ 6 Ä ´!8 üE@ 6 Ê ÈLÔ?U n G¡ Ú ×CÃ+ ü RIP CÃ+ ³ ,XG£ z Ä V p G¡ Ú × Ô þCÃ+ #A,E¯/ß Ê È"u Ý â.B n G£ z È RIP Ú S*ü default-metric n ,XG£ z × V p Ý â.B n G£ z ÈA¹ Ú?Z,ª default-metric n ,XG£ z Ä áG!5BA¹ Q¸ í default-metric 5 ,Õ 1 Ä

G!5B _

¹ ß,XG! 5B _ $ ÈRIP CÃ+ #A, Í OSPF CÃ+ #A, : ,XCÃ+ E¯> ZG¡ „ Ú × ÈE- oG¡ Ú ×CÃ+ ,X ñ Ÿ RIP G£ z A’5B 3 Ä

```
Ruijie(config)# router rip
Ruijie(config-router)# default-metric 3
Ruijie(config-router)# redistribute ospf 100
```

,Ì G Q¸

Q¸	£EÄ

"¼ ã	V p RIP E¯ß6Ñ óEîE› Q ¸*ó ä5 ,ÕCÃ+ ÈFw RIP Ú á a : 4F• Eî ,X5 ,ÕCÃ+ Ä Í b ip default-network *ó ä,X5 ,ÕCÃ+ È ¡' LÔ?U S*ü default-information originate Q ¸ !6Ñ ó>• é 9 RIP Ä

G!5B _

¹ ß,XG! 5B _ $ {*ó Ô 55 ,ÕCÃ+ RIP CÃ+ >< Ä

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

Y È í h*ü,Ì h,X1u)ÚC±/• È ú íA¹CÃ+ h*ü RIP A'5B,X1u)ÚC±/• Ä

¹ ß,XG! 5B _ $ ÈÚG!5B RIP CÃ+ 1u)ÚC±/• 160, J Û n ¢ 192.168.12.1 : 4 ,XCÃ+ ,X1u)ÚC±/• 123

G!5B _

```
Ruijie(config)# router rip
Ruijie(config-router)# distance 160
Ruijie(config-router)# distance 123 192.168.12.1 0.0.0.0
```

„ y [E¯> Ø)Ú Ä V p"u Û n y · È Í Ý,X y · y ,XCÃ+ È „ y [E¯> Ø)Ú Ä

G!5B _

¹ ß,XG! 5B _ $ ÈRIP Í ¢ Fastethernet 0/0 0Ã · y ,XCÃ+ ÈE¯> Z { Ø)Ú È¾ AŒ y 172.16 Ô ,XCÃ+ Ä

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

Q¸	£EÄ
access-list	n A“KÂ ë><?˜ í Ä n !4Ô ë>< Ä prefix82 0]TJ /TT1 1 Tf ( )Tj 261 TfE

,Ì G Q¸

connected	(ÃEÝ)A¹ Ú × ë><ÈCÃ+ È „Eî { ¾ h*ü ü ¢,È E² é 9,XCÃ+ Ä
isis [*area-tag*]	(ÃEÝ)A¹ Ú × ë><ÈCÃ+ È „Eî { ¾ h*ü ü ¢ isis é 9,XCÃ+ È*area-tag* Û n K ' ¤ þ isis r _ Ä
ospf *process-id*	(ÃEÝ)A¹ Ú × ë><ÈCÃ+ È „Eî { ¾ h*ü ü ¢ ospf é 9,XCÃ+ È*process-id* Û n K ' ¤ þ ospf r _ Ä
rip	(ÃEÝ)A¹ Ú × ë><ÈCÃ+ È „Eî { ¾ h*ü ü rip CÃ + Ä
static	(ÃEÝ)A¹ Ú × ë><ÈCÃ+ È „Eî { ¾ h*ü ü ¢M-Õ é 9,XCÃ+ Ä

5 ,ÕG!5B 5 ,Õ"u Ý { CÃ+ È „Eî Ä

Q¸õã CÃ+ E¯/ßG!5B õ ã Ä

S*ü Û Ð V pA¹ Q ¸ áC³ Ï) ÃEÝ – D ÈCÃ+ È „Eî { Í Ý y ·CK 0*ü × V pC³ y ·EÝNM È CÃ+ 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

G!5B _

¹ ß,XG! 5B _ $ ÈRIP CÃ+ E¯/ß ¾ Í êEî 192.168.12.0/24 CÃ+ Ä

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

,Ì G Q¸

Q¸	£EÄ
access-list	n A“KÂ ë><?˜ í Ä
prefix-list	n !4Ô ë>< Ä
redistribute	G!5BCÃ+ G¡ Ú × Ä

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

32.1.8 exit-address-family

?UEÔ Î £G!5B õ ã È ü £G!5B õ ã ß S*ü exit-address-family Q ¸ Ä

exit-address-family

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B A¹ Q ¸´ T¬Ax> êT¬Ax

Q ¸ õ ã £G! 5B õ ã Ä

S*ü Û Ð ü £ G!5B õ ã ß S*üA¹ Q ¸EÔ Î £G!5B õ ã Ä
A¹ Q ¸ Ã ¹>•4ý m exit Ä

G!5B _ ¹ ß,XG! 5B _ $ È / Z V)E¯ 9 `EÔ Î £G!5B $ õ ã Ö

```
Ruijie(config-router)# address-family ipv4 vrf vpn1
Ruijie(config-router-af)# exit-address-family
```

,Ì G Q ¸

Q ¸	£EÄ
address-family	E¯ 9 £G!5B $ õ ã Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

32.1.9 ip rip authentication key-chain

?U *ü RIP AxA• È J Û n RIP AxA• S*ü,X šJy È*ü y ·G!5B Q ¸ ip rip authentication key-chain ÄA¹ Q ¸,X no 6 ã ôL8 Û n,X šJy Ä

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

no ip rip authentication key-chain

– DAÈ â

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

5 ,ÕG!5B	5 ,Õ þ G 6(šJy Ä
Q ¸ õ ã	y ·G!5B õ ã Ä
S*ü Û Đ	V p šJy ü y ·G!5B Û n Z È "u Ý ý*ü key chain < G!5B Q ¸E¯> A¹ šJy ,X n È Ú áE¯> RIP D B ÙAxA• Ä RIPv1 á Õ RIP D B ÙAxA• È ¾ Ý RIPv2 Õ Ä

G!5B _	¹ ß,XG! 5B _ $ ÈSerial 0 y · *ü Z RIP AxA• È G6(,X šJy ripchain Ä
	`Ruijie(config)# interface serial 0/0`
	`Ruijie(config-if)# ip rip authentication key-chain ripchain`

text	RIP AxA• õ ã â [AxA• Ä
md5	RIP AxA• õ ã MD5 AxA• Ä

5 ,ÕG!5B 5 ,Õ â [AxA• õ ã Ä

Q¸õ ã y ·G!5B õ ã Ä

S*ü Û Ð

'G!5B RIP AxA• Ê È ÝLÔ?U,È y x 6 RIP CÃ+ µ C,XA' Û È G!5B,X RIP AxA• õ ã ™ NO Ô7È È ú íRIP D B Ù x 6 Ú Bù Ä

V pG›*ü â [AxA• È þG!5B â [AxA• +0ú È ê5Ù þG!5B G6(šJy È ê5Ù G6(Z š Jy šJy rL þG!5B È!8 Ê J á î ÝAxA•> ¥*ó Ä à È V pG›*ü MD5 AxA• È þG!5B G6(šJy È ê5Ù G6(Z šJy šJy rL þG!5B È 3 á î ÝAxA•> ¥*ó Ä RIPv1 á Õ RIP D B ÙAxA• È ¾ ÝRIPv2 Õ Ä

G!5B _

¹ ß,XG! 5B _ $ ÈSerial 0 y ·,X RIP AxA• õ ãA' MD5 Ä

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

,Ì G Q¸

Q¸	£EÄ
ip rip authentication key-chain	*ü RIP AxA• È J Û n RIP AxA• S *ü,X šJy Ä ¾ Ý RIPv2 Õ RIP D B ÙAxA• Ä
ip rip authentication text-password	*ü RIP AxA• È JA'5B RIP â [AxA• +0ú Ä ¾ Ý RIPv2 Õ RIP D B Ù AxA• Ä
key chain	ï Î šJy È JE¯ 9 šJy G!5B õ ã Ä

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

32.1.11 ip rip authentication text-password

RIP

5 ,ÕG!5B

Q ¸ õ ã y ·G!5B õ ã Ä

S*ü Û Ð ü ¤ y · G!5B ZA¹ Q ¸ â È î {*ó Ô 55 ,ÕCÃ+ È J ¢A¹ y ·Eî !8CÃ+ Ä V p à Ê G!5B Z y · ß,X ip rip default-information ` RIP E¯/ß,X default-information originate È í ¾Eî y ·G!5B,X5 ,ÕCÃ+ Ä

"¼ ã ¾?U Ý Ôþ y ·G!5B Z ip rip default-information ÈRIP á a : 4 F• Eî ,X5 ,ÕCÃ+ Ä

G!5B _ ¹ ß,XG! 5B _ $ È ü y ·t0/0C2_0 1 Tf 0 Tc 0 Tw 15.29002 Tc D35>ED09BE4F14CE35>6<350E2CD5

G!5B _

¹ ß,XG! 5B _ $ È S k Fastethernet 0/0 y ·/U!6 y RIP ,X D B Ù Ä

```
Ruijie(config)# interface fastethernet 0/0
Ruijie(config-if)# no ip rip receive enable
```

,Ì G Q ¸

Q ¸	£EÄ
ip rip send enable	AŒ ê/U!6 y · ¥EÕ RIP D B Ù
passive-interface	G!5BRIP >• | y ·

G ÄAÈ â

´

Q¸Z Æ	(Ë	AÈ â
	-	-

32.1.17 ip rip send supernet-routes

?U AŒRIP ü Ô þ Û n y · Þ ¥EÕ RIP CY5%CÃ+ È*ü y ·G!5B Qp¸rip send supernet-routes ÄA¹ Q¸,X no 6 ã/U!6 RIP ü Ô þ Û n y · Þ ¥EÕ RIP CY5%CÃ+ Ä

ip rip send supernet-routes

no ip rip send supernet-routes

– DAÈ â	– D	£EÄ

5¸ÕG!5B 5¸Õ AŒy · ¥EÕ RIP CY5%CÃ+

Q¸õã y ·G!5B õã

S*ü Û Ð ' RIPv1 CÃ+ A' Û,¥ RIPv2 CÃ+ ¡h y [Ê È V p,¥ CY5%CÃ+ µC È+ b RIPv1 î Ú y [CÃ+ µC,X $5% }-Õ Ñ+9 È ¢5à : 4 JíAÃ,XCÃ+ Ä ¹ÈE-/¡ ™ ‰ ß ÈLÔ ?U ü RIPv2 CÃ+ A' Û S*üA¹ Q¸,X no 6 ã/U!6 ü,Ì h y ·Eî CY5%CÃ+ Ä Q¸™ 0*ü bG!5B Z!8 Q¸,X y · Ä

AÈ â	A¹ Q¸™ ü y · ¥EÕ RIPv2 y [Ê Ý È*ü b { CY5%CÃ+ ,X ¥EÕ Ä

G!5B _ ¹ß,XG! 5B _ $ È S k Fastethernet 0/0 y ·/U!6 ¥EÕ RIP ,XCY5%CÃ+ Ä

```
Ruijie(config)# interface fastethernet 0/0
Ruijie(config-if)# no ip rip send supernet-routes
```

,Ì G Q¸	Q¸	£EÄ
	ip rip send enable	AŒ ê/U!6 y · ¥EÕ RIP D B Ù
	version	G!5BA' ÛE¤> ,XRIP (

G ÄAÈ â ´

Q¸Z Æ	(Ë	AÈ â
	-	-

32.1.18 ip rip send version

?U n RIP

no ip rip split-horizon

– D	£EÄ

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B 5 ,Õ> ª ‡ b version Q¸,XG!5B Ä

Q¸õ ã y ·G!5B õ ã Ä

S*ü Û Ð A¹ Q¸,X G!5B4§ p È Ã ¹?Z,ª*ü vesion 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 ,XG!5B Ä

G!5B _ ¹ß,XG! 5B _ $ È S k Fastethernet 0/0 y · ¹ S • ¥EÕ RIPv2 y [Ä

```
Ruijie(config)# interface fastethernet 0/0
Ruijie(config-if)# ip rip v2-broadcast
```

,Ì G Q¸

Q¸	£EÄ
Version	n Ý y · ¥,X RIP D B Ù,X5 ,Õ(Ä

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

32.1.22 network (RIP)

?U n RIP CÃ+ E¯/ß?UEî ,X5%4° ë>< ÈAË S*üCÃ+ E¯/ßG!5B Qŋetwork ÄA¹ Q¸,X no 6 ã ôL8 Æ n ,X5%4° Ä

network *network-number* [*wildcard*]

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

– DAÈ â	– D	£EÄ
	network-number	,ÈE²5%4°X5%4° Ë ÄA¹5%4° Ë 7¾' 2O5%4° Ë ÈP 2 bA¹7¾' 5%4°,X Ý y ·FÑ Ã ¥EÕ ` y RIP D B Ù Ä
	wildcard	n IP !¨EW!¨(M ! È 0 ></ 2'.B G! È 1 >< á . !¨EW Ä

5 ,ÕG!5B ´

Q¸õã CÃ+ E¯/ßG!5B õ ã Ä

S*ü Û Ð

*ü Ã¹ à ÊG!5B *network-number* ` *wildcard* – D ÈS: üA¹ 8× È Y,X y · – â RIP E¤> Ä

V p þG!5B *wildcard* – D ÈRGOS ÚT¬Ax Ý'; Ý2O 8× È 9 Ø)Ú È S: üA¹ Ý2O 8× È Y,X y · – â RIP E¤> Ä

¾ Ý y · : ü RIP n ,X5%4° ë><ÈA¹ y · ! Ã¹ Í ê ¥EÕ RIP CÃ+ È „ y [È J y RIP CÃ+ È „ y [Ä

G!5B _

¹ß,XG! 5B _ $ È n Z â RIP G6(,X ø þ5%4° Ë È AŒ: ü 192.168.12.0/24 ` 172.16.0.0/24 8× È Y,X y · – â RIP E¤> Ö

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

,Ì G Q¸

Q¸	£EÄ
-	-

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
10.4(1)	r t *wildcard* – D

32.1.23 neighbor (RIP)

?U n RIP F• ,X IP È Ã¹*üCÃ+ E¯/ßG!5B Q¸ neighbor ÄA¹ Q¸,X no 6 ã ôL8F• n Ä

neighbor *ip-address*

no neighbor

– DAÈ â

– D	£EÄ
ip-address	F• ,X IP Ä hA¹ A' Û,ÈE²5%4° Ä

5 ,ÕG!5B 5 ,Õ"u Ý n F• Ä

Q ¸ õ ã	CÃ+ E¯/ßG!5B õ ã
S*ü Û Ð	RIPv1 5 ,Õ S*ü IP S • Ä 255.255.255.255 ÅEî CÃ+ µ C È RIPv2 5 ,Õ S*ü4˜ • Ä224.0.0.9 ÅEî 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 ÈÃ ¹*üCÃ+ E¯/ßG!5B Q ¸ passive-interface 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 { Ú á î ¥EÕAË" y [Ä
G!5B _	Q ¸ S*ü _ Ä ¹ ß,XG!5B _ $ È n Z RIP ¾ åF•

5¸ÕG!5B	5¸Õ"u Ý Û n offset Ä
Q¸õã	CÃ+ E¯/ßG!5B õ ã Ä
S*ü Û 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

G!5B _	¹ ß,XG! 5B _ $ È ü acl 7 Û n,X8× È Y,X RIP CÃ+ ! î Í metric r t 7 Ä
	`Ruijie(config-router)# offset-list 7 out 7`
	¹ ß,XG!5B _ $ ÈEîE› fastEthernet1/0 : 4,X ü acl 8 Û n,X8× È Y,X RIP CÃ+ ! î Í metric r t 7 Ä
	`Ruijie(config-router)# offset-list 7 in 7`
	`Ruijie(config-router)# offset-list 8 in 7 fastEthernet 1/0`

¸Ì G Q¸	Q¸	£EÄ
	-	-

G ÄAÈâ	´

Q¸Z Æ	(Ë	AÈâ
	-	-

32.1.25 output-delay

?U ¬ RIP È„y [,X ¥EÕ Ê Ê ÈAË S*üCÃ+ E¯/ßG!5B Q¸

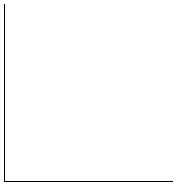
output-delay ÈA¹ Q¸,X no 6 ã ª#\ Í È„y [,X ¥EÕ Ê ÊA'5B Ä

output-delay *delay*

no output-delay

–DAÈâ	–D	£EÄ
	delay	A'5B y [KÈ ¥EÕ Ê Ê È) ! !¿/¦ È8× È <8-50>

5¸ÕG!5B	5¸ÕA'5B ´ ¥EÕ Ê Ê Ä
Q¸õã	CÃ+ E¯/ßG!5B õ ã Ä



û b 25 È îEîE› 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 output-delay Q ¸ r tP¬EóA’ Û,X y [KÈ

rip receive enable 9{ Ä

G!5B _

¹ß,XG! 5B _ $A'5B Ý y · passive õ ã È' âA'5B ethernet0/0 M2 passive õ ã

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

,Ì G Q¸

Q¸	£EÄ
ip rip receive enable	AŒ ê/U!6 y · y RIP D B Ù
ip rip send enable	AŒ ê/U!6 y · ¥EÕ RIP D B Ù

G ÄAÈ â ´

(Ë	AÈ â

metric *metric-value*	A’5BG¡ Ú ¥,XCÃ+ ,Xmetric ÈEîE› metric-value Û n metric û ã È ª 8× È Ö1-16
route-map *route-map-name*	A’5BG¡ Ú ×E›$¸?˜ í

5 ,ÕG!5B

5 ,Õ ™ ‰ß È

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 × â,XCÃ+ ,X metric 5 ,Õ 1 ×

5 ,Õ á G6(route-map Ä

Q ¸ õ ã

CÃ+ E¯/ßG!5B õ ã Ä

S*ü Û Ð

S*üA¹ Q ¸ Ú êF¼CÃ+ µ CG¡ Ú × RIP Ä

CÃ+ G¡ Ú × Ê È Ú Ô þCÃ+ #A,,XG£ zE@ 6 ä º Ô/¡CÃ+ #A,,XG£ z "u Ý ™?U,X È ´ á àCÃ+ #A, G›*ü,XG£ zAu1k •"© ` < á à,X Ä RIP G£ zAu1k Î bCÇ D È OSPF Î b ú ‘ È ´!8 W ÀAu1k Î 9,XG£ z "u Ý Ã!¨ û,X Ä CÃ+ G¡ Ú × Ê È œ ™NO?U A’5B Ô þB5 U û,XG£ z È ú íCÃ+ G¡ Ú × Ú Bù Ä

G!5BG¡ Ú ×isis CÃ+ Ê È á ú level – D Ê ÈT¬Ax ¾ AŒG¡ Ú ¥level-2 ,XCÃ+ È8¹ ñ Ÿ

G!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

G!5BG¡ Ú ×ospf CÃ+ Ê Èá 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

✎ "¼ ã	G¡ Ú × Q ¸ á6Ñ Ú J ª #A,,X5 ,ÕCÃ+ é 9 RIP È V p?U é 95 ,ÕCÃ+ RIP ÈAË S*üdefault-information originate Q ¸ Ä

G!5B _

¹ ß Q ¸ ÚG¡ Ú ×M- ÕCÃ+ RIP Y

```
Ruijie(config-router)# redistribute static
```

,Ì G Q ¸

Q ¸	£EÄ
default-metric *metric*	A’5BG¡ Ú ×CÃ+ ,X5 ,Õ zG£
default-information originate	ü RIP E¯/ß {*ó5 ,ÕCÃ+

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

32.1.28 router rip

?U ï Î RIP CÃ+ E¯/ß JE¯ 9CÃ+ E¯/ßG!5B õ ã ÈAË S*ü < G!5B Q¸ router rip ÄA¹ Q¸,X no 6 ã ôL8 RIP CÃ+ E¯/ß Ä

router rip

no router rip

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B "u Ý RIP CÃ+ E¯/ß üE¤> Ä

Q¸õ ã < G!5B õ ã Ä

S*ü Û Ð Ô þ RIP CÃ+ E¯/ß È7Ç å?U n Ô þ5%4° Ë Ä V p Ö!94“CÃ ÞE¤> | ÕCÃ+ #A, ÈLÔ?U ü Ö!9 y ·G!5B async default routing Ä

G!5B _ ¹ ß,XG! 5B _ $ ÈAÈ â Z V) ï Î RIP CÃ+ E¯/ß È JE¯ 9CÃ+ E¯/ßG!5B õ ã Ä

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

,Ì G Q¸

Q¸	£EÄ
network (RIP)	n RIP E¯/ß,X5%4° Ë Ä

G ÄAÈ â ´

Q¸Z Æ	(Ë	AÈ â
	-	-

32.1.29 timers basic

?UA× HRIP ,X ÊJs ÈAË S*üCÃ+ E¯/ßG!5B Q¸timers basic ÄA¹ Q¸,X no 6 ã 6 á5 ,ÕG! 5B Ä

timers basic *update invalid flush*

no timers basic

– DAÈ â	– D	£EÄ

update	CÃ+ È „ ÊKÈ È¹/¦Au Ä update n ZA’ Û ¥EÕCÃ+ È „ y [,X < ó È£ y È „ y [È invalid ` flush ÊJs á ! Ä5 ,Õ!£Lh 30 /¦ ¥EÕ Ô õCÃ+ È „ y [Ä CÃ+ ´ ÊKÈ È ¹/¦Au È ¢ ÔE¥ Ô õ Ý È „ y [Ô ŸAu Ê Äinvalid n ZCÃ+ >< CÃ+ ´"u Ý È „5à ¬ ´ ,X ÊKÈ ÄCÃ+ ´ ÊKÈ7Ç å hA¹ CÃ+ È „ Ê KÈ,X Ý á È V p üCÃ+ ´ ÊKÈ Y"u Ý y Ï) È „ y [È,Ì h,XCÃ+ Ú ¬ ´ ÈE¯ 9 invalid (Š Õ × invalid ÊKÈ Y y CÃ+ È „ y [È ÊJs î á ! Ä Invalid

	-	-

32.1.30 validate-update-source

Í y ,X RIP CÃ+ È „ y [,X$d ÈE¯> Ý ûP`A• ÈAË S*üCÃ+ E¯/ßG!5B Q ¸ validate-update-source

32.1.31 version (RIP)

?U n H þA’ Û,X RIP (Ë ÈAË S*üCÃ+ E¯/ßG!5B Q ¸ version ÄA¹ Q ¸,X no 6 ã 6 á 5 ,ÕG!5B Ä

version {1 | 2}

no version

– DAÈ â

– D	£EÄ
1	n RIP (Ë 1 Ä
2	n RIP (Ë 2 Ä

5 ,ÕG!5B

5 ,Õ Ã ¹ y RIPv1 ` RIPv2 ,XCÃ+ È „ y [È ¾ ¥EÕ RIPv1 ,XCÃ+ È „ y [Ä

Q ¸ õ ã

CÃ+ E¯/ßG!5B õ ã Ä

S*ü Û Ð

*ü b n H þA’ Û RIP E¤> ,X(Ë Ä Ã ¹*ü ip rip receive version Ãip rip send version Q ¸ È Í!£ þ y · Ø)Ú ¾ þ(,X RIP y [E¯> G¡ „ n Ä

G!5B _

¹ ß,XG! 5B _ $ È Ú RIP ,X(ËA’5B 2 Ä

32.2.1 show ip rip

?U / RIP CÃ+ #A, #E¯/ß,X Î µ C ÈAË S*ü show ip rip Ä

show ip rip [vrf *vrf-name*]

– DAÈ â	– D	£EÄ
	vrf *vrf-name*	Ä ÃEÝ Å / Û n VRF ,X RIP µ C

5 ,ÕG!5B ´

Q¸õã (M õã Ã < G!5B õã ÃCÃ+ E¯/ßG!5B õã Ä

S*ü Û Ð Ã*ü b ¿ Eó / RIP CÃ+ #A,E¯/ß,X Ý þAu Ê < ÃCÃ+ Ú¥ ÃCÃ+ G¡ Ú¥(Š Õ Ã y · rip (Ã rip y · â5%4°8× È Ãmetric â distance 1 Ä
V Û n VRF ÈE¬ î / VRF ,X á/Ä ž VRF-id

G!5B –

_ 1 Ö¹ ß,XG!5B _ $ È / RIP CÃ+ #A,E¯/ß,X Î µ C È V È „ ÊKÈ Ã1u)ÚC±/•1 Ä

```
Ruijie# show ip rip
Routing Protocol is "rip"
Sending updates every 10 seconds
Invalid after 20 seconds, flushed after 10 seconds
Outgoing update filter list for all interface is: not set
Incoming update filter list for all interface is: not set
Default redistribution metric is 2
Redistributing: connected
Default version control: send version 2, receive version 2
Interface            Send  Recv
FastEthernet 1/1      2     2
FastEthernet 1/0      2     2
Routing for Networks:
192.168.26.0 255.255.255.0
192.168.64.0 255.255.255.0
Distance: (default is 50)
```

_ 2 Ö¹ ß,XG!5B _ $ È Û n Z vrf È / ,Ì h,X RIP r _,X Î µ C Ö

```
Ruijie(config-router)# sh ip rip vrf 1
VRF 1  VRF-id:1
Routing Protocol is "rip"
Sending updates every 30 seconds
```

```
Invalid after 180 seconds, flushed after 120 seconds
Outgoing update filter list for all interface is: not set
Incoming update filter list for all interface is: not set
Default redistribution metric is 1
Redistributing:
Default version control: send version 1, receive any version
Routing for Networks:
Distance: (default is 120)
```

¸Ì G Q¸

Q¸	£EÄ
-	-

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

32.2.2 show ip rip database

?U / RIP CÃ+ D B g CÃ+ " µ DQ c˜´¯ÀÀ“ 01 Â «æå>ÌÀ P ¹â

192.168.02 0 0(/effffau)-6(to-summary)]TJ 66.8</MCID 0 >>1DC /TT20 -1.76 TD

vrf *vrf-name*	Ä ÃEÝ Å / Û n VRF ,X RIP êF¼CÃ+
process-name	*ü b Û n ISIS ,X r _ á/Ä

– DAÈ â

– D	£EÄ
vrf *vrf-name*	Ä ÃEÝ Å / Û n VRF ,X RIP y ·

5 ,ÕG!5B ´

Q¸õã (M õã Ã< G!5B õã ÃCÃ+ E¯/ßG!5B õã Ä

S*ü Û Ð A¹Q¸*ü b / RIP y·µC È8¹á,ü RIP y·Èíá / Ï)µC Ä

G!5B _

¹ß,XG! 5B _ $ È / RIP ,X y·µC Ä

```
Ruijie# show ip rip interface
FastEthernet 1/0 is up, line protocol is up
  Routing Protocol: RIP
    Receive RIPv2 packets only
    Send RIPv2 packets only
    Passive interface: Disabled
    Split horizon: Enabled
    V2 Broadcast: Disabled
    Multicast registe: Registed
    Interface Summary Rip:
    Not Configured
    Authentication mode: Text
    Authentication key-chain: ripk1
    Authentication text-password: ruijie
    Default-information: only, metric 5
    IP interface address:
      192.168.64.100/24, next update due in 14 seconds
      2.2.1.1/24, next update due in 24 seconds
        neighbor 2.2.1.6, next update due in 3 seconds
        neighbor 2.2.1.77, next update due in 13 seconds
      2.2.2.57/24, next update due in 16 seconds
```

V p *ü RIP â BFD 6(|ÈFw 3îrt / BFD µC:

```
Ruijie#show ip rip interface
VLAN 1 is up, line protocol is up
  Routing Protocol: RIP
    Receive RIPv1 and RIPv2 packets
    Send RIPv1 packets only
    Receive RIP packet: Enabled
```

```
Send RIP packet: Enabled
Send RIP supernet routes: Enabled
Passive interface: Disabled
Split horizon: Enabled
BFD: Enabled
V2 Broadcast: Disabled
Multicast registe: Registed
Interface Summary Rip:
  Not Configured
IP interface address:
  2.2.2.111/24, next update due in 14 seconds
```

¸Ì G Q¸

Q¸	£EÄ
show ip rip	/ ' !E¤> ,XCÃ+ #A,E¯/ß,X µ C

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

32.2.5 show ip rip peer

RIP : 4 ,X RIP ,XCÃ+ µ C$d(RIP CÃ+ È „ y [,X$d) A„) Z ,?U µ C È ¹ • "*ü ,¥ { ÈE- oCÃ+ µ C$d>•/Ä RIP F• µ C ÈV p?U / RIP F• µ C È AË S*üshow ip rip peer Ä

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

– DAÈ â

– D	£EÄ
ip-address	Ä ÃEÝ Å / Û n,X RIP F•
vrf *vrf-name*	Ä ÃEÝ Å / Û n VRF ,X RIP y ·

5 ,ÕG!5B ´

Q¸õ ã (M õ ã Ã < G!5B õ ã ÃCÃ+ E¯/ßG!5B õ ã Ä

S*ü Û Ð A¹ Q¸*ü b / RIP F• µ C È8¹ á , ü RIP F• È í á / Ï) µ C Ä

G!5B _

¹ß,XG!5B _ $ È / RIP ,XF• µ C Ä

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

,Ì G Q¸

Q¸	£EÄ
show ip rip	/ ' !E¤> ,XCÃ+ #A,E¯/ß,X µ C

G ÄAÈ â ´

(Ë	AÈ â

Q ¸ Z Æ	(Ë	AÈ â
	10.4(1)	„ r Q ¸ é 9

33.1.2 area authentication

?U *ü OSPF ³AxA• ÈAË S*üCÃ+ E¯/ßG!5B Q ¸ area authentication ÄA¹ Q ¸,X no 6 ã GKÁOSPF ³AxA• Ä

area *area-id* authentication [*message-digest*]

no area *area-id* authentication

– DAÈ â	– 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
	message-digest	Ä ÃEÝ ÅG›*üMD5 Ämessage digest 5 ÅAxA• õ ã Ä

5 ,ÕG!5B 5 ,Õ"u Ý G›*üAxA• Ä

Q ¸ õ ã CÃ+ E¯/ßG!5B õ ã Ä

S*ü Û Ð

RGOS EC Ê Ã ¹ Õ Ý/¡AxA•2O _ ÖÍ Å2O _ Ì Èá?U" AxA• È"u Ý*üA¹ Q ¸ *ü OSPF AxA• ÈOSPF D B Ù ,XAxA•2O _ Ì × Î Å2O _ Í È â [AxA• õ ã ÈG!5BA¹ Q ¸ Ê È "u Ý S*ü message-digest EÝNM × Ï Å2O _ Î È MD5 AxA• õ ã ÈG!5BA¹ Q ¸ Ê È S*ü message-digest EÝNM Ä

Ô þ OSPF ³ Ý,XCÃ+ A' Û È ™NOG›*ü à Ô/¡AxA•2O _ Ä V p *ü ZAxA• ÈE¬ ™NO ü ÝE² yF• ,X y ·G!5BAxA• · ¸ Äy ·G!5B Q ¸ ip ospf authentication-key Ã ¹G!5B â [AxA• · ¸ ×y ·G!5B Q ¸ ip ospf message-digest-key Ã ¹G!5B MD5 AxA• · ¸ Ä

G!5B _

¹ ß,XG! 5B _ $ ÈOSPF CÃ+ E¯/ß,X ³ 0 ÄP| F ³ ÅG›*ü MD5 AxA• ÈAxA• · ¸ backbone Ä

```
Ruijie(config)# interface FastEthernet 0/0
Ruijie(config-if)# ip address 192.168.12.1 255.255.255.0
Ruijie(config-if)# ip ospf message-digest-key 1 md5 backbone
# G!5BOSPF CÃ+ #A,
Ruijie(config)# router ospf 1
Ruijie(config-router)# network 192.168.12.0 0.0.0.255 area 0
Ruijie(config-router)# area 0 authentication message-digest
```

,Ì G Q ¸	Q ¸	£EÄ

ip ospf authentication-key	n OSPF â [AxA• · ¸ Ä
ip ospf message-digest-key	n OSPF MD5 AxA• · ¸ Ä
area virtual-link	n <. ³JÒCÃ Ä

G ÄAÈ â ´

Q ¸ Z Æ	**(Ë**	**AÈ â**
	-	-

33.1.3 area default-cost

?U n Eî 4- STUB ³ ê5Ù NSSA are109j /C2_0

Q¸	£EÄ
area stub	Ú Ô þ OSPF ³A’ !_ ³ Ä

	-	-

G ÄAÈ â ´

Q ¸ Z Æ	**(Ë**	**AÈ â**
	-	-

33.1.5 area nssa

?U Ú Ô þOSPF ³A'5B NSSA ÈAË S*üCÃ+ E¯/ßG!5B Q ¸area nssa ÄA¹ Q ¸,X no 6 ã ôL8 NSSA ³ ê NSSA ³,XG!5B Ä

area *area-id* nssa [no-redistribution] [default-information-originate [metric *value* | metric-type <*1-2*>]] [no-summary[eT0 1 TTf 0.2435 Tw 4 0 Td [(no-)8(14 0 Td (nssy)Tj /TT0 c 0.0008 T

+ á¥× NSSA ÄA¹EÝNMEî *ü b NSSA ,XCÃ+ A' Û ¶ ASBR œ ABR ,X Ê í È W Ã ¹L !6 êF¼CÃ+ µ CE¯ 9 NSSA Ä

ZE¯ Ô!9 £ å ¥EÕ NSSA ³ ,XJÒCÃ(Š Õ S • ÄLSA Å,X DG£ È Ã ¹ ü ABR Þ G!5Bno-summary 2 û ÐU!6 ABR å NSSA ³ Y ¥EÕ summary LSAsÄType-3 LSA ÅÄ º ê area default-cost *ü üE² y üA¹ NSSA ³,XE•+ CÃ+ A' Û ABR Þ ÄA¹ Q ¸G!5B ³E•+ CÃ+ A' Û ¥EÕ NSSA ³,X5 ,ÕCÃ+ ,X8…C Ä5 ,Õ ™ ‰ ß È ¥EÕ NSSA 5 ,ÕCÃ+ ,X8…C 1 Ä

G!5B _

¹ ß,XG! 5B _ $ È Ú ³ 1 A'5B !_ ³ È Ý 2 bA¹ ³,XCÃ+ A' ÛFÑ ™NOG!5B Ä

```
Ruijie(config)# router ospf 1
Ruijie(config-router)# network 172.16.0.0 0.0.255.255area 0
Ruijie(config-router)# network 192.168.12.0 0.0.0.255area 1
Ruijie(config-router)# area 1 nssa
```

,Ì G Q¸

Q¸	£EÄ
area default-cost	n Eî 4- NSSA 5 ,Õ" 6.CÃ+ ,X8…C ÄOSPF ,XG£ z Å Ä

G ÄAÈ â

´

Q¸Z Æ

(Ë	AÈ â
-	-

33.1.6 area range

?UG!5BOSPF ³ KÈ,XCÃ+ " 6. ÈAË S*üCÃ+ E¯/ßG!5B Q¸ area range ÄA¹ Q¸,X no 6 ã ôL8 ÆG!5B,XCÃ+ " 6. Èno !4Ô â cost – D4˜ Ü Ã ¹ 6 á" 6.CÃ+ T¬Ax,X zG£ È á î ôL8CÃ+ " 6. Ä

area *area-id* range *ip-address net-mask* [advertise | not-advertise] [cost *cost*]

no area *area-id* range *ip-address net-mask* [cost]

– DAÈ â

– D	£EÄ
area-id	Û n?U"¼9" 6.CÃ+ ,X OSPF ³ Ë Ä ³ Ë Ã ¹ Ô þ E¯ H D È 3 Ã ¹ Ô þ IP Ä
ip-address net-mask	n " 6.CÃ+ ,X5%!‰ Ä
advertise | not-advertise	n ú?U @ ×A¹" 6.CÃ+
cost *cost*	A'5B" 6.CÃ+ ,X zG£ È ª 8× È Ö 0-16777215

5 ,ÕG!5B

5 ,Õ"u Ý G!5B ³KÈ" 6.CÃ+ Ä

5 ,Õ @ ×G!5B,X" 6.8× È Ä

" 6.CÃ+ ,XT¬Ax zG£ â ú P • RFC1583 Ý G È V pG!5B Z P • RFC1583 õ ã ÈT¬Ax zG£ >•" 6.,XCÃ+ cost ,X Ô ã Ëú íT¬Ax zG£ >•" 6.,XCÃ+ cost ,X Ô û Ä

Q ¸ õ ã

CÃ+ E¯/ßG!5B õ ã Ä

S*ü Û Ð

A¹ Q ¸ ¾ 6Ñ 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' 5Badvertise ` not-advertise EÝNM 9 ‡ n ú @ ×E- þ" 6.8× È ÈCK #; `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" È J èNM,Â,È y Ý Ù ÿ G2Ï,X Ê í ÈCÃ+ B ÔKS G! s í.B n>• " ,X area range ,X Ä

G!5B _

¹ ß,XG! 5B _ $ È Ú ³ Í,XCÃ+ " 6. ä Ô 5CÃ+ 172.16.16.0/20 Ä

```
Ruijie(config)# router ospf 1
Ruijie(config-router)# network 172.16.0.0 0.0.15.255 area 0
Ruijie(config-router)# network 172.16.17.0 0.0.15.255area 1
Ruijie(config-router)# area 1 range 172.16.16.0 255.255.240.0
```

,Ì G Q ¸

Q ¸	£EÄ
discard-route	AŒdiscard CÃ+ #Ï t CÃ+ >< Ä
summary-address	G!5BOSPF êF¼CÃ+ " 6. Ä

G ÄAÈ â

´

(Ë	

	– D	£EÄ
– DAÈ â	*area-id*	STUB ³,X ³ Ë Ä
	no-summary	Ä ÃEÝ ÅL !6 ABR T!_ ³ ¥EÕ5%4° ,?UJÒCÃEî È !8 Ê!_ ³ Ã/Ä <!_ ³ Ä ¾ Ý ABR !LÔ?UG!5BA¹ – D Ä

5 ,ÕG!5B

5 ,Õ"u Ý n !_ ³ Ä

Q ¸ õ ã

CÃ+ E¯/ßG!5B õ ã Ä

S*ü Û Ð

OSPF !_ ³ Y Ý,XCÃ+ A' ÛFÑ ™NO ;> area stub Q ¸ ÄABR ¾ å!_ ³ ¥EÕ Ý/¡JÒCÃ (Š Õ £EÄ(LSA) Ö1 Å2O _ 1 ÈCÃ+ A' Û LSA ×2 Å2O _ 2 È5%4°LSA ×3 Å2O _ 3 È5%4° ,?U LSA Ä ¢CÃ+ ><?¦ z,ß È!_ ³ ,XCÃ+ A' Û ¾6Ñ : 4 OSPF CÃ+ ³ YF¼,XCÃ+ È Ù À+ ABR {*ó,XPF ÓYF¼5 ,ÕCÃ+ Ä!_ ³,XCÃ+ A' Û á6Ñ :

?U n OSPF <. ³JÒCÃ ÈAË S*üCÃ+ E¯/ßG!5B Q ąarea virtual-link ÄA¹ Q ¸,X no 6 ã ô L8<. ³JÒCÃ,X n Ä

area *area-id* virtual-link *router-id* [authentication [message-digest | null]] [dead-interval *seconds*] [hello-interval *seconds*] [retransmit-interval *seconds*] [transmit-delay *seconds*] [[authentication-key *key*] | [message-digest-key *key-id* md5 *key*]]

no area *area-id* virtual-link *router-id*

– DAÈ â

– D	£EÄ
area-id	OSPF E›#õ ³ Ë Ä ³ Ë Ã ¹ Ô þ E¯ H D È 3 Ã ¹ Ô þ IP Ä
router-id	<. ³JÒCÃF• ,XCÃ+ A’ Û ÛAš ÄCÃ+ A’ Û></ Ã ¹Eî E› show ip ospf Q ¸ ¹,ß Ä
dead-interval *seconds*	Ä ÃEÝÅ n w F• ö ÊKÈ È ¹/¦) ! È ª 8× È Ö1-65535 ÄA¹ – D ™NO âF• ± Õ Ô7È Ä
hello-interval *seconds*	Ä ÃEÝ ÅOSPF T<. ³JÒCÃ ¥EÕHello y [,X ÊKÈKÈ Lh È ¹/¦) ! È ª 8× È Ö1-65535 ÄA¹ – D ™NO âF• ± Õ Ô7È Ä
retransmit-interval *seconds*	Ä ÃEÝ ÅOSPF JÒCÃŠ Õ £EÄ ÄLSA ÅG¡ ô ÊKÈ È ¹ /¦) ! È ª 8× È Ö 1-65535 ÄA¹ ÊKÈ,XA’5B hA¹ 5×<% D B Ù üA¹JÒCÃ Þ,X TE¨ ÊKÈ Ä
transmit-delay *seconds*	Ä ÃEÝ ÅOSPF ¥EÕJÒCÃ(Š Õ £EÄ LÄSA Å,X Ê Ê È ¹/¦) ! È ª 8× È Ö 1-65535 ÄA¹ r t LSA ,X ,# ÊKÈ È ' LSA ,X ,# ÊKÈE’ Ô n ÊKÈ Ê ÈA¹ LSA Ú>• „ Ä
authentication-key *key*	Ä ÃEÝÅ n OSPF â [AxA•,X šJy ÄF• KÈ,X â [AxA•,X šJy ™NO Ô7È Äservice password-encryption Q ¸ Ã ¹ SA¹ šJy ¹ t š,X • ã / Ä
message-digest-key *key-id* md5 key	Ä ÃEÝÅ n OSPF MD5 AxA•,X šJy ÛAš0ú ` šJy Ä F• KÈ,X MD5 AxA•,X šJy ÛAš0ú ` šJy ™NO Ô7È Ä service password-encryption Q ¸ Ã ¹ SA¹ šJy ¹ t š,X • ã / Ä
authentication	A’5BAxA•2O _ È S*ü â [AxA• Ä
message-digest	A’5BAxA•2O _ MD5 AxA• Ä
null	A’5B áAxA• Ä

5 ,ÕG!5B	dead-interval Ö40 /¦ × hello-interval Ö10 /¦ × retransmit-interval Ö5 /¦ × transmit-delay Ö1 /¦ × 5 ,Õ áAxA• × J - – D"u Ý5 ,Õ Ä

c@2'QÍÐ5 ,Õ Ä

33.1.9 auto-cost

A¹ Q ¸A’5B7¾ | · Ë s6Ñ Ô G ` ' Ô â,X –5× ú ‘ È B –5× ú ‘7¾ |A’5B y ·,X · Ë È S
*üA¹ Q ¸,X no EÝNM Ã ¹ GKÁ7¾ | · Ë s6Ñ È Ã ¹ Ú5 ,Õ –5× ú ‘ 6 á äT¬Ax Ä

auto-cost [reference-bandwidth *ref-bw*]

no auto-cost [reference-bandwidth]

	– D	£EÄ
– DAÈ â	*ref-bw*	–5× ú ‘ Ä ¹ Mbps) ! È 8× È

33.1.10 bfd all-interfaces (OSPF)

G!5BE¤> OSPF ,X Ý y · S*ü BFD E¯> JÒCÃ "# ÈAË üOSPF CÃ+ G!5B õ ã ß ;> bfd all-interfaces Ä S*üA¹ Q ¸,X no 6 ã 6 á5 ,ÕG!5B Ä

bfd all-interfaces

no bfd all-interfaces

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B GKÁ

Q ¸ õ ã CÃ+ E¯/ßG!5B õ ã Ä

S*ü Û 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• È OSPF î0Ÿ E¯> 5%4° / Ä

| 3 Ã ¹EîE› y ·G!5B õ ã Q ¸ ip ospf bfd [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-interfaces Q ¸ Ä

G!5B _ ´

,Ì G Q ¸

Q ¸	£EÄ
router ospf *process-id* [vrf *vrf-name*]	ï Î OSPF CÃ+ E¯/ß JE¯ 9OSPF CÃ + G!5B õ ã Ä
ip ospf bfd [disable]	G!5BE¤ OSPF ,X Û n y · | ê5Ù GKÁ S*üBFD E¯> JÒCÃ "# Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

33.1.11 clear ip ospf process

#ÙL8 JG¡ OSPF r _ Ä

clear ip ospf [*process-id*] process

	– D	£EÄ
– DAÈ â	process-id	OSPF E¯/ß Ë Û nA¹EÝNM Ê È#ÙL8 JG¡ Û n OSPF r _ Ä

S*ü Û Ð ´

Q¸õã	CÃ+ E¯/ßG!5B õ ã Ä
S*ü Û Ð	';> redistribute ê5Ùdefault-information Q¸Ê ÈOSPF CÃ+ A' Û î7¾ | ¬ ASBR Ä7¾"• ³E•+ CÃ+ A' Û Å Ä ASBR á î7¾ | {*ó5 ,ÕCÃ+ È JEî 4- OSPF CÃ+ ³ ,X ÝCÃ+ A' Û ÄASBR {*ó5 ,ÕCÃ+ È ™NO*üdefault-information originate CÃ+ E¯/ßG!5B Q¸E¯> G!5B Ä V pEÝ ½always – D È OSPF CÃ+ E¯/ß á1u ú , ü5 ,ÕCÃ+ ÈFÑ î åF• Eî Ô 5 ê F¼5 ,ÕCÃ+ Ä CÃ+ A' Û á î / A¹5 ,ÕCÃ+ È?U.BAx ú {*ó5 ,ÕCÃ+ È Ã ¹ *ü show ip ospf database ?– ³ OSPF JÒCÃ(Š Õ D B g ÈJÒCÃ ÛAš0.0.0.0 ,X êF¼JÒ CÃ £EÄ Z5 ,ÕCÃ+ ÄOSPF‚XF• EîE› ;> show ip route Q¸È Ã ¹,ß 5 ,ÕCÃ+ ,X Ä êF¼5 ,ÕCÃ+ ,XCÃ+ G£ z È ¾6Ñ+default-information originate Q¸E¯> n È á 6ÑEîE› Q¸default-metric A'5B Ä 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 show ip route ¾ / 2O _ 1 Fw 5CÃ+ Ä STUB ³ ,XCÃ+ A' Û á Ã ¹ {*ó êF¼5 ,ÕCÃ+ ,X Ä

G!5B _	¹ ß,XG! 5B _ $ ÈOSPF Ú {*ó Ô 5 êF¼5 ,ÕCÃ+ È"¼ 9 OSPF CÃ+ ³ È2O _A'5B 1 ÈG£ z A'5B 50 Ä
	`Ruijie(config)# **router ospf** *1*`
	`Ruijie(config-router)# **network** *m6{et9cJJXCT3 11 4T-63A 41 01B5 3 Td$0 / T TT0`

?UA'5BOSPF G¡ Ú ×CÃ+ ,X5 ,ÕG£ z ÈAË S*üCÃ+ E¯/ßG!5B Q¸default-metric ÄA¹ Q¸ ,X no 6 ã 6 á5 ,ÕG!5B Ä

default-metric *metric*

no default-metric

– DAÈ â

– D	£EÄ
metric	n OSPF G¡ Ú ×CÃ+ ,X5 ,ÕG£ z È ª 8× È Ö 1-16777214 Ä

5 ,ÕG!5B

5 ,Õ 20 Ä

Q¸õ ã

CÃ+ E¯/ßG!5B õ ã Ä

S*ü Û Ð

default-metric Q¸™NO âredistribute CÃ+ E¯/ßG!5B Q¸G! Ü S*ü ÈÃ ¹ Â ÝG¡ Ú ×CÃ+ ,X ñ Ÿ êG£ z Ä

default-metric Q¸,XA'5B È Í ¹ default-information originate • ã"¼ 9 OSPF CÃ+ ³,X êF¼CÃ+ áCK 0*ü Ä

G!5B _

¹ ß,XG! 5B _ $ È Ú OSPF G¡ Ú ×CÃ+ ,X ñ Ÿ êG£ z A' 50 Ä

```
Ruijie(config)# router ospf 1
Ruijie(config-router)# network 192.168.12.0
Ruijie(config-router)# version 2
Ruijie(config-router)# exit
Ruijie(config)# router  ospf
Ruijie(config-router)# network 172.16.10.0 0.0.0.255 area 0
Ruijie(config-router)# default-metric 50
Ruijie(config-router)# redistribute rip subnets
```

,Ì G Q¸

Q¸	£EÄ
redistribute	G¡ Ú × J WCÃ+ E¯/ß,XCÃ+ Ä
show ip ospf	¹,ß ospf < G!5B,X,Ì G µ C Ä

G ÄAÈ â

	– D	£EÄ

access-list-number | *name*	S*ü acl E›$¸?˜ í
gateway *prefix-list-name*	S*ü gateway E›$¸?˜ í
prefix *prefix-list-name*	S*ü prefix-list E›$¸?˜ í
interface-type interface-number	G!5B ¾J\ Í ¤ þ y ·E¯> LSA CÃ+ E›$¸

5 ,ÕG!5B 5 ,Õ ´ G!5B È G <EîE› Ä

Q¸õã CÃ+ E¯/ŒG!5B õ ã Ä

S*ü Û Ð Í ,X LSA E¯> E›$¸ È$µC‡E›$¸ 5 Ê,X ! – â SPF Au1k È JAu1k,Ì h,XCÃ+ ÄW J á î E ¡JÒCÃ(Š Õ D B g È ÍF• ,XCÃ+ >< 3 á î {*ó Ï) E ¡ È ¾ î E ¡ OSPF Au1k,XCÃ+ ><NM Ä Ô8 ÆABR ê5Ù ASBR Þ S*üA¹ Q ¸ { Fw oE¯ 9A¹ ³,XCÃ+ Ä

G!5B –

```
Ruijie(config)# access-list 3 permit 172.16.0.0 0.0.127.255
Ruijie(config)# router ospf 25
Ruijie(config-router)# redistribute rip metric 100
Ruijie(config-router)# distribute-list 3 in ethernet 1/0
```

,Ì G Q¸

Q¸	£EÄ
distribute-list out	G!5BE›$¸G¡ Ú ×CÃ+ Ä

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

33.1.18 distribute-list out

G!5BE›$¸G¡ Ú ×CÃ+ È s6Ñ2O redistribute Q¸

distribute-list {[*access-list-number* | *name*] | prefix *prefix-list-name*} out [bgp | connected | isis [*area-tag*] | ospf *process-id* | rip | static]

no distribute-list {[*access-list-number* | *name*] | prefix *prefix-list-name*} out [bgp | connected | isis [*area-tag*] | ospf *process-id* | rip | static]

– DAÈ â

– D	£EÄ
access-list-number | name	S*ü acl E›$¸?˜ í
prefix prefix-list-name	S*ü prefix-list E›$¸?˜ í

bgp | connected | isis
[area-tag] |

	-	-

5 ,ÕG!5B 5 ,Õ ™ ‰ß È MIB 4¥ n üE¯/ß Ë Ô ã,X OSPFv2 E¯/ß Þ Ä

Q ¸ õ ã CÃ+ E¯/ßG!5B õ ã Ä

S*ü Û Ð

+ b OSPFv2 MIB "u Ý OSPFv2 E¯/ß µ C È ¹*ü EîE› SNMP ¡ 0 OSPFv2 E¯/ß È ¾6Ñ ¡ 0 Ô,XE¯/ß Æ5 ,Õ ™ ‰ ß È OSPFv2 MIB 4¥ 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

G!5B _

¹ ß,XG! 5B _ $ ÈEîE› SNMP ¡ 0E¯/ß Ë 100 ,X OSPFv2 E¯/ß Ö

Ruijie(config)# router ospf *100*

Ruijie(config-router)# enable mib-binding

,Ì G Q ¸

Q ¸	£EÄ
show ip ospf	¹,ß OSPF < G!5B,X,Ì G µ C
enable traps	G!5BOSPF TRAP s6Ñ

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.4(1)	„ r Q ¸ é 9

33.1.20 enable traps

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 no 6 ã Ã ¹ GKÁ Û n TRAP µ C,X ¥EÕ Ä

enable tra

[LsdbApproachOverflow | LsdbOverflow | MaxAgeLsa | OoriginateLsa] | retransmit [IfTxRetransmit | VirtIfTxRetransmit] | state-change [IfStateChange | NbrRestartHelperStatusChange | NbrStateChange | RestartStatusChange | VirtIfStateChange | VirtNbrRestartHelperStatusChange | VirtNbrStateChange]]

– D	£EÄ
error	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 IfAuthFailure y ·AxA•JíAÃ IfConfigError y · – DG!5BJíAÃ IfRxBadPa cket y · y JíAÃ y [VirtIfAuthFailure <. ³ y ·AxA•JíAÃ

5 ,ÕG!5B 5 ,Õ G KÁ <F½traps

Ô þ OSPF ³ ú *üAxA• È*üCÃ+ E¯/ßG!5B Q ¸ area authentication E¯> G!5B Ä ü y · Þ 3 Ã ¹)(À *üAxA•, S*ü y · õ ã ß,XG!5B Q ¸ ip ospf authentication E¯> G!5B,' ³AxA• ` y ·AxA•FÑG!5B Ê ì ª y ·,XAxA•2O _ Ä

G!5B _

¹ ß,XG! 5B _ $ ÈA'5B FastEthernet 0/0 0Ã ·,X OSPF AxA• šJy ospfauth Ä

```
Ruijie(config)# interface fastethernet 0/0
Ruijie(config-if)# ip address 172.16.10.0 255.255.255.0
Ruijie(config-if)# ip ospf authentication-key ospfauth
```

s6Ñ Ä

G!5B _ ´

,Ì G Q ¸

Q ¸	£EÄ
router ospf *process-id* [vrf *vrf-name*]	ï Î OSPF CÃ+ E¯/ß JE¯ 9OSPF CÃ + G!5B õ ã Ä
bfd all-interfaces	G!5BE¤ OSPF ,X Ý y · S*ü BFD E¯> JÒCÃ "# Ä

G!5B _

¹ ß,XG! 5B _ $ È Ú serial 1/0 y ·,X OSPF 8…C A'5B 100 Ä

```
Ruijie(config)# interface serial 1/0
Ruijie(config-if)# ip ospf cost 100
```

,Ì G Q ¸

Q ¸	£EÄ
bandwidth	A'5B Û n y ·,X ú ' ÄA¹A'5B á î E ¡ D B ôEgEó z Ä
show ip ospf	¹,ß Ospf < G!5B,X,Ì G µ C

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

33.1.25 ip ospf database-filter all out

A¹ Q ¸A'5B y · á å ê = 7 LSA y [È G á üA¹ y · Þ ¥EÕ LSA ,X È „ y [, S*üA¹ Q ¸,X no EÝNM Ã ¹ 6 á äT¬Ax Ä

ip ospf database-filter all out

no ip ospf database-filter

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B

5 ,ÕA¹ s 6Ñ>• GKÁ, Ã ¹ üA¹ y · Þ ¥EÕ Ï) LSA È „ y [Ä

Q ¸ õ ã

y ·G!5B õ ã Ä

S*ü Û Ð

?UL !6 ü ¤ þ y · Þ ¥EÕ LSA ,X È „ y [Ê È Ã ¹ üA¹ y · Þ ' ÔA¹ s6Ñ È ' ÔA¹ s6Ñ â È A' Û Ú á åF• Eî LSA È „ y [È ¡' àF• Î0ŸF• y G2Ï J y F• ¥ 9 ,X LSA µ C Ä

G!5B _

¹ ß,XG! 5B _ $ È ÚL !6 LSA È „ y [ü serial 1/0 y · Þ ¥EÕ Ä

```
Ruijie(config)# interface serial 1/0
Ruijie(config-if)# ip address 172.16.10.1 255.255.255.0
Ruijie(config-if)# encapsulation ppp
Ruijie(config-if)# ip ospf database-filter all out
```

¸Ì G Q¸	Q¸	£EÄ
	-	-

G ÄAÈ â ´

Q¸Z Æ	(Ë	AÈ â
	-	-

33.1.26 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 A¹ Q¸,X no 6 ã 6 á5 ,ÕG!5B Ä

ip ospf dead-interval *seconds*

no ip ospf dead-interval

– DAÈ â	– D	£EÄ
	seconds	n F• !O u ø • ÊKÈKÈLh È¹/¦) ! Èª 8× È Ö 1-65535 Ä

5 ,ÕG!5B 5 ,Õ ip ospf hello-interval A'5B,X ÊKÈKÈLh,X4 á Ä

Q¸õ ã y ·G!5B õ ã Ä

S*ü Û Ð

OSPF ,X!O u ÊKÈ Ù ÿ ü Hello y [Y Ä V p OSPF ü!O u ÊKÈ Y È"u Ý F• ¥EÕ ,X Hello y [È w F• ´ J ¢F• >< ôL8A¹F• A„) Ä!O u ÊKÈ5 ,Õ hello y [ÊKÈKÈLh,X4 á È V p Â Z hello ÊKÈKÈLh È î7¾ | Â !O u ÊKÈ Ä

*üA¹ Q¸Ã ¹ ¹ Â OSPF ø •F• !O u ÊKÈ È ™NO ÚAü " Ä Ý ø&• ™NO"¼ ã Ö

1 Ô&• Ö!O u ÊKÈKÈLh È á6Ñ ã bhello y [ÊKÈKÈLh ×

1 `&• Ö à Ô5%!‰ Þ,X ÝCÃ+ A' Û,X!O u ÊKÈKÈLh ™NO Ô7È Ä

G!5B _

¹ ß,XG! 5B _ $ È Ú serial 1/0 y ·,X OSPF ø •F• !O u ÊKÈKÈLhA' 30 Ä

```
Ruijie(config)# interface serial 1/0
Ruijie(config-if)# ip address 172.16.10.1 255.255.255.0
Ruijie(config-if)# encapsulation ppp
Ruijie(config-if)# ip ospf dead-interval 30
```

¸Ì G Q¸	Q¸	£EÄ

?UA'5BOSPF ¥EÕHello y [,X ÊKÈKÈLh ÈAË S*ü y ·G!5B Q¸ ip ospf hello-interval ÄA¹ Q¸,X no 6 ã 6 á5 ,ÕG!5B Ä

ip ospf hello-interval *seconds*

no ip ospf hello-interval

– DAÈ â

– D	£EÄ
seconds	A'5B OSPF ¥EÕhello y [,X ÊKÈKÈLh È¹/¦) ! È ª 8× È Ö1-65535 Ä

5 ,ÕG!5B

¹ Þ5% 10 /¦ ×
PPP ÃHDLC Õ>™,X y · 10 /¦ ×
û 4»&• &• $ y · 10 /¦ ×
M2 û 4»&• &• $ y · ÃX.25 y · 30 /¦ Ä

Q¸ õ ã

y ·G!5B õ ã Ä

S*ü Û Ð

hello y [Ê KÈKÈLh Ù ÿ ühello y [ÄA¹ ÊKÈC^-Á ÈOSPF "# § % ¬ ê,X ÊKÈ 3 ÚC^ ¿ È Ú r t5%4°# G£ Ä à Ô5%!‰ Þ,X ÝCÃ+ A' Û,X hello y [ÊKÈKÈLh ™NO Ô 7È Ä V pE¬ Ç ¹ Â ø •F• !O u ÊKÈ È ™NO ±A• hello y [ÊKÈKÈLh á6Ñ û bF• !O u ÊKÈ Ä

G!5B _

¹ ß,XG! 5B _ $ È Ú serial 1/0 y ·,X OSPF ¥EÕHello y [ÊKÈKÈLhA' 15 /¦ Ä

```
Ruijie(config)# interface serial 1/0
Ruijie(config-if)# ip address 172.16.10.1 255.255.255.0
Ruijie(config-if)# encapsulation ppp
Ruijie(config-if)# ip ospf hello-interval 15
```

,Ì G Q¸

Q¸	£EÄ
ip ospf dead-interval	A'5B OSPF ø •F• !O u ÊKÈ Ä

G ÄAÈ â

´

Q¸ Z Æ

(Ë	AÈ â
-	-

33.1.29 ip ospf message-digest-key

	-	-

33.1.31 ip ospf network

?UG!5BOSPF 5%4°2O _ ÈAË S*ü y ·G!5B Q ¸ ip ospf network ÄA¹ Q ¸,X no 6 ã 6 á5 ,ÕG!5B Ä

ip ospf network {*broadcast* *non-broadcast* st0 Td ad]0EE1350E>]TJ -35.006CID 6-0 1 .->]TJ -3 T

X25 map	n IP â X.25 5%4° ,X ô Ø Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

33.1.32 ip ospf priority

?UG!5B y ·,X OSPF ì ÈAË S*ü y ·G!5B Q ¸ ip ospf priority ÄA¹ Q ¸,X no 6 ã 6 á5 ,ÕG!5B Ä

ip ospf priority *priority*

no ip ospf priority

– DAÈ â

– D	£EÄ
priority	A'5B y ·,X OSPF ì È ª 8× È Ö0-255 Ä

5 ,ÕG!5B ì 5 ,Õ Í Ä

Q ¸ õ ã y ·G!5B õ ã Ä

S*ü Û Ð

OSPF y · ,X ì Ù ÿ ü hello y [Ä' OSPF S •2O _5%4° ¥*ó DR/BDRÄ Û n CÃ+ 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,X CÃ+ A' Û È á – â DR/BDR 0²EÝ ÄA¹ Q ¸ ¾ Í OSPF broadcast ` non-broadcast 5%4° 2O _ Ý Ä

"¼ ã V p5%4° Æ4£ , ü DR ` BDR Fw Â y ·,X ì 4{ á î0Ÿ G*ó È¾ Ý ü ß Ô õ,X DR ` BDR EÝ E›/ß ! î*ü A¹ y ·,X ì 4{ Ä

G!5B _

¹ ß,XG! 5B _ $ È Ú fastethernet 0/0 y ·,X ì A' 0 Ä

```
Ruijie(config)# interface fastethernet 0/0
Ruijie(config-if)# ip ospf priority 0
```

,Ì G Q ¸

Q ¸	£EÄ
ip ospf network	G!5B y ·,X OSPF 5%4°2O _ Ä

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

33.1.33 ip ospf retransmit-interval

?U n y · LSU ÄJÒCÃ(Š Õ È „ Å y [G¡ ô ÊKÈKÈLh ÈAË S*ü y ·G!5B Q¸ ospf retransmit-interval ÄA¹ Q ¸,X no 6 ã 6 á5 ,ÕG!5B Ä

ip ospf retransmit-interval *seconds*

no ip ospf retransmit-interval

– DAÈ â	– D	£EÄ
	seconds	LSU G¡ ô ÊKÈKÈLh È²/¦) ! È³ 8× È Ö 1-65535 Ä A¹ ÊKÈ ™NO û b ø þF• KÈ,X D B Ù TE¨ ôEg Ê Ê Ä

5 ,ÕG!5B	5 ,Õ 5 /¦ Ä
Q ¸ õ ã	y ·G!5B õ ã Ä

S*ü Û Ð

'CÃ+ A' Û ¥EÕ ` Ô þ LSU y [È A¹ LSU y [E¬ ±+- ü ¥EÕ4ç †Kó ë È V p ü ip ospf retransmit-interval Q ¸ n ,X ÊKÈ Y È"u Ý k F• ,X.BAx È ÚG¡ „ ¥EÕ LSU Ä A¹ ÊKÈA'5BLÔ?UAü " È ¹ !Eô ä á ™?U,XG¡ ô È ü > 4"CÃ ê<. ³JÒCÃ Þ ÈG¡ ô ÊKÈ Ã ¹A'5B k!¨EW û Ô&• Ä<. ³JÒCÃ,X LSU y [G¡ ô ÊKÈKÈLh*ü area virtual-link Q ¸C³Lc retransmit-interval GK +E¯> n Ä

G!5B _

ü ¹ ß,X G!5B _ $ È Ú serial 1/0 y ·,X LSU y [G¡ ô ÊKÈA' 10 /¦ Ä

```
Ruijie(config)# interface serial 1/0
Ruijie(config-if)# ip ospf retransmit-interval 10
```

,Ì G Q ¸	Q ¸	£EÄ
	area virtual-link	n OSPF <. ³JÒCÃ Ä

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

log-adj-changes [detail]

no log-adj-changes [detail]

– DAÈ â

– D	£EÄ
detail	A„) <F¼(Š Õ ¬ ê µ C

5 ,ÕG!5B

5 ,ÕA¹ s 6Ñ ' Ô È á ú detail – D È ¾A„)F• y(Š ÕE' Full ê5Ù/• Ô Full (Š Õ,X ¹ « µ C Ä

Q¸õ ã

CÃ+ E¯/ßG!5B õ ã Ä

S*ü Û Ð

´

G!5B _

¹ ß,XG! 5B _ $ È Ú ' ÔF• (Š Õ ¬ ê,X ¹ «A„) Ä

```
Ruijie(config)# router ospf 1
Ruijie(config-router)# log-adj-changes detail
```

,Ì G Q¸

Q¸	£EÄ
show ip ospf	¹,ß ospf < G!5B,X,Ì G µ C Ä

G ÄAÈ â

´

Q¸Z Æ

(Ë	AÈ â
-	-

33.1.36 max-concurrent-dd

A¹G!5B*ü bA'5B à Ê Ø)Ú,X DD y [,X Ô û D,Â Ä

max-concurrent-dd *<1-65535>*

no max-concurrent-dd

– DAÈ â

– D	£EÄ
<1-65535>	Û n Ô û DD D,Â

5 ,ÕG!5B

5 ,Õ 5 Ä

Q¸õ ã

CÃ+ E¯/ßG!5B õ ã Ä

S*ü Û Ð

'CÃ+ A' Û â î þF• à Ê x 6 D B ÈJ û6Ñ « E ¡ Ê ÈG!5BA¹ Q¸ ÈÃL$!£ þ OSPF r _ AŒ à Ê J ¥,X DD x f D B Ù Ô û D,Â Ä

G!5B _

¹ ß,XG! 5B _ $ È Ú DD D B Ù Ô û D,ÂA'5B 4 Ä

```
Ruijie(config)# router ospf 10
Ruijie(config-router)# max-concurrent-dd 4
```

,Ì G Q¸

Q¸	£EÄ
-	-

G ÄAÈ â

´

Q¸Z Æ

(Ë	AÈ â
-	-

33.1.37 neighbor

?U n OSPF F• ÈÆË S*üCÃ+ E¯/ßG!5B Q¸ neighbor ÄÆ¹ Q¸,X no 6 ã ôL8 Û n,XF• Ä

neighbor *ip-address* {[poll-interval *seconds* | priority *priority*] | [cost *cost*]}

no neighbor *ip-address*

– DAÈ â

– D	£EÄ
ip-address	F• y ·,X IP Ä
poll-interval *seconds*	Ä ÃEÝÅF• EBA¶ ÊKÈKÈLh È¹/¦) ! Èª 8× È Ö 1-2147483647 Ä M2 S •5%4°2O _(NBMA) ÕA¹EÝNM
priority *priority*	Ä ÃEÝ ÅA'5BM2 S •5%4°F• ,X ì Èª 8× È Ö 0-255 ÄM2 S •5%4°2O _(NBMA) ÕA¹EÝNM
cost *cost*	Ä ÃEÝ ÅA'5B&• î&•5%4° !£ þF• ?U,XC *ü È 5 ,Õ þ n È S*ü y · ÞG!5B,X cost È ª 8× È Ö 1-65535 Ä&• î&•5%4°2O _(point-to-multipoint) ! ÕA¹EÝNM Ä

5 ,ÕG!5B

5 ,Õ"u Ý n F• ×
F• EBA¶ ÊKÈKÈLh Ö5 ,Õ120 /¦ ×
M2 S •5%4°F• ,X ì Ö5 ,Õ 0 Ä

Q¸õã CÃ+ E¯/ßG!5B õ ã Ä

S*üÛÐ

RGOS EC Ê ™NO !£ þM2 S •5%4°,XF• È â.BG!5BF• µ C ÄF• ,X IP È ™NO A¹F• y ·,X IP Ä

ü NBMA 5%4° Þ V pF• CÃ+ A' Û ¬ á# C— È G 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 Ä1 DR/BDR {*ó ¹ â È DR/BDR î å Ý,XF• ¥EÕ Hello y [Î0ŸF• G2ï Ä

ü&• î&•M2 S •5%4° Þ, ´ á K Û S •6Ñ o ¹´"© | Õ,X ¥)„F• , ´!8 ™NO S*ü A¹ Q¸ ¹ JG!5BF• , º ê Í b&• î&•2O _,X5%4°E¬ Ã ¹EîE› cost EÝNM Û n E'!£ þF• ,X8…C Ä

G!5B _

¹ ß,XG! 5B _ $ È Ä â Z Ô þ OSPF M2 S •5%4°F• È J IP 172.16.24.2 È ì 1 ÈEBA¶KÈLh 150 /¦ Ä

```
Ruijie(config)# router ospf 20
Ruijie(config-router)# network 172.16.24.0 0.0.0.255 area 0
Ruijie(config-router)# neighbor 172.16.24.2 priority 1
poll-interval 150
```

,Ì G Q¸

Q¸	£EÄ
ip ospf priority	A'5B OSPF CÃ+ A' Û,X ì Ä
ip ospf network	A'5B OSPF 5%4°2O _

G ÄAÈâ ´

Q¸Z Æ

(Ë	AÈâ
-	-

33.1.38 network area

n ¾ o y · ÚE¤> OSPF È· ž 2 OSPF ³ ÐÆË S*üCÃ+ E¯/ßG!5B Q¸ network area Ä A¹ Q¸,X no 6 ã ôL8 y ·,X OSPF ³ n Ä

network *ip-address wildcard* area *area-id*

no network *ip-address wildcard* area *area-id*

– DAÈâ

– D	£EÄ
ip-address	y · Í h,X IP Ä

no overflow database

– D	£EÄ

<

5 ,ÕG!5B

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

Q ¸ õ ã

< G!5B õ ã Ä

S*ü Û Ð

'A' Û ,X external-LSA D,ÂCYE›G!5B,X *max-dbsize* Ê È îE¯ 9$v Î(Š Õ È A¹(Š Õ ß È á a tEQ external-LSA È J Ú#ÙL8 *ó ä,X external-LSA Ä '4£E› *wait-time* ÊKÈ â È A' Û 6 á!7 (Š Õ È JG¡ „ tEQ external-LSA Ä

ü S*üA¹ s6Ñ Ê ™NO ±AÐSPF F ³ ` BEî ³,X ÝCÃ+ <G! 5B,Ì à,X *max-dbsize* È ú í Ã6Ñ éCK V ß)„B5 Ö

"¼ ã

1 Å H5%,XJÒCÃ(Š Õ D B g ´"©E' ä Ô7È È F• ´"©E' Full (Š Õ ×

2 Å JíAÃ,XCÃ+ È Ù À)ƒCÃ,X ™ ‰ ×

3 Å Ã6Ñ î éCKNe4 ,X

– DAÈ â	– D	£EÄ
	no	!8EÝNM ÍGÁ ü Y , áC‡ Ê OSPF E¯ 9 OVERFLOW (Š Õ,X s6Ñ Ä

5 ,ÕG!5B Y , áC‡ ™ ‰ ßOSPF AŒE¯ 9OVERFLOW (Š Õ Ä

Q ¸ õ ã CÃ+ E¯/ßG!5B õ ã

S*ü Û 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 ×HÜÉ €ïÁÓSIP5—ÓA¹ sNáÀ0éCK ˜5% , è@ dC Î)„ !

no passive-interface [default | type *number*]

– DAÈ â	– D	£EÄ
	type *number*	?UG!5B >• | y ·,X y · Ä
	default	A¹EÝNM⊁⊲Ú Ý y ·A'5B >• | y · Ä

isis [*area-tag*]	¢ isis G¡ Ú × ÈŒîE› *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 Ö1-65535
rip	¢ rip G¡ Ú ×
static	¢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 AŒevel-2 ,X IS-IS CÃ+ E¯> G¡ Ú ¥ Ä
	¾J\ ÍG! 5BG¡ Ú ¥OSPF CÃ+ Ê S*ü È*ü bE›$¸(M n CÃ+ E¯> G¡ Ú ¥ ÈT¬Ax(Š Õ AŒ Ý,XOSPF CÃ+ E¯> G¡ ðÄ`PÝƒ @ static |

Ÿ – DE¯> G! × Í bG¡ Ú ¥ OSPF ê ISIS CÃ+ È ¾ ÝG¡ Ú ¥,XCÃ+ $µC‡G!5B,¤match ê level ,X?˜ í È ! aE¯> route-map ,X ø • Ä

_ 1 Ö ¹ ß Q ¸ ÚG¡ Ú × ospf *2* ` isis *isis-001* ,XCÃ+ OSPF ³ Y Ö

```
Ruijie(config)# router ospf 1
Ruijie(config-router)# redistribute ospf 2 subnets
Ruijie(config-router)# redistribute ospf 2 match
external 1 internal
Ruijie(config-router)# redistribute isis isis-001
Ruijie(config-router)# redistribute isis isis-001 level-1
```

_ 2 ÖShow run / ,X4§ p V ß Ö

```
router ospf 1
redistribute ospf 2 match external 1 internal subnets
redistribute isis isis-001 level-1-2
```

Q¸	£EÄ
summary-address	G!5BOSPF CÃ+ ³ êF¼CÃ+ ,X" 6.CÃ + Ä
default-metric	A'5B OSPF G¡ Ú ×CÃ+ ,X5 ,ÕG£ z

´

(Ë	AÈ â
-	-

33.1.44 router ospf

?U ï Î OSPF CÃ+ E¯/ß JE¯ 9OSPF CÃ+ G!5B õ ã ÈAË S*ü < G!5B Q ¸ router ospfÄA¹Q ¸,X no 6 ã ôL8 Æ n ,X OSPF CÃ+ E¯/ß Ä

router ospf

router ospf *process-id* [vrf *vrf-name*]

no router ospf *process-id*

– D	£EÄ
process-id	OSPF E¯/ß Ë Ä þG!5BE¯/ß Ë Ê È></ G!5BE¯/ß1 Ä

5 ,ÕG!5B

5 ,Õ á , ü OSPF CÃ+ E¯/ß Ä

Q ¸ õ ã

< G!5B õ ã Ä

S*ü Û Ð

RGOS10.1 ü s r)„ Î. Þ r t ZE¯/ß Ë – D È =) î r _ OSPF Ä á à OSPF r _ KÈ,Ì f(À0Ÿ È Ã ¹E¥ Ax ø þ(À0ŸE¤> ,XCÃ+ #A, Ä

G!5B _

¹ ß,XG! 5B _ $ È ü Û n vrf Ö*vpn_1* Y ï Î OSPF CÃ+ E¯/ß10 Ä

```
Ruijie(config)# router ospf 10 vrf vpn_1
```

,Ì G Q ¸

Q ¸	£EÄ
show ip protocols	/ ' !E¤> ,XCÃ+ #A,1T?U µ C Ä
show ip ospf	/ ' ! ospf E¯/ß1T?U µ C Ä

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â

Í b NSSA È summary-address Q¸,Â ! ¾ ü NSSA ,X ABR Þ ;> Ý È5à è ¾ Í G¡ Ú ×CÃ+ E¯> " 6. Ä

G!5B _

¹ ßG!5B Q¸ È Ú {*ó Ô 5 êF¼" 6.CÃ+ 100.100.0.0/16 Ä

```
redRuijie(config)# router ospf 20
Ruijie(config-router)# summary-address 100.100.0.0 255.255.0.0
Ruijie(config-router)# redistribute static subnets
Ruijie(config-router)# network 200.2.2.0 0.0.0.255 area 1
Ruijie(config-router)# network 172.16.24.0 0.0.0.255 area 0
Ruijie(config-router)# area 1 nssa
```

,Ì G Q¸

Q¸	£EÄ
area range	ü OSPF ³E•+ CÃ+ A’ Û Þ .CÃ+ " 6. Ä
redistribute	G¡ Ú × J WCÃ+ E¯/ß,XCÃ+ Ä

> 4³ Ô,X È „ `5Õ ê ¡ 0 Ä

È „5Õ ê ¡ 0,X5 ,ÕA'5B 4 ÚJs È Ã ¹EîE› Q ¸ Â A¹5 ,Õ ÄA¹ – D J áLÔ?U4£ A× H Ä ü LSA DG£ Ô n,X ™ ‰ ß È!9A× ÊKÈKÈLhC^ û È n Ê < ó$µ â Ø)Ú,¼SA DG£ C^ î Ä Z ± Õ CPU ,X0 n È å À ÎA,!£ õ ó$µ Ø)Ú,X LSA DG£ á p þ î È ¹ V p LSA DG£EW û È å À ÎA, |L! "!9A×KÈLh Ä!¨ V È D B g Ý 10000 5 LSA È Ã ¹L! " !9A× ÊKÈKÈLh È V p ¾ Ý40 100 5 È í Ã ¹A× H 10~20 ÚJs Ä

G!5B _

¹ ß,XG! 5B _ $ È Ú!9A× ÊKÈA'5B 120 /¦ Ä

```
Ruijie(config)#router ospf 20
Ruijie(config-router)#timers lsa-group-pacing 120
```

,Ì G Q ¸

Q ¸	£EÄ
show ip ospf	¹,ß ospf ,X,Ì GG!5B µ C

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

33.1.48 timers spf

?UG!5BOSPF ü y § %,X ¬ ê µ C ÈE¯> SPF Au1k,X B,X B+È> 2PF8× Èð l D% = U,%

5 ,ÕG!5B	5 ,Õ Ú ¹ ß ø/¡ ™ ‰ Ö 1 Ã ü RGOS 10.4 (! È á Õ timers throttle spf Q ¸ Ä2Ï4³5 ,Õ timers spf 5 10 2 ÃRGOS 10.4 (Ô Ÿ È Õ timers throttle spf Q ¸ Ä!8 Ê5 ,Õ ™ ‰ ß

spf-delay	n SPF Au1k,X1 Y ÊKÈ È ¹!¿/¦) ! È ª 8× È Ö1-600000 ÄOSPF CÃ+ E¯/ß y § % ¬ ê È?º ¥,X SPF Au1k7Ç å?U ïspf-delay ÊKÈKÈLh â ;> Ä
spf-holdtime	n ø õ SPF E¤1k KÈ,X Ô ã ÊKÈKÈLh È ¹!¿/¦) ! È ª 8× È Ö1-600000 Ä
spf-max-waittime	n ø õ SPF E¤1k KÈ,X Ô û ÊKÈKÈLh È ¹!¿/¦) ! È ª 8× È Ö1-600000 Ä

5 ,ÕG!5B

spf-delay Ö1000 !¿/¦ ×
spf-holdtime Ö5000 !¿/¦ ×
spf-max-waittime Ö10000 !¿/¦ Ä

Q ¸ õ ã

CÃ+ E¯/ßG!5B õ ã Ä

S*ü Û Ð

spf-delay ></ ¢ § % ¥*ó ¬ ê SPF Ô ŸAu1k È7Ç åLÔ?U ÊE³,X ÊKÈ1ÄÔ õ?º ¥ SPFspfSPF

show ip ospf	¹,ß ospf ,X,Ì GG!5B µ C
timers spf	G!5BSPF Au1k ÊE³ ÊKÈ Äü 10.4 ! ,X RGOS (È Õ,X SPF Au1k ÊE³ Q ¸ Ä,Â ! |9$ S*ü timers throttle spf ª · timers spf G!5B

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.4(1)	„ r Q ¸ é 9

33.2 Ã ¸ Ò

33.2.1 show ip ospf

?U / OSPF µ C V?U ÈAË S*ü(M *ü õ ã Q ¸ show ip ospf Ä

show ip ospf [*process-id*]

– DAÈ â

– D	£EÄ
process-id	ospf E¯/ß Ë

5 ,ÕG!5B ´

Q ¸ õ ã (M *ü õ ã Ä

S*ü Û Ð h*üA¹ Q ¸ Ã ¹ / OSPF CÃ+ E¯/ß,XE¤> µ C V?U Ä

G!5B _

¹ ß show ip ospf Q ¸,XEg Î4§ p Ö

```
Ruijie# show ip ospf
Routing Process "ospf 1" with ID 1.1.1.1
Process uptime is 4 minutes
Process bound to VRF default
Memory Overflow is enabled.
Router is not in overflow state now.
Conforms to RFC2328, and RFC1583Compatibility flag isenabled
Supports only single TOS(TOS0) routes
Supports opaque LSA
```

```
This router is an ASBR (injecting external routing information)
SPF schedule delay 5 secs, Hold time between two SPFs 10 secs
LsaGroupPacing: 240 secs
Number of incomming current DD exchange neighbors 0/5
Number of outgoing current DD exchange neighbors 0/5
Number of external LSA 4. Checksum 0x0278E0
Number of opaque AS LSA 0. Checksum 0x000000
Number of non-default external LSA 4
External LSA database is unlimited.
Number of LSA originated 6
Number of LSA received 2
Log Neighbor Adjency Changes : Enabled
Graceful-restart disabled
Graceful-restart helper support enabled
Number of areas attached to this router: 1
Area 0 (BACKBONE)
Number of interfaces in this area is 1(1)
Number of fully adjacent neighbors in this area is 1
Area has no authentication
SPF algorithm last executed 00:01:26.640 ago
SPF algorithm executed 4 times
Number of LSA 3. Checksum 0x0204bf
Area 1 (NSSA)
Number of interfaces in this area is 1(1)
Number of fully adjacent neighbors in this area is 0
Number of fully adjacent virtual neighbors through this area is 0
Area has no authentication
SPF algorithm last executed 02:09:23.040 ago
SPF algorithm executed 4 times
Number of LSA 6. Checksum 0x028638
NSSA Translator State iselected
 V p OSPF â BFD 6( |, LÔ?U ü s Ý / ,X Y • Þ r t”BFD enabled”,        _ V ß Ö
Ruijie# show ip ospf
Routing Process "ospf 1" with ID 1.1.1.1
Process uptime is 4 minutes
Process bound to VRF default
Conforms to RFC2328, and RFC1583Compatibility flag isenabled
Supports only single TOS(TOS0) routes
Supports opaque LSA
```

```
Supports Graceful Restart
This router is an ASBR (injecting external routing information)
SPF schedule delay 5 secs, Hold time between two SPFs 10 secs
LsaGroupPacing: 240 secs
Number of incomming current DD exchange neighbors 0/5
Number of outgoing current DD exchange neighbors 0/5
Number of external LSA 4. Checksum 0x0278E0
Number of opaque AS LSA 0. Checksum 0x000000
Number of non-default external LSA 4
External LSA database is unlimited.
Number of LSA originated 6
Number of LSA received 2
Log Neighbor Adjency Changes : Enabled
Graceful-restart disabled
Graceful-restart helper support enabled
Number of areas attached to this router: 1
BFD enabled
Area 0 (BACKBONE)
Number of interfaces in this area is 1(1)
Number of fully adjacent neighbors in this area is 1
Area has no authentication
SPF algorithm last executed 00:01:26.640 ago
SPF algorithm executed 4 times
Number of LSA 3. Checksum 0x0204bf
Area 1 (NSSA)
Number of interfaces in this area is 1(1)
Number of fully adjacent neighbors in this area is 0
Number of fully adjacent virtual neighbors through this area is 0
Area has no authentication
SPF algorithm last executed 02:09:23.040 ago
SPF algorithm executed 4 times
Number of LSA 6. Checksum 0x028638
NSSA Translator State iselected
```

+!‰	AÈ â
Router ID	CÃ+ A’ Û ÛAš0ú Ä
Process uptime	OSPF E¯/ß*ó ,X ÊKÈ Ärouter-id 0.0.0.0 Ê E¯/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
Supports opaque LSA	Õ opaque-LSA Ä
Graceful-restart	RFC3623 Graceful Restart £EÄ,X GR Restart 6Ñ o Ä
Graceful-restart helper	RFC3623 Graceful Restart £EÄ,X GR Help 6Ñ o Ä
Router Type	OSPF CÃ+ A' Û2O _ Ýnormal ÃABR ÃASBR Ä
SPF Delay	§ % ¬ êA×*ü SPF E¤1k ?U ÊE³,X ÊKÈ Ä
SPF-holdtime	ø õ SPF Au1k KÈ7Ç å?U4È Õ,X ÊKÈ Ä
LsaGroupPacing	LSA ,X È „ È õP` `Au1k È5Õ ê1 ,X ÊKÈKÈLh Ä
Incomming current DD exchange neighbors	!7 ü x f,XF• DG£ Èincomming ÛOj õE¯ 9 exstart (Š Õ,XF• Ä
Outgoing current DD exchange neighbors	!7 ü x f,XF• DG£ È outgoing Û ¢ ÈP¬(Š ÕEÔ ² exstart G¡ „ x f,XF• Ä
Number of external LSA	D B g , |,X êF¼

Number of interfaces in this area	2 bA¹ ³,X y · D,Â Ä
Number of fully adjacent neighbors in this area	2 bA¹ ³,X Full ,XF• DG£ Ä
Number of fully adjacent virtual neighbors through this area	2 bA¹ ³,X Full ,X<.JÒ y,XF• DG£ ×¾ Ý üM2 P| F,XT¬Ax2O _,X ³ Ý Ä
Area authentication	³,XAxA• • ã Ä
SPF algorithm last executed	Þ õ SPF Au1k ,Â ! 4£E›,X ÊKÈ Ä
SPF algorithm executed times	SPF Au1k,X õ D 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(|

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

33.2.2 show ip ospf border-routers

?U / ABR/ASBR ,X OSPF YF¼CÃ+ >< ÈAË S*ü(M *ü õ ã Q ¸ show ip ospf border-routers Ä

show ip ospf [*process-id*] border-routers

– DAÈ â

– D	£EÄ
process-id	ospf E¯/ß Ë

5 ,ÕG!5B ´

Q ¸ õ ã (M *ü õ ã Ä

A¹ Q ¸,X á à ã / á àJÒCÃ(Š Õ £EÄ ÄLSAs Å µ C Ä

show ip ospf [*process-id area-id*] database [adv-router *ip-address* | {asbr-summary | external | network | nssa-external | opaque-area | opaque-as | opaque-link | router | summary } [*link-state-id*] [{adv-router *ip-address* | self-originate}] | database-summary | max-age | self-originate]

– DAÈ â

– D	£EÄ
area-id	Ä ÃEÝ Å / ,X ³ Ë Ä
adv-router	Ä ÃEÝÅ / + Û n @ CÃ+ A' Û*ó ä,XJÒCÃ(Š Õ £ EÄ µ C Ä
link-state-id	Ä ÃEÝÅ¾ / Û n OSPF JÒCÃ(Š Õ ÛAš,XJÒCÃ(Š Õ £EÄ µ C Ä
self-originate	Ä ÃEÝÅ / + CÃ+ A' Û7¾ Å*ó ä,XJÒCÃ(Š Õ £EÄ µ C Ä
max-age	Ä ÃEÝ Å / Æ 5Õ ê ÊKÈ,X LSA
router	Ä ÃEÝ Å / OSPF CÃ+ A' ÛJÒCÃ(Š Õ £EÄ µ C Ä
network	Ä ÃEÝ Å / OSPF 5%4°JÒCÃ(Š Õ £EÄ µ C Ä
summary	Ä ÃEÝ Å / OSPF ,?UJÒCÃ(Š Õ £EÄ µ C Ä
asbr-summary	Ä ÃEÝ Å / G b ASBR ,X ,?UJÒCÃ(Š Õ £EÄ µ C Ä
external	Ä ÃEÝ Å / OSPF êF¼JÒCÃ(Š Õ £EÄ µ C Ä
nssa-external	Ä ÃEÝ Å / OSPF 1 ×2O êF¼JÒCÃ(Š Õ £EÄ µ C Ä
opaque-area	Ä ÃEÝ Å / 1 2O LSA
opaque-as	Ä ÃEÝ Å / 1 Ô2O LSA
opaque-link	Ä ÃEÝ Å / 1 12O LSA
database-summary	Ä ÃEÝ Å / OSPF JÒCÃ(Š Õ D B g Ø/¡LSA 4³Au µ C Ä

5 ,ÕG!5B ´

Q ¸ õ ã (M *ü õ ã Ä

S*ü Û Ð ' OSPF JÒCÃ(Š Õ D B g \ û Ê È ÚNM / Ú ™?U,X Ä!7.B S*üE- o Q ¸ È Ý } b OSPF Lp,X fL8 Ä

G!5B _ _ 1 Ö ¹ OSP

```
Router Link States (Area 0.0.0.0)
Link ID        ADV Router     Age  Seq#      CkSum  Link count
1.1.1.1        1.1.1.1        2    0x80000011 0x6f39 2
3.3.3.3        3.3.3.3        120  0x80000002 0x26ac 1
Network Link States (Area 0.0.0.0)
Link ID        ADV Router     Age  Seq#      CkSum
192.88.88.27    1.1.1.1        120  0x80000001 0x5366
Summary Link States (Area 0.0.0.0)
Link ID        ADV Router     Age  Seq#      CkSum  Route
10.0.0.0       1.1.1.1        2    0x80000003 0x350d 10.0.0.0/24
100.0.0.0      1.1.1.1        2    0x8000000c 0x1ecb 100.0.0.0/16
Router Link States (Area 0.0.0.1 [NSSA])
Link ID        ADV Router     Age  Seq#      CkSum  Link count
1.1.1.1        1.1.1.1        2    0x80000001 0x91a2 1
Summary Link States (Area 0.0.0.1 [NSSA])
Link ID        ADV Router     Age  Seq#      CkSum  Route
100.0.0.0      1.1.1.1      2    0x80000001 0x52a4 100.0.0.0/16
192.88.88.0    1.1.1.1      2    0x80000001 0xbb2d 192.88.88.0/24
NSSA-external Link States (Area 0.0.0.1 [NSSA])
Link ID    ADV Router    Age  Seq#      CkSum  Route        Tag
20.0.0.0     1.1.1.1     1    0x80000001 0x033c E2 20.0.0.0/24     0
100.0.0.0   1.1.1.1      1    0x80000001 0x9469 E2 100.0.0.0/28    0
AS External Link States
Link ID   ADV Router     Age  Seq#      CkSum  Route          Tag
20.0.0.0   1.1.1.1     380  0x8000000a 0x7627 E2 20.0.0.0/24    0
100.0.0.0    1.1.1.1    620  0x8000000a 0x0854 E2 100.0.0.0/28  0
```

show ip ospf database Q¸ / 4§ p Ø +!‰,X £EÄ V ß Ä

+!‰	AÈ â
OSPF Router with ID	/ OSPF JÒCÃ(Š Õ D B g,XCÃ+ A’ Û ÛAš0ú â OSPF Í h,XE¯/ß Ë
Router Link States	></ ¹ ß Y • CÃ+ A’ ÛJÒCÃ(Š Õ £EÄ µ C Ä
Net Link States	></ ¹ ß Y • 5%4°JÒCÃ(Š Õ £EÄ µ C Ä
Summary Net Link States	></ ¹ ß Y • ,?U5%4°JÒCÃ(Š Õ £EÄ µ C Ä
	></ ¹ ß Y • 1 ×2O,X7¾"• ³ êF¼JÒCÃ(Š Õ £ EÄ µ C

ADV Router	Eî A¹JÒCÃ(Š Õ £EÄ,XCÃ+ A’ Û ÛAš Ä
Age	/ A¹JÒCÃ(Š Õ £EÄ,X , ü ÊKÈ Ä
Seq#	/ A¹JÒ CÃ(Š Õ £EÄ,X c Ë È*ü b ”# 5Õ,X êG¡ á ,X LSA Ä

Network Mask

TOS	TOS È,Â ! ¾6Ñ 0 Ä
Metric	/ A¹JÒCÃ(Š Õ £EÄ Í hCÃ+ ,XG£ z Ä
Forward Address	A¹,Â Û 5%4°,X D B# G£ È Ú>•E@ ¥ A¼P 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 Ý32 þ!¨(MCÃ+ ÛA„ ÄOSPF D• á S*üA¹CÃ+ ÛA„ È ü J WCÃ+ E¯/ßCÃ+ G¡ Ú ×OSPF CÃ+ Ê î h*ü Ä

_ 4 Ö ¹ ß show ip ospf database network Q ¸,X / 4§ p Ö

```
Ruijie# show ip ospf database network
OSPF Router with ID (1.1.1.1) (Process ID 1)
Network Link States (Area 0.0.0.0)
LS age: 572
Options: 0x2 (*|-|-|-|-|-|E|-)
LS Type: network-LSA
Link State ID: 192.88.88.27 (address of Designated Router)
Advertising Router: 1.1.1.1
LS Seq Number: 80000001
Checksum: 0x5366
Length: 32
Network Mask: /24
Attached Router: 1.1.1.1
Attached Router: 3.3.3.3
```

show ip ospf database network Q ¸ / 4§ p Ø +!‰,X £EÄ V ß Ä

+!‰	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	

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 ¹ ß show ip ospf database route r Q ¸,X / 4§ p Ö

```
Ruijie# show ip ospf database router
OSPF Router with ID (1.1.1.1) (Process ID 1)
Router Link States (Area 0.0.0.0)
LS age: 322
Options: 0x2 (*|-|-|-|-|-|E|-)
Flags: 0x3 : ABR ASBR
LS Type: router-LSA
Link State ID: 1.1.1.1
Advertising Router: 1.1.1.1
LS Seq Number: 80000012
Checksum: 0x6d3a
Length: 48
Number of Links: 2
Link connected to: Stub Network
(Link ID) Network/subnet number: 100.0.1.1
(Link Data) Network Mask: 255.255.255.255
Number of TOS metrics: 0
TOS 0 Metric: 0
```

show ip ospf database router Q ¸ / 4§ p Ø +!‰,X £EÄ V ß Ä

+!‰	AÈ â
OSPF Router with ID	/ ¹ ß µ C Í h,XCÃ+ A' Û ÛAš0ú â OSPF Í h,XE¯/ß Ë Ä
Router Link States	></ ¹ ß CÃ+ A' ÛJÒCÃ(Š Õ £EÄ µ C Ä
LS age	/ A¹JÒCÃ(Š Õ £EÄ,X , ü ÊKÈ Ä
Options	EÝNM
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 ¹ ß show ip ospf database summar y Q¸,X / 4§ p Ö

```
Ruijie# show ip ospf database summary
OSPF Router with ID (1.1.1.1) (Process ID 1)
Summary Link States (Area 0.0.0.0)
LS age: 499
Options: 0x2 (*|-|-|-|-|-|E|-)
LS Type: summary-LSA
Link State ID: 10.0.0.0 (summary Network Number)
Advertising Router: 1.1.1.1
LS Seq Number: 80000004
Checksum: 0x330e
Length: 28
Network Mask: /24
TOS: 0  Metric: 11
```

show ip ospf database summary Q¸ / 4§ p Ø +!‰,X £EÄ V ß Ä

+!‰	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	/ 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

A¹,Â Û 5%4°,X D B# G£ È Ú>•E@ ¥ A¶P Ä
V pA¹ 0.0.0.0 Èí D B# G£ î>•E@ ¥ {*ó

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	

	-	-

33.2.4 show ip ospf interface

?U / â OSPF G6(,X y · µ C ÈAË S*ü(M *ü õ ã Q ¸ show ip ospf interface Ä

show ip ospf interface [*interface-type interface-number*]

	– D	£EÄ
	interface-type	*interface-type*

1 4 1.5 re f] 1 4 1.5 re f 1 4 1.4 1 3 1.4 1 3 8 0 0 1 5 re f 2 9 0 9 5 2 P 3 < 0 M 5 8 0 1 re f 66.84 7460 2 T.76 0.48 r

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

Q ¸ õ ã	(M *ü õ ã Ä
S*ü Û Ð	,Â !A¹ Q ¸ ¾6Ñ ü NSSA ,X ABR

Q¸õã (M *ü õã Ä

S*üÛÐ V p ÝG!5B<. ³JÒCÃ È ¾6ÑEîE›A¹ Q¸ / F• ,X(Š Õ È ¹ ž J W,Ì G µ C Ä show ip ospf neighbor Q¸ á î / <. ³JÒCÃ,XF• Ä

G!5B _

¹ ß show ip ospf virtual-links Q¸,X / 4§ p Ö

```
Ruijie# show ip ospf virtual-links
Virtual Link VLINK0 to router 1.1.1.1 is up
Transit area 0.0.0.1 via interface FastEthernet 0/1
Local address 10.0.0.37/32
Remote address 10.0.0.27/32
Transmit Delay is 1 sec, State Point-To-Point,
Timer intervals configured,Hello 10,Dead 40,Wait 40,Retransmit 5
Hello due in 00:00:05
Adjacency state Full
```

/ 4§ p Ø +!‰,X £EÄ V ß Ä

+!‰	AÈ â
Virtual Link VLINK0 to router	/ <. ³JÒCÃ,XF• ¹ ž(Š Õ
Virtual Link state	A¹<. ³JÒCÃ,X(Š Õ.
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

,Ì G Q¸

Q¸	£EÄ
-	-

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

34 Ẩ ﺟ ﺟ

34.1 ﺟ Ẩ ﺟ ﺟ

34.1.1 distribute-list in

?U { CÃ+ È „ Ø)Ú È ¹ r)„CÃ+ E›$¸ ÈAË S*üCÃ+ E¯/ßG!5B Q ¸ distribute-list in ÄA¹ Q ¸,X no 6 ã ôL8A¹ n Ä

distribute-list {[*access-list-number* | *access-list-name*] | prefix *prefix-list-name* [gateway *prefix-list-name*]} in [*interface-type interface-number*]

no distribute-list {[*access-list-number* | *access-list-name*] | prefix *prefix-list-name* [gateway *prefix-list-name*]} in [*interface-type interface-number*]

– DAÈ â

– D	£EÄ
access-list-number	A“KÂ ë>< Ë Û šA“KÂ ë>< Ë8× È Ö1-99 È1300-1999 =)A“KÂ ë>< Ë8× È Ö100-199 È2000-2699
access-list-name	A“KÂ ë>< á +
prefix *prefix-list-name*	S*ü !4Ô ë>< 9E›$¸CÃ+
gateway *prefix-list-name*	S*ü !4Ô ë>< 9E›$¸CÃ+ ,X$d
interface-type interface-number	(ÃEÝ)A¹ Ú × ë>< È ¾ h*ü ü Û n y ·

5 ,ÕG!5B 5 ,Õ"u Ý n Ú × ë>< Ä

Q ¸ õ ã CÃ+ E¯/ßG!5B õ ã Ä

S*ü Û Ð Z ¦4± y ¤ o Û nCÃ+ È Ã ¹EîE›G!5BCÃ+ Ú × { ë>< È Í Ý y ,XCÃ+ È „ y [E¯> Ø)Ú ÄA¹ Q ¸ Í OSPF CÃ+ #A, ´ È ´ OSPF y ,X á K ',XCÃ+ È 5à JÒCÃ(Š Õ £EÄ y [Ä

V p"u Û n y · È Í Ý,X y · y ,XCÃ+ È „ y [E¯> Ø)Ú Ä

G!5B _r T õ ã Ä

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

¸Ì G Q ¸

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

G{ëAÈ â ´

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

S*ü Û Ð

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
permit	AŒA“KÂ
deny	¦4±A“KÂ

¶ ' 2 û Ä

ã AA:NN(7¾'•2Ï4³ Ë Ö 2 +8V D +) È ê5Ù Ô þ D È8× È 0-4294967295 È ê5Ù ¹ ßNX n Ö internet È></ Internet

Q ¸ Z Æ	(Ë	AÈ â
	-	-

34.1.5 ip prefix-list

?U ï Î Ô þ !4Ô ë>< ê5Ù r t Ô 5 !4Ô ë><><NM È S*ü ip prefix-list Q ¸ ÄA¹ Q ¸,X no 6 ã ôL8 Ô þ !4Ô ë>< ê !4Ô ë><><NM Ä

ip prefix-list *prefix-lis-name* [seq *seq-number*] { deny | permit } *ip-prefix* [ge] {

G!5B _

¹ ß _ $ IP !4Ô ë><#Ï t [+ £EÄ Deny routes from Net-A Ö

```
Ruijie# configure terminal
Ruijie(config)# ip prefix-list pre description Deny routes from Net-A
```

¸Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â ´

Q ¸ `

(Ë	AÈ â
-	-

34.1.7 ip prefix-list sequence-number

?U !4Ô ë>< *ü f c s6Ñ ÈAË S*ü ip prefix-list description Q ¸ ÄA¹ Q ¸,X no 6 ã ª #\ !4Ô ë><,X f c s6Ñ Ä

ip prefix-list sequence-number

– DAÈ â

– D	£EÄ
-	-

5 ¸ÕG!5B "u Ý#Ï t !4Ô ë>< [+ £EÄ

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð ´

G!5B _

¹ ß _ $!4Ô ë>< *ü f c s6Ñ Ö

```
Ruijie# configure terminal
Ruijie(config)# ip prefix-list sequence-number
```

¸Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â

Q ¸ Z Æ

(Ë	AÈ â
-	-

34.1.8 ip route

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

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

– DAÈ â

– D	£EÄ
vrf_name	VRF á
network	‚Â Û5%4°‚X5%4°
net-mask	‚Â Û5%4°‚X }-Õ
ip-address	M- ÕCÃ+ ‚X ß ÔCÇ
Interface	Ä ÃEÝ ÅM- ÕCÃ+ ‚X ß ÔCÇ Î ·
distance	Ä ÃEÝ ÅM- ÕCÃ+ ‚X1u)ÚC±/•
permanent	Ä ÃEÝ Å" CÃ+ ÛAš
number	Ä ÃEÝ ÅM- ÕCÃ+ ‚X G¡
disable/enable	Ä ÃEÝ ÅM- ÕCÃ+ ‚X S6Ñ ÛAš

5 ‚ÕG!5B 5 ‚Õ ´M- ÕCÃ+ Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð

pM- Õ€d?• æ.Ė

+ E@ ¥ s6Ñ ÄE- Ê Ã ¹ GKÁRGOS ,X IP CÃ+ s6Ñ Ä

G!5B _

¹ ßG!5B È GKÁ ZRGOS EC Ê,XIP CÃ+ s6Ñ Ä

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

G ÄAÈ â	A¹ Q ¸ ü ` A’ Û Þ á Õ

Q ¸ Z Æ	(Ë	AÈ â
	-	-

34.1.11 ipv6 prefix-list

?U ï Î Ô þ IPv6 !4Ô ë>< ê5Ù r t Ô 5 !4Ô ë><><NM ÈAË S*ü ipv6 prefix-list Q ¸ ÄA¹ Q ¸,X no 6 ã ôL8 Ô þ !4Ô ë>< ê !4Ô ë><><NM Ä

Q ¸ õ ã	< G!5B õ ã
S*ü Û Ð	´
G!5B _	¹ ß _ $ IPv6 !4Ô ë>< pre #Ï t [+ £EÄ Deny routes from Net-A Ö Ruijie# **configure terminal** Ruijie(config)# **ipv6 prefix-list pre description Deny routes from Net-A**

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â	´

Q ¸ Z Æ

(Ë	AÈ â
-	-

34.1.13 ipv6 prefix-list sequence-number

?U IPv6 !4Ô ë>< *ü f c s6Ñ ÈAË S*ü ipv6 prefix-list description Q ¸ ÄA¹ Q ¸,X no 6 ã ª#\ !4Ô ë><,X f c s6Ñ Ä

ipv6 prefix-list sequence-number

– D	£EÄ

-	-

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

34.1.14 ipv6 route

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

ipv6 route *network* | *prefix-length* { *ipv6-address* | *interface* [*ipv6-address*] } [*distance*] [weight *number*]

– DAÈ â

– D	£EÄ
network	,Â Û5%4°,X5%4°
prefix-length	,Â Û5%4°,X }-ÕKS z
Ipv6-address	M- ÕCÃ+ ,X ß ÔCÇ
interface	Ä ÃEÝ ÅM- ÕCÃ+ ,X ß ÔCÇ Î ·
distance	Ä ÃEÝ ÅM- ÕCÃ+ ,X1u)ÚC±/•
number	(ÃEÝ)M- ÕCÃ+ ,X G¡ È üG!5B1 ËCÃ X Ê Û âA¹ CÃ X,X G¡ ÄG!5B8× È Ö1-32 È Ô 5CÃ+ ,X Ý1 Ë CÃ X,X G¡ ` á6ÑCYE›A¹ 5CÃ+ 6ÑG!5B,X Ô û 1 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

5 ,ÕG!5B 5 ,Õ ´ ipv6 M- ÕCÃ+

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð M- ÕCÃ+,X5 ,Õ1u)ÚC±/• 1 ÈÆîE›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- ÕCÃ+ 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

G!5B – ¹ ß,XG! 5B _ $ È r t Z Ô 5 2001::/64 ,Â Û5%4°,XM- ÕCÃ+ È ß ÔCÇ 2002::2 È1u)ÚC±/• 115 Ä

10.1	1 Ô õ é 9A¹ Q ¸

34.1.17 match as-path

?UG¡ Ú ×A“KÂ ë>< AŒ,XAS_PATH 2 ûCÃ+ ÈAË S*üCÃ+ ÒG!5B Q ¸match as-path Ä A¹ Q ¸,X no 6 ã ôL8 Æ ÝG!5B Ä

match as-path *as-path-acl-list-num ÷as-path-acl-list-num…..* ù

no match as-path *÷as-path-acl-list-num……* ù

– DAÈ â

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

5 ,ÕG!5B

5 ,Õ"u Ý G!5B Ä

Q ¸ õ ã

CÃ+ ÒG!5B õ ã Ä

S*ü Û Ð

match as-path Q ¸ âM6 Ã ¹C³ î þA“KÂ ë>< Ë Ä

Ô þCÃ+ Ò?˜ íG!5B È Ã ¹ ;> 1 þ ê î þ,X match Q ¸ ` 1 þ ê î þ,X set Q ¸ Ä V p"u Ý match Q ¸ È í G! Ý × V p"u Ý set Q ¸ È í á . Ï) ¡ 0 Ä

G!5B _

```
Ruijie(config)# route-map ROUTEMAP2IBGP
Ruijie(config-route-map)# match as-path 20 30
```

,Ì G Q ¸

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

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

34.1.18 match community

?UG¡ Ú ×A“KÂ ë>< AŒ,œOMMUNITY 2 ûCÃ+ ÈAË S*üCÃ+ ÒG!5B Qmatch community 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] …]

– DAÈ â

– 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><

5 ,ÕG!5B 5 ,Õ"u Ý G!5B Ä

match origin	G!CÃ+ ,X$d ¥
set as-path prepend	A’5BG¡ Ú ×CÃ+ ,XAS_PATH 2 û Ä
set comm-list delete	A’5B ôL8 G!,X ¶ ' 2 û
set community	A’5B Û n,X ¶ ' 2 û
set metric	A’5BG¡ Ú ×CÃ+ ,XG£ z

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

34.1.19 match interface

?U G! ß ÔCÇ Î · Û n y · È AË S*üCÃ+ ÒG!5B Q ¸match interface ÄA¹ Q ¸,X no 6 ã ôL8 ÆG!5B Y • Ä

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

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

– DAÈ â

– D	£EÄ
interface-type	y ·2O _
interface-number	y ·4ê Ë

5 ,ÕG!5B 5 ,Õ"u Ý G!5B Ä

Q ¸ õ ã CÃ+ ÒG5B õ ã Ä

S*ü Û Ð match interface Q

– DAÈ â

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

5 ,ÕG!5B

5 ,Õ"u Ý G!5B Ä

Q ¸ õ ã

CÃ+ ÒG5B õ ã Ä

S*ü Û Đ

match ip ad dress 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+ 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 Ä route 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 set Q ¸ Ä
V p"u Ý match Q ¸ È í G! Ý × V p"u Ý set Q ¸ È í á . Ï) ¡ 0 Ä

S*ü Û Ð

match ip next-hop 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 + ³E¯/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 È3 Ã ¹ Ú RIP CÃ+ ³,XCÃ+ G¡ „ Ú × âEî OSPF CÃ+ ³ Ä CÃ+ ,X,Ì fG¡ Ú × Ã ¹ ü Ý,X IP CÃ+ #A, KÈE¯> Ä

üCÃ+ G¡ Ú × È4£ EîE›CÃ+ Ò Ä route 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 set Q ¸ Ä V p"u Ý match Q ¸ È í G! Ý × V p"u Ý set Q ¸ È í á . Ï) ¡ 0 Ä

G!5B –

¹ ß,XG! 5B _ $ ÈOSPF 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

```
Ruijie(config)# router ospf
Ruijie(config-router)# redistribute rip subnets route-map redrip
Ruijie(config-router)# network 192.168.12.0 0.0.0.255 area 0
Ruijie(config-router)# exit
Ruijie(config)# access-list 10 permit host 192.168.10.1
Ruijie(config)# access-list 20 permit host 172.16.20.1
Ruijie(config)# route-map redrip permit 10
Ruijie(config-route-map)# match ip next-hop 10 20
```

,Ì G Q ¸

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

G ÄAÈ â

´

(Ë	AÈ â

#A, ´ G Q ¸

S*ü Û 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+ G¡ Ú × È4£ EîE›CÃ+ Ò Ä route 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 set Q ¸ Ä V p"u Ý match Q ¸ È í G! Ý × V p"u Ý set Q ¸ È í á . Ï) ¡ 0 Ä

G!5B _

CÃ+ Ò,XG!5B Ú&l# 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

¹ ß,XG!5B _ $ È OSPF CÃ+ #A,G¡ Ú × RIP CÃ+ È?U" ¾G¡ Ú ×0ú ÜA“KÂ ë><10 ,X RIP CÃ+ È ü OSPF CÃ+ ³ ÈA¹CÃ+ ,X2O _ êF¼CÃ+ type-1 È ñ ŸG£ z 40 Ä

_ 1 ÖCÃ+ G¡ Ú ×/ _

```
Ruijie(config)# ipv6 router ospf
Ruijie(config-router)# redistribute rip subnets route-map redrip
Ruijie(config-router)# exit
Ruijie(config)# ipv6 access-list v6acl
Ruijie(config-ipv6-acl)# 10 permit ipv6 2620::/64 any
Ruijie(config-ipv6-acl)# exit
Ruijie(config)# route-map redrip permit 10
Ruijie(config-route-map)# match ipv6 address v6acl
Ruijie(config-route-map)# set metric 30
```

_ 2 ÖIPv6 PBR

match ipv6 route-source	G! IPv6 A“KÂ ë>< ,XCÃ+ $d
match metric	G!CÃ+ ,XG£ z
match route-type	G!CÃ+ ,X2O _
match tag	G!CÃ+ ,X ÛA„
set metric	A’5BG¡ Ú ×CÃ+ ,XG£ z
set metric-type	A’5BG¡ Ú ×CÃ+ ,X2O _
set tag	A’5BG¡ Ú ×CÃ+ ,X ÛA„
set ipv6 default next-hop	A’5B5 ,ÕE@ ¥ y [,X ß ÔCÇ Ä
set ipv6 next-hop	A’5BE@ ¥ [,X ß ÔCÇ Ä
show ipv6 policy	/ ' ! A’ Û h*ü,X1*+9CÃ+ ™ ‰ Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

34.1.24 match ipv6 next-hop

?UG¡ Ú × ß ÔCÇPv6 0ú ÜA“KÂ ë>< ê !4Ô ë><?˜ í,X,Â Û5%4°CÃ+ ÈÆË S*üCÃ+ ÒG!5B Q ¸ match ipv6 address ÄA¹ Q ¸,X no 6 ã ôL8 Æ ÝG!5B Ä

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

no match ipv6 next-hop

– DAÈ â

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

5 ,ÕG!5B 5 ,Õ"u Ý G!5B Ä

Q ¸ õ ã CÃ+ ÒG!5B õ ã Ä

S*ü Û 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 Ä route 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 set Q ¸ Ä V p"u Ý match Q ¸ È í G! Ý × V p"u Ý set Q ¸ È í á . Ï) ¡ 0 Ä

G!5B –

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

¹ ß,XG!5B _ $ È OSPF CÃ+ #A,G¡ Ú × RIP CÃ+ È?U" ¾G¡ Ú ×0ú ÜA“KÂ ë><10 ,X RIP CÃ+ È ü OSPF CÃ+ ³ ÈA¹CÃ+ ,X2O _ êF¼CÃ+ type-1 È ñ ŸG£ z 40 Ä

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

,Ì G Q ¸

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 metric	G!CÃ+ ,XG£ z
match route-type	G!CÃ+ ,X2O _
match tag	G!CÃ+ ,X ÛA„
set metric	A’5BG¡ Ú ×CÃ+ ,XG£ z
set metric-type	A’5BG¡ Ú ×CÃ+ ,X2O _
set tag	A’5BG¡ Ú ×CÃ+ ,X ÛA„

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

34.1.25 match ipv6 route-source

?UG¡ Ú × ß ÔCQÇPv6 0ú ÜA“KÂ ë>< ê !4Ô ë><?˜ í,X,Â Û5%4°CÃ+ ÈÆË S*üCÃ+ ÒG!5B Q ¸ match ipv6 address ÄA¹ Q ¸,X no 6 ã ôL8 Æ ÝG!5B Ä

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

match ipv6 address	G! IPv6 A“KÂ ë>< ,X ß ÔCÇ
match ipv6 route-source	G! IPv6 A“KÂ ë>< ,XCÃ+ $d
match metric	G!CÃ+ ,XG£ z
match route-type	G!CÃ+ ,X2O _
match tag	G!CÃ+ ,X ÛA„
set metric	A’5BG¡ Ú ×CÃ+ ,XG£ z
set metric-type	A’5BG¡ Ú ×CÃ+ ,X2O _
set tag	A’5BG¡ Ú ×CÃ+ ,X ÛA„

G ÄAÈ â ´

(Ë	**AÈ â**

Q ¸ Z Æ

V pLÔ?U Ú x f ã# G£ ` û MG£# G£ È Ú ÿCD á à,XCÃ X È Ã ¹ S*ü Î b D B Ù û ã ,X1*+9CÃ+ Ä

G!5B –

¹ ß,XG! 5B _ $ È ü serial 1/0 *ü1*+9CÃ+ È Ú D B Ù ã b 500 +8V,X# G£ È ¢ fastethernet 1/0 y · ¥EÕ Î • Ä

```
Ruijie(config)# interface fastethernet 1/0
Ruijie(config-if)# ip policy route-map smallpak
Ruijie(config-if)# exit
Ruijie(config)# route-map smallpak permit 10
Ruijie(config-route-map)# match length 0 500
Ruijie(config-route-map)# set interface fastethernet 0/0
```

¸Ì G Q ¸

Q ¸	£EÄ
route-map	n CÃ+ Ò
match ip address	G!A“KÂ ë>< ,X
set default interface	A’5B D B Ù,XEg Î y · È V pCÃ+ >< "u Ý â.B,XCÃ+
set interface	A’5B D B Ù,XEg Î y ·
set ip default next-hop	A’5B D B Ù,X ß ÔCÇIP È V pCÃ + >< "u Ý â.B,XCÃ+
set ip next-hop	A’5B D B Ù,X ß ÔCÇIP
set ip precedence	A’5B D B Ù IP ì

G ÄAÈ â ´

Q ¸Z Æ

(Ë	AÈ â
-	-

34.1.27 match metric

?U G!CÃ+ ,XG£ z ÈAË S*üCÃ+ ÒG!5B Q ¸match metric ÄA¹ Q ¸,X no 6 ã ôL8 Æ ÝG! 5B Ä

match metric *metric*

no match metric

– DAÈ â

– D	£EÄ

	metric	CÃ+ G£ z ª 8× È Ö0-4294967295

5 ,ÕG!5B

5 ,Õ"u Ý G!5B Ä

Q ¸ õ ã

CÃ+ ÒG!5B õ ã Ä

S*ü Û 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+ &, ¸ ÿ@ ¿ ¿ ÉÃ+ 8 ¡ ¹ Ã+ 6 ¡ A ¾ <>]Z

```
Ruijie(config)# router rip
Ruijie(config-router)# redistribute ospf route-map redrip
Ruijie(config-router)# network 192.168.12.0
Ruijie(config-router)# exit
Ruijie(config)# route-map redrip permit 10
Ruijie(config-route-map)# match route-type internal
```

,Ì G Q ¸

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

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â

S*ü Û Ð

match tag Q ¸ âM6 Ã ¹C³ î þ tag Ä

CÃ+ µ C Ã ¹ ¢ Ô þCÃ+ E¯/ßG¡ Ú × º ê Ô þCÃ+ E¯/ß Ä!¨ V Ã ¹ Ú OSPF CÃ+ ³,X CÃ+ 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 Ä route 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 set Q ¸ Ä V p"u Ý match Q ¸ È í G! Ý × V p"u Ý set Q ¸ È í á . Ï) ¡ 0 Ä

G!5B _

¹ ß,XG! 5B _ $ ÈRIP CÃ+ #A,G¡ Ú × OSPF CÃ+ ÄRIP ¾G¡ Ú × OSPF CÃ+ ³ ÛA„ 50 ` 80 ,XCÃ+ Ä

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

,Ì G Q ¸

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

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

34.1.31 route-map

'G!5BCÃ+ Ò Ê ÈCÃ+ Ò c Ë,X S*üLÔ?U"¼ ã ¹ ß ´&• Ö

V p ï Î1 Ô þCÃ+ Ò1*+9 È"u Ý Û n *sequence-number* È5 ,Õ 10 ×

V p ¾ , ü Ô þCÃ+ Ò1*+9 Ëu Ý Û n *sequence-number* Èá î ï Î „,XCÃ+ Ò1*+9 È ,È yE¯ 9 Æ Ý,XCÃ+ Ò1*+9E¯> G!5B ×

V p , ü î þCÃ+ Ò1*+9 È ¡ 0 ™NO?U Û n c Ë È ú í Ú Î)„JíAÃ ¤/ Ä

G!5B –

¹ ß,XG! 5B _ $ È OSPF 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

```
Ruijie(config)# router ospf
Ruijie(config-router)# redistribute rip subnets route-map redrip
Ruijie(config-router)# network 192.168.12.0 0.0.0.255 area 0
Ruijie(config-router)# exit
Ruijie(config)# route-map redrip permit 10
Ruijie(config-route-map)# match metric 4
Ruijie(config-route-map)# set metric 40
Ruijie(config-route-map)# set metric-type type-
Ruijie(config-route-map)# set tag 40
```

Pa

9QÄ

5 ,ÕG!5B

5 ,Õ"u Ý G!5B Ä

Q ¸ õ ã

CÃ+ ÒG!5B õ ã Ä

S*ü Û 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,ip-addr Å È á Õ à ÊA'5B î4˜ – D

G!5B _

```
Ruijie(config)# route-map set-as-path
Ruijie(config-route-map)# match as-path 1
Ruijie(config-route-map)# set aggregator as 3 2.2.2.2
```

,Ì G Q ¸

Q ¸	£EÄ
match as-path	G!CÃ+ ,X AS_PATH
match community	G!CÃ+ ,X ¶ '
match metric	G!CÃ+ ,XG£ z
match origin	G!CÃ+ ,X$d ¥
set community	A'5BG¡ Ú ×CÃ+ ,XCOMMUNITY 2 û
set metric	A'5BG¡ Ú ×CÃ+ ,XG£ z
set metric-type	A'5BG¡ Ú ×CÃ+ ,X2O _

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

34.1.33 set as-path prepend

?U Í G! match ?˜ í,XCÃ+ r t Û n,X AS_PATH 2 û ÈAË S*üCÃ+ ÒG!5B Q ¸ set as-path prepend ÄA¹ Q ¸,X no 6 ã ôL8 Æ ÝG!5B Ä Q ¸ ™*ü b1*+9CÃ+ G!5B Ä

set as-path prepend *as-number*

no set as-path prepend [*as-number*]

– DAÈ â

– D	£EÄ
as-number	š Û t 9 AS_PATH 2 û,X AS Ë

5 ,ÕG!5B	5 ,Õ"u Ý G!5B Ä
Q ¸ õ ã	CÃ+ ÒG!5B õ ã
S*ü Û Ð	A¹ Q ¸*ü 94- G! ,XCÃ+ r t š Û Q,X AS_PATH 2 û ÈÔ õ Ô î Ã ¹ ü as-path r t 15 þ as Ä

G!5B _

```
Ruijie(config)# route-map set-as-path
Ruijie(config-route-map)# match as-path 1
Ruijie(config-route-map)# set as-path prepend 100 101 102
```

,Ì G Q ¸

Q ¸	£EÄ
match as-path	G!CÃ+ ,X AS_PATH
match community	G!CÃ+ ,X ¶ '
match metric	G!CÃ+ ,XG£ z
match origin	G!CÃ+ ,X$d ¥
set community	A'5BG¡ Ú ×CÃ+ ,XCOMMUNITY 2 û
set metric	A'5BG¡ Ú ×CÃ+ ,XG£ z
set metric-type	A'5BG¡ Ú ×CÃ+ ,X2O _

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

34.1.34 set comm-list delete

?U Í G! match ?˜ í,XCÃ+ ôL8 COMMUNITY_LIST ,X Ý,X community 2 û ÈAË S *üCÃ+ ÒG!5B Q ¸set comm-list delete ÄA¹ Q ¸,X no 6 ã ôL8 Æ ÝG!5B Ä Q ¸ ™*ü b 1*+9CÃ+ G!5B Ä

set comm-list *community-list-number* | *community-list-name* delete

no comm-list *community-list-number* | *community-list-name* delete

– DAÈ â

– 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

5 ,ÕG!5B 5 ,Õ"u Ý G!5B Ä

Q ¸ õ ã CÃ+ ÒG5B õ ã Ä

S*ü Û Ð A¹ Q ¸*ü 9A'5B G! ,XCÃ+ üCÃ+ ôL8,X ¶ ' 2 û,X ë>< Ä

G!5B –

```
Ruijie(config)# router bgp 100
Ruijie(config-router)# neighbor 172.16.233.33 remote-as 120
Ruijie(config-router)# neighbor 172.16.233.33 route-map ROUTEMAPIN
in
Ruijie(config-router)# neighbor 172.16.233.33 route-map
ROUTEMAPOUT out
Ruijie(config-router)# exit
Ruijie(config)# ip community-list 500 permit 100:10
Ruijie(config)# ip community-list 500 permit 100:20
Ruijie(config)# ip community-list 120 deny 100:50
Ruijie(config)# ip community-list 120 permit 100:.*
Ruijie(config)# route-map ROUTEMAPIN permit 10
Ruijie(config-route-map)# set comm-list 500 delete
Ruijie(config-route-map)# exit
Ruijie(config)# route-map ROUTEMAPOUT permit 10
Ruijie(config-route-map)# set comm-list 120 delete
```

¸Ì G Q ¸

Q ¸	£EÄ
ip community-list	G!5B ¶ ' ë><
match as-path	G!CÃ+ ,X AS_PATH 2 û
match community	G!CÃ+ ,X ¶ ' 2 û
match metric	G!CÃ+ ,XG£ z
match origin	G!CÃ+ ,X$d ¥
set as-path prepend	A'5BG¡ Ú ×CÃ+ ,XAS_PATH 2 û
set comm-list delete	A'5B ôL8 G!,X ¶ ' 2 û

```
Ruijie(config-route-map)# exit
Ruijie(config)# route-map SET_COMMUNITY 20 permit
Ruijie(config-route-map)# match as-path 2
Ruijie(config-route-map)# set community no-export
```

¸Ì G Q ¸

Q ¸	£EÄ
match as-path	G!CÃ+ ,X AS_PATH
match community	G!CÃ+ ,X ¶ '
match metric	G!CÃ+ ,XG£ z
match origin	G!CÃ+ ,X$d ¥
set as-path prepend	A'5BG¡ Ú ×CÃ+ ,XAS_PATH 2 û
set origin	A'5BG¡ Ú ×CÃ+ ,X 9$d
set metric-type	A'5BG¡ Ú ×CÃ+ ,X2O _

G ÄAÈ â ´

Q ¸Z Æ

(Ë	AÈ â
-	-

34.1.36 set dampening

?U Í G! match ?˜ í,XCÃ+ ,XCÃ+ 95 – D ÈAË S*üCÃ+ ÒG!5B Q ¸ set dampening ÄA¹ Q ¸,X no 6 ã ôL8 Æ ÝG!5B Ä

set dampening *half-life reuse suppress max-suppress-time*

no set dampening

– D	£EÄ
half-life	CÃ+ ÃE' ê á ÃE' Ê,X >D ó Ä 8× È 1..45(ÚJs) È5 ,Õ 15 ÚJs 'CÃ+ ,X ½5. " bA¹ Ê ÈCÃ+ e ?·L8 Ä8× È 1..20000 È5 ,Õ 750 Ä

interface-type	y ·2O _
interface-number	y ·4ê-Õ

5 ,ÕG!5B 5 ,Õ"u Ý G!5B Ä

Q ¸ õ ã CÃ+ ÒG5B õ ã Ä

set de

S*ü Û Ð

G ÄAÈ â

Q ¸ Z Æ

(Ë	AÈ â
-	-

34.1.38 set extcommunity

?U Í G! match ?˜ í,XCÃ+ Û n =) ¶ ' 2 û ÈAË S*üCÃ+ ÒG!5B Set¸ extcommunity ÄA¹ Q ¸,X no 6 ã ôL8 Æ ÝG!5B Ä Q ¸ ™*ü b1*+9CÃ+ G!5B Ä

set extcommunity {rt *extend-community-value* | soo *extend-community-value*}

no set extcommunity {rt | soo}

– DAÈ â

– D	£EÄ
rt	A'5BCÃ+ ,XRT 2 û
soo	A'5BCÃ+ ,XSOO 2 û
extend-community-value	=) ¶ ',X

5 ,ÕG!5B 5 ,Õ"u Ý G!5B Ä

Q ¸ õ ã CÃ+ ÒG5B õ ã Ä

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

G!5B –

```
Ruijie(config)# access-list 2 permit 192.168.78.0 255.255.255.0
Ruijie(config)# route-map MAP_NAME permit 10
Ruijie(config-route-map)# match ip-address 2
Ruijie(config-route-map)# set extcommunity rt 100:2
```

Q ¸	£EÄ

Tf 0.006 Tc 2 Tr 10.091.

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

34.1.39 set ip default next-hop

?U Í G! match ?˜ í,X D B Ù Û nT¬Ax ß ÔCÇ IP ÈAË S*üCÃ+ ÒG!5B Q ¸ set ip next-hop ÄA¹ Q ¸,X no 6 ã ôL8 Æ ÝG!5B Ä

set ip default next-hop *ip-address* [*weight*] [*…ip-address* [*weight*]]

no set ip default next-hop *ip-address* [*weight*] [*…ip-address* [*weight*]]

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

Ô þCÃ+ Ò1*+9 Ã ¹ Ý î þ set ¡ 0 Ä

¹ ß,X _ $ Í ø þ á à,X8V&• ¥ Î,X y [Ú ÿE@ ¥ á à,XCÃ X Þ • Ä
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 J ª,X y [V pEC Ê R á E@ ¥CÃ+ Ê ö × Ø)Ú Ä

```
Ruijie(config)#access-list 1 permit ip 1.1.1.1 0.0.0.0
Ruijie(config)#access-list 2 permit ip 2.2.2.2 0.0.0.0
Ruijie(config)#interface async 1
Ruijie(config-if)#ip policy route-map equal-access
Ruijie(config)#route-map equal-access permit 10
Ruijie(config- route-map)#match ip address 1
Ruijie(config-route-map)#set ip default next-hop 6.6.6.6
Ruijie(config)#route-map equal-access permit 20
Ruijie(config-route-map)#match ip address 2
Ruijie(config-route-map)#set ip default next-hop 7.7.7.7
Ruijie(config)#route-map equal-access permit 30
Ruijie(config- route-map)#set default interface null 0
```

Q ¸	£EÄ
route-map	n CÃ+ Ò
match ip address	G!A“KÂ ë>< ,X
set default interface	A'5B D B Ù,XEg Î y · È V pCÃ+ >< "u Ý â.B,XCÃ+
set default interface	A'5B D B Ù,XEg Î y · È V pCÃ+ >< "u Ý â.B,XCÃ+
set interface	A'5B D B Ù,XEg Î y ·
set ip next-hop	A'5B D B Ù,X ß ÔCÇIP È V pCÃ + >< "u Ý â.B,XCÃ+
set ip precedence	A'5B D B Ù IP ì

G ÄAÈ â -

(Ë	AÈ â
-	-

34.1.40 set ip dscp

?U Í G! match ?˜ í,X y [A'5B DSCP ÈAË S*üCÃ+ ÒG!5B Q ¸ set ip dscp ÄA¹ Q ¸,X no 6 ã ôL8 Æ ÝG!5B Ä

set ip dscp *dscp_value*

no set ip dscp

– DAÈ â

– D	£EÄ
dscp_value	A'5B IP y [IP DSCP

5 ,ÕG!5B 5 ,Õ"u Ý G!5B Ä

Q ¸ õ ã CÃ+ ÒG!5B õ ã Ä

S*ü Û Ð ´

G!5B _ ´

,Ì G Q ¸

Q ¸	£EÄ
route-map	n CÃ+ Ò
match ip address	G!A"KÂ ë>< ,X
set default interface	A'5B D B Ù,XEg Î y · È V pCÃ+ >< "u Ý â.B,XCÃ+
set default interface	A'5B D B Ù,XEg Î y · È V pCÃ+ >< "u Ý â.B,XCÃ+
set interface	A'5B D B Ù,XEg Î y ·
set ip default next-hop	A'5B D B Ù,X ß ÔCÇIP È V pCÃ + >< "u Ý â.B,XCÃ+
set ip precedence	A'5B D B Ù IP ì

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

34.1.41 set vrf

Z S k G! Z match ?˜ í,X IP y [6Ñ ó ü Û n,X VRF CÃ+ ><E¯> EÝCÃ ÈAË S*üCÃ+ ÒG! 5B Q ¸ set vrf ÄA¹ Q ¸,X no 6 ã ôL8 Æ ÝG!5B Ä Q ¸ ™*ü b1*+9CÃ+ G!5B Ä

set default interface	A’5B D B Ù,XEg Î y · È V pCÃ+ >< "u Ý â.B,XCÃ+
set default interface	A’5B D B Ù,XEg Î y · È V pCÃ+ >< "u Ý â.B,XCÃ+
set interface	A’5B D B Ù,XEg Î y ·
set ip default next-hop	A’5B D B Ù,X ß ÔCÇIP È V pCÃ + >< "u Ý â.B,XCÃ+
set ip precedence	A’5B D B Ù IP ì

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

34.1.43 set ip next-hop verify-availability

?U Û n.BAx ß ÔCÇ ,X ÃE’ û ÈAË S*üCÃ+ ÒG!5B Çset ip next-hop verify-availability ÄA¹ Q ¸,X no 6 ã ôL8 Æ ÝG!5B Ä Q ¸ ™*ü b1*+9CÃ+ G!5B Ä

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

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

– DAÈ â

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

5 ,ÕG!5B 5 ,Õ"u Ý G!5B Ä

Q ¸ õ ã CÃ+ ÒG!5B õ ã Ä

S*ü Û Ð ´

G!5B –

¹ ß,XG! 5B _ $ È ü serial 1/0 Þ *ü1*+9CÃ+ Ä 'A¹ y · y $d ü 10.0.0.0/8 8× È Y,X D B Ù,X# G£ È Ú ¥EÕ 192.168.100.1 ×$d5%4° 172.16.0.0/16 8× È Y,X D B Ù,X# G£ È Ú ¥EÕ 172.16.100.1 × J -,X D B# G£ Ú <F¼ ö × Ä

```
Ruijie(config)#interface serial 1/0
Ruijie(config-if)#ip policy route-map load-balance
Ruijie(config)#access-list 10 permit 10.0.0.0 0.255.255.255
```

```
Ruijie(config)#access-list 20 permit 172.16.0.0 0.0.255.255
Ruijie(config)#route-map load-balance permit 10
Ruijie(config-route-map)#match ip address 10
Ruijie(config-route-map)#set ip  next-hop 192.168.100.1
Ruijie(config)#route-map load-balance permit 20
Ruijie(config--route-map)#match ip address 20
Ruijie(config-route-map)#set ip  next-hop 172.16.100.1
Ruijie(config)#route-map load-balance permit 30
Ruijie(config-route-map)#set interface Null 0
```

¸Ì G Q ¸

Q ¸	£EÄ
route-map	n CÃ+ Ò
match ip address	G!A“KÂ ë>< ,X
set default interface	A’5B D B Ù,XEg Î y · È V pCÃ+ >< "u Ý â.B,XCÃ+
set default interface	A’5B D B Ù,XEg Î y · È V pCÃ+ >< "u Ý â.B,XCÃ+
set interface	A’5B D B Ù,XEg Î y ·
set ip default next-hop	A’5B D B Ù,X ß ÔCÇIP È V pCÃ + >< "u Ý â.B,XCÃ+
set ip precedence	A’5B D B Ù IP ì

G ÄAÈ â ´

Q ¸Z Æ

(Ë	AÈ â
-	-

34.1.44 set ip precedence

?U Í G! match ?˜ í,X y [A’5B IP ,X ì 4{, AËAË S*üCÃ+ ÒG!5B Set ip precedence ÄA¹ Q ¸,X no 6 ã È J Û nG!5B,X ì 4{ ôL8 Æ ÝG!5B Ä

set ip precedence {<*0-7*> | *critical* | *flash* | *flash-override* | *immediate* | *internet* | *network* | *priority* | *routine* }

no set ip precedence {< *0-7*> | *critical* | *flash* | *flash-override* | *immediate* | *internet* | *network* | *priority* | *routine* }

– DAÈ â

– D	£EÄ

34.1.45 set ip tos

?U Í G! match ?˜ í,X y [A'5B y [IP ,X TOS, AË S*üCÃ+ ÒG!5B Q ¸set ip tos ÄA¹ Q ¸,X no 6 ã È J Û nG!5B,X tos ôL8 Æ ÝG!5B Ä

set ip tos {*<0-15>* | *max-reliability* | *max-throughput* | *min-delay* | *min-monetary-cost* | *normal* }

no set ip tos {*<0-15>* | *max-reliability* | *max-throughput* | *min-delay* | *min-monetary-cost* | *normal* }

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B

5 ,Õ"u Ý G!5B Ä

Q ¸ õ ã

CÃ+ ÒG5B õ ã Ä

S*ü Û Ð

4£ EîE› A'5B IP y [,X TOS Í S*ü1*+9CÃ+ EÝCÃ,X IP y [E¯> á à á uBüG£,X ôEÕ Ä

¾?U 1*+9CÃ+ G!,X y [IP y FÑ î>•A'5B Þ Û n,X TOS Ä

G!5B –

¹ ß,XG! 5B _ $ È Í ¢ y · fastEthernet 0/0 E¯ 9,X$d 192.168.217.68 ,X y [A' 5Btos 4 Ä

```
Ruijie(config)#access-list 1 permit 192.168.217.68 0.0.0.0
Ruijie(config)#route-map name
Ruijie(config-route-map)#match ip address 1
Ruijie(config-route-map)#set ip tos 4
Ruijie(config)#interface FastEthernet 0/0
Ruijie(config-if)#ip policy route-map name
```

¸Ì G Q ¸

Q ¸	£EÄ
match interface	G!CÃ+ ,X ß ÔCÇ y ·
match ip address	G!A"KÂ ë>< ,X
match ip next-hop	G!A"KÂ ë>< ,X ß ÔCÇ
match ip route-source	G!A"KÂ ë>< ,XCÃ+ $d
match metric	G!CÃ+ ,XG£ z
match route-type	G!CÃ+ ,X2O _
match tag	G!CÃ+ ,X ÛA„

set metric-type	A’5BG¡ Ú ×CÃ+ ,X2O _
set tag	A’5BG¡ Ú ×CÃ+ ,X ÛA„
set ip precedence	A’5B IP y [,X ì 4{ +!‰

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

34.1.46 set ipv6 default next-hop

?U Í G! match ?˜ í,X IPv6 y [Û nT¬Ax,X ß ÔCÇ IPv6 ÈAË S*üCÃ+ ÒG!5B Q ¸ set ipv6 default next-hop ÄA¹ Q ¸,X no 6 ã ôL8 Æ ÝG!5B Ä Q ¸ ™*ü b1*+9CÃ+ G!5B Ä

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

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

– DAÈ â

– D	£EÄ
global-ipv6-address	y [E@ ¥,X ß ÔCÇ IPv6 Ä ß ÔCÇCÃ+ < ™NO F• yCÃ+ < Ä
weight	BóEQ >5 õ ã ß,X G¡ È1 8.

5 ,ÕG!5B 5 ,Õ"u Ý G!5B

Q ¸ õ ã CÃ+ ÒG!5B õ ã Ä

S*ü Û Ð ü y · Þ h*ü1*+9CÃ+ ¹ â È Í b G!,Ì h,X?˜ í,X

G!5B _

ide
flash
critical

_ 1 ÖA’5B Â IPV6 y [ì 4{ 3 Ä

G!5B G6(,XACL6

```
Ruijie(config)#ipv6 access-list aaa
Ruijie(config-ipv6-acl)#permit ipv6 2003:1000::10/80 2001:100::/64
```

G!5Broute-map

G!5B _

```
Ruijie(config)#route-map pbr-aaa permit 10
Ruijie(config-route-map)#set ipv6 next-hop 2001:1234::2
```

A’5B Â ì 4{ s6Ñ

```
Ruijie(config-route-map)# set ipv6 precedence 3
Or
Ruijie(config-route-map)# set ipv6 precedence immediate
```

?U Í G! match ?˜ í,XCÃ+ A'5B LOCAL_PREFERENCE ÈAË S*üCÃ+ ÒG!5B Q ¸ set local-preference ÄA¹ Q ¸,X no 6 ã ôL8 Æ ÝG!5B Ä

set local-preference *number*

no set local-preference

– DAÈ â

– D	£EÄ
number	ì z,X zG£ Ä8× È Ö0-4294967295

5 ,ÕG!5B

5 ,Õ"u Ý G!5B Ä

Q ¸ õ ã

CÃ+ ÒG5B õ ã Ä

S*ü Û Ð

¾6Ñ óA'5B Ô þlocal-preference È á6Ñ óA'5B î þ local-preference 2 û Ä A¹ Q ¸+ 9A'5B G! ,XCÃ+ ,X ì 4{ Ä

G!5B _

```
Ruijie(config)# route-map SET_PREF permit 10
Ruijie(config-route-map)# match as-path 1
Ruijie(config-route-map)# set local-preference 6800
Ruijie(config-route-map)# exit
Ruijie(config)# route-map SET_PREF permit 20
Ruijie(config-route-map)# match as-path 2
Ruijie(config-route-map)# set local-preference 50
```

,Ì G Q ¸

Q ¸	£EÄ
match as-path	G!CÃ+ ,X AS_PATH 2 û
match metric	G!CÃ+ ,XG£ z
match origin	G!CÃ+ ,X$d ¥
set as-path prepend	A'5BG¡ Ú ×CÃ+ ,XAS_PATH 2 û
set metric	A'5BG¡ Ú ×CÃ+ ,XG£ z
set metric-type	A'5BG¡ Ú ×CÃ+ ,X2O _

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

34.1.52 set metric

?U Í G! match ?˜ í,XCÃ+ ,XA'5BG£ z ÈAË S*üCÃ+ ÒG!5B Q ¸ set metric ÄA¹ Q ¸,X no 6 ã ôL8 Æ ÝG!5B Ä

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

no set metric

– DAÈ â

– 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

5 ,ÕG!5B á àCÃ+ #A,G¡ Ú ×CÃ+ ,X5 ,ÕG£ z á Ô Ä

Q ¸ õ ã CÃ+ ÒG5B õ ã Ä

S*ü Û Ð

CÃ+ G£ z î E ¡CÃ+ ,XEÝ ½ È ´!8LÔ?U B rL ,X5%4° § % ÈAü " E¯> A'5B Ä J E¯> set metric Ã ¹ ž þ+ ÿ ê þ - ÿ metric ,X ¡ 0 h"¼ ã Ø þCÃ+ #A,,X Þ ßL$ Ä V Í b RIP #A,G¡ Ú × J W #A,CÃ+ Ê Èmetric r £ â,X4§ p8× È 1-16 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 Ä route 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 set Q ¸ Ä V p"u Ý match Q ¸ È í G! Ý × V p"u Ý set Q ¸ È í á . Ï) ¡ 0 Ä

G!5B –

¹ ß,XG! 5B _ $ ÈOSPF CÃ+ #A,G¡ Ú × RIP CÃ+ È J ÚG¡ Ú ×CÃ+ ,X ñ ŸG£ z A'5B 40 Ä

```
Ruijie(config)# router ospf
Ruijie(config-router)# redistribute rip subnets route-map redrip
Ruijie(config-router)# network 192.168.12.0 0.0.0.255 area 0
Ruijie(config-router)# exit
Ruijie(config)# route-map redrip permit 10
Ruijie(config-route-map)# set metric 40
```

,Ì G Q ¸

Q ¸	£EÄ
match interface	G!CÃ+ ,X ß ÔCÇ y ·
match ip address	G!A"KÂ ë>< ,X
match ip next-hop	G!A"KÂ ë>< ,X ß ÔCÇ

match ip route-source	G!A“KÂ ë>< ,XCÃ+ $d
match metric	G!CÃ+ ,XG£ z
match route-type	G!CÃ+ ,X2O _
match tag	G!CÃ+ ,X ÛA„
set metric-type	A’5BG¡ Ú ×CÃ+ ,X2O _
set tag	A’5BG¡ Ú ×CÃ+ ,X ÛA„

G ÄAÈ â ´

```
Ruijie(config-router)# network 192.168.12.0 0.0.0.255 area 0
Ruijie(config-router)# exit
Ruijie(config)# route-map redrip permit 10
Ruijie(config-route-map)# set metric-type type-1
```

Q ¸	£EÄ
match interface	G!CÃ+ ,X ß ÔCÇ y ·
match ip address	G!A“KÂ ë>< ,X
match ip next-hop	G!A“KÂ ë>< ,X ß ÔCÇ
match ip route-source	G!A“KÂ ë>< ,XCÃ+ $d

+ 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 Ä route 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 set Q ¸ Ä V p"u Ý match Q ¸ È í G! Ý × V p"u Ý set Q ¸ È í á . Ï) ¡ 0 Ä

G!5B _

¹ ß,XG! 5B _ $ È Ú G!A“KÂ { >< Í,XCÃ+ ,X ß ÔCÇA’5B 192.168.1.2 Ä

```
Ruijie(config)# route-map redrip permit 10
Ruijie(config-route-map)# match ip address 1
Ruijie(config-route-map)# set next-hop 192.168.1.2
```

Q ¸	£EÄ

egp	9$d E°0Ã,X EGP
igp	9$d ,X IGP
incomplete	á-¹F' ¾G 9,X

5 ,ÕG!5B 5 ,Õ"u Ý G!5B Ä

Q ¸ õ ã CÃ+ ÒG5B õ ã Ä

S*ü Û Ð ¾6Ñ óA'5B Ô þCÃ+ 9$d 2 û Ä
A¹ Q ¸+ 9A'5B G! ,XCÃ+ ,X 9$d 2 û Ä

G!5B _

```
Ruijie(config)# route-map SET_ORIGIN 10 permit
Ruijie(config-route-map)# match as-path 1
Ruijie(config-route-map)# set origin igp
Ruijie(config-route-map)# exit
Ruijie(config)#C /P <</MCID 9MCID 9MCID 9Ma-2 78.36 592.4603 Tm10.88 0.8/1e
map)#set orig-path 1
)#
```

set tag *tag*

no set tag

– DAÈ â

– D	£EÄ
tag	A’5BG¡ Ú ×CÃ+ ,X ÛA„

5 ,ÕG!5B

± Õ s 9 ,XCÃ+ ÛA„ á ¬ Ä

Q ¸ õ ã

CÃ+ ÒG5B õ ã Ä

S*ü Û Ð

A¹ Q ¸ ¾ EÖ*ü bCÃ+ G¡ Ú × Ê ! Ý Ä V p"u ÝG!5BA¹ Q ¸ È Ú4» S s 9,XCÃ+ ÛA„ Ä

G!5B _

¹ ß,XG! 5B _ $ È OSPF CÃ+ #A,G¡ Ú × RIP CÃ+ È J ÚG¡ Ú ×CÃ+ ,X ÛA„A’5B 100 Ä

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

,Ì G Q ¸

Q ¸	£EÄ
match interface	G!CÃ+ ,X ß ÔCÇ y ·
match ip address	G!A“KÂ ë>< ,X
match ip next-hop	G!A“KÂ ë>< ,X ß ÔCÇ
match ip route-source	G!A“KÂ ë>< ,XCÃ+ $d
match metric	G!CÃ+ ,XG£ z
match route-type	G!CÃ+ ,X2O _
match tag	G!CÃ+ ,X ÛA„

34.1.58 set weight

?U Í G! match ?˜ í,X BGP CÃ+ A'5B G¡ ÈAË S*üCÃ+ ÒG!5B Q ¸ set weight ÄA¹ Q ¸ ,X no 6 ã ôL8 Æ ÝG!5B Ä

set weight *number*

no set weight

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

5 ,ÕG!5B	5 ,Õ"u Ý A'5B Ä
Q ¸ õ ã	CÃ+ ÒG5B õ ã Ä
S*ü Û Ð	A¹ Q ¸ ¾ EÖ*ü b Â BGP CÃ+ ,X G¡ Ä 5 ,Õ ™ ‰ ß È ¢F• y ,XCÃ+ È B

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

34.2.2 show ip prefix-list

?U ¹,ß !4Ô ë>< µ C ê5Ù !4Ô ë><><NM µ C È S*ü show ip prefix-list Q ¸ Ä

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

– DAÈ â

– D	£EÄ
prefix-name	!4Ô ë>< á +

5 ,ÕG!5B 5 ,Õ / Ý !4Ô ë><G!5B µ C Ä

Q ¸ õ ã (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

S*ü Û 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

G!5B –

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

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

34.2.3 show ip route

?U ¹,ß IP CÃ+ >< µ C È S*ü show ip route Q ¸ Ä

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

	– D	£EÄ

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 _ 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
20.0.0.0/8	,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 ·

_ 2 Ö ¹ ß show ip route *network* Q ¸,X / 4§ p Ö

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

+!‰	AÈ â
Routing Descriptor Blocks	/ CÃ+ µ C,X ß ÔCÇ IP ÃCÃ+ 9$d Ã È „ ÊKÈ Ã¼£+ ¾ þ y · Ã$dCÃ+ #A, Ã2O _ Ã BGP ¶ ' 2 û 1

_ 3 Ö ¹ ß show ip route count Q ¸,X / 4§ p Ö

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

_ 4 Ö ¹ ß show ip route weight Q ¸,X / 4§ p Ö

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

¸ì G Q ¸	Q ¸	£EÄ
	-	-

+!‰	AÈ â
O	AÈ âA¹CÃ,X$dCÃå #A, ÄA¹ +!‰ Ã6Ñ ª Ö C Ö,ÈE²CÃå × L Ö CÃå × S ÖM- ÕCÃå × R ÖRIP CÃå × B ÖBGP CÃå × O ÖOSPF CÃå × i ÖIS-IS CÃå Ä
E2	CÃå2O _ ÄA¹ +!‰ Ã6Ñ ª Ö E1 ÖOSPF êF¼CÃå2O _ Í × E2 ÖOSPF êF¼CÃå2O _ Î × N1 ÖOSPF NSSA êF¼CÃå2O _1 × N2 ÖOSPF NSSA êF¼CÃå2O _2 × IA ÖOSPF CÃå ³ YF¼CÃå × su ÖIS-IS " CÃå × L1 ÖIS-IS 1 4{CÃå × L2 ÖIS-IS 2 4{CÃå × ia ÖIS-IS CÃå ³ YF¼CÃå Ä
20::/64	,Â Û5%4°,X5%4° `}-ÕKS z
[1/0]	1u)ÚC±/• Ë zG£
Via 10::4	ß ÔCÇIP
00:00:06	#A,CÃå ,# ÊKÈ
VLAN 1	ß ÔCÇE@ ¥ y ·

,Ì G Q ¸

Q ¸	£EÄ
ipv6 route	G!5Bipv6 M- ÕCÃå

G ÄAÈ â A¹ Q ¸ ü ` A' Û Þ á Õ

Q ¸ Z Æ

(Ë	AÈ â
10.1	1 Ô õ é 9A¹ Q ¸

34.2.6 show route-map

?U / CÃ+ Ò,XG!5B µ C ÈAË S*ü(M *ü õ ã Q ¸ show route-map Ä

show route-map ÷*route-map-name* ù

– DAÈ â

– D	£EÄ
route-map-name	Ä ÃEÝ Å ¾ / Û nCÃ+ Ò,XG!5B µ C

5 ,ÕG!5B

5 ,Õ / ÝCÃ+ ÒG!5B µ C Ä

Q ¸ õ ã

(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

S*ü Û Ð

V p"u Ý Û nCÃ+ Ò á + È î / ÝCÃ+ Ò,XG!5B µ C È ú í ¾ / Û nCÃ+ Ò,X G!5B µ C Ä

G!5B _

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

+!‰	AÈ â
route-map	CÃ+ Ò á +
Permit	CÃ+ Ò1*+9 Ù ÿpermit GK +
sequence 10	CÃ+ Ò1*+9 Í h,X c Ë
Match clauses	n G!?˜ í Ä BCÃ+ Ò1*+9 permit E¬ deny GK + ‡ n ú ;> set ¡ 0
Set clauses	n 0ú Ü match G!?˜ í â,X ¡ 0

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

,3Y Q,

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

35.1.2 ipv6 address

5%4° y ·G!5B Ô þ IPV6 ,X , S*üA¹ Q ¸,X no 6 ã ôL8G!5B,X Ä

ipv6 address *ipv6-address*/*prefix-length*

ipv6 address *ipv6-prefix*/*prefix-length* eui-64

ipv6 address *prefix-name sub-bits/prefix-length* [eui-64]

no ipv6 address

no ipv6 address *ipv6-address /prefix-length*

no ipv6 address *ipv6-prefix*/*prefix-length* eui-64

no ipv6 address *prefix-name sub-bits/prefix-length* [eui-64]

– DAÈ â

– D	£EÄ
ipv6-address	IPV6 È ™NOFI ¬RFC4291 n ,X 6 ã È!£ þ ³ KÈ*ü f ËLh Ô È!£ þ ³ 4 16 !¨(M È*ü AE¯ D></ .
ipv6-prefix	IPV6 !4Ô È ™NO FI ~ RFC4291 n ,X 6 ã È!£ þ ³ KÈ*ü f ËLh Ô È!£ þ ³ 4 16 !¨(M È *ü AE¯ D></ .
prefix-length	IPV6 !4Ô,XKS z G IPV6 ·><5%4°,XF¼ Ú Ä
prefix-name	Eî*ü !4Ô ,X á + Ä S*üE- þ Û n,XEî*ü !4Ô*ó ä y · Ä
sub-bits	$!4Ô!¨ (M â !¨(M,X ÄE- þ âEî*ü !4Ô ,X !4Ô Ü J*ó ä y · ÄE- þ ,X></ "©?UFI ~ RFC4291 £EÄ,X f Ë></ "© Ä
eui-64	></ *ó ä ,X IPV6 + G!5B,X !4Ô ` 64 !¨(M,X y · ID ÛAš0ú4˜ ä Ä

5 ,ÕG!5B ´

Q ¸ õ ã y ·G!5B õ ã

– DAÈ â

– D	£EÄ
default	ÃEÝ – D Ä V pG!5B ÞA¹ GK + ÈFw ´(Š Õ7¾ | G!5B È î*ó ä Ô 55 ,ÕCÃ+ Ä"¼ ã H ÄA' Û ¾ AŒ Ô þ Ý y · S*ü default GK + Ä

5 ,ÕG!5B ´

Q ¸ õ ã y ·G!5B õ ã

S*ü Û Ð

´(Š Õ7¾ \| G!5B Û 'A' Û RA ÄCÃ+ @ Å y [Ê È Ã ¹ S*ü RA y [,X ! 4Ô µ C7¾ |*ó ä EUI-64 ã,X y · Ä

V p ,X RA y [ÿ Ý J WG!5B ,X Û « ÈFw A¹ y · ÚEîE› DHCPv6 9‹ ªE- o J WG!5B Ä J WG!5B Eî Û DNS á u <,X IPv6 Ã NTP á u <,X IPv6 1 Ä

S*ü no ipv6 address autoconfig Q ¸ ôL8 y · Þ,X IPv6 Ä

G!5B –

```
Ruijie(config-if)# ipv6 address autoconfig default
Ruijie(config-if)# no ipv6 address autoconfig
```

,Ì G Q ¸

Q ¸	£EÄ
ipv6 address *ipv6-prefix/prefix-length* [eui-64]	¹G!5B y · IPv6

G ÄAÈ â Ý G Ä FÑ Õ Ä

Q ¸ Z Æ

(Ë	AÈ â
RGOS10.4 (	A¹ Q ¸ ¢ RGOS10.4 (Ô Ÿ Õ Ä

35.1.4 ipv6 enable

A¹ Q ¸ ' ÔA¹ y ·,X IPv6 s6Ñ È S*üA¹ Q ¸,X no 6 ã Ã ¹ Ú IPv6 s6Ñ GKÁ Ä

ipv6 enable

no ipv6 enable

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B y ·,X IPv6 s6Ñ"u Ý ' Ô Ä

Ã ¹ é*ü W Ä 'Eî*ü !4Ô ¬ ê Ê ÈE- o é*üEî*ü !4Ô,X(M n !4Ô îC³- ¬ ê Ä5%4°4ê Ë ¬ ê Ê È ¾?U Â Ô ßEî*ü !4Ô G Ã Ä

Ô þEî*ü !4Ô Ã ¹ Ù ÿ î þ !4Ô Ä

E- o ÈKS,X(M n !4ÔEî *ü ü y ·,X IPv6 G!5B Þ Ä

G!5B _

V ß,X _ $ ¹G!5B Z Ô þEî*ü !4Ô ¿ my-prefix Ä

```
Ruijie(config)# ipv6 general-prefix my-prefix 2001:1111:2222::/48
```

,Ì G Q ¸

Q ¸	£EÄ
ipv6 address prefix-name sub-bits/prefix-length	S*üEî*ü !4ÔG!5B y ·
show ipv6 general-prefix	¹,ßEî*ü !4Ô

G ÄAÈ â

Ý G Ä FÑ Õ7r s 0

,Ì G Q ¸	Q ¸	£EÄ
	-	-

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

35.1.7 ipv6 nd dad attempts

(NS) /P Tf 0 Tc 0 Tw 10.2Td 541C81BE218791B5B 1 T-e f-m (8Tj EM<2C581B49C4A301C4C /C2_4<1

35.1.9 ipv6 neighbor

S*üA¹ Q ¸G!5B Ô þM- ÕF• È S*üA¹ Q ¸,X no 6 ã Ã ¹ ôL8 W Ä

ipv6 neighbor *ipv6-address interface-id hardware-address*

no ipv6 neighbor *ipv6-address interface-id*

– DAÈ â

– D	**£EÄ**
ipv6-address	F• ,X IPV6 È ™NOFI ~ RFC4291 n ,X ></ 6 ã Ä
interface-id	Û nA¹F• ü,X5%4° y Ä Ù À Routed Port,L3 AP · ` SVI y · Å Ä
hardware-address	F• ,XJÒCÃ È G ¹ XXXX.XXXX.XXXX ></ ,X 48 !,X MAC È 'X'></ AE¯ D Ä

5 ,ÕG!5B "u ÝG!5BÏ)M- ÕF• Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð

A¹ Q ¸2O ARP Q ¸ ÈM- Õ,XF• ¾6ÑG!5B ü IPV6 ,X y · Þ È
V p?UG!5B,XF• Æ4£EîE› NDP : J , | üF• >< ÈFw A¹ | Õ*ó ä,XF• Ú7¾ |
E@ 6 M- Õ,X ÄG!5B,XM- ÕF• V p Ý ÈÚ Ø b Reachble (Š Õ Ä´ ,XM- ÕF• È
ÛG!5B,XM- ÕF• IPV6 È â y · ÞG!5B,X á G! Ä á üA¹ y ·,X Ï Ô IPV6
"Å€“ ÂÅ€ U• w ìæhB„ R•5B,W†>Å´r Ó•¼ Ù Ü.á• A¹ nÔŒ |!5Be \ È â y ,"A5ÆiJ,X U• ¥Å€

	-	-

35.1.10 ipv6 ns-linklocal-src

;> E- 5 Q ¸ È ¥EÕF• AË" Ê Ú S*üJÒCÃ 0 $d Ä ;> no ipv6 ns-linklocal-src È¥EÕF• AË" Ê á S*üJÒCÃ 0 $d È5à B,Â,X IPv6 Ý RFC3484 EÝ ½ S*üJÒCÃ ê5Ù <)×) • Ä

ipv6 ns-linklocal-src

no ipv6 ns-linklocal-src

– DAÈ â	– D	
	-	-

5 ,ÕG!5B	¥EÕF• AË" Ê È ¹JÒCÃ 0 $d Ä
Q ¸ õ ã	< G!5B õ ã Ä
S*ü Û Ð	+9

S*ü Û Ð 8config)# ipv6 n3 <0D048 reTJ /TT1 1.0026 Tw 0 -2.057 TD (no ipv6 n2<</MCID 14 18 r

ipv6-prefix	IPV6 ,X5%4° Ë È™NOFI RFC4291 ,X ></ 6 ã Ä
prefix-length	IPV6 !4Ô,XKS z È"¼ ã !M6 ™NO t Þ'/'
ipv6-address	Û n E',Â,X5%4°,X ß ÔCÇ È™NOFI ~ RFC4291 ,X ></ 6 ã Ä ß ÔCÇ Ã ¹ ` ß ÔCÇ,XEg Î y · à Ê Û n Ä"¼ ã V p ß ÔCÇ,X V p JÒCÃ ÈFw ™NO Û nEg Î y · Ä
interface-id	Û n E',Â,X5%4°,X y [Eg Î y · È V pG!5B,XM- Õ CÃ+ ™ ™ Û n ZEg Î y ·5à"u Ý Û n ß ÔCÇ È Fw ÚAx ,Â,X üA¹Eg Î y ·,ÌE²,XJÒCÃ Þ È GA¹ M- ÕCÃ+ >• ' 0,ÈE²CÃ+ Ø)Ú Ä"¼ ã V p,Â,X5%4° ê 5Ù ß ÔCÇ,X V p JÒCÃ ÈFw ™NO Û n Eg Î y · Ä

5 ,ÕG!5B ´

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð

"¼ ã	V p,Â,X ê5Ù ß ÔCÇ JÒCÃ Fw ™NO Û nEg Î y · È J è V p,Â,X JÒCÃ Ê?U" ß ÔCÇ 3 ™NO JÒCÃ Ä ' üG!5BCÃ+ Ê,Â,X ` ß ÔCÇ á AŒ Î)„ î • È V p ß ÔCÇ `Eg Î y ·FÑ Û n Z ÈFw ß ÔCÇ G!,X,ÈE²CÃ+ ,XEg Î y · ™NO `G!5B,XEg Î y · Ô7È Ä

G!5B _

```
Ruijie(config)# ipv6 route 2001::/64 vlan 1 2005::1
```

,Ì G Q ¸

Q ¸	£EÄ
show ipv6 route	¹,ß IPV6 ,XCÃ+ µ C

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

35.1.12 ipv6 source-route

S*üA¹ Q ¸ SA' ÛE@ ¥ ú ÝCÃ+ OjF¼,XIPv6 y [È S*üA¹ Q ¸,X no 6 ã Ú/U!6E@ ¥ ú ÝCÃ + OjF¼,XIPv6 y [Ä

ipv6 source-route

no ipv6 source-route

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	/U!6E@ ¥ú ÝCÃ+ OjF¼,XIPv6 y [Ä
Q ¸ õ ã	< G!5B õ ã Ä
S*ü Û Ð	´ 2O _ 0 CÃ+ OjF¼ Ý] <Ld w Ö SA' Û \ • çFA « ¦4± á u Ï È ¹ ü5 ,Õ ™ ‰ ß /U!6E@ ¥ ú ÝCÃ+ OjF¼,XIPv6 y [È ¡' Ø)Ú Ô4œ,Â,X ,X ú Ý2O _ 0 CÃ + OjF¼,XIPv6 y [Ä
G!5B _	Ruijie(conifg)# **no ipv6 source-route**

,Ì G Q ¸	Q ¸	£EÄ
	-	-

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

35.2 Ã ¸ Ò

35.2.1 clear ipv6 neighbors

#ÙL8 | Õ : 4 ,XF• Ä

clrear ipv6 neighbors

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	(M õ ã
Q ¸ õ ã	EîE›A¹ Q ¸ Ã ¹#ÙL8 ÝEîE›F• ¥)„ | Õ : 4 ,XF• È"¼ ãM- ÕG!5B,X á î>•#ÙL8 Ä

S*ü Û Ð ´

G!5B _ Ruijie# **clear ipv6 neighbors**

,Ì G Q ¸

Q ¸	£EÄ
ipv6 neighbor	G!5B>< ÕF•
show ipv6 neighbors	/ F• ><,X Y •

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

35.2.2 show ipv6 general-prefix

/ Eî*ü !4Ô ,X !4Ô µ C È S*ü show ipv6 general-prefix Q ¸ ÄA¹ Q ¸AÁ"© ã V ß Ö show ipv6 general-prefix

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã

S*ü Û Ð S*ü sho w ipv6 general-prefix Q ¸ ¹,ßEî*ü !4Ô,X µ C Ä ¹G!5B,XEî*ü !4Ô È â DHCPv6 v 0Ã : 4 Eî*ü !4Ô ÈFÑ î / Î 9 Ä

G!5B _

ipv6 general-prefix	G!5BEî*ü !4Ô

G ÄAÈ â Ý G Ä FÑ Õ Ä

Q ¸ Z Æ

(Ë	AÈ â
RGOS10.4 (	A¹ Q ¸ ¢ RGOS10.4 (Ô Ÿ Õ Ä

35.2.3 show ipv6 interface

/ IPV6 y ·,X µ C Ä

show ipv6 interface [*interface-id*] [ra-info]

– D	£EÄ
interface-id	y · Ä Ù À ¹ þ5% y · Ãaggregateport y · ÃSVI y · Å

,Ì G Q ¸	Q ¸	£EÄ
	-	-

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

35.2.4 show ipv6 neighbors

/ IPV6 ,XF• >< Ä

show ipv6 neighbors { [verbose] [*interface-id*] [*ipv6-address*] | [static] }

– DAÈ â	– D	£EÄ
	verbose	/ F• ,XAº4š µ C
	interface-id	/ ¤ þ y · Þ,XF• ><
	ipv6-addres	/ Û nF• ,X µ C
	static	/ M- ÕF• Ý û(Š Õ

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã

S*ü Û Ð ´

G!5B _

_ 1 Ö / SVI 1 y · Þ,XF• µ C

```
Ruijie# show ipv6 neighbors vlan 1
IPv6 Address Linklayer Addr   Interface
fa::1         00d0.0000.0002   vlan 1
fe80::200:ff:fe00:2  00d0.0000.0002  vlan 1
```

_ 2 Ö / F• ,XAº4š µ C

```
Ruijie# show ipv6 neighbors verbose
IPv6 Address  Linklayer Addr Interface
2001::1      00d0.f800.0001 vlan 1
       State: Reach/H Age: - asked: 0
fe80::200:ff:fe00:1    00d0.f800.0001 vlan 1
```

State: Reach/H Age: - asked: 0

+!‰	AÈ â
IPv6 Address	F• ,X IPV6
Linklayer Addr	JÒCÃ G Mac È V pE¬ þ k í / incomplete
Interface	A¹F• ü,X y ·
State	F• ,X(Š Õ Ö state/H(R) STATE ,X V ß Ö INCMP(Incomplete)—A¹F• ,X ?· d!7 üE¯ > ÈF• AË" (NS) y [Æ4£ ¥EÕ E¬"u Ý F• ,X h1(y [(NA) Ä REACH(Reachable) —></ ¢A' Û F• E²Eî ,X È üA¹(Š Õ åF• ¥EÕ y [Ê áLÔ?UNq ê,X | 0 ÄSTALE — ></ F• >•Ax Ã E',X ÊKÈ Æ4£ ó È Ø üA¹(Š Õ ÊA' Û áLÔ?UNq ê,X | 0,È Ý y [¥EÕ A¹F• Þ È!8 Ê G Ú | NUD (Neighbor Unreachability Detection) Ä DELAY—></ Ý y [å Ø b STALE (Š Õ,XF• ¥EÕ È!8 Ê(Š Õ+ STALE E@ 6 DELAY (Š Õ È ü DELAY_FIRST_PROBE_TIME seconds(5 /¦) Y V p"u Ý F• ÃE' û,XEî-¹ µ C ÈFw (Š Õ Ú + DELAY E@ 6 PROBE È à Ê åA¹F• ¥EÕF• AË" y [(NS) È!7 ã | NUD Ä PROBE—></ NUD Æ4£ | È'# F• ,X ÃE' û È !£Lh RetransTimer milliseconds åF• ¥EÕF• AË" (NS) y [,È ZF• ,X h1(ê5Ù ¥EÕ,X F• AË" y [DG£ ÆE' ÞL$ MAX_UNICAST_SOLICIT(3 þ) ?—></ þ-¹(Š Õ /R—></ Ax F• Ô þA' Û /H—></ Ax F• Ô þ
Age	></ F• >•Ax Ã E',X ÊKÈ È'-' ></ " E° ÃE' ,X È"¼ ã ÍM- ÕG!5B,XF• ><NM Ú qC* b rL ú ÃE' Ä'expired' ></ F• >•Ax ÃE',X ÊKÈ Æ4£ ó È1 Y?º ¥ NUD "# Ä
Asked	></ ü?· dF• ,XJÒCÃ Ê Æ4£ åF• ¥EÕ,X F• AË" (NS),X DG£ Ä

_ 3 Ö / M- ÕF• (Š Õ

```
Ruijie# show ipv6 neighbors static
```

```
IPv6 Address     Linklayer Addr  Interface              State
2001:1::1        00d0.f822.33ab  GigabitEthernet 0/14   ACTIVE
2001:2::2        00d0.f822.33ac  VLAN 1                 INACTIVE
```

+!‰	AÈ â
IPv6 Address	M- ÕF• ,X IPV6
Linklayer Addr	G!5B,XJÒCÃ G Mac
Interface	A¹F• ü,X y ·
State	M- ÕF• ,X(Š Õ Ö STATE ,X V ß Ö ACTIVE—# |,X INACTIVE— á# |,X È'G!5B,XM- ÕF• IPV6 È â y · ÞG!5B,X á G! Ä á ü Ï Ô y · ,X5%!‰ Y È ê â y · D• †0U Å ÈA¹M- ÕF• G!5B á# | È G D B Ù á î ÝM- ÕF• Û n,X mac E@ ¥ Ä

,Ì G Q ¸

Q ¸	£EÄ
ipv6 neighbor	G!5B>< ÕF•

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

35.2.5 show ipv6 route

/ IPV6 ,XCÃ+ µ C Ä

show ipv6 route [static] [local] [connected]

– D	£EÄ
	/ M- ÕG!5B,XCÃ+

Q ¸ õ ã (M õ ã

S*ü Û Đ EîE›A¹ Q ¸ Ã ¹ ¹,ßCÃ+ ><,X µ C Ä

G!5B _

```
Ruijie# show ipv6 route
Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP
      I1 - ISIS L1, I2 - ISIS L2, IA - IIS interarea
L    ::1/128
     via ::1, loopback 0
C    fa::/64
     via ::, vlan 1
L    fa::1/128
     via ::, loopback 0
C    2001::/64
     via ::, vlan 2
L    2001::1/128
     via ::, loopback 0
L    fe80::/10
     via ::1, Null0
C    fe80::/64
     via ::, vlan 1
L    fe80::200:ff:fe00:1/128
     via ::, loopback 0
C    fe80::/64
     via ::, vlan 2
```

,Ì G Q ¸

Q ¸	£EÄ
ipv6 route .5 r<</MCID 5 1ET 66.84 706.28 0.24 20.4 BMf tÕCÃ>BDC 60.24 1 Tf 2 T164f t C >>BDC	

IPv6 5%4° È Ô oF• ,XCÃ+ < î ¥ ÎCÃ+ @ y [Ä?U / E- oF• CÃ+ < `CÃ+ @ µ C È S*ü show ipv6 router Q ¸ Ä JAÁ"© ã V ß Ö

show ipv6 router *[interface-type interface-number]*

– DAÈ â

– D	**£EÄ**
interface-type interface-number	ÃEÝ – D Ä / Û n y · ,XCÃ+ @ µ C Ä

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã

S*ü Û Ð S*ü

36 OSPFv3 ﻋﻴ ﻟ

36.1 ﻋﻴ Ẩ ﻋﻴ ﻟ

36.1.1 area default-cost

ü stub ³,X ABR ÞA'5BA¹ Q ¸ È*ü 9 n stub ³ Y5 ,ÕCÃ+ ,X · Ë Ä S*üA¹ Q ¸,X no EÝNM Ú 6 á5 ,Õ Ä

area *area-id* default-cost *cost*

no area *area-id* default-cost

	– D	£EÄ
– DAÈ â	*area-id*	stub ³,X ³ Ë Ä J Ã ¹ Û n Ô þ H D ê5Ù Ô þ IPv4 !4Ô Ä
	cost	stub ³ Y5 ,ÕCÃ+ ,X · Ë Ä 8× È 1-16777214 Ä

5 ,ÕG!5B	5 ,Õ default-cost ,X 1 Ä
Q ¸ õ ã	CÃ+ E¯/ßG!5B õ ã Ä
S*ü Û Ð	A¹ Q ¸ ¾ üE² y stub ³,X ABR Þ S*ü Ä

G!5B _	ßM6 _ $ È Ú stub ³ 50 5 ,ÕCÃ+ ,X · ËA'5B 100 Ö
	`ipv6 router ospf 1`
	`area 50 stub`
	`area 50 default-cost 100`

	Q ¸	£EÄ
,Ì G Q ¸	area stub	A'5B Ô þ stub ³ Ä

G ÄAÈ â	´

	(Ë	AÈ â
Q ¸ Z Æ		

-	-

36.1.2 area range

S*üA¹ Q ¸A'5B KÈ" 6. 8× È È S*üA¹ Q ¸,X no EÝNM ôL8 ÆG!5B,X" 6.8× È ê5Ù 6 á " 6.8× È,X5 ,Õ – D Ä

area *area-id* range *ipv6-prefix*/*prefix-length* [advertise|not-advertise]

no area *area-id* range *ipv6-prefix*/*prefix-length*

– DAÈ â

– D	£EÄ
area-id	Ú?UE¯>CÃ+ " 6.,X ³ Ë Ä J Ã ¹ Û n Ô þ H D ê5Ù Ô þ IPv4 !4Ô Ä
ipv6-prefix/*prefix-length*	" 6.,X 8× È Ä
advertise	@ A¹" 6.8× È Ä
not-advertise	á @ A¹ " 6.8× È Ä 5 ,Õ @ Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
	-

36.1.3 area stub

S*üA¹ Q ¸ ï Î Ô þ stub ³ ê5ÙA'5B stub ³,X 2 û ÈS*üA¹ Q ¸,X no EÝNM Ú 6 á B Eî ³ ê5Ù ôL8 stub ³,XG!5B Ä

area *area-id* stub [no-summary]

no area *area-id* stub [no-summary]

– DAÈ â

– D	£EÄ
area-id	stub ³,X ³ Ë Ä J Ã ¹ Û n Ô þ H D ê5Ù Ô þ IPv4 !4Ô Ä
no-summary	A¹EÝNM ¼ stub ³,X ABR Þ Ý È></ A¹ ABR ¾ Ú Ô 5></ 5 ,ÕCÃ+ ,X2O _ 3 ,X LSA @ stub ³ Y È5à á a @ 2O _ 3 ,X J ª LSA Ä

5 ,ÕG!5B þ n stub ³ Ä

Q ¸ õ ã CÃ+ E¯/ßG!5B õ ã Ä

S*ü Û 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 ;>area stub Q ¸ Ä V p ³A'Au stub ³ È J Ú : 4 á AS êF¼CÃ+ µ Ctype 5 LSAs) È5à 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 È E- È stub ³ YF¼,XA' Û Ã ¹ E' AS êF¼ Ä

V pLÔ?UG!5Btotally stub Ä ` < stub Å ³ È ¾LÔ ü ABR Þ ;> area stub Q ¸ Ê ÈEÝ ½ no-summary GK + Ä

G!5B _

ßM6 _ $ Èstub ³ 10 ,X ABR Þ ¾ Ú5 ,ÕCÃ+ @ stub ³ Ö

```
ipv6 router ospf 1
area 10 stub
area 10 stub no-summary
```

,Ì G Q ¸

Q ¸	£EÄ
area default-cost	A’5B stub ³ Y5 ,ÕCÃ+ ,X · Ë Ä

G ÄAÈ â

– DAÈ â

– D	**£EÄ**
reference-bandwidth *ref-bw*	ú ‘,X – 5× È ¹ Mbps) ! Ä 8× È 1-4294967 Ä

5 ,ÕG!5B B ú ‘ –5× E¯> y ·,X zG£Au1k È ú ‘ –5× 100Mbps Ä

Q ¸ õ ã CÃ+ E¯/ßG!5B õ ã Ä

S*ü Û Ð S*ü

Q ¸ õ ã CÃ+ E¯/ßG!5B õ ã Ä

S*ü Û Đ 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• ÈOSPFv3 î0Ÿ E¯> 5%4° / Ä

| 3 Ã ¹EîE› y ·G!5B õ ã Q ¸ ipv6 ospf bfd [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-interfaces Q ¸ Ä

G!5B _ ´

,Ì G Q ¸

Q ¸	£EÄ
ipv6 router ospf *process-id*	| OSPFv3 CÃ+ E¯/ß JE¯ 9 OSPFv3 CÃ+ G!5B õ ã Ä
ipv6 ospf bfd [disable]	G!5BE¤ OSPFv3 ,X Û n y · | ê 5Ù GKÁ S*üBFD E¯> JÒCÃ ”# Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

36.1.7 clear ipv6 ospf process

S*üA¹ Q ¸#ÙL8 JG¡ OSPFv3 r _ Ä

clear ipv6 ospf [*process-id*] process

– DAÈ â

– D	£EÄ
process-id	Û n OSPFv3 E¯/ß Ë È8× È 1-65535

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã Ä

S*ü Û Đ !7 ™ ‰ ß È ´LÔ S*ü Q ¸ Ä

S*ü *process-id* – D Û n ¾#ÙL8 ¤ þ OSPFv3 r _ Ä V p"u Ý Û n *process-id* – D È í #ÙL8 Ý OSPFv3 r _ Ä

G!5B _ ßM6 _ $ È*ü bG¡ „ | Ý OSPFv3 r _

£EÄ
-

AÈ â
-

E¯/ßG!5B Q ¸default-information

ç] [metric-type *type*] [route-map

[metric-type *type*] [route-map

£EÄ
K + S k OSPFv3 ´ 5 Ê {*ó5 ,ÕCÃ , ü5 ,ÕCÃ+ Ä
ÃÃ+ ñ Ÿ,X zG£ È8× È 0-16777214 Ä Ê5 ,ÕCÃ+ zG£ 1 Ä
CÃ+ ,X2O _ ÄOSPFv3 êF¼CÃ+ Ý ø/¡ á àCÃ+ A’ Û Þ,ß ,X zG£ á Ô ×

ASBR Ä7¾"• ³E•+ CÃ+ A' Û Å Ä

redistribute ´"© {*ó5 ,ÕCÃ+ È JEî 4- OSPFv3 CÃ+ ³ ,X ÝCÃ+ A' Û Ä ASBR {*ó5 ,ÕCÃ+ È ™NO*üdefault-information originate 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 ,ÕCÃ+ Ä CÃ+ A' Û á î / A¹5 ,ÕCÃ+ È?U.BAx ú {*ó5 ,ÕCÃ + È Ã ¹*ü show ipv6 ospf database ?– ³ OSPFv3 JÒCÃ(Š Õ D B g ÄOSPFv3 ,XF• EîE› ;> show ipv6 route Q ¸ È Ã ¹,ß 5 ,ÕCÃ+ ,X Ä

êF¼5 ,ÕCÃ+ ,XCÃ+ zG£ È ¾6Ñ+default-information originate Q ¸E¯> n È á 6ÑEîE› Q ¸ default-metric 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 show ipv6 route ¾ / 2O _ 1 Fw 5CÃ+ Ä

stub ³ ,XCÃ+ A' Û á Ã ¹ {*ó êF¼5 ,ÕCÃ+ ,X Ä

G!5B _

ßM6 _ $ È*ü bG!5BG¡ Ú {*ó5 ,ÕCÃ+ Ö

```
default-information originate always
```

,Ì G Q ¸

Q ¸	£EÄ
redistribute	A'5BCÃ+ µ C,XG¡ Ú ¥ Ä
show ipv6 ospf	/ OSPFv3 CÃ+ E¯/ß µ C Ä
show ipv6 ospf database	/ OSPFv3 JÒCÃ(Š Õ D B g µ C Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

36.1.9 default-metric

S*üA¹ Q ¸A'5BG¡ Ú ¥CÃ+ ,X5 ,Õ zG£ È S*üA¹ Q ¸,X no EÝNM 6 á5 ,Õ Ä

default-metric *metric-value*

no default-metric

– DAÈ â

– D	£EÄ
metric-value	G¡ Ú ¥CÃ+ ,X5 ,Õ zG£ Ä 8× È 1-16777214

5 ,ÕG!5B	20
Q ¸ õ ã	CÃ+ E¯/ĺG!5B õ ã Ä
S*ü Û Đ	A¹ Q ¸ à redistribute

5 ,ÕG!5B

5 ,Õ 110 ×
YCÃ+ 1u)ÚC±/• Ö5 ,Õ 110 ×
KÈCÃ+ 1u)ÚC±/• Ö5 ,Õ 110 ×
êF¼CÃ+ 1u)ÚC±/• Ö5 ,Õ 110 ×

Q ¸ õ ã

CÃ+ E¯/ßG!5B õ ã Ä

S*ü Û Ð

8¹?U Ûn OSPFv3 á à2O _CÃ+ Í h á à1u)ÚC±/• Ê È*ü!8 Q ¸ Ä
CÃ+ 1u)ÚC±/• ¤ o4- á àCÃ+ #A,E¯> CÃ+ ì 4{!¨EW È1u)ÚC±/•C^ ã ÈCÃ+ ì 4{C^ P¬ Ä

"¼ ã	á à,X OSPFv3 E¯/ß*ó ä,XCÃ+ ?UE¯> ì 4{!¨EW È™NOEîE›1u)ÚC±/•E¯> !¨EW Ä 1u)ÚC±/•A'5B 255 È></ CÃ+ ><NM á Ã µ È Ú á – â y [E@ ¥ Ä

G!5B _

¹ ß,XG! 5B _ $ È ÚG!5B OSPFv3 êF¼CÃ+ 1u)ÚC±/• 160

```
Ruijie(config)# ipv6 router ospf 20
Ruijie(config-router)# distance ospf external 160
```

¸Ì G Q ¸

Q ¸	£EÄ
ipv6 router ospf	| OSPFv3 CÃ+ E¯/ß Ä

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

36.1.11 ipv6 ospf area

S*üA¹ Q ¸A'5B y · – â OSPFv3 CÃ+ E¯/ß È S*üA¹ Q ¸,X no EÝNM GKÁA'5B,X s6Ñ Ä

ipv6 ospf *process-id* area *area-id* [instance *instance-id*]

no ipv6 ospf *process-id* area [instance *instance-id*]

– DAÈ â

– D	£EÄ
process-id	ospf E¯/ß Ë 8× È 1-65535 Ä
area *area-id*	y · – â,X OSPFv3 ³ Ä J Ã ¹ Û n Ô þ H D ê5Ù Ô þ IPv4 !4Ô Ä

instance *instance-id*	Í y ·(M n OSPFv3 r 'E¯> G!5B 8× È 0-255 Ä

5 ,ÕG!5B "u Ý ' Ô A¹ s6Ñ Ä

Q ¸ õ ã y ·G!5B õ ã Ä

S*ü Û Ð

Ã ¹ ü y ·G!5B õ ã ß È S*ü Q ¸ | y · – â OSPFv3 ÈaÐÐ ipv6 router ospf G!5BOSPFv3 E¯/ß ÈG!5B ` OSPFv3 E¯/ß â È y · Ú7¾ | – â,Ì h,XE¯/ß Ä

S*ü no ipv6 ospf area Q ¸ Û n y · Ú á a – â OSPFv3 CÃ+ E¯/ß Ä

S*ü no ipv6 router ospf Q ¸ Ý y ·FÑ á a – â OSPFv3 CÃ+ E¯/ß Ä

¾ Ý *instance-id* ,Ì à,XA' Û KÈ !6Ñ!7 Î0ŸF• y G2ï Ä

G!5B Q ¸ â È y · Þ Ý,X !4Ô µ CFÑ Ú – â OSPFv3 E¤> Ä

G!5B –

ßM6 _ $ È*ü b ü y · int fastethernet 0/0 Þ | OSPFv3 E¯/ß È – â Û n,X r _,X Û n ³E¤> Ö

```
int fastethernet 0/0
ipv6 ospf 1 area 2 instance 2
```

Í •tp2ï Ä

Q ¸	£EÄ
ipv6 router ospf	| OSPFv3 CÃ+ E¯/ß Ä
passive-interface	A'5B#\ U y · Ä

instance *instance-id*	Í y ·(M n OSPFv3 r 'E¯> G!5B È8× È 0-255 Ä

5 ,ÕG!5B

5 ,Õ,X y ·8…C –5× ú ‘ /Bandwidth Ä –5× ú ‘T¬Ax 100Mbps Å Ä

Q ¸ õ ã

y ·G!5B õ ã Ä

S*ü Û 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› ipv6 ospf cost Q ¸G!5B,X OSPFv3 8…C È î?Z,ª5 ,ÕG!5B Ä

G!5B _

ßM6 _ $ È*ü bG!5B y ·,X · Ë 1 Ö

```
ipv6 ospf cost 1
```

,Ì G Q ¸

Q ¸	£EÄ
show ipv6 ospf interface	/ OSPFv3 y · µ C Ä
ipv6 ospf area	A’5B y · – â OSPFv3 CÃ+ E¯/ß

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

36.1.14 ipv6 ospf dead-interval

S*üA¹ Q ¸A’5B y · ÞAx F• ,X ÊKÈ È üA¹ ÊKÈ Y"u Ý F• ,X hello y [Ax A¹F• È S*üA¹ Q ¸,X no EÝNM 6 á5 ,Õ Ä

ipv6 ospf dead-interval *seconds* [instance *instance-id*]

no ipv6 ospf dead-interval [instance *instance-id*]

– DAÈ â

– D	£EÄ
seconds	F• ÊKÈ Ä 8× È 1-65535(/¦) Ä

instance *instance-id*	Í y ·(M n OSPFv3 r 'E¯> G!5B È8× È 0-255 Ä

5 ,ÕG!5B

ip v6 ospf hello-interval ÊKÈ,X4 á Ä

Q ¸ õ ã

y ·G!5B õ ã Ä

S*ü Û Ð

F• KÈ ÊKÈ ™NO,Ì à È ú í Ú ´"© Î0Ÿ!7 ,XF• y G2Ï Ä

F• ÊKÈ5 ,Õ ¥EÕ hello y [ÊKÈKÈLh,X 4 á È V p Â Z hello ÊKÈKÈLh È Ú7¾ | Â ÊKÈ Ä

å À J á ÎA, |,È y Â A¹ – D È V p.B rLÔ?U ÈAË"¼ ã Ö

ÊKÈ ™NO û bF• ¥EÕ hello y [,X ÊKÈKÈLh Ä

F• KÈ ™NOA'5B,Ì à,X ÊKÈ Ä

G!5B _

ßM6 _ $ È*ü bA'5B y ·Ax F• ,X ÊKÈ 60s Ö

```
ipv6 ospf dead-interval 60
```

,Ì G Q ¸

Q ¸	£EÄ
ipv6 ospf hello-interval	A'5B y · Þ ¥EÕHello y [,X ÊKÈKÈ Lh Ä
show ipv6 ospf interface	/ OSPFv3 y · µ C Ä

5 ,ÕG!5B 5 ,Õ Í MTU E¯> õP` Ä

Q ¸ õ ã y ·G!5B õ ã Ä

S*ü Û 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

G!5B _ ¹ ß,XG! 5B _ $ È Ú ethernet 1/0 ,X MTU õP` s6Ñ GKÁ Ä

```
Ruijie(config)# interface ethernet 1/0
Ruijie(config-if)# ipv6 ospf mtu-ignore
```

,Ì G Q ¸

Q ¸	£EÄ
ipv6 router ospf	| OSPFv3 CÃ+ E¯/ß Ä
ipv6 mtu	A'5B y ·,X IPv6 MTU Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

36.1.16 ipv6 ospf hello-interval

S*üA¹ Q ¸A'5B y · Þ ¥EÕ Hello y [,X ÊKÈKÈLh È S*ü Q ¸ ,X no EÝNM 6 á5 ,Õ Ä

ipv6 ospf hello-interval *seconds* [instance *instance-id*]

no ipv6 ospf hello-interval [instance *instance-id*]

– DAÈ â

– D	£EÄ
seconds	¥EÕHello y [ÊKÈKÈLh Ä 8× È 1-65535(/¦) Ä
instance *instance-id*	Í y ·(M n OSPFv3 r 'E¯> G!5B 8× È 0-255 Ä

5 ,ÕG!5B S •5%4° â&• Í&•5%4° 10 /¦ ×&• Í î&•5%4° â NBMA 5%4°5 ,Õ 30 /¦ Ä

Q ¸ õ ã y ·G!5B õ ã Ä

S*ü Û Ð F• KÈ ¥EÕHello y [,X ÊKÈKÈLh ™NO,Ì à È ú í Ú ´"© Î0Ÿ!7 ,XF• y G2Ï Ä

G!5B – ßM6 _ $ È*ü bA’5B y · ¥EÕ hello y [,X ÊKÈKÈLh 20s Ö

```
ipv6 ospf hello-interval 20
```

Q ¸	£EÄ

5 ,ÕG!5B

5 ,Õ"u Ý n F• ×
F• EBA¶ ÊKÈKÈLh Ö5 ,Õ120 /¦ ×
M2 S •5%4°F• ,X ì Ö5 ,Õ 0 Ä

Q ¸ õ ã

y ·G!5B õ ã Ä

S*ü Û Ð

| Ã ¹ B rL 5%4°2O _ ÈA'5BF• ,Ì h – D Ä

G!5B _

¹ ß,XG! 5B _ $ ÈA'5B OSPFv3 ,XF• È IPv6 2001:DB8:4::1 Èì 1 È EBA¶KÈLh 150 /¦ Ä

```
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ipv6 ospf neighbor 2001:DB8:4::1 priority 1 poll-interval 150
```

,Ì G Q ¸

Q ¸	£EÄ
Ipv6 ospf priority	A'5B y ·,X ì Ä
Ipv6 ospf network	A'5B y ·,X5%4°2O _

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

36.1.18 ipv6 ospf network

S*üA¹ Q ¸A'5B y ·,X5%4°2O _ È S*üA¹ Q ¸,X no EÝNM 6 á5 ,Õ Ä

ipv6 ospf network { broadcast | non-broadcast | point-to-point | point-to-multipoint [non-broadcast]} [instance *instance-id*]

no ipv6 ospf network [broadcast | non-broadcast | point-to-point | point-to-multipoint [non-broadcast]] [instance *instance-id*]

– DAÈ â

– D	£EÄ
broadcast	A'5B S •5%4°2O _ Ä
non-broadcast	A'5BM2 S •5%4°2O _
point-to-point	A'5B&• Í&•5%4°2O _ Ä
point-to-multipoint	A'5B&• Í î&•5%4°2O _

OSPFv3 Q ¸

Q ¸ õ ã

y ·G!5B õ ã Ä

S*ü Û Ð

' S •5% 4°2O _ ÈLÔ?UEÝ DR/BDR(Û nCÃ+ </ Û Ñ Û nCÃ+ <) Ä üE¯> DR/BDR EÝ Ê È ì 4{ P¬,XA' Û Ú ì ä DR ê BDR È V p ì 4{ ,Ì à È Router-ID P¬ ,XA' Û È Ú ì ä DR ê BDR Ä

ì 4{ Ì,XA' Û È Ú á – â DR/BDR ,XEÝ Ä

V p5%4° Æ4£ , ü DR ` BDR ÈFw Â y ·,X ì 4{ á î0Ÿ G*ó È ¾ Ý ü ß Ô õ E¯> DR ê BDR EÝ Ê È ! î – âEÝ Ä

G!5B _

ßM6 _ $ È S k y · ü DR/BDR EÝ Ê È á a ä DR ê BDR Ö

```
ipv6 ospf priority 0
```

,Ì G Q ¸

Q ¸	£EÄ
ipv6 ospf network	A'5B y ·,X5%4°2O _ Ä
router-id	A'5BA' Û,X ÛAš Ä
show ipv6 ospf interface	/ OSPFv3 y · µ C Ä
ipv6 ospf area	A'5B y · – â OSPFv3 CÃ+ E¯/ß

Q ¸ õ ã	y ·G!5B õ ã Ä
S*ü Û 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 ÈEîE› 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
G!5B _	ßM6 _ $ È*ü bA'5BG¡ ô LSA ,X ÊKÈKÈLh 10s Ö

	-	-

36.1.23 log-adj-changes

A¹ Q ¸A'5B úA„)F• y(Š Õ ¬ ê,X ¹ « ÈA¹ Q ¸,X no ` default EÝNM Ã ¹ GKÁA¹ s6Ñ Ä

log-adj-changes [detail]

no log-adj-changes [detail]

– DAÈ â	– D	£EÄ
	detail	/ Aº4š,XF• (Š Õ ¬E• µ C

5 ,ÕG!5B 5 ,ÕEg Î E¯ 9 ê/• Ô FULL (Š Õ,XF• (Š Õ ¹ « ×

Q ¸ õ ã CÃ+ E¯/ßG!5B õ ã Ä

S*ü Û Ð ´

G!5B _ ¹ ß,XG! 5B _ $ È Ú ' ÔAº4š,XF• (Š Õ ¬ ê,X ¹ «A„) Ä

```
Ruijie(config)# router ospf 1
Ruijie(config-router)# log-adj-changes detail
```

,Ì G Q ¸

Q ¸	£EÄ
show ipv6 ospf	¹,ß ospf < G!5B,X,Ì G µ C Ä

G ÄAÈ â ´

A¹ Q ¸ ¾ Í – â OSPFv3 E¤> ,X y ·*ó È è Í<.JÒCÃ á*ó Ä

G!5B _

ßM6 _ $ È ¾ AŒVLAN1 y · – â OSPFv3 E¤> Ö

```
passive-interface default
no passive-interface vlan 1
```

,Ì G Q ¸

Q ¸	£EÄ
ipv6 ospf area	A'5B y · – â OSPFv3 CÃ+ E¯/ß Ä
show ipv6 ospf	/ OSPFv3 CÃ+ E¯/ß µ C Ä
show ipv6 ospf neighbor	/ OSPFv3 F• µ C Ä

G ÄAÈ â

"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

G!5B _

â area range Q ¸ á à È area range " 6.,X OSPFv3 ³ KÈCÃ+ È5à summary-prefix " 6.,X OSPFv3 CÃ+ ³,X êF¼CÃ+ Ä summary-prefix Q ¸,Â ! ¾ ü7¾"• ³E•+ CÃ+ < (ASBR) Þ ;> Ý È5à è ¾ ÍG¡ Ú × CÃ+ E¯> " 6. Ä

G!5B _

ßM6 _ $ Ëü bG!5B Ú 2001:DB8::/64 8× È Y,X êF¼CÃ+ ,X" 6. 2001:DB8::/64 CÃ+ E¯ > Eî Ö

```
summary-prefix 2001:DB8::/64
```

,Ì G Q ¸

Q ¸	£EÄ
area range	S*üA¹ Q ¸ Í OSPFv3 ³ KÈ,XCÃ + E¯> " 6. Ä
redistribute	G¡ Ú × J WCÃ+ E¯/ß,XCÃ+ Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

36.1.29 timers spf

?UG!5BOSPFv3 ü y § %,X ¬ ê µ C ÈE¯> SPF Au1k,X Ê Ê ÊKÈ È ¹ ž ø õ SPF Au1k ,X ÊKÈKÈLh È Ã S*üCÃ+ E¯/ßG!5B Qţimers spf ÄA¹ Q ¸,X no 6 ã 6 á5 ,ÕG!5B Ä

timers spf *spf-delay spf-holdtime*

no timers spf

– DAÈ â

– D	£EÄ
spf-delay	n SPF Au1k,X1 Y ÊKÈ È ¹/¦) ! È8× È 0-214748364 (/¦) ÄOSPF CÃ+ E¯/ß y § % ¬ ê È ™NO1 Û n,X ÊKÈ â È !E¯> SPF E¤1k Ä
spf-holdtime	n ø õ SPF E¤1k KÈ,X ÊKÈKÈLh È ¹/¦) ! È 8× È 0-214748364 (/¦) Ä1 Y ÊKÈ Z È ø õE¤1kKÈ Lh ÊKÈ"u ÈE¬ á6ÑE¯> SPF E¤1k Ä

5 ,ÕG!5B

5 ,Õ Ú ¹ ß ø/¡ ™ ‰ Ö

1 Ã ü RGOS 10.4 (! È á Õ timers throttle spf Q ¸ Ä2Ï4³5 ,Õ timers spf 5 10

2 ÃRGOS 10.4 (Ô Ÿ È Õ timers throttle spf Q ¸ Ä!8 Ê5 ,Õ ™ ‰ ß timers spf Q ¸ á*ó ÈSPF Au1k Ê Ê ¹ timers throttle spf Q ¸,X5 ,ÕG!5B š È –?• timers throttle spf Q ¸AÈ â Ä

Q ¸ õ ã

CÃ+ E¯/ßG!5B õ ã Ä

t s p

³1 \ ?R4°a°1¼/¼¡K€ 5 È “Jü 3+ E’ Ûa¼€,Õ

*spf-delay*¼¡K€ ’T ! ÈEÑF•Šv ÒPšÀŽ¬X6 ¸ C45

S*ü Û Ð

clear ipv6 ospf	S*üA¹ Q ¸G¡ „ | OSPFv3 F¼ Ú s 6Ñ Ä
show ipv6 ospf	/ OSPFv3 CÃ+ E¯/ß µ C Ä
timers spf	G!5BSPF Au1k ÊE³ ÊKÈ

G ÄAÈ â ´

Q ¸Z Æ

(Ë	AÈ â
-	-

36.2 Ấ ₹ Ƈ

36.2.1 show ipv6 ospf

/ OSPFv3 E¯/ß µ C Ä

show ipv6 ospf [*process-id*]

– DAÈ â

– D	£EÄ
process- id	ospf E¯/ß Ë

5 ,ÕG!5B ´

Q ¸õ ã (M õ ã Ä

S*ü Û Ð ´

G!5B _

ßM6,X _ $*ü b / OSPFv3 E¯/ß µ C

```
Ruijie# show ipv6 ospf
Routing Process "OSPFv3 (1)" with ID 1.1.1.1
Process uptime is 24 minutes
SPF schedule delay 5 secs, Hold time between SPFs 10 secs
Minimum LSA interval 5 secs, Minimum LSA arrival 1 secs
Number of incomming current DD exchange neighbors 0/5
Number of outgoing current DD exchange neighbors 0/5
Number of external LSA 0. Checksum Sum 0x0000
Number of AS-Scoped Unknown LSA 0
Number of LSA originated 11
```

```
Number of LSA received 4
Log Neighbor Adjency Changes : Enabled
Number of areas in this router is 2
Area BACKBONE(0)
Number of interfaces in this area is 1(1)
SPF algorithm executed 4 times
Number of LSA 3.  Checksum Sum 0x1DDF1
Number of Unknown LSA 0
```

V p OSPFv3 â BFD 6(| ,LÔ?U ü s Ý / ,X Y • Þ r t ”BFD is enabled”, _ V ß Ö

```
Ruijie# show ipv6 ospf
Routing Process "OSPFv3 (1)" with ID 1.1.1.1
Process uptime is 24 minutes
SPF schedule delay 5 secs, Hold time between SPFs 10 secs
Minimum LSA interval 5 secs, Minimum LSA arrival 1 secs
Number of incomming current DD exchange neighbors 0/5
Number of outgoing current DD exchange neighbors 0/5
Number of external LSA 0. Checksum Sum 0x0000
Number of AS-Scoped Unknown LSA 0
Number of LSA originated 11
Number of LSA received 4
Log Neighbor Adjency Changes : Enabled
Number of areas in this router is 2
BFD is enabled
Area BACKBONE(0)
Number of interfaces in this area is 1(1)
SPF algorithm executed 4 times
Number of LSA 3.  Checksum Sum 0x1DDF1
Number of Unknown LSA 0
```

,Ì G Q ¸

Q ¸	£EÄ
ipv6 router ospf	| OSPFv3 CÃ+ E¯/ß Ä
default-information originate	A’5B5 ,ÕCÃ+ G¡ Ú ¥ Ä
default-metric	A’5BG¡ Ú ¥CÃ+ ,X5 ,Õ zG£ Ä
router-id	A’5B OSPFv3 CÃ+ E¯/ß ÛAš Ä
timers spf	G!5BOSPFv3 ü y § %,X ¬ ê µ C ÈE¯> SPF Au1k,X Ê Ê ÊKÈ È ¹ ž ø õ SPF Au1k,X Ô ã ÊKÈKÈLh Ã Ô û ÊKÈKÈLh Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

36.2.2 show ipv6 ospf database

/ OSPFv3 E¯/ß D B g µ C Ä

show ipv6 ospf [*process- id*] database [*lsa-type* [adv-router *router-id*]]

– DAÈ â

– D	£EÄ
process- id	OSPFv3 E¯/ß Ë
lsa-type	LSA 2O _ È Ý ¹ ß ´2O Ö AS-external-LSAs ÃLink-LSAs Ã Inter-Area-Prefix-LSAs ÃInter-Area-Router-LSAs Ã Intra-Area-Prefix-LSAs ÃNetwork-LSAs Ã Router-LSAs "uG!!8 – D Ê È / Ý LSA µ C
adv-router *router-id*	/ Û n router {*ó,X LSA µ C Ä

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã Ä

S*ü Û Ð ´

G!5B _

ßM6,X _ $*ü b / OSPFv3 E¯/ß D B g µ C

```
Ruijie# show ipv6 ospf database
OSPFv3 Router with ID (1.1.1.1) (Process 1)
Link-LSA (Interface FastEthernet 1/0)
Link State ID   ADV Router      Age  Seq#       CkSum  Prefix
0.0.0.2         1.1.1.1         197 0x80000001 0x7cd8     0
0.0.0.5         2.2.2.2         206 0x80000001 0x8c86     0
Link-LSA (Interface Loopback 1)
Link State ID   ADV Router      Age  Seq#       CkSum  Prefix
0.0.64.1        1.1.1.1          82 0x80000001 0xb760     0
Router-LSA (Area 0.0.0.0)
```

V ß Q ¸ Ú / OSPFv3 y · µ C

```
Ruijie# show ipv6 ospf interface
FastEthernet 1/0 is up, line protocol is up
Interface ID 2
IPv6 Prefixes
fe80::2d0:22ff:fe22:2223/64 (Link-Local Address)
OSPFv3 Process (1), Area 0.0.0.0, Instance ID 0
Router ID 1.1.1.1, Network Type BROADCAST, Cost: 1
Transmit Delay is 1 sec, State BDR, Priority 1
Designated Router (ID) 2.2.2.2
Interface Address fe80::c800:eff:fe84:1c
Backup Designated Router (ID) 1.1.1.1
Interface Address fe80::2d0:22ff:fe22:2223
Timer interval configured,Hello 10,Dead 40,Wait 40,Retransmit 5
Hello due in 00:00:02
Neighbor Count is 1, Adjacent neighbor count is 1
Hello received 26 sent 26, DD received 5 sent 4
LS-Req received 1 sent 1, LS-Upd received 3 sent 6
LS-Ack received 6 sent 2, Discarded 0
```

G!5B _ V pA¹ y ·,XF• *ü â BFD 6(|,

```
Neighbor priority is 1, State is Full, 6 state changes
DR is 2.2.2.2 BDR is 1.1.1.1
Options is 0x000013 (-|R|-|-|E|V6)
Dead timer due in 00:00:36
Database Summary List 0
Link State Request List 0
Link State Retransmission List 0
 V p *üEîE›  BFD  "# âA¹F•  ,XE@ ¥CÃ X,Fw  ü  / ,X µ C  r t V ß      BFD
session state up
Ruijie# show ipv6 ospf neighbor detail
Neighbor 2.2.2.2, interface address fe80::c800:eff:fe84:1c
In the area 0.0.0.0 via interface FastEthernet 1/0
Neighbor priority is 1, State is Full, 6 state changes
DR is 2.2.2.2 BDR is 1.1.1.1
Options is 0x000013 (-|R|-|-|E|V6)
Dead timer due in 00:00:36
Database Summary List 0
Link State Request List 0
Link State Retransmission List 0
```

BFD session state up

,Ì G Q¸

Q¸	£EÄ
ipv6 router ospf	| OSPFv3 CÃ+ E¯/ß Ä
ipv6 ospf area	G!5B y · – â OSPFv3 E¯/ß Ä
area virtual-link	G!5BOSPFv3 <.JÒCÃ Ä
show ipv6 ospf interface	/ OSPFv3 y · µ C Ä

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

36.2.5 show ipv6 ospf route

/ OSPFv3 CÃ+ Ä

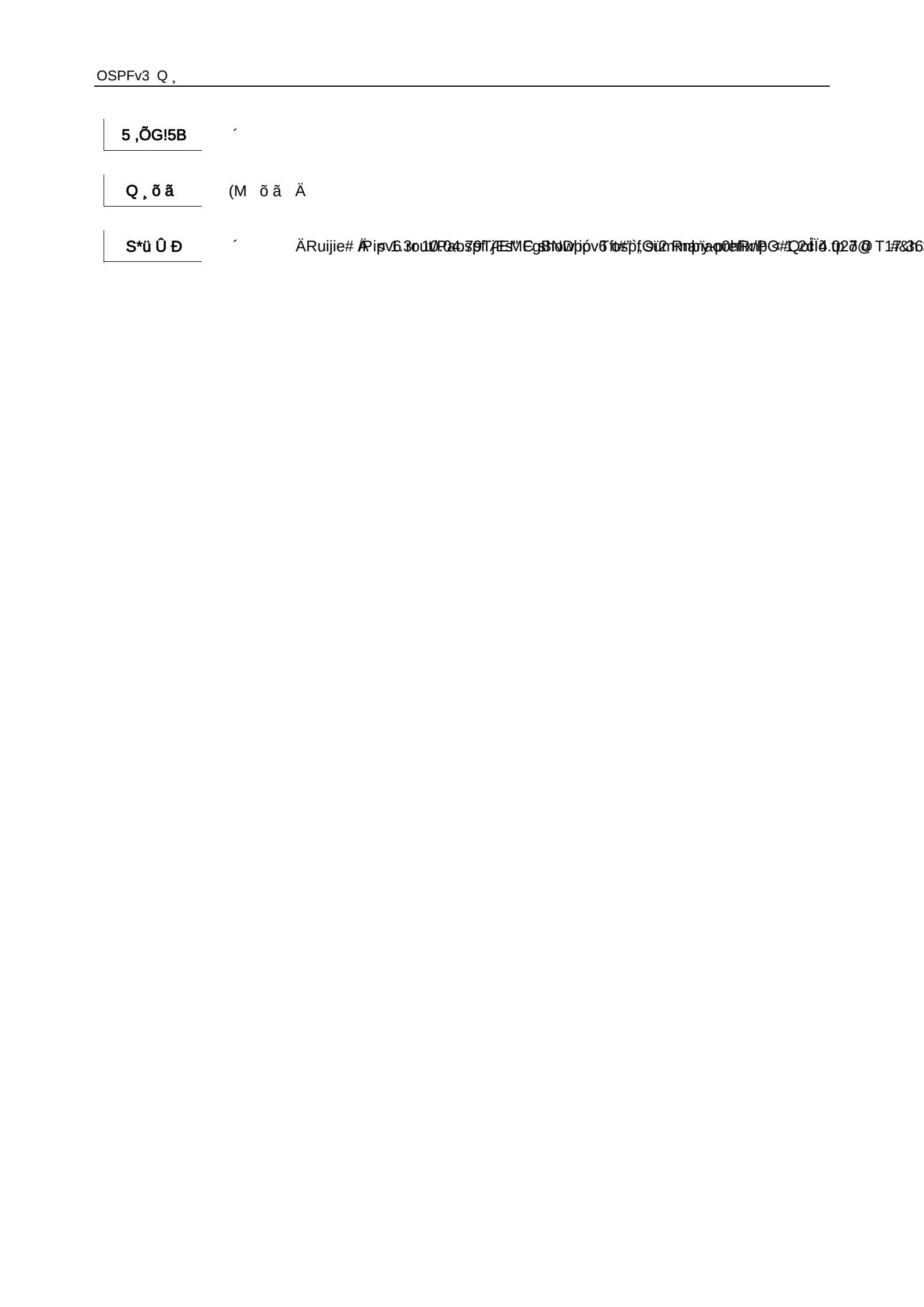
show ipv6 ospf [*process- id*] route [count]

– DAÈ â

– D	£EÄ

process- id	OSPFv3 E¯/ß Ë

5 ,ÕG!5B	´
Q ¸ õ ã	(M õ ã Ä
S*ü Û Ð	´ ÄRuijie# Ä



```
Ruijie# show ipv6 ospf topology
OSPFv3 Process (1)
OSPFv3 paths to Area (0.0.0.0) routers
Router ID       Bits  Metric    Next-Hop
Interface
1.1.1.1          EB  --
2.2.2.2          E   1         2.2.2.2
FastEthernet 1/0
OSPFv3 paths to Area (0.0.0.1) routers
Router ID       Bits  Metric    Next-Hop
Interface
1.1.1.1          B   --
```

,Ì G Q ¸

Q ¸	£EÄ
ipv6 router ospf	| OSPFv3 CÃ+ E¯/ß Ä
area range	G!5BOSPFv3 ,X 8× È

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

36.2.8 show ipv6 ospf virtual-links

/ OSPFv3 E¯/ß<.JÒCÃ µ C Ä

show ipv6 ospf [*process- id*] virtual-links

– DAÈ â

– D	£EÄ
process- id	OSPFv3 E¯/ß Ë

5 ,ÕG!5B ´

Q ¸ õ ã

37 RIPNG ﺟﻴ ﻟ

37.1 ﻳ Ẩ ﺟﻴ ﻟ

37.1.1 default-metric (RIPng)

?U n G¡ Ú × J WCÃ+ #A,RÊIPng 5 ,Õ,X zG£ ÈAË S*üCÃ+ E¯/ßG!5B Q ¸ default-metric ÄA¹ Q ¸,X no 6 ã 6 á5 ,ÕG!5B Ä

default-metric *metric*

no default-metric

	– D	£EÄ
– DAÈ â	*metric*	5 ,Õ,X zG£ È Ý 1 16 Ä V p metric û b1 b 16 ÈRGOS ÚAx A¹CÃ+ á ÃE' Ä

5 ,ÕG!5B	5 ,Õ 1 Ä
Q ¸ õ ã	CÃ+ E¯/ßG!5B õ ã Ä
S*ü Û Ð	A¹ Q ¸LÔ?U âCÃ+ #A,G!5B Q ¸ redistribute 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 ÈLÔ?U n G¡ Ú ×CÃ+ ü RIP CÃ+ ³ ,X zG£ Ä V p G¡ Ú × Ô þCÃ+ #A,E¯/ß Ê È"u Ý â.B n zG£ ÈRIPng Ú S*ü default-metric n ,X zG£ × V p Ý â.B n zG£ ÈA¹ Ú?Z,ª default-metric n ,X zG£ Ä áG!5B A¹ Q ¸ í default-metric 5 ,Õ 1 Ä

G!5B _	ü ¹ ß,X G!5B _ $ ÈG¡ Ú × OSPF 100 E¯/ß,XCÃ+ RIP CÃ+ E¯/ß Ê È zG£ A'5B 3 Ä
	`Ruijie(config-router)# default-metric 3`
	`Ruijie(config-router)# redistribute ospf`

no distribute-list prefix-list *prefix-list-name* {in | out} [*interface-type interface-name*]

– DAÈ â

– D	£EÄ
prefix-list *prefix-list-name*	prefix-list ,X á + È S*ü !4Ô ë>< 9E›$¸CÃ+ Ä
in | out	Û nA¹ Ú × ë>< Í y ê ¥EÕ È „CÃ+ S*üE›$¸
interface-type interface-name	Ä ÃEÝ ÅA¹ Ú × ë>< ¾ h*ü ü Û n y ·

5 ,ÕG!5B

T¬Ax"u Ýn Ú × ë>< Ä

Q ¸ õ ã

CÃ+ E¯/ŒG!5B õ ã Ä

S*ü Û Ð

Z ¦4± y ê5Ù ¥EÕ ¤ o Û nCÃ+ È Ã ¹EîE›G!5BCÃ+ Ú × { ë>< È Í Ý,XCÃ+ È „ y [E¯> E›$¸ Ä V p"u Û n y · È Í Ý,X y ·,XCÃ+ È „ y [E¯> E›$¸ Ä

¹ ß,XG! 5B _ $ È ¾ ü y · eth0 Þ Í y ,X È „ y [S*üE›$¸ È ¾ Ý ü prefix-list *allowpre* !4Ô><8× È Y,X È „CÃ+ !>• y Ä

D♦"T3P$6Ð¸¶Ð¸GB♦Q¸_ÀÀ♦♦uAM♦Ð♦♦Ã1"♦♦♦cFÀÀÀ♦♦ionITjÉ0 0 10.02 10 142

Q¸õã y·G!5B õãÄ

S*üÛÐ 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¸î¾ |E¤> RIPng CÃ+ #A, Ä

G!5B _ ßM6,X _ $ Ú y · ethenet 0/0 t 9 RIPng E¤> Ä

```
Ruijie(config)# interface ethernet 0/0
Ruijie(config-if)# ipv6 rip enable
```

,Ì G Q¸

Q¸	£EÄ
-	-

G ÄAÈâ ´

Q¸ZÆ

(Ë	AÈâ
-	-

37.1.6 ipv6 rip metric-offset

?UA'5B y · Þ,X zG£ ÈAË S*ü y·G!5B Q¸ ipv6 rip metric-offset *value* ÄA¹ ÄAæÏ)gH # zì ‡ñiip~ ã í?

,Ì G Q ¸	Q ¸	£EÄ
	-	-

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

37.1.7 ipv6 router rip

?U ï Î RIPng CÃ+ E¯/ß JE¯ 9CÃ+ E¯/ßG!5B õ ã ÈAË S*ü < G!5B Q ¸ ipv6 router rip ÄA¹ Q ¸,X no 6 ã ôL8 RIPng CÃ+ E¯/ß

ipv6 router rip

no ipv6 router rip

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	"u Ý RIPng CÃ+ E¯/ßüE¤> Ä

Q ¸ õ ã	< G!5B õ ã Ä

S*ü Û Ð	A¹ Q ¸*ü b ï Î RIPng CÃ+ E¯/ß JE¯ 9CÃ+ E¯/ßG!5B õ ã Ä

G!5B _	¹ ß,XG! 5B _ $ ÈAÈ â Z V) ï Î RIPng CÃ+ E¯/ß È JE¯ 9CÃ+ E¯/ßG!5B õ ã Ä Ruijie(config)# **ipv6 router rip**

,Ì G Q ¸	Q ¸	£EÄ
	ipv6 rip enable	ü Û …‡• · *ü RIPng Ä

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

37.1.8 passive-interface õ RIPng Ð

bgp	¢ BGP G¡ Ú ×
connected	¢,ÈE²CÃ+ G¡ Ú ×
isis [*area-tag*]	¢ ISIS G¡ Ú × ÈEîE› *area-tag* G¡ Ú × Û n ISIS r _
ospf *process-id*	¢ OSPF G¡ Ú × ÈEîE› *process-id* G¡ Ú × Û n ospf r _ È*process-id* ª 8× È Ö1-65535
static	¢M- ÕCÃ+ G¡ Ú ×
metric *metric-value*	Ä ÃEÝ ÅA'5B>•G¡ Ú × RIPng ³,XCÃ X,X zG£
route-map *route-map-name* ¢	Ä ÃEÝ ÅA'5BG¡ Ú ×CÃ XE›$¸

37.1.10 split-horizon (RIPng)

?U *ü RIPng " G Ú F s6Ñ ÈAË S*üCÃ+ E¯/ßG!5B Q¸split-horizon ÄA¹ Q¸,X no 6 ã G KÁ RIP " G Ú F s6Ñ Ä?U *ü ú!¦ ûEÚE@,X" G Ú F ÈAË S*üCÃ+ E¯/ßG!5B Q¸ split-horizon poisoned-reverse È A¹ Q¸,X no 6 ã ª#\ ú!¦ ûEÚE@,X" G Ú F Ä

split-horizon [poisoned-reverse]

no split-horizon [poisoned-reverse]

– DAÈ â	– D	£EÄ
	poisoned-reverse	Ä ÃEÝ Å *ü ú!¦ ûEÚE@,X" G Ú F

5 ,ÕG!5B	5 ,Õ y · *ü á ú!¦ ûEÚE@,X" G Ú F Ä

Q¸õ ã	CÃ+ E¯/ßG!5B õ ã Ä

S*ü Û 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!¦ ûEÚE@,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 show ipv6 rip Q¸E¯> ø • Ä

G!5B _	¹ ß,XG! 5B _ $ È GKÁ ZRIPng " G Ú F s6Ñ Ä
	`Ruijie(config)# **ipv6 router rip**`
	`Ruijie(config-router)# **no split-horizon**`

,Ì G Q¸	Q¸	£EÄ
	-	-

G ÄAÈ â	´

Q¸Z Æ	(Ë	AÈ â
	-	-

37.1.11 timers (ipv6)

?UA× HRIPng ,X ÊJs ÈAË S*üCÃ+ E¯/ßG!5B Q¸timers ÄA¹ Q¸,X no 6 ã 6 á5 ,ÕG!5B Ä

timers *update invalid flush*

no timers

– D	£EÄ
update	CÃ+ È „ ÊKÈ È¹/¦Au Ä update n ZA’ Û ¥EÕCÃ+ È „ y [,X < ó È£ y È „ y [È invalid ` flush ÊJs á ! Ä5 ,Õ!£Lh 30 /¦ ¥EÕ Ô õCÃ+ È „ y [Ä CÃ+ ´ ÊKÈ È ¹/¦Au È ¢ ÔE¥ Ô õ Ý È „ y [Ô ŸAu Ê Äinvalid n ZCÃ+ >< CÃ+ ´"u Ý È „5à ¬ ´ ,X ÊKÈ ÄCÃ+ ´ ÊKÈ7Ç å hA¹ CÃ+ È „ Ê KÈ,X Ý á È V p üCÃ+ ´ ÊKÈ Y"u Ý y Ï) È „ y [È,Ì h,XCÃ+ Ú ¬ ´ ÈE¯ 9 invalid (Š Õ × invalid ÊKÈ Y y CÃ+ È „ y [È ÊJs î á ! Ä Invalid

G ÄAÈ â ´

(Ë	AÈ â

```
    Loopback 1          1     1
  Routing Information Sources:
    None
```

,Ì G Q¸

Q¸	£EÄ
show ipv6 rip	/ RIPng CÃ+ #A,E¯/ß,X – D â4³ Au D B

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

37.2.2 show ipv6 rip database

?U / RIPng CÃ+ ><,X ØNM,Â µ C ÈAË S*üshow ipv6 rip database Q¸Ä

show ipv6 rip database

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B ´

Q¸õ ã *ü õ ã ê(M õ ã Ä

S*ü Û Ð S*üA¹ Q¸ / RIPng CÃ+ ><,X ØNM µ C Ä

G!5B _

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

```
          Null 0/::
C(i)   2001:db8:5::/64, metric 1, tag 0
          Loopback 1/::
S(r)   2001:db8:6::/64, metric 1, tag 0
          Null 0/::
```

,Ì G Q¸

Q¸	£EÄ
show ipv6 rip	/ RIPng CÃ+ #A,E¯/ß,X – D â4³ Au D B

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

38 IGMP ﻟﻜ ﻳﻞ

38.1 ﻳﻞ Ẩ ﻳﻞ ﻟﻜ

38.1.1 ip igmp access-group

A¹ Q ¸*ü 9 ü y · Þ { î •4˜ Ä ü Q ¸ !#Ï no

```
Ruijie(config-ext-nacl)# permit ip host 1.1.1.1 host 233.3.3.3
Ruijie(config)# interface ethernet 0
Ruijie(config-if)# ip igmp access-group ext_acl
```

¸Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

38.1.3 ip igmp immediate-leave group-list

ü IGMPversion2 ž IGMPversion3 (È S*üA¹ Q ¸ ¹ £ å/• Ô4˜,X ÊE³ ÊKÈ ÄA¹ Q ¸ S*ü ü ¾ Ý Ô þ y E² y Ô þ y ·,X ™ ‰ ß Ä S*üA¹ Q ¸,X no 6 ã ª#\!8 s6Ñ Ä

ip igmp immediate-leave group-list *access-list*

no ip igmp immediate-leave group-list

– DAÈ â

– D	£EÄ
access-list	A“KÂ { ë>< á/Ä

5 ,ÕG!5B GKÁ(Š Õ

Q ¸ õ ã y ·G!5B õ ã

S*ü Û Ð

üA¹ Q ¸ "u Ý>•G!5B,X ™ ‰ ß È 'A' Û y /• Ô y [â È ¥ Î(M n4˜ ¹A¶ y [Ä ' ¡ hCY Ê â ÈA' Û 0!6E@ ¥ A¹ y · y [ÄCY Ê,X ÊKÈ ª ‡ b Ô â ä , ¹A¶KÈLh ` IGMP 9 Â û ¬G£ È5 ,Õ ™ ‰ ß 2s Ä

V pG!5B ZA¹ Q ¸ È ' y /• Ô y [â ÈA' Û J á ¥EÕ(M n4˜ ¹A¶ y [Ä,Ì ¡ È W,È y ü IGMP 4ç † E- þ4˜/ÍL8 ZA¹ y · È JEî-¹ IGMP #A, Ä V!8 Ã ¹ ûG£4ý-Á ÊKÈ Ä

G!5B _

ßM6,X_ $)/ Z V) Ô o î •4˜ ¤ o0Ÿ G/• Ô s6Ñ È " ™NO.B ± Û,X î •4˜,X !£ þ y · ¾ Ý Ô þ4˜ ä , Ä

```
Ruijie# configure terminal
Ruijie(config)# access-list 1 permit 225.192.20.0 0.0.0.255
Ruijie(config)# interface ethernet 0/1
Ruijie(config-if)# ip igmp immediate-leave group-list 1
Ruijie(config-if)# exit
```

,Ì G Q ¸

Q ¸	£EÄ
ip igmp last-member-query-interval	-

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

38.1.4 ip igmp last-member-query-count

last-member-query-count Û ' î •A' Û leave y [â È îE²4Á ¥EÕ ¹A¶ y [,X õ D Ä A¹ Q ¸*ü 9G!5B last-member-query-count ,X Ä S*ü no Q ¸ 6 á5 ,Õ Ä

ip igmp last-member-query-count *number*

no ip igmp last-member-query-count

	– D	£EÄ Eâco 0 07re1 Tw0618791B5CD4C8>

ip igmp last-member-query-interval *interval*

no ip igmp last-member-query-interval

– DAÈ â

– D	£EÄ
interval	KÈLh ,X8× È <1-255> È) ! 0.1s

5 ,ÕG!5B 1s

Q ¸ õ ã y ·G!5B õ ã

S*ü Û Ð 'A' Û,X y · Ô þ IGMPv2 /•4˜#\ C È1 Y*ü ip igmp last-member-query-count á,X ¹A¶KÈLh t Þ Ô ,X h1(ÊKÈ È V p ü1 Y ÊKÈ Y"u ä , y ÈA' Û ü y · ô L8A¼4˜ ä , µ C Ä

G!5B – ¹ ß _ $ A'5B Z4˜(M n ¹A¶ µ CKÈLh 20 /¦ Ö

```
Ruijie# configure terminal
Ruijie(config)# interface eth 0
Ruijie(config-if)# ip igmp last-member-query-interval 200
```

Q ¸

G ÄAÈ â	´

Q ¸ Z Æ		AÈ
	-	

ip igmp q

A¹ 5B BEî ä , ¹A¶KÈLh È Ã ¹*ü n G!5B BEî A¶KÈLh 5 ,Õ Ä

gmp query-interval *seconds*

no ip igmp query-interval

– DAÈ â	– D	£EÄ
	seconds	BEî ä , ¹A¶KÈLh Ä) ! s È D 1 18000

5 ,ÕG!5B	125

A¹ Q ¸*ü 9G!5B Ô û ¡ hKÈLh È Ã ¹*ü no 6 ã 9G!5B Ô û ¡ hKÈLh 5 ,Õ Ä

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

no ip igmp query-max-response-time

– DAÈ â

– D	£EÄ
seconds	Ô û ¡ hKÈLh È) ! s È D 1 25

5 ,ÕG!5B

10s

Q ¸ õ ã

y ·G!5B õ ã Ä

S*ü Û Đ

E- þ Q ¸ ¾ Ý 'E¤> ,X IGMPv2 Ê Ý ,X ÄE- þ Q ¸ { üA' Û ôL84˜ µ C ! h1(5Ù ¡ h ¹A¶ µ C,XKÈLh Ä

G!5B _

_ 1 Ö ü y · Ethernet 0 G!5B ÈG!5B Ô û ¡ hKÈLh 20s Ä

```
Ruijie(config-if)# ip igmp query-max-response-time 20
```

_ 2 Ö ü y · Ethernet 0 G!5B È 6 á Ô û ¡ hKÈLh 5 ,Õ Ä

```
Ruijie(config-if)# no ip igmp query-max-response-time
```

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

5 ,ÕG!5B	255s
Q ¸ õ ã	y ·G!5B õ ã
S*ü Û Ð	A¹ Q ¸LÔ?UE¤> IGMPv2 ÄT¬Ax ™ ‰ ß È ñ/¥A'5BA' Û1 Y ÊKÈ*ü ø á,X ip igmp query-interval ,X ¹A¶KÈLh È ü Ruijie ßA'5B5 ,Õ 255s Ä üE-!‰ ÊKÈ Y È V p"u Ý ¹A¶ y [ÈA¹A' Û ä ¹A¶5Ù Ä
G!5B _	_ 1

Q ¸ Z Æ	(Ë	AÈ â
	-	-

38.1.15 ip igmp ssm-map static

A¹ Q ¸*ü 9 ü < õ ã ß ssm-map ,XM- Õ ô Ø$dA„) È Q ¸ ã Ö

ip igmp ssm-map static *access-list a.b.c.d*

no ip igmp ssm-map static *access-list a.b.c.d*

– DAÈ â	– D	£EÄ
	access-list	Acl ,X ª 8× È <1-99> |<1300-1999> |WORD
	a.b.c.d	4˜A„) ô Ø,X) •

5 ,ÕG!5B "u Ý ô Ø ,X$d

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð A¹ Q ¸ â ip igmp ssm-map enable G! Ü S*ü ÈG!5B `A¹ Q ¸ â È Í y ,X v3 ¹ ß,X y [FÑ Ú ô Ø Þ,Ì h,X$dA„),ÁF,Å€$dA„ Va"ÀU0*ü Û Ð

A' Û 3 t 9 ¤ þ4˜ ÈA¼4˜ 3 î5+ ë üE- þ ë>< Ä ¢ IGMP 4ç , ôL8 <F¼,X 5,Â È Ã ¹*ü á ú – D,X clear ip igmp group Q ¸ Ä

G!5B _

ôL8 <F¼X4˜A„) Ö

```
Ruijie# clear ip igmp group
```

,Ì G Q ¸

Q ¸	£EÄ
show ip igmp groups	-
show ip igmp interface	-

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

38.2.2 clear ip igmp interface

A¹ Q ¸*ü 9#ÙL8 y ·,X IGMP A„) Ä

clear ip igmp interface *ifname*

– DAÈ â

– D	£EÄ
ifname	y ·,X á/Ä
´	Ý y ·

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã

S*ü Û Ð A¹ Q ¸*ü 9#ÙL8 y · Þ ÝG!5B IGMP Ê {*ó,X µ C Ä Ã ¹ á ú ifname – D Ä

G!5B _

```
Ruijie# clear ip igmp interface eth1
```

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

38.2.3 show ip igmp groups

S*üA¹ Q ¸ / âA' Û,È y,ÌE²,X4˜ ` ¢ IGMP : 4 ,X4˜ µ C Ä

show ip igmp groups [*group-address* | *interface-type interface-number*] [*detail*]

– DAÈ â	– D	£EÄ
	group-address	32 þ!¨ (M ! IP 4˜ •4˜ G D 2O È 8 ! Ô4˜ È ¹ E¯ • ã></ È4˜ KÈ*ü&•Lh Ô Ä
	interface-type	G6(y ·2O _ Ä
	interface-number	G6(y ·4ê Ë Ä
	detail	/ Aº4š µ C Ä
	´	/ <F¼4˜ µ C Ä

5 ,ÕG!5B	´

Q ¸ õ ã	*ü õ ã ê(M õ ã Ä

S*ü Û Ð	S*üA¹ Q ¸ á ú – D / 4˜ Ã y ·2O _ ` y · Þ,ÈE²,X Ý4˜ •4˜ µ C Ä V p ú4˜ / (M n4˜,X µ C Ä ¸ á ú – D ‰À ñ÷ƒcg" S*ü Û Ð

```
Uptime: 00:00:42
Group mode: Include
Last reporter: 192.168.50.111
TIB-A Count: 2
TIB-B Count: 0
Group source list: (R - Remote, M - SSM Mapping)
Source Address Uptime v3 Exp Fwd Flags
192.168.55.55 00:00:42 00:03:38 Yes R
192.168.55.66 00:00:42 00:03:38 Yes R
```

```
IGMP Active, Non-Querier, Version 3 (default)
IGMP querying router is 0.0.0.0
IGMP query interval is 125 seconds
IGMP querier timeout is 255 seconds
IGMP max query response time is 10 seconds
Last member query response interval is 1000 milliseconds
Group Membership interval is 260 seconds
IGMP Snooping is globally enabled
IGMP Snooping is enabled on this interface
IGMP Snooping fast-leave is not enabled
IGMP Snooping querier is not enabled
IGMP Snooping report suppression is enabled
```

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

38.2.5 show ip igmp su5(g)1(mp su5 /TT0pu5(g)pre) 0 TID 31 >>BDC 27.90 1 Tf 10.0

SSM Mapping : Enabled
Database : Static mappings configured
_ 2 Ö / 4˜ 233.3.3.3 Ú ô Ø,X4˜ µ C
Ruijie#**show ip igmp ssm-mapping** *233.3.3.3*
Group address: 233.3.3.3
Database : Static
Source list : 192.3.3.3
: 3.3.3.3

¸Ì G Q¸

Q¸	£EÄ
-	-

G ÄAÈ â ´

Q¸ Z Æ

(Ë	AÈ â
-	-

ipv6 mld access-group *word*

no ipv6 mld access-group

– DAÈ â

– D	£EÄ
Word	IPv6 A“KÂ { ë>< ACL ,X á/Ä

5 ,ÕG!5B

þA’5BE›$¸ 5 Ê

Q ¸ õ ã

y · õ ã

S*ü Û Ð

ü y · Þ V pLÔ?U/U!6&• • Ô o4˜ È Ã ¹ S*üA¹ Q ¸ ÄA¹ Q ¸ G6(Þ,Ì h,X ACL È V p y >•,Ì h ACL deny ,X report y [È Ú ö ×!8 y [Ä!8 Q ¸ Õ =) ACL È6Ñ ó 2’.B E›$¸ MLDv2 y [,X$dA„) µ C Ä

"¼ ã	4˜ •4˜A“ KÂ { Q ¸ G6(,X =) ACL Ä' y ,X MLD report µ C ÄS1,S2,S3…Sn,G Å Ê È!8 Q ¸ Ú Í (0,G) µ C S*ü,Ì h,X ACL E¯ > G! ” ¹ Ä ¹?U!7 S*üA¹ Q ¸ È ™NO Í =) ACL ãG!5B Ô 5 (0, G) ÈE- ! Ã ¹!7 ,X Í ÄS1,S2,S3…Sn,G ÅE¯> E›$¸ Ä

G!5B _

ü ßM6,X _ $ È ü y · Eth0/1 y ,X report y [ú,X4˜ µ C ™NO$µC‡ acl È !6Ñ ó>•!7.B Ø)Ú Ä

```
Ruijie(config)#ipv6 access-list acl
Ruijie(config-ipv6-acl)#permit ipv6 ::/64 ff66::100/64
Ruijie(config-ipv6-acl)#permit ipv6 2222::3333/64 ff66::100/64
Ruijie(config)#
```

A¹ Q ¸ Ú x 6 ,Ì G y ·G!5B ä K Ý > JLÔ?U t 9,Ì h4˜ •4˜ ÈE- $ x 6 |
Ã ¹ : 4 ,Ì h,X4˜ µ C È üLÔ?U Ú y ·#Ï t Ô þ4˜ ä , Ê S*ü!8G!5B Ä S*üA¹ Q ¸,X no
EÝNM ª#\ x 6 t 9A¹4˜ •4˜ Ä

Ipv6 mld join-group *group-address*

no ipv6 mld join-group

no ipv6 mld last-member-query-count

– DAÈ â

– D	£EÄ
number	Ô â ä , ¹A¶Au D , 8× È <2-7>

5 ,ÕG!5B 5 ,Õ,X last member query count 2 Ä

Q ¸ õ ã y ·G!5B õ ã Ä

S*ü Û Ð 'A' Û,X y · MLD /• Ô y [È V p üCY Ê ÊKÈKÈLh Y ¡' "u Ý4˜ h1(È!8 y · Þ,X MLD 4˜ ä , ë><G M6 Ú ôL8A¼4˜ ÄE- þCY Ê ÊKÈ mld last-member-query-count á ,X(M n4˜ ¹A¶ ÊKÈKÈLh t Þ Ô ,X h1(ÊKÈ Ä

G!5B _ A'5B Ô â

Q ¸ õ ã y ·G!5B õ ã

S*ü Û Ð 'A' Û,X y · MLD /• Ô y [È V p üCY Ê ÊKÈKÈLh Y ¡' "u Ý4˜ h1(È!8 y · Þ,X MLD 4˜ ä , ë><G M6 Ú ôL8A¼4˜ ÄE- þCY Ê ÊKÈ mld last-member-query-count á ,X(M n4˜ ¼A¶ ÊKÈKÈLh t Þ Ô ,X h1(ÊKÈ Ä

G!5B _ ¼ ß _ $ A'5B Z4˜(M n ¼A¶ µ CKÈLh 2 /¦ Ö

```
Ruijie# configure terminal
Ruijie(config)# interface fa 0/1
Ruijie(config-if)# ipv6 mld last-member-query-interval 200
```

,Ì G Q ¸

Q ¸	£EÄ
ipv6 mld immediate-leave	-

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

39.1.8 ipv6 mld limit (5 ¡ ±)

S*üA¼ Q ¸ ü y ·A'5BEîE› MLD #A, Ã ¼ : 4 ,X4˜ ä ,,X Ô û þ D Ä ª#\A¼NMG!5B È S *ü no 6 ã Ä

G!5B _

¹ß _ $ A'5B ZL$ þ D 300 Ö

```
Ruijie Äconfig Å# ipv6 mld limit 300
```

¹ß _ $A'5B ZL$ þ D 300 È $µC‡ acl ,X4˜ ¡' Ã¹: 4 È á «L$ Ö

```
Ruijie(config)# ipv6 mld limit 300 except acl
```

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

39.1.10 ipv6 mld mroute-proxy

A¹ Q ¸G!5B ` È y · Ã¹ å J,Ì h,X Þ6(·E@ ¥ y [Ä

Ipv6 mld mroute-proxy *interface-type interface-number*

no ipv6 mld mroute-proxy

– DAÈ â

– D	£EÄ
interface-type interface-number	,Ì h,X Þ6(· á/Ä

Q¸õã y·G!5B õã

S*üÛÐ A¹ Q¸{ üA’ Û¥Î¹A¶y[âÈ ,XÔû¡hÊKÈÄVpüE’ Ôû¡hÊKÈâÈ ¡'"uÝy ,Xh1(ÈMLD Ú¢4˜ä,ë><ôL8,Ìh,X4˜ÄS*ü¹Q¸È Ã¹{ ,X¡hÊKÈÄ

G!5B _ üy· gigabitEthernet 0/1 G!5B ÈG!5B Ôâä,¹A¶KÈLh 20sÄ

```
Ruijie(config-if)# ipv6 mld query-max-response-time 20
```

üy· gigabitEthernet 0/1 G!5B È6áÔâä,¹A¶KÈLh T¬AxÄ

```
Ruijie(config-if)# no ipv6 mld query-max-response-time
```

,ÌGQ¸

Q¸	£EÄ
-	-

GÄAÈâ ´

Q¸ZÆ

(Ë	AÈâ
-	-

39.1.14 ipv6 mld querier-timeout

A¹Q¸*ü 9G!5B ¹A¶5ÙnÊ<CYÊÊKÈKÈLhÈÃ¹*ü no 6ã 9G!5B Jª¹A¶5ÙAuÊ<KÈLh T¬Ax .

ipv6 mld querier-timeout *seconds*

no ipv6 mld querier-timeout

–DAÈâ

–D	£EÄ
seconds	¹A¶5ÙnÊ<CYÊÊKÈKÈLhÄ)!/¦È D 60 300Ä

G!5B _

ü y · õ ã ßG!5B ÈG!5B J ª ¹A¶5ÙAu Ê <KÈLh200s Ä

```
Ruijie(config-if)# ipv6 mld querier-timeout 200
```

ü y · Ethernet 0 G!5B ÈG!5BM2 ¹A¶5Ù n Ê <CY Ê ÊKÈKÈLh T¬Ax Ä

```
Ruijie(config-if)# no ipv6 mld querier-timeout
```

¸Ì G Q¸

Q¸	£EÄ
-	-

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

39.1.15 - ¸ˆ y ütp¥ ˜! q»@

G ÄAÈ â	´

Q¸Z Æ	(Ë	AÈ â
	-	-

39.1.16 ipv6 mld ssm-map enable

A¹ Q¸*ü 9 ü < õ ã ß | mld ssm-map s6Ñ È Q¸ ã Ö

Ipv6 mld ssm-map enable

no ipv6 mld ssm-map enable

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	s6Ñ á	Ä

Q¸õ ã	< G!5B õ ã

S*ü Û Đ	'E- þ Q ¸>•G!5B È	Õ : 4 ,X4˜ µ C Ú>• #Ï t,Ì G6(,X$dA„) µ C ÄA¹ Q¸Ô 8 b Q¸ ipv6 mld ssm-map static G! Ü S*ü Ä

G!5B –	ü < õ ã ß *ü mld ssm-map s6Ñ Ä `Ruijie(config)# **ipv6 mld ssm-map enable**`

Q¸	£EÄ

no ipv6 mld ssm-map static *access-list X:X:X:X::X*

– DAÈ â

– D	£EÄ
access-list	ipv6 ,X Q á ACL
X:X:X:X::X	4˜A„) ô Ø,X) •

5 ,ÕG!5B "u Ý ô Ø $d

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð A¹ Q ¸ â ipv6 mld ssm-map enable G! Ü S*ü ÈG!5B `A¹ Q ¸ â È Í y ,X mldv2 ¹ ß,X y [FÑ Ú ô Ø Þ,Ì h,X$dA„) Ä

G!5B – ^ ACL á/Ä te ,X Ý4˜A„) ô Ø Þ$d 4444::1234 Ä Q ¸ Ö

```
Ruijie(config)# ipv6 mld ssm-map static te 4444::1234
```

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

39.1.18 ipv6 mld static-group

A¹ Q ¸ Ú x 6 ,Ì G y ·,È y#Ï t Ô þ4˜ ä , ÈÅ}LÔ?U Ú y ·#Ï t Ô þ4˜ ä , Ê S*ü!8G!5B Ä S*üA¹ Q ¸,X no EÝNM ª#\ x 6 t 9A¹4˜ •4˜ Ä

ipv6 mld static-group *group-address*

no ipv6 mld static-group *group-address*

– DAÈ â

– D	£EÄ
group-address	ipv6 M21u)Ú4˜ •4˜

5 ,ÕG!5B 5 ,Õ ™ ‰ß"u Ý |G!5B,XM- Õ î • ä , t 9 Ä

Q ¸ õ ã y ·G!5B õ ã

S*ü Û Ð

S*üA¹ Q ¸,È y ü y · Þ t 9 Ô þ î •4˜ Ä W â join-group ,X ÿ W áLÔ?U y [x f 9 t 9 Ô þ î •4˜ È5à ,È y t 9,Ì h î •4˜ Ä

üLÔ?U ü y · Þ#Ï t Ô þ4˜ ä , ÊG!5B!8 Q ¸ Ä"¼ ãE-/¡4˜ á6Ñ ó>• clear Q ¸ ôL8, ¾ 6ÑEîE›no ipv6 mld static-group ôL8E- þ4˜A„) Ä

G!5B _

¹ ß _ $ ¹#Ï t Z 4˜ ä , Ö

```
Ruijie# configure terminal
Ruijie(config)# interface fast 0/1
Ruijie(config-if)# ipv6 mld static-group ff55::3
```

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

39.1.19 ipv6 mld version

S*üA¹ Q ¸ ü y ·A’5BLÔ?U S*ü,X MLD ,X(Ë Ä V p?U S*ü5 ,Õ È S*ü no 6 ã Ä

ipv6 mld version {1 | 2 }

no ipv6 mld version

– DAÈ â

– D	£EÄ
{1 | 2}	MLD ,X(Ë, 8× È <1-2>

5 ,ÕG!5B

5 ,Õ ™ ‰ß(Ë 2.

Q ¸ õ ã

y ·G!5B õ ã

S*ü Û Ð

S*üA¹ Q ¸ < G!5B Í MLD E¤> ,X(ËE¯> { Ä

G!5B _

¹ ß _ $ A’5B Z(Ë 1 Ö

```
Ruijie# configure terminal
Ruijie(config)# interface ethernet 0/1
```

Ruijie(config-if)# **ipv6 mld version** *1*

¸Ì G Q¸

Q¸	£EÄ
-	-

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

39.2 Ấ ₹ Ƈ

_ 2 Ö ßM6 / 4˜,XAº4š µ C Ö

```
Ruijie# show ipv6 mld groups detail
Interface:     VLAN 1
Group:         ff66::1
Uptime:        00:10:26
Group mode:    Exclude (Expires: 00:02:47)
Last reporter:  fe80::2d0:f8ff:fe22:3378
Source list is empty
```

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

39.2.2 show ipv6 mld interface

S*üA¹ Q ¸ ¹,ß y ·,XG!5B µ C Ä

show ipv6 mld interface [*interface-type interface-number*]

– DAÈ â

– D	£EÄ
interface-type	G6(y ·2O _
interface-number	G6(y ·4ê Ë
	/ Ý y · µ C

5 ,ÕG!5B ´

Q ¸ õ ã *ü õ ã ê5Ù(M õ ã

S*ü Û Ð ´

G!5B –

ßM6 _ $ / ¹,ß Ý y ·,X(Š Õ µ C Ö

```
Ruijie# show ipv6 mld interface
Interface VLAN 2 (Index 4098)
 MLD Enabled, Inactive, Version 2 (default)
```

```
MLD interface limit is 1024
MLD interface has 0 group-record states
MLD interface has 1 join-group records
MLD interface has 0 static-group records
MLD activity: 0 joins, 0 leaves
MLD query interval is 125 seconds
MLD querier timeout is 255 seconds
MLD max query response time is 10 seconds
Last member query response interval is 10 (1/10s)
Last member query count is 2
Group Membership interval is 260
Robustness Variable is 2
```

,Ì G Q¸

Q¸	£EÄ
-	-

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

39.2.3 show ipv6 mld ssm-mapping

S*üA¹ Q¸ ¹,ß4˜A„) ä$d ,X ô Ø µ C Ä

show ipv6 mld ssm-mapping [*group-address*]

– DAÈ â

– D	£EÄ
group-address	/ (M n4˜,X$d ô Ø µ C
	/ Ý y · µ C

5 ,ÕG!5B ´

Q¸õ ã *ü õ ã ê5Ù(M õ ã

S*ü Û Ð ´

G!5B _ ßM6 _ $ / ¹,ß Ý y ·,X(Š Õ µ C Ö

```
Ruijie# show ipv6 mld ssm-mapping ff66::1234
Group address: ff66::1234
Database    : Static
Source list  : 5555::1234
Ruijie# show ipv6 mld ssm-mapping
SSM Mapping : Enabled
Database    : Static mappings configured
```

,Ì G Q¸

Q¸	£EÄ
-	-

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

40 MLD Snooping ﺟﻴ ﺗ

40.1 ﻳ Ã ﺟﻴ ﺗ

40.1.1 ipv6 mld profile

MLD ,X profile *ü b n Ô2Ï ë,X4˜E›$¸ < Ä?UE¯ 9 profile õ ã È?UOj ü < õ ã ßG!5B Ô þ profile ÄA¹ Q ¸ õ ã Ð7þ Q ¸ ÈEÝ ½ profile-number È JE¯ 9 mld profile G!5B õ ã Ä

ipv6 mld profile *profile-number*

no ipv6 mld profile *profile-number*

– DAÈ â

– D	£EÄ
profile-number	profile ,X4ê Ë È8× È 1-1024

5 ,ÕG!5B ´5 ,Õ Ä

Q ¸ õ ã < õ ã Ä

S*ü Û Ð

MLD Profiles rL Þ Ô o4˜E›$¸ < È o SVGL õ ã h*ü,X4˜ • 8× È Ã CÃ+ E² y ·E›$¸4˜ • D B8× È Ã MLD Filtering 8× È ØNM s6Ñ S*ü Ä ´!8 È Z S profile CK 0*ü ÈLÔ?U Ú profile `(M n,X s6Ñ G6(S*ü Ä

G!5B _

ßM6,X/ _ ï Î Z Ô þ4ê Ë 1 ,X profile JE¯ 9 profile G!5B õ ã Ä

```
Ruijie(config)# ipv6 mld profile 1
Ruijie(config-profile)#
```

,Ì G Q ¸

Q ¸	£EÄ
range	G!5Bprofile 4˜ • 8× È
deny	Û n profile ,X> deny
permit	Û n profile ,X> permit

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â
	10.4	1 Ô õ é 9

40.1.2 range

G!5B Ô þprofile Ê ÈLÔ?U Û nprofile 4˜ •# ,X8× È ÈAË ;> profile õ ã ß,XG!5B Q ¸ range È Ã ¹ Û n) þ4˜ • È 3 Ã ¹ Û n ¤ þ8× È Y,X4˜ • Ä S*üA¹ Q ¸,X no EÝNM ôL8 Û n,X4˜ • Ä

range *low-ipv6-address* [*high-ipv6-address*]

no range *low-ipv6-address* [*high-ipv6-address*]

– DAÈ â	– D	£EÄ
	low-ipv6-address	Û n8× È,X "
	high-ipv6-address]	Û n8× È,XP¬

5 ,ÕG!5B ´5 ,Õ Ä

Q ¸ õ ã profile G!5B õ ã Ä

S*ü Û Ð ?U" low-ipv6-address ,X ã b high-ipv6-address ,X ÈG!5B Q 8× È â È B rL LÔ?U Û n Ô þ> È5 ,ÕA¹ profile ,X> deny Ä

G!5B _ ßM6 ï Î Ô þ8× È FF77::1~FF77::100 4˜ •# profile ,X _ $:

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

,Ì G Q ¸	Q ¸	£EÄ
	ipv6 mld profile	ï Î Ô þ profile
	deny	Û n profile ,X> deny
	permit	Û n profile ,X> permit

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â
	10.4	1 Ô õ é 9

5 ,ÕG!5B	profile 5 ,Õ ; > deny ¡ 0 Ä
Q ¸ õ ã	profile G!5B õ ã Ä
S*ü Û Ð	AË ü profile õ ã ß S*ü range Q ¸G!5B Q4˜ •8× È Ä
G!5B _	ßM6 ï

Q ¸ õ ã

< G!5B õ ã

S*ü Û Ð

üA¹ õ ã ß È Ø VLAN KÈ,X4˜ •# ,Ì f(À0Ÿ,X Ä ¾6Ñ ñ â7¾ Å Ø b à Ô þ VLAN ,XCÃ+ E² y ·AË" y 4˜ •# × x 6 ü y Ï) Ô þ VLAN ,X4˜ •# Ê È ¾6Ñ T,Ì à VLAN Y,X ä ,0Ã ·E@ ¥ Ä

G!5B _

ßM6,X/ _$è/ üA' Û Þ ' Ô mld snooping JA'5B ivgl õ ã Ö

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

,Ì G Q ¸

Q ¸	£EÄ
ipv6 mld snooping svgl	' Ô mld snooping JG!5B svgl õ ã
ipv6 mld snooping ivgl-svgl	' Ô mld snooping JG!5B#Ë Ü õ ã

G ÄAÈ â

´

Q ¸ Z Æ

	AÈ â
10.4	1 Ô õ é 9

G!5B _

ßM6,X/ _$è/ Ú SVGL õ ã,X h*ü8× È Û n porfile 1 Û n,X4˜ 8× È Ö

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

¸Ì G Q ¸

Q ¸	£EÄ
ipv6 mld snooping ivgl	' Ô mld snooping JG!5B ivgl õ ã
ipv6 mld snooping ivgl-svgl	' Ô mld snooping JG!5B#Ë Ü õ ã

G ÄAÈ â

´

Q ¸Z Æ

(Ë	AÈ â
10.4	1 Ô õ é 9

40.1.7 ipv6 mld snooping dyn-mr-aging-time

*ü ipv6 mld snooping dyn-mr-aging-time *time* G!5B | ÕCÃ+ E² y ·,X5Õ ê n Ê < È*ü no ipv6 mld snooping dyn-mr-aging-time 9 6 áT¬Ax Ä

ipv6 mld snooping dyn-mr-aging-time *time*

no ipv6 mld snooping dyn-mr-aging-time

– DAÈ â

– D	£EÄ
time	G!	ÕCÃ+ E² y ·,X5Õ ê ÊKÈ È^a 1-3600È)! /¦

5 ¸ÕG!5B

300s Ä

Q ¸õ ã

< G!5B õ ã

S*ü Û Đ

| ÕCÃ+ E² y · V p ü J5Õ ê ÊKÈCY Ê !"u Ý MLD BF!4˜ ¹A¶ y [ê5Ù IPv6 PIM Hello y [È x 6 Ú ^A¹0Ã · ¢CÃ+ <0Ã · ë>< ôL8 Ä

G!5B _

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.4	1 Ô õ é 9

40.1.8 ipv6 mld snooping query-max-response-time

*ü ipv6 mld snooping query-max-response-time *time* G!5BMLD ¹A¶ y [,X Ô KS ¡ h ÊKÈ È*ü no ipv6 mld snooping query-max-response-time 9 6 áT¬Ax Ä

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

no ipv6 mld snooping query-max-response-time

– DAÈ â

– D	£EÄ
time	MLD Ô8 ¹A¶ y [,X ÔKS ¡ h ÊKÈ È ª 1-65535 È) ! /¦

– DAÈ â

– D	£EÄ
vid	vlan ,X id 4ê Ë È ª 1-4094

5 ,ÕG!5B

A¹ s6Ñ5 ,Õ GKÁ

Q ¸ õ ã

< G!5B õ ã

S*ü Û Ð

CÃ+ E² y · 4˜ •A’ Û â J4˜ •F• A’ Û,È y,ÌE²,X0Ã · Ä5 ,Õ,X ™ ‰ ß È Í b Ô þ VLAN áE¯> | ÕCÃ+ E² y ·,X : 4 È¦ Ã ¹G!5BA} ` 4˜ •A’ Û S6Ñ | ÕCÃ+ E² y ·,X : 4 È*ü,Ì h,X no EÝNM Q ¸ GKÁ | Õ : 4 È J#Ù0N Ý | Õ : 4 ,XCÃ+ E² y · Ä$d0Ã · ” ¹ ' Ô Ê È ¾ Ý ¢CÃ+ E² y ·E¯ 9,X4˜ •# ! Ü"©,X È ` 4˜ •A’ Û ^ W ÀE@ ¥ å Æ"¼ `,X0Ã · ×5à ¢M2CÃ+ E² y ·E¯ 9,X4˜ •# >•?š M2"©,X È Ú>• ö × Ä ü$d0Ã · ” ¹ s6Ñ ' Ô,X ™ ‰ ß È S*ü | ÕCÃ+ E² y · : 4 È Ã ¹ ¤P¬ mld snooping ,X h*ü&I # û Ä

G!5B _

ßM6,X/ _$è/ üA’ Û ' Ô | ÕCÃ+ E² y · : 4 s6Ñ Ö

```
Ruijie(config)# ipv6 mld snooping vlan 1 mrouter learn
```

,Ì G Q ¸

Q ¸	£EÄ
ipv6 mld snooping vlan mrouter interface	G!5BCÃ+ E² y ·

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
10.4	1 Ô õ é 9

40.1.11 ipv6 mld snooping vlan mrouter interface

?UG!5BM- ÕCÃ+ E² y · ÈAË ;> < G!5B Q ¸ ipv6 mld snooping vlan mrouter interface ÄA¹ Q ¸,X no 6 ã ôL8 Ô þM- Õ4˜ •CÃ+ E² yCÃ+ · Ä

ipv6 mld snooping vlan *vid* mrouter interface *interface-id*

no ipv6 mld snooping vlan *vid* mrouter interface *interface-id*

– DAÈ â

– D	£EÄ
vid	vlan ,X id 4ê Ë È ª 1-4094

interface-id	0Ã ·4ê Ë

5 ,ÕG!5B ´G!5B

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð Ã ¹ y ·G!5B ä î þM- Õ4˜ • ,X ä ,0Ã · Ä

G!5B _ ßM6,X/ _$è/ ü Ô þ0Ã · ÞG!5B FF88::1 4˜,XM- Õ ä ,0Ã · Ö

```
Ruijie(config)# ipv6 mld snooping vlan 1 static FF88::1 interface
fastEthernet 0/1
```

,Ì G Q ¸

Q ¸	£EÄ
ipv6 mld snooping vlan mrouter interface	G!5BCÃ+ E² y ·

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.4	1 Ô õ é 9

40.1.13 ipv6 mld snooping fast-leave enable

?U ' Ô mld snooping fast-leave ÈAË ;> < G!5B Q ¸ ipv6 mld snooping fast-leave enable ÄA¹ Q ¸,X no 6 ã GKÁ mld snooping fast-leave Ä

ipv6 mld snooping fast-leave enable

no ipv6 mld snooping fast-leave enable

– DAÈ â

– D	£EÄ

5 ,ÕG!5B ´G!5B

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð 0Ã · ¿Eó/• Ô Û ' x 6 ¢ ¤0Ã · ¥EÕ,X/• Ô ¤ IPv6 4˜ •4˜,X MLD /• Ô4˜

m

G!5B _	ßM6,X/ _$è/ üA’ Û Þ ' Ô mld snooping fast-leave Ö Ruijie(config)# **ipv6 mld snooping fast-leave**

,Ì G Q ¸	Q ¸	£EÄ

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	10.4	1 Ô õ é 9

40.1.14 ipv6 mld snooping suppression enable

?U ' Ô mld snooping suppressionnÈÄ Ë¸> < G!5B Q ¸ ÈÄ Ë¸> < G!5B Q ¸ ression

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.4	1 Ô õ é 9

40.1.15 ipv6 mld source-check port

$d0Ã · ” ¹,X 0*ü L$ 4˜ •# ¾6Ñ+ CÃ+ E² y ·E¯ 9 ÆUG!5B mld snooping ,X$d 0Ã · ” ¹ s6Ñ ÈAË ;> < G!5B Q ¸ ipv6 mld snooping source-check port ÄA¹ Q ¸,X no 6 ã GKÁ$d0Ã · ” ¹ s6Ñ Ä

ipv6 mld snooping source-check port

no ipv6 mld snooping source-check port

– DAÈ â

– D	£EÄ

5 ,ÕG!5B ´G!5B

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð

mld snooping $d0Ã · ” ¹ Û ù L$ n MLD 4˜ •# ,XE¯ 90Ã · Ä'$d0Ã · ” ¹ GKÁ Ê È¢ Ï)0Ã ·E¯ 9,X?šNe# Ü"©,X È ` 4˜ •A’ Û î Ý'; mld snooping ,XE@ ¥>< ^ W À E@ ¥ Æ"¼ `,X ä ,0Ã · Þ Ä ' mld snooping $d0Ã · ” ¹ ' Ô Ê È ¾ Ý ¢CÃ+ E² y ·E¯ 9,X4˜ •# ! Ü"©,X È ` 4˜ •A’ Û ^ W ÀE@ ¥ å Æ"¼ `,X0Ã · ×5à ¢M2CÃ+ E² y · E¯ 9,X4˜ •# >•?š M2"©,X È Ú>• ö × Ä

$d0Ã · ” ¹ < Ô G È Ô º ' Ô È Ý,X4˜ •# FÑ ™NO 97¾CÃ+ E² y · È ú í Ú>• ö × Ä

G!5B _

ßM6,X/ _ ' Ô mld snooping ,X$d0Ã · ” ¹ s6Ñ Ö

```
Ruijie(config)# ipv6 mld snooping source-check port
```

,Ì G Q ¸ –

Q ¸	£EÄ

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â
	10.4	1 Ô õ é 9

40.1.16 ipv6 mld snooping filter

?UG!5B ¤ þ0Ã · ¾6Ñ y Ô M(M n,X4˜ •# È ü0Ã · õ ã ß ;> A¹ Q ¸ G6((M n,X profile ÄA¹ Q ¸,X no 6 ã ôL8 G6(,X profile Ä

ipv6 mld snooping filter *profile-number*

no ipv6 mld snooping filter *profile-number*

– DAÈ â	– D	£EÄ
	profile-num	profile ,X4ê Ë

5 ,ÕG!5B ´G!5B

Q ¸ õ ã **<</4 2 Tr 10.0.76 63.12175C2 7e f B0.48B0.02 8 0.24175C2 7394.>BD0.48B0.02 63.121 /18 e f BT /** 0Ã ·G!5B õ ã

S*ü Û Ð | Ã ¹ ^ ¤ Ô þ MLD Profile h*ü ü Ô þ0Ã · ß È V pA¹0Ã · MLD Report

?UG!5B y · AŒ Ô î ´ þ4˜ | Õ,X t 9A¹0Ã ·, AË ;> 0Ã ·G!5B Q ¸ ipv6 mld snooping max-groups Q ¸ ÄA¹ Q ¸,X no 6 ã ª#\ Ô û4˜L$ Ä

ipv6 mld snooping max-groups *number*

no ipv6 mld snooping max-groups

– DAÈ â

– D	£EÄ
Number	– D8× È 0 – 1024

5 ,ÕG!5B 1024

Q ¸ õ ã 0Ã ·G!5B õ ã

S*ü Û Ð V pG!5B Z Ô û4˜ È í üA¹ y · Þ È '4˜ DG£CYE›8× È Û n,X8× È Ê È x 6 Ú á a y Ã Ø)Ú MLD Report y [Ä

G!5B _ ßM6,X/ _G!5B,R · 0/1 Þ ¾6Ñ Ø)Ú100 þ î •4˜ Ö

```
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ipv6 mld snooping max-group 100
```

,Ì G Q ¸ –

Q ¸	£EÄ
ipv6 mld snooping filter	0Ã · î •4˜E›$¸

G ÄAÈ â ´

ÄI£EÄ

Q ¸ õ ã	(M G!5B õ ã
S*ü Û Đ	#ÙL8 | Õ : 4,XE@ ¥>< µ C Ä
G!5B _	#ÙL8 | Õ : 4,XE@ ¥>< µ C Ö `Ruijie# clear ipv6 mld snooping gda-table`

,Ì G Q ¸ _

Q ¸	£EÄ

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.4	1 Ô õ é 9

40.1.19 debug mld-snp

?U ' Ô mld á uA×A© Ô G,AË ;> (M G!5B Q ¸ debug mld-snp Q ¸ Ä

debug mld-snp

undebug mld-snp

_ DAL á

– D	£EÄ

Q ¸ Z Æ14D40747>Tj /TT0 1 Tf /809TJ /TT1 , 1

(Ë	AÈ â

```
-------------- ----------- ------------  ------------   -
FF88::1 VL1:Gi4/2   0d:0h:0m:7s     ----    2003::1111
                        Report pkts: 1          Leave pkts: 0
```

_ 3 Ö S*ü **show ipv6 mld snooping mrouter** Q¸¹,ß mld snooping ,XCÃ+ E² y · µ C Ö

```
Ruijie# show ipv6 mld snooping mrouter
Vlan   Interface       State     MLD profile number
----     --------        -------     ------------------
1   GigabitEthernet 0/7   static       1
1   GigabitEthernet 0/12  dynamic      0
```

_ 4 Ö S*ü **show ipv6 mld snooping gda-table** ¹,ß GDA ><,X Ø4˜ •4˜ µ C ¹ ž Ô þ4˜ •4˜,X Ý ä ,0Ã ·,X µ C Ö

```
Ruijie# show ipv6 mld snooping gda-table
Abbr: M - mrouter
     D - dynamic
     S - static
VLAN  Address            Member ports
-----------------------------------------------------------
1      FF88::1          GigabitEthernet 0/7(S)
```

_ 5 Ö S*ü show ipv6 mld snooping interface ¹,ß mld snooping Filtering ,XG!5B Ö

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

,Ì G Q¸	Q¸	£EÄ

G ÄAÈ â ´

Q¸Z Æ	(Ë	AÈ â
	10.4	1 Ô õ é 9

40.2.2 show ipv6 mld profile

/ MLD profile ,X,Ì GG!5B µ C Ä

show ipv6 mld profile [*profile-number*]

41

G ÄAÈ â	-

Q ¸ Z Æ	(Ë	AÈ â
	-	-

41.1.3 switchport protected

A'5B0Ã ·] < s6Ñ È0Ã ·] <,XE± _ Ø)Ú1 Ä S*üA¹ Q ¸,X no EÝNM GKÁ0Ã ·] <,XA'5B È ê5Ù Ú] <E± _ Ø)Ú • ã 6 á ä5 ,Õ Ä

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

no switchport port-security [violation]

– DAÈ â

– D	£EÄ
port-security	y ·] < Ô G
violation protect	¥)„E± _ È í ö ×E± _,X y [Ä
violation restrict	¥)„E± _ È í ö ×E± _,X y [J è ¥EÕ trap Ä
violation shutdown	¥)„E± _ È í ö × y [Ã ¥EÕ Trap J è GKÁ y · Ä

5 ,ÕG!5B y ·,X] <5 ,Õ GKÁ,X Ä

Q ¸ õ ã y ·G!5B õ ã

S*ü Û Ð

ý*ü0Ã ·] <E- þ(M û È Ã ¹EîE›L$ AŒA"KÂA' Û Þ ¤ þ y ·,X MAC ¹ ž IP(Ã EÝ)9 r)„ ù { ÍA¹ y ·,XEg 9 Ä '] <0Ã ·(' Ô Z0Ã ·] < s6Ñ,X0Ã ·)G!5B Z Ô o] < â È íL8 Z$d E- o] < ,X Ù ê ÈE- þ0Ã · Ú áE@ ¥ J W Ï) y Ä !8 ê ÈE¬ Ã ¹L$ Ô þ0Ã · Þ6Ñ Ù ÿ,X] < Ô û þ D È V p Ú Ô û þ DA'5B 1 J è A¹0Ã ·G!5B Ô þ] < ÈíE² y E- þ ·,X ¹ 00-Ä J G!5B,X] < M Å Ú(À •A¹0Ã ·,X <F¼ ú ' Ä

G!5B _

ßM6,X _ $ ü y · Gigabitethernet 1/1 Þ ' Ô0Ã ·] < s6Ñ È JA'5BE± _ Ø)Ú shutdown Ö

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

,Ì G Q ¸

Q ¸	£EÄ
show port-security	/ 0Ã ·] <,XA'5B µ C `] < Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

41.1.5 switchport port-security aging

Î b0Ã ·,X# { Q ¸

y · õ ã ß ¹G!5B] < 4¥ n È Ã ¹ Í] < E¯> $d IP+$d MAC ê5Ù ™$dP 4¥ n È 4¥ n â È ™NO 0ú Ü4¥ n,X] < ,X y [! Ã ¹E¯ 9 x 6 È á0ú Ü4¥ n,X y [Ú>• ö × Ä S*ü no EÝNM Ã ôL84¥ n,X Ö

[no] switchport port-security binding *mac-address* vlan *vlan_id ipv4-address* | *ipv6-address*

[no] switchport port-security binding *ipv4-address* | *ipv6-address*

– D	£EÄ

switchport port-security binding	y · õ ã ßG!5B] < 4¥ n
Switchport port-security mac-address	A'5BM- Õ] <
switchport port-security aging	0Ã ·] < 5Õ ê
show port-security	/ 0Ã ·] < µ C

G ÄAÈ â ´

Q ¸Z Æ

(Ë	AÈ â
-	-

41.1.8 switchport port-security maximum

A'5B0Ã · Ô û] < þ D È S*ü no EÝNM Ã 6 á5 ,Õ þ D Ö

switchport port-security maximum *value*

[no] switchport port-security maximum

– DAÈ â

– D	£EÄ
value	] < þ D 1-128

5 ,ÕG!5B 128

Q ¸õ ã y · õ ã

S*ü Û Đ] < þ D Ù ÿM- ÕG!5B ` | Õ : 4,X ] < þ D,X ` È5 ,Õ 128 þ È V pA' 5B,X] < þ D ã b ' ! Æ Ý,X] < þ D È Ú ¤/ A'5B Bù

G!5B _ _ 1 ÖA'5B · 10 ,X0Ã ·] < þ D 2 Ö

```
Ruijie(config)#inter g0/10
Ruijie(config-if)# switchport port-security maximum 2
```

,Ì G Q ¸

Q ¸	£EÄ
switchport port-security	' Ô0Ã ·] <
switchport port-security binding	G!5B] < 4¥ n

Switchport port-security mac-address	y · õ ã ßA’5BM- Õ] <
switchport port-security aging	0Ã ·] < 5Õ ê
show port-security	/ 0Ã ·] < µ C

G ÄAÈ â ´

Q ¸ Z Æ	**(Ë**	**AÈ â**
	-	-

41.1.9 switchport port-security mac-address

switchport port-security mac-address interface	(M õ ã ßA'5BM- Õ] <
switchport port-security aging	0Ã ·] < 5Õ ê
show port-security	/ 0Ã ·] < µ C

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

41.1.10 switchport port-securi ty mac-address interface

(M õ ã ß ¹G!5BM- Õ] < È S*ü no EÝNM ôL8G!5B,X Ö

[no] switchport port-security interface i *nterface-id* mac-address *mac-address* [*vlan vlan-id*]

– DAÈ â

– D	£EÄ
i*nterface-id*	y · ID
mac-address	M- Õ] <
vlan-id	MAC ,X VID "¼ ã Ö ™ üTRUNK · ß ! ÕA'5B vlan-id ,XA'5B

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã

S*ü Û Ð ´

G!5B _ _ 1 ÖA'5BTRUNK y · 10 ,XM- Õ] < 00d0.f800.5555 VID=2 Ö

```
Ruijie(config)# switchport port-security interface g0/10 mac-address 00d0.f800.5555 vlan 2
```

,Ì G Q ¸

Q ¸	£EÄ
switchport port-security	' Ô0Ã ·] <
switchport port-security binding	G!5B] < 4¥ n

Switchport port-security mac-address	y · õ ã ßA’5BM- Õ] <
switchport port-security aging	0Ã ·] < 5Õ ê
show port-security	/ 0Ã ·] < µ C

00d0.f800.5555 **vlan** *2*
Ruijie(config-if)# **end**

Q ¸	£EÄ
switchport port-security	' Ô0Ã ·] <
switchport port-security binding	G!5B] < 4¥ n
Switchport port-security mac-address	y · õ ã ßA'5BM- Õ] <
switchport port-security mac-address interface	(M õ ã ßA'5BM- Õ] <
switchport port-security aging	0Ã ·] < 5Õ ê
show port-security	/ 0Ã ·] < µ C

´

(Ë	AÈ â
RGOS 10.4(3)	Sticky MAC s6Ñ ¢ 10.4(3) Ô Ÿ Õ

41.2 Ấ ₹ Ƈ

41.2.1 show storm-control

/ N¢ ˆ { µ C Ä

show storm-control [*interface-id*]

– D	£EÄ
interface-id	y ·,XN¢ ˆ { A'5B Ä

5 ,Õ / Ý µ C Ä

(M õ ã

´

Ruijie# **show storm-control gigabitethernet** *1/1*

¸Ì G Q ¸	Q ¸	£EÄ
	switchport port-security	A'5B0Ã ·] < s6Ñ È0Ã ·] <,XE± _ Ø)Ú1 Ä
	switchport port-security aging	Ô þ y · Þ,X Ý] < G!5B5Õ ê ÊKÈ Ä
	switchport port-security mac-address	A'5B0Ã ·] < >< Ä

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

42 802.1X ﻳﺠ ﻟ

42.1 dot1x ﻫ ﻳﺠ ﻟ

42.1.1 dot1x auto-req

?UG!5B802.1X ,X |AxA• s6Ñ ÈAË ;> < G!5B Q ¸ dot1x auto-req ÄA¹ Q ¸,X no 6 ã ª#\ |AxA• s6Ñ Ä

[no] dot1x auto-req

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	áG!5B |AxA•
Q ¸ õ ã	< G!5B õ ã Ä
S*ü Û Ð	A'5BA' Û | ¥CK 802.1x ,XAxA• È Ã ¹ S*ü show dot1x auto-req Q ¸ ¹,ßA¹ s6Ñ,X A'5B Ä
G!5B _	ßM6 A' 5BA' Û | ¥CK 802.1x AxA•,X _ $ Ö Ruijie# **configure terminal** Ruijie# dot[(8auto-r)-8terminal

Q ¸ Z Æ	(Ë	AÈ â
	-	-

42.1.3 dot1x auto-req req-interval

42.1.4 dot1x auto-req user-detect

A’5BA’ Û | ¥ ÎAxA•AË" y [,X õ D Èno 6 ã Û T¬Ax Ä

dot1x auto-req user-detect

no dot1x auto-req user-detect

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	' Ô

Q ¸ õ ã	< G!5B õ ã Ä

S*ü Û Ð	A’5BA’ Û | ¥ ÎAxA•AË" y [,X õ D È Ã ¹ S*ü show dot1x auto-req Q ¸ ¹,ßA¹ s 6Ñ,XA’5B Ä

G!5B _	ßM6 A’ 5BA’ Û ü Ý*ü Þ4“ â 0!6 å Í h0Ã · ¥EÕAxA•AË" Ö Ruijie# **configure terminal** Ruijie(config)# **dot1x auto-req user-detect** Ruijie(config)# **end** Ruijie# **show dot1x auto-req** Auto-Req: Enabled User-Detect : Enabled Packet-Num : 0 Req-Interval: 60 Second

,Ì G Q ¸	Q ¸	£EÄ
	show dot1x auto-req	¹,ß |AxA•,XA’5B µ C Ä

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

42.2 dot1x ç x ﻳﺠ ﻳﺠ

42.2.1 dot1x timeout quiet-period

S*üA¹ Q ¸A'5BA' ÛAxA• Bù Ä _ VAxA• · ¸JíAÃ Å â AŒ ñA©G¡ „AxA•,X1 Y ÊKÈ Ä/¦ D Å Ä S*üA¹ Q ¸,X no EÝNM ÚA¹A'5B 6 á 5 ,Õ Ä

dot1x timeout quiet-period *seconds*

no dot1x timeout quiet-period

– DAÈ â	– D	£EÄ
	seconds	A' ÛAxA• x f Bù â AŒ ñA©G¡ „AxA•,X1 Y Ê KÈ Ä ,X8× È 0 65535 Ä) ! s

5 ,ÕG!5B 5 ,Õ 10 /¦ Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð GAË5ÙA•• Bù â È á AŒ0Ÿ G ¥CKG¡ „AxA• È™NO1 Y Ô!‰ ÊKÈ ÄÃ ¹ S*üshow dot1x Q ¸ Ä

G!5B –

ßM6 A' 5BG¡ „AxA•1 Y ÊKÈ 1000s Ö

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

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

5 ,ÕG!5B	5 ,Õ 3 /¦ Ä
Q ¸ õ ã	< G!5B õ ã Ä
S*ü Û Ð	Ã ¹ S *ü show dot1x Q ¸ ¹,ß 802.1x A'5B Ä

ßM6 A' 5B v 0Ã x fCY Ê ÊKÈ 10s Ö

```
Ruijie# configure terminal
Ruijie(config)# dot1x timeout supp-timeout 10
Ruijie(config)# end
Ruijie# show dot1x
802.1X Status:       Enabled

6thentiRe-aationP111111
```

G!5B –

```
AuthentiSoutl P111111secE
6thentiClientP111111OlineP111111Probe:  E
AuthentiEapolP111111TagP111111Mode:  EAP-MD5( Grouptatus:  e-6( rv/rP1)]TJEM
```

42.2.5 dot1x timeout tx-period

A’5B Z y [G¡ ô,X Ô û õ D â È S*üA¹ Q ¸A’5B!£ õG¡ ô,X ÊKÈKÈLh È GG¡ ô < ó Ä S*üA¹ Q ¸,X no EÝNM ÚA¹A’5B 6 á 5 ,Õ Ä

dot1x timeout tx-period *seconds*

no dot1x timeout tx-period

– DAÈ â	– D	£EÄ
	seconds	G¡ ô < ó Ä ,X8× È 0 65535 Ä

```
Tx Timer Period:      10 sec
Supplicant Timeout:   10 sec
Server Timeout:       10 sec
Re-authen Max:        3 times
Maximum Request:      3 times
```

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

,Ì G Q ¸

Q ¸	£EÄ
show dot1x	¹,ß 802.1x ,XA'5B µ C Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

42.4 dot1x љ ц ا ج Č

42.4.1 dot1x probe-timer

G!5B v 0Ã v# n Ê <.

dot1x probe-timer {interval | alive}*interval*

no dot1x probe-timer

– DAÈ â

– D	£EÄ
no	6 áT¬Ax

	interval	hello KÈLh
	alive	ü4“KÈLh
	nterval	n Ê <

5 ,ÕG!5B

Hello KÈLh¬Ax 20 /¦ ×
ü4“KÈLh,XT¬Ax 250 /¦ Ä

Q ¸ õ ã

G!5B õ ã Ä

S*ü Û Ð

G!5B v 0Ã ü4“ v# n Ê < È Ã ¹ S*ü show dot1x Q ¸ ¹,ß 802.1x A’5B Ä

G!5B –

G!5B hello KÈLh 30 /¦, G!5B ü4“KÈLh 120 /¦ Ö

```
Ruijie# configure terminal
Ruijie(config)# dot1x probe-timer interval 30
Ruijie(config)# dot1x probe-timer alive 120
Ruijie(config)# end
Ruijie# show dot1x probe-timer
Hello Interval: 30 Seconds
Hello Alive: 120 Seconds
```

5 ,ÕG!5B	GKÁ
Q ¸ õ ã	< G!5B õ ã Ä
S*ü Û Ð	G!5B v 0Ã ü4“ v# s6Ñ Ô G Ä
G!5B _	' Ô v 0Ã ü4“ v# s6Ñ Ö Ruijie# **configure terminal** Ruijie(config)# **dot1x client-probe enable** Ruijie(config)# **end** Ruijie# **show dot1x** 802.1X Status: Enabled Authentication Mode: EAP-MD5 Authed User Number: 0 Re-authen Enabled: Enabled Re-authen Period: 1000 sec Quiet Timer Period: 1000 sec Tx Timer Period: 10 sec Supplicant Timeout: 10 sec Server Timeout: 10 sec Re-authen Max: 5 times Maximum Request: 3 times Filter Non-RG Supp: Disabled Client Oline Probe: Enabled Eapol Tag Enable: Disabled Authorization Mode: Group Server

,Ì G Q ¸

Q ¸	£EÄ
show dot1x	/ dot1x G!5B Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

42.5 dot1x ـيـ ـجـ ـڭ

42.5.1 dot1x authentication

ü AAA ' Ô,X ™ ‰ ß È,O)AxA• ™NOG›*üAAA á u 9E¯> AxA• È S*üA¹ Q ¸ G6(,O)AxA• •"© ë>< ÄA¹ Q ¸,X no 6 ã ôL8,O)AxA• •"© ë>< Ä

dot1x authentication {default | *list-name*}

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

– DAÈ â	– D	£EÄ
	default	T¬Ax,XAxA• •"© ë>< á Ä
	list-name	ÃEÝ,X •"© ë>< á Ä

5 ,ÕG!5B V p AAA ' Ô È í,O)AxA•5 ,Õ,X Ú S*üAAA Ä

A¹ Q ¸A'5B 802.1X AŒAxA•,X >< Ä S*üA¹ Q ¸,X no EÝNM ôL8 ÃAxA• Ä

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

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

– D	£EÄ
mac-addr	

– DAÈ â

– D	£EÄ
num	E¯ 9 Bù VLAN ,XE²4ÁAxA• Bù õ D,8× È 1-3

5 ,ÕG!5B 3

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Đ Ã ¹ S *ü show dot1x Q ¸ ¹,ßA'5B Ä

G!5B _

ßM6 A' 5BE¯ 9 Bù VLAN ,X Ô û ñA© õ D,X _ $ Ö

```
Ruijie# configure terminal
Ruijie(config)# dot1x auth-fail max-attempt 5
Ruijie(config)# end
Ruijie#write
```

,Ì G Q ¸

Q ¸	£EÄ
show dot1x	¹,ß 802.1x ,XA'5B µ C Ä

G ÄAÈ â ´

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

,Ì G Q ¸

Q ¸	£EÄ
show dot1x	¹,ß 802.1x ,XA'5B µ C Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

42.5.6 dot1x default

ÚA' Û,X 802.1x A'5BF¼ Ú – D 6 á ä5 ,Õ Ä

dot1x default

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B ´

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð Ã ¹ S *ü show dot1x Q ¸ ¹,ß 802.1x A'5B Ä

G!5B _

ßM6 A' 5B802.1x T¬Ax – D,X _ $ Ö

```
Ruijie# configure terminal  qÑYçT!ô§•ÜùT ððÞúÁ x ñ !g •çb Jy Ï•@ Ü w€0 ñ !g •@uB G•Ü
```

Q ¸ Z Æ	(Ë	AÈ â
	-	-

42.5.7 dot1x dynamic-vlan enable

G!5B ú AŒE¯> | Õ vlan CÇE@ Ä S*üA¹ Q ¸,Xno EÝNM Ã ¹ GKÁA¹ Ô G Ä

dot1x dynamic-vlan enable

no dot1x dynamic-vlan enable

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B

dot1x dynamic-vlan <1 - 4094>

no dot1x guest-vlan

– DAÈ â

– D	£EÄ
vid	– D,X8× È<1 - 4094>

5 ,ÕG!5B

5 ,ÕA¹ Ô G GKÁ

Q ¸ õ ã

0Ã · ßG! 5B

S*ü Û Đ

1 Ô&• Öü S*ü guest vlan s6Ñ ! ÈŁÔ?U G!5B dot1x dynamic-vlan enable Q ¸ È ú íG!5B,X guest vlan á*ó Ä

1 `&• ÖG!5B guest vlan s6Ñ È Ô Q á?U Â A¹0Ã ·,X ` 2 û È ø J |G!5B 0Ã · t 9 ¤ þ vlan Ä

1 Ý&• Ö Ã ¹ S*ü show running-config Q ¸ ¹,ß 802.1x A'5B Ä

G!5B _

ßM6 A' 5B802.1x ,X guest vlan CÇE@,X _ $ Ö

```
Ruijie# configure terminal
Ruijie(config)# dot1x guest-vlan 10
Ruijie(config)# end
Ruijie#
```

Q ¸ Z Æ	(Ë	AÈ â
	10.3(5)	Q ¸ é 9

42.5.13 dot1x max-req

ü DOT1X ` á u < x fE›/ß È V p DOT1X ü Ô n ÊKÈ Y"u Ý á u <,X ¡ h È í DOT1X Ú a õ å á u < ¥CKAË" Ä S*üA¹ Q ¸A'5B å á u <AË" AŒ,X Ô û õ D Ä S*üA¹ Q ¸,X no EÝNM ÚA¹A'5B 6 á ä5 ,Õ Ä

dot1x max-req *count*

no dot1x max-req

– DAÈ â	– D	£EÄ
	count	AŒ,X Ô ûAxA•AË" ,X õ D Ä

5 ,ÕG!5B 5 ,Õ 3 õ Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð Ã ¹ S *ü show dot1x Q ¸ ¹,ß 802.1x A'5B Ä

G!5B _

ßM6 A' 5B802.1x AxA• Ô ûG¡ ô 7 õ,X _ $ Ö

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

,Ì G Q ¸	Q ¸	£EÄ
	show dot1x	¹,ß 802.1x ,XA'5B µ C Ä

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

42.5.14 dot1x private-supplicant-only

ü < G!5B õ ã ÈA'5B ú ¾ Õ/• Ý v 0Ã Èno EÝNM ÚA¹A'5B 6 á ä5 ,Õ Ä

dot1x private-supplicant-only

no dot1x private-supplicant-only

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	5 ,Õ áE› <% Ä
Q ¸ õ ã	< G!5B õ ã Ä
S*ü Û Ð	Ã ¹ S *ü show dot1x private-supplicant-only Q ¸ ¹,ß 802.1x A'5B Ä

G!5B _

ßM6 A' 5B ¾ S*ü/• Ý v 0Ã,X _ $ Ö

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

,Ì G Q ¸	Q ¸	£EÄ
	show dot1x private-supplicant-only	¹,ßA'5B µ C Ä

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

42.5.15 dot1x port-control auto

ü y ·G!5B õ ã ÈA'5BA¹ y · ú – tAxA• Ä S*üA¹ Q ¸,X no EÝNM ÚA¹A'5B 6 á ä5 ,Õ Ä

dot1x port-control auto

no dot1x port-control

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	y ·5 ,Õ á – t 802.1x AxA• Ä
Q ¸ õ ã	y ·G!5B õ ã
S*ü Û Ð	Ã ¹ S *ü show dot1x Q ¸ ¹,ß 802.1x A'5B Ä
G!5B _	ßM6 A' 5B0Ã · 802.1x – âAxA•,X _ $ Ö

42.5.17 dot1x stationarity enable

802.1x ü Î b0Ã ·,X { õ ã ß ÈT¬Ax ™ ‰ ß È | Õ*ü Ã ¹ ü Ø0Ã ·KÈ7¾+ C—E• È(M!^ ™ ‰ ß È ZA}*ü á6Ñ ¢ h*ü 802.1X 0Ã ·C—E• J ª0Ã · È Ã ¹EîE›G!5B ¹ ß Q ¸E' ,Â ,X Ä

dot1x stationarity enable

no dot1x stationarity enable

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	5 ,Õ | Õ*ü Ã ¹ ü Ø0Ã ·KÈ7¾+ C—E• Ä

Q ¸ õ ã	< G!5B õ ã Ä

S*ü Û Ð	LÔ?U ü Í*ü AxA• !G!5B QA¹ Q ¸ È ú íLÔ?U Ý*ü G¡ „AxA• Ä

G!5B _

ßM6 A' 5B0Ã · 802.1x – âAxA•,X _ $ Ö

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

,Ì G Q ¸	Q ¸	£EÄ
	-	-

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

42.5.18 dot1x redirect url

G!5BG¡ n å5% È4œ0Ã*ü ü 802.1x AxA• ä s ! Ä Ù ÀAxA• Bù Å È V p S*ü##?œ <A" KÂ5%4° ÈA' Û î Ú*ü A"KÂ,¼RL G¡ n å ÆG!5B,¼URL È ¹ http:// Ô È!¨ V Ö http://ruijie.net/web È"¼ ã ÈE-G ¾ Õ http://A"KÂ È á Õ https://A"KÂ Ä ¾6ÑA'5B Ô þG¡ n

å ÈG¡ áA’5B Ê È âA’5B,X url Ú?Z !A’5B,X url Ä S*ü no EÝNM Ã ¹ S Q ¸ ôL8 G¡ n å url Ö

dot1x redirect url [*url-string*]

[

– DAÈ â

– D	£EÄ
port num	TCP ,Â,X0Ã · Ë

5 ,ÕG!5B *ü T¬Ax ,XG¡ n å tcp ,Â,X0Ã · 80 ` 8080 È J è á Ã no]

Q ¸ õ ã (M õ ã

S*ü Û Ð TCP Ý 0Ã ·8× È 1-65535

G!5B _ _ 1 ÖA'5BG¡ n å TCP ,Â,X0Ã · 8443 Ö

```
Ruijie(config)#dot1x redirect for special tcp-destination port 8443
```

,Ì G Q ¸

Q ¸	£EÄ
dot1x redirect url	G!5BG¡ nå5%
dot1x redirect time-out	G!5B4È Õ¡ n åE² y,XCY Ê ÊKÈ
dot1x redirect num for special source-ip	G!5B Í à Ô þ$d AŒ,XG¡ n åE² y D
show dot1x	/ dot1x G¡ n å µ C

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

42.5.20 dot1x redirect time-out

G!5B4È ÕG¡ n åE² y,XCY Ê ÊKÈ(! Ö/¦), 5 ,Õ 3 /¦ × ÃEÝ,X8× È 1-10 /¦ Ä S*ü no EÝNM Ã ¹ S Q ¸ 6 á7Ç5 ,Õ Ö

dot1x redirect time-out port *time-out-interval*

no dot1x redirect time-out port

– DAÈ â

– D	£EÄ
time-out-interval	CY Ê ÊKÈ

5 ,ÕG!5B	3
Q ¸ õ ã	(M õ ã
S*ü Û Ð	´
G!5B _	_ 1 ÖA'5BG¡ n åCY Ê ÊKÈ 5 /¦ Ö `Ruijie(config)# dot1x redirect time-out 5`

,Ì G Q ¸

Q ¸	£EÄ
dot1x redirect url	G!5B Í,Â ,X0Ã · (M n0Ã · È,Â,X ip M2 !C ip ,X ,X web AË" E¯> G¡ n å
dot1x redirect for special tcp-destination port	G!5B4È ÕG¡ n åE² y,XCY Ê ÊKÈ
dot1x redirect num for special source-ip	G!5B Í à Ô þ$d AŒ,XG¡ n åE² y D
show dot1x	/ dot1x G¡ n å µ C

G ÄAÈ â	´

Q ¸ Z Æ

(Ë	AÈ â
-	-

42.5.21 dot1x redirect num for special source-ip

G!5B Í à Ô þ$d AŒ,XG¡ n åE² y D È5 ,Õ 1 þ È ÃEÝ8× È 1-10 þ Ä S*ü no EÝNM Ã ¹ S Q ¸ 6 á7Ç5 ,Õ Ö

dot1x redirect num for special source-ip *num*

no dot1x redirect num for special source-ip

– DAÈ â

– D	£EÄ
num	G¡ n åE² y D

5 ,ÕG!5B	1
Q ¸ õ ã	(M õ ã

S*ü Û Đ	´
G!5B _	_ 1 ÖA'5BG¡ n åE² y D 3 Ö Ruijie(config)# **dot1x redirect num for special source-ip** *3*

,Ì G Q ¸

Q ¸	£EÄ
dot1x redirect url	G!5BG¡ nå5%
dot1x redirect for special tcp-destination port	G!5B Í,Â,X0Ã · (M n0Ã · È,Â,X ip M2 !C ip ,X ,X web AË" E¯> G¡ n å
dot1x redirect time-out	G!5B4È ÕG¡ n åE² y,XCY Ê ÊKÈ
show dot1x	/ dot1x G¡ n å µ C

G ÄAÈ â	´

Q ¸ Z Æ

(Ë	AÈ â
-	-

42.6 dot1x ج ڭ

42.6.1 show dot1x

¹,ß 802.1x ,XA'5B µ C Ä

show dot1x

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B	´
Q ¸ õ ã	(M õ ã Ä
S*ü Û Đ	´
G!5B _	ßM6 / _ $ Ö

```
Ruijie# show dot1x
802.1X Status:       Enabled
Authentication Mode:  EAP-MD5
Authed User Number:   0
Re-authen Enabled:    Disabled
Re-authen Period:     3600 sec
Quiet Timer Period:   10 sec
Tx Timer Period:      3 sec
Supplicant Timeout:   3 sec
Server Timeout:       5 sec
Re-authen Max:        3 times
Maximum Request:      3 times
Filter Non-RG Supp:   Disabled
Client Oline Probe:   Disabled
Eapol Tag Enable:     Disabled
Authorization Mode:   Group Server
Ruijie#
```

,Ì G Q¸

Q¸	£EÄ
dot1x auth-mode	A'5B 802.1x ,XAxA• • ã Ä
dot1x max-req	A'5B AŒ Ô ûG¡ ô y [,X õ D Ä
dot1x port-control auto	A'5B y · ú – tAxA• Ä
dot1x reauth-max	A'5B GAË5Ù Ô ûG¡ „AxA• õ D
dot1x re-authentication	A'5B ú?U" GAË5Ù n óG¡ „AxA• Ä
dot1x timeout quiet-period	A'5BAxA• Bù â AŒ ñA©G¡ „AxA• ,X1 Y ÊKÈ Ä
dot1x timeout re-authperiod	A'5B GAË5Ù,XG¡AxA• ÊKÈKÈLh Ä
dot1x timeout server-timeout	A'5B `AxA• á u < KÈAxA• x f,XCY Ê ÊKÈ Ä
dot1x timeout supp-timeout	A'5BA' Û ` GAË5Ù KÈAxA• x f,XCY Ê ÊKÈ Ä
dot1x timeout tx-period	A'5B!£ õ G¡ ô,X ÊKÈKÈLh È GG¡ ô < ó Ä

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â

	-	-

42.6.2 show dot1x auth-address-table

A¹ Q ¸ / 802.1X AŒAxA•,X >< Ä

show dot1x auth-address-table [*addressmac-addr*][*interface interface*]

– DAÈ â

– D	£EÄ
mac-addr	ÃAxA•,X(=)Ú
interface	y · Ë

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã Ä

S*ü Û Ð ´

G!5B _

ßM6 / _ $ Ö

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

,Ì G Q ¸

Q ¸	£EÄ
dot1x auth-mode	A’5B 802.1x ,XAxA• • ã Ä
dot1x max-req	A’5B AŒ Ô ûG¡ ô y [,X õ D Ä
dot1x port-control auto	A’5B y · ú – tAxA• Ä
dot1x reauth-max	A’5B GAË5Ù Ô ûG¡ „AxA• õ D
dot1x re-authentication	A’5B ú?U" GAË5Ù n óG¡ „AxA• Ä
dot1x timeout quiet-period	A’5BAxA• Bù â AŒ ñA©G¡ „AxA• ,X1 Y ÊKÈ Ä
dot1x timeout re-authperiod	A’5B GAË5Ù,XG¡AxA• ÊKÈKÈLh Ä
dot1x timeout server-timeout	A’5B `AxA• á u < KÈAxA• x f,XCY Ê ÊKÈ Ä

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

,Ì G Q¸

Q¸	£EÄ
dot1x auth-mode	A'5B 802.1x ,XAxA• • ã Ä
dot1x max-req	A'5B AŒ Ô ûG¡ ô y [,X õ D Ä
dot1x port-control auto	A'5B y · ú – tAxA• Ä
dot1x reauth-max	A'5B GAË5Ù Ô ûG¡ „AxA• õ D
dot1x re-authentication	A'5B ú?U" GAË5Ù n óG¡ „AxA• Ä
dot1x timeout quiet-period	A'5BAxA• Bù â AŒ ñA©G¡ „AxA• ,X1 Y ÊKÈ Ä
dot1x timeout re-authperiod	A'5B GAË5Ù,XG¡AxA• ÊKÈKÈLh Ä
dot1x timeout server-timeout	A'5B `AxA• á u < KÈAxA• x f,XCY Ê ÊKÈ Ä
dot1x timeout supp-timeout	A'5BA' Û ` GAË5Ù KÈAxA• x f,XCY Ê ÊKÈ Ä
dot1x timeout tx-period	A'5B!£ õG¡ ô,X ÊKÈKÈLh È GG¡ ô < ó Ä

G ÄAÈ â ´

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã

S*ü Û Ð / v 0Ã ü4“ v# n Ê <G!5B Ä

G!5B _

ßM6 / _ $ Ö

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

,Ì G Q ¸

Q ¸	£EÄ
dot1x auth-mode	A’5B 802.1x ,XAxA• • ã Ä
dot1x max-req	A’5B AŒ Ô ûG¡ ô y [,X õ D Ä
dot1x port-control auto	A’5B y · ú – tAxA• Ä
dot1x reauth-max	A’5B GAË5Ù Ô ûG¡ „AxA• õ D
dot1x re-authentication	A’5B ú?U" GAË5Ù n óG¡ „AxA• Ä
dot1x timeout quiet-period	A’5BAxA• Bù â AŒ ñA©G¡ „AxA• ,X1 Y ÊKÈ Ä
dot1x timeout re-authperiod	A’5B GAË5Ù,XG¡AxA• ÊKÈKÈLh Ä
dot1x timeout server-timeout	A’5B `AxA• á u < KÈAxA• x f,XCY Ê ÊKÈ Ä
dot1x timeout supp-timeout	A’5BA’ Û ` GAË5Ù KÈAxA• x f,XCY Ê ÊKÈ Ä
dot1x timeout tx-period	A’5B!£ õG¡ ô,X ÊKÈKÈLh È GG¡ ô < ó Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

42.6.8 show dot1x re-authentication

/ G¡AxA•G!5B

show dot1x re-authentication

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã Ä

S*ü Û Ð G¡AxA•G5B ™ ‰

G!5B –

ßM6 / _ $ Ö

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

,Ì G Q ¸

Q ¸	£EÄ
dot1x auth-mode	A’5B 802.1x ,XAxA• • ã Ä
dot1x max-req	A’5B AŒ Ô ûG¡ ô y [,X õ D Ä
dot1x port-control auto	A’5B y · ú – tAxA• Ä
dot1x reauth-max	A’5B GAË5Ù Ô ûG¡ „AxA• õ D
dot1x re-authentication	A’5B ú?U" GAË5Ù n óG¡ „AxA• Ä
dot1x timeout quiet-period	A’5BAxA• Bù â AŒ ñA©G¡ „AxA• ,X1 Y ÊKÈ Ä
dot1x timeout re-authperiod	A’5B GAË5Ù,XG¡AxA• ÊKÈKÈLh Ä
dot1x timeout server-timeout	A’5B `AxA• á u < KÈAxA• x f,XCY Ê ÊKÈ Ä
dot1x timeout supp-timeout	A’5BA’ Û ` GAË5Ù KÈAxA• x f,XCY Ê ÊKÈ Ä
dot1x timeout tx-period	A’5B!£ õG¡ ô,X ÊKÈKÈLh È GG¡ ô < ó Ä

G ÄAÈ â ´

dot1x timeout supp-timeout	A’5BA’ Û ` GAË5Ù KÈAxA• x f,XCY Ê ÊKÈ Ä
dot1x timeout tx-period	A’5B!£ õG¡ ô,X ÊKÈKÈLh È GG¡ ô < ó Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

42.6.10 show dot1x summary

A¹ Q ¸ / 802.1X AxA•G!5B>< µ C

show dot1x summary

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã Ä

S*ü Û Ð / V?U G!5B

G!5B _

```
ßM6    / _ $ Ö
Ruijie# show dot1x summary
ID    MAC       Interface VLAN Auth-State
Backend-State Port-Status Type
---------------- --------------- ---------------
1 00d0f8000000 Gi0/1       1  Authenticated Idle
Authed     Static
Ruijie#
```

Q ¸	

dot1x port-control auto	A’5B y · ú – tAxA• Ä
dot1x reauth-max	A’5B GAË5Ù Ô ûG¡ „AxA• õ D
dot1x re-authentication	A’5B ú?U" GAË5Ù n óG¡ „AxA• Ä
dot1x timeout quiet-period	A’5BAxA• Bù â AŒ ñA©G¡ „AxA• ,X1 Y ÊKÈ Ä
dot1x timeout re-authperiod	A’5B GAË5Ù,XG¡AxA• ÊKÈKÈLh Ä
dot1x timeout server-timeout	A’5B `AxA• á u < KÈAxA• x f,XCY Ê ÊKÈ Ä
dot1x timeout supp-timeout	A’5BA’ Û ` GAË5Ù KÈAxA• x f,XCY Ê ÊKÈ Ä
dot1x timeout tx-period	A’5B!£ õG¡ ô,X ÊKÈKÈLh È GG¡ ô < ó Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

42.6.11 show dot1x user id

A¹ Q ¸ / 802.1X AxA•G!5B>< µ C

show dot1x user id *<id>*

– DAÈ â

– D	£EÄ
id	ü show summary Î)„,X*ü id

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã Ä

S*ü Û Ð / (M n *ü ,X µ C

G!5B _

ßM6 / _ $ Ö

```
Ruijie# show dot1x user id 1
User name: caikov
id: 1
Type: static
```

42.6.12 show dot1x timeout

A¹ Q¸ / 802.1X CY Ê – D µ C

	dot1x timeout tx-period	A’5B!£ õG¡ ô,X ÊKÈKÈLh È GG¡ ô < ó Ä

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â
	10.2(5)	„ r Q ¸

42.7.2 http redirect

?UA’5BHTTP G¡ n å,X IP s6Ñ ÈAË ;> < G!5B Q ¸ http redirect ÄA¹ Q ¸ ,X no 6 ã#ÙL8 HTTP G¡ n å,X IP Ä

http redirect *ip-address*

no http redirect

– DAÈ â	– D	£EÄ
	ip-address	HTTP G¡ n å,X IP ip-address – DAÈ @ ðÄfPÒ ÌÖw1 L•Hï6hl

http redirect homepage *url-string*

no http redirect homepage

– D	£EÄ

– DAÈ â *url-string*

5 ,ÕG!5B	º þ*ü ¥ Î,X,Â,X0Ã · 80 ,X HTTP y [Ä
Q ¸ õ ã	< G!5B õ ã
S*ü Û Ð	'*ü A“ KÂ5%4°C $d Ê Ä _ V S*ü##?œ < Þ5% Å È!8 Ê*ü î ¥ Î HTTP y [È y 9A’ ÛEîE› º þ 97¾*ü ,X HTTP y [È 9 ø •*ü ú üA“KÂ5%4°C $d Ä ' y 9A’ Û ”# þAxA•,X*ü üA“KÂ5%4°C $d Ê È ÚL !6*ü A“KÂ5%4°C $d È J å*ü Î v 0Ã ß EQNIM6 Ä 5 ,Õ ™ ‰ ß È y 9A’ ÛEîE› º þ*ü ¥ Î,X0Ã · Ë 80 ,X HTTP y [È 9 ”# *ü ú üA“KÂ5%4°C $d Ä ?U È y 9A’ Û º þ*ü PC

port-session-num	Ä ÃEÝ Å£ þ0Ã · ß,X þAxA•*ü ,X HTTP îA± D È ª 8× È 1-300 Ä

5 ,ÕG!5B

5 ,Õ < !£ þ þAxA•*ü ,X Ô û HTTP îA± D 255 È5à!£ þ0Ã · ß,X þAxA•*ü ,X HTTP îA± D Ô û 300 Ä

Q ¸ õ ã

< G!5B õ ã

S*ü Û Ð

ZL !6 þAxA•*ü ¥CK HTTP Ï È5à Ð7È y 9A' Û,X TCP E² y5ë ÈLÔ?U ü y 9A' Û ÞL$ þAxA•*ü ,X Ô û HTTP îA± D Ä

+ b*ü üAxA• Ê È î 4*ü Ô þ HTTP îA± È5à*ü ,X J ª h*ü/ß c 3 Ã6Ñ 4*ü- HTTP îA± È ´5à á ÎA,A'5B þAxA•*ü ,X Ô û HTTP îA± D 1 Ä

G!5B _

ßM6 _ $A'5B þAxA•*ü ,X Ô û HTTP îA± D 4 Ö

```
Ruijie# configure terminal
Ruijie(config)# http redirect session-limit 4
```

,Ì G Q ¸

Q ¸	£EÄ
	¹,ß HTTP G¡ n å,XG!5B

```
  session-limit: 10
  timeout:       5

Direct sites:
  Address          MASK            ARP Binding
  ---------------- ---------------- -----------
  61.233.3.215    255.255.255.255   On
  61.233.3.220    255.255.255.255   Off
  192.168.5.140   255.255.255.255   Off
  218.30.66.101   255.255.0.0       Off
  218.30.66.101   255.255.255.255   Off
```

Q¸	£EÄ
http redirect	A'5B HTTP G¡ n å,X IP
http redirect direct-site	A'5B !AxA•,X5%4°C $d8× È
http redirect homepage	A'5B v 0Ã ßEQ á uNIM6,X NI i 4ÞÎf„CB @Hï IÓ"˜ H

A’5B !AxA•,X5%4°C $d8× È Ä*ü Ã ¹*üA¹ Q ¸,X no EÝNM ôL8 !AxA•,X5%4°C $d8× È Ä

http redirect direct-site *ip-address* [*ip-mask*] [arp]

no http redirect direct-site *ip-address* [*ip-mask*]

– DAÈ â

– D	£EÄ
ip-address	!AxA•5%4°C $d,XIP Ä
ip-mask	!AxA•5%4°C $d,XIP }-Õ Ä
arp	V p y 9A’ Û *ü Z ARP CHECK s6Ñ ÈFw LÔ?U Í !AxA•,X5%4°C $d8× È¯> ARP 4¥ n ÈÔ?UG!5Barp GK + Ä

5 ,ÕG!5B 5 ,Õ"u Ý A’5B !AxA•,X5%4°C $d Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð | Web AxA• â È Ý*ü LÔ EîE› Web AxA• È !6ÑA“KÂ5%4°C $d Ä8¹?U Ô ¤ o5%4°C $d È þAxA•*ü 3 Ã ¹A“KÂE- o Ô ,X5%4°C $d È S*ü!8 Q ¸ Ä ' ¤ þ5%0- 2 b ! AxA•,X5%4°C $d ÈFw Ý*ü FÑ Ã ¹A“KÂE- þ5%0- Ä

Ô î AŒG!5B 50 þ !AxA•,X5%4°C $d8× È

G!5B – _ 1 ÖA’5BIP 172.16.0.1 ,X5%0- !AxA•A“KÂ,X5%4°C $d Ä

```
Ruijie(config)# http redirect direct-site 172.16.0.1
```

,Ì G Q ¸

Q ¸	£EÄ @•¡Ág Q ¸
show http redirect	¹,ß HTTP G¡ n å,XG!5B Ä

G ÄAÈ â ´

(Ë	AÈ â

– DAÈ â	– D	£EÄ
	url-string	NI È h ¹“http://” ê“https://” Ô È ú í ¤/ G! 5B á ä s È Ô ûKS z 255 þ +0ú Ä

5 ,ÕG!5B 5 ,Õ"u Ý Û nAxA•NIM6,X NI Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð ?U ä s h *ü Web AxA• s6Ñ È ™NOG!5BAxA•NIM6,X NI Ä

G!5B _ _ 1 Ö Û nAxA•NIM6,X NI http:// *www.web-auth.net/login* Ä

```
Ruijie(config)#
http redirect homepage http://www.web-auth.net/login
```

,Ì G Q ¸	Q ¸	£EÄ
	show http redirect	¹,ß HTTP G¡ n å,XG!5B Ä
	http redirect	A’5BAxA•á u <,X IP Ä

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â
	10.2(5)	„ r Q ¸

43.1.4 http redirect port

?UA’5B Í*ü ¥ Î,X(M n,Â,X0Ã · Ë,X HTTP ,X WEB AË" E¯> G¡ n å ÈÆË S*ü http redirect port Q ¸ Ä*ü Ã ¹*üA¹ Q ¸,X no EÝNM ôL8 Í(M n,X,Â,X0Ã · Ë,X HTTP ,X WEB AË" E¯ > G¡ n å Ä

http redirect port *port-num*

no http redirect port *port-num*

– DAÈ â	– D	£EÄ
	port-num	HTTP ,X WEB AË" ,X,Â,X0Ã · Ë Ä

5 ,ÕG!5B 5 ,Õ º þ *ü ¥ Î,X0Ã · 80 ,X HTTP y [Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð

'*ü A“ KÂ5%4°C $d Ê È!8 Ê*ü î ¥ Î HTTP y [È y 9A’ ÛEîE› º þ 97¾*ü ,X HTTP y [È9 ø •*ü ú üA“KÂ5%4°C $d ×' y 9A’ Û ”# þAxA•,X*ü üA“KÂ5% 4°C $d Ê È ÚL !6*ü A“KÂ5%4°C $d È J å*ü ÎAxA•NIM6 Ä

5 ,Õ ™ ‰ ß È y 9A’ ÛEîE› º þ*ü ¥ Î,X0Ã · Ë 80 ,X HTTP y [È 9 ”# *ü ú üA“KÂ5%4°C $d Ä

?U È y 9A’ Û º þ*ü ¥ Î,X(M n0Ã · Ë,X HTTP y [È S*ü!8 Q ¸ Ä

Ô û AŒG!5B10 þ á à,X,Â,X0Ã · Ë È0Ã · Ë 80 3 ÿ üA¹ DG£8× È Y Ä

G!5B _

_ 1 Ö Í*ü ¥ Î,X0Ã · Ë 8080 ,X HTTP ,X WEB AË" E¯> G¡ n å Ä

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

_ 2 Ö á Í*ü ¥ Î,X0Ã · Ë 80 ,X HTTP ,X WEB AË" E¯> G¡ n å Ä

```
Ruijie(config)# no http redirect port 80
```

,Ì G Q ¸

Q ¸	£EÄ
show http redirect	¹,ß HTTP G¡ n å,XG!5B Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.2(5)	„ r Q ¸

43.1.5 http redirect session-limit

A’5B < à Ô þAxA•*ü ,X Ô û HTTP îA± D Èê!£ þ0Ã · ß,X þAxA•*ü ,X HTTP îA± D Ä*ü Ã ¹*üA¹ Q ¸,X no EÝNM 6 á þAxA•*ü ,X Ô û HTTP îA± D Ä

http redirect session-limit *session-num* [port *port-session-num*]

no http redirect session-limit

– DAÈ â

– D	£EÄ
session-num	< à Ô þAxA•*ü ,X Ô û HTTP îA± D Èª 8× È 1-255 Ä
port-session-num	Ä ÃEÝ Æ£ þ0Ã · ß,X þAxA•*ü ,X HTTP îA± D È ª 8× È 1-300 Ä

5 ,ÕG!5B

5 ,Õ < !£ þ þAxA•*ü ,X Ô û HTTP îA± D 255 È5à!£ þ0Ã · ß,X þAxA•*ü ,X HTTP îA± D Ô û 300 Ä

Q ¸ õ ã

< G!5B õ ã Ä

S*ü Û Ð

ZL !6 þAxA•*ü ¥CK HTTP Ï È5à Ð7È y 9A' Û,X TCP E² y5ë ÈLÔ?U ü y 9A' Û ÞL$ þAxA•*ü ,X Ô û HTTP îA± D Ä

+ b*ü üAxA• Ê È î 4*ü Ô þ HTTP îA± È5à*ü ,X J ª h*ü/ß c 3 Ã6Ñ 4*ü- HTTP îA± È ´5à á ÎA,A'5B þAxA•*ü ,X Ô û HTTP îA± D 1 Ä

G!5B _

_ 1 ÖA'5B þAxA•*ü ,X Ô û HTTP îA± D 4 Ä

```
Ruijie(config)# http redirect session-limit 4
```

,Ì G Q ¸

Q ¸	£EÄ
show http redirect	¹,ß HTTP G¡ n å,XG!5B Ä

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
10.2(5)	„ r Q ¸

43.1.6 http redirect timeout

A'5B4È ÕG¡ n åE² y,XCY Ê ÊKÈ Ä*ü Ã ¹*üA¹ Q ¸,X no

,Ì G Q ¸

Q ¸	£EÄ
show web-auth allow-vlan	¹,ß Õ Î b VLAN ,X Web AxA•,XVLAN ë>< µ C Ä

G ÄAÈ â -

Q ¸ Z Æ

(Ë	AÈ â
10.4(2b2)	„ r Q ¸

43.1.8 web-auth direct-host

A'5B ´LÔAxA•*ü IP 8× È Ä Ã ¹*üA¹ Q ¸,X no EÝNM ª#\ ´LÔAxA•*ü Ä

web-auth direct-host *ip-address* [i*p-mask*] [port *interface-name*] [arp]

no web-auth direct-host *ip-address*

– DAÈ â

– D	£EÄ
ip-address	´LÔAxA•*ü ,X IP Ä
ip-mask	´LÔAxA•*ü ,X IP }-Õ Ä
port *interface-name*	Ú*ü IP â y 9A' Û,X0Ã ·E¯> 4¥ n Ä
arp	V p y 9A' Û *ü Z ARP CHECK s6Ñ ÈFw LÔ?U Í !AxA•,X*ü IP 8× ÈE¯> ARP 4¥ n ÈLÔ?UG!5Barp GK + Ä

5 ,ÕG!5B

5 ,Õ"u Ý A'5B ´LÔAxA•*ü È Ý*ü FÑ ™NO EîE› Web AxA• È !6ÑA"KÂ «L$,X5%4°C $d Ä

Q ¸ õ ã

< G!5B õ ã Ä

S*ü Û Ð

A'5B*ü ´LÔAxA•,X*ü ÈFw A¹*ü áLÔ?UE¯> Web AxA• È 3 Ã ¹A"KÂ Ý ÃE',X 5%4°C $d Ä

Ô û AŒ50 þ ´LÔAxA•*ü 5%4°8× È Ä

G!5B –

_ 1 ÖA'5BIP 172.16.0.1 ,X*ü ´LÔAxA•*ü Ä

```
Ruijie(config)# web-auth direct-host 172.16.0.1
```

,Ì G Q ¸

Q ¸	£EÄ
show web-auth direct-host	¹,ß ! web AxA•,X*ü 8× È Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.2(5)	„ r Q ¸

43.1.9 web-auth offline-detect-mode flow

A’5B Î b*ü # G£ 9 ”# *ü ú ß4“ Ä*ü Ã ¹*üA¹ Q ¸,X no EÝNM GKÁ Î b*ü # G£ 9 ”# *ü ú ß4“ Ä

web-auth offline-detect-mode flow

no web-auth offline-detect-mode flow

– DAÈ â

– D	£EÄ
´	

5 ,ÕG!5B 5 ,Õ GKÁÎ b*ü # G£ 9 ”# *ü ú ß4“ Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð

' ! ”# *ü ú ß4“ Ý ¹ ß Ý/¡ • ã Ö

1) *ü &• ÏAxA•NIM6 Þ,X ” ß4“ ” ÝJ, Ã ê GKÁAxA•NIM6 ×

2) Î bJÒ y,X ”# õ ã È ' y 9A’ Û ”# *ü 0Ã · LinkDown â È ü 60s Y È"u Ý a õ ”# *ü 0Ã · LinkUp È íAx *ü ß4“ ×

3) Î b*ü # G£,X ”# õ ã È ü 15 ÚJs Y È*ü # G£"u Ý r t È íAx *ü ß4“ ×

E- Ý/¡ • ã È1 Å ` 2 ÅFÑ ”# È3 Å ÃEÝ ”# Ä G üT¬Ax ™ ‰ ß È EîE› 1 Å ` 2 Å 9 ”# *ü ú ß4“ Ä

?UA’5B | Î b*ü # G£ 9 ”# *ü ú ß4“ È S*ü!8 Q ¸ Ä

G!5B –

_ 1 Ö | Î b*ü # G£ ”# *ü ú ß4“ Ä

```
Ruijie(config)# web-auth offline-detect-mode flow
```

,Ì G Q ¸

Q ¸	£EÄ
show web-auth user	¹,ß Ý*ü ê Û n*ü ,X ü4“ µ C Ä

G ÄAÈ â

Q ¸ Z Æ	(Ë	AÈ â
	10.2(5)	„ r Q ¸
	10.4(2b2)	r t ip-only-mode – D

43.1.11 web-auth portal key

A'5B y 9A' Û âAxA• á u < KÈE¯> Eî µ,X šJy Ä*ü Ã ¹*üA¹ Q ¸,X no EÝNM#ÙL8*ü ,X HTTP ,X WEB AË" >•G¡ n å â,X „,X WEB AË" âAxA• á u <E¯> Eî µ,X šJy Ä

web-auth portal key *key-string*

no web-auth portal key

– DAÈ â	– D	£EÄ
	key-string	y 9A' Û âAxA• á u < KÈE¯> Eî µ,X šJy È Ô ûKS z 255 þ +0ú Ä

5 ,ÕG!5B 5 ,Õ"u Ý A'5B šJy Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð ?U ä s h *ü Web AxA• s6Ñ È ™NOA'5B y 9A' Û âAxA• á u < KÈE¯> Eî µ,X šJy Ä

G!5B _ _ 1 ÖA'5B y 9A' Û âAxA• á u < KÈE¯> Eî µ,X šJy *web-auth* Ä

```
Ruijie(config)# web-auth portal
```

43.1.12 web-auth update-interval

A’5B ü4“*ü µ C,X È „ ÊKÈKÈLh Ä*ü Ã ¹*üA¹ Q ¸,X no EÝNM 6 á ü4“*ü µ C,X È „ ÊKÈKÈLh 60 /¦ Ä

web-auth update-interval *seconds*

no web-auth update-interval

– DAÈ â

– D	**£EÄ**
seconds	È „ ÊKÈKÈLh È) !/¦ È ª 8× È 30-3600 Ä

5 ,ÕG!5B 5 ,Õ,X ü 4“*ü µ C,X È „ ÊKÈKÈLh 60 /¦ Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð y 9A’ Û 4È x- ü4“*ü µ C È y 9A’ ÛLÔ?U n Ê È „ ü4“*ü µ C È Ù À ü4“ ÊKÈ È ¹,¥ { ü4“*ü S*ü5%4°C $d,X ™ ‰ È!¨ V Ö*ü ,X ü4“ ÊKÈ Ä
?U È ü4“*ü µ C,X È „ ÊKÈKÈLh È S*ü!8 Q ¸ Ä

G!5B _ _ 1 ÖA’5B ü4“*ü µ C,X È „ ÊKÈKÈLh 30 /¦ Ä

```
Ruijie(config)# web-auth update-interval 30
```

– DAÈ â

– D	£EÄ
´	

session-limit	à Ô þAxA•*ü ,X Ô û HTTP îA± D Ä
timeout	4È ÕG¡ n åE² y,XCY Ê ÊKÈ Ä
!AxA•5%4°C $d Ö	
Address	!AxA•5%4°C $d,XIP Ä
Mask	!AxA•5%4°C $d,XIP }-Õ Ä
ARP Binding	úE¯> ARP 4¥ n Ä
´LÔAxA•,X*ü Ö	
Address	´LÔAxA•*ü ,X IP Ä
Mask	´LÔAxA•*ü ,X IP }-Õ Ä
Port	â*ü IP 4¥ n,X y 9A’ Û,X0Ã · Ä
ARP Binding	úE¯> ARP 4¥ n Ä

¸Ì G Q ¸

Q ¸	£EÄ
http redirect	A’5BAxA•á u <,X IP Ä
http redirect direct-site	A’5B !Ax A•,X5%4°C $d8× È Ä
http redirect homepage	A’5BAxA•NIM6,X NI Ä A’5B Í*ü ¥ Î,X(M n,Â,X0Ã · Ë,X HTTP ,XIP

5 ,ÕG!5B	´ Ä
Q ¸ õ ã	(M õ ã Ä
S*ü Û Ð	´ Ä

G!5B _

_ 1 Ö ¹,ß Õ Î b VLAN ,X Web AxA•,X VLAN ë>< µ C Ä

```
Ruijie# show web-auth allow-vlan
  Allow-vlan list  :  1-3,5
```

+!‰	AÈ â
-	-

,Ì G Q ¸

Q ¸	£EÄ
web-auth allow-vlan	A'5B Î b VLAN ,X Web AxA• s6Ñ ž AŒAxA•,X VLAN ë>< Ä

G ÄAÈ â	-

Q ¸ Z Æ

(Ë	AÈ â
10.4(2b2)	„ r Q ¸

43.2.3 show web-auth direct-host

/ ! web a(-)-3((e)47b)57(h direce)47bt-host **show<19A345C4TT1 1 Tf 0 Tc 0 Tr ( )Tj EMC ET 66.8**

_ 1 Ö / y · Þ,XAxA•G!5B `4³Au µ C Ä

```
Ruijie# show web-auth port-control
   Port                Control
   ----------------- ---------
   FastEthernet 0/1    On
   FastEthernet 0/2    On
G!5B _ FastEthernet 0/3    Off
   ......
```

```
Ruijie# show web-auth user
  Current user num  :  4

Address          Online   Time Limit    Time Used    Status
---------------- -------  ------------ ------------- --------
192.168.0.11      On      0d 01:00:00   0d 00:15:10     Active
192.168.0.13      On      0             0d 00:00:59     Active
192.168.0.25      Off     0             0               Create
192.168.0.46      Off     0d 01:00:00   0d 01:00:00     Destroy

Ruijie# show web-auth user 192.168.0.11
 Address      :   192.168.0.11
 Mac          :   00d0.f800.2233
 Port         :   Fa0/2
 Online       :   On
 Time Limit   :   0d 01:00:00
 Time Used    :   0d 00:15:10
 Time Start   :   2009-02-22 20:05:10
 Status       :   Active
```

+!‰	AÈ â
Address	*ü ,X IP Ä
Mac	*ü ,X MAC Ä
Port	*ü E² y,X y 9A’ Û,X0Ã · Ä
Online	*ü ú ü4“ Ä
Time Limit	*ü ,X Ã*ü ÊKSL$ È 0 ></ ´L$ Ä
Time Used	*ü Æ4£ ü4“ ÊKÈ Ä
Time Start	*ü AxA•EîE› Ã Ô Ÿ Þ4“,X ÊKÈ Ä
Status	*ü (Š Õ ÈActive ></ *ü !7 ü4“ È Create >< / *ü î>• ï Î ÃE¬ þ ` äA’5B ÈDestroy ></ *ü î>• ôL8 Ã V þ ` ä#ÙL8A’5B Ä

,Ì G Q¸

Q¸	£EÄ
-	-

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â

	10.2(5)	„ r Q ¸

Q ¸	£EÄ
aaa new-model	S*ü AAA] < á u
dot1x authentication	ü 802.1X #A, Þ G6((M n •"© ë><

local	S*ü *ü á D B gE¯> AxA•
none	áE¯> D• ÑAxA•
group	S*ü á u <4˜E¯> AxA• È,Â ! Õ RADIUS ` TACACS+ á u <4˜

5 ,ÕG!5B ´

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð V pA' Û *ü AAA PPP] < á u È*ü ™NO S*ü AAA E¯> PPP *ü AxA• # Ä| ™NO S*üaaa authentication ppp Q ¸G!5BT¬Ax,X ê ÃEÝ,X •"© ë><*ü b PPP *ü AxA• Ä ¾ Ý !M6,X •"©"u Ý ¡ h È !6Ñ S*ü âM6,X •"©E¯> AxA• Ä

G!5B – ßM6,X/ _ n Ô þ á rds_ppp ,X AAA PPP AxA• •"© ë>< ÄA¹AxA• •"© ë>< S*ü RADIUS] < á u <E¯> AxA• È V p ü Ô n ÊL$ Y"u Ý RADIUS] < á u <,X h 1(È È í S*ü *ü D B gE¯> AxA• Ä

```
Ruijie(config)# aaa authentication ppp rds_ppp group radius local
```

,Ì G Q ¸

Q ¸	£EÄ
aaa new-model	S*ü AAA] < á u
ppp authentication	PPP #A, G6((M n •"© ë><
username	n *ü D B g

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

44.1.5 login authentication

?U ü Û n,X4œ0Ã4"CÃ Þ h*üogin Ä,O) ÅAxA• s6Ñ ÈAË ü4"CÃG!5B õ ã ß ;> login authentication Q ¸ h*ü Login AxA•,X •"© ë>< ÄA¹ Q ¸,X no 6 ã ôL8AxA•,X •"© ë>< ü A¹4"CÃ Þ,X h*ü Ä

login authentication {default | *list-name*}

no login authentication

– DAÈ â

– D	£EÄ

method	™NO local Ãnone Ãgroup ë GK + Ô È Ô þ •"© ë>< Ô î Ý 4 þ •"©
local	S*ü *ü á D B gE¯> \
none	áE¯> \
group	S*ü á u <4˜E¯> \ È,Â ! Õ RADIUS ` TACACS+ á u <4˜

5 ,ÕG!5B GKÁAAA Exec \ s6Ñ Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð RGOS Õ Í,O) NAS ,X CLI + M6,X*ü E¯> \ È C \ J CLI L$4{ ÿÄ0~15 4{ ÅÄ ,Â ! Í bEîE› Z Login AxA•,X*ü È !E¯> Exec \ Ä V p Exec \ Bù È í ´"© E¯ 9 CLI + M6 Ä
G!5B ZExec \ •"© â È ™NO Ú J h*ü üLÔ?UE¯>

– DAÈ â

– D	£EÄ
default	Ö S*üA¹ – D È í âM6 n ,X •"© ë>< 0 Network \ ,XT¬Ax •"© Ä
method	™NO none Ãgroup ë GK + Ô È Ô þ •"© ë>< Ô î Ý 4 þ •"©
none	áE¯> 5%4° \
group	S*ü á u <4˜E¯> \ È,Â ! Õ RADIUS ` TACACS+ á u <4˜

5 ,ÕG!5B GKÁAAA Network \ s6Ñ Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð

RGOS Õ Í Ý5%4° Ý G,X á uAË" V PPP ÃSLIP 1 #A,E¯> \ ÄV pG!5B Z \ È í Í Ý,XAxA•*ü ê y ·7¾ |E¯> \ Ä

Ã ¹ Û n Ý/¡ á à,X \ •"© È âD• ÑAxA• Ô È ¾ Ý ' !,X \ •"©"u Ý ¡ h È !6Ñ 4»4Á S*ü âM6,X •"©E¯> \ È V p ' ! \ •"© Bù È í á a S*ü J ª â4»,X \ • "© Ä

RADIUS ê TACACS+ á u < EîE›E¨ ² Ô2Ï ë,X 2 û Í 9 ` ä ÍAxA•*ü ,X \ Ä ¹ 5%4° \ Î0Ÿ üAxA•,X Î. Þ,X È ¾ ÝAxA•EîE› Z ! Ý Ã6Ñ9‹ ª5%4° \ Ä

G!5B _

ßM6,X/ _ S*ü RADIUS á u < Í5%4° á uE¯> \ Ö

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

,Ì G Q ¸

Q ¸	£EÄ
aaa new-model	S6ÑAAA] < á u
aaa accounting	n AAA A„ ä
aaa authentication	n AAA D• ÑAxA•
username	n *ü D B g

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

44.2.6 authorization commands

?U Ú Q ¸ \ ë>< h*ü ü Û n4œ0Ã4“CÃ Þ È ;> 4“CÃG!5B õ ã aQthorization commands ÄA¹ Q ¸,X no 6 ã ª#\4“CÃ Þ Q ¸ \ s6Ñ Ä

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

no authorization commands *level*

– D	£EÄ
	?UE¯> \ ,X Q ¸4{ ÿ È8× È

?U ÚExec \ ë>< h*ü ü Û n4œ0Ã4“CÃ Þ È ;> 4“CÃG!5B õ ã Q ¸ authorization exec Ä A¹ Q ¸,X no 6 ã ª#\4“CÃ Þ Exec \ s6Ñ Ä

authorization exec { default | *list-name*}

no authorization exec

	– D	£EÄ
– DAÈ â	default	S*üA¹ – D È h*ü Exec \ ,XT¬Ax •"© Ä
	list-name	h*ü Ô þ Æ n ,X Exec \ ,X •"© ë>< Ä

5 ,ÕG!5B	þG!5B AAA Exec \ s6Ñ Ä
Q ¸ õ ã	4“CÃG!5Bõ ã Ä
S*ü Û Ð	T¬Ax,XExec \ •"© ë>< Ô ºG!5B È Ú7¾ | h*ü Ý4œ0Ã Þ Ä ü4“CÃ Þ h*üM2T¬Ax Exec \ •"© ë>< È Ú ª ·T¬Ax,X •"© ë>< Ä V pA© Ò h*ü þ n ,X •"© ë>< È í î4- Î Ô þA: ¤/ µ C ÈA¹4“CÃ Þ,X Exec \ Ú á î*ó È,È7Ç n ZA¹ Exec \ •"© ë>< ! î*ó Ä

G!5B _	ßM6,X/ _G!5B Ô þ á exec-1 ,X Exec \ ë>< È S*ü RADIUS 0] < á u < È V p á u <"u Ý ¡ h ÚG›*ü none •"© ÄG!5B â h*ü VTY 0 – 4 4“CÃ Þ Ö
	`Ruijie(config)# aaa authorization exec exec-1 group radius none`
	`Ruijie(config)# line vty 0 4`
	`Ruijie(config-line)# authorization exec exec-1`

	Q ¸	£EÄ
,Ì G Q ¸	aaa new-model	S6ÑAAA] < á u
	aaa authorization commands	n AAA Exec \ •"© ë><

G ÄAÈ â	´

	(Ë	AÈ â
Q ¸ Z Æ	-	-

44.3 ţŋ Ẩ ﻣﻴ Ƈ

44.3.1 aaa accounting commands

Î b1u)Ú*ü # | ÈLÔ?U Í,O) NAS Þ,X*ü ;> ,X Q ¸# |E¯> A„ ä ÈAË ;> < G!5B Q ¸ aaa accounting commands ÄA¹ Q ¸,X no 6 ã ª#\ Q ¸A„ ä s6Ñ Ä

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

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

– D	£EÄ
level	?UE¯> AÞú,X Q ¸4{ ÿ È8× È 0~15 È ‡ n ¾ þ4{ ÿ ,X Q ¸ ;> Ê ÈLÔ?UA„) µ C Ä
default	S*üA¹ – D È í âM6 n ,X •"© ë>< 0 Q ¸A„Bú,X T¬Ax •"© Ä
list-name	n Ô þ Q ¸A„Bú,X •"© ë>< È Ã ¹ Ï) +0ú Ä

Q ¸ Z Æ	(Ë	AÈ â
	-	-

44.3.2 aaa accounting exec

Î b1u)Ú*ü # | ÈLÔ?U Í*ü ,O) NAS ,XA“KÂ# |E¯> A„ ä ÈAË ;> < G!5B Q ¸ aaa accounting exec ÄA¹ Q ¸,X no 6 ã ª#\ Exec A„ ä s6Ñ Ä

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

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

– DAÈ â	– D	£EÄ
	default	S*üA¹ – D È í âM6 n ,X •"© ë>< 0 Exec A„Bú ,XT¬Ax •"© Ä
	list-name	n Ô þ Exec A„Bú,X •"© ë>< ÈÃ ¹ Ï) +0ú Ä
	method	™NO noneÃgroup ë GK + Ô È Ô þ •"© ë >< Ô î Ý 4 þ •"©
	none	áE¯> A„Bú
	group	S*ü á u <4˜E¯> A„Bú È,Â ! Õ RADIUS ` TACACS+ á u <4˜

5 ,ÕG!5B	GKÁA„ äs6Ñ
Q ¸ õ ã	< G!5B õ ã Ä
S*ü Û Ð	RGOS ¾ Ý ü*ü EîE› Z,O)AxA• â È! î *ü Exec A„Bú s6Ñ ÈV p*ü ,O) Ê þE¯> AxA• êAxA•G›*ü,X •"© none È í á îE¯> Exec A„Bú Ä *üA„Bú s6Ñ â È ü*ü ,O) NAS ,X CLI + M6 Ê í È ¥EÕA„Bú Ô Ÿ ÄStart Å µ C4-] < á u < È ü*ü EÔ Î,O),X Ê í È ¥EÕA„Bú4§ 3 ÄStop Å µ C4-] < á u < Ä V p Ô þ*ü ü,O) Ê"u Ý ¥ Î Start µ C È üEÔ Î,O) Ê 3 á î ¥ Î Stop µ C Ä G!5B ZExec A„Bú •"© â È ™NO Ú J h*ü üLÔ?UE¯> Q ¸A„Bú,X4œ0Ã4“CÃ Þ È ú í Ú á*ó Ä
G!5B _	ßM6,X/ _ S*ü RADIUS Í*ü ,O) NAS ,X# |E¯> A„ ä ÈJ ü Ô Ÿ `4§ 3 Ê ¥EÕA„ ä y [ Ö `Ruijie(config)# **aaa accounting exec default start-stop group radius**`

,Ì G Q ¸	Q ¸	£EÄ

aaa new-model	S6ÑAAA] < á u
aaa authentication	n AAA D• ÑAxA•
accounting commands	ü4œ0Ã4“CÃ Þ h*ïExec A„Bú

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

44.3.3 aaa accounting network

Î b5%4°C *ü,X4³Au ê1u)Ú*ü # | ÈLÔ?U Í*ü ,XA“KÂ# |E¯> A„ ä ÈAË ;> < G!5B Q ¸ aaa accounting network ÄA¹ Q ¸,X no 6 ã ª#\5%4°A„ ä s6Ñ Ä

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

no 1.251 0 Td [(aaa acco)-7t.0.0022 4i6.53tt0- J /TT0 1 Tf 0 Tc 0 Tw 11.6740 Td (})Tj /TT1 1 Tf -0.0007 T

Q ¸ Z Æ	(Ë	AÈ â
	-	-

44.3.6 accounting commands

?U Ú Q ¸A„Bú ë>< h*ü ü Û n4œ0Ã4“CÃ Þ È¦> 4“CÃG!5B õ ã Q ¸ accounting commands Ä A¹ Q ¸,X no 6 ã ª#\4“CÃ Þ Q ¸A„Bú s6Ñ Ä

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

no accounting commands *level*

– DAÈ â	– D	£EÄ
	level	?UE¯> A„Bú,X Q ¸4{ ÿ È8× È 0~15 È ‡ n ¾ þ4{ ÿ ,X Q ¸LÔ?UE¯> A„Bú Ä
	default	S*üA¹ – D È h*ü Q ¸A„Bú,XT¬Ax •"© Ä
	list-name	h*ü Ô þ Æ n ,X Q ¸A„Bú,X •"© ë>< Ä

5 ,ÕG!5B GKÁA„ äs6Ñ

Q ¸ õ ã 4“CÃG!5Bõ ã Ä

S*ü Û Ð T¬Ax,X Q¸A„Bú •"© ë>< Ô ºG!5B È Ú7¾ | h*ü Ý4œ0Ã Þ Ä ü4“CÃ Þ h*üM2T¬Ax Q ¸A„Bú •"© ë>< È Ú ª ·T¬Ax,X •"© ë>< Ä V pA© Ò h*ü þ n ,X •"© ë>< È í î4- Î Ô þA: ¤/ µ C ÈA¹4“CÃ Þ,X Q ¸A„Bú Ú á î*ó È,È7Ç n ZA¹ Q ¸A„Bú •"© ë>< ! î*ó Ä

G!5B – ßM6,X/ _G!5B Ô þ á cmd ,X Q ¸A„Bú ë>< È\ Í 15 4{ Q ¸E¯> A„Bú ÈS*ü TACACS+ 0] < á u < È V p á u <"u Ý ¡ h ÚG›*ü none •"© ÄG!5B â h*ü VTY 0 – 4 4“CÃ Þ Ö

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

,Ì G Q ¸	Q ¸	£EÄ
	aaa new-model	S6ÑAAA] < á u
	aaa accounting commands	n AAA Q ¸A„Bú •"© ë><

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

44.3.7 accounting exec

?U ÚExec A„Bú ë>< h*ü ü Û n4œ0Ã4“CÃ Þ È ;> 4“CÃG!5B õ ã Q ¸ accounting exec ÄA¹ Q ¸,X no 6 ã ª#\4“CÃ Þ Exec A„Bú s6Ñ Ä

accounting exec { default | *list-name*}

no accounting exec

– DAÈ â	– D	£EÄ
	default	S*üA¹ – D È h*ü Exec A„Bú,XT¬Ax •"© Ä
	list-name	h*ü Ô þ Æ n ,X Exec A„Bú,X •"© ë>< Ä

5 ,ÕG!5B GKÁA„ äs6Ñ

Q ¸ õ ã 4“CÃG!5Bõ ã Ä

S*ü Û Ð T¬Ax,XExec A„Bú •"© ë>< Ô ºG!5B È Ú7¾ | h*ü Ý4œ0Ã Þ Ä ü4“CÃ Þ h*üM2T¬Ax Exec A„Bú •"© ë>< È Ú ª ·T¬Ax,X •"© ë>< Ä V pA© Ò h*ü þ n ,X •"© ë>< È í î4- Î Ô þA: ¤/ µ C ÈA¹4“CÃ Þ,X Exec A„Bú Ú á î*ó È,È7Ç n ZA¹ Exec A„Bú •"© ë>< ! î*ó Ä

G!5B _ ßM6,X/ _G!5B Ô þ á exec-1 ,X Exec A„Bú ë>< È S*ü RADIUS 0] < á u < È V p á u <"u Ý ¡ h ÚG›*ü none •"© ÄG!5B â h*ü VTY 0 – 4 4“CÃ Þ Ö

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

,Ì G Q ¸	Q ¸	£EÄ
	aaa new-model	S6ÑAAA] < á u
	aaa accounting commands	n AAA Exec A„Bú •"© ë><

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â

	-	-

44.4 ˈḤ ج ا AAA ḏ Ẩ ج Ƨ

44.4.1 aaa domain

E¯ 9 ³G!5B õ ã ÈG!5B ³,X 2 û ÄA¹ Q ¸,X no 6 ã ª#\A¹ Q ¸ Ä

aaa domain {default | *domain-name*}

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

	– D	£EÄ
– DAÈ â	default	S*üA¹ – D ÈE¯> 5 ,Õ ³,XG!5B
	domain-name	Û n ³,X á/Ä

5 ,ÕG!5B	"u ÝG!5BÏ) ³ Ä
Q ¸ õ ã	< G!5B õ ã Ä
S*ü Ê'Ð	Û n Î b @$'„ïfŒÐ r6® T D

5 ,ÕG!5B	5 ,Õ ™ ‰ß áL$ *ü DG£ Ä
Q ¸ õ ã	³G!5B õ ã Ä
S*ü Û Ð	S*üA¹ Q ¸ Í ³,X*ü DG£E¯> L$ Ä
G!5B _	ßM6,X/ _$è/ A'5B ³ á ruijie.com ,X ³,X*ü DG£ 20 Ö Ruijie(config)# **aaa domain** *ruijie.com* Ruijie(config-aaa-domain)# **access-limit** *20*

S*ü Û Ð ³ Û n S*ü,X Network A„Bú •"© ë>< Ä

G!5B _ ßM6,X/ _$è/ A'5B ³ Û n Network A„Bú •"© ë>< Ö

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

Q¸	

	-	-

44.4.8 show aaa domain

/ ' ! ÝG!5B ³ µ C Ä

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

	– D	**£EÄ**
– DAÈ â	default	S*üA¹ – D È Û n / T¬Ax,X ³ µ C
	domain-name	/ Û n ³ á,X ³ µ C

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã Ä

44.4.9 username-format

ü ³G!5B õ ã ßG!5B NAS â á u < x f Ê*ü á ú ú ³ µ C ÈA¹ Q ¸,X no 6 á äT¬ AxG!5B Ä

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

no username-format

	– D	£EÄ
– DAÈ â	without-domain	9/• ³ µ C
	with-domain	á 9/• ³ µ C

5 ,ÕG!5B	5 ,Õ ™ ‰ß á 9/• ³ µ C Ä
Q ¸ õ ã	³G!5B õ ã Ä
S*ü Û Ð	ü ³G!5B õ ã ß ÈG!5B NAS J\ Í Û n ³ â á u < x f Ê È*ü á ú ú ³ µ C Ä
G!5B _	ßM6,X/ _$è/ A'5B 9/• ³ µ C Ö Ruijie(config)# **aaa domain** *ruijie.com* Ruijie(config-aaa-domain)# **username-domain without-domain**

	Q ¸	£EÄ
,Ì G Q ¸	aaa new-model	' Ô AAA] < á u
	aaa domain enable	' Ô Î b ³ á,X AAA á u Ô G
	show aaa domain	/ ³G!5B

G ÄAÈ â	´

	(Ë	AÈ â
Q ¸ Z Æ	-	-

44.5 AAA ḏ ڃ ڃ

44.5.1 aaa group server

E¯ 9 AAA á u <4˜G!5B õ ã ÄA¹ Q ¸,X

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

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

– DAÈ â

– D	£EÄ
name	á u <4˜ ,X ª á È,Â ! á6Ñ GK + radius È tacacs+ È ´ E- RADIUS ` TACACS+T¬Ax ,X á u <4˜ á/Ä Ä

5 ,ÕG!5B

´

Q ¸ õ ã

< G!5B õ ã Ä

S*ü Û Đ

A¹ Q ¸G! 5BAAA á u <4˜ È ,Â ! Õ RADIUS ` TACACS+ á u <4˜ Ä

G!5B _

ßM6/ _ Ä

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

,Ì G Q ¸

Q ¸	£EÄ
show aaa group	/ aaa á u <4˜

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	- -

5 ,ÕG!5B	´ á u < G!5B
Q ¸ õ ã	á u <4˜ G!5B õ ã Ä
S*ü Û Ð	T Û n á u < #Ït á u < È á Û n0Ã · Ê S*üT¬Ax Ä
G!5B _	ßM6/ _ Ä Ruijie(config)# **aaa group server radius ss** Ruijie(config-gs-radius)# **server** *192.168.4.12* acct-port 5 authen-port 6 Ruijie(config-gs-radius)# end Ruijie# show aaa group Group Name: ss Group Type: radius Referred: 2 Server List:

12.6~212.64742.682.63647-19.620B11F141A92C4F160.8s Àaaa lo2C4F1-348.nti- Ë-

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð A¹ Q ¸G! 5BLogin ,O)*ü ñA©,O) Bù õ D

G!5B _ ßM6,X/ _ Ö

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

,Ì G Q ¸

Q ¸	£EÄ
Show running-config	/ x 6 ' !G!5B
Show aaa lockout	/ ' ! login ,XJÕ nG!5B – D

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

44.6.2 aaa local authentication lockout-time

G!5Blogin ,O)*ü ñA©CYE›G!5B,O) Bù õ D È>•JÕ n,X ÊKÈKS z

aaa local authentication lockout-time *lockout-time*

– DAÈ â

– D	£EÄ
lockout-time	JÕ n ÊKÈ Ä) ! Ö ã Ê Å È ª 8× È 1~2147483647

5 ,ÕG!5B

Show running-config	/ x 6 ' !G!5B
Show aaa lockout	/ ' ! login ,XJÕ nG!5B – D

G ÄAÈ â ´

Q ¸ Z Æ	**(Ë**	**AÈ â**
	-	-

44.6.3 aaa new-model

?U S*üRGOS ,X

	-	-

44.6.4 clear aaa local user lockout

#ÙL8>•JÕ n,X*ü ë><

clear aaa local user lockout {all | user-name < *word*>}

– DAÈ â	– D	£EÄ
	<*word*>	*ü ID

5 ,ÕG!5B

Q ¸ õ ã (M õ ã Ä

S*ü Û Ð #ÙL8>•JÕn,X*ü ë>< È Ã ¹ <F¼#Ù . 3 Ã ¹ Û n*ü #ÙL8

G!5B – ßM6,X/ _ Ö

```
Ruijie# clear aaa local user lockout all
```

,Ì G Q ¸	Q ¸	£EÄ
	show running-config	/ x 6 ' !G!5B
	show aaa lockout	/ ' ! login ,XJÕ nG!5B – D

5 ,ÕG!5B	´
Q ¸ õ ã	(M EXEC G!5B õ ã Ä
S*ü Û Đ	´
G!5B _	´

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â	´

Q ¸ Z Æ

(Ë	AÈ â
-	-

44.6.6 show aaa method-list

/ AAA Ý,X •"© ë>< Ä

show aaa method-list

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B	´
Q ¸ õ ã	(M õ ã Ä
S*ü Û Đ	A¹ Q ¸ / AAA Ý,X •"© ë>< Ä

G!5B _

ßM6,X/ _ / AAA •"© ë>< Ä

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

```
ation dot1x san-f local  group angel group rain none
ation enable default group radius
thod-list
 network default start-stop group radius
 method-list
ting network default group radius
```

Q¸	£EÄ
	n *ü AxA• •"© ë><
	n *ü \ •"© ë><
	n *ü A„ ä •"© ë><

45 RADIUS ج ٦

45.1 RADIUS ـ Ẩ ج ٦

45.1.1 ip radius source-interface

?U Û n radius y [,X$d ÈAË ;> < G!5B Q ¸ ip radius source-interface ÄA¹ Q ¸,X
no 6 ã ôL8 Û n,X RADIUS y [$d Ä

ip radius source-interface *interface*

no radius source-interface

	– D	£EÄ
– DAÈ â		

23	login privilige	42

=) ™ ‰ Ö

id	s6Ñ	type
1	max down-rate	76
2	qos	77
3	user ip	3
4	vlan id	4

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.3(5)	„ r Q ¸

45.1.4 radius-server deadtime

*ü ¥ Î y [â È ü ÊKÈ t 8× È Y"u Ý ² h È íAx á u <!O u È ÊKÈ t /Ä !O u ÊKÈ Ädeadtime Å ÈRGOS 5%4° ¡ 02Ï4³ Õ Í RADIUS !O u ÊKÈ,X A'5B È ;> < G!5B Q ¸ radius-server deadtime ÄA¹ Q ¸,X no 6 ã È 6 áT¬Ax Ä

radius-server deadtime *minnutes*

no radius-server deadtime

– DAÈ â

– D	£EÄ
minnutes	!O u ÊKÈÄ) ! Ú Å Ä ÃA'5B,X 8× È 1-1000 /¦ Ä

5 ,ÕG!5B 5 Ú

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð S*üA¹ Q ¸ ÍG¡ ¥ y [,XCY Ê ÊKÈE¯> A× H Ä

G!5B – ßM6,X/ _ Ú!O u ÊKÈ n 10 Ú Ö

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

,Ì G Q ¸

Q ¸	£EÄ
radius-server host	n RADIUS] < á u <,X
radius-server retransmit	n RADIUS y [G¡ ¥ õ D
radius-server key	n RADIUS ,X E • · ¸
radius-server timeout	n RADIUS CY Ê ÊKÈ

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

Q ¸ Z Æ	(Ë	AÈ â
	-	-

45.1.6 radius-server key

?U n 5%4°A“KÂ á u < ÄCÃ+ A’ Û Å â RADIUS

RADIUS Q ¸

G!5B _

ßM6,X/ _Ö

```
Ruijie(config)# radius set qos cos
```

,Ì G Q ¸

Q ¸	£EÄ
radius vendor-specific extend	Radius =) á ÿ/• Ý V id

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

45.1.10 radius vendor-specific extend

=) á ÿ/• Ý V id Ä

radius vendor-specific extend

no radius vendor-specific extend

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B

¾Aš ÿ å Ì/• Ý V id

Q ¸ õ ã

< G!5B õ ã Ä

S*ü Û Ð

S*üA¹ Q ¸ Ã Í Ý V id ,X 2 û Ý';G!5B + 2O _Aš ÿ Ä

G!5B _

ßM6,X/ _Ö

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

,Ì G Q ¸

Q ¸	£EÄ
radius attribute	G!5B/• Ý2O _ Ë

Q	(	AÈ â
	-	-

45.2 RADIUS ﺣﻴ ﺗ

45.2.1 debug radius

' Ô RADIUS A×A© Ô G no 6 ã GKÁ RADIUS A×A© Ô G•Ä

debug radius [event | detail]

no debug radius [event | detail]

–	– D	£EÄ
	-	-

5

Q	(M EXEC G!5B õ ã

S

G!

	Q„¸	£EÄ
	-	-

G

Q		AÈ â
	-	-

45.2.2 show radius parameter

/ RADIUS á u < <

show radius parameter

–	– D	£EÄ

-	-

5¸ÕG!5B ´

Q¸õã (M õã Ä

S*ü ÛÐ S*üA¹ Q¸ / radius á u <,X – D Ä

G!5B _

```
Ruijie# show radius parameter
Server Timout:   5 Seconds
Server Deadtime: 5 Minutes
Server Retries:  3
Server Key:      ******
```

¸Ì G Q¸

Q¸	£EÄ
radius-server host	n RADIUS] < á u <,X
radius-server retransmit	n RADIUS y [G¡ ¥ õ D
radius-server key	n RADIUS ,X E • · ¸
radius-server timeout	n RADIUS CY Ê ÊKÈ

G ÄAÈâ ´

Q¸ZÆ

(Ë	AÈâ
-	-

45.2.3 show radius server

/ RADIUS á u <G!5B ™ ‰ Ä

show radius server

–DAÈâ

–D	£EÄ
-	-

5¸ÕG!5B ´

Q¸õã (M õã Ä

S*ü Û Ð S*üA¹ Q ¸ / radius á u <,XG!5B ™ ‰ Ä

G!5B _

```
Ruijie# show radius server
server ip : 192.168.4.12
acct  port: 23
authen  port: 77
server state: ready
server ip : 192.168.4.13
acct  port: 45
authen  port: 74
server state: ready
```

,Ì G Q ¸

Q ¸	£EÄ
radius-server host	n RADIUS] < á u <,X
radius-server retransmit	n RADIUS y [G¡ ¥ õ D
radius-server key	n RADIUS ,X E • · ¸
radius-server timeout	n RADIUS CY Ê ÊKÈ

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

45.2.4 show radius vendor-specific

/ RADIUS /• Ý 2 û2O _G!5B Ä

show radius vendor-specific

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã Ä

S*ü Û Ð S*üA¹ Q ¸ / radius /• Ý 2 û2O _G!5B Ä

G!5B _

```
Ruijie# show radius vendor-specific
id    vendor-specific       type-value
----- -------------------- ----------
1     max down-rate         76
2     qos                   77
3     user ip               3
4     vlan id               4
5     version to client     5
6     net ip                6
7     user name             7
8     password              8
9     file-diractory        9
10    file-count            10
11    file-name-0           11
12    file-name-1           12
13    file-name-2           13
14    file-name-3           14
15    file-name-4           15
16    max up-rate           75
17    version to server     17
18    flux-max-high32       18
19    flux-max-low32        19
20    proxy-avoid           20
21    dailup-avoid          21
22    ip privilige          22
23    login privilige       42
24    limit to user number  50
```

,Ì G Q ¸

Q ¸	£EÄ
radius-server host	n RADIUS] < á u <,X
radius-server retransmit	n RADIUS y [G¡ ¥ õ D
radius-server key	n RADIUS ,X E • · ¸
radius-server timeout	n RADIUS CY Ê ÊKÈ

G ÄAÈ â ´

Q ¸Z Æ

(Ë	AÈ â

	-	-

46 TACACS+ ﺩﻳ

	vrf-name	vrf á +

5 ,ÕG!5B ´

Q ¸ õ ã TACACS+ á u <4˜G!5B õ ã Ä

S*ü Û Đ Û n ,X TACACS+ á u <4˜ Û n vrf á + Ä

G!5B – ßM6/ _ TACACS+ á u <4˜ Û n VRF á + vpn1 Ö

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

,Ì G Q ¸

Q ¸	£EÄ
aaa group server tacacs+	G!5BTACACS+ á u <4˜
server	G!5BTACACS+ á u <4˜,X server ë ><

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

46.1.4 server(TACACS+)

!8 Q ¸G!5B TACACS+ á u <4˜ ,X á u < Ä

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

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

– DAÈ â

– D	£EÄ
ip-address	TACACS+ á u <4˜ ,X á u < IP
ipv6-address	TACACS+ á u <4˜ ,X á u < IPV6

5 ,ÕG!5B ´

Q ¸ õ ã TACACS+ á u <4˜G!5B õ ã Ä

TACACS+

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð Z S *ü TACACS+ r)„ AAA] < á u È ™NO n TACACS+] < á u < Ä | Ã ¹ S*ü tacacs-server Q ¸ n Ô þ ê î þ TACACS+] < á u < Ä

G!5B _ ßM6,X/ _ n Ô þ TACACS+] < á u < Ö

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

,Ì G Q ¸

Q ¸	£EÄ
aaa authentication	n AAA ,XD• ÑAxA• •"© ë><
tacacs-server key	< n TACACS+] < á u <,X E • · ¸
tacacs-server timeout	< n TACACS+ á u < ¡ h y [CY Ê n Ê <

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

46.1.6 tacacs-server key

!8 Q ¸G!5B TACACS+,X < šJy Ä

tacacs-server key [*0* | *7*] *string*

no tacacs-server key

– DAÈ â

– D	£EÄ
string	E • · ¸,X [
0	*7*	· ¸,X t š2O _ È0 ´ t š È7 1T) t š Ä

5 ,ÕG!5B "u Ý Û n E • · ¸ Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð E • · ¸ A' Û ` TACACS+ ] < á u <E¯> !7.BEî µ,X Î. Ä Z SA' Û ` TACACS+] < á u <6ÑE¯> Eî µ È™NO üA' Û ` TACACS+] < á u < Þ n ,Ì à,X E • · ¸ Ä'

å ÀLÔ?U !£ þ á u < Û n á à,X šJy S È å À S*ü host Q ¸ ,X key EÝNM r)„ ÈE-G Ã ¹EîE› < G!5B Í Ý þG!5B key EÝNM,X á u <G!5B Ô þkey Ä

G!5B –

ßM6,X/ _ n TACACS+] < á u <,X E • · ¸ aaa Ö

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

,Ì G Q ¸

Q ¸	£EÄ
tacacs-server host	n TACACS+] < á u <,X
tacacs-server timeout	n TACACS+ y [CY Ê n Ê <

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

46.1.7 tacacs-server timeout

!8 Q ¸G!5B â TACACS+ á u <EîA*ƒ* Ê È1 Y á u <,X < CY Ê ÊKÈ Ä

tacacs-server timeout *seconds*

no tacacs-server timeout

– DAÈ â

– D	£EÄ
seconds	CY Ê ÊKÈÄ) ! /¦ Å Ä ÃA'5B,X 8× È 1-1000 /¦ Ä

5 ,ÕG!5B

5 /¦

Q ¸ õ ã

< G!5B õ ã Ä

S*ü Û Ð

S*üA¹ Q ¸ Í ¡ h y [,XCY Ê ÊKÈE¯> A× H Ä ' å ÀLÔ?U !£ þ á u < Û n á à,XCY Ê ÊKÈ Ê È S*ü host Q ¸ ,X timeout EÝNM r)„ ÈE-G Ã>?à þ

tacacs-server host	n TACACS+] < á u <,X
tacacs-server key	n TACACS+,X E • · ¸

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

46.2 TACACS+ ₹ Ĉ

46.2.1 debug tacacs+

' Ô TACACS+A×A© Ô G ÄA¹ Q ¸,Xno 6 ã GKÁ TACACS+A×A© Ô G Ä

debug tacacs+

no debug tacacs+

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B ´

Q ¸ õ ã (M EXEC G!5B õ ã Ä

S*ü Û Ð ´

G!5B _ ´

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

TACACS+

-	-

47.1.2 crypto key zeroize

ôL8 SSH á u <0Ã,X @ E šJy È ü < G!5B õ ã ß È ;> Q¸Ö

crypto key zeroize {rsa | dsa}

– DAÈ â

– D	£EÄ
rsa	ôL8 RSA šJy
dsa	ôL8 DSA šJy

5 ,ÕG!5B ´

Q¸õ ã < G!5B õ ã

S*ü Û Ð EîE›!8 Q¸9 ôL8 á u <,X @ E šJy ÄšJy>• ôL8 â È SSH Server (Š Õ ä DISABLE Ä V pLÔ?U GKÁSSH Server ÈLÔ?U ;> no enable service ssh-server Q¸Ä

G!5B –

```
Ruijie# configure terminal
Ruijie(config)# crypto key zeroize rsa
```

,Ì G Q¸

Q¸	£EÄ
show ip ssh	¹,ß SSH Server ,X ' !(Š Õ Ä
crypto key generate {rsa|dsa }	*ó ä DSA â RSA šJy Ä

G ÄAÈ â EC Ê(RGOS10.1 ¹ Þ

Q¸Z Æ

(Ë	AÈ â
-	-

47.1.3 ip ssh authentication-retries

A’5B SSH Server *ü AxA•,XG¡AxA• õ D ÄS*üA¹ Q¸,X no EÝNM Ú*ü AxA•,XG¡AxA• õ D 6 á 5 ,ÕA’5B Ä

ip ssh authentication-retries *retry times*

no ip ssh authentication-retries

– DAÈ â

– D	£EÄ
retry times	G!5B*ü AxA•,XG¡AxA• õ D Ä

5 ,ÕG!5B

5 ,ÕA'5B ßG¡AxA• õ D 3 õ Ä 'A'5BG¡AxA• õ D â È S*ü no ip ssh authentication-retries Q¸3 Ã¹ SA'5B 6 á T¬Ax Ä

Q¸õ ã

< G!5B õ ã

S*ü Û Đ

A¹ Q¸G! 5BSSH Server E¯> *ü AxA•,XG¡AxA• õ D Ä 'CYE› SSH Server G!5B,XG¡AxA• õ D È¡"u ÝAxA• ä s ÈíAx *ü AxA• Bù ÄS*ü show ip ssh Q¸¹,ß SSH Server ,XG!5B µ C Ä

G!5B _

A'5B*ü AxA•,XG¡AxA• õ D 2 Ö

```
Ruijie# configure terminal
Ruijie(config)# ip ssh ssh authentication-retries 2
```

,Ì G Q¸

Q¸	£EÄ
show ip ssh	¹,ß SSH Server ,X ' !(Š Õ Ä

G ÄAÈ â

EC Ê(RGOS10.1 ¹ Þ

Q¸Z Æ

(Ë	AÈ â
-	-

47.1.4 ip ssh time-out

A'5B SSH Server ,X*ü AxA•CY Ê ÊKÈ ÄS*üA¹ Q¸,X no EÝNM Ú*ü AxA•CY ÊKÈA'5B 6 á 5 ,ÕA'5B Ä

ip ssh time-out *time*

no ip ssh time-out

– DAÈ â

– D	£EÄ
time	G!5B*ü AxA•,XCY Ê ÊKÈ Ä

5 ,ÕG!5B

5 ,ÕA'5B ß ÈCY Ê ÊKÈ 120s Ä 'A'5BCY Ê ÊKÈ â È S*ü no ip ssh time-out Q¸È Ú A'5B 6 á T¬Ax Ä

SH Server

SSH Q ¸

Q ¸ õ ã < G!5B õ ã

S*ü Û Đ

0ÊsKÈ

Q ´G"

G!5B _

A'5B ¾ S*ü(2 Ö

```
Ruijie# configure terminal
Ruijie(config)# ip ssh version 2
```

¸Ì G Q¸

Q¸	£EÄ
show ip ssh	¹,ß SSH Server ,X ' !(Š Õ Ä

G ÄAÈ â

EC Ê(RGOS10.1 ¹ Þ

Q¸Z Æ

(Ë	AÈ â
-	-

47.2 Ấ ₹ Ƈ

47.2.1 disconnect ssh

• Ô Æ4£ Î0Ÿ,X SSH E² y îA± Ä

disconnect ssh [vty] *session-id*

– DAÈ â

– D	£EÄ
session-id	Æ4£ Î0Ÿ,X SSH E² y îA± Ë Ä

5 ¸ÕG!5B

´

Q¸õ ã

(M *ü õ ã

S*ü Û Ð

EîE›Eg 9 Û n,X SSH E² y îA± Ë È • Ô Æ4£ Î0Ÿ,X SSH E² y Ä ê5ÙEg 9 Û n,X VTY E² y îA± Ë È • Ô Û n,X SSH E² y Ä ¾6Ñ • Ô SSH 2O _,XE² y Ä

G!5B _

```
Ruijie# disconnect ssh 1
```

ê5Ù

```
Ruijie# disconnect ssh vty 1
```

¸Ì G Q¸

Q¸	£EÄ
show ssh	/ Æ4£ Î0Ÿ,X SSH E² y îA± µ C Ä

Clear line vty *line_number*	• Ô ' !,X VTY E² y îA± Ä

G ÄAÈ â EC Ê(RGOS10.1 ¹ Þ

Q ¸ Z Æ

(Ë	**AÈ â**

-

show ip ssh

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B ´

Q ¸ õ ã (M *ü õ ã

S*ü Û Đ / SSH Server ' ! *ó ,XG!5B µ C Ä Ù À Ö(Ã ú ' Ô SSH Server ÃCY Ê ÊKÈ Ã G¡AxA• õ D Ä

"¼ ã	G SG!5BZ Í h,X SSH (È V p"u Ý*ó ä Í h,X á u <0Ã šJy È ¡ ' / A¹ SSH (á Ã*ü Ä

G!5B _ Ruijie# **show ip ssh**

[redacted]

Q¸õã (M *ü õã

S*üÛÐ / Æ4£ Î0Ÿ,X SSH E² y,XE² y µ C Ä Ù À ÖE² y 4*ü,X VTY Ë ÃSSH (Ã t š 1k"© Ã#\ CAxA•1k"© ÃE² y(Š Õ Ã*ü á Ä

G!5B _ Ruijie# **show ssh**

,Ì G Q¸

Q¸	£EÄ
-	-

G ÄAÈâ EC Ê(RGOS10.1 ¹Þ

Q¸ZÆ

(Ë	AÈâ
-	-

48 CPU λ"Ι ﺟ ﻉ

48.1 ﻳ Ǻ ﺟ ﻉ

48.1.1 cpu-protect type packet-type pps pps_value

[redacted]

ttl1 |

– DAÈ â

– D	£EÄ
slot_num	ª 8× È 1-16 Ä

5 ,ÕG!5B ´

Q ¸ õ ã (M *ü õ ã Ä

S*ü Û Ð A¹ Q ¸ / Û n2O _ y [,X4³Au µ C Ä

G!5B _ ¹ ß _ $ S*ü show cpu-protect type bpdu Q ¸ ¹,ß BPDU y [,X y 4³Au Ö

```
Ruijie(config)# show cpu-protect type arp
Slot      Type         Pps       Total      Drop
--------- ------------ --------- --------- ---------
MainBoard bpdu          100        30         0
Slot-2    bpdu          100        30         0
```

49 DoS λ"I ﮋ ﮊ

49.1 ﮉ Ẩ ﮋ ﮊ

49.1.1 ip deny invalid-l4port

Ô L 7¾D•#\5ë Ï s6Ñ Ä S*üA¹ Q ¸,X no EÝNM Ú GKÁL 7¾D•#\5ë Ï s6Ñ Ä

ip deny invalid-l4port

no ip deny invalid-l4port

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	5 ,Õ ™ ‰ß ÈA' Û,XL 7¾D•#\5ë Ï s6Ñ GKÁ,X Ä
Q ¸ õ ã	< G!5B õ ã Ä
S*ü Û Ð	´
G!5B _	_ 1 Ö üA' Û Þ Ô L 7¾D•#\5ë Ï s6Ñ Ö Ruijie(config)# **ip deny invalid-l4port** _ 2 Ö üA' Û Þ GKÁL 7¾D•#\5ë Ï s6Ñ Ö Ruijie(config)# **no ip deny invalid-l4port**

,Ì G Q ¸	Q ¸	£EÄ
	show ip deny invalid-l4port	¹,ßL 7¾D•#\5ë Ï,X(Š Õ

Q ¸ Z Æ	(Ë	AÈ â
	-	-

49.1.2 ip deny invalid-tcp

Ô L M2"© TCP y [Ï s6Ñ Ä S*üA¹ Q ¸,X no EÝNM Ú GKÁL M2"©P y [Ï s6Ñ Ä

ip deny invalid-tcp

no ip deny invalid-tcp

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B 5 ,Õ ™ ‰ß ÈA’ Û,XL M2"© TCP y [Ï s6Ñ GKÁ,X Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð ´

G!5B _

_ 1 Ö üA’ Û Þ Ô L M2"© TCP y [Ï s6Ñ Ö

```
Ruijie(config)# ip deny invalid-tcp
```

_ 2 Ö üA’ Û Þ GKÁL M2"©TCP y [Ï s6Ñ Ö

```
Ruijie(config)# no ip deny invalid-tcp
```

,Ì G Q ¸

Q ¸	£EÄ
show ip deny invalid-tcp	¹,ßL M2"© TCP y [Ï,X(Š Õ

(Ë	

G!5B _

_ 1 Ö üA' Û Þ Ô L Land Ï s6Ñ Ö

```
Ruijie(config)# ip deny land
```

_ 2 Ö üA' Û Þ GKÁL Land Ï s6Ñ Ö

```
Ruijie(config)# no ip deny land
```

,Ì G Q ¸

Q ¸	£EÄ
show ip deny land	¹,ßL Land Ï,X(Š Õ

Q ¸ Z Æ

(Ë	AÈ â
-	-

49.2 Ấ ₹ Ƈ

49.2.1 show ip deny invalid-l4port

/ L 7¾D•#\5ë Ï,X(Š Õ Ä

show ip deny invalid-l4port

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B ´

Q ¸ õ ã (M *ü õ ã Ä

S*ü Û Ð ´

G!5B _

```
Ruijie# show ip deny invalid-l4port
 DoS Protection Mode                    State
------------------------------         -----
 protect against invalid l4port attack  Off
```

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

49.2.2 show ip deny invalid-tcp

/ L M2"© TCP y [Ï,X(Š Õ Ä

show ip deny invalid-tcp

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	(M *ü õ ã Ä
Q ¸ õ ã	´
S*ü Û Ð	´

G!5B _

```
Ruijie# show ip deny invalid-tcp
DoS Protection Mode                          State
-------------------------------------     -----
protect against invalid tcp attack         On
```

,Ì G Q ¸	Q ¸	£EÄ
	(no) ip deny invalid-tcp	Ô ê GKÁL M2"©TCP y [Ï s6Ñ

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

49.2.3 show ip deny land

/ L Land Ï,X(Š Õ Ä

show ip deny land

– DAÈ â	– D	£EÄ

-	-

5¸ÕG!5B ´

Q¸õã (M *ü õã Ä

S*ü Û Ð ´

G!5B _

```
Ruijie# show ip deny land
DoS Protection Mode              State
-------------------------------  -----
protect against land attack      On
```

¸Ì G Q¸

Q¸	£EÄ
(no) ip deny land	Ô ê GKÁL Land Ï s6Ñ

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

50 GSN ‿ ᴅ _→ ᴄ̈ ᴄ̈

50.1 ᴇ̈ Ấ ᴄ̈ ᴄ̈

50.1.1 security address-bind enable

A¹ Q ¸*ü bG!5BA’ Û0Ã · ú ' Ô 4¥ n1*+9 Ä

security address-bind enable

no security address-bind enable

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	´
Q ¸ õ ã	y · õ ã È Õ BEî,X ` x 6 · Ä á Ù À AP ` AP ä , · Å Ä
S*ü Û Ð	;> A¹ Q ¸ Ä í0Ã ·,X 4¥ n G ' Ô ÈLÔ?U"¼ ã!8 Q ¸ ™NO ü GSN < Ô G ' Ô Ê ! 6ÑCK 0*ü Ä
G!5B _	G!5B] < _ Ê Ô ã ÊKÈKÈLh Ö Ruijie(config-if)# **security address-bind enable**

,Ì G Q ¸	Q ¸	£EÄ
	security gsn enable	GSN < Ô G

G ÄAÈ â	EC Ê(RGOS10.1 ¹ Þ Ä

Q ¸ Z Æ	(Ë	AÈ â
	-	-

50.1.2 security community

A¹ Q ¸*ü bG!5B ` smp á u < KÈEîAƒ,X] < á Ä

¹,ß] < _ Ê Ô ã ÊKÈKÈLh Ä

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	´
Q ¸ õ ã	(M õ ã
S*ü Û Ð	¹,ß] < _ Ê Ô ã ÊKÈKÈLh Ä

G!5B _

```
Ruijie# show security event interval
Event sending interval(Seconds):5
```

,Ì G Q ¸	Q ¸	£EÄ
	security event interval *interval*	G!5B] < _ Ê Ô ã ÊKÈKÈLh Ä

G ÄAÈ â	EC Ê(RGOS10.1 ¹ Þ Ä

Q ¸ Z Æ	(Ë	AÈ â
	-	-

50.2.2 show smp-server

/ smp server ,X IP

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	´
Q ¸ õ ã	(M õ ã
S*ü Û Ð	/ smp server ,X IP Ä

G!5B _

```
Ruijie# show smp-server
```

51 DAI ج Ƨ

51.1 ά Ẩ ϯ π VLAN ϊ DAI π ` ω ṷ ⌊ ج Ƨ

51.1.1 ip arp inspection vlan

S*üA¹ Q ¸ È Ã ¹ *ü *vlan-id* Í h,X VLAN ,X DAI y [” ¹ s6Ñ ÄA¹ Q ¸,X no 6 ã Ã ¹ GKÁ*vlan-id* Í h,X VLAN ,X DAI y [” ¹ s6Ñ ÈV p,Õ+9 – D *vlan-id* Èí GKÁ Ý VLAN Þ,X DAI y [” ¹ s6Ñ Ä

ip arp inspection vlan *vlan-id*

no ip arp inspection vlan [*vlan-id*]

– DAÈ â	– D	[redacted]
	vlan-id	></ vlan 4ê Ë Ä

5 ,ÕG!5B	Ý VLAN Þ GKÁDAI y [” ¹ s6Ñ Ä
Q ¸ õ ã	< G!5B õ ã Ä
S*ü ÛÎÐ ð@	'ŒÒ9 H ï((@

51.2 ʉ ʜ ɛ ⁱ Ḃ Ʒ ⸗ ⸗ Ƈ

51.2.1 ip arp inspection trust

?UG!5B ` 0Ã · ú Ã µ Ï ÈAË S*ü y ·G!5B Q ¸ ip arp inspection trust ÄA¹ Q ¸,X no 6 ã 6 á ` 0Ã · á µ Ï(Š Õ Ä

ip arp inspection trust

no ip arp inspection trust

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	0Ã · Ø b á µ Ï(Š Õ Ä
Q ¸ õ ã	y ·G!5B õ ã Ä
S*ü Û Ð	'LÔ?U S ¤ þ y · ,X ARP y [´ 5 Ê,XEîE› DAI ,X ” ¹ Ê È Ã ¹ Ú JA’5B ä « µ Ï(Š Õ È></ å À áLÔ?U ” ¹!8 y · ,X ARP y [È W À Ü"©,X Ä
AÈ â	Õ NFPP(5%4° Î. ± x1*+9) ,X { • ÈEó)[L$ + NFPP ` ä È á a EîE› DAI E¯> A’5B È´!8,Ì G Q ¸ show ip arp inspection interface ¾ / y ·,X µ Ï(Š Õ Ä

G!5B _	¹ ß,XG! 5B _ $ È Ú gigabitEthernet 0/19 y ·A’5B ä « µ Ï Ä
	`Ruijie(config)# interface gigabitEthernet 0/19`
	`Ruijie(config-if)# ip arp inspection trust`

,Ì G Q ¸	Q ¸	£EÄ
	show ip arp inspection interface	/ y · ,X DAI ,Ì G µ C È Ù À y · ,X µ Ï(Š Õ ` y ·L$Eó µ C Ä

G ÄAÈ â	

Q ¸ Z Æ	(Ë	AÈ â
	-	-

51.3 DHCP Snooping ⸗ ' Ẩ ⸗

' *ü Z VLAN ,X Í h,X DAI s6Ñ Èè y ,X ARP y [,X ` 0Ã · Ø b á « µ Ï,X(Š Õ Ê È !8 ARP y [íLÔ?UE¯ Ô!9,X Ü"© û " ¹ È' ¹,X q B DHCP Snooping D B g,X,Ì G µ C. V p"u Ý Í D B gE¯> Ï)G!5B È í1k " ¹EîE› Ä DHCP Snooping ,Ì GG!5BAË –5×ÉDHCP Snooping G!5B Ê Ä

52 ð Ẩ arp ﺟ ﺟ

52.1 ð Ẩ arp ﺟ ﺟ

52.1.1 anti-arp-spoofing ip

A’5BL 5% Garp ! Pk Ä S*üA¹ Q ¸,X no EÝNM ÚA¹A’5B 6 á ä5 ,Õ Ä

anti-arp-spoofing ip *ip-address*

no anti-arp-spoofing ip *ip-address*

– DAÈ â	– D	£EÄ
	Ip-address	5% GIP

5 ,ÕG!5B	A¹ s6Ñ5 ,Õ á*ó
Q ¸ õ ã	y ·G!5B õ ã Ä
S*ü Û Ð	S*ü show anti-arp-spoofing Q ¸ ¹,ßA’5B Ä
G!5B _	Ruijie(config)#**interface fastEthernet** 0/1 Ruijie(config-if)#**anti-arp-spoofing ip** 192.168.1.1

,Ì G Q ¸	Q ¸	£EÄ
	show anti-arp-spoofing	/ Ý y · ß,XL 5% G arp ! Pk µ C

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

52.2 ð Ẩ arp ﺟ ﺟ

52.2.1 show anti-arp-spoofing

/ Ý y · ß,XL 5% G arp ! Pk µ C Ä

show anti-arp-spoofing

– DAÈ â

– D	£EÄ

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã

S*ü Û Ð ´

G!5B _

```
Ruijie#show anti-arp-spoofing
                port            ip
                -------         -----------
                Fa0/1           192.168.1.1
```

,Ì G Q ¸

Q ¸	£EÄ
anti-arp-spoofing ip	A’5BL 5% Garp ! Pk Q ¸

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

53 IP Source Guard ﾈﾞ ﾋ

53.1 IP Source Guard ﾏ ﾈﾞ ﾋ

53.1.1 ip source binding

ü IP $d 4¥ n D B g #Ï tM- Õ*ü µ C Èno 6 ã ôL8 Í h,XM- Õ*ü Ä

[no] ip source binding *mac-address* vlan *vlan-id ip-address* interface *interface-id*

	– D	£EÄ
– DAÈ â	*mac-address*	M- Õ#Ï t,X*ü ,X MAC ×
	vlan-id	M- Õ#Ï t,X*ü ,X vlan id ×
	ip-address	M- Õ#Ï t,X*ü ,X IP ×
	interface-id	M- Õ#Ï t,X*ü 2,X0Ã · Ä

5 ,ÕG!5B "u Ý#Ï t Ï)M- Õ*ü ,X Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð EîE›G!5B18 Q ¸ Ã ¹ AŒF¼ Ú*ü Ã ¹EîE› IP Source Guard ,X ”# ÈáLÔ?UEîE› DHCP • ãE¯> 4³ Ô { Ä

G!5B _

ßM6 A’ 5BG!5B Ô þM- Õ*ü 0Ã · 1 ,X _ $ Ö

```
Ruijie# configure terminal
Ruijie(config)# ip source binding 0000.0000.0001 vlan 1 1.1.1.1
interface FastEthernet 0/1
Ruijie(config)# end
Ruijie# show ip source binding
MacAddress    IpAddress  Lease(sec)   Type     VLAN  Interface
------------- --------- ----------   ----     ----  ------------
0000.0000.0001 1.1.1.1   infinite    static    1  FastEthernet 0/1
Total number of bindings: 1
```

,Ì G Q ¸

Q ¸	£EÄ

show ip source binding	¹,ß IP $d 4¥ n D B g,X µ C

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

53.2 IP Source Guard 5 ¡ ¨ ¨ ¨

53.2.1 ip verify source

' Ô y · Þ,X IP Source Guard s6Ñ Èno 6 ã GKÁ Í h s6Ñ Ä

[no] ip verify source [port-security]

– DAÈ â

– D	£EÄ
port-security	G!5BIP Source Guard s6ÑE¯> Î b IP+MAC ”# Ä

5 ,ÕG!5B GKÁ Ä

Q ¸ õ ã

Q ¸ Z Æ	(Ë	AÈ â
	-	-

53.3 IP Source Guard ﻫ ﻫ

53.3.1 show ip source binding

A¹ Q ¸ ¹,ß IP $d 4¥ n D B g,X µ C Ä

show ip source binding [*ip-address*] [*mac-address*] [dhcp-snooping] [static] [vlan *vlan-id*] [interface *interface-id*]

– DAÈ â	– D	£EÄ
	ip-address	/ Í h ip ,X*ü 4¥ n µ C ×
	mac-address	/ Í h mac ,X*ü 4¥ n µ C ×
	dhcp-snooping	/ | Õ*ü ,X4¥ n µ C ×
	static	/ M- Õ*ü ,X4¥ n µ C ×
	vlan-id	/ Í h vlan ,X*ü 4¥ n µ C ×
	interface-id	/ Í h y ·,X*ü 4¥ n µ C Ä

5 ,ÕG!5B	´ Ä
Q ¸ õ ã	(M õ ã Ä
S*ü Û Ð	´ Ä

G!5B _

ßM6 / _ $ Ö

```
Ruijie# show ip source binding static
MacAddress    IpAddress  Lease(sec)   Type     VLAN  Interface
------------- --------- ----------   ----     ----  ------------
0000.0000.0001 1.0.0.1   infinite    static    1  FastEthernet 0/1
Total number of bindings: 1
```

,Ì G Q ¸	Q ¸	£EÄ
	ip source binding	A’5B IP $d 4¥ nM- Õ*ü Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

53.3.2 show ip verify source

A¹ Q ¸ ¹,ß IP Source Guard *ü E›$¸><NM

show ip verify source [interface *interface-id*]

– DAÈ â

– D	£EÄ
interface-id	/ Í h y ·,X*ü E›$¸><NM Ä

5 ,ÕG!5B ´ Ä

Q ¸ õ ã (M õ ã

S*ü Û Ð

ü S*ü interface – D Ê V p Í h y ·"u Ý ' Ô IP Source Guard s6Ñ È Ú î ü4œ0Ã ' D V ß µ C Ö“IP source guard is not configured on the interface FastEthernet 0/10” Ä

,Â ! IP Source Guard Õ,XE›$¸ õ ã(/ µ C mode ë) Ù À V ß Ö

inactive-no-snooping-vlan Ö M2DHCP Snooping { ,X y · ×

inactive-trust-port Ö DHCP Snooping { ,X µ Ï · Þ ×

active Ö DHCP Snooping { ,XM2 µ Ï · Þ Ä

G!5B _

ßM6 / _ $ Ö

```
Ruijie # show ip verify source
Interface Filter-type Filter-mode Ip-address Mac-address    VLAN
--------- ----------- ----------- ---------- -------------- ----
FastEthernet 0/3   ip         active      3.3.3.3                    1
FastEthernet 0/3   ip         active      deny-all
FastEthernet 0/4    ip+mac    active       4.4.4.4    0000.0000.0001   1
FastEthernet 0/4    ip+mac    active       deny-all
```

,Ì G Q ¸

Q ¸	£EÄ
ip verify source	G!5B y ·,X IP Source Guard s6Ñ Ä

54 NFPP ¾Ö

54.1 ¼ ¾ ÎÑ π ¹ ª¸ ¼ ÃÑ ¾Ö

54.1.1 cpu-protect sub-interface {man age|protocol|route} pps

A¹ Q¸*ü 9G!5B!£/¡2O _ y [,X# G£ ú ‘ Ä

cpu-protect sub-interface { ***manage***|***protocol***|***route***} pps *pps_vaule*

– DAÈ â	– D	£EÄ
	pps_vaule	L$Eó" 4“ È ª 8× È 1-8192

5 ,ÕG!5B	
	1u)Ú2O(Manage),X5 ,Õ# G£ ú ‘ 3000 È E@ ¥2O(Route) ,X5 ,Õ# G£ ú ‘ 3000 È #A,2O(Protocol) ,X5 ,Õ# G£ ú ‘ 3000 Ä

Q¸ õ ã	
	< G!5B õ ã

S*ü Û Ð	
	´

G!5B _	
	`Ruijie(config)# **cpu-protect sub-interface manage pps** 200`

,Ì G Q¸	Q¸	£EÄ
	cpu-protect sub-interface { *manage* | *protocol* | *route* } percent	G!5B!£ þ2O _ y [# G£ ú ‘

G ÄAÈ â	
	´

Q¸ Z Æ	(Ë	AÈ â
	-	-

54.2 ¼ ¾ ÎÑ π ¹ ª¸ ¼ B ∫ ¾ ÃÑ ¾Ö

54.2.1 cpu-protect sub-interface {manag e|protocol|route} percent

A¹ Q ¸*ü 9G!5B!£/¡2O _ y [4*üKó ë,X,R Ú!¨ Ä

cpu-protect sub-interface {*manage*|*protocol*|*route*} percent *percent_vaule*

– DAÈ â	– D	£EÄ
	percent_vaule	,R Ú!¨ È ª 8× È 1 100

5 ,ÕG!5B	
	1u)Ú2O(Manage) 4*ü4ç † ,R Ú!¨ 30 È E@ ¥2O(Route) 4*ü4ç † ,R Ú!¨ 25 È #A,2O(Protocol) 4*ü4ç † ,R Ú!¨ 45 Ä

Q ¸ õ ã	< G!5B õ ã

S*ü Û Ð	´

G!5B _	Ruijie(config)# **cpu-protect sub-interface manage percent** 60

,Ì G Q ¸	Q ¸	£EÄ
	cpu-protect sub-interface { *manage* | *protocol* | *route* } pps	A'5B!£ þ2O _ y [,X 4*üKó ë,X,R Ú !¨

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

54.3 ARP ♪ Ụ ῇ ـ Ẩ ـ Ƨ

54.3.1 arp-guard attack-threshold

G!5B < Ï" 4“ È G ' y [Eó zCYE› Ï" 4“,X Ê í ÈAx , ü Ï> Ä

arp-guard attack-threshold { per-src-ip | per-src-mac | per-port } *pps*

– DAÈ â	– D	£EÄ
	per-src-ip	G!5B!£ þ$d IP ,X Ï" 4“ Ä
	per-src-mac	G!5B!£ þ$d MAC ,X Ï" 4“ Ä
	per-port 4uard attack-threshold	G!5B!£ þ0Ã ·,X Ï" 4“ Ä

	pps	Ï" 4“ È) ! !£/¦ y [D È ª 8× È [1,9999] Ä

5 ,ÕG!5B

!£ þ$d IP `!£ þ$d MAC ,X5 ,Õ Ï" 4“ !£/¦ 8 þ È!£ þ0Ã ·,X5 ,Õ Ï" 4“ !£/¦ 200 þ Ä

Q ¸ õ ã

NFPP G!5Bõ ã

S*ü Û Ð

Ï" 4“ á6Ñ ã bL$Eó" 4“ Ä

G!5B _

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# arp-guard attack-threshold per-src-ip 2
Ruijie(config-nfpp)# arp-guard attack-threshold per-src-mac 3
Ruijie(config-nfpp)# arp-guard attack-threshold per-port 50
```

,Ì G Q ¸

Q ¸	£EÄ
nfpp arp-guard policy	G!5B F¼,XL$Eó" 4“ ` Ï" 4“
show nfpp arp-guard summary	¹,ßG!5B µ C
show nfpp arp-guard hosts	¹,ß «,¥ {
clear nfpp arp-guard hosts	#ÙL8 ÆLh/•

G ÄAÈ â

´

(Ë	

54.3.5 arp-guard monitored-host-limit

A¹ Q ¸*ü 9G!5B Õ,X Ô û «,¥ { D Ä

arp-guard monitored-host-limit *number*

– D	£EÄ
number	Õ,X Ô û «,¥ { D È ª 8× È 1 4294967295

– DAÈ â

5 ,ÕG!5B

per-src-ip	Í!£ þ$d IP E¯> L$Eó
per-src-mac	Í!£ þ$d MAC E¯> L$Eó
per-port	Í!£ þ0Ã ·E¯> L$Eó
pps	L$Eó" 4“ È ª 8× È [1,9999] Ä

5 ,ÕG!5B

!£ þ$d IP `!£ þ$d MAC ,X5 ,ÕL$Eó" 4“ !£/¦ 4 þ È!£ þ0Ã ·,X5 ,ÕL$Eó" 4“ !£/¦ 100 þ Ä

Q ¸ õ ã

NFPP G!5Bõ ã

S*ü Û Ð

´

G!5B _

^ VLAN 1 0Ã · g 0/1 ,X ?·L8Lh/• Ä

```
Ruijie# clear nfpp arp-guard hosts vlan 1 interface g0/1
```

,Ì G Q ¸

Q ¸	£EÄ
arp-guard attack-threshold	G!5B < Ï" 4“
nfpp arp-guard policy	G!5B F¼,XL$Eó" 4“ ` Ï" 4“
show nfpp arp-guard hosts	¹,ß «,¥ {

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

54.3.10 nfpp arp-guard enable

A¹ Q ¸*ü 9 ü0Ã · Þ ' Ô ARP k Ï s6Ñ Ä

nfpp arp-guard enable

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	0Ã ·"u Ý G!5BARP k Ï Ô G ÈG›*ü < Ô G Ä
Q ¸ õ ã	y ·G!5B õ ã
S*ü Û Ð	0Ã ·,X ARP k Ï Ô G ì b < ARP k Ï Ô G Ä
G!5B –	Ruijie(config)# **interface G0/1** Ruijie(config-if)# **nfpp arp-guard enable**

,Ì G Q ¸	Q ¸	£EÄ
	arp-guard enable	< ' Ô ARP k Ï s6Ñ
	show nfpp arp-guard summary	¹,ßG!5B µ C

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â
	10.4	„ rA¹ Q ¸

54.3.11 nfpp arp-guard isolate-period

A¹ Q ¸*ü 9 ü0Ã · ÞG!5B F¼Lh/• ÊKÈ Ä

nfpp arp-guard isolate-period {*seconds* | permanent }

– DAÈ â	– D	£EÄ

	seconds	Lh/• ÊKÈ È) ! /¦ Èª 8× È 0 ê5Ù[30, 86400] È 0 ></ áLh/• Ä
	permanent	" Lh/•

5 ,ÕG!5B 5 ,Õ ™ ‰"u ÝG!5B F¼Lh/• ÊKÈ ÈG›*ü < Lh/• ÊKÈ Ä

Q ¸ õ ã y ·G!5B õ ã

S*ü Û Ð ´

G!5B _

NFPP Q ¸

,Ì G Q ¸	Q ¸	£EÄ
	nfpp dhcp-guard policy	G!5B F¼,XL$Eó" 4“ ` Ï" 4“
	show nfpp dhcp-guard summary	¹,ßG!5B µ C
	show nfpp dhcp-guard hosts	¹,ß «,¥ { ><
	clear nfpp dhcp-guard hosts	#ÙL8 «,¥ {

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

54.4.2 dhcp-guard enable

A¹ Q ¸*ü 9 ' Ô DHCP L Ï s6Ñ Ä

dhcp-guard enable

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B 0Ã ·"u Ý G!5BDHCP k Ï Ô G ÈG›*ü < Ô G Ä

Q ¸ õ ã NFPP G!5Bõ ã

S*ü Û Ð ´

G!5B –

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcp-guard enable
```

	Q ¸	£EÄ
	nffp dhcp-guard enable	ü0Ã · Þ ' Ô

-	-

54.4.3 dhcp-guard isolate-period

A¹ Q ¸*ü 9G!5B < Lh/• ÊKÈ Ä

dhcp-guard isolate-period {*seconds* | permanent }

– DAÈ â

– D	£EÄ
seconds	Lh/• ÊKÈ È) ! /¦ È^a 8× È 0 ê5Ù[30, 86400] È 0 ></ áLh/• Ä
permanent	" Lh/•

5 ,ÕG!5B < Lh/• ÊKÈ,X5 ,Õ 0 È G áLh/• Ä

Q ¸ õ ã NFPP G!5Bõ ã

S*ü Û Ð Í Ï5Ù ,XLh/• ÊKÈ Ú < Lh/• ÊKÈ ` Î b0Ã ·,XLh/• ÊKÈ Ä G F¼Lh/• ÊKÈ Å Ä Í b ¤ þ0Ã · È V p"u ÝG!5B Î b0Ã ·,XLh/• ÊKÈ ÈFw G›*ü < Lh/• ÊKÈ × ú í ÈG›*ü Î b0Ã ·,XLh/• ÊKÈ Ä

G!5B –

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcp-guard isolate timeout 180
```

,Ì G Q ¸

Q ¸	£EÄ
nfpp dhcp-guard isolate-period	ü0Ã · ÞG!5B F¼Lh/• ÊKÈ
show nfpp dhcp-guard summary	¹,ßG!5B µ C

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

54.4.4 dhcp-guard monitor- period

A¹ Q ¸*ü 9G!5B,¥ { ÊKÈ Ä

dhcp-guard monitor- period *seconds*

– DAÈ â

– D	£EÄ
seconds	,¥ { ÊKÈ È) ! /¦ È ª 8× È [180, 86400] Ä

5 ,ÕG!5B < ,¥ { ÊKÈ,X5 ,Õ 600 /¦ Ä

Q ¸ õ ã NFPP G!5Bõ ã

S*ü Û Ð

”# Î Ï5Ù,X Ê í È V pLh/• ÊKÈ 0 È Ú Í Ï5ÙE¯> EC Ê,¥ { ÈCY Ê ,¥ { Ê KÈ Ä üEC Ê,¥ {E›/ß È 'Lh/• ÊKÈ>•G!5B M2LÊ Ê È Ú7¾ | ÍEC Ê,¥ {,X Ï 5ÙG› ª.@ ÊLh/• È J è ^CY ÊA’5B Lh/• ÊKÈ Ä,¥ { ÊKÈ üLh/• ÊKÈ 0 ,X ™ ‰ ß ! Ý ã Ä

V p ^Lh/• ÊKÈ ¢M2LÊ äLÊ È Ú,È y ^,Ì G0Ã ·,X Ï5Ù ôL8 È5à á E¯> EC Ê,¥ { Ä

G!5B –

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcp-guard monitor-period 180
```

,Ì G Q ¸

Q ¸	£EÄ
show nfpp dhcp-guard summary	¹,ßG!5B µ C
show nfpp dhcp-guard hosts	¹,ß «,¥ { ><
clear nfpp dhcp-guard hosts	#ÙL8 ÆLh/•

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

54.4.5 dhcp-guard monitored-host-limit

A¹ Q ¸*ü 9G!5B Õ,X Ô û «,¥ { D Ä

dhcp-guard monitored-host-limit *number*

– DAÈ â

– D	£EÄ
number	Õ,X Ô û Ô û «,¥ { D È ª 8× È 1 4294967295

5 ,ÕG!5B 5 ,Õ Õ ,X Ô û «,¥ { D 1000 þ

Q¸õã NFPP G!5Bõã

S*üÛÐ

V p «,¥ { D Æ4£E' T¬Ax,X 1000 þ È8 Ê1u)Ú , ^ «,¥ { ,X Ô û D,ÂA'5B ä ã b 1000 È á î ôL8 Æ Ý,X «,¥ { È5à ' D µ C %ERROR ÖThe value that you configured is smaller than current monitored hosts 1000 ÄG!5B,X «,¥ { D Å È please clear a part of monitored hosts. 9 ¤Gf1u)Ú ,G!5B"u Ý*ó ÈLÔ?U ôL8F¼ Ú Æ 4£>•,¥ {,X Ä

' «,¥ { ><$µ Ê È' D ¹ « % NFPP_DHCP_GUARD-4-SESS ION_LIMIT: Attempt to exceed limit of 1000 ÄG!5B «,¥ { D Å monitored hosts. ¤Gf1u)Ú , Ä

G!5B _

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcp-guard monitored-host-limit 200
```

¸ÌGQ¸

Q¸	£EÄ
	¹,ßG!5B µ C

show nfpp dhcp-guard hosts	¹,ß>•,¥ {

G ÄAÈ â ´

nfpp dhcp-guard isolate-period {*seconds* | permanent }

– D	£EÄ
[redacted]	

54.4.10 nfpp dhcp-guard policy

ü0Ã · ÞG!5B F¼,XL$Eó" 4“ ` Ï" 4“ Ä

nfpp dhcp-guard policy AÈ âe<41Cr<41C| 59 p-<41Cc<41C| 59 ma<41Cc104.34 254.324.38 0.1934 2

Q ¸ õ ã y ·G!5B

S*ü Û Đ ´

G!5B _

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcpv6-guard attack-threshold per-src-mac 15
Ruijie(config-nfpp)# dhcpv6-guard attack-threshold per-port 200
```

¸Ì G Q¸

Q¸	£EÄ
nfpp dhcpv6-guard policy	G!5B F¼,XL$Eó" 4“ ` Ï" 4“
show nfpp dhcpv6-guard summary	¹,ßG!5B µ C
show nfpp dhcpv6-guard hosts	¹,ß «,¥ { ><
clear nfpp dhcpv6-guard hosts	#ÙL8 «,¥ {

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
10.4	„ rA¹ Q¸

54.5.2 dhcpv6-guard enable

A¹ Q¸*ü 9 ' Ô DHCPv6 L Ï s6Ñ Ä

dhcpv6-guard enable

– DAÈ â

– D	£EÄ
-	-

5 ¸ÕG!5B 0Ã ·"u Ý G!5BDHCPv6 k Ï Ô G ÈG›*ü < Ô G Ä

Q¸õ ã NFPP G!5Bõ ã

S*ü Û Đ ´

G!5B –

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcpv6-guard enable
```

¸Ì G Q¸

Q¸	£EÄ

dhcpv6-guard monitored-host-limit *number*

– DAÈ â

– D	£EÄ
number	Õ,X Ô û Ô û «,¥ { D È ª 8× È 1 4294967295

5 ,ÕG!5B 5 ,Õ Õ ,X Ô û «,¥ { D 1000 þ

Q ¸ õ ã NFPP G!5Bõ ã

S*ü Û Ð

V p «,¥ { D Æ4£E' T¬Ax,X 1000 þ È8 Ê1u)Ú , ^ «,¥ { ,X Ô û D,ÂA'5B ä ã b 1000 È á î ôL8 Æ Ý,X «,¥ { È5à ' D µ C %ERROR ÖThe value that you configured is smaller than current monitored hosts 1000 ÄG!5B,X «,¥ { D Å È please clear a part of monitored hosts. 9 ¤Gf1u)Ú ,G!5B"u Ý*ó ÈLÔ?U ôL8F¼ Ú Æ 4£>•,¥ {,X Ä

' «,¥ { ><$µ Ê È' D ¹ « % NFPP_DHCP_GUARD-4-SESS ION_LIMIT: Attempt to exceed limit of 1000 ÄG!5B «,¥ { D Å monitored hosts. ¤Gf1u)Ú , Ä

G!5B –

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcp-guard monitored-host-limit 200
```

,Ì G Q ¸

Q ¸	£EÄ
show nfpp dhcpv6-guard summary	¹,ßG!5B µ C

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.4	„ rA¹ Q ¸

54.5.6 dhcpv6-guard rate-limit

G!5B < L$Eó" 4“ Ä

dhcpv6-guard rate-limit { per-src-mac | per-port } *pps*

– DAÈ â

– D	£EÄ
per-src-mac	Í!£ þ$d MAC E¯> L$Eó
per-port	Í!£ þ0Ã ·E¯> L$Eó
pps	L$Eó" 4“ È ª 8× È [1,9999] Ä

5 ,ÕG!5B !£ þ$d MAC

Q ¸ Z Æ	(Ë	AÈ â
	10.4	„ rA¹ Q ¸

54.5.9 nfpp dhcpv6-guard isolate-period

A¹ Q ¸*ü 9 ü0Ã · ÞG!5B F¼Lh/• ÊKÈ Ä

nfpp dhcpv6-guard isolate-period {*seconds* | permanent }

– DAÈ â	– D	£EÄ
	seconds	Lh/• ÊKÈ È) ! /¦ Èª 8× È 0 ê5Ù[30, 86400] È 0 ></ áLh/• Ä
	permanent	" Lh/•

5 ,ÕG!5B	5 ,Õ ™ ‰"u ÝG!5B F¼Lh/• ÊKÈ ÈG›*ü < Lh/• ÊKÈ Ä

Q ¸ õ ã	y ·G!5B õ ã

S*ü Û Ð	´

G!5B –	Ruijie(config)# **interface** *G 0/1* Ruijie(config-if)# **nfpp dhcpv6-guard isolate-period** 180

,Ì G Q ¸	Q ¸	£EÄ
	dhcpv6-guard isolate-period	G!5B < Lh/• ÊKÈ
	show nfpp dhcpv6-guard summary	¹,ßG!5B µ C

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	10.4	„ rA¹ Q ¸

54.5.10 nfpp dhcpv6-guard policy

ü0Ã · ÞG!5B F¼,XL$Eó" 4“ ` Ï" 4“ Ä

nfpp dhcpv6-guard policy { per-src-mac | per-port } *rate-limit-pps attack-threshold-pps*

Q ¸ õ ã NFPP G!5Bõ ã

S*ü Û Ð ´

G!5B –

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# icmp-guard enable
```

,Ì G Q ¸

Q ¸	£EÄ
nffp icmp-guard enable	ü0Ã · Þ ' Ô ICMP k Ï s6Ñ
show nfpp icmp-guard summary	¹,ßG!5B µ C

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

54.6.3 icmp-guard isolate-period

A¹ Q ¸*ü 9G!5B < Lh/• ÊKÈ Ä

icmp-guard isolate-period {*seconds* | permanent }

– DAÈ â

– D	£EÄ
seconds	Lh/• ÊKÈ È) ! /¦ È³ 8× È 0 ê5Ù[30, 86400] È 0 ></ áLh/• Ä
permanent	" Lh/•

5 ,ÕG!5B < Lh/• ÊKÈ,X5 ,Õ 0 È G áLh/• Ä

Q ¸ õ ã NFPP G!5Bõ ã

S*ü Û Ð Í Ï5Ù ,XLh/• ÊKÈ Ú < Lh/• ÊKÈ ` Î b0Ã ·,XLh/• ÊKÈ Ä G F¼Lh/• ÊKÈ Å Ä Í b ¤ þ0Ã · È V p"u ÝG!5B Î b0Ã ·,XLh/• ÊKÈ ÈFw G›*ü < Lh/• ÊKÈ × ú í ÈG›*ü Î b0Ã ·,XLh/• ÊKÈ Ä

G!5B –

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# icmp-guard isolate-period 180
```

¸Ì G Q¸	Q¸	£EÄ
	nfpp icmp-guard isolate-period	ü0Ã · ÞG!5B F¼Lh/• ÊKÈ
	show nfpp icmp-guard summary	¹,ßG!5B µ C

G ÄAÈ â	´

Q¸Z Æ	(Ë	AÈ â
	-	-

54.6.4 icmp-guard monitor-period

£EÄ
$Eó

ip IP

show nfpp icmp-guard summary	¹,ßG!5B µ C

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.4	„ rA¹ Q ¸

54.6.10 nfpp icmp-guard isolate-period

A¹ Q ¸*ü 9 ü0Ã · ÞG!5B F¼Lh/• ÊKÈ Ä

nfpp icmp-guard isolate-period {*seconds* | permanent }

– DAÈ â

– D	£EÄ
seconds	Lh/• ÊKÈ È) ! /¦ Èª 8× È 0 ê5Ù[30, 86400] È 0 ></ áLh/• Ä
permanent	" Lh/•

5 ,ÕG!5B 5 ,Õ ™ ‰"u ÝG!5B F¼Lh/• ÊKÈ ÈG›*ü < Lh/• ÊKÈ Ä

Q ¸ õ ã y ·G!5B õ ã

S*ü Û Ð ´

G!5B –

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp icmp-guard isolate-period 180
```

Q ¸	£EÄ
icmp-guard isolate-period	G!5B < Lh/• ÊKÈ

ü0Ã · ÞG!5B F¼,XL$Eó" 4“ ` Ï" 4“ Ä

nfpp icmp-guard policy { per-src-ip | per-port } *rate-limit-pps attack-threshold-pps*

– DAÈ â

– D	£EÄ
per-src-ip	G!5B!£ þ$d IP ,XL$Eó" 4“ ` Ï" 4“ Ä
per-port	G!5B!£ þ0Ã ·,XL$Eó" 4“ ` Ï" 4“ Ä
rate-limit-pps	L$Eó" 4“ È ª 8× È 1 9999 Ä
attack-threshold-pps	Ï" 4“ È ª 8× È 1 9999 Ä

5 ,ÕG!5B 0Ã ·"u Ý 7¾ Å,XL$Eó" 4“ ` Ï" 4“ ÈG›*ü < ,XL$Eó" 4“ `L$Eó" 4“ Ä

Q ¸ õ ã y ·G!5B õ ã

ip-guard enable
ip-guard isolate-period
ip-guard monitor-period
ip-guard monitored-host-limit
ip-guard rate-limitt
ip-guard scan-threshold
ip-guard trusted-host
clear nfpp ip-guard hosts
nfpp ip-guard enable
nfpp ip-guard isolate-period
nfpp ip-guard policy

nfpp ip-guard scan-threshold

"¼ ã	LÔ?U(M ÿAÈ â,X ÈP L ? £J\ Í,X ,Â,X IP á IP ,X IP y [Ï Ä Í b,Â,X IP IP ,X IP y [È í+ CPP ÄCPU Protect Policy ÅL$Eó Ä ` x 6 á Õ IP L ? £ È ™ Ý x 6 Õ IP L ? £ Ä

54.7.1 ip-guard attack-threshold

G!5B < Ï" 4“ È G ' y [Eó zCYE› Ï" 4“,X Ê í ÈAx , ü Ï> Ä

ip-guard attack-threshold {per-src-ip | per-port } *pps*

– D	£EÄ
per-src-ip	G!5B!£ þ$d IP ,X Ï" 4“ Ä
per-port	G!5B!£ þ0Ã ·,X Ï" 4“ Ä
pps	Ï" 4“ È) ! !£/¦ y [D È ª 8× È [1,9999] Ä

5 ,ÕG!5B !£ þ$d IP ,X5 ,Õ Ï" 4“ !£/¦ 20 þ È!£ þ0Ã ·,X5 ,Õ Ï" 4“ !£/¦ 200 þ Ä

Q ¸ õ ã NFPP G!5B õ ã

S*ü Û Ð Ï" 4“ á6Ñ ã bL$Eó" 4“ Ä

G!5B _

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# ip-guard attack-threshold per-src-ip 2
Ruijie(config-nfpp)# ip-guard attack-threshold per-port 50
```

,Ì G Q ¸

Q ¸	£EÄ
nfpp ip-guard policy	G!5B F¼,XL$Eó" 4“ ` Ï" 4“

' «,¥ { ><$µ Ê È ' D ¹ « % NFPP_IP_GUARD-4-SESSION_LIMIT: Attempt to exceed limit of 1000 ÄG!5B,X «,¥ { D Å monitored hosts. ¤Gf1u)Ú , Ä

G!5B _

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# ip-guard monitored-host-limit 200
```

,Ì G Q¸

Q¸	£EÄ
show nfpp ip-guard summary	¹,ßG!5B µ C

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
10.4	„ rA¹ Q¸

54.7.6 ip-guard rate-limit

G!5B < L$Eó" 4“ Ä

ip-guard rate-limit {per-src-ip | per-port} *pps*

– DAÈ â

– D	£EÄ
per-src-ip	Í!£ þ$d IP E¯> L$Eó
per-port	Í!£ þ0Ã ·E¯> L$Eó
pps	L$Eó" 4“ È ª 8× È [1,9999] Ä

5 ,ÕG!5B !£ þ$d IP ,X5 ,ÕL$Eó" 4“ !£/¦ 20 þ È!£ þ0Ã ·,X5 ,ÕL$Eó" 4“ !£/¦ 100 þ Ä

Q¸õ ã NFPP G!5Bõ ã

S*ü Û Ð ´

G!5B _

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# ip-guard rate-limit per-src-ip 2
Ruijie(config-nfpp)# ip-guard rate-limit per-port 50
```

,Ì G Q¸

Q¸	£EÄ
nfpp ip-guard policy	G!5B F¼,XL$Eó" 4“ ` Ï" 4“

	show nfpp ip-guard summary	¹,ßG!5B µ C

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.4	„ rA¹ Q ¸

54.7.7 ip-guard scan-threshold

G!5B < ? £" 4“ Ä

ip-guard scan-threshold *pkt-cnt*

– DAÈ â

– D	£EÄ
pkt-cnt	? £" 4“ È ª 8× È [1,9999] Ä

5 ,ÕG!5B 5 ,Õ ? £ " 4“ 10 /¦ 100 þ Ä

Q ¸ õ ã NFPP G!5Bõ ã

S*ü Û Ð ´

G!5B –

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# ip-guard scan-threshold 20
```

,Ì G Q ¸

Q ¸	£EÄ
nfpp ip-guard scan-threshold	ü0Ã · ÞG!5B F¼ ? £" 4“
show nfpp ip-guard summary	¹,ßG!5B µ C

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.4	„ rA¹ Q ¸

54.7.8 ip-guard trusted-host

V p1u)Ú , à ï Í ¤ Ä áE¯> ,¥ { È G ÍA¹ ></ µ Ï È í Ã ¹EîE›A¹ Q ¸G!5B Ä

5 ,ÕG!5B	´
Q ¸ õ ã	(M õ ã
S*ü Û Ð	V p á ú – D È></ #ÙL8 Ý>•,¥ {,X Ä
G!5B _	^ VLAN 1 0Ã · g 0/1 ,X ?·L8Lh/• Ä `Ruijie# clear nfpp ip-guard hosts vlan 1 interface g0/1`

,Ì G Q ¸

Q ¸	£EÄ
ip-guard attack-threshold	G!5B < Ï" 4“
nfpp ip-guard policy	G!5B F¼,XL$Eó" 4“ ` Ï" 4“
show nfpp ip-guard hosts	¹,ß «,¥ {

G ÄAÈ â	´

Q ¸ Z Æ

(Ë	AÈ â
10.4	„ rA¹ Q ¸

54.7.10 nfpp ip-guard enable

A¹ Q ¸*ü 9 ü0Ã · Þ ' Ô IP L ? £ s6Ñ Ä

nfpp ip-guard enable

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B	0Ã ·"u Ý G!5BIP L ? £ Ô G ÈG›*ü < Ô G Ä
Q ¸ õ ã	y ·G!5B õ ã
S*ü Û Ð	0Ã ·,X IP L ? £ Ô G ì b < L ? £ Ô G Ä
G!5B _	`Ruijie(config)# interface G0/1` `Ruijie(config-if)# nfpp ip-guard enable`

	Q ¸	£EÄ
,Ì G Q ¸	ip-guard enable	< ' Ô IP L ? £ s6Ñ
	show nfpp ip-guard summary	¹,ßG!5B µ C

G ÄAÈ â ´

Q ¸ Z Æ	**(Ë**	**AÈ â**
	10.4	„ rA¹ Q ¸

54.7.11 nfpp ip-guard isolate-period

A¹ Q ¸*ü 9 ü0Ã · ÞG!5B F¼Lh/• ÊKÈ Ä

nfpp ip-guard isolate-period {*seconds* | permanent }

	– D	**£EÄ**
– DAÈ â	*seconds*	Lh/• ÊKÈ È) ! /¦ Èª 8× È 0 ê5Ù[30, 86400] È 0 ></ áLh/• Ä
	permanent	" Lh/•

5 ,ÕG!5B 5 ,Õ ™ ‰"u ÝG!5B F¼Lh/• ÊKÈ ÈG›*ü < Lh/• ÊKÈ Ä

Q ¸ õ ã y ·G!5B õ ã

S*ü Û Ð ´

G!5B –

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp ip-guard isolate-period 180
```

54.7.12 nfpp ip-guard policy

ü0Ã · ÞG!5B F¼,XL$Eó" 4“ ` Ï" 4“ Ä

nfpp ip-guard policy {per-src-ip | per-port } *rate-limit-pps attack-threshold-pps*

	– D	£EÄ
	per-src-ip	G!5B!£ þ$d IP ,X Ï" 4“ Ä
– DAÈ â	per-port	G!5B!£ þ0Ã ·,X Ï" 4“ Ä
	¼Ä4[Q1Ä	L$Eó" 4“ È ª 8× È 1 9999 Ä

nfpp ip-guard scan-threshold *pkt-cnt*

– DAÈ â

– D	£EÄ
pkt-cnt	? £" 4“ È ª 8× È [1,9999] Ä

5 ,ÕG!5B "uG!5B Î b0Ã ·,X IP ? £" 4“ ÈG›*ü < ARP ? £" 4“ Ä

Q ¸ õ ã y ·G!5B õ ã

S*ü Û Ð ´

G!5B –

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp ip-guard scan-threshold 20
```

5 ,ÕG!5B	!£ þ0Ã · F• AË" / @ ,X5 ,ÕL$Eó" 4“ !£/¦ 30 þ ÈCÃ+ <AË" ,X5 ,ÕL$Eó" 4“ !£/¦ 30 þ ÈCÃ+ < @ / G¡ n å y [,X5 ,ÕL$Eó" 4“ !£/¦ 30 þ Ä
Q ¸ õ ã	NFPP G!5Bõ ã
S*ü Û Ð	Ï" 4“ á6Ñ ã bL$Eó" 4“ Ä

G!5B _

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# nd-guard attack-threshold per-port ns-na 20
Ruijie(config-nfpp)# nd-guard attack-threshold per-port rs 10
Ruijie(config-nfpp)# nd-guard attack-threshold per-port ra-redirect 10
```

,Ì G Q ¸

Q ¸	£EÄ
nfpp nd-guard policy	G!5B F¼,XL$Eó" 4“ ` Ï" 4“
show nfpp nd-guard summary	¹,ßG!5B µ C

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.4	„ rA¹ Q ¸

54.8.2 nd-guard enable

A¹ Q ¸*ü 9 < ' Ô ND k Ï s6Ñ Ä

nd-guard enable

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B	T¬AxND k Ï s6Ñ ' Ô
Q ¸ õ ã	NFPP G!5Bõ ã
S*ü Û Ð	´

G!5B _

```
Ruijie(config)# nfpp
```

Ruijie(config-nfpp)# **nd-guard enable**

¸Ì G Q¸

Q¸	£EÄ
nffp nd-guard enable	ü0Ã · Þ ' Ô ND k Ï s6Ñ
show nfpp nd-guard summary	¹,ßG!5B µ C

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
10.4	„ rA¹ Q¸

54.8.3 nd-guard rate-limit

G!5B < L$Eó" 4“ Ä

nd-guard rate-limit per-port {ns-na | rs | ra-redirect } *pps*

– DAÈ â

– D	£EÄ
ns-na	F• AË" `F• @
rs	CÃ+ <AË"
ra-redirect	CÃ+ < @ `G¡ n å y [
pps	L$Eó" 4“ È ª 8× È [1,9999] Ä

5 ,ÕG!5B

!£ þ0Ã · F• AË" / @ ,X5 ,ÕL$Eó" 4“ !£/¦ 15 þ ÈCÃ+ <AË" ,X5 ,Õ Ï" 4“ !£/¦ 15 þ ÈCÃ+ < @ / G¡ n å y [,X5 ,Õ Ï" 4“ !£/¦ 15 þ Ä

Q¸õ ã NFPP G!5Bõ ã

S*ü Û Ð ´

G!5B –

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# nd-guard rate-limit per-port ns-na 10
Ruijie(config-nfpp)# nd-guard rate-limit per-port rs 5
Ruijie(config-nfpp)# nd-guard rate-limit per-port ra-redirect 5
```

¸Ì G Q¸

Q¸	£EÄ
nfpp nd-guard policy	G!5B F¼,XL$Eó" 4“ ` Ï" 4“

	show nfpp nd-guard summary	¹,ßG!5B µ C

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.4	„ rA¹ Q ¸

54.8.4 nfpp nd-guard enable

A¹ Q ¸*ü 9 ü0Ã · Þ ' Ô ND k Ï s6Ñ Ä

nfpp nd-guard enable

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B 0Ã ·"u Ý G!5BND k Ï Ô G ÈG›*ü < Ô G Ä

Q ¸ õ ã y ·G!5B õ ã

S*ü Û Ð 0Ã ·,X ND k Ï Ô G ì b < Ô G Ä

G!5B _

```
Ruijie(config)# interface G0/1
Ruijie(config-if)# nfpp nd-guard enable
```

Q ¸	£EÄ
nd-guard enable	< ' Ô ND k Ï s6Ñ

nfpp nd-guard policy per-port {ns-na | rs | ra-redirect } *rate-limit-pps attack-thresh old-pps*

– DAÈ â

– D	£EÄ
ns-na	F• AË" `F• @
rs	CÃ+ <AË"
ra-redirect	CÃ+ < @ `G¡ n å y [
rate-limit-pps	L$Eó" 4“ È ª 8× È 1 9999 Ä
attack-threshold-pps	Ï" 4“ È ª 8× È 1 9999 Ä

5 ,ÕG!5B 0Ã ·"u Ý 7¾ Å,XL$Eó" 4“ ` Ï" 4“ ÈG›*ü < ,XL$Eó" 4“ ` Ï" 4“ Ä

Q ¸ õ ã y ·G!5B õ ã

Ï" 4“ á6Ñ ã bL$Eó" 4“ Ä

, h_0 ND snooping ^0Ã · æ Ú M2 µ@0Ã } @èM,Uó

ND snooping €•4 @Ó } FM1 ND snooping ND snooping

S*ü Û Ð

	10.4	„ rA¹ Q ¸

54.9 NFPP ـ Ẩ ـ Ƨ

54.9.1 clear nfpp log

#Ù0NNFPP ¹ «4ç † Ä

clear nfpp log

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	´
Q ¸ õ ã	(M õ ã
S*ü Û Đ	´
G!5B _	Ruijie# **clear nfpp log** 32 log-buffer entries were cleared.

,Ì G Q ¸	Q ¸	£EÄ
	show nfpp log	/ NFPP ¹ «G!5B ê ¹ «4ç †

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	10.4	„ rA¹ Q ¸

54.9.2 log-buffer entries

G!5BNFPP ¹ «4ç † û ã Ä

log-buffer entries *number*

– DAÈ â	– D	£EÄ

number	4ç † û ã È) ! ¹ « 5 D È ª 8× È [0,1024]

5 ,ÕG!5B

5 ,ÕG!5B *number_of_message* 5 ,Õ 1 È*length_in_seconds* 5 ,Õ 30 Ä

Q ¸ õ ã NFPP G!5Bõ ã

S*ü Û Ð ´

G!5B –

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# log-buffer logs 2 interval 12
```

,Ì G Q ¸

Q ¸	£EÄ
log-buffer entries *number*	G!5BNFPP ¹ «4ç † û ã Ä
show nfpp log summary	/ NFPP ¹ «G!5B ê ¹ «4ç † Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.4	„ rA¹ Q ¸

54.9.4 logging

G!5BNFPP A„) ¾ o VLAN ê0Ã ·,X ¹ « Ä

logging vlan *vlan-range*

logging interface *interface-id*

– DAÈ â

– D	£EÄ
vlan-range	LÔ?UA„)Û n VLAN 8× È Y,X ¹ « µ C ÈEg 9 ã V 1-3,5 Ä
interface-id	LÔ?UA„) Û n0Ã ·,X ¹ « µ C Ä

5 ,ÕG!5B Ý ¹ « FÑA„) Ä

Q ¸ õ ã NFPP G!5Bõ ã

S*ü Û Ð EîE›A¹ Q ¸ Ã ¹ Í ¹ «E¯> E›$¸ È ¾A„) Û n VLAN 8× È ê5Ù Û n0Ã ·,X ¹ « µ C Ä ø 5 ¹ «E›$¸G!5B ê,X G2Ï È G ¾LÔ?U$µC‡ J Ô 5 ¹ «E›$¸?˜ í È hA¹A„) ¹ « 4ç † Ä

G!5B _

1u)Ú ,?U" ¾A„) VLAN 1 ÃVLAN 2 ÃVLAN 3 ` VLAN 5 ,X ¹ « ÈG!5B V ß Ö

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# logging vlan 1-3,5
```

1u)Ú ,?U" ¾A„)0Ã · G 0/1 ,X ¹ « ÈG!5B V ß Ö

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# logging interface G 0/1
```

,Ì G Q ¸

Q ¸	£EÄ
show nfpp log summary	/ NFPP ¹ «G!5B ê ¹ «4ç † Ä

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã

S*ü Û Ð ´

G!5B –

¹,ß «,¥ { ,X4³Au µ C Ä

Ruijie# show nfpp dhcp-guard hosts statistics

success fail total

------- ---- -----

100 20 120

' ! Ý 120 Ä >•,¥ { È J 100 Ä >•.@ Ê ä s Lh/• È 20 Ä .@ ÊLh/• Bù ÄEî éCK,X s ´ Ý Y , áC‡ È ê5Ù.@ ÊC $d áC‡ Å Ä

¹,ß «,¥ { È1 ¯ ë remain-time(seconds) Û = -,XLh/• ÊKÈ Ä

Ruijie# show nfpp dhcp-guard hosts

If column 1 shows '*', it means "hardware failed to isolate host".

VLAN	interface	MAC address	remain-time(seconds)
1	gi0/2	0000.0000.0001	10
*2	gi0/1	0000.0000.0002	20

Total Ö2 host(s)

,Ì G Q ¸

Q ¸	£EÄ
	#ÙL8 ë

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B ´

Q¸õã (M õã

S*ü Û Ð EîE›A¹ Q¸ Ã ¹ ¹,ßG!5B µ C Ä

G!5B _

```
Ruijie# show nfpp dhcp-guard summary
 ÄFormat of column Rate-limit and  Attack-threshold is per-src-ip
/per-src-mac/per-port. Å
Interface  Status  Isolate-period Rate-limit Attack-threshold
Global     Enable  300            -/5/150     -/10/300
Gi 0/1      Enable  180            -/6/-       -/8/-
Gi 0/2      Disable 200            -/5/30      -/10/50

Maximum count of monitored hosts: 1000
Monitor period Ö300s
AÈ â Ö
 Ä1 Å   +!‰Interface    Global ></ < G!5B Ä
 Ä2 Å   +!‰Status ></  ú ' Ô k  Ï s6Ñ Ä
 Ä3 Å   +!‰Rate-limit ,X  ã  Ä Í$d   IP   ,XL$Eó" 4“/  Í$d MAC   ,XL$Eó"
4“/0Ã ·,XL$Eó" 4“  Å È +!‰  Attack-threshold ,X /  ã2O  Ä  -     ></ "u Ý
G!5B Ä
```

,Ì G Q¸

Q¸	£EÄ
dhcp-guard attack-threshold	G!5B < Ï" 4“
dhcp-guard enable	< ' Ô DHCP k Ï s6Ñ
dhcp-guard isolate-period	G!5B < Lh/• ÊKÈ
dhcp-guard monitor-period	G!5B,¥ { ÊKÈ
dhcp-guard monitored-host-limit	G!5B Ô û «,¥ { D
dhcp-guard rate-limit	G!5B < L$Eó" 4“
nfpp dhcp-guard enable	ü0Ã · Þ ' Ô DHCP k Ï s6Ñ
nfpp dhcp-guard isolate-period	G!5B F¼Lh/• ÊKÈ
nfpp dhcp-guard policy	G!5B F¼L$Eó" 4“ ` Ï" 4“

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.4	„ rA¹ Q ¸

54.12 DHCPv6 ♪ Ụ ῇ Ẩ ᴥ ᴦ

54.12.1 show nfpp dhcpv6-guard hosts

¹,ß «,¥ { Ä

show nfpp dhcpv6-guard hosts [statistics | [[vlan *vid*] [interface *interface-id*] [*mac -address*]]]

– DAÈ â

– D	£EÄ
statistics	¹,ß «,¥ { ,X4³Au µ C
vid	<. ³ ³5% Ë
interface-id	0Ã · á/Ä
mac-address	MAC

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã

S*ü Û Đ ´

G!5B _

¹,ß «,¥ { ,X4³Au µ C Ä

Ruijie# show nfpp dhcpv6-guard hosts statistics

success fail total

--- --- ---

100 20 120

' ! Ý 120 Ä >•,¥ { È J 100 Ä >•.@ Ê ä s Lh/• È 20 Ä .@ ÊLh/• Bù ÄEî éCK,X s ´ Ý Y , áC‡ È ê5Ù.@ ÊC $d áC‡ Å Ä

¹,ß «,¥ { È1 ¯ ë remain-time(seconds) Û = -,XLh/• ÊKÈ Ä

Ruijie# show nfpp dhcpv6-guard hosts

If column 1 shows '*', it means "hardware failed to isolate host".

VLAN	interface	MAC address	remain-time(seconds)
---	---	---	---
1	gi0/2	0000.0000.0001	10
*2	gi0/1	0000.0000.0002	20

Total Ö2 host(s)

,Ì G Q ¸

Q ¸	£EÄ
clear nfpp dhcpv6-guard hosts	#ÙL8 «,¥ {

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.4	„ rA¹ Q ¸

54.12.2 show nfpp dhcpv6-guard summary

¹,ßG!5B µ C Ä

show nfpp dhcpv6-guard summary

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã

S*ü Û Ð EîE›A¹ Q ¸ Ã ¹ ¹,ßG!5B µ C Ä

G!5B _

```
Ruijie# show nfpp dhcpv6-guard summary
ÄFormat of column Rate-limit and  Attack-threshold is per-src-ip
/per-src-mac/per-port. Å
Interface  Status  Isolate-period Rate-limit Attack-threshold
Global     Enable  300            -/5/150    -/10/300
Gi 0/1      Enable  180            -/6/-      -/8/-
Gi 0/2      Disable 200            -/5/30    -/10/50

Maximum count of monitored hosts: 1000
```

Monitor period Ö300s

AÈ â Ö

Ä1 Å +!‰ Interface Global ></ < G!5B Ä

Ä2 Å +!‰ Status ></ ú ' Ô k Ï s6Ñ Ä

Ä3 Å +!‰ Rate-limit ,X ã Ä Í$d IP ,XL$Eó" 4“/ Í$d MAC ,XL$Eó" 4“/ 0Ã ·,XL$Eó" 4“ Å È +!‰ Attack-threshold ,X / ã2O Ä - ><
/ "u ÝG!5B Ä

,Ì G Q ¸

Q ¸	£EÄ
dhcpv6-guard attack-threshold	G!5B < Ï" 4“
dhcpv6-guard enable	< ' Ô DHCPv6 k Ï s6Ñ
dhcpv6-guard isolate-period	G!5B < Lh/• ÊKÈ
dhcpv6-guard monitor-period	G!5B,¥ { ÊKÈ
dhcpv6-guard monitored-host-limit	G!5B Ô û «,¥ { D
dhcpv6-guard rate-limit	G!5B < L$Eó" 4“
nfpp dhcpv6-guard enable	ü0Ã · Þ ' Ô DHCPv6 k Ï s6Ñ
nfpp dhcpv6-guard isolate-period	G!5B F¼Lh/• ÊKÈ
nfpp dhcpv6-guard policy	G!5B F¼L$Eó" 4“ ` Ï" 4“

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.4	„ rA¹ Q ¸

54.13 ICMP ♪ Ụ ῇ̃ Ẩ ᴤ̣ Ƨ

54.13.1 show nfpp icmp-guard hosts

¹,ß «,¥ { Ä

show nfpp icmp-guard hosts [statistics | [[vlan *vid*] [interface *interface-id*] [*ip6 389.2403 Tm[<Ơ0.*

interface-id	0Ã · á/Ä
ip-address	IP

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã

S*ü Û Ð ´

G!5B _

```
Ruijie#sho w nfpp icmp-guard hosts statistics
success       fail       total
-------       ----       -----
100             20           120
></ Ö    E Ý    120 Ä   >•,¥ { È J        100 Ä   Lh/• ä s È    20 Ä   Lh/• Bù Ä
```

```
Ruijie# show nfpp icmp-guard hosts
If column 1 shows '*', it means "hardware failed to isolate host".
VLAN   interface IP address       remain-time(s)
----   --------   ---------       -------------
1      Gi0/1          1.1.1.1         110
2      Gi0/2          1.1.2.1         61
Total Ö2 host(s)
```

,Ì G Q ¸

Q ¸	£EÄ
clear nfpp icmp-guard hosts	#ÙL8 «,¥ {

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.4	„ rA¹ Q ¸

54.13.2 show nfpp icmp-guard summary

¹,ßG!5B µ C Ä

show nfpp icmp-guard summary

– DAÈ â

– D	£EÄ

	-	-
5 ,ÕG!5B	´	
Q ¸ õ ã	(M õ ã	
S*ü Û Đ	EîE›A¹ Q ¸ Ã ¹ ¹,ßG!5B µ C Ä	

G ÄAÈ â ´

Q¸Z Æ	(Ë	AÈ â
	10.4	„ rA¹ Q¸

54.13.3 show nfpp icmp-guard trusted-host

¹,ß á,¥ {,X Ã µ Ä

show nfpp icmp-guard trusted-host

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B ´

Q¸õ ã (M õ ã

S*ü Û Ð ´

G!5B _

¹,ß Ã µ G!5B Ä

```
Ruijie# show nfpp icmp-guard trusted-host
IP address      mask
---------       ------
1.1.1.0         255.255.255.0
1.1.2.0         255.255.255.0
Total Ö2 record(s)
```

,Ì G Q¸	Q¸	£EÄ
	icmp-guard trusted-host	G!5B á,¥ {,X Ã µ

G ÄAÈ â ´

Q¸Z Æ	(Ë	AÈ â
	10.4	„ rA¹ Q¸

AÈ â Ö1 ¯ þ +!‰ Reason £EÄ >•,¥ {,X s ´ È ATTACK ></
¥EÕIP y [,XEó zCYE› Ï" 4“ È SCAN ></ ü ? £ ¤ þ5%!‰ Ä

,Ì G Q ¸

Q ¸	£EÄ
clear nfpp ip-guard hosts	#ÙL8 «,¥ {

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.4	„ rA¹ Q ¸

54.14.2 show nfpp ip-guard summary

¹,ßG!5B µ C Ä

show nfpp ip-guard summary

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã

S*ü Û Ð EîE›A¹ Q ¸ Ã ¹ ¹,ßG!5B µ C Ä

G!5B _

Ruijie# show nfpp ip-guard summary

ÄFormat of column Rate-limit and Attack-threshold is per-src-ip/per-src-mac/per-port. Å

Interface Status Isolate-period Rate-limit Attack-threshold Scan-threshold

Global Enable 300 4/-/60 8/-/100 15

Gi 0/1 Enable 180 5/-/- 8/-/- -

Gi 0/2 Disable 200 4/-/60 8/-/100 20

Maximum count of monitored hosts: 1000

Monitor period Ö300s

AÈ â Ö

Mo1>Tj /MCID 542 TC2_0 1 Tc.7 4570.0025 Tc 1CID >-548<112B3.520C 205B5>6<164301C1 Tf -

NFPP Q ¸

0Ã ·,XL$Eó" 4“ Å È +!‰ Attack-threshold ,X / ã2O Ä - ></ "u ÝG!5B Ä

Q ¸	£EÄ
ip-guard attack-threshold	G!5B < Ï" 4“
ip-guard enable	< ' Ô IP L ? £ s6Ñ
ip-guard isolate-period	G!5B < Lh/• ÊKÈ
ip-guard monitor-period	G!5B,¥ { ÊKÈ

,Ì G Q ¸

G!5B < L$xfttore0E1B44>]TJ /TT0 1 0P <

55 ACL ﻳﺪ ﻟ

ü ¹ ß Q ¸ *ü ,X ÛAš0ú Ã –?• ¹ ß Q ¸ ÛAš0ú><

Q ¸ ÛAš0ú

ÛAš0ú	ÿ
id	A“KÂ ë>< D Û Ë Ä ÃG!8× È IP Û š ACL Ö1-99 È1300-1999 IP =) ACL Ö100-199 È2000-2699 MAC =) ACL Ö700–799 ç Š =) ACL Ö2700–2899
name	ACL á +
sn	ACL ><NM c Ë(Õ Ý ì 4{A’5B { •)
start-sn	c ËCK Ÿ
inc-sn	c Ë rG£
deny	V p G! È í ¦4±A“KÂ
permit	V p G! È í AŒA“KÂ
prot	#A,4ê Ë È Í b IPv6 ,XA¹ +!‰ Ã ipv6 Èicmp Ètcp È udp ž D 0-255 È Í b IPv4 È Ã ¹ eigrp Ègre È ipinip Èigmp Ènos Èospf Èicmp Èudp Ètcp Èip ,X Ô þ È 3 Ã ¹ ·>< IP #A,,X 0-255 4ê Ë È Ô oG¡ ?U #A, V icmp/tcp/udp 1)(À ë ÎE¯> AÈ â
interface idx	Eg 9 G!,X y ·
src	y [$d Ä ê5%4° Å
src-wildcard	$d EîG!0ú Ä Ã ¹ S áE²4Á,X È V 0.255.0.32
src-ipv6-pfix	$d IPv6 5%4° ê5%4°2O _
dst-ipv6-pfix	,Â,X IPv6 5%4° ê5%4°2O _
pfix-len	P¬ !CK }-Õ ! D
src-ipv6-addr	$d IPv6
dst-ipv6-addr	,Â,X IPv6
dscp dscp	Ý Â á u-Õ&• , -Õ&• È 8× È 0-63
flow-label flow-label	# Û1R È# Û1R 8× È 0-1048575
dst	y [,Â Û Ä ê5%4° Å
dst-wildcard	,Â Û EîG!0ú Ä Ã ¹ áE²4Á È V 0.255.0.32
fragment	y [Ú(,XE›$¸

precedence precedence	y [,X ì 4{ ÿ Ä0-7 Å
range	y [,X ¯ 0Ã · Ë8× È
time-range tm-rng-name	y [E›$¸,X ÊKÈ È á/Ä tm-rng-name
tos tos	y [,X á u2O _ Ä0-15 Å
cos cos	y [cos (0-7)
cos inner cos	y [YF¼ tag ,X cos
icmp-type	ICMP y [,X#\ C2O _ Ä0-255 Å
icmp-code	ICMP y [,X#\ C2O _ ·-Õ Ä0-255 Å
icmp-message	ICMP y [,X#\ C2O _ á/Ä
operator port[port]	Operator ¡ 00úÄlt- ã b È eq-1 b È gt- û b È neq- á1 b È range-8× È Å y [S6VÂ ã8€9Ð Ib1 ûbÈ] Á €Ö,X#\ C0 ÍCõ ?Œ?íe€,XËðÈ J ªÐ ÁØ

4) Expert =)A“KÂ ë>< Ä2700 - 2899 Å

access-list *id* {deny | permit } [protocol | [*ethernet-type*][cos [*out*][inner *in*]]] [VID [*out*][inner *in*]] {*source source-wildcard* | host *source* | any} {host *source-mac-address* | any} {*destination destination-wildcard* | host *destination* | any} {host *destination-mac-address* | any}][precedence *precedence*] [tos *tos*] [fragments] [range *lower upper*] [time-range *time-range-name*]

EÝ ½ +!‰ Ù ÿ ¹ þ5%2O _Ethernet-type ê cos +!‰ Ê Ö

access-list *id* {deny | permit } {*ethernet-type*| cos [*out*][inner *in*]} [VID [*out*][inner *in*]] {s*ource source-wildcard* | host *source* | any} {host *source-mac-address* | any } {*destination destination-wildcard* | host *destination* | any} {host *destination-mac-address* | any} [time-range *time-range-name*]

EÝ ½ #A,Protocol +!‰ Ê Ö

access-list *id* {deny | permit } protocol [VID [*out*][inner *in*]] {*source source-wildcard* | host *source* | any} {host *source-mac-address* | any }{*destination destination-wildcard* | host *destination* | any} {host *destination-mac-address* | any} [precedence *precedence*] [tos *tos*] [fragments] [range *lower upper*] [time-range *time-range-name*]

Ô oG¡?U #A,,X Expert =)A“KÂ ë>< Ö

Internet Control Message Protocol (ICMP) Ö

access-list *id* {deny | permit } icmp [VID [*out*][inner *in*]] {*source source-wildcard* | host *source* | any} {host *source-mac-address* | any } {*destination destination-wildcard* | host *destination* | any} {host *destination-mac-address* | any

e)Tj /TT-0.0001 Tf 0.0002 Tw 1.559 0 Td (sc-m)Tj /TT0 1 Tf 0.0022 Tc 1857.001 T1.337 0 Td (] [)Tj /TT1 1 Tf -0.0512 Tc.0

time-range *jimr-name*

– DAÈ â	– D	£EÄ

A“KÂ ë>< Û Ë Ä ÃG!8× È Ä1-9919.62 re W* n q 0 841/-6<1B4441C

match-all	G! *tcp flag* ,X Ý !
tcp-flag	tcp flag Û «

5 ,ÕG!5B "u Ý Ï) ACL

Q ¸ õ ã < G!5B õ ã

Z S*ü A“KÂ ë>< Í D BE¯> E›$¸ ÈOj ™NOEîE› Q ¸ access-list n Ô2Ï ëA“KÂ ë>< ?˜ íAÁ ¹ Ä | Ã ¹ B K '] <LÔ?U S*ü á à/¡2O,XA“KÂ ë>< Ö

Û š IP A“KÂ ë>< Ä1-99 È1300-1999 Å ¾ Í$d E¯> { Ä

=) IP A“KÂ ë>< Ä100-199È2000-2699 Å È Ã ¹ B$d,Â,X E¯> á ,X { Ä

MAC =)A“KÂ ë>< Ä700-799 Å È Ã ¹ B$d `,Â,X MAC ¹ ž ¹ þ5%2O _E¯> G!

Expert =)A“KÂ ë>< Ä 2700-2899 Å È ÞM6 µ C,X4Ð Ü È J Ã ¹ Í VLAN ID E¯> G!E› $¸ Ä

TCP Flag Ù ÿ ¹ ßF¼ Ú ê <F¼ Ö

- urg
- ack
- psh
- rst
- syn
- fin

S*ü Û Ð

y [ì 4{ ÿ á/Ä V ß Ö

- critical
- flash
- flash-override
- immediate
- internet
- network
- priority
- routine

á u2O _ á/Ä V ß Ö

- max-reliability
- max-throughput
- min-delay
- min-monetary-cost
- normal

ICMP y [#\ C2O _ á/Ä V ß Ö

- administratively-prohibited

dod-host-prohibited
dod-net-prohibited
echo
echo-reply
fragment-time-exceeded
general-parameter-problem
host-isolated
host-precedence-unreachable
host-redirect
host-tos-redirect
host-tos-unreachable
host-unknown
host-unreachable
information-reply
information-request
mask-reply
mask-request
mobile-redirect
net-redirect
net-tos-redirect
net-tos-unreachable
net-unreachable
network-unknown
no-room-for-option
option-missing
packet-too-big
parameter-problem
port-unreachable
precedence-unreachable
protocol-unreachable
redirect
router-advertisement
router-solicitation
source-quench
source-route-failed
time-exceeded
timestamp-reply
timestamp-request

ACL Q ¸

55.1.2 deny

+ â Ô þ ê î þ,X ö ×(deny),X 5 Ê ¹*ü b ‡ n y [E@ ¥ êE¬ ö × Ä

1 Å IP Û šA“KÂ ë><

[*sn*] deny {*source source-wildcard* | host *source* | any}

2 Å IP =)A“KÂ ë><

[*sn*] deny protocol *source source-wildcard destination destination-wildcard* [precedence *precedence*] [tos *tos*] [fragments] [range *lower upper*] [time-range *time-range-name*]

Ô oG¡?U #A,,X IP =)A“KÂ { ë>< Ö

Internet Control Message Protocol (ICMP)

[*sn*] deny icmp {*source source-wildcard* | host *source* | any} {*destination destination-wildcard* | host *destination* | any} [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [precedence *precedence*] [tos *tos*] [fragments] [time-range *time-range-name*]

Transmission Control Protocol (TCP)

[*sn*] deny tcp { *source source-wildcard* | host *Source* | any} [*operator*] [*i*-39.44Tc 9.52 0 Tdildcard wi

destination-wildcard | host *destination* | any} {host *destination-mac-address* | any} [time-range *time-range-name*]

b) EÝ ½ #A,protocol +!‰ Ê

[*sn*] deny protocol [[VID [*out*][inner *in*]]] {*source source-wildcard* | host *source* | any} {host *source-mac-address* | any } {*destinationdestination-wildcard* | host *destination* | any} {host *destination-mac-address* | any} [precedence *precedence*] [tos *tos*] [fragments] [range *lower upper*] [time-range *time-range-name*]

c) Ô oG¡?U #A,,X expert =)A“KÂ ë>< Ö

Internet Control Message Protocol (ICMP)

[*sn*] deny icmp [[VID [*out*][inner *in*]]] {*source source-wildcard* | host *source* | any} {host *source-mac-address* | any} {*destination destination-wildcard* | host *destination* | any} {host *destination-mac-address* | any} [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [precedence *precedence*] [tos *tos*] [fragments] [time-range *time-range-name*]

Transmission Control Protocol (TCP)

[*sn*] deny tcp [[VID [*out*][inner *in*]]]{*source source-wildcard* | host *Source* | any} {host *source-mac-address* | any } [*operator* port [*port*]] {*destination destination-wildcard* | host *destination* | any} {host *destination-mac-address* | any} [*operator* port [*port*]] [precedence *precedence*] [tos *tos*] [fragments] [range *lower upper*] [time-range *time-range-name*] [match-all *tcp-flag*]

User Datagram Protocol (UDP)

[*sn*] deny udp [[VID [*out*][inner *in*]]]{*source source –wildcard* | host *source* | any} {host *source-mac-address* | any } [*operator* port [*port*]] {*destination destination-wildcard* | host *destination* | any}{host *destination-mac-address* | any} [*operator* port [*port*]] [precedence *precedence*] [tos *tos*] [fragments] [range *lower upper*] [time-range *time-range-name*]

Address Resolution Protocol (ARP)

[*sn*] deny arp {vid *vlan-id*}[*source-mac-address source-wildcard* |host *source-mac-address* | any] [host *destination –mac-address* | any] {*sender-ip sender-ip–wildcard* | host *sender-ip* | any} {*sender-mac sender-mac-wildcard* | host *sender-mac* | any} {*target-ip target-ip–wildcard* | host *target-ip* | any}

5 Å IPV6 =)A“KÂ ë><

[*sn*] deny protocol{ *source-ipv6-prefix*/*prefix-length* | any | host *source-ipv6-address* } {*destination-ipv6-prefix / prefix-length* | any| *hostdestination-ipv6-address*} [dscp *dscp*] [flow-label *flow-label*] [fragments] [range *lower upper*] [time-range *time-range-name*]

Ô oG¡?U #A,,X IPV6 =)A“KÂ { ë>< Ö

Internet Control Message Protocol (ICMP)

[*sn*]deny icmp {*source-ipv6-prefix / prefix-length* | *any source-ipv6-address* | host} {*destination-ipv6-prefix / prefix-length*| host *destination-ipv6-address* | any} [*icmp-type*]

*ü y· 1 ÄG!5B •"© Ö

```
Ruijie(config)# ipv6 access-list extended v6-acl
Ruijie(config-ipv6-nacl)# 11 deny ipv6 host 192.168.4.12 any
Ruijie(config-ipv6-nacl)# show access-lists
ipv6 access-list extended v6-acl
11 deny ipv6 host 192.168.4.12 any
Ruijie(config-ipv6-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# ipv6 traffic-filter v6-acl in
```

¸Ì G Q¸

Q¸	£EÄ
show access-lists	¹,ß Ý,XA“KÂ ë><
ipv6 traffic-filter	ü y · Þ h*ü IPV6 =)A“KÂ ë><
ip access-group	IP ACL ,X y · h*ü
mac access-group	MAC =) ACL ,X y · h*ü
ip access-list	IP ACL ,X n
mac access-list	MAC =) ACL ,X n
expert access-list	ç Š =) ACL ,X n
ipv6 access-list	IPV6 =) ACL n
permit	šAŒ><NM n Q¸

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
V10.0	EC Ê(V10.0 ¹ Þ È arp GK + üEC Ê(V10.2(3) ž ¹ Þ Õ Ä

55.1.3 expert access-group

Ú Ô þA’ n,X EXPERT ACL h*ü Û n,X y · Ä S*üA¹ Q¸,X no EÝNM ª#\ h*ü Ä

expert access-group {*id* | *name*} {in | out}

no expert access-group {*id* | *name*} {in | out}

– DAÈ â

– D	£EÄ
id	Expert A“KÂ ë><,X4ê Ë Ä2700-2899Å
name	Expert A“KÂ ë><,X á +

in	ÍE¯ 9A¹ y ·,X y [E¯> E›$¸
out	Í ¢A¹ y ·Eg Î,X y [E¯> E›$¸

5 ,ÕG!5B y ·"u Ý h*ü Expert ACL

Q ¸ õ ã y ·G!5B õ ã

S*ü Û Ð Ú Û n ,X ACL h*ü bA¹ y · Þ È*ü b Í y ·,XEg 9Eg Î D B# E¯> { Ä S*ü show access-group Q ¸ ¹,ßA'5B

G!5B _ ß _ / V) Ú access-list accept_00d0f8xxxxxx_only h*ü b Gigabit y · 1 Þ Ö

```
Ruijie(config)# interface GigaEthernet 0/1
Ruijie(config-if)# expert access-group accept_00d0f8xxxxxx_only in
```

,Ì G Q ¸

Q ¸	£EÄ
show access-group	/ y · Þ4¥ n,X ACL G!5B Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
V10.0	EC Ê(V10.0 ¹ Þ

55.1.4 expert access-list

A¹ Q ¸ ï Î ç Š =) ACL È JE¯ 9A¹G!5B õ ã Ä S*üA¹ Q ¸,X no EÝNM ôL8ÆACL

expert access-list extended {*id* | *name*}

no expert access-list extended {*id* | *name*

G!5B _

_ 1 Ö ï Î Û š ACL Ö

```
Ruijie(config)# ip access-list standard std-acl
Ruijie(config-std-nacl)# show ip access-lists
ip access-list standard std-acl
Ruijie(config-std-nacl)#
```

_ 2 Ö ï Î =) ACL Ö

```
Ruijie(config)# ip access-list extended 123
Ruijie(config-ext-nacl)# show ip access-lists
ip access-list extended 123
```

,Ì G Q ¸

Q ¸	£EÄ
show ip access-lists	¹,ß IP 2OA“KÂ ë><

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
V10.0	EC Ê(V10.0 ¹ Þ

55.1.7 ip access-list resequence

A¹ Q ¸ Í ip 2O _,X ACL ><NMG¡ f È ï Î IPV6 =) ACL È JE¯ 9A¹G!5B õ ã Ä S*üA¹ Q ¸ ,X no EÝNM 6 áT¬Ax

ip access-list resequence {*id* | *name*} start-sn inc-sn

no ip access-list resequence {*id* | *name*}

– DAÈ â

– D	£EÄ
Id	ACL 4ê Ë
name	ACL á +
start-sn	c ËCK Ÿ
inc-sn	c Ë rG£

5 ,ÕG!5B

start-sn Ö10

inc-sn Ö10

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð A¹ Q ¸,X G!5B4§ p Ã ¹EîE› show access-lists Q ¸ ¹,ß Ä

G!5B _

ACL ,X><NMG¡ f Ö

```
Ruijie# show access-lists
ip access-list standard 1
10 permit host 192.168.4.12
20 deny any any
Ruijie# config
Ruijie(config)# ip access-list resequence 1 21 43
Ruijie(config)# exit
Ruijie# show access-lists
ip access-list standard 1
21 permit host 192.168.4.12
64 deny any any
```

,Ì G Q ¸

Q ¸	£EÄ
show access-lists	¹,ßA“KÂ ë><

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
V10.0	EC Ê(V10.0 ¹ Þ

55.1.8 list-remark text

Û n,X ACL #Ï t"¼Gž µ C Èno !4Ô ôL8

list-remark *text*

– DAÈ â

– D	£EÄ
Text	"¼Gž µ C

5 ,ÕG!5B ´

Q ¸ õ ã ACL G!5Bõ ã

S*ü Û Ð Û n ,X ACL #Ï t"¼Gž µ C

G!5B _

```
Ruijie# ip access-list extended 102
Ruijie(config-ext-nacl)# list-remark this acl is to filter the host
192.168.4.12
Ruijie(config-ext-nacl)# show access-lists
ip access-list extended 102
deny ip host 192.168.4.12 any
1000 hits
this acl is to filter the host 192.168.4.12
Ruijie(config-ext-nacl)#
```

¸Ì G Q¸	Q¸	£EÄ
	show mac access-lists	¹,ß mac =)2OA“KÂ ë><

G ÄAÈ â ´

Q¸Z Æ	(Ë	AÈ â
	V10.0	EC Ê(V10.0 ¹ Þ

55.1.11 no sn

ôL8 ACL ,X Ô þ><NM

no *sn*

– DAÈ â	– D	£EÄ
	sn	ACL ,X Ô þ><NM,X c Ë

5 ,ÕG!5B ´

Q¸õ ã ACL G!5Bõ ã ß

S*ü Û Ð ü ACL G!5Bõ ã ß ôL8 ACL ><NM

G!5B –

```
Ruijie(config)# ipv6 access-list extended v6-acl
Ruijie(config-ipv6-nacl)# permit ipv6 host ::192.168.4.12 any
Ruijie(config-ipv6-nacl)# 12 deny ipv6 host any any
Ruijie(config-ipv6-nacl)# show access-lists
ipv6 access-list extended v6-acl
10 permit ipv6 host ::192.168.4.12 any
12 deny ipv6 any any
Ruijie(config-ipv6-nacl)# no 12
Ruijie(config-ipv6-nacl)# show access-lists
ipv6 access-list extended v6-acl
10 permit ipv6 host ::192.168.4.12 any
Ruijie(config-ipv6-nacl)#
```

¸Ì G Q¸	Q¸	£EÄ

show access-lists	¹,ß Ý,XA“KÂ ë><
ip access-list	ip ACL ,X n
ipv6 access-list	IPV6 =) ACL n
deny	n ¦4±AÁ ACL ><NM
permit	n AŒAÁ ACL ><NM

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
V10.0	EC Ê(V10.0 ¹ Þ

55.1.12 permit

+ â Ô þ ê î þ,X AŒ(permit),X 5 Ê ¹*ü b ‡ n y [E@ ¥ êE¬ ö × Ä

1) IP Û šA“KÂ ë><

[*sn*] permit {*source source-wildcard* | host *source* | any}

2) IP =)A“KÂ ë><

[*sn*] permit protocol *source source-wildcard destination destination-wildcard* [precedence *precedence*] [tos *tos*] [fragments] [range *lower upper*] [time-range *time-range-name*]

Ô oG¡?U #A,,X IP =)A“KÂ { ë>< Ö

Internet Control Message Protocol (ICMP)

[*sn*] permit icmp {*source source-wildcard* | host *source* | any} {*destination destination-wildcard* | host *destination* | any} [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [precedence *precedence*] [tos *tos*] [fragments] [time-range *time-range-name*]

Transmission Control Protocol (TCP)

[*sn*] permit tcp {*source source-wildcard* | host *Source* | any} [*operator* port [*port*]] {*destination destination-wildcard* | host *destination* | any}[*operator* port [*port*]] [precedence *precedence*] [tos *tos*] [fragments] [range *lower upper*] [time-range *time-range-name*] [match-all *tcp-flag*]

User Datagram Protocol (UDP)

[*sn*] permit udp {*source source -wildcard*|host *source* |any} [*operator* port [*port*]] {*destination destination-wildcard* |host *destination* | any} [operator port [*port*]] [precedence *precedence*] [tos *tos*] [fragments] [range *lower upper*] [time-range *time-range-name*]

3) MAC =)A“KÂ ë><

[*sn*] permit {any | host *source-mac-address*} {any | host *destination-mac-address*} [*ethernet-type*][cos [*out*] [inner *in*]]

4) Expert =)A“KÂ ë><

[*sn*] permit [protocol | [*ethernet-type*][cos [*out*] [inner *in*]]] [VID [*out]*[inner *in]*] {*source source-wildcard* | host *source* | any} {host *source*-mac-*address* | any } {*destination destination-wildcard* | host *destination* | any} {host *destination-mac-address* | any} [precedence *precedence*] [tos *tos*][fragments] [range *lower upper*] [time-range *time-range-name*]

EÝ ½ +!‰ Ù ÿ ¹ þ5%2O _Ethernet-type ê cos +!‰ Ê

[*sn*] permit {*ethernet-type*| cos [*out*] [inner *in*]} [VID [*out*][inner *in*]] {*source source-wildcard* | host *source* | any} {host *source-mac-address* | any } {*destination destination-wildcard* | host *destination* | any} {host *destination-mac-address* | any} [time-range *time-range-name*]

EÝ ½ #A,Protocol +!‰ Ê

[*sn*] permit protocol [VID [*out]*[inner *in*]] {*source source-wildcard* | host *Source* | any} {host *source-mac-address* | any } {*destination destination-wildcard* | host *destination* | any} {host *destination-mac-address* | any} [precedence *precedence*] [tos *tos*] [fragments] [range *lower upper*] [time-range *time-range-name*]

Ô oG¡?U #A,,X Expert =)A“KÂ ë>< Ö

Internet Control Message Protocol (ICMP)

[*sn*] permit icmp [VID [*out*][inner *in*]] {*source source-wildcard* | host *source* | any} {host *source-mac-address* | any } {*destination destination-wildcard* | host *destination* | any} {host *destination-mac-address* | any}[*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [precedence *precedence*] [tos *tos*] [fragments] [time-range *time-range-name*]

Transmission Control Protocol (TCP)

[*sn*] permit tcp [VID [*out*][inner *in*]]{*source source-wildcard* | host *Source* | any} {host *source-mac-address* | any } [*operator* port [*port*]] {*destination destination-wildcard* | host *destination* | any} {host *destination-mac-address* | any} [*operator* port [*port*]] [precedence *precedence*] [tos *tos*] [fragments] [range *lower upper*] [time-range *time-range-name*] [match-all *tcp-flag*]

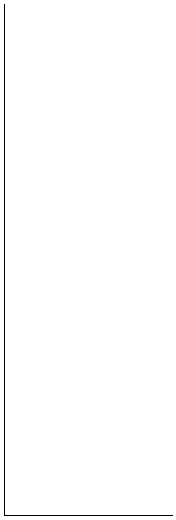
User Datagram Protocol (UDP)

[*sn*] permit udp [VID [*out*][inner *in*]]{*source source –wildcard* | host *source* | any} {host *source-mac-address* | any } [*operator* port [*port*]] {*destination destination-wildcard* | host *destination* | any} {host *destination-mac-address* | any} [*operator* port [*port*]] [precedenceprecedence] [tos *tos*] [fragments] [range *lower upper*] [time-range *time-range-name*]

Address Resolution Protocol (ARP)

[*sn*] permit arp {vid *vlan-id*} [host *source-mac-address* | any] [host *destination –mac-address* | any] {*sender-ip sender-ip–wildcard* | host *sender-ip* | any} {*sender-mac sender-mac-wildcard* | host *sender-mac* | any} {*target-ip target-ip–wildcards684>Tj/TTs4>BDT1 a]234ae5*

_ 5 ÖßM6 IPV6 =) ACL S*ü8× _ È‚Â‚X AŒ



id	A“KÂ ë><,X4ê Ë
name	A“KÂ ë><,X á +

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã

S*ü Û Đ / Û n ,X

– DAÈ â	– D	£EÄ
	<interface>	Û n,X y ·

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã

S*ü Û Đ / y · G!5B,XExpert ACL È8¹"u Ý Û n y · È í / Ý y · G6(Expert ACL Ä

G!5B _

```
Ruijie# show expert access-group interface gigabitethernet 0/2
expert access-group ee in
Applied On interface GigabitEthernet 0/2.
```

,Ì G Q ¸	Q ¸	£EÄ
	expert access-list	Expert =) ACL n

G ÄAÈ â ´

Q ¸ Z Æ	(Ë	AÈ â
	V10.0	EC Ê(V10.0 ¹ Þ

55.2.4 show ip access-group

/ y · G!5B,X IP ACL

show ip access-group [interface *<interface>*]

– DAÈ â	– D	£EÄ
	<interface>	Û n,X y ·

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã

S*ü Û Đ / y · G!5B,X IP ACL È8¹"u Ý Û n y · È í / Ý y · G6(,X IP ACL

G!5B _

55.3 ‿ ג

55.3.1 security access-group

G!5B y ·] <EîF'

security access-group {*id*|*name*}

no security access-group

– D	

	V10.2	EC Ê(V10.2 ¹ Þ

56 VACL ـﺰ Ȣ

56.1 ـﺩ Ẫـﺰ Ȣ

Vlan access map Ý ø þ GK + È J *map_name* GK + ™ á Ã å È *map_sn* õ G K + È Ã ¹5 ,Õ Ä å À ^ á +,Ì à,X $ map Ä Ô þ ê î þ Å,XLš Ü ¿ . map Ä

1 Å ï Î vlan access map rL Þ ï Î Ô þ $ map È ' á Û n *map_sn* Ê í È üA¹ $ map ,X !M6 è à 2 b Ô þ map ,X $ map ,X *map_sn* Î. Þ t *10* ×

2 Å ' á Û n *map_sn* Ê í È ôL8 vlan access map È í,Ì à *map_name* ,X *Map_name* î <F¼ ôL8 È G map >• ôL8 ×

3 Å ' Û n map_sn Ê í È ôL8 vlan access map È í ôL8(M n,X $ map ×8¹A¹ $ map 2,X map á ÿ Ý $ map ,X Ê í ÈA¹ map î7¾ | ôL8 È ú í á î ×

4 Å Ô þ map Ã ¹ ÿ Ý îE’ 6553 þ $ map Ä

56.1.1 action forward/drop/redirect

?UA’5B $map ,X actions | 0 ÈAË ü vacl õ ã ß ;> V ß Q ¸ ÄA¹ Q ¸,X no 6 ã ª#\ map A’5B,X actions | 0 È5 ,Õ | 0 forward Ä

action forward

no action forward

?UA’5B $map ,X actions | 0 ÈAË ü vacl õ ã ß ;> V ß Q ¸ ÄA¹ Q ¸,X no 6 ã ª#\ map A’5B,X actions | 0 È5 ,Õ | 0 forward Ä

action drop

no action drop

?UA’5B $map ,X actions | 0 ÈAË ü vacl õ ã ß ;> V ß Q ¸ ÄA¹ Q ¸,X no 6 ã ª#\ map A’5B,X actions | 0 È5 ,Õ | 0 forward Ä

action redirect { GigabitEthernet | Aggregateport | FastEthernet } { port_id }

no action redirect {GigabitEthernet | Aggregateport | FastEthernet } {***port_id*** }

– DAÈ â

– D	£EÄ
actions forward	Q ¸"u Ý – D ×
actions drop	Q ¸"u Ý – D ×
actions redirect	Ý Ô þ – D ÖG¡ n å0Ã ·

✗ "¼ ã	+></ 7Ç å G6(Ô þ acl, E-G Ô î6Ñ G6(8 þ acl Ä

S*ü Û Ð	AÈ â
	Ô þ $ map ,Â ! ¾6Ñ G6(ip acl ê5Ù map acl È ø5Ù ¾6ÑEý J Ô È á6Ñ#Ë Ü G6(×
	Ô þ $ map Ô î ¾6Ñ G6(8 þ acl ×
	Ô þ $ map á6Ñ G6(á , ü,X acl ×
	Ô þ $ map á6Ñ G6("u Ý ace ,X acl È G0N,X acl×
	' Ô þ $ map s 9 Æ4£ G6(Z ip acl (mac acl) È a õG!5B G6(ip acl (mac acl) È âG!5B,X ip acl (mac acl),X õ c ü s 9G!5B,X ip acl (mac acl) âM6 ×
	' Ô þ $ map s 9 Æ4£ G6(Z ip acl (mac acl) È a õG!5B G6(mac acl (ip acl) È íOj 7¾ | ôL8 s 9 Æ4£G!5B,X ip acl (mac acl) È' âG!5B mac acl (ip acl) ×

G!5B _

ßM6/ _ ÈA'5B $ map ,X match Y • Ö

```
Ruijie(config)# vlan access-map dd
Ruijie(config-access-map)# match ip address 10 20 sp1 30 sp2
Ruijie(config-access-map)# exit
Ruijie(config)# vlan access-map dd 20
Ruijie(config-access-map)# match mac address 710 720 m1 760
Ruijie(config-access-map)# exit
Ruijie(config)#
```

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

56.1.3 vlan access map

ï Î Ô þ $ map ÈAË S*üA¹ < Q ¸ Ä?U ôL8 Ô þ $ map ÈAË S*üA¹ Q ¸,X no 6 ã Ä

Vlan access map *map_name* [*map_sn*]

no Vlan access map *map_name* [*map_sn*]

S*ü Û Đ

' vlan access map *ü ü î þ vlan Þ Ê ÈÄË*üEë ËLh/• È Õ vlan 8× ÈEg 9 È¨ V Övlan filter aa vlan-list 1-33 È G ^ map *ü ü 1-33 ,X Ý vlan Þ Ä

G!5B –

ßM6/ _ Ú map ff ,X vlan access map h*ü ü vlan 5 Þ Ä

```
Ruijie(config)# vlan filter ff vlan-list 5
```

164 0 81.98 595.f4C /C2_0 1 Tf 1/C2_0 1 Tf8lt3 0 Td <03DE0947185E 78.36 692.1803 Tm [<241.8EM

```
action: forward
Vlan access-map aa  20
match ip address:   10, 20, 30, sp1, sp2, 60, 50, 80,
action: drop
Vlan access-map dd  20
match mac address:   710, 720, m1, 760,
action: forward
Ruijie(config)#
```

_ 2 Ö ßM6/ _ ;> show vlan access map { *map_name* },X Ô þ4§ p Ö

```
Ruijie(config)# show vlan access-map dd
Vlan access-map dd  20
match mac address:   710, 720, m1, 760,
action: forward
Ruijie(config)#
```

57 QOS ﻳﺠ ﻟ

57.1 ﻳ

*ü üE¯> QoS G!5B ! ÈLÔ?U#Ù . ` QoS Ý G,X ¹ ß ´&• µ C Ö

Ô þ y · Ô î G6(1 þ policy-map ×

Ô þ policy-map Ã ¹ ¹ Ý î þ class-map ×

Ô þ class-map Ô î G6(1 þ ACL ÈA¹ ACL ,X Ý ACE ™NO K Ý,Ì àE›$¸ ³ õ S ×

Ô þ y · Þ G6(,X ACE ,X þ D á ¢“ G!5B] < ACL”0´8V,XL$ Ä

5 ,Õ ™ ‰ ß È QoS s6Ñ GKÁ,X ÄGA’ Û Í Ý,X y [à1 Ø)Ú Ä ' 4 Ú Ô þ Policy Map G6(¤ Ô þ y · Þ È ¤A’5B Z y ·,X µ Ï õ ã Ê ÈA¹ y ·,X QoS s6Ñ G>• ' Ô Ä?U GKÁ A¹ y ·,X QoS s6Ñ È |EîE›?· ‡A¹ y ·,X Policy Map A’5B È J Ú y ·,X µ Ï õ ãA’ Off G Ã Ä ¹ ß QOS ,X5 ,ÕG!5B Ö

5 ,ÕG!5B	5 ,Õ CoS	0
	Kó ë þ D	8
	Kó ëEBE@1k"©	WRR
	QueueWeight	1:1:1:1:1:1:1:1
	WRR Weight Range	1:15
	DRR Weight Range	1:15
	µ Ï õ ã	No Trust

Cos Kó ë,XT¬Ax ô Ø><

	CoS	**Kó ë**
Cos **Kó ë**	0	1
	1	2
	2	3
	3	4
	4	5
	5	6
	6	7
	7	8

CoS to DSCP T¬Ax ô Ø><

QOS Q ¸

_ 4 Ö ï Î class-map, Q á cm

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

_ 5 Ö G6(ACL

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

_ 6 ÖEÔ Îclass-map A'5B

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

Q¸	£EÄ

show mls qos queueing	-

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

57.2.3 interface rate-limit

0Ã ·Eó)[L$,XA'5B

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

no rate-limit

– DAÈ â

– D	£EÄ
input	Eg 9L$Eó
output	Eg ÎL$Eó
bps	!£/¦Js,X ú 'L$ G£
burst-size	(ñ ¥# G£L$ (Kbyte)dscp-list ª 8× È q { • á à5à á à
no	6 á5 ,Õ

5 ,ÕG!5B ´

Q¸õ ã y ·G!5B õ ã

S*ü Û Ð

G!5B –

```
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# rate-limit input 1000000 4096
```

,Ì G Q¸

Q¸	£EÄ
show mls qos interface	-

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â

-	-

57.2.4 mls qos cos

G!5B y·,X CoS

mls qos cos *default-cos*

no mls qos cos

– DAÈ â	– D	£EÄ
	default-cos	0 7
	no	6 á5 ,Õ

5 ,ÕG!5B	CoS 0
Q¸õã	y·G!5B õã
S*ü Û Ð	´

G!5B –	Ruijie(config)# **interface gigabitethernet** *1/1* Ruijie(config-if)# **mls qos cos** *7*

,Ì G Q¸	Q¸	£EÄ
	show mls qos interface *interface-id*	-

G ÄAÈ â	´

Q¸Z Æ	(Ë	AÈ â
	-	-

57.2.5 mls qos map cos-dscp

A’5B CoS ô Ø YF¼ DSCP

mls qos map cos-dscp *dscp1...dscp8*

no mls qos map cos-dscp

– DAÈ â	– D	£EÄ

G!5B _ Ruijie(config)# **mls qos map dscp-cos** 8 10 16 18 to 0

¸Ì G Q¸

Q¸	£EÄ
-	-

G ÄAÈ â sho w mls qos maps / dscp-cos maps,dscp-cos maps ` ip-prec-dscp maps

Q¸ Z Æ

(Ë	AÈ â
-	-

57.2.7 mls qos map ip-prec-dscp

A’5B ippre ô Ø YF¼ DSCP

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

no mls qos map ip-prec-dscp

– DAÈ â

– D	£EÄ
dscp	ª 8× È q { • á à5à á à
no	6 á5 ¸Õ

5 ¸ÕG!5B ?•5 ¸ÕG! 5B

Q¸ õ ã < G!5B õ ã

S*ü Û Ð ´

G!5B _ Ruijie(config)# **mls qo map ip-prec -dscp** *8 10 16 18 24 26 32 34*

no policy-map *policy-map-name*	ôL8 Æ4£ , ü,X policy map
class-map-name	Æ4£ ï Î,X class map ,X á +
no class *class-map-name*	ôL8A¹ D B Ú2O
new-dscp	„ DSCP × ª 8× È q { • á à5à á à
rate-bps	!£/¦Js,X ú 'L$ G£ È) ! kbps
burst-byte	(ñ ¥# G£L$ È) ! kbyte
drop	ö × ú 'CYL$F¼ Ú,X y [
dscp-value	m ú ' CYL$F¼ Ú y [DSCP ª 8× È q { • á à5à á à

5 ,ÕG!5B ´

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð ´

G!5B _

_ 1 Ö ï Î policy map, Q á po

```
Ruijie(config)# policy-map po
```

_ 2 Ö G6(class-map cm

```
Ruijie(config-pmap)# class cm
```

_ 3 ÖA'5B# dscp 10

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

_ 4 ÖA'5B# ú ' 1M, (ñ ¥# G£ 4096k,CYL$ | 0 C „ dscp 16

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

,Ì G Q ¸

Q ¸	£EÄ
show policy-map	-

Q ¸ Z Æ

(Ë	AÈ â
-	-

57.2.11 priority-queue

A'5BEg ÎKó ëA× z1k"©

[no] priority-queue

– DAÈ â

– D	£EÄ
priority-queue	Eg ÎKó ëEBE@1k"© SP
no priority-queue	Eg ÎKó ëEBE@1k"© WRR

5 ,ÕG!5B Eg ÎKó ë EBE@1k"©WRR

Q¸õã < G!5B õã

S*üÛÐ ´

G!5B _ `Ruijie(config)# no priority-queue`

,Ì G Q¸

Q¸	£EÄ
show mls qos queueing	-

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

57.2.12 priority-queue cos-map

G!5BEg ÎKó ë G6(,X CoS

priority-queue cos-map *qid cos0* [*cos1* [*cos2* [*cos3* [*cos4* [*cos5* [*cos6* [*cos7*]]]]]]]

no priority-queue cos-map

– DAÈ â

– D	£EÄ
qid	Û n,XKó ë id
cos7	*cos0 ...* Ö G6(,X CoS
no	6 á5 ,Õ

5 ,ÕG!5B ?•5 ,ÕG!5B

Q¸õã < G!5B õã

S*üÛÐ ´

G!5B _ Ruijie(config)# **priority-queue cos-map** *1 0 1*

¸Ì G Q¸

Q¸	£EÄ
show mls qos queueing	-

G ÄAÈ â á à2Ï ë ¸XA' Û Õ,X – D á à È?•5 ¸ÕG!5B

Q¸Z Æ

(Ë	AÈ â
-	-

57.2.13 service-policy

Ú policy map h*ü y · Þ

service-policy {input | output } *policy-map-name*

no service-policy {input | output }

– DAÈ â

– D	£EÄ
policy-map-name	Æ4£ ï Î,X policymap ¸X á +
no	?·L8 policy map ü y · Þ,X h*ü

5 ¸ÕG!5B ´

config-if)#62 0.243licy mTf 778e f 141.service-5.018 0input p.62 0.2420.48 re f 1196.711 Tf 1.677 0.006 Td ( )Tj EM!

57.2.14 wrr-queue bandwidth

A'5B WRR 1k"©,XKó ë G¡!¨ _

wrr-queue bandwidth *weight1 ... weightn*

no wrr-queue bandwidth

– DAÈ â

– D	£EÄ
weight1...weightn	Û n ,X n þEg ÎKó ë,X G¡ È n ž ª 8× È?• 5 ,ÕG!5B
no	6 á5 ,Õ

5 ,ÕG!5B weight1: ...: weightn = 1:...:1

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð ´

G!5B _ `Ruijie(config)# **wrr-queue bandwidth** *1 2 3 4 5 6 7 8*`

,Ì G Q ¸

Q ¸	£EÄ
show mls qos queueing	-

G ÄAÈ â á à2Ï ë ,XA' Û Õ,X – D Ý á à È?•5 ,ÕG!5B Ä

Q ¸ Z Æ

(Ë	AÈ â
-	-

57.3 Ấ ₹ Ƈ

57.3.1 show class-map

/ class map r ',X Y •

show class-map [*class-name*]

– DAÈ â

– D	£EÄ
class-name	class map ,X á +

5¸ÕG!5B / Ý class map

Q¸õã (M õã

S*üÛÐ ´

G!5B _ Ruijie# **show class-map**

¸Ì G Q¸

Q¸	£EÄ
-	-

Q¸Z Æ

(Ë	AÈâ
-	-

57.3.2 show policy-map

/ QoS policy map r ' [Û n class class-name],X Y •

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

– DAÈâ

– D	£EÄ
policy-name	policy name ,X á +
class-name	class map ,X á +

5¸ÕG!5B / Ý policy name

Q¸õã (M õã

S*üÛÐ ´

G!5B _ Ruijie# **show policy-map**

¸Ì G Q¸

Q¸	£EÄ
-	-

G ÄAÈâ ´

Q¸õã (M õã

S*ü Û Ð ´

G!5B _ Ruijie# **show mls qos scheduler**

¸Ì G Q¸

Q¸	£EÄ
-	-

Q¸Z Æ

(Ë	AÈ â
-	-

Voice VLAN Q ¸

/ Voice VLAN ,XG!

5B µ C â ' !

(Š Õ Ä

G ÄAÈ â

show voice vlan

58.1.3 voice vlan cos

< A’5B Voice VLAN AÁMÇ# ,XCoS Ä*ü Ã ¹ S*üA¹ Q ¸,X no EÝNM ÚA¹G!5B 6 á 5 ,Õ Ä

voice vlan cos *cos-value*

no voice vlan cos

	dscp-value	></ Voice VLAN AÁMÇ# ,XDSCP Ä

5 ,ÕG!5B *dscp-value* – D,X5 ,Õ 46 Ä

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð A' ÛEîE› Â Voice VLAN ,XAÁMÇ# ,XCoS â DSCP 9 ¤P¬AÁMÇ# ,X ì 4{ È±A•Eî A±BüG£ Ä

G!5B _ _ 1 ÖG!5BVoice VLAN ,XAÁMÇ# ì 4{ ÈDSCP 40 Ä

```
Ruijie(config)# voice vlan dscp 40
```

,Ì G Q ¸

Q ¸	£EÄ
show voice vlan	/ Voice VLAN ,XG!5B µ C â ' ! (Š Õ Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.4	„ r Q ¸

58.1.5 voice vlan enable

ü y ·G!5B õ ã ß S*ü!8 Q ¸ S6Ñ0Ã ·,X Voice VLAN s6Ñ Ä*ü Ã ¹ S*üA¹ Q ¸,X no EÝ NM GKÁ0Ã ·,XVoice VLAN s6Ñ Ä

voice vlan enable

no voice vlan enable

– DAÈ â

– D	£EÄ
´	´

5 ,ÕG!5B 5 ,Õ ™ ‰ß0Ã ·,X Voice VLAN s6Ñ GKÁ Ä

Q ¸ õ ã y ·G!5B õ ã

S*ü Û Ð EîE›A¹ Q ¸ ' Ô0Ã ·,X Voice VLAN s6Ñ ÈVoice VLAN s6Ñ ¾6Ñ ü(=)Ú0Ã · Þ *ü ÄJä K { • Õ ü Access Port ÃTrunk Port ÃHybrid Port ÃPrivate VLAN · Ã Private VLAN

	#Ë · â Uplink · Þ *ü Voice VLAN s6Ñ Ä
	AÈ â ü < Voice VLAN GKÁ,X ™ ‰ ß Æ AŒ S6Ñ0Ã ·,X Voice VLAN s 6Ñ È á*ó Ä

G!5B _

_ 1 Ö ' Ô0Ã · FastEthernet 0/1 ,X Voice VLAN s6Ñ Ä

```
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# voice vlan enable
```

,Ì G Q ¸

Q ¸	£EÄ
show voice vlan	/ Voice VLAN ,XG!5B µ C â ' ! (Š Õ Ä

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
10.4	„ r Q ¸

58.1.6 voice vlan mac-address

< A’5B Voice VLAN ÃAš ÿ,XAÁMÇ#OUI Ä*ü Ã ¹ S*üA¹ Q ¸,X no EÝNM ôL8A’ Û Voice VLAN

Q ¸ õ ã	(M õ ã
S*ü Û Đ	EîE›!8 Q ¸ È Ã ¹,ß Voice VLAN ,XG!5B µ C â ' !(Š Õ È Ù À S6Ñ Voice VLAN s6Ñ,X 0Ã ·,X ¹ 0 õ ã Ä
G!5B _	_

– DAÈ â

– D	£EÄ
´	´

59 ᶜÉ < Ǔ"Ḥ‿ ṷ ⌊ Ȳ ᶜᶜ ᶜᶜ ᶜᶜ

59.1 ᶜᶜ Ǎ ᶜᶜ

59.1.1 rgos-security compatible

5 ,Õ ™ ‰ ß ÈJä K x 6] < s6Ñ RGOS P • õ ã E , ÈEîE› Q ¸ rgos-security compatible A'5B P • õ ã E , ×V p?UA'5B ä RGOS M2 P • õ ã E , ÈS*ü no Q ¸A'5B Ö

rgos-security compatible

no rgos-security compatible

– DAÈ â	– D	£EÄ
	´	´

5 ,ÕG!5B	5 ,ÕG!5Bß ÈJä K x 6] < s6Ñ RGOS P • õ ã E ,
Q ¸ õ ã	< G!5B õ ã
S*ü Û Ð	⚡ "¼ ã Â P • õ ã E , Q ¸ â È ™NOG¡ x 6 !6Ñ SG!5B*ó
G!5B _	_ 1 ÖG!5B] < s6Ñ M2 RGOS P • õ ã E , Ö Ruijie(config)#**no gos-security compatible**

,Ì G Q ¸	Q ¸	£EÄ
	´	´

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	10.4	„ r Q ¸

60 VRRP ﾈﾞ ﾋﾞ

60.1 ﾋﾞ Ẩ ﾈﾞ ﾋﾞ

60.1.1 vrrp authentication

Q ¸ *ü VRRP D B ÙP`A• s6Ñ È J no 6 ã Ú GKÁE- Ô s6Ñ Ä

vrrp group authentication *string*

no vrrp *group* authentication

– DAÈ â	– D	£EÄ
	group	VRRP 4˜ Ë
	string	*ü b VRRP 4˜P`A•,X +0ú ( á6ÑCYE8 þ +8V ÈE- G ,XP`A• · ¸ â [· ¸)

5 ,ÕG!5B	5 ,Õ ™ ‰ß È2Ï4³ ü y · Þ"u Ý *ü VRRP s6Ñ Ä G “ *ü VRRP s6Ñ È2Ï4³"u Ý5 ,Õ A’5B Ï)P`A• · ¸ Ä
Q ¸ õ ã	y ·G!5B õ ã
S*ü Û Ð	ü à Ô þ VRRP 4˜ ,XA’ Û ™NOA’5B,Ì à,XP`A• · ¸ Ä â [P`A• · ¸ á6Ñ ±A•] < û È W ¾ *ü 9L !6/ ¤/ JíAÃ,X VRRP G!5B Ä
	⚡ "¼ ã — IPv6 VRRP Æ4£ sL8 ZAxA• s6Ñ ÈV p ü IPv6 <. ³CÃ+ < ÞG!5B ZE- 5 Q ¸ È á î*ó Ä
G!5B _	ßM6,X _ $ VRRP 4˜ 1 A’5B ZP`A• · ¸ Ä `vrrp 1 authentication x30dn78k`

,Ì G Q ¸	Q ¸	£EÄ
	Ruijie(config-if)# vrrp *group ip ipaddress* [secondary]	*ü VRRP s6Ñ JA’ 5B<. ³A’ Û,X IP

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â

-	-

60.1.2 vrrp description

Q ¸ VRRP Û n Ô þ £EÄ0ú È J no 6 ã Ú 6 á2Ï4³5 ,ÕA'5B Ä

vrrp *group* description *text*

no vrrp group description

– DAÈ â

– D	£EÄ
group	VRRP 4˜ Ë
text	VRRP 4˜ £EÄ0ú

5 ,ÕG!5B

5 ,Õ ™ ‰ß È2Ï4³ ü y · Þ"u Ý *ü VRRP s6Ñ Ä G " *ü Z VRRP s6Ñ È2Ï4³ 3"u Ý 5 ,ÕA'5B Ï) VRRP 4˜ £EÄ0ú Ä

Q ¸ õ ã

y ·G!5B õ ã

S*ü Û Ð

VRRP 4˜A'5B £EÄ0ú È Ã ¹ " b Ú VRRP 4˜ Ä

G!5B –

ßM6,X _ $ Û â ü ¹ þ5% · E0 Þ,X VRRP 4˜ 1 Building A – Marketing and Administration Ä

```
interface FastEthernet 0/0
ip address 10.0.1.1 255.255.255.0
vrrp 1 ip 10.0.1.20
vrrp 1 description "Building A - Marketing and Administration"
```

,Ì G Q ¸

Q ¸	£EÄ
Ruijie(config-if)# vrrp *group* ip *ipaddress* [secondary]	*ü VRRP s6Ñ JA' 5B<. ³A' Û,X IP

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

60.1.3 vrrp ip

VRRP Q ¸

vrrp *group* priority *level*

no vrrp *group* priority

– DAÈ â

– D	£EÄ
group	VRRP 4˜ Ë
level	VRRP 4˜,X ì 4{

5 ,ÕG!5B

5 ,Õ ™ ‰ß È2Ï4³ ü y · Þ"u Ý *ü VRRP s6Ñ Ä Ô º *ü VRRP s6Ñ ÈVRRP 4˜T¬Ax J ì 4{ 100 Ä

Q ¸ õ ã

y ·G!5B õ ã

S*ü Û Ð

A¹ Q ¸ Ú |A'5B VRRP 4˜,X ì 4{ Ä

G!5B _

ßM6 _ $ A'5B VRRP 4˜ 1 ,X ì 4{ 254 Ä

```
vrrp 1 priority 254
```

,Ì G Q ¸

Q ¸	£EÄ
Ruijie(config-if)# vrrp *group* ip *ipaddress* [secondary]	*ü VRRP s6Ñ JA' 5B<. ³A' Û,X IP
Ruijie(config-if)# vrrp *group* preempt [delay *seconds*]	A'5B VRRP Ø b v 4 õ ã

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

60.1.7 vrrp timers advertise

Q ¸A'5B A' Û ¥EÕ VRRP Eî ,XKÈLh È J no 6 ã Ú 6 á2Ï4³T¬AxA'5B Ä

vrrp *group* timers advertise *interval*

no vrrp *group* timers advertise

– DAÈ â

– D	£EÄ
group	VRRP 4˜ Ë
interval	VRRP Eî ¥EÕKÈLh(¹/¦) !)

A’ Û KÈLh È5à á S*ü7¾ Å A’5B,X VRRP Eî ¥EÕKÈLh 9Au1k Ä Q ¸ Ã ¹ r)„ â Master

ipv6-global-addres	IPv6 <)×) •
ipv6-linklocal-addree	IPv6 JÒCÃ
interval-value	¥EÕ v# y [,X ÊKÈKÈLh Ä) ! /¦ Ä V p áA' n È 2Ï4³5 ,Õ 3 /¦ Ä
timeout-value	¥EÕ v# y [â1 Y h1(,XCY Ê ÊKÈ Ä V pCY Ê ÊKÈ Z È"u Ý h1(È íAx á ÃE' Ä) ! /¦ Ä V p áA' n È2Ï4³5 ,Õ 1 /¦ Ä
priority	>•,¥?š,X y ·(Š Õ ¬ Ê J VRRP ì 4{ ¬,X z Ä V p áA' n È2Ï4³5 ,Õ 10 Ä

5 ,ÕG!5B

5 ,Õ ™ ‰ß È2Ï4³ ü y · Þ"u Ý *ü VRRP s6Ñ Ä G " *ü VRRP s6Ñ È2Ï4³"u Ý5 ,Õ Û n,¥?š,X y · ÃIPv4 ê5Ù IPv6 Ä

Q ¸ õ ã

y ·G!5B õ ã

S*ü Û Ð

Ã ¹ S*ü Q ¸,¥?š Î ·JÒCÃ ÈLÔ?U"¼ ã,X >•,¥?š,X y · ¾ AŒ Ý ÃCÃ+ ,XF Ee y ·(V Routed Port ÈSVI ÈLoopback ÈTunnel 1 1) Ä

V p ,¥?š ÈÍ b IPv4 <. ³CÃ+ < ÈÛ n ,X IPv4 ×Í b IPv6 <. ³CÃ+ < È Û n ,X IPv6 Ä

V p>•C³Cþ,X JÒCÃ È ™NO Û n5%4° y · Ä

G!5B –

_ 1 Ö ü ßM6,X _ $ È VRRP 4˜ 1 Í Routed Port Fa1/1 E¯> ,¥?š Ä V p Fa1/1 JÒCÃ • Ô ÈVRRP 4˜,X ì 4{ £ å 30 × ü Fa1/1 ,XJÒCÃ 6 á â ÈVRRP 4˜ 1 ,X ì 4{ 6 á Ä

```
vrrp 1 track FastEthernet 1/1 30
```

_ 2 Ö ßM6,X _ $ C³Cþ 1000::1 ú Ã E' Ä

```
vrrp 1 track 1000::1
```

_ 3 Ö ßM6,X _ $ C³Cþ5%4° y · VLAN 1 Þ,X FE80::1 ú Ã E' È"¼ ã ™NO Û n5%4° y · Ä

```
vrrp 1 track FE80::1 vlan 1
```

#G!5B Û n VRRP 4˜EîE› BFD C³Cþ Û n,XF• 192.168.1.3

```
Ruijie#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)#interface FastEthernet 0/1
Ruijie(config-if)#no switchport
Ruijie(config-if)#ip address 192.168.1.1 255.255.255.0
Ruijie(config-if)#bfd interval 50 min_rx 50 multiplier 3
Ruijie(config)#interface FastEthernet 0/2
Ruijie(config-if)#no switchport
Ruijie(config-if)#ip address 192.168.201.17 255.255.255.0
```

```
Ruijie(config-if)#vrrp 1 priority 120
Ruijie(config-if)#vrrp 1 ip 192.168.201.1
Ruijie(config-if)#vrrp 1 track bfd FastEthernet 0/1 192.168.1.3 30
Ruijie(config-if)#end
```

,Ì G Q ¸

Q ¸	£EÄ
Ruijie(config-if)# vrrp *group* ip *ipaddress* [secondary]	*ü VRRP s6Ñ JA' 5B<. ³A' Û,X IP
Ruijie(config-if)# vrrp *group* priority level	A'5B VRRP 4˜,X ì 4{

G ÄAÈ â Ý G Ä FÑ Õ Ä

Q ¸ Z Æ

(Ë	AÈ â
RGOS 10.4	vrrp track âM6 Ã ¹C³ IPv6 È RGOS 10.4 (Ô Ÿ Õ Ä

60.2 VRRP Ǘ ↓ ˜I ﻣﻴ Ƈ

60.2.1 debug vrrp

Q ¸ ' Ô VRRP ÎJí ¤/ Ã VRRP _ Ê Ã VRRP y [¹ ž(Š ÕA×A© Ô G È J no 6 ã Ú G KÁA¹ s6Ñ Ä

debug vrrp

no debug vrrp

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B 5 ,Õ ™ ‰ß È2Ï4³"u Ý ' ÔA¹A×A© Ô G Ä

Q ¸ õ ã (M *ü õ ã

S*ü Û Ð ´

G!5B _

ü ßM6,X _ $ È*ü ' Ô Z VRRP A×A© Ô G Ä

```
Ruijie# debug vrrp
Ruijie#
```

address 192.168.1.1
VRRP: Grp 1 Advertisement from 192.168.201.213 has invalid virtual address 192.168.1.1
VRRP: Grp 1 Advertisement from 192.168.201.213 has invalid virtual address 192.168.1.1

,Ì G Q¸

Q¸	£EÄ
-	-

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

60.2.3 debug vrrp events

Q¸' Ô VRRP _ ÊA×A© Ô G È Jno 6 ½ÀÂ t ‘M@tp,€t1CC 10.5 0 0 10.5 142.32 573.8003 Tm (253.9

```
Master Down interval is 9 sec
FastEthernet 0/0 - Group 2
State is Master
Virtual IP address is 192.168.201.2 configured
Virtual MAC address is 0000.5e00.0102
Advertisement interval is 3 sec
Preemption is enabled
min delay is 0 sec
Priority is 120
Master Router is 192.168.201.217 (local), priority is 120
Master Advertisement interval is 3 sec
Master Down interval is 9 sec
_ 2 Ö /   VRRP 4˜,X V ‰
Ruijie# show vrrp brief
Interface   Grp Pri Time  Own Pre State   Master addr     Group addr
FastEthernet 0/0   1   100   -    -   P  Backup  192.168.201.213
192.168.201.1
FastEthernet 0/0   2   120   -    -   P  Master  192.168.201.217
192.168.201.2
```

,Ì G Q ¸

Q ¸	£EÄ
Ruijie(config-if)# vrrp *group ip ipaddress* [secondary]	*ü VRRP s6Ñ JA’ 5B<. ³A’ Û,X IP

G ÄAÈ â

5 ,ÕG!5B ´

Q¸õã (M *ü õã

S*ü Û Ð ´

G!5B _

ßM6,X _$ / Z¹þ5%· E1/0 Þ,X VRRP ™‰

```
Ruijie# show vrrp interface fastethernet 0/0
FastEthernet 0/0 - Group 1
State is Backup
Virtual IP address is 192.168.201.1 configured
Virtual MAC address is 0000.5e00.0101
Advertisement interval is 3 sec
Preemption is enabled
min delay is 0 sec
Priority is 100
Master Router is 192.168.201.213 , pritority is 120
Master Advertisement interval is 3 sec
Master Down interval is 9 sec
FastEthernet 0/0 - Group 2
State is Master
Virtual IP address is 192.168.201.2 configured
Virtual MAC address is 0000.5e00.0102
Advertisement interval is 3 sec
Preemption is enabled
min delay is 0 sec
Priority is 120
Master Router is 192.168.201.217 (local), priority is 120
Master Advertisement interval is 3 sec
Master Down interval is 9 sec
```

,Ì G Q¸

Q¸	£EÄ
Ruijie(config-if)# vrrp*ipttual ss*	*ü VRRP s6Ñ JA’ 5B<. ³A’ Û,X IP

rldp detect-max *num*

no rldp detect-max

– DAÈ â

– D	£EÄ
num	Ô û v# õ D , ª 8× È 2-10

5 ,ÕG!5B 2

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð A¹ Q ¸ ` v# KÈLh4§ Ü S*ü,X È*ü b.B n Ô û v# ÊKÈ Ä

G!5B – ßM6 Ô þG!5B Ô û v# õ D 5 ,X _ $ Ö

```
Ruijie(config)# rldp detect-max 5
```

,Ì G Q ¸

Q ¸	£EÄ
rldp detect-interval	G!5B v# KÈLh

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

61.1.3 rldp enable

A¹ Q ¸ { RLDP ,X < s6Ñ Ô G Ä

rldp enable

no rldp enable

– DAÈ â

– D	£EÄ

5 ,ÕG!5B GKÁ Ä

Q ¸ õ ã < G!5B õ ã Ä

S*ü Û Ð	¾ Ý < RLDP ' Ô È0Ã · RLDP !6ÑE¤> Ä
G!5B _	ßM6 ' Ô,X _ $ Ö `Ruijie(config)# rldp enable`

,Ì G Q ¸

Q ¸	£EÄ
rldp port	G!5B0Ã ·,X RLDP s6Ñ

G ÄAÈ â	´

Q ¸ Z Æ

(Ë	AÈ â
-	-

61.1.4 rldp port

A¹ Q ¸G!5B0Ã ·,X rldp ”# È à Ê Û n ”# 2O _ ` Lp Ø)Ú •"© Ä

rldp port {unidirection-detect | bidir ection-detect | loop-detect } {warning | shutdown-svi | shutdown-port | block }

no rldp port { unidirection-detect | bidir ection-detect | loop-detect }

– DAÈ â

– D	£EÄ
unidirection-detect	) åJÒCÃ ”# 2O _
bidirection-detect	åJÒCÃ ”# 2O _
loop-detect	)ƒCÃ ”# 2O _
warning	A: Ø)Ú
shutdown-svi	shutdown 0Ã · ü svi
shutdown-port	shutdown 0Ã ·
block	GKÁ0Ã ·,X : 4E@ ¥

5 ,ÕG!5B	´5 ,Õ Ä
Q ¸ õ ã	y ·G!5B õ ã Ä
S*ü Û Ð	¾ Ý < RLDP ' Ô,X ™ ‰ ß È0Ã ·,X RLDP ”# !6ÑCK 0*ü Ä
G!5B _	ßM6,X/ _ ü fas 0/1 ÞG!5B Z rldp ”# È Û n ”# 2O _)ƒCÃ ”# È Lp Ø)Ú GKÁ0Ã

· : 4E@ ¥ Ä

5 ,ÕG!5B ´

Q ¸ õ ã (M EXEC G!5B õ ã

S*ü Û Ð ´

G!5B _ ´

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

62 TPP ﻳﺠ ﻟ

62.1 ﻳ Ẩ ﻳﺠ ﻟ

62.1.1 topology guard

ü < G!5B Q ¸ õ ã ß È S*ü topology guard Q ¸ Ô § %L x s6Ñ,X < Ô G Ä S*üA¹ Q ¸,X no EÝNM 9/U!6 § %L x s6Ñ Ä

[no] topology guard

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	§ %L x s6Ñ5 ,Õ ' Ô
Q ¸ õ ã	< G!5B Q ¸ õ ã
S*ü Û Ð	§ %L x s6ÑT¬Ax ' Ô,X ÈE- Ã ¹ È Q,X ± x5%4° È ¹ !5%4° ´ « Ï5àEô ä § % 95 Ä WLÔ?U â Q ¸ cpu topology-limit G! Ü S*ü Ä
G!5B _	ßM6,X _ $ / V) Ô ` GKÁ < § %L x s6Ñ Ö Ruijie(config)# **topology guard** Ruijie(config)# **no topology guard**

,Ì G Q ¸	Q ¸	£EÄ
	tp-guard port enable	S6ÑA¹0Ã ·,X § %L x s6Ñ Ä
	cpu topology-limit	A’5B CPU ý*ü)[NXA: Ä

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

S6ÑA¹0Ã ·,X § %L x s6Ñ È S*üA¹ Q ¸,X no EÝNM 9/U!6A¹0Ã ·,X § %L x s6Ñ Ä

[no] tp-guard port enable

– DAÈ â

– D	£EÄ
-	-

Q¸õã (M Q¸õã

S*üÛÐ A¹ Q¸*ü b ¹,ß ' !,X tpp G!5B ž0Ã · ”# ™ ‰ Ä

G!5B _ ßM6,X _ $ / V) / § %L x s6Ñ µ C Ö

```
Ruijie# show tpp
```

,Ì G Q¸

Q¸	£EÄ
topology guard	S6Ñ < § %L x s6Ñ

G ÄAÈ â ´

Q¸Z Æ

(Ë	AÈ â
-	-

63 - ﺟ ﻟ

63.1 ﻳ Ấ ﺟ ﻟ

63.1.1 cd

A’5B [Ê2Ï4³,X ' !CÃ X Ä

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

– DAÈ â

– D	£EÄ
filesystem	Û n,X [Ê2Ï4³ ÄA¹ – D ™NO ú Ö
directory	Û n,X,Â)

5 ,ÕG!5B

5 ,Õ ' ! ,Â) ü ü flash ,X ,Â) ß

Q ¸ õ ã

(M õ ã

S*ü Û Ð

cd Q ¸ Ú ¬ ' ! [Ê2Ï4³,X ' ! Ä [Ê2Ï4³ J ª Q ¸ È8¹ S*ü,Ì ÍCÃ X Ä GCÃ X á
¹ / Ô Ÿ Å È í å Í b2Ï4³,X ' !CÃ X Ä?U ¹,ß2Ï4³ ' !CÃ X È S*ü pwd Q ¸ Ä

G!5B _

_ 1 Ö Ú ' !CÃ XA’5B usb0 ,X ,Â)

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

_ 2 Ö Ú ' !CÃ XA’5B sd 5,X ,Â)

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

,Ì G Q ¸

Q ¸	£EÄ
pwd	/ ' ! [ÊCÃ X

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
´	

63.1.2 copy

¢$d ,Â,X ËBñ Ï ã [Ê Ä

copy *source-url destination-url*

– DAÈ â

– D	£EÄ
source-url	>• ËBñ,X$d [Ê URL Ä B [Ê Þ ôE¬ ßEQ \| 0 ÈE- þ$d Ã ¹ ê5ÙE°/ß,X Ä
destination-url	,Â,X [Ê URL Ä B [Ê Þ ôE¬ ßEQ | 0 ÈE- þ ,Â,X Ã ¹ ê5ÙE°/ß,X Ä

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã

S*ü Û Ð

```
Ruijie#copy tftp://192.168.201.54/rgos.bin flash:/
_ 2 Ö Þ ô [ Ê     tftp á u <
Ruijie#copy flash:/rgos.bin tftp://192.168.201.54/rgos.bin
_ 3 Ö S*ü xmodem ßEQ [ Ê
```

	(Ë	AÈ â
Q ¸ Z Æ	´	

63.1.5 mkdir

ï Î,Â)

mkdir *directory*

	– D	£EÄ

´	

63.1.6 rename

/Ï | Û n,X [Ê ê5Ù È á [Ê

rename *url1 url2*

– D	£EÄ
url1	>•/Ï |,X$d [Ê URL Ä
url2	,Â,X [Ê ê5Ù,Â),X URL

– DAÈ â

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã

S*ü Û Ð EîE›E- þ Q ¸ È Ã ¹ ü à Ô þ,Â) ß Ú [Ê È á È ê5Ù S*üE- þ Q ¸ Ú [Ê ü á à,X , | ŸBü E¯> /Ï | Ä E- 5 Q ¸ ™ ™ Õ ,X [Ê/Ï | Ä á Õ S*ü #A, Ú [Ê ô Eæ á u < Þ Ä Õ,X !4Ô Ý Öusb0/1, flash, slave Ä

G!5B _

_ 1 Ö Ú log.txt /Ï | Þ Ô4{,Â), á config.txt Ö

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

_ 2 Ö Ú ¢ S,X log.txt /Ï | usb0 A' Û Ö

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

_ 3 Ö Ú '!,Â) [Ê log.txt È á log.txt.bak

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

_ 4 Ö Ú sd 5 Þ,X [Ê rgos.bin /Ï | flash Þ

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

_ 5 Ö Ú U ,¬,X [Ê test.txt /Ï | sd Þ

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

Q ¸	£EÄ
del	ôL8 [Ê
copy	[Ê ËBñ

,Ì G Q ¸

G ÄAÈ â ´

Q ¸ õ ã ´

S*ü Û Ð EîE› / [Ê2Ï4³ µ C,X Q ¸ È Ã ¹ Z?· ' !A’ Û Þ Ý Õ,X [Ê2Ï4³ È ¹ žE- o [Ê2Ï4³ Þ,X Ã*ü0NKÈ ™ ‰ Ä

G!5B _ _ 1 Ö / [Ê2Ï4³ µ C

Ruijie#show file systems

¸Ì G Q ¸

Q ¸	£EÄ
´	

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
´	

64 Ậ Ǔ ᵻ

64.1 CPU ᴗ ᵽ ω ♠ ᵹ ᴄ

64.1.1 cpu-log

,Ì G Q ¸	Q ¸	£EÄ
	-	-

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

64.1.2 show cpu

?U ¹,ß2Ï4³ CPU ý*ü)[µ C ÈAË ;> (M *ü õ ã Q ¸ show cpu Ä

show cpu

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	´

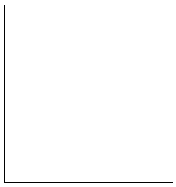
Q ¸ õ ã	(M *ü õ ã Ä

S*ü Û Ð	S*üA¹ Q ¸ Ã ¹ ¹,ß2Ï4³,X CPU ý*ü ™ ‰ È Ù À ÔE¥5 /¦Js Y Ã ÔE¥ 1 ÚJs Y Ã ÔE¥5 ÚJs Y2Ï4³,X CPU ý*ü)[È ¹ ž!£ þ Ï u Ú ÿ ü ÔE¥ 5 /¦Js Y Ã ÔE¥ 1 ÚJs Y Ã ÔE¥5 ÚJs Y,X CPU ý*ü)[1 µ C Ä

G!5B _	ßM6,X/ _ ;> show cpu ,X Ô þE¤> 4§ p Ä

```
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
```

```
 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
112    75%    80%    90%     idle
ü ÞM6,X ë><   È Ô  ,X    3 >  Ú ÿ></'¦sÀ= Ô¤ZP   #=5Â ð€ Óâ/¦¤§0 1ÍJE¥ ñ #•1Â ð€ Óâ •¤§0 1ÍJE¥ ñ
```



Q ¸ ë><,X ! 2 > !¨EW(M!^ ÈÚ ÿ></ Ý LISR ,X CPU ý*ü)[` Ý HISR ,X CPU ý *ü)[È ¢1 3 > Ô Ÿ È ></ Ï u,X CPU ý*ü)[Z Ä Ô â Ô> idle 4“/ß,X CPU ý*ü)[ÈC³ Windows ß,X System Idle Process Ô È></ 2Ï4³,X0NKÆ(Š Õ Ä ü ÞM6,X _ $ Èidle 4“/ß 5 /¦ Y,X CPU ý*ü)[75% ÈAÈ â ' ! CPU Ý 75% Ø b0NKÆ(Š Õ Äg 2.353 2 687

Í b þ Ô ,XCÃ+ #A, È Û n ì EÔ Î,XCÃ+ #A, È J á6Ñ }2Ï4³9‹ kC‡ ó,X Y , C $d Ä

AÈ â Û n ZA¹ 1*+9 ™ ™ Ô n/ß z Þ ± x2Ï4³ Y , áC‡ Ê,XG¡?U5%4° î u È8¹ Y ,E¯ Ô!9#\5ë È ÝCÃ+ #A,FÑ ÚEÔ Î J 0!6E¤> ÄCÃ+ # A,EÔ Î â î ü ø ÚJs â ñA©G¡ „ | Ä

G!5B _

_ 1 Ö ¹ ß _ Z Ú BGP A’ n ì EÔ Î,XCÃ+ #A, Ä

```
Ruijie(config)# memory-lack exit-policy bgp
```

,Ì G Q ¸

Q ¸	£EÄ
show memory	/ Y , µ C

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	
10.3(4b3)	„ r Q ¸

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

ÞM6 ë>< ,X µ C Ù ÿ V ß ´ þF¼ Ú Ö

1. Ã*ü Y ,NI þ D È Ô þ0NKÆ Y ,NI 4k û ã,X Y ,0NKÈ Ä
2. Y ," 4“ È ß>< Ø Y ," 4“,X ã Ö

" 4“	AÈ â
min	Y , U0Ã áC‡ È ™ ó4È Õ Î ,X Y E¤> È E'!8" 4“ È Ý Þ h*ü õ + Ú á ÃE¤> Ä
lower	Y , ùG¡ áC‡ È E'!8" 4“ È Ú Ý Ô þ Þ CÃ + #A,7¾ |EÔ Î È JGž Y , ÄEÔ Î #A,,X { –,ß memory-lack exit-policy Q ¸ Ä
low	Y , áC‡ È E'!8" 4“ È Þ CÃ+ #A, ÚE¯ 9 OVERFLOW (Š Õ È!8(Š Õ ß ÈCÃ+ A' Û Ú á a : 4 „,XCÃ+ Ä Y , áC‡ Ê È2Ï4³ { Ä á AŒ Q ¸ ;> Ä
high	Y , >© È!8" 4“ ¹ Þ È></ 2Ï4³ Y , >© È CÃ+ A' Û ØCÃ+ #A, Ú ñA© ¢OVERFLOW (Š Õ 6 á !7 (Š Õ Ä

3. 2Ï4³ Y , D È ' ! Ã*ü Y , D È ¹ ž Y , S*ü)[Ä

,Ì G Q ¸

Q ¸	£EÄ
-	-

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

64.2.3 show memory protocols

A¹ Q ¸ / ØCÃ+ #A, 4*ü Y , ™ ‰ Ä

show memory protocols

– DAÈ â

– D	£EÄ
´	

Q ¸ õ ã

;> õ ã

S*ü Û Ð

S*üA¹ Q ¸ ¹,ß ØCÃ+ #A, 4*ü Y , ™ ‰ Ä

AÈ â á à,XA' Û ž(Õ,XCÃ+ #A, á à È ?U,XCÃ+ #A, Ý BGP,OSPF,RIP,LDP,PIM,ISIS 1 Ä

G!5B _

_ 1 Ö ß _ show memory protocols Eg Î Y •

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

,Ì G Q ¸

Q ¸	£EÄ
show memory	/ Y , S*ü µ C

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
10.3(4b3)	„ r Q ¸

65

65.1

65.1.1 clear logging

?U#ÙL8 Y ,4ç † ,X ¹ « µ C ÈAË ü(M *ü õ ã ß ;> A¹ Q ¸ Ä

clear logging

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	´

Q ¸ õ ã	(M *ü õ ã

S*ü Û Ð	A¹ Q ¸ ¾ #ÙL8 Y ,4ç † ¹ « y [Y • Ä á6Ñ#ÙL8 ¹ « y [,X4³Au µ C Ä

G!5B _	ßM6/ _ #ÙL8 Y ,4ç † ¹ « y [Y • Ä Ruijie# **clear logging**

,Ì G Q ¸	Q ¸	£EÄ
	logging on	' Ô ¹ « Ô G
	show logging	¹,ß4ç † ¹ « y [
	logging buffered	Ú ¹ « µ CA„) Y ,4ç †

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

65.1.2 more flash

?U ¹,ßA„) ü =) FLASH ¹ « [Ê Y • ÈAË ü(M *ü õ ã ß ;> A¹ Q ¸ Ö

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

65.1.4 logging console

?UA’5B AŒ ü { Ä Þ / ,X ¹ « µ C4{ ÿ ÈAË ü < G!5B õ ã ß ;> A¹ Q ¸ ÄA¹ Q ¸,X no 6 ã/U!6 ü { Ä Þ ' D ¹ « y [Ä

logging console *level*

no logging console

– DAÈ â

– D	£EÄ
level	¹ « y [,X ùG¡ û È8× È ¢ 0 7 Ä Ã ¹ S*ü4{ ÿ á /Ä È 3 Ã ¹,È y S*ü D + Ä G b ¹ « µ C ùG¡ û,XAº 4šAÈ â ÈAË –5×>◁ Ä

5 ,ÕG!5B Debugging (7)

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð A’5B Ô þ ¹ « ùG¡ û ¹ â È ü D Þ1 b ê " bA¹ ùG¡ û4{ ÿ,X ¹ « y [Ú>• / ü { Ä Þ Ä

EîE› show logging Q ¸ Ã ¹ ¹,ß ¹ «A’5B,X,Ì G – D `4³Au Ä

G!5B – ßM6/ _ A’5B AŒ ü { Ä / ,X ¹ « µ C4{ ÿ 6 Ö

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

2Ï4³ ¹ « Q ¸

– D	£EÄ
facility-type	Syslog A’ Û È K ',XA’5B AË –5× S*ü Û + Ä

5 ,ÕG!5B Local7(23)

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð

ß>< Ä><2 Å Syslog Ã6Ñ,XA’ Û Ö

Numerical Code	Facility
0	kernel messages
1	user-level messages
2	mail system
3	system daemons
4	security/authorization messages
5	messages generated internally by syslogd
6	line printer subsystem
7	network news subsystem
8	UUCP subsystem
9	clock daemon
10	security/authorization messages
11	FTP daemon
12	NTP subsystem
13	log audit
14	log alert
15	clock daemon
16	local use 0 (local0)

G!5B _

ßM6,XA'5BSyslog A' Û kernel Ö

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

¸Ì G Q ¸

Q ¸	£EÄ
logging console	A'5B AŒü { Ä Þ / ,X ¹ « µ C 4{ ÿ

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

65.1.7 logging file flash

?U Ú ¹ « µ C ± , ü =) FLASH ÈAË ü < G!5B õ ã ß ;> A¹ Q ¸ Ä ª#\ ü =) FLASH A„) ¹ « µ C È S*üA¹ Q ¸,X no 6 ã Ä

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

no logging file

– DAÈ â

– D	£EÄ
Filename	¹ « [Ê á Ä á ú [Ê2O _ È Î n txt 2O _ Ä
max-file-size	¹ « [Ê,X Ô û Ä ¢ 128K 6M bytes È5 ,Õ û ã 128K Ä
level	AŒ>•A„) ¹ « [Ê ,X ¹ « µ C4{ ÿ Ä Ã ¹ S*ü 4{ ÿ á/Ä È 3 Ã ¹,È y S*ü D + Ä5 ,Õ m =) FLASH ,X ¹ «4{ ÿ 6 ÄG b ¹ « µ C,X4{ ÿ ÈAË –5×><1 Ä

5 ,ÕG!5B

á6Ñ Ú ¹ « µ CA„) =) FLASH Ä

Q ¸ õ ã

< G!5B õ ã

S*ü Û Đ

V p"u Ý Syslog Server È ê5Ù Î b Ø/¡] <5×<% á à ï ü5%4° ôEg ¹ « µ C È Ã ¹EÝ ½ Ú ¹ « µ C,È y ± , ü =) FLASH Ä

¹ « [Ê â4Ô Î n txt ÈG!5B [Ê â4Ô á Ú>• ¦4± Ä

Ú ¹ « µ CA„) =) FLASH È ™NO ·g— xÑd4 @) Á2' ú»•'ðÃFpÒÅ€@ @ µ Å)

G!5B _

ßM6/ _ Ú ¹ « µ CA„) ü =) FLASH È[Ê á trace.txt È[Ê û ã 64K, ¹ « µ C4{ ÿ 6 Ä

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

,Ì G Q ¸

Q ¸	£EÄ
logging on	' Ô ¹ « Ô G
show logging	¹,ß4ç † ¹ « y [È ¹ ž,Ì G ¹ «G!5B – D
more flash	¹,ß =) FLASH ¹ « µ C

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

65.1.8 logging monitor

?UA’5B AŒ üVTY 0k · Ätelnet 0k · ÃSSH 0k ·1 Å Þ / ,X ¹ « µ C4{ ÿ ÈAË ü < G! 5B õ ã ß ;> A¹ Q ¸ ÄA¹ Q ¸,X no 6 ã/U!6 ü VTY 0k · Þ ' D ¹ « y [Ä

logging monitor *level*

no logging monitor

– DAÈ â

– D	£EÄ
level	¹ « y [,X ùG¡ û Ä Ã ¹ S*ü4{ ÿ á/Ä È 3 Ã ¹,È y S*ü D + Ä G b ¹ « µ C ùG¡ û,XAº4šAÈ â ÈAË –5× ><1 Ä

5 ,ÕG!5B Debugging (7)

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð ?U ü VTY 0k · Þ ' D ¹ « µ C ÈOj ;> (M *ü Q ¸ terminal monitor AŒ ü ' ! VTY 0k · ' D ¹ « µ C Ä AŒ>• / ,X ¹ « µ C4{ ÿ í+ logging monitor n Ä Logging monitor n ,X ¹ « µ C4{ ÿ J\ Í Ý VTY 0k · Ä

G!5B – ßM6/ _ G!5B AŒ üVTY 0k · Þ ' D,X ¹ « µ C4{ ÿ 6 Ö

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

,Ì G Q ¸	Q ¸	£EÄ
	logging on	' Ô ¹ « Ô G
	show logging	¹,ß4ç † ¹ « y [È ¹ ž,Ì G ¹ «G!5B – D

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

65.1.9 logging on

?U AŒ ¹ « µ C ü á àA' Û Þ,X / ÈAË S*üA¹ < Q ¸ Ä?U/U!6 ¹ « µ C,X / ÈAË S*ü A¹ Q ¸,X no 6 ã Ä

logging on

no logging on

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B	AŒ ¹ « µ C ü á àA' Û Þ / Ä

Q ¸ õ ã	< G!5B õ ã

S*ü Û Ð	¹ « µ C á ™ Ã ¹ / ü Console 0k · Ã VTY 0k · Þ È 3 Ã ¹A„) ü á à,XA' Û Þ Ö Y ,4ç † Ã =) FLASH ÃSyslog Server ÄA¹ Q ¸ ¹ « Ô G È V p GKÁ ¹ « Ô G È Ý ¹ « µ C Ú á>• / êA„) ÈL8 Z ùG¡ û4{ ÿ û b 1 ,X Log Ä

G!5B –	ßM6,X/ _ üA' Û Þ GKÁ ¹ « Ô G Ö `Ruijie(config)#` **`no logging on`**

,Ì G Q ¸	Q ¸	£EÄ
	logging buffered	Ú ¹ « µ CA„) Y ,4ç †
	logging	Ú ¹ « µ C ¥4- Syslog Server
	logging file flash:	Ú ¹ « µ CA„) ü =) FLASH Þ

logging console	A’5B AŒü { Ä Þ / ,X ¹ « µ C 4{ ÿ
logging monitor	A’5B AŒü VTY 0k · (V telnet 0k ·) Þ / ,X ¹ « µ C4{ ÿ
logging trap	A’5B AŒ¥EÕ4-Syslog Server ,X ¹ « µ C4{ ÿ

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

65.1.10 logging rate-limit

?U ' Ô ¹ «Eó)[L$ s6Ñ ÈL$!£/¦ Y AŒEg Î,X ¹ « µ C ÈAË ü < G!5B õ ã ß ;> A¹ Q ¸ Ä?U GKÁ ¹ «Eó)[L$ s6Ñ ÈAË S*üA¹ Q ¸,X no 6 ã Ä

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

no logging rate-limit

– DAÈ â

– D	£EÄ
number	!£/¦Js Y AŒ Ø)Ú,X ¹ « µ C È8× È 1—10000 ×
all	A’5B Í Ý,X ¹ « µ CE¯> Eó)[{ È Ù À 0—7 4{ Ý ¹ « µ C ×
console	A’5B!£/¦Js Y AŒ ü { Ä Þ / ,X ¹ « µ C D ×
except	ã b1 b!8 ùG¡ û4{ ÿ,X ¹ « µ C È áE¯> Eó)[{ ×T¬Ax4{ ÿ error(3) È Í ã b1 b error 4{ ÿ,X ¹ « µ C áE¯> Eó)[{ ×
severity	¹ « µ C ùG¡ û4{ ÿ È4{ ÿC^ ã È ùG¡ ûC^P¬ È8× È 0—7

5 ,ÕG!5B 5 ,Õ ™ ‰ß È áE¯> Eó)[{ Ä

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð !8 Q ¸ { 2Ï4³,X ¹ « µ CEg Î Ä S*ü!8 Q ¸ È Ã ¹L !6 ûG£,X ¹ « µ CEg Î Ä

G!5B – A’5B!£/¦ Js Y AŒ Ø)Ú,X Ý ¹ « µ C Ä Ù À debug Å 10 5 È Í warning ž È ù G¡4{ ÿ áE¯> { Ö

	Q ¸	£EÄ
,Ì G Q ¸	logging on	' Ô ¹ « Ô G
	show logging	¹,ß4ç † ¹ « y [È ¹ ž,Ì G ¹ «G!5B – D A’5B AŒ¥EÕ4-syslog server ,X ¹ « µ C4{ ÿ

65.1.14 logging synchronous

?U ' Ô*ü Eg 9 â ¹ « µ CEg Î à!9 s6Ñ ÈL !6*ü !7 üEg 9 +0ú Ê>• ' • ÈAË ü4“CÃG!5B
õ ã ß ;> A¹ Q ¸ Ä?U GKÁ*ü Eg 9 â ¹ « µ CEg Î à!9 s6Ñ ÈAË S*üA¹ Q ¸,X

?UA’5B AŒ ¥EÕ4-Syslog Server ‚X ¹ « µ C4{ ÿ ÈAË ü < G!5B õ ã ß ;> A¹ Q ¸ ÄA¹ Q ¸‚X no 6 ã/U!6 Ú ¹ « y [¥EÕ4- Syslog Server Ä

logging trap *level*

no logging trap

– D	£EÄ
level	¹ « y [‚X ùG¡ û Ä Ã ¹ S*ü4{ ÿ á/Ä È 3 Ã ¹‚È y S*ü D + Ä G b ¹ « µ C ùG¡ û‚XAº4šAÈ â ÈAË –5× ><1 Ä

– DAÈ â

5 ‚ÕG!5B Informational(6)

Q ¸ õ ã < G!5B õ ã

S*ü Û Ð ?UÚ ¹ « µ C ¥EÕ4- Syslog Server ÈOj ?U S*ü < G!5B Q ¸ logging G!5B Syslog Server Ä' â È S*ü logging trap Û n ¥EÕ4- ¹ « µ C‚X ùG¡ û4{ ÿ Ä EîE› show logging Q ¸ Ã ¹ ¹‚ß ¹ «A’5B‚X‚Ì G – D `4³Au Ä

G!5B _ ßM6‚X _ $G!5B Ú4{ ÿ 6 ‚XìæhE8-ÜÂ1i ÿ 202.10 Tc1h 53trap5B og

no service sequence-numbers

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B

¹ « µ C á ú c Ë Ä

Q ¸ õ ã

< G!5B õ ã

S*ü Û Ð

L8 Z ü ¹ « µ C t Þ ÊKÈ µ C ¹ ê ÈE¬ Ã ¹ ü ¹ « µ C t Þ c Ë È c Ë ¢ 1 Ô Ÿ Ä t Þ c Ë ¹ â È Ã ¹M2 #Ù . -¹F' ¹ « µ C Ý"u Ý ö È ¹ ž ¹ « {*ó,X âNN c Ä

G!5B _

ßM6/ _ G!5B ü ¹ « µ C t Þ c Ë Ö

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

,Ì G Q ¸

Q ¸	£EÄ
logging on	' Ô ¹ « Ô G
service timestamps	*ü ¹ « µ C ,X ÊKÈ

G ÄAÈ â

´

Q ¸ Z Æ

(Ë	AÈ â
-	-

65.1.17 service sysname

?U ü ¹ « µ C t Þ2Ï4³ á ÈAË ü < G!5B õ ã ß ;> A¹ Q ¸ ÄA¹ Q ¸,X no 6 ã ª#\ ü ¹ « µ C ,X2Ï4³ á Ä

service sysname

no service sysname

– DAÈ â

– D	£EÄ
-	-

S*ü Û Ð

EîE›!8 Q ¸ È Ã ¹ BLÔ?U È ‡ n ü ¹ « µ C ú#Ï t2Ï4³ á Ä

G!5B _

ßM6/ _ G!5B ü ¹ « µ C t Þ2Ï4³ á Ö

```
Mar 22 15:28:02 %SYS-5-CONFIG: Configured from console by console
Ruijie# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# service sysname
Ruijie(config)# end
Mar 22 15:35:57 S3250 %SYS-5-CONFIG: Configured from console by
console
```

,Ì G Q ¸

Q ¸	£EÄ
show logging	/ ¹ « õ +,X Î G!5B µ C â ¹ « 4ç † ,X ¹ « µ C

G ÄAÈ â

´

Q ¸ Z Æ

	AÈ â
-	-

65.1.18 service timestamps

10.sage-type ìFY€ì.ÌãC”žÄe˜ À<ÓWÚçNÞÀ6²ÍÎ49lìFY€ì2Í ìÞÎÌÓc,,”9lìFY€ì [Qd0D êìFY€ k,×bæiCÜ‘“@

5 ,ÕG!5B	5 ,Õ ™ ‰ß È ü VTY 0k · Þ á AŒ / ¹ « µ C Ä
Q ¸ õ ã	(M *ü õ ã
S*ü Û Ð	Q ¸ ¾ A’5B ' ! VTY

,Ì G Q ¸

Q ¸	£EÄ
logging on	' Ô ¹ « Ô G
clear logging	#ÙL8 ¹ «4ç † ,X ¹ « y [

G ÄAÈ â ´

Q ¸ Z Æ

(Ë	AÈ â
-	-

65.2.2 show logging count

?U ¹,ß2Ï4³ Ø õ + ¹ « µ C {*ó,X õ D È ¹ ž Ô â {*ó,X ÊKÈ1 4³Au µ C ÈAË ü(M õ ã ß ;> A¹ Q ¸ Ä

show logging count

– DAÈ â

– D	£EÄ
-	-

5 ,ÕG!5B ´

Q ¸ õ ã (M õ ã

S*ü Û Ð Z S*ü ¹ « y [4³Au s6Ñ ÈLÔ?U ü < G!5B õ ã ß È ;> logging count Q ¸ Ä show logging count Q ¸ È Ã ¹ / ¤ 5 ¹ « µ C È {*ó,X õ D È Ô â Ô õ Î)„,X ÊKÈ Ä EîE› show logging Q ¸ È Ã ¹,ß ¹ « µ C4³Au s6Ñ ú ' Ô Ä

G!5B _ ßM6/ _ ;> show logging count ,X4§ p Ö

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

,Ì G Q ¸

Q ¸	£EÄ
logging count	' Ô ¹ «4³Au s6Ñ Ô G
show logging	/ ¹ « õ +,X Î G!5B µ C â ¹ « 4ç † ,X ¹ « µ C

66 USB ﻣﻴ ﻟ

66.1 ﻳ Ã ﻣﻴ ﻟ

!8 Ø Ÿ4¡,X ü /ß c,X CLI)ƒ W ßEîE› Q ¸E¯> ¹A¶ ` ôL8 USB A’ Û Ä

66.1.1 show usb

¹,ß2Ï4³ Æ ¦ 9,X USB A’ Û µ C Ä

show usb

– DAÈ â	– D	£EÄ
	-	-

5 ,ÕG!5B ´

Q ¸ õ ã (M *ü õ ã

S*ü Û Ð V p Ý USB A’ Û È í / A’ Û µ C È ú í ´Eg Î Ä

G!5B _

ßM6 / USB ,X µ C Ö

```
Ruijie# show usb
```

Device: Mass Storage:
ID: 0
URL prefix: usb0
Disk Partitions:
usb0(type:FAT32)

Size : 131,072,000B(125MB)
Available size Ö 1,260,020B Ä1.2MB Å

¹ Þ µ C È Mass Storage Device A’ Û,X á/Ä Ä

+!‰	AÈ â
URL	></ A¹ U ,¬ Ã ¹ S*ü â ,X !4ÔA“KÂ U ,¬ Ä
Size	></ U ,¬ Þ ÃA“KÂ,X0NKÈ Ä

Available size ></ U ,¬ Þ,X = -0NKÈ Ä

	-	-

G ÄAÈ â ´

Q¸Z Æ	(Ë	AÈ â
	10.4(1)	Q¸ r t Í b SD 5,X ¡ 0 Õ
	10.4(2b4)	Ú SD 5,X ¡ 0 Q¸ ¢ usb Q¸ (À0Ÿ Î 9

67 ŋ v Ậ Ǚ ﺟ ﺣ

67.1 ﺑ Ẩ ﺟ ﺣ

67.1.1 device-priority

device-priority [*member*] *priority*

– DAÈ â	– D	£EÄ
	member *member*	Û n ä , ID ÄÃ ¹,Õ+9 È V p,Õ+9 í Í member 1 E¯ > G!5B Ä
	description	ä ,,X £ EÄ0ú È Ô î Õ +0úKS z 31 Ä

5 ,ÕG!5B	´
Q ¸ õ ã	< G!5B õ ã Ä
S*ü Û Ð	EîE› Q ¸ 9A'5B ¤ þ ä ,,X ÿ á ÈA'5B âLÔ?U ;> write ± , !6Ñ*ó Ä
G!5B _	Û n ä , A' Û 2 ,X ÿ á red-giant Ruijie(config)# d**evice-description member** *2* **red-giant**

,Ì G Q ¸	Q ¸	£EÄ
	show member	/ Ú ´ ä ,,XAº4š µ C Ä

G ÄAÈ â	´

Q ¸ Z Æ	(Ë	AÈ â
	-	-

67.2 Ã ¯ Ò

67.2.1 show member

show member [*member*]

– DAÈ â	– D	£EÄ
	member	Û n ä , ID È V p Ñ+9 í / Ý ä , Ä

5 ,ÕG!5B	´
Q ¸ õ ã	(M *ü õ ã
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Ruijie# show member
Member  Mac Address    Priority  Software Version
HardwareVersion  Description
------ ---------  -------  ---------- ---------   --------
1  00d0.f810.3323  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
2  00d0.f822.33aa  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
3  00d0.f822.33ae  1  RGOS 10.1.00(2),Rel ease(12889) 1.0  SWITCH
4  00d0.f822.33b0  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
5  00d0.f822.33b2  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
6  00d0.f824.23b4  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
7  00d0.f833.44b4  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
8  00d0.f855.33ae  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
```

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G!5B _	_ 1 Ö ßM6 _ $ / N¢ ,¬(µ C Ö Ruijie# show version fans Fan information: Type: M7806-FAN I Item number: 9 Hardware version : 1.00 Software version : 1.00

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_ 1 Ö ßM6 _ $ / N¢ ¹0(Š Õ Ö
Ruijie# show fans
Device : M7806-FAN I Temperature:30c
         Item     State    speed(0-4)
       -------   --------  ---------------
          1       stop        --
          2       error       --
          3       work         3
          4       work         5
          5       work         1
```

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Temperature	N¢ ,¬#ý z
Item	Y5BN¢ 4ê Ë
State	Y5BN¢ ¹0(Š Õ stop ÖN¢ 0E@ error ÖN¢ ¹0 Ö work ÖN¢ !7 ¹0 N¢ E@E0-4

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