Q ¸ `

RG-S3760E 2Ï ë x 6

RGOS 10.4(3b19)

(Ä â

Jä K5%4°©2000-2012

Jä K5%4°(Ý È J ±+- Í ` ž Ä â,X Ô Û ý Ä

þ k Jä K5%4°,X :M6AŒ Ã Ë) Ž á k ¹ Ï) • ã ê 6 ã Í ` Y,X Ï)F¼ ÚE¯>
á Ã ,) Ã Û Ñ Ã Â Ã ô • Ã5ïA¥ ä J ªAÁ?Ô Ã Ú J <F¼ êF¼ Ú*ü b î*üEè Ä

Ã Ã Ã

Ã Ã Ã Ã

RGNOS® Ã Ã Ã

Ã FÑ Jä K5%4°,X"¼ ` Û È á k Ó f Ä

!B÷ Ä â

` Y • q B)„ Ý µ C 0 È+ b { •(4{ ê J ª s ´ È J Y • Ý Ã6Ñ ¬ È ÄJä
K5%4° ±+- ü"u Ý Ï)Eî-¹ ê5Ù ¤/ ,X ™ ‰ ß Í ` Y •E¯> Â ,X ý Ä

` ™ 0  S*ü Û Ð ÈJä K5%4° ü4ê m  ` Ê Æ o ±A• J Y • š.B ÃM4 È J á
.B ± ` Y • ` <"u ÝJíAÃ êF+$ã È ` ,X Ý µ C 3 á X ä Ï) â/ ê k/ ,X ™
± Ä

T Õ

Jä K5%4° l •5%0- Öhttp://www.ruijie.com.cn/ Ä

| Ã ¹ ü l5% 9‹ k Ô „,X { • T C m Ã{ • Lp s ´ žKÂNl Ú d Ã{ •,X h
*ü?· ‡ • ÃEC Ê 4{C m1 1 Ä

Jä K5%4° ü4“ v á Öhttp://webchat.ruijie.com.cn Ä

| Ã ¹ ü ¹ 0 ¹ ½8:30 7Ç .6 &• ÈEîE› ü4“ v á 9‹ k µ C |A¶ ÃE°/ßA×A© fLp Ã
EC Ê4È x1 T Õ Ä ´LÔ ßEQ v 0Ã È Ã ¹ G Ê þ Ò Ã ¥L Ê È • “ ¿ K Ä

Jä K5%4°E°/ß T Õ — Öhttp://www.ruijie.com.cn/service.aspx Ä

Jä K5%4°E°/ß T Õ — Ã ¹ Ý,X v ¤ o LÔ?U,X T } `?· ‡ •
Ä Í b v F ,X { •,X]>™ ÃEC Ê,XG!5B ¹ ž J W,X5%4° û6Ñ,XKÂNl È v
á u —FÑ Ú ¤ oE™Eó,X T Õ Ä

7 h24 ã Ê T á u&Á4“ Ö4008-111-000

Jä K5%4° T AŽ / Ö http://support.ruijie.com.cn

Jä K5%4° T Õ â ¡O\ µ1… Öservice@ruijie.com.cn

,Ì GC m

` á/Ä	AÈ â

` Ÿ4¡ Z { • ü s6Ñ `(=)Ú Þ,X @ lÚ/ Q@$0DT3‰ž B ÿPÑ,XK+ 4!0Ã yš@{vô]> Ì€
{ •]>™ `

5XLMLHV"
VKRZWDUWFKDWVWDUWWHUPLQDOVHUYLFH

[illegible] ><"ip address" È
[illegible]

5XLMLHFRQJLILD"
$%&',3DGGUHVV
GKFS,3$GGUHVVYLD'+&3
5XLMLHFRQJLILSDGGUHVV

EGÊ **ip address** [illegible]
[illegible]OHEg9[illegible]
S*ü **show aliases** [illegible]

Ï5B_Ð [illegible]'5B<G5B[illegible]def-route" ><TAxCÃA'5B"ip route 0.0.0.0 0.0.0.0 192.168.1.1"Ö

5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJDOLDVFRQJGHIURXWHLSURXWH
5XLMLHFRQJGHIURXWH"
GHIURXWH LSURXWH
5XLMLHFRQJHQ
5XLMLHVKRZDOLDVHVFRQJ
JOREOHFRQJXUHPRGHDOLDV
GHIURXWHLSURXWH

ÏGÐ

Ð	ÆÄ
show aliases	[illegible]'5B

ÏGÄÈ

1.2 privilege

?U[illegible]X> L[illegible]G5B[illegible]*ü **privilege** [illegible]
no [illegible]
privilege *mode* [**all**] {**level** *level* **| reset**} *command-string*
no privilege *mode* [**all**] [**level** *level*] *command-string*

ÏÐÄÈ

Ð	ÆÄ
mode	?U\XÐX CLI [illegible]
all	[illegible]
level *level*	[illegible] 0-15
reset	[illegible]
command-string	**?U**[illegible]

Ï5,Õ5BÐ -

Ï Ð <G5Bã

Ï5*Ð ß</ÊÚ privilege Ð×X CLI ÐK+ÀXÀÑÐ
DGÃÑG5BÃ*ü privilege ?Ã CLI Ð

ã	Aã
config	<G5Bã
exec	(Mã
interface	yG5Bã
ip-dhcp-pool	DHCP 4G5Bã
keychain	KeyChain G5Bã
keychain-key	KeyChain-key G5Bã
time-range	Time-Range G5Bã

Ï G5B_Ð ÈÀ'5B CLI 4{ÿ 1 ,X¡"test" ÈA'5B> reload ÐXLÃ'Ã
5XLMLHFRQJHQEOHVHFUHWOHYHOWHVW
5XLMLHFRQJSULYLOHJHH[HFOHYHOUHORDG
8Ê*ü4{ÿ 1 E9 CLI + M6ÈÃ*ü reload Ö
5XLMLHUHORDG"
/,1(5HDVRQRUUHORDG
FU!
Vp?UÚ reload ,X<FÐÑ4{ÿ 1 ,X*Ã*ü all GK+Ö
5XLMLHFRQJSULYLOHJHH[HFDOOOHYHOUHORDG
8Ê*ü4{ÿ 1 E9 CLI + M6ÈÃ*ü reload ,X<FÐ
5XLMLHUHORDG"
/,1(5HDVRQRUUHORDG
DWUHORDGDWDVSHFLILFWLPHGDWH
FDQHOFDQHOSHQLQUHORDGVFKHPH
LQHORDGDIWHUDWLPHLQWHUYDO

ÏÎGÐ

Ð	ÆÄ
enable secret	**A5B** CLI 4{ÿX¡

ÏGÄÀ -

1.3 show aliases

?U/,ÝXÐMnÐXÐ EXEC Ã*ü **show aliases Ð**
show aliases [*mode*]

ÏÐAÀ

Ð	ÆÄ

mode	*ä¤Ø¤*

ï5,Õ5BÐ -

ï¤ EXEC ã

ï*Ð Vpüï Ez9¤Ø¤'5BÄ

ï5B_Ð ÷È EXEC ã¤Ø

5XLMLHVKRZDOLDVHVH[HF
H[HFPRGHDOLDV
KKHOS
SSLQ
VVKRZ
XXQHEXJ
XXQHEXJ

ïGÐ

Q	EÄ
alias	A'5B¤

2

2.1 banner login

?UG5B,O)ÑÎ¡CÀÈG5B¾ Q

banner login ÄUÐÑÎ¡CÈ5Bü

no banner login Ö

banner login *c message c*

ÏÐAÈ

Ð	ÈÄ
c	*ÎCXÚ h0ÈÎ0ú*
message	*ÄÉÐÏÉÐ Ïn*

ï5,Õ5BÐ	-
ÐÑ	(M*ã
ï5*Ñ	ôGÄ8ECÊsÊKÛ@ÊsÄalendar Ä@Ês++'4PE|ÈSÄ'ÔKÉ¡X™ 6ÕÉDÊ Vp2Ï4³XECÊs`@ÊsÄÈbECÊsÈ'X4ÈÔUEÊAÉCÊs ¾B,XÈ@ÊsÄ
ï5B_Ð	S*VÉCÊs,XÈ@ÊsÄ

5XLMLHFORFNXSGDWHFDOHQDU

ïÎÐÑ	Ñ	ÊÄ
	-	-

ïÄÈ	-

2.6 disable

(MÈULÎ¡X4{ÈÊ (M*Ñ **disableÄ**

disable [*privilege-level*]

ÐÄÈ	Ð	ÊÄ
	privilege-level	L$4{

ï5,Õ5BÐ	-
ÐÑ	(M*ã
ï5*Ñ	S*ÄÑM*ãÊÊ*ÄptÊL$4{Ê$4{Lb,X L$4{Ä

disable

ï5B_Ð	M6,X/_G5BA'Û$4{L14{Ö

5XLMLHGLVDEOH

ïÎÐÑ	Ñ	ÊÄ
	enable	BÊ*ã9(M*ãÈÙ)È4{ÿÄ

ïÄÈ	-

2.7 enable

?UE9(M*ÀÈ BE*G5BQ **enableÄ**

enable

ÐAÈ

Ð	ÈÄ
-	-

Õ,Õ5BÐ -

Ð -

Ö*Ð -

G5B_Ð -

ÌGÐ

Q	ÈÄ
-	-

GÄÈ -

2.8 enable password

?UG5BÄ4{ÿXÈÈ <G5BQ **enable passwordÄÐ** no ô8ÛÄ4{ÿX·

Ä

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

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

ÐAÈ

Ð	ÈÄ
Password	*E9(M EXEC G5B,X¸
Level	*ÿX4{ÿ
0|7	¸Xt2O_È ÈÈ 7 1T)tš
encrypted-password	[

Õ,Õ5BÐ -

Ð <G5Bã

Ö*Ð E1NOEg9t2O_ÂÈ8lC+A'tÈ,XÊÊUEg9t2O_Ä

ÿÝVÖ

NOÙ 1 26 ÊÈ n+Ð++0Ä

M6ÑÈÑ9ÄÈ8X0N0¸XÊÄ

EXEC

ÏG5B_Ð	M6,X/_A’5B¡	pw10Ö
	5XLMLHFRQJHQEOHSDVVZRUGSZ	

ÏÏGÐ	Q	ÐÄ
	enable secret	A’5B]<,X¡

ÏGÄÐ -.002 Tc 0.0042 Tw 7.[(pw)23g32780323g32( )Tj5.197.4.754 g.9/TT0 1 T1007 -Tw 7.1

2.10 enable service

?UÔKÁ,XáÄSSH Server/Telnet Server/Web Server/Snmp AgentÀ5BÃ

S*Ò **enable service Ò**

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

ÏÐAÈ

Ð	ÆÄ		
ssh-server	**Á**	SSH ServerÀÔ	IPv4 ` IPv6 á
telnet-server	**ÔÍ**	Telnet ServerÀÔ	IPv4 ` IPv6 á
web-server [http | https | all]	**ÔÍ**		

Ð	ÉÄ
enable	**enable password** ê **enable secret** Q5B>AxAÈ'O 15 4{ ,XÄ4TAxG*ü enable AxAÄ
local	username Q'5B,X*ÈÈ> AxAÈ*'O4¥ 15 4{LÄ

ï5,Õ5BÐ 2ÄTAxG*ü enable AxAÄ

ÏÐ <G5Bã

ÏS*Ô AÇÐA'5B Web ,O)AxAÄ*ü **no ip http authentication** Ó5BÄxÄ

ÏG5B_Ð M6,X/_È'5B Web ,O)Ê*ü local AxAÄ

5XLMLHFRQJLSKWWSDXWKHQWLFDWLRQRFDO

ÏÎGÇ

Ç	ÉÄ
enable service	ÔÊÄ

ÏGÄÈ -

2.15 ip http port

?UA'5BHTTP á,X0Ã5BÄ*ü **ip http port** Ç

ip http port *number*

ÏÐAÈ

Ð	ÉÄ
number	*AB* HTTP Server 0ÃAx 80Ä

ï5,Õ5BÐ TAx 80Ä

ÏÐ <G5Bã

ÏS*Ô AÇÐA'5B HTTP á,X0Ã*ü **no ip http port** ÓÃ5BÄxÄ

ÏG5B_Ð M6,X/_È'5B HTTP á0Ã 8080Ö

5XLMLHFRQJLSKWWSSRUW

ÏÎGÇ

Ç	ÉÄ
enable service	ÔÊÄ

ÏGÄÈ -

2.16 ip http secure-port

?UA'5B HTTPS á,X0Ã5BÃ*ü **ip http secure-port Ö**

ip http secure-port *number*

ÐAÈ	Ð	ÆÄ
	number	*AB* HTTPS Server 0ÃAx 443Ä

ÏÕ5BÐ TAx 443Ä

Ö <G5Bã

Ï*Ô AÇÏA'5B HTTPS á,X0Ã*ü **no ip http secure-port ÓÃ5BÃxÄ**

Ï5B_Ð M6,X/_Ò'5B HTTPS á0Ã 4443Ö

5XLMLHFRÇJLSKWWSVHFXUHSRUW

ÏÇÖ	Ö	ÆÄ
	enable service	**ÔÍÁ**
	show web-server status	**/** web á<(Ö

ÏÄÈ -

2.17 ip telnet source-interface

?UbÿÞX IP 0 Telnet Eÿ,X0Ã5BÃ*ü **ip telnet source-interface Ö**

ip telnet source-interface *interface-name*

ÐAÈ	Ð	ÆÄ

ñ	Ò	ÉÄ
	telnet	ÒÔ Telnet á<Ä

ÏGÄÈ -

2.18 lock

?U40Ã'5BÐÊXÈÉ EXEC ÐÒ **lockÄ**
lock

ÏÐÄÈ	Ð	ÉÄ
	-	-

Ï5,Õ5BÐ -

ÏÐÒ (M*ã

ÏS*Ð 4ÉÉA'5BÊXÈÕyÄ,XÈÕÃ M6Ì6AKÊÉ8PxJÕce
0Ã M6Ö

1&Ëg9 **lock ÈÄ4Eg9×**

1&Ëg9ÈÕÄg9ÈÄ4BAxEg9,XÈÄ4Ì8
)Ë/Locked Ò×

?UÇÉ940ÈÕUEg9A'5B,XÊ

?U40Ã*J40ÃXs6ÈÕUEÉü line G5BÈ **lockable ÈÒX** line Þ
ÕÕÃX(MÄ

ÏG5B_Ð M6,X/_JÕÃ M6Ö

5XLMLHFRÒJOLÐORFNDEOH
5XLMLHFRÒJOLÐHÒ
5XLMLHORFN
3DVVZRUGSDVVZRUG!
$DLÒDVVZRUG!
/RFNHG
ÏG5B_VÎnA9ÐÒ/RINò

2.19 lockable

?UÕÕÕ*ü **lock Ð** line G5Bã **lockable ÐÕÕÕ**
lock Ðü **no Ð5Ä**
lockable
no lockable

ÏÐAÈ

Ð	ÆÄ
-	-

ÏÕ,Õ5BÐ -

Ð line G5Bã

ÏÕ*Ð AÇÐ,ù4CÕÕÕ,X(MÈUJÕÕÕÆÄ EXEC ã **lock Ð**

ÏG5B_Ð M6,X/_{ÕÕÕ,Xs6ÕÕÕ
5XLMLHFRQJOLQHFRQROH
5XLMLHFRQJOLQHORFNDEOH
5XLMLHFRQJOLQHQ
5XLMLHORFN
3DVVZRUGSDVVZRUG!
$DLQSDVVZRUG!
/RFNHG
3DVVZRUGSDVVZRUG!

ÏÌGÐ

Ð	ÆÄ
lock	ÕÕÕÃ

ÏGÄÈ -

2.20 login

ü AAA GK,XÈ?UÿÈ> 1T),X,O)ÐÈÈ yG5BÐ **loginÄÐ**
X no 6ÐÐ)ÐÄ
login
no login

ÏÐAÈ

Ð	ÆÄ
-	-

ÏÕ,Õ5BÐ -

Ñ line G5Bã

Ï*Ñ Vpü*ú AAA]<áÈ¤ü,O)AxAÊ1T),XÞÄG,XÛ VTY ê console yG5B,XÄ

Ï5B_Ð Ñ6,X/_ñü VTY Ä'5B,O)ÞÄ

5XLMLHFRQJRDDDQ2RGHO
5XLMLHFRQJOLQYW\
5XLMLHFRQJOLQSDVVZRUGQUPDWHVW
5XLMLHFRQJOLQORJLQ

ÏGÞ

Q	ÈÄ
password	**G5B** line 4C,Õ)¡

ÏGÄÈ -

2.21 login authentication

ü AAA ÔXÈ)AxAÑOG*ü AAA á9E> AxAÈ*ÄQ6(,O)AxAÊ<Ä
AÞX no 6ã8,O)AxAÊ<Ä
login authentication {**default** | *list-name*}
no login authentication {**default** | *list-name*}

ÏÐAÈ

Ð	ÈÄ
default	*ÄxXAxAÊ*
list-name	*ÃÊ*

Ï5,Õ5BÐ -

Ñ line G5Bã

Ï*Ñ Vp*ü AAA]<áÈ¤ü,O)AxAÊ*ü,XÊ<E> AxAÄ

Ï5B_Ð

ÏGÄÈ -

2.25 privilege mode

?ÉLI Ã

ÏÐÄÈ

Ð	ÉÄ
-	-

Ï5,Õ5BÐ ?ÉLI Ã

Ï Ã ?ÉLI Ã

Ï5*Ð ?ÉLI Ã

Ï5B_Ð ?ÉLI Ã

ÌÏGÐ

Ð	ÉÄ
-	-

ÏGÄÈ -

2.26 prompt

?UA’5B2Ï4³,XÐ Ï6G5BÃ Ð **prompt** ÄÜÐÏ6G5BÈ **no prompt** Ï

prompt *string*

ÏÐÄÈ

Ð	ÉÄ
string	*Ð* 32 þ0ú

Ï5,Õ5BÐ -

Ï Ã <G5Bã

Ï5*Ð Vp4ÜÉ5BÐ Ï4ÄÄ0ÈÚc-2Ï4ÄX5Ã 0Ï4 EXEC Ã

Ï5B_Ð M6,X/_Ú5BÐ RGOSÖ

5XLMLHFRÐJSURPSW5*26

5XLMLHFRÐJHÐ

5*26

ÏÎGÐ

Ç	ÈÄ
-	-

ÏGÄÈ -

2.27 reload

?UGÁ'ÔÏÄÈÈ (M*ÃÇ **reloadÄ**

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

ÏÐAÈ

Ð	ÈÄ
text	ÇsÈ-255 þ8V
in [*hh:*] *mm*	ûÈhÇÈ 24 ý
at *hh:mm*	ûXÇÏ
month	ÑÈ 3 Ñlar
day	ÈÈ 1 31
year	ÇÄ993-2035 ÈÑ*ÄÝ
cancel	ÈuÇG

ÏÕ5BÐ -

ÏÇ (M*ã

ÏS*ÔÏ S*ÄÇÃ'ÔÏ,XÇÈ> 1u)ÄÏ

ÏG5B_Ð M6,X/_ÔÏ 10 ÚsÇ,ÏÄÖ

5XLMLHUHORDGLQ

5RXWHUZOOUHORDGLQHFRQV

ÏÎGÐ

Ç	ÈÄ
-	-

ÏGÄÈ -

2.28 service password-encryption

?UÉ> tÈÈ service password-encryption ÇÇX no 6ã,ÕÈ

4ÇXÇÄ

service password-encryption

ÏÐAÈ

Ð	ÈÄ
-	-

2.30 show clock

2.35 show this

?U¹¸Ž48ˆXG5BµÈÈM6,> Ç **show thisÄ**

show this

ÏÐAÈ

Ð	ÈÄ
-	-

ÏÕ,Õ5BÐ ´

ÏÇ yã

ÏS*Ð S*ÄÃÇˆXG5BµÄ

ÏG5B_Ð M6,X/_¹ß interface fastEthernet 0/1 ˆXG5BµÄ

5XLMLHFRQJLJ WHUIDFHIDVW(WKHUHW

5XLMLHFRQJLI)DVW(WKHUHWVKRZWKLV

%XLOGLQFRQJXUDWLRQ

VSDQQWUHHOLQWSHSRLQWWRSRLQW

VSDQQWUHHPVWSRUWSULRULW\

HQ

5XLMLHFRQJLI)DVW(WKHUHW

ÏÎGÇ

Ç	ÈÄ
-	-

ÏGÄÈ 10.4(3b19) (ÂÿS*ü show this ÈWÂS*ü show this Ç

2.36 show startup-config

?U¹¸ß¸ü NVRAMÄ2ÇµC,ª¸|<Å’ÎXG5BÈÈ (M*ÇQ **show startup-configÄ**

show startup-config

ÏÐAÈ

Ð	ÈÄ
-	-

ñ ,|ü NVRAMÄ2ûc,ª|<Å’|ÎXG5BG startup-config A’|Ê ,XG5BÄ
startup-config |Î,bA’Ù5B Flash ,XTAxG5B[Êconfig.text ,XG5BÄ

ÏG5B_Ð -

ÏGÐ

Ð	ÈÄ
-	-

ÏGÄÈ -

2.37 show version

?U¹Ô2Ï¹³XÇÃMÈ **show version Ö**
show version [**devices | slots**]

ÏÐAÈ

Ð	ÈÄ
devices	*ÅÛAÛ*
slots	*ÅÛÑ*

Ï – D A È

2.38 show web-server status

?U¹ Web áG5BÇ(ÕÈ Q **show web-server statusÄ**

show web-server status

ÏÐAÈ

Ð	ÈÄ
-	-

ÏÕ,Õ5BÐ -

ÏÐ (M*ã

ÏÕ*Ô -

ÏG5B_Ð / Web áG5BÇ(Õ

5XLMLHVKRZEVHUYHUVWDWXV
KWWSVHUYHUVWDWXVHQEOHG
KWWSVHUYHUSRUW
KWWSVVHUYHUVWDWXVHQEOHG
KWWSVVHUYHUSRUW

ÏÎGÐ

Q	ÈÄ
-	-

ÏGÄÈ -

2.39 speed

?UG5B40ã'ÎXEÐÈCÃ5BÈ Q **speed** *speed* **Ä4ÃÎ7xÈ**

Sü **no speed Q**

speed *speed*

ÏÐAÈ

Ð	ÈÄ
Speed	4ÃÎXEÐ bpsÄ> yÈÑgEÐ(A'5B 9600Ã 19200Ã 38400Ã 57600 Ã 115200 ,XÐ,ÕXEÐ 9600Ä

ÏÕ,Õ5BÐ 5,ÕXEÐ 9600

ÏÐ <G5Bã

ÏÕ*Ô S*AÇ'5B40ã'ÎXEÎ,EÐÄ

ÏG5B_Ð M6,X/_ÉÐ(A'5B 57600 bpsÖ

ÏÌGÐ

Ò	ÐÄ
-	-

ÏGÄÈ -

2.40 telnet

?U,O)Ã Telnet á<È EXEC(ÄMÈ*ü **telnet** Ò>O)Ä

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

ÏÐAÈ

Ð	ÐÄ
Host	Telnet á<,X IPV4 Ã IPV6 ôÙ
Port	Telnet á<,X TCP 0ÃAx 23
/source	ô Telnet v0Ã*¡X$ IP ôÙy·
ip *A.B.C.D*	ô Telnet v0Ã*¡X$ IPV4
ipv6 *X:X:X:X::X*	ô Telnet v0Ã*¡X$ IPV6
interface *interface-name*	ô Telnet v0Ã*¡X$y·

ï5,Õ5BÐ -

ÏÒ (Mã

ÏS*Ô A¶Ò,O)Ã telnet á<Ä

ÏG5B_Ð _ 1Ö6,X_È telnet ,X,ÂXA'Û IPV4 192.168.1.1ÈÃ*TAxÔy· Gi 0/1È ôA¶X VRF CÃ>< vpn1

5XLMLHWHOÐWVRXUFHLÒWHUIDFHJLJDELW(WKHUÐWYUIYSQ

_ 2Ö6,X_È telnet ,X,ÂXA'Û IPV6 2AAA:BBBB::CCCC

5XLMLHWHOÐWS%%%%&&&&

ÏÌGÐ

Ò	ÐÄ
ip telnet source-interface	ôyÞ IP 0 Telnet Eÿ,X$
show sessions	ÐÈ! Telnet Ô,ÏXÃ±
exit	ÐÈÿ

ÏGÄÈ -

2.41 username

?UA'5B*ÈÈ <G5BÐ **usernameÄ**

username *name*{**nopassword**|**password**{*password* | [**0**|**7**]*encrypted-password* }}
username *name* **privilege** *privilege-level*
no username *name*

ÏÐAÈ	Ð	ÈÄ
	name	*ã*
	password	*ÿ*
	0|7	*Xt2ÇÈ* tÈ 7 1T)tš
	encrypted-password	*[*
	privilege-level	*ÏL${*

ÏÕ5BÐ -

ÏÐ <G5Bã

ÏÕ*Ð AÇÐÎ*ÏDBgÈAxAS*Ä

⚡	7
⚡	7
	7

ÏG5B_Ð M6,X/_G5BÐÎ4Ÿ*ÿ 15 4{Ö
5XLMLHFRÇJXVHUÇPHWHVWSULYLOHJHSDVVZUGSZ

ÏÏGÇ Ç ÈÄogin locel

Ï5*Ð	ñ*ñ[Ê×0L$	
Ï5B_Ð	¥6,X/_G5B*ü	test K[ÊÃXAïmLÖ
	5XLMLHFRQLJXVHUQPHWHVWSHUPLVVLRQZ	
	¥6,X/_G5B/U6*ü	test [ÊÃÝÖ
	5XLMLHFRQLJXVHUQPHWHVWSHUPLVVLRQOO	
	¥6,X/_G5B*ü	test L8Z config.text [ÊW[ÊÃKÁÄmÃ LÖ
	5XLMLHFRQLJXVHUQPHWHVWSHUPLVVLRQRQJWH[W	
	5XLMLHFRQLJXVHUQPHWHVWSHUPLVVLRQZ	

ÏGÐ	Q	EÄ
	-	-
ÏGÄÈ	-	

2.43 username reject rlogin

	?UL$ïE/Ç)Ä	TELNET/SSH/HTTP 1ÈÊ <G5BÐ **username reject rloginÄ**
	username *name* **reject rlogin**	
	no username *name* **reject rlogin**	

ÐAÈ	Ð	EÄ
	name	*ä*
ï5,Õ5BÐ	-	
Ð	<G5Bã	
Ï5*Ð	A[ÐL$ïE/Ç)ÈG5BZ$ E/Ç)2ÈÄ	
	ÁÑE/AKÂ	
Ï5B_Ð	¥6,X/_L$ E/Ç)Ö	
	5XLMLHFRQLJXVHUQPHWHVWUHMHFWUORJLQ	

ÏGÐ	Q	EÄ
	login local	**E>AxA•**
ÏGÄÈ	-	

2.44 write

ÍÄ¶ÎG5BÄ running-config ÅÔ5BÄ

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

ÏÐAÈ

Ð	ÆÄ
memory	*ÍÄm9* NVRAMÈÀ **copy running-config startup-configÄ**
network	*ÍÄ±* TFTP á<ÈÀ **copy running-config tftpÄ**
terminal	*2ÄÈÀ* **show running-configÄ**

ÏÕ5BÐ -

ÏÐ (M*ã

ÏÕ*ÐÎ AÇÐ¶JS¨XS*ùÄxÃ±-9*ÕÄ

ÏG5B_Ð _ 1ÕV)Ä'ÊÄ¶G5BÖ

```
5XLMLHØLWH
%XLOGLQFRQJXUDWLRQ
>2.@
```

ÏÇÐ

Ç	ÆÄ
copy	**ÁÔ5ÊÃ**
show running-config	**ÄÄ¶G5B**

ÏGÄÈ **-**

3 LINE

3.1 access-class

A’5B Line ß*¡X ACLÄ*K{ë<Ä*ü **access-class** { *access-list-number* | *access-list-name* } { **in | out** } **Q5B** Line ßXA‘KÂ{ë<Ä*ü **no access-class** { *access-list-number* | *access-list-name* } {**in | out**} ÐÐ LINE ßX ACL G5BÄ

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

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

ÐÄÐ	Ð	EÄ c c | access(Li)-7(n)(out)]TJ/TT0 4 50 Tc 0.94 0 Td(

console	**{·**
tty	**ÿÐ**
vty	**:40ÃÇÃÐ** telnet/ssh E²ÿ
First-line	**?UE9ÇX** first-line 4Ë
Last-line	**?UE9ÇX** last-line 4Ë

ÿ5,Õ5BÐ -

ÿÐ <G5Bã

ÿS*ÐÛ E9,XÛ,X LINE ã

ÿG5B_Ð E9 LINE VTY 1 3 ,X LINE ãÐ

5XLMLHFRQJOLQYW\

ÿÌGÇÐ

Ç	ÉÄ
-	-

ÿGÄÈÐ -

3.3 line vty

AÇÑÃ*¡X VTY E²ÿD,ÂÉAÇX no ÐÃ*¡X VTY E²ÿD,Â

line vty *line-number*

no line vty *line-number*

ÿÐAÈÐ

Ð	ÉÄ
line-number	VTY E²ÿD,Â

ÿ5,Õ5BÐ 5,ÑÐX VTY E²ÿD,Â 5ÈÉ 0--4Ä

ÿÐ <G5Bã

ÿS*ÐÛ LÔUrtõÃÐX VTY E²ÿD,Ã*ÐÇÄ

ÿG5B_Ð _ 1ÑÐX VTY E²ÿD,Â 20Ãü VTY 4ÈÈ 0—19Ä

5XLMLHFRQJOLQYW\

_ 2ÑÐX VTY E²ÿD,Â 10Ãü VTY 4ÈÈ 0—9Ä

5XLMLHFRQJOLQYW\

ÿÌGÇÐ

Ç	ÉÄ
-	-

ÏGÄÈ -

3.4 transport input

A’5B Line ÊÃ/XûÁÊ*ü **transport input Q5B** Line ÊÃ/XÁÊ*ü **default transport input 6á** LINE ÁÊÃ/XÁ5,Ã

transport input {**all | ssh | telnet | none**}

default transport input

ÏÐAÈ

Ð	ÊÄ
all	*BA¹* Line ÈÓÉÁÊÃ
ssh	*BA¹* Line ÈÓ SSH ÁÊÃ
telnet	*BA¹* Line ÈÓ Telnet ÁÊÃ
none	*BA¹* Line ÈÏÁÊÃ

ï5,Õ5BÐ 5,Ã’5BÊTY ÁÓÉÁÊÃÀW2O_,X TTY ,XTÁx NONE default transp8 0_0 1 Tf

4 UPGRADE

4.1 upgrade system

LÔUE> 2Ï4¾{ÊMÃ*ü **upgrade system ÇÄ**

upgrade system [*filename*]

ÐAÈ

Ð	ÉÄ
filename	2Ï4¾{[ÊÐÃÉ

Ï,Õ5BÐ -

ÇÐ (Mã

Ï*Ô ; AÇÏ4E> 4{Ä

:DLWLQRULPDJHLQWDOOHG&RPSOHWH
6ORW0$1LQWDOOHG
6ORW6OLPDJHVKDYHEHHQQWDOOHG

Q	EÄ
-	-

5

5.1 cd

A’5B[Ê¾³XÌÃÄ

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

ÐAÐ	Ð	ÆÄ
	filesystem	ûÌ,X[Ê¾ÄÐ¹ÑÒÜ
	directory	ûÌ,X,Â

ÏÕ5BÐ 5,ÕÂü flash ,X,ÂÄ

Ð (Mã

Ï*Ð **cd** [Ê¾ÄÃÕÊ¾ÈÕÌÃÄ

/ Ð2¾³XÌÃÄU¹2¾ÌÃÈ*ü **pwd** Ð

Ï5B_Ð _ 1ÕÃA’5B usb0 ,X,Â

5XLMLHFGXVE

_ 2ÕÃA’5B sd 5,X,Â

5XLMLHFGVG

ÌÏÐ	Ð	ÆÄ
	pwd	**/[ÊÃ**

ÏÄÐ -

5.2 copy

ÏÂ,ÂÄÊ

copy *source-url destination-url*

ÐAÐ	Ð	ÆÄ
	source-url	[Ê URLÄ[ÊÆÐÈ[ÊÃÈ° /ÏXÄ
	destination-url	[Ê URLÄ[ÊÆÐÈ[ÊÃÈ°/ÏXÄ

ÏÕ5BÐ -

Ð (Mã

Ï*Ê S*ü copy ÕÇ|ÏK|XÈÏ5%4á<K|X[ÊgÄ

(Mn[Ê4³X URL ¼Ô

¼Ô	Aè
flash:	flash ,|ÏÄ¼ÔÊÑ*Ä URL S*¼Ô ,XÊ,Õ</ flashÄÂ'|Ù|/ÇFÑu flash Ä
tftp:	TFTP 5%4á<
xmodem:	S*ü xmodem Ãâ%4Â'|Ê

ÏÐAÐ	Ð	ÉÄ
	recursive	**#LÔUô8M20N)Â**
	url	?Uô8,X[ÊX urlÄ

ÏÕ,Õ5BÐ -

Ïð (Mã

ÏÕ*Ô ô8 url ô5B,X[ÊÕ8,|ÏÏ,X[Ê URL ÑO flash:/ usb0:/È usb1:/ slave:/,X)Ô url ô4Ê</ô8[Ê4*X[Ê

ÏÕ5B_Ð _ 1ô8!)ÂX tmpfile [Ê

5XLMLHGHOHWHWPSILOH

_ 2Ö ô8S,X rgos.bin.bak [Ê

5XLMLHGHOHWHVODYHUJRVELQDN

_ 3ô8 sd 5,X aaa.bin [Ê

5XLMLHGHOHWHVGDDDELQ

_ 4ô8 flash ,X)Ô20N,Â aaa

5XLMLHGHOHWHUHFXUVLYHDDD

ÏÏÕ

Ï5B_Ð _ 1ÏÎ,ÂX[Ê

```
5XLMLHGLUVODYH
LUHFWRUVRIVODYH
0RGH/LQ6L]H07LPH1DPH

UJRVELQ
FRQLJWH[W
FIJW[W

)LOHV7RWDOVL]H%WHVLUHFWRULHV
7RWDOEWHV0%LQWKLVGHYLFHEWHV0%DYDLODEOH
```

_ 2ÏÎ,ÂX[Ê

```
5XLMLHGLU
LUHFWRUVRIWHPS
0RGH/LQ6L]H07LPH1DPH

DGDW

)LOHV7RWDOVL]H%WHVLUHFWRULHV
7RWDOEWHV0%LQWKLVGHYLFHEWHV0%DYDLODEOH
```

ÏÎGÐ

Ð	ÐÄ
pwd	**/CÃ**
cd	**A5ÊÄ**

ÏGÄÐ -

5.5 mkdir

ÎÂ

mkdir *directory*

ÐAÐ

Ð	ÐÄ
directory	ÎÂÄ

Ï,Õ5BÐ -

Ð (Mã

Ï*Ð Eg9?UÎX,ÂÄ(ÎÃ)Ä

flash:/backup/temp	flash:/backup
flash:/bakcup	flash:/backup/temp

ÏG5B_Ð _ 1ÖÎ test ,Â Ö

5XLMLHPNGLUWHVW

_ 2Ö sd 5,ÎÂ test2

5XLMLHPNGLUVGWHVW

ÏGÐ

Ò	ÐÄ
rmdir	**ô8Â**
pwd	**/[Ê4CÃ**

ÏGÄÈ -

5.6 pwd

/ÐCÃ

pwd

ÏÐAÈ

Ð	ÐÄ
-	-

ÏÕ5BÐ -

Ð (Mã

ÏS*Ð /Ø[Ê4CÃÄ

ÏG5B_Ð _ 1Ö6,X/_/ÐCÃÇÄ

5XLMLHSG

IODVK

ÏGÐ

Ò	ÐÄ
cd	**ÈÊ4CÃ**

ÏGÄÈ -

5.7 rename

/ÏÛ,X[ÊÊ

rename *url1 url2*

ÏÐAÐ

Ð	ÐÄ
url1	>ÏÏ,X$[Ê URL
url2	,Ã[ÊÃ,QPr—~G8Ž r0tHn%GÐ•Ð8r0tHn%"bq'UŽ8uPyŽ8uPyŽÐh<ÐÕ5M

6

6.1 archive

ÔÌ,7ä archive ÔÅ5BÄå*ÄÄÒX no EÝM6äAÊ5BåX}ẅ5B5,ÕŠ
Õ

archive

no archive

ÐÄÅÐ

Ð	ŁÄ
-	-

Ï5,Õẅ5BÐ -

ÐÒ <G5Bã

ŠS*Ð archive ÒÌ,7G5BÄ

?UEẗMã end Ò*ÏK CTRL+CÄ

?UE²<G5Bã exit ÃÒ

Ïẅ5B_Ð _ 1ÔÌ,7G5Bã

```
5XLMLHFRQ ÌJXUHWHUPLQ O
(Q WHUFRQÌJXUDWLRQ RPPDQGVRQ HSHUOLQH(QGZLWK&17/=
5XLMLHFRQÌJDUFKLYH
```

ÏÏGÒ

Q	ŁÄ
-	-

ÏGÄÐ -

6.2 hidekeys

/UÔG5BÁÇÕÄÃ*ÄÄÒX no EÝMAÇ5BÁÇÕÄ

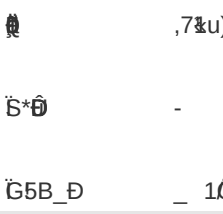
hidekeys

no hidekeys

ÐÄÅÐ

Ð	ŁÄ
-	-

Ï5,Õ5BÐ 5,ÑÀÇ5BÁÇÕÄ



Ð×		[illegible]
[illegible]	,71 ku)Ó5Bã	
Ï5*Ô	-	
Ï5B_Ð	_ 1Ö/6Ï5B/ëÕÄ	

ÏGÄÈ	-

6.4 logging enable

Ô5Bs6ÃÑ*ÄÇX	no EÝMMGKÁ5Bs6Ñ
logging enable	
no logging enable	

ÏDAÈ	

Ï*Ð -

Ï5B_Ð _ 1ÔG5B1-,X5,ÂXÔ 50Ä

5XLMLHFRQJXUHWHUPLQO
(WHUFRQJXUDWLRQRPPDQVRQSHUOLQ(QZWK&17/=
5XLMLHFRQJDUFKLYH
5XLMLHFRQJDUFKLYHORJFRQJ
5XLMLHFRQJDUFKLYHORJFRQJORJJLQVL]H

ÏÌGÐ

Ð	ÐÄ
archive	**E9,7G5B**
log config	**E9,71u)Ó5B**

ÏGÄÈ -

6.6 notify syslog

AÆÕ5Bê¡µCE0Ã<Ã*ÄÐ no EÝM/U6ÆÕ5Bê¡µ
CE0Ã<Ä
notify syslog
no notify syslog

ÏÐAÈ

Ð	ÐÄ
-	-

Ï5,Õ5BÐ 5,ÑM6ÆÕ5Bê¡µCE0Ã<Ä

ÏÐ ,71u)Ó5Bã

Ï*Ð -

Ï5B_Ð _ 1ÄÆÕ5Bê¡µCE0Ã<Ä

5XLMLHFRQJXUHWHUPLQO
(WHUFRQJXUDWLRQRPPDQVRQSHUOLQ(QZWK&17/=
5XLMLHFRQJDUFKLYH
5XLMLHFRQJDUFKLYHORJFRQJ
5XLMLHFRQJDUFKLYHORJFRQJRWLIVVORJ

ÏÌGÐ

Ð	ÐÄ
archive	E9,7G5Bã
log config	E9,71u)Ó5Bã
logging enable	Ô5Bê6Ñ

ÏGÄÈ -

6.7 show archive log config

/G5B5,ÊÄ

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

ÏÐAÈ

user@line	{*AG5B5,Â×*ÀCÊÊ¡S,X	
	ÊM6,X	15~+0Ñb,Ẽ9Ó,2Ê

G²¯4 ”r T!»‘Z±ÓRÌ!¼¤¼.Å€

7 CPU-LOG

7.1 cpu-log

?UÍG5B CPU ÿ]¡¢?¥Ł$ Ã*ü **cpu-logÄ**

cpu-log *log-limit low_num high_num*

ÏÐAÈ

Ð	ÆÄ
log-limit	8ÈXÇú
low_num	CPU ÿ]¡¢?¥Ł$
high_num	CPU ÿ]¡¢?¥Ł$

Ï5,Õ5BÐ TAxÆ¥Ł$ 100%ÈŁ$ 90%Ä

Ïþ <G5Bã

ÏS*ÊÐ S*AÇ5B CPU ÿ]¡¢?¥ŁÈCPU ÿ]¡CYÎ¥Ł$XÆÕ CÈ CPU ÿ]¡ÕÁb?¥ŁÈ ÆÕ× CPU ÿ]¡b?¥Ł$ ÆÕ ¢, EÎ CPU ÿ]¡4ÈÈ¢Ý4 CPU ÿ]¡PbPŁ$ÈÇ¥ŁÈ EÕ

ÏG5B_Ð M6,X/_Ú CPU ÿ]¡¢?¥Ł$G5B 70%È CPU ÿ]¡¢?¥Ł$G5B 80%Ä

UXLMLHFRQJFSXORJORJOLPLW

8¹ CPU ÿ]¡Pb 80%Ú/¢Ö

2FW6<6&+(&.&38B86,1*B5$(B/2*&38XWLOL]DWLRQDWHLRQPLQWHUOBFRQ

RFFXSLHGPRVW&38XWLOL]DWLRQDWH

8¹ CPU ÿ]¡b 70%Ú/¢Ö

2FW6<6&+(&.&38B86,1*B5$(B/2*&38XWLOL]DWLRQDWHLRQPLQWHUOBFRQ

RFFXSLHGPRVW&38XWLOL]DWLRQDWH

LVNWLPHU

2FW6<6&+(&.&38B86,1*B5$(B/2*7KH&38XWLOL]DWLRQDWLRKDVEHHQHFUHDVHG

ÏÌGÐ

Ç	ÆÄ
-	-

ÏGÄÈ -

7.2 show cpu

?U¹ÇÄ³ CPU ÿ]¡¢ÈÈ (M*Ð **show cpuÄ**

show cpu

ÏÐAÐ

Ð	ÆÄ
-	-

ÏÕ5BÐ -

```
PVWSBHYHVW
*953B(9(17
UOGSBWDVN
UHUSBWDVN
UHXSBHYHVWBKDVOHU
WSSBWDVN
LSWLPHU
UWDGYG
WHVW
WHVW
7DUSWLPH
JUDBDUS
7WFSWLPHU
HIBUHV
HIBUFYBPVJ
HIBLERRVLVWHVWBGDHPRQ
LSBWXEOBUFYBSNW
UHVW
WXQW
HIBUFYBPVJ
HIBLERRVLVWHVWBGDHPRQ
LPLG
VPG
ULSG
ULSQG
RVSIG
RVSIG
EJSG
SLPG
SLPG
SGPG
GYPUSG
YWBFREFW
DDDBWDVN
7ORJWUDS
GKFSF
VWSBUHFYBWDVN
WSBWDVN
VODBGHDPRQ
WUDFNBGDHPRQ
SEUBJXDUG
YUUSG
SVSG
LJVSG
```

```
FRDBUHFY
FRBRSHU
FRBPDF
UDGLXVBWDVN
WDFBDFFWBWDVN
WDFBWDVN
GKFSGBWDVN
GKFSVBWDVN
GKFSSLQBWDVN
GKFSFBWDVN
XDUWBGHEXJBILOHBWDVN
VVSBLQWBWDVN
UOBOLVWHQ
LNOBPVJBRSHUDWHBWKUHDG
EFP3&
EFP/;
EFP/;
EFP&175
EFP7;
EFP*6$7;
EFP/,1.
EFP5;
PQSNWBUFYBWKUHDG
PQSNWBUHFFOHBWKUHDG
VWDFNBWDVN
VWDFNBGLVFBWDVN
UHGXBVEBWDVN
FRQGLVDWFKBWDVN
GHYSUEBWDVN
UGSBVQBWKUHDG
UGSBUFYBWKUHDG
UGSBVORWBFKDQHBWKUHDG
GDWDSNWBUFYBWKUHDG
NHHSDOLYHBOLQBBQWLI\
UHUSBPVJBUHFYBWKUHDG
LSBVFDBJXDUGBWDVN
VVSBLSPFBKLWBWDVN
VVSBLSPFBWUDSBWDVN
KBHUUBVQBWDVN
UHUSBSDFNHWBVHQBWDVN
LGOHBYODBSURFBWKUHDG
FPLFBSDXVHBGHWHFW
VWDWBJHWBDQBVHQ
UOBFRQ
```

LGOH

M6,Xë<ĝX 3 > ý</2ÏÊ¥ 5 /¡JsÃ¥ 1 ÚsÃ¥ 5 ÚsY,X CPU ý[

Ã‰ LISRÃ¯HISR ÏuÃ¯M6K¦,X CPU ý[ÃÃ¯XÿÏÒ

+‰	AÈ
No	cË
5Sec	Ê></,XÏuÊ¥ 5 /¡JsY,X CPU ý[
1Min	Ê></,XÏuÊ¥ 1 ÚsY,X CPU ý[
5Min	Ê></,XÏuÊ¥ 5 ÚsY,X CPU ý[

Ę<,X! 2 > ÏEW(MÊ</Ý LISR ,X CPU ý[Ý HISR ,X CPU ý[È 3

>Ê</ïu,X CPU ý[Ã idle 4ƒß CPU ý[È³ Windows ß System

Idle ProcessÊ</2Ï³X0NK(Ã¯M6,X_È idle 4ƒß 5 /¡Y,X CPU ý[75%È

AÈ CPU Ý 75%Ï0NK(Ã

ÏĜĘ Ę E/ÄfHEÏ¾HEÏ¾ÏV¼dÏ¾Ïb7pÅ(AÊ(AÏ0X0D0Ïb¾d3ÏÊHÃ¯Ò?X0NKÊpÏ

8

8.1 memory-lack exit-policy

AQ'5BY,E' lower 4ÊÃ,XEÎ*+ÊÃ,Ù OSPFÃRIPÃPIM-SM 1Ä

memory-lack exit-policy { **ospf** | **pim-sm** | **rip**}

no memory-lack exit-policy

Ð	Ä
ospf|pim-sm|rip	ûCÃ, OSPF ê PIM ê RIPÄ
no	S*ÄEÝM6ÃAx> Ä

5,Õ5BÐ 5,ÊÎ,4*ÎXCÃ,Ä

<G5Bã

Y,E' lower 4ÊS*ü **show memory** lower 4Ä24,XJW,E¤ È

ÚKÎÃ,ÊÝ,C¶Ä

*ü-F%CÃ,e75%4,X?UûÈ,C,XÊKÎ?U,X,È

E/U0Ã?Uû,XE¤ Ä

bÎXCÃ,ÊÎXCÃ,È¡24ÿkC,XY,C¶Ä

G5B_Ð -

Q	Ä
show memory	/Y,C

GÄÈ -

8.2 show memory

ÃW4}pÈb@1ÊÃ@1ÊÃGCH<ÖÇÇ?ÃYX?TÈ&C¬ÎDÃVÃ%iQ

-	-

ï5,Õ5BÐ -

Ð (M*ã

ïS*Ð S*ÃÇÄ¹XY,(Õ,S*ÄÄ¹X()Ú,GÈÄ¹X
0NKÆÐÕNKÆ,G£,ÌÇÄ

ïG5B_Ð M6,X/_> **show memory pÃ¤pÄ**

```
5XLMLHVKRÆHPRU\
6VWHP0HPRU6WDWLVWLF
)UHHSDJHV
ÆWHUPDUNVPLQRÆUORÆLJK
6VWHP7RWDO0HPRU0%&XUUHQ)UHH0HPRU\%
8VHG5DWH
```

M6ë<,XÇÙÅÕ

ÃÝ,NIÐÐNKÆ,NI 4k ãXY,0NKÃ

Y,4È<Ø,4“,XÄ

4“	AÈ
min	Y,U0ÃÄÕXYE¤ È’8¼Ê*õ +Ã¤ Ä
lower	Y,ÇÇÈ’8¼ÃÃ,7ÃÊÇÝ ,ÄÃ,X{,ß **memory-lack exit-policy**
low	Y,ÇÈ’8¼ÈÃÃÉ9 OVERFLOW Ã ,Ä
high	Y,>È4È</2Ä¹Y,>ÇÃA’ÕÃÃÉ© ¢ OVERFLOW

2Ä¹Y,DÃÝ,DÈ,S*)[Ä

ïÇÐ

Ð	ÆÄ
-	-

ïGÄÈ -

8.3 show memory protocols

AÇÕÃÃ,4*Ý,Ä

9 POE

9.1 poe enable

G5B0,ÃXE/ñ3+6ñÄ

poe enable

no poe enable

ÏÐAÈ

Ð	ÉÄ
-	-

ÏÕ5BÐ -

ÏÐ yG5Bã

ÏS*Ð EÉÐG5BÈ6Ñ GKÓ,ÃXE/ñ3+6ñ

ÏG5B_Ð

5XLMLHFRÐLJLI
5XLMLHFRÐLJLISRHHÐEOH
5XLMLHFRÐLJLIÐSRHHÐEOH
5XLMLHFRÐLJLI

ÏÌGÐ

Ð	ÉÄ
-	-

ÏGÄÈ -

9.2 poe mode

A’5B2Ï4,³Xo+1u)Ã

poe mode auto

poe mode energy-saving

poe mode energy-static

ÏÐAÈ

Ð	ÉÄ	
auto	**A5B1u)Ã**	POE A’ÛXTAxã
energy-saving	**A5B1u)Ã**	POE A’ÛXÃ
energy-saving	**A5B1u)Ã**	POE A’ÛXÃ

ÏÕ5BÐ auto

Ð <G5Bã

S*Ð ; VÃ'5B2Ï4³XTAxo+1u)Ã

G5B_Ð A'5B! POE 2Ï4³Xo+1u)ÉV6Ã

5XLMLHFRQJXUH
5XLMLHFRQJSRHPRGHHQUJVDYLQ
5XLMLHFRQJHQ

ÌGÐ

Q	ÉÄ
-	-

GÄÈ S3760E-P V1.x (PoE x6Ã-Õ+1u)Ã

9.3 poe disconnect-mode mode

A'5B2Ï4³Xyzä

poe disconnect-mode *mode*

ÐAÈ

Ð	ÉÄ
mode	*AB,Xyzà*ac | dc}

5,Õ5BÐ dc

Ð <G5Bã

S*Ð ; VÃ'5B2Ï4³Xyzä

G5B_Ð A'5B! POE 2Ï4³Xyzã ac

5XLMLHFRQJXUH
5XLMLHFRQJSRHGLVFRQFWPRGHDF
5XLMLHFRQJHQ

ÌGÐ

Q	ÉÄ
-	-

GÄÈ -

9.4 poe power-off time-range name

A'5B0,ÃXnÊ+s6Ã

poe power-off time-range *name*

no poe power-off time-range

ÏÎGÐ	Ò	ÐÄ
	-	-

ÏGÄÈ -

9.6 poe legacy

A’5ByÛM2ÊÙ PD Ps6ÃÑ

poe legacy

no poe legacy

ÐÄÈ	Ð	ÐÄ
	-	-

ÏÕ,Õ5BÐ -

ÏÒ yG5Bã

ÏS*Ô EÊÒG5BÈS6ÕÙGKÓÃX PoE M2ÊÄ

ÏG5B_Ð ÔÃ fa 0/1 ,XM2ÊÃ

5XLMLHFRÎQJLÒWHUIDFH)DVW(WKHUÒW

5XLMLHFRÎQJLISRHOHJDF\

ÏÎGÐ	Ò	ÐÄ
	-	-

ÏGÄÈ -

9.7 poe max-power

A’5B2Ï4³,XÔ)[Ä

poe max-power *int*

no poe max-power

ÐÄÈ	Ð	ÐÄ
	int	ÔÈ WÈÈ0-30>
		ÕÄ 802.3af ,X2Ï4ÈÈ0-15.4>

ÏÕ,Õ5BÐ -

ÏÒ yG5Bã

S*Ð	EEQG5BÈA'5B0ÃXÔ)[Ä	
G5B_Ð	A'5B0Ã Fa 0/1 ,XÔ)[	20W
	5XLMLHFRQJLQWHUIDFH)DVW(WKHUQHW	
	5XLMLHFRQJLISRHPD[SRZHU	

ÏGÐ

Q	[redacted]Ä
-	

GÄè -

929.4 p61D3982CBE280C309E0CE4D2 [redacted] 3D58.254232CF]538.38 677 0.48 0

A'5B24³X³X³X³X³X³X³X³X³T#uÈÐXdž [redacted] Xp@jBè-fD,xuVVgyÂuaÐ

¨Ï5,Õ5BÐ	2¨4¾X±-s)[TÀx	0%
¨Ð	<G5Bã	

9.11 poe warning-power

A’5B2Ï¾Xs)[A:¼Ä

poe warnig-power *int*

ÐAÐ	Ð	ÐÄ
	int	**A:s]RÐ**0-99>

Ð,ÕÐBÐ 99

5XLMLHFRQLJSRHQWLILFDWLRQRWUROHQDEOH
5XLMLHFRQLJHQ
5XLMLHZLWH

ÏGÐ

Ò	£Ä
-	-

ÏGÄÈ -

9.13 poe pd-description

A’5B0Ã,X PD £Ä¿Ä

poe pd-description *pd-name*

no poe pd-description

ÏÐÄÈ

Ð	£Ä
pd-name	PD £Ä¿Ð+0ÈSÕ 32 þ0Ä

ÏÕ5BÐ -

ÏÐ yG5Bã

ÏS*Ô A’5B RFC3621 pethPsePortType ,XÈD £Ä¿Ä

ÏG5B_Ð _VÈ A’5B FastEthernet 0/1 y;X PD £Ä¿ú

5XLMLHFRQLJXUH
5XLMLHFRQLJLQWHUIDFH)DVW(WKHUHQW
5XLMLHFRQLJLISRHSGGHVFULSWLRQS
5XLMLHFRQLJLIHQ

ÏGÐ

Ò	£Ä
-	-

ÏGÄÈ -

9.14 poe class-lldp enable

A’5B24¾,X LLDP `ú{s6Ñ

poe class-lldp enable

no poe class-lldp enable

ÏÐÄÈ

Ð	£Ä

-	-

Ï5,Õ5BÐ -

Ïð <G5Bã

Ï*Ô A’5B2Ï4³X LLDP `ú{s6Ñ

```
7URXEOHFDXVH1RH
3ULRULWLFULWLFDO
/HJDFRII
3RZURIIWLPHUDQH1$
3RZUPDQJHPHWDXWR
```

ÏGÐ

Ð	ÆÄ
-	-

ÏGÄÐ -

9.16 show poe interfaces

¹ÝÃX PoE (Ð5BÄ

show poe interfaces status

show poe interfaces configuration

ÐAÐ

Ð	ÆÄ
status	**/Ý** PoE 0ÃX(Ð
configuration	**/Ý** PoE 0ÃXG5BÇ

Ï5,Õ5BÐ -

Ð (M*ã

Ï5*Ð > ÃÃX POE (Ð5B

Ï5B_Ð

```
5XLMLHVKRZRHLWHUIDFHVVWDWXV
,WHUIDFH3RZU3RZU&XUU$J3HDN&XUU7URXEOH33RUW
&RWURO6WDWXV3RZU3RZU3RZU&XUUHW&DXVH&ODVV9ROWDJH

)DHQEOHRQP$
)DHQEOHRQP$
)DHQEOHRQP$
)DHQEOHRII:::P$$
)DHQEOHRQP$
)DHQEOHRQP$
)DHQEOHRQP$
)DHQEOHRQP$
)DHQEOHRQP$
)DHQEOHRQP$
)DHQEOHRQP$
)DHQEOHRII:::P$$
)DHQEOHRQP$
)DHQEOHRQP$
```

```
)DHQEOHRII:::P$$
)DHQEOHRII:::P$$
)DHQEOHRII:::P$$
)DHQEOHRII:::P$$
)DHQEOHRII:::P$$
)DHQEOHRII:::P$$
)DHQEOHRII:::P$$
)DHQEOHRII:::P$$
)DHQEOHRII:::P$$
)DHQEOHRII:::P$$

5XLMLHVKRZRHLWHUIDFHVFRQLJXUDWLRQ
,WHUIDFH3RZU3RZU0D[$DORF3RUW3RUW3RZURII
&RWURO6WDWXV3RZU3RZU3ULRULWHJDF7LPHUDQH

)DHQEOHRQ$FULWLFDORII1$
)DHQEOHRQ$FULWLFDORII1$
)DHQEOHRQ$FULWLFDORII1$
)DHQEOHRII1$FULWLFDORII1$
)DHQEOHRQ$FULWLFDORII1$
)DHQEOHRQ$KLJKRII1$
)DHQEOHRQ$KLJKRII1$
)DHQEOHRQ$KLJKRII1$
)DHQEOHRQ$KLJKRII1$
)DHQEOHRQ$KLJKRII1$
)DHQEOHRQ$KLJKRII1$
)DHQEOHRII1$KLJKRII1$
)DHQEOHRQ$ORZII1$
)DHQEOHRQ$ORZII1$
)DHQEOHRII1$ORZII1$
)DHQEOHRII1$ORZII1$
)DHQEOHRII1$ORZII1$
)DHQEOHRII1$ORZII1$
)DHQEOHRII1$ORZII1$
)DHQEOHRII1$ORZII1$
)DHQEOHRII1$ORZII1$
)DHQEOHRII1$ORZII1$
)DHQEOHRII1$ORZII1$
)DHQEOHRII1$ORZII1$
```

ÏÎGÐ

Q	EÄ
-	-

ÏGÄÈ -

9.17 show poe powersupply

¦ß POE 2Ï¾Xo+(Ð

show poe powersupply

ÏÐAÈ

Ð	ÈÄ
-	-

Ï5,Õ5BÐ -

ÏÐ (M*ã

Ï5*Ô ¦ ÃÐ POE 2Ï¾Xo+(Ð

Ï5B_Ð

```
6(3VKRZSRHSRÆUVXSSO\
HYLFHPHPEHU
3RÆUPDQDJHPHQWDXWR
36(WRWDOSRÆU:
36(WRWDOSRÆUFRQVXPSWLRQ
36(WRWDOUHPDLQSRÆU:
36(SHDNSRÆU                                    :
36(DYHUDJHSRÆU:
36(SRÆUHGSRUW
36(GLVFRQFWPRGH&
36(UHVHUYHSRÆU
```

ÏÏGÐ

Ð	ÈÄ
-	-

10

10.1 clear logging

?UÈ8Y,4¢XÇÈÏM*ã AÇ

clear logging

ÐAÈ	Ð	ÈÄ
	-	-

Ï,Õ5BÐ -

Ï (M*ã

Ï*Ô AÈ8Y,4¢[YÄÑ8y[,X4ˆAu¢Ä

Ï5B_Ð M6/_È8Y,4¢[YÄ

5XLMLHFOHDUORJJLQ

ÌGÇ	Ç	ÈÄ
	logging on	Ô
	show logging	[
	logging buffered	[

ÏGÄÈ -

10.2 logging buffered

?UA’5BA),¢,XY,4ÐÄÇÃÈG5B> AÇ

AÇ no 6Ú6Y,4¢),¢ÄÇ default 6Ú,4¢á

5,Õ

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

no logging buffered

default logging buffered

Ï5,Õ5BÐ 4ţTAxâ'A'2O_ÉÖ

—x6TAx 1M Bytes×

ï.x6TAx 256K Bytes×

y9x6TAx 128K Bytes×

JÃ'ÛAx 4K Bytes×

ţ,XÛ¡û 7Ä

Ï Ð <G5Bã

Ï S*Ð Y,4ţNKÈ)S*¡XÈpbÛXY,>mÎXÇÚ?ZÄU¹Y

,4ţXÇÈÈ*(M*Ç **show loggingÄ**

Y,4ţXÇÎXÈ'ÛÈ) (M*Ç **clear loggingÈ**

ÇÙ8Ï?UCÇÎlÈAÚ)= FLASH ÈÈÕ Syslog ServerÄ

ÇÚ 8 Ï{Ä< 1Ã

GK+	14{	EÄ
Emergencies	0	2ÏÄÈÕ
Alerts	1	LÔU0ÏGÇ-7,XKÂl
Critical	2	G?U%
Errors	3	JÁÇ
warnings	4	A:Ç
Notifications	5	BE2O_ÈLÔUG¡XG?UÇ
informational	6	AÈXÇ
Debugging	7	AÁÇ

CÈ{CPÈ 0 4{ÿXÇÔ4{ÿXÇÄ

bÂÛÇE4{ÈbÈA54{ÇÚÇÄ

Ï G5B_Ð M6/_A'5BÁÇÈÿ 6 Ï 6

10.3 logging console

?UA’5BA{Ë¤ÈXÇ4{ÈÈG5Bã AÄÇX no 6ãU6ü

{Ë¤ÈÄ

logging console [*level*]

no logging console

ÏÐAÈ	Ð	ÈÄ

level

ÏG5B_Ð	ÊÄus6Ñ
	5XLMLHFRQJORJJLQFRXQW

ÏGÐ	Q	EÄ
	show logging count	**ÿÄÐ**
	show logging	**ÎG5BÂÐ**

ÏGÄÐ	-

10.5 logging facility

	?UA’5BÐ,XAÄG5BÐ AÄX	no 6Ä’ÛAx(23) Ä
	logging facility *facility-type*	
	no logging facility	

ÏÐAÐ	

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

TAxA'Û local7)23 Ä

ÏG5B_Ð M6,XA'5B Syslog A'Û kernelÖ

5XLMLHFRQJORJJLQDFLOLWNHUQ

ÏGÐ

Ð	ÐÄ
logging console	A'5BAÐXÇ4{ÿ

ÏGÄÐ -

10.6 logging file flash

?UÍ FLASH ÈÈG5B FLASH A)«

ÇÈ*AÐ no 6Ä

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

no logging file

ÏÐÄÐ

Ð	ÐÄ
filename	txt 2O_Ä
max-file-size	128K 6M bytesÈÐ 128KÄ
level	FLASH ,X4{ÿ 6Ä1« ÇX4{ÈÈ× 1Ä

ÏÐ,Õ5BÐ FLASH Ä

ÏÐ <G5Bã

ÏS*Ð VpÜÝ Syslog Serverè<5×%5%4Ègg,È

y FLASH Ä

txtÈG5B[4Ä

FLASH FLASH FLASH logging file flash

ÏG5B_Ð M6/_ FLASH trace.txtÈ 128KÇ4{ÿ 6Ä

5XLMLHFRQJORJJLQLOHIODVKWUDFH

ÏÎGÐ

Ò	ÆÄ
logging on	**Ê**

Ð	ÆÄ
-	-

5,Õ5BÐ AÇÉÄ'ÎÄ

Ð <G5Bã

Ö*Ð Console 0kÃ VTY 0kÈÃ,ÈXA'Ô,4ÈÃ
FLASHÃ Syslog Server ÄÇÈpGKÔÇÉ/A,È
L8Ä4{ÿ 1 ,X LogÄ

Ï5B_Ð M6,X/_Ä'ÔKÔÖ
5XLMLHFRQJRORJJLQRQ

ÌGÐ

Ð	ÆÄ
logging buffered	**ÓAÿ**
logging	**Ó4-** Syslog Server
logging file flash:	**ÓAÿ** FLASH Þ
logging console	**A5BÏÏ4{ÿ**
logging monitor	**A5BÏ** VTY 0k(V telnet 0k)Þ,X¢4{ÿ
logging trap	**A5BÏÕ-** Syslog Server ,X¢4{ÿ

ÏGÄÈ -

10.9 logging rate-limit

?UÊÇ[L$6ÑÏYAÈgÎX¢ÈÈG5Bã AÇUGKÁ
ÈÇ[L$6ÑÈ*AÇX no 6Ä
logging rate-limit {*number* | **all** *number* | **console** {*number* | **all** *number*}} [**except** [*severity*]]
no logging rate-limit

ÏÐAÈ

Ð	ÆÄ
number	*ÆÓÇÈ* 1—10000
all	*AB,Ó¢Ã* 0—7 4{Ó
console	*AB¢ÈÇD*
except	*ã1 b¢X¢ÈÃx4* error(3)ã1b error 4{ÿX¢ã> Ê¢{
severity	*¢ÈÈPÈ* 0—7

5,Õ5BÐ 5,Ã> Ê¢{Ä

Ð <G5Bã

ÎÎ	8Q24;XÇCEgÃ*8ÃÇ6G,XÇCEgÃ
ÏG5B_Ð	A'5BÐ,sYAÇÓXÇÃ debugÅ 10 5Ê warning Ê4{ÇÊ> { Ö
	5XLMLHFRQJORJJLQUDWHOLPLWDOO H[FHSWDUQV

ÏGÇÐ	
show logging count	**24Ð**
show logging	**Ê5BÃÇ**

ÏGÄÈ	-

10.10 logging server

?UÁ,ÛÎ,X syslog serverÈÊG5B6*ÃÇÛ8 syslog server ë<,X ÛÎ,X syslog serverÈÊ*ÃÇX no 6Ä

logging server {*ip-address* [**vrf** *vrf-name*] | **ipv6** *ipv6-address*}

no logging server {*ip-address* [**vrf** *vrf-name*] | **ipv6** *ipv6-address*}

ÐAÈ	
ip-address	*yÇX* IP
vrf-name	*ÛÊX* VRFÄPN CÃE@¥<Å_
ipv6-address	*ÛyÇX* IPV6

Ï,Õ5BÐ	TAxÅ syslog server ÊÇÐ
ÇÐ	<G5Bã
Ï*Ûî	AÇÛÎ Syslog server 9yA'ÛXÇÄG5BÊ' 5 þ Syslog ServerÄ CÊG5B,XÝ Syslog ServerÄ
ÏG5B_Ð	_ 1Ö6,X/_ÛÎ 202.101.11.1 ,X syslog serverÖ
	5XLMLHFRQJORJJLQVHUYHU
	_ 2Ö6,X/_ÛÎ IPV6 AAAA:BBBB::FFFF
	5XLMLHFRQJORJJLQVHUYHULSY$%%%%))))

ÏGÇÐ	
logging on	**Ê**
show logging	**4ÇÊG5B**
logging trap	**A5BÊÐ** syslog server ,XÇ4{ÿ

ÏGÄÈ	-

10.11 logging source interface

?UA'5Bÿ[,X$ÿÈÈG5B$ AÄÇX no 6$ÿ[,X$ÿA'
5BÄ

logging source interface *interface-type interface-number*

no logging source interface

ÐAÈ

Ð	ÆÄ
interface-type	*y2O*
interface-number	*yÆ*

5,Õ5BÐ -

Ð <G5Bã

S*Ð TAxÈÕ Syslog Server ,Xÿ[$ IP y[ÆÕX IP ÄCC1u
)Ã*AÇ,X$ IP ĥÿ,X IP È1u)ÍÆÊÔ
AÄÇÕ,Xÿ[ÈA'ĥ5BA$ÿ$ÿĥ5B IP È
y[$ IP y[ÆÕX IP Ä

G5B_Ð M6,X/_ĥ Loopback 0 ,X Syslog y[,X$Ö
5XLMLHFRQJORJJLQVRXUFHLQWHUIDFHORRSEDFN

ÌGÇ

Ç	ÆÄ
logging	**ÍÄ-** Syslog Server

GÄÈ -

10.12 logging source ip| ipv6

?UA'5Bÿ[,X$ IP ÈÈG5B$ AÄÇX no 6$ÿ[,X$ IP
A'5BÄ

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

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

ÐAÈ

Ð	ÆÄ
ip-address	*ĥå* IPV4 ÆÕ[,X$ IPV4
ipv6-address	*ĥå* IPV6 ÆÕ[,X$ IPV6

5,Õ5BÐ -

Ð <G5Bã

[illegible]	TAxEÕ-	Syslog Server ,Xy[	IP y[EÕX	IP ÄC¹ [illegible]u	
	)Ñ*AÝ,X	IP ĥþ	IP È1u)ÍFÊÔ		
	ÄÊÕ,Xy[ÈA'ÔÕ5BA¹	IP y[	IP y[EÕ		
	;X IP Ä				
ÏG5B_Ð	M6,X/_ĥ	192.168.1.1	Syslog y[,X		
	5XLMLHFRQJORJJLQVRXUFHLS				
ÏGÐ					

10.14 logging trap

?UA'5BAÆÕ syslog Server ,X¡C4{ÈÈG5Bã AÇÇX no 6ã
/U6ý[ÆÕ syslog ServerÄ

logging trap [*level*]

no logging trap

ÐAÈ

Ð	ÆÄ
level	ý[X¡ÈÈSÐÄ ¡C¡ÈAÈÈ 1Ä

ÏÕ5BÐ Informational(6)

Ð <G5Bã

ÏS*Ð ?U¡ÆÕ syslog ServerÈj?US*ëG5BÇ logging G5B syslog ServerÈü
logging trap bÆÕ¡C,X¡C4{ÿÄ
ÆÈ› **show logging** Ð5BÐ4AuÄ

ÏG5B_Ð M6,X_¡G5B4{ÿ 6 ,X¡ÆÕ 202.101.11.22 ,X syslog ServerÖ

5XLMLHFRQJORJJLQ
5XLMLHFRQJORJJLQWUDSLQRUPDWLRQO

ÏGÇ

Ç	ÆÄ
logging on	Ô
logging	¡Ø4- Syslog Server
show logging	¡ÈG5Ð

ÏGÄÈ -

10.15 more flash

?U¡A,)¡ FLASH ¡ÊÈ(M*ã AÇ

more flash:*filename*

ÐAÈ

Ð	ÆÄ
filename	¡ÊÄ

ÏÕ5BÐ -

Ð (M*ã

ÏS*Ð ¡ FLASH ¡ÊÊ/f2/" È/f3/' ,X[ÊÇ¡Ê

[illegible]

ÏG5B_Ð M6/_¦B FLASH [ÊXÔ§Ö

5XLMLHPRUHIODVKIORJW[W
ORRNXSILOHLQVKHH[WHQHGIODVKIORJW[W
5XLMLH5HORDGUHTXHVWHGEHSPLQVWUDWRU5HORDG5HDVRQHORDG
FRPPDQ

ÏÎGÐ

Q	EÄ
logging file flash:	[illegible] FLASH Þ

ÏGÄÐ -

10.16 service private-syslog

?U[illegible]G5B[illegible] no 6[illegible]
,X[illegible]G*TAx,X[illegible]> /Ä

service private-syslog

no service private-syslog

ÏÐAÐ

Ð	EÄ
-	-

Ï5,Õ5BÐ [illegible]G*TAx[illegible]> /Ä

Ïð <G5Bã

Ï5*Ð TAx[illegible]M6,X[illegible]C/VÖ
*timestamp: %facility-severity-mnemonic: description
q [illegible] %[illegible]
_[illegible]May 31 23:25:21: %SYS-5-CONFIG_I: Conf igured from console by console

8[illegible]6[illegible]M6,X[illegible]C/VÖ
timestamp facility-severity-mnemonic: description
q [illegible] [illegible]
_[illegible]May 31 23:31:28 SYS-5-CONFIG_I: Configured from console by console
J[illegible]TAx[illegible]M6[illegible]
þ [illegible]M6[illegible]

ÏG5B_Ð M6/_G5B[illegible]

5XLMLHFRQJVHUYLFHSULYDWHVVORJ

ÏÎGÐ

Q	EÄ
logging on	[illegible]

service timestamps	[illegible]

ÏGÄÈ -

10.17 service sequence-numbers

?U[illegible]G5B[illegible] no 6[illegible],XcÄ

service sequence-numbers

no service sequence-numbers

ÏÐAÈ

Ð	ÆÄ
-	-

Ï5,Õ5BÐ [illegible]

Ïð <G5Bã

Ï5*Ù L8[illegible] 1 [illegible]

Ñ2[illegible]XÑNcÄ

Ï5B_Ð M6/_G5B[illegible]

5XLMLHFRQJVHUYLFHVHTXHQHQPEHUV

ÏGÐ

Ð	ÆÄ
logging on	[illegible]
service timestamps	[illegible]

ÏGÄÈ -

10.18 service standard-syslog

?U[illegible] RFC3164 n,X[illegible]G5B[illegible]

no 6[illegible] RFC3164 n,X[illegible]G*T-x,X[illegible] /Ä

service standard-syslog

no service standard-syslog

Ð	ÆÄ

-

[illegible]	TAxÀ[illegible]M6,X[illegible]C/V[illegible] *timestamp: %facility-severity-mnemonic: description q [illegible] %[illegible] _[illegible]May 31 23:25:21: %SYS-5-CONFIG_I: Conf igured from console by console 8[illegible]6[illegible]M6,X[illegible]C/V[illegible] timestamp %facility-severity-mnemonic: description q [illegible]% [illegible] _[illegible]May 31 23:31:28 %SYS-5-CONFIG_I: Configured from console by console J[illegible]Axa[illegible]M6[illegible] Ã [illegible]M6[illegible]
[illegible]G5B_Ð	[illegible]M6/_G5B[illegible] 5XLMLHFR[illegible]JVHUYLFHVWD[illegible]DUGV[illegible]VORJ

[illegible]GÐ	[illegible]	[illegible]Ä
	logging on	[illegible]
	service timestamps	[illegible]

[illegible]GÄ[illegible]	-

10.19 service sysname

	?U[illegible]G5B[illegible] A[illegible] no 6[illegible],X2Ï 4[illegible] **service sysname** **no service sysname**

[illegible]ÐA[illegible]	[illegible]	[illegible]Ä
	-	-

[illegible],Õ5BÐ	[illegible]
[illegible]	<G5Bã
[illegible]S*[illegible]	E[illegible]
[illegible]G5B_Ð	[illegible]M6/_G5B[illegible] 0DU6<6&21),*&R[illegible]JXUHGIURPFR[illegible]ROHE[illegible]FR[illegible]ROH 5XLMLHFR[illegible]JWHUPL[illegible]O ([illegible]WHUFR[illegible]JXUDWLR[illegible]RPPD[illegible]VR[illegible]SHUOL[illegible]([illegible]ZWK&17/= 5XLMLHFR[illegible]JVHUYLFHV[illegible]PH 5XLMLHFR[illegible]JH[illegible] 0DU66<6&21),*&R[illegible]JXUHGIURPFR[illegible]ROHE[illegible]FR[illegible]ROH

ÌGÐ	[redacted]	EÄ
	show logging	**/ÎG5BâÊ**

ÏGÄÈ -

10.20 service timestamps

?UÇtÊÈÄÈG5Bâ AÄÐX no 6Ê

ÊÈÄ default 6ÊÇ,XÊÈ-AxÄ

service timestamps [*message-type* [**uptime** | **datetime** [**msec** | **year** /S,GpNÊÈÄHbbèP0ÉÐ,GÎ-Fµ

10.21 show logging

?U¹G5B,XÐÃ³AuÇÈ,4ţXÿ[ÈÏM*ü AÇ

Syslog logging	©Ô enabled,GKÁ disabled
Console logging	D{ø,X4{ÈAu
Monitor logging	Dü VTY 0kø,X4{ÈAu
Buffer logging	A)Ï,4ø,X4{ÈAu
Standard format	ã
Timestamp debug messages	Debug µÊÈ
Timestamp log messages	Log µÊÈ
Sequence-number log messages	cÔ
Sysname log messages	µt2Ï4á
Count log messages	4Aus6Ñ
Trap logging	ÿÕ Syslog Server µ,X4{ÈAu
Log Buffer	A)Ï,4ø,Xy[

ÏGÐ

Ð	ÈÄ
logging on	**©**
clear logging	**Ù84ÏÏ[**

ÏGÄÈ -

10.22 show logging count

?U¹,2Ï4ÈÕ{*ó X DÈÕ,XÊÈ4Au µÈÈ(Mã AÐ

Ä

show logging count

ÏÐÄÈ

Ð	ÈÄ
-	-

Ï5,Õ5BÐ -

Ï Ð (Mã

Ï5*Ô Z*ÿ[4Aus6ÑÔUëG5BÈ **logging count Ð show logging count**

ÏÏ

ÈÈ› **show logging Ð4Aus6Ñ**

Ï5B_Ð M6/_> **show logging count XÕÖ**

```
5XLMLHVKRØRJJLØFRXØ
0RGXOH1DPH0HVVDJH1DPH6HY2FFXU/DVW7LPH
                                6<6&21),*B,
-XO
6<6727$
```

[illegible]	Q	EÄ
	logging count	-4Aus6N

11

11.1 fan force enable

G5BN¡X0ÈQX no 6ãã,Õ5BÄ

fan force enable

no fan force enable

ÐAÈ	Ð	ÉÄ
	-	-

Ï5,Õ5BÐ 7¦ã

Ï¢ config ã

Ï5*Ð AÇG5BÄ

no fan force enble	**show running-config**

Ï5B_Ð G5BN¡X0ÄÄ

5XLMLHFRÏLJ

(WHUFRÏLJXUDWLRÏRPPDÇVRÏSHUOLÏ(QZWK&17/=

5XLMLHFRÏLJIDÏRUFHHÏDEOH

ÏÏGÏ

Ç	ÉÄ
show fans	**¡NÈGÇÄ**

ÏGÄÈ AÏ S3760E V2.x A'Ñ

11.2 show fans

¡N¡X0Ð

show fans

ÐAÈ	Ð	ÉÄ
	-	-

Ï5,Õ5BÐ -

[illegible]	(Mã	
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

[illegible]

Ø‰ÿ/Ö

+‰	AÈ
Dev	C{¡XA’ÛÈ
Slot	C{¡XÑ

Temperature Slot	¥ó,XÑ
State	Ä'¥(Õ
Current(C)	Ä'¥

ÏÎGÐ

Ò	ÉÄ
-	-

ÏGÄà

-

12 Warm Reload & Upgrade

12.1 reload warm

(MÉE› **reload warm** Ð> Warm Reload ãXGé{Ä

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

ÐAÈ

Ð	EÄ
warm	S*ü warm reload E> E&Ó¡
text	GÇK,XsÈ-255 þ8V
in [*hh:*] *mm*	ûÊÈhGÇK24ÏÈ 24 ý
at *hh:mm*	ûÎ,XÊGÇK24³
month	ÑX+0ú</È 3 Ñar
day	È 1 31
cancel	¥ua×GÇK

ï5,Õ5BÐ -

Ð <G5Bã

Ï*Ð

SMNG reload

Ï5B_Ð _ 1ÏE> Warm Reload

5XLMLHUHORDGÐUP

3URFHVVHGÐWKUHORDG>Q@\

-XÇ65(/2ÏKHGHYLFHLVUHORDGLQGXHWRWKHH[HFXWLRQRFRPPDQUHORDG

6VWHPÐOOSHUIRUPDÐUPUHORDG

_ 2Ï*Q **copy tftp ` reload warm E>4{**

5XLMLHFRSWIWSUJRVELQDDVKUJRVELQ

ÏFHVVLQWIWSUJRVELQ

6VWHPLVUXQQGHIUDJPHQWSOHDVHÐLWWLQ

3UHVV&WUO&WRTXLW

7UDQVPLVVLRQLQVKHGILOHOHQWKEWHV

8SWLPHV

_ 2Ö Warm Reload ÞÐ Warm Reload Ç

5XLMLHVKRZ DUPUHORDG
:DUP5HORDGFRQ LJXUDWLRQ VWDWH
:DUPUHORDGLVHQ DEOHG
0D[UHORDGFRXQ W
0LQ SWLPHV
:DUP5HORDGUXQQ VWDWH
:DUP5HORDGLVRSHQQ VDYHG

_ 3Ö Warm Reload GKÐ Warm Reload Ç

5XLMLHVKRZ DUPUHORDG
:DUP5HORDGFRQ LJXUDWLRQ VWDWH
:DUPUHORDGLVGLVDEOHG
0D[UHORDGFRXQ W
0LQ SWLPHV
:DUP5HORDGUXQQ VWDWH
:DUP5HORDGLVFORVH

_ 4Ö Warm Reload *Ð Warm Reload Ç

5XLMLHVKRZ DUPUHORDG
:DUPUHORDGFRQ LJXUDWLRQ VWDWH
:DUPUHORDGLVHQ DEOHG
0D[UHORDGFRXQ W
0LQ SWLPHV
:DUPUHORDGUXQQ VWDWH
:DUPUHORDGLVDYDLODEOH
:DUPUHORDGFRXQ W
8SWLPHV

6ORWZ DUPUHORDGUXQQ VWDWH
6ORW
:DUPUHORDGLVDYDLODEOH
:DUPUHORDGFRXQ W
8SWLPHV

+‰	Aè
max reload count	G5B,XoGKÈ4É> Warm Reload ,XÔDÄ
min uptime	G5B,X2Ä¢CK0nÈ> Warm Reload GÑO4£ E›XÊKÈhÄ
warm reload count	4Ê,X Warm Reload ,X DÄ
uptime	2Ä¢G5BÊ,XKÈhÄ

ÏGÐ

Ç	£Ä
warm-reload {enable | count *number*] | **uptime** *minutes*}	**A5B** Warm Reload s6Ñ

reload warm	Warm Reload/Upgrade
reset warm module *slot*	Warm Reload
show warm-reload	Warm Reload

13 SRM

13.1 cpu

ü srm-policy G5BÈ1E› **cpu Ð9** owner-cpu G5BÄ **cpu**

ÏÐAÈ

Ð	EÄ
-	-

ÏG5B_Ð _ 1ÖG5BÐ rgos_group ,XC$S*5ÙÏ snmpd ï4ÐÑ*¡Ï1*+9Ä

5XLMLHFRQLJXUHWHUPLQO
5XLMLHFRQLJUHVRXUFHPDQJHU
5XLMLHFRQLJVUPXVHUJURXSUJRVBJURXS
5RXWHUFRQLJUHVJURXSLQWDQHVQSG

ÏGÐ

Ð	ÆÄ
resource manager	**E9** srm G5Bã

ÏGÄÐ -

13.3 memory

ü srm-policy G5BÈÏE› **memory Ð9** owner-memory G5BÄ
memory

ÏÐÄÐ

Ð	ÆÄ
-	-

ÏÕ,Ö5BÐ -

ÏÐ srm-policy G5Bã

ÏS*Ð -

ÏG5B_Ð _ 1Ö srm-policy G5BÈÏE› memory Ð9 owner-memory G5BÄ

5XLMLHFRQLJVUPSROLFPHPRU\
5XLMLHFRQLJRQUPHPRU\

ÏGÐ

Ð	ÆÄ
resource manager	**E9** srm G5Bã
policy policy-name [**global**]	**Ï19E9** srm-policy G5Bã

ÏGÄÐ -

13.4 policy

ü srm G5BÈÏE› **policy Ð5Ï19E9** srm-policy G5BÄ
policy *policy-name* [**global**]
no policy *policy-name*

ÏÐAÐ

Ð	ÐÄ
policy-name	policy-nameÏ*+9Ä
global	**ÿÏZ** global ÐÈ</EÐ,Ÿ1*+9È</E-Ðÿ1*+9Ä
no	**ô8Ÿ19Ä**

ÏÕ,Õ5BÐ -

ÏÐ srm G5Bã

ÏS*Ð -

ÏG5B_Ð _ 1ÏG5BÄ rgos_policy ,X<,Ÿ1*+9Ä

5XLMLHFRÏQJUHVRXUFHPDÏQJHU

5XLMLHFRÏQJVUPSROLFÏUJRVBSROLFÏJOREDO

5XLMLHFRÏQJVUPSROLF\

_ 2ÏG5BÄ rgos_policy ,X*ÿÏ1*+9Ä

5XLMLHFRÏQJUHVRXUFHPDÏQJHU

5XLMLHFRÏQJVUPSROLFÏUJRVBSROLF\

5XLMLHFRÏQJVUPSROLF\

ÏÌGÐ

Ð	ÐÄ
resource manager	**E9** srm G5Bã

ÏGÄÐ -

13.5 policy policy-name

ü config-res-group G5BÈE› **policy** *policy-name* ÐÏÄ

policy *policy-name*

no policy *policy-name*

ÏÐAÐ

Ð	ÐÄ
policy-name	*Ÿ9Ä*
no	**ô84Ÿ19Ä6Ä**

ÏÕ,Õ5BÐ -

ÏÐ srm G5Bã

ÏS*Ð -

ÏG5B_Ð _ 1ÏG5BÐ rgos_group ,X4Ï snmpd ï4Ðn*ï1*+9Ä

5XLMLHFRQLJXUHWHUPLQO
5XLMLHFRQLJUHVRXUFHPDQJHU
5XLMLHFRQLJVUPXVHUJURXSUJRVBJURXS
5RXWHUFRQLJUHVJURXSLQWDQHVPSG
5RXWHUFRQLJUHVJURXSSROLFUJRVBSROLF\

ÏÎGÐ

Ò	ÐÄ
resource manager	**Ð9** srm G5Bã

ÏGÄÈ -

13.6 resource manager

ëÄ9 srm G5BÄ
resource manager [**slot** *slot-id* [**subsystem** *subsystem-id*]]

ÏÐAÈ

Ð	ÐÄ
slot *slot-id*	ûÎ?UG5B,XS5Ä
subsystem *subsystem-id*	$4ÄÈ 0-1Ÿ show version /Ç,X cpu idÄ

ÏÕ,Õ5BÐ -

ÏÐ <ã

ÏS*Ð -

ÏG5B_Ð _Ð9 srm G5Bã
5XLMLHFRQLJUHVRXUFHPDQJHU
5XLMLHFRQLJVUP

ÏÎGÐ

Ò	ÐÄ
-	-

ÏGÄÈ -

13.7 rising

ü owner-memory ê owner-cpu G5BÈÈ› **rising Ò5B4Ä**
{**critical | major | minor**} **rising** rising-waterline-value [**interval** interval-value] [**falling** falling-waterline-value [**interval** interval-value]]
no {**critical | major | minor**}

ÏÐAÈ

Ð	ÐÄ

rising	rising ‘4“
rising-waterline-value	rising ‘4È,RÈ× 1~100
interval-value	ÐÕ 5Ð 86400Ä4 Ä
falling	falling ‘4“
falling-waterline-value	falling ‘ÝÈ 1 100èÈ falling value NOÕ rising value
no	ô84“

ÏÕ,Õ5BÐ -

ÏÐ owner-memory ê owner-cpu G5Bã

ÏÕ*Ð

major	rising	minor	rising	critical	rising	major	rising

ÏG5B_Ð _ 1Ö5B critical ‘4“

5XLMLHFRQJVUPSROLFTPHPRU\

5XLMLHFRQJRÐUPHPRUFULWLFDOULVLQDOOLQWHUYDO

ÏÎGÐ

Ð	ÐÄ
resource manager	**E9** srm G5Bã
policy policy-name [global]	**Î** policy JE9 srm-policy G5Bã
memory	**E9** owner-memory G5Bã
cpu	**E9** owner-cpu G5Bã

ÏGÄÈ -

13.8 show resource database

/ SRM DBgÇÈ$5ÇÈ$S*4ÇÈ$S*5ÇÄ

show resource database [**slot** *slot-id* [**subsystem** *subsystem-id*]]

ÏÐÄÈ

Ð	ÐÄ
slot *slot-id*	ô?U/,XS5
subsystem *subsystem-id*	$4È× 0-1Ÿ show version /Ç,X cpu id

ÏÕ,Õ5BÐ -

ÏÐ <ã

ÏÕ*Ð -

ÏG5B_Ð _ 1Ö×X SRM DBgÇ

```
5XLMLHVKRZ/HVRXUFHGDWDEDVH
5HVRXUFH2Q/UV,'

&SX                                                    [
0HPRU\                                                [
5HVRXUFH8VHUV,'              3ULRULW\

.WLPHU                                                 [              3527B76.
$WLPHU                                                 [      $3B76.
SULQ/WNBWDVN                [              $3B76.B76
Z/LWTXHXHBSURFHVV[   3527B76.
WDVNOHWBWDVN     [3527B76.
FPLFBSDXVHBGHWHFW[   3527B76.
LGOH          [      ,/(
NHYHQ/WV   [      3527B76.
VQ/SG   [      3527B76.
VQ/SBWUDSG      [D      $3B76.
PWGEORFN      [E      3527B76.
JFBWDVN      [F      3527B76.
&RQ/WH[W     [G      3527B76.
NVZ/DSG          [H      3527B76.
0RUH—
```

+‰	Aà
Resource Owners	C$5ÝÙ
ID	Âš
Resource User Groups	C$S*4˜
Resource Users	C$S*5ÙÙ
Priority	ïù4{Ð PROT_TASKÖÕ/ß HAPP_TASK_TSÖ4{*Ö/ß APP_TASKÖ*Ö/ß APP_TASK_TSÖ(Xh*Ö/ß IDLE:0NKÆ7ÇÜ

ÏGÇ	Ç	ÆÄ
	-	-

ÏGÄà -

13.9 show resource notification

/ SRM ,¥_Ê4Auµ CÄ

show resource notification owner {**all | cpu | memory**}

Ð

Runtime(ms)	E¤ ÊÄ
5Sec	C$S*5ÙÙ 5 /¡4*ü cpu C$,X,RÚ
1Min	C$S*5ÙÙ 1 Ús4*ü cpu C$,X,RÚ
5Min	C$S*5ÙÙ 5 Ús4*ü cpu C$,X,RÚ

ÌÌGÐ

Ò	ÆÄ
-	-

ÌGÄÈ -

13.11 show resource policy

/ SRM ,¥1*+9ÇÄ

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

ÌÐAÈ

Ð	ÆÄ
all	**Ý9**
policy-name	*K1Ä*
slot *slot-id*	ÛÎ?U/,XS5
subsystem *subsystem-id*	3ÄÈ 0-1È show version /Ç,X cpu id

ÌÌ,Õ5BÐ -

ÌÒ <ã

ÌS*Ð -

ÌG5B_Ð _ 1ÓX SRM 1*+9Ç

```
5XLMLHVKRZHVRXUFHSROLFDOO
SROLF1DPHUJRVBJOREDOBSROLF\

7SH*OREDO
,8VH1R
52PHPRU\
FULWLFDOULVLQLWHUYDOIDOOLQLWHUYDO
PDMRUULVLQLWHUYDOIDOOLQLWHUYDO
PLRUULVLQLWHUYDOIDOOLQLWHUYDO
52FSX
FULWLFDOULVLQLWHUYDOIDOOLQLWHUYDO
PDMRUULVLQLWHUYDOIDOOLQLWHUYDO
PLRUULVLQLWHUYDOIDOOLQLWHUYDO
SROLF1DPHUJRVBSROLF\
```

```
7SH8VHU
,8VH1R
52PHPRU\
FULWLFDOULVLQLWHUYDOIDOOLQLWHUYDO
PDMRUULVLQLWHUYDOIDOOLQLWHUYDO
PLQUULVLQLWHUYDOIDOOLQLWHUYDO
52FSX
FULWLFDOULVLQLWHUYDOIDOOLQLWHUYDO
PDMRUULVLQLWHUYDOIDOOLQLWHUYDO
PLQUULVLQLWHUYDOIDOOLQLWHUYDO
3ROLF1DPHUJRVBSROLF\

7SH8VHU
,8VH1R
52PHPRU\
FULWLFDOULVLQLWHUYDOIDOOLQLWHUYDO
PDMRUULVLQLWHUYDOIDOOLQLWHUYDO
PLQUULVLQLWHUYDOIDOOLQLWHUYDO
52FSX
FULWLFDOULVLQLWHUYDOIDOOLQLWHUYDO
PDMRUULVLQLWHUYDOIDOOLQLWHUYDO
PLQUULVLQLWHUYDOIDOOLQLWHUYDO
```

+‰	Aè
Policy Name	,¥1*+9á
Type	,¥1*+92O_
In Use	6*ü
RO memory	C5Ý,
RO cpu	C*ï5Ù cpu

ÌÏGÐ Q EPSÃh2)@Hå8)'Hå8)'Hãh(8 Hn2¥å8(8 Hnèb2r2CH—ãh H2)@Hã

¨5,Õ5BÐ	-
¨Ð	<ã
¨S*Ð	-
¨G5B_Ð	_ 1Ö SRM G6(µ

```
5XLMLHVKRZ ZHVRXUFHUHODWLRQ VKLS
3ROLF\                                  5HVRXUFH8VHU      8VHU7SH

JOREDO                                  JOREDO                  *OREDO*URXS
UJRVBSROLF\          UJRVBJURXS         0XOWL8VHU*URXS
UJRVBSROLF\           NWLPHU                6LQOH8VHU*URXS
```

+‰	Aè
Policy	,¥1*+9
Resource User	C$S*5ÃÅ
User Type	4ˆ2O_Ê Global GroupÈ Multi-User GroupÈ Single-User Groupÿ<4È4È4Ä

¡ÎGÐ	Ç	ÆÄ
	-	-

¨GÄè	-

13.13 show resource user

¦ß RU /– OX' < Öá %‘) D "%‘ â6 Y 2•D@ Ž $$B ’ nòCH Õ4R„$A˜T nû$4• ò€ • R„(– Q ¸

Ð <ã

S*Ð -

G5B_Ð _ 1ÐX RU group Ð

```
5XLMLHVKRZHVRXUFHXVHUDOO
7RWDOUHVRXUFHXVHUJURXS
0XOWL8VHU*URXSUJRVBJURXS

3ROLFUJRVBSROLF\
8VHU
5HVRXUFH2ZUPHPRU\
SORFDWHG6L]H%
SORF&W
)UHH&W
5HVRXUFH2ZUFSX
5XWLPHPV     6HF     0LQ   0LQ

6LQOH8VHU*URXSNWLPHU

3ROLF\        UJRVBSROLF\
8VHU      NWLPHU
5HVRXUFH2ZUPHPRU\
SORFDWHG6L]H%
SORF&W
)UHH&W
5HVRXUFH2ZUFSX
5XWLPHPV          6HF     0LQ   0LQ
```

+‰	Aè
Multi-User Group	ˆCSS*ü˜
Single-User Group	)*CSS*ü˜
Policy	,¥1*+9
User	CSS*ÙÙ
Resource Owner	CSÝÙ
Allocated Size(B)	Ó!XY,ä8VÅ
Alloc Cnt	Y,Ó!Ð
Free Cnt	Y,GžÐ
Runtime(ms)	E¤ ÊÅ
5Sec	CSS*ÙÙ 5 /¦4*ü cpu CS,X,RÚ
1Min	CSS*ÙÙ 1 Ús4*ü cpu CS,X,RÚ
5Min	CSS*ÙÙ 5 Ús4*ü cpu CS,X,RÚ

ÏÎGÐ

Ò	ÆÄ
-	-

ÏGÄÈ -

13.14 user

ü srm G5BÈE› **user** Ø19hbC¶S5Ü

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

no user *resource-user-name*

ÏÐÄÈ

Ð	ÆÄ
resource-user-name	*C¶S*ÈÑÑ* show resouce database ¹ß 2Ï4³XC¶S*5Ü
resource-policy-name	¥Ä
no	ô8C¶S*5Ù¥1*+9,XG6(Ä

ÏÕ5BÐ -

ÏÐ srm G5Bã

ÏS*Ô -

ÏG5B_Ð _ 1Ö5Bô rgos_policy ,X*ü,¥1*+9Èh*ü snmpd Ä

5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJUHVRXUFHPDQJHU
5XLMLHFRQJVUPSROLFUJRVBSROLF\
5XLMLHFRQJVUPSROLFH[LW
5XLMLHFRQJVUPXVHUVQSGUJRVBSROLF\

ÏÎGÐ

Ò	ÆÄ
resource manager	E9 srm G5Bã
policy *policy-name*	Î¥1*+9JE9 srm-policy G5Bã

ÏGÄÈ -

13.15 user global

ü srm G5BÈE› **user global** Ø19hbC¶S5ÙÄ

user global

no user global

ÈÈ

Ð	ÆÄ

global-policy-name

	Q	Ä
	resource manager	srm

-

-

Ï5%x6Q5;X GYÈ8VÖ

1. y·
2. MAC

1

1.1 carrier-delay

ÿG5BÐ6*Q¸ **carrier-delay ÿA5BQÊÑQX** **no 6E5Õ**

carrier-delay [*seconds*]

no carrier-delay

ÐAÈ	Ð	ÆÄ
	seconds	ÃÝÞÈÈ 160 /Ä

ÿ5,Õ5BÐ EQÊ,Õ 2 /Ä

ÿQÐ yG5BÄ

ÿ5*Ô AÐÛJÒÃXEQ¶#Ë DCD ¢ Down (Õ Up (ÕXÊÈp DCD Ê
¥Ê w2ÄÑ9E/¡X(ÕX5ÃÇ¶XDBJÒÃ¸#Ä
Vp DCD EQÊÈWKSÈwÚÐA'KSoÊÈCÃ6.ÈCÃ×ÊW¿X
/Ïp,È DCD EQÊÈCÃ6.8,XÊÈwhAÚÐA'5B,ÌXôÈ
EÃÝ,XCÃ95Ä

ÿG5B_Ð ÞX_18×5By¸XEQÊ 5 /Ö

5XLMLHFRQILJLQWHUIDFHJLJDELWHWKHUQHW
5XLMLHFRLQILJFDUULHUGHOD\

ÌGQÐ	Q¸	ÆÄ
	-	-

ÿGÄÈ -

1.2 clear counters

#Ù8yAuD<

clear counters [*interface-id*]

ÐAÈ	Ð	ÆÄ
	interface-id	y2O_ÿÄ

ÿ5,Õ5BÐ -

ÿQÐ (MÄ

ÊÎ	y¡X4ˆAuÃÊE{MÇ¸	**show interfaces** [Ñ5ü	**clear counters** QÈ
	ÿ¼XAuÈÊpÊyÿÊAuDÈÊ		

ÏG5B_Ð	5XLMLHFOHDUFRXQWHUVJLJDELWHWKHUQHW

ÏÎGQÐ	Q¸	ÐÄ
	show interfaces	**ÿA5ÊAuÇÄ**

ÏGÄÈ	-

1.3 clear interface

y:Ê@

clear interface *interface-id*

ÏÐAÈ	Ð	ÐÄ
	interface-id	y2O_ÿÄ

ÏÕ5BÐ	-

ÏQÐ	(Mã

ÏS*Ê	AQÍ¼	Switch Port,L2 Aggregrate port ,Xä0Ã	Routed port,L3 Aggregate port ,Xä0Ã
	¸AQ¸bÍ4¥¸	**shutdown** `	**no shutdown** QÄ

ÏG5B_Ð	5XLMLHFOHDULQWHUIDFHJLJDELWHWKHUQHW

ÏÎGQÐ	Q¸	ÐÄ
	shutdown	GKÁ

ÏGÄÈ	-

1.4 descriptioin

A’5By¡XÄ*AQ¸X no EÍMÚA’5B65Ã

description *string*

no description

ÏÐAÈ	Ð	ÐÄ
	string	y¡XÄ

ÏÕ5BÐ	5,ÕÄ

[illegible]	yG5Bã
S*Ð	S*ü **show interfaces Q[illegible]**
G5B_Ð	5XLMLHFRQILJLQWHUIDFHJLJDELWHWKHUQHW 5XLMLHFRQILJLIGHVFULSWLRQ*%,&
ÌGQÐ	

auto	7#/#G£Ä
off	GK#/G£Ä
on	£Ê G£Ä
receive	**M2Ë£yå**
send	**M2Ë£Eõ**

ï5,Õ5BÐ 5,ÕK#/G£Ä

ÏQ¸Ð yG5Bã

ÏS*Ê S*ü **show interfaces** **yG£rL£Ä**

ÏG5B_Ð ÊÕ%y· 1/1 ,X#G£Ö

5XLMLHFRQILJLQWHUIDFHJLJDELWHWKHUQHW

5XLMLHFRQILJLIIORZERQWURORQ

ÏÌGQ¸Ð

Q¸	£Ä
show interfaces	¹¸ÿA'5B4³Au¸CÄ

ÏGÄÈ -

1.7 interface aggregateport

AÇ¸ÐÇÊ"KÊÜÒÀÈ9yG5BÊ*AÇ¸X no EÍMÔ L8AÿÄ

interface aggregateport *port-number*

ÐÄÈ

Ð	£Ä
port-number	Aggregate port ÊÈA'Ê)õ¤Ä

ï5,Õ5BÐ -

ÏQ¸Ð <G5Bã

ÏS*Ê ÃÔÊyt9Ê aggregate port Ä aggregate port ,X¸ÿÉ ÊÈ¸X2Ê aggregate port ,X2¤Ä*ü **show interfaces ê show interfaces aggregateport Q¸ÿA5Ë**

ÏG5B_Ð 5XLMLHFRQILJLQWHUIDFHDJJUHJDWHSRUW

ÏÌGQ¸Ð

Q¸	£Ä
show interfaces	**¸ÿA5Ë4Au¸CÄ**

[illegible]	-

1.8 interface fastEthernet

AQ[illegible]%y[illegible]9yG5B[illegible]

interface fastEthernet *mod-num/port-num*

[illegible]	[illegible]	[illegible]
	mod-num/port-num	[illegible]

[illegible]	-
[illegible]	<G5B[illegible]
[illegible]	AQ[illegible]Ý no

show interfaces	¹ÿA’5B4³AuÇÄ

ÏGÄÈ -

1.10 interface vlan

AÇÈÇÊ“KÕ6<.ÿÄ switch virtual interface È SVIÄÊ9y
G5BÄ*ÄÇ¸X **no EÍMÎ08A¹** SVIÄ
interface vlan *vlan-id*
no interface vlan *vlan-id*

ÏÐÄÈ

Ð	ÉÄ
vlan-id	VLAN IDÈÈA’ÛÄ

ÏÕ5BÐ -

ÏÇÈ <G5Bã

ÏS*Û S*ü **show interfaces ê show interfaces vlan QÇA5Ë**

ÏG5B_Ð 5XLMLHFRQILJLQWHUIDFHYODQ

ÏÎGQÐ

Q¸	ÉÄ
show interfaces	¹ÿA’5B4³AuÇÄ

ÏGÄÈ -

1.11 line-detect

> line-detect QÇÕ#AÇ²y4“4ÍX(Ã
line-detect

ÏÐÄÈ

Ð	ÉÄ
-	-

ÏÕ5BÐ -

ÏÇÈ yG5Bã

ÏS*Û line-detect QÇ*ü”4“4ÍX(Ã4“4ÎÏLpÄÇÃnLp¥X5BÄ

ÏG5B_Ð 5XLMLHFRQILJLQWHUIDFHJLJDELW(WKHUQHW
5XLMLHFRQILJLI*LJDELW(WKHUQHWOLQHGHWHFW

[illegible]	5,ÊÄ
[illegible]	yG5B[illegible] Ap ` SVIÅ
[illegible]	Vp[illegible] 5B0[illegible] [illegible] Vp|G5B0[illegible] [illegible] 5Bmedium-type auto-select prefer fiber 9A'5B[illegible] #{12[illegible]
[illegible]	5XLMLHFRQILJLQWHUIDFHJLJDELWHWKHUQHW 5XLMLHFRQILJLIPHGLXPWSHFRSSHU

[illegible]	Q¸	[illegible]
	show interfaces	**[illegible]**

[illegible]	-

1.13 mtu

A'5By[illegible] mtu

Mtu *num*

[illegible]	[illegible]	[illegible]
	num	64[illegible]216([illegible] 65536 B{•[illegible]

[illegible] 92040E65536{•[illegible]

1.14 negotiation mode

A’5By¡X7#Ä*ÄQ¸X **no EÍMÚ**

negotiation mode { **on** | **off** }

no negotiation mode

Ð	Ä
on	**A5**
off	**A5**

y¡X7#5,ÕÄ

yG5BÄ

,Ã)Ú,XA’5BÄ

M6,X_$bGKÁ 0/1 ,X7#5

5XLMLHFRQILJLQWHUIDFHJLJDELWHWKHUQHW

5XLMLHFRQILJLI*LJDELWHWKHUQHWQHJRWLDWLRQPRGHRII

Q¸	Ä
show interfaces	**0 5**

-

1.15 shutdown

ÿG5BÄ*ÄQ¸GKÁÄ*ÄQ¸X **no EÍMÔÄ**

shutdown

no shutdown

Ð	Ä
-	-

-

yG5Bã

bÿ%yÃp yÃVI yÄQ¸GKÁÈ¡XJ¨G5B¡ÈK

0*Ä*ü **show interfaces Q**

no shutdown

_ 1ÖKÁ Ap 1Ö

[redacted]	
[redacted]	
_ 2Ô	Ap 1Ö
5XLMLHFRQILJLQWHUIDFHDJJUHJDWHSRUW	
5XLMLHFRQILJLIQRVKXWGRZQ	

ÏGQÐ	Q¸	EÄ

1.17 speed

A’5By;XEÿ[Ä*ÄQ¸X **no EÍMÚ¼A5BÕ**
speed [**10 | 100 | 1000 | 10G | auto**]
no speed

ÐAÈ	Ð	ÉÄ
	10	**¼Ëg[** 10MbpsÄ
	100	**¼Ëg[** 100MbpsÄ
	1000	**¼Ëg[** 1000MbpsÄ
	10G	**¼Ëg[** 10GbpsÄ
	auto	**¼Ëg[7ÉÖÄ**

5,Õ5BÐ Eÿ[5,ÕÉÖ,XÄ

Qÿ yG5Bã

S*Ü Vpy· Ap ,XÀÈy;XEÿ[+ Ap ,XEÿ[ÑÃ’5BAy;XEÿ[ÈK0*ÿÄ
EÕ Ap Ê*ÿ¾XEÿ[A’5BÄ*ü **show interfaces QÃ5ÿ2ÈÃ5Bó**
z2O3ÈÈFP 2O_,XyÃÉÓA’ 10M 6Ù 100MÄ

G5B_Ð 5XLMLHFRQILJLQWHUIDFHJLJDELWHWKHUQHW
5XLMLHFRQILJLIVSHHG

ÌGQÿ

Q¸	ÉÄ
show interfaces	¹ÿA’5B4ÃuÇÄ

GÄÈ -

1.18 switchport

ÿG5B6*ÿÐ,X **switchport QÊA5B** 2 Ä*ÿ–
D,X **no switchport QÚyA5B** 3 Ä
switchport
no switchport

ÐAÈ	Ð	ÉÄ
	-	-

5,Õ5BÐ 5,ÕyFÑ 2 Ä

ÎÎ	AÇÍ¿6((=)ÚÃ¸yÄ switchport Q¸X0ÚKÁ¹yJGÛÈ¸E/ß A'ÄÏ¿Ey(Õ¸X#'CÄpÚ¸ 2 ÊÎ 3 ÊÎ8Ay¸;XÝ 2 2Ä
ÏG5B_Ð	5XLMLHFRQILJLIVZWFKSRUW

ÏÎGQÐ	Q¸	ÆÄ
	show interfaces	**ßA5ÄÄuÇÄ**

ÏGÄÈ	-

1.19 switchport access

S*ÄÇÛÊÃ'5B **access port** VLAN ,XäÕÃ*ÄÇ¸X no EÝ NMÁ0ÃÕ5,ÕX VLAN Ä

switchport access vlan *vlan-id*

no switchport access vlan

ÏÐÄÈ	Ð	ÆÄ
	vlan-id	0Ãt9,X VLAN ,X IDÄ

ÏÕ,Õ5BÐ	switch port 5,Õ access È,ÕX VLAN VLAN 1

ÏÇÛÊ	yG5Bã

ÏS*ÛÊ	Eg9ÛÊ VLAN IDÄpEg9,XÛÊX VLAN IDÈ'ÛÊ VLANÈÁ0Ã'5BA¹ VLAN ,XäÄpEg9,X4E¸X VLAN IDÈ VLAN ,XäÕÄpA0ÃÛÊ trunkportÈ0ÚÍ)0*Ä

ÏG5B_Ð	5XLMLHFRQILJLQWHUIDFHJLJDELWHWKHUQHW 5XLMLHFRQILJLIVZWFKSRUWDFFHVVYODQ

ÏÎGQÐ	Q¸	ÆÄ
	switchport mode	**ÛÊÛÄ** switch port ÅÄ
	switchport trunk	**ÛÊ** trunkport ÛÊ native VLAN ÈG5BEÞ Trunk ;XAÕE VLAN ëÄ

ÏGÄÈ	-

1.20 switchport mode

S*ÄÇÛÊÄ switch port ÅÄ¹ access port ÊÙ trunk port, ÊÙ' 802.1Q L{FÄ*ÄÇ¸X **no EÝMÁ¹yÃÕ**

switchport mode {**access | trunk**}

no switchport mode

Ð	£Ä
access	A’5Bþ switch port access portÄ
trunk	A’5Bþ switch port trunk portÄ

switch port 5,ã access

yG5Bã

Vpþ switch port ,Xã accessÁÿ5Bþ VLAN ,XÃÄü **switchport access vlan Qþ**Ay**þ**4 VLAN ,XäÄ

Vpþ switch port ,Xã trunkÈÿÃ VLAN ,XäÄÿ2b¾ VLAN +Aÿ;XAÃE VLAN ë¦È trunk port AÃE VLAN ë,XÝ VLAN ,XäÃ*ü **switchport trunk Q9nyÃE** VLAN ëÄ

5XLMLHFRQILJLIVZWFKSRUWPRGHWUXQN

Q¸	£Ä
switchport access	þÃ’5B statics accessportÈÚ/ÚÔ þ VLAN ,XäÃ
switchport trunk	þ trunkport ûþ native VLAN G5BEþ Trunk ;XAÃE VLAN ëÄ

-

1.21 switchport trunk

þ trunkport ûþ native VLAN G5BEþ Trunk ;XAÃE VLAN ëÄ*ÄQ¸X no EÍM Áÿ;X trunk 2ÓÃ

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

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

Ð	£Ä
allowed vlan *vlan-list*	G5BEþ Trunk ;XAÃE VLAN ëÄ vlan-list þ VLANÈ 3ÃE VLANÈX VLAN ID þX VLAN ID 4È KÈÄÅÿÄÖ10-20 ÄÄ ÅÈÖ 1-10,20-25,30,33 all ,XÿAÃE VLAN ëÿX VLAN× add ×/ûÙ VLAN ët9AÃE VLAN ë× remove ×/ûÙ VLAN ëÄÃE VLAN ëÃ8× except ×/Ú8ÎX VLAN ëÃXÝ VLAN t9AÃE VLAN ë×

native vlan *vlan-id*	G5B Native VLANÄ

ï5,Õ5BÐ 5,ÕXAÆE VLAN ëA'5B allÈ,ÕX Native VLAN í VLAN 1

ÏQþÐ yG5Bã

ÏS*üÐ Native VLANÖ
0 TrunkÈþJ2bÞÔ native VLANÄç native VLANÊþþX UNTAG
y[ÈÑx2bEþ VLAN ,XÊþ¿X5,Õ VLAN IDÊ IEEE 802.1Q ,X PVIDÅ
native VLAN ,X VLAN IDÊ Trunk ëÆZb native VLAN ,XÊS*ü UNTAG ,X
ÄÅ
AÆE VLAN ëÖ
þÔ Trunk 5,ÊgA'ÕXÝ VLANÄ 1é094 ÅX#GÆÊEA'5B Trunk
¿XAÆE VLAN ë9LÊ VLAN ,X#GñÑEEþ Trunk Ä
S*ü show interfaces switchport Q¿ÅA'5BÄ

ÏG5B_Ð MI6ÞÔ VLAN 2 0ÃÃ 1/15 /ÎX_ÊÐ

```
5XLMLHFRQILJLQWHUIDFHIDVWHWKHUQHW
5XLMLHFRQILJLIVZWFKSRUWWUXQNDOORZGYODQUHPRYH
5XLMLHFRQILJLIHQG
5XLMLHVKRZQWHUIDFHIDVWHWKHUQHWVZWFKSRUW
6ZWFKSRUWLVHQDEOHG
0RGHVWUXQNSRUW
6VHVVYODQLV1DWLYHVODQLV
3URWHFWHGLVGLVDEOHG
9ODQOLVWVLV
```

ÏÎGQÞ

Q¸	ËÄ
show interfaces	/yQÄ
switchport access	ÞÃ5B statics accessportÈÚ/ÊÔ þ VLAN ,XÃÐÃ

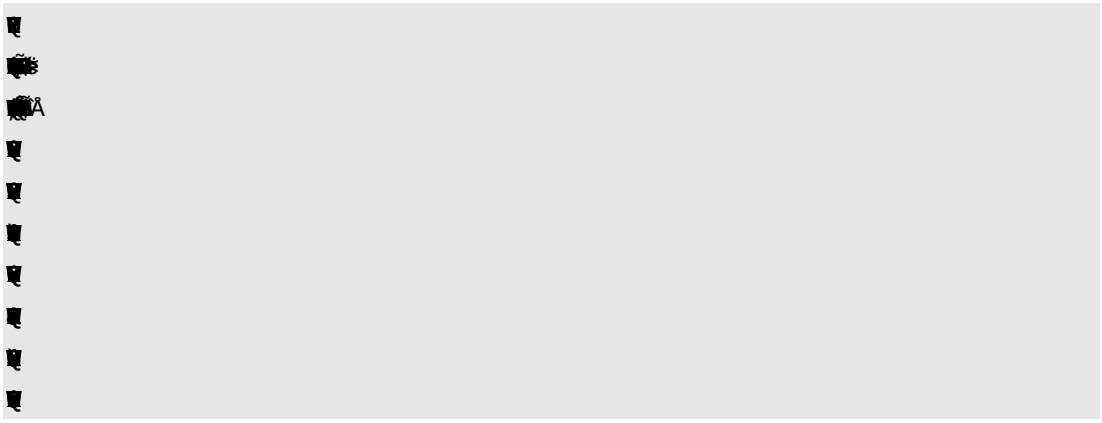
ïGÄÃÈÐ -

1.22 show interfaces

¿ÝA'5B¾ÅuQÈÇÄ
show interfaces [*interface-id*] [**counters | description | status | switchport | trunk | transceiver** [**alarm | diagnosis**]]

ÏÐAÈÐ

Ð	ËÄ
interface-id	ÝÊ%yÃ aggregateport yÃ SVI yÃ loopback yÄÅ
counters	y¡X4ÅuQÄ



[illegible]

_ 2Ö Gi0/1 Access [illegible]

6ZWFKSKRZQWHUIDFHVJLJDELW(WKHUQHW
,QGH[GHFKH[
*LJDELW(WKHUQHWLV2:1OLQHSURWRFROLV2:1
+DUGZUHLV%URDGFRP*LJDELW(WKHUQHW
,QWHUIDFHDGGUHVVLVQRLSDGGUHVV
078EWHV%:.ELW
(QFDSVXODWLRQSURWRFROLV%ULGJHORRSEDFNQRWVHW
.HHSDOLYHLQWHUYDOLVVHFVHW
&UULHUGHODLVVHF
5,ORDGLV7[ORDGLV
4XHXHLQJVWUDWHJ),)2
2XWSXWTXHXHGURSV
,QSXWTXHXHGURSV
6ZWFKSRUWDWWULEXWHV
LQWHUIDFHVGHVFULSWLRQ
PHGLXPWSHLVFRSSHU
ODVWFKDQJHWLPHD+RXU0LQXWH6HFRQG
3ULRULWLV
DGPLQGXSOH[PRGHLV872RSHUGXSOH[LV8QNQRZQ
DGPLQVSHHGLV872RSHUVSHHGLV8QNQRZQ
IORZHFHLYHFRQWURODGPLQVWDWXVLV2))IORZHQGFRQWURODGPLQVWDWXVLV2))IORZHFHLYH
FRQWURORSHUVWDWXVLV8QNQRZQIORZHQGFRQWURORSHUVWDWXVLV8QNQRZQ
EURDGFDVW6WRUP&QWUROLV2))PXOWLFDVW6WRUP&QWUROLV2))XQLFDVW6WRUP&QWUROLV2))
DGPLQQHJRWLDWLRQPRGHLV2))RSHUQHJRWLDWLRQLV21
3RUWWSHDFFHVV
9ODQLGFFHVV ;X2 9/$,'
PLQXWHVLQSXWUDWHELWVVHFSDFNHWVVHF
PLQXWHVRXWSXWUDWHELWVVHFSDFNHWVVHF
SDFNHWVLQSXWEWHVQREXIIHUGURSSHG
5HFHLYHGEURDGFDVWVUXQWVJLDQWV
LQSXWHUURUV&&UDPHRYHUUXQDERUW
SDFNHWVRXWSXWEWHVXQGHUUXQVGURSSHG
RXWSXWHUURUVFROOLVLRQVLQWHUIDFHUHVHWV

_ 3Ö Gi0/1 Hybrid Ê¡C

6ZWFKSKRZQWHUIDFHVJLJDELW(WKHUQHW
,QGH[GHFKH[
*LJDELW(WKHUQHWLV2:1OLQHSURWRFROLV2:1
+DUGZUHLV%URDGFRP*LJDELW(WKHUQHW
,QWHUIDFHDGGUHVVLVQRLSDGGUHVV
078EWHV%:.ELW
(QFDSVXODWLRQSURWRFROLV%ULGJHORRSEDFNQRWVHW
.HHSDOLYHLQWHUYDOLVVHFVHW
&UULHUGHODLVVHF
5,ORDGLV7[ORDGLV
4XHXHLQJVWUDWHJ),)2
2XWSXWTXHXHGURSV
,QSXWTXHXHGURSV
6ZWFKSRUWDWWULEXWHV
LQWHUIDFHVGHVFULSWLRQ
PHGLXPWSHLVFRSSHU
ODVWFKDQJHWLPHD+RXU0LQXWH6HFRQG
3ULRULWLV
DGPLQGXSOH[PRGHLV872RSHUGXSOH[LV8QNQRZQ
DGPLQVSHHGLV872RSHUVSHHGLV8QNQRZQ
IORZHFHLYHFRQWURODGPLQVWDWXVLV2))IORZHQGFRQWURODGPLQVWDWXVLV2))IORZHFHLYH
FRQWURORSHUVWDWXVLV8QNQRZQIORZHQGFRQWURORSHUVWDWXVLV8QNQRZQ
EURDGFDVW6WRUP&QWUROLV2))PXOWLFDVW6WRUP&QWUROLV2))XQLFDVW6WRUP&QWUROLV2))
3RUWWSHKEULG
7DJJHGYODQLGÂ„X 9/$,'
8QWDJJHGYODQLGQRQHÂ„X 9/$,'
PLQXWHVLQSXWUDWHELWVVHFSDFNHWVVHF
PLQXWHVRXWSXWUDWHELWVVHFSDFNHWVVHF
SDFNHWVLQSXWEWHVQREXIIHUGURSSHG
5HFHLYHGEURDGFDVWVUXQWVJLDQWV
LQSXWHUURUV&&UDPHRYHUUXQDERUW
SDFNHWVRXWSXWEWHVXQGHUUXQVGURSSHG
RXWSXWHUURUVFROOLVLRQVLQWHUIDFHUHVHWV

_ 4Ö3 Gi0/1 yµ

5XLMLHVKRZQWHUIDFHVJLJDELW(WKHUQHWVZWFKSRUW
,QWHUIDFH6ZWFKSRUW0RGH$FFHVV1DWLYH3URWHFWHG9/$OLVWV

*LJDELW(WKHUQHWHQDEOHG$FFHVVLVDEOHG$

_ 5Ö· Gigabitethernet 5/4 ,Xõ¡C

5XLMLHVKRZQWHUIDFHVJLJDELW(WKHUQHWWUDQVFHLYHU
7UDQVFHLYHU7SH%$(6,6)3
&QQHFWRU7SH/&
:DYHOHQJWKQP

[illegible]

P

P

[illegible]

_ 6Ø y Gigabitethernet 5/4 ,XõLpA:µ

5XLMLHVKRZQWHUIDFHVJLJDELW(WKHUQHWWUDQVFHLYHUDODUP
JLJDELW(WKHUQHWWUDQVFHLYHUFXUUHQWDODUPLQIRUPDWLRQ
5,ORVVRIVLJQDO

_ 7Ø y Gigabitethernet 5/4 ,XõAÐ,X#Gµ

5XLMLHVKRZQWHUIDFHVJLJDELW(WKHUQHWWUDQVFHLYHUGLDJQRVLV
&UUHQWGLDJQRVWLFSDUDPHWHUV$$HUDJH3RZU@
7HPS&OVLXV9ROWDJH9%LDVP$,SRZUG%P7,SRZUG%P
2.2.2.DODUP$@ODUP

ÏGQÐ

Q¸	ÐÄ
duplex	**E>yA5B**
flowcontrol	**ÔÉ£Ä**
interface gigabitEthernet	**E%yÐ%Ð9y·** **G5B**
interface aggregateport	**ÂÐÕÃÈ9yG5B**
interface vlan	**ïÎÂ ¹Ãp Õ 6<³y ·Ä** switch virtual interfaceÈVI ÅE9yG5BÄ
shutdown	**ÿG5BÀQ¸ÝÄ**
speed	**A5BÐÄ**
switchport priority	**A5B** 802.1q ,Xy5,Ã(Ä
switchport protected	**ÿÁ±yÄ**

ÏGÄÈ -

2 MAC

2.1 address-bind

A’5BÞ ip ` mac ,X4¥Ä

address-bind *ip-address mac-address*

no address-bind *ip-address*

ÐAÈ	Ð	ÆÄ
	ip-address	¥X IP Ä
	mac-address	¥X mac Ä

ÏÕ5BÐ -

ÏQÞ <G5Bã

ÏS*Ð Vp4Þ IP Þ,X MAC 4¥È’Ð IP EÞ IP ,XÈ ,X MAC EÞ IP 4¥,X MAC ÈÞ’Ð

ÏG5B_Ð M6_$ ip 3.3.3.3 ` mac 00d0.f811.1112 ,X4¥

5XLMLHFRQILJDGGUHVVELQGGI

ÏÌGQÞ

Q¸	ÆÄ
show address-bind	¥¥

ÏGÄÈ -

2.2 address-bind install

]™ LEQ_€*+9

address-bind install

no address-bind install

ÐAÈ	Ð	ÆÄ
	-	-

ÏÕ5BÐ -

ÏQÞ <G5Bã

ÏS*Ð Vp|A’n_ÈAQ]™+9¶Ä

address-bind ipv6-mode strict

Ð	EÄ
-	-

Ö,Õ5BÐ

<G5Bã

4¥,Xõ PÈÑÈAxã ã,h,XE

/Ö

ã	Ipv4 E
ù	IPV4+MAC 5Ê Xy[E
R	IPV4+MAC 5Ê Xy[E
P•	IPV4+MAC 5Ê Xy[E

ã	IPV6 E
ù	ipv6 y[E Axã
R	IPV6 y[E
P•	MAC 4¥,X MAC ,X IPV6 y[E@

¨5,Õ5BÐ	-
¨Q¨	<G5Bã
¨S*Ð	Vp4Ð IP Ð,X MAC 4¥È6¶ IP Eþ IP ,XÊ ¡X¶ MAC Eþ IP 4¥,X MACÊ6È 5¨VpAy_È J4¶

2.7 mac-address-learning

G5B0Ã46ÑÔ GKÁ

mac-address-learning

ÏÐAÈ	Ð	ÉÄ
	-	-

ÏÕ,Õ5BÐ :46ÑÔ

ÏQÐ yã

ÏS*Ûì ãÑ s6Ñ,X0ÃGKÁ MAC :46ÑÈGKÁ46Ñ,X0ÃÑ5B]<s6Ñ

ÏG5B_Ð _ 1ÖKÁ:46ÑÖ

5XLMLHFRQILJLIQRPDFDGGUHVVOHDUQLQJ

ÏÎGQÐ	Q¸	ÉÄ
	-	-

ÏGÄÈ -

2.8 mac-address-table aging-time

A’5B|ÕÕÈ*ÄÇ¸X no EÍMÁÍA’5B6ã,Õ

mac-address-table aging-time *seconds*

no mac-address-table aging-time

ÏÐAÈ	Ð	ÉÄ
	seconds	|ÕÕÈÄ8ÈA’ÛÄ

ÏÕ,Õ5BÐ 5,Õ 300 /Ä

ÏQÐ <G5Bã

ÏS*Ûì S*ü **show mac-address-table aging-time QÐ5Ä**

S*ü **show mac-address-table dynamic QÐÕ**

ÏG5B_Ð 5XLMLHFRQILJPDFDGGUHVVWDEOHDJLQJWLPH

ÏÎGQÐ	Q¸	ÉÄ
	show mac-address-table aging-time	**|ÕÕ**
	show mac-address-table dynamic	**|ÕÄ**

GÄÈ -

2.9 mac-address-table filtering

A’5BE$*AQ¸X **no EÍMMÛ8E$**

mac-address-table filtering *mac-address* **vlan** *vlan-id* [source | destination]

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

ÐAÈ

Ð	ÆÄ
mac-address	$Ä
vlan *vlan-id*	VLAN IDÈÈA’ÛÄ
source	$ MAC E>EEA’n,X VLAN y$ MAC A’n,X MAC ,XDBÄ
destination	$ MAC E>EEA’n,X VLAN y,ÂX MAC A’n,X MAC ,XDBÄ

5,Õ5BÐ 5,ÕÍ’5B)E$

8G5BÛ source ê destinationÈn,X VLAN y,XDB,X$ MAC ê,X MAC A’n,X MAC ÊÑ$

Q$ <G5Bã

S*Ô E$ÑÄ*ü **show mac-address-table filtering Q$A5Ä**

G5B_Ð 5XLMLHFRQILJPDFDGGUHVVWDEOHILOWHULQJGIYODQ

ÌGQÐ

Q¸	ÆÄ
show mac-address-table filtering	**E$ÄÄ**

GÄÈ -

2.10 mac-address-table notification

Ô MAC Eî-s6Ñ*AQ¸X **no EÍMMGÍs6Ñ**

mac-address-table notification [**interval** *value* | **history-size** *value*]

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

ÐAÈ

Ð	ÆÄ
interval *value*	A’5BÆÕ MAC Trap ,XÊÈÈh5,Õ 1 /Ä
history-size *value*	MAC Eî-Æ,××NM,XÔÈ,Õ 50Ä

5,Õ5BÐ ÊÈÈh5,Õ 1 /ÈNM,XÔ5,Õ 50Ä

ÌQÐ	<G5Bã
Ï*Ð	MAC Eî¹s6Ñ¡]Ã¾5ÈM-ÕX¶ó Trap EîÑ <G5BÈEQ¸ **snmp-server enable traps mac-notification** 9ÔÁÊÕ MAC Trap ,Xs6Ñ
ÏG5B_Ð	5XLMLHFRQILJPDFDGGUHVVWDEOHQRWLILFDWLRQ 5XLMLHFRQILJPDFDGGUHVVWDEOHQRWLILFDWLRQLQWHUYDO 5XLMLHFRQILJPDFDGGUHVVWDEOHQRWLILFDWLRQKLVWRUYVL]H

ÌGQÐ	Q¸	ÈÄ
	snmp-server enable traps	**A5ÈÛ** trap ,XÓÑ
	show mac-address-table notification	**/** MAC Eî¹s6Ñ'5BEî¹×¡ÇÄ
	snmp trap mac-notification	**ÓX** MAC Eî¹s6Ñ

ÏGÄÈ	-

2.11 mac-address-table static

A'5BÔ-Ñ*ÄQ¸X **no EÍMÔ8Ô-Ñ**

mac-address-table static *mac-addr* **vlan** *vlan-id* **interface** *interface-id*

no mac-address-table static *mac-addr* **vlan** *vlan-id* **interface** *interface-id*

ÐAÈ	

ÏGÄÈ	-

2.12 show address-bind

¡Ŕ¤×,XÇÄ

show address-bind

ÏÐAÈ	Ð	ÉÄ
	-	-

ÏÕ5BÐ	-
ÏQÐ	(Mã
ÏS*Ô	-
ÏG5B_Ð	5XLMLHVKRÐGGUHVVELQG ,3$GGUHVV%LQGLQJ0$GGU GI GI

ÏÎGQÐ	Q¸	ÉÄ
	address-bind	**A5ÐÄ**

ÏGÄÈ	-

2.13 show address-bind uplink

¡ßÇÄ

show address-bind uplink

ÏÐAÈ	Ð	ÉÄ
	-	-

ÏÕ5BÐ	-
ÏQÐ	(Mã
ÏS*Ô	-
ÏG5B_Ð	5XLMLHVKRÐGGUHVVELQGXSOLQN

3RUWV6WDWH

)DLVDEOHG
)DLVDEOHG

ÌÎGQÐ

Q¸	£Ä
address-bind uplink	**A5B**ê

ÏGÄÈ -

2.14 show mac-address-learning

¹ÛÃ46ÑÌ
show mac-address-learning

ÐAÈ

Ð	£Ä
-	-

ÏÕ,Õ5BÐ -

ÏQÐ (Mã

ÏS*Ô -

ÏG5B_Ð _ 1ÛÃ46ÑÖ
5XLMLHVKRP2DFDGGUHVVOHDUQLQJ

ÌÎGQÐ

Q¸	£Ä
-	-

ÏGÄÈ -

2.15 show mac-address-table address

/ÝO_,X MAC ÇÃÑ-ÕÅ
show mac-address-table [**address** *mac-addr*] [**interface** *interface-id*] [**vlan** *vlan-id*]

ÐAÈ

Ð	£Ä
address *mac-addr*	ûÌ,X MAC Ä
interface *interface-id*	**yË**
vlan *vlan-id*	VLAN Ë

ÏÕ,Õ5BÐ -

2.17 show mac-address-table count

/××NMþD,X4ÂuÇÄ

show mac-address-table count [interface *interface-id* **| vlan** *vlan-id***]**

ÏÐAÈ

Ð	ÆÄ
interface *interface-id*	yË
vlan *vlan-id*	VLAN Ë

Ï5,Õ5BÐ -

ÏQÐ (Mã

Ï*ÊÐ

show mac-address-table count QÈ MAC ×NM,X2O_4ÂuÇNMDGÆ

show mac-address-table count interface QÈ MAC ×NM,Xhy4ÂuÇNMDGÆ

show mac-address-table count vlan QÈ MAC ×NM2 VLAN 4ÂuÇNMDGÄ

Ï5B_Ð

_ 1Ö MAC 2O_,X×NMDGÆÖ

```
5XLMLHVKRZ2DFDGGUHVVWDEOHFRXQW
QDPLFSGGUHVVRXQW
6WDWLFSGGUHVVRXQW
)LOWHUSGGUHVVRXQW
7RWDO0DFSGGUHVVHV
7RWDO0DFSGGUHVV6SDFHSDLODEOH
```

_ 2Ö VLAN 1 ßX MAC DGÆÖ

```
5XLMLHVKRZ0                    Q      Q
Q
Q
Q
Q      Ð   Q
```

_ 3Ö interface g0/1 ßX MAC DGÆÖ

```
5XLMLHVKRZ0                    Q          J
Q
Q
Q
Q      Ð   Q
```

ÏGQÐ

Q¸	ÆÄ

show mac-address-table vlan	**b** VLAN ,XŹO_,XÇÄ

ÏGÄÈ -

2.18 show mac-address-table dynamic

/|ẽÇÄ

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

ÏÐAÈ

Ð	ÆÄ
mac-addr	*b*>*ÍÂ* MAC Ä
vlan-id	*b*>*ÍX* VLANÄ
interface-id	*ÏÐÃ*)*ÚÃ* AggregatePort)

ÏÕ5BÐ 5,Õ<FÇ

ÏQÐ (Mã

ÏS*Ð -

ÏG5B_Ð

```
5XLMLHVKRPDFDGGUHVVWDEOHGQDPLF
9ODQ0GGUHVV7SH,QWHUIDFH

<1,&LJDELWHWKHUQHW
FD<1,&LJDELWHWKHUQHW
FGII<1,&LJDELWHWKHUQHW
FIHHH<1,&LJDELWHWKHUQHW
FIII<1,&LJDELWHWKHUQHW
EG<1,&LJDELWHWKHUQHW
EDGHF<1,&LJDELWHWKHUQHW
```

ÌÎGQÐ

Q¸	ÆÄ
-	-

ÏGÄÈ -

2.19 show mac-address-table filtering

/E$Ç

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

ÏÐAÈ

Ð	ÆÄ
mac-addr	*b*>*ÍÂ* MAC Ä

show mac-address-table filtering	**E**
show mac-address-table dynamic	**l**
show mac-address-table address	**b**
show mac-address-table vlan	**b** VLAN ,X
show mac-address-table count	**b**

-

2.21 show mac-address-table notification

/ MAC E

show mac-address-table notification [**interface**[*interface-id*] **| history**]

D	**E**
interface *interface-id*	**y** MAC E
history	/ MAC E

5, MAC E

(M

-

```
5XLMLHVKRZDFDGGUHVVWDEOHQRWLILFDWLRQLQWHUIDFH
,QWHUIDFH0&GHG7UDS0&HPRYHG7UDS

*LJDELW(WKHUQHWLVDEOHGLVDEOHG
 5 X L M L H   V K R Z  P D !#À i D & H À ,¨s8¢t€ ` `  p @ P ð € 0  p 2 _ Ð 5 P D  L P@  •  Q0H L P
```

2.22 show mac-address-table static

/M-Õ

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

mac-addr		MAC Ä
vlan-id		VLANÄ
interface-id		

ÏG5B_Ð	5XLMLHVKRP2DFDGGUHVVWDEOHYODQ 9ODQ08GGUHVV7SH,QWHUIDFH GI67$,&LJDELWHWKHUQHW GI67$,&LJDELWHWKHUQHW GI67$,&LJDELWHWKHUQHW

ÏÏGQÐ	Q¸	£Ä
	show mac-address-table static	**M-Ã**
	show mac-address-table filtering	**£Ä**
	show mac-address-table dynamic	**ÍÃ**
	show mac-address-table address	**ÛÝÇ£Ä**
	show mac-address-table interface	**ÛyÝÇ£Ä**
	show mac-address-table count	**ÍÞ¤AuÄ**

ÏGÄÈ	-

2.24 snmp trap mac-notification

ÿÛX	MAC Eî¹s6Ñ*ÄÇ¸X	**no EÍMGÁ¹s6Ñ**

snmp trap mac-notification {**added** | **removed**}

no snmp trap mac-notification {**added** | **removed**}

ÏÐAÈ	Ð	£Ä
	added	**ÍtÊî¹Ä**
	removed	**ÍÊî¹Ä**

ÏÕ5BÐ	5,ÕKÁ¹s6Ñ
ÏQÐ	yG5Bã
ÏS*Û	S*ü **show mac-address-table notification** *interface* **Ä**

ÏG5B_Ð	5XLMLHFRQILJLQWHUIDFHJLJDELWHWKHUQHW 5XLMLHFRQILJLIVQPSWUDSPDFQRWLILFDWLRQDGGHG

ÏÏGQÐ	Q¸	£Ä
	mac-address-table notification	**Ô** MAC Eî¹s6Ñ
	show mac-address-table notification	**/** MAC Eî¹s6Ñ'5BÊî¹¤ÇÄ

ÏGÄÈ	-

3 Aggregate Port

3.1 aggregateport load-balance

G5BÎ AP ,X#GÉ5 1kÄ*ÄQ¸X no EÍMÚ#GÉ5 A'5B65,Ã

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

no aggregateport load-balance

ÏÐÀÈ

Ð	ÉÄ
dst-mac	**Bg9y[Â** MAC E=#GÉÄ AP ØÒÃ MAC ,à ,Xy[E,Ã0Ã MAC ,Xy[Ó0Ã
src-mac	**Bg9y[Ï** MAC E=#GÉÄ AP ØÒÃ MAC ,Xy[Ó0Ã MAC ,Xy[S*ÿ0Ã
src-dst-ip	**Ï** IP ,Â IP E=#GÉÄ IP+,Â IP ,X#GÉÉ0Ã@ Ï IP+,Â IP EÉ,XJÒÃ@G*Ï#GÉ5,XÄ
dst-ip	**Bg9y[Â** IP E=#GÉÄ AP ØÒÃ IP ,Xy[E,Ã0Ã IP ,Xy[Ó0Ã
src-ip	**Bg9y[Ï** IP E=#GÉÄ AP ØÒÃ IP ,Xy[Ó! ,X0Ã IP ,Xy[S*ÿ0Ã
src-dst-mac	**Ï** MAC ,Â MAC E=#GÉÄ MAC+,Â MAC ,X#GÉÉ0 ,X0Ã@ MAC+,Â MAC EÉ,XJÒÃ@

ÏÕ,Ã5BÐ BEg9y[,X,Â Ï MAC E=#GÉÄ

ÏQÐ <G5BÄ

ÏS*Ï S*ü **show aggregateport load-balance QÐ5BÉ5 1kÄ**

ÏG5B_Ð G5BÎ,Â MAC ,X#GÉ5Ö

5XLMLHFRQILJDJJUHJDWHSRUWORDGEDODQFHGVWPDF

ÏÌGQÐ

Q¸	ÉÄ
show aggregateport load-balance	**/** aggregateport A'5BÇÄ

ÏGÄÈ -

3.2 port-group

ÏÐ)ÚÃ'5B Aggregate Port ,X,ÄÃÄQ¸X no EÍMÚ8A0,Ã Aggregate Port ,2Ä

port-group *port-group-number*

no port-group

ÏÐAÐ

Ð	ÆÄ
port-group-number	Aggregate Port ¿0Ã¯X4Ë Aggregate Port yÄ

Ï¸Õ5BÐ (=)5¿Ãbï Aggregate PortÄ Ú Õ

ÏÎGQÐ	Q¸	£Ä
	aggregateport load-balance	**G5ÊÞ** AP ,X#G£5-1kÄ

ÏGÄÈ -

4 LACP

4.1 lacp system-priority

G5B,X LACP 2Ä4{S*AQ¸X no EÍM65,Ã

lacp system-priority *system-priority*

no lacp system-priority

ÐAÈ	Ð	ÉÄ
	system-priority	*X* LACP 2Ä4{È 0-65535Ä

5,Õ5BÐ 5,Ã{ 32768Ä

Q5 <G5BÄ

S*Ð LACP ,X2Ä4{+,X1u)Ú MAC Ä4{Ä MAC ĥ,XÈa 4{Ã5BÈp4{,1È MAC CÄ4{CPÃ6,Ý|ÕÕÄ.ÜE *E2Ä4{ÈEx6P,Ý6.ÜÄ

G5B_Ð G5B,X2Ä4{Ö

5XLMLHFRQILJODFSVVWHPSULRULW\

ÌGQÐ

Q¸	ÉÄ
port-group key mode active | passive	**S6ÑÃ** LACP Jĥ6.Ü ID E¤Ä
lacp port-priority	**G5BÃ** LACP Ä{

GÄÈ -

4.2 port-group mode

S6ÑÃ LACP JĥÜ6.ÜX4˜ ID 5.Ä*AQ¸X no EÍM#A0Ã LACP Au 1kÄ

port-group *key* **modeactive** | **passive**

no port-group

ÐAÈ	Ð	ÉÄ
	key	ĥA0Ã6.ÜX4˜ ID, key 8È5,Õ6.ÜD GÄ
	active	A6.Ä/A0ÑCK LACP 6.Ë1kÄ
	passive	A6.Ä/A0ÑCK LACP

	,X LACP y[LACP Au1k.

ï5,Õ5BÐ 5,ê LACP Au1kÄ

ÏQÞÐ yG5Bä

ïS*Ð

1) ÞÊ>6.Ê4{,X0ß6.ÊÊ4{,X0ÊÝÊ
LG5BÊ0Ã¾X4“CÃG8Ã¾X4{NNcÄ

2) ÆÊU6à96ÊÎÕ AP s6ÑX0ÊÑu LACPÊ LACP àÑu
/U6à96ÊÎÕ AP s6ÑU6à96ÊÎÕÑX APÊ5B LACP
APkACP AP êÑU6à96ÊÎÕ AP ,Xs6Ñ

3) +bÊ%6ÑSÊÈ LACP EÕ AP BÐÊ EÕ AP BÙX SYSLOGØÈ
0Ã FastEthernet 0/1 EÕ AP1 BÙX SYSLOGÖ %LACP-5-UNBUNDLE_FAIL: Interface FastEthernet 0/1 failed to leave the AggregatePort 1ÅÊ5BÞU6àEÕ AP
,X,ÈG5BÊ¡ AP ,X7y[gÄ

ïG5B_Ð
```
5XLMLHFRQILJLQWHUIDFHJLJDELWHWKHUQHW
5XLMLHFRQILJLIODFSSRUWSULRULW\
```

ÏÎGQÞÐ

Q¸	Ê
port-group *key* **modeactive** | **passive**	**S6ÑÑ** LACP Jû6.Ü ID Ê

ïGÄÈÐ -

4.3 show lacp summary

/,X LACP 6.ÜÄ

show lacp summary [*key*]

ïÐAÈÐ

Ð	Ê
key	*ûÐÈÜ* idÈpÊÊAx/Ý.ÜC

ï5,Õ5BÐ -

ÏQÞÐ (MÄ

ïS*Ð -

ïG5B_Ð
```
5XLMLHVKRZ&VXPPDU\
)ODJV6HYLFHLVVHQGLQJ6ORZ&8V)HYLFHLVVHQGLQJIDVW&8V
$HYLFHLVQDFWLYHPRGH3HYLFHLVLQSDVVLYHPRGH
$JUHJDWHSRUW
```

```
/RFDOLQIRUPDWLRQ
/&SRUW2SHU3RUW3RUW
3RUW)ODJV6WDWH3ULRULW\H1XPEHU6WDWH

*L6EQGO[[[G
*L6EQGO[[[G
*L6EQGO[[[G
3DUWQHULQIRUPDWLRQ
/&SRUW2SHU3RUW3RUW
3RUW)ODJV3ULRULW\HY,'H1XPEHU6WDWH

*L6GI[[[G
*L6GI[[[G
*L6GI[[[G
```

+‰	Aè
Local information	/,X2Ï4¹È,X0Ã LACP µÄ
Port	/,X2Ï4³Y0Ã IDÄ
Flags	/,X0Ã Xô(Ö' ù LACP (Ö 4EnÈnÈÕ LACPPDU ,X(Ö'ù -0Ö\Ä
State	/,X0Ã X6.Ï Ö ndl ù0ÃÈÕ b6.(Ö Down ≤/0ÃÈy(Ö susp ≤/0Ãb.(Ö
LACP Port Priority	/,X0Ã LACP ¼{µÄ
Oper Key	/,X0Ã Xµ KeyÄ
Port Number	/,X0Ã X0Ë
Port State	/,X0Ã LACP #A(Ö Ä
Partner infomation	FÈX,È0Ã LACP µÄ
Dev ID	FÍX0Ã F0Ã X2Ï4³ MAC µÄ

ÏGQÐ

Q¸	ÈÄ

susp

5 VLAN

5.1 add

å VLAN #ïtÕ Access yÈ*ü **no Q** VLAN ñ8Õ Access y
.

add interface { *interface-id* | **range** *interface-range* }

no add interface { *interface-id* | **range** *interface-range* }

ÏÐAÈ

Ð	EÄ
interface-id	AP ·
range *interface-range*	AP 8È

ï5,Õ5BÐ ÍÍ%yFÑb VLAN1

ÏQÐ VLAN G5Bã

ÏS*Ð AQÍ¼ access port Ä
AQ¸XG5BpÑÂAy2 VLAN ,XQÄ **switchport access vlan** *vlan-idÅ*
pÑÑt9 VLAN QÈ5B*ôXsÈ5B,XQÄM6G5B,XQÄ
S*AQÚ AP #ï! VLAN ÈG5BÍ¼ AP *È AP ;Xã
Ä

ÏG5B_Ð _ 1Ã VLAN20 t9 GigabitEthernet 0/10 y·

```
5XLMLHFRQILJXUHWHUPLQDO
6ZWFKSFRQILJYODQ
6ZWFKSFRQILJYODQDGGLQWHUIDFH*LJDELW(WKHUQHW
5XLMLHVKRZQWHUIDFH*LJDELW(WKHUQHWVZWFKSRUW
,QWHUIDFH6ZWFKSRUW0RGHSFHVV1DWLYH3URWHFWHG9/$OLVWV

*LJDELW(WKHUQHWHQDEOHG$66LVDEOHG$
```

_ 2Ã VLAN200 t9 GigabitEthernet 0/1~ GigabitEthernet 0/10 y·

```
5XLMLHFRQILJXUHWHUPLQDO
6ZWFKSFRQILJYODQ
6ZWFKSFRQILJYODQDGGLQWHUIDFHUDQJH*LJDELW(WKHUQHW
5XLMLHVKRZYODQ
6ZWFKSVKRZYODQ
9/$1DPH6WDWXV3RUWV

9/$67$,&L*L*L*L*L
*L*L*L*L*L*L*L*L*L
```

9/67,&L*L*L*L*L*L*L*L*L

_ 3ô VLAN20 t9 AggregatePort 10 ·

5XLMLHFRQILJXUHWHUPLQDO

6ZWFK$FRQILJYODQ

6ZWFK$FRQILJYODQDGGLQWHUIDFHDJJUHJDWHSRUW

5XLMLHVKRZQWHUIDFHDJJUHJDWHSRUWVZWFKSRUW

,QWHUIDFH6ZWFKSRUW0RGH$FFHVV1DWLYH3URWHFWHG9/$OLVWV

$JUHJDWH3RUWHQDEOHG$66LVDEOHG$

ÏÌGQÐ

Q¸	£Ä
show interface *interface-id* **switchport**	ÿÇ

ÏGÄÈ -

5.2 dot1q-vlan-current-entry mib dot1q-vlan-index max-access mode read-only

G5BAÇÃ Dot1qVlanCurrentEntry ≤,X MIB 8V& dot1qVlanIndex ,XÔ“KÂ$Ï

Ä*AÇ¸X no EÍM6á MIB 8V& dot1qVlanIndex ,XÔ“KÂ$U6A“KÂ

dot1q-vlan-current-entry mib dot1q-vlan-index max-access mode read-only

no dot1q-vlan-current-entry mib dot1q-vlan-index max-access mode

ÏÐAÈ

Ð	£Ä
-	-

Ï5,Õ5BÐ -

ÏQÐ <G5Bã

Ï*Ô ÜE?Mèg9 **end Qè** **Ctrl+C 4Ï**

ÏG5B_Ð Â Dot1qVlanCurrentEntry ≤,X MIB 8V& dot1qVlanIndex ,XÔ“KÂ$Ïã

5XLMLHFRQILJGRWTYODQFXUUHQWHQWUPLEGRWTYODQLQGH[PD[DFFHVVPRGHUHDGRQO\

5XLMLHFRQILJ

ÏÌGQÐ

Q¸	£Ä
show vlan	**/** VLAN ,XäÔÃÇÄ

ÏGÄÈ AÇÜ S3760E-P 2ïé6Õ

5.3 name

	A’5B VLAN ,XáÄ*AQ¸X **name** *vlan-name* **no name**	**no EÍMMÚA5BáÕ**
ÏÐAÈ	Ð	

ÏÎGQÐ

Q¸	£Ä
name	**A5B** VLAN ,XáÄ
switchport access	**ýt9þ** VlanÄ

ÏGÄÈ -

5.5 switchport access

S*ÄQþÃ'5B access portÈÚ#þ VLAN ,XäÃ0Ã*ÄQ¸X **no EÝ**
NMÄ0ÃÕ VLAN Ä
switchport access vlan *vlan-id*
no switchport access vlan

ÏÐÄÈ

Ð	£Ä
vlan-id	*ÃX* VLAN ,X IDÄ

ÏÕ5BÐ switch port 5,ã accessÈ,ÕX VLAN VLAN 1

ÏQþ yG5Bã

ÏS*Ûþ Eg9þ VLAN IDÄXpEg9,XþX VLAN IDÈ'þ VLANÈÚ0Ã'5BA¹
VLAN ,XäÄXpEg9,XÄÈX VLAN IDÈ VLAN ,XäÃ0Ã
VpA0þ trunk portÈÃÄ0

ÏG5B_Ð

5XLMLHFRQILJLQWHUIDFHJLJDELWHWKHUQHW
5XLMLHFRQILJLIVZWFKSRUWDFFHVVYODQ

ÏÎGQÐ

Q¸	£Ä
switchport mode	**ûþ** switch port ÅXä
switchport trunk	**þ** trunk port ûþ native VLAN ÈG5BEþ Trunk ,XAÃE VLAN ëÄ

ÏGÄÈCÄÈÐ

trunk	**A5þ**	switch port	trunk portÄ
hybrid	**A5þ**	switch port	hybrid portÄ
uplink	**A5þ**	switch port	uplink portÄ
dot1q-tunnel	**A5þ**	switch port	802.1Q tunnel portÄ

ï5,Õ5BÐ switch port 5,õ access

ÜQþ yG5Bã

Ï*ûð Vpþô switch port ,Xã accessÁÈ¥ÿõ VLAN ,XäÄü **switchport access vlan Qþ¥Aÿþ¼** VLAN ,XäÄ

Vpþô switch port ,Xã trunkÊÿþÃ VLAN ,XäÄÿÊbð¼ VLAN +Aÿ¡XAÆE VLAN ë‡ÈÈ trunk port AÆE VLAN ë,XÝ VLAN ,XäÃ*ü **switchport trunk Q¸nyÆE** VLAN ë

ÜG5B_Ð 5XLMLHFRQILJLIVZWFKSRUWPRGHWUXQN

ÎÎGQþÐ

Q¸	Ë Ä
switchport access	**ûþÃ5B** access port È ÚW ü þô VLAN ,Xä0Ã
switchport trunk	**þô** trunk port ûþô native VLAN ÜG5BEþ Trunk ¡XAÆE VLAN ë*AQ¸X

ÜÄà¼ -

5.7 switchport trunk

þô trunk port ûþô native VLAN ÜG5BEþ Trunk ¡XAÆE VLAN ëÄ*AQ¸X **no EÍM Áÿ¡X** trunk 2ë5,Ã

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

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

ÐÀà¼

Ð	Ë Ä
allowed vlan *vlan-list*	G5BEþ Trunk ¡XAÆE VLAN ëÄ vlan-list þô VLANÈ 3ÆE VLANèX VLAN ID ÔX VLAN ID 4è KÈÀÆEÿXÖ10-20 ÄÃ ÆEhÐÖ 1-10,20-25,30,33 all ,XÿAÆE VLAN ëÔX VLAN× add ×/ûÙ VLAN ët9AÆE VLAN ë× remove ×/ûÙ VLAN ëÀÆE VLAN ë08× except ×/Ú8ÎX VLAN ëÎÝ VLANt9AÆE VLAN ë×
native vlan *vlan-id*	G5B Native VLANÄ

ï5,Õ5BÐ 5,ÕXAÆE VLAN ëA'5B allÈ,ÕX Native VLAN í VLAN 1

ÏQþÐ yG5Bã

ÏS*ÐÔ **Native VLANÖ**

0 TrunkÈÞJ2bÐÔ native VLANÄç native VLANÊÞÞ¥X UNTAG y[ÈÑx2bEþ VLAN ,XÊþ,X5,Õ VLAN IDÊ IEEE 802.1Q ,X PVIDÅ native VLAN ,X VLAN IDÊ Trunk ÆÇ2b native VLAN ,XÐ*ü UNTAG ,X Ä

AÆE VLAN ë9

þÐ Trunk 5,ÊgA'ÕXÝ VLANÄ 1é094 ,X#GÆÊEA'5B Trunk ;XAÆE VLAN ë9Lê VLAN ,X#GéÑEEÞ Trunk Ä

S*ü **show interfaces switchport Q¸15Ê**

ïG5B_Ð MI6ÐÔ VLAN 2 0Ã 1/15 /ÎX_ëÐ

```
5XLMLHFRQILJLQWHUIDFHIDVWHWKHUQHW
5XLMLHFRQILJLVZLWFKSRUWWUXQNDOORZGYODQUHPRYH
5XLMLHFRQILJLIHQG
5XLMLHVKRZQWHUIDFHIDVWHWKHUQHWVZLWFKSRUW
,QWHUIDFH6ZLWFKSRUW0RGH$FFHVV1DWLYH3URWHFWHG9/$OLVWV

)LJDELW(WKHUQHWHQDEOHG7581.LVDEOHG
```

ÎÎGQÞÐ

Q¸	Ë:Ä
show interfases	**ÿ(C Ä**
switchport access	**ÏÔÃ 5B** access port È ÚW Ê Ô VLAN ,Xä0Ã

ïGÄÀè -

5.8 vlan

G5BAQÇ9 VLAN G5BÊ*ÄQ¸X no EÝMî8,ÆX VLANÄ

vlan *vlan-id*

no vlan *vlan-id*

ÐAè

Ð	Ë:Ä
vlan-id	VLAN ID Ê ê0,ÕX VLANXLAN 1 Å0BÄ

ï5,Õ5BÐ -

ÏQþÐ <G5Bã

Ï*Ô	ØE²Mèg9	**end Q¸È**	**Ctrl+C 4Ïä**
	ØE²<G5BèG9	**exit Q¸**	

Ï G5B_Ð	5XLMLHFRQILJYODQ 5XLMLHFRQILJYODQ

ÏÌGQÐ

Q¸	ÆÄ
show vlan	**/** VLAN ,Xä¸0ÃÇÄ

ÏGÄÈ -

6 Super-VLAN

6.1 proxy-arp

S*AÏQÔ VLAN ,X ARP)ÉÓÑ

proxy-arp

no proxy-arp

ÏÐAÈ

ÏG5B_Ð	5XLMLHVKRZVXSHUYODQ VXSHUYODQLGVXSHUYODQDUSSUR[VXEYODQLGVXEYODQDUSSUR[VXEYODQLSUDQJH 2121 21

ÏÌGQÐ¸	Q¸	ÐÆÄ
	-	-

ÏGÄÈÐ	-

6.3 subvlan

S*ÄÆQ¸A'5BA¹ super vlan ,X subvlan ÊÔÌ8 subvlanÄ

subvlan *vlan-id-list*

no subvlan [*vlan-id-list*]

ÏÐÄÈÐ	Ð	ÐÆÄ
	Vlan-id-list	ÅÁ VLAN ,X subvlan ,X ID,ÊÕ'5Bîp vlan

ÏÕ¸Õ5BÐ	-

ÏQÐ¸Ð	VLAN G5Bã

ÏS*ÊÔÌ	S*ü **no subvlan ÔÌ8A¹** supevlan ,ÝX subvlan

ÏG5B_Ð	5XLMLHFRQILJYODQ 5XLMLHFRQILJYODQVXSHUYODQ 5XLMLHFRQILJYODQVXEYODQ 5XLMLHFRQILJYODQVXEYODQ

ÏÌGQÐ¸	Q¸	ÐÆÄ
	show supervlan	**/** supervlan ÇÄ

ÏGÄÈÐ	-

6.4 subvlan-address-range

S*ÄÆQ¸A'5B subvlan ,X ip 8ÊÆ

subvlan-address-range *start-ip end-ip*

no subvlan-address-range

ÏÐAÐ

Ð	ÆÄ
start-ip	ÅA SubVLAN ,X IP CKŸ
end-ip	ÅA SubVLAN ,X IP 4§

ÏÐ,Õ5BÐ -

ÏQÐ VLAN G5Bã

ÏS*Ð ÐE(MÈg9 **end QÈ** **Ctrl+C 4Ï**
ÐE<G5BÈg9 **exit Q¸**

ÏG5B_Ð 5XLMLHFRQILJYODQ
5XLMLHFRQILJYODQVXEYODQDGGUHVVUDQJH

ÏÎGQÐ

Q¸	ÆÄ
show supervlan	**/** supervlan ÇÄ

€ ž Ž û œ

7 Protocol VLAN

7.1 protocol-vlan ipv4

G5B IP 5%}-Ð VLAN 2O

protocol-vlan ipv4 *addr* **mask** *addr* **vlan** *id*

#ûJ,X IP G5B

no protocol-vlan ipv4 *addr* **mask** *addr*

#)X IP G5B

no protocol-vlan ipv4

ÏDAÈ

Ð	EÄ
addr	IP ÈÉ x.x.x.x 6Eg9
id	VLAN IDÈ- {•ÕXÔ VLAN

¨5,Õ5BÐ	-
¨Q¸Ð	yã
¨S*Ð	-
¨G5B_Ð	5XLMLHFRQILJLISURWRFROYODQLSY

¡ÎGQÐ	Q¸	ÆÄ
	no protocol vlan ipv4	-

¨GÄÈ	-

7.3 protocol-vlan profile

G5By[2O_ƀ%2O_,X profile

protocol-vlan profile *num* **frame-type** *type* **ether-type** *type*

ĉ8¤ profile G5B

no protocol-vlan profile *num*

#Ù8,Ý profile G5B

no protocol-vlan profile

¨ÐAÈ	Ð	ÆÄ
	num	profile 2ë
	type	y[2O_ƀ%2O_

¨5,Õ5BÐ	-
¨Q¸Ð	<G5Bã
¨S*Ð	-
¨G5B_Ð	5XLMLHFRQILJSURWRFROYODQSURILOHIUDPHWŠH(7+(5,,HWKHUWŠHDDUS

¡ÎGQÐ	Q¸	ÆÄ
	show protocol-vlan profile	-
	show protocol-vlan profile *num*	-
	no protocol-vlan profile	-
	no protocol-vlan profile *num*	-

¨GÄÈ	-

7.4 protocol-vlan profile

h*ü profile Aÿ·

protocol-vlan profile *num* **vlan** *id*

#Ù80Ã,Xþ profile

no protocol-vlan profile *id*

#Ù80Ã,XÝ profile

no protocol-vlan profile

ÏÐAÈ

Ð	ÆÄ
num	profile 2ë
id	VLAN IDÈ- {•Õ,XÛ VLAN

ÏÕ,Õ5BÐ -

ÏQÞ yã

ÏS*Ûì -

ÏG5B_Ð 5XLMLHFRQILJLISURWRFROYODQSURILOHYODQ

ÌÏGQÞ

Q¸	ÆÄ
show protocol-vlan profile	-
show protocol-vlan profile *num*	-
no protocol-vlan profile	-
no protocol-vlan profile *num*	-

ÏGÄÈ -

7.5 show protocol-vlan

/ Protocol VLAN ,XG5B

show vlan protocol-vlan

ÏÐAÈ

Ð	ÆÄ
-	-

ÏÕ,Õ5BÐ -

ÏQÞ (Mã

ÏS*Ûì

ÏG5B_Ð	5XLMLHVKRZURWRFROYODQ

ÏÌGQÐ	Q¸	ÐÄ
	-	-

ÏGÄÐ	-

8 Private VLAN

8.1 private-vlan association

G6(secondary VLAN â primary VLAN G5BQ¸

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

no private-vlan association

ÐAÐ	Ð	ÆÄ
	svlist	secondary VLAN list
	no	ª\ primary VLAN ¾X secondary VLAN G6(

ÐÕ5BÐ G6(

ÐQÐ Primary VLAN G5Bã

ÐÛ -

ÐG5B_Ð 5XLMLHFRQILJYODQ
5XLMLHFRQILJYODQSULYDWHYODQDVVRFLDWLRQDGG

ÐGQÐ

Q¸	ÆÄ
show vlan private-vlan	-

ÐÄÐ -

8.2 private-vlan mapping

Ø secondary VLAN 7Ç SVI yQ¸

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

no private-vlan mapping

ÐAÐ	Ð	ÆÄ
	svlist	secondary VLAN list
	no	ô8Ø

ÐÕ5BÐ -

ÐQÐ Primary VLAN ĥ,Xyã

ÐÛ -

ÏG5B_Ð	5XLMLHFRQILJLQWHUIDFHYODQ 5XLMLHFRQILJLISULYDWHYODQPDSSLQJDGG

ÏÎGQÐ

Q¸	ÆÄ
show vlan private-vlan	-

ÏGÄÈ -

8.3 private-vlan type

G5B VLAN /•Ý VLAN

private-vlan {*community* | *isolated* | *primary*}

no private-vlan {*community* | *isolated* | *primary*}

ÏÐAÈ

Ð	ÆÄ
community	G5B community VLAN
isolated	G5B isolated VLAN
primary	G5B primary VLAN
no	ûn8,ìh,X/•Ý VLAN G5B

ÏÕ,Õ5BÐ /•Ý VLAN

ÏQÐ VLAN G5Bã

ÏS*Ûì -

ÏG5B_Ð	5XLMLHFRQILJYODQ 5XLMLHFRQILJYODQSULYDWHYODQSULPDU\

ÏÎGQÐ

Q¸	ÆÄ
show vlan private-vlan	-

ÏGÄÈ -

8.4 switchport mode private-vlan

ÏÄ private VLAN ã

switchport mode private-vlan{**host**|**promiscuous**}

no switchport mode

ÏÐAÈ

Ð	ÆÄ
host	/•Ý VLAN ,Xã

promiscuous	/•Ý VLAN ,X#ã
no	ô80ÃÝ VLAN G5B

ï5,Õ5BÐ -

ÏQÐ yã

ÏS*Ô -

ÏG5B_Ð 5XLMLHFRQILJLQWHUIDFHJLJDELW(WKHUQHW
5XLMLHFRQILJLIVZWFKSRUWPRGHSULYDWHYODQKRVW

ÏÏGQÐ

Q¸	ÆÄ
show vlan private-vlan	-

ÏGÄÈ -

8.5 switchport private-vlan association trunk

G5B0Ãh/• Trunk ÈG6(ÀÝ VLANÈG6(Ä

switchport private-vlan association trunk *p_vid s_vid*

no switchport private-vlan association trunk *p_vid s_vid*

ÏÐÀÈ

Ð	ÆÄ
p_vid	4ÊX primary VID
s_vid	ÂÆ secondary VID
no	ÀÝ VLAN ,XG6(

ï5,Õ5BÐ -

ÏQÐ yG5Bã

ÏS*Ô 5XLMLHFRQILJLQWHUIDFHJLJDELW(WKHUQHW
5XLMLHFRQILJLIVZWFKSRUWPRGHWUXQN
5XLMLHFRQILJLIVZWFKSRUWSULYDWHYODQDVVRFLDWLRQWUXQN

ÏG5B_Ð -

ÏÏGQÐ

Q¸	ÆÄ
-	-

ÏGÄÈ -

8.6 switchport private-vlan host-association

G6(private VLAN ãyG6(,X primary VLAN ÿX secondary VLAN

switchport private-vlan host-association *p_vid s_vid*

no switchport private-vlan host-association

ÏÐAÈ	Ð	ÉÄ
	p_vid	4ÊX primary VID
	s_vid	4ÊX secondary VID
	no	/•Ý VLAN ô80Ã

ÏÕ,Õ5BÐ -

ÏQÐ yG5Bã

ÏS*Ô -

ÏG5B_Ð

5XLMLHFRQILJLQWHUIDFHJLJDELW(WKHUQHW
5XLMLHFRQILJLIVZWFKSRUWPRGHSULYDWHYODQKRVW
5XLMLHFRQILJLIVZWFKSRUWSULYDWHYODQKRVWDVVRFLDWLRQ

ÌÏGQÐ

Q¸	ÉÄ
show vlan private-vlan	-

ÏGÄÈ -

8.7 switchport private-vlan mapping

private VLAN ,X#ÿG5BÓ#ÐX secondary VLAN

switchport private-vlan mapping *p_vid* {*svlist*|**add** *svist* |**remove** *svlist*}

no switchport private-vlan mapping

ÏÐAÈ	Ð	ÉÄ
	p_vid	4ÊX primary VID
	svlist	ÊE secondary VLAN list
	no	¾#ÐXÝ secondaryVLAN

ÏÕ,Õ5BÐ #ÐX secondary VLAN

ÏQÐ /•Ý VLAN #ÿã

ÏS*Ô -

G5B_Đ	5XLMLHFRQILJLQWHUIDFHJLJDELW(WKHUQHW 5XLMLHFRQILJLIVZWFKSRUWPRGHSULYDWHYODQSURPLVFXRXV 5XLMLHFRQILJLIVZWFKSRUWSULYDWHYODQPDSSLQJDGG

ÌGQÐ	Q¸	ÆÄ
	show vlan private-vlan	-

GÄÈ -

8.8 switchport private-vlan promiscuous trunk

G5B0ÃÈ Trunk ÈG6(ÀÝ VLANÈG6(Ä

switchport private-vlan promiscuous trunk *p_vid s_list*

no switchport private-vlan promiscuous trunk *p_vid s_list*

ÐÀÈ	Đ	ÆÄ
	p_vid	ÀÊX primary VID
	s_list	ÀÊ secondary VID ë
	no	ÀÝ VLAN ,XG6(

5,Õ5BÐ -

QÀ yG5Bã

S*Ê -

G5B_Đ	5XLMLHFRQILJLQWHUIDFHJLJDELW(WKHUQHW 5XLMLHFRQILJLIVZWFKSRUWPRGHWUXQN 5XLMLHFRQILJLIVZWFKSRUWSULYDWHYODQSURPLVFXRXVWUXQN

ÌGQÐ	Q¸	ÆÄ
	-	-

GÄÈ -

8.9 show vlan private-vlan

/ private VLAN ,XG5B

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

ÐÀÈ	Đ	ÆÄ
	primary	/ primary VLAN µ
	community	/ community VLAN µ

isolated	/ isolated VLAN µ

¨5,Õ5BÐ ´ private VLAN

¨Q¸Ð (Mã

¨S*Ð -

¨G5B_Ð 5XLMLHVKRZ ODQSULYDWHYODQ

¨ÌGQ¸Ð

Q¸	£Ä
-	-

¨GÄÈ -

8.10 switchport hybrid allowed vlan

G5B hybrid 0,ÃXEgÎ?

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

no switchport hybrid allowed vlan

¨ÐAÈ

Ð	£Ä
no	6á hybrid TAxEgÎ?

¨5,Õ5BÐ µ5B

¨Q¸Ð yã

¨S*Ð -

¨G5B_Ð 5XLMLHFRQILJLIVZ WFKSRUWKE ULGDOORZ GYODQDGGXQWDJJHG

¨ÌGQ¸Ð

Q¸	£Ä

¨GÄÈ -

8.11 switchport hybrid native vlan

G5B hybrid 0,ÃXTAx vlan

switchport hybrid native vlan *vid*

no switchport hybrid native vlan

ÐAÈ	Ð	ÆÄ
	no	6á hybrid TÆx VLAN

ÏÕ,Ã5BÐ ÞG5B

ÏQÞ yã

ÏS*Ô -

ÏG5B_Ð 5XLMLHFRQILJLIVZWFKSRUWKEULGQDWLYHYODQ

ÌÎGQÞ	Q¸	ÆÄ
	-	-

ÏGÄÈ -

8.12 switchport mode hybrid

G5B0Ã hybrid ·

switchport mode hybrid

no switchport mode

ÐAÈ	Ð	ÆÄ
	no	ô8 hybrid ã

ÏÕ,Ã5BÐ ÞG5B

ÏQÞ yã

ÏS*Ô -

ÏG5B_Ð 5XLMLHFRQILJLIVZWFKSRUWPRGHKEULG

ÌÎGQÞ	Q¸	ÆÄ
	-	-

ÏGÄÈ -

9 MAC VLAN

9.1 mac-vlan enable

AQ*ÿîb0Ã GKÁ MAC VLAN s6ÑÜÃG5BÃ*AQ¸

mac-vlan enable

ÏÐAÈ	Ð	£Ä
	-	-

ÏÕ5BÐ 5,Ã0,XÔÐGK(Ã

ÏQÐ 0Ã5Bã

ÏS*Ô NO0Ã MAC VLAN ÔÈG5B,X MAC VLAN ≈NM6ÑÃ
MAC VLAN s6Ñ hybrid 0ÃW0Ã

ÏG5B_Ð 5XLMLHFRQILJXUHWHUPLQDO
(QWHUFRQILJXUDWLRQFRPPDQGVRQHSHUOLQH(QGZWK&7/=
5XLMLHFRQILJLQWHUIDFHIDVWHWKHUQHW
5XLMLHFRQILJLIPDFYODQHQDEOH
5XLMLHFRQILJLIQRPDFYODQHQDEOH
5XLMLHFRQILJLIHQG

ÏÌGQÐ	Q¸	£Ä

¨5,Õ5BÐ	5,ÕÝ5BM-Õ MAC VLAN ≈NMÄ
¨Q¸Ð	<G5Bã
¨S*Ô	**mac-vlan mac-address Q¸G5B** MAC ĥ,X VLAN ¾4{Ä **ao mac-vlan Q¸ü 9ô8** MAC â VLAN ,XG6(G2Ä
¨G5B_Ð	5XLMLHFRQILJXUHWHUPLQDO (QWHUFRQILJXUDWLRQFRPPDQGVRQHSHUOLQH(QGZWK&7/= 5XLMLHFRQILJPDFYODQPDFDGGUHVVYODQSULRULW\ 5XLMLHFRQILJPDFYODQPDFDGGUHVVPDVN IIIIIIIIYODQSULRULW\ 5XLMLHVKRZPDFYODQDOO 7KHIROORZQJ0$&/$DGGUHVVH[LVW 66WDWLFQDPLF 0$&06.9/$,35,267$(IIIIIIII6 IIIIIIIIIIII6 7RWDO0$&/$DGGUHVVFRXQW

¨ÎGQÐ	Q¸	ÐÄ
	show mac-vlan all	**/** MAC VLAN ≈NM

¨GÄÈ	-

9.3 show mac-vlan

S*ÄQ¸G5B,X MAC VLAN ≈NMÄ

show mac-vlan

¨ÐÄÈ	Ð	ÐÄ
	all	**/** MAC-VLAN ≈,X≈NMÄ
	dynamic	**[Õ5]** MAC-VLAN ≈NMÄ
	static	**M-Õ5]** MAC-VLAN ≈NMÄ
	mac-address *mac-address*	**Ý** MAC / MAC-VLAN ≈NMÄ
	mask *mac-mask*	**ô** MAC 8]X MAC-VLAN ≈NMÄ
	vlan *vlan-id*	**ô** VLAN ,X MAC-VLAN ≈NMÄ

¨5,Õ5BÐ	-
¨Q¸Ð	(Mã

ÏÎGQÐ

Q¸	ÆÄ
mac-vlan enable	**Îb0Ã** MAC VLAN s6Ñ

ÏGÄÈ -

10 SHARE VLAN

10.1 share

S*ÄQA’5B share vlanÄ
share

ÐAÈ

Ð	ÉÄ
-	-

5,Õ5BÐ -

QÐ vlan G5Bã

S*Ûl 0#\ share vlan *ü **no share QÄ**
0E?MÈg9 **end QÈ** Ctrl+C 4ÏÄ
0E<G5BÈg9 **exit QÄ**

G5B_Ð 5XLMLHFRQILJYODQ
5XLMLHFRQILJYODQVKDUH

ÌGQÐ

Q¸	ÉÄ

ØE²<G5BÈg9 **exit Q¸**

ÏG5B_Ð

```
5XLMLHVKRP2DFDGGUHVVWDEOHVKDUH
9ODQ08GGUHVV7SH,QWHUIDFH6WDWXV

HH<10,&LJDELWRULJLQDO
HH<10,&LJDELWGXSOLFDWHG
```

ÌÎGQÐ

Q¸	£Ä
-	-

ÏGÄÈ

-

11 Voice VLAN

11.1 show voice vlan

/ Voice VLAN ,XG5BC[illegible]6Ñ Voice VLAN s6[illegible]Ñ[illegible]0Ã[illegible]0Ã[illegible]

11.2 show voice vlan oui

/A’ÕX OUI ÕOUI }-ÕÄ

show voice vlan oui

ÏÐAÈ	Ð	ÉÄ
	-	-

ÏÕ5BÐ -

ÏQÐ (Mã

ÏS*Ô EÉ8QÕ’ÕXAÍÇ OUI Ä

ÏG5B_Ð _ 1Ø’ÎX Voice VLAN OUI

```
5XLMLHFRQILJVKRZ7RLFHYODQRXL
28,0DVNHVFULSWLRQ

HIIIIII6LHPHQVSKRQH
EIIIIII&VFRSKRQH
GIIIIII$DDSKRQH
EIIIIII3KLOLSV1(&KRQH
GHIIIIII3LQJWHOSKRQH
HIIIIII3ROFRPSKRQH
HEEIIIIIIFRPSKRQH
```

show voice vlan oui QÇAÈ

+‰	AÈ
OUI	OUI ÈÁÍÇ,X$ MAC Ä
Mask	OUI }-ÕOUI ,XÍKSzÈ-ÕÄ
Description	OUI ,XÉÄ

ÏÌGQÐ

Q¸	ÉÄ
voice vlan mac-address *mac-addr* **mask** *oui-mask* **[description** *text***]**	A’5B Voice VLAN ÃÿXAÍÇ OUI Ä

ÏGÄÈ -

11.3 voice vlan

<S6Ñ Voice VLAN*5BÔ VLAN Voice VLAN*Ã*AQ¸X **no EÍMGÍ** Voice VLAN s6Ñ

voice vlan *vlan-id*

no voice vlan

ÐAÈ	Ð	ÉÄ
	vlan-id	≤/ Voice VLAN ,X IDÄ

5,Õ5BÐ 5,ÕKÁXÄ

Q¸ <G5Bã

S*ÛÐ S*AÇ¸S6Ñ'ÎX Voice VLAN s6Ñ Voice VLAN IDÄ

- Voice VLAN VLAN
- VLAN 1 VLAN VLAN 1 Voice VLAN
- VLAN Voice VLAN Super VLAN
- 802.1x VLAN VID Voice VLAN ID
- RSPAN Remote VLAN Voice VLAN 1 VLAN Voice VLAN

G5B_Ð _ 1ÇS6Ñ'ÎX Voice VLAN s6ÑA'5B VLAN2 Voice VLANÄ

5XLMLHFRQILJYODQ
5XLMLHFRQILJYODQH[LW
5XLMLHFRQILJYRLFHYODQ

ÌGQÐ

Q¸	ÉÄ
show voice vlan	/ Voice VLAN ,XG5BÇÃÐ

GÄÈ -

11.4 voice vlan aging

<A'5B Voice VLAN 5ÕÕ*AÇ¸X **no EÝM5ÕÕ**

voice vlan aging *minutes*

no voice vlan aging

ÐAÈ	Ð	ÉÄ
	minutes	≤/ Voice VLAN ,X5ÕÄ

5,Õ5BÐ *minutes* Ø 1440 ÚsÄ

Q¸ <G5Bã

Ï5*Ûð *Ã'Ô'5B Voice VLAN ,X5ÕÈÕÈÈÀ'ÛÉg90)ÃÁÍÇ
[Ã0Ã Voice VLAN ô8Ä

Ï5B_Ð _ 1Ö'5B Voice VLAN 5ÕÈ 10 Ú
5XLMLHFRQILJYRLFHYODQDJLQJ

ÏGQÐ

Q¸	ÉÄ
show voice vlan	/ Voice VLAN ,XG5BÇÃÕ

ÏGÄÈ -

11.5 voice vlan cos

<A'5B Voice VLAN AÍÇ,X CoS *Ã*ÄQ¸X **no EÍMÍG5BÃÕ**
voice vlan cos *cos-value*
no voice vlan cos

ÏÐAÈ

Ð	ÉÄ
cos-value	×/ Voice VLAN AÍÇ,X CoS Ä

Ï5,Õ5BÐ *cos-value* Ã 6Ä

ÏQÐ <G5Bã

Ï5*Ûð A'ÊÉÂ Voice VLAN ,XAÍÇ,X CoS â DSCP 9PAÍÇ,X4{È•ÉÂBGÄ

Ï5B_Ð _ 1Ö5B Voice VLAN ,XAÍÇ4{È CoS 5
5XLMLHFRQILJYRLFHYODQFRV

ÏGQÐ

Q¸	ÉÄ
show voice vlan	/ Voice VLAN ,XG5BÇÃÕ

ÏGÄÈ -

11.6 voice vlan dscp

<A'5B Voice VLAN AÍÇ,X DSCP *Ã*ÄQ¸X **no EÍMÍG5BÃÕ**
voice vlan dscp *dscp-value*
no voice vlan dscp

ÏÐAÈ

Ð	ÉÄ
dscp-value	×/ Voice VLAN AÍÉ¢,X DSCP Ä

ÏÕ,Õ5BÐ *dscp-value* ÃÕ 46Ä

ÏQÐ <G5Bã

ÏS*Ûì A'ÊÉÂ Voice VLAN ,XAÍÉ¢,X CoS â DSCP 9PAÍÉ¢,X4{È•ÊÂBÜÄ

ÏG5B_Ð _ 1Ö5B Voice VLAN ,XAÍÉ¢4{È DSCP 40Ä

5XLMLHFRQILJYRLFHYODQGVFS

ÏÌGQÐ

Q¸	ÉÄ
show voice vlan	/ Voice VLAN ,XG5BÇÃ

ÏGÄÈ -

11.7 voice vlan enable

ÿG5B8*8Q¸S6ÑÃX Voice VLAN s6ÑÃ*AÇ¸X **no EÍMGÃÃ**

Voice VLAN s6Ñ

voice vlan enable

no voice vlan enable

ÏÐAÈ

Ð	ÉÄ
-	-

ÏÕ,Õ5BÐ 5,ÃÃX Voice VLAN s6ÑKÄ

ÏQÐ yG5Bã

ÏS*Ûì EÊÂÇÛÃX Voice VLAN s6Ñ Voice VLAN s6ÑÃ(=)ÚÃÄ{•Õ

Access PortÃ Trunk PortÃ Hybrid PortÃ Private VLAN Ã Private VLAN #È Uplink Ñü

Voice VLAN s6Ñ

Voice LAN	Voice LAN

ÏG5B_Ð _ 1ÛÃ FastEthernet 0/1 ,X Voice VLAN s6Ñ

5XLMLHFRQILJLQWHUIDFHIDVW(WKHUQHW

5XLMLHFRQILJLIYRLFHYODQHQDEOH

ÏÌGQÐ

Q¸	ÉÄ
show voice vlan	/ Voice VLAN ,XG5BÇÃ

ÏGÄÈ	-

11.8 voice vlan mac-address

<A'5B Voice VLAN ÃÿXAÍÇ OUI ÄÕ*ÄQ¸X **no EÍMÎ8AÛ5B**
þ OUI Ä

voice vlan mac-address *mac-addr* **mask** *oui-mask* **[description** *text***]**

no voice vlan mac-address *mac-addr*

ÏÐAÈ	Ð	ÈÄ
	mac-addr	ã *H.H.H*ÄÏ MAC Ä
	oui-mask	ã *H.H.H*ÄÏ OUI ,XÍKSzÈ¡-Ã/Ä
	text	OUI ,XÈÄ

Ï5,Õ5BÐ	5,ÕÍ5BÏ OUIÄ
ÏQÐ	<G5Bã
ÏS*Û	*ÛÏ5,X,XAÍÇ[ÄÍÇ'Û MAC ,XÍ8V*ÛÏ5Voice VLAN ÃÈ>
	ÍXy[,X$ MAC ` OUI }-Ã OUIÈ¡y[ÄÍÇ[Ä

Voice VLAN OUI

ÏG5B_Ð	_ 1Ä'5B OUI 0012.3400.0000 Voice VLAN ,XÏÐ Company AÄ

5XLMLHFRQILJYRLFHYODQPDFDGGUHVVPDVNIIIIIIGHVFULSWLRQ&PSDQ\
$

ÏÌGQÐ	Q¸	ÈÄ
	show voice vlan oui	/A'ÕX OUI Ã OUI }-ÃÈÄ CÄ

ÏGÄÈ	-

11.9 voice vlan mode auto

ÿG5B6 5B0ÃX Voice VLAN 0ã*ÄÕ*ÄQ¸X **no EÍMA5BÃ**
X Voice VLAN 0ã
voice vlan mode auto
no voice vlan mode auto

ÏÐAÈ	Ð	ÈÄ
	-	-

¨5,Õ5BÐ	0Ã,X Voice VLAN 0ã,Ã¡
¨Q¸Ð	yG5Bã
¨S*Ð	Voice VLAN ,X0ã¡ÊÕ0Ã5BÃ Voice VLAN ,X0ã f(0ÃX0Ã'5BÃ,X0ã Voice VLAN ,Xã ÃB0Ã?X IP +A2O_0Ã,X2O_9A'5B0Ã,X Voice VLAN 0ã

- Voice VLAN Voice VLAN Voice VLAN
- native VLAN Voice VLAN
- Trunk Port/Hybrid Port VLAN Voice VLAN VLAN Voice VLAN Voice VLAN Voice VLAN

Voice LAN
Voice VLAN

Voice LAN Voice VLAN

¨G5B_Ð	_ 1Ö'5B0Ã FastEthernet 0/1 ,X Voice VLAN ã¡

5XLMLHFRQILJLQWHUIDFHIDVW(WKHUQHW
5XLMLHFRQILJYODQYRLFHYODQPRGHDXWR

¨ÌGQÐ	Q¸	£Ä
	show voice vlan	/ Voice VLAN ,XG5B¡Ca¡ÊÕ6Ñ Voice VLAN s6Ñ,X0Ã,X0ã

¨GÄÈ	-

11.10 voice vlan security enable

<Ô Voice VLAN ,X]<ÄÃ*AQ¸X **no EÍMG¡Ã**

voice vlan security enable

no voice vlan security enable

¨ÐAÈ	Ð	£Ä
	-	-

¨5,Õ5BÐ	Voice VLAN ,X]<ã,Ã

ÏQ <G5Bã

Ï*Ô ZÕE>ÄÁ¢ÇB#/ÚgÊ Voice VLAN ,X]<Ã
A'Ÿ[,X MAC E>Ÿ[MAC ÃÿX Voice VLAN OUI Ê
AÕy[ü Voice VLAN YÕgÊÿ[Ä

Voice VLAN Voice VLAN

untagged Voice VLAN tag MAC
Voice VLAN tag VLAN Voice VLAN /

ÏG5B_Ð _ 1Ô Voice VLAN ,X]<Ä
5XLMLHFRQILJYRLFHYODQVHFXULWHQDEOH

ÏÎGQÐ

Q¸	ÊÄ
show voice vlan	/ Voice VLAN ,XG5BÇÃ

ÏGÄÈ -

12 MSTP

12.1 bpdu src-mac-check

ĵ,X bpdu ¶ mac ”ÄÃ Q¸X no EÍMGKÁ,X bpdu ¶ mac ”¹s6Ñ

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

no bpdu src-mac-check

ÐAÈ	Ð	ÆÄ
	H.H.H	≈/ÿ¶ mac A¹,X bpdu Ä
	no	EÍM≈/0ÃÿÌ,X bpdu Ä

5,Õ5BÐ 5,ÕKÁ,XÄ

Q¸Ð yG5BÄ

S*Ô -

G5B_Ð 5XLMLHFRQILJLQWHUIDFHJLJDELWHWKHUQHW
5XLMLHFRQILJLIESGXVUFPDFFKHFNGIHI

ÌGQ¸Ð

Q¸	ÆÄ
-	-

GÄÈ -

12.2 clear spanning-tree counters

#Ù8 STP ,XÈ4Au¸C

clear spanning-tree counters [**interface** *interface-id*]

ÐAÈ	Ð	ÆÄ
	interface-id	ĺ,Xy·

5,Õ5BÐ -

Q¸Ð (Mã

S*Ô -

G5B_Ð 5XLMLHFOHDUVSDQQLQJWUHHFRXQWHUV

ÌÎGQÐ	Q¸	ÐÄ
	show spanning-tree counters	/ STP ÈÄuÇ

ÏGÄÈ -

12.3 clear spanning-tree detected-protocols

y¥ RSTP BPDUÊ BPDU ÿÄ

clear spanning-tree detected-protocols [**interface** *interface-id*]

ÏÐÄÈ	Ð	ÐÄ
	interface-id	ĺ,Xy·

ÏÕ5BÐ -

ÏQÐ (Mã

ÏS*Ê -

ÏG5B_Ð 5XLMLHFOHDUVSDQQLQJWUHHGHWHFWHGSURWRFROV

ÌÎGQÐ	Q¸	ÐÄ
	show spanning-tree interface	/y· STP ,XG5BÄ

ÏGÄÈ -

12.4 show spanning-tree

/*ÅG,X<G5BÇÄ

show spanning-tree [**summary** | **forward-time** | **hello-time** | **max-age** | **inconsistentports| tx-hold-count** | **pathcost method** | **max_hops | counters**]

ÏÐÄÈ	Ð	ÐÄ
	summary	/ MSTP ,XØ instance ,XÇ70ÃÇÕÄ
	Inconsistentports	/*ÿÇÃ5à block ,X0Ã
	forward-time	/ BridgeForwardDelayÄ
	hello-time	/ BridgeHelloTimeÄ
	max-age	/ BridgeMaxAgeÄ
	max-hops	/ instance ,XÔÇÄ
	tx-hold-count	/

¨5,Õ5BÐ	-
¨Q¸Ð	(MÄ
¨S*Ð	-
¨G5B_Ð	5XLMLHVKRZVSDQQLQJWUHHKHOORWLPH

¨ÌGQÐ

Q¸	ÆÄ
spanningtree pathcost method	A'5BCÃ8C,X©
spanning-tree forward-time	**A5B** BridgeForwardDelayÄ
spanning-tree hello-time	**A5B** BridgeHelloTimeÄ
spanning-tree max-age	**A5B** BridgeMaxAgeÄ
spanning-tree max-hops	**A5B** instance ,XÔÐ
spanning-tree tx-hold-count	/ TxHoldCountÄ

¨GÄÈ -

12.5 show spanning-tree interface

/ STP yA'5BÃ*Ó5BÄ

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

¨ÐAÈ

Ð	ÆÄ
interface-id	0Ã
bpdufilter	/ bpdufilter (Ã
portfast	**/** portfast (Ã
bpduguard	**/** bpduguard (Ã
link-type	/0,X linktype

¨5,Õ5BÐ	-
¨Q¸Ð	(MÄ
¨S*Ð	-
¨G5B_Ð	5XLMLHVKRZVSDQQLQJWUHHLQWHUIDFHJLJDELWHWKHUQHW

¨ÌGQÐ

Q¸	ÆÄ
spanning-tree bpdufilter	ÔX BPDU filter ÔÄ
spanning-tree portfast	ÔX portfast ÔÄ
spanning-tree bpduguard	ÔX BPDU guard ÔÄ

spanning-tree link-type	G5By;XEy2O_“&y”Ä

ÏGÄÈ -

12.6 show spanning-tree mst

(M6*8Q¸Ã MST G5BÈ instance ,XÇÄ

show spanning-tree mst { **configuration** | *instance-id* [**interface** *interface-id*] }

ÏÐÄÈ

Ð	ÆÄ
configuration	A’ÛX mst G5B
instance-id	*Instance Ë*
interface-id	0Ã

ÏÕ,Õ5BÐ 5,Õ InstanceÄ

ÏQÐ (Mã

ÏS*Ûì -

ÏG5B_Ð 5XLMLHVKRZVSDQQLQJWUHHPVWFRQILJXUDWLRQ

ÏÌGQÐ

Q¸	ÆÄ
spanning-tree mst configuration	E9 MST region G5B
spanning-tree mst cost	/ instance ,XCÃ8C.
spanning-tree mst max-hops	/ instance ,XÛÐ
spanning-tree mst priority	**/** instance ,XA’Û
spanning-tree mst port-priority	/ instance ,X0Ã

ÏGÄÈ -

12.7 spanning-tree

Ô MSTPÈÃ MSTP ,XÃ’5B MSTP <,XÂ’5BÄ*AQ¸X no EÍMG KÁspanning-tree s6Ãp no QÐEÍMÍÃD65ÃÐKÁ spanning treeÄ

spanning-tree [**forward-time** *seconds* | **hello-time** *seconds* | **max-age** *seconds*]

no spanning-tree [**forward-time** | **hello-time** | **max-age**]

ÏÐÄÈ

Ð	ÆÄ
forward-time *seconds*	0ÃÕXÊÈhÄ
hello-time *seconds*	A’ÛÊÕ BPDU y[,XÊÈhÄ
max-age *seconds*	BPDU y[#C*ó,XÔSÊÃ

12.9 spanning-tree bpdufilter

ĵ¸X BPDU filter ÔÄÃÃ¸Q¸X enabled ê disabled EÍMÊGÊGÊ·ÄÄÍ¸Ø¨ÄÄ¸Ü¨ÄÄ¸pqÔÄ

ÏG5B_Ð	5XLMLHFRQILJLIVSDQQLQJWUHHJXDUGORRS

ÏÎGQÐ	Q¸	£Ä
	-	-

ÏGÄÈ	-

12.13 spanning-tree guard none

yÐGKÁ guard (MÄ*ÄÇ¸X no EÍMM#yÞX guard s6Ñ

spanning-tree guard none

no spanning-tree guard none

ÏÐAÈ	Ð	£Ä
	-	-

ÏÏ,Õ5BÐ	GKÁ guard s6Ñ
ÏQÐ	yG5BÄ
ÏS*Ô	-

ÏG5B_Ð	5XLMLHFRQILJLIVSDQQLQJWUHHJXDUGQRQH

ÏÎGQÐ	Q¸	£Ä
	-	-

ÏGÄÈ	-

12.14 spanning-tree guard root

yÔ root guard (MÄ*ÄÇ¸X no EÍMGKÁ root guard (MÄ root guard s6ÑÑ6´

JÁÕ5B6 M2Ø¸XÐÈ¸XÄ

spanning-tree guard root

no spanning-tree guard root

ÏÐAÈ	Ð	£Ä
	-	-

ÏÏ,Õ5BÐ	5,ÕKÁ root guard s6Ñ
ÏQÐ	yG5BÄ

shared.

ÏQ¸Ð yG5BÄ

Ï5*Ð -

ÏG5B_Ð 5XLMLHFRQILJLQWHUIDFHJLJDELWHWKHUQHW
5XLMLHFRQILJLIVSDQQLQJWUHHOLQNWSHSRLQWWRSRLQW

ÏÎGQÐ

Q¸	ÆÄ
show spanning-tree interface	**/** STP 0Ã5B

ÏGÄÐ -

12.17 spanning-tree loopguard default

<Ô loop guard (MÄ*ÄQ¸X no EÍMMGKÁ loop guard (MÄü loop guard s6ÑÑ6 0Ã bpdu 5ª(ÔXÃÑX)ÇÃ

spanning-tree loopguard default

no spanning-tree loopguard default

ÏÐÄÐ

Ð	ÆÄ
-	-

Ï5,Õ5BÐ 5,ÕKÁ loop guard s6Ñ

ÏQ¸Ð <G5Bã

Ï5*Ð -

ÏG5B_Ð 5XLMLHFRQILJVSDQQLQJWUHHORRSJXDUGGHIDXOW

ÏÎGQÐ

Q¸	ÆÄ
-	-

ÏGÄÐ -

12.18 spanning-tree max-hops

ïG5B6*8QÃ'5B BPDU ¡XÔÇÄ Max-hops Count ÀÛZ BPDU ü Ô Region Y4ÆÃ'ÑX Instance Ã*ü no EÍMMÃQ¸7Ç 5,Ã

spanning-tree max-hops *hop-count*

no spanning-tree max-hops

ÐAÈ	Ð	ÆÄ
	hop-count	BPDU ÃÆ:A'¡Û DÈÈ 1Ã40

ÏÕ5BÐ *hop-count* ÕÕ 20

ÏQÐ <G5Bã

ÏS*Ûü Region YÈ Root Bridge ÆÕX BPDU ÕÛ Hot Count NMÈ Root Bridge ÈÊÛ'
Hop Count £ 1ÈÈ 0 ¥/A¹ BPDU ¡CYÊ'Û Hops 0 ,X BPDU ÛÖ
WÄ
¬ max-hops ÉÝ InstanceÄ

ÏG5B_Ð ßÝ MST Instance ,X Max-hops A' 10Ö
5XLMLHFRQILJVSDQQLQJWUHHPD[KRSV
3Ã9 **show spanning-tree mst (MQÐ¸ÀÊÄG5B**

ÏÎGQÐ

Q¸	ÆÄ
show spanning-tree	¹ß MSTP ¡C

ÏGÄÈ -

12.19 spanning-tree mode

ÏÄ*ÈQ¸ STP (Ä*ü no ÉÝMÃÕ6ã¸Ã
spanning-tree mode [**stp** | **rstp** | **mst***p*]
no spanning-tree mode

ÐAÈ	Ð	ÆÄ
	stp	Spanning tree protocol(IEEE 802.1d)
	rstp	Rapid spanning tree protocol(IEEE 802.1w)
	mstp	Multiple spanning tree protocol(IEEE 802.1s)

ÏÕ5BÐ MSTP (

ÏQÐ <G5Bã

ÏS*Ûü -

ÏG5B_Ð 5XLMLHFRQILJVSDQQLQJWUHHPRGHVWS

ÏÎGQÐ

Q¸	ÆÄ

show spanning-tree	**5B**

GÄ -

12.20 spanning-tree mst configure

ü *1QÃ9 MST G5B MSTP Region ü no EMÃQ
DÄame Ævision Ævlan map Ã,Õ
spanning-tree mst configuration
no spanning-tree mst configuration

Ð	EÄ
-	-

5,Õ5BÐ 5,Õ instance ` vlan ,XhG2X Vlan F Instance 0 Ä
name 0N+0Ä
revision 0Ä

<G5Bã

*Ð 0E?MEg9 end Q9 Ctrl+C 4Ä
0E<G5BEg9 exit QÄ
E9 MST G5BÃ*QE<G5BÐÖ
instance *instance-id* **vlan** *vlan-range* Vlan 4#ï MST Instance ÄG instance-id ,X8 0 64Ävlan ,X8 1409 Ävlan-range Ã vlan ,XLÃVLAN ID *EEhÐ4,X VLAN ID Ã*ý VLAN ID E_ÈVÖ instance 10 vlan 2,3,6-9 nØ VLAN 2È 3È 6È 7È 8È 9 #ï Instance 10 Ä,ÕXG5B,X VLAN ü Instance 0 Ä VLAN ¢ Instance 0,XÃ*ü **no Q o** **instance** *instance-id* [**vlan** *vlan-range*]Ø4 no Q Instance ,X8 164)
name *name* MST Ã 32 +0X+0Ãü no name Ã,Õ
revision *version* MST (D 0655535 Ãü no revision Ã,Õ
show spanning-tree mst configuration MST region Ä

5B_Ð M6_9AE)E9 MST Ã VLAN 3, 5-10 Ø MST Instance 1.

```
5XLMLHFRQILJVSDQQLQJWUHHPVWFRQILJXUDWLRQ
5XLMLHFRQILJPVWLQVWDQFHYODQ
5XLMLHFRQILJPVWQDPHUHJLRQ
5XLMLHFRQILJPVWUHYLVLRQ
5XLMLHFRQILJPVWVKRZSDQQLQJWUHHPVWFRQILJXUDWLRQ
067FRQILJXUDWLRQ
1DPHUHJLRQ@
5HYLVLRQ
,QVWDQFH9ODQV0DSSHG
```

5XLMLHFRQILJPVWH[LW

5XLMLHFRQILJ

VpÚ VLAN 3 ¢ Instance 1 ĩ8ÈwE9 MST G5BÀ/ß XE/ß

5XLMLHFRQILJPVWQRLQVWDQFHYODQ

VpÚ Instance 1 ĩ8ÈÖ

5XLMLHFRQILJPVWQRLQVWDQFH

|ÃE› MST G5BQ¸X show PÀ•ÈÄ/Ä

ÏGQÐ

Q¸	ÈÄ
show spanning-tree mst	¦ß MST region G5B
instance instance-id vlan vlan-range	Vlan 4#ï MST Instance
name	**G5B** MST ,Xá

ÏGÄÈ -

12.21 spanning-tree mst cost

ÿß*8QÁ'5Bþ Instance ,XCÃ8CÄ*ü no EÁMÃQ¸ã5¸Ã

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

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

ÏÐÀÈ	Ð	ÈÄ

ÏÕ5BÐ]TJ21.5 068d()53 T 1.840370Tj

ÏÎGQÞÐ

Q¸	Ë.Ä
show spanning-tree mst	**ß¾X** MSTP Ç.Ä
spanning-tree mst port-priority	**G5B¾{**
spanning-tree mst priority	instance G5B¾{

ÏGÄßÐ -

12.22 spanning-tree mst port-priority

ÿGÞ5BßÐ*ßQ¸Ã'5BA¼ÿJ¼ß Instance ¼ßX0Ã¼{È·É¡
Region Y6¾ÇÃXÞßÐ(ßÐ*ü no ÉÑMÃÐQ¸ãÇ¸Ã

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

ÐAßÐ

Ð	Ë.Ä
Instance-id	Instance ÐÈ 0É4
priority	0Ã{Ê*ü 0È6È24È8 É4 È0È6 È12È28 È44 È160È 176È192 È208È224È240È 16 þIDÈ 16 ,XÐÄ

Þ¸Õ5BÐ Instance-id ,X5,Õ 0
priority ,X5,Õ 128

ÏQßÐ yG5Bã

Ê*Ðß ü Region Y6¾ÇÃÉÑ¼{,X0ÃÐ(Ð¸ÊÝüËWãX
0Ã

ÏG5B_Ð ßÚ Instance 20 ,X Gigabitethernet 1/1 y¸X¼{A' 10Ö

```
5XLMLHFRQILJLQWHUIDFHJLJDELWHWKHUQHW
5XLMLHFRQILJLIVDQQLQJWUHPVWSRUWSULRULW\
```

Ã9 **show spanning-tree mst instance interface** *interface-id* ß

ÏÎGQÞÐ

Q¸	Ë.Ä
show spanning-tree mst	¼ß¸X MSTP Ç.Ä
spanning-tree mst cost	**A5BßÐC.**
spanning-tree mst priority	4ä Instance A'5BA'ÛÚ{

ÏGÄßÐ -

12.23 spanning-tree mst priority

¤GÞ5BßÐ*ßQ¸Ã- Instance A'5BA'ÛÚ{Ê*ü no ÉÑMÃÐQ¸ãÇ¸Õ
Ä

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

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

ÐAÈ	Ð	£Ä
	instance-id	Instance ÊÈ 0É4
	priority	A’ Û4{ ÊÈ Ýü 0, 4096,8192, 12288, 16384, 20480, 24576, 28672, 32768, 36864, 40960, 45056, 49152,53248, 57344 ` 61440Ä E 16 þIDÈ 4096 ,XÐÄ

5,Õ5BÐ *instance-id* ÕÕ 0È *priority* ÕÕ 32768

Q¸Ð <G5Bã

S*Ð -

G5B_Ð ß4- Instance 20 A’5B,XA’Û{A’ 8192Ö

5XLMLHFRQILJLIVSDQQLQJWUHHPVWSULRULW\

Ã9 **show spanning-tree mst instance interface interface-id (MQP`AÐÄ5B**

ÏGQÐ

Q¸	£Ä
show spanning-tree mst	**ßX** MSTP µÄ
spanning-tree mst cost	**A5BÃCÄ**
spanning-tree mst port-priority	**4ã** Instance A’5B0Ã{Ä

GÄÈ -

12.24 spanning-tree pathcost method

G5B0ÃÃ8C,X5,Õu1kÖ*ÄQ¸X no EÍMÚÄ’5B6ã,Õ

spanning-tree pathcost method {{**long [standard]}** | **short**}

no spanning-tree pathcost method

ÐAÈ	Ð	£Ä
	long [standard]	G*ü 802.1t Â’n path-cost ,XÄ standard ×/ÞÕ,Xõu1k cost Ä
	short	G*ü 802.1d Â’n path-cost ,XÄ

5,Õ5BÐ 5,Õ*ü 802.1T Â’n Path-cost ,XÄ

Q¸Ð <G5BÄ

S*Ð -

ÏG5B_Ð	5XLMLHFRQILJLIVSDQQLQJWUHHSDWKFRVWPHWKRGORQJ

ÏÎGQÞ

Q¸	£Ä
show spanning-tree interface	/ STP yG5BÄ

ÏGÄÐ -

12.25 spanning-tree portfast

ÞÎX Portfast ÔÄÑÃÄQ¸X disabled EÝMGKÁ¸X Portfast ÔÄ

spanning-tree portfast [**disabled**]

ÏG5B_Ð	5XLMLHFRQILJVSDQQLQJWUHHSRUWIDVWESGXILOWHUGHIDXOW

ÏÎGQÐ

Q¸	£Ä
show spanning-tree interface	**/** STP <G5BÄ

ÏGÄÈ -

12.27 spanning-tree portfast bpduguard default

<,XÔ BPDU guardÄÃÄ Q¸X no EÝM<,XGKÁ BPDU guardÄ

spanning-tree portfast bpduguard default

no spanning-tree portfast bpduguard default

ÏÐÄÈ

Ð	£Ä
-	-

ÏÕ5BÐ 5,ÕKÁ BPDU Guard.

ÏQÐ <G5BÄ

ÏS*Ü 'Ô BPDU guard È/ p ÜÄ 0 ÃÞ BPDU È¯ 9 error-disabled (ÕÄS*ü **show spanning-tree** Q¸Ä'5BÄ

ÏG5B_Ð	5XLMLHFRQILJVSDQQLQJWUHHSRUWIDVWESGXJXDUGGHIDXOW

ÏÎGQÐ

Q¸	£Ä
show spanning-tree interface	/ STP <G5B

ÏGÄÈ -

12.28 spanning-tree portfast default

<ÔÿX Portfast ÔÄS*ÄÃQ¸X no EÝM<GKÝÄ,X Portfast ÔÄ

spanning-tree portfast default

no spanning-tree portfast default

ÏÐÄÈ

Ð	£Ä
-	-

ÏÕ5BÐ 5,ÕKÝÄ,X Portfast ÔÄ

ÏQÐ <G5BÄ

Ï´S*ÊÐ -

Ï´G5B_Ð 5XLMLHFRQILJVSDQQLQJWUHHSRUWIDVWGHIDXOW

ÌÏGQÐ

Q¸	£Ä
show spanning-tree interface	/ STP <G5BÄ

Ï´GÄÊÐ -

12.29 spanning-tree reset

Ú´Þ spanning-tree A’5B65,ÕQ¸ÚÝ no EÝMÄ

spanning-tree reset

Ï´ÐAÊÐ

Ð	£Ä
-	-

Ï´5,Õ5BÐ -

Ï´QÐ <G5BÄ

Ï´S*ÊÐ -

Ï´G5B_Ð

ÏQÞ	yG5Bã
ÏS*ÛÐ	-
ÏG5B_Ð	5XLMLHFRQILJLIVSDQQLQJWUHHWFJXDUG

ÏÌGQÞ	Q¸	£Ä
	-	-

ÏGÄÈ

12.31 spanning-tree tc-protection

<Ô tc- protection ÔÄ*ÄÇ¸X no EÝM<GKÁ tc- protection ÔÄ

spanning-tree tc- protection

no spanning-tree tc- protection

ÏÐAÈ	Ð	£Ä
	-	-

Ï,Õ5BÐ	5,Õ tc-protection ÔÄ
ÏQÞ	<G5BÄ
ÏS*ÛÐ	-
ÏG5B_Ð	5XLMLHFRQILJVSDQQLQJWUHHWFSURWHFWLRQ

ÏÌGQÞ	Q¸	£Ä
	-	-

ÏGÄÈ -

12.32 spanning-tree tc-protection tc-guard

<Ô tc- guard ÔÄ*ÄÇ¸X no EÝM<GKÁ tc- guard ÔÄ tc-guard s6ÑÑ6 tc y[,X=7Ä

spanning-tree tc-protection tc-guard

no spanning-tree tc-protection tc-guard

ÏÐAÈ	Ð	£Ä
	-	-

¨5,Õ5BÐ	5,ÕKÁ tc-guard ÔÄ
¨Q¸Ð	<G5BÄ
¨S*Ð	-
¨G5B_Ð	5XLMLHFRQILJVSDQQLQJWUHHWFSURWHFWLRQWFJXDUG

¨ÌGQÐ

Q¸	ÆÄ
-	-

¨GÄÐ -

12.33 spanning-tree tx-hold-count

STP <,X TxHoldCount A'5BÈG5BÆÊÕX BPDU ÞÄ*ÄQ¸X no EÝMÁÄ'5B6 5,Õ

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

no spanning-tree tx-hold-count

¨ÐAÐ

Ð	ÆÄ
tx-hold-count	TxHoldCount A'5BÄÈ 1 10Ä

¨5,Õ5BÐ	5,Õ 3Ä
¨Q¸Ð	<G5BÄ
¨S*Ð	-
¨G5B_Ð	5XLMLHFRQILJVSDQQLQJWUHHW[KROGFRXQW

¨ÌGQÐ

Q¸	ÆÄ
show spanning-tree	**/** MSTP <G5BÇÄ

¨GÄÐ -

13

13.1 bridge-frame forwarding protocol bpdu

Ô BPDU #A¸Ã6Ñ*ÄQ¸X **no EÍMÓK** BPDU #A¸Ã6Ñ

bridge-frame forwarding protocol bpdu

no bridge-frame forwarding protocol bpdu

ÏÐAÈ	Ð	ÉÄ
	-	-

ÏÕ5BÐ 5,ÕÛ¸X BPDU #A¸Ã6ÑKÁ¸XÄ

ÏQÐ <G5BÄ

ÏS*Ô -

ÏG5B_Ð _ 1ÄÔ BPDU #A¸Ã6Ñ

5XLMLHFRQILJEULGJHIUDPHIRUÐUGLQJSURWRFROESGX

_ 2ÄÔKÁ BPDU #A¸Ã6Ñ

5XLMLHFRQILJQREULGJHIUDPHIRUÐUGLQJSURWRFROESGX

ÏÌGQÐ	Q¸	ÉÄ
	-	-

ÏGÄÈ -

13.2 bridge-frame forwarding protocol gvrp

Ô GVRP #A¸Ã6Ñ*ÄQ¸X **no EÍMÓK** GVRP #A¸Ã6Ñ

bridge-frame forwarding protocol gvrp

no bridge-frame forwarding protocol gvrp

ÏÐAÈ	Ð	ÉÄ
	-	-

ÏÕ5BÐ 5,ÕÛ¸X GVRP #A¸Ã6ÑKÁ¸XÄ

ÏQÐ <G5BÄ

ÏS*Ô -

Ï G5B_Ð	_ 1ÄÿÔ	GVRP #AÊ¡ã6Ñ	
	5XLMLHFRQILJEULGJHIUDPHIRUZUGLQJSURWRFROJYUS		
	_ 2ÄÿÔ GKÁ	GVRP #AÊ¡ã6Ñ	
	5XLMLHFRQILJQREULGJHIUDPHIRUZUGLQJSURWRFROJYUS		

ÏGQÐ	Q¸	ÊÄ
	-	-

ÏGÄÐ	-

13.3 bridge-frame forwarding protocol 802.1x

Ô 802.1X #AÊ¡ã6Ñ*ÄÇ¸X **no EÍMÚÁ** 802.1X #AÊ¡ã6Ñ

bridge-frame forwarding protocol 802.1x

no bridge-frame forwarding protocol 802.1x

ÏÐAÐ	Ð	ÊÄ
	-	-

ÏÕ5BÐ	5,ÑÛX	802.1X #AÊ¡ã6ÑÄ
ÏQÐ	<G5BÄ	
ÏS*Ð	-	

ÏG5B_Ð	_ 1ÄÿÔ	802.1X #AÊ¡ã6Ñ
	5XLMLHFRQILJEULGJHIUDPHIRUZUGLQJSURWRFRO[	
	_ 2ÄÿÔ GKÁ	BPDU #AÊ¡ã6Ñ
	5XLMLHFRQILJQREULGJHIUDPHIRUZUGLQJSURWRFRO[	

ÏGQÐ	Q¸ÏÕ[illegible]	[illegible]

-	-

Ï5,Õ5BÐ	5,ÑÛX±-4#AÞÃ6ÑÄ
ÏQÐ	<G5BÄ
Ï5*Ô	-
Ï5B_Ð	_

14 GVRP

14.1 clear gvrp statistics

#Ù8 GVRP ,X4ªAuÈJGÊuD

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

ÐAÈ	Ð	ÉÄ
	interface-id	5%4ÿ· ID

ï5,Õ5BÐ -

ÏQÊ (Mã

ÏS*Ûì S*ü **show gvrp statistics QÊ4ªAu**

ÏG5B_Ð 5XLMLHFOHDUJYUSVWDWLVWLFVDOO

ÏÏGQÐ

Q¸	ÉÄ
show gvrp statistics	**/** GVRP 4ªAuÇ

ÏGÄÈ -

14.2 gvrp applicant state

AÇ¸A’5B0,ÃXEÈ0ÃÕ GVRP EÄS*AÇ¸X no EÍM65,Õ’5BÄ

gvrp applicant state {**normal** | **non-applicant**}

no gvrp applicant state

ÐAÈ	Ð	ÉÄ
	-	-

ï5,Õ5BÐ AÇÃÕ GVRP EÄ

ÏQÊ yG5Bã

ÏS*Ûì S*ü **show gvrp configuration QÊ5B**

ÏG5B_Ð 5XLMLHFRQILJLIJYUSDSSOLFDQWVWDWHQRUPDO

ÏÎGQÐ

Q¸	£Ä
show gvrp configuration	**/** GVRP G5BÇ

ÏGÄÈ -

14.3 gvrp dynamic-vlan-creation

AÐ{¡A|Ñ vlanÈ*ÄÐ¸X no EÝM65,Ñ'5BÄ

gvrp dynamic-vlan-creation enable

no gvrp dynamic-vlan-creation enable

ÐÄÈ

Ð	£Ä
-	-

ÏÕ5BÐ /U6|Õ vlan

ÏQÐ <G5Bã

ÏS*Ñ S*ü **show gvrp configuration QÐ5B**

ÏG5B_Ð 5XLMLHFRQILJJYUSGÏQDPLFYODQFUHDWLRQHQDEOH

ÏÎGQÐ

Q¸	£Ä
show gvrp configuration	**/** GVRP G5BÇ

ÏGÄÈ -

14.4 gvrp enable

AÐÇÔ GVRP s6Ñ*ÄÐ¸X no 65,Ñ'5BÄ

gvrp enable

no gvrp enable

ÐÄÈ

Ð	£Ä
-	-

ÏÕ5BÐ GKÁ GVRP

ÏQÐ <G5Bã

ÏS*Ñ S*ü **show gvrp configuration QÐ5B**

ÏG5B_Ð 5XLMLHFRQILJJYUSHQDEOH

ÌGQÐ	Q¸	ÉÄ
	show gvrp configuration	**/** GVRP G5BÇ

ÏGÄÈ -

14.5 gvrp registration mode

AÉQA'5B0Ã,XOÀÈÃÐÀÞÔÃX VLANÄ*ÄQ¸X no EÝ NM65Ã,Ð'5B

gvrp registration mode {**normal** | **disabled**}

no gvrp registration mode

ÐÀÈ	Ð	ÉÄ
	-	-

Ï5,Ã5BÐ AÈÃÐÀÞÔÃX VLAN

ÏQÞ yG5Bã

Ï*Ô S*ü **show gvrp configuration**

```
3RUW*LJDELW(WKHUQHWDSSPRGHQRUPDOUHJPRGHQRUPDO
3RUW*LJDELW(WKHUQHWDSSPRGHQRUPDOUHJPRGHQRUPDO
3RUW*LJDELW(WKHUQHWDSSPRGHQRUPDOUHJPRGHQRUPDO
3RUW*LJDELW(WKHUQHWDSSPRGHQRUPDOUHJPRGHQRUPDO
3RUW*LJDELW(WKHUQHWDSSPRGHQRUPDOUHJPRGHQRUPDO
3RUW*LJDELW(WKHUQHWDSSPRGHQRUPDOUHJPRGHQRUPDO
3RUW*LJDELW(WKHUQHWDSSPRGHQRUPDOUHJ
PRGHQRUPDO
3RUW*LJDELW(WKHUQHWDSSPRGHQRUPDOUHJ
PRGHQRUPDO
3RUW*LJDELW(WKHUQHWDSSPRGHQRUPDOUHJ
PRGHQRUPDO
```

ÏGQÐ

Q¸	£Ä
-	-

ÏGÄÈ -

14.8 show gvrp statistics

/ÔÕÃX GVRP 4Ãu

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

ÊÕÃ#ÊYUS3GÊÃ3Ã3Ã3Ã3ÓAõÃVvQ¸ÊÕÃ%ÊYUS3GÊÃ3Ã3Ã3ÓAõÊAUg5K€ ÊÕÃÐYH,Q3Ã3Ã3ÃÊVvQ¸

6HQW-RLQ,Q
6HQW(PSW\
6HQW/HDYH(PSW\
6HQW/HDYH,Q
6HQW/HDYH$DO
-RLQ,QGLFDWHG
/HDYH,QGLFDWHG
-RLQ3URSDJDWHG
/HDYH3URSDJDWHG

ÌÎGQÐ

Q¸	£Ä
clear gvrp statistics	**Ù8ÔÑÃ** GVRP 4Au

ÏGÄÈ -

14.9 show gvrp status

/+ GVRP *ãX|Õ VLAN ,Xá0Ã9M-Õ VLAN ,X|ãÕÃ
show gvrp status

ÐÄÈ

Ð	£Ä
-	-

ÏÕ5BÐ -

ÏQÐ (Mã

ÏS*Ô S*ü **show gvrp status Q¸** GVRP (Õ

ÏG5B_Ð 5XLMLHVKRZYUSVWDWXV

ÌÎGQÐ

Q¸	£Ä
-	-

ÏGÄÈ -

15 LLDP

15.1 clear lldp statistics

#Ù8 LLDP ,X4Âuµ

clear lldp statistics [**interface** *interface-name*]

ÐAÈ	Ð	ÉÄ
	interface-name	yáÄ

5,Õ5BÐ -

Qþ (Mã

S*Ô ô **interface ÐÈ8ôyX** LLDP 4Âuµ

G5B_Ð #Ù8y· 1 ,X LLDP 4Âuµ

```
5XLMLHFOHDUOOGSVWDWLVWLFVLQWHUIDFH*LJDELW(WKHUQHW
5XLMLHVKRZOOGSVWDWLVWLFVLQWHUIDFH*LJDELW(WKHUQHW
/OGSVWDWLVWLFVLQIRUPDWLRQRISRUW*LJDELW(WKHUQHW@

7KHQXPEHURIOOGSIUDPHVWUDQVPLWWHG
7KHQXPEHURIIUDPHVGLVFDUGHG
7KHQXPEHURIHUURUIUDPHV
7KHQXPEHURIOOGSIUDPHVUHFHLYHG
7KHQXPEHURI7/9VGLVFDUGHG
7KHQXPEHURI7/9VXQUHFRJQL]HG
7KHQXPEHURIQHLJKERULQIRUPDWLRQDJHGRXW
```

ÌGQÐ

Q¸	ÉÄ
-	-

ÏÐAÈ

Ð	ÉÄ
-	-

ÏÕ,Õ5BÐ 5,ÕXÄ

ÏÇÐ <ÄÂ5Bã

ÏÕ*Ô LÔ<Ô LLDP ÔÈ;X LLDP s6ÑÄ

ÏG5B_Ð GKÁ¸ÿ;X LLDP s6ÑÖ

5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJQROOGSHQDEOH
5XLMLHFRQILJLQWHUIDFHJLJDELWHWKHUQHW
5XLMLHFRQILJLIQROOGSHQDEOH

ÏÌGQÐ

Q¸	ÉÄ
show lldp status	**/** LLDP (Ñ

ÏGÄÈ -

15.3 lldp encapsulation snap

G5B LLDP y[,XÑ,Õ*ü Ethernet II ,XÑ

lldp encapsulation snap

no lldp encapsulation snap

ÏÐAÈ

Ð	ÉÄ
-	-

ÏÕ,Õ5BÐ 5,Õ*ü Ethernet II Ñ

ÏÇÐ yG5Bã

ÏÕ*Ô

LLDP

ÏG5B_Ð G5B LLDP y[,XÑ SNAPÖ

5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJLQWHUIDFHJLJDELWHWKHUQHW
5XLMLHFRQILJLIOOGSHQFDSVXODWLRQVQDS

ÏÌGQÐ

Q¸	ÉÄ
show lldp status	**/** LLDP ,X(Ñ

ÏGÄÈ	-

15.4 lldp error-detect

G5B LLDP JÁÃ#s6ÑÃ#ÀÒÃ,X VLAN G5B”#ÕÃÕÃ.Ü5B”
#ÑMTU G5B”#ÿÇÃ#Ä LLDP ”#JÁÐA:µ/1u),Ä

lldp error-detect

no lldp error-detect

ÏDAÈ	Ð	£Ä
	-	-

Ï*Ð LLDP y[Time To Live TLV ,X=TTL ,Dhy[¥ÕKÈh+1 ÁÈEA× TTL ,DÃ
{A'ÛFA'ÛX,#ÊÃ

ÏG5B_Ð G5B TTL ,D 5

```
5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJOOGSKROGPXOWLSOLHU
```

ÏÏGQÐ

Q¸	£Ä
show lldp status	**/** LLDP ,X(Ð

ÏGÄÈ -

15.6 lldp management-address-tlv

G5B LLDP y[¥X1u)Ä*ü **no EÍMÃu)Ä**

lldp management-address-tlv [*ip-address*]

no lldp management-address-tlv

ÏÐAÈ

Ð	£Ä
ip-address	LLDP y[¥X1u)Ú

Ï5,ÕG5BÐ 5,Ã1u)ÚAÊE¸Xô VLAN ,X IPv4 Ä

ÏQÐ yG5Bã

Ï*Ð 5,Ã LLDP y[¥u)Ä1u)ÚÃÊE¸Xô VLAN ,X IPv4 È
pA¹ VLAN ÿG5B IPv4 È4ÁÊE¸Xô VLAN È IPv4 6Ä
VpR IPv4 È0ÃÊE¸Xô VLAN ,X IPv6 Ä
VpR IPv6 È*A'ÛX MAC 01u)Ä

ÏG5B_Ð G5B LLDP y[¥X1u)Ú 192.168.1.1Ö

```
5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJLQWHUIDFHJLJDELWHWKHUQHW
5XLMLHFRQILJLIOOGSPDQDJHPHQWDGGUHVVWOY
```

ÏÏGQÐ

Q¸	£Ä
show lldp local-information	**/** LLDP Ú

ÏGÄÈ -

15.7 lldp mode

G5B LLDP ,X0ÄÃ*ü **no EÍMGÁ** LLDP ,X0Ä

lldp mode {**rx** | **tx** | **txrx** }

no lldp mode

ÏÐAÐ	Ð	ÆÄ	
	rx	**yÆÕ**	LLDPDU
	tx	**Æ**	LLDPDU
	txrx	**ÆÕ**	LLDPDU

ÏÕ5BÐ **txrx**

ÏQÐ yG5Bã

ÏS*Ð GKÁ,X LLDP ÐÈÊÁÆÕ LLDP y[Ä
y· LLDP s6ÑX:S6Ñ LLDP ÿ· LLDP ,X ÐÕ txÃx ê txrxÄ

ÏG5B_Ð G5By,X LLDP ÐÆÕ LLDPDUÖ

```
5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJLQWHUIDFHJLJDELWHWKHUQHW
5XLMLHFRQILJLIOOGSPRGHW[
```

ÏÌGQÐ

Q¸	ÆÄ
show lldp status	**/** LLDP (Ñ

ÏGÄÐ -

15.8 lldp notification remote-change enable

G5B LLDP Trap s6Ñ*ü **no EÍMGÁ** LLDP Trap s6Ñ

ÌÎGQÞ	Q¸	£Ä
	show lldp status	**/** LLDP ,X(Õ

ÏGÄÈ -

15.9 lldp timer notification-interval

G5BÆÕ LLDP Trap ,XÊÈÈhÄ*ü **no EÍMÕÅÈhÄ**

lldp timer notification-interval *seconds*

no lldp timer notification-interval

ÐÄÈ	Ð	

Q5 <G5Bã

S*Ô ZS0,X0ãXNe4ÊCK,XNe4ÊÕ5B0ÃKÊÊÈ

G5B_Đ G5B LLDP 0ÃKÊÊÈ 3 /Ö

```
5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJOOGSWLPHUUHLQLWGHOD\
```

ÌGQĐ

Q¸	ÆÄ
show lldp status	**/** LLDP ,X(Õ

GÄÈ -

15.11 lldp timer tx-delay

G5B LLDP y[,XÆÕÊÊÃ*ü **no EÍMÃÆÊÊÕ**

lldp timer tx-delay *seconds*

no lldp timer tx-delay

ÐAÈ

Đ	ÆÄ
seconds	LLDP y[,XÆÕÊÊÃ5B8È 1-8192

5,Õ5BĐ 2 /¦

Q5 <G5Bã

S*Ô µ¥ÊÖãA'ÊÕ LLDP y[ÄSµCNe4ÊCK,XNe4

ÆÕ LLDP y[Ã5B LLDP y[,XÆÕÊÊL$ LLDP y[,XNe4ÆÕ

G5B_Đ G5B LLDP y[,XÆÕÊÈ 3 /Ö

```
5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJOOGSWLPHUW[GHOD\
```

ÌGQĐ

Q¸	ÆÄ
show lldp status	**/** LLDP ,X(Õ

GÄÈ -

15.12 lldp timer tx-interval

G5B LLDP y[,XÆÕÊÈhÄ*ü **no EÍMÃÆÊh5Õ**

lldp timer tx-interval *seconds*

no lldp timer tx-interval

ÏÐAÐ	Ð	ÆÄ
	seconds	LLDP y[,XÆÕÈÈhÃ5B8È 5-32768

ÏÐ,Õ5BÐ 30 /¦

ÏQÐ <G5Bã

ÏS*Ð -

ÏG5B_Ð G5B LLDP y[,XÆÕÈÈh 10 /Ö

5XLMLHFRQILJXUHWHUPLQDO

5XLMLHFRQILJOOGSWLPHUW[LQWHUYDO

ÏÎGQÐ

Q¸	ÆÄ
show lldp status	**/** LLDP ,X(Ð

ÏGÄÐ -

15.13 lldp tlv-enable

G5BAÆ TLV 2O_Ä*ü **no EÍMÕX** TLV 2O_Ä

lldp tlv-enable { **basic-tlv** { **all** | **port-description** | **system-capability** | **system-description** | **system-name** } | **dot1-tlv** { **all** | **port-vlan-id** | **protocol-vlan-id** [*vlan-id*] | **vlan-name** [*vlan-id*] } | **dot3-tlv** { **all** | **link-aggregation** | **mac-physic** | **max-frame-size** | **power** } }

no lldp tlv-enable { **basic-tlv** { **all** | **port-description** | **system-capability** | **system-description** | **system-name** } **|** **dot1-tlv** { **all** | **port-vlan-id** **|** **protocol-vlan-id** | **vlan-name** } **|** **dot3-tlv** { **all** | **link-aggregation** | **mac-physic** | **max-frame-size** | **power** } }

ÏÐAÐ	Ð	ÆÄ
basic-tlv	Î1u)Ú TLV	
port-description	≤/ Port Description TLV	
system-capability	>/< System Capabilities TLV	
system-description	>/< System Description TLV	
system-name	>/< System Name TLV	
dot1-tlv	802.1 4ÃÄn,X TLV	
port-vlan-id	>/< Port VLAN ID TLV	
protocol-vlan-id	≠ Port And Protocol VLAN ID TLV	
vlan-id	**ÐÃ,** VLAN ID	
vlan-name	≠ VLAN Name TLV	
vlan-id	**Ô** VLAN ÃÄ,X VLAN ID	
dot3-tlv	802.3 4ÃÄn,X TLV	
link-aggregation	≠ Link Aggregation TLV	

mac-physic	≠	MAC/PHY Configuratioin/Status TLV
max-frame-size	≠	Maximum Frame Size TLV
power	≠	Power Via MDI TLV

Ï5,Õ5BÐ 5,ÿ¥ÆB Location Ident ification TLV ,ÊX2Ó_,X TLV

ÏQÊ yG5Bã

Ï5*Ûl G5BÎ1u)Ú TLVÃ IEEE 802.1 4Ïn TLVÃ IEEE 802.3 4Ïn TLV Ê2pû **all ÐÜ**
A2ÕÆÝ TLVÄ

Ï5B_Ð G5B¥ IEEE 802.1 4Ïn,XÆÝ TLVÖ

5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJLQWHUIDFHJLJDELWHWKHUQHW
5XLMLHFRQILJLIOOGSWOYHQDEOHGRWWOYDOO

Chassis ID type	Chassis ID 2O_ Chassis ID +‰
Chassis ID	MAC ≍/
System name	
System description	ECB
System capabilities supported	
System capabilities enabled	
Port ID type	0Ã ID 2O_
Port ID	0Ã ID
Port description	0
Management address subtype	1u)
Management address	1u)Ú
Interface numbering subtype	1u) 2O_
Interface number	1u) ID
Object identifier	1u)
Port VLAN ID	0Ã VLAN ID
Port and protocol VLAN ID	0 A, VLAN ID
PPVID Supported	0 A, VLAN
PPVID Enabled	0 A, VLAN
VLAN name f VLAN 1	VLAN 1 ,
Protocol Identity	#
Auto-negotiation supported	
Auto-negotiation enabled	
PMD auto-negotiation advertised	0
Operational MAU type	0
PoE support	POE
Port class	POE 2O_Ö PSE o+A’Û PD o+A’Û
PSE MDI power support	PSE o+
PSE MDI power enable	PSE o+
PSE pairs control ability	o+
PSE power pair	POE 0

PSE power class	0Ã{4{Ö Class 0ë/4{ÿ 1 Class 1ë/4{ÿ 2 Class 2ë/4{ÿ 3 Class 3ë/4{ÿ 4 Class 4ë/4{ÿ 5
Link aggregation supported	ÕÒÃ.Ü
Link aggregation enabled	6ÕÒÃ.Ü
Aggregation port ID	JÒÃ.ÜÃ ID
Max mum frame Size	0ÃXÛKSz
Power-via-MDI device type	A’2O_Ð PSEÄ+A’Å PDÄA’Å
Power-via-MDI power source	+ß,X2O_
Power-via-MDI power priority	+ß,X4{
Power-via-MDI power value	0Ã+s)[
Model name	ãÄ

ÏGQÐ

Q¸	ÆÄ
-	-

ÏGÄÈ -

15.15 show lldp neighbor-information

/FA’ÛX LLDP ÇÄ

show lldp neighbor-information [**brief** | **interface** *interface-name*]

ÏÐÄÈ

Ð	ÆÄ
interface-name	yÄ

ÏÕ5BÐ -

ÏQÐ (Mã

ÏS*Ð

- **brief ÐÈÄ**
- **interface ÐÈÄ**

ÏG5B_Ð /ÕXFA’ÛXÇÖ

5XLMLHVKRZOGSQHLJKERULQIRUPDWLRQ

+‰	Aè
Neighbor index	F2é
Device type	FA'ÎX2O_
Update time	FÇÊ¥ÈÈ
Chassis ID type	Chassis ID ,X2O_
Chassis ID	*ÙÂ'Êrü MAC ≤/
System name	EÄ'ÎXáÄ
System description	A'ÊÄÈ ECÊ2Ä1Ç
System capabilities supported	2Ä¾Xs6Ñ
System capabilities enabled	2Ä¾Xs6Ñ
Management address subtype	1u)Ú2O_
Management address	1u)Ú
Interface numbering subtype	1u)Ú2O_
Interface number	1u)Ú ID
Object identifier	1u)Ú5Ûú
Port ID type	0Ã ID 2O_
Port ID	0Ã ID
Port description	0ÃÄú
Port VLAN ID	0Ã VLAN ID
Port and protocol VLAN ID	0ÃA, VLAN ID
PPVID Supported	0ÃA, VLAN
PPVID Enabled	S6ÑÃA, VLAN
VLAN name of VLAN 1	VLAN 1 ,XáÄ
Protocol Identity	#AÛú
Auto-negotiation supported	0ÃÄ
Auto-negotiation enabled	S6ÑÄ
PMD auto-negotiation advertised	0Ã¾E6Ñ
Operational MAU type	0Ã¾XE)[(Ó
PoE support	Ó POE
Link aggregation supported	0ÒÃ.Ü
Link aggregation enabled	S6ÑÒÃ.Ü
Aggregation port ID	JÒÃ.ÜÃX ID
Maximum frame Size	0ÃÒXKSz

Power-via-MDI device type	A’2O_Ð PSEÄ+A’Å PDÄA’Å
Power-via-MDI power source	+ß,X2O_
Power-via-MDI power priority	+ß,X4{
Power-via-MDI power value	0Ã+s)[

ÌGQÐ

Q¸	ÆÄ
-	-

ÏGÄÐ -

15.16 show lldp statistics

/ LLDP ,X4ÂuÇÄ

show lldp statistics [**global** | **interface** *interface-name*]

ÐAÐ

Ð	ÆÄ
interface-name	yÁ

ÏÕ5BÐ -

ÏQÐ (Mã

ÏS*Ð

- **global ÐÐ** LLDP 4ÂuÇÄ
- **interface ÐÐy,X** LLDP 4ÂuÇÄ

ÏG5B_Ð /,X LLDP 4ÂuÇÖ

```
5XLMLHVKRZOOGSVWDWLVWLFV
OOGSVWDWLVWLFVJOREDO,QIRUPDWLRQ
1HLJKERULQIRUPDWLRQODVWFKDQJHGWLPHKRXUPLQXWHVHFRQG
7KHQXPEHURIQHLJKERULQIRUPDWLRQLQVHUWHG
7KHQXPEHURIQHLJKERULQIRUPDWLRQGHOHWHG
7KHQXPEHURIQHLJKERULQIRUPDWLRQGURSSHG
7KHQXPEHURIQHLJKERULQIRUPDWLRQDJHRXW



/OGSVWDWLVWLFVLQIRUPDWLRQRISRUW*LJDELW(WKHUQHW@

7KHQXPEHURIOOGSIUDPHVWUDQVPLWWHG
7KHQXPEHURIIUDPHVGLVFDUGHG
```

7KHQXPEHURIHUURUIUDPHV
7KHQXPEHURIOOGSIUDPHVUHFHLYHG
7KHQXPEHURI7/9VGLVFDUGHG
7KHQXPEHURI7/9VXQUHFRJQL]HG
7KHQXPEHURIQHLJKERULQIRUPDWLRQDJHGRXW

show lldp statistics Q¸CEÄ

+‰	AÈ
Neighbor information last change time	FÇ¸ÐXÊÈ
The number of neighbor information inserted	FÇ¸,Xrt Ð
The number of neighbor information deleted	FÇ¸,Xô8 Ð
The number of neighbor information dropped	FÇ¸,XöÐ
The number of neighbor information aged out	FÇ¸,XCYÊÐ
The number of lldp frames transmitted	¥Ã,X LLDP Ð
The number of frames discarded	¢X LLDP Ð
The number of error frames	JÁ,ÃX LLDP Ð
The number of lldp frames received	y,X LLDP Ð
The number of TLVs discarded	¢X LLDP TLV Ð
The number of TLVs unrecognized	ÃÿX LLDP TLV Ð
The number of neighbor information aged out	FÇ¸,XCYÊÐ

ÌGQÐ

Q¸	ÉÄ
-	-

ÏGÄÈ -

15.17 show lldp status

/ LLDP ,X(ÐÄ

show lldp status [**interface** *interface-name*]

ÏÐÄÈ

Ð	ÉÄ
interface-name	yáÄ

Ï5,Õ5BÐ	-
ÏQÐ	(Mã
Ï5*Ð	ÛÌ **interface ÐÕÿX** LLDP (ÕÄ
Ï5B_Ð	/ÝÃX LLDP (ÕÖ

```
5XLMLHVKRZOGSVWDWXV
*OREDOVWDWXVRI//3(QDEOH
1HLJKERULQIRUPDWLRQODVWFKDQJHGWLPHKRXUPLQXWHVHFRQG
7UDQVPLWLQWHUYDOV
+ROGPXOWLSOLHU
5HLQLWGHODV
7UDQVPLWGHODV
1RWLILFDWLRQLQWHUYDOV

3RUW*LJDELW(WKHUQHW@

3RUWVWDWXVRI//3(QDEOH
3RUWVWDWH83
3RUWHQFDSVXODWLRQ(WKHUQHW,,
2SHUDWLRQDOPRGH5[QG7[
1RWLILFDWLRQHQDEOH12
(UURUGHWHFWHQDEOH<(6
1XPEHURIQHLJKERUV
```

show lldp status QÇEÖ

+‰	AÈ
Global status of LLDP	<Ù6Ñ LLDP
Neighbor information last changed time	FÇÊXÊÈ
Transmit interval	LLDP y[,XÝÕÈh
Hold multiplier	TTL ,D
Reinit delay	0ÃÊÈ
Transmit delay	LLDP y[ÝÕÊÈ
Notification interval	LLDP Trap Ç,XÝÕÈh
Fast start counts	ÇÝÕ LLDP y[,XÐ
Port status of LLDP	0Ã6Ñ LLDP
Port state	0ÃXJÒÃÕP ê DOWN
Port encapsulation	LLDP y[,XÃÐ

Operational mode	LLDP 0ã
Notification enable	0Ã6Ñ LLDP Trap s6Ñ
Error detect enable	0Ã6ÑÃ#s6Ñ
Number of neighbors	F•XÐ

ÏGQÐ

Q¸	ÆÄ
-	-

ÏGÄÐ -

15.18 show lldp tlv-config

/0Ã TLV G5BÇÄ

show lldp tlv-config [**interface** *interface-name*]

ÏÐÄÐ

Ð	ÆÄ
interface-name	yÄ

ÏÕ5BÐ -

ÏQÐ (Mã

ÏS*Ð ÐÐ **interface** ÐÐy,X LLDP TLV G5BÇÄ

ÏG5B_Ð /y· 1 ,X TLV ÇÖ

```
5XLMLHVKRZOGSWOYFRQILJLQWHUIDFH*LJDELW(WKHUQHW
//3WOYFRQILJRISRUW*LJDELW(WKHUQHW@

1$(67$86(()$/7

%DVLFRSWLRQDO7/9
3RUWHVFULSWLRQ7/9<(6<(6
6VWHP1DPH7/9<(6<(6
6VWHPHVFULSWLRQ7/9<(6<(6
6VWHP&SDELOLWLHV7/9<(6<(6
0DQDJHPHQW$GGUHVV7/9<(6<(6

,(((H[WHQG7/9
3RUW9/$,7/9<(6<(6
3RUW$QG3URWRFRO9/$,7/9<(6<(6
9/$1DPH7/9<(6<(6
```

,(((H[WHQG7/9
0&KVLF7/9<(6<(6
3RZUYLD0',7/9<(6<(6
/LQN$JUHJDWLRQ7/9<(6<(6
0D[LPXP)UDPH6L]H7/9<(6<(6

ÏGQÐ	Q¸	ÆÄ

16 QinQ

16.1 dot1q new-outer-vlan vid translate old-outer-vlan vid inner-vlan v-list

ü access trunk hybrid uplink 0 Tag ,X VID + ê Tag ,X VID vid ,X1*+9≈

dot1q new-outer-vlan *vid* **translate old-outer-vlan** *vid* **inner-vlan** *v-list*

no dot1q new-outer-vlan *vid* **translate old-outer-vlan** *vid* **inner-vlan** *v-list*

	v_list	Eg9y[vid
	vid	tag ,X vid
	no	#1*+9≈A’5B

1*+9≈0N

yã

-

Tag ,X vid 2001-3000 Tag ,X vid 1888 vid 3888

```
5XLMLHFRQILJYODQ
5XLMLHFRQILJLQWHUIDFHJLJDELW(WKHUQHW
5XLMLHFRQILJLIVZWFKSRUWPRGHWUXQN
5XLMLHFRQILJLIGRWTQHZXWHUYODQWUDQVODWHROGRXWHUYODQIQQHUYODQ

5XLMLHFRQILJLIHQG
```

	show translation-table [**interface** *intf-id*]	-

-

16.2 dot1q outer-vid vid register inner-vid v-list

ü tunnel 0 vid #1*+9≈

dot1q outer-vid *vid* **register inner-vid** *v_list*

no dot1q outer-vid *vid* **register inner-vid** *v_list*

ÐAÈ	Ð	ÉÄ
	v_list	YF¼vlan id ë
	vid	Ê¼ vlan id
	no	#1*+9×A'5B

ÏÕ5BÐ -

ÏQÐ yã

ÏS*Ð -

ÏG5B_Ð M6_A'5BEg9y[tag ,X vid 4-22 Ê tag ,X vid 3

UXLMLHFRQILJXUHWHUPLQDO
UXLMLHFRQILJLQWHUIDFHJLJDELW(WKHUQHW
UXLMLHFRQILJLIVZWFKSRUWPRGHGRWTWXQQHO
UXLMLHFRQILJLIGRWTRXWHUYLGUHJLVWHULQQHUYLG
UXLMLHFRQILJLIHQG

ÏÎGQÐ

Q¸	ÉÄ
show registration-table [**interface** *intf-id*]	-

ÏGÄÈ -

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

ü accessÈunk Èybrid Èplink 0Ã'5BÎb#A,XÊ¼ vid Â*+9×

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

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

ÐAÈ	Ð	ÉÄ
	v_list	Eg9y[Ê¼ vid ë
	vid	Â tag ,X vid
	no	Ï

UXLMLHFRQILJLIGRWTUHODYLGWUDQVODWHORFDOYLG
UXLMLHFRQILJLIHQG

ÏÎGQÐ

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

ÏGÄÈ -

16.7 l2protocol-tunnel

G5B dot1q-tunnel 0ÃÿÄy[

l2protocol-tunnel {**stp|gvrp**}

no l2protocol-tunnel {**stp|gvrp**}

ÏÐÄÈ

Ð	ÆÄ
stp	y stp y[
gvrp	y gvrp y[
no	ª#yy[A'5B

ÏÏ,Õ5BÐ -

ÏQÐ <ã

ÏS*Ð -

ÏG5B_Ð M6,X_ÊA, gvrp ` stp ,Xys6Ñ

UXLMLHFRQILJXUHWHUPLQDO

UXLMLHFRQILJOSURWRFROWXQQHOVWS

UXLMLHFRQILJOSURWRFROWXQQHOJYUS

UXLMLHFRQILJHQG

ÏÏGQÐ

Q¸	ÆÄ
show l2protocol-tunnel {**gvrp|stp**}	-

ÏGÄÈ -

16.8 l2protocol-tunnel *proto-type* enable

G5B0ÃS6ÑÃy[Eã6Ñ

l2protocol-tunnel { **stp|gvrp** } **enable**

no l2protocol-tunnel { **stp|gvrp** } **enable**

ÏÐÄÈ

Ð	ÆÄ
stp	**Eã** stp y[
gvrp	**Eã** gvrp y[
no	**Eã**

ÏÏ,Õ5BÐ -

ÏQ¸Ð yã

ÏS*ÛÐ -

ÏG5B_Ð M6,X_ÿ$Ð6ÑÄ,Eã6Ñ

UXLMLHFRQILJXUHWHUPLQDO
UXLMLHFRQILJLQWHUIDFHID
UXLMLHFRQILJLIOSURWRFROWXQQHOJYUSHQDEOH
UXLMLHFRQILJLIHQG

ÏÌGQÐ

Q¸	ÉÄ
show l2protocol-tunnel { **gvrp|stp** }	-

ÏGÄÈ -

16.9 l2protocol-tunnel *proto-type* tunnel-dmac *mac-address*

G5B,Ìh#A,XEã

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

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

ÏÐÄÈ

Ð	ÉÄ
stp	G5B stp ,XEã
gvrp	G5B gvrp ,XEã
no	É6ã,Õ 5,Õ*¡XEÐ 8¹ OUI 2bÈ 001aa9Ã 00d0f8Ã 14144b 1È,Õ,X Ý*8V 01d0f8È 3 +8V (stp:000005,gvrp:000006)Ä 8JW OUÈ,Õ OUI 1Ô8V,XÔ bit 5B1tÈ 3 +8V(stp:000005,gvrp:000006) ,X4ÐEã È V MAC 00CCCC000001È stp y[S*¡XEã 01CCCC00005Ä

ÏÏ5,Õ5BÐ -

ÏQ¸Ð <ã

ÏS*ÛÐ -

ÏG5B_Ð M6,X_ÿ$Ð6ÑÄ,Eã6Ñ

UXLMLHFRQILJXUHWHUPLQDO
UXLMLHFRQILJLIOSURWRFROWXQQHOJYUSWXQQHOGPDF$
UXLMLHFRQILJLIHQG

ÏĜQÐ

ï5,Õ5BÐ -

ÏQÐ (Mã

ÏS*Ô -

ÏG5B_Ð UXLMLHVKRZGRWTWXQQHO
3RUWVRWTWXQQHO

*L (QDEOH

ÏÌGQÐ

Q¸	ÆÄ
-	-

ÏGÄÈ -

16.12 show frame-tag tpid

/y· tpid ,XG5B

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

ÏÐÄÈ

Ð	ÆÄ
intf-id	(Mn,Xy·

ï5,Õ5BÐ Â tpid

ÏQÐ (Mã

ÏS*Ô -

ÏG5B_Ð UXLMLHVKRZUDPHWDJWSLG
3RUWVWSLG

*L [

ÏÌGQÐ

Q¸	ÆÄ
-	-

ÏGÄÈ -

16.13 show inner-priority-trust

/4{6 5B

show inner-priority-trust

ÐAÈ	Ð	ÆÄ
	-	-

5,Õ5BÐ á

QÐ (Mã

S*Ô -

G5B_Ð

UXLMLHVKRZQQHUSULRULWWUXVW
3RUWV LQQHUSULRULWWUXVW

*L HQDEOH

ÌGQÐ

Q¸	ÆÄ
-	-

GÄÈ -

16.14 show interface dot1q-tunnel

/ dot1q-tunnel G5B

show interface [*intf-id*] **dot1q-tunnel**

ÐAÈ	Ð	ÆÄ
	intf-id	(Mn,Xy·

5,Õ5BÐ -

QÐ (Mã

S*Ô -

G5B_Ð

UXLMLHVKRZQWHUIDFHGRWTWXQQHO
,QWHUIDFH*L
1DWLYHYODQ
$ORZHGYODQOLVWÈ
7DJJHGYODQOLVWÈ

ÏÎGQÞ

Q¸	Ë Ä
-	-

ËGÄà

-

16.15 show interface intf-name remark

/¼{ØXG5B

show interface intf-name remark

ËÐAà

Ð	Ë Ä
-	-

Ëþ,Õ5BÐ

ø

ËQþ

(Mã

ËS*Ô

-

ËG5B_Ð

```
5XLMLHVKRZQWHUIDFHLQWIQDPHUHPDUN
3RUWV7SH)URPYDOXH7RYDOXH

*L&V7R&V
```

ÏÎGQÞ

Q¸	Ë Ä
-	-

ËGÄà

-

16.16 show interface mac-address-mapping x

/ MAC ê5B

show interface mac-address-mapping *x*

ËÐAà

Ð	Ë Ä
-	-

Ëþ,Õ5BÐ

á

ËQþ

(Mã

ËS*Ô

-

stp	/Eã stp y[G5B

ï5,Õ5BÐ GKÁ

ïQÐ (Mã

ïS*Ûi -

ïG5B_Ð

UXLMLHVKRØSURWRFROWXQQHOVWS
HVWLQDWLRQPDF GI
/SURWRFROWXQQHO 6WS(QDEOH
UXLMLHVKRØSURWRFROWXQQHOJYUS
HVWLQDWLRQPDF GI
/SURWRFROWXQQHO JYUSLVDEOH

ïÎGQÐ

Q¸	ÆÄ
-	-

ïGÄÀ -

16.19 show registration-table

/Îb#A,X dot1q-tunnel 0Ã vid #ï1*+9×
show registration-table [**interface** *intf-id*]

ïÐAÀ

Ð	ÆÄ
intf-id	ûl,Xy·

ï5,Õ5BÐ 1*+9×0N

ïQÐ (Mã

ïS*Ûi -

ïG5B_Ð

UXLMLHVKRØHJLVWUDWLRQWDEOH
3RUWV7ÏSH2XWHU9,¦QQHU9,ÏOLVW

*LÏGGRXWHU

ïÎGQÐ

Q¸	ÆÄ
-	-

ïGÄÀ -

16.20 show traffic-redirect

/Îb#,X vid ÈÄ1*+9×

show traffic-redirect [**interface** *intf-id*]

ÏÐAÈ

Ð	ÆÄ
intf-id	ûX·

Ï5,Õ5BÐ 1*+9×0N

ÏQÐ (Mã

ÏS*Û -

Ï5B_Ð

UXLMLHVKRZWUDIILFUHGLUHFW
3RUWV 7ŠH9,0DWFKILOWHU

*L0RGRXWHU
*L0RGRXWHU
*L0RGRXWHU
*L0RGLQQHULQQHUWR
*L0RGLQQHU
*L1HVWHGYLGQHVW

ÏÎGQÐ

Q¸	ÆÄ
-	-

ÏGÄÈ -

16.21 show translation-table

/Îb#A,X access,trunk,hybrid 0Ã vid ÂÄ*+9×

show translation-table [**interface** *intf-id*]

ÏÐAÈ

Ð	ÆÄ
intf-id	û,Xy·

Ï5,Õ5BÐ 1*+9×0N

ÏQÐ (Mã

ÏS*Û -

ÏG5B_Ð	UXLMLHVKRZWUDQVODWLRQWDEOH 3RUWV7SH5HOD9,2OGORFDO/RFDO2QQHU9,OLVW *L,QQHU8,1$ *L/RFDO69,1$ *L,Q2XW

ÌÎGQÐ	Q¸	ÆÄ
	-	-

ÏGÄÈ	-

16.22 switchport dot1q-tunnel allowed vlan

A’5B dot1q-tunnel ,XAÃÆ vlan

switchport dot1q-tunnel allowed vlan [**add**] {**tagged|untagged**} *v_list*

switchport dot1q-tunnel allowed vlan remove *v_list*

no switchport dot1q-tunnel allowed vlan

ÏÐAÈ	Ð	ÆÄ
	tagged	ú tag
	untagged	á tag
	v_list	vlan id ë
	no	$T

16.23 switchport dot1q-tunnel native vlan

A’5B dot1q-tunnel ,XTAx vlan id

switchport dot1q-tunnel native vlan *vid*

no switchport dot1q-tunnel native vlan

	Ð	EÄ
	vid	A’5BTAx,X vlan id
	no	A’5BTAx vlan 1

5,Õ5BÐ A’5BTAx vlan 1

Q5 yã

S*Ô -

G5B_Ð M6_A’5B dot1q-tunnel ;XTAx vid 8

UXLMLHFRQILJLQWHUIDFHJLJDELW(WKHUQHW

UXLMLHFRQILJLIVZWFKSRUWGRWTWXQQHOQDWLYHYODQ

UXLMLHFRQILJHQG

ÌGQÐ

Q¸	EÄ
show interface dot1q-tunnel	-

GÄÈ -

16.24 switchport mode dot1q-tunnel

G5By· dot1q-tunnel ·

switchport mode dot1q-tunnel

no switchport mode

	Ð	EÄ
	no	ô8,h,X dot1q-tunnel G5B

5,Õ5BÐ M2dot1q-tunnel ·

Q5 yã

S*Ô -

G5B_Ð M6_A’5B0Ã dot1q-tunnel ·

UXLMLHFRQILJLIVZWFKSRUWPRGHGRWTWXQQHO
UXLMLHFRQILJHQG

ÏÎGQÐ

Q¸	ÆÄ
show vlan	-

¨ƀ,Õ5BÐ	1*+9≈0N
¨Q¸Ð	yã
¨S*Ð	-
¨G5B_Ð	M6_A'5BÝ 1.1.1.3 Eg9y[#ï vid 9

UXLMLHFRQILJXUHWHUPLQDO
UXLMLHFRQILJLSDFFHVVOLVWVWDQGDUG
UXLMLHFRQILJDFOVWGSHUPLWKRVW
UXLMLHFRQILJDFOVWGH[LW
UXLMLHFRQILJLQWHUIDFHJLJDELW(WKHUQHW
UXLMLHFRQILJLIVZWFKSRUWPRGHGRWTWXQQHO
UXLMLHFRQILJLIWUDIILFUHGLUHFWDFFHVVJURXSQHVWHGYODQLQ
UXLMLHFRQILJLIHQG

¨ÌGQÐ

Q¸	ÐÄ
show traffic-redirect	-

¨GÄÐ -

16.27 traffic-redirect access-group acl outer-vlan

Í access,trunk,hybrid, uplink 0Ãg9y[À'5BÎ#,XÊ¼ vid Â*+9

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

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

¨ÐAÐ

Ð	ÐÄ
acl	*ïG#,X acl
vd	¸ÂXÊ¼ vid
no	ª#Î#,XÊ¼ vid Â*+9

¨ƀ,Õ5BÐ	1*+9≈0N
¨Q¸Ð	yã
¨S*Ð	-
¨G5B_Ð	M6_A'5BÝ 1.1.1.1 Eg9y[,XÊ¼ vid Â 3

UXLMLHFRQILJXUHWHUPLQDO
UXLMLHFRQILJLSDFFHVVOLVWVWDQGDUG
UXLMLHFRQILJDFOVWGSHUPLWKRVW
UXLMLHFRQILJDFOVWGH[LW

UXLMLHFRQILJLQWHUIDFHJLJDELW(WKHUQHW
UXLMLHFRQILJLIVZWFKSRUWPRGHWUXQN
UXLMLHFRQILJLIWUDIILFUHGLUHFWDFFHVVJURXSRXWHUYODQLQ
UXLMLHFRQILJLIHQG

ÏÎGQÐ

Q¸	ÆÄ
show traffic-redirect	-

16.29 vlan

ÏÐAÐ

Ï5,Õ5BÐ

ÏQÐ

Ï5*Ð

Ï5B_Ð

1 IP /

1.1 arp

S*ARP 4ţ<rtţX IP ` MAC no 6Ã8
M-Õ MAC

arp [**vrf** *name*] *ip-address MAC-address type*

s6	**arp anti-ip-attack**	*num*	**no**
3			

5XLMLHFRQLIWHUIDFHYODQ
5XLMLHFRQLIIDUSJUDWXLWRXVVHQLWHUYDO
_ 2Ö!5BÈ!6nâ SVI 1 ¥ÕC ARP AÈ
5XLMLHFRQLIWHUIDFHYODQ
5XLMLHFRQLIIRDUSJUDWXLWRXVVHQ

ÏGÐ	Ò	ÈÄ
	-	-

ÏGÄÈ -

1.4 arp retry interval

S*AÑ'5BÈÕ arp AÈ[,XNe)[È?dÔ IP È4ÈÕ 2 õ ARP AÈ
,XÊÈÈhÄ*ÙÒX **no 6ÃÃ1AxÐ** 1 õ ARP AÈ
arp retry interval *seconds*
no arp retry interval

ÏDAÈ	Ð	ÈÄ

0.6 ref03seconds in7(no a)3600AÈ1

no arp retry times

		ARP
	number	

ÌÏGÐ	Ç	ÆÄ
	clear arp-cache	**Ù8** ARP 4¢<
	show interface	**/yÐB4ÃuÇ**

ÏGÄÈ -

1.7 arp trusted

S*ÄÇ'5BÏ ARP ><NM,XÐÄÇX no 6ãÃxÄ

arp trusted *number*

no arp trusted

ÐÄÈ	Ð	ÆÄ
	number	Ã5Ã ARP ><NM,XÐ

ÏÕ,Ã!5BÐ ¢5,Ã

Ð <G!5Bã

ÏS*Ð ?US!8ÇÈ'ÏÃ ARP s6Ñ ARP ><NMÌW><NMEY,ÈpÃ<NM

4*ÆÃÇÕ ARP ><NM0NKÈÝÔ'5BÈUA'5Bkp

ÏG!5B_Ð G!5BÈ'5BÃ'5B 1000 Ã ARP

DUSWUXVWHG

ÌÏGÐ	Ç	ÆÄ
	service trustedarp	***Ã** ARP s6Ñ

ÏGÄÈ -

1.8 arp trusted aging

S*ÄÇ'5BÏ ARP ÈÃÇX no 6ãÃxÄ

arp trusted aging

no arp trusted aging

ÐÄÈ	Ð	ÆÄ
	-	-

ÏÕ,Ã!5BÐ GSN Ã ARP TÃxãÕ

Ð <G!5Bã

S*AÑ ARP ARP 5

ß **arp timeout** 5BÄ

G!5B_Ð -

Q	EÄ
service trustedarp	*Ñ ARP s6Ñ

GÄ -

1.9 arp trusted user-vlan

S*AÑ'5BÑ ARP <<NMÊ> VLAN E@6ÄQX no 6ñ8<<NMÄ

arp trusted user-vlan *vid1* **translated-vlan** *vid2*

no arp trusted user-vlan *vid1*

Ð	EÄ
vid1	*á<5B* VID
vid2	*E@6* VID

5,Ñ> VLAN E@6

<G!5Bã

?US!8 ARP s6 VLAN ARP *ó VLAN

ÊÔUG!5B!8

G!5B VLAN 3 ARP rL*ó VLAN 5 Ê!5BVQ

DUSWUXVWHGXVHUYODQ WUDQODWHGYODQ

Q	EÄ
service trustedarp	*Ñ ARP s6Ñ

GÄÈ -

1.10 arp unresolve

S*AÑ!5B ARP <<NMpd><NM,XÔÄQX no 6ñTA 8192Ä

arp unresolve *number*

no arp unresolve

Ð	EÄ

number	*ð* ARP ><NM,XÐÈÈ 1-8192 > ÄÄx 8192

ï5,Õ!5BÐ ARP 4¢<Ã¤ 8192 ðd><NM

ÐÇ <G!5Bã

ï5*Ð ¥„ ARP 4ç><Î„ðd><NMÊÈ¤ÝÃ8ÇÐd><
NM,XÐÄ

ïG!5B_Ð G!5BÈ'5B,XÐd><NM,XÐ 500
DUSXQHVROYH

ïÏGÐÇ

Ç	ÈÄ
-	-

ïGÄÈ -

1.11 clear arp-cache

?U¢ ARP 4¢<ĉ8|Õ ARP Ã,È(MÇ clear arp-cache
clear arp-cache [**vrf** *vrf_name* | **trusted**] [*ip* [*mask*]] | **interface** *interface-name*]

ïÐAÈ

Ð	ÈÄ
trusted	*ðÃ* ARP ,X><NM
vrf *vrf_name*	ĉ8ÛÙ VRF r_,X|Õ ARP ><NM
ip	IP ÐÈ#Ù8ÛÙ IP ,X ARP ><NMÈ VpÛÙ **trusted G** **Ì8ÛÃ** ARP ><NMÈÕ ARP ><NM
mask	mask $%ÕÈ#Ù8$%,X ARP ><NMÈ6,X IP ™ NO$Ë VpÛ trusted GK+ĉ8$%ÃÃ ARP ><NMÈ ĉ8$%,X|Õ ARP ><NMÄ
interface *interface-name*	#Ù8ÛÙy;X|Õ ARP ><NM

ï5,Õ!5BÐ -

ÐÇ (M*ã

ï5*Ð ÃÃÇ ARP 4ç><

NFPP(Network Foundation Protection Policy ,) mac
(IP) ARP clear arp 1s
ARP

ïG!5B_Ð _ 1ÈÈ8Ý ARP |Ã,4¢<Ö

FOHDUDUSFDFKH

_ 2ÏÈ8|Õ ARP ><NM 1.1.1.1

FOHDUDUSFDFKH

_ 3ÏÈ8y· SVI1 ß|Õ ARP ><NM

FOHDUDUSFDFKHLWHUIDFH9ODQ

ÏGÐ

Q	£Ä
arp	ü ARP ><rtM-Ø)Ä

ÏGÄÈ -

1.12 clear ip route

?UHÎ8 IP CÃ><ÈÙ IP CÃ><,XÎ CÃ)ÃM*ã> **clear ip route Q**

clear ip route { * | *network* [*netmask*] }

ÏDAÈ

ip-address	32 þ(M! IP è ! Ê ã</ÆK È hÊ
network-mask	32 þ(M!5¼ -Ê1” ></}-Ê” ></!Æ 8 !Ê È Ê ã</ÆK È hÊ
mask-length	$¼Ê
ip-address/mask-length	IP $¼Ê Sz
secondary	ÆÊ X IP Ä

ß,Ê!5BÐ y!Ê!5B IP

Ðþ yG!5Bã

Ê*Ð ÞÊ!5BZ IP ÞÆÕ IP DByÆG!5BZ IP ÈÀyAÈ
IP #AÄ
5¼ -ÊÞ 32 !!(M,XDÆA¹ IP ,XÞ(M5¼ Æ¼ 1Õ
,X!(Mh,X IP !(M!5¼ Æ¼ ,X!(Mh,X IP !(M!F¼
Ø A 2O5¼ h,X5¼ -Ê 55.0.0.0 Æ5¼ -Õ5¼ È ¼
ÞÀX0(M!305¼ Æ¼ È5¼ XDGÈÞX
5¼ -Ê¼Õ
RGOS ECÞG!5Bþ IP Þ IP È<F½ IP Ä IP
,XG!5B)Ø,ÆÊc!5BÆ!5BZ IP 6Ñ!5B õ IP Ä IP
â IP ž IP K2b5¼ 6¼ Â’È*ú IP È
¼A5×¼ Ê IP Ö
5¼ ÚX5½ÞUÞ C 2O5¼ Æ! 254 Ä
5Œ›E› 254 Þ C 2O5¼ 6!ÞUÚ!Þ C 2O5¼ Æ A’ÛÊUE²
yÞ5¼ ÈÊUG!5Bþ IP Ä

AÞX5¼ 1¸X9y5¼ Æ ¼ È ,XS*ÆA5¼
ç{b IP ,XCÃ5¼ 6!Þ ÆÑ!5BÞ IP Ä

Þ5¼ XÞ¼ Þ¼ h/Ê 4Þ h/5¼ X È G!5B õ IP
,XÆh/•X5¼ yCK9Þ Æ ÃÑ’ÛXÞ Ä

Ê!5B_Ð ß!5BZ· IP 10.10.10.1¼ -Õ 255.255.255.0Ä
LSDGGUHVV
ê
LSDGGUHVV
ê
LSDGGUHVV
ß!5BÆ,6‰ 10.10.10.254Ä
LSDGGUHVVDWHZ\

ÎGÞ

Ç	È Ä

1.14 ip broadcast-address

?Unp,XSÈÿG!5BQ **ip broadcast-addressÄ** no 6ÃS•
G!5B

ip broadcast-address *ip-address*

no ip broadcast-address

ip-address	IP 5¼,XSÄ

5,Õ IP S• 255.255.255.255

ÿ5,ÕG<ÑIEUÿ@pS 0Ÿ3 3Ÿ{sRÁÐ
aD¾

/ÄŠy[Ä“Ay[,X8Vê¤Ä
ùäê¤Ê?XA'ý IP nŠy[ÈE@¥y[ÕŠy[ÄŠ
y[E',È¬A5%XA'ÊnŠy[E@6#ÚSy[ÊÙÊ IP <
1 ,XSy[ÊŠÊÈÕ¤Ä
4ÊÙXyènŠ(=)ÓE@6,Xs6ÑA¹yÊ@¥È5%Xn
ŠÄ¢ê¤ÊXnŠy[,XêgÈ,WnŠy[,X!7
E@Ä
ÿèÊÊEnA“Kê<9{E@¥nŠÄZ“Kê<ÊÙ“Kê
><n,XDBÙÈ> nŠ(=)Ó•XE@6Ä
VpÿÐ!5BZ **no ip directed-broadcast** ÈGOS ÿÙX,È5%XnŠy[Ä

Ë!5B_Ð Ê!5B_Ê'Û FastEthernet 0/1 0ÃŠ•XE@Ä

```
LQWHUIDFHIDVW(WKHUQHW
LSGLUHFWHGEURDGFDVW
```

ÏÊÐ

Ð	Ê
-	-

ËÄê

-

1.16 ip mask-reply

?UA}RGOS EC6ÑÙ ICMP }-ÕËÎhÈÕ ICMP h1(y[ÈÿG!5BÐ **ip mask-replyÄÐ** no 6ÊKÉÕ ICMP }-Õy[Ä

```
ip mask-reply
no ip mask-reply
```

ÐÄê

Ð	Ê
-	-

Ë,Ø!5BÐ 5,ØKÉÕ ICMP }-Õy[

Ê

yG!5Bã

Ë*Ê 5%A'ÊÙU-Ff6(5Ê%X$1%ÊÄ¢È%A'Û ÉÕ ICMP }-Õ
AÉÈCÿ ICMP }-ÕÉÈC,X5%A'ÊÙÕ1(#ÈÄ

Ë!5B_Ð Ê!5B_Ê'ÛX FastEthernet 0/1 yÚ ICMP ,X}-ÕÊ[

```
LQWHUIDFHIDVW(WKHUQHW
LSPDVNUHSO\
```

ÏÊÐ

Ð	Ê

ÏGÄÈ -

1.17 ip mtu

?UA'5B IP ÊÎg)ÄMTU ÊÿG!5BÇ **ip mtuÄÇ** no 6ÃÅ,Õ!5BÄ

ip mtu *bytes*

no ip mtu

ÏÐAÈ

Ð	ÆÄ
bytes	IP ÊÎg)È8V)!ÈÈ 68~1500Ä

ÏÕ,Õ!5BÐ 5,ÕÇ mtu G!5B,X,Ä

ÏÇ yG!5Bã

ÏS*Ê Vpô IP y[CYE› IP MTU ,XÈ RGOS ECÊ[E>ÊÎ)5%A'È
ÏÕ(y;X IP MTU ô?UÔÃ
Vp*ÿG!5BÇ mtu Í;XÊÎg)E> A'5BÈ IP MTU ,X7%;X MTU Ð
7ÃpA×Z IP MTU ,XÈ;X MTU ô³Ä

ÏG!5B_Ð G!5B_Ð FastEthernet 0/1 y;X IP MTU A' 512 +8V

```
LQWHUIDFHIDVW(WKHUQW
LSPWX
```

ÏÌGÇ

Ç	ÆÄ
mtu	**A5ByÊÎg)Ä**

ÏGÄÈ -

1.18 ip proxy-arp

?UÿÍ)Ú ARP s6Ñ **ip proxy-arp ÇÇ** no 6ÃGKÁÚ ARP s
6Ñ

ip proxy-arp

no ip proxy-arp

ÏÐAÈ

Ð	ÆÄ
-	-

ÏÕ,Õ!5BÐ GKÁÚ ARP

ÏÇ yG!5Bã

Ï*Ð	A'ÛX)Ú ARP s6ÑÙÍÃÇ,XÈJV5%8%	IP ,X MAC!ÏA'
	ûÔ ARP AËÈ ARP AËÕ,X IP AÈX	IP 2bÔ%È'A'ÔE'
	AË IP ,XCÃÈ'ÊÕ ARP hÈ,X	MAC A'ÛÊ,X5% MAC Ä
	E/ÙÚ ARP ,Xs6Ñ	
Ï5B_Ð	G!5BÈ5% FastEthernet 0/1 *ÙÚ ARP s6Ñ	

1.20 ip source-route

?UAŒ RGOS ECÊÑ¶CÃ¡C,X IP y[È¤G!5BÇ **ip source-routeÄÇ** no 6
6KÁ¶CÃ¡C,X¶6Ñ

ip source-route

no ip source-route

ÏÐAÈ	Ð	ÉÄ
	-	-

ÏÕ,Õ!5BÐ 5,Õü

ÏÇ <G!5Bã

ÏS*Ð RGOS Õ IP ¶CÃÄ'Ù IP DBÊ IP y,X¶CÃÃ¶CÃÃ¡CÃ
1EÍME> "ÈoEÍMü RFC 791 Á4ÉÄp"#AÐBÙÇÍMÈ
;> ¡h,X|0¥p"#´,XEÍMÈÐBÉÇÕ ICMP ÐKÂI#ÈÐ
BÃ
RGOS ECÊ,Ñ% IP ¶CÃ(MÄ

ÏG!5B_Ð G!5B_ÈKÁ IP ¶CÃ(MÏ
ÇLSVRXUFHURXWH

ÏÇ	Ç	ÉÄ
	-	-

ÏGÄÈ -

1.21 ip unnumbered

AÇG!5B4ÇÊG!5B4ÇÄÈyAÉ> IP #AÈyÃ
¥ IP DBÃü no 6ÄG!5BÄ

ip unnumbered *interface-type interface-number*

no ip unnumbered

ÌÎGÐ

Ò	ÉÄ
-	-

ÏGÄÐ -

1.23

mask	**/** IP 5%,X ARP ><NM,Vpû trusted GK+ÃÃ Ï ARP ><NMÈ M2Ã ARP ><NMÄ
static	**/Ñ** arp ><NMÄ
complete	**/Ã** arp ><NMÄ
incomplete	**/Ñ** arp ><NMÄ
mac-address	**/Ñ** mac ,X ARP ><NMÄ

Ï5,Õ!5BÐ -

Ï (M*ã

Ï5*Ñ -

Ï5B_Ð _ 1Ö show arp Egî4ÖÖ

```
5XLMLHVKRÐUS
7RWDO1XPEHUVRIÑUS
3URWRFROÑGGUHVVÑIPLÐDUGÐUH
7ÑSH,ÑWHUIDFH
,ÑWHUÐWDDIDUSD9/$
,ÑWHUÐWDDEGDUSD9/$
,ÑWHUÐWEEHDUSD9/$
,ÑWHUÐWEEDUSD9/$
,ÑWHUÐWDDEDUSD9/$
,ÑWHUÐWDDEEDUSD9/$
,ÑWHUÐWGIEDUSD9/$
```

ARP 4ÿ<Ø!%,ÿÄÖ

+!‰	AÈ
Protocol	5%,X#AÈ+!‰ InternetÄ
Address	â@Ê,X IP Ä
Age (min)	ARP 4Ã),ÿXÊÈAuÄp,XÊÙ M-Õ!5B,XÈ+!%ÁÄ“-”></Ä
Hardware	â IP Í,X.@Ê
Type	.@ÊO_Ê% ARPAÄ
Interface	â IP G6(,XyÄ

_ 2Ö **show arp** 192.168.195.68 ,XEgî4ÖÖ

```
5XLMLHVKRÐUS
3URWRFROÑGGUHVVÑIPLÐDUGÐUH7ÑSH,ÑWHUIDFH
,ÑWHUÐWDDIDUSD9/$
```

_ 3Ö **show arp** 192.168.195.0 255.255.255.0 ,XEgî4ÖÖ

```
5XLMLHVKRÐUS
3URWRFROÑGGUHVVÑIPLÐDUGÐUH7ÑSH,ÑWHUIDFH
```

show arp detail [*interface-type interface-number*| *ip* [*mask*] | *mac-address* | **static** | **complete** | **incomplete**]

ÏÐAÈ

Ð	ÆÄ
interface-type interface-number	/ÛÝÃÙÃ ARP
ip	ip ÈÛ ip ,X ARP ><NM
ip mask	/ ip mask ÀX5%% ARP ><NM
mac-address	/ÛÛ mac ,X ARP ><NM
static	/Ý-Õ arp ><NM
complete	/ÁÊd,X|Õ arp ><NM
incomplete	/Ýd,X|Õ arp ><NM

Ï5,Õ!5BÐ -

Ïð (M*ã

Ï5*Ûì *ÇÃ ARP ,XA4ÇÈV ARP ,X2O_ÄÕ-ÃÕÆ
Ã*ÛÇ

Ï G!5B_Ð ß **show arp detail Eg4ÊpÖ**

```
5XLMLHVKRZUSGHWDLO
,3ÊGGUHVV0ÊGGUHVV7ÈSHÊIPLÇÇWHUIDFH3RUW
IH6WDWLF
IH6WDWLF9O
IH6WDWLF9O*L
HIHÇPLF9O*L
DÇPLF*L*L
DÇPLF$
DÇPLF9O$
D/RFDO9O
D/RFDO*L
D/RFDO9O
D/RFDO*L
```

ARP 4ÇÊ<Ø!%ÆÄÖ

+!‰	ÆÄ
IP Address	â@Ê,X IP Ä
MAC Address	â IP Ý,X.@Ê
Type	ARP 2O_È-ÇÇO_Ä
Age	ARP :4ÎKSÊÈÄ
Interface	â IP G6(,XÝÄ

ÏGÄÈ -

1.28 show arp timeout

/ÔX|Õ ARP ><NM5ÕÄ

show arp timeout

ÏÐAÈ

Ð	ÆÄ
-	-

ÏÕ,Õ!5BÐ -

ÏÐ -

ÏS*Ô -

ÏG!5B_Ð ß **show arp timeout EgÎ4pÖ**

5XLMLHVKRÐUSWLPHRXW

,ÕWHUIDFHDUSWLPHRXWVHF

9/$

ÏÎGÐ

Ð	ÆÄ
-	-

ÏGÄÈ

1.29 show ip arp

?U/?d#A,ÄRP Å¢<ÈM*ã> AÐ

show ip arp

ÏÐAÈ

Ð	ÆÄ
-	-

ÏÕ,Õ!5BÐ -

ÏÐ (M*ã

ÏS*Ô -

Ï G!5B_Ð ß **show ip arp Eg4pÄ**

```
5XLMLHVKRZSDUS
3URWRFROGGUHVVHPLQDUGDUH7SH
,QWHUIDFH
,QWHUQWHG$3)DVW(WKHUQW
,QWHUQWHE$3)DVW(WKHUQW
,QWHUQWGIGF$3)DVW(WKHUQW
,QWHUQWGIHFI$3)DVW(WKHUQW
,QWHUQWGIG$3)DVW(WKHUQW
,QWHUQWEGHEHH$3)DVW(WKHUQW
,QWHUQWEGHIG$3)DVW(WKHUQW
,QWHUQWGIIEE$3)DVW(WKHUQW
```

ARP 4ţ<Ø!%ÿ.ÄÖ

+!‰	AÈ
Protocol	54%X#AÈ+!‰ InternetÄ
Address	â@Ê,X IP Ä
Age (min)	ARP 4Ą),,ÿXÊÈAuÄp,X6Ù M-Õ!5B,XÈ+!%ÁÄ“”-”></Ä
Hardware	â IP Ĺ,X.@Ê
Type	.@ÊO_Ò% ARPAÄ
Interface	â IP G6(,XyÄ

ÏGÇ

Ç	ÈÄ
-	-

ÏGÄÈ

1.30 show ip interface

AÕÇ;X IP (ÕÇß

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

ÏÐAÈ

Ð	ÈÄ
Interface-type	ûy2O_
Interface-number	ûy4Ë
brief	/ý;X IP Î G!5BÇÃ primary ipÃ secondary ip ỳ(Ê

ÏÕ,Õ!5BÐ -

ÏÇ (M*ã

Ï*Ð ÐÃX(Ð RGOS ÚÃ><ÕÈÃÃXyÛ RGOS ECÊÊ›
AyÃBÛpyÃÕÕRGOS ECÊÃ><ô8,Ì,X
,ÈÃÄ
VpyÕÃÕAÊÕÃ"CÃA(ÕUP Vp(™)Ú"CÃÃü
(ÕÕUP Ä
ãXy2O_ÈX4ÕÃÕYoy(M,ÝXEÝMÄ

Ï G!5B_Ð _ 1Ö **show ip interface brief** Ïg4ÎpÄ

5XLMLHVKRZSLQWHUIDFHEULHI
,QWHUIDFH,3$GGUHVV3ULIP-Address(Sec) 6WDWXV3URWRFRO
*LDELW(WKHUQWGRZQRZ
*LDELW(WKHUQWRDGGUHVVRDGGUHVVGRZQRZ
9/$RDGGUHVVGRZQRZ
AÕ
Status EÄ,XÒÃÕ upÈ down ` administratively downÄ,> shutdown ÿ
GKÅ
Protocol EÄ,X IPv4 #A(Ð

_ 2Ö **show ip interface vlan** Ïg4ÎpÄ

6ZWFKSKRZSLQWHUIDFHYODQ
9/$
,3LQWHUIDFHVWDWHLV2:1
,3LQWHUIDFHWSHLV5ÇÃ7
[redacted]
,3DGGUHVVLV
SULPDU0ÉB6A!,ûÃ,3DGGUHVHU*3U&WDWHLV9900Ó#ch-A!VÂW$U<PGH[redacted]

8QHDFKDEOH
6RXUFHTXHQK
5RXWLQHGLUHFW

/4§2!%EÄÖ

+!‰	AÈ
IP interface state is:	5%y ÕÃÜ:@ÊÕ“CÃA(Õ “UP” Ä
IP interface type is:	/y2O_ÈSÊÄ
IP interface MTU is:	/yA’5B,X MTU Ä
IP address is:	/y· IP }-ÕÄ
IP address negotiate is:	/y· IP ú#9kÄ
Forward direct-boardcast is:	/E@¥ÊÄ
ICMP mask reply is:	/ÈÕ ICMP }-Õ1(y[Ä
Send ICMP redirect is:	/ÈÕ ICMP Gnå[Ä
Send ICMP unreachabled is:	/ÈÕ ICMP Ã’y[Ä
DHCP relay is:	/ú DHCP 4Ä
Fast switch is:	/ú IP Ex6s6Ã
Route horizontal-split is:	/ú GÚÈ,C±Ê#A,XCÃÈ > Ä
Help address is:	/ helper IP Ä
Proxy ARP is:	/ú ARP Ä
ARP packet input number: 0 Request packet: 0 Reply packet: 0 Unknown packet: 0	/yX ARP y[DÈ ARP AÿÏ ARP h1(y[2O_y[
TTL invalid packet number:	/yX TTL ý[D
ICMP packet input number: 0 Echo request: 0 Echo reply: 0 Unreachable: 0 Source quench: 0 Routing redirect: 0	/yX ICMP y[DÈ0Ö Echo AÿÏ Echo h1(y[Ã’y[0ey[CÃGnå[
Outgoing access list is	/yG!5B2A“KÊ<Ä
Inbound access list is	/yG!5B20A“KÊ<Ä

1.31 show ip packet statistics

AÇ¶¹ß IP y[,X4³AuµCÄ

show ip packet statistics [total |

2 IPv6

2.1 clear ipv6 neighbors

#Ù8|Õ4,XFÄ

clrear ipv6 neighbors

	Ð	ÆÄ
	-	-

5,Õ!5BÐ (Mã

EEA Ù8ÉEF ¥,Õ4,XFÈ4-Õ!5B,Xã#Ù8Ä

S*Ô -

G!5B_Ð 5XLMLHFOHDULSYQLKERUV

	Q	ÆÄ
	ipv6 neighbor	**5BÕ**
	show ipv6 neighbors	**/F¥**

GÄÈ -

2.2 ipv6 addr[redacted]

5 4yG!5BÔ IPV6 ,X, S*AQX no 6 58G!5B,XÄ

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**]

prefix-length	IPV6 !4ÔXKSzG IPV6 ><5%XFÄ
prefix-name	[illegible]
sub-bits	[illegible] RFC4291 E,ÄXfÈ</Ä
eui-64	></*âX IPV6 +G!5B,X!4Ô 64 !(M,Xy· ID Â54˜ Ä

Ö,Õ!5BÐ -

ÿ yG!5Bã

Ö*Ð

	IPv6	VRF	IPv6	VRF	IPv6

ÿ IPV6 y>ÊÕ UP Êw24Ú+7*ÂÃ

y;X IPv6 3Ã*E*ü4ÔÄ IPv6 =E*ü4Ô +$4Ô +

!(MÄ*ü4Ã*ü **ipv6 general-prefix** [illegible] DHCPv6 v0,X PD(!4Ê

)),s6Ñ4(-DHCPv6 G!5B $ÄÔ +!(MS*ÿX *sub-bits/prefix-length*

DÕÄ

S*ü **no ipv6 address** [illegible]

S * ü **no ipv6 address** *ipv6-prefix/prefix-length* **eui-64** Ã¹ ô L 8 S * üQ **ipv6 address**

Ï5,Õ!5BÐ	y;X IPv6 s6ÑÎ			
Ï Q	yG!5Bã			
Ï*Ô	Ý 2 /Ï X IPv6	s6ÑG!5B	**ipv6 enable Q**	,ÿÿG!5B
	Z IPv6 Ä			
		IPv6		

5XLMLHFRQ1LSYHQUDOSUHIL[PSUHIL[

ipv6 address *prefix-name sub-bits/prefix-length*	**S*Eî4ÔBy·**
show ipv6 general-prefix	**Eî4Ô**

-

2.6 ipv6 hop-limit

SB1¹_SEÕÃ<qUEÄ

5,Õ!5BÐ	1
Ð	yG!5Bã
S*Ð	ÿG!5BÐX IPV6 E,7C4Ep!?UW|0U"#ÈÊ¹ Ð"tentative"(AÊ) ,X(ÕUE/,> Ìzpü"#0UÈwAÃ• !7.BS*Ìp"#0UÈS*ü,XyÂ5S*ü EUI-64 ,XÂ5Ìw><ã¹ ÒÃÕÃ,Ìw!8Ã47%GKÁy(GL!6ÁyÈ> IPV6 ,X,Ìg ()ÈÊÔÃ!5B„XÈEa õ down/up yG,0U"#Ä™ ÿ down (Õ up (ÕÃ¹yXG,0U"#Ä
G!5B_Ð	5XLMLHFRQJILSYQGDGDWWHPSWV

ÌGÐ	Q	EÄ
	show ipv6 interface	**ÿÄ**

GÄÈ	-

2.8 ipv6 nd managed-config-flag

S*ÄÐ'5BCÃ<@y[,X"**managed address configuration** "ÊS*ÄÐX no 6ã ÚÈ8AÚÃ

ipv6 nd managed-config-flag

no ipv6 nd managed-config-flag

ÐAÈ	Ð	EÄ
	-	-

5,Õ!5BÐ	CÃ<@y[AÛÚ>A'5B
Ð	yG!5Bã
S*Ð	AÛXA'5BÌZCÃ<@,X?US*ü(Õ%G!5B99ÄÿpÛA' 5BÈ*ü(Õ%G!5B99kÈ*Ä
G!5B_Ð	5XLMLHFRQJILSYQPDQHGFRQJODJ

ÌGÐ	Q	EÄ
	show ipv6 interface	**ÿG** ra-info ,XCÄ
	ipv6 nd other-config-flag	**A5B(Õ%GB9L8 ÿC,Û Ä**

GÄÈ	-

2.9 ipv6 nd ns-interval

S*ÄÇ'5By=AÏNS) ,XGÈhÈ*ÄÇX **no 6**

ipv6 nd ns-interval *milliseconds*

no ipv6 nd ns-interval

milliseconds		1000-4294967295

5,Õ!5BÐ CÃ<@y[(RA) 5,Õ 0(></p)È A'7Ã> FÄÏ*ÜXGô KÈh 1000ms(1 /)Ä

yG!5Bã

G!5B,XÚÃ<@y[(RA) >Ã3>A'7Ã>S*Ä2UÁ'5Bk

5XLMLHFRQJILSYQVLQWHUYDO

show ipv6 interface	¹Ç,XÇ

-

2.10 ipv6 nd other-config-flag

S*ÄÇ'5BCÃ<@y[,X"**other stateful configuration** "ÈS*ÄÇX no 6ÈÙ L8AÈÄ

ipv6 nd other-config-flag

no ipv6 nd other-config-flag

-	-

5,Õ!5BÐ CÃ<@y[AÛÝA'5B

yG!5Bã

A'5BÈ8ÈÄ'ÇXCÃ<@y[,XEÛ>5B!ÄÈÃ*ü dhcpv6 99L8 IPv6 ÇXÇE> 7ÇG!5B' managed address configuration >A'5BÊ TAx other stateful configuration 3>A'5BÄ

5XLMLHFRQJILSYQRWKHUFRQJODJ

ipv6 nd ra-mtu	**A5BC** MTU +!%

-

2.13 ipv6 nd ra-interval

S* A'5By CA<@(RA) y[,XKEhE* **no 6**

ipv6 nd ra-interval {*seconds* | **min-max** *min_value max_value*}

no ipv6 nd ra-interval

seconds	CA<@(RA) @y[,X
min-max	**A5BE**
min_value	A'5BE
max_value	A'5BE

200 /L y[,XKEhü 200 /B| 20Á

yG!5Bã

VpA A'5,ÕA A'EwA'5B,XKEhCA<*,XKE!6

,RÄ

VpÛGK+ **min-maxEwrL y[EhcE**

5XLMLHFRQJILSYQUDLWHUYDO

5XLMLHFRQJILSYQUDLWHUYDOPLQD[

show ipv6 interface	ra-info ,XCÄ
ipv6 nd ra-lifetime	**A5BA**
ipv6 nd ra-hoplimit	**A5BC**
ipv6 nd ra-mtu	**A5BC** MTU +!%

-

2.14 ipv6 nd ra-lifetime

S* A'5By CA<@(RA) y[,XCA<* **no 6**

5

ipv6 nd ra-lifetime *seconds*

no ipv6 nd ra-lifetime

seconds	*A'AÛA'yÃÕÃ*

1800 /¦

yG!5Bã

“CÃ<*ó+!%ÌÇÃ<@RA) y[ÈÃ¥yÌXÌÃ'
Ûõ,Õ'ÛXÊÃpA'5B,X 0 ></á>05,Õ'Ã'5BM2 0 ÊUÃ%NO
ñ1bA'ÊÕÃ<@RA) y[,XKÈhra-interval) Ä

5XLMLHFRQLIIÐSY0pUDOLIHWLPH

ipv6 nd ra-interval	**A5BCÕÃÈÃhÄ**
ipv6 nd ra-hoplimit	**A5BCÕÃÈÃ**
ipv6 nd ra-mtu	**A5BCÕÃX** MTU +!%Ä

-

value	CÃ<@RA) y[,X MTU +!%Ä

5XLMLHFRQ0ÀÀQ0P@p€

show ipv6 interface	**ra-info**
ipv6 nd ra-lifetime	**A5BA**
ipv6 nd ra-interval	**A5BCÕÃÈÃhÄ**

ipv6 nd ra-hoplimit	**A5BC**

-

2.16 ipv6 nd reachable-time

S*AQ'5By NDP |XFA'#F>AxA',XA

*AQ **no 6**

ipv6 nd reachable-time *milliseconds*

no ipv6 nd reachable-time

milliseconds	F>AxA',XA!EE0-3600000

5,Ö!5BÐ CA<@y[(RA) 5,Ö 0(></p)È A'7 F>AxA',XÕ

4È 30000ms(30 /)

yG!5Ba

S*Ü A'EAG!5B,XE"#,XFA'5B,XE-A"#FE

/>C,X54A5A'XC8A,UEG!5B,XEA

G!5B,XCA<@y[(RA) >3>A'7DS*ÜpA'5B,X 0 ></

A'pAEGS*5,Ö

5XLMLHFRQLILSYQUHDFKDEOHWLPH

show ipv6 interface	**y**

-

2.17 ipv6 nd suppress-ra

S*AQ'EÕA<@(RA) y*AQ **no 6**

(RA) y[Ä

ipv6 nd suppress-ra

no ipv6 nd suppress-ra

-	-

5,Ö!5BÐ ü IPv6 ,XyÕA<@y[

Ï Ð yG!5Bã

Ï S*Ð ?UÎ Ê Ã<@y[ÈÃ*ü ipv6 suppress-ra Ï Ð

Ï G!5B_Ð 5XLMLHFRQ1ILSYQVXSSUHVVUD

Ï ÏGÐ

Ð	ÈÄ
show ipv6 interface	**yG** ra-info ,XÏ

Ï GÄÈ -

2.18 ipv6 neighbor

S*ÄÐ!5BÎ-ÕÈ*ÄÐ **no 6Ã8Ï**

ipv6 neighbor *ipv6-address interface-id hardware-address*

no ipv6 neighbor *ipv6-address interface-id*

Ï ÐAÈ

Ð	ÈÄ
ipv6-address	F•X IPV6 ÈÏOFI~ RFC4291 n,X></6Ä
interface-id	[illegible]ce-87v6

2.19 ipv6 ns-linklocal-src

;> E5 **no ipv6 ns-linklocal-src**

IPv6 Ý RFC3484 E

ipv6 ns-linklocal-src

no ipv6 ns-linklocal-src

Ð	Ä
-	-

<G!5B

-

5XLMLHFRQ LSYQOLQORFDOVUF

Q	Ä
-	-

-

2.20 ipv6 redirects

show ipv6 interface	

-

2.21 ipv6 route

ipv6 route *ipv6-prefix/prefix-length* {*ipv6-address* | *interface-id* [*ipv6-address*]} [*distance*] [**weight** *number*]

ipv6-prefix	IPv6 RFC4291
prefix-length	IPv6
ipv6-address	RFC4291
interface-id	
distance	

number

ĠGÄǹ　-

2.22 ipv6 source-route

S*ǺĢĐA'ÊĔ@ǿĈÃǺOĘ¼Ẍ　IPv6 y[Ŝ*ǺĢẊ　**no 6ĺU6EǿĈĐẊ**
IPv6 y[Ä

ipv6 source-route

no ipv6 source-route

ÐAǹ

Ð	ȄÄ
-	-

ǚ,Ģ!5BĐ　/U!6E@ǿĈÃOĘ¼Ẍ　IPv6 y[

Ð̦　<G!5Bã

Ŝ*ĐÌ　2O_　0 CÃOĘ¼LdwŜA'ĐA4EĚ,ĐU!6E@ǿĈÃ
+OĘ¼Ẍ　IPv6 y[ĐÊ,X,ǾO_　0 CÃOĘ¼Ẍ　IPv6 y[Ä

ĠG!5B_Đ　5XLMLHFRQILJLSYVRXUFHURXWH

ÏĠGĐ

Ģ	ȄÄ
-	-

ĠGÄǹ　-

2.23 ping ipv6

AĢĐAž　IPV6 5%XEEÄ

ping ipv6-[[illegible]

!	></!ÎXAÊh,Xh1(Z
.	></ÎXAÊÿnÊÈ'uÝ1(
U	></A'ÛÇÃE',Â
R	></ÐÎ
F	></2ÄÿÇ
A	></y[ÊÑÝ
D	></5ÄÿÐ Down (ÕÙ5Ä;X IPV6 s 6ÑU*(V"#U)
?	></ÄÃ

Q	E
-	-

-

2.24 show ipv6 address

IPv6 ,X

show ipv6 address [*i.7275Cress [*

```
Ruijie#show ipv6 address
Global unicast address limit: 1024, Global unicast address count: 3
Tentative address count: 2,Duplicate address count: 1
Preferred address count: 3,Deprecated address count: 0
Gi 0/5
  FE80::1/64                                    Preferred
    Preferred lifetime: INFINITE, Valid lifetime: INFINITE
  1000::1/64                                    Duplicate
    Preferred lifetime: INFINITE, Valid lifetime: INFINITE
Gi 0/6
  FE80::1/64                                    Tentative
    Preferred lifetime: INFINITE, Valid lifetime: INFINITE
  1111:1111:1111:1111:1111:1111:1111:1111/64   Tentative
    Preferred lifetime: INFINITE, Valid lifetime: INFINITE
Gi 0/7
  FE80::1/64                                    Preferred
    Preferred lifetime: INFINITE, Valid lifetime: INFINITE
  2000:1111:1111:1111:1111:1111:1111:1111/64   Preferred
    Preferred lifetime: INFINITE, Valid lifetime: INFINITE
```

_ 2Ã GigabitEthernet 0/1 DX IPv6 Ä

```
Ruijie#show ipv6 address Gi 0/5
Global unicast address count: 3
Tentative address count: 0,Duplicate address count: 1
Preferred address count: 1,Deprecated address count: 0
FE80::1/64                                      Preferred
  Preferred lifetime: INFINITE, Valid lifetime: INFINITE
[illegible]
  Preferred lifetime: INFINITE, Valid lifetime: INFINITE
```

ÏGÐ

Ð	ÐÄ
-	-

ÏGÄÐ -

2.25 show ipv6 general-prefix

/Eîü4ÔX!4ÔÐ*ü **show ipv6 general-prefix ÐÐÐ**

show ipv6 general-prefix

ÏÐÄÐ

Ð	ÐÄ
-	-

ÏÐ,Õ!5BÐ -

Ð (Mã

Ï*Ð S*ü **show ipv6 general-prefix ÐÐÐ** DHCPv6 v0Ã

4Eî¼ÊÑÄ

Ï G!5B_Ð /Eî¼ÔÈ$ß

5XLMLHVKRZSYHQUDOSUHIL[

1UHDFKDEOHWLPHLVPLOOLVHFRQV
1DGYHUWLVHGUHDFKDEOHWLPHLVPLOOLVHFRQV

initcount	></ RA nÊG¡ÊXCÃ<@y[þ DÄ
RA(out/in/inconsistent)	OutÖ</ÎXCÃ<@y[,XÞÄ inÖ</,XCÃ<@y[,XÞÄ inconsistentÖ</,XCÃ<@y[ÌCÃ<7Ð• @,Xy[,XÐÊÈXy[,XÞÄ
RS(input)	></,XCÃ<AÏ[,XÞÄ
Link-layer address	Ay¡,XÌÃ
Physical MTU	Ay¡,XÌÃ MTUÄ
!M | M	!M ></CÃ<@y[,XÄ managed-config-flag ÛÚ5BÄ M: ÃM6,ÌÄ
!O | O	!O ></CÃ<@y[,XÄ other-config-flag ÛÚ5BÄ OÃM6,ÌÄ

Gb ra-info ,X!4Ô<(Prefix) ,XÞ!%Ÿ¡

+!‰	AÈ
total	></Ay¡,X!4Ô,XÞÄ
fec0:1:1:1::/64	K¦,X!4Ô
Def	AÛ</A!4Ô*ü,X5,ÕÊÔG!5BÄ
Auto | CFG	Auto ÛÛ</A!4Ôbü¡G!5BÌ,h,X IPV6 5ã¡*ÃX!4Ô,CFG ÛÛ</A!4Ô!5B,XÄ
!Adv	AÛ</A!4Ôa@Ä
vltime	></A!4Ô,XÊÈ(Ì)Ä
pltime	></A!4Ô,XOÊÈ(Ì)Ä
L | !L	L ÛÛ</A!4Ô,X on-link !5BÄ !L ÃM6,ÌÄ
A | !A	A ÛÛ</A!4Ô,X auto-config !5BÞ!A ÃM6,Ì ÄÄ

ÏÏGÞ

Q	EÄ
-	-

ÏGÄÈ -

2.27 show ipv6 neighbors

/ IPV6 ,XF•><Ä

show ipv6 neighbors [**verbose**] [*interface-id*] [*ipv6-address*]

show ipv6 neighbors static

ÏÐAÈ

Ð	ÈÄ
verbose	/F•XA4ÿ
interface-id	**/bF×**
ipv6-addres	/ûF•XÇ
static	*/M-Ð*

ÏÏ,Õ!5BÐ -

ÏÇ (Mã

ÏS*Ûì -

ÏG!5B_Ð _ 1Ö SVI 1 yÞXFÇ

5XLMLHVKRZSYQLKERUVYODQ

State	F•X(Õstate/H(R) STATE ,XVÖ INCMP(Incomplete)—AF•X?d!7E> È• AËNS) y[4EÕ¨Ý•Xh1(y[(NA)Ä REACH(Reachable) —></A'ÊEÎXÈ¹ (ÕÊÕ[ÊÔUNqêX|0Ä STALE — ></ F•AxÃ',XÊÈÕ(Ã'ú LÔUNqêX|0,ÿ[ÊÕF•ÈÊÚ | NUD (Neighbor Unreachability Detection) Ä DELAY—></ý[ÊÕ STALE (ÕXF¥ÊÊ S(Š Õ+D E@L A(Ÿ Õ È ü DELAY_FIRST_PROBE_TIME seconds(5 /)YVpüÝ FÃ'ÛXEîµÊw(Õ
Age	></F•AxÃ',XÊÈ '-'></EÃ',X% Í-Õ!5B,XF•><NMÚC*brLÃ'Ä expired' ></F•AxÃ',XÊÈÕ?¥ NUD "#Ä
Asked	></?dF•XÒÃÊ¥ÕXF•AË (NS),XDGÄ

DELAY E@6

_ 3/Ö-Õ(Õ

5XLMLHVKRZSYQLKERUVVWDWLF

,3YSGGUHVV/LQODHUSGGU,WHUIDFH6WDWH

GIDE*LDELW(WKHUQW&,9(

GIDF9/$,1&,9(

+!‰	AÈ
IPv6 Address	M-Õ•X IPV6
Linklayer Addr	G!5B,XÒÃ Mac
Interface	AF•Xy·

State	M-Ð,X(Ö STATE ,XVÖ ACTIVE—#|,X INACTIVE—á|,XÈ!5B,XM-Ð IPV6 È yÐ!5B,X á!Ö,X5%È ŷ Ð ÛÅM-ÐG!5Bá|ÈD BÝM-Ðû,X mac E@Ä

Ï GÐ	Ò	ÉÄ
	ipv6 neighbor	**5BÑ**

ÏGÄÈ -

2.28 show ipv6 neighbors statistics

Ò¡ÏÕ IPv6 F><,X4Ãuµ

show ipv6 neighbors statistics

Ò¡Ý IPv6 F><,X4Ãuµ

show ipv6 neighbors statistics all

ÏÐÄÈ	Ð	ÉÄ
	-	-

Ï5,Õ!5BÐ -

Ò (M*ã

Ï5*Ô -

Ï!5B_Ð _ 1

```
Ruijie#show ipv6 neighbors statistics
Memory: 1000 bytes
Entries: 10
  Static: 1,Dynamic: 9,Local: 0
  Incomplete:1, Reachable:5, Stale:1, Delay:1, Probe:1
```

_ 2

```
Ruijie#show ipv6 neighbors statistics all
IPv6 neighbor table count: 2
Static neighbor count: 4(2 active, 2 inactive)
Total
[illegible]                                    Memory:
[illegible]                                    Entries:
[illegible]Dynamic:[illegible]18,Local:[illegible]
[illegible]Reachneig:10,  [illegible]Delay:2,[illegible]Incom

 Total                                         Glob
[illegible]                                    Memory:
[illegible]                                    Entries:
[illegible]Dynamic:[illegible]9,Local:[illegible]
[illegible]Reachneig:5,  [illegible]Delay:1,[illegible]Incom

[illegible]                                    VRF1
[illegible]                                    Memory:
[illegible]                                    Entries:
[illegible]Dynamic:[illegible]9,Local:[illegible]
[illegible]Reachneig:5,  [illegible]Delay:1,[illegible]Incom
```

ÏGÐ	Ð	ÐÄ
	-	-

ÏGÄÐ -

2.29 show ipv6 packet statistics

AÐ¡ß IPv6 y[,X4ÂuÇ

show ipv6 packet statistics [total | *interface-name*]

ÐAÐ	Ð	ÐÄ
	total	**ý,ÁÂuÇ`**
	interface-name	*yáÄ*

Ï5,Õ!5BÐ -

Ð (M*ã

Ï5*Ð -

Ï5B_Ð _ 1Ï IPv6 y[4ÂuÇ!ÐX4ÂuÇÄ

```
Ruijie#show ipv6 packet statistics
Total
  Received 1000 packets, 1000000 bytes
    Unicast:1000,Multicast:0
    Discards:0
      HdrErrors:0(HoplimitExceeded:0,Others:0)
      NoRoutes:0
      Others:0
  Sent 100 packets, 6000 bytes
    Unicast:50,Multicast:50

VLAN 1
  Received 1000 packets, 1000000 bytes
    Unicast:1000,Multicast:0
    Discards:0
      HdrErrors:0(HoplimitExceeded:0,Others:0)
      NoRoutes:0
      Others:0
  Sent 100 packets, 6000 bytes
    Unicast:50,Multicast:50
```

_ 2ÐÐ IPv6 y[4ÃuÇÄ

```
Ruijie#show ipv6 packet statistics total
Received 1000 packets, 1000000 bytes
 Unicast:1000 Multicast:0
                          Discards:
Exceeded:0,Others:0)      HdrErrors:0(HoplimitE
                          NoRoutes:
                          Others:0
1000 packet                Sent  bytes        6Ceived
                          Unicast:50,Multicast:50
```

ÏÎGÐ

Ð	ÆÄ
-	-

ÏGÄÐ -

2.30 show ipv6 route

/ IPv6 ,XCÃÇÄ

show ipv6 route [**static** | **local** | **connected**]

ÏÐÄÐ

Ð	ÆÄ
static	/M-Õ!5B,XCÃ
local	/CÃ
connected	/,ÈCÃ

ÏÕ,Õ!5BÐ -

ÏÐ (Mã

Ï´S*ÊÐ EÊÃ¡ÇÃ><,XÇÄ

Ï´G!5B_Ð

```
5XLMLHFRQJVKRZSYURXWH
,3Y [illegible]
```

ÏÎGÐ¡Q

Q	ÊÄ
ipv6 route	**5BMÕÃ**

ÏGÄÈ -

2.31 show ipv6 route summary

M6,XÇ¡Q¡Ï6 IPv6 CÃ><,X4ÃuÇÄ

show ipv6 route summary

M6,XÇ¡Q¡Ý IPv6 CÃ><,X4ÃuÇÄ

show ipv6 route summary all

ÏÐAÈ

Ð	ÊÄ
-	-

Ï´Ö!5BÐ -

Ï¡Q (M*ã

Ï´S*ÊÐ -

Ï´G!5B_Ð _ 1¡BCÃ><,X4ÃuÇÄ

```
Ruijie#show ipv6 route summary
IPv6 routing table name is Default(1), global scope - 2 entries
IPv6 routing table default maximum-paths is 32
 Local           2                                    ■■  ■      |
 Connected       0                                    ■■  ■      |
 Static          0                                    ■■  ■      |
 RIP             0                                    ■■  ■      |
 OSPF            0                                    ■■  ■      |
 BGP             0                                    ■■  ■      |
 ------------------------
 Total           2                                    ■■  ■      |
```

_ 2ÖÏ IPv6 CÃ><,X4ÃuÇ

```
Ruijie#show ipv6 route summary all
IPv6 routing table count: 2
Total
  Memory: 2000 bytes
  Entries: 20
    Local:2,Connected:2,Static:8,RIP:2,OSPF:2,ISIS:2,BGP:2

Global
  Memory: 1000 bytes
  Entries: 10
    Local:1,Connected:1,Static:4,RIP:1,OSPF:1,ISIS: 1,BGP:1

VRF1
  Memory: 1000 bytes
  Entries: 10
    Local:1,Connected:1,Static:4,RIP:1,OSPF:1,ISIS: 1,BGP:1
```

ÏGÇ	Q	EÄ
	-	-

ÏGÄÈ -

2.32 show ipv6 routers

IPv6 5ÖÈ,XCÃ<ÊÃ@y{Ü/EoFCÃ<CÃ@ÇÈü **show ipv6 routers** [illegible]

ÝÃ@,XÇÄ

Ï G!5B_Ð / IPv6 CÃ<,XÇÈÈÖ

5XLMLHVKRZSYURXWHUV
5RXWHU)()))(&RQ'$ODVWXSGDWHVHF
+RSV/LIHWLPHVHF0DQHG)ODJ2WKHU)ODJ078
3UHIHUHQH 0(',80
5HDFKDEOHWLPHPVHF5HWUDQPLWWLPHPVHF
3UHIL[RQLQDXWRFRQLJ
9DOLGOLIHWLPHVHFSUHIHUUHGOLIHWLPHVHF
3UHIL[RQLQDXWRFRQLJ
9DOLGOLIHWLPHVHFSUHIHUUHGOLIHWLPHVHF

ÏÎGÇ

Q	ÆÄ
-	-

ÏGÄÈ -

2.33 tunnel destination

S*ÄÇ{F'yÛ,ÂX, S*ÄÇX no ÇBÄ¹,ÂXÄ

tunnel destination *ipv4-address*

no tunnel destination

ÏÐÄÈ

Ð	ÆÄ
ipv4-address	ÆÂ GL{FÛÃX IPv4 Ä

Ï5,Õ!5BÐ 5,Õ{FÕ,X,ÂXuÝ!5B

ÏÇ yG!5Bã

Ï5*Ð 6ÃÛ'Ô!5BÕ2'O_Ã{F$L{F',ÂXF,ÑXÎ{F'

(6to4 isatap)

Ï G!5B_Ð G!5BIPv6 Ł{F',X_$Ö

5XLMLHFRQLJWHUIDFHWXQO
5XLMLHFRQLJIWXQOPRGHLSYLS
5XLMLHFRQLJIWXQOVRXUFHYODQ
5XLMLHFRQLJIWXQOGHVWLQWLRQ

ÏÎGÇ

Q	ÆÄ
tunnel source	**6BL{F,X**

tunnel mode	**5BL{F}**
tunnel ttl	**5BL{F}** TTL

ÏGÄÈ -

2.34 tunnel mode ipv6ip

S*ÄÇ!5BÎ-Õ IPV6 L{F2O_, S*ÄÇ no Ó5,Õ IPv6 L{F2O_Ä

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

no tunnel mode

ÏDAÈ

Ð	ÆÄ
6to4	G!5BAŁ{F' 6to4 7¾{FÄ
isatap	G!5BAŁ{F' ISATAP 7¾{FÄ

Ï5,Õ!5BÐ ÎX IPv6 L{F2O_G!5BL{F'

ÏÇ yG!5Bã

ÏS*Ô L{FyÎÒK9Ê,Õ×G!5BL{FÈ*Ç tunnel mode ipv6ip ÏÉÝMÊÚ{ FÄ'5BŁ{FÄ7¾{FFÑOû,ÂXÄ

ÏG!5B_Ð M6G!5B 6to4 L{F',X_Ö

5XLMLHFRQLIWHUIDFHWXQO

5XLMLHFRQLIWXQOPRGHLSYLSWR

ÏÎGÇ

Ç	ÆÄ
tunnel source	**5BL{F}**
tunnel destination	**5BL{F}**
tunnel ttl	**5BL{F}** TTL

ÏGÄÈ -

2.35 tunnel source

S*ÄÇ{Fyn$, S*ÄÇ no Ó8A$

tunnel source {*ipv4-address* | *interface-type interface-number*}

no tunnel source

ÏDAÈ

Ð	ÆÄ
ipv4-address	G!5BL{F$ IPv4 È¹ IPv4 Ú·Ü{F5,Õ×y[,X $Ä

interface-type	G!5BL{F$,X éÿÈ ÿpL{Fã ipv6ipÈ éÿ·
interface-number	,X ipv4 ÝÒÜ{F$,Õ Xy[,X$ IPv4 ÝpL{F'
	ã ipv6Èéÿ G!5B,X1Ô ipv6 <)ÝÒÜ{
	F$,Õ Xy[,X$ IPv6 Ä

Ï5,Õ!5BÐ 5,ÕÝ{F$>A'5B

Ï Ð yG!5Bã

Ï5*Ô L{F',X$ã3Ô,X IPv4 3Ã*ÿ,X IPv4 , G!5B7¾{F$V
6to4 ` isatap)Ô*éÿÔ$Ä

Ï G!5B_Ð G!5BIPv6 Ł{F',X_$Ö

5XLMLHFRQLIWHUIDFHWXQO
5XLMLHFRQLIIWXQOPRGHLSYLS
5XLMLHFRQLIIWXQOVRXUFHYODQ
5XLMLHFRQLIIWXQOGHVWLQWLRQ

ÏGÐ

Ð	ÆÄ
tunnel mode	**5BL{F$**
tunnel destination	**5BL{F$**
tunnel ttl	**5BL{F$** TTL

ÏGÄÐ -

3 DHCP

3.1 address range

?Uü DHCP ´4G6(,X CLASS ÛÙ CLASS 6Ñ!,X5%&È class G!5Bã
,X **address range** ÈÐÇ **no 6Ã8A5%&È**
address range *low-ip-address* *high-ip-address*
no address range

ÏÐAÈ	Ð	ÈÄ
	low-ip-address	5%&È XCKÄ
	high-ip-address	*5%&È6Ä*

ÏÕ,Õ!5BÐ 5,Õ6(,X CLASS ÞG!5B5%&È Ax´4,X5%&È

ÏÐ ´4 CLASS G!5Bã

ÏS*Ûì !Þ CLASS ÍÞ%&È%&È OPÃÞE CLASS KÈX5%&×
ÈÄpÃ´4G6(,X CLASSÊ,X5%&È´G!5BÈ¹ CLASS TAx,X5%&È
` CLASS ØX´4,X5%&È

ÏG!5B_Ð G!5B_ÈG!5B´4 mypool0 G6(class1 ,X5%&È 172.16.1.1 172.16.1.8 Ä
5XLMLHFRQJ1SGKFSSRROPSRRO
5XLMLHGKFSFRQJFODVVFODVV
5XLMLHFRQJGKFSSRROFODVVDGGUHVVUDÐ

ÏÏGÐ

Ç	ÈÄ
ip dhcp pool	**n** DHCP ´4áÈ9 DHCP ´4G!5BÃ
class	**5B** DHCP ´4G6(,X CLASSÈ9´4 CLASS G!5BÃ

ÏGÄÈ -

3.2 bootfile

?Un DHCP v0Ã,ÞÈü DHCP ´4G!5BÇ **bootfileÄÇ** **no 6Ã**
ÈÄ
bootfile *file-name*
no bootfile

ÐAÈ	Ð	ÆÄ
	file-name	n*ü|,X[Å

5,Õ!5BÐ 5,Õ|[Å

Ð DHCP 4G!5Bã

S*Ð ý DHCP v0Ã/ÛUEQ24Ã!5B[ÊÈ DHCP á<N°Oo|ÊÛU,X
Ã DHCP v0ÃÊ,h,Xá<Ÿ TFTPÅÃá<EÊ **next-server**
Ð>nÄ

G!5B_Ð G!5B_ÈZ router.conf 0|[Å
5XLMLHGKFSFRQ.ERRWILOHURXWHUFRQ

ÌGÐ	Ð	ÆÄ
	ip dhcp pool	n DHCP 4áÈ9 DHCP 4G!5BÄ
	next-server	G!5BDHCP v0Ã/,XÐ< IP Ä

GÄÈ -

3.3 class

?Uü DHCP 4G!5BG6(,X CLASSÈü DHCP 4G!5BÅX **class** **no 6**
Å86X CLASS
class *class-name*
no class *class-name*

ÐAÈ	Ð	ÆÄ
	class-name	Eg9 CLASS ,XÃ0Ð+È V myclass 5Ù 1Ä

5,Õ!5BÐ 5,Ã6(Ï CLASSÄ

Ð DHCP 4G!5BÄ

S*Ð !Ð DHCP 4Ã Option82 G!ÇE> Ó!Å Option82 ÇE> G!2OÈ
DHCP 4Eo2OÛÃ!,X5%Ã0/Ä CLASSÐ DHCP 4
Ã6(Ð CLASSÈ CLASS Ã,X5%Ã
Ó!E/Bv0Ã5%nÃ!,X4ÈBJ Option82 ÇEÔ.Bn
2,X CLASSÈ CLASS Ó,X5%Ã! IP ÐÈ[G!4,XÐ
CLASS Ê CLASS 4G!5B,XÃNcÓ,X CLASS 5%Ã!ÈpA¹
CLASS Ó!E4Ã!,X CLASS E> Ó!È82O|Ã CLASS Ó

ip-address	*ÊÛ* IP ÎUA¸Ä

Ï5,Õ!5BÐ -

Ïð (M*Ä

Ï5*Ûð DHCP á<”#ÎU*ü ping ÎAÈ DHCP v0Ã#ÎU*ûd#AÄ¸RP **cÄear ip dhcp conflict Ã8ÆUA¸Ä**

Ï!5B_Ð ÇÈÙ8ÍUA¸Ä

5XLMLHFOHDULSGKFSFRÇOLFW

ÏÎGÐ

Ç	ÆÄ

7 0 Td<7F44C3818DB11644C38l12A09C.83.493 4.24807D2 0 Td[(DHC)-7(P)]TJ/C20/C20 1 Tf 3.08 0 Td[<1176180B30C31E94231F0D0

ÎAÈ

3.7 clear ip dhcp relay statistics

?Uá DHCP)ÚXAuD<È(M*ãü **clear ip dhcp relay statistics Ö**
clear ip dhcp relay statistics

ÏDAÈ	Ð	ÉÄ
	-	-

Ï5,Õ!5BÐ -

Ï Ö (M*ã

Ï5*Ô DHCP)ÚAuAuÚÈZÕ DHCP 2Oy[D,Ê> 2AuÄ **clear ip dhcp relay statistics**
Ö8ÆuDAÏAuÄ

Ï G!5B_Ð ÏÈÙ8ÂÏÈuÏÈÙ DPHVÇF!VÐ7ÔÊ-S2ÕÕ-|V-|VÂ$TP@

,XnÃ• RFC1700 [7,XAddress Resolution Protocol Parameters 08VÄ
Ý> DHCP 4¥nÃ*AÇ

Ï G!5B_Ð G!5B_ÈZ MAC 00d0.f822.33b4 ,X5% DHCP v0,Ãxv0ÃÄ
5XLMLHGKFSFRQJFOLHQWLGHQWLILHU
GIEHI

ÏÏGÇ

Ç	ÆÄ
hardware-address	n DHCP v0,Ãx.@Ã
host	n IP 5%-ÃÏG!5B DHCP 4¥Ä
ip dhcp pool	n DHCP 4áÈ9 DHCP 4G!5Bõ Ä

ÏGÄÈ -

3.9 client-name

?Un DHCP v0,ÃxáÈü DHCP 4G!5BÇ **client-nameÄÇ** no 6ã8 DHCP v 0,ÃxáÄ
client-name *client-name*
no client-name

ÏÐAÈ

Ð	ÆÄ
client-name	n DHCP v0,ÃxáÄÏ,X ASCII +0ÚÄá hÀÈVn river DHCP v0ÃÈÑ river.i-net.com.cnÄ

Ï5,Õ!5BÐ 5,ÕÝv0ÃÄ

Ï Ç DHCP 4G!5BÄ

Ï S*Ð Ý> DHCP 4¥nÇ DHCP v0,ÃxáÄáÄÀ
4Ã

Ï G!5B_Ð G!5B_ÈÊ0ú river 0v0,ÃxáÄ
5XLMLHGKFSFRQJFOLHQWQPHULYHU

ÏÏGÇ

Ç	ÆÄ
host	n IP 5%-ÃÏG!5B DHCP 4¥ nÄ
ip dhcp pool	n DHCP 4áÈ9 DHCP 4G! 5BÄ

ÏGÄÈ -

3.10 debug ip dhcp client

?UE> DHCP Client ,XAÀ(M*ãü **debug ip dhcp client Ö**

debug ip dhcp client

no debug ip dhcp client

ÏÐÀÈ

Ð	ÆÄ
-	-

ÏÕ,Õ!5BÐ 5,ÕKÁ

Ö (M*Ä

ÏS*Û AÇ/ dhcp client á<xfE/,X?Uy[Y

ÏG!5B_Ð ÈÐ'Ûx dhcp v0,XAÀÔÄ

5XLMLHGHEXÌSGKFSFOLHW

ÏÌGÐ

Ö	ÆÄ
-	-

ÏGÄÈ -

3.11 debug ip dhcp server

?UE> DHCP Server ,XAÀ(M*ãü **debug ip dhcp server Ö**

debug ip dhcp server { **event** | **event** }

no debug ip dhcp server { **event** | **packet** }

ÏÐÀÈ

Ð	ÆÄ
event	/ DHCP #'CY•
packet	/ DHCP y[Y•

ÏÕ,Õ!5BÐ 5,ÕKÁ

Ö (M*ã

ÏS*Û AÇ/ dhcp server á0XfE/,X?Uy[Y

ÏG!5B_Ð ÈÐ'Ûx dhcp á<y[,XAÀÔÄ

5XLMLHGHEXÌSGKFSVHUYHUSDFNHW

ÏÎGÐ	Ò	ÆÄ
	-	

ÏGÄÈ -

3.15 hardware-address

?Un DHCP v0Ã,X.@Êu DHCP ¼G!5BÇ **hardware-addressÄÇ** **no 6Ã** **ô8.Ê@Ä**

hardware-address *hardware-address* [*type*]

3.16 host

?Un DHCP v0Ã X IP 5¾-Ñü DHCP ¼G!5BÇ **hostÄÇ** **no 6Ã**
ô8 DHCP v0Ã IP 5¾-ÕXnÄ

host *ip-address* [*netmask*]

no host

ÏÐAÈ

Ð	ÉÄ
ip-address	*n* DHCP v0Ã X IP Ä
netmask	*n* DHCP v0Ã X5¾-Ã

ÏÕ,Õ!5BÐ ÙÝ,X IP 5¾-Ã

ÏKÅ DHCP ¼G!5BÄ

ÏS*Ù Vp5¾-ÕÄBnÈ DHCP á<ÿÅ¹ IP ,X7¾-Ã 2O5¾-Õ
255.0.0.0Ø 2O5¾-Õ 255.255.0.0Ø 2O5¾-Õ 255.255.255.0Ä
Ø> DHCP ¼nnÈÃ*ÄKÅ

ÏG!5B_Ð G!5B_Ø0Ã IP A' 192.168.12.91ÈÕ 255.255.255.240Ä
5XLMLHGKFSFRQ.KRVW

ÏÏGKÅ

KÅ	ÉÄ
client-identifier	**n** DHCP v0Ã XÃÈ,ÔXAE¯ D></Å
hardware-address	**n** DHCP v0Ã X.@Ê
ip dhcp pool	**n** DHCP ¼ëÈ9 DHCP ¼G! 5BÄ

ÏGÄÈ -

3.17 ip address dhcp

?USk56Ù PPPÃ HDLCÃ FR Õ,Xy6ÑE› DHCP 9k IP µÈÿG!5BKÅ **ip address dhcpÄÅ** **no 6ÃÈ5BÄ**

ip address dhcp

no ip address dhcp

ÏÐAÈ

Ð	ÉÄ
-	-

ÏÕ,Õ!5BÐ 5,ÕÃÑE› DHCP 9k IP Ä

ÏGÄÈ -

3.19 ip dhcp database write-delay

?UG!5BnÊ DHCP /4z4¥DBgÇm9 FLASH s6ÑÔUüG!5BÐ !8Ò
AÇX no 6ÈKÁÊm9 FLASH s6Ñ

ip dhcp database write-delay *time*

no ip dhcp database write-delay

ÏÐÀÈ

Ð	ÈÄ
time	ó DHCP /4z4¥DBgm9 FLASH ,XÊÈÈhÄ

ÏÕ,Õ!5BÐ As6Ñ,ÑKÈm9 FLASH

Ò <G!5Bã

ÏS*Ô EÊG!5BAÇÑ DHCP /4z4¥DBgÇm9 FLASH [Ã!6A'ÔÇÈü
ÇÄ

ÏG!5B_Ð G!5B_È G!5BnÊ 3600S m FLASHÄ
5XLMLHFRQ1SGKFSGDWDEDVHØLWHGHOD\

ÏÏGÇ

Ç	ÈÄ
-	-

ÏGÄÈ -

3.20 ip dhcp database write-to-flash

?UG!5BrÊ DHCP /4z4¥DBgÇm9 FLASH [ÊÔUüG!5BÐ !8Ò

ip dhcp database write-to-flash

ÏÐÀÈ

Ð	ÈÄ
-	-

ÏÕ,Õ!5BÐ <G!5BÄ

Ò EÊG!5BAÇÑ DHCP /4z4¥DBgÇm9 FLASH [Ê

ÏS*Ô G!5B_È G!5B|m4¥DBgÇ FLASHÄ
5XLMLHFRQ1SGKFSGDWDEDVHØLWHWRIODVK

ÏG!5B_Ð -

ÏÎGÐ	Ç	ÆÄ
	-	-

ÏGÄÈ -

3.21 ip dhcp excluded-address

?Uno IP È k DHCP á<Ú!4- DHCP v0Ã¤G!5BÇ **ip dhcp excluded-addressÄÇ no 6Ã/ÇnÄ**

ip dhcp excluded-address *low-ip-address* [*high-ip-address*]

no ip dhcp excluded-address *low-ip-address* [*high-ip-address*]

ÐAÈ	Ð	ÆÄ
	low-ip-address	*fy* IP È fy IP 8È XCKŸ IP Ä
	high-ip-address	*fy8È* IP Ä

5,Õ!5BÐ 5,Õ DHCP á<Ú!H4,X IP Ä

Ç <G!5BÄ

Ï*Ô Vpü Ú!5Bfy IP È DHCP á<ÂÔ! DHCP 4,XÝ IP ÄÇM n±-Ô IP È S!Eo>Ú!4- DHCP v0Ã'.Bnfy IP È Ã DHCP á<Ú!Ê X0U"#ÊÃ

Ï G!5B_Ð G!5B_È DHCP á<ÂÔ! 192.168.12.100~150 8È X IP Ä

5XLMLHFRQ1SGKFSH[FOXGHGDGGUHVV

ÏÎGÐ	Ç	ÆÄ
	ip dhcp pool	**n** DHCP 4áÈ9 DHCP 4G! 5BÄ
	networkÄ DHCP Å	**n** DHCP 4,X5 4Ë4}-Ô

ÏGÄÈ -

3.22 ip dhcp ping packets

?UG!5B DHCP á<"#0UÊ ping A¹,X D È¤G!5BÇ **ip dhcp ping packetsÄ¹ Ç no 6ÃÃ5BÄ**

ip dhcp ping packets[*number*]

no ip dhcp ping packets

ÐAÈ	Ð	ÆÄ

number	[illegible] 0 10È 0 ></GKÁ ping [illegible] ping [illegible]

Ï5,Õ!5BÐ 5,Õ ping [illegible] 2Ä

[illegible] <G!5B[illegible]

Ï5*[illegible] DHCP á<¢ DHCP '4A[illegible]! IP [illegible] ping [illegible]9"#A[illegible]V4 *[illegible]p4*[illegible]pü4*[illegible]!4- DHCP v0Ã Ping [illegible]5,[illegible] [illegible]Õ 10 [illegible]

Ï!5B_Ð [illegible]!5B_[illegible] ping [illegible]BÙA' 3 [illegible]

5XLMLHFR[illegible]SGKFSSL[illegible]DFNHWV

ÏÏG[illegible]

[illegible]	[illegible]Ä
clear ip dhcp conflict	[illegible] DHCP [illegible]UA),Ä
ip dhcp ping timeout	[illegible] DHCP á< ping [illegible]1Yh1(,XCY[illegible] [illegible]X ping [illegible]h1([illegible] A[illegible]!,X[illegible]),0UÄ
show ip dhcp conflict	**/** DHCP á<[illegible],X† 0UÄ

ÏGÄ[illegible] -

3.23 ip dhcp ping timeout

clear ip dhcp conflict	**U8** DHCP [illegible]UA),Ä
ip dhcp ping packets	**n** DHCP á<Ú"Ê0U,X ping [illegible]

ip dhcp relay check server-id

no ip dhcp relay check server-id

Ð	E
-	-

GKÁ

<G!5Bã

EE G!5B!8Ò DHCP Relay E@¥ DHCP AÿÊ option server-id EÝÔUE@¥X DHCP á<Ïpu'Ý!5BAÑ!5B,X DHCP á<E@¥ DHCP AÿÄ N0 HCP

service dhcp	**Ô** DHCP 4»
ip dhcp relay information option dot1x access-group *acl-name*	G!5Boption dot1x acl

ÏGÄÐ -

3.27 ip dhcp relay information option dot1x access-group

?UG!5BDHCP Relay option dot1x G6(,X ACL

	HÐFHVV(DFK2WKHU2I8ÐXWKUL]H

ÏÎGÐ	Ð	ÐÄ

Ð <G!5Bã

Ï*Ð As6Ñ option dot1x s6ÑÑ G!5BÄ

Ï G!5B_Ð G!5B_È ü DHCP 4A'Ñü opion82 s6Ñ

5XLHFQ.XHWUPLQO

5XLHFQ,SGSUHOLQPDWRQ

ÏGÐ

Ç	ÆÄ
service dhcp	**Ô** DHCP 4)Ú
ip dhcp relay information option dot1x	**6BÔ** DHCP option dot1x s6Ñ

ÏGÄÈ -

3.30 ip dhcp relay suppression

?Uû0Ð DHCP Relay es6Ñ*ÄÇ*ÄÇ no 6GKÁÃ DHCP relay es6Ñ

ip dhcp relay suppression

no ip dhcp relay suppression

ÏDAÈ

Ð	ÆÄ
-	-

Ï,Õ G!5BÐ GKÁ

Ð yG!5Bã

Ï*Ð G!5BAÐ,A0Ã DHCP AÏÄ

Ï G!5B_Ð G!5B_ÐÃ 1 ÞX DHCP relay es6Ñ

Ð

Ð

Ð

Ð

ÏGÐ

Ç	ÆÄ
service dhcp	Ô DHCP 4)Ú

ÏGÄÈ -

3.31 ip dhcp use class

?UG!5B*ü CLASS E> Ó!È¤G!5BÅX **ip dhcp use class** ÈÐÇ **no 6Ã**
É*ü CLASS E> Ó!Ä
ip dhcp use class
no ip dhcp use class

ÏÐAÈ

Ð	ÉÄ
-	-

ï5,Õ!5BÐ 5,Õü CLASS E> Ó!Ä

ÏÐ <G!5BÄ

ÏS*Ô -

ÏG!5B_Ð G!5B_È!5B*ü CLASS E> Ó!Ä
5XLMLHFRQ1SGKFSXVHFODVV

ÏÌGÇ

Ç	ÉÄ
-	-

ÏGÄÈ -

3.32 ip helper-address

?U#ïÔ DHCP á<Ã*ÄÇÄ AÇX **no 6È8ÔÄ**
DHCP á<ÃG!5BÄG!5BÄ
ip helper-address { cycle-mode | [vrf *vrf-name* **] A.B.C.D }**
no ip helper-address { cycle-mode | [vrf *vrf-name* **] A.B.C.D }**

ÏÐAÈ

Ð	ÉÄ
vrf-name	ô2,X VPN 5È0NKÈ ÈAx5y2bÔ VPN 0N KÈ0NKÃ

ï5,Õ!5BÐ ïÓG!5Bá<Ä

ÏÐ <G!5Bã yG!5BÄ

ÏS*Ô <5ÏÐ!5B 20 þ DHCP á<Ä
ÿÏG!5B DHCP á<,XÈ DHCP Relay G*ü DHCP á<VpyG!5BZ
DHCP á<ÈDHCP Relay ,ÿS*ÿG!5B,Xá<È*üá<Ä
G!5B vrf Ð,XÃ<,XG!5BÎy,XG!5B/Ã<,XG!5BVpÂ vrf –

DÈÀx2bÏ vrfÎy¡XG!5BVpÁ vrf ÐÈÀx!á<ỳ2bÂ vrfÄ
<G!5BÃ dhcp relay ,X cycle-mode ÐE> G!5BÈ cycle-mode ,XÊ</ dhcp relay
AÿÊX dhcp client AÿÊ[E@Ÿ¡XÝ dhcp serverÄ cycle-mode ,XÊ
Í></ dhcp relay ¾,X dhcp client AÿÊ[E@Ÿ¡X1Ô dhcp server Ä
cycle-mode ¾G!5BÃ G!5BÈ*ü<ỳÈÀx*Ä

Ï G!5B_Ð G!5B_È G!5BÁ<Ö
G!5BÁ< 192.168.1.1×
1Ê G!5BÎ vrf r_ dep1 ,Xá< 192.168.2.1×

```
5XLMLHFRQ1XUHWHUPLQO
5XLMLHFRQ1ISKHOSHUDGGUHVV
5XLMLHFRQ1ISKHOSHUDGGUHVVYUIGHS
5XLMLHFRQ1ISKHOSHUDGGUHVVFFOHPRGH
```

G!5B<á< 192.168.1.1×
2Ê G!5BÎ vrf r_ dep1 ,Xá< 192.168.2.1×

```
5XLMLHFRQ1XUHWHUPLQO
5XLMLHFRQ1ISKHOSHUDGGUHVV
5XLMLHFRQ1ISKHOSHUDGGUHVVYUIGHS
```

ÌÏGÐ

Ð	ÐÄ
service dhcp	**Ô** DHCP 4Ä

ÏGÄÈ -

3.33 lease

?Un DHCP á<Ó!4v0,Ã/ÊÈÄ DHCP ¼G!5BÐ **leaseÄÐ** **no 6**
ÐÃ
lease { *days* [*hours*] [*minutes*] | **infinite** }
no lease

ÏÐÀÈ

Ð	ÐÄ
days	*n/Ð*
hours	*Ã/ÊÃÎÑÝ* *DÄ*
minutes	*Ã/ÊÄÁÑÝ* *ÊÄ*
infinite	**nÜÝÄ**

ÏÕ,Õ!5BÐ 5,Ô

Ï Ð DHCP ¼G!5Bã

ÏÕ*Ô /ÊDHCP v0ÃÕÁÈDHCP á<ÔÀÁÈÁXÃ

ÏG!5B_Ð G!5B_Ð DHCP /Ã' 1 Ã
5XLMLHGKFSFRQ DHDVH
G!5B_Ð DHCP /Ã' 1 ÚÄ
5XLMLHGKFSFRQ DHDVH

ÏGÐ

Q	EÄ
ip dhcp pool	**n** DHCP '4áÈ9 DHCP '4G! 5BÃ

ÏGÄÐ -

3.34 netbios-name-server

? U G ! 5 B ,E C DHCP v 0 Ã NETBIOS ,X WINS á+ áu < È ü DHCP "4 G ! 5 B Q
netbios-name-serverÄÐ **no 6Ã8** WINS á<Ä
netbios-name-server *ip-address* [*ip-address2…ip-address8*]
no netbios-name-server

ÏDAÐ

Ð	EÄ
ip-address	*n* WINS á<,X IP ?ÄU'7Ç!5BÐ
ip-address2…ip-address8	ÃB 8 þ WINS á<Ä

ÏÕ,Ã!5BÐ 5,Õ'Ý WINS á<Ä

ÏÐ DHCP '4G!5Bã

ÏS*Ð nþ WINS á<ÈÙM6,XPÈ DHCP v0Ã,X WINS á<EÃƒ
BÈÈÐ WINS á<Ä

ÏG!5B_Ð G!5B_È DHCP v0ÃZ WINS á< 192.168.12.3Ä
5XLMLHGKFSFRQ DWELRVQ PHVHUYHU

ÏGÐ

Q	EÄ
ip address dhcp	**y*ü** DHCP v0Ã^ IP µÄ
ip dhcp pool	**n** DHCP '4áÈ9 DHCP '4G! 5BÃ

ÏGÄÐ -

3.35 netbios-node-type

?UnEC DHCP v0Ã NetBIOS ,X8Vã&O_È ü DHCP '4G!5BQ **netbios-node-typeÄ**

AÇX **no 6Ã8** NetBIOS 8V&O_G!5B

netbios-node-type *type*

no netbios-node-type

ÏÐAÈ

Ð	ÆÄ
type	*n* NetBIOS 8V&O_ÄÄ D+nÈÈ 0~FFÈÈEDÈÑ 1È< b-node× 2È< p-node× 4È< m-node× 8È< h-nodeÄ +0ńÖ b-nodeÈ•8V& p-nodeÊ_8V& m-nodeÈÈ8V& h-nodeÈ8VÄ

Ï5,Õ!5BÐ 5,ÕÝ NetBIOS 8V&O_Ä

ÏÐ DHCP ´4G!5BÄ

Ï*Ô ÆC DHCP v0Ã NetBIOS 8V&O_ÝÖ 1Å BroadcastÈ•8VÈÈ&Ê> NetBIOS á?d× 2ÅPeer-to-peeÍÈ8VÈÈ›ÿÄÈ WINS á<E> NetBIOS á?d× 3ÅMixedÈ #È8VÈÈ&Ê?dÈÈâ WINS á<EÿE> á?d× 4Å HybridÈ Ü8VÈ›ÿÄÈ WINS á<E> NetBIOS á?dÈpüÝh1(ÈÈ&Ê> NetBIOS á?dÄ 5,ÕÇ¡24¾X8V&O_S•6ÈÜÄpüÝG!5B WINS á<È•8V&pG!5BZ WINS á<È8VÄÚ NetBIOS ,X8V&O_A' HybridÄ

Ï G!5B_Ð G!5B_ÈC DHCP v0Ã NetBIOS 8VÄ'È8VÄ

5XLMLHGKFSFRQÐWELRVÐGHWSHKÐGH

ÏÏGÐ

Ð	ÆÄ
ip dhcp pool	**n** DHCP ´4áÈ9 DHCP ´4G!5BÄ
netbios-name-server	**5BÆC** DHCP v0Ã NETBIOS ,X WINS áá u<

ÏGÄÈ -

3.36 network DHCP

?Un DHCP 4,X5 DHCP 4G!5BQ **network** **no 6**

6 8n

network *net-number net-mask*

no network

Ð	Ä
net-number	DHCP 4,X IP 5
net-mask	DHCP 4,X IP 5

5,Õ!5BÐ 5,Õ 5 4

DHCP 4G!5BÄ

n,4,X5 DHCP á<o!4v0,X0NKÈ8M2Ý

fyG!5B4,XFÑ!4v0DHCP Ú!4,XÑNc

E0ÙKÈ á<o@Ñ#PÃ~¡B1P@VÈ=@?P,Ä!4c

¨5,Õ!5BÐ	-
¨Ę	DHCP ´4G!5BÄ
¨S*Ô	n¡á<Ê¡M6,XPÈ DHCP v0Ã¡X¡á<EÎ¡BÈ !EÊ¡á<Ä
¨G!5B_Ð	G!5B_È DHCP v0Ã¡á< 192.168.12.4Ä 5XLMLHGKFSFRQ[WVHUYHU

¨ÏGĘ

Ę	EÄ
bootfile	**n** DHCP v0Ã¡Ê
ip dhcp pool	**n** DHCP ´4áÈ9 DHCP ´4G! 5BÄ
ip help-address	**yn** Helper Ä
option	**6B** RGOS ECÊ DHCP á<,XEÍMÄ

¨GÄÈ | -

3.38 option

?UG!5B DHCP á<,XEÍMÈ DHCP ´4G!5BĘ **optionÄĘ** **no 6Ã8** option ,X nÄ

option *À1 0ÏÄÀ¡Ê*

></GKÁ IP È@¥ ></*ü IP È@Ï5BÈk DHCP v0Ãü IP È@Ä

5XLMLHGKFSFRQLRSWLRQH[

_ 2Ö!5B_ÊÍM-Õ 33 E> ZÈÉÍM4- DHCP v0ÃZ-ÕÃÇÈ DHCP

v0Ã5M-ÕÃÖ

1

3.40 relay-information hex

?Uë‚X CLASS E9 Option82 G!µCG!5BÈ CLASS G!5BÐX **relay-information hex** ÈÐ **no 6Ã85Ô**

relay-information hex *aabb.ccdd.eeff…* [*]

no relay-information hex *aabb.ccdd.eeff…* [*]

ÏÐAÈ

Ð	ÉÄ
aabb.ccdd.eeff… [*]	16 E‚X Option82 G!µÈ *><ãG!ÈÔUG!!M6F¼ ÚÃ</EÉG!È ><LÔU<G!Ä

ÏÕ‚Õ!5BÐ -

Ïð < CLASS G!5BÃ -

CLASS ÐÐrNõ0ÏÕ0

class-remark	CLASS

-

< CLASS

-

CLASS

ip dhcp class	CLASS

-

3.42 service dhcp

DHCP **service dhcp** **no**

DHCP

service dhcp

no service dhcp

-	-

DHCP

<

IP DHCP

3.43 show dhcp lease

?U/ DHCP v9k,X/4zp EXEC Q **show dhcp lease**

show dhcp lease

	-	-

Ö*Ô	Vpü'ní	IP Ğ¥X4¥Ÿ¥pnZ	IP Ğ¹	IP ,X4¥™
Ÿ¤				

/4ß,XØ!%ÆÄÄ

+!‰	AÈ
ip address	Ã!4- DHCP v0,Ã IP Ä
Detection Method	¶U”#Ä
dhcp excluded ipaddress	fy8Ã

ÏGÐ

Ç	ÆÄ
clear ip dhcp conflict	#Ù8 DHCP ¶UA,

ÏGÄÈ -

3.46 show ip dhcp server statistics

?U/ DHCP á<,XØ4ÃuDBÈü EXEC Ç **show ip dhcp server statisticsÄ**

show ip dhcp server statistics

ÐAÈ

Ð	ÆÄ
-	-

Ï5,Õ!5BÐ -

Ð (M*ã

Ï*Ð AÃ DHCP á<!,XØM4ÃuDBÄ

Ï!5B_Ð ß **show ip dhcp server statistics Ðg4pÄ**

5XLMLHVKRZSGKFSVHUYHUVWDWLVWLFV
/HDVHFRXQ
¶GGUHVVSRROV
¶XWRPDWLFELQLQ
0DXDOELQLQ
([SLUHGELQLQ
0DOIRUPHGPHVVDHV
0HVVDH5HFHLYHG
%275(48(67
'+&'6&9(5
'+&5(48(67
'+&(&1(
'+&5(/(¶(
'+&,1)250
0HVVDH6HQ

```
%275(3/<
+&2))(5
+&&
+&1$
/4$Ø!%%KEÄÄ
```

+!‰	AÈ
Lease count	ÚE/4zÞ
Address pools	4Þ
Automatic bindings	7¾¥,XD,Â
Manual bindings	4¥,XD,Â
Expired bindings	E4¥,XD,Â

```
$N
1DN
HFOLQ
5HOHDVH
,Q
Ø G

LUHFWLRQXQ
5[FOLHQ
5[FOLHQXQ
5[FOLHQEUR
7[FOLHQ
7[FOLHQXQ
7[FOLHQEUR
5[VHUYHU
7[VHUYHU
```

/4 ¢Ø!%¥KEÄÄ

+!‰	AÈ
Cycle mode	cycle mode !E> È ></*È ></*ü
Rx client/ uni/ bro	¢ client y,Xy[D/)Ð/ SÐ
Tx client/ uni/ bro	¥Õ client ,Xy[D/)Ð/ SÐÄ
Rx server	¢ server y,Xy[DÄ
Tx server	¥Õ server ,Xy[DÄ

ÏGÐ

Q	EÄ
clear ip dhcp relay statistics	**ô8** DHCP)Ó4AuDBÄ

ÏGÄÈ -

4.2 ip helper-address

G!5B UDP Sy[4E@¥X,Â Xá<Ä ü no EÍM*9ô8 UDP Sy[4E@¥X,Â Xá<Ä

ip helper-address *address*

no ip helper-address [*address*]

ÐAÈ	Ð	EÄ
	address	5B UDP Sy[4E@¥X,Â Xá<Ä Ð yÕ 20 µ<Ä

ï5,Õ!5BÐ ïÚ G!5B UDP Sy[4E@¥X,Â Xá<

Ð yG!5BÄ

Ï S*Ð Ã G!5BÔ 20 µ Xá<Ä p4E@¥X,Â Xá<ÿ G!5B,X, µ
Z UDP-Helper s6Ã yy,Xû UDP 0Ã,XSy[6E Ã yG!5B
,X,Â Xá<Ä
S*ü **no ip helper-address** E Sy[ûÄ

Ï G!5B_Ð M6,X_ G!5B UDP Sy[4E@¥X,Â Xá<Ö
5XLMLHFRQ.IILSKHOSHUDGGUHVV

ÏÏGÐ

Ð	EÄ
ip forward-protocol	5BLÔ4E Ð UDP 0Ã

ÏGÄÈ -

4.3 udp-helper enable

udp-helper enable Ð UDP Sy[,X4E@¥6Ñ **no udp-helper enable** Ð
UDP Sy[,X4E@¥6Ñ
5,Ã UDP Sy[,X4E@ GK(Õ
udp-helper enable
no udp-helper enable

ÐAÈ	Ð	EÄ
	-	-

ï5,Õ!5BÐ 5,Õ UDP Sy[,X4E@ GK(Õ

Ð <G!5Bã

Ï*Ð Ô UDP-Helper ,X4Ð¿@¥6ÑAxÍ 69,53,37,137,138,49 ,X UDP Sy[E> 4Ð¿@Ä

Ï!5B_Ð M6,X_$ UDP 4Ð¿@¥6Ñ

5XLMLHFRQJXGSKHOSHUHQEOH

ÏÏGÐ

Q	ÐÄ
ip forward-protocol	**5BLÔ4Ð¿@** UDP 0Ã

ÏGÄÐ -

5 DHCPv6

5.1 clear ipv6 dhcp binding

?U#Ù8 DHCPv6 4¥µÇÀÈÏ*ü **clear ipv6 dhcp binding** Ö
clear ipv6 dhcp binding [*ipv6-address*]

Ð	Ë
ipv6-address	IPv6 ê4Ô

-

(Mã

Vpù'ÛÐ *ipv6-address*ÈÝ DHCPv6 4¥µÇÄpûÐ *ipv6-address*È4
ÈÛ¥µÇÄ

#Ù8 DHCPv6 4¥µÇ,X_Ö

Ò	Ë
-	-

-

5.2 clear ipv6 dhcp client

?UÿÐ¡ DHCPv6 v0ÃÈÏ*ü **clear ipv6 dhcp client** Ö
clear ipv6 dhcp client *interface-type interface-number*

Ð	Ë
interface-type interface-number	*y2Ò2ê*

-

(Mã

clear ipv6 dhcp client DHCPv6 v0ÃÈÏ0Ã¿<0ÃÈ!
5BÇÄ

Ï¨G!5B_Ð G¡ DHCPv6 v0,Ã X_$

5XLMLHFOHDULSYGKFSFOLHQWYODQ

ÏÎGÐ

Ç	ÆÄ
-	-

ÏGÄÈ -

5.3 clear ipv6 dhcp conflict

DHCPv6 v0Ã#7Ð,X IPv6 0UÊCK Decline y[È DHCPv6 Server Ú¼y[,X #ï0UKÈ#ï0UKÈXÉÓ!ÃU#Ù8 DHCPv6 Server ,X† 0UÇÈÉ*ü **clear ipv6 dhcp conflict Ö**

clear ipv6 dhcp conflict {*ipv6-address* | *}

ÏÐÄÈ

Ð	ÆÄ
ipv6-address	IPv6 ê4Ô
*	,Ý IPv6 ê4Ô

Ï5,Õ!5BÐ -

Ï Ö (Mã

Ï¨S*Ô Ç pû* ÐÈ</#Ù8,Ý IPv6 0UÊ4Ô pûÐ *ipv6-address* Ê4 8bÔ,UÇ

Ï¨G!5B_Ð #Ù8 DHCPv6 0UÇ,X_Ö

5XLMLHFOHDULSYGKFSFRQOLFW

ÏÎGÐ

Ç	ÆÄ
show ipv6 dhcp conflict	**/0UÇÄ**

ÏGÄÈ -

5.4 clear ipv6 dhcp relay statistics

#Ù8!A'Ô DHCPv6 Relay s6ÑOy[4AuÈ*Ç

clear ipv6 dhcp relay statistics

ÏÐÄÈ

Ð	ÆÄ
-	-

ï5,Õ!5BÐ -

ÏÐ (Mã

ï5*ÛÐ EÏ-AÑÙ8A'Û DHCPv6 Relay ,ÌGØOy[¥AuÄ

ï!G!5B_Ð #Ù8 DHCPv6 Relay Agent 4ÃuÇÏÙ8Ò ÈÏ-4ÃuÑ
¢ 0 ÑÃu1kÕ
5XLMLHFOHDULSYGKFSUHODVWDWLVWLFV

ÌÏGÐ

Ò	ÈÄ
show ipv6 dhcp relay statistics	**/4ÃAu**

ïGÄÈ -

5.5 clear ipv6 dhcp server statistics

?U#Ù8 DHCPv6 á<4ÃuÇÈÏ*ü **clear ipv6 dhcp server statistics Ò**
clear ipv6 dhcp server statistics

ÏÐÄÈ

Ð	ÈÄ
-	-

ï5,Õ!5BÐ **-**

ÏÐ (Mã

ï5*ÛÐ #Ù8 DHCPv6 á<4ÃuÇ

ï!G!5B_Ð #Ù8 DHCPv6 á<4ÃuÇ,X_ÏÐ
5XLMLHFOHDULSYGKFSVHUYHUVWDWLVWLFV

ÌÏGÐ

Ò	ÈÄ
-	-

ïGÄÈ -

5.6 dns-server

?UG!5BÐ DHCPv6 Server ,X DNS Server ë<Çu(@HFO'2CrSll A3á<4ÃÃ6ÃÃÙ -4248 r1CF233/TT0>1D001D041D94T/TT

Ï PâíTr T Ð

no dns-server *ipv6-address*

ÐAÐ

Ð	ÆÄ
ipv6-address	DNS Server ,X

ipv6 dhcp pool	DHCPv6

no ipv6 dhcp client pd

	prefix-name	IPv6
	rapid-commit	

!4

yG!5B

Vp DHCPv6 DHCPv6
ipv6 dhcp client pd DHCPv6 Server client
!4 IPv6
rapid-commit GK+A two-message GK+
solicit rapid-commit

```
```

clear ipv6 dhcp client	DHCPv6	
show ipv6 dhcp interface	/ DHCPv6	

Ï G!5B_Ð Î ß DHCPv6 Server G!5BÇ'4,XÔ$ Ö

5XLMHFRQ.DHHUPLQO

5XLMHFRQ.1SKSSRR

5XLMHFRQ.6S

ÏÇ Ò

Ò	Ë Ä
ipv6 dhcp server	*ÿ*ÿ DHCPv6 Server s6Ñ
show ipv6 dhcp pool	/ DHCPv6 4Ç

ÏÄ Ò -

5.11 ipv6 dhcp relay destination

?U*ü DHCPv6 relay áÈ!5B#'CE@¥X,ÂXÈÈ*ü **ipv6 dhcp relay destination Ö**

S*AÇ no 6Ã8EÊ6Ò8EÊBÄ

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

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

ÏÐ Ò

Ð	Ë Ä
ipv6-address	

```
3001::2
```

	ipv6 dhcp pool	DHCPv6
	show ipv6 dhcp interface	DHCPv6

-

5.13 prefix-delegation

?UG!5BDHCPv6 Server ,XM- **prefix-delegation** **no**

prefix-delegation *ipv6-prefix/prefix-length client-DUID* [*lifetime*]

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

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

DHCPv6 G!5B

1u) **prefix-delegation** IAPD |G!5B

client-DUID IAPD

DHCPv6 Server request

server

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

-

5.14 prefix-delegation pool

5.17 show ipv6 dhcp conflict

?U/ DHCPv6 ,X†UÇÈÄ*ü **show ipv6 dhcp conflict Ö**
show ipv6 dhcp conflict

ÐAÈ	Ð	ÆÄ
	-	-

ÏÕ,Õ!5BÐ -

Ö (Mã

Ï*Ô / DHCPv6 Server ,Ý†UÇÄ

Ï!5B_Ð ß DHCPv6 †UÇ,X_Ö

```
5XLMLHVKRZSYGKFSFRQOLFW
GHFOLÖG
GHFOLÖG
GHFOLÖG
GHFOLÖG
GHFOLÖG
GHFOLÖG
```

ÏÇÖ

Ö	ÆÄ
clear ipv6 dhcp conflict	**È8†UÇÄ**

ÏÄÈ -

5.18 show ipv6 dhcp interface

?U/ DHCPv6 yÇÈÄ*ü **show ipv6 dhcp interface Ö**
show ipv6 dhcp interface [*interface-type interface-number*]

ÐAÈ	Ð	ÆÄ
	interface-type interface-number	*y2Ö2é*

ÏÕ,Õ!5BÐ -

Ö (Mã <ã yã

Ï*Ô Vpü'ÔÐ *interface-type interface-numberÉÝ* DHCPv6 yÇÄpÔÐ *interface-type interface-numberÈÔyÇÄ*

5XLMLHVKRWSYGKFSLQWHUIDFH	
9/$LVLQHUYHUPRGH	

```
6ROLFLWUHFHLYHG
5HTXHVWUHFHLYHG
&QUPUHFHLYHG
5HQZHFHLYHG
5HELQUHFHLYHG
5HOHDVHUHFHLYHG
HFOLQUHFHLYHG
5HODLRUZUGUHFHLYHG
,QRUPDWLRQHTXHVWUHFHLYHG
8QRZHVVDJHWSHUHFHLYHG
(UURUPHVVDJHUHFHLYHG

+&YSDFNHWVHQW
6YHUWLVHVHQW
5HSOVHQW
5HODUHSOVHQW
6HQUHSOHUURU
6HQSDFNHWHUURU

%QLQWDWLVWLFV
%QLQHQUDWHG
,$DVVLQG
,$$DVVLQG

&QXUDWLRQWDWLVWLFV
+&YVHUYHULQWHUIDFH
+&YSRRO
+&YLDSGELQLQ
```

ÏGÐ

Q	ÆÄ
ipv6 dhcp pool	**6BÔ** DHCPv6 4Ä

ÏGÄÈ -

6 DNS

6.1 clear host

?U#Ù8|ãÐ¢<ÃM*ã> AÇÐ

clear host [*host-name*]

ÏÐAÈ

Ð	ÆÄ
host-name	ÃÊÛÃÄ” ><#Ù8<F|ãÇ †

ÏÕ,Õ!5BÐ -

ÏÇÐ (M*ã

ÏS*Ð 4¢<,XÃ,ÃÏÖ

ÈÈ› ip host ê ipv6 host M-Õ!5B×

ÈÈ› DNS |Õ4,Ä> AÇÐ8!ÈÈ› DNS |Õ4,XÃ,Ä

ÏG!5B_Ð G!5BÈ8áP 4¢<|Õ4,XÃ,Ä

FOHDUKRVW

ÏÌGÇÐ

Ç	ÆÄ
show hosts	**/** DNS ,ÌGG!5BÇÄ

ÏGÄÈ -

6.2 ip domain-lookup

| DNS E> ãdÄ*ÄÇX no EÝMÍGKÁ DNS ãds6Ñ

ip domain-lookup

no ip domain-lookup

ÏÐAÈ

Ð	ÆÄ
-	-

ÏÕ,Õ!5BÐ 5,Õ% DNS ãds6Ñ

ÏÇÐ <G!5Bã

Ï´*Ð AÇ DNS ªds6¦ÑXÔÈ> AÈ DNS E> ªdÄ

Ï´G!5B_Ð M6,X_ÕÐ DNS ªds6¦ÑXÔ

5XLMLHFRQLJSGRPDLQRRNXS

ÏÎGÇ

Ç	ÆÄ
show hosts	/ DNS ,ÌGG!5BÇ

ÏGÄÈ -

6.3 ip host

AÇ!5Bă IP ,XÈ*ÄÇX no EÍMÎ8ë<Ä

ip host *host-name ip-address*

no ip host *host-name ip-address*

ÏÐAÈ

Ð	ÆÄ
host-name	*AÇ*
ip-address	*AÇ* IP

Ï´Õ!5BÐ -

Ç <G!5Bã

Ï´*Ð |Vp?Uî8ë<Ãï **no ip host** *host-name ip-address* ÇÄ

Ï´G!5B_Ð 5XLMLHFRQLJSKRVWVZWFK

ÏÎGÇ

Ç	ÆÄ
show hosts	**/** DNS ,ÌGG!5BÇÄ

ÏGÄÈ -

6.4 ip name-server

AÇ!5Bã<,X IP/IPv6ÄÇ!5Bã<!6Ñ> |ÈdÄ*ÄÇX

no EÍMÎ8G!5B,Xã<

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

no ip name-server [*ip-address* | *ipv6-address*]

ÏÐAÈ

Ð	ÆÄ

ip-address	á×	IP
ipv6-address	á×	IPV6

Ï5,Õ!5BÐ 5,ÕÍ!5Bá<

Ïð <G!5Bã

Ï*Ûð #ï DNS Server ,X IP/IPv6 Ä> E5Ò'ÛÑïÛ DNS ServerÂÔ
þ Server 9Ê'ÂÂÁ Server ÆÕ DNS AÊ7.Bh!6Ä
2ÄÕ 6 á<Ä8 DNS Server Êp|ûZ ip-address ê ipv6-address ÐÈ4
ô8ûXá<Ê8,Ý DNS á<Ä

Ï G!5B_Ð 5XLMLHFRQ1SQPHVHUYHU
5XLMLHFRQ1SQPHVHUYHU
ÆIIHHI%

ÌÏGÐ

Q	EÄ
show hosts	**/** DNS ,ÌGG!5BÇÄ

ÏGÄÀ -

-

6.6 show hosts

/ DNS ,XG!5B
show hosts [*hostname*]

7 FTP Server

7.1 debug ftpserver

Ô FTP á<,XA^@EgÊ*ÁÇX no 6ÊKÁ^@EgÃ

ËÐ	<G!5Bã
Ŝ*Ð	' FTP á<*ÊÈ› FTP v0Åý È> [ÊÇ0Ä

ftp-server topdir FTP FTP

5XLMLHFRQJWSVHUYHUSDVVZRUGSDVV

5XLMLHFRQJWSVHUYHUSDVVZRUGSDVV

_ 2(BV)G!5BÕ 8001Ö

5XLMLHFRQJWSVHUYHUSDVVZRUG

_ 3(BV)#5Ö!5BÖ

5XLMLHFRQJWSVHUYHUSDVVZRUG

Q	EÄ
-	-

-

7.4 ftp-server timeout

G!5BFTP Â÷X0NKÊ$ session idle timeout Â*ÄQ no 6ÊNKÊ$ÄxÄ0

ftp-server timeout *time*

no ftp-server timeout

Đ	EÄ
time	*0*-3600 Å

TÄxÊ$ 30

<G!5BÄ

G!5BFTP Â÷X0NKÊ$p!ÂÛXÊ$É>)ÇÄ0NKÊ FTP á<

GÃxEÿ4ÊÂ*ÇXEÿÄ

FTP FTP FTP

FTP 0

_ 1(BV)G!5B0NKÊ$ 5

5XLMLHFRQJWSVHUYHUWLPHRXW

_ 2(BV)6ÊNKÊ$ÄxÄ0

5XLMLHFRQJWSVHUYHUWLPHRXW

Q	EÄ
-	-

-

7.5 ftp-server topdir

L$ FTP v0ÃÑ> [ÊÏm0,X,)Â8Ã*ÀÇX no 6ÐÏ/U!6v0Ã“KÂ FTP á u<)Ï[Ê

ftp-server topdir *directory*

no ftp-server topdir

Ð	ÊÄ
directory	FTP v0ÃÑ> 0,XN,)Â

TÀxN,)Â’5B

<G!5Bã

FTP á<N,)Â$Z0,Õ)Ã“KÂX[)Ã8ÃO!7.BÛN,)Â6Ñ} FTP v0Ã“KÂ FTP á<)X[Ê

8"Ý!5BAÇ)FTP v0Ã“KÂ<)Ï[)Ä

_ 1(8×)| FTP á<L$0ÃÑ“KÂ syslog $)ÖÖ

5XLMLHFRQJIWSVHUYHUWRSGLUVVORJ

5XLMLHFRQJIWSVHUYHUHQEOH

_ 2(8×)#\)ÂXG!5BÖ

5XLMLHFRQJIWSVHUYHUWRSGLU

Ç	ÊÄ
-	-

7.6 ftp-server username

G!5BFTP á<,X,O)*Ã*ÀÇX no 6ã*G!5BÄ

ftp-server username *username*

no ftp-server username

Ð	ÊÄ
username	,O)*á

TÀx*á

<G!5Bã

Ï´ÊÔ G!5Bv0,ÃOL FTP á<ÊÔUø,X*ä0,Ã)ÊÔUê!7.B,X*ãÕÑ
,O)Ä
*ÊÔSz 64 þ0ÈÀÓÉN*ÃÃ8Å+!ÃÅD+?0ÄÄ
FTP á<ÊÔÑ!5BÞÃ

FTP

Ï´G!5B_Ð _ 1ÏÖ×)G!5B*ã userÖ
5XLMLHFRQJIWSVHUYHUXVHUQPHXVHU
_ 2ÏÖ×)#*ã!5BÖ
5XLMLHFRQJIWSVHUYHUXVHUQPH

ÏÌGÐ

Ð	ÆÄ
-	-

ÏGÄÈ -

7.7 show ftp-server

/ FTP á<,X,Ì(ÕÄ

show ftp-server

ÏÐÄÈ

Ð	ÆÄ
-	-

ÏÕ,Õ!5BÐ -

ÏÐ (M*ã

Ï´ÊÔ / FTP á<,X,Ì(ÕÈ

á<µ

ÔÏÈ¿ÄÌG IPÃort Å

ÔÏÐBE¿ÄÈ>ÌG IPÃort Å

![Êg2O_

á<,O)*ãÕ!5BÅ

á<N,JÂ

ÂÔNKÊÄ'5B

Ï G!5B_Ð ß×)¦ß FTP á<,X,Ì G(ÕÖ

```
5XLMLHVKRZ IWSVHUYHU
IWSVHUYHULQ RUPDWLRQ

HQ EOH<
WRSGLU
WLPHRXWPLQ
XVHUQ PHFRQ Ls<
SDVVZ RUGFRQ Ls<
WSH%1$<
FRQ WUROFRQ FW<
IWSVHUYHULS SRUW
IWSFOLHQ WLS SRUW
SRUWGDWDFRQ FW<
IWSVHUYHULS SRUW
IWSFOLHQ WLS SRUW
SDVVLYHGDWDFRQ FW1
```

Ï ÌGÐ

Ò	£Ä
-	-

Ï GÄÈ -

8 FTP CLIENT

8.1 copy ftp

ªV¥(B,X CLI)WBE› **copy ftp** Ð-[ÊgÄ ØS*ü FTP Client á<[Ê
EQ'ÐMEg9Q **copy ftp:url flash:url** E>ÈÐQ **copy flash:url ftp:url** í
Ñ0ÐÄ

copy ftp://*username*:*password*@*dest-address* [/*remote-directory*]/*remote-file*

flash:[*local-directory*/]*local-file* [**vrf** *vrfname*]

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

ÐAÐ

Ð	EÄ
username	,O) FTP Server ,XBÐSzL$ 40 +8VÐ Ã @Ã / 0N1+0Ð9
password	,O) FTP Server ,XBÐSzL$ 32 +8VÐ @Ã Ã / 0N1+0Ð9
dest-address	A“KÂX FTP Server ,X IP
remote-directory	ÐX FTP Server Þ[ÊÃÐSzL$ 255 +8VÐN [+0Ùp0NÈ</ FTP á<!0CÃ
remote-file	Ð[ÐzL$ 255 +8VÐN[+0ú
local-directory	Ð[ÊÐÂ[ÊÐA[ÊÃÊÊÐ[Ð0Ñ /ÐÐ 255 +8VÐN[+0ú
local-file	ÐÐ 255 +8VÐN[+0ú
vrfname	Ù VRF á

Ð,Õ!5BÐ -

Ð (M*ã

Ð*Ð S*ü **copy ftp**:*url* **flash**:*url* ÐÐ
S*ü **copy flash**:*url* **ftp**: *url* ÐÐ

Ð!5B_Ð tá user Õ pass Þ 192.168.23.69 ,X FTP Server ,X root ,Ð[Ê
remote-file ,X[Ê'Ô home ,Ð,X[Ê local-file

```
5XLMLHFRSI\WSXVHUSDVV#URRWUHPRWHILOHIODVKKRPHORFDOILOH
```

A'Ô home ,Ð,X local-file [Ê FTP Server ,X root ,ÐÊ remote-file

```
5XLMLHFRSI\ODVKKRPHORFDOILOHIWSXVHUSDVV#URRWUHPRWHILOH
```

ÏÐÐ

Ð	EÄ

copy tftp	tftp #AE> [g

vrfname	VRF IP

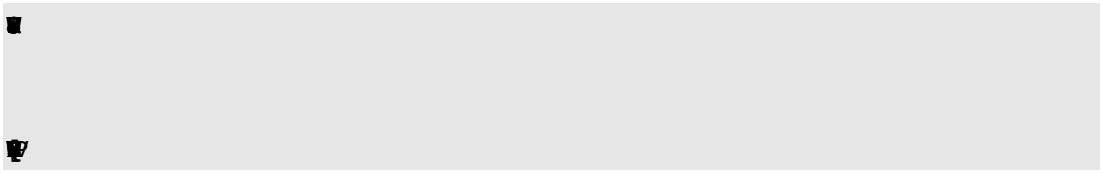
IP

9

9.1 ping

[illegible]

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



[illegible]

Ï¡GÐ¸	Ç	ÆÄ
	-	-

¨GÄÀ¸ -

9.2 ping ipv6

A¸Ð#A54¸XEÆÑK}*AÀ!54¸XEÆÑKÎÑÏÐÖ

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

ÐAÀ¸	Ð	ÆÄ
	ip-address	ûÏ IPv6
	length	ûÆÕBÌ¸z
	times	ûÆÕBÌ¸
	seconds	ûCÊ¸
	data	ûÐB
	source	ûÏ IPv6 ¶yÏÄ_V::1 ÅÕ¶

¨5,Õ!5BÐ 5,ÕÏ,XÊÆ,Õ 2 /ÅÈÕ 5 ¸kSz 100Byte ,XDBûÏ,X IP

¨Ð¸ (M*ã

¨S*Ð¸ **Ping ipv6 Ð¸BEî¸BEî¸ÑÑ¸X** ping ipv6 s6ÑÏM*ÈÆ¤ ping ipv6 ,X=)s6ÑÆîX ping ipv6 s6ÑÆî *ÏM*Ð¸ Ì,ÕÏ,XÊÆ,Õ 2 /ÅÈÕ 5 ¸kSz 100Byte ,XDB ûÏ,X IP ÈÏph1(ÏÐ ÈÏpüÝ1(ÏÐ ÈÏph1(,XDBY• ÅÏXDBYÆ!È ÐÇ' ÐgÐAuÇÄ) ping ipv6 s6ÑÏM *Ð¸ È) ping ÆÆÕBÌ,XÐÑKSzÈYÊXÊÈ1ÈÆîX ping ipv6 s6ÑÆgÐAuÇÄUS*ã6ÑUG!5Bã<ÈG!5BÆ¤ DNS G!5BFÄ¸

¨G!5B_Ð _ 1ÈÏ ping ipv6 ,Xr_Ö

5XLMLHSLÏSY
6HQLÐWH,&3(FKRHVWRWLPHRXWLVVHFRQV
SUHVV&WUO&WREUHDN!

6XFFHVVUDWHLVSHUFHQWURXQWULSPLÐYÐD[PV

_ 2Ë) ping ,Xr_Ö

5XLMLHSLÏSYOHÏWKQWLPHVWLPHRXWGDWDIIIIVRXUFH

IP 61.154.22.36 ,

traceroute

5XLMLHWUDFHURXWH
SUHVVWOWREUHDN!
7UDFLQJKHURXWHWR
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF

PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF

¶
¶
¶

ÏGÐ

Ò	ÉÄ
-	-

ÏGÄÐ -

9.4 traceroute ipv6

;> **traceroute ipv6 Ñ¿ÀÐBÙÂÉÝÄ**

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

ÏÐAÐ

Ð	ÉÄ
Ip-address	*ûÎ* IPv6 Ä
number	*ûÑÐG*
seconds	*ûCÊ*
minimum maximum	*ûÐ* TTL

ÏÕ,Õ!5BÐ -

Ï¿ (M*ã

Ï*ÛÎ **Traceroute ipv6 Ò*ü5ÄÉÈÄLp*ÊÄ,ÄLp*ÊÄ**

ÒS*ã6ÑÕBãÈÄÉ× DNS G!5BFÄ

Ï!5B_Ð Ñ*ü traceroute ipv6 ,XÈÄÉÿ+ÉÈÄÉÿ,ü5%ÉîX™

Ï‰

_ 15%ÉîX traceroute ipv6 _Ö

5XLMLHWUDFHURXWHLSY

SUHVV&WUO&WREUHDN!

7UDFLQWKHURXWHWR

PVHFPVHFPVHF

PVHFPVHFPVHF

PVHFPVHFPVHF

PVHFPVHFPVHF

M6,X4ÑÀÙÈ?UA“KÂ IP 3004::1 ,XÈ4DBÈÄÉ25%

GÄ É ÂÉ’A5%8C,XÊÈÍ5%ÚÈ2*ÍXÄ

_ 25%ÉîX traceroute ipv6 _Ö

5XLMLHWUDFHURXWHLSY

SUHVV&WUO&WREUHDN!

7UDFLQWKHURXWHWR

IP 3004::1 ,XÈ4DBÈÑÈ75%

GÄ É ÅÇ 4 ÎĽpÄ

ÎĞÐ	Ą	ÉÄ
	-	-

ÏGÄÈ -

10 TCP

10.1 ip tcp mss

A’5BÔÝ TCP E?y,X MSS ,XÈÉ6*ü **ip tcp mss** **Ä*ÄÇ** no 6ã!8NM G!5BÄ

ip tcp mss *max-segment-size*

no ip tcp mss

ÏÐAÈ	Ð	ÉÄ
	max-segment-size	MSS ,XÈÄ)!+8VÈÄ

ÏÕ,Õ!5BÐ A’5BÈÄ

ÏÇ <ã

ÏS*Ô **ip tcp mss** **Ä*ÄÇ** TCP E?y,X MSS ,XÏÐ,XE?#,X MSS ãÑYEG!5B,XÄp?UÉ?y,XÔ MSS Ã!5BAÇÐ UG!5BÄ

ÏG!5B_Ð 5XLMLHFRQ1SWFSPVV

ÏÌGÇ	Ç	ÉÄ
	-	-

ÏGÄÈ -

10.2 ip tcp not-send-rst

?U/U!6Í TCP 0Ã’,Xy[¥Õ reset y[ÈÉ6*ü **ip tcp not-send-rst** **Ä*ÄÇ** **X** no 6ã!8NMG!5BÄ

ip tcp not-send-rst

no ip tcp not-send-rst

ÏÐAÈ	Ð	ÉÄ
	-	-

ÏÕ,Õ!5BÐ Í TCP 0Ã’,Xy[¥Õ reset y[

ÏÇ <ã

Ï*Đ ÔÈ‰ TCP õú TCP yÊRÁy[2,X TCP E¿Fw]Ô reset
y[*ú0Ã TCP E¿ÁÊÍÇ£X0Á,X TCP y[Á’Ê> ÆE›
!8Ñ!6ÔÁ’,Xy[ÆÕ reset y[Ä

ÏG!5B_Đ 5XLMLHFRQILSWFSQWVHQUVW

ÏÎGÑ

Ñ	Æ Ä
-	-

ÏGÄè -

10.3 ip tcp path-mtu-discovery

?U*ü TCP ,XCÃÊg)(PMTU) ¥s6ÃÊ*ü **ip tcp path-mtu-discovery** S Ä
*Á Ñ no 6Ã!8NMG!5BÄ

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

no ip tcp path-mtu-discovery

ÐAè

Đ	Æ Ä
age-timer *minutes*	TCP ¥ PMTU Æ > v#,XÊÈhÄÃÊ 10-30Ã,Õ 10Ä
age-timer infinite	TCP ¥ PTMU Èy#Ä

Ï,Õ!5BÐ GKÁ PMTU ¥s6Ñ

Ñ <ã

Ï*Đ TCP ,XCÃÊg)¥s6Ñ RFC1191 r)„XÈÞ6Ñ5%XÿÑ[Ü
S*ü TCP 9MGÆgûDBÆs6ÃÆg0KÄ
EÞ6ÑX*ÆGKÃ4Æ,X TCP E¿ÃÊ0,X TCP E¿*Ñ
Í IPv4 ` IPv6 ,X TCP Ã
Ý RFC1191 ,XÆÃCP ¥ PMTU Èh0ÃÊ*ÞX MSS 9v#„X PMTUÄ-
ÊÈhS*Đ **age-timer 9**Ñ PMTU !¨ TCP E¿0Ã0,X MSS ã
Æ’ÊÃ!5BÊÈhÊ¥X PMTUÆ PMTU E’ MSS ,XÈÙü
0!6EÞÊÈÞ#E›0!6Ñ!6EÞÊÈ*ü **age-timer infinite ÐÄ**

ÏG!5B_Đ 5XLMLHFRQILSWFSSDWKPWXGLVFRYHU\

ÏÎGÑ

Ñ	Æ Ä
show tcp pmtu	/ TCP E¿,X PMTU

ÏGÄè -

State	TCP E?!,X(Ö 11 /ß(Ö CLOSEÖ?/Ö LISTEN(ÖÖ SYNSENTÖYN y[Ö!‰ SYNRCVDÖYN y[Ö!‰ ESTABLISHEDÖ?/Ö FINWAIT1ÖÖ FIN y[FINWAIT2ÖÖ FIN y[4E•BAx CLOSEWAITÖÖ FIN y[LASTACKÖÖ FIN y[ÖÖ FIN y[CLOSINGÖÖ FIN y[ÖÖA¹ FIN y[,X ACK y[9! Ö,X FIN y[TIMEWAITÖÖ FIN y[>•BAxÖÖ4EBAxy,X FIN y[

Q	EÄ
-	-

-

10.7 show tcp pmtu

TCP ,X PMTU ,XÄ

show tcp pmtu

Foreign Address	E0ÃÐ" ÃM6,XD+0Ã !V"2002::2.23" ã192.168.195.212.23" ,X "23"0Ã
PMTU	PMTU ,X

ÏGÐ

Ò	£Ä
Ip tcp path-mtu-discovery	**Ô** TCP ,X PMTU ¥,6Ñ

ÏGÄÐ -

10.8 show tcp port

/2Ï4! TCP 0Ã*Ï%

show tcp port

ÏÐAÐ

TCB	! TCP {+Ÿ,,X!5B
Foreign Address	E²ÿ0Ã,X
Port	E²ÿ0Ã,X0Ã
State	TCP E²ÿ!,X(Ã 11 /ÃÑ CLOSED: E²ÿÊ LISTENÿÕ SYNSENTÖYN y[Ã!‰ SYNRCVDÖYN y[Ã!‰ ESTABLISHEDÖ²ÿÊÿ FINWAIT1ÖÃ FIN y[FINWAIT2ÖÃ FIN y[4E•BAx CLOSEWAITÖÃ,X FIN y[LASTACKÖÃ,X FIN y[ÈÃ,X FIN y[CLOSINGÖÃ FIN y[ÊÃ¹ FIN y[,X ACK y[9! Ã,X FIN y[TIMEWAITÖÃ,X FIN y[>•BAxÖÃ4EBAxÿ,X FIN y[

ÌGÐ

Ð	ÆÄ
-	-

ÏGÄÈ -

-

1. SNMP
2. RMON
3. NTP
4. SNTP
5. SPAN
6. RSPAN

1 SNMP

1.1

ÏG5BÐ M6,X/_ SNMP ,XÔ^AuÇÖ

5XLMLHVRZPS
&VVLV)
6103SDFNHWLQXW
DG6103MUVLRQUURUV
8QRZRPPXQQPH
,OOHJDORSHUDWRQUFRPPXQQPHVXSSOLHG
QRGLQHUURUV
1XPEHURIUHTXHVWGDULDEOHV
1XPEHURIDOWUHGDULDEOHV
HWHTXHV38V
HQ[38V
6HWHTXHV38V
6103SDFNHWRXSXW
7RRELJHUURUV0D[LPXPSDFNHWL]H
1RVXFQPHHUURUV
DGDOXHVHUURUV
HQUDOHUURUV
5HVSRQH38V
7UDS38V
6103JOREDOWDSGLVDEOHG
6103ORJJLQGLVDEOHG
6103DJHQQEOHG

ÏGQ

Q	EÄ
snmp-server *chassis-id*	SNMP 24ÿ¿Ë

ÏGÄÈ -

1.3 snmp trap link-status

ÄÕyG5BÉÕy¡X LinkTrapÈ6Mpy¥ Link Ò
SNMP Ý LinkTrap,ÄÄQX **no** ÉM SNMP Ý LinkTrapÄ
snmp trap link-status
no snmp trap link-status

ÏÐÈ

–D	EÄ
-	-

ÏÕ5BÐ 5,Ò6Mpy¥ Link Ò SNMP Ý LinkTrapÄ

ÏQ yG5BÄ

ÏÎÐ bÍyÄÿÃ Ap yÃ SVI yÄÇ5BÄÕy¡X LinkTrapÈ6Ñ
Vpy¥ Link Ñ SNMP Ï LinkTrap,Ä

ÏG5BÐ _ 1ÏÄ6G5BÍ5ByÄ¥ÕÖ Link trapÖ
5XLMLHFRQJLJ¥QUIDFHJLJDELK¥UHQW
5XLMLHFRQJLJIQVPQSWDSOLQVDXW
_ 2ÏÄ6G5BÍ5ByÄ¥ÕÖ Link trapÖ
5XLMLHFRQJLJ¥QUIDFHJLJDELK¥UHQW
5XLMLHFRQJLJIVPQSWDSOLQVDXW

ÏÎÇÐ

Ç	ÄÄ
snmp trap link-status	ÊÕy· link trap ,Xs6Ñ
no snmp trap link-status	GÄÕy· link trap ,Xs6Ñ

ÏGÄÈ -

1.4 snmp-server chassis-id

ÏÎÛ SNMP ,X2Ä¿ÈÄG5BÇ **snmp-server chassis-idÄÇ** **no 6È**
Ä

snmp-server chassis-id *text*

no snmp-server chassis-id

ÏÈÐ

–D	ÄÄ
text	2Ä¿ÈX[Ñ+ê0Ä

Ï,Ñ5BÐ cÈ,Ñ 60FF60

ÏÇÐ G5Bã

ÏÎÐ

1.5 snmp-server community

SNMP **snmp-server community** **no**
SNMP

ÏG5BÐ M6,X/ÏÆÕ SNMP ÊKÉÖ

5XLMLHFRQLJVPSVHUYUHQEOHWDSVVPS

5XLMLHFRQLJVPSVHUYUKVSXEOLFVPS

ÏÎGÐ

Q	ÆÄ
snmp-server host	**ô** SNMP

ÏGÄÐ -

1.8 snmp-server group

ÜA5B SNMP ÄÈÆG5BQ **snmp-server groupÄÐ** **no 6ÄÄ**

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

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

ÏÐÐ

–D	ÆÄ
v1 | **v2c** |**v3**	ô SNMP Ä
auth	A4,X6g,XÊLÔPÀÐBáÔÊ v3 Ä
noauth	A4Ëg,XÊáÔPÀÐB3áÔÊ v3 Ä
priv	**A4gÔÀgÊ** v3 Ä
readview	**6ÊÔ**
writeview	6ÊÔ
aclnum	ÊÔÀ6Ñ MIB ,X ipv4 NMS 8Ä
aclname	ÊÔÀ6Ñ MIB ,X ipv4 NMS 8Ä
ipv6-aclname	ipv6 AÊÔ,XÀÊÑÀ MIB ,X ipv6 NMS 8Ä

ÏÕ5BÐ 5,ÕÄ5B4˜

ÏÐ G5Bã

ÏÔ -

ÏG5BÐ M6,X/A5BÔÖ

5XLMLHFRQLJVPSVHUYUJURXSPLEXVHUYULVHDGPLE

ÏÎGÐ

Q	ÆÄ
show snmp group	**/** SNMP ÊÇ4¼

1.9 snmp-server host

0ûÊÕ¼C,X SNMP ÄNMS ÅÈG5BQ **snmp-server hostÄ¡Q no 6ÊÊ** SNMP Ä

snmp-server host { *host-addr* | **ipv6** *ipv6-addr* } [**vrf** *vrfname*] [**traps**] [**version** { **1** | **2c** | **3** { **auth** | **noauth** | **priv** }] *community-string* [**udp-port** *port-num*] [*notification-type*]

no snmp-server host { *host-addr* | **ipv6** *ipv6-addr* } [**vrf** *vrfname*] [**traps**] [**version** { **1** | **2c** | **3** { **auth** | **noauth** | **priv** }] *community-string* [**udp-port** *port-num*]

–D	ÆÄ
host-addr	SNMP
ipv6-addr	SNMP ipv6 Å
vrfname	A5B vrf E@ÄÄ
version	E½ snmp È V1Ã2C Ã3
auth | **noauth** | **priv**	**A5B** V3 ¨X]4{Ä
community-string	3 Å
port-num	snmp 0Ã
notification-type	|ÆÕXLK2OÈ snmpÄ

5,Õ5BÐ 5,Ã7Ax SNMP Ä

VpÙLK2OÊK2OÄ

Q G5Bã

SÊ AQ5BQ **snmp-server enable traps** NMS ÆÕ¼ÆÄ

Ã5BÃX SNMP ÙyLK2O4Ã0Ã

ÃX vrf E@È,à ,àÃ vrf G5B]ÊXÔG5BÎM6,XG5BÜÈV

0Ã4,ÈÕ,X¼ÆÕ5BÃKÊeoG5BÜÔÄ

G5BÐ M6,X/ÛÔ SNMP È SNMP ÊKÖ

5XLMLHFRQJVPSVHUMUR VXEOLFVPS

Q	ÆÄ
snmp-server enable traps	Ã

GÄÈ -

1.10 snmp-server location

0A5B SNMP ,X2Ä5BÇÈG5BQ **snmp-server locationÄ¡Q no -s65B16431102653411**

Ä	–D	EÄ
	text	EÄ4¢,X+0Ä

5,Õ5BÐ 24¢0N

Ö Ö5Bã

Ö -

Ï5BÐ M6,X/ÛÕ4¢Ö

5XLMLHFRQJVQSVHUYUORFDWRQDWWFKORJ\FLWSLOGLQ

ÏGÐ	Q	EÄ
	snmp-server contact	SNMP 24¢2ã

ÏGÄÐ -

1.11 snmp-server net-id

20PLqsNÓÖ

1.12 snmp-server packetsize

Ø{ SNMP ÔXDBÈÈG5BÇ **snmp-server packetsizeÄÇ** **no 65**
ãAxÄ

snmp-server packetsize *byte-count*

no snmp-server packetsize

–D	ÉÄ	
byte-count	DBÈ	484 +8V 17876 +8VÄ

5,Õ5BÐ 1472 +8V

Ç5Bã

-

G5BÐ M6,X/ÛÙ SNMP ÔBÈ 1492Ö

5XLMLHFRQJVPSVHUMUSDFNHWL]H

Ç	ÉÄ
snmp-server queue-length	SNMP ã

GÄÈ -

1.13 snmp-server queue-length

ÔÛLKÈÈÈG5BÇ **snmp-server queue-lengthÄ**

snmp-server queue-length *length*

–D	ÉÄ	
length	ÈÈ	1 1000Ä

5,Õ5BÐ 10

Ç5Bã

LKÈ,LKÈÈAQHÈ{ÈÈÕÄ
ÈÈÕ 4 ÈÄ

G5BÐ M6,X/ÛLKÈ 4 Ö

5XLMLHFRQJVPSVHUMUTXHXHOHQW

Ç	ÉÄ

snmp-server packetsize	SNMP

-

1.14 snmp-server system-shutdown

snmp-server system-shutdown **no**

SNMP

snmp-server system-shutdown

no snmp-server system-shutdown

-	-

SNMP

reload/reboot NMS

SNMP

-	-

8 5 9 5 . 2

RUIJIE-TRAP-FORMAT-MIB.mib

SNMP v1	Trap

1.17 snmp-server trap-timeout

snmp-server trap-timeout *seconds*

no snmp-server trap-timeout

–	
seconds	– 1000

30

-

-

1.18 snmp-server udp-port

snmp-server udp-port *port-num*

no snmp-server udp-port

–	
port-num	SNMP

161

SNMP

-

-

ÌÎGÐ

Ç	ÉÄ
-	-

ÏGÄÈ -

1.19 snmp-server user

ÒÄ5B SNMP ÈÄÉG5BÇ **snmp-server user**ÄÇ **no 6**ÈÄ

snmp-server user *username groupname* {**v1** | **v2c** | **v3** [**encrypted**] [**auth** {**md5** | **sha**} *auth-password*] [**priv des56** *priv-password*]} [**access** {**ipv6** *ipv6-aclname* | *aclnum* | *aclname*}]

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

ÏÄÈ

–D	ÉÄ
username	Ä
groupname	Aú,X4ã
v1 | **v2c** | **v3**	ûÙ SNMP Ä v3 ÕÒ6,X]<DÄ
encrypted thu d	ûÙ,XšÕg9,X[Eg9[Eg9ÄpEÝ [Eg9ÌÒEg9E4,X 16 ED++0ÁXÌyÄÙ MD5 16 5ÍgÌÈA5 +aÐaÌÈXÌyÌÈ@ ÂÒÄ

2 RMON

2.1 rmon alarm

Ø,¥p MIB G£SAÇü no 6ÄÄ

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

no rmon alarm *number*

–D	£Ä
number	~65535
variable	1~255 ÞÞ0ú,X+0ÈV& OID ,XÚ ã Ä ã entry.integer.instance ê5 ÙÊ$8 V & ánstance Ù 1.3.6.1.2.1.2.1.10.1Â¯×
interval	12147483647
absolute	
delta	
rising-threshold *value event-number*	*A5B$–D value ¹ž £ÍÊ h ,X_ ÊË event-number value* 2147483648~+2147483647 *event-number* ~65535
falling-threshold *value event-number*	*A5B$–D value ¹ž £ÍÊ h ,X_ ÊË event-number value* 2147483648~+2147483647 *event-number* ~65535
owner *ownername*	A5B¤M,XÎ5Ù *ownername£ ownername* 1~64 ÞÞ0ú ,X+0ÈN

-

G5Bã

ü RGOS EC G5B,X 4,X variableÃabsolute/deltaÃownerÃ intervalÃrising-threadhold/falling-threadhold ž,X event 1G5B ÇÊ5XEoG5B ÇJ6 ÊÊ XÊ

G5BÐ MIB G£_ ifInNUcastPkts.6

5XLMLHFRQJUPRQODUPGHOWULVLQWHVROG IDOOLQWHVROGRQU]QVDQ

Q	£Ä
rmon event *number* [**log**] [**trap** *community*]	

[**description** *description-string*] [**owner** *owner-string*]	

ÏGÄÈ -

2.2 rmon collection history

UA5%XÆSÄÇü **no 6ÄÇ**

rmon collection history *index* [**owner** *ownername*] [**buckets** *bucket-number*] [**interval** *seconds*]

no rmon collection history *index*

–D	ÆÄ
index	ÆM,X2ÈÈ~65535
owner *ownername*	*ownernameÈownername* 1~64 p0ÛX+0È ÉÈN
buckets *bucket-number*	*bucket-numberÈbucket-number* ÈÈ~65535
interval *seconds*	*secondsÈseconds* ÈÈ~3600 È

ÏÕ5BÐ -

ÏÇ yG5Bã

ÏÊÐ ü RGOS ECÃÉG5B,X5%XÆÈÃ ownerÃ buckets ž interval 1G5BÇÈÕ%XEoG5BÇJÈÊÃ)XÊ ó

ÏG5BÐ È|Ã5%Ã 1 ,XÆÄ

5XLMLHFRQJLÇUIDFHIDVÇUÇW

5XLMLHFRQJLIUPRÇROOHFWRQVRU\ RÇU *JÇQDQ* EXFNHWLÇUÇO

ÏÇ	ÆÄ
rmon collection stats *index* [**owner** *owner-name*]	ÏÊÃu×M

ÏGÄÈ -

2.3 rmon collection stats

Ï–DAÈ	–D	ÉÄ
	index	4ÄuÇ,X2ÈÈ~65535
	owner *ownername*	**A5MÎ5Ù** *ownernameÈwnername* 1~64 þ0ÛX+0È ÉÑÕN

Ï5,Õ5BÐ	-
Ï Q	yG5Bã
Ï5Ô	-
Ï G5BÐ	È ÃÑ5%Ã 1 ,X4ÄuÇÄ
	5XLMLHFRQJLÈ QUIDFHIDVÈ QUÈ

[*event-number*] [**owner** *ownername*]	

GÄà -

2.6 show rmon event

0/4Aup

show rmon event

–D	EÄ
-	-

5,Õ5BÐ -

Ò Mã

Sô -

G5BÐ 4Aup CÖ

5XLMLHVRZUPRQHQWW
UPRQHQWEOH
LQH[
GHVFULSWRQI,Q8FDVWNW
WH
FRPPXQWPRQ
ODVWLPH6HQGRV

Ï–DAà	–D	EÄ
	-	-

Ï5,Õ5BÐ -

Ïà (Mã

ÏSÎ -

Ï5BÐ 4Au CÖ

```
5XLMLHVRZPRQDLVLFV
HKUVDLVLFDEOH
LQH[
LQUIDFH )DVKUQW
RQU ]KQVDQ
VDXW
GURSKW
RFHW
SNW
EURDGFDV3NW
PXOL3NW
FUFSDLJQURUV
XQHU6L]H3NW
RKU6L]H3NW
IUDJPHQW
MDEEHUV
FROOLVLRQ
SDFNHW2FHW
SDFNHW7R2FHW
SDFNHW7R2FHW
SDFNHW7R2FHW
SDFNHW7R2FHW
SDFNHW7R2FHW
```

ÏGQ

Q	EÄ
rmon collection stats *index* [**owner** *ownername*]	ÏÔAu×M

ÏGÄà -

3 NTP

3.1 debug ntp

/ NTP AAQÄ

debug ntp

no debug ntp

–D	EÄ
-	-

5,Õ5BÐ 5,ÕÁ

Q (MÄ

5Ô 0E> NTP s6ÑAÊEAQgÐ,XAAQÈ>LpAÏL8Ä

G5BÐ Ê NTP AAÔ

5XLMLHFRQJGHEXJÐ

Q	EÄ
-	-

GÄÀ -

3.2 no ntp

GÁ ntp ÀáÈ6Ê<XÀÈ8 ntp ,XÓ5BÇÄ

no ntp

–D	EÄ
-	-

5,Õ5BÐ 5,Õ NTP áGÁ

Q 5Bã

5Ô 5,Õ NTP s6ÑÁÈG5BZ NTP áê NTP]AÈ NTP s6Ñ

G5BÐ G5BÈÁ NTP á

5XLMLHFRQJQ

Q	E
ntp server	NTP

-

3.3 ntp access-group

G5B NTP XA **no**

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*

–D	E
peer	NTP
serve	NTP
serve-only	NTP
query-only	NTP

NTP

ip access-list	Î IP A[

ĠÄ -

3.4 ntp authenticate

G5B NTP

5,Õ5BÐ ü3y

Q G5Bã

SÐ G5B<AA3yÈGü md5 E>tsÈyÕX key-id ÛsÈÃ **ntp trusted-key** Ú¹ key-id ĥ,X3yA5BÈyÄ
3yL$ 1024 ÈÕyÄ

G5BÐ G5BÕ ID 6 ,XAA3yÖ
5MRQQQHRRRRS

ÌGQ

Q	EÄ
ntp authenticate	**Ôy**
ntp trusted-key	**5Ÿ**

GÄÈ -

3.6 ntp disable

GÍyy NTP y[,Xs6Ñ
ntp disable

ÌDAÈ

–D	EÄ
-	-

5,Õ5BÐ 5,ÕÑ« NTP y[

Q yG5Bã

SÐ 5,ÕX NTP y[FÑ4v0ÃÊsA<ÈEA5BEs6Ñ
ĥyX NTP y[Ä

IP

G5BÐ G5BÈyy NTP y[Ö
5XLMLHFRQJQQGLVDEOH

ÌG7b•JÈ$ÈAÈXÐ8XDÈ–ÈcVVÈ(21y[ÀÈ@ 5e4@ÈVVE–Ÿ

3.7 ntp master

A5BÊs0 NTP ÊsÊs–5ÑM4ÈA5BÊQX no 6ã

¥ NTP ÊsA5BÄ

ntp master *[stratum]*

no ntp master

–D	EÄ
stratum	*bÊÈ* 1 158ÊA–DÎTAx 8Ä

5,Õ5BÐ 5,ÕÓ5B NTP Êss6Ñ

Ã G5Bã

ÈÊ E¥4¯ÑÿÈ6¹,XÊs¶E>9Ä¹+b54¢yLp1s5à

ÐÈ4¶Ês¶ÊEAQ5BÊs–5ÑM4ÈA5Ûà

9Ê

Ê>ZA5BÈ4¶ÊsDDÈ,XÊs¶E>9Ä

ō Ŏ

ÌG5BÐ ÎS×)A5BÊs–5ÑM4ÈA5BJÊsD 12Ä

Q	EÄ
-	-

ÌGÄÈ -

3.8 ntp server

NTP v0ÃÔ NTP áÄ

ntp server *ip-addr* [**version**

version	[illegible] NTP ,XÄ-3 [illegible] NTPv3 (
if-name	[illegible] NTP y[,X[illegible]
keyid	[illegible]
prefer	[illegible] Prefer á<

5,Õ5BÐ 5,Õ5B NTP áÄ

Q G5BÄ

SÊ ,Â X24[illegible] 20 Ä
[illegible]
[illegible]
[illegible]
[illegible] prefer [illegible]
G5B NTP [illegible] IP ,XJÃ NTP á
[illegible]

G5BÐ G5B[illegible] NTP serverÄ
,3Y G5BÖXLMLHFRQJ[illegible]
,3Y G5BÖXLMLHFRQJ[illegible]

ÌGÐ

Q	EÄ
no ntp	[illegible] NTP ás6Ñ

GÄÈ -

3.9 ntp synchronize

E> NTP rÊÄ

ntp synchronize

no ntp synchronize

ÌDAÈ

–D	EÄ
-	-

5,Õ5BÐ -

Q G5Bã

SÊ NTP [illegible] 8 [illegible]
[illegible]

G5BÐ G5B[illegible] NTP rÊÖ

[illegible]

ÌGÇ	Ç	ÆÄ
	ntp server	**ûpô** NTP á< JE>ã

ÏGÄÈ -

3.10 ntp trusted-key

ô ID ń,XšyG5BÄyÄ

ntp trusted-key *key-id*

no ntp trusted-key *key-id*

Ï–DAÈ	–D	ÆÄ
	key-id	**ÿ** IDÄ

Ï,Õ5BÐ TAÄÄyÄ

ï5,Õ5BÐ TA¡G5Bnè@Êss6Ñ

ïÐ Ç5Bã

ïSÊ Sûs6Ñ} NTP v0ÃSÊÊsûak9,XÊsÈÛX.@ÊsÄÛX.@
ÊsGSAÛAÛXÊÄ4ÇD|Ä
5,ÕÇ5B NTP È@ÊsÄ5Bè NTP v0ÃÊÊsûaäÊ
ÈÛX.@ÊsÄ

ïG5BÐ /8×)G5B NTP nè@Ês
5XLMLHFRQJÜXSGDWFDOHQDU

ïÏGÐ

Ç	ÊÄ
-	-

ïGÄè -

3.12 show ntp status

/ NTP ÇÄ

show ntp status

ïÏ–DAè

–D	ÊÄ
-	-

ï5,Õ5BÐ -

ïÐ ÇewÿS–rSyfÿÄÊ@q(VTVÇ¨ÈVÇ4@
(Ma

ïSÊ Vp2Ï4³X NTP áÊX NTP ÇÈÊaáÄÇÏ
ÇÄ

4 SNTP

4.1 sntp enable

AQ5BÔ SNTP s6ÑQX **no** ÉMÚA5BÕ–Disable Ä

sntp enable

no sntp enable

–D	ÉÄ
-	-

5,Õ5BÐ 5,Õ SNTP Ò Disable

Q 5Bã

SÑ Sü **show sntp** Q SNTP ,Ì–DÄ

5XLMLHFRQJVQHQEOH

Q	ÉÄ
show sntp	**/** SNTP ,XG5BÒ
clock update-calendar	**Ê.Ê**
clock set	**A5Ê**

GÄÈ -

4.2 sntp interval

AQ5B SNTP Client LÔnÊ NTP/SNTP Server 9Ês,XÈhÄ

sntp interval *seconds*

no sntp interval

–D	ÉÄ
seconds	*nÊÈ* 60 /¦-65535 /¦Ä

5,Õ5BÐ 5,Õ 1800s

Q 5Bã

SÑ Sü **show sntp** Q SNTP ,Ì–DÄ

sntp enable

ÏG5BÐ 5XLMLHFRQJVQLQUDO

ÏGÐ

Q	ÆÄ
sntp enable	**Ô** SNTP
show sntp	**ß** SNTP ,X,ÌG–D
clock update-calendar	**Ê.Ê**

ÏGÄÈ -

4.3 sntp server

AQ5B SNTP ServerÈ SNTP #,` NTP ÈÈp Server Ã5Bä internet @ÿX NTP ServerÄ

sntp server *ip-address*

no sntp server

ÏÌDAÈ

–D	ÆÄ
ip-address	NTP/SNTP á,X IP

ÏÕ5BÐ 5,ÕÁ5BÏ NTP/SNTP á<

Ð ©5Bã

ÏÊÔ Sü **show sntp** Q SNTP ,ÌG–D

ÏG5BÐ 5XLMLHFRQJVQVHUMU

ÏGÐ

Q	ÆÄ
show sntp	**/** SNTP ,XG5BÕ
sntp enable	**Ô** SNTP

ÏGÄÈ -

4.4 show sntp

AQ SNTP ,X,ÌG–DÄ

show sntp

ÏÌDAÈ

–D	ÆÄ

-	-

Ö,Õ5BĐ -

Q (Mã

ÖSÊ Sử **show sntp Q** SNTP ,Ò–D

Ö5BĐ

```
5XLMLHVRZQ
6173VDHQEOH
6173VHUYU
6173VQLQUDO
7LPH]RQ
```

ÌGQ

Q	ÆÄ
sntp enable	**Ô** SNTP
show sntp	**ß** SNTP ,X,Ò–D

ÖÄÈ -

5 SPAN

5.1 monitor session

[illegible] SPAN [illegible] no [illegible]

monitor session *session_number* {**source** [**interface** *interface-id* | **vlan** *vlan-id-list*] [**both** | **rx** | **tx**] | **destination interface** *interface-id* { **encapsulation | switch** } | **mac** {**source** *mac-addr*| **destination** *mac-addr* } [**both** | **rx** | **tx**] | **filter vlan** *vlan-id-list*} [**acl** *name*]

no monitor session *session_number* [source [illegible]

acl

session 1 SPAN session 1

gigabitEthernet 1/1 gigabitEthernet 1/8

show monitor	SPAN

RX TX VSPAN

5.2 show monitor

SPAN

show monitor [**session** *sn*umbeor

6 RSPAN

6.1 monitor session

no RSPAN

monitor session *session_num* {**remote-destination** | **remote-source**}

monitor session *session-num* **destination remote vlan** *vlan-id* **interface** *interface-name* [**switch**]

monitor session *session-num* **source interface** *interface-name* [**rx** | **tx** | **both**]

–D	
session-num	
vlan-id	**remote span vlan id**
Interface-name	

-

end Ctrl+C

exit

show monitor	

-

6.2 remote-span

RSPAN VLAN

[**no**] **remote-span**

-IP

Ï¡ IP CÃÇÌ¸GYÈ8VÖ

1. #AÍ¸G
2. ECMP/WCMP 1*+9
3. RIP
4. RIPng
5. OSPFv2
6. OSPFv3
7. IS-IS
8. 1*+9CÃ
9. VRF

1

1.1 accept-lifetime

Ïðyjsÿ ÊÅ3y,Xyåx*ÓÈÊ*Q **accept-lifetimeÄÇ** **no 6**

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

no accept-lifetime

Ð	ÆÄ
start-time	**ÛÓ*ÇÊÄÖ** *hh:mm:ss month date year* *hh:mm:ss date month year* *hh*—Ê *mm*—Ú *ss*—/¦ *month*—Ü *date*—¹ *year*—H 5,ÕÇÄÊÈ Jun 1È993
infinite	**ÅÅ3ÇÊ**
end-time	*ÿÓ3Ê* *start-time*
duration *seconds*	*ûÓ* *start-time* ÇÊ-2147483646

Ï5,Õ5BÐ ÏyjsÿÈÝ

Ïð ÏyjsÿG5Bã

Ï5*Ê S*ÅÇÏyyåx*ÓÄ

Ï5B_Ð G5BÈ5BÏy 1 ,Xy*ó<ó 2000 H 9 Ü 9 ÈÊ• 2011 H 10 Ü 12 ÈÊÄ

5XLMLHFRÇJNHÏFKDLÇLSNHV

5XLMLHFRÇJNHÏFKDLÇH\

5XLMLHFRÇJNHÏFKDLÇHÏDFFHSWOLIHWLPH6HS'HF

ÏGÇ

Q	ÆÄ
-	-

ÏGÄÈ -

1.2 ip default-network

ØG5B5,Õ%4ÈÈ*ëG5BÇ

permit	**íbGK¥ÆÊÃ**
ip-prefix	*G¥ÆÊÃz¢* 0 32Ä
minimum-prefix-length	*ú¢Ê8è¤XCKÏKSz* **ge**
maximum-prefix-length	*ú¢Ê8è¤X4ÊKSz* **le**

Ï5,Õ5BÐ ùÿ¼Ê<

Ïº <G5Bã

Ï*Ð **ip prefix-list ÇúG5B** IP ¼ÊÄ ¼Ê<*ü permit ÊÙ deny GK+9¼ÊG¦XÿÆ ¼¥„X|0Ä ¼Ê<>*9nbúÇX2'.BGÊ8èÄ ge ÊÙ le GK+*9nÇúG¦X ¼ÇX8èÊÿ4Fg9 ip-prefix È&I#,XGÊG5BXÿpÇÝ ge ÊÙ le GK+È ip-prefix ¤Z'.B,X¼ÊÈXÿpÊ¼g9 geÊ8è minimum-prefix-length 32Ÿ pÊ¼g9 leÊ8è ip-prefix ,X}-ÕSz maximum-prefix-lengthXÿp5ÈÆg9Ê! 8è minimum-prefix-length maximum-prefix-lengthÊÄ ip-prefix }-Õ minimum-prefix-length ` maximum-prefix-length , X G 2 Ï Öip-prefix } - ÕK S z < minimum-prefix-length < maximum-prefix-length <= 32Ä

Ê5B_Ð Í OSPF #AÇ¥ý RIP ÊgÎXCÃÁÇ¥ÝÂX IP E> E¦È¦B6(,X IP ¼Ê ><n(#X¢Ä IP ü201.1.1.0/24 8è,XCÃÇ>ÿÄ

```
5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJLSSUHIL[OLVWSUHSHUPLW
5XLMLHFRQJURXWHURVSI
5XLMLHFRQJURXWHUGLVWULEXWHOLVWSUHIL[SUHRXWULS
5XLMLHFRQJURXWHUHQ
```

ÏÊG Ç

Ç	ÊÄ
-	-

Ê GÄè -

1.4 ip prefix-list description

Ç¤Ê<#Ï[+ÊÄÊ*ü **ip prefix-list description ÄÇ** **no 6ê8Ô 4ÇÊÄ**

ip prefix-list *prefix-list-name* **description** *descripton-text*

Ä è

Ð	ÊÄ

prefix-list-name	*¼Ê<á*
descripton-text	*¼Ê<£Ä*

ï5,Õ5BÐ ü*Ÿï¼Ê<[+£Ä

ÐÇ <G5Bã

ï*ÊÛ -

ï5B_Ð IP ¼Ê<#ï[+£Ä Deny routes from Net-AÄ

```
5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJLSSUHIL[OLVWSUHGHVFULSWLRQIQRXWHVIURP1HW$
```

ïÌGÇ

Ç	£Ä
-	-

ïGÄÈ -

1.5 ip prefix-list sequence-number

Ü¼Ê<*ïcs6ÑÏ*ü **ip prefix-list sequence-number** **no 6ÊÔ**

¼fcs6Ñ

ip prefix-list sequence-number

ïÈ

Ð	£Ä
-	-

ï5,Õ5BÐ ü*Ÿ¼Ê<fcs6Ñ

ÐÇ <G5Bã

ï*ÊÛ -

ï5B_Ð ¼Ê<*ïcs6Ñ

```
5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJLSSUHIL[OLVWVHTXHQHXPEHU
```

ïÌGÇ

Ç	£Ä
-	-

ïGÄÈ -

1.6 ip route

ÜG5BM-ÕÃÈÈ*ëG5BÇ ip routeÄÇX no 6ã8ÆE5B,XM-ÕÃÄ

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

ÏÈÈ

Ð	ÆÄ
vrf_name	ÃÇ VRF
network	ÂÆ
net-mask	ÂÆÕ
ip-address	*M-*ÃÇ
Interface	*M-*ÃÇ
distance	*M-*ÃÇÚÉ
tag	*M-*ÃÇ?ÂÈ•

Ã -

1.7 ip routing

Ø*ü IP CÃs6ÑÃ AÇÐX no 6ÃGKÁ IP CÃs6Ñ

ip routing

no ip routing

Ð	Ä
-	-

5,Õ5BÐ *ü IP CÃ

<G5Bã

'A'Ø9yA'ÐÙ VOIP 5%GA'ÃÒ IP CÃ6ÑÃGKÁ IP CÃs6Ñ

G5B_Ð GKÁ IP CÃs6Ñ

5XLMLHFRQJQLSURXWLQ

Q	Ä
-	-

GÄÈ -

1.8 ip static route-limit

ØG5BM-ÕÃ,X5DÈÈ*üG5BQ **ip static route-limitÄÇ** no 6Ã'5BT¬ AxCÃ5DÄ

ip static route-limit *number*

no ip static route-limit

Ð	Ä
number	ÃÃ 1-10000È,Õ 1024Ä

5,Õ5BÐ Ð5,Õ

<G5Bã

G5BM-ÕÃDÈ$X,ÂXZM-ÕÃ,X5DÈÈ› **ip static route-limit** G5BM-ÕÃDÈ$ ¶*ÿ6G5B,XM-ÕÃDÈCYEA'5B,XÈÈ› **show running-config Ã**

G5B,XM2TAxM-ÕÃ

Ï5B_Ð A’5BM-ÕÃD5×

1.11 ipv6 prefix-list sequence-number

Ø IPv6 4ÊÈ<*fcs6ÑÈ*ü **ipv6 prefix-list sequence-number** ÖÇ **no 6ã**
#Êfcs6Ñ
ipv6 prefix-list sequence-number

Ð	Ä
-	-

ï5,Ã5BÐ ü*4ÊÈ<fcs6Ñ

ÇÐ <G5Bã

ï*ÊÐ -

ïG5B_Ð ß$ IPv6 4ÊÈ<*fcs6Ñ
5XLMLHFRÇJXUHWHUPLÇO
5XLMLHFRÇJLSYSUHIL[OLVWVHTXHÇHÇPEHU

Ç	Ä
-	-

ïGÄÈ -

1.12 ipv6 route

ØG5B ipv6 M-ÕÃÈÈ*üG5BÇ ipv6 routeÄÇ no 6ã8ÆÈ5B,XM-ÕÃÄ
ipv6 route *pv6-prefix / prefix-length* { *ipv6-address* | *interface* [*ipv6-address*] } [*distance*] [**weight** *number*]

Ð	Ä
ipv6-prefix	IPv6 4ÈÑOFI~ RFC4291 ,X></6ã
prefix-length	IPv6 4ÇXKSÈ6ÑOtÞ
Ipv6-address	M-ÕÃ,XÔÇ
interface	M-ÕÃ,XÔÇ
distance	M-ÕÃ,X1u)Ú±

number

4	<G5Bã
Ï S*Ð	M-ÕÃ,X5,Õu)Ú/• 1ÈEA’5B1u)Ú/ÃÊÕÃ:,XCÃ2M-ÕÃÝ
	|ÕÃ:Ê*ïM-ÕÃÄÈEA’5BM-ÕÃ,X1u)Ú/Ã),4“CÃ,XÑÊXM-Õ
	CÃÊ/ÄB|CÃÄ OSPF CÃ#A,X1u)Ú/• 110ÑM-ÕÃ,X1u)Ú/A’5B
	125È'C¥ OSPF ,X4“CÃpÊB#G7ÑM-ÕÃ,X4“CÃ
Ï G5B_Ð	rtô 2001::/64 ,Ê%4,XM-ÕÃÊÇ 2002::2Èu)Ú/• 115Ä
	LSYURXWH

ipv6 route	G5B ipv6 M-ÕÃ
show ipv6 route	/ IPv6 CÃ><Ä

ÏGÄè -

1.14 ipv6 unicast-routing

Ï*ü IPv6 CÃs6ÑÐ AÄQX no 6ÑKÁ IPv6 CÃs6Ñ

ipv6 unicast-routing

no ipv6 unicast-routing

ÏÐè

Ð	ÈÄ
-	-

Ï,Õ5BÐ *ü IPv6 CÃ

ÏÐ <G5Bã

Ï*Ð 'A'Ûº9yA'ÐÒ VOIP 5%GA'ÐÒ IPv6 CÃEÑÑKÁ IPv6 CÃs6Ñ

ÏG5B_Ð GKÁ IPv6 CÃs6Ñ

5XLMLHQLSYXQFDVWURXWLQ

ÏÎGÐ

Q	ÈÄ
ipv6 route	G5B ipv6 M-ÕÃ
show ipv6 route	/ IPv6 CÃ><Ä

ÏGÄè -

1.15 key

ÏðyJÒÐyJÈ9ðyJÒyG5BÒÈ*Q **keyÄQ** **no 6ÑÛ**

ðÄ

key *key-id*

no key *key-id*

ÏÐè

Ð	ÈÄ
key-id	ðyJÒxAðy,X IDÈÒ-2147483647

Ï,Õ5BÐ ðyJÒy

ÏÐ ðyJÒG5Bã

Ï*Ê	S*ÃÇ¾yÄ				
Ï5B_Ð	G5BÈ5B¾yJÒ	ripkeysÌÈ9¾yJÒ	G5BÈ5B¾y	1ÌÈ9¾y	1 G5BÃ

0	**[illegible]**
7	**[illegible]**
text	*[illegible]*

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]	[illegible]
-	-

[illegible]

1.18 match interface

[illegible] **match interface** [illegible] **no** [illegible]

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

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

[illegible]	[illegible]
interface-type	*[illegible]*
interface-number	*[illegible]*

[illegible]

[illegible]

[illegible] **match interface** [illegible]

[illegible] OSPF [illegible]

[illegible] RIP [illegible] RIP [illegible] OSPF [illegible]

[illegible] route maps [illegible]

[illegible] 1 [illegible] **match** [illegible] 1 [illegible] **set** [illegible]

[illegible] **match** [illegible] **set** [illegible]

[illegible]

[illegible]

Ï

Ï5B_Ð G5B OSPF CÃ#A,GÚ RIP CÃÈ¶ÇÔÇ fastethernet 0/0 ,X RIP CÃÄ

5XLMLHFRQLJURXWHURVSI

5XLMLHFRQLJURXWHUUHGLVWULEXWHULSVXEQWVURXWHPDSUHGULS

5XLMLHFRQLJURXWHUQWZRUNDUHD

5XLMLHFRQLJURXWHUH[LW

5XLMLHFRQLJURXWHPDSUHGULSSHUPLW

5XLMLHFRQLJURXWHPDSPDWFKLQWHUIDFHIDVWHWKHUQW

ÏÎGÇÐ

Ç	ÆÄ
match ip address	**GAÊÅ**
match ip next-hop	**GAÊÔÇ**

Ï*Ð **match ip address** ¸Q6Ã¸Ã¸Ã¸Ã

CÃ¸Ã¸ÃE7¸Ã¸ÃE7¸Xs6ÃÃ OSPF CÃ¸XCÃG¡

éî RIP CÃ¸ÃÃ RIP CÃ¸XCÃG¸éî OSPF CÃ¸Ã¸Ã¸X,Ì

fG¸Ã IP CÃ#AĶÈ> Ä

ÚÃG¸ÃEÚÃ¸Ã¸ute maps Åxh*¸ÃÃ¸KÈXCÃ¸Ìé> ý

Ê{¸ÃÃ¸5B¸Ã 1 ¸X **match** Ç 1 ¸X **set** ¸Ã¸p

ùÝ match ¸ÇÝ¸pùÝ **set** ¸Ä

CÃ¸XG5BÚl#Ã*ÚÃG¸*+9CÃ¸XG5BÃuV)h*ÚÃ¸G5Bs

)ÚXÈÚ¸XÇ¸ÃÃSà*ÚÃG¸ÃKCÃ#Aĥ*ÚÃÈ

J6Ã*¡X¸Ã

Ï5B_Ð G5B OSPF CÃ#AĢÚ RIP CÃÈ¸ÚÚ"KÂ< 10 ,X RIP CÃÈ OSPF CÃÈ

AÈCÃ¸X2O_ÈÈCÃ type-1Ã£ 40Ä

```
5XLMLHFRQJURXWHURVSI
5XLMLHFRQJURXWHUUHGLVWULEXWHULSVXEQWVURXWHPDSURHGULS
5XLMLHFRQJURXWHUQWR2UNDUHD
5XLMLHFRQJURXWH[LW
5XLMLHFRQJDFFHVVOLVWSHUPLW
5XLMLHFRQJURXWHPDSURHGULSSHUPLW
5XLMLHFRQJURXWHPDSPDWFKLSDGGUHVV
5XLMLHFRQJURXWHPDSVHWPHWULF
5XLMLHFRQJURXWHPDSVHWPHWULFWSHWSH
```

ÏÏG¸Ç

Ç	Ã
access-list	**nA**
match interface	**GCÃ¸Ç**
match ip next-hop	**GA¸ÇÇ**
match ip route-source	**GA¸ÇCÃ**
match metric	**GC¸ÃG£**
match route-type	**GC¸Ã2O_**
match tag	**GC¸Ã**
set metric	**A5BG¸ÃG£**
set metric-type	**A5BG¸Ã2O_**
set tag	**A5BG¸Ã**

ÏGÄ -

1.20 match ip next-hop

Ç¸G¸Ç IP 0Ú"KÂ<¢ê<?X,Ê%4CÃÈCÃÒ5BÇ **match ip next-hop**Ä¸Ç **no** 6Ã8Ã5BÄ

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

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

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

ÏêÐÅ

Ð	ÉÄ
access-list-number	*AÐÊ<Ë* ÊÌ"KÊ<ËÈ99 È300-1999 =)A"KÊ<ËÈ00-199 È2000-2699
access-list-name	*AÐÊ<á*
prefix-list *prefix-list-name*	*ØÁKÊ<á*

Ï¿ÕÑ5BÐ -

ÏÇ CÁÀÒ5BÄ¾

Ï*ÐÔ **match ip next-hop** ÇÖ6ÕÊÞÄÊÙÙÊ

CÁÇÐÕÁE7ÒÇÞÕÁE7ÒXs6ÑÌ ÙÑÌ OSPF CÁE7ÒÇÚ

ÞÕÁE7ÒXs6ÑÌÙÑÌ OSPF CÁ³XCÁGÞÎî RIP CÁÈÃ

Ú RIP CÁ³XCÁGÞÎî OSPF CÁÑÃ,X,ÌGÞK IP CÁ#A,

KÈ> Ä

ÒÁGÞÆÉÒÁÕute maps ÅXh*ÞÃ¤KÈXCÁ,ÌÉ> Ý

ÞX{ÞÃÒ5BÞÆ 1 ÞX **match** ÇÖ 1 ÞX **set** ÇÖÞ

ÙÝ match ÇÖÝÞÙÝ **set** ÞÖÄ

Ï¿5B_Ð G5B OSPF CÁ#AÇÚ RIP CÁÆÄ RIP CÁ,XÔÇÖÙ"KÊ< 10 ê 20È OSPF

AÒÉÇÚÌ

```
5XLMLHFRQJURXWHURVSI
5XLMLHFRQJURXWHUUHGLVWULEXWHULSVXEÇÖWVURXWHPDSUHGULS
5XLMLHFRQJURXWHUÇÖWZURUHD
5XLMLHFRQJURXWH[LW
5XLMLHFRQJDFFHVVOLVWSHUPLWKRVW
5XLMLHFRQJDFFHVVOLVWSHUPLWKRVW
5XLMLHFRQJURXWHPDSUHGULSSHUPLW
5XLMLHFRQJURXWHPDSPDWFKLSÇÖ[WKRS
```

Ï¿ÇÖ

Ç	ÉÄ
access-list	**nAÊ**
match ip address	**GAÞÊ**
match interface	**GCÁÒÇ**
match ip route-source	**GAÞÊCÃ**
match metric	**GCÁÇÉ**
match route-type	**GCÁÒO_**

match tag	**GÇÃÛ„**
set metric	**A5BGÓÃGƒ**
set metric-type	**A5BGÓÃ2O_**
set tag	**A5BGÓÃÛ„**

ÏGÄÈ -

1.21 match ip route-source

ÙGÓÃ¶ IP 0Ä“KÂ<4Ê<?X,Ê%4ÇÃÈÇÃÒ5BÇ **match ip route-sourceÄÇ** **no 6ã8Ó5BÄ**

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

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

ÏÄÈ

Ð	ÉÄ
access-list-number	*AÂ<Ë*
access-list-name	*AÂ<á*
prefix-list *prefix-list-name*	*ÙÂ<á*

ÏÕ5BÐ -

ÏÇ ÇÃÒ5Bã

ÏÓ*Ð **match ip route-source ÇÃÂÃ**

ÇÃÇÃÈÇÃÈÇÃÈÇÃ6ÑÃ OSPF ÇÃ³XÇÃG¡ ÉÎ RIP ÇÃÈÃ RIP ÇÃ³XÇÃGÉÎ OSPF ÇÃÈÃ,X,Ì fGÇ IP ÇÃ#AÇÈ> Ä

ÇÃGÉÈÇÃÒ route maps ÅXh*ÈÇÃÈXÇÃ,ÌÉ> 5 ÊX{ÈÇÃÒ5BÈ 1 ÊX **match Ç** 1 ÊX **set Ç**

ÜÝ **match ÈÝpÜÝ** **set ÈÄ**

ÏG5B_Ð G5B OSPF ÇÃ#AÇÓ RIP ÇÃÄ RIP ÇÃ,XÇÃ¶ IP 0Ä“KÂ< 5È OSPF AÇÉ GÇ

5XLMLHFRÇJURXWHURVSI

5XLMLHFRÇJURXWHUUHGLVWULEXWHULSVXEÇWV5XLMLHFRÇJURXWHUURXWHPDSUHGULS

5XLMLHFRÇJURXWHUÇWZUNDUHD

5XLMLHFRÇJURXWHUH[LW

5XLMLHFRÇJDFFHVVOLVWSHUPLWKRVW

5XLMLHFRÇJURXWHPDSUHGULSSHUPLW

5XLMLHFRÇJURXWHPDSPDWFKLSURXWHVRXUFH

ÌGÐ

Ò	ÆÄ
access-list	**nAÂ**
match ip address	**GÀÂ**
match interface	**GÇÃÔÇ**
match ip next-hop	**GÀÂÔÇ**
match metric	**GÇÃG£**
match route-type	**GÇÃ2O_**
match tag	**GÇÃÛ„**
set metric	**A5BGÓÃG£**
set metric-type	**A5BGÓÃ2O_**
set tag	**A5BGÓÃÛ„**

ÏGÄÈ -

1.22 match ipv6 address

nÙGÁ“KÂ<ÂÔ<AÇ,Ã IPv6 5%4ÇÃÈÏ*ÇÃÒ5BÒ **match ipv6 addressÄÒ no 6ÂÁÉ5BÄ**

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

no match ipv6 address

ÏÈÂ

Ð	ÆÄ
access-list-name	*AÂ<á*
prefix-list *prefix-list-name*	*ÙX* IPv6 ÁÔ<á

Ï,Õ5BÐ -

ÏÒ ÇÃÒ5Bã

ÏS*Ô ÔÎ route map ,X sequence 6ÑÔÎ IPV6 ACL×

Route map ,X sequence 5,ÇÏ 10×

IPv6 PBR s6ÃÑ prefix-list ÊS*ÈÊÐáÄ

ÇÃÇÃÃE7ÇÃÃE7Xs6ÑÃ OSPF ÇÃ³XÇÃG¡

ÁÎ RIP ÇÃÈÃ RIP ÇÃ³XÇÃGÁÎ OSPF ÇÃÈÃ,X,Ì

fGÁK IP ÇÃ#AÇÈ> Ä

ÇÃGÁÈÏ ÇÃÔ route maps ÅXh*ÇÃ*ÈXÇÃ,ÌÉ> Ý

ÊX{ÔÃÒ5BÃ 1 ÁX **match Ò** 1 ÁX **set ÒÎp**

ÜÝ match ÒÝpÜÝ set ÒÎÄ

ÇÃÒXG5BÚÏ#Ã*ÇÃGÁ*+9ÇÃ,XG5BÄuV)h*ÇÃÈG5Bs

)ÔXÈÒXÇÃÈSÀ*ÇÃGÁXÇÃ#Ah*ÇÃÈ

J6Ñ*¡XÇÃ

Ð	G5B OSPF CÃ#A,GÚ	RIP CÃÈ¤ÚÄ“KÂ<	v6acl ,X RIP CÃÈ	OSPF CÃ³	
	Ñ£	30Ä			

5XLMLHFRQJLSYURXWHURVSI
5XLMLHFRQJURXWHUUHGLVWULEXWHULSVXEQWVURXWHPDSUHGULS
5XLMLHFRQJURXWHUH[LW
5XLMLHFRQJLSYDFFHVVOLVWYDFO
5XLMLHFRQJLSYDFOSHUPLWLSYDQ
5XLMLHFRQJLSYDFOH[LW
5XLMLHFRQJURXWHPDSUHGULSSHUPLW
5XLMLHFRQJURXWHPDSPDWFKLSYDGGUHVVYDFO
5XLMLHFRQJURXWHPDSVHWPHWULF

ÌGÐ

Ð	ÆÄ
ipv6 access-list	**n** IPv6 A“KÂ<?
match interface	**GCÃÔÇ**
match ipvGCÃÔÇpÂÔ	

Ïâê

Đ	Ë.Ä
access-list-name	*Aß<á*
prefix-list *prefix-list-name*	></Ø,X IPv6 ¼Ê<á

Ь,Õ5BĐ -

Ïê CÃÒ5Bã

Ь*Ð CÃ¡ÐÃE7Ø¢ÐÃE7[¡Xs6ÑÑ OSPF CÃ¡XCÃG¡ é¤î RIP CÃ¤Ñ RIP CÃ¡XCÃGêî OSPF CÃ¢ÃX,Ì fGÊK IP CÃ#AĶÈ> Ä

ÐÃGÊE€ÐÃute maps ÅXh*ÊÃĶÈXCÃ,Ìé> ý ÊX{ÊÃÒ5BÊ 1 ÞX **match Ò** 1 ÞX **set ÏêÞ** **üÝ match ÈÒÝpüÝ** **set ÊÄ**

CÃ¡XG5Bú#Ê*ÐÃGÞ*+9CÃ,XG5BÚuV)h*ÐÃÈG5Bs

)ÒXÈÐ¡XÐ¢ÊSà*ÐÃGÊXCÃ#Aḥ*ÐÃÐ

J6Ñ*¡XÐ¢Ã

Ï5B_Đ G5B OSPF CÃ#AÐÞ RIP CÃÈÈ¢ÞÚ“KÊ< v6acl ,X RIP CÃÈ OSPF CÃ³ ÊÉ 50Ä

```
5XLMLHFRQJLSYURXWHURVSI
5XLMLHFRQJURXWHUUHGLVWULEXWHULSVXEQWVURXWHPDSURHGULS
5XLMLHFRQJURXWHUH[LW
5XLMLHFRQJLSYDFFHVVOLVWYDFO
5XLMLHFRQJLSYDFOSHUPLWLSYDQ
5XLMLHFRQJLSYDFOH[LW
5XLMLHFRQJURXWHPDSURHGULSSHUPLW
5XLMLHFRQJURXWHPDSPDWFKLSYURXWHVRXUFHYDFO
5XLMLHFRQJURXWHPDSVHWPHWULF
```

ÏÎG¢Ð

Ð	Ë.Ä
ipv6 access-list	**n** IPv6 A“KÊ<?

1.25 match metric

0GCÃ,XGÈÈ*ÄÑÒ5BÇ **no 6a8É5BÄ**

1.26 match origin

ÙGÁ“KÂ<AÇ,X9ß,XCÃÈÈ*CÃÒ5BÇ **match originÄÇ** **no 6ã8**
É5BÄ

match origin { **egp** | **igp** | **incomplete** }

no match origin [**egp** | **igp** | **incomplete**]

ÏÀÈ

Ð	ÉÄ
egp	**9ßE0Ã** EGP
igp	**9ßX** IGP
Incomplete	**9ßÍ2O_**

Ï5,Õ5BÐ -

Ç

CÃÒ5Bã

Ï*Ô

6ÑÔ9ß,XCÃÈÑ9ß2O_Ä
AÇÐA’5BG!XCÃ9ß,X5Ê

Ï5B_Ð -

ÌGÇ

Ç	ÉÄ
match metric	**GCÃG£**
match origin	**GCÃ¥**
set metric	**A5BGÓÃG£**
set origin	**A5BGÓÃ2O_**

ÏGÄÈ -

1.27 match route-type

ÙGCÃ,XCÃ2O_ÈÈ*CÃÒ5BÇ **match route-typeÄÇ** **no 6ã8É5BÄ**

match route-type { **local | internal | external** [**type-1 | type-2**] **| level-1 | level-2** }

no match route-type [**local | internal | external** [**type-1 | type-2**] **| level-1 | level-2**]

ÏÀÈ

Ð	ÉÄ
local	***ÃCÃ**
Internal	OSPF ,XYFCÃ
external	ÊCÃ(BGP ê OSPF ,XÊCÃ)
**type-1	type-2**	OSPF ,X2O_ 1 ê2O_ 2 ÊCÃ
**level-1	level-2**	ISIS 1 ê 2 CÃ

Ï5,Õ5BÐ

Ð CÃÒ5Bã

Ï*Ð CÃ¡ÐÃE7ÐÃE7Ïxs6ÑÃ OSPF CÃ¾XCÃG¡
ÉÎ RIP CÃÈÃ RIP CÃ¾XCÃGÉÎ OSPF CÃÈÃ,X,Ì
fGÉK IP CÃ#AÇÈ> Ä
CÃGÉÈÈCÃÒ route maps ÅXh*ÐÃ¹KÈXCÃ,ÌÉ> Ý
ÊX{ÐÃÒ5BÃ 1 ÐX **match Ò** 1 ÐX **set Ò**
ÜÝ **match ÒÝpÜÝ** **set ÐÄ**

Ï5B_Ð G5B RIP CÃ#AÇÚ OSPF CÃÄRIP ÇÚ OSPF CÃ¾XYFÇÃÄ

5XLMLHFRÐJURXWHUULS
5XLMLHFRÐJURXWHUUHGLVWULEXWHRVSIURXWHPDSUHGULS
5XLMLHFRÐJURXWHUÐWÆUN
5XLMLHFRÐJURXWHUH[LW
5XLMLHFRÐJURXWHPDSUHGULSSHUPLW
5XLMLHFRÐJURXWHPDSPDWFKURXWHWSHLÐWHUÐO

ÏÎGÐ

Ò	ÆÄ
access-list	**nAÊ**
match ip address	**GAÊ**
match interface	**GCÃÔÇ**
match ip next-hop	**GAÊÔÇ**
match ip route-source	**GAÊCÃ**
match metric	**GCÃG£**
match tag	**GCÃÛ„**
set metric	**A5BGÉÃG£**
set metric-type	**A5BGÉÃ2O_**
set tag	**A5BGÉÃÛ„**

ÏGÄÈ -

1.28 match tag

ÜGCÃ,XÛÈÈ*CÃÒ5BÒ **match tagÄÒ** **no 6ÃÉ5BÄ**

match tag *tag* [*…tag*]

no match tag [*tag* [*…tag*]]

ÏÈ

Ð	ÆÄ
tag	*Ã„*

¢ CÃÒ5Bã

Ï*Ô **match tag ¢6Ãp** tagÄ

CÃ¡ÕÃE/ÕÃE/ÄÑ OSPF CÃ³XCÃGÉ

Eî RIP CÃ³Ñ RIP

ÏÐ <G5Bã

Ï*Ô G5B1ËÃ5D,X,ÂXÇ1ËÃ,X5DÈÊ› **maximum-paths G5B1ËÃÐ**
***ÚÞÈÈÈÈÈXÓÃÊG5BX1ËÃÊ› **show running**
config Ã5BX1ËÃ
AÇXG5BÍ ipv4 ` ipv6 ªÈÀÈG5BÆÇ'Ô ipv4 ,ÂX,XÐËÃ
X5,ÐAG5BÈ'Ô ipv6 ,ÂX,XÐËÃ5,Ð3AG5BÄ

ÏG5B_Ð A'5B1ËÃÔ 10 5ÈãÎAxÄ

```
5XLMLHFRQJPD[LPXPSDWKV
5XLMLHFRQJÐPD[LPXPSDWKV
```

ÏÎGÇ

Ç	ÊÄ
-	-

ÏGÄÈ -

1.30 route-map

ÐnCÃÐÊ9CÃÒG5BÈÊ*ïG5BÇ **route-mapÄÇ** **no 6È8Ð**
CÐnÄ

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

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

ÄÈ

Ð	ÊÄ
route-map-name	*4ÈÐÔÄÇ* CÃÊ7G5BÇÊÄ¹ áëCÃÒXÐÃÈÇCÃÒ*+9ÐÃÒ 1*+9ÍÐË
permit	**VpnZ** permit GK+ÈÊÜ match n,XGÇÄ set Ç GKÓÃÊ> {x1*+9CÃÈ set ÇBÈÈ> { ÄÊÕÃÒXÐÄ VpnZ permit GK+ÈÊÜ match n,XGÈÐ 1ÐCÃÒ*+9E> Ð,ÆÐeZ set Ç
deny	**VpnZ** deny GK+ÈÊÜ match n,XGÇÄ)ÐÈCÃÒ*+9ÄÊ> CÃGÐ*+9CÃÈÈÕ CÃÒÄ VpnZ deny GK+ÈÊÜ match n,XGÈÐ ÐÃÒ*+9E> Ð,ÆÐeZ set Ç
sequence-number	*ÆÐhÆÄÊ9kSÈÐ ÆÄ*

Ï,ÕG5BÐ 5,ÐXG5BCÃÒ

¶ <G5Bã

Ï*Ð ,Â RGOS ECÊXCÃÒ*ÿÃG{Ã*+9CÃÄ
CÃG{CÃ¡ÊÃE/GÊÃE/¡Xs6ÑÃ OSPF CÃ
+³XCÃGÿî RIP CÃÈÑ RIP CÃ³XCÃGÿî OSPF CÃ
ÄÃ,X,ÌGÿK IP CÃ#AKÈ> Ä
CÃGÿEEC Ãoute maps ÅXh*ÊÃ*KÈXCÃ,ÌÉ> 5
ÊX{ÊÃÒ5BÃ 1 ÊX **match Q** 1 ÊX **set Ÿp**
üÝ match ÈÝpüÝ set ÿÄ
'G5BCÃÊÃÈXS*üÔ&Ö
1ÅpÎÊÃÒ*+9ÈÎ *sequence-number* 10×
2ÅpÊÃÒ*+9ÈÎ *sequence-number* 9E9Æ
9E> GB
3ÅpÊÃÒ*+9ÈÎ*OÛÊÃÄ

Ï5B_Ð G5B OSPF CÃ#AGÿ RIP CÃÈÉÇÒ 4 ,X RIP CÃÈ OSPF CÃÈCÃ
pe-1E2CD5>-7<040E>]TJ/TT2.77Tf-0.0028 Tc 1 Tf7F10F945AF315AF06DD1 1 Tf0.807 0 Td<1 Tf0 Tc 7/TT0 1 Tf4 Ï5

hh—Ê

mm—Ú

ss—/¦

month—Ü

date—¹

year—H

5,[illegible]È Jun 1È

	È 1..20000È,Õ 2000Ä
max-suppress-time	ÃÑ¿ÑÃ 8È 1..255(Ús)È,Õ 4* half-life

Ï5,Õ5BÐ -

Ïð CÃÒ5Bã

Ï5*Ð S*ÄÇG5BG¦XCÃ,XCÃ95ÐÄ

Ï5B_Ð 5XLMLHFRÇJURXWHPDSWDJ
5XLMLHFRÇJURXWHPDSPDWFKDVSDWK
5XLMLHFRÇJURXWHPDSVHWGDPSHÇÇ
5XLMLHFRÇJURXWHPDSH[LW

ÏGÐ

Ç	ÆÄ
match metric	**GÇÃG£**
match origin	**GÇÃd¥**
set metric	**A5BGÓÃG£**
set local-preference	**A5BGÓÃz**

ÏGÄÈ -

1.33 set ip default next-hop

ÓÍG! match ÎXDBÛTÄxÔÇ IPÄÈ*ÇÃÒ5BÇ **set ip default next-hopÄ**
AÇ no 6ã8Ó5BÄ
set ip default next-hop *ip-address* [*weight*] [*…ip-address* [*weight*]]
no set ip default next-hop [*ip-address* [*weight*] [*…ip-address* [*weight*]]]

ÏÄÈ

Ð	ÆÄ
ip-address	Ç IP
weight	Ç¡

Ï5,Õ5BÐ -

Ïð CÃÒ5Bã

Ï5*Ð 5 set ÇÆ¤ ÏWCMP BÊÇ5E¤ È2 WCMP BÊÇ5E¤ Ê¤
> ÄÄ4Ð*Ëg9,X weight DÍ#GÆ> WCMP BÊÇ5Ä
set ip default next-hop ÇÃ6Ãp IP ÊYE› 32 Ä
Vpü ip address â weight DÊ5BÇYE› 4 X nexthop Ä

	next-hop	weight	set	WCMP

WCMP weight nexthop

weight 1

set ip next-hop ` **set ip default next-hop** ÇÜÖ G5BZ **set ip next-hop** Ç2ÏE@

¥Ç5*Ü*9CÃ5BZ **set ip default next-hop** X2ÏÊ¥Ç5*CÃ@

S*5ÇÜn*üA5BÔnTAxCÃs6ÑpECÊÇX¥ÇRE¥@

CÃ¥Ç5BXÔÇ(nexthop) Ä

h*Ü*+9CÃÊÒÜ1*+9CÃS*¡XCÃÊÊÎCÃÊÃÈ61*+94È

ß*+9FÑZ 1 ÞXGÎ0ÊÔn*Ü*+9CÃÊ¥yy,X

Ê> "ÊÜÃÊÜ1*+9,XDBÊ¡XCÃEÊ> ÊÜÃÊÜ

1*+9,XDBÊÜ1*+9n,XÇE> ÊÜ

ÇÃÜ*+9ß set Ä

G5B_Đ Ây· 1 Þ,X¢ 1.1.1.1 ÊXy[ÈpECÊÊÊÊÊÛ 6.6.6.6 ×

5à,X¢ 2.2.2.2 ÊXy[ÈpECÊÊÊÊÊÛ 7.7.7.7 Ä

5XLMLHFRQJDFFHVVOLVWSHUPLW

5XLMLHFRQJDFFHVVOLVWSHUPLW

5XLMLHFRQJLQWHUIDFHDVÇ

5XLMLHFRQJILSSROLFÙRXWHPDSHTXDODFFHVV

5XLMLHFRQJURXWHPDSHTXDODFFHVVSHUPLW

5XLMLHFRQJURXWHPDSPDWFKLSDGGUHVV

5XLMLHFRQJURXWHPDSVHWLSGHIDXOWÇ[WKRS

5XLMLHFRQJURXWHPDSHTXDODFFHVVSHUPLW

5XLMLHFRQJURXWHPDSPDWFKLSDGGUHVV

5XLMLHFRQJURXWHPDSVHWLSGHIDXOWÇ[WKRS

ÎÎGÇ

Ç	Ê Ä
route-map	**nCÃ**
match ip address	**GÀÂ**
set ip next-hop	**A5BÐÇ** IP ÈpCÃ><ÙÃB,XCÃ
set ip precedence	**A5BÐÙ** IP ì

ÈGÄ

-

1.34 set ip dscp

ÐÍG! match ÞXy[A'5B DSCP ÆË*CÃÒ5BÇ **set ip dscp** ÆÇ **no 6** 8

Æ5BÄ

set ip dscp *dscp_value*

no set ip dscp

Æ

Đ	Ê Ä
dscp_value	*AB* IP y[IP DSCP

¨ø	-
¨Ð	CÃÒ5Bã
¨S*Ð	-
¨G5B_Ð	-
¨ÌGÐ	

Ç	ÉÄ
route-map	**nCÃ**
match ip address	**GÄ**
set ip default next-hop	**A5BÐÙÔÇ** IP ÈpCÃ><ÚÁB,XCÃ
set ip precedence	**A5BÐÙ** IP ì

¨GÄÐ	-

1.35 set ip next-hop

IP

Ë¶Ñ

Ñ

ÐÃÒ*+9ß **set ÐÄ**

Ï5B_Ð ü serial 1/0 Þ1*+9CÃÄpy¦y ü 10.0.0.0/8 8ÈY,XD'B ÕÈ

192.168.100.1 5%4° 172.16.0.0/16 8È,XDBÙX#GÈÕ 172.16.100.1Ä

5XLMLHFRQJLQWHUIDFHVHULDO

5XLMLHFRQJLSILSSROLFURXWHPDSORDGEDODQH

5XLMLHFRQJDFFHVVOLVWSHUPLW

5XLMLHFRQJDFFHVVOLVWSHUPLW

5XLMLHFRQJURXWHPDSORDGEDODQHSHUPLW

5XLMLHFRQJURXWHPDSPDWFKLSDGGUHVV

5XLMLHFRQJURXWHPDSVHWLSQ[WKRS

5XLMLHFRQJURXWHPDSORDGEDODQHSHUPLW

5XLMLHFRQJURXWHPDSPDWFKLSDGGUHVV

5XLMLHFRQJURXWHPDSVHWLSQ[WKRS

ÏÎGÑ

Ñ	Ë
route-map	**nCÐ**
match ip address	**GA**
set ip default next-hop	**A5BÐ** IP ÈpCÃ><ú,X CÃ
set ip precedence	**A5BÐÙ** IP ì

Ï**G**Ä**Ð** -

1.36 set ip next-hop verify-availability

Ð**û**.BAx**Ô**Ç IP ,XÃ'È**Ë***CÃÒ5BÑ **set ip next-hop verify-availability**Ä**Ñ**

X no 6ß8É5BÑ1*9CÃ5BÄ

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

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

Ð

Ð	Ë
ip-address	*Ô* IP
track-obj-number	*É*

Ï5,Ñ5BÐ -

Ï**Ñ** CÃÒ5Bã

Ï5*Ô**Ð** -

Ï**G**5B_Ð **û**.BAx**Ô**Ç 192.168.1.2 ,XÃ'È**C**ß54Ë 1Ä

ÏÌGÐ

Ò	ÐÄ
route-map	**nCÃ**
match ip address	**GÃ**
set ip default next-hop	**A5BÐÙÔÇ** IP ÈpCÃ><ÚÁB,XCÃ
set ip precedence	**A5BÐÙ** IP ì

ÏGÄÈ -

1.37 set ip precedence

ÓÍG! match ÎXy[A'5B IP ,X4{ÈÈ*CÃÒ5BÒ **set ip precedenceÄÒ**

no 6ÊG5B,X4{8ÉÈ5BÄ

set ip precedence { *number* | **critical** | **flash** | **flash-override** | **immediate** | **internet** | **network** | **priority** | **routine** }

no set ip precedence

ÏÐÈ

Ð	ÐÄ
number	*Ð*></ IP ,X4{ÈÈ 0-7Ä 7Ö critical 6Ö flash 5Ö flash-override 4Ö immediate 3Ö internet 2Ö network 1Ö priority 0Ö routine
critical | **flash** | **flash-override** | **immediate** | **internet** | **network** | **priority** | **routine**	IP ,X4{Ä

ÏÕ5BÐ -

ÏÒ CÃÒ5Bã

ÏÓ*Ô 4Ä'5B IP y[,X4{9S1*+9CÃÉÓÃ IP y[Ê> ä{,XÕÃ

CÃÒ5BÊ5BÎ **set ip precedence Ô5BÊ,**

1*9CÃ,Xy[IP yFÃ'5BÔ,X4{Ä

ÏG5B_Ð ÍÏ FastEthernet 0/0 Ê9,X6 192.168.217.68 ,Xy[A'5B precedence 4Ä

5XLMLHFRÎQJDFFHVVOLVWSHUPLW

5XLMLHFRÎQJURXWHPDSÒPH

5XLMLHFRÎQJURXWHPDSPDWFKLSDGGUHVV

ÏÎGÐ

Ò	ÆÄ
match interface	**GÇÃÔÇ**
match ip address	**GÃÂ**
match ip next-hop	**GÃÂÔÇ**
match ip route-source	**GÃÂCÃ**
match metric	**GÇÃG£**
match route-type	**GÇÃ2O_**
match tag	**GÇÃÛ„**
set metric-type	**A5BGÓÃ2O_**
set tag	**A5BGÓÃÛ„**
set ip tos	**A5B** IP y[,X tos

ÏGÄÐ -

1.38 set ip tos

ÓÍG! match ÎXy[A'5By[IP ,X TOSÈÈ*ÇÃÒ5BÒ **set ip tosÄÒ no 6 ÂG5B,X** tos ô8ÉÉ5BÄ

set ip tos { *number* | **max-reliability | max-throughput | min-delay | min-monetary-cost | normal** }

no set ip tos

ÏÐÐ

Ð	ÆÄ
number	*Ð*></ IP ,X TOSÄÈ 0-15Ä
max-reliability |	IP ,X4{Ä+,XíG2Ö
max-throughput |	max-reliabilityÖ
min-delay |	max-throughputÖ
min-monetary-cost |	min-delayÖ 8
normal	min-monetary-costÖ
	NormalÖ 0

ÏÕ,Õ5BÐ -

Ò CÃÒ5Bã

ÏÕ*Ô 4ÉÉA'5B IP y[,X TOS Ó*1*+9CÃÉÇÃ IP y[E> ãBÇ,XÕ
Ó1*+9CÃG!Xy[IP yFÑA'5BÛ,X TOS Ä

ÏG5B_Ð ÍÏ fastEthernet 0/0 E9,X8 192.168.217.68 ,Xy[A'5B tos 4Ä
5XLMLHFRQJDFFHVVOLVWSHUPLW

match interface	**GCÃÔÇ**
match ip address	**GAÃ**
match ip next-hop	**GAÃÔÇ**
match ip route-source	**GAÃCÃ**
match metric	**GCÃG£**
match route-type	**GCÃ2O_**
match tag	**GCÃÛ„**
set metric-type	**A5BGÓÃ2O_**
set tag	**A5BGÓÃÛ„**
set ip precedence	**A5B** IP y[,X¼{+‰

-

1.39 set ipv6 default next-hop

match IPv6 y[ûTAx,XÔÇ IPv6 AÈ*CÃÒ5BÇ **set ipv6 default next-hop** no 6ã8ÉÈ5BÇÛ1*+9CÃG5BÄ

set ipv6 default next-hop *global-ipv6-address* [*weight*] [*global-ipv6-address* t-9(8144709C441C8TT0 1 Tf ( )Tjip)-6(

ÏG5B_Đ ÿ· fastEthernet 0/0 E9,X,ÂX 2001:0db8:2001:1760::/64 ,Xy[A'5BTÂx,XÔÇ 2002:0db8:2003:1::95Ä

```
ÆXMLHÆQ1ISØFFWVDVDFÆEU
ÆXMLHÆQ1ISØFGÆLWSØQE
ÆXMLHÆQÆDSØBIB
ÆXMLHÆQÆDSPDÆKSØGGWVDFÆEU
ÆXMLHÆQÆDSVÆSCHDÆV
GE
ÆXMLHÆQ1ÆFÆVÆV
ÆXMLHÆQ1ILSSÆFÆDSØBIB
```

ÏÎGÇ

Ç	ÆÄ
match ipv6 address	**n1*9CÃGÎ**
ipv6 policy route-map	**ÿh*Î*9CÂ**
set ipv6 next-hop	**A5B1*9CÃÔÇ**

ÏGÄÈ -

1.40 set ipv6 next-hop

ØÍG! match ÎX IPv6 y[ûÔÇ IPv6 ÈËÖ*ÇÃÒ5BÇ **set ipv6 next-hopÄ**

AÈ no 6È8ÉÆ5BÈÑ1*+9CÃG5BÄ

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

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

ÈÈ

Đ	ÆÄ
global	*Çb<Ä*
global-ipv6-address	y[EÈÔÇ IPv6 ÔÇÃ<NOFyCÂ<Ä
weight	*ÈÈÉ* 8

Ï,Õ5BĐ -

ÈÑ CÂÒ5BÄ

Ï*ÔÐ 5 set ÇÆ¤ ÐWCMP BÈÇ5E¤ ÈÑ2 WCMP BÈÇ5E¤ ÇÆ¤ > ÈÄÉ*Eg9,X weight DÍ#GÆ> WCMP BÈÇ5Ä

set ipv6 next-hop ÈÑ6ÃÎ IP ÊÐYE› 32 ÇÄ

VpÛÇ5B,XÔÇXGÊ5B 4 ÞXÔÇ

weight set WCMP

WCMP weight nexthop

weight 1

y[1*+9CÃ6CÃ><EÃ¯Ã¼X4{E> Ö

set ipv6 next-hop > BEÃ¯ÃGM2TAxCÃÅ> **set ipv6 default next-hop** > TAxCÃ

ÏG5B_Ð Íty · fastEthernet 0/0 E¯9,X,ÂX 2001:0db8:2001:1760::/64 ,X y [A'5B ÎÔÇ 2002:0db8:2003:1::95Ä

```
XMLHQ1SDFFHVDVDFBEU
XMLHQ1SDFSHLVSDQE
XMLHQ2DSPBIB
XMLHQ2DSPDFKSDGGHVDFBEU
XMLHQ2DSVHSQGE
XMLHQ1DFFHVQ
XMLHQ1ILSSFHDSPBIB
```

ÏGÐ

Ð	ÐÄ
match ipv6 address	**n1*9CÃGÎ**
ipv6 policy route-map	**yh*1*9CÃ**
set ipv6 default next-hop	**A5B1*9CÃTAxÔÇ** IPv6

ÏGÄÈ -

1.41 set ipv6 precedence

ÏÍG! match ÎXy[A'5B IPv6 ,X4{ÈÈ*CÃÒ5BÐ **set ipv6 precedenceÄÐ**

X no 6ÈG5BX4{8ÉÉ5BÄ

set ipv6 precedence { *number* | **critical** | **flash** | **flash-override** | **immediate** | **internet** | **network** | **priority** | **routine** }

no set ipv6 precedence

ÏÄÈ

Ð	ÐÄ
number	*D*></ IP ,X4{ÄÈ 0-7Ä 7Ö critical 6Ö flash 5Ö flash-override 4Ö immediate 3Ö internet 2Ö network 1Ö priority 0Ö routine
critical | **flash** | **flash-override** | **immediate** | **internet** | **network** | **priority** | **routine**	IP ,X4{

ÏÕ5BÐ -

Ð	CÃÒ5Bã
Ö*Ð	-
Ö5B_Ð	A’5B route-map Â IPV6 y[4{ 3Ä

ĞÄâê -

1.44 set metric

ØÍĞ! match ÞXCÃA'5BGâËË*ĞCÃÒ5BQ **set metric**ÄÞQ **no** 6â8Æ Ê5BÄ

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

no set metric

âê

Đ	ËÄ
+	*rt*âÃ metric ÞÅ
-	âÃ metric â
metric-value	*A*ÃÞ£

ĕ,Ò5BĐ -

Þ CÃÒ5Bã

Ĕ*Đ CÃGÆ£ĘCÃ,XEâ2ÔBrL,X5%4%âËÊ> A'5BÄÆ> set metricÃ

Þ Þmetric ,XÞhÞÃ#A,XÞÃb RIP #AĢÞW#AĢÃ

Êmetric rÞX4§8È 1-16Ä

CÃĢÞÃE7ĢÞÃE7ĢXs6ÑÃ OSPF CÃ³XCÃG¡

âî RIP CÃÈÊ RIP CÃ³XCÃGÞî OSPF CÃÆÃ,X,Ì

fGÞK IP CÃ#AĶÈ> Ä

CÃGÞÆECÃÂoute maps ÅXh*ÞÃĶÈXCÃ,ĺ> ĕ

ÞX{ÞÃÒ5BÃ 1 ÞX **match** Ą 1 ÞX **set** Ąp

ŭÝ **match** ĘÝpŭÝ **set** ÞÄ

ĞĕB_Đ G5B OSPF CÃ#AĢĶ RIP CÃÈĞĶÃ,XâÆ'5B 40Ä

```
5XLMLHFRQJURXWHURVSI
5XLMLHFRQJURXWHUUHGLVWULEXWHULSVXEQWVURXWHPDSURHGULS
5XLMLHFRQJURXWHUQWR2UNDUHD
5XLMLHFRQJURXWHUH[LW
5XLMLHFRQJURXWHPDSURHGULSSHUPLW
5XLMLHFRQJURXWHPDSVHWPHWULF
```

ÎĞĄ

Ą	ËÄ
match interface	**G**CÃÒĞ
match ip address	**G**AÞÃ
match ip next-hop	**G**AÞÃÒÇ
match ip route-source	**G**AÞÃCÃ
match metric	**G**CÃG£

match route-type	**GCÃ2O_**
match tag	**GCÃÛ„**
set metric-type	**A5BGÓÃ2O_**
set tag	**A5BGÓÃÛ„**

ÏGÄÈ -

1.45 set metric-type

ÓÍG! match ÎXCÃA’5BG2O_ÈÈ*ÏCÃÒ5BÇ **set metric-typeÄÇ** **no 6**

6 8ÓÉ5BÄ

set metric-type *type*

no set metric-type

Ð	ÉÄ

match route-type	**GCÃ2O_**
match tag	**GCÃÛ„**
set metric	**A5BGÓÃG£**
set tag	**A5BGÓÃÛ„**

Ï¨ÄÃè -

1.46 set next-hop

Ò¹ÍG! match ¦XCÃ¸ÇÛÒÇ IP ÆÈ*ÇÃÒ5BQ **set next-hopÄÃ¦**

no 6è8Ê5BÄ¦ÇÃ*9G5BÄ

set next-hop *ip-address*

no set next-hop

Ä¦è

Ð	ÆÄ
ip-address	ÒÇ IP

Ï¨Õ5BÐ -

Ä¦ CÃ¸Ò5Bã

Ï*Ô CÃ¸ÇÛÃÆ/ÒGÔÃÆ/¦Xs6ÑÑ OSPF CÃ¦XCÃG¡

èî RIP CÃÈÑ RIP CÃ¦XCÃGÉî OSPF CÃÆÃ¸X,Ì

fGÔK IP CÃ#AĶÈ> Ä

ÇÃGÔÆÈÈÇÃÔoute maps Åxh*ÔzÃ¸KÈXCÃ¸ìÉ> ý

ÊX{ÔÃÒ5BÃ 1 ÔX **match Ò** 1 ÔX **set Ò¦p**

ùÝ match ÈÒÝpùÝ **set ÔÄ**

Ï¨5B_Ð ÓÍA“KÊ>< 1 ,XÃ¸XÔÇ’5B 192.168.1.2Ä

```
5XLMLHFRQJURXWHPDSUHGULSSHUPLW
5XLMLHFRQJURXWHPDSPDWFKLSDGGUHVV
5XLMLHFRQJURXWHPDSVHWÐ[WKRS
```

ÎÏGÐ

Ò	ÆÄ
match interface	**GCÃÔÇ**
match ip address	**GA¸Ê**
match ip next-hop	**GA¸ÊÔÇ**
match ip route-source	**GA¸ÊCÃ**
match metric	**GCÃG£**
match route-type	**GCÃ2O_**
match tag	**GCÃÛ„**
set metric-type	**A5BGÓÃ2O_**
set tag	**A5BGÓÃÛ„**

ÏGÄÈ -

1.47 set origin

ÓÍG! match ?XCÃÇÛCÃ9¢2ÈÈ*CÃÒ5BÇ **set originÄÇ no 6**

6 8ÉÉ5BÄ

set origin { **egp** | **igp**

Ð	CÃÒ5Bã
Ö*Ô	AÇ¢A’5BG¦XCÃ,X¢Ä
Ö5B_Ð	-
ÏGÇ	

[illegible]	172.16.0.0/16 8È,XDB¡Ù#GÐ	vrf_B EÝÃ¥@,XDB	
#GÐCÃ><EÝÃ¥@			
1 1			

ÌÎGÐ	Ð	ÐÄ
	-	-

ÏGÄÐ -

1.52 show ip route

Ð¹ß IP CÃ><ÇÈ*ü **show ip route** Ð

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

Ð	Ð
vrf *vrf-name*	¾A¹ VRF ,XCÃÇ
network	¾A¹Ê%4ºXCÃÇ
mask	¾A¹ÊÃ
count	/'CÃ5DÄ ECMP/WCMP CÃÊCÃAu1kÅ
protocol	ÃÈÄÇ **connected** , **static**Mn#ÇÃ ***BÄÄÐgp** , **isis**, **ospf**, **rip**
process-id	**CÃÇ/Ë**
weight	¾M2TAxG¡XCÃ

Ï5,Õ5BÐ -

Ð (M*ÃG5BÃG5BÃÃ#AÇ5BÃÃÒ5BÃÄ

Ï*Ð AÇÍMÈI#/ÛCÃÇÄ

Ï5B_Ð _ 1Ë **show ip rout** e ÇX/4Ç

```
5XLMLHVKRZSURXWH
&RGHV&FRQFWHG6VWDWLF55,3%%*3
2263),$63)LQWHUDUHD
1263)166$H[WHUQOWSH1263)166$H[WHUQOWSH
(263)H[WHUQOWSH(263)H[WHUQOWSH
L,6,6VX,6,6VXPPDU/,6,6OHYHO/,6,6OHYHO
LD,6,6LQWHUDUHDFDQLGDWHGHIDXOW
*DWHZRIODVWUHVRUWLVQVHW
6LVGLUHFWOFRQFWHG9/$
6>@LD
2(>@LD9/$
5>@LD9/$
```

[illegible]

+‰	AÈ
O	AÈ CÃ,X8 CÃ#AÄ+ÃÕ CÊ CÃ× SÖ-ÕÃ× RÖIP CÃ× BÖGP CÃ× OÖSPF CÃ× iÖS-IS CÃÄ
E2	CÃ2O_Ä+ÃÕ E1ÖSPF ÊCÃ2O_í E2ÖSPF ÊCÃ2O_î N1ÖSPF NSSA ÊCÃ2O_ 1× N2ÖSPF NSSA ÊCÃ2O_ 2× IAÖSPF CÃ³YFCÃ× suÖS-IS 'CÃ× L1ÖS-IS 1 4{CÃ× L2ÖS-IS 2 4{CÃ× iaÖS-IS CÃ³YFCÃÄ
20.0.0.0/8	,Â%4°X5%4}-ÕSz
[1/0]	1u)Ú#Ë£
Via 20.0.0.1	ÔÇ IP
00:00:06	#A,CÃ,#ÊÈ
VLAN 1	ÔÇ@

_ 2ÖS **show ip route** *network* Ø/6

5XLMLHVKRZSURXWH

5RXWLQHWUIRU

'LVWDQHPHWULF

5RXWLQHVFULSWRU%ORFNV

DJRYLD9/$JHQUDWHGE263)H[WHUQ

ÇgÎ CÇ/Ö

+‰	AÈ
Routing Descriptor Blocks	/CÃ,XÔÇ IP CÃ9ÊÃ 4£ÿÃCÃ#AÃO_ÃGP ¶21

_ 3ÖS **show ip route count** Ø/4

5XLMLHVKRZSURXWHFRXW

URXWHLQR

WKHQPRIDFWLYHURXWH

_ 4Ë**show ip route weight** Ø/4ß

```
5XLMLHVKRZSURXWHZLJKW
>GLVWDQHPHWULFZLJKW@
6>Ø@LD
6>Ø@LD
```

ÏGÇ

Ç	ÆÄ
-	-

ÏGÄÈ -

1.53 show ip route summary

M6,XÇ¾

```
Ruijie#show ip route summary all
IP routing table count: 2
Total
  Memory: 2000 bytes
  Entries: 20
    Connected:4,Static:8,RIP:2,OSPF:2,ISIS:2,BGP:2

Global
  Memory: 1000 bytes
  Entries: 10
    Connected:2,Static:4,RIP:1,OSPF:1,ISIS: 1,BGP:1

VRF1
  Memory: 1000 bytes
  Entries: 10
    Connected:2,Static:4,RIP:1,OSPF:1,ISIS: 1,BGP:1
```

Total 8VEÊÃ><,X4³AuÇÄ

ÌÇÐ	Ç	ÉÄ
	-	-

ÏGÄÈ -

1.54 show ipv6 prefix-list

Ø¦ß IPv6 ¼Ê<Ç5¼Ê<><NMÇÈ*ü **show ipv6 prefix-list** Ø

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

ÏÈ	Ð	ÉÄ
	prefix-name	IPv6 ¼Ê<á

ÏÇÕ5BÐ -

Ø (M*ÃG5BÃG5BÃÃ#A,G5BÃÃÒ5Bã

ÏÇ*Ð Vpü¼Ê<á¼Ê<,XG5BÇÃ¼Ê<,XG5BÇÄ

ÏG5B_Ð

5XLMLHVKRZSYSUHIL[OLVW
LSYSUHIL[OLVWSHQVULHV
SHUPLW
SHUPLW

ÌÇÐ	Ç	ÉÄ
	-	-

ÏGÄÈ -

1.55 show ipv6 route

Ø¹ß IPv6 CÃ><ÇÈ*ü **show ipv6 route** Ö

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

Ð	Ä
network / prefix-length	³A¹Ô%4ºXCÃÇ
summary	/'! ipv6 CÃ5D,XÍO4³AuÇ
protocol	**connected** , **static** **Mn** **ÇÈ** ***BGKÖgp** , **isis**, **ospf**, **rip**
weight	**M2TAxG,XCÃ**

Ö5BÐ -

Ö (M*ÃG5BÃG5BÃÃ#AG5BÃÃÒ5Bã

Ö*Ô AÇÍMÈI#/ÛCÃÇ

Ö5B_Ð 5XLMLHFRQJVKRZSYURXWH

,3YURXWLQWDEOH'HIDXOW– Ø

Ø

E2	CÃ2O_Ä¹+ÃÃ E1ÖSPF ÊÇÃ2O_í E2ÖSPF ÊÇÃ2O_î N1ÖSPF NSSA ÊÇÃ2O_ 1× N2ÖSPF NSSA ÊÇÃ2O_ 2× IAÖSPF CÃ³YFÇÃ× suÖS-IS ÇÃ× L1ÖS-IS 1 4{CÃ× L2ÖS-IS 2 4{CÃ× iaÖS-IS CÃ³YFÇÃÄ
20::/64	,Â%4,°X5%4}-ÕSz
[1/0]	1u)Ú#Ë£
via 10::4	ÔÇ IPv6
VLAN 1	ÔÇ¥@

ÏGÇ

Ç	ÆÄ
ipv6 route	G5B ipv6 M-ÕÃ

ÏGÄÈ -

1.56 show key chain

Ü/ÌyJÒXG5BÇÈÈ*(M*Ç **show key chainÄ**

show key chain [*key-chain-name*]

ÏÈ

Ð	ÆÄ
key-chain-name	*ÃÃÇÒB*

Ï5,Õ5BÐ 5,ÕÌyJÒ5BÇÄ

ÏÇ (M*ÃG5BÃG5BÃÃ#AG5BÃyJÒ5BÃÄ

ÏS*Ô Vpù'ÛÌyJÈÈÌyJÒXG5BÇÈÛÌyJÒXG5BÇÄ

ÏG5B_Ð

5XLMLHVKNHÌFKDLQ
NHÌFKDLQLSNHV
NHWH[WDEF
DFFHSWOLIHWLPH6HS'HF
VHQOLIHWLPH6HS'HF

+‰	AÈ
key chain	ÌyJÈ
key	Ìy ID

text	³yAxA•
accept-lifetime	yåó
send-lifetime	¥Ãó

ÌÎGÐ

Q	ÆÄ
-	-

ÏGÄè -

1.57 show route-map

0/CÃÀXG5BµÈÈ*(M*ð **show route-mapÄ**

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

ÏÀè

Ð	ÆÄ
route-map-name	*³ÅÐ*

Ï5,Õ5BÐ -

ð (M*ãG5Bãð5 [illegible]

2 ECMP/WCMP

2.1 ip ref ecmp load-balance

A’5B ECMP/WCMP 1*+9Ä

ip ref ecmp load-balance [**crc32_lower** | **crc32 upper**] [**dip**] [**port**] [**udf** *number*]

no ip ref ecmp load-balance [**crc32_lower** | **crc32 upper**] [**dip**] [**port**] [**udf**]

] [(ip ref ec0.199 346.96.24S.)T9 - Tf ( )6 re 1.69 -7.9d [9d _9d 36 uppe A’5Bhash u

3 RIP

3.1 address-family

address-family

no

address-family ipv4 vrf *vrf-name*

no address-family ipv4 vrf *vrf-name*

vrf *vrf-name*	VRF

ÑS6Ñ

auto-summary

no auto-summary

Ð	Ä
-	-

5,Õ5BÐ 5,Õ7%6Ñ

CÃE7G5BÄ

RIP CÃ7%CÃ0SC2ÝO5%4E+ÛÝO5%4CÃÄ

ü RIP BFD ”#s6 RIP CÃ¡ (RIP CÃ¡ [,X ÎÜŸ BFD ÎÈ

Ô BFD FÈ RIP CÃ¡ ÎÈ9 (ÕÈ ÃÈ

ü RIP #ÎÜŸ BFD F“#Ê RIP E¤ ,XÄ’ÎX IP ÎÈ%%È

E6ÑKÊŸ BFD ÎÄ

|3ÃÈ yG5B **ip rip bfd** [**disable**] 6ÙKÂy,X BFD ”#s6ÑG5B

,X4{PbE7G5B X **bfd all-interfaces** ÎÅ

] E¤> ,X ÿ ,X

ip default-network **default-information originate**

RIP

RIP

5XLMLHFRQJURXWHUGHIDXOWLQRUPDWLRQULJLQWHDOV

ip rip default-information	
redistribute	RIP

-

3.5 default-metric

RIP **default-metric** **no**

default-metric *metric-value*

3.6 distance

ÙA’5B RIP CÃ,X1u)Ú/ÈÈ*CÃE/G5BQ **distanceÄ**Q **no 6**5Ã5BÄ

distance *distance* [*ip-address wildcard*]

no distance [*distance ip-address wildcard*]

Ð	Ä
distance	A’5B RIP CÃ1u)Ú/È-255 KÈXHD
ip-address	IP 4Ô
wildcard	*n* IP EW(MÈ ></2’.BGÈ ></æEWÄ

5,Õ 120Ä

CÃE/G5BÄ

S*AQ’5B RIP CÃ,X1u)Ú/Ä

Ã*8Ô4,X1u)Ú/È RIP CÃ8E-4ÔXÈ*ù

,X1u)Ú/ÈCÃh*ü RIP A’5B,X1u)Ú/Ä n

	RIP Fastethernet 0/0 172.16

```
5XLMLHFRQJURXWHUULS
5XLMLHFRQJURXWHUQWWR
5XLMLHFRQJURXWHGLVWULEXWHOLVWLQVWHWKHUQW
5XLMLHFRQJURXWHUDXWRVXPPDU\
5XLMLHFRQJDFFHVVOLVWSHUPLW
```

access-list	**nA**
prefix-list	**n**

-

3.8 distribute-list out

distribute-list outA no 6

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

no distribute-list { [*access-list-number* | *name*] | **prefix** *prefix-list-name* } **out** [*interface* **|** [**bgp | connected | isis** [*area-tag*] **| ospf** *process-id* **| rip | static**]]

access-list-number | *name*	*A*
prefix *prefix-list-name*	S*
interface	*y*
bgp	bgp
connected	
isis [*area-tag*]	isis *area-tag* isis r_
ospf *process-id*	ospf *process-id* *p* ospf r_
rip	rip
static	

-

3.10 ip rip authentication key-chain

RIP

no ip rip authentication mode

text	RIP AxAÃ AxAÄ
md5	RIP AxAã MD5 AxAÄ

5,ÕBÐ 5,ÃAxAÄ

yG5BÄ

'G5B RIP AxAÈÕ,Ÿx6 RIP CÃÇ,XA'Ã5B,X RIP AxAÄ'OÕÈ
RIP DBÙx6ÉÄ
VpG*ÃAxAÈ5BÃAxA+0ÈÕ5BG6(ÌyÈÈÄxA> ¥Ä
ÈpG*ü MD5 AxAÈ5BG6(ÌyÈÄxA> ¥Ä
RIPv1 Õ RIP DBÙxAÈ4 RIPv2 Õ

G5B_Ð fastEthernet 0/1 y;X RIP AxAã' MD5Ä
5XLMLHFRQJLQWHUIDFHIDVW(WKHUQW
5XLMLHFRQJLI)DVW(WKHUQWLSULSDXWKHQWLFDWLRQRGHPG

ip rip authentication key-chain	***ü** RIP AxAÈÛ RIP AxAS*ü,XÌyÄ4 RIPv2 Õ RIP DBÙxAÄ
ip rip authentication text-password	***ü** RIP AxAÈ'5B RIP ÃAxA+0Ä RIPv2 Õ RIP DBÙxAÄ
key chain	**ÛÈ9ÌG5BÄ**

Ï Ð yG5BÄ

Ï S*Ð AÐ AxAÄ
VpÜ*ü RIP ÐAxAs6ÑÑS*Ð5BÐAxA+0ÈÊÊ G6(Ïy9ª
ÐAxA+0ÈÙ{Pb5Ü
RIPv1 Õ RIP DBÙxAÏ RIPv2 Õ

Ï G5B_Ð fastEthernet 0/1 y¡X*ü RIP ÐAxAÈ'5BÐAxA+0ú helloÄ
5XLMLHFRQJLÜ WHUIDFHIDVW(WKHUÑW
5XLMLHFRQJLI)DVW(WKHUÑWLSULSDXWKHÜ WLFDWLRÜ WH[WSDVVÏ RUGKHOOR

ÏÏGÐ

Ð	ÏÄ
ip rip authentication mode	**n** RIP AxA¡XÄ
ip rip authentication key-chain	***ü** RIP AxAÈÛ RIP AxAS*¡XÏyÏ RIPv2 Õ RIP DBÙxAÄ

ÏGÄÈ -

3.13 ip rip bfd

3.14 ip rip default-information

Ùü RIP yE> 5,ÕÃEÈÈ*ÿG5BQ **ip rip default-informationÄ**Q **no 6**
ÄyE5ÕÃ

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

no ip rip default-information

Ð	Ä
only	**E5ÕÃWCÃ**
originate	**E5ÕÃEÌWCÃ**
metric *metric-value*	**5ÕÃGzÈÈ**-15

5,Õ5BÐ TAxü5,ÕÃG5BÄ*metric* *Ax* 1Ä

Q yG5BÄ

S*Ô ÿG5BZÈÊ5,ÕÃÈÀyE3CÃÄpÊ5BZ,X

ip rip default-information ` RIP E/ÎX **default-information originateÈÿG5BX5ÕÃ**
Ä

ÿG5BZ **ip rip default-informationÈ**RIP á:4FEîX5,ÕÃÄ

G5B_Ð ÿ· ethernet0/1 Ê5,ÕÃÈyEÄ5,ÕÃÄ

Ï*Ê	VpØ/U6y RIP DBÙy;Xy6*AÇX **no 6G5BÇ*ü** **G5BÇ*ÃÇ** **default 6áy** RIP DBÃ
ÏG5B_Ð	fastEthernet 0/1 y/U6y RIP ,XDBÃ

```
5XLMLHFRQJLJ WHUIDFHIDVW(WKHUQW
5XLMLHFRQJLJ)DVW(WKHUQWRLSULSUHFHLYHHQEOH
```

ÏGÇ	Ç	ÆÄ
	ip rip send enable	**AÊyÆÕ** RIP DBÙ
	passive-interface	**G5B** RIP >ly·

ÏGÄÈ	-

3.16 ip rip receive version

Ø n RIP ÊÍ/X RIP DBÙG5BÇ **ip rip receive versionÄÇ**
X no 6áÇ5BÄ
ip rip receive version [**1**] [**2**]
no ip rip receive version

ÏÈ	Ð	ÆÄ
	1	**y¾** RIPv1 ,XDBÃ
	2	**y¾** RIPv2 ,XDBÃ

Ï5,Õ5BÐ	5,Õ **version ÇG5BÄ**
ÏÇ	yG5BÄ
Ï*Ê	AÇXG5B4ÊÜ **vesion ÇÕ5BÄÇy** RIP y[,X>Ã AÇyÊ RIPv1 ` RIPv2 ,XDBÃÇ5BÊy> version ,X G5BÄ
ÏG5B_Ð	S fastEthernet 0/1 yÃ RIPv1 ` RIPv2 ,XDBÃ

```
5XLMLHFRQJLJ WHUIDFHIDVW(WKHUQW
5XLMLHFRQJLJ)DVW(WKHUQWLSULSUHFHLYHYHUVLRQ
```

ÏGÇ	Ç	ÆÄ
	version	**nÝX** RIP DBÙX5,ÕÄ

ÏGÄÈ	-

3.17 ip rip send enable

ip rip send enable

no ip rip send enable

-	-

3.18 ip rip send supernet-routes

ip rip send supernet-routes

no ip rip send supernet-routes

-	-

,X **no 6ãbÌyÊC5%Ã*ÌG5BÃÊyÄ**

AÿÊÕ RIPv2 y[Ÿ{CY5%CÃ,XÊÕ

ÏG5B_Ð S fastEthernet 0/1 y/U6ÊÕ RIP ,XCY5%CÃÄ

5XLMLHFRQJLQWHUIDFHIDVW(WKHUQW

5XLMLHFRQJLI)DVW(WKHUQWRLSULSVHQVXSHUQWURXWHV

ÏÏGÐ

Q	ÊÄ
ip rip send enable	**AÊÕ** RIP DBÙ
version	**G5BAÊ>X** RIP (

ÏGÄÈ -

3.19 ip rip send version

Ùn RIP ÊÊX RIP DBÈÊ*ÿG5BQ **ip rip receive versionÄ**,Ì "ÈAËQqN1`î

3.20 ip rip split-horizon

0*ü RIP ˈGÉs6ÃÏ*ÿG5BQ

	ip-address	IP
	ip-network-mask	IP

RIP

ip rip summary-address

RIP

GKÁ RIPv2 ,XCÃ7 fastEthernet 0/1

[illegible]	yG5BÄ
[illegible]	RIP [illegible]s6ÑRIP È Triggered RIPÅ RIP #A[illegible]5%ÄWAN È Wide Area Network[illegible]=)[illegible]h*[illegible]ÝÎÒÃ
	'*[illegible] RIP [illegible]s6ÑRIP #A[illegible]ÊÕÃ[illegible]XÊ RIP [illegible]
	5%y[illegible]ÕÃ[illegible]
	1[illegible]CÃA[illegible]Ä
	2[illegible]RIP CÃ[illegible]
	3[illegible]
	4[illegible]CÃA'[illegible]Ä
	+b[illegible] RIP [illegible]G*[illegible]BAxG[illegible]5%[illegible]ÕÄ
	[illegible] **retransmit-timer** ` **retransmit-count** [illegible]
	[illegible]s6Ñ.

-	-

5,Õ5BÐ 5,Õ **version QG5BÄ**

yG5BÄ

AQXG5B4 **vesion Q5Õ5BÄ** RIP y[,X> Ã
AGyÊÕ RIPv1 ` RIPv2 ,XDBÄQ5BÊy> version ,X
G5BÄ

S fastEthernet 0/1 yS RIPv2 y[Ä
5XLMLHFRQJLQWHUIDFHIDVW(WKHUQW
5XLMLHFRQJLI)DVW(WKHUQWLSULSYEURDGFDVW

Q

GÄÈ	-

3.25 network

Ðn RIP CÃE/ÐEîX5%4ë<ÈÈ*CÃE/G5BÇ **networkÄÇ** **no 6ã8Æ** **nX5%Ä**

network *network-number* [*wildcard*]

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

ÐÈ	Ð	ÆÄ
	network-number	**È5%X5%Ä5%Ë2O5%Ë** IP 2bA7%5%4° ,XýFÃÕ RIP DBÛ
	wildcard	*n* IP EW(MÈ ></2'.BGÈ ><ãEWÄ

ö,Õ5BÐ -

Ç CÃE/G5BÄ

S*Ô *Ã5B *network-number* ` *wildcard ÐÈ:ÄÈ* RIP E¤ Ä Vpç5B *wildcard ÐÈ* RGOS ÚAx'ÝO8ÈÐÈ:ÄÝO8È,Xy· â RIP E¤ Ä ý:ü RIP n,X5%4ë<ÈyÃÕ RIP CÃÈÇÈy RIP CÃÈÇÄ

G5B_Ð AÇE 192.168.12.0/24 ` 172.16.0.0/24 8È,Xyâ RIP E¤ Ö

```
5XLMLHFRQJURXWHUULS
5XLMLHFRQJURXWHUQWZUN
5XLMLHFRQJURXWHUQWZUN
```

ÌGÇ	Ç	ÆÄ
	-	-

GÄÈ	-

3.26 offset-list

Ðrtyë,Õ RIP CÃ,X metric Ã*CÃE/G5BÇ **offset-listÈÇ** **no 6ã** **ô8ÛX** offset ë<

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

no offset-list { *access-list-number* | *name* } { **in** | **out** } *offset* [*interface-type interface-number*]

ÐÈ	Ð	ÆÄ

access-list-number | name	*ûAÂ<*
in	**h*ü** acl ý,XCÃ,X metric E> Â
out	**h*ü** acl Ý,XCÃ,X metric E> Â
offset	*Â* metric ,X|ÈÖ-16
interface-type	*hü* acl ûy·
interface-number	*ûy4Ë*

ï,Õ5BÐ 5,Õû offsetÄ

ïÐ CÃE/G5BÄ

ïS*Û 85 RIP CÃÊ ûy;X offset-list ûy;X< offset-listÈ¹ RIP CÃÚ tûy;X offset-list ,X metric Ä

ïG5B_Ð _ 1Ö acl 7 û,X8È,X RIP CÃÍ metric rt 7Ä

5XLMLHFRQJURXWHURIIVHWOLVWRXW

_ 2ÖE› fastethernet0/1 :4,Xü acl 8 û,X8È,X RIP CÃÍ metric rt 7Ä

5XLMLHFRQJURXWHURIIVHWOLVWLQVWHWKHUQW

ïÌGÐ

Ð	ÉÄ
-	-

ïGÄÈ -

3.27 output-delay

Ø¬ RIP È,XÉÊS*CÃE/G5BÐ **output-delayÈÐ no 6È**

yXÉÊ5BÄ

output-delay *delay*

no output-delay

ïÐÈ

Ð	ÉÄ
delay	*AÉÊ8-50>*

ï,Õ5BÐ 5,Õ'5BÉÊ

ïÐ CÃE/G5BÄ

ïS*Û 7ÈIP È,ã 512 +8VÊ 25 5CÃÈpÈXCÃ5,Â 25È

ÉÊÈCÃÈÉÊÊXÉÕ

ÓÚFÈÄ

ÏG5B_Ð Ú RIP ,XÈÈÑ5B 30 ¿

5XLMLHFRQJURXWHUULS

5XLMLHFRQJURXWHURXWSXWGHOD\

ÏGÐ

Ò	ÈÄ
-	-

ÏGÄÈ D •¾#PâÍP- passive p*qr}"_Ïb}(-ÈX%€-CÃGE7ß

3.28 passive-interface

Ú#ÔÈÑ,Xs6ÑÈ*ÿG5BÒ **passive-interface ÏÒ** **no**

6ÈÑ,ÈÑXs6Ñ

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

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

ÏÀÈ

Ð	ÈÄ
default	**AÐ5BÝ·** passive

3.29 redistribute

redistribute

redistribute { **bgp** | **connected** | **isis** [*area-tag*] | **ospf** *process-id* | **static** } [{ **level-1 | level-1-2 | level-2** }] [**match** { **internal | external** [**1 | 2**] **| nssa-external** [**1 | 2**] }] [**metric** *metric-value*] [**route-map** *route-map-name*]

no redistribute { **bgp** | **connected** | **isis** [*area-tag*] | **ospf** *process-id* | **static** } [{ **level-1 | level-1-2 | level-2** }] [**match** { **internal | external** [**1 | 2**] **| nssa-external** [**1 | 2**] }] [**metric** *metric-value*] [**route-map** *route-map-name*]

bgp	bgp
connected	
isis *area-tag*	isis *area-tag* isis
ospf *process-id*	ospf *process-id* ospf 1-65535
static	

level-1 | **level-1-2** |

2Ê Ep no ĝÏÐÊÐ8Ä
VÆ5BÖ redistribute isis 112 level-2È no redistribute isis 112 level-2 Ä¹ no Ú level-2
Ð65,Ã à level-2 Ðe5,Ã5B± redistribute isis 112 level-2Ä
ÚÍÐ8AÈ ÇÒ redistribute isis 112 Ä

	RIP	RIP
default-information originate		

ÏG5B_Ð GÚ-ÕÃ RIP

5XLMLHFRQJURXWHUUHGLVWULEXWHVWDWLF

ÏÌGÇ

Ç	£Ä
default-metric *metric*	**A5BGÚÃ5ÕG£**
default-information originate	**ü** RIP E/Ç*5,ÕÃ

ÏGÄÈ -

3.30 router rip

ÚÎ RIP

3.31 show ip rip

Ø/ RIP RIPRIP

```
>@LD)DVW(WKHUHW

_ 3Ö RIP CÃDBgØ2O_CÃ,X4ÃuÇ,Ø
5XLMLHVKRZSULSGDWDEDVHFRXQ
$O9DOLG,QDOLG
GDWDEDVH
DXWRVXPPDU\

FRQFWHG
ULS
```

Q	EÄ
show ip rip	**/E>XCÃE/XCÄ**

-

3.33 show ip rip external

Ø/ RIP GÝXFCÃÇÈÈ*ü **show ip rip external Q**

show ip rip external [**bgp** | **connected** | **isis** [*process-id*] | **ospf** *process-id* | **static**] [**vrf** *vrf-name*]

D	EÄ
bgp	**/GÝ** BGP CÃÄ
connected	**/GÝÈCÃ**
isis *process-id*	**/GÝ** ISIS CÃÄ *process-id* ISIS E/Ä

```
>FRQFWHGQHWULF
KRS LI
>FRQFWHGQHWULF
KRS LI
```

show ip rip	**/E>XCÃE/XCÄ**

-

3.34 show ip rip interface

/ RIP yCÈÉ*ü **show ip rip interfaceÄ**

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

vrf *vrf-name*	*ô* VRF ,X RIP y·
interface-type interface-number	**ôXy2O_4È**

-

(MÃG5BÃÃE/G5BÄ

A/ RIP yCÈ RIP yÃCÄ

/ RIP ,XyCÄ

```
5XLMLHVKRZSULSLWHUIDFH
)DVW(WKHUQWLVXSOLQSURWRFROLVXS
5RXWLQ3URWRFRO5,3
5HFHLYH5,3YSDFNHWVRQ\
6HQ5,3YSDFNHWVRQ\
3DVVLYHLWHUIDFH'LVDEOHG
6SOLW+RUL]RZWK3RLVRQG5HYHUVH(DEOHG
7ULJJHUHG5,3(DEOHG
5HWUDQPLWWLPHU5HWUDQPLWFRXW
9%URDGFDVW'LVDEOHG
0XOWLFDVWUHJLVWH5HJLVWHG
,WHUIDFH6XPPDU5LS
1RW&RQLJXUHG
$WKHQWLFDWLRQRGH7H[W
$WKHQWLFDWLRQHFKDLQLSN
$WKHQWLFDWLRQWH[WSDVVZRUGUXLMLH
'HIDXOWLQRUPDWLRQQPHWULF
,3LWHUIDFHDGGUHVV
```

Ę[WXSGDWHGXHLQHFRQV

Ę[WXSGDWHGXHLQHFRQV

ĘLJKERUĘ[WXSGDWHGXHLQHFRQV

ĘLJKERUĘ[WXSGDWHGXHLQHFRQV

Ę[WXSGDWHGXHLQHFRQV

Vp*ü RIP â BFD 6(|È/ BFD µ:

5XLMLHVKRZSULSLQWHXSGDWHÀ0^

RIP

2Mbps

G5B_Đ G5B RIP

3.38 version

0nHA'Û RIP (ËS*CÃE7G5BQ **versionÄQ** **no 6ÃÕ5BÄ**

version { **1** | **2** }

no version

Ð	ÆÄ
1	**n** RIP (Ë 1Ä
2	**n** RIP (Ë 2Ä

5,Õ5BÐ 5,Ã RIPv1 ` RIPv2 ,XCÃÈÈÕ RIPv1 ,XCÃÈÄ

Q CÃE7G5BÄ

S*Û *ÿnHA'Û RIP E¤ ,X(Ãï **ip rip receive versionÃ ip rip send version Ê**

RIP y[E> GnÄ

G5B_Ð Ú RIP ,X(Ë'5B 2Ä

5XLMLHFRQJURXWHUULS

5XLMLHFRQJURXWHUYHUVLRQ

Q	ÆÄ
ip rip receive version	**n** RIP DBÃ
ip rip send version	**n** RIP DBÃ

4 RIPNG

4.1 default-metric

ÙnGÚ¥WCÃ#AÊ RIPng 5,ÕXzÈÄ*CÃE/G5BÇ **default-metricÄÇ**
X no 6ãÕ5BÄ
default-metric *metric*
no default-metric

Ð	Ä
metric	1 16Ÿp metric ñ1b 16ÈGOS

5,Õ5BÐ 5,Õ 1

CÃE/G5Bã

AÇÔCÃ#A,G5BÇ **redistribute GÜ*ÜÊÃE/GÚ**
RIP CÃE/ÊbCÃ#A,XzÄu1k,XÈÃzÈÊÈ
LÔnGÚÃü RIP CÃ³XzÄpGÊÃ#AE/ÊBnzÈ
RIPng Ú*ü **default-metric n,XzGÄpÄBnzGÈÉ** **default-metric n**
XzGÄ5BAÇ **default-metric 5Õ** 1Ä

G5B_Ð GÚ OSPF 100 E/XCÃ RIP CÃE/ÊA'5B 3Ä
5XLMLHFRQJURXWHUGHIDXOWPHWULF
5XLMLHFRQJURXWHUUHGLVWULEXWHRVSI

Ç	Ä
redistribute	**ÚÊÃÊÃ**

-

4.2 distance

ÙA'5B RIPng CÃ,X1u)ÚÈÄ*CÃE/G5BÇ **distanceÄÇ** **no 6ãÕ5BÄ**
distance *distance*
no distance

Ð	Ä
distance	A'5B RIPng CÃ1u)ÚÈÄ5B<1-254> KÈXHD

ï5,Õ5BÐ 5,Õ 120

ïÐ CÃE7G5Bã

ïS*Ûï RIPng CÃA'5B1u)Ú±ÈÐÇ

ïG5B_Ð G5B RIPng CÃ1u)Ú± 160

```
5XLMLHFRQJLSYURXWHUULS
5XLMLHFRQJURXWHUGLVWDQH
```

ïÌGÐ

Ç	ÆÄ
-	-

ïGÄÈ -

4.3 distribute-list

ÙS*ü prefix-list ><É7 ÎÇÃE> EÈÇS*CÃE7G5BÇ **distribute-listÄÐ no** ÈÌXEÇÄ

distribute-list prefix-list *prefix-list-name* { **in** | **out** } [*interface-type interface-name*]

no distribute-list prefix-list *prefix-list-name* { **in** | **out** } [*interface-type interface-name*]

ïÐÈ

Ð	ÆÄ
prefix-list *prefix-list-name*	**prefix-list** XÈ*4ÔEÇÃ
in | **out**	ûAé<#ÿÆÕÃS*E$
interface-type interface-name	*Aé<ÿÛy·*

ï5,Õ5BÐ TAxüÝé<Ä

ïÐ CÃE7G5BÄ

ïS*Ûï Ÿ5ÈÕûCÃÆE G5BCÃÉ<ÆXCÃÈ[E> E›
ÇÄpüûyÆXy;XCÃÈ[E> EÇÄ

ïG5B²_Ð ÿ· eth0 ÍXÈÃE> EÈ4 **prefix-list** *allowpre 4Ô<ÆÃ*

```
5XLMLHFRQJLSYURXWHUULS
5XLMLHFRQJURXWHUGLVWULEXWHOLVWSUHIL[OLVWDOORZUHLQWK
```

ïÌGÐ

Ç	ÆÄ
redistribute	**G5BCÃÉ**

ïGÄÈ -

4.4 ipv6 rip default-information

[illegible] IPv6 [illegible] RIPng [illegible] **default-information** [illegible] no [illegible]

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

no ipv6 rip default-information

[illegible]	[illegible]
only	**Eî** ipv6 [illegible]
originate	**Eî** ipv6 [illegible]
metric *metric-value*	**[illegible]** 1Ä

[illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible] IPv6 [illegible]

[illegible] RIPng [illegible]

[illegible] RIPng [illegible]

[illegible] ethernet0/0 [illegible] RIPng [illegible]

5XLMLHFRQJLJ[illegible]WHUIDFHHWKHU[illegible]W

5XLMLHFRQJLILSYULSGHIDXOWL[illegible]RUPDWLR[illegible]\

[illegible]	[illegible]
show ipv6 rip	**/** RIPng [illegible]
show ipv6 rip database	**/** RIPng [illegible]

[illegible] -

4.5 ipv6 rip enable

[illegible] RIPng [illegible] **ipv6 rip enable** [illegible] **no** [illegible]

E¤ RIPngÄ

ipv6 rip enable

no ipv6 rip enable

[illegible]	[illegible]
-	-

[illegible] -

[illegible] [illegible]

Ï´S*ÛÐ AÇÐiA'5Bâ RIPng #AÉ¤ ,XyÄ5BAÈÐpÚÉ¤ RIPng #AÈ5BA¹
ÇÐÉ¤ RIPng CÃ#AÄ

Ï´G5B_Ð ÿÚ ethenet 0/0 t9 RIPng E¤ Ä

```
5XLMLHFRÐLJLÐWHUIDFHHWKHUÐW
5XLMLHFRÐLJLILSYULSHÐEOH
```

ÌÏGÐ

Ð	ÉÄ
-	-

ÏGÄÈÐ -

4.6 ipv6 rip metric-offset

ÐÚA'5ByÞXÉÈÄ*ÿG5BÐ **ipv6 rip metric-offset** *value*ÄÐ **no 6Ì**
ÐXA5BÄ
ipv6 rip metric-offset *value*
no ipv6 rip metric-offset

ÏÐÈÐ

Ð	ÉÄ
value	*yzGÈ*16

Ï´5,Õ5BÐ TÃx 1

ÏÐ yG5Bã

Ï´S*ÛÐ CÃt9CÃ><ÈÃ,X metric ÐtyÃ'5B,XÉÃÉÃ'5By;XÉÉ¡
CÃ,XS*Ä

Ï´G5B_Ð ÿÚ ethernet 0/1 ÞXyÉÃ'5B 5Ä

```
5XLMLHFRÐLJLÐWHUIDFHHWKHUÐW
5XLMLHFRÐLJLILSYULSPHWULFRIIVHW
```

ÌÏGÐ

Ð	ÉÄ
-	-

ÏGÄÈÐ -

4.7 ipv6 router rip

ÐÎ RIPng CÃÉ7ÏE9CÃÉ7G5BÈÄ*ÿG5BÐ **ipv6 router ripÄÐ no**
6ÈÄ RIPng CÃÉ7Ä

ipv6 router rip

no ipv6 router rip

Ð	Ä
-	-

ü Ý RIPng CÃE/Ã¤

<G5Bã

S*ÄTrpbÊüÝ-4(g)]TJ 1 A-4(gj/90 TdIPn)-4(g)]TJ Tf5.807 0 Td(88 40 Tc 3.027 0 Td[<43C3>-7<2B0545A72FDF0CFC45A43E20>]TJ/T

-	-

ÏGÄêø -

4.9 redistribute

ÐÚÚWCÃ¸XCÃGÝ RIPng YÆÊ*ÇÃÆÐG5BQ **redistribute** ÄØÐ **no** 6èÐXGÐ5BÄ

redistribute { **bgp | connected | isis** [*area-tag*] **| ospf** *process-id* **| static** } [**metric** *metric-value* | **route-map** *route-map-name*]

no redistribute { **bgp | connected | isis** [*area-tag*] **| ospf** *process-id* **| static** } [**metric** *metric-value* | **route-map** *route-map-name*]

Äêø

Ð	ÆÄ
bgp	¢ BGP GÝ
connected	**ÆÇÃGÝ**
isis [*area-tag*]	¢ ISIS GÐ*area-tag* ></ ISIS ÆÐ
ospf *process-id*	¢ OSPF GÐ*process-id* ></ OSPF ÆÐ 1-65535
static	**M-ÕÃGÝ**
metric *metric-value*	A'5B>GÝ RIPng ¸XCÃ,XÐ£
route-map *route-map-name*	A'5BGÝÃE$

Ï5,Õ5BÐ TAxGÝWCÃ#A,XCÃ×

Vpù×Ã'5B **default-metricÈ metric** TAx 1×

TAxÁ'5B **route-map×**

TAxGÐÇÃÆÐXÝO_CÃ

Ï Ð CÃÆÐG5Bã

Ï5*Ð S*ÁÐÇÃ¸CGÝ RIPng Ä

CÃGÐÃ#A,XÐÆÐÇÃ#A,XÐÆÐÇÃ#A,XÐÈÃ#A,

G*¡XÐÆu1kÐXRIP ÐÆu1kÎÐCÇÈSPF ÎÐWÀu1kÎ

9,XÐÆÐÃÄ

G5BGÝ_#AÆÎÔÚK'Ð¿GÝÃ¸C RIPngÄ

Ï5B_Ð M-ÕÃGÐ*ÇÃÒ *mymap E> EÐGÆAB* 8Ä

```
5XLMLHFRQJLSYURXWHUULS
5XLMLHFRQJURXWHUUHGLVWULEXWHVWDWLFURXWHPDSPPDSPHWULF
```

ÎÏGÐ

Ç	ÆÄ
default-metric	**nGÝWCÃÆ** RIPng 5,ÕXÐ£
distribute-list	RIPng CÃÐ¸XÝ$

-

4.10 show ipv6 rip

show ipv6 rip

-	-

-

*

-

```
5XLMLHVKRZSYULS
5RXWLQJ3URWRFROV5,3Q
6HQLQXSGDWHVHYHUVHFRQVZWKQ[WGXHLQHFRQV
7LPHRXWDIWHUVHFRQVJDUEDJHFROOHFWDIWHUVHFRQV
2XWJRLQXSGDWHILOWHUOLVWIRUDOOLQWHUIDFHLV
GLVWULEXWHOLVWSUHIL[DDRXW
,QRPLQXSGDWHILOWHUOLVWIRUDOOLQWHUIDFHLVQWVHW
'HIDXOWUHGLVWULEXWLRQHWULFV
'HIDXOWGLVWDQHV
5HGLVWULEXWLRQ
5HGLVWULEXWLQSURWRFROFRQFWHGURXWHPDSUP
5HGLVWULEXWLQSURWRFROVWDWLF
5HGLVWULEXWLQSURWRFRORSSI
'HIDXOWYHUVLRQRQURVHQYHUVLRQHFHLYHUVLRQ
,QWHUFH6HQ5HFY
9/$1
/RRSEDFN
5RXWLQJRUPDWLRQRXUFHV
1RQH
```

show ipv6 rip	**/** RIPng CÃ#AE7[XÐaAuDB

-

4.11 show ipv6 rip database

Ø/ RIPng CÃ><,XØM,ÊÈÈ*ü **show ipv6 rip database** Ö
show ipv6 rip database

ÏÐÈ	Ð	ÉÄ
	-	-

Ï5,Õ5BÐ -

Ö Ã*ãMã

Ï*Ê S*ÄÇ RIPng CÃ><,XØMÇÄ

Ï5B_Ð

```
5XLMLHVKRZSYULSGDWDEDVH
&RGHV55,3Q&&RQFWHG66WDWLF2263)%%*3
VXEFRGHVQUPDOVVWDWLFGGHIDXOWUUHGLVWULEXWH
LLQWHUIDFHDVDJJUHJDWHGVXSSUHVVHG
6UGEPHWULFWDJ
/RRSEDFN
6UGEPHWULFWDJ
/RRSEDFN
&UGEPHWULFWDJ
9/$
6UGEPHWULFWDJ
1XOO
&LGEPHWULFWDJ
/RRSEDFN
6UGEPHWULFWDJ
1XOO
```

ÏÏGÇ

Ç	ÉÄ
-	-

ÏGÄÈ -

4.12 split-horizon

Ø*ü RIPng ÏGÉs6ÃÈ*ÇÃÉ7Ï5BÇ **split-horizonÄÇ** **no 6ÈÉ** RIP ÏG
Ésé6Ã*ÇÉÇ@ÏGÉÈ*ÇÃÉ7Ï5BÇ **split-horizon poisoned-reverseÈ**
AÇ **no 6ÈÉÇÏGÉÄ**
split-horizon [**poisoned-reverse**]

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

	poisoned-reverse	

4.13 timers

timers *update invalid flush*

no timers

update		

Ê¤ÔÙÔÃÁÍ		RIP ÊsE> AHÈ8M2ãB,XLÔ	
'¦X	RIPng ÊsÐA'5BÃü	**show ipv6 rip Ę>Ä**	

2Mbps

ÏG5B_Ð	RIP ÿ[Ęh	10 /¦ÆÕ¤p	30 /¦Yüÿ[Ęh,XCÃÉÃÈ		
	E9 invalid (ÕCÃE9	invalid (ÕYE›	90 /Ę#Ù8Ä		
	5XLMLHFRQJLSYURXWHUULS				
	5XLMLHFRQJURXWHUWLPHUV				

ÏGĘQ

Q	ÆÄ
show ipv6 rip	**/** RIPng CÃ#AĘ/¦XÐaAuDB
show ipv6 rip database	**/** RIPng CÃ

ÏGÄÈ -

5 OSPFv2

5.1 area

G5BÛ,XÄ*ÄQX **no 6ÂÛX** OSPF Ä

area *area-id*

no area *area-id*

	area-id	OSPF IP Ä

5,Õ5BÐ 5,ÕÝ5B OSPF Ä

CÃE7G5BÄ

*üÃS*üQX no 6 ÂÈÙ8 Û OSPF ¾XG5BJ 8A¹ÈÄÙ8 **area authenticationÃrea default-cost Ãrea filter-list Ãrea nssa 1Î,XG5BÇ**

ÙÈÙ8 OSPF ¾XG5BÖ

Ù#Ù8F¾XÝ5BÈ<.JÒÃXG5BÄÑO#Ù8<.JÒÃG5BÈÑ8FÄ

3 Tc 0Ð302C850 Td690E0Ð32Ó,Ñ8472132202 5Tj/TT0 1 Tf(Tj/C2_0 1 Tf-16.22 -1.733 Td850 Td690E0Ð22026 5Tj/T2F44C3841B9090E0Ð85AF080A10

message-digest	**G*ü** MD5Ä message digest 5 ÅxAÄ

Ï5,Õ5BÐ 5,ÕÍ*AxA•

Ð CÃE7G5BÄ

Ï*Ð RGOS ECÃ AxA2O_Ö
ÃO_Ï'AxAÈÍ*Ã Q OSPF AxAÈOSPF DBÙXAxA2O_Ì×
ÃO_ÃAxAÈ5BAÃÍ*ü message-digest EÍM×
ÃO_Ê MD5 AxAÈ5BAÃ*ü message-digest EÍMÄ
Ô OSPF ¾XCÃA'ÈOG*ÃAxA2O_Ïp*ÃAxAÈNOÍ2yF•
,XyG5BAxAÄG5BÃ **ip ospf authentication-key Ã5BÃxAyG5BQ**
¸ **ip ospf message-digest-key Ã5B** MD5 AxAÄ

Ï5B_Ð OSPF CÃE7X³ 0Ä|FÃ*ü MD5 AxAÈxA• backboneÄ

```
5XLMLHFRQJLQWHUIDFHIDVW(WKHUQW
5XLMLHFRQJLI)DVW(WKHUQWLSDGGUHVV
5XLMLHFRQJLI)DVW(WKHUQWLSRVSIPHVVDJHGLJHVWNHPGEDFNERQ
5XLMLHFRQJURXWHURVSI
5XLMLHFRQJURXWHUQWZUNDUHD
5XLMLHFRQJURXWHUDUHDDXWKHQWLFDWLRQHVVDJHGLJHVW
```

ÌÏGÃ

Ã	ÈÄ
ip ospf authentication-key	**n** OSPF ÃAxAÄ
ip ospf message-digest-key	**n** OSPF MD5 AxAÄ
area virtual-link	**n:ÒÃ**

ÏGÄÈ -

5.3 area default-cost

ÜnE4- STUB 5Ù NSSA 5,ÕÃ,X8CÄOSPF ,XGÈÈ*CÃE7G5BÃ
area default-costÄÃ **no** 6ÄÄ,Õ5BÄ
area *area-id* **default-cost** *cost*
no area *area-id* **default-cost**

ÏÐAÈ

Ð	ÈÄ
area-id	STUB ê NSSA ,XÈÄ
cost	¾ STUB 5Ù NSSA ,X5,Õ.CÃ,X8C.ÈÈ 1-16777214Ä

Ï5,Õ5BÐ 5,Õ 1

Ð CÃE7G5BÄ

ÏÎGÐ

Ò	ÈÄ
-	-

ÏGÄÈ -

5.5 area nssa

Ùþ OSPF ª'5B NSSAÈÈ*CÃE7G5BÒ **area nssaÄÐ** **no 6ê8** NSSA ê NSSA ³XG5BÄ

area *area-id* **nssa** [**no-redistribution**] [**default-information-originate** [**metric** *value*] [**metric-type** *type*]] [**no-summary**] [**translator** [**stability-interval** *seconds* | **always**]]

no area *area-id* **nssa** [**no-redistribution**] [**default-information-originate** [**metric** *value*] [**metric-type** *type*]] [**no-summary**] [**translator** [**stability-interval** | **always**]]

ÏÐAÈ

Ð	ÈÄ
area-id	NSSA ³XÈ
no-redistribution	**'ACÃÊ** NSSA ABRÈp4ºÇÓÃ +CÐBEÎ5ÀÀ}WE9 NSSA ÈÈÉÍMÄ
default-information-originate	**{5Ò2O_** 7 ,X LSA E9 NSSA ÈÉÍMÄ NSSA ABR 6Ù ASBR Ä
metric *value*	**A5B{Ó5Ò** LSA ,XÇÄ metric ªÈ 0-16777214È ,Õ 1Ä
metric-type *type*	**A5B{Ó5Ò** LSA ,XCÃ2O_Ä type ª 1 ê 2Ä 1 ></ N-1× 2 ></ N-2Ä,Õ 2

- **area default-cost**

advertise ` not-advertise

A’5B_ÊÑY,XCÃÈ ABR {*ôXYF5¼ÕÃÄ

ÎÔ OSPF ³A’5B!_ÊÑÇ **area stub** ` **area default-cost** Ëy!_XCÃÛ

ÈÑOG5B **area stub** Ò **area default-cost** ÇÔ Stub ³X ABR Ò5BÄ area default-cost ÇZF5¼ÕÃ,XÊÏCÄGÅ

ÏG5B_Ð ÚÙ 1 A’5B!_ÊÑbA³XCÃA’ÊÑOG5BÄ

```
5XLMLHFRQLJURXWHURVSI
5XLMLHFRQLJURXWHUQWZRUNDUHD
5XLMLHFRQLJURXWHUQWZRUNDUHD
5XLMLHFRQLJURXWHUDUHDVWXE
```

ÏGÇ

Ç	ÆÄ
area default-cost	**n Eî4-** STUB ¯5 ,Õ6.CÃ ,X8.C. ÄOSPF ,XGÅ

ÏGÄÈ -

5.8 area virtual-link

Ùn OSPF <.JÒÃÈ*CÃE7G5BÇ **area virtual-link** ÄÇ **no 6ã8<ÒÃ** **nÄ**

area *area-id* **virtual-link** *router-id* [**authentication** [**message-digest** | **null**]] [**dead-interval** { *seconds* | **minimal hello-multiplier**

	0-65535 LSA ,X,#KÈ LSA ,X,#KÈ'ôKÈ LSA
authentication-key [**0**|**7**] *key*	n OSPF AxA,XšyÄKÈ AxA,XšyÑOÊÄ service password-encryption AÄšytšXÄ 0 ûšyß 7 ûšyß
message-digest-key *key-id* **md5** [**0**|**7**] key	n OSPF MD5 AxA,XšyÛÛšyÄKÈ MD5 AxA,Xš JyÛÛšyÑOÊÄ service password-encryption AÄ¹ šytšXÄ 0 ûšyß 7 ûšyß
authentication	**A5BAxA2O_È*AxAÄ**
message-digest	**A5BAxA2O_** MD5 AxAÄ
null	**A5BAxAÄ**

dead-interval 0 /
hello-interval 0 /
retransmit-interval 5 /
transmit-delay 1 /
5,AxA
5, Fast Hello s6Ñ
J-Ðü5,Ã

CÃE7G5BÄ

È*ûG5BÄ

Ĝ5BÄ

Ïĝ5B_Ð _ 1Ö 1 0E#Ê• 2.2.2.2 Î¥.JÒÃ

5XLMLHFRQJEXLM ÁUð

Ð CÃE7G5BÄ

S*Ð -

G5B_Ð S*ü rfc 2328 ,X9.BnÔCÃÄ

5XLMLHFRQJURXWHURVSI

5XLMLHFRQJURXWHURFRPPSDWLEOHUIF

ÌGÐ

Q	ÉÄ

GÄÐ -

5.13 default-information originate

Ú{*ô5,ÕXCÃ¾ OSPF CÃÈÉ*CÃE7G5BQ **default-information originateÄ**

AÐ no 6ÉÕÃ

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

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

ÐAÐ

Ð	ÉÄ
always	**AGKk** OSPF 5Ê5,ÕÃÈÚ5,ÕÃÄ
metric *metric*	5,ÕÃÑXGÈÐ-16777214 Ä
metric-type *type*	5,ÕÃ,X2O_ÖOSPF FCÃÁ2O_Ö2O_ 1ÈÃA'Û ÌXGÐO_ 2ÈÃA'ÛXGÐÑ 2O_ 1

OSPF ÁÊÇÃÈO_ 1 ÊÇÃ,XCÃGÈÊO_ 2 ÊÇÃ,XCÃGÊÄ

ÊÊ%4,ÊJ> CÃÀXCÃGÈO_ 1 ÎO_ 2 ÌÀ{PÈ **show ip route**

ÌÀO_ 1 Fw5CÃÄ

STUB ³XCÃA'ÊÊ5ÕÃ,XÄ

G6(,X route-map ,X set metric ®È 0-16777214ÈpCYÎA8ÊCÃÄ

ÏG5B_Ð OSPF {*ÔÊ5ÕÃÈ OSPF CÃÈO_A'5B 1ÈA'5B 50Ä

5XLMLHFRQLJURXWHURVSI

5XLMLHFRQLJURXWHUQWRUNDUHD

5XLMLHFRQLJURXWHUGHIDXOWLQRUPDWLRQULJLQWHDODVPHWULFPHWULFWSH

ÏGÐ

Ò	ÈÄ
show ip ospf database	**/** OSPF JÒÕÊgÄ

[8(t5(sp5(f)4(d)-5(atab)-5(ase)]TJ/C2_0 1 T

5XLMLHFRQJURXWHUGHIDXOWPHWULF
5XLMLHFRQJURXWHUUHGLVWULEXWHULSVXEQWV

CÃE/G5BÄ

ÍX LSA E> E$ÊÊ SPF Au1k,Ìh,XCÃÄ Ä Ä Ä
DBgÊ,XCÃ><3ÊÊ OSPF Au1k,XCÃ><NMÄ ABR ê
OSPF

Ï*Ð **distribute-list out â redistribute route-map** ÇÓÈ¡Ú OSPF ,XCÃE> E›
WÐ¿ CÃG¶â **redistribute** ÇÜ*Ä ACL E$ prefix-list E$
âÃG5BE,È8Ôd,XCÃS*ü ACL E$ âÃG5B prefix-list E> E$

ÏG5B_Ð ÍGÚXM-ÕÃE> E$

```
5XLMLHFRQJURXWHURVSI
5XLMLHFRQJURXWHUUHGLVWULEXWHVWDWLFVXEQWV
5XLMLHFRQJURXWHUGLVWULEXWHOLVWRXWVWDWLF
5XLMLHFRQJURXWHUGLVWULEXWHOLVWSUHIL[MMMRXWVWDWLF
$FHVVOLVWILOWHUH[LVWVSOHDVHGHFRQJILUVW
```

ÌÏGÇ

Ç	ÉÄ
distribute-list in	**G5B** LSA E$
redistribute	**GÚ/CÃ/XCÃ**

ÏGÄÈ -

5.19 enable mib-binding

enable mib-binding ÇÚ MIB 4¥ÛÙ,X OSPFv2 E$ÄÇ **no 6ÃÃÕ**
nÄ
enable mib-binding
no enable mib-binding

ÏÐAÈ

Ð	ÉÄ
-	-

Ï5,Õ5BÐ 5,ÕMIB 4¥E/ÊX OSPFv2 E/Ä

Ï Ç CÃE/G5BÄ

Ï*Ð +b OSPFv2 MIB ÜÝ OSPFv2 E/ÇÈE› SNMP ÛÙ OSPFv2 E/ÈÑÇX
E/Ä,ÕOSPFv2 MIB 4¥E/ÊX OSPFv2 E/ÈÇXÛÑE/ÄÄ
Vp*âÃE› SNMP ÛÙ,X OSPFv2 E/ÃEÇÚ MIB 4¥AE/Ä

ÏG5B_Ð EÈE› SNMP ÛE/Ë 100 ,X OSPFv2 E/Ö

```
5XLMLHFRQJURXWHURVSI
5XLMLHFRQJURXWHUHQEOHPLEELQLQ
```

ÌÏGÇ

Ç	ÉÄ
show ip ospf	ß OSPF <G5B,X,ÌGÇ
enable traps	**G5B** OSPF TRAP s6Ñ

ÏGÄÈ -

5.20 enable traps

OSPFv2 E/ÃÕ 16 /¡ TRAP ¢Ĕ 4 /¿O_È*VÃ5B|ĵ TRAP ¢,XÉÃ*AÇX **no 6ÃÉ** TRAP ¢,XÉÃ

enable traps [**error** [**IfAuthFailure | IfConfigError | IfRxBadPacket | VirtIfAuthFailure | VirtIfConfigError | VirtIfRxBadPacket**] | **lsa** [**LsdbApproachOverflow | LsdbOverflow | MaxAgeLsa | OriginateLsa**] | **retransmit** [**IfTxRetransmit | VirtIfTxRetransmit**] | **state-change** [**IfStateChange | NbrRestartHelperStatusChange | NbrStateChange | NssaTranslatorStatusChange | RestartStatusChange | VirtIfStateChange | VirtNbrRestartHelperStatusChange | VirtNbrStateChange**]]

no enable traps [**error** [**IfAuthFailure | IfConfigError | IfRxBadPacket | VirtIfAuthFailure | VirtIfConfigError | VirtIfRxBadPacket**] | **lsa** [**LsdbApproachOverflow | LsdbOverflow | MaxAgeLsa | OriginateLsa**] | **retransmit** [**IfTxRetransmit | VirtIfTxRetransmit**] | **state-change** [**IfStateChange | NbrRestartHelperStatusChange | NbrStateChange | NssaTranslatorStatusChange | RestartStatusChange | VirtIfStateChange | VirtNbrRestartHelperStatusChange | VirtNbrStateChange**]]

ÏÐAÈ

Ð	ÉÄ
	G5BÁ error Ý¢,X traps ÔÈÐEÃ5BV(Mn,X error Ý ¬,Å€

error

VirtNbrRestartHelperStatusChange GR

A'ÈpA'Ŝ6Ñ GR Help 6ÑÈ Grace-LSA ÊÈ GR HelperÈY}Fà™

Gä**disable** **EÍM#6ÑLG;XAÊ>**

area authentication	***ü** OSPF ?AxA•nAxAÄ
ip ospf authentication-key	**G5B** OSPF ,XßAxAðyÄ
ip ospf message-digest-key	**G5B** OSPF ,X MD5 AxAðyÄ

ÏGÄê -

5.23 ip ospf authentication-key

ØG5B OSPF ,XßAxAðyÈË*üG5BQ **ip ospf authentication-key**ÄßQ **no 6ê**
L8ßAxAðyÄ

ip ospf authentication-key [**0**|**7**] *key*

no ip ospf authentication-key

ÏÐAê

Đ	ËÄ
0	*bßß*
7	*bßß*
key	*yÐ* 8 þ0ú

ï5,Õ5BÐ 5,ÕÓ5BAxAðyÄ

ïQ yG5BÄ

ïS*Ô **ip ospf authentication-key** Q5BXßÝ OSPF yðyÄ
E?,XA'êÕÑÝ OSPF FG2Ë3ëÑ> CÃÇ,Xx6Ä
ð,Xyð5BÄ¥ê)5%‰CÃA'ÊOG5BQX3yÄ
ÞÔ OSPF ?AxAÈCÃE/G5BQ **area authentication E>G5BÄ**
ÿ¥ÃÑÀAxA• S*üßXG5BQ **ip ospf authentication E>G5B**, '?AxA•
ùAxAF5BÊ;XAxA2O_Ä

ï5B_Đ A'5B fastEthernet 0/1 0ÃX OSPF AxAðy ospfauthÄ

```
5XLMLHFRQILJXUHUIDFHIDVWHWKHUQW
5XLMLHFRQILJ)DVW(WKHUQWLSDGGUHVV
5XLMLHFRQILJ)DVW(WKHUQWLSRVSIDXWKHQWLFDWLRQHRVSIDXWK
```

ÎGQ

Q	ËÄ
area authentication	***ü** OSPF ?AxA•nAxAÄ
ip ospf authentication	***ü¥KAxAðAxAã**

ÏGÄê -

5.24 ip ospf bfd

G5BE¤ OSPF ,Xûy|6ÒGKÁ*ü BFD E> JÒÃ?ÈË*üG5BQ **ip ospf bfd**

[**disable**]Ä*ÄÇX no 6ã8yÞ **ip ospf bfd G5BÄ**

ip ospf bfd [**disable**]

no ip ospf bfd [**disable**]

ÏÐAÈ

Ð	ÆÄ
disable	**GÉ¤** OSPF ,XÛyS*ü BFD E> JÒÃ#

ÏÕ5BÐ 5,ÕÓ5BÈ OSPF E/G5BÇX BFD G5BÄ

ÏÇ yG5BÄ

ÏS*Ô yG5B,X¼{PÞE/G5BÇX **bfd all-interfaces ÇÇ**

|ÃrL)WÈ› **ip ospf bfd ÇÓXyS*ü** BFD E> JÒÃ#Ä*ü OSPF E/G5BÇXÇ **bfd all-interfaces G5Bâ** OSPF E¤ ,XýÉE› BFD E> JÒÃ#È

*ü **ip ospf bfd disable EÉÉyX** BFD "#s6Ñ

ÏG5B_Ð -

ÏÏGÇ

Ç	ÆÄ
router ospf	**Î** OSPF CÃE/ÏE9 OSPF CÃG5BÄ
bfd all-interfaces	**G5BE¤** OSPF ,XýS*ü BFD E> JÒÃ #Ä

ÏGÄÈ -

5.25 ip ospf cost

ÏÏA'5B OSPF yÆÕBÌX8CÄOSPF y· costÈÄS*ÿG5BÇ **ip ospf costÄ¹**

ÇÇ no 6ã5Ó

ip ospf cost *cost*

no ip ospf cost

ÏÐAÈ

Ð	ÆÄ
cost	OSPF y¡X8CÈÈÐ65535 Ä

ÏÕ5BÐ OSPF y· cost 1b7ÈÄ× yÄ

ÏÇ yG5BÄ

ÏS*Ô 5,ÕOSPF y· cost 1b7ÈÄ× yÄ

S*ü **auto-cost ÇÇÄÄÕ** 100MbpsÄ

S*ü **bandwidth ÇÇ5ByÄ**

/ÌL_4"CÃX OSPF y· cost 5,Õ

64K > 4"CÃcost 1562×

E1 4“CÊost 48×

10M þ5%Ècost 10×

100M þ5%È cost 1Ä

EÊ› **ip ospf cost Ç5B** OSPF y· costÞ5,Ç5BÄ

Ç5B_Ð A’5B fastEthernet *0*/1 y· cost 100Ä

```
5XLMLHFRQJLQWHUIDFHIDVW(WKHUQHW
5XLMLHFRQJLI)DVW(WKHUQHWLSRVSIFRVW
```

ÎÇÐ	Ç	ÊÄ

5.27 ip ospf dead-interval

ÙA’5B OSPF ÛyFÒu,XÊÈÈ*ÿG5BÇ ip ospf dead-intervalÄ*ü OSPF ,X Fast Hello s6ÑÈ*ÿG5BÇ ip ospf dead-interval minimal hello-multiplierÄÇX no 6 ÈÈ,Õ5BÄ

ip ospf dead-interval { *seconds* **| minimal hello-multiplier** *multiplier* }

no ip ospf dead-interval

ÏDAÈ \t

5XLMLHFRQLJLI)DVW(WKHUQWLSRVSIGHDGLQWHUYDOPLQPDOKHOORPXOWLSOLHU

ÏÎGÐ

Ç	£Ä
ip ospf hello-interval	OSPF ¥ÕÕ Hello y[ÊÈÈhÄ
show ip ospf interface	¥ OSPF yÇ

ÏGÄÈ -

5.28 ip ospf disable all

Sûyá{*ó ospf y[Ä

ip ospf disable all

no ip ospf disable all

ÏÐAÈ

Ð	£Ä
-	-

Ï5,Õ5BÐ -

Ïð yG5BÄ

Ï5*Û G5BAÇXyÑ9Z network area ÛÈG5BÀÈSy2bA¹ networkÈÚ á{*ó ospf DByÄWÿ¥ÏÕ OSPF y[Èá OSPF ,XAu1kÄ

Ï5B_Ð

5XLMLHFRQLJLQWHUIDFHIDVW(WKHUQW
5XLMLHFRQLJLI)DVW(WKHUQWLSDGGUHVV
5XLMLHFRQLJLI)DVW(WKHUQWLSRVSIGLVDEOHDOO

ÏÎGÐ

Ç	£Ä
-	-

ÏGÄÈ -

5.29 ip ospf hello-interval

ÛA'5B OSPF ¥ÕÕ Hello y[,XÊÈÈhÄÈ*ÿG5BÇ **ip ospf hello-intervalÄÇ no 6 ÊÈÕ5BÄ**

ip ospf hello-interval *seconds*

no ip ospf hello-interval

ÏÐAÈ

Ð	£Ä
seconds	*AB* OSPF ¥ÕÕ hello y[,XÊÈÈhÈ 1-65535Ä

Ï5,Õ5BÐ	5% 10 /¦ PPPÃDLC Õ,Xy· 10 /¦ 4&&$· 10 /¦ M24&&$Ã.25 y· 30 /Ä
Ð	yG5BÄ
Ï5*Ð	hello y[ÊÈÈhÙ hello y[ÄÊÈ^ÐSPF "#%ÊÈÍÐ rt5%4#GÃ%%ÇÃA'Ì,X hello y[ÊÈÈhÑOÃpEÂ• OuÊÈÑOÂ• hello y[ÊÈÈhÃÑFOuÊÃ
Ï5B_Ð	Ú fastEthernet 0/1 y;X OSPF ÈÕ Hello y[ÊÈÈhA' 15 /Ä 5XLMLHFRQJLQWHUIDFHIDVW(WKHUQW 5XLMLHFRQJLI)DVW(WKHUQWLSDGGUHVV 5XLMLHFRQJLI)DVW(WKHUQWLSRVSIKHOORLQWHUYDO

ÏGÐ	Ð	ÈÄ
	ip ospf dead-interval	**A5B** OSPF ÈOuÊÃ

ÏGÄÈ	-

5.30 ip ospf message-digest-key

G5BÊ¿XAxA²O_Ä
RGOS ECÕ¾E> MD5 AxAª³yÊÃFI~ê8,XsÁÑÔÃ
A'ÛX OSPF MD5 AxAª³yÊCÃA'ÛxJWCÃA'Êu¹(X³yÊÊÝa
²X³y¼ÑÕ OSPF y[ÈBAxFÆG5BZX³yÝÇÃA'Ô5BZX³yÈ
Ê8¡X³yÄ

ËG5B_Đ fastEthernet 0/1 0ÃÊX OSPF AxAª³yÈyË 5È³y hello5Ä

```
5XLMLHFRQILJXUHIDFHIDVW(WKHUQHW
5XLMLHFRQILJI)DVW(WKHUQHWLSDGGUHVV
5XLMLHFRQILJI)DVW(WKHUQHWLSRVSIDXWKHQWLFDWLRQHVVDJHGLJHVW
5XLMLHFRQILJI)DVW(WKHUQHWLSRVSIPHVVDJHGLJHVWNHPGKHOOR
5XLMLHFRQILJI)DVW(WKHUQHWLSRVSIPHVVDJHGLJHVWNHPGKHOOR
```

1¸ÝXF¹ÑZX³yèFÇÃA'ÊÑÔ8¡X³yÄ

```
5XLMLHFRQILJXUHIDFHIDVW(WKHUQHW
5XLMLHFRQILJI)DVW(WKHUQHWLSRVSIPHVVDJHGLJHVWNHPGKHOOR
```

ÏÎGÐ

Ð	Ê
area authentication	***ü** OSPF ÃxA³nAxAÃ
ip ospf authentication	***ü**KAxA³AxAÃ

ËGÄÈ -

5.31 ip ospf mtu-ignore

Ð¼Ñ9A¼D BgÊ¿Ä[Ê mtu ,XÐÊ*ÄÇÐX **no 6È5Ð5BÄ**

ip ospf mtu-ignore

no ip ospf mtu-ignore

ËÐAÈ

Ð	Ê
-	-

Ë5,Ð5BÐ 5,È mtu E> ÐÄ

Ê¿ yG5BÈ

Ë*Ô OSPF DBgÊ¿Ä[ÊF•Xy¡X MTU 7Ê¿X MTU µÈ Vp,XDB gÊ¿Ä[ÛXy¡X MTU ûyy¡X MTU,FwF¼yG2ÈÑÔ,Ÿ 8ÊÊ¿GKÁ MTU ,XÐ¹9Ê

ËG5B_Đ Ú fastEthernet 0/1 ,X MTU Ð¹s6ÑKÄ

```
5XLMLHFRQILJXUHIDFHIDVW(WKHUQHW
5XLMLHFRQILJI)DVW(WKHUQHWLSRVSIPWXLJQUH
```

ÏÎGÐ

Ð	Ê

-	-

ÏGÄÀê -

5.32 ip ospf network

A'ny¡X OSPF 5%42O_Ä ĘX **no 6ĕ5Õ5BÄ**

ip ospf network { **broadcast** | **non-broadcast** | **point-to-multipoint** [**non-broadcast**] | **point-to-point** }

no ip ospf network

ÐAê

Đ	ĘÄ
broadcast	ý**A**h**S**2**O**_Ä
non-broadcast	ý**A**h NBMA 2O_Ä
point-to-multipoint	ý**A**h P2MP 2O_Ä
[**non-broadcast**]	Vpyk Ŝ6ñÈÛ non-broadcast ÐÄ
point-to-point	ý**A**h P2P 2O_Ä

ï,Õ5BÐ S2O_ĕ%Õ™

P2P 2O_Ð PPĘLIP Ãà&8ÃÄ.25 à&ÿÕ™

NBMA 2O_ÐÄà&ÿL8Ã.25 ÕÄà&ÿL8Å

5,Ũý· P2MP 2O_Ä

ïĕ yG5BÄ

ïŠ*Ð S2O_Ðý̈KŚ6ñÄ

P2P 2O_Ðý· 1 Í 1 f6(Ä

NBMA 2O_Ð<5%(Šý6(,XCÃA'ÛO6ĵÊ?Ä

P2MP 2O_ÐÄ

ïG5B_Đ _ 1Ðý A'n P2P 2O_ÈÖ 1 Í 1 f6(,XÄ

```
5XLMLHFRQJLQWHUIDFH6HULDO
5XLMLHFRQJ6HULDOLSDGGUHVV
5XLMLHFRQJ6HULDOHQDSVXODWLRQJDPHUHOD\
5XLMLHFRQJ6HULDOLSRVSIHQWR2UNSRLQWWRSRLQW
```

_ 2Ðý A'n NBMA 2O_ÈÏ5%(Šý Ä

```
5XLMLHFRQJLQWHUIDFH6HULDO
5XLMLHFRQJ6HULDOLSDGGUHVV
5XLMLHFRQJ6HULDOHQDSVXODWLRQJDPHUHOD\
5XLMLHFRQJ6HULDOLSRVSIHQWR2UNSRQURDGFDVW
5XLMLHFRQJ6HULDOH[LW
5XLMLHFRQJURXWHURSI
5XLMLHFRQJURXWHUHLJKERUSULRULWSROOLQWHUYDO
```

ÏĜĘ

Ę	ÆÄ
dialer map ip	**n** IP ãÕXØ
frame-relay map	**n** IP â» DLCI ,XØ
neighbor	ûFÈÖ NBMA 2O_` P2MP 2O_Ä
X25 map	**n** IP â X.25 5%4,XØ
ip ospf priority	**ûy·** DR/RDR ¼{Ä

ÏGÄÈ -

5.33 ip ospf priority

ÒG5By¡X OSPF ÈÈ*ÿG5BĘ **ip ospf priority** **no**

seconds	LSU 1-65535

area virtual-link retransmit-interval

area virtual-link	**n** OSPF

5.35 ip ospf transmit-delay

ip ospf transmit-delay *seconds*

no ip ospf transmit-delay

seconds	*n* OSPF LSU 1-65535

ÏG5B_Ð Ú fastEthernet 0/1 ,XÊgÊ’ 10Ä

5XLMLHFRQLJLQWHUIDFHIDVW(WKHUQHW

5XLMLHFRQLJLI)DVW(WKHUQHWLSRVSIWUDQVPLWGHOD\

ÏÎGÐ

Q	ÆÄ
area virtual-link	**n** OSPF <.3ÒÃ

ÏGÄÈ -

5.36 log-adj-changes

AÇ'5BÁ,)Fy(ÕXÈÇX no ` default EÝMÃGKÁ‘s6Ñ

log-adj-changes [**detail**]

no log-adj-changes [**detail**]

ÏÐAÈ

Ð	ÆÄ
detail	**AÇ,FÇ**

ÏÕ,Õ5BÐ 5,Õ‘s6Ñ detail ÐÈ,)Fy(Õ’ Full 5ÙÔ Full (ÕXÇÄ

ÏÇ CÃE/G5BÄ

ÏS*Ô -

ÏG5B_Ð 'Ô(ÕXÁ,)Ä

5XLMLHFRQLJURXWHURVSI

5XLMLHFRQLJURXWHUORJDGMFKDQHVGHWDLO

ÏÎGÐ

Q	ÆÄ
show ip ospf	**ß** ospf <G5B,X,ÌGÇÄ

ÏGÄÈ -

5.37 max-concurrent-dd

AÇG5B*ÙA’5B'(ÇÇ3Ã–2_ÇÄCKüÇTFÈ,)Ä

x-iconcurrent-d

ï5,Õ5BÐ 5,Õ 5Ä

ïÐ CÃE7G5BÄ

ïß*Ô 'CÃA'ÊÄ6DBÈÑÊ5BAÊÐ OSPF r_AÐE
ÊxfÈKêÅXFÔ,Â

ïG5B_Ð ÚxfÈKêÅXFÔ,Â'5B 4ÆG5B,XpGExf,XEÆÈ'Ô
AÐEKâ 4 ÞxfÈÔÐ 4 ÞFCK,XxfÈA'Ð
8 ÞFE> xfÄ
5XLMLHFRQJURXWHURVSI
5XLMLHFRQJURXWHUPD[FRQXUUHQWGG

ïÎGÐ

Ð	Ä
router ospf max-concurrent-dd	A'5BÝ OSPF CÃE7ÊxfXFÔ D,Â

ïGÄÐ -

5.38 max-metric

ÔG5BE¤ OSPF #A,XCÃA'ÊÔÈWCÃA'Ô SPF Au1kÚA'Ô
Eg8V&ÆÈCÃE7G5BÐß*Ð **max-metricÄ*ÆÐ** **no 6ÊÔGÄ**

max-metric router-lsa [**external-lsa** [*max-metric-value*]] [**include-stub**] [**on-startup** [*seconds*]] [**summary-lsa** [*max-metric-value*]]

no max-metric router-lsa [**external-lsa** [*max-metric-value*]] [**include-stub**] [**on-startup** [*seconds*]] [**summary-lsa** [*max-metric-value*]]

ïÐÐ

Ð	Ä
router-lsa	*GB* Router LSA ,XM2 stub links ,XÈÔxFFFF Å
external-lsa	**G5BCÃß*ÔGÄ¼** LSAÐl Type-5 ` Type-7Å ,XÈÄ
max-metric-value	LSA ,XÔÄ,Õ 16711680ÐÔ-16777215 Ä
include-stub	*GÃÊî* Router LSA ,X stub links ÔÄ
on-startup	**G5BCÃÊÔGÄ**
seconds	**EÔGXÔÈhÄ,Õ** 600sÐÔ-86400 Ä
summary-lsa	**G5BCÃß*ÔGÄ** LSAÐl Type-3 ` Type-4Å ,XÈÄ

ï5,Õ5BÐ 5,ÊÐ7È-X LSAsÄ

ïÐ CÃE7G5BÄ

S6 **max-metric router-lsa** Router LSA ,XM2 stub links ,X
xFFFF
stub links **include-stub**
stub links
0 ABR A' **summary-lsa** LSA
0 ASBR A' **external-lsa** LSA
max-metric router-lsa
GA' GP #A' XA'
A' BGP CA BGP CA
on-startup
Vp
OSPF r) RFC 1247 LSA xFFFF links SPF
Au1k LSAs ,XCA'A'

100 /

5XLMLHFRQJURXWHURVSI
5XLMLHFRQJURXWHUPD[PHWULFURXWHUOVDRQWDUWXS

show ip ospf	ospf ,X,

-

5.39 neighbor

OSPF **neighbor** **no**
neighbor *ip-address* [**poll-interval** *seconds*] [**priority** *priority*] [**cost** *cost*]
no neighbor *ip-address* [**poll-interval**] [**priority**] | [**cost**]

ip-address	*F* IP
poll-interval *seconds*	FEBA 2147483647 NBMA 2O_
priority *priority*	F 255 NBMA 2O_
cost *cost*	65535 P2MP 2O_

5,
FEBA 120 /
M2S 0

	CÃE/G5BÄ
S*Ô	NO NBMA 2O_y` P2MP 2O_M2SyÛFÄ,X IP ÈNOAFy,X IP Ä
	ü NBMA 5%4Vp FCÃA'ÊC—GCÃA'ÛuKÈEuÝ Hello y[È OSPF EÎAFÆÕ Hello y[ÈÕ Hello y[,XKÈÈh/ÄBAK¶ÈhÄ OSPF 1ÕÊ Ê ¾ 0 ,XFÆÕ Hello y[ÈA' 0 ,XFÃ DR/BDR ,X0EÄ 1 DR/BDR {*ÈDR/BDR ÊXFÆÕ Hello y[ÛÏG2Ä
	ü P2MP M2S5%4ÊS6ÑÕ¶X¶ÈNOS*AÛ G5BFÄê P2MP 2O_,X5%4ÃE› cost EÍMÛE'ÊX8CÄ
G5B_Ð	ü NBMA 5%4ÛÊP 172.16.24.2È 1ÈBAK¶Èh 150 /Ä

ÏG5B_Ð n 3 þÏ 0È 1È 172.16.16.0Á IP :ü 192.168.12.0/24 8È,Xyn³ 1Ê IP :ü 172.16.16.0/20 8È,Xyn³ 172.16.16.0Ê-yn³ 0Ä

5XLMLHFRQJURXWHURVSI
5XLMLHFRQJURXWHUQWZRUNDUHD
5XLMLHFRQJURXWHUQWZRUNDUHD
5XLMLHFRQJURXWHUQWZRUNDUHD

ÏGÐ

no overflow database external

max-dbsize	external lsa ,XÛ,Â AS YÇÃA'ÛL,Â 8Ö-2147483647 Ä
wait-time	ÃÇÛ overflow (ÕBE(ÕÛY,XÊÈ 0-2147483647Ä

5,Õ5BÐ 5,ã$ external-LSA ,XÛ,Â
VpL$ external-LSA ÛÈ external-LSA ,XD,ÂYE›G5B,XÊ6ã(Ã

CÃE7G5BÃ

'A' ÛX external-LSA D,ÂYE›G5B,X *max-dbsize* *tEQ*
external-LSAÈÚ8*ãX external-LSAÄE› *wait-time* *tEQ* external-LSAÄ
S*As6ÑOA• OSPF F'BE?XÇÃ<G5B,ÈX *max-dbsize* È ÃÑ
H5%,XJÒÃÕBg€'ãÈ€' Full (Õ
JÁ,ÃXCÃÈÇÃ%
Ne4,X AS-External-LSA Gô

G5B_Ð G5B external lsa ÛÂ 10ÈYEí- overflow (Õ overflow (ÕÃXÊÈh
3 /Ä

5XLMLHFRQJURXWHURVSI
5XLMLHFRQJURXWHURYHUIORZGDWDEDVHH[WHUQO

-	-

-

5.43 overflow memory-lack

AÇÃE,ÇÊ OSPF E9 OVERFLOW (Õ*ÃÇX no EÍMGKÁ‹6Ñ
overflow memory-lack
no overflow memory-lack

-	-

Y,ÇÃ% OSPF AE9 OVERFLOW (Õ

CÃE7G5BÃ

OSPF E9 OVERFLOW (

OSPF E9 OVERFLOW (

OSPF

G5BGÚ **isis CÃ** level ÐÊAx3ÄGÚ level-2 ,XCÃÈÈG5BGÊ
ú level ÐÈGÚ5B,X level Ð,XCÃÄ5BÊ5B level 1, level
2 Ê level-1-2 Ð,ÄÃÈ
G5BGÚ **ospf CÃ** match ÐÊAxAGÚO_,X ospf CÃ× 5ãX1Ô
ÕG5B match Ð0ÿX match ÐÈ GÊGÉ,X$O_,XCÃÈ> GÚü no Q
ÇÁ match ÐTAx,ÄÃÈ
G5BGÊ5B route-map EÊ route-map ,X match ÿGÚXsÈÈ> G×
ÍbGÚ OSPF ê ISIS CÃÈXCÃÇG5B,X match ê level ,XÈ> route-map
,XÄ
G6(,X route-map ,X set metric 8È<0-16777214> ÈpCYÎA8ÈCÃÄ
redistribute Q no 6G5B,XÿÕ
1Êp **no ÇoÈoÈÃÕ5B×**
2Êp **no ÇÊÇ8Ä**
_VÄG5BZ **redistribute isis 112 level-2ÈÈQ** **no redistribute isis 112 level-2 G5BÈ**
ÁÇ level-2 Ð6ÃÈà level-2 Ðe5,ÈÈÄ no Ò!
5B± **redistribute isis 112 level-2ÄpÉÇ8LÔ5B** **no redistribute isis 112Ä**

ÏG5B_Ð Ú ospf 2 ` isis isis-001 GÚ OSPF1Ö

```
5XLMLHFRQJURXWHURVSI
5XLMLHFRQJURXWHUUHGLVWULEXWHRVSIVXEQWV
5XLMLHFRQJURXWHUUHGLVWULEXWHRVSIPDWFKH[WHUQOLQWHUQO
5XLMLHFRQJURXWHUUHGLVWULEXWHLVLVLVLV
5XLMLHFRQJURXWHUUHGLVWULEXWHLVLVLVLVOHYHO
```

show run /4ÇVÖ

```
URXWHURVSI
UHGLVWULEXWHRVSIPDWFKH[WHUQOLQWHUQOVXEQWV
UHGLVWULEXWHLVLVLVLVOHYHO
```

ÏGÇ

Q	ÈÄ
summary-address	**G5B** OSPF CÃÈCÃ,X6.CÃÄ
default-metric	**A5B** OSPF GÚÃ,X5,Õ£

ÏGÄÈ -

5.46 router ospf

ÚÎ OSPF CÃÈ/ßÈ9 OSPF CÃG5BÈÈ*ëG5BQ router ospfÄÇX no 6
ÈÄ8ÄX OSPF CÃÈ/Ä
router ospf
router ospf *process-id* [**vrf** *vrf-name*]
no router ospf *process-id*

ÏÐÄÈ

Ð	ÈÄ
process-id	OSPF E/ÈG5BE/ÊÈ</G5BE/ß 1Ä

vrf-name	*ĥ* OSPF E/Ž,X VRF

ï5,Õ5BÐ 5,ã OSPF CÃE/Ä

ð <G5BÄ

ï*ĥ RGOS10.1

ËG5B_Ð

```
5XLMLHVKRZLSRVSI
5RXWLQJ3URFHVVRVSIZLWK,'
'RPDLQWSH[YDOXH[
3URFHVVXSWLPHLVPLQXWHV
3URFHVVERXQGWR95)GHIDXOW
0HPRU\RYHUIORZLVHQDEOHG
5RXWHULVQRWLQRYHUIORZVWDWHQRZ
&RQIRUPVWR5)&DQG5)&&RPSDWLELOLW\IODJLVHQDEOHG
6XSSRUWVRQO\VLQJOH726726URXWHV
(QDEOHWZRZPDLQWDLQ
6XSSRUWVRSDTXH/6$
6XSSRUWV*UDFHIXO5HVWDUW
7KLVURXWHULVDQ$%5LQWHFWLQH[WHUQDOURXWLQJLQIRUPDWLRQ
2ULJLQDWLQJURXWHU/6$VZLWKPD[LPXPPHWULF
&RQGLWLRQRQVWDUWXSIRUVHFRQGV6WDWHLQDFWLYH
$GYHUWLVHVWXEOLQNVZLWKPD[LPXPPHWULFLQURXWHU/6$V
$GYHUWLVHVXPPDU\/6$VZLWKPHWULF
$GYHUWLVHH[WHUQDO/6$VZLWKPHWULF
8QHWUHDVRQWLPHUH[SLUHG2ULJLQDWHGIRUVHFRQGV
8QHWWLPH7LPHHODSVHG
63)VFKHGXOHGHOD\VHFV+ROGWLPHEHWZHHQWZR63)VVHFV
,QLWLDO/6$WKURWWOHGHOD\PVHFV
0LQLPXPKROGWLPHIRU/6$WKURWWOHPVHFV
0D[LPXPZDLWWLPHIRU/6$WKURWWOHPVHFV
/VD7UDQVPLW3DFLQJWLPHUPVHFV/68SG
0LQLPXP/6$DUULYDOPVHFV
3DFLQJIODJURXSVHFV
1XPEHURILQFRPPLQJFXUUHQW'H[FKDQJHQHLJKERUV
1XPEHURIRXWJRLQJFXUUHQW'H[FKDQJHQHLJKERUV
1XPEHURIH[WHUQDO/6$&KHFNVXP[(
1XPEHURIRSDTXH$/6$&KHFNVXP[
1XPEHURIQRQHIDXOWH[WHUQDO/6$
([WHUQDO/6$GDWDEDVHLVXQOLPLWHG
1XPEHURI/6$RULJLQDWHG
1XPEHURI/6$UHFHLYHG
/RJ1HLJKERU$GMHQF\&KDQJHV(QDEOHG
*UDFHIXOUHVWDUWGLVDEOHG
*UDFHIXOUHVWDUWKHOSHUVXSSRUWHQDEOHG
1XPEHURIDUHDVDWWDFKHGWRWKLVURXWHU
%)'HQDEOHG
$UHD%$&.%21(
1XPEHURILQWHUIDFHVLQWKLVDUHDLV
1XPEHURIIXOOTf0 0ÈÕÆ
```

```
6KRZDVSRXWHGDWDEDVH
63)OLVWKPODVWH[HFXWHGDJR
63)OLVWKPH[HFXWHGWLPHV
1XPEHURI/6$&KHFNVXP[EI
6KRZ166$
1XPEHURILQWHUIDFHVLQWKLVDUHDV
1XPEHURIIXOODGMDFHQWQELJKERUVLQWKLVDUHDV
1XPEHURIIXOODGMDFHQWYLUWXDOQELJKERUVWKURXJKWKLVDUHDV
6KRZDVSRXWHGDWDEDVH
63)OLVWKPODVWH[HFXWHGDJR
63)OLVWKPH[HFXWHGWLPHV
1XPEHURI/6$&KHFNVXP[
166$UDQGODWU6WDWHLVGLVDEOHGEWDELOLW\QWHUYDOH[SLUHGLQ
```

+‰	AÈ
Router ID	CÃA'ÛßÄ
Process uptime	OSPF E7ßXÊÊouter-id 0.0.0.0 Ê7ßo ,XÅ
Bound to VRF	OSPF E7Ø,X VRFÄ
Conforms to RFC2328	â RFC2328 ÔÆÄ
RFC1583Compatibility flag	Au1kÊÇÃÊ³¡X RFC1583 Ø¬ RFC2328 ,X? ÊØ,X ASBR CÃEWÊÊÞÄ
Support Tos	Õ TOS0Ä
Supports opaque LSA	Õ opaque-LSAÄ
Graceful-restart	RFC3623 Graceful Restart Ê,ÄX GR Restart 6ÑÄ
Graceful-restart helper	RFC3623 Graceful Restart Ê,ÄX GR Help 6ÑÄ
Router Type	OSPF CÃA'ØO_Ý normal ÃBR ÃSBR Ä
SPF Delay	‰Å×ü SPF E¹kÙÊ³XÊÊ
SPF-holdtime	ø SPF Au1kKÈ4ßXÊÊ
LsaGroupPacing	LSA ,XÈAu1kÊÊ,XÊÊÈhÄ
Incomming current DD exchange neighbors	7ïf,XFÐDGÈ incomming Ôj Ê9 exstart (ÑXFÄ
Outgoing current DD exchange neighbors	7ïf,XFÐDGÈ outgoing Ø(ÑÔ exstart Gx f,XFÄ
Number of external LSA	DBg,|,XÊ¼ LSA ,XDGÆÄ
External LSA Checksum Sum	DBg,|,XÊ¼ LSA ,X"P`XÄ
Number of opaque LSA	DBg,|,X opaque-LSA ,XDGÆÄ
Opaque LSA Checksum Sum	DBg,|,X opaque-LSA ,X"P`XÄ
Number of non-default external LSA	M25,ÕÃ,X external-LSA ,XDGÆÄ
External LSA database limit	external-LSA DGÆÄ
Exit database overflow state	

Ø S P / F g < B A 9 Y b •

```
&RGHVL,WUDDUHDURXWH,,WHUDUHDURXWH
L>OLD)DVW(WKHUQWS%56%5UHDVHOHFW
```

+‰	Aè
Codes	CÃ2O_-ÕÄ ></ˆYFCÃÈ ></ˆKÈÃÄ
I	></ACÃYFCÃÄ
1.1.1.1	/E+ CÃA'ÎX OSPF ÛÄ
[2]	/E'AE+ CÃA'ÎX8Cëost Å
via 10.0.0.1	/E'E+ CÃA'ÎXÔ5%GÄ
FastEthernet 0/1	/E'E+ CÃA'ÎXyÄ
ABR, ASBR	/E+ CÃA'ÎX2O_Ê ABR ` ASBR Ê ABR ` ASBRÄ
Area 0.0.0.1	/:4ACÃ,XÄ
select	'ÝCÃE' ASBR Ê select ></'E;ÝXÔÃÄ

ÏGÇ	Ç	ÆÄ
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ÏGÄè -

5.51 show ip ospf database

Ø/ OSPF JÒÃÕBgµÈÈ*(M*ç **show ip ospf databaseÄÇä**

Net Link States	></ß5%4JÒÃÕÄ
Summary Net Link States	></ß,U5%4JÒÃÕÄ
NSSA-external Link States	></ß12O,X7ÈJÒÃÕÄ Ç
AS External Link States	></ß1h2O,X7ÈJÒÃÕÄ ÇÄ
Link ID	JÒÃÄ
ADV Router	EÂJÒÃÕÄ,XCÃA'ÛÄ
Age	/AJÒÃÕÄ,X,ÊÃ
Seq#	/AJÒÃÕÄ,XcÊb"#5ÕXGá ,X LSAÄ
Cksum	/AJÒÃÕÄ,XÞÄ
Link-Count	/CÃA'ÛJÒÃÕÄ,XJÒÃXDG£
Route	/8 LSA ÙXCÃÇ
Tag	/AJÒÃÕÄ,XÛÄ

_ 2Ö**show ip ospf database asbr-summary** Ø/4ø

```
5XLMLHVKRZSRVSIGDWDEDVHDVEUVXPPH
263)5RXWH0ÀÞÀ0ÈÞP ÈÀ0Ò@
6%56XPPH/LÑ6WDWH(@000Ò@
/6DJH
2SWLRÑ_____(_
/670ÐÞP@
/LÑ6WDWH,'(6%RXQDP5RXWH0ppHVV
GHpÀÞP ê€
/66HT1XPEHÐ000000@
&KHFNVXP[EHF
/HÑWK
1HWZRUN0HN
7260HWULF
```

+‰	AÈ
OSPF Router with ID	/Ch,XCÃA'ÛÄ OSPF Í h,XE/Ë
AS Summary Link States	></ß,X AS ,UJÒÃÕÄ
LS age	/AJÒÃÕÄ,X,ÊÃ
Options	EÍMÄ
LS Type	/AJÒÃÕÄ,X2O_Ä
Link State ID	/AJÒÃÕÄ,XJÒÃÄ
Advertising Router	/AJÒÃÕÄ,XECÃA'Û

TOS	TOS [illegible] 0Ä
Metric	/AJÒ(ÕÄCÃ,XGÄ

_ 3Ö **show ip ospf database external** [illegible]

```
5XLMLHVKRZSRVSIGDWDEDVHH[WHUQO
263)5RXWHUZWK,'3URFHVV,'
$([WHUQO/LQ6WDWHV
/6DJH
2SWLRQ[_____(_
/67SH$H[WHUQO/6$
/LQ6WDWH,'([WHUQO1HWZRUN1XPEHU
$YHUWLVLQ5RXWHU
/66HT1XPEHUD
&KHFNVXP[
/HQWK
1HWZRUN0DVN
0HWULF7SH/DUJHUWKDQQLQVWDWHSDWK
726
0HWULF
)RUZDUG$GUHVV
([WHUQO5RXWH7DJ
```

+‰	Aè
OSPF Router with ID	/Ch,XCÃA'Ûsá OSPF Í h,XE/Ä
Type-5 AS External Link States	></C7ÈJÒ(ÕÄ
LS age	/AJÒ(ÕÄX,ÈÄ
Options	EÍMÄ
LS Type	/AJÒ(ÕÄX2O_Ä
Link State ID	/AJÒ(ÕÄXJÒÃÄ
Advertising Router	/AJÒ(ÕÄXEÎCÃA'Ûl
LS Seq Number	/AJÒ(ÕÄXcÄ
Checksum	/AJÒ(ÕÄXPÄ
Length	/AJÒ(ÕÄXKSÈ8V)Ä
Network Mask	/AJÒ(ÕÄÒ@ÓÄ

show ip ospf database network

```
5XLMLHVKRZSRVSIGDWDEDVHQHWZRUN
263)5RXWHUZLWK,'3URFHVV,'
1HWZRUN/LQN6WDWHVHHD
/6DJH
2SWLRQ[_____(_
/67SHQHWZRUN/6$
/LQN6WDWH,'DGGUHVVRI'HVLJQDWHG5RXWHU
$GYHUWLVLQJ5RXWHU
/66HT1XPEHU
&KHFNVXP[
/HQJWK
1HWZRUN0DVN
WWDFKHG5RXWHU
WWDFKHG5RXWHU
```

```
/HQWK
1XPEHURI/LQV
/LQFRQFWHGWR6WXE1HWZUN
/LQ,'1HWZUNVXEQWXPEHU
/LQ'DWD1HWZUN0DVN
1XPEHURI726PHWULFV
7260HWULF
```

+‰	Aè
OSPF Router with ID	/Ch,XCÃA'ÛÕá OSPF Í h,XE/Ä
Router Link States	></CÃA'ÛÒÕÄ
LS age	/AÛÒÕÄX,ÈÄ
Options	EÍM
Flag	router ,XÛ
LS Type	/AÛÒÕÄX2O_Ä
Link State ID	/AÛÒÕÄXJÒÃÄ
Advertising Router	/AÛÒÕÄXECÃA'Û
LS Seq Number	/AÛÒÕÄXcÄ
Checksum	/AÛÒÕÄXÞÄ
Length	/AÛÒÕÄXKSÈ8V)Ä
Number of Links	/ACÃA'Û6(,XJÒÃÄ
Link connected to	/JÒÃÃÕÿÈ%42O_Ä
(Link ID)	JÒÃÄ
(Link Data)	JÒÃBÄ
Number of TOS metrics	TOS Ã TOS0Ä
TOS 0 Metrics	TOSÌÄ

_ 6Ë show ip ospf database summary Q/4§

```
5XLMLHVKRZSRVSIGDWDEDVHVXPPDU\
263)5RXWHUZWK,'3URFHVV,'
6XPPDU\LQ6WDWHV$HD
/6DJH
2SWLRQ[_____(_
/67\SHVXPPDU\6$
/LQ6WDWH,'VXPPDU\1HWZUN1XPEHU
$GYHUWLVLQ5RXWHU
/66HT1XPEHU
&KHFNVXP[H
/HQWK
1HWZUN0DVN
7260HWULF
```

+‰	Aè

OSPF Router with ID

OSPF Í

interface-type	*ûÿ¿2OÄ*
interface-number	*ûÿ¿4Æ*

Ï¿Õ5BÐ -

Ïð (M*ã

Ï*Ðð 8ßÿ¿E¤ OSPFÈ£oyC³ OSPF ,ÌG,XA’5BÇÄ

Ï5B_Ð 5XLMLHVKRWZSRVSILQWHUIDFHIDVW(WKHUQHW
)DVW(WKHUQHWLVXSLQSURWRFROLVXS
,QWHUQHWGGUHVV,ILQH[SHD078
0DFKLQHWRUNFRQJ
3URFHVV,'5RXWHU,'1HWZRUN7\SH%52$&67&RVW
7UDQVPLW'HODLVVHF6WDWH'53ULRULW\)'HQEOHG
'HVLJQWHG5RXWHU,',QWHUIDFHGGUHVV
%DFNXS'HVLJQWHG5RXWHU,',QWHUIDFHGGUHVV
7LPHULQWHUYDOVFRQJXUHG+HOOR'HDG:DLW5HWUDQVPLW
+HOORGXHLQ
1HLJKERU&RXQWLVGMDFHQWQHLJKERUFRXQWLV
&USW6HTXHQH1XPEHULV
+HOORUHFHLYHGVHQW"UHFHLYHGVHQW
/65HTUHFHLYHGVHQW/68SGUHFHLYHGVHQW
/6NUHFHLYHGVHQW"LVFDUGHG

+‰	Aê
FastEthernet 0/1 State	A5%4ÿ;X(Õ UP Aè0È Down Aê ÝpÄ
Internet Address	y· IP Ä
Area	y2 OSPF ÆÄ
MTU	Íh,X MTU
Matching network config	Íh OSPF E7ÐX network area G5B
Process ID	Íh,XE7Ð
Router ID	OSPF CÆA’ÛšÄ
Network Type	OSPF 5%42O_Ä
Cost	OSPF y8CÄ
Transmit Delay is	OSPF yêgÆ
State	DR/BDR (ÕÛšÄ
Priority	Aÿ;X¾{
Designated Router(ID)	Aÿ;X DR ,XCÆA’ÛšÄ
DR's Interface address	Aÿ;X DR ,Xy·
Backup designated router(ID)	Aÿ;X BDR ,XCÆA’ÛšÄ
BDR's Interface address	Aÿ;X BDR ,Xy·

Time intervals configured	yh,X HelloÈ DeadÈ Wait Ètransmit ÊÈ
Hello due in	Ìõ HELLO ¥,ÕXÊÈ
Neighbor count	FÐ
Adjacent neighbor count	Full ,XFÐG£
Crypt Sequence Number	yh,X md5 AxA•XcË
Hello received send	âX HELLO y[4ªAuÄ
DD received send	âX DD y[4ªAuÄ
LS-Req received send	âX LS AÿÏ[4ªAuÄ
LS-Upd received send	âX LS ÿÈ[4ªAuÄ
LS-Ack received send	âX LS ¦ny[4ªAuÄ
Discard	>ø×X OSPF y[4ªAuÄ
BFD enabled	></*ü OSPF â BFD 6(|

ÏGÐ

Ò	£Ä
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ÏGÄÈ -

5.53 show ip ospf neighbor

Ø/ OSPF ,XF•><ÈÈ*(M*ÐÒ **show ip ospf neighborÄ**

show ip ospf [*process-id*] **neighbor** [**detail**] [*interface-type interface-number*] [*neighbor-id*]]

ÏÐAÈ

Ð	£Ä
process-id	OSPF E/Ë
detail	**/FA4ªXÇÄ**
interface-type interface-number	/ûyXÇÄ
neighbor-id	/ûFÇÄ

ÏÕ5BÐ -

ÏÒ (M*ã

ÏÊÛ AÑ•XÇÈÈÄÒBAx OSPF ÆÈ> Ä

ÏG5B_Ð

5XLMLHVKRZSRVSIÐLJKERU
263)SURFHVV1HLJKERUVLV)XOO
1HLJKERU,'3UL6WDWH%)'6WDWH'HDG7LPHÛGGUHVV,ÒWHUIDFH
)XOO%'58S)DVW(WKHUÐW

5XLMLHVKRZSRVSIÐLJKERUGHWDLO
1HLJKERULÒWHUIDFHDGGUHVV

```
,QWKHDUHDYLDLQWHUIFH)DVW(WKHUQW
1HLJKERUSULRULW\LV6WDWHV)XOOVWDWHFKDQHV
'5LV%'5LV
2SWLRQLV[_2__($__(_
'HDGWLPHUGXHLQ
1HLJKERULVXSIRU
```

Link State Request List	F• LS A[47Au
Link State Retransmission List	FG[47Au
Crypt Sequence Number	3 MD5 AxA•Õ
Thread Inactivity Timer	Fn(Õ
Thread Database Description Retransmission	8y· DD y[n(Õ
Thread Link State Request Retransmission	8y· LS A[n(Õ
Thread Link State Update Retransmission	8y· LS [n(Õ
Thread Poll Timer	M-Õ5B,XFPoll Timer |(Õ
Graceful-restart helper	LS

ÌÎGÐ	Ò	ÉÄ
	-	-

ÏGÄÈ -

5.55 show ip ospf spf

/ OSPF ³XCÃAu1k Ð

show ip ospf [*process-id*] **spf**

ÐAÈ	Ð	ÉÄ
	process-id	OSPF ÉÏÈ

Ï5,Õ5BÐ -

Ò (M*ã

Ï5*Ô AÇ¹ß OSFP ÉÏ 30 ÚsYCÃAu1k,X Ð7ÇÈCÃAu1k,X ÐÄ

Ï5B_Ð

```
5XLMLHVKRÏZSRVSIVSI

263)SURFHVV
ÚHDBLGPLÇFRXÇVV7RWDOBFRXÇVV
```

+‰	AÈ
Area_id	OSPF ³ ID
30min_counts	Ô¥ 30 ÚsÊÏÈOSPF CÃAu1k,X Ð
Total_counts	7ÇÈOSPF CÃAu1k,X Ð

ÌÎGÐ	Ò	ÉÄ
	show ip ospf	/ OSPF ÇVÒ

ÏGÄÈ -

5.56 show ip ospf summary-address

Ò/ OSPF ÓÇÁ,X6.CÃÈ*(M*Ò **show ip ospf summary-addressÄ**

show ip ospf [*process-id*] **summary-address**

ÐAÈ	Ð	ÉÄ

process-id OSPF

```
7UDQVLWDUHDYLDLQWHUIDFH)DVW(WKHUQHW
/RFDODGGUHVV
5HPRWHDGGUHVV
7UDQVPLW'HODLVVHF6WDWH3RLQW7R3RLQW
7LPHULQWHUYDOVFRQJXUHG+HOOR'HG:DLW5HWUDQVPLW
+HOORGXHLQ
6MDFHEVWDWH)XOO
```

+‰	AÈ
Virtual Link VLINK0 to router	/<.ÌÒÃXF
Virtual Link state	A<.ÌÒÃX(
Transit area	/<.ÌÒÃXE#
via interface	/<.ÌÒÃXG6(y
Local address	0
Remote Address	0

E4- OSPF CÃA'ÛÞ9¼XCÃÊ4¼X0NKÈÈ+ CÃA'ÊÊÊ

5.60 timers pacing lsa-group

AQ'5B LSA 5,Õy#PD

Ä

CÃE7G5BÄ

Ê*Ô

)W LSA DGÈ'ÔÞ0KÊ5BEÖX **transmit-time ` transmit-count Ã**

54Ä LS-UPD y[DGÄ

CPU B0KÊÈ%4B0KÊ **transmit-time rt transmit-count ÔVX/Ä**

G5B_Đ

G5Byß 50ms ¥ÕÔ LS-UPD y[ÈÄ¥Õ 20 ÿ[Ä

```
5XLMLHFRQJURXWHURVSI
5XLMLHFRQJURXWHUWLPHUVSFLQDVDWUDQPLW
```

ÏGĐ

Ç	ÉÄ
show ip ospf	**/** OSPF E7[XÇÉÃA'ÔÞÄ

GÄè

-

5.62 timers spf

ØG5B OSPF ÿ%,XÇÈ> SPF Au1k,XÊÈ SPF Au1k,XÊÈhÈ

Ã*ÇCÃE7G5BÇ **timers spfÄÇ** no 6ÈÃ,Õ5BÄ

timers spf *spf-delay spf-holdtime*

no timers spf

ĐAè

Đ	ÉÄ
spf-delay	*n* SPF Au1k,X1YÈÊ 0-2147483647(/}Ä OSPF CÃE7G%ÈO1ûÇXÊÈ> SPF E¤1kÄ
spf-holdtime	*n ø õ* SPF E ¤1 k K È¸X ÊK ÈK È h È¼/¦) ! È B ×È 0-2147483647(/}ÄYÊÈ6¤1kKÈhÊÈÈ6Ñ E> SPF E¤1kÄ

Ê,Õ5BĐ

ü RGOS 10.4 (Ê **timers throttle spf Ç45Õ** **timers spf** 5 10Ä

RGOS 10.4 (Ê **timers throttle spf Ç5%** **timers spf È**SPF

Au1kÊ **timers throttle spf Ç5Õ5BÈ** **timers throttle spf ÇÄ**

Ä

CÃE7G5BÄ

Ê*Ô

spf-delay ` spf-holdtime ÄÈSPF E%ÊXÊÈC¤ÄAÈ%4/ÊÈ

C¤Ê*ÇCÃA'ÔX CPU ÊÄ

timers spf G5Bâ timers throttle spf G5BÔÄ

G5B_Đ

Ú OSPF ,XÊÄ' 3 ` 9 /Ä

```
5XLMLHFRQJURXWHURVSI
5XLMLHFRQJURXWHUWLPHUVVSI
```

ÏÌGÐ	Ò	ÉÄ
	show ip ospf	ß ospf ,X,ÌGG5BÇ
	timers throttle spf	**G5B** SPF Au1kÛÊÊÔSÊÊÈÈ6Ñ **timers spf** ÈÄ,S*ü **timers throttle spf** ª **timers spf G5B**

ÏGÄÈ -

5.63 timers throttle lsa all

ÛG5B LSA *ÛÊÊÔS1kÈÈ*ÏÃÊ7G5BÇ **timers throttle lsa allÄÇ** no 6ã ãAxG5BÄ

timers throttle lsa all *delay-time hold-time max-wait-time*

no timers throttle lsa all

ÐAÈ	Ð	ÉÄ
	delay-time	*G5B* LSA ÊÊÊÈÈ-600000
	hold-time	*G5B* 2 õ LSA ÊÊÊÈÈ 1-600000
	max-wait-time	*E4,Á* LSA ÊÊ LSA ,XÊÊÈ KÈ h3ø LSA E4,ÁÈÈ-600000

Ï5,ÕG5BÐ 5,Ã%

delay-time Ö ¼

hold-time Ö000 ¼

max-wait-time Ö000 ¼

Ò CÃÊ7G5BÄ

Ï5*Ô JÒÃÛEWPÊ delay-time ÕG5BEWÄÃ CPU #5Ã EÒÃ?Ä

G5BÇ hold-time ÃÊ delay-timeÈ max-wait-time 3ÃÊ hold-timeÄ

ÏG5B_Ð G5BOj ÊÊÈ 10msÈ hold-time 1sÒÊÊÈ 5sÄ

5.64 timers throttle spf

OSPF SPF Au1k,X SPF Au1k,X
timers throttle spf no
timers throttle spf *spf-delay spf-holdtime spf-max-waittime*
no timers throttle spf

spf-delay	*n* SPF Au1k,X1Y 1-600000ÄOSPF SPF Au1k7 spf-delay Lhâ Ä
spf-holdtime	*n* SPF E1kK 1-600000Ä
spf-max-waittime	*n* SPF E1kK 1-600000Ä

spf-delay 0000
spf-holdtime 5000
spf-max-waittime 0000

spf-delay ></ SPF Au1k1`õ SPF Au1k,X SPF Au1k,X
spf-holdtime SPF Au1k,X
spf-max-waittime SPF Au1k,X
SPF Au1k *spf-holdtime* Au1kÄ
spf-delay ` *spf-holdtime*

timers spf	**G5B** SPF Au1kÊÊÃ 10.4 ¦X RGOS (,Õ X SPF Au1kÊ¾ÃS*ü **timers throttle spf ª timers spf G5BÄ**

ÏGÄÈ -

5.65 two-way-maintain

*ü OSPF åÕ6Ñ*ÄÇX no 6ÃU*ü OSPF åÕ6Ñ

two-way-maintain

no two-way-maintain

ÏDAÈ

Ð	ÆÄ
-	-

Ï,Õ5BÐ 5,Õü OSPF åÕ6Ñ

Ïð CÃE7G5BÄ

ÏS*Ð EWÛX5%4ÃÑ,Xy[È*EWP,X CPU Y,CÊÈ6Ý¼,XÊ³ Ïp Hello y[,XÓÛYÎDuKÈhÊÈ,XFyCYÊÊåÕ6Ñ Vp5%4,Ûy[Ì8Z Hello y[È7p,X DDÃ LSUÃ LSRÃ LSAck y[36Ñ *ü4ÃF,Xô2ÊS+b Hello y[,XÊ6ÈÈ,XÄ

ÏG5B_Ð /U*ü OSPF åÕ6Ñ

5XLMLHFRÛJURXWHURVSI

5XLMLHFRÛJURXWHURWZ2PDLWDLQ

ÏÎGÐ

Ç	ÆÄ
-	-

ÏGÄÈ -

6 OSPFv3

6.1 area default-cost

ü stub ¾X ABR A'5BA¢n stub ¾Y5,ÕÃ,XÄ*AQ **no EÝMÓ**

ÃÕ

area *area-id* **default-cost** *cost*

no area *area-id* **default-cost**

ÏÐAÐ

Ð	ÆÄ
area-id	stub ¾XÄ JÃÔÐ5Ô IPv4 4Ô
cost	stub ¾Y5,ÕÃ,XÄ 8È 1-16777214Ä

rÑDFV1Ae35Ñ¾ 583.4 -5.16 -15.6 re119.94 583<01CF 0 0re4 5219.46 Tj/C2_045AF2FDFc 0.28 11FF514E364 419.4 0.48 ref10 Tc 0 -

ipv6-prefix/prefix-length	6.Ã
advertise	@6.Ã
not-advertise	**@6.8Ã** 5,Ã

ï5,Õ5BÐ þKÈ.8È

ÐÇ CÃE/G5Bã

ï5*Ûì AÇ ABR ÈÐÛ,X5CÃ6.ÔCÃÈJÈÃÇ
,XÜ> ¾6+ ÈFCÃA'ÇXFÑ',XCÃÇÈW³XA'Ûª
6Ñ6.CÃÈÃEA'5B advertise ` not-advertise EÍM9ÏÇ6.8È
CK#ÈÇX0*È,ÈÐE› cost EÍM9A'5B6.CÃ,XCÄ
ÃÇÃ6.ÈÇHþ OSPF CÃ³XCÃÍ1TÈ5%4Ê
Ð5%4ÈÐÑ
'G5BÐÈM,ÃÇ2ÏXÈÃBÔSGsíBn>¦X area range
,XÄ

ï5B_Ð í 1 ,XCÃE> 6.Ö

5XLMLHFRQJLSYURXWHURVSI
5XLMLHFRQJURXWHUDUHDUDQH'%

ÏGÇ

Ç	ÈÄ
summary-prefix	**A5BÈCÃ.8È**

ïGÄÈ -

6.3 area stub

S*ÄÇ stub ÈÙ'5B stub ³X2È*ÄÇX **no EÍM6BÈÙ**
ÔÈ stub ³XG5BÄ
area *area-id* **stub** [**no-summary**]
no area *area-id* **stub** [**no-summary**]

ÏÐÄÈ

Ð	ÈÄ
area-id	stub ³XÈ JÄÐÐÈÔ IPv4 4Ô
no-summary	**AEÍMÏ¼** stub ³X ABR>È/A¹ ABR Ô></5,ÕÃ +,X2O_ 3 ,X LSA @ stub ³ÈÄ2O_ 3 ,XJª LSAÄ

ï5,Õ5BÐ þ stub ³

ÐÇ CÃE/G5Bã

S*Ð

Vp̂ØHþ%4,XÿFÛÄ’Au stub È stub Y,XCÃA’ÐÑ NO,> **area stub Ü̧pA’Au** stub ÈÉ4á AS ÈC,Ã(type 5 LSAs) È 5ã Lh*ÈC,ÃùÒ(ÕBg4È stub YF,Ä,4 àXCÃÈLE> OSPFv3 #A,Ô4*iX24CÄ ü stub ,X ABR Ð,Õ><5,ÕÃ,X2O_ 3 ,X LSA @ stub YÈstub YF,XA’Ä’ A , AS ÈÄ SX ABR stub VpLÔG5B totally stubÄ stubÄÔ ABR Þ **area stub ÊÝ** **no-summary** stub E’

hello-interval 5,Õ 10 /þ

dead-interval 5,Õ hello-interval ,Xþ

retransmit-interval 5,Õ 5 /þ

transmit-delay 5,Õ 1 /@

CÃE/G5BÄ

S*Ù ü OSPFv3 7 B:4Hþ

dead-interval À instance FÑOÒ

5XLMLHFRQJLSY0P 0 0@

5XLMLHFRQJLSYURXWHURVSI
5XLMLHFRQJURXWHUDXWRFRVWUHIHUHQHEDQZGWK

ÏÎGÐ

Ò	ÐÄ
ipv6 ospf cost	**A5By;XË**
show ipv6 ospf	**/** OSPFv3 CÃÆ/Ï

ÏGÄÐ -

6.6 bfd all-interfaces

G5BE¤ OSPFv3 ,X Ý S*ü BFD E> JÒÃ# ÈÏ OSPFv3 CÃG5Bã **bfd all-interfaces** **Ä*AÏ** no 6ãã,Õ5BÄ

bfd all-interfaces

no bfd all-interfaces

ÏÐAÐ

Ð	ÐÄ
-	-

ÏÕ5BÐ GKÁ BFD ”#

Ï CÃÆ/G5Bã

ÏS*Ð OSPFv3 #AÆÈ› Hello y[|Ÿ FÈ OSPFv3 | BFD ”#s6Ï FULL G2Ï ,XFÎÿ BFD ÎÆÈ› BFD ”#F(Ö BFD FÈ OSPFv3 ÎÏ> 5%4° /Ä

|3ÃÆyG5Bã **ipv6 ospf bfd** [**disable**]|6ÙKÁy;X BFD ”#s6Ï G5B,X¼{PÞÆ/G5Bã **bfd all-interfaces** **Ï**

ÏG5B_Ð -

ÏÎGÐ

Ò	ÐÄ
ipv6 router ospf	**|** OSPFv3 ÈÏ OSPFv3 CÃÆ/G5Bõ Ä
ipv6 ospf bfd	**G5B** OSPFv3 yS*ü BFD E> JÒÃ#Ä

ÏGÄÐ -

6.7 clear ipv6 ospf process

S*AÆÙ8JG¡ OSPFv3 r_Ä

clear ipv6 ospf [*process-id*] **process**

ÏÐAÐ

Ð	ÆÄ
process-id	*ûÙ* OSPFv3 E/ÈÈ 1-65535

ÏÕ,Õ5BÐ -

Ð (Mã

Ï*Ð 7ÈÈ*Ð
S*ü *process-id* ÐÚÈÈ OSPFv3 r_Ä'ÚÙ *process-id* ÐÈÈ OSPFv3 r_Ä

Ï5B_Ð GÌÝ OSPFv3 r_
5XLMLHFOHDULSYRVSISURFHVV

ÌÏGÐ

Ð	ÆÄ
-	-

ÏGÄÐ -

6.8 default-information originate

+ CÃA'Å

redistribute OSPFv3 CÃ³XÍCÃA'ÂSBR {*5,ÕÃ

+ÈNO*ü **default-information originate** **G5BÄ**

VpEÝ½ always Dèu—CÃ><ú5,ÕÃÈ OSPFv3 E7ÑÊÊ5¼Õ

CÃÄCÃA'ÅA5,ÕÃÈ.BAx{*5,ÕÃÈü **show ipv6 ospf database ?** OSPFv3 JÒÃÕBgÄOSPFv3 ,XFÉÉ> **show ipv6 route** **5ÕÃÄ**

É5¼ÕÃ,XCÃ2GÈÃÑ **default-information originate** **6ÑÉ**

default-metric A5BÄ

OSPFv3 ÉCÃÈO_ 1 ÉCÃ,XCÃGÈÃO_ 2 ÉCÃ,XCÃGÈá

%4,5J> CÃÈXCÃGÈO_ 1 2O_ 2 4{PÈ **show ipv6 route** **2O_** 1 Fw5CÃÄ

stub ³XCÃA'Å5¼ÕÃ,XÄ

G5B_Ð G5BG{*5,ÕÃÖ

5XLMLHFRQJLSYURXWHURVSI

5XLMLHFRQJURXWHUGHIDXOWLQRUPDWLRQULJLQWHDOD

Q	EÄ
redistribute	**A5BCÃXGÄ**
show ipv6 ospf	**/** OSPFv3 CÃE7ÇÄ
show ipv6 ospf database	**/** OSPFv3 JÒÃÕBgÇÄ

GÄÈ -

6.9 default-metric

S*ÅQ'5BGÉÃ,X5,ÕÈ*ÅQX **no EÍM65Ã**

default-metric *memet4ts-valt4tue*

faault-m

6.11 ipv6 ospf area

S*AÇ'5Byâ OSPFv3

ÏDAêê

Ð	ÆÄ
disable	**GÉ¤** OSPF ,XûÙyS*ü BFD E> JÒÑ#Ä
instance *instance-id*	*ýÝMn* OSPFv3 r'E> G5B 8ÈÆ 0-255Ä

Ï5,Õ5BÐ 5,ÛÝG5BÈ OSPFv3 E7ÛG5BßK BFD G5BßÅ

ÏÐ yG5BßÅ

ÏS*ûÐ yG5B,Xä{PÞE7ÛG5BßK **bfd all-interfaces Ø**

|ßrL)ÿWÈE› **ipv6 ospf bfd ØÉXyS*ü** BFD E> JÒÑ#ÈßS*ü

OSPFv3 E7ÛG5BßKQ **bfd all-interfaces G5Bâ** OSPFv3 E¤ ,XýÆE› BFD E> JÒ

CÑ#ÈS*ü **ipv6 ospf bfd disable EÉßyX** BFD "#s6Ñ

ÏG5B_Ð -

ÏÎGØ

Q	ÆÄ
ipv6 router ospf *process-id*	| OSPFv3 E7ÛE9 OSPFv3 CÃE7ÛG5Bõ Ää
bfd all-interfaces	**G5BE¤** OSPFv3 ,XýS*ü BFD E> JÒÃ "#Ä

ÏGÄêê -

6.13 ipv6 ospf cost

S*ÀÇQ'5By¡XÈS*ÀÇX **no EÑM6ÈÐ**

ipv6 ospf cost *cost* [**instance** *instance-id*]

no ipv6 ospf cost [**instance** *instance-id*]

ÏDAêê

Ð	ÆÄ
cost	*yÆ* 8ÈÆ 1-65535Ä
instance *instance-id*	*ýÝMn* OSPFv3 r'E> G5BÈÆ 0-255Ä

Ï5,Õ5BÐ 5,ØXy8C5ÆBandwidth ÆÆAx 100MbpsÅ

ÏÐ yG5BßÅ

ÏS*ûÐ 5,Ø% OSPFv3 y8C. 100Mbps/BandwidthÈ Bandwidth y¡XÈEyG!

5BÇ bandwidth E> A'5BÄ

/ÌL_4"CÃK OSPFv3 5,Ø8CÖ

64K > 4"CÃost 1562×

E1 4“CÃ cost 48×
10M þ5%È cost 10×
100M þ5%È cost 1Ä
EÊ› **ipv6 ospf cost Q5BX** OSPFv3 8CÞ5,Õ5BÄ

Ï5B_Ð G5By;XË 1Ö

5XLMLHFRQJLQ WIDVWHWKHUQW
5XLMLHFRQJLILSYRVSIFRVW

ÏGÞ

Q	EÄ
show ipv6 ospf interface	**/** OSPFv3 yÇÄ
ipv6 ospf area	**A5Byâ** OSPFv3 CÃE7ß

ÏGÄÈ -

6.14 ipv6 ospf dead-interval

S*ÄQ'5ByÅxF•XÊÈÊÈÏuÝ•X hello Eì y0Dé

show ipv6 ospf interface	**/** OSPFv3 yÇÄ
ipv6 ospf area	*AÿÂ* OSPFv3 CÃE7Ä

ÏGÄÈ -

6.15 ipv6 ospf hello-interval

S*ÄÇ'5ByÈÕ Hello y[,XÊÈÈhÈ*Ç **no EÍM65Ã**

ipv6 ospf hello-interval *seconds* [**instance** *instance-id*]

no ipv6 ospf hello-interval [**instance** *instance-id*]

ÏÐÄÈ

Ð	ÈÄ
seconds	*ÈÕ* Hello y[ÊÈÈhÄ 8È 1-65535(/)Ä
instance *instance-id*	ý(Mn OSPFv3 r'E> G5B 8È 0-255Ä

Ï,Õ5BÐ S5%4&Í5%4° 10 /&Í5%4â NBMA 5%45,Õ 30 /Ä

ÏÇ yG5BÄ

ÏS*Ð FKÈÕ Hello y[,XÊÈÈhNO,ÐÏ,XFyG2Ä

ÏG5B_Ð A'5ByÈÕ hello y[,XÊÈÈh 20sÖ

5XLMLHFRQJLQWIDVWHWKHUQW

5XLMLHFRQJLILSYRVSIKHOORLQWHUYDO

ÏÏGÇ

Ç	ÈÄ
ipv6 ospf dead-interval	**A5ByÄxFXÊ**
show ipv6 ospf interface	**/** OSPFv3 yÇÄ
ipv6 ospf area	*AÿÂ* OSPFv3 CÃE7ß

ÏGÄÈ -

6.16 ipv6 ospf mtu-ignore

S*ÄÇDBgÈÄ[Ã9Í MTU ,XÈÄÇ **no 65Õ5BÄ**

ipv6 ospf mtu-ignore [**instance** *instance-id*]

no ipv6 ospf mtu-ignore [**instance** *instance-id*]

ÏÐÄÈ

Ð	ÈÄ
instance *instance-id*	*ý(Mn* OSPFv3 r'E> G5B 8È 0-255Ä

¨5,Õ5BÐ	5,Õ MTU E> ÐÄ
¨Ð	yG5BÄ
¨S*Ð	OSPFv3 DBgE¡[ÊFy¡X MTU 7¾X MTU ¡È¡p,XD BgE¡[ÛXFy¡X MTU ñ7¾y¡X MTUÈwFyG2ÄÑÔÄÊ ÃEGKÁ MTU ,XÐ9Ä
¨G5B_Ð	¡XG5B_Ð ethernet 1/0 ,X MTU Ðs6ÑKÄ 5XLMLHFRQJLQWHUIDFHHWKHUQW 5XLMLHFRQJLILSYRVSIPWXLJQUH

¨GÐ		
	Ð	ÆÄ
	ipv6 router ospf	**|** OSPFv3 CÃE/Ä
	ipv6 mtu	**A5By¡X** IPv6 MTU Ä

¨GÄÐ	-

6.17 ipv6 ospf neighbor

S*ÄÐ5B OSPFv3 ,XFÈ*ÄÐ **no EÍM65Ã**

ipv6 ospf neighbor *ipv6-address* { [**cost** *cost*] | [**poll-interval** *seconds* | **priority** *value*] } [**instance** *instance-id*]

no ipv6 ospf neighbor *ipv6-address* { [**cost** *cost*] | [**poll-interval** *seconds* | **priority** *value*] } [**instance** *instance-id*]

¨ÐÄÐ		
	Ð	ÆÄ
	cost *cost*	A'5B&&5%4¡FÐ,XC*È,ÕÈ*ÿG! 5B,X costÈÈ 1-65535Ä &&5%4¡O_(point-to-multipoint) ÃEÍM
	poll-interval *seconds*	FÈBA¡KÈhÐÈ 1-2147483647Ä M2S5%4¡O _(NBMA) ÃEÍMÄ
	priority *value*	A'5BM2S5%4¡F,XÈ 0-255Ä M2S5%4¡O_(NBMA) ÃEÍMÄ
	instance *instance-id*	*ÿ(Mn* OSPFv3 r'E> G5BÈ 0-255Ä

¨5,Õ5BÐ	5,ÕÍF× FÈBA¡KÈhÖ,Õ 120 /× M2S5%4¡F,XÖ,Õ 0Ä
¨Ð	yG5BÄ
¨S*Ð	|ÃrL5%4¡O_È'5BF,ÌhÐÄ

ÏG5B_Ð ;XG5B_Ä5B OSPFv3 ,XFÈ IPv6 2001:DB8:4::1È 1ÈBA¶È h 150 /Ä

```
5XLMLHFRQLJLQ WHUIDFHIDVW(WKHUQW
5XLMLHFRQLJLILSYRVSIQLJKERU'%SULRULWSROOLQ WHUYDO
```

ÏGÐ

Q	EÄ
Ipv6 ospf priority	**A5By;XÄ**
Ipv6 ospf network	**A5By;X5%42O_**

ÏGÄÈ -

6.18 ipv6 ospf network

S*ÄÐ'5By;X5%42O_È*ÄÐ **no EÍM65Ã**

ipv6 ospf network { **broadcast** | **non-broadcast** | **point-to-point** | **point-to-multipoint** [**non-broadcast**] } [**instance** *instance-id*]

no ipvinstance-id

ÏÎGÐ

Ð	ÐÄ
ipv6 ospf priority	**A5By;X4{Ä**
show ipv6 ospf interface	**/** OSPFv3 yÐÄ
ipv6 ospf area	*A* OSPFv3 CÃE7ß

ÏGÄÐ -

6.19 ipv6 ospf priority

S*AÐ'5By;X4{È*AÐX **no EÍM6ÃÐ**

ipv6 ospf priority *number-value* [**instance** *instance-id*]

no ipv6 ospf priority [**instance** *instance-id*]

ÏÐAÐ

Ð	ÐÄ	
number-value	*y*	0-255Ä
instance *instance-id*	*y*	OSPFv3 r'E> G5BÈ 0-255Ä

ÏÕ5BÐ 1

ÏÐ yG5Bã

[Od0 Ä

seconds	LSA ,XG 1-65535(/)
instance *instance-id*	OSPFv3 r'E> G5B 0-255

5 /

yG5B

LSA

LSA

10sÖ

5XLMLHFRQJLQWHUIDFHHWKHUQW

5XLMLHFRQJLILSYRVSIUHWUDQPLWLQWHUYDO

show ipv6 ospf interface	**/** OSPFv3 y
ipv6 ospf area	OSPFv3

-

6.21 ipv6 ospf transmit-delay

LSA **no**

ipv6 ospf transmit-delay *seconds*

5XLMLHFRQJLILSYRVSIWUDQPLWGHOD\

ÏGÐ

Ò	ÆÄ
show ipv6 ospf interface	**/** OSPFv3 yÇÄ

ÏGÄÐ -

6.22 ipv6 router ospf

S*ÄÇÔ OSPFv3 CÃÆ/Ò*ÄÇX **no EÍMGÍ** OSPFv3 CÃÆ/Ä

ipv6 router ospf [*process-id*]

no ipv6 router ospf *process-id*

ÏDÄÐ

Ð	ÆÄ
process-id	OSPFv3 E/Ä5BE/Ò</Ô/ß 1Ä

process-id

ÏÐ	<G5BÄ
Š*Ð	'CÃA'ÞÍ6DBÈÑÊ5BAÐ OSPFv3 CÃE/ß AÈfÆKÿÅXFÐ,Â
Ĝ5B_Ð	VßÐ OSPFv3 CÃE/ßÈfÆKÿÅXFÐ,Â'5B 4ÈĜ5B ,XpĜÈf,XE/Â'ÐÊKâ 4 þÈfÈÐÿ 4 þ FÆK,XxfĜA'Ð 8 þÈ> xfÖ 5XLMLHFRQILJLSYURXWHURVSIPD[FRQFXUUHQWGG
ÏĜÐ	

Q	EÄ
max-concurrent-dd	A'5BOSPFv3 CÃE/ßÈf,XFÐ ,Â

S*ÐÎ 'ÔÞ>A'5B#UyÐyÈÕ hello y[Ä
AÐ OSPFv3 E¤ ,Xy*ê.JÒÃÄ

G5B_Ð ÃÇ VLAN1 yâ OSPFv3 E¤ Ö

```
5XLMLHFRQJURXWHURVSI
5XLMLHFRQJURXWHUSDVVLYHLQWHUIDFHGHIDXOW
5XLMLHFRQJURXWHURSDVVLYHLQWHUIDFHYODQ
```

ÏGÐ

Q	ÆÄ
ipv6 ospf area	**A5Byâ** OSPFv3 CÃE/Ä
show ipv6 ospf	**/** OSPFv3 CÃE/ÇÄ
show ipv6 ospf neighbor	**/** OSPFv3 FÇÄ

GÄÐ -

6.27 redistribute

S*ÁÇÃGÇÃ#A,XCÃÇ¼ OSPFv3 CÃE/Ä*ÁÇ

no EÍMÃs6ÐÇÍÄ

redistribute { **bgp** | **connected** | **isis** [*area-tag*] | **ospf** *process-id* | **rip** | **static** } [{ **level-1** | **level-1-2** | **level-2** } **| match** { **internal | external** [**1 | 2**] **} | metric** *metric-value* **| metric-type** { **1** | **2** } | **route-map** *route-map-name* | **tag** *tag-value*]

no redistribute { **bgp** | **connected** | **isis** [*area-tag*] | **ospf** *process-id* | **rip** | **static**} [{ **level-1** | **level-1-2** | **level-2** } **| match** { **internal | external** [**1 | 2**] **} | metric | metric-type** { **1** | **2** } | **route-map** *route-map-name* | **tag** *tag-value*]

ÐAÐ

Ð	ÆÄ
bgp	¢ bgp GÍ
connected	ÈÃÍ
isis [*area-tag*]	¢ isis GÍE› *area-tag* ûÍ isis r_
ospf *process-id*	¢ ospf GÍE› *process-id* ûÍ ospf r_ÈÕ 1-65535
rip	¢ rip GÍ
static	M-ÃÍ
level-1 | **level-1-2** | **level-2**	ÍÈÍ IS-IS CÃÊ*ÈÕ(Mn level ,XCÃE> G¡ Ä
match	ÍÈÍ OSPFv3 CÃÊ*ÈÕ(MnCÃE> GÍ internalÖCÃÊÈÃ× external [1|2]Ë1 Ã2 ÁÈÇÃ
metric *metric-value*	*AB* OSPFv3 external 2 LSA ,X metricÈE› metric-value ûÍ metric ÈÕ-16777214
metric-type {*1*|*2*}	*ABÃG2O* E-1 ê E-2

route-map *route-map-name*	*G6Ä* map-tag ,X CYE› 32 +0Ä
tag *tag-value*	*AB* OSPFv3 YCÃ,X tag 4294967295

5,Õ5BÐ ü'Ôs6Ñ
metric-type 5,Õ 2×
G ISIS 5,Õ level-2 CÃ×
G OSPFv3 5,Õ O_,X OSPFv3 CÃ×
5,Õ6(route-mapÄ

CÃE7G5BÄ

'A'Õ#AÐ,KÈXf,ÜÔ2G,XYÄ'ÐÈ6Ñ¤
> CÃ#AÈ/ÑO6Ñ,XCGÓÐÄÈÇÃ#AFÑÖXÄ
G ISIS #A,CÃÈ6G5B level-1Ã level-2 ê level-1-2 Ð</G ISIS CÃh
level ,XCÃÈAx G level-2 2O_,X ISIS CÃÄ
G OSPFv3 #A,CÃÈ6G5B *match Ð</G* OSPFv3 CÃÈ3O_,XCÃ
+ÈAx G O_,X OSPFv3 CÃÄ
bG ISIS ÊX *level ž* OSPFv3 ,X *match Ð7.Ñ* route-map ,X
G×
G5BG route-map ?X *match Ð> G* tagÈ
metric â metric-type Ð *route-map hAÐ* *set* Ä
G6(,X route-map ,X set metric 8Ê<0-16777214> ÈpCYÎA8CÃÄ
redistribute no 6 5B,XÝÖ
1Êp no Ð6 5,Õ5B×
2Êp no ÐÈ8Ä
_VÖ5BZ **redistribute isis 112 level-2Ê*** **no redistribute isis 112 level-2 5BÈ**
AÓ level-2 Ð6 5,Ãà level-2 Ð5,ÐÈÄ no
5B **redistribute isis 112 level-2ÄpÐ8LÔ5B** **no2_04F11D.0038 D.0d996015 Tc 0..00T/C**

show ipv6 ospf	**/**	OSPFv3 CÃE7ÇÄ
show ipv6 ospf database	**/**	OSPFv3 JÒÕBgÇÄ

ÏGÄÈ -

6.28 router-id

S*AÇ'5BA'ÛXÂ(Router ID) SÈAÇ **no**

ÐAÐ	Ð	ÉÄ
	process- id	ospf E/Ë

Ö,Õ5BÐ -

Ð (Mã

Ö*Ð -

Ö5B_Ð / OSPFv3 E/Ï

```
5XLMLHVKRZSYRVSI
5RXWLQ3URFHVV263)YZWK,'
3URFHVVXSWLPHLVPLXWHV
63)VFKHGXOHGHODVHFV+ROGWLPHEHWZHQ63)VVHFV
0LQPXP/6$WHUYDOVHFV0LQPXP/6$UULYDOVHFV
1XPEHURILQRPPLQFXUUHW"H[FKDQHQLJKERUV
1XPEHURIRXWJRLQFXUUHW"H[FKDQHQLJKERUV
1XPEHURIH[WHUQO/6&KHFNVXP6XP[
1XPEHURI$6FRSHG8QRZ6$
1XPEHURI/6$RULJLQWHG
1XPEHURI/6$UHFHLYHG
/RJ1HLJKERU$GMHQ&KDQHV(QEOHG
1XPEHURIDUHDVLWKLVURXWHULV
$UHD%&.%21(
1XPEHURILWHUIDFHVLWKLVDUHDLV
63)DOJRULWKPH[HFXWHGWLPHV
1XPEHURI/6&KHFNVXP6XP[")
1XPEHURI8QRZ6$
```

Vp OSPFv3 â BFD 6(|ÈBFD is enabled” Ä

```
5XLMLHVKRZSYRVSI
5RXWLQ3URFHVV263)YZWK,'
3URFHVVXSWLPHLVPLXWHV
63)VFKHGXOHGHODVHFV+ROGWLPHEHWZHQ63)VVHFV
0LQPXP/6$WHUYDOVHFV0LQPXP/6$UULYDOVHFV
1XPEHURILQRPPLQFXUUHW"H[FKDQHQLJKERUV
1XPEHURIRXWJRLQFXUUHW"H[FKDQHQLJKERUV
1XPEHURIH[WHUQO/6&KHFNVXP6XP[
1XPEHURI$6FRSHG8QRZ6$
1XPEHURI/6$RULJLQWHG
1XPEHURI/6$UHFHLYHG
/RJ1HLJKERU$GMHQ&KDQHV(QEOHG
1XPEHURIDUHDVLWKLVURXWHULV
%)'LVHQEOHG
```

```
$UHD%&.%21(
1XPEHURILQWHUIDFHVLQWKLVDUHDLV
63)DOJRULWKPH[HFXWHGWLPHV
1XPEHURI/6&KHFNVXP6XP[")
1XPEHURI8QRQ$
```

ÏGÐ

Ð	ÆÄ
ipv6 router ospf	**|** OSPFv3 CÃE7Ä
default-information originate	**A5B5ÕÕÄ**
default-metric	**A5BGÚÃ5ÕGÄ**
router-id	**A5B** OSPFv3 CÃE7ÂÄ
timers spf	**G5B** OSPFv3 ÿ%,XÊÈ SPF Au1k,XÊÈ SPF Au1k,XÊÈ LhÊÈhÄ

ÏGÄÈ -

6.30 show ipv6 ospf database

/ OSPFv3 E7ÒBgÇÄ

show ipv6 ospf [*process- id*] **database** [*lsa-type* [**adv-router** *router-id*]]

ÏDAÈ

Ð	ÆÄ

```
[[F
/LQ/6HUIDFH/RRSEDFN
```

```
,WHUIDFH,'
,3Y3UHIL[HV
IHGIIIH/LQ/RFDOSGUHVV
263)Y3URFHVVSHD,VWDQH,'
5RXWHU,'1HWZUN7SH%52$&67&RVW
7UDVPLW'HODLVVHF6WDWH%'53ULRULW\
'HVLJQWHG5RXWHU,'
,WHUIDFHSGUHVVIHFHIIIHF
%DFNXS'HVLJQWHG5RXWHU,'
,WHUIDFHSGUHVVIHGIIIH
7LPHULWHUYDOFRQLJXUHG+HOOR'HDG:DLW5HWUDVPLW
+HOORGXHLQ
1HLJKERU&RXWLVSMDFHWHLJKERUFRXWLV
+HOORUHFHLYHGVHW"UHFHLYHGVHW
/65HTUHFHLYHGVHW/68SGUHFHLYHGVHW
/6SNUHFHLYHGVHW'LVFDUGHG
```

VpAy;XF*â BFD 6(|È BFD enabled Ä

```
5XLMLHVKRZSYRVSILWHUIDFH
)DVW(WKHUHWLVXSOLHSURWRFROLVXS
,WHUIDFH,'
,3Y3UHIL[HV
IHGIIIH/LQ/RFDOSGUHVV
263)Y3URFHVVSHD,VWDQH,'
5RXWHU,'1HWZUN7SH%52$&67&RVW
7UDVPLW'HODLVVHF6WDWH%'53ULRULWÈ%)'HQEOHG
'HVLJQWHG5RXWHU,'
,WHUIDFHSGUHVVIHFHIIIHF
%DFNXS'HVLJQWHG5RXWHU,'
,WHUIDFHSGUHVVIHGIIIH
7LPHULWHUYDOFRQLJXUHG+HOOR'HDG:DLW5HWUDVPLW
+HOORGXHLQ
1HLJKERU&RXWLVSMDFHWHLJKERUFRXWLV
+HOORUHFHLYHGVHW"UHFHLYHGVHW
/65HTUHFHLYHGVHW/68SGUHFHLYHGVHW
/6SNUHFHLYHGVHW'LVFDUGHG
```

ÏÌGÐ

Q	EÄ
ipv6 router ospf	| OSPFv3 CÃE/Ä
ipv6 ospf area	| OSPFv3 CÃE/Ä

ÏGÄÈ -

6.32 show ipv6 ospf neighbor

/ OSPFv3 E/Ïs¢Ä

show ipv6 ospf [*process- id*] **neighbor** [*interface-type interface-number* [**detail**] | *neighbor-id* | **detail**]

ÏÐAÐ

Ð	EÄ
process-id	OSPFv3 E/Ë
detail	**/FA4¢Ä**
interface-type interface-number	*ûy2_Ä*
neighbor-id	*ûF•* Router IDÄ

Ï5,Õ5BÐ -

Ï¢ (Mã

Ï5*Ûi -

Ï5B_Ð _ 1¢Ï OSPFv3 F•U¢

```
5XLMLHVKRZSYRVSIHLJKERU
263)Y3URFHVV1HLJKERUVLV)XOO
1HLJKERU,'3UL6WDWH'HDG7LPH,WHUIDFH,WDEH,'
)XOO'5)DVW(WKHUHW
```

_ 2¢Ï OSPFv3 FA4¢

```
5XLMLHVKRZSYRVSIHLJKERUGHWDLO
1HLJKERULWHUIDFHDGGUHVVIHFHIIIHF
,WKHDUHDYLDLWHUIDFH)DVW(WKHUHW
1HLJKERUSULRULWLV6WDWHLV)XOOVWDWHFKDQHV
'5LV%'5LV
2SWLRVLV[_5___(_9
'HDGWLPHUGXHLQ
'DWDEDVH6XPPDU)LVW
/LQ6WDWH5HTXHVW/LVW
/LQ6WDWH5HWUDVPLVVLRQLVW
```

Vp*EE› BFD "#AF•XE@ÃÈ BFD session state up Ä

```
5XLMLHVKRZSYRVSIHLJKERUGHWDLO
1HLJKERULWHUIDFHDGGUHVVIHFHIIIHF
,WKHDUHDYLDLWHUIDFH)DVW(WKHUHW
1HLJKERUSULRULWLV6WDWHLV)XOOVWDWHFKDQHV
'5LV%'5LV
2SWLRVLV[_5___(_9
'HDGWLPHUGXHLQ
```

```
'DWDEDVH6XPPDU\LVW
/LQN6WDWH5HTXHVW/LVW                                    9
/LQN6WDWH5HWUDQVPLVVLRQLVW
%)'VHVVLRQWDWHXS
```

6.34 show ipv6 ospf summary-prefix

/ OSPFv3 ÊCÃ6.µÄ

show ipv6 ospf [*process-id*] **summary-prefix**

ÐÀÈ

Ð	ÆÄ
process- id	OSPFv3 E/Ë

ÏÕ5BÐ -

Ð (Mã

Ï*Ð -

Ï5B_Ð ¦ß OSPFv3 ÊCÃ6.µ

5XLMLHVKRZSYRVSIVXPPDUSUHIL[
263)Y3URFHVV6XPPDUSUHIL[
GE0HWULF7SH7DJ0DWFKFRXQWDGYHUWLVH

ÏÇÐ

Q	ÆÄ
ipv6 router ospf	**|** OSPFv3 CÃE/Ä
summary-prefix	**G5B** OSPFv3 CÃÊCÃ,X6.CÃ

ÏÄÈ -

6.35 show ipv6 ospf topology

/ OSPFv3 ÞX%µÄ

show ipv6 ospf [*process- id*] **topology** [**area** *area-id*]

ÐÀÈ

ÐBbg%&(5%bI"(5/SbRQVÀÃ&rV1%&&rdanÞ&'$4@	

ÏGÄÈ -

6.37 summary-prefix

ÜG5B OSPFv3 CÃÊCÃ‚X6.CÃÈÏ*CÃÊ/G5BÇ **summary-prefixÄÇ no 6ãÕ5BÄ**

summary-prefix *ipv6-prefix/prefix-length* [**not-advertise** | **tag** *number*]

no summary-prefix *ipv6-prefix/prefix-length* [**not-advertise | tag** *number*]

ÏDAÈ

Ð	ÊÄ
ipv6-prefix/prefix-length	*6.Ã*
not-advertise	*ãÊÈ.Ã* 8Ð></Eî
tag *number*	**A5BGÚ** OSPFv3 YCÃ‚X tag 8È 0-4294967295

Ï5,Õ5BÐ	spf-delayÏ000 [illegible]×
	spf-holdtimeÖ 5000 [illegible]×
	spf-max-waittimeÏ0000 [illegible]Ä
Ð	CÃE/G5BÄ
Ï5*Ð	*spf-delay* ></[illegible] SPF Au1kÈ[illegible]A*C[illegible]=BS[illegible] SPF Au1k1`õ [illegible] SPF Au1k*CÁÈ[illegible] *spf-holdtimeÈ* 8[illegible]4[illegible] SPF Au1k*C[illegible]P[illegible]B[Ì [illegible]*C[illegible] *spf-max-waittime* [illegible] SPF Au1k*C[illegible] 4[illegible]YE[illegible]*CÁ0a,gpAÀ SPF Au1k[illegible] *spf-holdtime* [illegible]*u1kÄ* *spf-delay* ` *spf-holdtime* [illegible] *spf-max-waittime* [illegible] SPF Au1k[illegible]rL5%4[illegible]0n[illegible]&I#'5BÄ â **timers spf** [illegible]C5B[illegible] SPF Au1k[illegible]1G,[illegible] GB4[illegible] SPF Au1k*C4[illegible]#[illegible]*ü **timers throttle spf** [illegible]G5BÄ *spf-holdtime* [illegible] *spf-delay* [illegible] *spf-holdtime* [illegible] *spf-delay* [illegible]× *spf-max-waittime* [illegible] *spf-holdtime* [illegible] *spf-max-waittime* [illegible] *spf-holdtime* [illegible]Ä **timers throttle spf G5Bâ timers spf G5B**[illegible] ' **timers spf â timers throttle spf F**[illegible]5B[illegible] **timers throttle spf G5B*C**[illegible]
Ï5B_Ð	Ú OSPFv3 ,C SPF Au1kLÌ[illegible] 5 [illegible]000 [illegible]0000 [illegible] %GB4[illegible] SPF Au1k[illegible] 5ms[illegible] 5s [illegible] 5s [illegible] 5s È 31s[illegible]3s [illegible]9s È 179sÈ 179+90 5CLMLCFBAILJLSYUBCWCURFSI 5CLMLCFBAILJUBCWCUWLPCUVVSI

ÏÏGAÐ	A¸	[illegible]Ä
	clear ipv6 ospf	**S*[illegible]A[illegible]G[illegible]** OSPFv3 F[illegible]6Ñ
	show ipv6 ospf	**/** OSPFv3 CÃG/[illegible]Ä
	timers spf	**G5B** SPF Au1k[illegible]CÈ

7 IS-IS

7.1 adjacency-check

S*ÄÇ5Bü Hello y["#FÕX#AÄ*ÄÇX **no 6ÄÄ**

adjacency-check

no adjacency-check

ÏÐAÈ

Ð	ÆÄ
-	-

ÏÕ5BÐ *Ä*#

ÏÐ IS-IS CÃÆ7G5Bã

ÏÊ TÄxÄ Hello y["#FÕX#AÄ*ÄÇX no 6ÄÆ/¡#Ä

ÏG5B_Ð

5XLMLHFRÇJURXWHULVLV

5XLMLHFRÇJURXWHUDGMDFHÇFKHFN

ÏÏGÇ

Ç	ÆÄ
-	-

ÏGÄÈ -

7.2 area-password

S*ÄÇ'5B Level-1 area ,XÇAxAšÕ*ÄÇX **no 6ÄÄ5BXšÕ**

area-password [**0** | **7**] *password-string* [**send-only**]

no area-password [**send-only**]

ÏÐAÈ

Ð	ÆÄ
0	ûÊyÇ
7	*ûÊÇ*
password-string	*AÇxAšÕÄ* ÊSÕ 126 ÇÄ
send-only	ûÊ Level-1 area ,XÇAxAšÕ*ÄÇXy[ÊXy[ÄÈ PÄ•

ÏÕ5BÐ Ç'5BAxAšÕ

	IS-IS CÃE7G5Bã
S*Ô	A’5BE5Ò Level-1 area ,X LSPÃCSNP ÃSNP y,XAxAÈÕ5ÈxAµ ÈÕ Area ÈX IS-IS A’ÛOA’5B,ÈX passwordÄ 8EE› **authentication mode G5BÃxAÈÕ5BÈÔ8** **authentication mode Q5BÄ** #’G5BÈpú **send-only ÈÄ**
G5B_Ð	ÛJ IS-IS Y,XAxAS*ÈAxAÈÕ *redgiantÈÕ*

ÏG5B_Ð ĥ IS-IS Ý,XAxAS*á kc ,XšÕÎ

5XLMLHFRQLJURXWHULVLV

5XLMLHFRQLJURXWHUDXWKHQWLFDWLRQHIFKDLQFOHYHO

ÏÎGÐ

Ð	ÐÄ
authentication mode	**ĥ** IS-IS AxAã
authentication send-only	**ĥ** IS-IS AxAÞ*ÿÏÐ,Xy[Ê,Xy [Ê> AxA•
key-chain	**G5BšÕ**

ÏGÄÈ -

7.4 authentication mode

S*ÄÎ IS-IS AxA•XÄ*ÄÎ **no 6ÄÎ** IS-IS AxAÄ

authentication mode { **md5** | **text** } [**level-1** | **level-2**]

no authentication mode { **md5** | **text** } [**level-1** | **level-2**]

ÏÐAÈ

Ð	ÐÄ
md5	**ĥS*ü** MD5 AxAã
text	**ĥS*ÎAxAã**
level-1	*ĥAxAã* Level-1 ÞÓ
level-2	**ĥAxAã** Level-2 ÞÓ

ÏÕ,Õ5BÐ ĥAxAã

ÏÎ IS-IS CÃÊ7G5Bã

ÏS*ĥ ÜS*ü **authentication key-chain Ò5B,XšÕÎ*ÈOS*ü** **authentication mode ÎÒ AxAÄ**

8ÜĥÎ LevelÊ,XAxAÊ*ü Level-1 ` Level-2Ä

G5B **authentication mode ÎS4S*ü** **area-password ê domain-password Ò5B ÎAxAÎ Ò5B,XÎ**

8G5BZ **authentication mode ÎG5B** **area-password ê domain-password ÈÔ Ó** **authentication mode Ò8Ä**

ÏG5B_Ð ĥ IS-IS Ý,XAxAS*ü MD5 AxAÄ

5XLMLHFRQLJURXWHULVLV

5XLMLHFRQLJURXWHUDXWKHQWLFDWLRQRGHPGOHYHO

ÏÎGÐ

Ð	ÐÄ
area-password	**A5B** Area ÎAxAšÕ

authentication key-chain	**ûÙ** IS-IS AxA•S*¡XšÕÒ
authentication send-only	**ûÙ** IS-IS AxA•½*ùÈ,Õ¯Xy[Ê¿Xy [Ê¯> AxA•
domain-password	**A5B** Domain ÊAxAšÕ

ÏGÄÈ -

7.5 authentication send-only

S*ÀÊ IS-IS AxA•½*ùÈ,Õ¯Xy[Ê¿Xy[Ê¯> AxAÄ*ÀÊ **no 6ª**
Ê/Ê6ÿ,Xy¿Ê¯>AxAÄ
authentication send-only [**level-1** | **level-2**]
no authentication send-only [**level-1** | **level-2**]

ÏÐAÈ

Ð	ÊÄ
level-1	*ûü* Level-1 Ä'5B **send-only**
level-2	**ûü** Level-2 Ä'5B **send-only**

ÏÕ,Õ5BÐ ÊÊÕ¯Xy[Ê¯> AxA•

ÏÊ IS-IS CÃÊ7G5Bã

ÏS*ûÙ G5BAÊ IS-IS ÉÕ¯Xy[A'5BAxAšÕ¯Xy[Ê¯> AxAÄÄ*ùø
ÊÊ%4,XÁ'šF IS-IS AxAÈxAšÕxAÊ¯> ÊÊ
ÏÙÄ'5BÞ **authentication send-only ÊÊÕ¯Xy[Ê¯>AxAÈSâ**
¸XAxAšÕFÊ/3¾ÊÕ5ÄÊ¾XAxAšFÊS*ü **no isis authentication**
send-only ÊÊ **send-only ÊÊ¯>AxAÄ**
AÊ*ùÊAxAã MD5 AxAÊÊ› **authentication mode ÊÊ5BS*¡XAx**
AÄ
8ÏÙÙ Level ÊÊ,XAxAÊ*ù Level-1 ` Level-2Ä

ÏG5B_Ð ûÙ IS-IS ¥,XAxA• send-only Ä

5XLMLHFRÊÊJURXWHULVLV
5XLMLHFRÊÊJURXWHUDXWKHÊWLFDWLRÊÊHÊRÊÊOHYHO

ÏÏGÊÊ

Ê	ÊÄ
authentication key-chain	**ûÙ** IS-IS AxAšÕÒ
authentication mode	**ûÙ** IS-IS AxA•Xã
key-chain	**G5BšÕ**

ÏGÄÈ -

7.6 clear clns neighbors

AÇÐ¡#Ù8Ý IS-IS ,XF•G2Ï><Ä

clear clns neighbors

ÏÐAÈ

Ð	ÉÄ
-	-

ÏÕ5BÐ -

ÏÇ (Mã

ÏS*Ô S*8ÇÑÏ„ IS-IS ,XF•G2Ï><Ä

ÏG5B_Ð -

ÏÌGÇ

Ç	ÉÄ
clear isis *	**Ù8Ý** IS-IS ,XDB4X

ÏGÄÈ -

7.7 clear isis *

AÇÐ¡#Ù8Ý IS-IS ,XDB4XÄ

clear isis *

ÏÐAÈ

Ð	ÉÄ
-	-

ÏÕ5BÐ -

ÏÇ (Mã

ÏS*Ô ÇÏLÔ0Ï„ LSP ,XÄ¥¡ Z area-password ` domain-password â

CÃ<E,É,X LSP Ã*Ç¡#Ù8Eo LSPÄ

ÏG5B_Ð -

ÏÌGÇ

Ç	ÉÄ
clear clns neighbors	**Ù8Ý** IS-IS ,XF•

ÏGÄÈ -

7.8 clear isis counter

AÇÐ#Ù8 IS-IS ,XÇ4ª Au¡ÇÄ

clear isis [*tag*] **counter**

ÏÐAÈ

Ð	ÆÄ
tag	IS-IS r_

ÏÕ5BÐ -

ÏÇ (Mã

ÏS*Ð -

ÏG5B_Ð -

ÏÌGÇ

Ç	ÆÄ
clear isis *	**Ù8Ý** IS-IS ,XDB4X

ÏGÄÈ -

7.9 debug isis

S*8ÇÔ IS-IS ĥ,X DEBUG ¡ÇÔÄ¡Ç **no 6ª9GÌÍX** DEBUG ¡ÇÔÄ

debug isis { **all** | **auth** | **events** | **gr** | **ifsm** | **lsp** | **nfsm** | **nsm** | **pdu** | **spf** | **warn** }

no debug isis { **all** | **auth** | **events** | **gr** | **ifsm** | **lsp** | **nfsm** | **nsm** | **pdu** | **spf** | **warn** }

ÏÐAÈ

Ð	ÆÄ
all	**Ô** IS-IS ,X DEBUG Ô
auth	**Ô** IS-IS ,X authentication AxA•DEBUG Ô
events	**Ô** IS-IS ,X_ÊG,X DEBUG Ô
gr	**Ô** IS-IS ,X GR ,ÌG,X DEBUG Ô
ifsm	**Ô** IS-IS ,Xy(ÕG,X DEBUG Ô
lsp	**Ô** IS-IS ,X LSP ,ÌG,X DEBUG Ô
nfsm	**Ô** IS-IS ,XF(ÕG,X DEBUG Ô
nsm	**Ô** IS-IS ,X NSM ,ÌG,X DEBUG Ô
pdu	**Ô** IS-IS ,Xy[,ÌG,X DEBUG Ô
spf	**Ô** IS-IS ,X SPF Au1k,ÌG,X DEBUG Ô
warn	**Ô** IS-IS ,XA:,ÌG,X DEBUG Ô

ÏÕ5BÐ Ý DEBUG ¡ÇÔGKÁ

ÏÇ (Mã

Ï S*Ð -

Ï G5B_Ð _ 1Ö IS-IS ,X GR ,Ì G,X DEBUG Ô
5XLMLHGHEXJLVLVJU
_ 2Ö IS-IS ,X SPF ,Ì G,X DEBUG Ô
5XLMLHGHEXJLVLVVSI

ÏÌ GÐ

Ò	ÉÄ
show debugging	**/AÑÝ** DEBUG Ô'(Ã

ÏGÄÈ -

7.10 default-information originate

S*ÄÒÕTÄxCÃÇJEÉ› LSPÄÄÒ **no 6ã** LSP ô8TÄxCÃÇÄ
default-information originate [**route-map** *map-name*]
no default-information originate [**route-map** *map-name*]

ÏÐÄÈ

Ð	ÉÄ
route-map *map-name*	G6(route-mapÄ

Ï ÕÕ5BÐ ÇÃ*TÄxCÃ

Ï Ò IS-IS CÃÉ7G5Bã

Ï S*Ð Level-2 domain ÇÃ*TÄxCÃÈ*ÄÒÕTÄxCÃÉ9 Level-2 domainÄ

Ï G5B_Ð 5XLMLHFRÒLJURXWHULVLV
5XLMLHFRÒLJURXWHUGHIDXOWLÒRUPDWLRÒULJLÒWH

ÏÌ GÐ

Ò	ÉÄ
-	-

ÏGÄÈ -

7.11 distance

S*ÄÒ'5B IS-IS CÃ,X1u)Ú/Ä*ÄÒ **no 6ã1u)Ú/5Ò**
distance *my-cost*
no distance

my-cost	Ã/Ã1-255>	È,Õ	115Ä

Ï5,Õ5BÐ Ð5,Õ

Ð IS-IS CÃE/Ï5Bã

Ï*Ô CÃ1u)ÚÈ¢ÈCÃ¢CÃ

Ï5B_Ð 5XLMLHFRQJURXWHULVLV
5XLMLHFRQJURXWHUGLVWDQH

ÌÏGÐ

Q	EÄ
isis metric	**A5By;X** metric

ÏGÄÈ -

ÏÎGÐ

Ò	£Ä
area-password	**A5B** Level-1 area [ÂxAšÕ
authentication mode	**bÎ** IS-IS AxAã

ÏGÄÈ -

7.13 graceful-restart helper disable

AÇÎGKÁ IS-IS GR Helper 6ÑÄ*ÄÇX **no 6ÎS6ÑÄ**

graceful-restart helper disable

no graceful-restart helper disable

ÏÐAÈ

Ð	£Ä
-	-

ÏÕ5BÐ S6Ñ IS-IS GR Help 6Ñ

Ò IS-IS CÃE7G5Bã

ÏS*Î 'LÔGKÁ IS-IS GR Help 6ÑÊ5BAÇÊ IS-IS Ñ9GÃ'ÎXLÎ'ÄÈ

ÏG5B_Ð G5B6Ñ IS-IS GR Help 6Ñ

5XLMLHFRÎQJURXWHULVLV

5XLMLHFRÎQJURXWHUJUDFHIXOUHVWDUWKHOSHUGLVDEOH

ÏÎGÐ

Ò	£Ä
-	-

ÏGÄÈ -

7.14 hello padding

S*8ÇÍ IS-IS Hello y[E> ÄÇX **no 6ÃA5Bã** IS-IS Hello y[Ä

hello padding [**multi-point | point-to-point**]

no hello padding [**multi-point | point-to-point**]

ÏÐAÈ

Ð	£Ä
multi-point	bÍ LAN 2O_ Hello y[E> ?
point-to-point	bÍ P2P 2O_ Hello y[E> ?

ÏÕ5BÐ 5,Õ LAN 2O_ž P2P 2O_ Hello y[FÑÄ

Ò IS-IS CÃE7G5Bã

Hello

7.16 ignore-lsp-errors

A'5B IS-IS LSP ,X PJ AX **no** A'5B LSP ,X PJí AÃ

ignore-lsp-errors

no ignore-lsp-errors

Đ	EÄ
-	-

5,Õ5BĐ LSP ,X PJÁÃ

IS-IS CÃE/G5Bã

' IS-IS LSP y[ÍX LSP E> PÀu1kÈÉu1kÎ,X Pà LSP y[,X PE> EWÍX LSP E> P PÄ,(Ãp y[,X Pàu 1kÎ,X PÃÈ LSP 5ÁÝpÂEQ ignore-lsp-errors A'5B "PJÁÃS"PÎ LSP ,X PJÁÃÉy[Ýy[ÄÉ

5XLMLHFRQJURXWHULVLV

5XLMLHFRQJURXWHULJRUHOVSHUURUV

Q	EÄ
-	-

-

7.17 ip router isis

S*AQA'5BAyÕ IPv4 IS-IS CÃÄ IS-IS G5BNOÁ5Q5BÄÉ> ü Tag IS-IS r_Èpáü Tag IS-IS r_È3ü|Jä Tag IS-IS r_Èy· ü IS-IS CÃÄ*AQX **no** 6ÁÝ· IPv4 IS-IS CÃÄ

ip router isis [*tag*]

no ip router isis [*tag*]

Đ	EÄ
tag	IS-IS r_ÁÄ

5,Õ5BĐ yÞü IPv4 IS-IS CÃ

yG5Bã

A'5BE5Qyâ IS-IS IPv4 CÃ#AQX no **6ãyÞü** IS-IS CÃE/Ä

VpüG5BÐ G5B no ip routingÈw IS-IS ýÓGKÁ IPv4 CÃs6Ñü
ýÓ7¾ **no ip router isis** [*tag*]ÈG5B IS-IS G5BÐ

ÏG5B_Ð 5XLMLHFRQLJLQWHUIDFH*LJDELW(WKHUQW
5XLMLHFRQLJLILSURXWHULVLV

ÏÎGÐ

Ð	ÆÄ
router isis	Î IS-IS r_

ÏGÄÐ -

7.18 isis authentication key-chain

S*ÄÐ'5B IS-IS yAxAS*ÿXšÕÀÐ **no 6ÐyAxAS*ÿXšÕ**
isis authentication key-chain *name-of-chain* [**level-1 | level-2**]
no isis authentication key-chain *name-of-chain* [**level-1 | level-2**]

ÏÐAÐ

Ð	ÆÄ
name-of-chain	šÕÐSz 255
level-1	ÔÌ Level-1 ,XAxAšÕÒ
level-2 ÔÌ Level-2 ,XAxAšÕÒ	

ÏÕ,Õ5BÐ ÔÌ IS-IS yAxAšÕÒ

Ð yG5Bã

ÏS*ÔÌ VpüÝ*ü **key chain Ð5BÌ,XšÕÀxAÐ** IS-IS šÕÀxAÇK0*È
LÔÐ5B **isis authentication mode Ð**
AšÕÀ*ÿ[AxAã MD5 tÀxAÃÈ› **isis authentication mode Ð5B**
S*ÿXAxAÄ
S*[AxAÐÕÀšÕ key-string ãÑ 254 +0Ò5BÄ
ÐÔ*Ô key-chainÈ5BÐ,X key-chain ÉÑ9,X key-chainÄ
VpüÔ LevelšÕÀ*ÿ Level-1 ` Level-2Ä
AÐ,XšÕÒ*ÿ Hello y[Ä IS-IS ÉÑ2bAšÕÒ,XšÕ
šÕÀÐÑÕ[Ê*üÄXšÕy[Ê,Xy[
,XšÕÒÐÑÄy[Ä
IS-IS E7Ò5B,XAxAÐ,X LSPÃ SNP y[È IS-IS yÇK0*È **authentication key-chain Ð**

ÏG5B_Ð ÔÌy· GigabitEthernet 0/1 ,XAxAšÕÒ*ä kc ,XšÕÀ
5XLMLHFRQLJLQWHUIDFH*LJDELW(WKHUQW
5XLMLHFRQLJLILVLVDXWKHQWLFDWLRQHFKDLQF

ÏÎGÐ

Ð	ÆÄ

isis authentication mode	**b** IS-IS yAxAã
isis authentication send-only	**b** IS-IS yAxAÞ¾'bÞÕ,Xy[Ê ,Xy[Ê> AxAÄ
key-chain	**G5BšÕ**

ÏGÄÈ

7.20 isis authentication send-only

S*ÄÃÇ IS-IS yAxAÄ¾*üÆÇÕy[Ê,Xy[ÊE> AxAÄ*ÄÃÇX **no 6ã**
9ÆÄÀ6ãÇÇXyÇE>AxAÄ
isis authentication send-only [**level-1** | **level-2**]
no isis authentication send-only [**level-1** | **level-2**]

ÐÄÃÀ

Ð	ÆÄ
level-1	*ÇüX* Level-1 Ä'5B **send-only**
level-2	**ÇüX** Level-2 Ä'5B **send-only**

Ö,Õ5BÐ ÇÆÆÇÕXy[E> AxA•

ÖÇ yG5Bã

Ö*üÐ G5BAÀÇ-IS ÚÆÇÕX Hello y[A'5BAxAšÇÕX Hello y[ÊE> AxA•
'ÆÄ*üÇÐ¾4;XÁ'šF IS-IS yAxAÀÊxAšÕxA•
ÊE> ÊÄÇÀÀ'5BÞ **isis authentication send-only ÐÇÜ**
X Hello y[E> AxAÀÊSÊ,X IS-IS yAxAšFE⁄ß%4{*üÜ5ÄÇ5%4;XAxA×
5FÀS*ü **no isis authentication send-only Ð** **send-only ÐE>AxAÄ**
AÇ*üÇAxAã MD5 AxAÃÊE› **isis authentication mode Ç5B** IS-IS
yS*üXAxAÃÄ
8üÜ Level ÊXAxAÃ*üy¡X Level-1 ` Level-2Ä

ÖG5B_Ð ÇÜy· GigabitEthernet 0/1 ,X Level-1 ,XAxAS*ü send-only Ä
5XLMLHFRQILJLVWHUIDFH*LJDELW(WKHUQHW
5XLMLHFRQILJLILVLVDXWKHQWLFDWLRQHQRQHOHYHO

ÎÎGÇÐ

Ç	ÆÄ
isis authentication key-chain	**Ü** IS-IS yAxAS*üXšÕÒ
isis authentication mode	**Ü** IS-IS y¡XAxAã
key-chain	**G5BšÕ**

ÖGÄÃÀ -

7.21 isis circuit-type

S*ÄÃÇ'5B IS-IS y¡X circuit-typeÄ*ÄÃÇX **no 6ãG5B** circuit-type TAxÄ
isis circuit-type { **level-1 | level-1-2 | level-2-only** }
no isis circuit-type

ÐÄÃÀ

Ð	ÆÄ
level-1	**6ä** Level-1 F•

level-2-only	**6ä** Level-2 F•
level-1-2	**6ä** Level-1-2 F•

Ï5,Õ5BÐ circuit-type Level-1-2

Ïð yG5Bã

Ï*Ð VpA'5BZ Level-1 ê Level-2-only ,X circuit-typeÈ IS-IS Ï¥Õ Level ,X PDUÄ
Vp is-type >•G5B Level-1 ê Level-2-onlyÈ IS-IS r_ÏÁ¹ Level ,X_uÈÃÊA¹
yÏ¥Õ is-type â circuit-type ,ÈGÏX Level PDUÄ

ÏG5B_Ð 5XLMLHFRQJLWHUIDFH*LJDELW(WKHUQW
5XLMLHFRQJLILVLVFLUFXLWWSHOHYHORQ\

ÏÌGÐ

Q	£Ä
is-type	**A5B** IS-IS r_,X Level

ÏGÄÈ -

7.22 isis csnp-interval

A*Ð9A'5B IS-IS y,X CSNP y[,XSKÈhÈÄ*ÄQX **no 6ÄÈ5B** CSNP y[,XSKÈhTAxÄ

isis csnp-interval *interval* [**level-1 | level-2**]

no isis csnp-interval [*interval*] [**level-1 | level-2**]

ÏÐAÈ

Ð	£Ä

ÌÎGÐ

Ò	£Ä
-	-

ÏGÄÐ -

7.23 isis hello-interval

S*ÄÒ'5B IS-IS y£Õ Hello y[,XKÈhÊÃ*ÄÒ **no 65,5B** Hello KÈhÊÈ¬ AxÄ

isis hello-interval { *interval* | **minimal** } [**level-1 | level-2**]

no isis hello-interval { *interval* | **minimal** } [**level-1 | level-2**]

ÏÐAÐ

Ð	£Ä
interval	*£Õ* Hello y[,XKÈhÊÈÈ 1-65535È,Õ 10
minimal	Holdtime ÔÐ 1
level-1	**h*ïb** Level-1 hello y[
level-2	**h*ïb** Level-2 hello y[

ÏÕ5BÐ Level-1 ` Level-2 S*Ð5,Õ

}

	-

7.24 isis hello-multiplier

S*AQ'5B IS-IS y;X Hello holdtime ,X,DÄ*AQX **no 6Ú** Hello holdtime ,D5B TAxÄ

isis hello-multiplier *multiplier-number* [**level-1 | level-2**]

no isis hello-multiplier [*multiplier-number*] [**level-1 | level-2**]

	multiplier-number	*DÈ* 2-100È,Õ 3

	5,Õ5BÐ Ð5,Õ
	IS-IS CÃE7G5Bã
	Hello y[,X holdtime + hello-interval ,A¹DÄ
	5XLMLHFRQJURXWHULVLV 5XLMLHFRQJURXWHULVLVKHOORPXOWLSOLHU

	isis hello-interval	**A5B** Hello ÈÕÈhÊÈ

	-
	Hello

7.25 isis hello padding

S*8ÕÍ00

,X Hello y[,XÈÊÕ Hello y[ÊÈ> Ä

ÏG5B_Ð 5XLMLHFRQJLQWHUIDFH*LJDELW(WKHUQW
5XLMLHFRQJLIQLVLVKHOORSDGGLQ

ÏGÐ

Q	ÊÄ
isis hello-interval	**A5B** Hello ÊÕÈhÊÈ
hello padding	**A5B** Hello y[,Xa

ÏGÄÈ -

7.26 isis lsp-interval

S*8Q'5B IS-IS yÊÕ LSP PDU ,XKÈhÊÈ8Q **no** 6ÉÈhÊÈ'5BTAxÄ

isis lsp-interval *interval*

no isis lsp-interval

ÏÐÄÈ

Ð	ÊÄ
interval	ÊÕ LSP PDU ,XKÈhÊÈ 1-4294967295È ,Õ 33

ÏÕ5BÐ Ð5,Õ

ÏÐ yG5Bã

ÏS*Ð -

ÏG5B_Ð 5XLMLHFRQJLQWHUIDFH*LJDELW(WKHUQW
5XLMLHFRQJLILVLVOVSLQWHUYDO

ÏGÐ

Q	ÊÄ
isis retransmit-interval	P2P 5%4ÈSP GÊÈhÊÈ

ÏGÄÈ -

7.27 isis mesh-group

AÐÚ IS-IS yt9ÛX<E4Ä*8Q **no**

mesh-group-id	**Ú9ÛX** mesh-group-id ,X<E4Ä 8È 1-4294967295

ï5,Õ5BÐ yÞÏ<E4˜

Ïð yG5Bã

ïS*Ûð Mesh-groups ÃS NBMA 5%4E#ÕXÃ,X LSP =7#|ÄÄ% IS-IS CÃ<y
yÕXJÝ=7 LSPÈÄÈpÕÃ<G5BÞÈw LSP ÎX
ÞÈÕÞX LSPÈ>CÛ,X CPU Ä
IS-IS <E4ÄÚÃ<yÚÈpÕ LSP >4˜,XÞyÈwA¹ LSP ÃÈ›
4JÞ=7ÎvpCÃ<4Z LSP FwÚÛÞy=7 LSPÄ
VpLÔü IS-IS yÞ5B **mesh-groupÈ5%4ÈX** LSP ÞÄ,XHÈÔS*ü **isis csnp-interval** Ò5BM2 0 ,X CSNP y[ÈÕÈhÈÈÕ CNSP y[Ò LSPÄ

ïG5B_Ð 5XLMLHFRQJLQWHUIDFH*LJDELW(WKHUQW
5XLMLHFRQJLILVLVPHVKJURXS

ïÏGÞ

Ò	ÈÄ
isis network point-to-point	**G!5B Ú** IS-IS ,X Broadcast y ·2O _A'5B Point-to-Point 2O_

ïÏÄÈ)!Ð -

7.28 isis metric

S*ÞÒ'5B IS-IS y;X Metric È*ÞÒX **no 6Ú** IS-IS y;X Metric A'TAxÄ
isis metric *metric* [**level-1| level-2**]
no isis metric [*metric*] [G!5B Ú

5XLMLHFRQLJLILVLVPHWULF

ÏÎGÐ

Ç	ÆÄ
metric-style	**A5B** Metric 2O_
isis wide-metric	**A5B** IS-IS y;X wide Metric

ÏGÄÈ -

7.29 isis network point-to-point

AÓ Broadcast 2O_,XyA'5B Point-to-Point 2O_ÄÄÇX **no 65á** Broadcast 2O_Ä

isis network point-to-point

no isis network [**point-to-point**]

ÏÐÄÈ

Ð	ÆÄ
point-to-point	**&O_**

ÏÕ5BÐ Broadcast 2O_Ä

ÏÇ yG5Bã

ÏS*Ð S*ÄÓ IS-IS ,X Broadcast y2O_A'5B Point-to-Point 2O_ÄÇ Broadcast 5%4° y2O_Ä

ÏG5B_Ð 5XLMLHFRQLJLWHUIDFH*LJDELW(WKHUQW

5XLMLHFRQLJLILVLVQWZUNSRLWWRSRLW

ÏÎGÐ

Ç	ÆÄ
isis mesh-group	**G5BÚ** IS-IS yt9ûJ,X<E4˜

ÏGÄÈ -

7.30 isis password

S*8Ç'5By;X Hello y[ÄxAšÕ*ÄÇX **no 65A5BXšÕ**

isis password [**00TE31 Tw 1 1 Tf08025 Tc 1|2 Tc 0 Tw []Tj/TT2 1 Tf0f5025 Tc 17sis password**

ÏG5B_Ð	5XLMLHFRQLJLQWHUIDFH*LJDELW(WKHUQW 5XLMLHFRQLJLILVLVSULRULWOHYHO

ÏÎGÐ	Q	£Ä
	-	-

ÏGÄÈ -

7.32 isis retransmit-interval

S*ÄQ'5ByGô LSP ,XKÈhÊÃ*ÄQX **no 6Ú** LSP GôKÈhÊÃ'TAxÄ

isis retransmit-interval *interval-time*

no isis retransmit-interval

ÐAÈ	Ð	£Ä
	interval-time	LSP GôKÈhÈÈ 0-65535È,Õ 5

Ï,Õ5BÐ Ð5,Õ

Ïô yG5Bã

Ï*Ú S*ÄQ'5B LSP GôXKÈhÊÃÇô P2P 5%ÆÕ LSP yÏÈ retransmit-interval ÊÈÏüÝ PSNP h1(ÈÇÃ LSP y[Ä

Vp retransmit-interval A' 0È¥ LSP y[Ä

ÏG5B_Ð	5XLMLHFRQLJLQWHUIDFHVHULDO 5XLMLHFRQLJLILVLVUHWUDQPLWLQWHUYDO

ÏÎGÐ	Q	£Ä
	isis lsp-interval	**yÈÕ** LSP ¥XKÈhÊÈ

ÏGÄÈ -

7.33 isis wide-metric

S*ÄQ'5By;X wide Metric È*ÄQX **no 6ÚX** wide Metric A'TAxÄ

isis wide-metric *metric* [**level-1 | level-2**]

no isis wide-metric [*metric*] [**level-1 | level-2**]

ÐAÈ	Ð	£Ä
	metric	Metric ÈÈ 1-16777214È,Õ 10
	level-1	**h*ï** Level-1 circuit

level-2	**h*ü** Level-2 circuit

ï5,Õ5BÐ Level-1 ` Level-2 S*Ð5,Õ

Ð yG5Bã

ï*Ð Metric ü IP Ã'µ,X TLV Ù/ü SPF Au1k>h*Ä,X Metric ></8y;XEÍÃ5ë CÈSPF Au1kJCÃCÍKSÄ

Metric ã¼ metric-style Ù wide Ã

ï5B_Ð 5XLMLHFRQJLQWHUIDFH*LJDELW(WKHUQW
5XLMLHFRQJLILVLVZGHPHWULF

ïGÐ

Ð	ÆÄ
metric-style	**A5B** Metric 2O_
isis metric	**A5B** IS-IS y;X Metric

ïGÄÈ -

7.34 is-type

S*ÄÐ IS-IS E¤ ,X LevelÄ*ÄÐ **LevelgTxpÃ**

ÏGÄÈ -

7.35 log-adjacency-changes

AÇ6ÎÕ debug ,XÄ) IS ,XF(ÕÄ*ÄÇX **no 6ÎGÄ's**
6Ñ
log-adjacency-changes
no log-adjacency-changes

ÏÐAÈ

Ð	ÆÄ
-	-

ï,Õ5BÐ As6ÑÎ

Ïð IS-IS CÃE7G5Bã

ÏS*Ûï 3Ã*ü **debug ÇA),** IS ,XF(ÕÈ56,X24ÏCÄ

ÏG5B_Ð -

ÌÏGÇ

Ç	ÆÄ
-	-

ÏGÄÈ -

7.36 lsp-gen-interval

S*8Ç'5B LSP KÈhÊ,XÊ*ÄÇX **no 6ÃÃxÄ**
lsp-gen-interval [**level-1 | level-2**] *value*
no lsp-gen-interval

ÏÐAÈ

Ð	ÆÄ
value	LSP KÈhÊ,XÊÈ 1-120È,Õ 5
level-1	**h*ü** Level-1 IS-IS
level-2	**h*ü** Level-2 IS-IS

ï,Õ5BÐ Level-1Level-2v2l-KÈÑ@
Ï ó]a´D €

ÏG5B_Ð

5XLMLHFRQLJURXWHULVLV
5XLMLHFRQLJURXWHUOVSJHQWHUYDO

ÏÎGÐ

Ą	ÐÄ
lsp-refresh-interval	LSP GĶÈhÊÈ

ÏGÄÈ -

7.37 lsp-refresh-interval

S*8Ą'5B LSP ,XĶÈhÄ*AĶX **no 6ãÃ**xÄ

lsp-refresh-interval *interval*

no lsp-refresh-interval

ÏÐAÈ

Ð	ÐÄ
interval	LSP ,XĶÈhÈÈ 1-65535È,Õ 900

ÏÕ,Õ5BÐ Ð5,Õ

ÏÐ IS-IS CÃE7G5Bã

ÏS*Ð '7Ð,X LSP 0n(ÕÉ refresh interval EKS,XÊÈ LSP Ú refresh Eþ LSPÈÚ LSP (4{JÃ

lsp-refresh-interval NOã max lifetimeÄ

ÏG5B_Ð

5XLMLHFRQLJURXWHULVLV
5XLMLHFRQLJURXWHUOVSUHIUHVKLQWHUYDO

ÏÎGÐ

Ą	ÐÄ
-	-

ÏGÄÈ -

7.38 max-area-addresses

S*8Ą'5BAGÉ5B area address ,XÔÄ*8ĶX **no 6ãÃ5BAGÉ5B** area address ,XÔÃ-xÄ

max-area-addresses *value*

no max-area-addresses

ÏÐAÈ

Ð	ÐÄ
value	*AŒ* area address ,XÔÈÈ 3-6È,Õ 3

¨ÕÕ5BÐ	Ð5,Õ
¨Ð	IS-IS CÃÆ/G5Bã
¨S*Ð	´ Level-1 ,X IS CÃ<Ž4 max-area-addresses ,ÈÑÏ¨G2Ä
¨G5B_Ð	5XLMLHFRQJURXWHULVLV 5XLMLHFRQJURXWHUPD[DUHDDGGUHVVHV

¨ÌGÐ

Ð	ÆÄ
net	**A5B** IS-IS ,X NET(Network Entry Title)

¨GÄÈ -

7.39 max-lsp-lifetime

S*8Q'5B LSP *ÇÈÈÐ*8Q **no 6ã5B** LSP *ÇÈÐAxÄ

max-lsp-lifetime *value*

no max-lsp-lifetime

¨ÐAÈ

Ð	ÆÄ
value	LSP *ÇÈÈÐÈ 1-65535È,Õ 1200

¨ÕÕ5BÐ	Ð5,Õ
¨Ð	IS-IS CÃÆ/G5Bã
¨S*Ð	max-lsp-lifetime ¨Nõ lsp-refresh-intervalÄ
¨G5B_Ð	5XLMLHFRQJURXWHULVLV

ÏG5B_Ð	5XLMLHFRQJURXWHULVLV 5XLMLHFRQJURXWHUQW

ÏGÐ	Q	EÄ
	router isis	**Î** IS-IS r_

ÏGÄÐ	-

7.42 redistribute

A'5BÚCÃGÚ ISIS Ä*ÄQX **no 6ÃGÚ0Ä**

redistribute { **bgp** | **ospf** *process-id* [**match** { **internal** [**external** [**1 | 2**]] [**nssa-external** [**1 | 2**]] | **external** [**1 | 2**] [**internal**] [**nssa-external** [**1 | 2**]] **| nssa-external** [**1 | 2**] [**internal**] [**external** [**1 | 2**

IS-IS

IS-IS CÃE/G5Bã

ÃÊÐ **route-map** ê **distribute-list** Ó¼Ûr_X Level-1 CÃE> E¶C‡ 5ÊXCÃÃGÚ_,X Level-2 Ä **route-map** ` **distribute-list** 6Ñ 2 EÊ G5B **no redistritbue isis** [*tag*] **level-2 into level-1** #Ûr_XGÚ **no redistribute** ÊGZÐÈ</ÍÐ6ãAxG5BÈãÛr_XGÚ _VÖ **no redistritbue isis** *tag1* **level-1 into level-2** # isis *tag1* GÚ **no redistritbue isis** *tag1* **level-1 into level-2 route-map** *aa*È</ÊÚ **route-map** *aa E> E* Í isis *tag1* GÚ

ÏÎGÐ

Ò	£Ä
ip router isis	**G5Byâ** IS-IS IPv4 CÃ#A,
net	**G5B** NET

ÏGÄÈ -

7.46 show clns is-neighbors

/,Ý IS FèCÃ<FyG2ÏÇÄ

show clns [*tag*] **is-neighbors** [*interface-type interface-number* | **detail**

7.47 show clns neighbors

/,Ý IS FèCÃ<¡ãÃ4FyG2¡ÄÄ

show clns [*tag*] **neighbors** [*interface-type interface-number* | **detail**]

ÏÐAÈ

Ð	£Ä
tag	*ûl* IS-IS r_
interface-type interface-number	*ûlyÄ*
detail	**/A4¢Ïb,Ý·**

ÏÕ5BÐ -

Ïð (Mã

ÏS*ÛÐ -

ÏG5B_Ð

```
5XLMLHVKRZOQHLJKERUVGHWDLO
$HDXOO
6VWHP,G6136WDWH+ROGWLPH7SH3URWRFRO
,QWHUIDFH
UGIDG8S/,6,6
9/$
8S/,6,6
9/$
$MDFHQ'
8SWLPH
$HDGGUHVVHV
```

ÏÏGÐ

Q	£Ä
show clns is-neighbors	**S*ÛÝ** IS FÈ ¤CÃ<FyG 2¡Ä

ÏGÄÈ -

7.48 show isis counter

/ IS-IS ,XÄ4¡Au¡Ä

show isis [*tag*] **counter** Ï – D

–	£ E Ä
tag	IS-IS r_

Ï5,Õ5BÐ -

Ïð (Mã

Ï5*Ð -

Ï5B_Ð

```
5XLMLHVKRZVLVFRXWHU
$HDXOO
,6,6/HYHOLVLV6VWHP&RXWHU(WU\
LVLV6V6WDW&RUU/63V
LVLV6V6WDW$XWK7SH)DLOV
LVLV6V6WDW$XWK)DLOV
LVLV6V6WDW/63'EDVH2ORDGV
LVLV6V6WDW0D$GU'URS)URP$HDV
LVLV6V6WDW$WWPSW7R([0D[6HT1XPV
LVLV6V6WDW6HT1XP6NLSV
LVLV6V6WDW2Z633XUJHV
LVLV6V6WDW,')LHOG/HQLVPDWFKHV
LVLV6V6WDW0D[$HDG$GU0LVPDWFKHV
LVLV6V6WDW3DUW&KDQHV
LVLV6V6WDW63)5XW
,6,6/HYHOLVLV6VWHP&RXWHU(WU\
LVLV6V6WDW&RUU/63V
LVLV6V6WDW$XWK7SH)DLOV
LVLV6V6WDW$XWK)DLOV
LVLV6V6WDW/63'EDVH2ORDGV
LVLV6V6WDW0D$GU'URS)URP$HDV
LVLV6V6WDW$WWPSW7R([0D[6HT1XPV
LVLV6V6WDW6HT1XP6NLSV
LVLV6V6WDW2Z633XUJHV
LVLV6V6WDW,')LHOG/HQLVPDWFKHV
LVLV6V6WDW0D[$HDG$GU0LVPDWFKHV
LVLV6V6WDW3DUW&KDQHV
LVLV6V6WDW63)5XW
```

ÏÏGÐ

Q	EÄ
-	-

ÏGÄÈ -

7.49 show isis database

/ LSP DBgÇ

show isis [*tag*] **database** [*FLAGS* | *LEVEL* | *LSPID*]

ÏÐAÐ

Ð	ÉÄ
tag	*ĥ* IS-IS r_
FLAGS	*ã/Ö* detail | verbose detailÖ4¦Ç verboseÖ detail È4¦XÇ
LEVEL	*ã/Ö* l1 | l2 | level-1 | level-2 l1 ` level-1ĥ Level-1 ,X LSP DBg l2 ` level-2ĥ Level-2 ,X LSP DBg
LSPID	*ĥ* LSP ,X ID ãã,X LSP ,XÇ

ÏÏ,Õ5BÐ -

ÏÐ (Mãã

ÏÏ*ĥ -

ÏÏ5B_Ð

```
5XLMLHVKRZVLVGDWDEDVHGHWDLO
$HDXOO
,6,6/HYHO/LQ6WDWH'DWDEDVH
/63,'/636HT1XP/63&KHFNVXP/63+ROGWLPH$732/
5XLMLH[[&''
$HDG$GUHVV
1/3,'[&&
+RVWQPH5XLMLH
,3$GUHVV
0HWULF,6U
0HWULF,3
U[[$
$HDG$GUHVV
1/3,'[&&
+RVWQPHU
,3$GUHVV
0HWULF,6U
0HWULF,3
U[[$
0HWULF,6U
0HWULF,65XLMLH

,6,6/HYHO/LQ6WDWH'DWDEDVH
/63,'/636HT1XP/63&KHFNVXP/63+ROGWLPH$732/
5XLMLH[[&'
```

```
$UHDG$GUHVV
1/3,'[&&
+RVWQPH5XLMLH
,3$GGUHVV
0HWULF,6U
0HWULF,3
U[[$
$UHDG$GUHVV
1/3,'[&&
+RVWQPHU
,3$GGUHVV
0HWULF,6U
0HWULF,3
U[[$
0HWULF,6U
0HWULF,65XLMLH
```

ÏÌGÐÇ

Ç	ÐÄ
-	-

ÏGÄÈ -

7.50 show isis graceful-restart

/ IS-IS GR ,ÌG,X(ÕÄ

show isis [*tag*] **graceful-restart**

ÏÐAÈ

Ð	ÐÄ
tag	IS-IS r_áÄ

ÏÕ5BÐ -

ÏÇ (Mã

ÏS*Ô -

ÏG5B_Ð

```
5XLMLHFRQLJVKRZVLVJUDFHIXOUHVWDUW
*UDFHIXOUHVWDUWHQEOHGJUDFHIXOSHULRGV/HYHOWLPHU,WHUIDFHWLPHUV
*UDFHIXOUHVWDUW+HOSHUHQEOHG
```

ÏÌGÐÇ

Ç	ÐÄ
graceful-restart helper disable	**S6Ñ** IS-IS GR Help 6Ñ

ÏGÄÈ -

7.51 show isis hostname

/CÃ<ă System ID ,XÍhG2Ï

show isis [*tag*] **hostname**

ÏÐAÈ

Ð	ÆÄ
tag	*ûl* IS-IS r_

ÏÕ5BÐ -

ÏÐ (Mã

ÏS*ÐÛ -

ÏG5B_Ð

```
5XLMLHVKRZVLVKRVWQPH
6VWHP,"QPLF+RVWQPH
5XLMLH
U
```

ÏÎGÐ

Ð	ÆÄ
-	-

ÏGÄÈ -

7.52 show isis interface

/ IS-IS y;XA4ÐC

show isis [*tag*] **interface** [*interface-type interface-number*]

ÏÐAÈ

Ð	ÆÄ
tag	*ûl* IS-IS ,Xr_á
interface-type interface-number	*ûlyá*

ÏÕ5BÐ -

ÏÐ (Mã

ÏS*ÐÛ -

ÏG5B_Ð

```
5XLMLHVKRZVLVLQWHUIDFH
$UHDXOO
9/$LVXSOLHSURWRFROLVXS
```

```
5RXWLQJ3URWRFRO,6,6XQOO
1HWZRUN7\SH%URDGFDVW
&LUFXLW7\SHOHYHO
/RFDOFLUFXLW,'[
([WHQGHG/RFDOFLUFXLW,'[
/RFDO613$GIDE
,3LQWHUIDFHDGGUHVV

/HYHO0HWULF3ULRULW\&LUFXLW,'U
1XPEHURIDFWLYHOHYHODGMDFHQF\LHV
/HYHO0HWULF3ULRULW\&LUFXLW,'U
1XPEHURIDFWLYHOHYHODGMDFHQF\LHV
1H[W,6,6/$/HYHO+HOORLQWHUYDO
1H[W,6,6/$/HYHO+HOORLQWHUYDO
```

7.54 show isis neighbors

/ IS-IS ,XFµ¢

show isis [*tag*] **neighbors** [**detail**]

ÏÐAÈ

Ð	ÉÄ
tag	*ûl* IS-IS r_
detail	**/A4¢ÍbÝy·**

level-2	**ĥ** Level-2 ,X%

ï5,Õ5BÐ -

Ð (Mã

ïS*Ĥ -

ïG5B_Ð

```
5XLMLHVKRZVLVWRSRORJ\
$HDXOO
,6,6SDWKVWROHYHOURXWHUV
6VWHP,G0HWULF1H[W+RS613$WHUIDFH
UUGIDG9/$
5XLMLH
,6,6SDWKVWROHYHOURXWHUV
6VWHP,G0HWULF1H[W+RS613$WHUIDFH
UUGIDG9/$
5XLMLH
```

ïGÐ

Ð	ÆÄ
-	-

ïGÄÈ -

7.56 spf-interval

A’5B SPF Au1k,XÊÈhÄ*ÊÇX **no 6ÄÄxÄ**

spf-interval [**level-1 | level-2**] *interval*

no spf-interval

ïÐAÈ

Ð	ÆÄ
interval	SPF Au1k,XÊÈhÈÈÈ 1-120È,Õ 10

ï5,Õ5BÐ Ð5,Õ

Ð

ïS*Ĥ 8 SPF ,XKÈhÊÊ*ï Level-1 ` Level-2Ä

rû SPF Au1k,XÊÈhÊS! SPF ,XNe4Au1kÈN5ë CPU CÊÄÐÊÃ,XhÊ

4Ä

ïG5B_Ð

```
5XLMLHFRQJURXWHULVLV
5XLMLHFRQJURXWHUVSILWHUYDOOHYHO
```

ÌÎGÐ

Ò	ÈÄ
-	-

ÏGÄÈ -

7.57 summary-address

G5B IPv4 6.ÜÃÄ*8Ò **no 6ã886.ÜÃ**

summary-address *ip-address net-mask* [**level-1 | level-2 | level-1-2**]

no summary-address *ip-address net-mask*

ÐÄÈ

Ð	ÈÄ
ip-address	6.Ã IP Ä
net-mask	**6.CÃ5%-Ò**
level-1	ü Level-1 *ó
level-2	ü Level-2 *Ä,Õ Level-2 *Ä
level-1-2	ã Level-1 ` Level-2 *ó

ï,Õ5BÐ 6.ÜÃ

Ò IS-IS CÃE/G5Bã

ÏS*Ô A’5Bz.ÜÃ8,6.ÜÃYÊ’Ã’5%CÃÇÈ.ÜÃÈà

Ä4ÈÄ

ÏG5B_Ð 5XLMLHFRQJURXWHULVLV

5XLMLHFRQJURXWHUVXPPDUDGGUHVVOHYHO

ÌÎGÐ

Ò	ÈÄ
-	-

ÏGÄÈ -

8

8.1 ip local policy route-map

[illegible] **ip local policy route-map** [illegible] **no** [illegible]

[illegible]

ip local policy route-map *route-map*

no ip local policy route-map

[illegible]	
route-map	[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] 192.168.217.10 [illegible] 6.6.6.6

1[illegible] IP [illegible] ACL

5XLMLHFRQJDFFHVVOLVWSHUPLWKRVW

2[illegible]

5XLMLHFRQJURXWHPDSODESHUPLW

5XLMLHFRQJURXWHPDSPDWFKLSDGGUHVV

5XLMLHFRQJURXWHPDSVHWLSQ[WKRS

5XLMLHFRQJURXWHPDSH[LW

3[illegible]

5XLMLHFRQJLSORFDOSROLFURXWHPDSODE

[illegible]

[illegible]	
access-list	**nA** [illegible]
route-map	**nC** [illegible]
set vrf	**n1*9C** [illegible] IP [illegible] VRF r_
set ip next-hop	**n1*9C** [illegible]
set ip default next-hop	**n1*9C** [illegible]
set ip tos	**A5By[** IP ,X TOS
set ip dscp	**A5B** IP [illegible] DSCP

set ip precedence	**A5By[** IP ,X4{
match ip address	**A5BE}**

GÄÈ -

8.2 ip policy

A’5B1*+9CÃ,X **set ip** [**default**] **nexthop** **XÔÇ*k-Ñ5ÇÈ5B**

5*ü **ip policy E>G5BÄ** **AÇ** **no 6ãa*9CÃE@**

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

no ip policy

ÐAÈ

Ð	EÄ
load-balance	**BÇ**
redundance	**k-Ñ**

5,Õ5BÐ 5,Õ*k-Ñ

Ç <G5BÄ

S*Ô G5B **set ip next-hop** **Ã5BÇÈ5BZ-Ñ*9CÃÇ**

dXÔÇ*A5BZ5ÇÈ*9CÃXÔÇ*ü/CMP Ã’5B 8

ÇÈCMP Ã’5B 32 ÇÄ

MAC

G5B_Ð CÃÀ’5BÇ nexthop,ëG5BÄ’5BZ-Ñ*ü FastEthernet 0/0 ÞX1*

+9CÃÝÔ nexthop CK0*Ä

1È5BÇCMP Ô þ

[illegible]
3ÈÄ h*ì1*+9CÃ
5XLMLHFRQJLQWHUIDFH)DVW(WKHUHQW
5XLMLHFRQJLILSSROLFURXWHPDSODE
5XLMLHFRQJLIH[LW
5XLMLHFRQJLSSROLFUHGXQDQH

ÏGÇ

Ç	ÆÄ
-	-

ÏGÄÈ -

8.3 ip policy route-map

Ùh*ì1*+9CÃÈÄ*G5BÇ **ip policy route-mapÈ*ÄÇ** **no 6ÈÄ**
h*ÄÄ1*9CÃ
ip policy route-map *route-map*
no ip policy route-map

ÏDAÈ

Ð	ÆÄ
route-map	[illegible]

Ï5,Õ5BÐ 5,ÕKÁ1*+9CÃÄ

ÏÇ yG5BÄ

Ï5*Ô 1*+9CÃÑ'Oû,Xyh*Ãyy,XDBÈ> 1*+9CÃÊAyÆÕX
DBÈ> 1*+9CÃÄ
h*ì1*+9CÃÈ'Oûì1*+9CÃS*ìXCÃÈÊÎCÃÔÃÈ51*+94È
ÈÄ*+9FÑZ 1 ÊXGÎ?ÔÄh*ì1*+9CÃÈyy,X
Ï> "ÈÜÃÎÛ1*+9,XDBÜÊîXCÃÈÆ> ÜÜÃÔ
1*+9,XDBÜÄ1*+9n,XÛÈ> ÜÄ
A'ÔÊÑ5BÔÃÔÊG5BCÃÈ5B,XCÃÜ
G5B,XCÃÔ

Ï5B_Ð 'Ëp5%y· FastEthernet 0/0 yDByÈpDBy$ 10.0.0.1È'5BÔÇ
196.168.4.6È'p$ 20.0.0.1 Á'5BÔÇ 196.168.5.6È> BEÈÄ
1È5BG! IP y[,X ACL

5XLMLHFRQJDFFHVVOLVWSHUPLWKRVW
5XLMLHFRQJDFFHVVOLVWSHUPLWKRVW
2È'CÃÒ
5XLMLHFRQJURXWHPDSODESHUPLW
5XLMLHFRQJURXWHPDSPDWFKLSDGGUHVV
5XLMLHFRQJURXWHPDSVHWLSH[WKRS

[redacted]

3ÈÞh*ÏI*+9CÃ

5XLMLHFRQJLQWHUIDFH)DVW(WKHUQW

5XLMLHFRQJLILSSROLFURXWHPDSODE

5XLMLHFRQJLIH[LW

ÏÎGÐ

Ð	ÆÄ
access-list	**nAÊ**
route-map	**nCÕ**
set vrf	**n1*9CÃ** IP y[,X VRF r_

WCMP	Ñ'5B	8	ÔÈÇCMP	Ñ'5B	32 ÔÄ

8

ÏÐAÈ	Ð	ÉÄ
	route-map-name	CÃ¸ÀÆÊ› **route-map Q5BXÄ**

Ï5,Õ5BÐ yh*Ïü1*+9CÃs6Ñ

Ï¸ yG5BÄ

Ï5*Ð yh*ü IPv6 1*+9CÃÈyy,X IPv6 y[E> 1*+9CÃÈ1*+9ÉÕX IPv6 y[È> 1*+9CÃÄ
h*ü1*+9CÃÈNO?Ïh1*+9CÃS*ü,XCÃÈÈÎCÃÈÎÃÈ51*+94È
h*+9FÑZ 1 ÈXGÎ?ÏÈh*ü1*+9CÃÈyy,X
Ï> "ÈÜÃÏ1*+9,XDBÜÉ¡XCÃÉE@> ÏÈÜÃÈ
1*+9,XDBÜÃ1*+9n,XÏE> ÏÜ
A'ÈÈÑ5BÎ IPv6 ,XCÃÈÈ5BCÃÈ5B,XCÃÜ
Z5B,XCÃÈ
>• IPv6 1*+9CÃéÏXCÃÀÏNO IPv6 ÕÈ1*+9CÃÄ

Ï5B_Ð 'Ïp5%y· FastEthernet 0/0 y IPv6 ,XDBy[ÊpDBy$ 10::/64 5%%D

set ipv6 default next-hop	**A5B5ÕÿÿXÔÇ**
set ipv6 next-hop	**A5BEÿÿXÔÇ**
show ipv6 policy	**/'Aû*µ1*9CÃ**
show route-map	**/,XCÕ5BÄ**

ÏGÄÈ -

8.7 show ip policy

/'Ý5BZ*+9CÃ,XyÀ¹yh*µXCÃ,ÒÀ

show ip policy

ÏÐAÈ

Ð	EÄ
-	-

/ ' !

Ð (MÄ

S*Ô ZÄ4ÓÝh*Z IPv6 ,Ì,X1*+9CÃÊ*ÀÇ

G5B_Ð /ZÄ4ÞÿX1*+9CÃÄ

5XLMLHVKRZSYSROLF\
%DQDQH0RGHUHGXQDQH
,QWHUIDFH5RXWHPDS
9/$50BIRUB9ODQ
9/$50BIRUB9ODQ

+‰	Aè
Banlance Mode	**AÛ*9CÃ¤ã**
Interface	**h*Ï*9CÃyÄ**

Route

9 VRF

9.1 ip vrf

VRF

ip vrf *vrf-name*

no ip vrf *vrf-name*

ÏG5B_Ð yt9)#A, VRF

5XLMLHFRQJLILSYUIIRUZUGLQUHGYUI

ÏGÐ

Q	ÆÄ
-	-

ÏGÄÐ -

9.3 show ip vrf

/)#A, VRF µ

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

ÏÐAÐ

Ð	ÆÄ
brief	1T+9/ VRF žyµ
detail	A4š VRF žyµ
interfaces	*A4š* VRF žyµ
vrf-name	VRF ,XáÄ

ÏÕ5BÐ 'ùMÐÊT+9/24Ý VRF µ

Ð (M*ã

ÏS*Ð S*AQ VRF µÖ

GK+ brief 1T)/

GK+ detail A4š

GK+ interfaces / VRF ,Xyµ

ÏG5B_Ð -

ÏGÐ

-IP

IP 4

1. IPv4 4
2. IPv6 4
3. IGMP
4. MLD
5. PIM-DM
6. PIM-SM
7. PIM-SMv6
8. MSDP
9. IGMP Snooping
10. MLD Snooping

1 IPv4

1.1 clear ip mroute

AÐQ¸*9#Ù8 IP 4˜CÃ¸CÄ

clear ip mroute { * | *group-address* [*source-address*] }

Ï–DAÈ

–D	£Ä
*	#Ù84˜CÃ><,ÝXE@Ä
group-address	¸Ã
source-address	¸ÃÄ

Ï5,Õ!5BÐ -

ÏQ¸Ð (Mã

ÏS*Ô -

ÏG!5B_Ð 4˜CÃ><#Ù84˜ 230.0.0.1 ,X4Ã¸)><NMÖ

5XLMLHFOHDULSPURXWH

ÏÌGQ¸Ð

Q¸	£Ä
show ip mroute	4¸@

ÏGÄÈ -

1.2 clear ip mroute statistics

#Ù8 IP 4˜CÃ4ˆAu¸CÄ

clear ip mroute statistics { ***** | *group-address* [*source-address*] }

Ï–DAÈ

–D	£Ä
*****	**Ù84@Ä**
group-address	¸Ã
source-address	¸ÃÄ

Ï5,Õ!5BÐ -

ÏQ¸Ð (Mã

ÏS*Ô -

Ï¨G!5B_Ð 4˜CÃ><#Ù84˜ 230.0.0.1 ,X4˜CÃ4ˆAuµCÖ

5XLMLHFOHDULSPURXWHVWDWLVWLFV

ÏÎGQÞ

Q¸	£Ä
show ip mroute	**4Ñ**
clear ip mroute	**Ù84Ñ**

ÏGÄÀ -

1.3 debug ip mrf event

ÔÀÔÈ IPv4 4˜CÃ£Ø)Ø/Ä*ÀQ¸X no 6ÃGKÁÀÔÄ

debug ip mrf event

no debug ip mrf event

Ï–DAÀ

–D	£Ä
-	-

Ï5,Õ!5BÐ AÀÔGKÁ

ÏQÞ (Mã

Ï*Ð -

Ï¨G!5B_Ð -

ÏÎGQÞ

Q¸	£Ä
-	-

ÏGÄÀ -

1.4 debug ip mrf forwarding

ÔÀÔÈ IPv4 4˜y[CÃ£Ø)Ø/Ä*ÀQ¸X no 6ÃGKÁÀÔÄ

debug ip mrf forwarding

no debug ip mrf forwarding

Ï–DAÀ

–D	£Ä
-	-

Ï5,Õ!5BÐ AÀÔGKÁ

ÏQÞ (Mã

ÏS*Ð -

ÏG!5B_Ð -

ÌÏGQÞ

Q¸	ÆÄ
-	-

ÏGÄÈ -

1.5 debug ip mrf mfc

ÂÀÔÈ IPv4 ÁÇÃÆ@<NM,X¡ÆÄ*ÀÇ¸X no 6ÆKÁÀÔÄ

debug ip mrf mfc

no debug ip mrf mfc

ÏÌDAÈ

–D	ÆÄ
-	-

ÏÕ,Ã!5BÐ AÀÔGKÁ

ÏQÞ (Mã

ÏS*Ð -

ÏG!5B_Ð -

ÌÏGQÞ

Q¸	ÆÄ
-	-

ÏGÄÈ -

1.6 debug msf api

ÂÀÔÈ IPv4 ÁÆ@X api y>A*¡X¡ÆÄ*ÀÇ¸X **no 6ÆKÁ**

ÔÄ

debug msf api

no debug msf api

ÏÌDAÈ

–D	ÆÄ
-	-

Ï5,Õ!5BÐ AÂGKÁ

ÏQÐ (Mã

Ï5*Ð -

Ï!5B_Ð -

ÏÏGQÐ

Q¸	EÄ
-	-

ÏGÄÐ -

1.7 debug msf event

ÂGÈ IPv4 4EÊXÐ/Ä*AQ¸X **no 6ÊÄ**

debug msf event

no debug msf event -

Ï–DAÐ

–D	EÄ
-	-

ÏLGÄ -

Qa¸Vb‘…n2)S¸fQaVà…(Aê2b%8Efb)aVõEf fEÄ

Ï5,Õ!5BÐ AÂGKÁ

ÏQÐ (Mã

-

Ï5BA%Ð - ÏÇQÐ

¨5,Õ!5BÐ	AÂGKÁ
¨QÐ	(Mã
¨S*Ð	-
¨G!5B_Ð	-
¨ÌGQÐ	
¨GÄÐ	-

	ÄÄ
-	-

1.9 debug msf mfc

ÂÈ	IPv4	-

Ï–DAÈ	–D	ÆÄ
	-	-

Ï5,Õ!5BÐ AÂGKÁ

ÏQÐ (Mã

Ï5*Ð -

Ï!5B_Ð -

ÌGQÐ	Q¸	ÆÄ
	-	-

ÏGÄÈ -

1.13 debug nsm mcast mrt

ÂÂÈ¡Ä¿b4˜CÃ,XÇÄ*ÄQ¸X no 6ÆKÁÂÄ

debug nsm mcast mrt

no debug nsm mcast mrt

Ï–DAÈ	–D	ÆÄ
	-	-

Ï5,Õ!5BÐ AÂGKÁ

ÏQÐ (Mã

Ï5*Ð -

Ï!5B_Ð -

ÌGQÐ	Q¸	ÆÄ
	-	-

ÏGÄÈ -

1.14 debug nsm mcast register

ÂÂÈ¡Ä¿b¾¼,XÇÄ*ÄQ¸X no 6ÆKÁÂÄ

debug nsm mcast register

no debug nsm mcast register

Ï–DAà	–D	EÄ
	-	-

ï5,Õ!5BÐ	AÂGKÁ
ÏQÐ	(Mã
ÏS*Ûl	-
ÏG!5B_Ð	-

ÏGQÐ	Q¸	EÄ
	-	-

ÏGÄà	-

1.15 debug nsm mcast stats

ÂÂGÈ–by><NM4ÃuÇ,XÓÉÄÃÇ¸X no 6ÃKÁÂGÄ

debug nsm mcast stats

no debug nsm mcast stats

Ï–DAà	–D	EÄ
	-	-

ï5,Õ!5BÐ	AÂGKÁ
ÏQÐ	(Mã
ÏS*Ûl	-
ÏG!5B_Ð	-

ÏGQÐ	Q¸	EÄ
	-	-

ÏGÄà	-

1.16 debug nsm mcast vif

ÂÂGÈ–byE> E/Ä*ÃÇ¸X no 6ÃKÁÂGÄ

debug nsm mcast vif

no debug nsm mcast vif

Ï–DAÈ	–D	£Ä
	-	-

ï5,Õ!5BÐ AÂGKÁ

ÏQÐ (Mã

ÏS*Ûl -

ÏG!5B_Ð -

ÏÌGQÐ	Q¸	£Ä
	-	-

ÏGÄÈ -

1.17 ip mroute

G!5B4M-ÕÃÄ*ÄQ¸X **no ã8G5Ã**

ip mroute *source-address mask* [*protocol*] { *rpf-addrress* | *interface-type interface-number* } [*distance*]

no ip mroute *source-address mask* [*protocol*]

Ï–DAÈ	–D	£Ä
	source-address	[illegible]
	mask	4[illegible],X}-Õ
	protocol	!!7[illegible]*¡X)CÃ#A,
	rpf-address	RPF FÄ[illegible],XÔÇX
	interface-type interface-number	RPF yÄ[illegible],XÎyÅ
	distance	[illegible] 0-255È,Õ 0Ä

ï5,Õ!5BÐ 4M-ÕÃ

ÏQÐ <ã

ÏS*Ûl M-ÕCÃ*u RPF Ä

VpÛbM-ÕCÃ,XÎy5M2ÔÇ IP ÈwAÎyNOÉO_Ä

ÏG!5B_Ð

	5XLMLHFRQILJLSPURXWH

ÏÎGQÞ

Q¸	£Ä
-	-

ÏGÄÈ

-

1.18 ip multicast-routing

AÇ¸*9|4˜CÃÄ*AÇ¸X **no GÁÃ**

ip multicast-routing

no ip multicast-routing

Ï–DAÈ

–D	£Ä

Ï*Ê	G!5B!8QÈ¸ÂyÂ48È,X			IGMPÃ PIM-SM y[E> EÈ¸DB#Ây·		
	#9#Ã					
	!8QG6(,X	ACL ÊX	ACLÈÃ	ACLÊ),X	ACL ¯G!,ÂXÈ!	
	¶Ä					
Ï G!5B_Ð	A5B svi1 ¥4¯,XE+ Ä					
	5XLMLHFRQILJLSDFFHVVOLVWVWDQGDUGPXOERXQ					

1.21 ip multicast rpf longest-match

ÎÔSG!sÉÝ½ RPF CÃÄ*AÇ¸X **no ÉÄ65Õ5Ä**

ip multicast rpf longest-match

no ip multicast rpf longest-match

Ï–DAÈ

–D	ÉÄ
-	-

Ï5,Õ!5BÐ ÉÝ{Ô,XCÃ0 RPF CÃÄ

Vpì4{,ÈÉM-ÕÃÃMBGP CÃÃÇÃ,XNNcÉ> ÉÄ½

ÏQÐ <ã

Ï5*Ô ÉÝ½ RPF CÃ,X!9PxÖ

1È 4ÏM-ÕÃ><ÃMBGP CÃ><ÃÇÃ><ÉÕÃo RPF ¨,XÔÃÄ

2È ÉÉ5CÃÉÔ0 RPF CÃÄ

VpG!5BÎÔSG!sÉÝ½ÃQÈÉ5CÃÉÎÔSG!,XFw5CÃÄpÉ-

5CÃ,X}-ÉÝ4{Ô,XFw5CÃÄpW,À4{3,ÈÉ•

M-ÕÃÃMBGP CÃÃÇÃ,XNNcÉ> ÉÄ½

VpÏÝG!5BÎÔSG!ÉÝ½ÃÉÉ5CÃÉÏ4{Ô,XFw5CÃÄpW,À

ì4{,ÈÉM-ÕÃÃMBGP CÃÃÇÃ,XNNcÉ> ÉÄ½

ÏG!5B_Ð -

ÏÎGQÐ

Q¸	ÉÄ
-	-

ÏGÄÈ -

1.22 ip multicast static

AÇ*9G!5B4˜##{ÃÇ¸X no 6ÃG!5BÄ

ip multicast static

ÏQ¸Ð	<ã
Ï*Ûb	´ôÂ4˜#Ã¸G!5B¯ÏQ¸ÈAÈ¸G!5B¯ÞAÈ¸X0Ã#G!5BZ ÊÂ4˜#ÃÑÑ¸eoÆ¸G!5B,X0ÃÑÑ¸ÞAÇ¸X0ÃÑÑ¸Ä AÇ¸¾4˜0ÃÑ¸XE¸@ÈÈ¸E¸4˜#A¸Í#Ay[,X0Ãb4˜#A, ÄÖ PIM-DM ê PIM-SM¸Åo(MôÇ*4¯DB#PE|,X4ÈÇÃ#A,X> ÃÑ¸ EÄ¸
ÏG!5B_Ð	G!5B4˜# (192.168.43.4 È 225.1.1.5)¾0E GigabitEthernet 2/6 ` FastEthernet 3/2 EÄ@ UXLMLHFRQILJLSPXOWLFDVWVWDWLF* UXLMLHFRQILJLSPXOWLFDVWVWDWLF)

ÏÌGQ¸Ð

Q¸	EÄ
-	-

ÏGÄÈ | -

1.23 ip multicast ttl-threshold

AÇ¸*9G!5By¸X TTLÄime-To-Live ÅÄ*AÇ¸X **no Ï6¸Ã**

ip multicast ttl-threshold *ttl-value*

no ip multicast ttl-threshold

.6603 Tm( )TjET0.D00262g/B6.9.807 0 Td( )TjETq12/B6.9.67.8246.96/B6.9.807 0 Td( )Tjmh328.92 56

1.24 msf ipmc-overflow override

G!5B4˜•Ê@<NM$Ê¾Ä*ÄÄQ¸X **no Ñ6ÑÕ**

msf ipmc-overflow override

no msf ipmc-overflow override

Ï–DAÈ	–D	ÉÄ
	-	-

Ï5,Õ!5BÐ !8s6ÑÑKÁ

ÏQÐ <ã

ÏS*Ûì -

ÏG!5B_Ð -

ÏÎGQÐ

Q¸	ÉÄ
-	-

ÏGÄÈ -

1.25 show ip mrf mfc

/ IPv4 4˜CÃÉ@<Ä

show ip mrf mfc [*soure-address group-address*]

Ï–DAÈ	–D	ÉÄ
	source-address	ÑÕ
	group-address	ÑÕ

Ï5,Õ!5BÐ -

ÏQÐ (Mã

ÏS*Ûì 3 þDFÑ,ÝÈ¼TNOÊÄ

ÊÄÃÕX mfc ><NMÄ

ÊÄÃÕÃ,X mfc ><NMÄ

ÏG!5B_Ð /¶ 20.0.1.30 ,X IPv4 ,X4É@<NM

5XLMLHVKRZSPUIPIF

0XOWLFDVW5RXWLQJDQG)RUZUGLQJ&FKH7DEOH

```
5XLMLHVKRZSPURXWH
,30XOWLFDVW5RXWLQJ7DEOH
)ODJV,,PPHGLDWH6WDW77LPHG6WDW))RUDUGHULQVWDOOHG
7LPHUV8SWLPH6WDW([SLU\
,QWHUIDFH6WDWH,QWHUIDFH77/
XSWLPHVWDWH[SLUHV
2ZHU3,060)ODJV7)
,QFRPLQJLQWHUIDFH)DVW(WKHUQHW
2XWJRLQJLQWHUIDFHOLVW
)DVW(WKHUQHW
```

_ 2ÖX/_/(Mn,XCÃ><NMµ

```
5XLMLHVKRZSPURXWH
,30XOWLFDVW5RXWLQJ7DEOH
)ODJV,,PPHGLDWH6WDW77LPHG6WDW))RUDUGHULQVWDOOHG
7LPHUV8SWLPH6WDW([SLU\
,QWHUIDFH6WDWH,QWHUIDFH77/
XSWLPHVWDWH[SLUHV
2ZHU3,060)ODJV7)
,QFRPLQJLQWHUIDFH)DVW(WKHUQHW
2XWJRLQJLQWHUIDFHOLVW
)DVW(WKHUQHW
```

_ 3ÖX/_/CÃ><AuDµ

```
5XLMLHVKRZSPURXWHFRXQW
,30XOWLFDVW6WDWLVWLFV
7RWDOURXWHVXVLQJEWHVPHRU\
5RXWHOPLW5RXWHWKUHVKOG
7RWDO12&(:521*9,):+2/(3.7UHFYIURPIZG
7RWDO12&(:521*9,):+2/(3.7VHQWWRFOLHQWV
,PPHGLDWH7LPHGVWDWXSGDWHVVHQWWRFOLHQWV
5HJ&UHFY5HJ1&UHFY5HJSNWVHQW
1H[WVWDWVSOO
)RUDUGLQJ&RXQWV3NWFRXQWW:HFRXQW2WKHU&RXQWV:URQJ,SNWV
)ZPVJFRXQWV:521*9,):+2/(3.7UHFY
&OLHQWPVJFRXQWV:521*9,):+2/(3.7,PP6WDW7LPHG6WDWVHQW
5HJSNWFRXQWV5HJ&UHFY5HJ1&UHFY5HJSNWVHQW
)RUDUGLQJ2WKHU
```

_ 4ÖX/_/CÃ><NM,X,ºµ

```
5XLMLHVKRZSPURXWHVXPPDU\
,30XOWL¥URXGLQJ0RW&\
```

7LPHUV8SWLPH6WDW([SLU\
,QWHUIDFH6WDWH,QWHUIDFH77/
3,060)ODJV7

+!‰	Aà
Flags	I-0Ÿ64Au T-nÊAu F-4E5BE@<
Timers:Uptime/Stat Expiry	A><NMÊÈÊÈ
Interface State	y(Ö
Owner	A><NM,X25ÊÊÇÃ#A,
Incoming interface	NXôXy[Eg9yÈprL,XEg9yá 0ÿ[Ú
Outgoing interface list	EgÎÿ<ÿ[Ú<,XyÞEÎ@ •
Forwarding CountsÖkt count/Byte count,	E@uDÖ><NME@y[D/ +8VD

ÏÎGQÐ¸

Q¸	ÐÉÄ
-	-

ÏGÄÈ¸ -

1.28 show ip mvif

/4˜y;XÎ¸ÇÄ

show ip mvif *interface-type interface-number*

Ï–DAÈ¸

–D	ÐÉÄ
interface-type interface-number	*ÎÛy·*

Ï5,Õ!5BÐ -

ÏQÐ¸ (Mã

Ï5*Ûi -

Ï!5B_Ð /svi1 ,X4˜y;XÎ¸Ç

```
5XLMLHVKRZSPYLIYODQ
,QWHUIDFH9LI2ZQHU77//RFDO5HPRWH8SWLPH
,G[0RGXOHÛGUHVVÛGUHVV
9/$3,00
```

ÏÎGQÐ¸

Q¸	ÐÉÄ
-	-

ÏGÄÈ¸ -

1.29 show ip rpf

/(Mnt$,X RPF ¸ÇÄ

show ip rpf *source-address*

Ï–DAÈ¸

–D	ÐÉÄ
source-address	*ÛÐÉÄ*

Ï5,Õ!5BÐ -

ÏQÐ¸ (Mã

Ï*Ð -

Ï!5B_Ð /E’ 192.168.1.54 ,X RPF µ

```
5XLMLHVKRZSUSI
53)LQIRUPDWLRQIRU
53)LQWHUIDFH9/$
53)QHLJKERU
53)URXWH
53)WSHXQLFDVWFRQQHFWHG
53)UHFXUVLRQFRXQW
RLQJGLVWDQFHSUHIHUUHGORRNXSVDFURVVWDEOHV
LVWDQFH
0HWULF53)LQIRUPDWLRQIRU
53)LQWHUIDFH9/$
53)QHLJKERU
53)URXWH
53)WSHXQLFDVWFRQQHFWHG
53)UHFXUVLRQFRXQW
RLQJGLVWDQFHSUHIHUUHGORRNXSVDFURVVWDEOHV
LVWDQFH
0HWULF
```

ÏÌGQÐ

Q¸	ÆÄ
-	-

ÏGÄÈ -

1.30 show msf msc

/ IPv4 ¾Æ©<Ä

show msf msc [*soure-address*] [*group-address*] [*vlan-id*]

Ï–DAÈ

–D	ÆÄ
soure-address	[illegible]
group-address	[illegible]
vlan-id	*[illegible] VLAN ID!Èb 4096 Ê ><ÊÃÄ

Ï5,Õ!5BÐ /,Ý X IPv4 ¾Æ©<NM

ÏQÐ (Mã

2 IPv6

2.1 clear ipv6 mroute

ĉ8 IPv6 4˜Ea@<NIMÄ

clear ipv6 mroute { ***** | *v6group-address* [*v6source –address*] }

Ï–DAà

–D	£Ä
*	#Ù8 IPv6 4˜CÃ><,ÝXEÞ@Ä
v6group-address	IPv6 4˜CÃ,X

Ï˜S*ÊÛ -

Ï˜G!5B_Ð ûn8<F4˜CÃ><NM,X4˜Auµ

5XLMLHFOHDULSYPURXWHVWDWLVWLFV

ÏÎGQÐ

Q¸	ÆÄ
show ipv6 mroute	/4˜CÃEÊÄ
clear ipv6 mroute	#Ù84˜CÃEÊÄ

ÏGÄÈ -

2.3 debug ipv6 mrf6 event

ÔÀÔÊÈ IPv6 4˜CÃEÊÔXÉ/Ä*ÀQ¸X no 6ÊGKÁÀÔÄ

debug ipv6 mrf6 event

no debug ipv6 mrf6 event

Ï–DAÈ

–D	ÆÄ
-	-

Ï˜5,Õ!5BÐ AÀÔGKÁ

ÏQÊ (Mã

Ï˜S*ÊÛ -

Ï˜G!5B_Ð -

ÏÎGQÐ

Q¸	ÆÄ
8 628.7 0.48 0.48 refBT0.194n12 efBT4(v)	

¨5,Õ!5BÐ	AÂGKÁ
¨Q¸Ð	(Mã
¨S*Ð	-
¨G!5B_Ð	-

¡ÌGQ¸Ð	Q¸	ÆÄ
	-	-

¨GÄÈ	-

2.5 debug ipv6 mrf6 mfc

ÂÂÈ	IPv6 ÁÃÆ@<NM,X¡ÆÄ*ÄQ¸X	no 6GKÁÂÄ	

debug ipv6 mrf6 mfc

no debug ipv6 mrf6 mfc

¨–DAÈ	–D	ÆÄ
	-	-

¨5,Õ!5BÐ	AÂGKÁ
¨Q¸Ð	(Mã
¨S*Ð	-
¨G!5B_Ð	-

¡ÌGQ¸Ð	Q¸	ÆÄ
	-	-

¨GÄÈ	-

2.6 debug msf6 api

ÂÂÈ	IPv6 ÁÆ@X	api y>A*¡X¡ÆÄ*ÄQ¸X	**no 6GKÁ**

ÂÄ

debug msf6 api

no debug msf6 api

¨–DAÈ	–D	ÆÄ

Ï–DAÈ	–D	ÆÄ
	-	-

Ï5,Õ!5BÐ AÂGKÁ

ÏQÐ (Mã

Ï5*Ð -

Ï!5B_Ð -

ÌÎGQÐ	Q¸	ÆÄ
	-	-

ÏGÄÈ -

2.9 debug msf6 msc

ÂÂÈ IPv6 ÁÆ@<NM,X0E/Ä*AQ¸X **no 6ÂÄ**

debug msf6 msc

no debug msf6 msc

Ï–DAÈ	–D	ÆÄ
	-	-

Ï5,Õ!5BÐ AÂGKÁ

ÏQÐ (Mã

Ï5*Ð -

Ï!5B_Ð -

ÌÎGQÐ	Q¸	ÆÄ
	-	-

ÏGÄÈ -

2.10 debug msf6 ssp

ÂÂÈ IPv6 ÁÆ@.@)E/Ä*AQ¸X **no 6ÂÄ**

debug msf6 ssp

no debug msf6 ssp

Ï–DAÈ	–D	EÄ
	-	-

GÄ

debug nsm mcast6 fib-msg

no debug nsm mcast6 fib-msg

Ï–DAÈ

–D	ÉÄ
-	-

Ï5,Õ!5BÐ AÂGKÁ

ÏQÐ (Mã

Ï5*Ð -

Ï!5B_Ð -

ÌÏGQÐ

Q¸	ÉÄ
-	-

ÏGÄÈ -

2.13 debug nsm mcast6 register

ÂÂÊÈ IPv6 4˜Gbyy¡,XÐÉ/Ä*ÄQ¸X no 6ÈGKÁ× AÊGÄ

debug nsm mcast6 register

no debug nsm mcast6 register

Ï–DAÈ

–D	ÉÄ
-	-

Ï5,Õ!5BÐ AÂGKÁ

ÏQÐ (Mã

Ï5*Ð -

Ï!5B_Ð -

ÌÏGQÐ

Q¸	ÉÄ
-	-

ÏGÄÈ -

2.14 debug nsm mcast6 stats

ÂAÊÈ IPv6 4˜Gby><)„4^ Auµ,XÓÉ/Ä*ÄQ¸X no 6ÈGKÁ×
AÊGÄ

debug nsm mcast6 stats

no debug nsm mcast6 stats

Ï–DAÈ	–D	ÉÄ
	-	-

Ï5,Õ!5BÐ AÂÊGKÁ

ÏQÐ (Mã

Ï5*Ê -

Ï!5B_Ð -

ÏGQÐ	Q¸	ÉÄ
	-	-

no 6ÈGKÁ×ÂÊGÄ

ÏGÄÈ -

2.16 ipv6 mroute

G!5BIPv6 4M-ÕÃÄ*ÄQ¸X **no 6ÈG5B** IPv6 4M-ÕÃÄ

ipv6 mroute *ipv6-prefix/prefix-length* [*protocol*] { *v6rpf-addrress* | *interface-type interface-number* } [*distance*]

no ipv6 mroute *ipv6-prefix/prefix-length* [*protocol*]

Ï–DAÈ

–D	EÄ
ipv6-prefix/	4,X IPv6
prefix-length	4,X IPv6 ,X}-Õ
protocol	!!7S*¡X)CÃ#A,
v6rpf-address	RPF FÄ,XÔÅX IPv6
interface-type interface-number	RPF yÄ,XÎyÅ
distance	0-255È,Õ 0Ä

Ï5,Õ!5BÐ ´ IPv6 4M-ÕÃ

ÏQÐ <ã

ÏS*Ô IPv6 4M-ÕÃõ™ RPF Ä

VpÛÛ IPv6 M-ÕCÃ,XÎy5M2ÔÇ IP ÈwAÎyNOÉO_Ä

ÏG!5B_Ð G!5BÔ IPv6 M-ÕCÃÈ233 Ö4 ÃE› 3333Ö333 EÄ

5XLMLHFRQILJLSYPURXWHÖ

ÏÏGQÐ

Q¸	EÄ
-	-

ÏGÄÈ -

2.17 ipv6 multicast boundary

A5B(Mn IPv6 48X IPv6 4E+ Ä*ÄQ¸X **no 6ÈG5B** IPv6 4E+ Ä

ipv6 multicast boundary *accT6s-list-name* [**in** | **out**]

no ipv6 multicast boundary *access-list-name* [**in** | **out**]

Ï–DAÈ

–D	EÄ
access-list-name	ÉÜ ACL 9L$48È
in	
out	

¨5,Õ!5BÐ	¡G!5B IPv6 4˜E•
¨Q¸Ð	yã
¨S*Ð	!8Q¸¿X ACL ¸X ACL¸Ã ACL¸Ã)=X ACL¸Ã!,¸XÈ 6¡!8Ä AQ¸Ã¹ IPv6 48¸È¸G,X MLD ÃIM-SMv6 #Ay[E> E¸DB#Ã4˜• E• y#9#Ã
¨G!5B_Ð	A5B svi1 Ý IPv6 4˜4¸XE• Ä 5XLMLHFRQILJLSYDFFHVVOLVWPXOERXQ 5XLMLHFRQILJVWGQDFOSHUPLWLSY 5XLMLHFRQILJVWGQDFOH[LW 5XLMLHFRQILJLQWHUIDFHYODQ 5XLMLHFRQILJLILSYPXOWLFDVWERXQGDUPXOERXQ

¨ÌGQÐ

Q¸	£Ä
-	-

¨GÄÈ -

2.18 ipv6 multicast route-limit

L¡Ñ IPv6 4˜CÃ><,X5,ÂDGÄ*ÄQ¸X **no 6¸ÃÂGÉ$**
5¸Ð
ipv6 multicast route-limit *limit* [*threshold*]
no ipv6 multicast route-limit *limit* [*threshold*]

¨ÌDAÈ

–D	£Ä
limit	*6¸Ñ* IPv6 4˜CÃ,XDG¸È 1~2147483647¸Ã,Õ 1024Ä
threshold	' IPv6 4˜CÃ D,Ã'ÔA¹KÔ¸*Ã:/#\CÄ,Õ 2147483647Ä

¨5,Õ!5BÐ –D5,Õ

¨Q¸Ð <ã

¨S*Ð ¿Ô¸XL¸YE›¿<NM,XCÃNMN¹O+ECÊ¸ÑÄ

¨G!5B_Ð L¡Ñ IPv6 4˜CÃ><,X5,ÂDG£ 100È:/ 90Ä
5XLMLHFRQILJLSYPXOWLFDVWURXWHOLPLW

ÏÎGQÞ

Q¸	£Ä
-	-

ÏGÄÈ -

2.19 ipv6 multicast-routing

| IPv6 4˜CÃs6Ñ*ÄQ¸X **no 6ÉÁ** IPv6 4˜CÃs6Ñ

ipv6 multicast-routing

no ipv6 multicast-routing

ÏÍDAÈ

–D	£Ä
-	-

ÏÕ¸Õ!5BÐ IPv6 4˜CÃs6ÑKÁ

ÏQÞ -

ÏS*Ûì ÑO| IPv6 4˜CÃs6Ñ¶Ø IPv6 4˜#AÄ

IPv6 4˜CÃs6Ñ MLD snooping s6Ñ¸XÄ

ÏG!5B_Ð -

ÏÎGQÞ

Q¸	£Ä
-	-

ÏGÄÈ -

2.20 ipv6 multicast rpf longest-match

ÏÇSG!sÉ½ RPF CÃÄ*ÄQ¸X **no Ñ6ÉÕ5Ä**

ipv6 multicast rpf longest-match

no ipv6 multicast rpf longest-match

ÏÍDAÈ

–D	£Ä
-	-

ÏÕ¸Õ!5BÐ É¼{Ô¸XCÃ0 RPF CÃÄ

Vpì4{¸Ï IPv6 4˜M-ÕÃÃPv6 MBGP CÃÃPv6)CÃ¸XNNcE> É½

ÏQÞ <ã

ÏS*Ûì É½ RPF CÃ¸X!9PxÖ

¢ IPv6 4˜M-ÕÃ><Ã IPv6 MBGP CÃ><Ã IPv6)€Ã><ÐÕÃ RPF ¨;XÒ
CÃÄ
E5CÃE0 RPF CÃÄ
VpG!5BÐSG!sEÉÃQÈ5CÃEÐSG!,XFw5CÃÄpE5
CÃ,X}-Ð4{Ð,XFw5CÃÄpW,Ì4{3,È IPv6 4˜M-Õ
CÃÃPv6 MBGP CÃÃPv6)€Ã,XNNcE> EÄ
VpüÉ!5BÐSG!EÉÃE5CÃE4{Ð,XFw5CÃÄpW,Ì
4{,È IPv6 4˜M-ÕÃÃPv6 MBGP CÃÃPv6)€Ã,XNNcE> EÄ

ÏG!5B_Ð -

ÏGQÐ

Q¸	EÄ
-	-

ÏGÄÈ -

2.21 ipv6 multicast static

AÐ*9G!5B4˜##ÅÄQ¸X no 6ÃG!5BÄ

ipv6 multicast static *source-address group-address interface-type interface-number*

no ipv6 multicast static *source-address group-address interface-type interface-number*

ÏDAÈ

–D	EÄ
source -address	**4ÄÄ**
group-address	**44Ä**

interface-type

ÏGÄÈ -

2.22 show ipv6 mroute

AÕ¸*0¹¸ß IPv6 4Ï€@<µÄ

show ipv6 mroute [*group-or-source-address* [*group-or-source-address*]] [**dense** | **sparse**] [**summary** | **count**]

Ï–DAÈ

–D	ÉÄ
group-or-source-address	[illegible]
group-or-source-address	[illegible]
dense	/ PIM-DMv6 4˜><NMÄ
sparse	/ PIM-SMv6 4˜><NMÄ
summary	**/** IPv6 4ÕÃ><NM,X,ÕµÄ

)RUZ DUGLQJ&RXQWV3NWFRXQWW HFRXQW2WKHU&RXQWV:URDUGEpDP @Pp Pn)RUZ pR PPUR pPPpWV5 08DÀ

2.24 show ipv6 mvif

/ IPv6 4ÿ¡XŒÄ

53)WSHXQLFDVWFRQQHFWHG

53)UHFXUVUDAPRX6WHG

3 IGMP

3.1 clear ip igmp group

#Ù8 IGMP 4ç¸X|Õ¡ã¸Ä

clear ip igmp group [*group-address* [*interface-type interface-number*]]

Ï–DAÈ

–D	£Ä
group-address	4
interface-type interface-number	yáÄ

ï5,Õ!5BÐ -

ÏQ¸Ð (Mã

ïS*Ûb IGMP 4ç¸Ð<Ëe<,XYJ,È5%Ý¾4ÄpA3t9þ
4È43ï+Ëþ<Ä
S*áD,X **clear ip igmp group** Ïq IGMP 4ç#Ù8|Õ¡ã¸Ä

ïG!5B_Ð #Ù8<F¼X|Õ¡ã¸Ö
5XLMLHFOHDULSLJPSJURXS

ÏÏGQ¸Ð

Q¸	£Ä
show ip igmp groups	/Ý¡ã¸
show ip igmp interface	/Ù30¸X4¡ã¸

ïGÄÈ -

3.2 clear ip igmp interface

#Ù8yÞXÝ IGMP 4ª Au¡Ù4¡ã¸

clear ip igmp interface *interface-type interface-number*

Ï–DAÈ

–D	£Ä
interface-type interface-number	yáÄ

ï5,Õ!5BÐ -

ÏQ¸Ð (Mã

Ï*Ð AQ¸9#Ù8yý IGMP :4,X4Ù¸yÞXÔy[4ªAuÙËoy[4ªAuÙÙ
ÿ,X report y[ÐÙÈeave y[ÐÙÈyÞX4ãA),XAuDÙÄ

ÏG!5B_Ð #Ù8y· E0/1 ÞX IGMP Ù
5XLMLHFOHDULSLJPSLQWHUIDFHHWK

ÏÎGQÞ

Q¸	ËÄ
-	-

ÏGÄÐ -

3.3 ip igmp access-group

ÿÙÐÄÙË,X4ÐÏ*Ù8Q¸X **no 6ÐÏs6Ñ**
ip igmp access-group *access-list*
no ip igmp access-group

Ï-DAÐ

–D	ËÄ
access-list	ëü ACL n48È

Ï5,Õ!5BÐ AÙ9Ï4˜

ÏQÞ yã

Ï*Ð EÊÿÙ!5B!8QÞÈ5‰,X6Ñ9,X4ÐÏü ACL LÞ48ÐÏpy
>• ACL deny ,X report y[ÐÏy[Ä
tü IGMPv3 ÐÏBQÞÕ ACLÿÄ,X IGMP report ÙÐS1,S2,S3…Sn,G ÐÏÄ
Q¸(0,G) ÙS*ì¸h,X ACL E> G!ÐÏ!7S*ÄAQÞÈÏOÉ= ACL 6!5B
6(0, G) È!Ñ,XÐS1,S2,S3…Sn,G Ð> EÞÄ

ÏG!5B_Ð _ 1ÐÿÙ· Eth0/1 ÐÑ9˜ 225.2.2.2.
5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJDFFHVVOLVWSHUPLW
5XLMLHFRQILJLQWHUIDFHHWKHUQHW
5XLMLHFRQILJLILSLJPSDFFHVVJURXS

_ 2ÿØ Eth0/1 G!5B4{ë<G6()= ACLÿÙÐÑ 1.1.1.1È˜ 233.3.3.3
,X igmp #Aÿ[Ä
5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJLSDFFHVVOLVWH[WHQGHGH[WBDFO
5XLMLHFRQILJH[WQDFOSHUPLWLSKRVWKRVW
5XLMLHFRQILJLQWHUIDFHHWKHUQHW
5XLMLHFRQILJLILSLJPSDFFHVVJURXSH[WBDFO

ÌGQÐ

Q¸	ÆÄ
-	-

ÏGÄÈ -

3.4 ip igmp immediate-leave group-list

ÿ¹Ë/ô6Ñ*ÀQ¸X **no 6ÈÄs6Ñ**

ip igmp immediate-leave group-list *access-list*

no ip igmp immediate-leave

Ï–DAÈ

–D	ÆÄ
access-list	éü ACL n4ÏÈ

Ï5,Õ!5BÐ GKÉ/ô6Ñ

ÏQÐ yã

ÏS*Ô AQÈ¹ÿyE¤ IGMPv2 ê v3ÈÈ¹ÿ)ÔXÄ%

VpG!5BAQÈ¹y/ÿ[ÊMn4ÏÿÏ[ÈYhÄYÊã

,A)ô8!8yÄYÊÈb(Mn4ÏÏ¶Èhâ IGMP 9ÂÏD,X,/Ã,Ã% 2sÄ

VpG!5BAQÊ¹ô8È,X4Ïÿ/ÿ[ÊÈÕ(Mn4ÏÏ[Èà

4ã,A)ô8!8yÄ!8ÊÐ

ÏG!5B_Ð G!5BÈ/ô6Ñ

Ï–DAÈ	–D	£Ä
	group-address	4˜

Ï5,Õ!5BÐ yp9)ÏÎÄ

ÏQÐ yã

Ï5*Ûð G!5B!8QÐ ÈÉ ÂÈÕÏA4˜X join y[Ä
!8Q¸*ÏrP#AÄ

ÏG!5B_Ð ÿÍ Eth0/1 t94˜ 233.3.3.3Ä

5XLMLHFRQILJXUHWHUPLQDO

5XLMLHFRQILJLQWHUIDFHHWKHUQHW

ï5,Õ!5BÐ	–D5,Õ
ïQ¸Ð	<ãã
ïS*Ûì	<ÕÏ IGMP 4ãA),XDGÄ yÕÏy,X IGMP 4ãA),XDGÄ Vp4ãA),CYÎ¿,XLÈ¸,X report y[ÚÑ9Ä VpG!5BZ except _ê<Ê)ÚÈ¿,X,X report y[Ì6ãX4ãA),á ÂuDÄ y<(ÃÕG!5BÄ/p<G!5B,XÐLÈ¸yÈG!5BÄ
ïG!5B_Ð	L$ IGMP 4ãA) 400¿Ì E0/1 ,X4ãA) 300¿Ì‡ acl1 ,X4Ĩ8Ä 5XLMLHFRQILJXUHWHUPLQDO 5XLMLHFRQILJLSLJPSOLPLWH[FHSWDFO 5XLMLHFRQILJLQWHUIDFHHWK 5XLMLHFRQILJLILSLJPSOLPLWH[FHSWDFO

ïÌGQÐ

Q¸	ÉÄ
-	-

ïGÄÈ -

3.9 ip igmp mroute-proxy

ïÌP mroute-proxy s6Ñ*ü **no 6ÈÄ6Ñ**

ip igmp mroute-proxy *interface-type interface-number*

no ip igmp mroute-proxy

ïÌDAÈ

–D	ÉÄ
interface-type interface-number	yÄ(Å

ï5,Õ!5BÐ	¡ÙS6Ñ
ïQ¸Ð	yG!5Bã
ïS*Ûì	S*ü **ip igmp proxy-service ¿ÈB** proxy-service yÄ S*ü **ip igmp mroute-proxy ¿ÈB** mroute-proxy yÄ + proxy-service yå mroute-proxy yÈ@ IGMP Ay[Ä mroute-proxy yå proxy-service yÈ@ IGMP report y[Ä
ïG!5B_Ð	ü E0/1 Þ proxy-service s6Ñ E0/2 Þ mroute-proxy s6Ñ 5XLMLHFRQILJLQWHUIDFHHWK

5XLMLHFRQILJLILSLJPSSUR[VHUYLFH
5XLMLHFRQILJLILQWHUIDFHHWK
5XLMLHFRQILJLILSLJPSPURXWHSUR[HWK

ÏÎGQÐ

Q¸	£Ä
ip igmp proxy-service	ÿÞ proxy-service s6Ñ

ÏGÄÈ -

3.10 ip igmp proxy-service

ÿÞ proxy-service s6Ñ*ü **no 6Ñ6Ñ**
ip igmp proxy-service
no ip igmp proxy-service

ÏÌDAÈ

–D	£Ä
-	-

ÏÕ,Õ!5BÐ -

ÏQÐ yG!5BÄ

ÏS*Ûì S*ü **ip igmp proxy-service** proxy-service yÄ
S*ü **ip igmp mroute-proxy** mroute-proxy yÄ
+ proxy-service yå mroute-proxy yE@ ¹ÿ[Ä mroute-proxy yå proxy-service
yE@ y[Ä
AÊG!5B 32þ proxy-service yÄ ' proxy-service yy ¹ÿ[È
4ãÄ¸)0Î1(Ä
ÿ6AÈpÍ proxy-service y¸ Z **switchport** mroute-proxy yÕ!5B,X
mp mroute-proxy 8Ä

0/1 Þ proxy-service s6Ñ E0/2 Þ mroute-proxy s6Ñ

5XLMLHFRQILJLQWHUIDFHHWK
5XLMLHFRQILJLILSLJPSSUR[VHUYLFH
5XLMLHFRQILJLILQWHUIDFHHWK
5XLMLHFRQILJLILSLJPSPURXWHSUR[HWK

ÏÎGQÐ

Q¸	£Ä
ip igmp mroute-proxy	ÿÞ mroute-proxy s6Ñ

ÏGÄÈ -

3.11 ip igmp query-interval

G!5BBEãÀ¶ÈhÄ8Q¸X **no 6ãÃ**

ip igmp query-interval *seconds*

no ip igmp query-interval

Ï–DAÈ	–D	£Ä				
	seconds	BEãÀ¶ÈhÄ	sÈ£	118000	È,Õ	125

Ï5,Õ!5BÐ –D5,Õ

ÏQÐ yG!5Bã

ÏS*Ô -

ÏG!5B_Ð ÿ·

ÏGÄÈ	-

3.13 ip igmp query-timeout

G!5BJWÄ¶¡#ÊÃ8Q¸X **no 6ãã**

ip igmp query-timeout *seconds*

no ip igmp query-timeout

Ï–DAÈ	–D	ÆÄ
	seconds	JWÄ¶¡#ÊÈ sÈÈ 60 300È,Õ 255

ÏÕ,Õ!5BÐ	–D5,Õ
ÏQÐ	yG!5Bã
ÏS*Ô	yÎÄ¶[ÈYJÄÎÄ¶[ÄpCYÊx,È5%,7Ô Ä¶Ô

2

ÏG!5B_Ð	ÿ· Ethernet 0/1 ÐG!5BJWÄ¶¡#ÊÈ 200sÄ 5XLMLHFRQILJLQWHUIDFHHWKHUQHW 5XLMLHFRQILJLILSLJPSTXHUWLPHRXW

ÏÌGQÐ	Q¸	ÆÄ
	-	-

ÏGÄÈ	-

3.14 ip igmp robustness-variable

A5BÄ¶92ÎÄ8Q¸X **no 6ãã**

ip igmp robustness-variable *number*

no ip igmp robustness-variable

Ï–DAÈ	–D	ÆÄ
	number	92ÎÄÈ 2-7È,Õ 2

ÏÕ,Õ!5BÐ	–D5,Õ
ÏQÐ	yG!5Bã

Ï S*ÛÐ -

Ï G!5B_Ð A5B92ÂÏD 3

5XLMLHFRQILJLQWHUIDFHHWKHUQHW

5XLMLHFRQILJLILSLJPSUREXVWQHVVYDULDEOH

ÏÎGQÐ

Q¸	£Ä
-	-

ÏGÄÈ -

3.15 ip igmp ssm-map enable

| ssm-map s6Ñ8Q¸X **no 6ÈGÁs6Ñ**

ip igmp ssm-map enable

no ip igmp ssm-map enable

Ï–DAÈ

–D	£Ä
-	-

Ï5,Õ!5BÐ GKÁs6Ñ

ÏQÐ <G!5Bã

Ï S*ÛÐ S*ü **ip igmp ssm-map enable** ÈQ ssm-map s6Ñ

S*ü **ip igmp ssm-map static** ÈQM-ÕÄ

yE¤ IGMPv3,ÄX IGMPv1 ê IGMPv2 ,X report y[ÊÏM-ÕX6ÄÄ

Ï G!5B_Ð *ü ssm-map s6ÑCL11 ,X4ÐÕ 192.168.2.2Ä

5XLMLHFRQILJLSLJPSVVPPDSHQDEOH

5XLMLHFRQILJLSLJPSVVPPDSVWDWLF

ÏÎGQÐ

Q¸	£Ä
ip igmp ssm-map static	**G5BM-ÕÄ**

ÏGÄÈ -

3.16 ip igmp ssm-map static

G!5BM-ÕÄ<NMÄ8Q¸X **no 6ÈGÁ88MÄ**

ip igmp ssm-map static *access-list source-address*

no ip igmp ssm-map static *access-list source-address*

Ï–DAÈ

–D	£Ä
access-list	+ ACL A5B,X48È
source-address	6

Ï5,Õ!5BÐ M-Õ<NM

ÏQÐ <G!5Bã

Ï5*Ô S*ü **ip igmp ssm-map enable** Ò ssm-map s6Ñ

S*ü **ip igmp ssm-map static** Ò M-Ä

yE¤ IGMPv3,X IGMPv1 ê IGMPv2 ,X report y[ÊM-Õ6Ä

Ï G!5B_Ð *ü IGMP ssm-map s6Ñ ACL11 ,X48 192.168.2.2Ä

5XLMLHFRQILJLSLJPSVVPPDSHQDEOH

5XLMLHFRQILJLSLJPSVVPPDSVWDWLF

ÏÎGQÐ

Q¸	£Ä
ip igmp ssm-map enable	| IGMP ssm-map s6Ñ

ÏGÄÈ -

3.17 ip igmp static-group

yM-Õ94Ä8Q¸X **no 6GÄ5Ä**

ip igmp static-group *group-address*

no ip igmp static-group *group-address*

Ï–DAÈ

–D	£Ä
group-address	4˜

Ï5,Õ!5BÐ yM-Õ)4Ä

ÏQÐ yã

Ï5*Ô AQ¸yáÔE> IGMP y[xfGÃ94ÄŽ,È5%9A4È

A4˜,X4ãA,FÑyÄ

ÏÎGQÐ

Q¸	£Ä
ip igmp join-group	**yt9¶˜**

ÏGÄÈ -

3.18 ip igmp version

A5ByÐ¤ ,X IGMP (ÄÙ8Q¸X **no 6ãÕ**

ip igmp version { **1** | **2** | **3** }

no ip igmp version

ÏÍDAÈ

–D	£Ä
1	IGMPv1
2	IGMPv2
3	IGMPv3

ÏÕ,Õ!5BÐ IGMPv2

ÏQÐ yG!5Bã

ÏS*Ô G!5B!8QÈGMP 7¾G¸Ä

ÏG!5B_Ð y· E0/1 E¤ IGMPv3Ö

5XLMLHFRQILJXUHWHUPLQDO

5XLMLHFRQILJLQWHUIDFHHWKHUQHW

5XLMLHFRQILJLILSLJPSYHUVLRQ

ÏÎGQÐ

Q¸	£Ä
-	-

ÏGÄÈ -

3.19 show ip igmp groups

/ÄÙÊ,È?X4¢ IGMP :4,X4¢Ä

show ip igmp groups [*interface-type interface-number*] [*group-address*] [**detail**]

ÏÍDAÈ

–D	£Ä
group-address	*4*
interface-type interface-number	*yáÄ*
detail	**¶¢**

ï5,Õ!5BÐ	-
ÏQÐ	(Mã
ÏS*Ð	Vpÿ–DÈÃ2O_ÿÈ?X4¶ÇÄ Vpÿ47(Mn4˜XÇÄ
ÏG!5B_Ð	_ 1ÕX4¶Ç 5XLMLHVKRZLSLJPSJURXSV ,*03&RQQHFWHG*URXS0HPEHUVKLS *URXS$GGUHVV,QWHUIDFH8SWLPH([SLUHV/DVW5HSRUWHU HWK HWK HWK HWK HWK HWK
	_ 2ÕÐMn4˜XA4¶Ç 5XLMLHVKRZLSLJPSJURXSVGHWDLO ,QWHUIDFHHWK *URXS 8SWLPH *URXSPRGH,QFOXGH /DVWUHSRUWHU 7,&XQW 7,&XQW *URXSVRXUFHOLVW55HPRWH06600DSSLQJ 6RXUFH$GGUHVV8SWLPHY([S)Z)ODJV <HV5 <HV5

ÏÌGQÐ	Q¸	ÈÄ
	-	-

ÏGÄÈ	-

3.20 show ip igmp interface

¹¸ÿÏX	IGMP G!5BÇ

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

ÏÌ–DAÈ	–D	ÈÄ
	interface-type	*yÄ*

interface-number	
detail	**Ãµ**

Ï¸Õ!5BÐ -

ÏQÐ (Mã

Ï*Ô VpáDÝÇÄ

Ï!5B_Ð ¹Ý¸X IGMP G!5BÇÖ

5XLMLHVKRZSLJPSLQWHUIDFH

[redacted]

,*0ãXHUÌ_QW_UÈYPHÒLVVHFRQGV

,*0ÌTXHULHS_@Q_UÈ¶Ò

Ï¨G!5B_Ð /4˜ 233.3.3.3 ,X ssm-map µ¨

5XLMLHVKRZ ZSLJPSVVPPDSSLQJ

*URXSDGGUHVV

DWDEDVH6WDWLF

6RXUFHOLVW

ÏÌGQÐ

Q¸	ÆÄ
-	-

ÏGÄÐ -

4 MLD

4.1 clear ipv6 mld group

#Ù8 MLD 4ç,X|Õ¯A¸)Ä

clear ipv6 mld group [*group-address*] [*interface-type interface-number*]

Ï–DAà

–D	£Ä
group-address	4
interface-type interface-number	6¥·

ï5,Õ!5BÐ -

ÏQ¸Ð (Mã

ïS*Ð MLD 4ç¸Ð<Ëe<,XY·J,È5%ý0¾4ÏXpAÛ3t9

µÈ4ï35+Ep<Ä

S*áD,X **clear ipv6 mld group** ¸Ã MLD 4ç#Ù8|Õ¯A¸)Ä

ïG!5B_Ð _ 1ö8<F|Õ¯A¸)

5XLMLHFOHDULSYPOGJURXS

_ 2ö8Ô4¯A¸)

5XLMLHFOHDULSYPOGJURXSIIH

_ 3ö8ÙMny,X4¯A¸)

5XLMLHFOHDULSYPOGJURXSIIHLQWHUIDID

ÏÎGQ¸Ð

Q¸	£Ä
show ipv6 mld groups	/Ý¯A¸)
show ipv6 mld interface	/Ù80,X4¯A¸)

ïGÄà -

4.2 clear ipv6 mld interface

#Ù8yÞXÝ MLD 4ªAuÇ4¯A¸)

clear ipv6 mld interface *interface-type interface-number*

Ï–DAà

–D	£Ä

interface-type *interface-number*	*yáÄ*

ï5,Õ!5BÐ -

ÏQ¸Ð (Mã

ÏS*ÛÐ AÕ*9#Ù8yÝ MLD :4,X4¯Ù¡Xôy[4ªAuÏÆoy[4ªAuÏÙ
y,X report y[DÏÈone y[DÏÈy¡X4¯ã¸AuDÏÄ

ÏG!5B_Ð #Ù8y· E0/1 ¡X MLD Ï
5XLMLHFOHDULSYPOGLQWHUIDFHHWKHUQHW

ÏÏGQÐ

Q¸	ÆÄ
-	-

ÏGÄÈÐ -

4.3 ipv6 mld access-group

ÿÏ¿AÏ9,X4¯Ï¸#Ï **no ÈÑs6ÑÏ**
ipv6 mld access-group *access-list*
no ipv6 mld access-group

ÏÏ–DAÈÐ

–D	ÆÄ
access-list	*éü* ACL n4¯8È

ï5,Õ!5BÐ AÏ9Ï4˜

ÏQ¸Ð yã

ÏS*ÛÐ EÏÿÏG!5B!8QÈÈ5%,X6Õ9,X4¯Ï ACL L$4¯8È¯Ïpy
>• ACL deny ,X report y[ÈÏy[Ä
ïü MLDv2!ÈÏQÊ ACL6ÈÏBE$ MLDv2 y[,X$ÄA)Ï¿Ä,X MLD
report ÏÄ1,S2,S3…Sn,G ÈÏQÍ0,G) ÏÄS*¡Ù,X ACL E> G!Ï¿Ä!7
S*ÄÏQÈÑO¡= ACL 6G!5BÔ(0, G) È!Ñ7,XÏÄ1,S2,S3…Sn,G Ä> E›
¿Ä

ÏG!5B_Ð ÿÏ· Eth0/1 ÄA5B4ÏE$
5XLMLHFRQILJLSYDFFHVVOLVWDFO
5XLMLHFRQILJLSYDFOSHUPLWLSYII
5XLMLHFRQILJLSYDFOSHUPLWLSYII
5XLMLHFRQILJLQWHUIDFHHWKHUQHW
5XLMLHFRQILJLILSYPOGDFFHVVJURXSDFO

ÏÎGQÞ	Q¸	£Ä
	-	-

ÏGÄÈ -

4.4 ipv6 mld immediate-leave group-list

ÿ¹Ë/ô6Ñ*ÄQ¸X **no 6ÈÄs6Ñ**

ipv6 mld immediate-leave group-list *access-list*

no ipv6 mld immediate-leave group-list

Ï–DAÈ	–D	£Ä
	access-list	éü ACL n48È

Ï5,Õ!5BÐ GKÉ/ô6Ñ

ÏQÞ yã

ÏS*Ô !8s6ÑÖÿ¾ÿÔXÄ

VpG!5BAÇÿ MLD /ÿÎÈMn4ÃÿÎÈYhÄYÈ

4ã,ô8!8yÄYÈÈb(Mn4ÃÎÈhâ MLD 9ÂÏD,X,/Ã,Ñ 2sÄ

VpG!5BÃÇÿ,ô8È,X4È/ÿÎÈÛÈÕMn4ÃÿÎÈÈ

yô8,Ì4ÏÄ!8ÈÐ

ÏG!5B_Ð G!5BÉ/ô6Ñ

5XLMLHFRQILJXUHWHUPLQDO

5XLMLHFRQILJLSYDFFHVVOLVWDFO

5XLMLHFRQILJLSYDFOSHUPLWLSYII

5XLMLHFRQILJLQWHUIDFHHWKHUQHW

5XLMLHFRQILJLILSYPOGLPPHGLDWHOHDYHJURXSOLVWDFO

ÏÎGQÞ	Q¸	£Ä
	-	-

ÏGÄÈ -

4.5 ipv6 mld join-group

yt9ÿÄ*ÏBQ¸X **no 6ÈÄ5Ä**

Ipv6 mld join-group *group-address*

no ipv6 mld join-group *group-address*

–D	£Ä
group-address	4˜ ÁG£5B¹ 0xFF*1Ã0xFF*2 Ã0xFF3* ÇXÄ

ÏÕ¸Ã!5BÐ yp9)ÏÕÄ

ÏQ¸Ð yã

ÏS*Ûb G!5B!8Q¸ÈÉ ÂÈÕÃ¹4˜,X join y[Ä
!8Q¸*ÏrP#AÄ

ÏG!5B_Ð ÿ Eth0/1 t94˜ ff55::100Ö

```
5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJLQWHUIDFHHWKHUQHW
5XLMLHFRQILJLILSYPOGMRLQJURXSII
```

Q¸	£Ä
-	-

ÏGÄÈ -

4.6 ipv6 mld last-member-query-count

ÿÄ5B(Mn4˜Ay[,X£ÕÄS*ü **no 6¸ÃÕ**
ipv6 mld last-member-query-count *number*
no ipv6 mld last-member-query-count

–D	£Ä
number	(Mn4˜Ay[,X£ÕÄÈ 2-7È,Õ 2

ÏÕ¸Ã!5BÐ –D5,Õ

ÏQ¸Ð yG!5Bã

ÏS*Ûb y· done y[È4ÉÕ(Mn4˜Ay[È1YhÄYÂx,È5%ÄE
,ÄA¹4˜¸ÄÈ MLD 4˜¸ÄA,) ô8A¹y·ÄYÊÈ b last-member-query-interval â
last-member-query-count ,X,/ÃtÞ 1/2 ,X query-max-response-timeÄ

ÏG!5B_Ð A5B(Mn4˜Ay[,X£Õ 3.

```
5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJLQWHUIDFHHWKHUQHW
5XLMLHFRQILJLILSYPOGODVWPHPEHUTXHUFRXQW
```

Q¸	£Ä

ipv6 mld last-member-query-interval	**no ipv6 mld last-member-query-interval**

ÏGÄÐ -

4.7 ipv6 mld last-member-query-interval

ÿÄA5B(Mn4ÆÅ¶[,XÆÈÕÈhÄ*ÄÆQ¸X **no ipv6 mld last-member-query-interval**

ipv6 mld last-member-query-interval *interval*

no ipv6 mld last-member-query-interval

Ï-DAÐ

–D	ÆÄ
interval	(Mn4ÆÅ¶[,XÆÈÕÈhÄ 0.1sÐÈ 1-255È¸Õ 10Ä 1sÅ

Ï5,Õ!5BÐ –D5,Õ

ÏQÐ yG!5Bã

ÏS*ÐÐ ÿ· done yÐÈ4ÆÅ(ÕMn4ÆÅ¶[ÆÈ1YÞÄÄÅx,È5%ÆÆ

,ÄÅ4˜ãÆÈ MLD 4˜ãA¸) Ä8Aÿ·ÄÈYÞÐÆÈÆb last-member-query-interval â last-member-query-count ,X,/ÃÆÞ 1/2 ,X query-max-response-timeÄ

ÏG!5B_Ð A5B(Mn4ÆÅ¶[ÆÈÕÈh 2 /¦

```
5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJLQWHUIFHID
5XLMLHFRQILJLILSYPOGODVWPHPEHUTXHU LQWHUYDO
```

ÏÎGQÐ

Q¸	ÆÄ
ipv6 mld last-member-query-count	**no ipv6 mld last-member-query-count**

ÏGÄÐ -

4.8 ipv6 mld limit

A5B MLD 4˜ãÄ¸,XÛÐGÄÐ*ü **no ipv6 mld limit**

ipv6 mld limit *number* [**except** *access-list*]

no ipv6 mld limit *number* [**except** *access-list*]

Ï-DAÐ

–D	ÆÄ
number	MLD 4˜ãÄ¸,XÛÐGÄÐÈ'ÄÛÐÿÄ5,Õ 1024È5,Õ 65536Ä
except *access-list*	Æccess-list ,X4˜ãÄuDÈÞL8ÐGÆÐÄ

Ï5,Õ!5BÐ –D5,Õ

Q¸Ð <ÃÃ

S*Ô <ÖÏ MLD 4¯A),XDGÄ

yÖÙy;X MLD 4¯A),XDGÄ

Vp4¯A),CYÎ¿,XLÈÎ,X report y[ÚÑ9Ä

VpG!5BZ except

5XLMLHFRQILJLILSYPOGPURXWHSUR[HWK

ÏÎGQÞÐ

Q¸	£Ä
ipv6 mld proxy-service	ÿÞ proxy-service s6Ñ

ÏGÄÀÐ -

4.10 ipv6 mld proxy-service

ÿÞ proxy-service s6Ñ*ü **no 6ÏÄÑ**

ipv6 mld proxy-service

no ipv6 mld proxy-service

Ï–DAÀÐ

–D	£Ä
-	-

ÏÕ,Õ!5BÐ -

ÏQÞÐ yG!5BÄ

ÏS*ÛÐ S*ü **ipv6 mld proxy-service** ÏÄB proxy-service yÄ

S*ü **ipv6 mld mroute-proxy** ÏÄB mroute-proxy yÄ

+ proxy-service yå mroute-proxy yE@ MLD ÄÿÏ[Ä mroute-proxy yå proxy-service yE@ MLD report y[Ä

AÛÐG!5B 32 þ proxy-service yÄ ' proxy-service yy MLD ÄÿÏÈ MLD 4ã,A)0ĥ1(Ä

ÿ6AÈÐpÍ proxy-service y> Z **switchport** ÈÐ mroute-proxy yÐG!5B,X

ipv6 mld mroute-proxy ÏÄ8Ä

ÏG!5B_Ð ü E0/1 Þ proxy-service s6Ñ E0/2 Þ mroute-proxy s6Ñ

5XLMLHFRQILJLQWHUIDFHHWK

5XLMLHFRQILJLILSYPOGSUR[VHUYLFH

5XLMLHFRQILJLILQWHUIDFHHWK

5XLMLHFRQILJLILSYPOGPURXWHSUR[HWK

ÏÎGQÞÐ

Q¸	£Ä
ipv6 mld mroute-proxy	ÿÞ mroute-proxy s6Ñ

ÏGÄÀÐ -

4.11 ipv6 mld querier-timeout

G!5BJWÄ5¡Ì#ÊÃ8Q¸X **no 6ÏÄÑ**

ipv6 mld querier-timeout *seconds*

no ipv6 mld querier-timeout

–D	£Ä	
seconds	JWA¶Ì#ÊÈ	sÈÈ 60 300È,Õ 255

–D5,Õ

yG!5Bã

yÎ¥[ÈYJÂÎ¥XÂ¶[ÏpCYÊx,È5%,7Ô
Ì¶Ü
ÎÂÎX5,ÕEÂ¶Èh,X 2 Ä

G!5BJÂ¶ÌuÊKÈh 200sÄ

5XLMLHFRQILJLILSYPOGTXHULHUWLPHRXW

Q¸	£Ä
-	-

-

4.12 ipv6 mld query-interval

G!5BBEÂ¶ÈhÄ8Q¸X **no 6ãÕ**

ipv6 mld query-interval *seconds*

no ipv6 mld query-interval

–D	£Ä	
seconds	ÈÄ	sÈÈ 118000 È,Õ 125

–D5,Õ

yG!5Bã

-

ÿ· Ethernet 0 G!5BBEÂ¶Èh 120sÄ

5XLMLHFRQILJLILSYPOGTXHULQWHUYDO

Q¸	£Ä
-	-

ÏGÄÈ -

4.13 ipv6 mld query-max-response-time

G!5BÐÊÊÄ8Q¸X **no 6ÄÄÕ**

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

no ipv6 mld query-max-response-time

–D	EÄ					
seconds	ÐÊÊÄ	sÈÈ	125	È,Õ	10	

Ï–DAÈ

Ï5,Õ!5BÐ –D5,Õ

ÏQÐ yG!5Bã

Ï5*Ð yÅ¶[È¶ÈYhÄYÊx,È5%á4ÈÈ84¶CÄ

ÏG!5B_Ð ÿ· Ethernet 0 G!5BÐÊKÈh 20sÄ

5XLMLHFRQILJLILSYPOGTXHUPD[UHVSRQVHWLPH

ÏÏGQÐ

ÌGQÐ	Q¸	ÆÄ
	-	-

ÏGÄÈ -

4.15 ipv6 mld ssm-map enable

| ssm-map s6Ñ8Q¸X **no 6ÉÁs6Ñ**

ipv6 mld ssm-map enable

no ipv6 mld ssm-map enable

ÏÌDAÈ	–D	ÆÄ
	-	-

Ï5,Õ!5BÐ GKÁs6Ñ

ÏQÐ <G!5Bã

ÏS*Ô S*ü **ipv6 mld ssm-map enable** Ò ssm-map s6Ñ

S*ü **ipv6 mld ssm-map static** Ò **-ÑÄ**

yE¤ MLDv2ÄX MLDv1 ,X report y[ÊÏM-ÕX#y#TÕ[illegible]

Q¸Ð <G!5Bã

S*Ô S*ü **ipv6 mld ssm-map enable Ò** ssm-map s6Ñ

S*ü **ipv6 mld ssm-map static ÒÑ-ÑÄ**

yE¤ MLDv2¸X MLDv1 ,X report y[ÊÏM-ÕX6Ä

G!5B_Ð

4.18 ipv6 mld version

A5ByÊ¤ ,X MLD (ÄÙ8Q¸X **no 6ãã**

ipv6 mld version {**1** | **2** }

no ipv6 mld version

Ï–DAÈ

–D	ÉÄ
1	MLDv1
2	MLDv2

Ï5,Õ!5BÐ MLDv2

ÏQ¸Ð yG!5Bã

ÏS*Ûì G!5B!8QÈMLD ĩ7¾GÄ

ÏG!5B_Ð y· E0/1 E¤ MLDv1Ö

5XLMLHFRQILJXUHWHUPLQDO

5XLMLHFRQILJLQWHUIDFHHWKHUQHW

5XLMLHFRQILJLILSYPOGYHUVLRQ

ÏÎGQÐ

Q¸	ÉÄ
-	-

ÏGÄÈ -

4.19 show ipv6 mld groups

/ÀÙÎÉ,È²X4¢ MLD :4,X4¢ÇÄ

show ipv6 mld groups [*group-address* | *interface-type interface-number*] [

Ï S*ü ™a´ Ð

Ġ!5B_Đ

5 PIM-DM

5.1 clear ip pim dense-mode track

please try again!Ëë ÃG!5BAQÄ
G!5BAQ¸XÊp}¸PIM-DM Configure failed! VIF limit exceeded in NSM!!! È</!4˜
yG!5B,XDG4E'AÕ!5B,X4ÿLÐXp¸LÔAyÔ PIM-DM h*È
AÊ8ÔÐ¸X PIM-DM ê PIM-SM ê DVMRP yÄ
ÂÃÐÔXÿG!5BàX v4 4ÇÃ#AÄ
Vpy2O_L{F2O_ÐÝ¼ 4Over4 G!5BL{FÃ 4Over4 GRE L{FÃ 4Over6 G!5BL{FÃ 4Over6
GRE L{FÕ IPv4 4šs6ÃWÐXL{FyÐÝ¼s6ÃAÄ
CÈÊ> 4ÿ[,XyÈÊÕ
4L{FÕÐL{FÈDB,X Qos/ACLÄ

ËG!5B_Ð
```
5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJLQWHUIDFHIDVWHWKHUQHW
5XLMLHFRQILJLILSSLPGHQVHPRGH
```

ÏÎGQÐ

Q¸	ÉÄ
-	-

ËGÄÈ -

5.3 ip pim neighbor-filter

ÐÏÔXFÉÈŞÊ*ü **ip pim neighbor-filter** ÐÈ
ÐÊÉ PIM-DM ÈÍF¬ÔÏyÄeering Ô2ÈÈ6ÀFÆÐ¸X
FyG2ÄQ¸X no 6ÃU*ÉÉE$6Ñ
ip pim neighbor-filter *access-list*
no ip pim neighbor-filter *access-list*

Ï¬DAÈ

–D	ÉÄ
access-list	access-listÕ+ acl 8È 1-998ÕÁ acl

Ëˌ,Õ!5BÐ yÐÈÉE$6Ñ

ËQÈ yG!5Bã

ËS*Ô ÝÚ ACL EŞÐXF¬6ÑÙy¡X PIM FÈ• ACL EŞXFÚ
!y¡X PIM FÄ
AçXFyÐeeringÔ2ÐX PIM F¬ÈX#Ay[xfÝp!6ÐÈ PIM AÔXF•
yG2ÈÃ6È•G2ÈÑ97ÝAÔX PIM #Ay[Ä

ËG!5B_Ð
```
5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJLQWHUIDFHIDVWHWKHUQHW
5XLMLHFRQILJLILSSLPQHLJKERUILOWHU
```

ÏÎGQÐ

Q¸	ÉÄ

-	-

ÏGÄÀ -

5.4 ip pim override-interval

ÙGG¸!5B hello #Ĉ,X override-interval ÀÈÏ*ü **ip pim override-interval** Ï no 6ã
Ã hello #Ĉ,X override-interval 6ãÀxÄ
ip pim override-interval *interval-milliseconds*
no ip pim override-interval

Ï–DAÀ

–D	ÈÄ
interval-milliseconds	Ã1-65535> Ì!¿

ï,Õ!5BÐ 2500 !¿

ÏQÐ yG!5Bã

Ï*Ù G!5By¡X override-interval GG!5By¡X>qÈÃ

Ï!5B_Ð M6,X_$G!5By¡X override-interval 3000 !¿Ä

5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJLQWHUIDFHIDVWHWKHUQHW
5XLMLHFRQILJLILSSLPRYHUULGHLQWHUYDO

ÏÏGQÐ

Q¸	ÈÄ
-	-

ÏGÄÀ -

5.5 ip pim propagation-delay

ÙGG¸!5B hello #Ĉ,X propagation-delay ÀÈÏ*ü **ip pim propagation-delay** Ï no
6Ã hello #Ĉ,X propagation-delay 6ãÀxÄ
ip pim propagation-delay *interval-milliseconds*
no ip pim propagation-delay

Ï–DAÀ

–D	ÈÄ
interval-milliseconds	Ã1-32767> Ì!¿

ï,Õ!5BÐ 500 !¿

ÏQÐ yG!5Bã

no ip pim state-refresh disable

Ï–DAà	–D	£Ä
	-	-

ï5,Õ!5BÐ	5,[illegible]CÄ
ÏQ¸Ð	<G!5Bã
ÏS*Ô	GK[illegible] Hello y[illegible]MÈ ü Hello y[illegible],X SR Cap +!Ä GK[illegible]X PIM-DM 4[illegible] CÃ><95[illegible]GK[illegible]
ÏG!5B_Ð	-

ÏÎGQ¸Ð	Q¸	£Ä
	-	-

ÏGÄà	-

5.8 ip pim state-refresh origination-interval

ÏUG¸A5B PIM-DM ,X([illegible]C,X€KÊÈÈhÈ*ü	**ip pim state-refresh origination-interval**
[illegible]	no 6[illegible]€KÊÈÈhG¸A’
5BTAxÄ	

ip pim state-refresh origination-interval *interval-seconds*

no ip pim state-refresh origination-interval

Ï–DAà	–D	£Ä
	interval-seconds	[illegible]1-100> [illegible]/¦

ï5,Õ!5BÐ	60 /¦
ÏQ¸Ð	yG!5Bã
ÏS*Ô	-
ÏG!5B_Ð	5XLMLHFRQILJXUHWHUPLQDO 5XLMLHFRQILJLQWHUIDFHIDVWHWKHUQHW 5XLMLHFRQILJLILSSLPVWDWHUHIUHVKRULJLQDWLRQLQWHUYDO

ÏÎGQ¸Ð	Q¸	£Ä

-	-

ÏGÄÈ -

5.9 show ip pim dense-mode interface

Ø/ PIM-DM y¡XÇÈÈ*ü **show ip pim dense-mode interface** Ö¸

show ip pim dense-mode interface [*interface-type interface-number*] [**detail**]

Ï–DAÈ

–D	£Ä
interface-type interface-number	*yØÿÈ*
detail	**y¡¥Ç**

ÏÕ,Õ!5BÐ -

ÏQÇ (MÃÃÃ

Ï*Ô -

Ï!5B_Ð

```
5XLMLHVKRZSSLPGHQVHPRGHLQWHUIDFH
$GUHVV,QWHUIDFH9,)9HU1EU
,QGH[0RGH&XQW
)DVW(WKHUQHWY'
9/$Y'
```

+!‰	AÈ
Address	PIM-DM y¡X IP
Interface	PIM-DM y¡Xyá
VIF Index	VIF ÂÄD Å
Ver/Mode	PIM (/ ã
Nbr Count	PIM-DM y¡XFÐ

ÏÎGQÇ

Q¸	£Ä
show ip pim dense-mode neighbor	**/** PIM-DM y¡XFÇ

ÏGÄÈ -

5.10 show ip pim dense-mode mroute

Ø/ PIM-DM CÃ><ÇÈÈ*ü show ip pim dense-mode mroute QÄ

show ip pim dense-mode mroute [*group-or-source-address*

Ï–DAÈ	–D	ÉÄ
	group-or-source-address	[illegible]
	group-or-source-address	[illegible]
	summary	[illegible]

Ï¸Õ!5BÐ -

ÏQÐ (M[illegible]

Ï*Ð -

ÏG!5B_Ð	5XLMLHVKRZSSLPGHQVHPRGHQHLJKERU 1HLJKERU$GGUHVV,QWHUIDFH8SWLPH([SLUHV9HU)DVW(WKHUQHWY 9/$Y

+!‰	AÈ
Neighbor-Address	F•
Interface	ã¸È²Xy·
Uptime/Expires	><NM,#ÊÈÈÈ
Ver	PIM (

ÏÌGQÐ	Q¸	ÆÄ
	-	-

ÏGÄÈ -

5.12 show ip pim dense-mode nexthop

Ø/ PIM-DM ÔÇÈÄ*ü **show ip pim dense-mode nexthop Q**
show ip pim dense-mode nexthop

ÏÌDAÈ		ÆÄ
	-	-

ÏÌ,Õ!5BÐ -

ÏQÐ (MÃÃã

ÏS*Ð -

ÏG!5B_Ð

ÏÎGQÞ

Q¸	EÄ
-	-

ÏGÄÈ -

5.13 show ip pim dense-mode track

0/ PIM-DM #Ay[4³Au¸CÈÈ*ü **show ip pim dense-mode track Q**
show ip pim dense-mode track

ÏÏDAÈ

–D	EÄ
-	-

ÏÏ,Õ!5BÐ -

ÏQÞ (Mãã

Ï*Ûì ¹¸4³Au,XÈÈÈÇÕX PIM y[DÄÏ¹¸Ê5B4³Au,XÈÈ
ÈÄ*ü **clear ip pim dense-mode track Ê¸¸ÈÈ** PIM y[,XAu
D<Ä

Ï!5B_Ð

```
5XLMLHVKRZSSLPGHQVHPRGHWUDFN
3,0SDFNHWFRXQWHUV
(ODSVHGWLPHVLQFHFRXQWHUVFOHDUHG
        5HFHLYHGVHQW
9DOLG3,00SDFNHWV
+HOOR
-RLQ3UXQH
*UDIW
*UDIW$N
$VHUW
6WDWH5HIUHVK
3,0605HJLVWHU
3,0605HJLVWHU6WRS
3,0606
3,0606&3$
8QNQRZQ7SH
(UURUV
0DOIRUPHGSDFNHWV
0GFKHFNVXPV
8QNQRZQ3,0YHUVLRQ
6HQGHUURUV
```

6 PIM-SM

6.1 clear ip mroute

#Ù84ˆCÃ><NM

clear ip mroute { * | *group-address* [*source-address*] }

Ï–DAà

–D	£Ä
*	¾
group-address	4
source-address	6

ï5,Õ!5BÐ -

ÏQ¸Ð (Mã

ÏS*Ô S*Ù8Q¸4ˆCÃ><Ä

ÏG!5B_Ð _ 1ö84ˆCÃ><NM

5XLMLHFOHDULSPURXWH

_ 2ö8ô4˜ 224.2.2.2 ,X4ˆCÃ><NM

5XLMLHFOHDULSPURXWH

_ 3ö8ô4˜ 224.2.2.2ÃÄ 2.2.2.2 ,X4ˆCÃ><NM

5XLMLHFOHDULSPURXWH

ÏÌGQ¸Ð

Q¸	£Ä
-	-

ÏGÄà -

6.2 clear ip mroute statistics

#Ù84ˆCÃ,X4ˆAuµC

clear ip mroute statistics {* | *group-address* [*source-address*] }

Ï–DAà

–D	£Ä
*	¾
group-address	4

6.4 clear ip pim sparse-mode track

G¸A5B4ˆAu,XÊÈ#Ù8 PIM y[,XAuD<Ä

clear ip pim sparse-mode track

Ï–DAÈ	–D	£Ä
	-	-

Ï5,Õ!5BÐ -

ÏQ¸Ð (Mã

Ï5*Ûº -

Ï!5B_Ð 5XLMLHFOHDULSSLPVSDUVHPRGHWUDFN

ÏÌGQ¸Ð

Q¸	£Ä
show ip pim sparse-mode track	/ PIM y[4ˆAuÇ

ÏGÄÈ -

6.5 ip multicast-routing

|4ˆCÃÄ8Q¸X no 6ÊKÁ8s6ÃÈ-Ž2PY]É

6.6 ip pim accept-bsr list

LÖX BSR 8ÃBQ¸X no 6ãLÄ

ip pim accept-bsr list *access-list*

no ip pim accept-bsr

Ï–DAÈ	–D	£Ä
	list *access-list*	ëü IP ŠÛ ACL L$ BSR 8È 8È 1-99Ã300-1999 Ã word

Ï5,Õ!5BÐ L$

ÏQÐ

Ï5*Ûü G!5B!8QÈPIM-SM CÃ<ÿÜ BSR ÎX BSM y[Ä

Ï G!5B_Ð 5XLMLHFRQILJLSSLPDFFHSWEVUOLVW

ÌÏGQÐ

Q¸	£Ä
-	-

ÏGÄÈ -

6.7 ip pim accept-crp-with-null-group

AŒ BSR y prefix-count 0 ,X C-RP-ADV y[ÄBQ¸X no 6ãGKÁ8s6Ñ

ip pim accept-crp-with-null-group

no ip pim accept-crp-with-null-group

Ï–DAÈ	–D	£Ä
	-	-

Ï5,Õ!5BÐ BSR ý prefix-count 0 ,X C-RP-ADV y[

ÏQÐ <ã

Ï5*Ûü C-BSR G!5B!8QÈ¹ C-BSR ä BSR ÈÑÌ prefix-count 0 ,X C-RP-ADV y[È
JÀxA¹ C-RP 6ÑX4Ä

Ï G!5B_Ð 5XLMLHFRQILJLSSLPDFFHSWFUSZWKQXOOJURXS

ÌÏGQÐ

Q¸	£Ä
-	-

ÏGÄÐ	-

6.8 ip pim accept-crp list

LÞX C-RP 8Èá,X48ÃBQ¸X no 6ãLÄ

ip pim accept-crp list *access-list*

no ip pim accept-crp

ÏÍDAÐ	–D	£Ä
	list *access-list*	éü IP)= ACL L$ C-RP 8Èá,X48È 8È00-199 Ã 2000-2699ÃWORD

ÏÕ,Õ!5BÐ	C-BSR yÉ¼,XEÝ RP Eî
ÏQÐ	<ã
ÏS*ÛÐ	ü C-BSR Ð!5B!8QÈ¸ C-BSR ä BSR6ÕX C-RP 8Èá,X44˜ 8È> LÄ
ÏG!5B_Ð	5XLMLHFRQILJLSSLPDFFHSWFUSOLVW

ÏÎGQÐ	Q¸	£Ä
	-	-

ÏGÄÐ	-

6.9 ip pim accept-register list

LÞ¼,X(S,G) 8ÃBQ¸X no 6ãLÄ

ip pim accept-register list *access-list*

no ip pim accept-register

ÏÍDAÐ	–D	£Ä
	list *access-list*	éü IP)= ACL L$(S,G) 8È 8È00-199 Ã 2000-2699ÃWORD

ÏÕ,Õ!5BÐ	LÈRP yÉ(S,G) ,XÞ¼
ÏQÐ	<ã
ÏS*ÛÐ	ü-Õ RP ê C-RP Ð!5B!8QÈ$Mnd4˜,XÞ¼

Ï G!5B_Ð	5XLMLHFRQILJLSSLPDFFHSWUHJLVWHUOLVW 5XLMLHFRQILJDFFHVVOLVWSHUPLWLS

ÌÎGQÐ	Q¸	£Ä
	-	-

ÏGÄÈ	-

6.10 ip pim bsr-border

G!5BBSR E+ Ä8Q¸X no 6ã8E+ Ä

ip pim bsr-border

no ip pim bsr-border

Ï–DAÈ	–D	£Ä
	-	-

ï5,Õ G!5BÐ	´ BSR E+

ÏQÐ	yã

Ï S*Ô	Z$ BSM y[,XÕ G!5B BSR E+ ÈEÿ· BSM ãÏÈ BSM 3ÈÿEÄ

Ï G!5B_Ð	ü gi 0/3 G!5B BSR E+ 5XLMLHFRQILJLQWHUIDFHJL 5XLMLHFRQILJLILSSLPEVUERUGHU

ÌÎGQÐ	Q¸	£Ä
	-	-

ÏGÄÈ	-

6.11 ip pim bsr-candidate

G!5BC-BSRÄ8Q¸X no 6ãÏG!5BÄ

ip pim bsr-candidate *interface-type interface-number* [*hash-mask-length* [*priority-value*]]

no ip pim bsr-candidate [*interface-type interface-number*]

Ï–DAÈ	–D	£Ä
	interface-type *interface-number*	*ûy·*
	hash-mask-length	ã0-32> È RP EÝ G!5B HASH }-ÕSÈ,Õ

	10
priority-value	ÆÕ-255> 4ÈÉÝ BSR G!5B¼{–DÈ¸Õ 64

Ï5¸Õ!5BÐ ´ C-BSR

ÏQÐ¸ <ã

Ï5*Ûõ ÛÎ PIM-SM ÑÈÐ¸ÛX7ºÇÃ< BSRÄ BSR BÛ-Ì¥ RP ÛÄ C-BSR
EÊ7ºÇ¡EÝ*ÔÛx¸X BSRÄ¹ BSR Ç!È C-BSR Ax7Å¼ BSRÈ¼Ãõ
PIM-SM ¼• 224.0.0.13 ÈÕ¸ÛÊÇ¡Ù BSR ¸X¼{Ä
S*Ì8QÃ}AÛÛ!4- BSR ¸XyÈÕÇ¼Ý¸X PIM FÈ !ÊÕ
¸X BSR Ç¡à¸X7ºÇ¡EWÈ¸ÇÝ¸X7ºÇ¡Ì¥¸EÊ7ºÇ¡¸X
0 BSR ÌÈÇÇÃ
! C-BSR AÛÅ¼ BSR¸ÈÛÎ C-BSR yÈ¸X7ºÇÈ•Ô
C-BSR ÎÈ¸XÄÛÈ¸X IP Å

Ï¨G!5B_Ð 5XLMLHFRQILJLSSLPEVUFDQGLGDWHJL

ÏÎGQÐ¸ Q¸

5XLMLHFRQILJLILSSLPGUSULRULW\

ÏÎGQÞ

Q¸	£Ä
-	-

ÏGÄÈ -

6.13 ip pim ignore-rp-set-priority

E¥ÁÍ,X RP Ñ9 RP ,X¼{Ä8Q¸X no 6ãã,Õ!5BÄ

ip pim ignore-rp-set-priority]TJ/TT0 1 Tf0 Tc 0 Tw 13.167 Tm( )Tj29orit Tc -7.007 20 T67I Td()Tj/TC2_0 1 Tf0 Tc 0

Ï S*Ð	-
Ï G!5B_Ð	5XLMLHFRQILJLSSLPMSWLPHU

¡ÏGQÐ	Q¸	£Ä
	-	-

ÏGÄÈ	-

6.15 ip pim mib dense-mode

S Mib 4¥ PIM-DMÄ8Q¸X no 6ãã,Õ!5BÄ

ip pim mib dense-mode

no ip pim mib dense-mode

Ï–DAÈ	–D	£Ä
	-	-

Ï5,Õ!5BÐ	Mib 4¥ PIM-SM
ÏQÐ	<ã
Ï S*Ð	-
Ï G!5B_Ð	5XLMLHFRQILJLSSLPPLEGHQVHPRGH

¡ÏGQÐ	Q¸	£Ä
	-	-

ÏGÄÈ	-

6.16 ip pim neighbor-filter

*F£$6Ñ8Q¸X no 6ã£Ä

ip pim neighbor-filter *access_list*

no ip pim neighbor-filter *access_list*

Ï–DAÈ	–D	£Ä
	access_list	*Ú* IP Ú acl L$8È 8È 1-99Ã0ú

Ï5,Õ!5BÐ	¡A¹s6Ñ

ÏQ¸Ð yã

ÏS*Ð *FE¸$6Ñ PIM 5%X]<ÈS¡XÈÈF>E¸$KÂ
><¡ÈÈ PIM-SM ÁFÔÏÏpeering Â2ÈÈ6aFÂÈ,XÍLG2Ä

ÏG!5B_Ð

```
5XLMLHFRQILJLQWHUIDFHJL
5XLMLHFRQILJLILSSLPQHLJKERUILOWHU
5XLMLHFRQILJLIH[LW
5XLMLHFRQILJDFFHVVOLVWGHQ\
```

ÏÎGQÐ

Q¸	ÆÄ
-	-

ÏGÄÈ -

6.17 ip pim neighbor-tracking

/U!6y¡Xt9e6ÑÈ)¡F¢¢¡ÄQ¸X no 6ÈÈ,Õ!5BÄ

ip pim neighbor-tracking

no ip pim neighbor-tracking

ÏÍDAÈ

–D	ÆÄ
-	-

ÏÈ,Õ!5BÐ |y¡Xt9e6ÑÏ

ÏQ¸Ð yã

ÏS*Ð y¡Xt9e6ÑÏ>|ÊÃ<ÇÈÈÕ join y[ÊpF¢TÈÃ<
ÈÇÕX join y[ÈwÈÃ<,X join y[ÎeGÊ/py¡Xt9e6ÑÏ>/U
!6Èw!8ÊÃ<ÈÕ join y[ÈÈ5ÌXt9e6ÑÏFÑ/U!6ÈÃ
EÈy,X join y[È5àBÛFÈÈ5ÈF¢¢¡Ä

ÏG!5B_Ð /U!6y¡Xt9e6ÑÏ

```
5XLMLHFRQILJLQWHUIDFHJL
5XLMLHFRQILJLILSSLPQHLJKERUWUDFNLQJ
```

ÏÎGQÐ

Q¸	ÆÄ
ip pim propagation-delay	**G5BÈ** propagation-delay

ÏGÄÈ -

6.18 ip pim override-interval

ise al

A5By¡X Override-IntervalÄ8Q¸X no 6ãã¸Õ!5BÄ

ip pim override-interval *milliseconds*

no ip pim override-interval

Ï–DAÈ	–D	£Ä

	¥#ÊKÈhâÑYE¥ÊKÈ¡XÊ!5BãÄgÊ¡fG			WarningÄ
	5à 3*¥ÊKÈ	¥#ÊâÑYE›	65535ÈgÊ¡fG	WarningÄ

ÏG!5B_Ð G!5B¥#ÊKÈ 6s

5XLMLHFRQILJLSSLPSUREHLQWHUYDO

ÏGQÐ

Q¸	ÆÄ
ip pim register-suppression	-

ÏGÄÈ -

6.20 ip pim propagation-delay

G!5By¡XÊ³ propagation-delayÄ8Q¸X no 6ãã,Õ!5BÄ

ip pim propagation-delay *milliseconds*

no ip pim propagation-delay

Ï–DAÈ

–D	ÆÄ
milliseconds	ÆÈ 1-32767È,Õ 500

Ï5,Õ!5BÐ –D5,Õ

ÏQÐ yã

!8K ÆÊMÈ,ãESÈÑÊ¡ÊÕ~BÅ1]9RuãEÊwLÊ5,¡¡Hx)V yã

Ï5*ÜÊ!ÅOAL[0

Ï–DAÈ	–D	£Ä
	seconds	hello y[¥Ó)!/È¥ 1-65535È,Õ 30

Ï5,Õ!5BÐ –D5,Õ

ÏQÐ yã

Ï5*Ô !£ Hello #Ï¥ÓÈh>È Hello #ÏÕÈ¥cÐ Hello #ÏÕÈ >È Hello #Ï¥ÓÈh,X 3.5 ¥ap Hello #Ï¥ÓÈh * 3.5 > 65535 Jè Hello #Ï¥ÓÈ Lh>È 18725Ä

ÏG!5B_Ð 5XLMLHFRQILJLQWHUIDFHJL
5XLMLHFRQILJLILSSLPTXHUÌLQWHUYDO

ÏÌGQÐ

-	-

ÏGÄÈ -

6.23 ip pim register-decapsulate-forward

AŒ RP ƒ¼E> ÕÏE@X4ÐBy[Ä8Q¸X no 6ãã,Õ!5BÄ

ip pim register-decapsulate-forward

no ip pim register-decapsulate-forward

ÏÌDAÈ

		E Ä
-	-	

Ï5,Õ!5BÐ RP ƒ¼E> ÕÈ@X4ÐBy[Ä

ÏQÈ <ã

ÏS*Ûì M-Õ RP ê C-RP

	5B¡Ä8QÚ!$	DR ` RP ,XBÈ'YEL$X¥¡6ÑEÕ	
ÏG!5B_Ð	5XLMLHFRQILJLSSLPUHJLVWHUUDWHOLPLW		
ÏGQÐ			

Q¸ã <ã

S*Ô

no ip pim rp-address *rp-address* [*access_list*]

–D	£Ä
rp-address	RP ,X ip
access_list	*ëü* ACL L$!8 RP á,X48Ã,ÊÃ Õ+ acl 8È <1-99>Ã1300-1999> × 3Qá aclÄ

M-Õ RP

<ã

2ÏÿÿÕ!5B4ÏM-Õ RPÈ/3ÕM-Õ RP ` BSR ÊÃ> Ä*ü8QÇ,Ê46´
ÈÖ
VpEÊ› BSR ` RP M-Õ!5BÊ*ÇÕ!5BÄ
S*ÄKÂ<M-Õ!5B RP Ã!5BÇX44Ä*ü ACLÂÇX44Ä*ü ACLÄ
ÇÕ RP M-ÕÑÑÕ!5BS*Ä
VpÍM-Õ RP ábÇÈ,XM-Õ RP ÚEÉ*Ä
Ý4 ACL n,XAÊÇÝX44ÄACL 5,ÊÃx AÇX44˜
224/4Ä
G!5BÈ-ÇX RP $ÇÕ48È XM-Õ RP 4ÂXÈ8ÈM-Õ4Ê
ÇM-Õ RP 4˜,XJÈ<4ÄÈJÈ<Ý IP EaeÇ8È Ê RPÈÇÊ
3 IP Ê,XFwÇj>EÄ
ÇÕ RP M-ÕX4Ç8ÈÇÈ8EÇ RP Ä

5XLMLHFRQILJLSSLPUSDGGUHVV
5XLMLHFRQILJDFFHVVOLVWSHUPLW

ÏGQÇ

seconds	å BSR ¥ÕÕ C-RP #C,X<ÄÁ ª 8 × È <1-16383> È interval interval-seconds 5 , ÕÊ È interval-seconds 60sÄ
access_list	ëü ACL L¶!8 C-RP á,X48Ã,ÕÁ Õ+ acl 8È 1-99ÃÕá acl× group-list access_listÄ

ï5,Õ!5BÐ ¶!5B C-RP

ÏQÐ <ã

ÏS*Ô ü PIM-SM #A¡ÈÃ4ÐBÎXEå RPT ¶.& RP ÅÃRP EÈ›
EÝ RP E¶*ÓXÄ BSR E¶*ÓX C-RP nå BSR)• C-RP #CÈ+ BSR å
þ PIM ¾Ä
8LÔbyÇMn48ÈXEÝ rpÈwAQÐ acl EÝMÄÔ¶48ÈXAu1k
ÎÓ permit ,X aceÊ deny ,X ace E> 4Ëu1k,XÄ

ÏG!5B_Ð 5XLMLHFRQILJLSSLPUSFDQGLGDWHJLSULRULWJURXSOLVWLQWHUYDO
5XLMLHFRQILJDFFHVVOLVWSHUPLW

ÏÏGQÐ

Q¸	ÆÄ
-	-

ÏGÄÈ -

6.30 ip pim rp-register-kat

A5B RP ¶X KAT KÈhÄ8Q¸X no 6ãã,Õ!5BÄ
ip pim rp-register-kat *seconds*
no ip pim rp-register-kat

ÏÏ–DAÈ

–D	ÆÄ
seconds	KAT nÊ,XÊÃ)!/¶È 1-65535È,Õ 210Ä

ï5,Õ!5BÐ –D5,Õ

ÏQÐ <ã

ÏS*Ô -

ÏG!5B_Ð 5XLMLHFRQILJLSSLPUSUHJLVWHUNDW

ÏÏGQÐ

Q¸	ÆÄ

-	-

ÏGÄÈ -

6.31 ip pim sparse-mode

ÿÏP PIM-SMÄ8Q¸X no 6ãã,Õ!5BÄ

ip pim sparse-mode

no ip pim sparse-mode

Ï–DAÈ

–D	£Ä
-	-

Ï5,Õ!5BÐ þ PIM-SM

ÏQÐ yã

Ï*Ô µ PIM-SM !ÈÈG!5BÄ¹C ÃE@ÑS|Z PIM-SMÈ6Ñ@

4ÐBy[Ä

µ PIM-SM ,XÈGMP ÿÿ/ÈÔ|G!5BÄ

G!5BA¹Q¸X ÊÈ V p î)„Failed to enable PIM-SM on < y á >, resource temporarily

Ï–DAÈ	–D	£Ä
	group-list *access-list*	*éü* ACL L$ACE SPT ô,X48Ã access-listÕ+ acl 8È 1-99Ã300-1999 × 3Õá aclÄ

Ï5,Õ!5BÐ á SPT ô

ÏQÐ <ã

Ï5*Ô VpáD **group-list** *access-list*Ã SPT ôÄ

Ï!5B_Ð 5XLMLHFRQILJLSSLPVSWWKUHVKROGJURXSOLVW
5XLMLHFRQILJDFFHVVOLVWSHUPLW

ÏÏGQÐ	Q¸	£Ä
	-	-

ÏGÄÈ -

6.33 ip pim ssm

| SSMÈ5B SSM 48Ã8Q¸X no 6ã5,Õ!5BÄ

ip pim ssm { **default** | **range** *access_list* }

no ip pim ssm

Ï–DAÈ	–D	£Ä
	default	SSM 5,Õ8È32.0.0.0/8
	range *access_list*	*éü* ACL L$ SSM 48Ã Õ+ acl 8È 1-99Ã Õá acl

Ï5,Õ!5BÐ GKÁ SSMÄ

ÏQÐ <ã

Ï5*Ô VpLÔü PIM-SM 5%)„ SSM h*ÈOG!5B!8QÄ

Ï!5B_Ð _ 1Ö SSMÈ5B SSM 48È 232/8Ä
5XLMLHFRQILJLSSLPVVPGHIDXOW

_ 2Ö SSMÈ5B SSM 48È 226/8Ä
5XLMLHFRQILJLSSLPVVPUDQJH
5XLMLHFRQILJDFFHVVOLVWSHUPLW

ÏÎGQÐ¸	Q¸	£Ä
	-	-

ÏGÄÀ¸ -

6.34 ip pim triggered-hello-delay

G!5By¡X Triggered-Hello-DelayÄ8Q¸X no 6ãã,Õ!5BÄ

ip pim triggered-hello-delay *seconds*

no ip pim triggered-hello-delay

ÏÎ–DAÀ¸	–D	£Ä
	seconds	Triggered-Hello-Delay ,XÄ)!/ÈÈ¸ 1-5È¸,Õ 5

ÏÏ5,Õ!5BÐ –D5,Õ

ÏQÐ¸ yã

ÏS*Ûì yÎÊ¸#¡FÈÊ*ü Triggered-Hello-Delay 9{*ÔÊÈ¸
EÞcÊÈÈÿÎÈÕ hello y[Ä

ÏG!5B_Ð G!5By¡X Triggered-Hello-Delay 3sÄ

5XLMLHFRQILJLQWHUIDFHJL

5XLMLHFRQILJLILSSLPWULJJHUHGKHOORGHOD\

ÏÎGQÐ¸	Q¸	£Ä
	-	-

ÏGÄÀ¸ -

6.35 show debugging

/A×ÔÊÛ¸XÄ¸

show debugging

ÏÎ–DAÀ¸	–D	£Ä
	-	-

ÏÏ5,Õ!5BÐ -

ÏQÐ¸ (MÃÃã

Ï¨S*ÊÐ -

Ï¨G!5B_Ð 5XLMLHVKRZGHEXJJLQJ
LSSDFNHWGHEXJ
LSSDFNHWGHEXJGHEXJJLQJLVRQDFO

ÏÎGQÐ¸

Q¸	£Ä
-	-

Ï¨GÄÀÐ -

6.36 show ip pim sparse-mode bsr-router

¡ß BSR µÇÄ

show ip pim sparse-mode bsr-router

Ï¨–DAÀÐ

–D	£Ä
-	-

Ï¨5,Õ¨G!5BÐ -

Ï¨QÐ¸ (MÃÃÃ¸

Ï¨S*ÊÐ -

Ï¨G!5B_Ð 5XLMLHVKRZLSSLPVSDUVHPRGHEVUURXWHU
3,0Y%RWVWUDSLQIRUPDWLRQ
7KLVVVWHPLVWKH%RWVWUDS5RXWHU%5
%5DGGUHVV
8SWLPHGKP%53ULRULW+DVKPDVNOHQJWK
1H[WERRWVWUDSPHVVDJHLQ
5ROH&QGLGDWH%53ULRULW+DVKPDVNOHQJWK
6WDWH(OHFWHG%5
&QGLGDWH53*LJDELW(WKHUQHW
$YHUWLVHPHQWLQWHUYDOVHFRQGV
1H[W&QGB53BDGYHUWLVHPHQWLQ

ÏÎGQÐ¸

Q¸	£Ä
-	-

Ï¨GÄÀÐ -

6.37 show ip pim sparse-mode interface

¦ß PIM SM yŒÄ

detail

¨Ï5,Õ!5BÐ	-
¨ÏQ¸Ð	(Mãõ¸ãõ
¨Ï5*Ð	-
¨Ï G!5B_Ð	5XLMLHVKRZSSLPVSDUVHPRGHUSKDVK 53 ,QIRVRXUFHYLDERRWVWUDS

¨ÏÏGQ¸Ð

Q¸	ÆÄ
-	-

¨ÏGÄÈ | -

6.43 show ip pim sparse-mode rp mapping

¡¸ÍX RP ¿Ïá,X4Ä

show ip pim sparse-mode rp mapping

¨Ï–DAÈ

–D	ÆÄ
-	-

¨Ï5,Õ!5BÐ	-
¨ÏQ¸Ð	(Mãõ¸ãõ
¨Ï5*Ð	-
¨Ï G!5B_Ð	5XLMLHVKRZSSLPVSDUVHPRGHUSPDSSLQJ 3,0*URXSWR530DSSLQJV *URXSV 53 ,QIRVRXUFHYLDERRWVWUDSSULRULW\ 8SWLPHH[SLUHV 53 ,QIRVRXUFHYLDERRWVWUDSSULRULW\ 8SWLPHH[SLUHV *URXSV6WDWLF 53 8SWLPH

¨ÏÏGQ¸Ð

Q¸	ÆÄ

-	-

ÏGÄÈ -

6.44 show ip pim sparse-mode track

¹¸ÃÃ¹Au,XÊÒÈÈÇÕX PIM y[,XÞÄ

show ip pim sparse-mode track

Ï–DAÈ

–D	£Ä
-	-

Ï5,Õ!5BÐ -

ÏQÞ (MÃÃÃ

Ï5*Ô 24¹¦ÊÔA5B4³Au,XÊÒÈÈA*ü clear ip pim sparse-mode track Ê¡

A5B4³Au,XÊÒÈ#Ù8 PIM y[,XAuD<Ä

Ï!5B_Ð

```
5XLMLHVKRZSSLPVSDUVHPRGHWUDFN
3,0SDFNHWFRXQWHUVWUDFN
(ODSVHGWLPHVLQFHFRXQWHUVFOHDUHG
UHFHLYHGVHQW
9DOLG3,060SDFNHWV
+HOOR
-RLQ3UXQH
5HJLVWHU
5HJLVWHU6WRS
$VHUW
60
&3$
3,00*UDIW
3,00*UDIW$N
3,006WDWH5HIUHVK
8QNQRZQ3,07SH
(UURUV
0DOIRUPHGSDFNHWV
%DGFKHFNVXPV
6HQGHUURUV
3DFNHWVUHFHLYHGZWKXQNQRZQ3,0YHUVLRQ
```

ÏÏGQÞ

Q¸	£Ä
-	-

ÏGÄÈ -

7 PIM-SMv6

7.1 clear ipv6 mroute

#Ù84€Ã><NM

clear ipv6 mroute { ***** | *ipv6_group_address* [*ipv6_source_address*] }

Ï–DAÈ

–D	£Ä
*	ã
ipv6_group_address	4
ipv6_source_address	6

ï5,Õ!5BÐ -

ÏQÐ (Mã

ÏS*Ô -

ÏG!5B_Ð _ 1ÖÏ8,Ý4€Ã><NM

5XLMLHFOHDULSYPURXWH

_ 2ÖÏ8(Mn4˜,X4€Ã><NM

5XLMLHFOHDULSYPURXWHII

_ 3ÖÏ8(Mn,X4¶,X4€Ã><NM

5XLMLHFOHDULSYPURXWHII

ÏÌGQÐ

Q¸	£Ä
-	-

ÏGÄÈ -

7.2 clear ipv6 mroute statistics

ô84€Ã><NM,X4ÃuÇ

clear ipv6 mroute statistics { * | *ipv6_group_address* [*ipv6_source_address*] }

Ï–DAÈ

–D	£Ä
*	ã
ipv6_group_address	4

ipv6_source_address	*ß*

ï5,Õ!5BÐ -

ÏQ¸Ð (Mã

ÏS*Ûð -

ÏG!5B_Ð _ 1ö8,Ý X4ˆCÃ><NM,X4ˆAu

5XLMLHFOHDULSYPURXWHVWDWLVWLFV

_ 2ö8(Mn4˜,X4ˆCÃ><NM,X4ˆAu

5XLMLHFOHDULSYPURXWHVWDWLVWLFVII

_ 3ö8(Mn,X4ˆß¡X4ˆCÃ><NM,X4ˆAu

5XLMLHFOHDULSYPURXWHVWDWLVWLFVII

ÏÌGQÐ

Q¸	ÆÄ
-	-

ÏGÄÈ -

7.3 clear ipv6 pim sparse-mode bsr rp-set *

#Ù8|Õ RP µÄ

clear ipv6 pim sparse-mode bsr rp-set *

ÏÌ-DAÈ

–D	ÆÄ
-	-

ï5,Õ!5BÐ -

ÏQ¸Ð (Mã

ÏS*Ûð !8Q¸6Ñ8:,X C-RP ,X µÈ6Ñ8M-Õ RPÄ

ÏG!5B_Ð 5XLMLHFOHDULSYSLPVSDUVHPRGHEVUUSVHW

ÏÌGQÐ

Q¸	ÆÄ
-	-

ÏGÄÈ -

7.4 clear ipv6 pim sparse-mode track

G¸A5B4ª Au,XÊÈ#Ù8 PIMv6 y[,XAuD<Ä

clear ipv6 pim sparse-mode track

Ï–DAÈ	–D	£Ä
	-	-

Ï5,Õ!5BÐ -

ÏQ¸Ð (Mã

Ï5*Ê -

Ï!5B_Ð 5XLMLHFOHDULSYSLPVSDUVHPRGHWUDFN

ÌGQ¸Ð	Q¸	£Ä
	show ipv6 pim sparse-mode track	**/** PIM y[4ªAuÇ

ÏGÄÈ -

7.5 ipv6 multicast-routing

| IPv6 4ªCÃÄ8Q¸X no 6ÈGKÁ IPv6 4ªCÃÄ

ipv6 multicast-routing

no ipv6 multicast-routing

Ï–DAÈ	–D	£Ä
	-	-

Ï5,Õ!5BÐ GKÁ IPv6 4ªCÃ

ÏQ¸Ð <ã

Ï5*Ê NO| IPv6 4ªCÃÈb IPv6 4¸ªXJªG!5B!6ÑÄ

Ï!5B_Ð 5XLMLHFRQILJLSYPXOWLFDVWURXWLQJ

ÌGQ¸Ð	Q¸	£Ä
	-	-

ÏGÄÈ -

7.6 ipv6 pim accept-bsr list

L$ BSR ,X8ÈÄBQ¸X no 6ÄÄL$Ä

ipv6 pim accept-bsr list *ipv6_access-list*

no ipv6 pim accept-bsr

Ï–DAÈÄ	–D	£ÄÄ
	list *ipv6_access-list*	éü IPv6 ACL L$ BSR ,X8È Q̃á acl

Ï5,Õ!5BÐ yÝ BSM y[

ÏQ¸Ð <ã

ÏS*Ð -

ÏG!5B_Ð 5XLMLHFRQILJLSYSLPDFFHSWEVUOLVWEVUOLVW

ÏGQ¸Ð	Q¸	£ÄÄ
	-	-

ÏGÄÄÈÄ -

7.7 ipv6 pim accept-crp-with-null-group

AÿÉ prefix-count 0 ,X C-RP-ADV y[ÄÄBQ¸X

Ï¨G!5B_Ð /U!6ß fe80::2d0:f8ff:fe22:33ad ,X¥Y¡

```
5XLMLHFRQILJLSYSLPDFFHSWUHJLVWHUOLVWUHJLVWHUDFFHVVOLVW
5XLMLHFRQILJLSYDFFHVVOLVWUHJLVWHUDFFHVVOLVW
5XLMLHFRQILJLSYDFOGHQLSYIHGIIIIHDGDQ\
```

ÏÎGQÐ

Q¸	Ë£Ä
-	-

Ï¨GÄÀß -

7.10 ipv6 pim bsr-border

G!5BBSR E«Ä¾Q¸X no 6ß8 BSR E«Ä

ipv6 pim bsr-border

no ipv6 pim bsr-border

Ï–DAß

–D	Ë£Ä
-	-

Ï¸Õ¨G!5BÐ ´ BSR E«

Ï¨Qß -

Ï¨*Ð Ë£ BSM y[,XÐG!5B BSR E« ÈËÞ· BSM ßÏ¨Ç

BSM 3ßÞEÄ@

Ï¨G!5B_Ð ü gi 0/3 G!5B BSR E«

```
5XLMLHFRQILJLQWHUIDFHJL
5XLMLHFRQILJLILSYSLPEVUERUGHU
```

ÏÎGQÐ

Q¸	Ë£Ä
-	-

Ï¨GÄÀß -

7.11 ipv6 pim bsr-candidate

G!5BC-BSRÄ¾Q¸X no 6ßG!5BÄ

ipv6 pim bsr-candidate *interface-type interface-number* [*hash-mask-length* [*priority-value*]]

no ipv6 pim bsr-candidate [*interface-type interface-number*]

Ï–DAß

–D	Ë£Ä

interface-type *terface-number*	*yéÄ* !8y¡X C-BSR ,X
hash-mask-length	hash }-ÕSz 8È 0-128Ê,Õ 126
priority-value	*ÿ* 8È 0-255Ê,Õ 64

Ê,Õ!5BÐ ´ C-BSR

ÒQÞÐ <ã

Ê*ÐÐ þÔ PIM-SMv6 ÆÐX7ÇÃ< BSRÄ BSR BÐÊ3¥ RP ÇÞÄ
EÝBSR EÊ7ÿ¡E{*ÐX,X BSRÄ¹ BSR Ç!È-BSR Ax7Å¼ BSRÈW
ÀÔ PIM-SMv6 ÆÇÝ¡ÊÝ[Ù BSR ,X¼{Ä
S*Ì8QÃ}AÚÔ!4¡X BSR ÆÇÞ¼4¡X PIM ÆÐÊ,X
BSR à7Þ¼,X!EWÈpÿ¥X,X IPV6 å16ÙWPÈW±
,EÐ BSR ÈÆÇÞÄ
!AÐÞ¼ BSRÈWÐÝ BSR yÞÇÈ!AÙWÐ
È¸XÐÔXÈ¸X IPV6 Å

Ê!5B_Ð 5XLMLHFRQILJLSYSLPEVUFDQGLGDWHJL

ÌÊGQÞÐ

Q¸	Ê:Ä
-	-

ÊGÄÐ -

7.12 ipv6 pim dr-priority

G!5BDR¼{Ä8Q¸X no 6ÊÔ,Õ

ipv6 pim dr-priority *priority-value*

no ipv6 pim dr-priority

Ì-DAÐ

–D	Ê:Ä
priority-value	*ÿ* 8È 0-4294967294Ê,Õ 1Ä

Ê,Õ!5BÐ –D5,Õ

ÒQÞÐ yã

Ê*ÐÐ EÞ DR Ð6ÞÐ*Ö
ÔXAÔX Hello y[FÑ5B¼{–DÈwÊ:½ DR ÊEW¼{ÈÔXì
4{PÈÊõ DR8ÞÐX¼{ÈwÈÔX IP PÈÊÕ DRÄ

5¾ÔXÞÛ	Hello #Cy[ü¨Ý5B¼{–DÊwEþ¾

Ï5,Õ!5BÐ	–D5,Õ
ÏQÐ	<ã
ÏS*Ûð	-
ÏG!5B_Ð	5XLMLHFRQILJLSYSLPMSWLPHU

ÏÌGQÐ	Q¸	£Ä
	-	-

ÏGÄÀÐ	-

7.15 ipv6 pim neighbor-filter

L$8ÃBQ¸X no 6ãLÄ

ipv6 pim neighbor-filter

no ipv6 pim neighbor-filter

ÏÌ–DAÀÐ	–D	£Ä
	ipv6_access-list	éü IPv6 ACL L$F8È

Ï5,Õ!5BÐ	áÄ
ÏQÐ	yã
ÏS*Ûð	S*l8QÍ£E> E£ PIM 54¸X]<ÈÏ¸X8ÃF>E›
	$K£<4È PIM-SMV6 ÏN0Ãeeringt

Ï G!5B_Ð	G!5By¡X Override-Interval 3000 !¿
	5XLMLHFRQILJLQWHUIDFHJL
	5XLMLHFRQILJLILSYSLPRYHUULGHLQWHUYDO

ÏÏGQÐ	Q¸	£Ä
	ipv6 pim propagation-delay	G!5By¡X£ê³ propagation-delay

ÏGÄÀ	-

7.18 ipv6 pim probe-interval

G!5B¥#£ÈÃBQ¸X no 6ãã,Õ

ipv6 pim probe-interval *seconds*

no ipv6 pim probe-interval

Ï–DAÀ	–D	£Ä
	seconds	¥#£È)!/£È 1-65535£,Õ 5

Ï5,Õ!5BÐ	–D5,Õ

ÏQÐ	<ã

Ï S*Ð	¥#£È¥£È¥£ÈYÊÈ	DR å RP £ÕÑ¥¡G	NULL-Register ,X£È
	KÈhÄ		
	¥#£È¥£È¥£ÈhãÑYE¥£È¡X£Ò!5Bá8Ä4Vp|Ê¡p		
		>€	¥#£È¥£ÑYE•

–D	£Ä
milliseconds	Hello EÍM,X Propagation_Delay ,XÄ)!!/ÈÈ 1-32767È,Õ 500

5,Õ!5BÐ -

Q¸ yã

S*Ô ÂÂqÊÑ¡ J/P-override-interval#ÄÐ" J/P-override-interval
NOã Join-Prune y[,X holdtime ÑÑáX,X#ÄÈÕ541u)ÚÙÈ±
AÄ

G!5B_Ð G!5By¡X propagation-delay 600 !/¿

5XLMLHFRQILJLQWHUIDFHJL
5XLMLHFRQILJLILSYSLPSURSDJDWLRQGHOD\

ÌGQÐ

Q¸	£Ä
ipv6 pim override-interval	G!5By¡X2KÈh override-interval
ipv6 pim neighbor-tracking	G!5By¡XF€Cþ6Ñ

GÄÈ -

7.20 ipv6 pim query-interval

G!5BHello y[¥ÕÄ8Q¸X no 6ãã,Õ
ipv6 pim query-interval *seconds*
no ipv6 pim query-interval

–D	£Ä
seconds	Hello y[¥Õó)!/ÈÈ 1-65535È,Õ 30

5,Õ!5BÐ -

Q¸ yã

S*Ô !£ Hello #CÈÕÈh>È Hello #CÈÕÈcÐ Hello #CÈÕÈ
>È Hello #CÈÕÈh,X 3.5 áp Hello #CÈÕÈh * 3.5 > 65535 Jè Hello #CÈÕÈ
Lh>È 18725Ä

G!5B_Ð 5XLMLHFRQILJLQWHUIDFHJL
5XLMLHFRQILJLILSYSLPTXHULQWHUYDO

ÏÎGQÐ¸

Q¸	ÐÄ
-	-

ÏGÄÈ

-

7.21 ipv6 pim register-checksum-wholepkt

Au1kHÞ¸XÐÄ3Q¸X no 6ÄG!5BÄ

ï5,Õ!5BÐ	L$
ÏQ¸Ð	<ã
ÏS*Ô	AÇÍ¸ÄÈ GÃÕ¥¸ÆÕ5¯> G!5BÈÉ¡Ï¾¾¥¸ÆÕ5¯ > G!5BÄ¸8Q¸Ú!¶ DR ` RP ,XBÈ¥YEL¸¥¸!6ÑÆÕ
ÏG!5B_Ð	5XLMLHFRQILJLSYSLPUHJLVWHUUDWHOLPLW

ÏÎGQ¸Ð	Q¸	ÆÄ
	-	-

ÏGÄÈ	-

7.23 ipv6 pim register-rp-reachability

ÆÕ¸!¹ RP ÃÄ8Q¸X no 6ã5,Õ!5BÄ	
ipv6 pim register-rp-reachability	
no ipv6 pim register-rp-reachability	

ÏÍDAÈ	–D	ÆÄ
	-	-

ï5,Õ!5BÐ	ÆÕ¸Ê RP Ã’
ÏQ¸Ð	<ã
ÏS*Ô	G!5BAÇÈÕ¸!¹ RP ÃÈÆÆÕÃÆÕ
ÏG!5B_Ð	5XLMLHFRQILJLSYSLPUHJLVWHUUSUHDFKDELOLW\

ÏÎGQ¸Ð	Q¸	ÆÄ
	-	-

ÏGÄÈ	-

7.24 ipv6 pim register-source

ÔÏ¸,X¶ IPv6 Ä8Q¸X no 6ã¶G!5BÄ	
ipv6 pim register-source { *ipv6_local_address* | *interface-type interface-number* }	
no ipv6 pim register-source	

ÏÍDAÈ	–D	ÆÄ

ipv6_local_address	*ûp* IPV6 0¥¡,X$
interface-type *interface-number*	*ûpX* ipv6 0¥¡,X$

Ï5,Õ!5BÐ ¥¡,X$ IPV6 S*â$E²y,X DR y·

ÏQ¸Ð <ã

Ï5*Ûp G!5B,XNOÃ¸,XÄ RP ¥¡Ê/¥¡,X$ IPv6 0,ÂXÊÕ
Register-Stop y[Ä
!8G!5BÛ"¡G6(,Xy¦Æ PIM-SMv6Ä

ÏG!5B_Ð 5XLMLHFRQILJLSYSLPUHJLVWHUVRXUFH
5XLMLHFRQILJLSYSLPUHJLVWHUVRXUFHJL

ÏÎGQ¸Ð

Q¸	ÆÄ
-	-

ÏGÄÈ -

7.25 ipv6 pim register-suppression

G!5BÈ¿ÊÃ8Q¸X no 6ãPyIÊ@

-

7.26 ipv6 pim rp-address

G!5BM-ÕRPÄ¾ÃQ¸X no 6ãÄG!5BÄ

ipv6 pim rp-address *ipv6_rp-address* [*ipv6_access_list*]

no ipv6 pim rp-address *ipv6_rp-address* [*ipv6_access-list*]

Ï–DAêð

–D	ÆÄ
ipv6_rp-address	RP ¸X IPv6
ipv6_access_list	é*ü IPv6 ACL Lê§M-Õ RP á¸X48È *ipv6_access-list*ÐÑ acl

Ï5¸Õ!5BÐ M-Õ RP

ÏÐÇð <ã

ÏÕ*Ûð Õ!5B4¼M-Õ RPÑM-Õ RP ` C-RP ßÄ

¼NMÖ

1ÛpEÆ› BSR ` RP M-Õ!5BßÆ*¡Õ!5BÄ

1Ø*{è<M-Õ!5B RP Õ!5BÞX4ÆÆ*ü ACLÅÞX4ÆÆ

*ü ACLÐð RP M-ÕÑ¾G!5BS*ÜÄ

1ÛpÝM-Õ RP ábÞÆPv6 P¸XM-Õ RP ÚÝG*ÜÄ

1ÛÅ ACL n¸XAÆßÞX4ÆÆ,ÑÝX4ÆÄ

1hÆ!5BÑ-ÕX RP ßÝÎb48ÈXM-Õ RP 4ãÆ!ß8ÈM-

Õ4ÞM-Õ RP 4¸XJÈ<48ÆJÈ<Ý IPV6 EæÞ8ÈÞ RPÈ

ÞÈ IPV6 Ð¸XFwÞj>EÄ

1AÆ8ÞM-Õ RP ÑX4Ð8EÞM-Õ RP ÆÆEÞ

0 RP Ä

Ï!5B_Ð G!5BM-ÕRP ábÆ8È ff66::6666/64

```
5XLMLHFRQILJLSYSLPUSDGGUHVVDFO
5XLMLHFRQILJLSYDFFHVVOLVWDFO
5XLMLHFRQILJLSYDFOSHUPLWLSYDQ
```

ÏÎGQÞ

Q¸	ÆÄ
-	-

ÏÄêð -

7.27 ipv6 pim rp-candidate

G!5BC-RPÄ¾ÃQ¸X no 6ãÄG!5BÄ

ipv6 pim rp-candidate *interface-type interface-number* [**priority**

no ipv6 pim rp-candidate [*interface-type interface-number*]

Ï-DAèð

–D	Ë.Ä
interface-type *interface-number*	*yéÄ* !8y· C-RP
priority *priority-value*	*ûÙ* C-RP ,X¾{ 8Ëè 0-255è¸Õ 192
interval *seconds*	*Æ* BSR ¥ÉÕ C-RP #'C¸X<á)!/ßÈè 1-16383è¸Õ 60
group-list *ipv6_access-list*	*éü* IPv6 L§ C-RP á¸X48è Qá acl

ß¸Õ!5BÐ ´ C-RP

ÙQÞð <ã

ß*ôð ü PIM-SMV6 #AÈÉCÃÎXEå RPT ¶6.& RP 8Vä BSR E{*é
,X C-RP nå BSR)• C-RP #'Cè+ BSR åÞ PIM ¥Ä
8ŁÔûyÞMn48ÞXEÝ RPÈwAQÞ acl EÝMÄÔÞK48ÞXAu1k
Þ¼ permit ,X aceê deny ,X ace E> 4ÐÙu1kÄ
VpéD **group-list** ipv6_access-listêb¥Ä

Ù!5B_Ð G!5BC-RPèb48è ff66::6666/64

```
5XLMLHFRQILJLSYSLPUSFDQGLGDWHJLSULRULWLJURXSOLVWDFOLQWHUYDO
5XLMLHFRQILJLSYDFFHVVOLVWDFO
5XLMLHFRQILJLSYDFOSHUPLWLSYDQlI
```

ÏÙGQÞ

Q¸	Ë.Ä
-	-

ÙGÄèð -

7.28 ipv6 pim rp-register-kat

G!5BRP ¼ÎX(S,G) ,X,#ÊèBQ¸X no 6èµ¸Õ

ipv6 pim rp-register-kat *seconds*

no ipv6 pim rp-register-kat

Ï-DAèð

–D	Ë.Ä
seconds	KAT nÊ¸XÊÈÄ)!/ßÈè 1-65535è¸ÊÊÈ* 3 + ¼#ÊÈÄ

ß¸Õ!5BÐ –D5¸Õ

ÏQ¸Ð	<ã				
ÏS*Ô	KAT nÊhôd	DR AÛ*ÊÈ* 3 + ¨V#ÊÈ		RP ÃÕ	DR a õ
	ÈÕ¡(S,G)	(ÕYÊÈ ÃÕ-Ý,X#Ä			
ÏG!5B_Ð	5XLMLHFRQILJLSYSLPUSUHJLVWHUNDW				

ÏÌGQ¸Ð	Q¸	ÈÄ
	-	-

Ï5,Õ!5BÐ yþ PIM-SMv6

ÏQ¸Ð yã

ÏS*Ô µ PIM-SMv6 !ÀËG!5BÄ¢C¬ÃE¥ÖÕS|Z PIM-SMv6ÈÁ
6ÑÑÐBy[Ä
µ PIM-SMv6 ,XÊ MLD ÞÞ¦ÈÔ|G!5BÄ
G!5BA¹Q¸XÊZpî„ Failed to enable PIM-SMv6 on <yá >, resource temporarily unavailable, please try againÀË ÃG!5BA¹Q¸Ä
G!5BA¹Q¸XÊZpî„PIM-SMv6 Configure failed! VI F limit exceeded in NSM!!! È</'
!4ÿG!5B,XDGÆE'AÕ!5B,X4ÿÞÞXpL¸ÔÄ¼ÿÔ PIM-SMv6
h*ÀË8ÔÞ,X PIM-SMv6 ê PIM-DMv6 yÄ
Vpy2O_L{F2O_ÞÝ¼ 6Over4 G!5BL{FÃ 6Over4 GRE L{FÃ 6Over6 G!5BL{FÃ 6Over6 GRE L{FÕ IPv6 4šs6ÃWÆXL{FyÞÃš6ÃÄ¸Ã
CÈÊ> 4ÿ[,XyÆÃÕ
4ÿL{FÑÃÞL{FÆDB,X Qos/ACLÄ

ÏG!5B_Ð
```
5XLMLHFRQILJLQWHUIDFHJL
5XLMLHFRQILJLILSYSLPVSDUVHPRGH
```

ÏÎGQÞ

Q¸	ÆÄ
-	-

ÏGÄÈÞ -

7.31 ipv6 pim spt-threshold

| SPT ÔÏÐQ¸X no 6ÆGKÁs6ÃÑ

ipv6 pim spt-threshold [**group-list** *ipv6_access-list*]

no ipv6 pim spt-threshold [**group-list** *ipv6_access-list*]

Ï-DAÈÞ

–D	ÆÄ
group-list *ipv6_access-list*	éü IPv6 ACL LÆÆACŒ SPT ÔÏ¸X48ÐÆ ipv6_access-listÕá aclÄ

Ï5,Õ!5BÐ µá SPT ÔÏ

ÏQ¸Þ <ã

ÏS*Ô VpéD **group-list** ipv6_access-listÈÁ4ÆE> SPT ÔÏÄ

ÏG!5B_Ð | SPT ÔÏÈÔÏÆ fe80::2d0:f8ff:fe22:33adÁ 4˜ ff66::6666/64

```
5XLMLHFRQILJLSYSLPVSWWKUHVKROGDFO
```

5XLMLHFRQILJLSYDFFHVVOLVWDFO
5XLMLHFRQILJLSYDFOSHUPLWLSYIHGIIIIHDGII

ÏÌGQÐ

Q¸	£Ä
-	-

ÏGÄÈ -

7.32 ipv6 pim ssm

| SSMÈ5B SSM 48Ã8Q¸X no 6GKÁ SSMÄ

ipv6 pim ssm { **default** | **range** *ipv6_access-list* }

no ipv6 pim ssm

Ï–DAÈ

–D	£Ä
default	SSM 5,Õ8È FF3x::/32
range *ipv6_access-list*	*ü IPv6 ACL L$ SSM 48Ã Qá aclÄ

Ï5,Õ!5BÐ GKÁ SSM

ÏQÐ <ã

Ï5*Ô Vp2Ü PIM-SMv6 54h*ü SSMÈ OG!5B!8QÄ

Ï!5B_Ð | SSMÈ5B SSM 48Ã fe80::2d0:f8ff:fe22:33adÃ˜ ff32::3333/64

5XLMLHFRQILJXUHWHUPLQDO
RQILJLSYSLPVVPUD0PÀ@

Ï5,Õ!5BÐ	C-RP ¼{PÞM-Õ RPÄ
ÏQÐ	<ã
Ï5*Ô	G!5BAÊQÐ-Õ!5B,X RP ¼{PÞ BSR E,Ý RPÄ
Ï!5B_Ð	5XLMLHFRQILJLSYSLPVWDWLFUSSUHIHUUHG

ÏGQÐ	Q¸	£Ä
	-	-

ÏGÄÐ	-

7.34 ipv6 pim triggered-hello-delay

G!5By¸X Triggered-Hello-Delay ,XÊÄBQ¸X no 6ãã,Õ

ipv6 pim triggered-hello-delay *seconds*

6b[pvay602 r6}(Ello-lÊ0 1 ¶0 ¶ 0 ¶w 14.213 0 ¶5]F25.22 -1.-7.007 -1.722Ï5*ñe119.94 645.8 mh464¶ 645246161464¶

Ï–DAÈ	–D	ÉÄ
	-	-

Ï5,Õ!5BÐ -

ÏQÐ (Mãÿã

Ï5*Ô -

Ï!5B_Ð

```
5XLMLHVKRZGHEXJJLQJ
3,060HEXJJLQJVWDWXV
3,0SDFNHWGHEXJJLQJLVRQ
```

ÏÌGQÐ	Q¸	ÉÄ
	-	-

ÏGÄÈ -

7.36 show ipv6 pim sparse-mode bsr-router

¦ß BSR µÄ

show ipv6 pim sparse-mode bsr-router

Ï–DAÈ	–D	ÉÄ
	-	-

Ï5,Õ!5BÐ -

ÏQÐ (Mãÿã

Ï5*Ô -

Ï!5B_Ð

```
5XLMLHVKRZSYSLPVSDUVHPRGHEVUURXWHU
3,0Y%RWVWUDSLQIRUPDWLRQ
7KLVVVWHPLVWKH%RWVWUDS5RXWHU%5
%5DGGUHVV
8SWLPH%53ULRULW+DVKPDVNOHQJWK
1H[WERRWVWUDSPHVVDJHLQ
5ROH&QGLGDWH%53ULRULW+DVKPDVNOHQJWK
6WDWH(OHFWHG%5
&QGLGDWH53*LJDELW(WKHUQHW
$YHUWLVHPHQWLQWHUYDOVHFRQGV
1H[W&QGB53BDGYHUWLVHPHQWLQ
```

ÌÎGQÞ	Q¸	ÆÄ
	-	-

ÏGÄÈ -

7.37 show ipv6 pim sparse-mode interface

¦ß PIM-SMv6 yµÄ

show ipv6 pim sparse-mode interface [*interface-type interface-number*] [**detail**]

ÏÌ–DAÈ	–D	ÆÄ
	interface-type interface-number	*yáÄ*
	detail	**ÆÇ**

ÏÕ,Õ!5BÐ -

ÏQÞ (Mãÿãã

ÏS*Ô -

ÏG!5B_Ð

```
5XLMLHVKRZSYSLPVSDUVHPRGHLQWHUIDFHGHWDLO
*LJDELW(WKHUQHWYLI
$GGUHVVIHGIIIIHDG5IHGIIIIHE
+HOORSHULRGVHFRQGV1H[W+HOORLQVHFRQGV
7ULJJHUHG+HOORSHULRGVHFRQGV
6HFRQGDUDGGUHVVHV



1HLJKERUV
IHGIIIIHE
```

ÌÎGQÞ	Q¸	ÆÄ
	-	-

ÏGÄÈ -

7.38 show ipv6 pim sparse-mode local-members

¦ß PIM-SMv6 yÞX MLD µÄ

show ipv6 pim sparse-mode local-members [*interface-type interface-number*]

7.40 show ipv6 pim sparse-mode neighbor

¦ÇÇÄ

show ipv6 pim sparse-mode neighbor [**detail**]

Ï–DAÈ

–D	£Ä
detail	**ÆÇ**

ï5,Õ!5BÐ -

ÏQÐ (Mãã

ÏS*Ûõ -

Ï!5B_Ð 5XLMLHVKRZSYSLPVSDUVHPRGHQHLJKERUGHWDLO
1EUIHGIIIIHE*LJDELW(WKHUQHW
([SLUHVLQVHFRQGV
6HFRQGDUDGGUHVVHV

ÌÏGQÐ

Q¸	£Ä
-	-

ÏGÄÈ -

7.41 show ipv6 pim sparse-mode nexthop

¦ÔÇ,ÈÇÐÇÈ metric 1Ä

show ipv6 pim sparse-mode nexthop

Ï–DAÈ

–D	£Ä
-	-

ï5,Õ!5BÐ -

ÏQÐ (Mãã

ÏS*Ûõ -

Ï!5B_Ð -

ÌÏGQÐ

Q¸	£Ä
-	-

Ï¨G!5B_Ð	5XLMLHVKRZ ZSYSLPVSDUVHPRGHUSKDVKII 53 ,QIRVRXUFHYLDERRWVWUDS 3,0Y+DVK9DOXH 53YLDERRWVWUDSSULRULWKDVKYDOXH

ÏÏGQÐ	Q¸	£Ä
	-	-

ÏGÄÈ	-

7.44 show ipv6 pim sparse-mode track

	¹¸ÃAu,XÈÈÈÕX	PIM y[,XÐÄ
	show ipv6 pim sparse-mode track	

Ï–DAÈ	–D	£Ä
	-	-

Ï¨5,Õ!5BÐ	-

ÏQÐ	(MÃÃÃ

Ï¨S*Ð	2Ï¨ÊÔ5B4³Au,XÈÈÈA*ü		**clear ipv6 pim sparse-mode track Ê**
	GÐÃÃÈ	PIM y[,XAuD<Ä	

Ï¨G!5B_Ð	5XLMLHVKRZ ZSYSLPVSDUVHPRGHWUDFN 3,0YSDFNHWFRXQWHUVWUDFN (ODSVHGWLPHVLQFHFRXQWHUVFOHDUHG 5HFHLYHGVHQW 9DOLG3,060YSDFNHWV +HOOR -RLQ3UXQH 5HJLVWHU 5HJLVWHU6WRS $VHUW 60 &39 3,00Y*UDIW 3,00Y*UDIW$FN 3,00Y6WDWH5HIUHVK 8QNQRZQ3,0Y7SH (UURUV

0DOIRUPHGSDFNHWV
DGFKHFNVXPV
6HQGHUURUV
3DFNHWVUHFHLYHGZWKXQNQRQ3,0YYHUVLRQ

ÏÎGQÞ

Q¸	EÄ
clear ipv6 pim sparse-mode track	-

ÏGÄÈ

-

8 MSDP

8.1 clear ip msdp peer

G¸5Bâ MSDP Í1¸X TCP EÿÈ#Ù8!8 MSDP Í1¸X4ª AuÇÄ

ÏQÐ <ã

Ï5*Ð ¢ MSDP Í1Ÿ,X SA #ÇÃÑE› Peer-RPF 5àÏpÚ MSDP Í1'A'
5BTAx MSDP Í1ÌB MSDP Í1Ÿ,X SA #Çô6ÑE› Peer-RPF Ä
VpúD **prefix-list** *prefix-list-name*ÈÝ SA #ÇÄ
VpúD **prefix-list** *prefix-list-name*ÈÝ SA #ÇÄ
VpúD **prefix-list** *prefix-list-name*ÈÝ RP ¢K,X
SA #ÇÄ

Ï!5B_Ð A5B MSDP Í1' 172.16.33.1 TAxÍ1'

```
5XLMLHFRQILJLSPVGSSHHU
5XLMLHFRQILJLSPVGSSHHU
5XLMLHFRQILJLSPVGSGHIDXOWSHHU
```

ÏÌGQÐ

Q¸	EÄ
ip msdp peer connect-source	**ïpÔ** MSDP Í1'

ÏGÄÈ -

8.5 ip msdp description

MSDP Í1#ïEÄÄ*AQ¸X no 6ÈÄ
ip msdp description *peer-address text*
no ip msdp description *peer-address*

ÏÌDAÈ

–D	EÄ
peer-address	MSDP Í1' IP Ä
text	(pÀ F5–@QÏS(…nÈ–32ÈV#3(…nÏÉ E2PÈ47@SÏ/ÈÏ/ÈIPoeB–6@Ã!5@

ÏGÄÈ -

8.6 ip msdp filter-sa-request

E$ MSDP Í19,X SA AÏCÄ*AQ¸X no 6ÃE$Ä

ip msdp filter-sa-request *peer-address* [**list** *access-list*]

no ip msdp filter-sa-request *peer-address*

–D	£Ä
peer-address	MSDP Í1',X IP
list *access-list*	*éü* ACL 9L$48È

ÏÕ,Õ!5BÐ y97¾ MSDP Í1',XÝ SA AÏCJ4h1(Ä

ÏQÐ <G!5Bã

ÏS*Ô LÔ{¾ SA AÏCA5yJ4h1(Ã*AQÄ

VpúD **list** *access-list*Ž SA AÏCFÑÑ9Ä

VpúD **list** *access-list*È ACL ÃX SA AÏCFÑÑ9Ä

VpúD **list** *access-list*È ACL ÃX ACL AQÈ SA AÏCÈ,XÚÑ9Ä

ÏG!5B_Ð E$' 172.16.223.1 9,X SA AÏ[ÈÈ 224.0.1.0/24

5XLMLHFRQILJLSPVGSILOWHUVDUHTXHVWOLVW

5XLMLHFRQILJDFFHVVOLVWSHUPLW

ÏGQÐ	Q¸	£Ä
	ip msdp peer connect-source	**ip** MSDP Í1'

ÏGÄÈ -

8.7 ip msdp mesh-group

ÎÔ MSDP Í1t9<EÊ4Ä*AQ¸X **no 6ÃE$Ä**

ip msdp mesh-group *mesh-name peer-address*

no ip msdp mesh-group *mesh-name peer-address*

–D	£Ä
mesh-name	<EÊ4Ãm
peer-address	MSDP Í1',X IP

ÏÕ,Õ!5BÐ áÏEÊ4È MSDP Í1p9)<EÊ4˜

ÏQÐ <G!5Bã

Ï*Ĉ	t9ĉEE4¸XÝ	MSDP Í1ÑÒÿ	MSDP Í1G2Ä
	¢E44¸9,X	SA #CÃE›	Peer-RPF Ä
	ĉE44¸y,X	SA #CãEXĉE4¸XJ4¸Ä	

Ïg!5B_Ð	Ú MSDP Í1'	192.168.1.3 t9<EE4¸	msdp-mesh
	5XLMLHFRQILJLSPVGSPHVKJURXSPVGSPHVK		

ÏGQÐ

ip msdp password peer *peer-address* [*encryption-type*] *string*

no ip msdp password peer *peer-address*

Ï–DAÈ

–D	£Ä
peer-address	MSDP Í1',X IP
encryption-type	šÕ4{ÊÕ 0 ` 7Ä Ê 7 ÊÅ,Õ 0Ä
string	Ï TCP MD5 AxA,•XšÕ 8Ö*tÈO_ 0 Ê 80 þ0ú S*tÈO_ 7 Ê 160 þ0ú

Ï5,Õ!5BÐ þ> MD5 tš

ÏQþ <G!5Bã

Ï5*Ð LÔÍ MSDP Í1',XDÑ> PÃÊ MSDP Í1',X TCP EÿE> MD5 tÄ MSDP Í1'NOE> Í1,XG!5BÈÑO,Èÿ6ãÄ

VpG!5B6ÈÑÊ6!,XÃÈ5*ÈÑÊÈYÊ

VpAÔ!5BZ MD5 tÈ MSDP Í1'tÓ!5BÈgÎVÃ:#CÖ

7&87+0GLJHVW127H[SHFWHGEXWRXQG

VpAâ MSDP Í1G!5B,X MD5 šÕÈgÎVÃ:#CÖ

7&87+0GLJHVWIDLOHGIRU!

0 TCP 0

0 MSDP MSDP

0

7 TCP

TCP 7 7

7 show run 7

MSDP 3.3.3.3 7 123456 show run

show run ip msdp password peer 3.3.3.3 7 110174 110174

show run ip msdp password peer 3.3.3.3 7 072d50 072d50

show run ip msdp password peer 3.3.3.3 7 15595e 15595e

Ï!G!5B_Ð â MSDP Í1' 10.32.43.144 ,X TCP EÿG!5B MD5 šÕ test

5XLMLHFRQILJLSPVGSSDVVRUGSHHUWHVW

ÏÎGQÐ

Q¸	£Ä
-	-

ÏGÄê -

8.10 ip msdp peer connect-source

#ïþÔ MSDP Í‰Ë*ÄQ¸X **no 6ê8** MSDP Í‰Ä

ip msdp peer *peer-address* **connect-source** *interface-type interface-number*

no ip msdp peer *peer-address*

Ï–DAê

–D	ÊÄ
peer-address	MSDP Í‰¦X IP Ä MSDP Í‰S*ü IP ÄÀÔÊŸ TCP Eÿ¿Ä
interface-type *interface-number*	yÃ¸S*ü loopback yÄ AÊ*ü8y¡X IP â MSDP Í‰ÔŸ TCP Eÿ¿Äp !8yüÓ!5B IP ÿ(Õ shutdownÈv MSDP Í‰' ,XG2ÕÄ

Ï5,Õ!5BÐ ´ MSDP Í‰'

ÏQê <G!5Bã

ÏS*Ð AÊü MSDP Í‰KÊŸ TCP Eÿ¿Ä

S*ü **ip msdp peer** *peer-address* **connect-source** *interface-type interface-number*Ø

ž MSDP Í‰¦XEÿ¿Ä MSDP Í‰ÞNOE> Í‰,XG!5BÄ

ÏG!5B_Ð â 192.168.5.1 ÔŸ MSDP Í‰G2ÿ loopback 0

```
5XLMLHFRQILJLSPVGSSHHUFRQQHFWVRXUFHORRSEDFN
```

ÏÎGQÞÐ

Q¸	ÊÄ
show ip msdp peer	**/** MSDP Í‰¦XÇ

ÏGÄê -

8.11 ip msdp redistribute

L$ MSDP ¥X (S,G)Ç‰Ë*ÄQ¸X no 6ê‰LÄ

ip msdp redistribute [**list** *access-list*] [**route-map** *route-map*]

no ip msdp redistribute

Ï–DAê

–D	ÊÄ
list *access-list*	éü ACL n(S,G) ÐÈ
route-map *route-map*	éÇÃÇ(S,G) ÐÈ

Ï5,Õ!5BÐ ü RP ÞX46ÇÇ(S,G) FÑ MSDP ¥

ÜQþ <G!5Bã

Ü5*Ô **ip msdp redistribute** ßQÜ**ý5B**Ø,G) Q¢È
¥A,X(S,G) Q¢!6Ñ MSDPÄ
aÅpúD **list** *access-list*Ø ACL ,X(S,G)Q¢!Ñ
bÅpúD **route-map** *route-map*Ø route map ,X(S,G)Q¢!ÞÑ
cÅpêÈþD Ø!5Ê X(S,G) Q¢!ÞÑ
dÅpÿÈ–DØ(S,G) Q¢Ä
GÉÇ6(route-map ,XS*ØÖ
aÅp route-map æÈ¸Ý4ØQ¢
bÅpùÝ BGPÈ¸Ý4ØQ¢
cÅÔÃÈu1kû,X AS-PATHÅÈ7%XÈÈÔÃ9¢ÃÚ
,X AS-PATHÞ7%XÈÐ AS ,X AS-PATHÍÄÅ AS-PATH h*ü route-map
,X AS-PATH G!ÈG!4ßÈE¸ßÄ
_Ö RP¦È BGPÈ AS Ë 100ÈÉ6(,X route-map á re-route-mapØÑ¡
Ý,X4ØQÈ route-map A5BÝJ AS ,X AS-PATH G!Ø route-map ` as-path
ACL ,XG!5B(!Ø‰

```
URXWHPDSUHURXWHPDSSHUPLW
PDWFKDVSDWK
LSDVSDWKDFFHVVOLVWSHUPLWB
```

Ü G!5B_Ð ÆÇE MSDP ¥Øü 200.200.200.0/24 8ÈÆÃü 225.1.1.0/24 8È,X(S,G)Q¢

```
5RXWHUFRQILJLSPVGSUHGLVWULEXWHOLVW
5RXWHUFRQILJLSDFFHVVOLVWH[WHQGHG
5RXWHUFRQILJH[WQDFOSHUPLWLS
```

ÏÎGQÐ

Q¸	Ë¢Ä
ip msdp sa-filter in	**G5B** SA #Ç,X90E¸$
ip msdp sa-filter out	**G5B** SA #Ç,XÛ0E¸$

Ü GÄÀè -

8.12 ip msdp sa-filter in

G!5BSA #Ç,X90E¸$Ä*Ä¢Q¸X no 6ê890E¸$Ä

ip msdp sa-filter in *peer-address* [**list** *access-list*] [**route–map** *route-map*] [**rp-list** *rp-access-list*] [**rp-route-map** *rp-route-map*]

no ip msdp sa-filter in *peer-address*

Ï–DAè

–D	Ë¢Ä
peer-address	MSDP Í¦,X IP Ä
list *access-list*	û(S,G) ,X}– IP A¥Â<ÆQ{¾4ØQ¢(S,G) AÆÈÄ

route-map *route-map*	ûÝ(S,G) ,XCÃ,X AS-path ß¦!8CÃØÝ ,X AS-Path G!,X4ßÇ(S,G) !6ÑÊÄ
rp-list *rp-access-list*	ûÝ RP ,XÊÝKÂ<ÆÐ{¾ RP Ñ,X4ß ÇÇ(S,G) AÆÊÄ
rp-route-map *rp-route-map*	ûÝ RP ,XCÃ,X AS-Path ß¦!8CÃØÝ ,X AS-Path G!,X4ßÇ(S,G) !6ÑÊÄ

Ъ,Õ!5BÐ yÝ MSDP Ílý,X SA #Ċ

ÜÇþ <G!5Bã

Ъ*ûÐ VpG!5BÇÈÇÊÝÂ<ÆÜÃÆÝg9,X SA #ĊÍ<FÆÇÄ
VpS*ü **list** ê **route-map** ÇÊÝ SA #Ċ,X!ÇÝß(S,G) ÆÇ‡
EÇGK+Ñ,XÈÇÝß(S,G) ÃyÄ
VpS*ü **rp-list** ê **rp-route-map** ÇÊÝA #Ċ,XÇX RP Æ6ÇÝ‡
EÇGK+Ñ,XÈwEÞ SA #ĊÃyÄ
VpS*ü **list** Ñ**route-map** Ã **rp-list**Ã **rp-route-map** ÇÊÝ SA #Ċ
,XÇÝß(S,G) ÈVOÇÝ,XGK+Ñ,XÈÆÝyÄ
90E$G6(route-map ,XS*ÆÝ
aÝp route-map ÆÇÝX4ßÇ
bÝpú¡Ý BGPÈÇÝX4ßÇ
cÆÔÃÆu1kû¸X AS-PATHÆÆ7%XÈÈÔÃ9ĊÃú
,X AS-PATHÞ7%XÈÞ AS ,X AS-PATÍÆÅ AS-PATH h*ü route-map
,X AS-PATH G!ÈG!4ÇÈÆ$ÇÄ

ÜG!5B_Ð G!5BE$7Í¼ 10.234.1.43 ,XÝ SA #Ċ

```
5XLMLHFRQILJLSPVGSSHHU
5XLMLHFRQILJLSPVGSVDILOWHULQ
```

ÏÎGQÞ

Q¸	Æ Ä

list *access-list*	ûb6*,X)= IP AKÂ<ÊÊ9{¾4ÊÇÄÈ GÅÊÊÄ
route-map *route-map*	ûb(S,G) ,XCÃÂÊ S ,XCÃ,X AS-path ÇÄ8CÃÓ ,X AS-Path G!,X4ÊÇ(S,G) !6ÑÊÄ

peer-address	MSDP Íl',X IP

ÏGÄÈ	-

8.16 ip msdp timer

G!5BTCP GĘ²KÈhÄ*ÄQ¸X no 6ãÄ5,Õ

ip msdp timer *interval*

no ip msdp timer

Ï–DAÈ	–D	£Ä
	interval	TCP GĘ²KÈhÈ/ÈÈ 1-60È,Õ 30

Ï5,Õ!5BÐ	–D5,Õ
ÏQÐ	<G!5Bã
ÏS*Ô	ü TCP GĘ²KÈhÊÈÈÈy0,Ã MSDP Í17Ç¸KÔ TCP Eÿöh*ÏÈ £Eó MSDP Í1G2ÏX/Ã TCP GĘ²KÈhAÄ
ÏG!5B_Ð	A5B TCP GĘ²ñÊ,XKÈh 20sÄ 5XLMLHFRQILJLSPVGSWLPHU

ÏÏGQÐ	Q¸	£Ä
	-	-

ÏGÄÈ	-

8.17 ip msdp ttl-threshold

L$ SA #ÏÇÚX4ÐBÌÙX TTL Ä*ÄQ¸X no 6ãÄL$

ip msdp ttl-threshold *peer-address ttl-value*

no ip msdp ttl-threshold *peer-address*

Ï–DAÈ	–D	£Ä
	peer-address	MSDP Í1',X IP
	ttl-value	TTL ÄÈ 0-255È,Õ 0

Ï5,Õ!5BÐ	L$
ÏQÐ	<G!5Bã

Èw4ÐBy[ÚÏ SA #ÏC9/JÈ9/4ÐBâX SA #ÏC£Ã- MSDP Í1
Ä
AQ¸Ƶ¡ SA #ÏC4ÐB,X£Ã¡ SA #Ï,X4ÐC(S,G) ,X£Ã

G!5BÍ1' 192.168.10.1 ,X TTL KÜ 8

5XLMLHFRQILJLSPVGSWWOWKUHVKROG

Q¸	£Ä
-	-

-

w ip msdp count

/ SA #Ï{*ó Ïd4¯XDGÈ7¾ MSDP Í1',X SA #Ï4¸5,ÂGÄ

show ip msdp count [*as-number*]

–D	£Ä

	_Ö 200.200.200.200 : 2 ></¢ MSDP Í1' 200.200.200.200 :4 2 5 SA 5,Â
<asn>: <# sources>/<# groups>	RP ,X79Ï4È RP €CK,X6D44DÄ _Ö100 : 1/2 ></79Ï4³ 100 Y,X RPÈ 1 ¥8` 2 ¥4Ä
Total entries	¢Ý MSDP Í1:,XÝ SA 5,ÂGÄ _Ö Total entries: 2 ></¢Ý MSDP Í1:,XÝ SA 5 ,ÂG£ 2 ¥Ä

ÏÌGQÐ

Q¸	£Ä
-	-

ÏGÄÈ -

8.19 show ip msdp mesh-group

/<EÈ4¯,XÇ

show ip msdp mesh-group

Ï–DAÈ

–D	£Ä
-	-

Ï5,Õ!5BÐ -

ÏQÐ (MÃÃã

ÏS*Ô -

ÏG!5B_Ð

5XLMLHVKRZSPVGSPHVKJURXS

063SHHUVLQHDFK0HVKJURXSÈHVKJURXSQDPH!SHHUV!

PVGSPHVK

```
6$HVSRQVHVRXW
DWD3DFNHWVLQRXW
```

+!‰	AÈ
MSDP Peer	MSDP Í1',X IP Ä
AS	MSDP Í12,X7ÿ4Èp7ÿ4ÈÕ unknownÄ
State:	MSDP Í1'(Õ
Connection source:	TCP Eÿ*¡X$,XyÈ8y¡X IP Èp!8yü Ý IP Èwú8y¡X IP /Ü unknown Ä
MD5 signature protection on MSDP TCP connection: enabled	Vp4- MSDP Í1',X TCP EÿG!5BZ MD5 tÈ8+!‰ È8+!Ä‰
Peer is member of mesh-group MSDP	Vp MSDP Í1t9zEÊ4Èwú8+!Ä‰ /!8+!Ä‰
Uptime(Downtime):	MSDP Í1E¤ ÊÈ 0ÊÈ
Messages sent/received:	¢ MSDP Í1¥Õ SA #'C,XDG£
SA Filtering:	SA Eg9/ EgÊ¢
SAs learned from this peer:	¢ MSDP Í1'4,X SA DG£
SAs limit:	MSDP Í1',X SA #'C4¢LÞ DG£
Data Packets in/out	Eg9/ EgÊ4DB,X SA y[Þ

ÏGQÞ

Q¸	£Ä
-	-

ÏGÄÈ -

8.21 show ip msdp rpf-peer

,S

53)SHHU
53)UXOH3HHULVRQOD DFWLYHSHHU
53)URXWHPDVN1RWXVHG
53)WS SH1RWXVHG

+!‰	Aà
RPF peer information for	ûU RP ,X RPF-Peer µ
RPF peer	ûU RP ,X RPF-Peer
RPF rule	S*ÿÀ Au1kûU RP ,X RPF-Peer
RPF route/mask	ûU RP ,X5%ÕÕ.Bn RPF-PeerÄ Au1kûU RP ,X RPF-PeerÊpS*ÿXÈ*CÃ +µÈw+!%Ö Not-used È</ÿ*ü RP ,X5% !%Ö !VÐÄÈ*ÿXÊC,X MSDP ÍÈÊ Ý*ü RP ,XCÃÈ RPF route/mask +!%Ö Not-usedÄ
RPF type	Au1kûU RP ,X RPF-Peer Ê*ÿX RP CÃ,XCÃ#A,Ä Au1kûU RP ,X RPF-PeerÊpS*ÿXÈ*CÃ +µÈw+!%Ö Not-used È</ÿ*ü RP CÃ ,XCÃ#A,Ä !VÐÄÈ*ÿXÊC,X MSDP ÍÈÊ Ý*ü RP ,XCÃÈ RPF type +!%Ö Not-usedÄ

ÏGQÐ

Q¸	ÆÄ
-	-

ÏGÄÈ -

8.22 show ip msdp sa-cache

/:4,X(S,G) µ

show ip msdp sa-cache [*group-address* **|** *source-address*] [*group-address* **|** *source-address*] [*as-number*]

Ï–DAÈ

–D	ÆÄ
group-address	4˜
source-address	ƒ
as-number	SA #C{*ó X7ÿ4Ë

ÏÕ,Õ!5BÐ -

ÏQÐ (Mãã

ÏS*Ê Vpü ÊwTAx/,Ý(S,G) µÄ

Vpû Ê wÚ Ê pE4È Vp!8)È EwAx

Ep 4 8 S È 4 8 S ,X(Ý S,G) Vp!84È EwAxEþ

4 4˜ G È 4 4˜ G ,X(Ý S,G) VpEþ 8 4 4È wã

/Ï ¡¡C ×

Vpû Ê wÚ Ê 2 8 S È 4 4˜ GÄ Xpû

,Xá Ý 4 4È wÚ ¡¡C Ä

Ï G!5B_Ð

5XLMLHVKRZ ZSPVGSVDFDFKH

0636RXUFH $FWLYH &QFKHHQWULHV

530% 36 3HHU

/HDUQHGIURPSHHU53)SHHU

6$ VUHFHLYHG(QFDSVXODWHGGDWDUHFHLYHG

530% 36 3HHU

/HDUQHGIURPSHHU53)SHHU

6$ VUHFHLYHG(QFDSVXODWHGGDWDUHFHLYHG

ï5,Õ!5BÐ	-
ÏQ¸Ð	(Mãã
ÏS*Ô	' PIM-SM ,X RP5ã(S,G) ¼ RP5ã!5BZ MSDP ÍÈÊ EEQ¸ÕÔ€K,X(S,G) µÄ Q¸,X(S,G) µ4EEZ¼h,XQ¸ **ip msdp redistribute**)Èo(S,G) µ C6ÑC K4- MSDP ÍÈ-Ôe Ê0E¼h,XQ¸ **ip msdp sa-filter out**)Ä
ïG!5B_Ð	5XLMLHVKRZSPVGSVDRULJLQDWHG 0636RXUFHSWLYH2ULJLQDWHGHQWULHV 53 53 53 53 53

+!‰	Aè
(192.168.23.78, 225.0.0.1)),(MSDP Aè	

8S1RGHVFULSWLRQ
RZQSHHU$

Q¸	EÄ
Peer Address	MSDP Í1' IP Ä
AS	MSDP Í12,X72Ä Ä
State	MSDP Í1(Ö
Uptime/Downtime	MSDP Í1',XÛ8Ë
Reset-Count	MSDP Í1ÛÏ²yÊy,X Ð
Sa-count	Eþ MSDP Í1y,X SA y[,Xþ
Peer-description	Eþ MSDP Í1',XEÄÈpu'4Eþ MSDP Í1ÛEÄ ¡CÈw/Ö0 description Ä

ÏÎGQÐ

¨ƀ,Õ!5BÐ	-
¨Q¸ÐÐ	(Mã

9.4 ip igmp profile

p̃	profileÈ9	profile Ä*ÄQ¸X	**no 6È88**	profileÄ	
ip igmp profile *profile-number*					
no ip igmp profile *profile-number*					

Ï–DAÈ2	–D	£Ä

ÏQ¸ã <ã

Ï*Ûü IVGL ã VLAN

seconds	|ÕÃ¸X5ÈÐÈ/ÈÈ×	1-3600È¸Õ	300

Ï¸Õ!5BÐ

9.8 ip igmp snooping filter

L$6Ñ9,X4Ä*ÄQ¸X **no 6ÄLÄ**

ip igmp snooping filter *profile-number*

no ip igmp snooping filter *profile-number*

–D	ÆÄ	
profile-number	profile ,X4ÄÈ	1-1024

Ï–DAÈ

Ï5,Ñ!5BÐ AÑÄ

ÏQÐ yã

Ï*Ô NÎ profileÈÑ **ip igmp snooping filter** profileÄ G!5B!8QÈ0Ã Report

G!5B$ IP ¯s6¡X!9PxÖ

1È$ IP ¯s6ÑA5BTAx$ IPÄ

2ÃÁMn VLAN/4ô$ IPÄ

ÏG!5B_Ð *$ IP ÈAx$ IP 192.168.4.243È¿an1 4˜ 224.0.0.1 ,X$ IP 192.168.4.241

5XLMLHFRQILJLSLJPSVQRRSLQJVRXUFHFKHFNGHIDXOWVHUYHU

5XLMLHFRQILJLSLJPSVQRRSLQJOLPLWLSPFYODQDGGUHVVVHUYHU

ÏGQÐ

Q¸	£Ä
ip igmp snooping source-check default-server	***$** IP ¯s6Ñb5,Ñ IPÄ

ÏGÄÈ -

9.10 ip igmp snooping max-groups

L$6ÑXt9,X4˜,XDGÄQ¸X no 6ª!8LÄ

ip igmp snooping max-groups *number*

no ip igmp snooping max-groups

Ï–DAÈ	–D	£Ä
	vlan *vid*	ûÙ vlan

Ï5,Õ!5BÐ *Ù8s6Ñ

ÏQÐ <ã

Ï5*Ù CÃEÿ4ÃÂ4FÃ¡Ÿ,È?X0ÃÃ¶4CÃEÿs6Ñ

x67¾ IGMP Query/Dvmrp/PIM Hellp y[ÈÕÇÃEÿÄ

Ï G!5B_Ð 4ÑNX86(ëü profile 1)â IGMP Snooping filter(ëü profile 2)G!Ü*Ä

5XLMLHFRQILJLSLJPSVQRRSLQJSUHYLHZ

5XLMLHFRQILJLILQW(WKHUQHW

5XLMLHFRQILJLILSLJPSVQRRSLQJILOWHU

ÏÎGQÐ

Q¸	£Ä
ip igmp profile	ÎÎ profile
ip igmp snooping preview interval	**G5ÅÊ**

ÏGÄÈ -

9.13 ip igmp snooping preview interval

G!5B4ÑNXÊÊ*ÄQ¸X **no 6ÅÊÕ**

ip igmp snooping preview interval *seconds*

no ip igmp snooping preview interval

Ï–DAÈ

–D	£Ä
seconds	NXÊÈ/ÈÈ 1-300È,Õ 60

Ï5,Õ G!5BÐ –D5,Õ

ÏQÐ <G!5Bã

Ï S*Ü -

Ï G!5B_Ð *ü4ÑNX86ÑXÊÈ 100 /Ä

5XLMLHFRQILJLSLJPSVQRRSLQJSUHYLHZ

5XLMLHFRQILJLSLJPSVQRRSLQJSUHYLHZQWHUYDO

ÏÎGQÐ

Q¸	£Ä
ip igmp snooping preview	|4ÑNX86Ñ

ÏGÄÈ -

9.14 ip igmp snooping querier

*ü IGMP Snooping Ä¶s6ÑQ¸X no 6ÅKÁ8s6Ñ

ip igmp snooping [**vlan** *vid*] **querier**

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

Ï–DAÈ

–D	£Ä
vlan *vid*	ÛÛ vlan

Ï,Õ!5BÐ	GKÁs6Ñ
ÜQ¸Ð	<ã
Š*ÛÐ	<¦A¶s6Ñü VLAN ¶A¶s6ÑVLAN þXA¶s6ÑÑ Vpü GKÁ¶s6Ñ VLAN þXA¶s6ÑFGKÄ
ÜG!5B_Ð	_ 1Ö*A¶s6Ñ

```
5XLMLHFRQILJLSLJPSVQRRSLQJTXHULHU
```

_ 2ÜÞ VLAN *A¶s6Ñ

```
5XLMLHFRQILJLSLJPSVQRRSLQJYODQTXHULHU
```

ÏÎGQ¸Ð

Q¸	£Ä

ÜGÄè -

9.15 ip igmp snooping querier address

G!5BIGMP Snooping A¶,XÞ IP ÄQ¸X no 6ã8!8Ä

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

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

Ï–DAè

–D	£Ä
vlan *vid*	Û vlan
a.b.c.d	Þ IP

Ï,Õ!5BÐ	-
ÜQ¸Ð	<G!5Bã
Š*ÛÐ	¦A¶s6ÑOA¶ÛÞÐ IP ÅA¶s6ÑÄ Vp VLAN ÛA¶,XÞ IP Š*ÛG VLAN þXG!5BÄ
ÜG!5B_Ð	_ 1Û IGMP Snooping A¶,XÞ IP

```
5XLMLHFRQILJLSLJPSVQRRSLQJTXHULHUDGGUHVV
```

_ 2ÜÞ VLAN Û IGMP Snooping A¶,XÞ IP Ö

```
5XLMLHFRQILJLSLJPSVQRRSLQJYODQTXHULHUDGGUHVV
```

ÏÎG0y1LÀ%L1%2%Ã)ÈÆ‚...(A¥)ÆHnö8rA!V) ÂX(yS)<XS#À...28%V8%V<XyA)2%V8%Hnö8rA!V3Ec–ÊÀ

ÏGÄÈ -

9.16 ip igmp snooping querier max-response-time

G!5BIGMP Snooping Ä¶,XÔÊÄÈQ¸X no 6ãã,Õ

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

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

Ï–DAÈ

–D	ÉÄ
vlan *vid*	ûÙ vlan
seconds	*ÔÊÈ* 1-25È,Õ 10pt2m3 767r

Ï¨S*ÛÐ Vp VLAN ÛÆ¶ÈhÈ¨S*ü VLAN ÞXG!5BÄ

Ï¨G!5B_Ð _ 1Ö¨G!5BÄ¶ÈhÈ

5XLMLHFRQILJLSLJPSVQRRSLQJTXHULHUTXHUÌLQWHUYDO

_ 2Ö¨ÞÞ VLAN G!5BÄ¶ÈhÈ

5XLMLHFRQILJLSLJPSVQRRSLQJYODQTXHULHUTXHUÌLQWHUYDO

ÏÎGQÞÐ

Q¸	ÞÄ
-	-

ÏGÄÈ¨ÐÐ -

9.18 ip igmp snooping querier timer expiry

G!5BIGMP Snooping Ä¶,XCYÊÈÃQ¸X no 6ãã,Õ

ip igmp snooping [**vlan** *vid*] **querier timer expiry** *seconds*

no ip igmp snooping [**vlan** *vid*] **querier timer expiry**

Ï¨–DAÈ¨ÐÐ

–D	ÞÄ
vlan *vid*	ÛÐ vlan
seconds	CYÊÈÃÑÝÈ 60-300È¸Õ 125

Ï¨5,Õ¨G!5BÐ –D5,Õ

Ï¨QÞÐ <ã

Ï¨S*ÛÐ *Ä¶s6ÃÃÑÝ.BÄp:BÛÄ¶CYÊÈÙ¨Ý¨Ä¶

ÛÆ¨Ä¶[Ãx!Ä¶ÈÊKÔBEÄ

Vp,Ìh VLAN ÄÆG!5BÄ¶CYÊÈ¨ü VLAN ÞXG!5BÄ

Ï¨G!5B_Ð _ 1Ö¨G!5BÄ¶CYÊÈ

5XLMLHFRQILJLSLJPSVQRRSLQJTXHULHUWLPHUH[SLU\

_ 2Ö¨ÞÞ VLAN A5BÄ¶CYÊÈ

5XLMLHFRQILJLSLJPSVQRRSLQJYODQTXHULHUWLPHUH[SLU\

ÏÎGQÞÐ

Q¸	ÞÄ
-	-

ÏGÄÈ¨ÐÐ -

9.19 ip igmp snooping querier version

G!5BIGMP Snooping Ä¶E¤ ,X IGMP (ÄQ¸X **no** 6ãã,Õ

ip igmp snooping [**vlan** *vid*] **querier version** { **1** | **2** }

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

Ï–DAà

–D	£Ä
vlan *vid*	ûJ vlan
1	IGMPv1
2	IGMPv2

ï5,Õ!5BÐ IGMPv2

ÏQ¸Ð <ã

ÏS*ÛÐ Ä¶Õ IGMPv1 ê IGMPv2Ä

Vp VLAN ÆG!5BÄ¶E¤ ,X IGMP (È*ü VLAN ÞXG!5BÄ

Ï!5B_Ð _ 1Ö5BÄ¶E¤ ,X IGMP (

5XLMLHFRQILJLSLJPSVQRRSLQJTXHULHUYHUVLRQ

_ 2Ïþ VLAN A5BÄ¶E¤ ,X IGMP (

5XLMLHFRQILJLSLJPSVQRRSLQJYODQTXHULHUYHUVLRQ

ÏÎGQ¸Ð

Q¸	£Ä
-	-

ÏGÄà -

9.20 ip igmp snooping query-max-response-time

G!5BÄ¶[ÛÊÈ|ãÕÃÊQ¸X **no** 6ãã,Õ

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

no ip igmp snooping query-max-response-time

Ï–DAà

–D	£Ä
seconds	Ä¶[ÛÊÈ/ÈÈ 1-65535È,Õ 10

ï5,Õ!5BÐ –D5,Õ

ÏQ¸Ð <ã

ÏS*ÛÐ ü IGMP BEïÄ¶[ãÈ˜Ä'ÛG¸5B Ý(ã¸X5ãÈ È È È È È

query-max-response-timeŸpnÊCYÊxA0ðµ4ý[,X*èA'
ÊÑ0Ã IGMP Snooping ,Xä8Ä
ü IGMP (Mn4ÃY[èÃG5BA{Mn4¸X¦ÕX5ÕÊèÊÊ
KÈ query-max-response-timeŸpnÊCYÊxA0ðµ4ý[,X*È
ÃÊÑ0Ã IGMP Snooping ,Xä8Ä
Íb IGMPv3 ,X(Mn4ÈÃY[èÊ,XÐÑ

Ï¨G!5B_Ð G!5BÃY[ÕÊÈ 100sÖ

5XLMLHFRQILJLSLJPSVQRRSLQJTXHUHPD[UHVSRQVHWLPH

ÏÎGQÐ

Q¸	ÊÄ
-	-

Ï¨GÄè -

9.21 ip igmp snooping source-check default-server

*è IP ¹56ÕÃ5BTÃxè IPÄQ¸X no 6èGKÁs6Ñ

ip igmp snooping source-check default-server *source-address*

no ip igmp sooping souce-check

Ï¨DAè

–D	ÊÄ
source-address	TÃxè IP

Ï¨Õ¸Ø!5BÐ GKÁs6Ñ

Ï¨Qè <ã

Ï¨S*Ðè è IP ¹56ÑÑL¼¾#,XèÐÈs6Ñ2è¸X4¾#FÑÄ
è IP ¹56Ñ IP 4¹s6ÑÜÄ
G!5Bè IP ¹56Ñ!X!9PxÖ
1Êè IP ¹56ÕÃ5BTÃxè IPÄ
2ÊÁ(Mn VLAN/4Ôè IPÄ

Ï¨G!5B_Ð *è IP ÊÃxè IP 192.168.4.243Ïlan1 4˜ 224.0.0.1 ,Xè IP 192.168.4.241

5XLMLHFRQILJLSLJPSVQRRSLQJVRXUFHFKHFNGHIDXOWVHUVHU
5XLMLHFRQILJLSLJPSVQRRSLQJOLPLWLSPFYODQDGGUHVVVHUVHU

ÏÎGQÐ

Q¸	ÊÄ
ip igmp snooping limit-ipmc	(Mn VLAN/4Ôè IPÄ

Ï¨GÄè -

9.22 ip igmp snooping source-check port

*ß0ÃÑ6ÃÑ¸X **no 6ÃÑ6ÃÑ**

ip igmp snooping source-check port

no ip igmp snooping source-check port

6Ñ IGMPv1/v2 ,X Report y[Ê IGMPv3 ,X Report y[Ä

Ï G!5B_Ð *ü Report y[,Xes6Ñ

5XLMLHFRQILJLSLJPSVQRRSLQJVXSSUHVVLRQHQDEOH

ÏÎGQÐ

Q¸	ÆÄ
-	-

ÏGÄÀÐ -

9.24 ip igmp snooping svgl profile

ûÊ¤ ü SVGL ßX48ÃÊQ¸X **no 6Ñ5Ä**

ip igmp snooping svgl profile *profile-number*

no ip igmp snooping svgl profile

Ï–DAÀÐ

–D	ÆÄ
profile-number	profile 6Ñf A&(f GgS¸fH~8Ì~8Ì– FIF¡vÈ8f@–8Qyd–HG–FIdc7@Dpd²80 1 Tf5.80735

ï5,Õ!5BÐ L8E• VLAN êª VLAN FÑ VLANÄ

ÏQÐ <ã

ÏS*Ô ' IGMP Snooping ,XE¤ ã SVGL ê IVGL-SVGL Ñ!5B!8QÄ

ÏG!5B_Ð ôE• VLAN VLAN3È VLAN VLAN 2Ã Ã Ã 7Ö

5XLMLHFRQILJLSLJPSVQRRSLQJVYJOYODQ

5XLMLHFRQILJLSLJPSVQRRSLQJVYJOVXEYODQ

ÏÌGQÐ

Q¸	£Ä
ip igmp snooping	**<** IGMP Snooping JA5BE¤ ã
ip igmp snooping svgl vlan	**G5Ã** SVGL ÐXE• VLAN

ÏGÄÈ -

9.26 ip igmp snooping svgl vlan

ôE¤ ü SVGL ÐXE• VLANÄ Shared VLANÅQ¸X **no 6ãÃÕ**

ip igmp snooping svgl vlan *vid*

no ip igmp snooping svgl vlan

ÏÌDAÈ

–D	£Ä
vid	VLAN 4Ñ,Õ 1

ï5,Õ!5BÐ –D5,Õ

ÏQÐ <ã

ÏS*Ô ' IGMP Snooping ,XE¤ ã SVGL ê IVGL-SVGL Ñ!5B!8QÄ

ÏG!5B_Ð ôE• VLAN VLAN3È VLAN VLAN 2Ã Ã Ã 7Ö

5XLMLHFRQILJLSLJPSVQRRSLQJVYJOYODQ

5XLMLHFRQILJLSLJPSVQRRSLQJVYJOVXEYODQ

ÏÌGQÐ

Q¸	£Ä
ip igmp snooping	**<** IGMP Snooping JA5BE¤ ã
ip igmp snooping svgl subvlan	**G5Ã** SVGL ÐX$ VLAN

ÏGÄÈ -

9.27 ip igmp snooping tunnel

*ü QinQ Eâ IGMP y[,Xs6ÑQ¸X **no 6ÉÁs6Ñ**

ip igmp snooping tunnel

no ip igmp snooping tunnel

Ï-DAèð

–D	Ë-Ä
-	-

Ï5,Õ!5BÐ GKÁ8s6Ñ

ÏQ¸ð <â

ÏS*Ôð ÁØ IGMP Snooping JG!5BZ dot1q-tunnel 0ÃÈ dot1q-tunnel 0Ã¸X IGMP y[È-GMP Snooping ÃK¸ÁÃÔ

ÔQinQ Eâ IGMP y[ÁÄ><NMÔÏÝ IGMP y[¡X VLAN ÈÃü IGMP y[¡X VLAN E¥@ IGMP y[Ä

!VÄØÔ IGMP Snooping¸ÈÌX0Ã A dot1q-tunnel 0ÃÃ A ,X5,Õ VLAN VLAN 1èÃÃ A AŒ VLAN 1 ` VLAN 10 ,Xy[ÈÈÃÃ A ¥Õ VLAN 10 ,X IGMP report y[È IGMP Snooping ÕÝ VLAN 10 ,X4Ä><NMÈÉU IGMP report y[E¥@ VLAN 10 ,XCÃE¿ÄÃ ÃÄ><NMÔÏÝ dot1q-tunnel 0Ã¸X5,Õ VLAN Ä IGMP y[#tÔ dot1q-tunnel 0Ã 5,Õ VLAN ,X VLAN Tag ÈúÜü dot1q-tunnel 0Ã¸X5,Õ VLAN YE¥@

!VÄØÔ IGMP SnoopingÈÀ¸ÌX0Ã A dot1q-tunnel 0ÃÃ A ,X5,Õ VLAN VLAN 1èÃÃ A AŒ VLAN 1 ` VLAN 10 ,Xy[ÈÈÃÃ A ¥Õ VLAN 10 ,X IGMP report y[È IGMP Snooping ÕÝ VLAN 1 ,X4Ä><NMÈÉ IGMP report y[#tÔ VLAN 1 ,X VLAN Tag ÈúÜE¥@ VLAN 1 ,XCÃE¿ÄÃ 5,ÃÃÄ

Ï-5B_Ð *ü QinQ Eâ IGMP y[,Xs6ÑÑ

5XLMLHFRQILJLSLJPSVQRRSLQJWXQQHO

ÏÎGQÞð

Q¸	Ë-Ä
-	-

Ï-Äèð -

9.28 ip igmp snooping vlan

vid	VLAN 4ÊÈ 1-4094

Ï5,Õ!5BÐ Vp<| IGMP SnoopingÄVGL VLAN | IGMP SnoopingÄVGL
Vp<þ IGMP SnoopingÄVGL VLAN þ IGMP SnoopingÄVGL

ÏQþ <ã

Ï5*Ûð ë| IGMP SnoopingÄVGL **no ip igmp snooping vlan** *vid*
VLAN ÊXJª VLAN Þ IGMP SnoopingÄVGL
PIM Snooping ÑOqC*b IGMP SnoopingÈ*ü **no ip igmp snooping vlan GÍ** VLAN ÞX IGMP
Snooping sÑA¹ VLAN PIM SnoopingÊÈGKÁ PIM SnoopingÄ

Ï!5B_Ð <| IGMP SnoopingÄVGL vlan 2 GKÁ IGMP SnoopingÄVGL
5XLMLHFRQILJLSLJPSVQRRSLQJLYJO
5XLMLHFRQILJQRLSLJPSVQRRSLQJYODQ

ÏÌGQÞ

Q¸	ÆÄ
ip igmp snooping	**|** IGMP Snooping JA5BJE¤

ÏGÄÈ -

9.29 ip igmp snooping vlan mrouter interface

G!5BM-ÕÃÆ²yÄQ¸X **no 6Ë5Ë**
ip igmp snooping vlan *vid* **mrouter interface** *interface-type interface-number*
no ip igmp snooping vlan *vid* **mrouter interface** *interface-type interface-number*

Ï–DAÈ

–D	ÆÄ
vid	VLAN 4ÊÈ 1-4094
interface-type interface-number	*yÁ*

Ï5,Õ!5BÐ M-ÕÃÆ²y·

ÏQþ <ã

Ï5*Ûð *|Ï4CÃÆ²ys6Ñ,ÕÃk|ÕÃÆ²yÄ
G!5B**ip igmp snooping vlan mrouter interface** **kM-**
M-ÕÃÆ²yÃÕ
VpÚG!5BM-ÕÃÆ²yÈ6ÞX4#FÑÆA0ÃÆ
*ÏÕÃ6ÊÃÆ²yÊ9,X4#!ÏXÈÚ#ÆÏÏ0Ã
5M2CÃÆ²yÊ9,X4#>M2ÏXÈÄ

Ï!5B_Ð G!5BM-ÕÃÆ²yÖ

5XLMLHFRQILJLSLJPSVQRRSLQJYODQPURXWHULQWHUIDFHIDVW(WKHUQHW

ÌÎGQÞ

Q¸	£Ä
ip igmp snooping mrouter learn pim-dvmrp	***[Ñ]s6Ñ**
ip igmp snooping source-check port	*6Ñ

ÏGÄÈ -

9.30 ip igmp snooping vlan static interface

G!5BM-ÕÄQ¸X **no 6ÈÄ**

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

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

Ï–DAÈ

–D	£Ä
vid	VLAN 4ÈÈ 1-4094
group-address	4˜
interface-type interface-number	*yÄ*

Ï5,Õ!5BÐ M-ÕÄ

ÏQÞ <ã

Ï5*Ù IGMP Snooping E@<NMÿVLAN 4ÃÃÃEÿÄ

VLAN 4ÈÔÊ@<NMÄ

Ê@<NMÃÃEÿÃÑÕÃEÿM-ÕÃEÿÅM-ÕÃEÿ

ãÃ

Ê@<NMÃÃÑM-ÕÃ*ü

clear ip igmp snooping gda-table ÑÑ8M-Ã

Ï5B_Ð G!5BEthernet 0/1 vlan 1 4˜ 224.0.0.2 ,XM-ÕÏ

5XLMLHFRQILJLSLJPSVQRRSLQJYODQVWDWLFLQWHUIDFH(WKHUQHW

ÌÎGQÞ

Q¸	£Ä
clear ip igmp snooping gda-table	#Ù8|Ê@<NM

ÏGÄÈ -

9.31 permit

AÔÊX4Ä

permit

Ï–DAÈ	–D	ÉÄ
	-	-

Ï5,Õ!5BÐ profile 5,Õ **deny**

ÏQÐ profile ã

ÏG!5B_Ð	G!5Bprofile 1È4Ë 224.2.2.2224.2.2.244

```
5XLMLHFRQILJLSLJPSSURILOH
5XLMLHFRQILJSURILOHUDQJH
5XLMLHFRQILJSURILOHSHUPLW
```

ÏÎGQÐ	Q¸	£Ä
	ip igmp profile	ÎÐ profile
	permit	AÛBÈX4˜
	deny	/U!6ÛBÈX4˜

ÏGÄÈ	-

9.33 show ip igmp profile

¦ß profile ,XG!5BÇ

show ip igmp profile [*profile-number*]

ÏÌDAÈ	–D	£Ä
	profile-number	profile ,X4ÈÈ 1-1024

ÏÕ,Õ!5BÐ	-

ÏQÐ	(Mã

statistics	¦ß	IGMP Snooping ,X4³AuÇÄ
vlan *vid*	**ûÐ**	VLAN

Ï5,Õ!5BÐ -

ÏQÐ (Mã

Ï*ÛÐ VpáDÐ IGMP Snooping ,XØMÇÄ

Ï!5B_Ð -

ÌÎGQÐ

Q¸	ÉÄ
-	-

ÏGÄÐ -

10 MLD Snooping

10.1 clear ipv6 mld snooping gda-table

#Ù8|Õ@<NM

clear ipv6 mld snooping gda-table

Ï–DAà	–D	£Ä
	-	-

ï5,Õ!5BÐ -

ÏQþ (Mã

ÏS*Ô MLD Snooping E@<NMÿVLAN 4ÃÃÃ£ÿÄ

VLAN 4ÃÔÔ@<NMÄ

Ô@<NMÿÃ£ÿÃÑÕÃ£ÿ6M-ÕÃ£ÿÅM-ÕÃ£ÿ

ãÃ

Ô@<NMÿÃÑÕM-ãM-ãÃ*ü

clear ipv6 mld snooping gda-table ÃÑ8M-Ã

ÏG!5B_Ð 5XLMLHFOHDULSYPOGVQRRSLQJJGDWDEOH

ÏÏGQÞ	Q¸	£Ä
	ipv6 mld snooping vlan static interface	**G5M-Ã**

ÏGÄà -

10.2 debug mld-snp

S*ü **debug Ô** MLD Snooping ,Ì G,XA^ÔÄ*ü **undebug ÔÄ**

debug mld-snp [**event** | **packet** | **msf** | **warning**] de18(6)6(msf)4(n)6(p)]TJ /TT0 1 Tf 0.0022 Tc 0 Tw ([ )Tj /TT2 1 Tf 0

¨5,Õ!5BÐ	-
¨Q¸Ð	(Mã
¨S*Ð	-
¨G!5B_Ð	5XLMLHGHEXJPOGVQS

¡ÎGQÐ	Q¸	ÆÄ
	-	-

¨GÄÈ	-

10.3 deny

/U!6ĥ8ÈX4˜

deny

¨–DAÈ	–D	ÆÄ
	-	-

¨5,Õ!5BÐ	profile 5,Õ **deny**
¨Q¸Ð	profile ã
¨S*Ð	profile ĵ4˜XE¸$ÈJWs6ÊÄ!5B!9PxÖ 1È*ü **ipv6 mld profile** ĵ profileÈE9 profile ã 2È*ü **range** ĵ8È 3È*ü **permit** ĵ8È*ü **deny** ĵ8È
¨G!5B_Ð	G!5Bprofile 1È!U!64˜ FF77::1FF77::100Ä 5XLMLHFRQILJLSYPOGSURILOH 5XLMLHFRQILJSURILOHUDQJH)))) 5XLMLHFRQILJSURILOHGHQ\

¡ÎGQÐ	Q¸	ÆÄ
	ipv6 mld profile	ĵ profile
	range	n48È
	permit	AĥBÈX4˜

¨GÄÈ	-

10.4 ipv6 mld profile

[illegible] profileÈ9 profile [illegible]*ÄQ¸X **no 6[illegible]88** profileÄ

ipv6 mld profile *profile-number*

no ipv6 mld profile *profile-number*

[illegible]DA[illegible]	–D	[illegible]ÄÄ
	profile-number	profile ,X4[illegible] 1-1024

[illegible],Õ!5BÐ -

[illegible] <ã

[illegible]*[illegible] profile [illegible]4¯,XE$[illegible]JWs6[illegible]!5B!9PxÖ

1[illegible]*ü **ipv6 mld profile** [illegible] profÈ9profile

ÏQÞ <ã

Ï5*Ð ü IVGL Ø VLAN KÈX4#,ÌÀ,X ÄÕÕÞ VLAN ,XCÃE¿ AÿÄ4#x6ÿÏÒ VLAN ,X4#ÊÕÑ,à VLAN Y,XÄÈÄ@
ü SVGLØ VLAN ,XEÔÕÈ¼ VLAN +AÄÄÄÒÞÒ shared VLANÄ,Õ VLAN1Ä shared VLAN ,X4#ÃÈÄ@4ÍÑ,XÄÈo
ÄÕÒÞ VLANÄÒ*ü profile ÞÄÈ- SVGLÈ8È,X4#Ã¼
VLAN EÈ8È,X4#ÍÄ
ü IVGL-SVGL ÈVGL ÃSVGL ÄÞ,ÄÒ*ü Profile ÞÄÈ- SVGLÈ
!88È,X4#EÖü SVGL È88È,X4#EÖü IVGL Ä

Ï!5B_Ð _ 1Ö MLD Snooping IVGL Ä
5XLMLHFRQILJLSYPOGVQRRSLQJLYJO

_ 2Ö MLD Snooping SVGL Ò shared VLAN VLAN1È SVGL 48È profile 1Ä
5XLMLHFRQILJLSYPOGVQRRSLQJVYJO
5XLMLHFRQILJLSYPOGVQRRSLQJVYJOSURILOH

_ 3Ö MLD Snooping IVGL-SVGL Ò shared VLAN VLAN1È SVGL 48È profile 1Ä
5XLMLHFRQILJLSYPOGVQRRSLQJLYJOVYJO
5XLMLHFRQILJLSYPOGVQRRSLQJVYJOSURILOH

ÏÏGQÞ

Q¸	ÆÄ
ipv6 mld snooping svgl vlan	ÒÞ Shared VLANÄ
ipv6 mld snooping svgl profile	ÒÞ SVGL G6(,X profileÄ

ÏGÄÈ -

ÊÈ›ÃÊÈÃÊ²yNe4,X#ït8Ä

ÏG!5B_Ð G!5B|ÕÃ5ÊÈ 100sÄ

5XLMLHFRQILJLSYPOGVQRRSLQJGQPUDJLQJWLPH

ÏÏGQÐ

Q¸	ÆÄ
-	-

ÏGÄÈ -

10.7 ipv6 mld snooping fast-leave enable

*0ÊÓ6ÊÑ*ÄQ¸X **no 6ÊÓs6Ñ**

ipv6 mld snooping fast-leave enable

no ipv6 mld snooping fast-leave enable

ÏÏ–DAÈ

–D	ÆÄ
-	-

ÏÏ5,Ó!5BÐ GKÁs6Ñ

ÏQÐ <ã

ÏS*Ê *0ÊÓ6ÊÑ0Ã done y[Ê]h,XE¥@<NM,Xä8A¹

0ÃÈ6h,X(Mn4Ay[Ê6áÅ0ÊÄ@

0ÊÓ6ÊÑÖx6ÊÂ²yÂÑV4ÈtÄ

ÏG!5B_Ð

Ï5,Õ!5BÐ	AOÃÄ#
ÏQÐ	yã
Ï5*Ô	NOÎ profileÈÑ **ipv6 mld snooping filter** ÐÑ profileÄ L$ÃÑ,X4˜XDBÈpA0Ã Report yÈÛEpÃt9,X4˜ ú profile AÇ4˜ÈÄÄ4ÄÇ4Ä
Ï!5B_Ð	ëü profile 1 L$ÃÑ,X4˜#Ä 5XLMLHFRQILJLQWHUIDFH(WKHUQHW 5XLMLHFRQILJLILSYPOGVQRRSLQJILOWHU

ÌGQÐ	Q¸	ÈÄ
	ipv6 mld profile	ÎÑ profile

ÏGÄÈ	-

10.9 ipv6 mld snooping max-groups

L$6ÑÑt9,X4˜XDGÄÇ¸X no 6ã!8LÄ

ipv6 mld snooping max-groups *number*

no ipv6 mld snooping max-groups

Ï–DAÈ	–D	ÈÄ
	number	8È 0 – 1024

Ï5,Õ!5BÐ	1024
ÏQÐ	yã
Ï5*Ô	ÏpBÔ5B!8QÈ¹ÈÎ4,X4˜),DC¸wÑGÊ]¾GNÈ:ÀÄÑWÎÈ4DSÈ

10.10 ipv6 mld snooping query-max-response-time

G!5BÁ¶[ÔÊÈ|ÕÕÊÈQ¸X **no** 6ãs,Õ

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

no ipv6 mld snooping query-max-response-time

ÏÌDAÈ	–D	ÉÄ
	seconds	Á¶[ÔÊÈ/ÈÈ 1-65535È,Õ 10

ï5,Õ!5BÐ –D5,Õ

ÏQÐ <ã

ÏS*Ô ü MLD BEÁ¶[ÈÀÏ,X5ÕÊÈÊÊÈ

ïnÊ,X£ 0 ÊxA0ãÁ¶4#È7AÔ0Ã MLD Snooping ,XE@<ô8Ä

ü MLD (Mn4Á¶[ÈÀÏ(Mn4,Xá¶5ÕÊÈÊÊÈ

KSÏnÊÈÊ,X£ 0 ÊxA0ãÁ¶4#ÈÀÏ0Ã

MLD Snooping ,XE@<ô8Ä

ïb MLDv2 ,X(Mn4Á¶[ÈÊ,XÐÏ

ÏG!5B_Ð G!5BÁ¶[ÔÊÈ 100sÖ

5XLMLHFRQILJLSYPOGVQRRSLQJTXHUÏPD[UHVSRQVHWLPH

ÏÌGQÐ

Q¸	ÉÄ
-	-

ÏGÄÈ -

10.11 ipv6 mld snooping source-check port

*ÏÏ5ÕÊÑQ¸X **no 6ãs6Ñ**

ipv6 mld snooping source-check port

no ipv6 mld snooping source-check port

ÏÌDAÈ	–D	ÉÄ
	-	-

ï5,Õ!5BÐ GKÁ8s6Ñ

ÏQÐ <ã

ÏS*Ô ÏÏ5ÕÊÑ9LÏ4#6ÑCÃÊ¿yÊ9Ã8s6ÑÏX4#FÑÏO97ÇÃ

+EyÈÑ¤ VLAN YáCÃEyÈwÕ¶ÕÑ VLAN YáÓ
Ä

no ipv6 mld snooping svgl profile

Ï–DAÈ

–D	£Ä
profile-number	profile ,X4ÈÈ 1-1024

Ï5,Õ!5BÐ ĵ SVGL ,X4ÈÈ

ÏQÐ <ã

Ï5*Ĵ Vp MLD Snooping ,XE¤ ã SVGL ê IVGL-SVGLÈ¥OG!5B!8QÄ
ĵ profile nLÔE¤ ü SVGL ÐX4ÈÈ8QÄ profileÄ

Ï G!5B_Ð G!5BE¤ ü SVGL ÐX4ÈÈ profile 2Ö
5XLMLHFRQILJLSYPOGVQRRSLQJVYJOSURILOH

ÏÎGQÐ

Q¸	£Ä
ipv6 mld snooping	¦< MLD Snooping JA5BJE¤ Ä

ÏGÄÈ -

10.14 ipv6 mld snooping svgl vlan

ĵE¤ ü SVGL ÐXE• VLANÄ Shared VLANÅQ¸X **no 6ÈÈÕ**
ipv6 mld snooping svgl vlan *vid*
no ipv6 mld snooping svgl vlan

Ï–DAÈ

–D	£Ä
vid	VLAN 4ÈÕ 1

Ï5,Õ!5BÐ –D5,Õ

ÏQÐ <ã

Ï5*Ĵ ' MLD Snooping ,XE¤ ã SVGL ê IVGL-SVGL ÈÕ!5B!8QÄ

Ï G!5B_Ð ĵE• VLAN VLAN3
5XLMLHFRQILJLSYPOGVQRRSLQJVYJOYODQ

ÏÎGQÐ

Q¸	£Ä
ipv6 mld snooping	¦< IGMP Snooping JA5BE¤ ã

ÏGÄÈ -

10.15 ipv6 mld snooping vlan

ü VLAN Þ MLD Snooping JE¤ IVGL ÄÇ¸X **no 6ã** VLAN ÐKÁ MLD SnoopingÄ

ipv6 mld snooping vlan *vid*

no ipv6 mld snooping vlan *vid*

Ï-DAÈ	–D	£Ä
	vid	VLAN 4ÈÈ 1-4094

Ï5,Õ!5BÐ -

ÏQÐ <ã

Ï*Ûï ü| MLD SnoopingÄVGL ÅXÈ*ü **no ipv6 mld snooping vlan** *vid* Ã¸

ûï VLAN ÊXJª VLAN Þ MLD SnoopingÄVGL Å

Ï!5B_Ð <| MLD SnoopingÄVGL Å vlan 2 ÐKÁ MLD SnoopingÄVGL Å

5XLMLHFRQILJLSYPOGVQRRSLQJLYJO

5XLMLHFRQILJLSYPOGVQRRSLQJYODQ

ÏGQÐ	Q¸	£Ä
	ipv6 mld snooping	**|** MLD Snooping JA5BJE¤ Ä

ÏGÄÈ -

10.16 ipv6 mld snooping vlan mrouter interface

G!5BM-ÕÃEºÄÇ¸X **no 6ã5Ë**

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

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

Ï-DAÈ	–D	£Ä
	vid	VLAN 4ÈÈ 1-4094
	interface-type interface-number	*yáÄ*

Ï5,Õ!5BÐ M-ÕÃEº·

ÏQÐ <ã

Ï*Ûï G!5B**ipv6 mld snooping vlan mrouter learn** Ã¸k|ÃÄ

G!5B**ipv6 mld snooping vlan mrouter interface** Ã¸kM-ÃÄ

VpÚÃG!5BM-ÕÃEºÈ6|X4#FÃÑEA0ÃEÏ@

ipv6 mld snooping vlan *vid* **static** *group-address* **interface** *interface-type interface-number*

no ipv6 mld snooping vlan *vid* **static** *group-address* **interface** *interface-type interface-number*

Ï–DAÈ

–D	£Ä
vid	VLAN 4ÈÈ 1-4094
group-address	4˜
interface-type interface-number	*yá*Ä

ï5,Õ!5BÐ M-Õ@<NM

ÏQ¸Ð <ã

ÏS*Ûð MLD Snooping E@<NMÿ2Ö VLAN 4ÃÃ
VLAN 4ÈÛÊ@<NMÊ@<NMÊÄ
S*ü **clear ipv6 mld snooping gda-table** ¸Ñ8M-ÕÄ

ÏG!5B_Ð G!5BM-Õ@<NMÖ
5XLMLHFRQILJLSYPOGVQRRSLQJYODQVWDWLF))LQWHUIDFHIDVW(WKHUQHW

ÏÌGQ¸Ð

Q¸	£Ä
clear ipv6 mld snooping gda-table	ûß|Õ@<NM

ÏGÄÈ -

10.19 permit

AûBÈX4Ä
permit

Ï–DAÈ

–D	£Ä
-	-

ï5,Õ!5BÐ profile 5,Õ **deny**

ÏQ¸Ð profile ã

ÏS*Ûð profile

```
5XLMLHFRQILJSURILOHUDQJH))))
5XLMLHFRQILJSURILOHSHUPLW
```

ÏÌGQÐ

Q¸	ÆÄ
ipv6 mld profile	ÎÎ profile
range	n48È
deny	/U!6ûÈX4˜

ÏGÄÈ -

10.20 range

nÎÈ*AQ¸X **no 6ûÈX4Ä**

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

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

–D	ÆÄ
low-ip-address	ûÈXCKŸ
high-ip-address	ûÈX4§

10.21 show ipv6 mld profile

¦ß profile ,XG!5BQ

show ipv6 mld profile [*profile-number*]

Ï-DAð

ÏG!5B_Ð

_ 1ÏØ MLD Snooping ,XØMG!5B

```
5XLMLHVKRZSYPOGVQRRSLQJ
0/VQRRSLQJPRGH,9*/
69*/YODQLG
69*/SURILOHQXPEHU
6RXUFHFKHFNSRUWLVDEOHG
4XHUPD[UHVSRQHWLPH6HFRQGV
```

_ 2ÏØ MLD Snooping ,X4ÃAuÇ

```
5XLMLHVKRZSYPOGVQRRSLQJVWDWLVWLFV
*5283,QWHUIDFH/DVWUHSRUW/DVWOHDYH/DVW
WLPHWLPHUHSRUWHU

))9/*LGKPV
5HSRUWSNWV/HDYHSNWV
```

_ 3ÏØ MLD Snooping ,XCÃEy·

```
5XLMLHVKRZSYPOGVQRRSLQJPURXWHU
9ODQ,QWHUIDFH6WDWH0/SURILOHQXPEHU

*LJDELW(WKHUQHWVWDWLF
*LJDELW(WKHUQHWGQDPLF
```

_ 4ÏØ MLD Snooping ,XE@<

```
5XLMLHVKRZSYPOGVQRRSLQJJGDWDEOH
$EU0PURXWHU
GQDPLF
6VWDWLF
9/$GGUHVV0HPEHUSRUWV

))*LJDELW(WKHUQHW6
```

_ 5ÏØ MLD Snooping filtering ,XG!5B

```
5XLMLHVKRZSYPOGVQRRSLQJLQWHUIDFH*LJDELW(WKHUQHW
,QWHUIDFH)LOWHU3URILOHQXPEHUPD[JURXSV

*LJDELW(WKHUQHW
```

ÏGQÐ

Q¸	EÄ
-	-

ÏGÄÐ -

execÄ¡Ø **no 6ã** Exec AÞ¡ś6Ñ

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

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

ÐAÈ

–D	ÆÄ
default	SÄ¹–DÈ6n,XÈ<0 Exec AÞ¡ÚXTAxÄ
list-name	nÊ Exec AÞ¡ÚXÈ<Ñ+0Ä
method	ÑÒ**none** **Ã groupGKÊ** 4 Ê
none	**ÈAÞ**
group	**Sä4ÈAÞ** RADIUS ` TACACS+á<4˜

ï,Õ5BÐ GKÁÞ¡ś6Ñ

ÊÞ <G5BÄ

ÏSÊ RGOS ÉÆ¿O)AxAÈ Exec AÞ¡ś6ÑÞ¡Ò)Ê> AxAÂxAG›

¡Ò© noneÈ> Exec AÞ¡Ä

ÄÞ¡ś6ÑÒ) NAS ,X CLI + M6ÊÃÞ¡Ñtart Â4]<á<È

	äA,ÈÑÊ> 5%4A“KÂ
method	**NBKÊ** 4 þ
none	ã> AÞú
group	Sú<4E> AÞÈÕ RADIUS ` TACACS+á<4˜

ï,Õ5BÐ GKÁÞá6Ñ

ÿ <G5BÄ

default	**S** 802.1X
list-name	802.1X
method	

¨5,Õ5BÐ	-
¨Q	<G5BÄ
¨SÊ	VpA'ûÙ AAA Enable AxAáÈ¨OSü AAA E> Enable AxA¡¨OSü **aaa authentication enable Q5BAxX** Enable AxAÄ ¨M6,XÚÝÈÑM6,XÈ> DÑxAÄ Enable AxAÈ<G5BÈ Enable AxA•6ÑÄ
¨G5B_Ð	¨M6,X/_n AAA Enable DÑxAÈ<Ä¹AxAÈ<Sü RADIUS]<á<E> DÑ AxAÈpÔÊ$ÙÝ RADIUS]<á<,Xh1(ÈÙBgE> DÑxAÄ 5XLMLHFRQJDDDDXWKHQWLFDWLRQQEOHGHIDXOWJURXSUDGLXVORFDO

¨ÏGÐ	Q	ÉÄ
	aaa new-model	**Sü** AAA]<á
	enable	**6ü{ÿ**
	username	**nÙB**

¨GÄÈ	-

1.8 aaa authentication login

ÙSü AAA E> Login,Ö)ÅxAÈ¡> <G5BQ **aaa authentication login G5B** Login AxA•,XÈ<ÄQX **no** 6ÈAxA•XÈ<Ä

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

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

¨ÐAÈ	–D	ÉÄ
	default	SÄ¹–DÈM6n,XÈ<0 Login AxA•XTAxÄ
	list-name	**nÔ** Login AxA•XÈ<Ñ+0Ä
	method	¨Local Ã noneÃ groupGK+Ô<Ô 4 Ô
	local	**SÈ¡DÑxA•**
	none	**DÑxA•**
	group	**Sü4DÑxA¡** RADIUS ` TACACS+á<4˜

¨5,Õ5BÐ	-
¨Q	<G5BÄ
¨SÊ	VpA'ûÙ AAA ,O)AxA]<áÈ¨OSü AAA E> Login AxA¡¨OSü **aaa authentication login Q5BAxX** Login AxAÄ

aaa authorization commands	**n** AAA Ç<

ÏGÄÈ -

1.10 aaa authorization config-commands

ÜSü AAA Ć5BÅG5BÅXÇ> Ì> <G5BÇ **aaa authorization config-commandsÄÇ** **no 6ÉÄ** AAA Ć5BÅXÇ\s6Ñ

aaa authorization config-commands

no aaa authorization config-commands

ÏÐÅÈ

–D	ÉÄ
-	-

Ï5,Õ5BÐ TÄxÉ5BÅXE> Ä

ÏÇ <G5BÄ

ÏSÊ VpÍ2G5BÄ(MÅXÇ> ÊÄÇ **no 6É5B\ s6Ñ5BÇÄ**

Ï5B_Ð M6,X/_Ô5BÅX\s6Ñ

5XLMLHFRQJDDDDXWKRUL]DWLRQRQJFRPPDQV

ÏÎGÇ

Ç	ÉÄ
aaa new-model	**S6Ñ** AAA]<á
aaa authorization commands	**n** AAA Ç

ÏGÄÈ -

1.11 aaa authorization console

ÜSü AAA ÉÉ{ÄO),XÈ> ,XÇ> Ì> <G5BÇ **aaa authorization consoleÄÇ** **no 6ÉÄ** AAA ÉÉ{ÄO),Xü> ÇX\s6Ñ

aaa authorization console

no aaa authorization console

ÏÐÅÈ

–D	ÉÄ
-	-

Ï5,Õ5BÐ TÄxÉÄ> ,XÇ> Ä

	<G5BA
	RGOS

aaa new-model	**S6Ñ** AAA]<á
authorization exec	**ïóÃCÃï**
username	

1.14 aaa domain

E9G5BÈ5B³X2ÄQ **no 6ÄQ**

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

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

–D	£Ä
default	SÄ¹–DÈ> 5,ÕXG5B
domain-name	*bÄ*

5,Õ5BÐ ÚG5B)Ä

Q <G5BÄ

SÐ bÎX AAA áG5BÄ default 5,Õ5BÈVpÚ5%4ÄÛ

tXÈ<Ä *domain-name bÈpÄ*

ÄÄ 32 Ä

G5B_Ð M6,X/_ÄÄ'5BÄG5BÖ

5XLMLHFRQJDDDGRPDLQXLMLHFRP

5XLMLHFRQJDDDGRPDLQ

ÌGQ

Q	£Ä
aaa new-model	**Ô** AAA]<á
aaa domain enable	**bÎX** AAA áÔ
show aaa domain	**/G5B**

GÄÈ -

1.15 aaa domain enable

bÎX AAA áÔÈAxÄK(ÄÔ,XÈbÎX AAA

áG5BÄQX **no 6ÄÔÄ**

aaa domain enable

no aaa domain enable

–D	£Ä
-	-

5,Õ5BÐ bÎX AAA áÔGKÄ

Q <G5BÄ

ÏSÊÐ E> ÎaX AAA áG5BÈÔÊÐG5BÔÄ

ÏG5B_Ð ÕÂX AAA áÔÖ

5XLMLHFRQJDDDGRPDLQQEOH

ÏÎGÇÐ

Ç	ÆÄ
aaa new-model	**Ô** AAA]<á
show aaa domain	**/ÏG5B**

ÏGÄÈÐ -

1.16 aaa group server

E9 AAA á<4ÏG5BÄÇX **no 6Ãá<4Ä**

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

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

ÏÐAÈÐ

–D	ÆÄ
name	á<4˜,XÈÃÑK+radius tacacs+ È- RADIUS ` TACACS+T-x,Xá<4ÄÄ

ÏÕ,ÕG5BÐ -

ÏÇÐ <G5BÄ

ÏSÊÐ AÇG5B AAA á<4È ,ÕÐ RADIUS ` TACACS+á<4Ä

ÏG5B_Ð M6/_Ä

5XLMLHFRQJDDDJURXSVHUYHUUDGLXVVV

5XLMLHFRQJVUDGLXVHQ

5XLMLHVKRZDDDJURXS

*URXS1DPHVV

*URXS7SHUDGLXV

5HIHUUHG

6HUYHU/LVW

ÏÎGÇÐ

Ç	ÆÄ
show aaa group	**/** aaa á<4˜

ÏGÄÈÐ -

1.17 aaa local authentication attempts

G5B login ,O)Ã,©)BùÐ

aaa local authentication attempts *max-attempts*

ÐAÈ	–D	ÉÄ
	*max-attempts*Ő	1~2147483647Ä

5,Õ5BÐ 5,Õ3 õ

<G5BÄ

AÇ5B Login ,O)Ã,©)BùÐ

M6,X/_Ö

5XLMLHFRQJXUHWHUPLQO

5XLMLHFRQJDDDORFDODXWKHQWLFDWLRQWWHPSWV

Q	ÉÄ
show running-config	**/AÛG5B**
show aaa lockout	**/!** login ,XÕG5B–D

-

1.18 aaa local authentication lockout-time

G5B login ,O)Ã©YEG5B,O)BùÐÈõ,XÊÈSz

aaa local authentication lockout-time *lockout-time*

ÐAÈ	–D	ÉÄ
	lockout-time	1~2147483647

5,Õ5BÐ 5,Õ15 Ê

<G5Bã

G5B login ,O)Ã©YEG5B,O)BùÐÈõ,XÊÈSz

M6,X/_Ö

5XLMLHFRQJXUHWHUPLQO

5XLMLHFRQJDDDOF[illegible]WFRQF[illegible]00

ÏGÐ

Q	EÄ
show running-config	**/AÛ5B**
show aaa lockout	**/!** login ,XÕ0G5B–D

ÏGÄÈ -

1.19 aaa new-model

ÜSü RGOS ,X AAA]<ás6ÃÏ> <G5BQ **aaa new-model S6Ñ** AAAÄQX **no 6**

6K AAA]<áÄ

aaa new-model

no aaa new-model

ÏDAÈ –D EÄ aaa ne(w)-20(-)2(m)12(ode)5(l)]TJ/62_0 1 Tf0 Tc 0 Tw 7.4 0 Td<055336D1>Tj/TT0 1 T

num	[illegible]	IEEE802.1x ŭ

ï5,Õ5BÐ 5,[illegible]GÄ

[illegible] ¯G5BÄ

5XLMLHFRQJOLQDFFRXQWLQRPPDQVFPG

ÏGQ

Q	£Ä
aaa new-model	**S6Ñ** AAA]<á
aaa accounting commands	**n** AAA Q,B6<

ÏGÄÈ -

1.22 accounting exec

ÙÚ Exec A,Bé<hû40ÃÃ“C,Ã 4“CÃG5BQ **accounting exec**ÄQ **no 6**

ÄCÃ Exec A,Bé6Ñ

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

no accounting exec

ÏDAÈ

–D	£Ä
default	SÄ¹–DÈ Exec A,BúXTAxÄ
list-name	hÊX Exec A,BúX6<Ä

ÏÕ5BÐ GKÁ,Bé6Ñ

ÏQ 4“CÃG5BÄ

ÏSÊ TAx,X Exec A,B6<ÊG5BÈ/hÁ0ÃÃ“CÃM2TAx Exec A,B6

><ÈAx,X6<ÄpAÒp,X6<ÈÊ:/CÈ4“CÃ

,X Exec A,BÈÇÄ¹ Exec A,B6<Ä

ÏG5B_Ð M6,X/_G5BÊ exec-1 ,X Exec A,Bé<È RADIUS 0]<á<Èpá<ÙÝ

hÚ none ÄG5BÂ

ĝ5BĝG5B Network Aĵĕ<ÈĵX **no 6ĝ**

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

no accounting network

ĐAĝ

–D	EÄ
default	SÄ¹–DĝS5,Õ5Bĝĕ<
list-name	ĝĕÄ

5,Õ5BĐ ĭĝĕ<ÊpĕCKAĔ%4ÄÂĈAĝ default ĕ<Ä

ĝ ĝ5BĂ

Ĝĝĝ ĝSĵX Network Aĵĕ<Ä

ĜG5B_Đ M6,X/_ĝÄ'5Bĝ Network Aĵĕ<Ö

5XLMLHFRQJDDDGRPDLQXLMLHFRP

5XLMLHFRQJDDDGRPDLQFFRXQWLQWZRUNGHIDĝRG HP`0

5XLMLHFRQ1DDDGRPDLQ1XLMLHFRP
5XLMLHFRQ1DDDGRPDLQ1XWKHQWLFDWLRQRW[GHIDXOW

ÏGQ

default	SA1–DÊS5,Õ5BÊ<
list-name	*ûÊÄ*

ï5,Õ5BÐ ïûÊ<ÊpÉCKAÊ%4A'ÂÊ4ÂÊ default Ê<Ä

ïÐ ¯G5BÄ

ïSÊ ûÊ<Ä

ïG5B_Ð M6,X/_ÊA'5BÊ<Ö

5XLMLHFRQJDDDGRPDLQXLMLHFRP

5XLMLHFRQJDDDGRPDLQXWKRUL]DWLRQWZRUNGHIDXOW

ïÎGÐ

Q	ÊÄ
aaa new-model	**Ô** AAA]<á
aaa domain enable	**ÕÊX** AAA áÔ
show aaa domain	**/¯G5B**

ïGÄÊ -

1.28 clear aaa local user lockout

Ê8>ÕÊ,XÊ<

clear aaa local user lockout {**all** | **user-name** *word* }

ïÐÄÊ

–D	ÊÄ
word	ü ID

ï5,Õ5BÐ -

ïÐ (MÄ

ïSÊ Ê8>ÕÊ,XÊ<ÊFÊ83ÊÊ8

ïG5B_Ð M6,X/_Ö

5XLMLHFOHDUDDDORFDOXVHUORFNRXWDOO

ïÎGÐ

Q	ÊÄ
show running-config	**/AÔG5B**
show aaa lockout	**/!** login ,XÕG5B–D

ïGÄÊ -

1.29 debug aaa

	Ô AAA áAAÔÄÇX	**no 6ÉÁAÔÄ**
	debug aaa event	
	no debug aaa event	

ÏÐAÈ	–D

ÏĨGĐ

Ǫ	ƐÄ
aaa group server	**G5B** aaa á<4˜

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

–D	£Ä
ip-addr	á< ip
port1	á<AxA0Ã™ RADIUS á<4Ã
port2	á<A¸0Ã™ RADIUS á<4Ã

ï5,Õ5BÐ á<G5B

ïQ á<4˜G5BÄ

ïSÊ Tûá<ïá<ÊÃ0ÃTAxÄ

ïG5B_Ð

```
5XLMLHFRQJDDDJURXSVHUYHUUDGLXVVV
5XLMLHFRQJVUDGLXVVHUYHUDFFWSRUWDXWKSRUW
5XLMLHFRQJVUDGLXVHQ
5XLMLHVKRZDDDJURXS
7SH5HIHUHQH1DPH

UDGLXVUDGLXV
WDFDFVWDFDFV
UDGLXVVV
```

ïÌGÐ

Q	£Ä
aaa group server	**G5B** aaa á<4˜
show aaa group	**/** aaa á<4˜

ïGÄÈ -

1.33 show aaa domain

/Ý5BÇÄ

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

–D	£Ä
default	SÄ¹–DÈ/TAx,XÇ
domain-name	/ûÇ

ï5,Õ5BÐ -

ïQ (MÄ

ïSÊ VpÈÝXÇÄ

ÏG5B_Ð M6,X/_/ôá domain.com ,XÇÄ

```
5XLMLHVKRZDDDGRPDLQRPDLQRP

        RPDLQRPDLQRP
6WDWHSFWLYH
8VHUQPHIRUPDW:LWKRXWGRPDLQ
SFHVVOLPLW1ROLPLW
;SFHVVVWDWLVWLF

6HOHFWHGPHWKRGOLVW
DXWKHQWLFDWLRQRW[GHIDXOW
```

ÏGÇÐ

Q	ÆÄ
aaa new-model	**Ô** AAA]<á
aaa domain enable	**ÕÑ** AAA áÔ

ÏGÄÈ -

1.34 show aaa group

/ AAA G5B,Xá<4Ä

show aaa group

ÏÐÄÈ

–D	ÆÄ
-	-

ÏÕ5BÐ -

ÏÐ (MÄ

ÏSÐ AÇ AAA ÁG5B,Xá<4Ä

ÏG5B_Ð

```
5XLMLHVKRZDDDJURXS
7SH5HIHUHQH1DPH

UDGLXVUDGLXV
WDFDFVWDFDFV
UDGLXVGRW[BJURXS
UDGLXVORJQJURXS
UDGLXVHQEOHBJURXS
```

ÏGÇÐ

Q	ÆÄ
aaa group server	**G5B** AAA á<4˜

ÏGÄÈ	-

1.35 show aaa method-list

/ AAA ,Ýxë<Ä

show aaa method-list

ÏDAÈ	–D	£Ä
	-	-

Ï5,Õ5BÐ	-
Ïq	(Mã
ÏSÎ	AÇ AAA ,Ýxë<Ä
Ï5B_Ð	M6,X/_/ AAA ë<Ä

```
5XLMLHVKRZDDDPHWKRGOLVW
$XWKHQWLFDWLRQPHWKRGOLVW
DDDDXWKHQWLFDWLRQRLQHIDXOWJURXSUDGLXV
DDDDXWKHQWLFDWLRQSSGHIDXOWJURXSUDGLXV
DDDDXWKHQWLFDWLRQRW[GHIDXOWJURXSUDGLXV
DDDDXWKHQWLFDWLRQRW[VDQORFDOJURXSDQHOJURXSUDLQHQ
DDDDXWKHQWLFDWLRQHQEOHGHIDXOWJURXSUDGLXV
$FFRXQWLQPHWKRGOLVW
DDDDFFRXQWLQHWZUNGHIDXOWVWDUWVWRSJURXSUDGLXV
$XWKRUL]DWLRQPHWKRGOLVW
DDDDXWKRUL]DWLQHWZUNGHIDXOWJURXSUDGLXV
```

ÏÎGÇ	Q	£Ä
	aaa authentication	**nÄxAë**

-	

5,Õ5BÐ -

Q (MÄ

5Ô />ô,Xë<ÈÝ>28ÕÄ

G5B_Ð M6,X/_Ö

5XLMLHVKRDDDXVHUORFNRXW

ÌGQ

Q	ÆÄ
show running-config	**/AÔG5B**
show aaa lockout	**/!** login ,XÕG5B–D

GÄÈ -

1.37 state

A’5BÄQX **no 6ÄAxG5B**

state {**block** | **active**}

no state

ÐAÈ

–D	ÆÄ
block	G5B,XÝ
active	**/G**

5,Õ5BÐ 5,Ä

Q ¯G5BÄ

5Ô ûG5B,XÄ

G5B_Ð M6,X/_ÈA’5BÄ

5XLMLHFRQJDDDGRPDLQXLMLHFRP

5XLMLHFRQJDDDGRPDLQWDWHEORFN

ÌGQ

Q	ÆÄ
aaa new-model	**Ô** AAA]<á
aaa domain enable	**ÔÄ** AAA áÔ
show aaa domain	**/¯G5B**

ÏGÄÈ -

1.38 username-format

ÏG5BÈG5B NAS á<xfÊÈÇX **no 6ÏAxG5Ë**

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

no username-format

ÏÐÄÈ

–D	ÆÄ
without-domain	9/ÇÏ
with-domain	ÆÇÏ

ÏÕ5BÐ 5,ÕÇÄ

ÏÇ ÏG5BÄ

ÏSÊ ÏG5BÈG5B NAS ÛÏá<xfÊÄ

ÏG5B_Ð M6,X/_ÊA'5B9/ÇÖ

5XLMLHFRQJDDDGRPDLQXLMLHFRP

5XLMLHFRQJDDDGRPDLQVHUQPHGRPDLQWKRXWGRPDLQ

ÏÌGÇ

Q	ÆÄ
aaa new-model	**Ô** AAA]<á
aaa domain enable	**ÛÊX** AAA áÔ
show aaa domain	**/ÏG5B**

ÏGÄÈ -

2 RADIUS

2.1 debug radius

Ô RADIUS A×ÔÄÇX **no 6ÉÄ** RADIUS A×ÔÄ

debug radius [**event | detail**]

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

ÏÐAÐ	–D	ÉÄ
	-	-

ÏÕ5BÐ -

ÏÐ (M EXEC G5BÄ

ÏÐ -

ÏG5B_Ð -

ÏÇÐ

radius y[¢ fastEthernet 0/0 y9ª ip 90 radius y[,X

radius-server host	**n** RADIUS á<
ip address	ip

-

2.3 radius attribute

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

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

id	s6Ñ id <1-255>
type	type

17	version to server	17
18	flux-max-high32	18
19	flux-max-low32	19
20	proxy-avoid	20
21	dailup-avoid	21
22	ip privilege	22
23	login privilege	42

	max up-rate 2O_n	211	

-	-

	id
	<G5BÄ
	SÄ id ,X2 G5B+2O_A
	M6,X/_Ö 5XLMLHFRQUDGLXVYHQRUVSHFLILFH[WHQ

Q	EÄ
radius attribute	**G5B**
radius set qos cos	**G5B** qos cos

-

2.6 radius-server attribute 31

RADIUS Calling-Station-ID 2 MAC <G5BQ **radius-server attribute 31** **no 6 5B**

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

no radius-server attribute 31 mac format

–D	EÄ
ietf	ETF RFC3580 MAC 00-D0-F8-33-22-AC
normal	MAC 00d0.f833.22ac
unformatted	00d0f83322ac

U0 _ V b Ä ñ6(s ÔA

-	-

ÏGÄÈ -

2.7 radius-server dead-criteria

ÙG5BA'ûÙ RADIUS]<á<Ã',XÊÈ> <G5BQ **radius-server dead-criteriaÄ**

AÈQ no 6ãÃ'AxÄ

radius-server dead-criteria {**time** *seconds* [**tries** *number*] | **tries** *number*}

no radius-server dead-criteria {**time** *seconds* [**tries** *number*] | **tries** *number*}

ÏÐAÈ

–D	ÆÄ
time *seconds*	G5BÊÈÈÊÐÄ'ûÙ,XÊÈÈÙ97¾ RADIUS]<á u<,X7.Bhy[ÈxA¹ RADIUS]<á<ÇÃ',XÊS 5Ã'5B,X,X8È 1-120 /Ä
tries *number*	G5BAËÄ4ÁYÊÐ5ÊÐÄ'ûÙ RADIUS]<á< ÆÕXAÿ[Ë4ÁYÊÐE'A'n,X ÐÈxA¹ RADIUS] <á<ÇÃ',XÈ4ÁYÊÐ5Ã'5B,X,X8È 1-100Ä

Ï5,Õ5BÐ **time** *seconds* ÆÄ 60 /Ä

tries *number* ÆÄ 10 Ä

ÈQ <G5BÄ

ÏSÊÐ VpÊÐ RADIUS]<á<ÇÊÈÈÊÈÄ4ÁYÊÐ5ÊÈÙxA¹ RADIUS]< á<Ã'ÄÄÇÊÈÈÄ4ÁYÊÐ5ÊX–DE> AÈÄ

ÏG5B_Ð M6,X/_ûÊS 120 /È4ÁYÊÐ 20 õ

5XLMLHFRQJUDGLXVVHUYHUGHDGFULWHULDWLPHWULHV

ÏÏGÈQ

Q	ÆÄ
radius-server host	**n** RADIUS]<á<,X
radius-server deadtime	**nAÛ6ãÃÊÐ** RADIUS]<á< ÆÕÿ[,XÊÈSz
radius-server timeout	**n** RADIUS y[CYÊÈ

ÏGÄÈ -

2.8 radius-server deadtime

no radius-server deadtime

ignore-auth-port	**ÊÍÁ**	RADIUS]<á<,XAxA0,Ã"ÈAxÔ
ignore-acct-port	**ÊÍÁ**	RADIUS]<á<,XA,Ã"ÈAxÔ

ï5,Õ5BÐ ïüÛ,X RADIUS Ä

ïÐ <G5BÄ

ïSÔ Zü RADIUS r)„ AAA]<áÈ On RADIUS]<á<Ãü **radius-server host**

ÐÔ RADIUS]<á<Ä

ïG5B_Ð M6,X/_nÔ IPv4)W,X RADIUS]<á<Ö

5XLMLHFRQJUDGLXVVHUYHUKRVW

M6,X/_nÔ IPv4)W,X RADIUS]<á<Ò#6ÑÈh<ó 60

ÍÈKÁ,Bú UDP ÂG,Gmy-ÂÈ Brp,ÜÊGý ÈÖ1s=ÍÕKÁRÈrR%ÎÈá<Ä

ÏG!5B _ Ð M6,X/_nÔ0

Ï Q <G5BÄ

ÏSÊ EÇA'Û RADIUS]<á<E> 7.BEîXÎÄA'Û RADIUS]<á<6Ñ>
EÑÏOÄA'Û RADIUS]<á<h,ÈXEÇÄ

ÏG5B_Ð M6,X/_n RADIUS]<á<,XE¸• aaaÖ
5XLMLHFRQJUDGLXVVHUYHUNHÌDDD

ÏÎGÇ

Q	ÉÄ
radius-server host	**n** RADIUS]<á<,X
radius-server retransmit	**n** RADIUS y[G¥Ð
radius-server timeout	**n** RADIUS y[CYÊÊ

ÏGÄÈ -

2.11 radius-server retransmit

ÏUG!5BA'ÛAx RADIUS]<á<'u Ý¡h¹!G¡¥y[,X ÕDÈÄÉ,> <G!5BQ
radius-server retransmitÄÇ **no 6ÄÄTAxG¥ÐÄ**
radius-server retransmit *retries*
no radius-server retransmit

ÏÐAÈ

–D	ÉÄ
retries	RADIUS ÃG¥ÐÄ

ÏÕ,Õ5BÐ TAxG¥Ð 3Ä

Ï Q <G5BÄ

ÏSÊ AAA SÊ> AxA¸XÏAxA¸X]<á<'u¡ÝÄ'¥á<
'u¡ÝÄ,X¥á<ÄÛ¥Ð RADIUS y[KÈÝ1(ÈGÇÉYÊ
KÈhÄ

ÏG5B_Ð M6,X/_ÛG¥Ð 4Ö
5XLMLHFRQJUDGLXVVHUYHUUHWUDQVPLW

ÏÎGÇ

Q	ÉÄ
radius-server host	**n** RADIUS]<á<,X
radius-server key	**n** RADIUS ,XE¸•
radius-server timeout	**n** RADIUS y[CYÊÊ

ÏGÄÈ -

2.12 radius-server timeout

radius-server timeout *seconds*

no radius-server timeout

	–	
	seconds	1-1000

5

radius-server host	**n** RADIUS
radius-server retransmit	**n** RADIUS
radius-server key	**n** RADIUS

-

2.13 show radius parameter

/ RADIUS

show radius parameter

–	
-	-

-

(

radius

6HUYHU5HWULHV
6HUYHUHDG&ULWHUD
7LPH6HFRQV
7ULHV

ÏÌGÐ

Q	ÆÄ
radius-server host	**n** RADIUS]<á<,X
radius-server retransmit	**n** RADIUS y[G¥D
radius-server key	**n** RADIUS ,XE¸•
radius-server timeout	**n** RADIUS CYÊÈ
radius-server dead-criteria	**n** RADIUS]<á<Ã’,XøÛ
radius-server deadtime	**nAÛ6ÃÕ** RADIUS]<á<ÆÕ y[,XÊÈ

ÏGÄÈ -

```
$FRXQWUHTXHVWWLPHRXWV

6HUYHU,3
$FRXQWLQRUW
$XWKHQRUW
7HVW8VHUQPH1RWRQXUHG!
7HVW,GOH7LPH0LQWHV
7HVW3RUWV$XWKHQQ$FRXQWLQ
6HUYHU6WDWH$FWLYH
&XUUHQWGXUDWLRQSUHYLRXVGXUDWLRQ
HDGWRWDOWLPHVFRXQW
6WDWLVWLFV
$XWKHQHTXHVWWLPHRXWV
$XWKRUUHTXHVWWLPHRXWV
$FRXQWUHTXHVWWLPHRXWV
```

ÏGQ	Q	EÄ

```
PD[GRQDWH
SRUWSULRULW\
XVHULS
YODQG
ODVWVXSSOLFDQYHUV
LRQ
WLS
XVHUQPH
SDVVZRUG
ILOHGLUHFWRU\
ILOHFRXQW
ILOHQPH
ILOHQPH
ILOHQPH
ILOHQPH
ILOHQPH
PD[XSUDWH
FXUUHQVVXSSOLFDQY
HUVLRQ
IOX[PD[KLJK
IOX[PD[ORZ
SUR[DYRLG
GLDOXSDYRLG
LSSULYLOHJH
ORQLQULYLOHJH
LSYPXOWLFDVWDGGUH
VV
LSYPXOWLFDVWDGGUH
VV
```

ÏÎGÇ

Ç	ÉÄ
radius-server host	**n** RADIUS]<á<,X
radius-server retransmit	**n** RADIUS y[G¥Ð
radius-server key	**n** RADIUS ,XE¸•
radius-server timeout	**n** RADIUS CYÊÈ

ÏGÄÈ -

3 TACACS+

3.1 aaa group server tacacs+

TACACS+

ÏSÊÐ -

ÏG5B_Ð -

ÏÌGÐ

Q	ÆÄ
-	-

ÏGÄÐ -

3.3 ip tacacs source-interface

8Q5B TACACS+y[,X$ÄÄ

ip tacacs source-interface *interface*

no ip tacacs source-interface

ÏÐÄÐ

–D	ÆÄ
interface	TACACS+y[,X$y·

ÏÕ5BÐ TACACS+y[,X$+5%4Ã’5BÄ

ÏÐ <G5BÄ

ÏSÊÐ TACACS+á<4ÈG,X nas µ,X0GÃÈÄÐ’5B TACACS+y[,X$ÄÐy,X1Ô ip 0 TACACS+y[,X$ÈÐ’ÔÄ

ÏG5B_Ð M6,X/_ÔZ TACACS+y[¢ fastEthernet 0/0 y9ª ip 90 TACACS+y[,X$ÖÖ 5XLMLHFRQLISWDFDFVVRXUFHLQWHUIDFHIDVW(WKHUQW

ÏÌGÐ

Q	ÆÄ
	X$Q0rqTACACS+FDaVáVÿVnpFÀ$}ÄÄÿBõX1,BSPÜÕ

Ï–DAÈ	–D	£Ä
	vrf-name	vrf á

Ï5,Õ5BÐ -

Ïð TACACS+á<4Ĩ5BÄ

ÏSÔ ĥ,X TACACS+á<4ĥ vrf áÄ

Ï5B_Ð M6/_ TACACS+á<4ĥ VRF á vpn1Ö

5XLMLHFRQJDDDJURXSVHUYHUWDFDFVWDF
5XLMLHFRQJVWDFDFVVHUYHU
5XLMLHFRQJVWDFDFVLSYUIIRUZDUGLQSQ

ÏGÐ	Q	£Ä
	aaa group server tacacs+	**G5B** TACACS+á<4˜
	server	**G5B** TACACS+á<4˜,X server ë<

ÏGÄÈ -

3.5 server(TACACS+)

8Q5B TACACS+á<4˜,Xá<Ä

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

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

ÏÐAÈ	–D	£Ä
	ip-address	TACACS+á<4˜,Xá< IP
	ipv6-address	TACACS+á<4˜,Xá< IPV6

Ï5,Õ5BÐ -

Ïð TACACS+á<4Ĩ5BÄ

ÏSÔ G5B8ÈOEÈQ **aaa group server tacacs+Ë** TACACS+4Ĩ5BÄ
TACACS+á<4Ĩ5B,Xá<ÈOë‹G5BÈE› **tacacs-server host Q5B**
8áÄ
á<4˜,XG5B,X TACACS+á<ĥ<ïÍĥ<ÈÕÄ

Ï5B_Ð M6,X/_G5Bĥ tac1 ,X TACACS+á<4Ä4Ĩ5Bĥ 1.1.1.1 ,X TACACS+
á<Ö

5XLMLHFRQJDDDJURXSVHUYHUWDFDFVWDF
5XLMLHFRQJVWDFDFVVHUYHU

ÌGÐ	Q	£Ä
	aaa group server tacacs+	**G5B** TACACS+á<4˜
	ip vrf forwarding	**G5B** TACACS+á<4Õ VRF á

ÏGÄÐ -

3.6 show tacacs

/Ø TACACS+á<,XxfE¤ Ä

show tacacs

ÐAÐ	–D	£Ä
	-	-

ï5,Õ5BÐ -

Ð (Mã

ÏSÐ SÄØ TACACS+á<,XxfE¤ Ä

ÏG5B_Ð

```
5XLMLHVKRZWDFDFV
7DFDFV6HUYHU
6RFNHW2SHQ
6RFNHW&RVHV
7RWDO3DFNHWV6HQW
7RWDO3DFNHWV5HFY
5HIHUHQH&XQW
```

ÌGÐ	Q	£Ä
	tacacs-server host	**n** TACACS+]<á<,X

ÏGÄÐ -

3.7 tacacs-server host

8Q5B TACACS+á< IP Ä

tacacs-server host {*ip-address* | *ipv6-address*} [**port** *integer*] [**timout** *integer*] [**key** *string*]

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

–D	E Ä
Ip-address	TACACS+]<á<,X IP Ä
ipv6-address	TACACS+]<á<,X IPV6 Ä
port *integer*	TACACS+E^ASÿX TCP 0Ã
timeout *integer*	TACACS+,XCYÊÊ
key *string*	TACACS+ client á<E•,XÿÄ

5,Õ5BÐ ÿÛ,X TACACS+Ä

Q <G5BÄ

SÛ Zÿ TACACS+r)„ AAA]<áÈ On TACACS+]<á<Ä ÿ **tacacs-server host** Q TACACS+]<á<Ä

G5B_Ð M6,X/_nÔ TACACS+]<á<Ö

5XLMLHFRQJWDFDFVVHUYHUKRVW

5XLMLHFRQJWDFDFVVHUYHUKRVW

Q	E Ä
aaa authentication	**n** AAA ,XDÑxAÊ<
tacacs-server key	**¤** TACACS+]<á<,XE•
tacacs-server timeout	**¤** TACACS+á<hy[CYÊÊ

GÄÈ -

3.8 tacacs-server key

5Bkey EÍM,Xá<G5BÊ keyÄ

Ï5B_Ð M6,X/_n TACACS+]<á<,XE• aaaÖ

5XLMLHFRQJWDFDFVVHUYHUNHDDD

ÏGÊ

Q	ÉÄ
tacacs-server host	**n** TACACS+]<á<,X
tacacs-server timeout	**n** TACACS+y[CYÊÊ

ÏGÄÈ -

3.9 tacacs-server timeout

8Q5Bâ TACACS+á<EÂÊYá<,X<CYÊÊ

tacacs-server timeout *seconds*

no tacacs-server timeout

ÏÐÄÈ

–D	ÉÄ
seconds	CYÊÊÃ'5B,X8È 1-1000 /Ä

Ï,Õ5BÐ 5 /¦

Ï<G5BÄ

ÏSÊ SÄ¢y[,XCYÊÈ> A+ÄÔ¦á<ûÄXCYÊÈ

tacacs-server host **timeout** **timeout**

á<5Ê **timeoutÄ**

Ï5B_Ð M6,X/_ÚYÊÈ 10 /Ö

5XLMLHFRQJWDFDFVVHUYHUWLPHRXW

ÏGÊ

Q	ÉÄ
tacacs-server host	**n** TACACS+]<á<,X
tacacs-server key	**n** TACACS+,XE•

ÏGÄÈ -

4 802.1X

4.1 dot1x auth-address-table

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

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

–D	
mac-addr	
interface	

ï5,Õ5BÐ	Vp	AAA Ê)AxA5,ÕXÚ	ü	AAA áÄ
ÿ	yG5BÄ			
ÏÊ	Vpü	AAA]<áÈ	ÿ	dot1x

ÏÊÕ	Ãŭ	**show dot1x** ¡Ø	802.1x A’5BÄ
ÏÊ		852.1x A’5B GŒ@	

ÏGÄÈ -

4.7 dot1x auto-req packet-num

A’5BA’|ÎAxAÄÿ[,X DÈ **no** **6ÔAxÄ**

dot1x auto-req packet-num *num*

no dot1x auto-req packet-num

ÏÐAÈ

–D	ÆÄ
num	**A|ÎAxAÄÿ[,X DÄ**

ÏÕ5BÐ num = 0; GÕÄÕ

ÏÐ <G5BÄ

ÏSÎ A’5BA’|ÎAxAÄÿ[,X DÈ **show dot1x auto-req** Q1s6|ÑXA’5BÄ

ÏG5B_Ð M6A’5BA’ÕÄCK 802.1x AxA,X_Ö

5XLMLHFRQJXUHWHUPLQO

5XLMLHFRQJGRW[DXWRUHTSDFNHWXP

5XLMLHFRQJHQ

5XLMLHVKRZGRW[DXWRUHT

XWR5HT(QEOHG

8VHUHWHFW(QEOHG

3DFNHW1XP

5HT,WHUYDO6HFRQ

ÏÌGÐ

Q	ÆÄ
show dot1x auto-req	**ÎAxAXA5Ø**

ÏGÄÈ -

4.8 dot1x auto-req req-interval

A’5BA’|ÎAxAÄÿ[,XÊÈÈhÈoTc 0 -1.793 TD<01CF210.199<2C5801520E4E3EDB1>7<9A54178E54A354200610

Ö <G5BÄ

SÊ A’5BA’|ÎAxAÄÿ[,XÊKÈhÃü **show dot1x auto-req** ¡Ãs6|ÑXA’5BÄ

G5B_Ð M6A’5BA’ÊK 802.1x AxAÊKÈh 60s ,X_Ö

5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJGRW[DXWRUHTUHTLQWHUYDO
5XLMLHFRQJHQ
5XLMLHVKRZGRW[DXWRUHT
XWR5HT(QEOHG
8VHUHWHFW(QEOHG
3DFNHW1XP
5HT,QWHUYDO6HFRQ

ÌGÐ

Q	ÆÄ
show dot1x auto-req	**¡AxAXA5BÄ**

GÄÈ -

4.9 dot1x auto-req user-detect

A’5BA’ÛÑp,AxAÆÈ›XÈÎAxAÄÿ[ÈÑ **no** **6ÊAxÄ**
dot1x auto-req user-detect
no dot1x auto-req user-detect

ÐAÈ

–D	ÆÄ
-	-

Ö,Ö5BÐ Ô

Ö <G5BÄ

SÊ A’5BA’ÛÑp,AxAÆÈ›XÈÎAxAÄÿ[ÊÑ **show dot1x auto-req**
¡Ãs6|ÑXA5BÄ

G5B_Ð M6A’5BA’ÛÑ“ÈÉh0ÊÑAxAÄÿ[Ö

5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJGRW[DXWRUHTXVHUGHWHFW
5XLMLHFRQJHQ
5XLMLHVKRZGRW[DXWRUHT
XWR5HT(QEOHG
8VHUHWHFW(QEOHG
3DFNHW1XP
5HT,QWHUYDO6HFRQ

ÏGÐ	Q	[redacted]
	show dot1x auto-req	**ßAxAXA5ßÄ**

ÏGÄÈ -

4.10 dot1x client-probe enable

ÔÃ“vs6Ñ

dot1x client-probe enable

no dot1x client-probe enable

ÐAÈ	–D	EÄ
	-	-

5,Õs“““Hab-13m6MÄÑ0Pfr99999ÄFAÑ0cEÄDSÑ,Õs“““Hd,ÔÃV014M6MÄÑfr99999ÄÑMAaÑÄ014@

ÏGÄÈ	-

4.11 dot1x critical

Ý RADIUS AxAá<[ÊX 802.1x AxAÈ<ÏÚ5BJÈ
,ÊxAÈ“KÂ%4Ë/ÈÄ“KÂ%4ÊÃ
Ê<CÃxAÄ inaccessible Authentication Bypass ÈT/Ä IABs6Ñ
Sü **no** ÉÑÇ75Ã
dot1x critical
no dot1x critical

ÏDAÈ	–D	ÉÄ
	-	-

Ï5,Õ5BÐ	5,ÕKÁ
ÏÇ	0Ã5Bã
ÏSÊ	0Ã IAB s6Ñp<G5B,X 802.1x AxAÈ<,Ï RADIUS AxAÈ©
	ë<,X RADIUS á<<FÊÈEÈ› IAB ÉÈ> 5%4Ã“KÊÕ
	EAPOL-SUCCESS y[Ä
	Vp 802.1x AxAÈ<ÈB RADIUS AxAÈ,ÏWAxAÈ IAB s6ÑÐ
	aaa authentication dot1x default group radius noneÈ RADIUS AxAÈ,ü none AxA•
	Ã
	bÈÈ› IAB ÈXÈb'BAxÐ,ÑÈ6G5BAuä6ÑÁ
	aÈCKAuÄÈ
	<Ô AAA ÎAxAs6Ñ802.1x ÄxAÊSü<G5B,XÈ<Äb IAB s6Ñ
	• 802.1x <G5BÈ<,X RADIUS á<<F,ÈÊÎAxAäÈÔEg9ü
	Ê AAA ÎAxAs6Ñ0Ã

ÏG5B_Ð	5XLMLHFRQJXUHWHUPLQO
	(QWHUFRQJXUDWLRQRPPDQVRQSHUOLQ(QZWK&7/=
	5XLMLHFRQJJQWHUIDFHID
	5XLMLHFRQJJIGRW[Ï
	Ï Ï
	Ï

ÏÇÐ	Q	ÉÄ
	-	-

ÏGÄÈ	-

4.12

RADIUS

VLAN

VLAN

5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJGRW[HDSROWDJ
5XLMLHFRQJHQ
5XLMLH

Q	Ä
show dot1x	802.1x ,XA'5BÇÄ

-

4.17 dot1x guest-vlan

G5BÁÆ **guest vlan** CÇÄÀÇX **no** EÍMÃGKÁÔÄ

dot1x dynamic-vlan *vid*

no dot1x guest-vlan

–D	Ä
vid	**ÐX8È**1 - 4094>

5,Õ5BÐ 5,ÕÔGKÁ

0Ã5B

1Ô Sü guest vlan s6ÑG5B **dot1x dynamic-vlan enable** guest vlan Ä

1Ö5B guest vlan s6ÑÂ0,Ã2ÀG5B0Ãp vlanÄ

1Ñü **show running-config** 802.1x A'5BÄ

M6A'5B 802.1x ,X guest vlan CÇ,Ã_Ö

5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJGRW[XHVWYODQ
5XLMLHFRQJHQ
5XLMLH

Q	Ä
show running-config	802.1x ,XA'5BÇÄ

-

4.18 dot1x mac-auth-bypass

A'5B MAC CÃxAÄ

dot1x mac-auth-bypass

no dot1x mac-auth-bypass

DAB	–D

ÌGÐ

Q	EÄ
show dot1x port-control interface	**y,X** 802.1x ÇÄ

ÏGÄÐ -

4.20 dot1x mac-auth-bypass violation

A’5B 802.1x MAC €ÃxA,XE±Ä

dot1x mac-auth-bypass violation

no dot1x mac-auth-bypass violation

ÏÐÄÐ

–D	EÄ
-	-

5,Õ5BÐ 5,Ð±ÓÚ

Ð yG5BÄ

SÐ Sü **show run** Q 802.1x A’5BÄ

ÏG5B_Ð M6A’5B 802.1x MAC €ÃxAE±,X_Ö

5XLMLHFRQ XUHWHUPLQO

5XLMLHFRQ WHUIDFHID

5XLMLHFRQ IIGRW[PDFDXWKE SDVVYLRODWLRQ

5XLMLHFRQ IIHQ

5XLMLHZLWH

ÌGÐ

Q	EÄ
show dot1x port-control interface	**y,X** 802.1x ÇÄ

ÏGÄÐ -

4.21 dot1x mac-move permit

G5B 802.1x ÄxAE EÄ W0Ã,ÃW0ÃÑ

A0Ã“KÂ%4Ä

Sü **no** **dot1x mac-move permit**

no dot1x mac-move permit

show dot1x	ß 802.1x ,XA’5BÇÄ

ÏGÄÈ -

4.23 dot1x port-control auto

ÿG5BÈ’5BA¹yútAxAÄÈ¹Q **no** EÍMÚA’5B6ã,Õ

dot1x port-control auto

no dot1x port-control

ÏÐÀÈ

–D	ÉÄ
-	-

Ï,Õ5BÐ y5,Õt 802.1x AxAÄ

ÏÇ yG5Bã

ÏSÎ Ãü **show dot1x** Q 802.1x A’5BÄ

ÏG5B_Ð M6A’5B0Ã 802.1x –ãxA•X_Ö

5XLMLHFRQJXUHWHUPLQO

5XLMLHFRQJWHUIDFHJ

5XLMLHFRQJIGRW[SRUWFRQWURODXWR

5XLMLHFRQJIHQ

5XLMLH

ÏGÇ

Q	ÉÄ
show dot1x	ß 802.1x ,XA’5BÇÄ

ÏGÄÈ -

4.24 dot1x port-control-mode

802.1x ÍX{TAxÈ MAC E> {,XÈÉAxA•XÑ5%4Èà

ÍyÐÃ5%4Èà0Ã,X{ã</ÐÃxA•

EÉÐÃxA•ÑÐÃ5%4Ã0Ã

,X{ÈÃ0ÃxAEÉÐÃxA•ÑÃ,XS5%4Ä

ÿX{ÈÃxA•Ãp,ÿW,XÿÈÃXÝ

ÿ8ÈÃxAÄG5BAxAÃÇÕ

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

no dot1x port-control-mode

–D	E Ä
mac-based	**b** mac ,X 802.1X A“K{Â
port-based	**b0Ã** 802.1X A“K{Â
single-host	**b0Ã** 802.1x A“K{Â

5,Õ5BÐ 5,Õ mac-based A“K{Â

yG5BÄ

show dot1x port-control 802.1x A’5BÄ single-host b0Ã,X 802.1x A“K{Ê **show dot1x port-control** port-based **show running-config** **dot1x port-control-mode port-based single-host** single-host +b G5B0Ã default-user-limit single-host G5B single-host G5B default-user-limit DG£ single-host ¼ A%Ä

G5B_Ð _ 1 6A’5B0Ã 802.1x –AxA,X_Ö

5XLMLHFRQ1WHUIDFHJ
5XLMLHFRQ1IGRW[SRUWFRQ WURODXWR
5XLMLHFRQ1IGRW[SRUWFRQ WUROPRGHSRUWEDVHG
5XLMLHFRQ1IHQ
5XLMLH

_ 2 6A’5B0Ã 802.1x AxA,X_Ö

5XLMLHFRQ1WHUIDFHJ
5XLMLHFRQ1IGRW[SRUWFRQ WURODXWR
5XLMLHFRQ1IGRW[SRUWFRQ WUROPRGHSRUWEDVHGVLQ HKRVW
5XLMLHFRQ1IHQ
5XLMLH

Q	E Ä
show dot1x port-control	**Ã** 802.1x ,XA’5BÇÄ
Show running-config	**6A5B Ä**

-

4.25 dot1x private-supplicant-only

G5B A’5B0Ã **o** E MA’5B6 ,Õ

dot1x private-supplicant-only

no dot1x private-supplicant-only

–D	E Ä

-	-

5,Õ5BÐ 5,Õ$

Ð <G5BÄ

SÊ Ãü **show dot1x private-supplicant-only** Q 802.1x A’5BÄ

G5B_Ð M6A’5BSÝ0,X_Ð

5XLMLHFRQJXUHW

5XLMLHFRQJGRW[SULYDWHVXSSOLFDQWRQ\

5XLMLHFRQJHQ

5XLMLH

ÌGÐ

Q	EÄ
show dot1x private-supplicant-only	**A5BÄ**

GÄÐ -

4.26 dot1x probe-timer

G5Bv0ÃÊ.

dot1x probe-timer{**interval** | **alive**}*interval*

no dot1x probe-timer

ÐAÐ

–D	EÄ

+HOOR,WHUYDO6HFRQV
+HOORSDLYH6HFRQV

Q	E
Show dot1x probe-timer	**/v0ÃvÿÊ5B**

-

4.27 dot1x re-authentication

SAQ'5B0'GAEÙG,AxAÄAQX **no** EÝMÚA'5B65,Õ
dot1x re-authentication
no dot1x re-authentication

–D	E
-	-

5,Õ5BÐ 5,ÕGAEÙG,AxAÄ

<G5BÄ

A'5BÄ4ÇxAGAEÙxAEÈÊÔÊÈNOG,AxÄÄ **show dot1x Q**
β 802.1x A'5BÄ

M6Ô,AxAs6Õ
5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJGRW[UHDXWKHQWLFDWLRQ
5XLMLHFRQJHQ
5XLMLHVKRZGRW[
;6WDWXV(QEOHG
$XWKHQWLFDWLRQRGH($0'
$XWKHG8VHU1XPEHU
5HDXWKHQQEOHG(QEOHG
5HDXWKHQHULRGVHF
4XLHW7LPHU3HULRGVHF
7[7LPHU3HULRGVHF
6XSSOLFDQW7LPHRXWVHF
6HUYHU7LPHRXWVHF
5HDXWKHQD[WLPHV
0D[LPXP5HTXHVWWLPHV
)LOWHU1RQ6XSSLVDEOHG
&LHQW2OLQ3UREHLVDEOHG
(DSRO7D(QEOHLVDEOHG

```
$XWKRUL]DWLRQRGH*URXS6HUYHU
```

ÏGQ

Q	£Ä
show dot1x	ß 802.1x ,XA'5BCÄ

ÏGÄÐ -

4.28 dot1x reauth-max

SAQ'5BGAÊÕ,AxA•DÄAQX **no** EÍMÁÚA'5B65,Õ
dot1x reauth-max *count*
no dot1x reauth-max

ÏÐAÐ

–D	£Ä
count	**Ô,AxA•DÄ**

ÏÕ5BÐ 5,Õ 3

ÏQ <G5BÄ

ÏSÔ A'5BÄ8QxA•GAÊÕ,AxA•BÙX ÕÄ **show dot1x** Q 802.1x
A'5BÄ

ÏG5B_Ð M6A'5BG,AxAÔs6Õ

```
5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJGRW[UHDXWKPD[
5XLMLHFRQJHQ
5XLMLHVKRZGRW[
;6WDWXV(QEOHG
$XWKHQWLFDWLRQRGH($0'
$XWKHG8VHU1XPEHU
5HDXWKHQQEOHG(QEOHG
5HDXWKHQHULRGVHF
4XLHW7LPHU3HULRGVHF
7[7LPHU3HULRGVHF
6XSSOLFDQW7LPHRXWVHF
6HUYHU7LPHRXWVHF
5HDXWKHQD[WLPHV
0D[LPXP5HTXHVWWLPHV
)LOWHU1RQ6XSSLVDEOHG
&LHQW2OLQ3UREHLVDEOHG
(DSRO7D(QEOHLVDEOHG
$XWKRUL]DWLRQRGH*URXS6HUYHU
```

ÏGQ	Q	EÄ
	show dot1x	ß 802.1x ,XA'5BÇÄ

ÏGÄÈ -

4.29 dot1x stationarity enable

802.1x ÎÙ0Ã{ÈAxÈÃÈ¼CEÈMÈ
A}ÙÑÙ 802.1X 0ÃÈ9ÃÈ.G5BÇ',ÂXÄ

dot1x stationarity enable

no dot1x stationarity enable

ÏDAÈ	–D	EÄ
	-	-

ÏÕ5BÐ 5,ÕÃÈ¼CEÄ

ÏQ <G5BÄ

ÏSÎ LÔÍAxA.G5BÇÈÔÍÇAxAÄ

ÏG5B_Ð M6A'5B0Ã 802.1x –ÂxA,X_Ö

5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJGRW[VWDWLRQULWHQEOH
5XLMLHFRQJHQ
5XLMLH

ÏGQ	Q	EÄ
	-	-

ÏGÄÈ -

4.30 dot1x timeout quiet-period

SÙÇ'5BA'ÛxAÈÄVAxAÇÃÃÈGÇAxA,X1YÊÈÐÃÙ
AÇX **no** EÝMÚÄ'5B65,Õ

dot1x timeout quiet-period *seconds*

no dot1x timeout quiet-period

ÏDAÈ	–D	EÄ
	seconds	**AÛxAxfÈÃÈGÇAxA,X1ÊÈ** 0 65535Ä s

ï5,Õ5BÐ	5,Õ 10 /Ä
ÏQ	<G5BÄ
ÏSÎ	GAËÙxAÞÅ0ÈÇKGÇxAÈÑO1YÊÃü **show dot1x** Q
ÏG5B_Ð	M6A’5BGÇxA1YÊÈ 1000sÖ

```
5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJGRW[WLPHRXWTXLHWSHULRG
5XLMLHFRQJHQ
5XLMLHVKRZGRW[
;6WDWXV(QDEOHG
$XWKHQWLFDWLRQRGH($0'
$XWKHG8VHU1XPEHU
5HDXWKHQQDEOHGLVDEOHG
5HDXWKHQ3HULRGVHF
4XLHW7LPHU3HULRGVHF
7[7LPHU3HULRGVHF
6XSSOLFDQW7LPHRXWVHF
6HUYHU7LPHRXWVHF
5HDXWKHQD[WLPHV
0D[LPXP5HTXHVWWLPHV
)LOWHU1RQ56XSSLVDEOHG
&LHQW2OLQ3UREHLVDEOHG
(DSRO7D(QDEOHLVDEOHG
$XWKRUL]DWLRQRGH*URXS6HUYHU
```

ÏGÇQ	Q	ÆÄ
	show dot1x	ß 802.1x ,XA’5BÇÄ

ÏGÄÈ -

4.31 dot1x timeout re-authperiod

U'GAËÙÊÇxA,•XÔÊÑÇ’5BGAËÙXGÇxAÊÈÈhÈGAxA<Ëü	
AÇX **no** EÍMÁÄ’5B65,Õ	

dot1x timeout re-authperiod *seconds*

no dot1x timeout re-authperiod

ÏÐÄÈ	–D	ÆÄ
	seconds	**AxAÇ8È** 0 65535Ä sÄ

ï5,Õ5BÐ 3600 /¦

Ð <G5BÄ

ÏSÊ Ãŭ **show dot1x** Q 802.1x A’5BÄ

Ï5B_Ð M6A’5BG¡AxA<ó 1000sÖ

```
5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJGRW[WLPHRXWUHDXWKSHULRG
5XLMLHFRQJHQ
5XLMLHVKRZGRW[
;6WDWXV(QDEOHG
$XWKHQWLFDWLRQRGH($0'
$XWKHG8VHU1XPEHU
5HDXWKHQDEOHGLVDEOHG
5HDXWKHQHULRGVHF
4XLHW7LPHU3HULRGVHF
7[7LPHU3HULRGVHF
6XSSOLFDQW7LPHRXWVHF
6HUYHU7LPHRXWVHF
5HDXWKHQD[WLPHV
0D[LPXP5HTXHVWWLPHV
)LOWHU1R56XSSLVDEOHG
&LHQW2OLQ3UREHLVDEOHG
(DSRO7D(QDEOHLVDEOHG
$XWKRUL]DWLRQRGH*URXS6HUYHU
```

ÏGÐ

Q	ÆÄ
show dot1x	ß 802.1x ,XA’5BÇ

ÏGÄÐ -

4.32 dot1x timeout server-timeout

AÇ’5BA’ÛxAá<KÈxA×f,XCYÊÃÇX **no** EÝMÁ’5B65,Õ

dot1x timeout server-timeout *seconds*

no dot1x timeout server-timeout

ÏÐAÐ

–D	ÆÄ
seconds	**AÛxAáÈxA×f,XCÊÈ** 0 65535Ä

Ï5,Õ5BÐ 5,Õ 5 /Ä

Ð <G5BÄ

ÏÊÐ Ãŭ **show dot1x** Q 802.1x A’5BÄ

ÏG5B_Ð M6A’5Bá<xfCYÊÈ 10sÖ

5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJGRW[WLPHRXWVHUYHUWLPHRXW
5XLMLHFRQJHQ
5XLMLHVKRZGRW[
;6WDWXV(QEOHG
$XWKHQWLFDWLRQRGH($0'
$XWKHG8VHU1XPEHU
5HDXWKHQQEOHGLVDEOHG
5HDXWKHQHULRGVHF
4XLHW7LPHU3HULRGVHF
7[7LPHU3HULRGVHF
6XSSOLFDQW7LPHRXWVHF
6HUYHU7LPHRXWVHF
5HDXWKHQD[WLPHV
0D[LPXP5HTXHVWWLPHV
)LOWHU1RQ6XSSLVDEOHG
&LHQW2OLQ3UREHLVDEOHG
(DSRO7D(QEOHLVDEOHG
$XWKRUL]DWLRQRGH*URXS6HUYHU

ÏÏGÐ

Q	ÆÄ
show dot1x	¦ß 802.1x ,XA’5BÇ

ÏGÄÈ -

4.33 dot1x timeout supp-timeout

AÇ’5BA’ÛGAËÈxAxf,XCYÊÈÃÇX **no** EÝMÁA’5B65,Õ

dot1x timeout supp-timeout *seconds*

no dot1x timeout supp-timeout

ÏÐAÈ

–D	ÆÄ
seconds	**AÛGAËÈxAxf,XCÊÈ** 0 65535Ä

ÏÏ5,Õ5BÐ 5,Õ 3 /Ä

ÏÇ <G5BÄ

ÏÊÐ Ãŭ **show dot1x** Q 802.1x A’5BÄ

ÏG5B_Ð M6A’5Bv0ÃfCYÊÈ 10sÖ

```
5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJGRW[WLPHRXWVXSSWLPHRXW
5XLMLHFRQJHQ
5XLMLHVKRZGRW[
;6WDWXV(QDEOHG
$XWKHQWLFDWLRQRGH($0'
$XWKHG8VHU1XPEHU
5HDXWKHQQDEOHGLVDEOHG
5HDXWKHQ3HULRGVHF
4XLHW7LPHU3HULRGVHF
7[7LPHU3HULRGVHF
6XSSOLFDQW7LPHRXWVHF
6HUYHU7LPHRXWVHF
5HDXWKHQD[WLPHV
0D[LPXP5HTXHVWWLPHV
)LOWHU1RQ6XSSLVDEOHG
&LHQW2OLQ3UREHLVDEOHG
(DSRO7DQDEOHLVDEOHG
$XWKRUL]DWLRQRGH*URXS6HUYHU
```

ÏGÐ

Q	ÆÄ
show dot1x	ß 802.1x ,XA'5BÇÄ

ÏGÄÈ -

4.34 dot1x timeout tx-period

A'5BÿZ[GôXÔÈÀQ'5BÈGôXÊÈÈÈGêÄÀQX **no** EÝ
NMÚA'5B65,Õ

4@

```
5XLMLHFRQJHQ
5XLMLHVKRZGRW[
;6WDWXV(QDEOHG
$XWKHQWLFDWLRQRGH($0'
$XWKHG8VHU1XPEHU
5HDXWKHQDEOHGLVDEOHG
5HDXWKHQ3HULRGVHF
4XLHW7LPHU3HULRGVHF
7[7LPHU3HULRGVHF
6XSSOLFDQW7LPHRXWVHF
6HUYHU7LPHRXWVHF
5HDXWKHQD[WLPHV
0D[LPXP5HTXHVWWLPHV
)LOWHU1RQ56XSSLVDEOHG
&LHQW2OLQH3UREHLVDEOHG
(DSRO7DQDEOHLVDEOHG
$XWKRUL]DWLRQRGH*URXS6HUYHU
```

Q	£Ä
show dot1x	ß 802.1x ,XA'5BQÄ

-

4.35 aaa authorization ip-auth-mode {disabled | dhcp-server | radius-server | supplicant }

A'5B ip \XÈ disableÈ dhcp-server Èradius-server ` supplicant ã

aaa authorization ip-auth-mode {**disabled** | **dhcp-server** | **radius-server** | **supplicant** }

no aaa authorization ip-auth-mode

–D	£Ä
disabled	ip \ disable ã
dhcp-server	ip \ dhcp-server ã
radius-server	ip \ radius-server ã
supplicant	ip \ supplicant ã

5,Õ disable ã

<G5BÄ

Ã ü **show running-config** Q A'5BÄ

M6A'5B ip ã radius-server

5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJDDDQPRGHO
5XLMLHFRQJDDDDXWKRUL]DWLRQSDXWKPRGHUDGLXVVHUYHU
5XLMLHFRQJHQ
5XLMLHVKRZXQRQJ

```
5HDXWKHQ D[WLPHV
0D[LPXP5HTXHVWWLPHV
)LOWHU1RQ 6XSSLVDEOHG
&OLHQW2OLQH3UREHLVDEOHG
(DSRO7DQ EOHLVDEOHG
$XWKRUL]DWLRQ RGH*URXS6HUYHU
0RYH3HUPLW Q EOHG
```

ÏĜĐ

Q	ĘÄ
dot1x auth-mode	**A5B** 802.1x ,XAxAÄ
dot1x max-req	**A5B ÕĞ[X ÐÄ**
dot1x port-control auto	**A5B ÁxAÄ**
dot1x reauth-max	**A5B AÖÕĜ AxA Ð**
dot1x re-authentication	**A5B ĜAÈĜ AxAÄ**
dot1x timeout quiet-period	**A5B xAÈĜ AxA 1Ä**
dot1x timeout re-authperiod	**A5B AÈĜ AxAÄ**
dot1x timeout server-timeout	**A5B xAÈ xAxfXCÄ**
dot1x timeout supp-timeout	**A5B ĜAÈ xAxfXCÄ**
dot1x timeout tx-period	**A5B ĜÄÈĜÄ**

ĞÄĐ   -

4.37 show dot1x auth-address-table

AĐ   802.1X AÆxA,X><Ä

show dot1x auth-address-table[*addressmac-addr*][*interface interface*]

ĐAĐ

–D	ĘÄ
mac-addr	**ÃxAX(}Ú**
interface	**yË**

Ĕ,Õ5BĐ   -

ĔpÜĕ"i"i"i"i"i"i"i"i"mF43VA" ĔpÜĜs=ÄÌpÜi"i"i"i"i"i"i"i"i•ĞRG_Ė04D@AHiRe@@

ÌÎGÐ

Ç	ÉÄ
dot1x auth-mode	**A5B** 802.1x ,XAxAÄ
dot1x max-req	**A5BÔÊÿ[X ÐÄ**
dot1x port-control auto	**A5BÉÄxAÄ**
dot1x reauth-max	**A5BAËÔÿ,xA•Ð**
dot1x re-authentication	**A5BÜGAËÒÒÿ,xAÄ**

dot1x timeout re-authperiod	**A5BAËÙG¡AxAÊÄ**

C4>Tj /TT0 1 Tf ( )T07.8 0.602 g 11

Ö (Mã

ÖÊ -

Ö5B_Ð M6/_Ö

5XLMLHVKRZGRW[SULYDWHVXSSOLFDWRQ\
SULYDWHVXSSOLFDWRQGLVDEOHG
5XLMLH

ÏGÐ

Q	ÆÄ
dot1x auth-mode	**A5B** 802.1x ,XAxAÄ
dot1x max-req	**A5BÔÊ[X DÄ**
dot1x port-control auto	**A5BÄxAÄ**
dot1x reauth-max	**A5BAËÔ,AxA•D**
dot1x re-authentication	**A5BÏGAËÒG,AxAÄ**
dot1x timeout quiet-period	**A5BxAÂÊG,AxA,X1Ê**
dot1x timeout re-authperiod	**A5BAËÙG,AxAÊÄ**
dot1x timeout server-timeout	**A5BxAáÈxAxf,XCÊ**
dot1x timeout supp-timeout	**A5BÔAËÈxAxf,XCÊ**
dot1x timeout tx-period	**A5BÊÊGÄ**

ÏGÄÈ -

4.42 show dot1x probe-timer

/v0Ã“v#ÊG5B

show dot1x probe-timer

ÐAÈ

–D	ÆÄ
-	-

Ö,Õ5BÐ -

Ö (Mã

ÖÊ /v0Ã“v#ÊG5B

Ö5B_Ð M6/_Ö

5XLMLHVKRZGRW[SUREHWLPHU
+HOOR,WHUYDO6HFRQV
+HOOR$LYH6HFRQV

ÏĈĢĮ

Ç	Ł Ä
dot1x auth-mode	**A5B** 802.1x ,XAxAÄ
dot1x max-req	**A5B**Ê Ô ê p [X Ð Ä
dot1x port-control auto	**A5B** ÿ é AxAÄ
dot1x reauth-max	**A5B** Ä Ë Ô Ą AxA • Ð
dot1x re-authentication	**A5B** Ø Ć A Ë ò Ĉ Ą AxAÄ
dot1x timeout quiet-period	**A5B**ÊxA**Ê**Ê Ĉ Ą AxA Ɣ 1 Ê
dot1x timeout re-authperiod	**A5B** Ä Ë Ø Ĉ Ą AxA Ê Ä
dot1x timeout server-timeout	**A5B**ÊxA á Ê xA x fƔ C Ê
dot1x timeout supp-timeout	**A5B**Ê Ô A Ë Ê xA x fƔ C Ê
dot1x timeout tx-period	**A5B** Ĉ ß Ê Ê Ĉ Ą

ĊÄÊ -

4.43 show dot1x re-authentication

/GĄxAĊ5B

show dot1x re-authentication

ĊAÊ

–D	Ł Ä
-	-

Ƃ,Õ5BĐ

Ê (Mã

ĊƑ GĄxAĊ5B‰

ĊG5B_Đ ℳ6/_Ƒ

```
5XLMLHVKRWGRW[UHDXWKHQWLFDWLRQ
UHDXWKHQWEOHGGLVDEOHG
```

ÏĈĢĮ

Ç	Ł Ä
dot1x auth-mode	**A5B** 802.1x ,XAxAÄ
dot1x max-req	**A5B**Ê Ô ê p [X Ð Ä
dot1x port-control auto	**A5B** ÿ é AxAÄ
dot1x reauth-max	**A5B** Ä Ë Ô Ą AxA • Ð
dot1x re-authentication	**A5B** Ø Ć A Ë ò Ĉ Ą AxAÄ
dot1x timeout quiet-period	**A5B**ÊxA**Ê**Ê Ĉ Ą AxA Ɣ 1 Ê
dot1x timeout re-authperiod	**A5B** Ä Ë Ø Ĉ Ą AxA Ê Ä
dot1x timeout server-timeout	**A5B**ÊxA á Ê xA x fƔ C Ê
dot1x timeout supp-timeout	**A5B**Ê Ô A Ë Ê xA x fƔ C Ê
dot1x timeout tx-period	**A5B** Ĉ ß Ê Ê Ĉ Ą

ÏGÄÈ	-

4.44 show dot1x reauth-max

/GAxAÔ

show dot1x reauth-max

Ï5,Õ5BÐ -

Ïð (Mã

ÏSÊ /VÙG5B

ÏG5B_Ð M6/_Ö

```
5XLMLHVKRZGRW[VXPPDU\
,8VHU0$Q VHUIDFH9/$$XWK6WDWH
%DFNHQ6WDWH3RUW6WDWXV8VHU7\SH7LPH



WVXVHUDHDD)D$XWKHQWLFDWHG
,GOH$XWKHGVWDWLFGDVKPV
```

ÌÏGÐ

Q	EÄ
dot1x auth-mode	**A5B** 802.1x ,XAxAÄ
dot1x max-req	**A5BÔÊÊ[X ÐÄ**
dot1x port-control auto	**A5BÁxAÄ**
dot1x reauth-max	**A5BAÈÔÀxA•Ð**
dot1x re-authentication	**A5BÏGAÈÒÔÀxAÄ**
dot1x timeout quiet-period	**A5BxAÀÀÊÔÀxAX1Ê**
dot1x timeout re-authperiod	**A5BAÈÒÀxAÊÄ**
dot1x timeout server-timeout	**A5BxAáÈxAxfXCÊ**
dot1x timeout supp-timeout	**A5BÔAÈÒxAxfXCÊ**
dot1x timeout tx-period	**A5BÔÀÊÈÒÀ**

ÏGÄÐ -

4.46 show dot1x timeout

AÐ 802.1X CYÊDÔ

show dot1x timeout quiet-period

show dot1x timeout re-authperiod

show dot1x timeout server-timeout

show dot1x timeout supp-timeout

show dot1x timeout tx-period

ÏÐAÐ

Q (Mã

S /CYÊDG5B

G5B_Đ M6/_S

5XLMLHVKRZGRW[WLPHRXWTXLHWSHULRG
TXLHWSHULRGVHF
5XLMLH

ÌGQ

Q	ÆÄ
dot1x auth-mode	**A5B** 802.1x ,XAxAÄ
dot1x max-req	**A5BÔp[X DÄ**
dot1x port-control auto	**A5BÁxAÄ**
dot1x reauth-max	**A5BAÊÔ,AxA•D**
dot1x re-authentication	**A5BGAÊÒ,AxAÄ**
dot1x timeout quiet-period	**A5BxAÊÈG,AxA,X1Ê**
dot1x timeout re-authperiod	**A5BAÊÙG,AxAÊÄ**
dot1x timeout server-timeout	**A5BxAáÈxAxf,XCÊ**
dot1x timeout supp-timeout	**A5BÔAÊÈxAxf,XCÊ**
dot1x timeout tx-period	**A5BÊÈGÁ**

GÄÈ -

4.47 show dot1x user id

AQ 802.1X AxAG5B<Q

show dot1x user id <*id*>

ÐAÈ

–D	ÆÄ
id	**ü** show summary Î„Xü id

5,Õ5BÐ -

Q (MÄ

S /(MnÿXQ

G5B_Đ M6/_S

5XLMLHVKRZGRW[XVHULG
8VHUQPHFDLNRY
LG

```
7SHVWDWLF
0DFDGGUHVVLV
9ODQGLV
$FFHVVIURPSRUWL
8VHULSDGGUHVVLV
0D[XVHUQPEHURWKLVSRUWLV
&6RWKLVSRUWLV
8SEDQZGWKLVNESV
RQDQZGWKLVNESV
$WKRUL]DWLRQODQVGHS
$WKRUL]DWLRQHHVLRWLPHLVVHFRQV
$WKRUL]DWLRQSDGGUHVVLV
6WDUWDFFRXWLQ
3HUPLWSUR[XVHU
3HUPLWGLDOXVHU
,3SULYLOLHLV
```

ÏGQ

Q	EÄ
dot1x auth-mode	**A5B** 802.1x ,XAxAÄ
dot1x max-req	**A5BÔ[X DÄ**
dot1x port-control auto	**A5BÄxAÄ**
dot1x reauth-max	**A5BAÈÔ,xA•D**
dot1x re-authentication	**A5BGAÈÒG,xAÄ**
dot1x timeout quiet-period	**A5BxAÈÈG,xAX1Ê**
dot1x timeout re-authperiod	**A5BAÈÙG,xAÊÄ**
dot1x timeout server-timeout	**A5BxAáÈxAxf,XCÊ**
dot1x timeout supp-timeout	**A5BÔAÈÈxAxf,XCÊ**
dot1x timeout tx-period	**A5BÊÈGÄ**

ÏGÄÈ -

5 Web

5.1 dot1x redirect

ÜG5B<,Xv0ÃÇ6ÑÏ> <G5BÇ **dot1x redirectÄÇ** **no 6ÑÉv**

0Ñ6Ñ

dot1x redirect

no dot1x redirect

ÏÐAÈ	–D	ÉÄ
	-	-

ÏÕ5BÐ -

ÏÇ (Mã

ÏÊ -

ÏG5B_Ð M6A'5BÊ,Xv0ÃÇ6Ñ_$ Ö

5XLMLHFRQ XUHWHUPLQO

5XLMLHFRQ GRW[UHGLUHFW

ÏÇ

Ç	ÉÄ
http redirect	**G5B** HTTP GnåX IP
http redirect direct-site	**A5BxAX54Cd8È**
http redirect homepage	**A5BnåIIMXNI**
http redirect port	**A5Ê(MÃ0Ã** HTTP ,X WEB AË È> Gnå
http redirect session-limit	**A5ÊxAÄÔ** HTTP ÃÐ
http redirect timeout	**A5ÃÕnÊXCÊ**
show http redirect	**/** HTTP GnåXG5B

ÏGÄÈ -

5.2 http redirect

ÜG5B HTTP GnåX IP s6ÑÏ> <G5BÇ **http redirectÄÇ** **no 6È** HTTP GnåX IP Ä

http redirect {*ip-address* | *ipv6-address*}

no http redirect

ÐAÐ	–D	EÄ
	ip-address	HTTP GnåX IPv4 Ä
	ipv6-address	HTTP GnåX IPv6 Ä

5,Õ5BÐ 5,ÕÁ'5B HTTP GnåX IPÄ IPv4 ê IPv6Å

Ð <G5BÄ

SÔ Ÿähü Web AxAs6ÑOA'5B HTTP GnåX IP È IPv4 ` IPv6 ,X HTTP GnåXÃ

ÏSÊÐ | Web AxAÈÊÊ› Web AxAÈÑ“KÂ%4ÊÈÂÒÔ5%4ÊÈÂxA•
ÈÃ“KÊoÇX5%4ÊÈÈ8Ä%02bAxA•X5%4ÊÈwÝ
FÑ“KÊÊ5%0Ä
ÂÇ5B 50 ÂxA•X5%4ÊÈ8È

ÏG5B_Ð _ 1Ö’5B IP 172.16.0.1 ,X5%0AxA•A“KÂX5%4ÊÈÄ
5XLMLHFRQ.KWWSUHGLUHFWGLUHFWVLWH

ÏÏGÇÐ

Ç	ÊÄ
show http redirect	ß HTTP GÇåXG5BÄ

ÏGÄÈÐ -

5.4 http redirect homepage

A’5BGÇåNIM6,XNIÃÇX **no ÉÑAxA•NIM6,XNIÄ**
http redirect homepage *url-string*
no http redirect homepage

ÏÐÄÈÐ

–D	ÊÄ
url-string	**NIÈ**“http://” ê “https://”ÊG5BáÈÕS z 255 þ0Ä

ÏÇÕ5BÐ 5,ÕÛAxA•NIM6,XNIÄ

ÏÇÐ <G5BÄ

ÏSÊÐ Ÿähü Web AxA•s6ÑÕG5BAxA•NIM6,XNIÄ

ÏG5B_Ð _ 1ÔAxA•NIM6,XNI http://www.web-auth.net/loginÄ
5XLMLHFRQ.KWWSUHGLUHFWKRPHSDJHKWWSZEDXWKQWORJQ

ÏÏGÇÐ

Ç	ÊÄ
show http redirect	ß HTTP GÇåXG5BÄ
http redirect	**A5BxAáX** IP Ä

ÏGÄÈÐ -

5.5 http redirect port

HTTP ,X WEB A

ÏSÊÐ Z6ÞAxA€K HTTP 5ÊÐÈ9A'ÛX TCP E²5ÊÔÿ9A'ÛÞAxA•
ÿXÔ HTTP ÎAÐÄ
+bÞAxA€ÊÐ HTTP ÎAÈÞX5ÏC3ÕÑÏ HTTP ÎAÈÄ
ÎAA'5BÞAxA•ÿXÔ HTTP ÎAÐ 1Ä

ÏG5B_Ð _ 1Ä'5BÞAxA•ÿXÔ HTTP ÎAÐ 4Ä
5XLMLHFRQLKWWSUHGLUHFWVHVVLRQLPLW

ÏGÞQ

Q	EÄ
show http redirect	ß HTTP GÞÅXG5BÄ

ÏGÄÈ s - /¦þ ! Á – E…ì " E•,Ì p¥ÿ ñÿQN?X < 1Aa`< < Ð õ ãþ "– E‡ Â ò 1Aa X_ðU0 d s

5.7

5.8 show http redirect

/ HTTP GŋåXG5BÄ

show http redirect

ÏÐAÈÐ

–D	£Ä
-	-

Ï5,Õ5BÐ -

ÏÐ -

ÏSÊÐ -

Ï5B_Ð _ 1Ö HTTP GŋåXG5BÄ

```
5XLMLHVKRZKWWSUHGLUHFW
+773UHGLUHFWLRQHWWLQ
VHUYHU
SRUW
KRPHSDJHKWWSH3RUWDOLQH[MVS
VHVVLRQLPLW
WLPHRXW

LUHFWVLWHV
$GUHVV06.$3%LQLQ

2Q
2II
2II
2II
2II

LUHFWKRVWV
$GUHVV0DVN3RUW$3%LQLQ

)D2Q
```

+%

homepage	GnåIIM6,XNIÄ
session-limit	HTTP
timeout	4
AxA5%4	

$DORZODQLVW

ÏÎGÇ

Ç	ÆÄ
web-auth allow-vlan	**A5B** VLAN ,X Web AxA•s6ÃÆxA•X VLAN ë<Ä

ÏGÄÀ -

5.10 show web-auth direct-host

/! web AxA•X8Ã

show web-auth direct-host

ÏÐAÀ

–D	ÆÄ
-	-

ÏÕ5BÐ -

ÏÇ (Mã

ÏSÎ -

ÏG5B_Ð _ 1ÏÎAxA•XÄ

[redacted]

$GUHVV0DVN3RUW$3%LQLQ

)DÀ0

5.11 show web-auth port-control

/yÞXAxA•G5B4ÀAuÇÄ

show web-auth port-control

ÏÐAÈ

–D	EÄ
-	-

ÏÕ5BÐ -

ÏÇ (Mã

ÏSÊ -

ÏG5B_Ð _ 1/yÞXAxA•G5B4ÀAuÇÄ

```
5XLMLHVKRZEDXWKSRUWFRQWURO
3RUWRQWURO

)DVW(WKHUQW2Q
)DVW(WKHUQW2Q
)DVW(WKHUQW2II
```

+‰	AÈ
Port	y9A'ÛX(=)ÚÃ
Control	A0ÐÃ Web AxAÄ

ÏÎGÇ

Q	EÄ
web-auth port-control	0ÃÃ Web AxAÄ

ÏGÄÈ -

5.12 show web-auth user

/ÊÛX4"ÇÈ IP yÃÃ"ÊÈÇÄ

show web-auth user [*ip-address* | *ipv6-address*]

ÏÐAÈ

–D	EÄ
ip-address	ÛÛX IPv4 Ä
ipv6-address	ÛÛX IPv6 Ä

Ï5,Õ5BÐ -

Ïð (Mã

ÏSÊ -

Ï5B_Ð _ 1Ö web AxA<G5B43AuÇÄ

```
5XLMLHVKRZIEDXWKXVHU
&UUHQWXVHUQP

$GUHVV2QLQ7LPH/LPLW7LPH8VHG6WDWXV

2QG$FWLYH
2Q$FWLYH
2II&UHDWH
2IIGGHVWUR\

5XLMLHVKRZIEDXWKXVHU
$GUHVV
0DFGI
3RUW)D
2QLQ2Q
7LPH/LPLWG
7LPH8VHGG
7LPH6WDUW
6WDWXV$FWLYH
```

+‰	AÈ
Address	¡X IP Ä
Mac	¡X MAC Ä
Port	Ëy,Xy9A'ÎX0Ã
Online	¡“Ä
Time Limit	¡XÃSLÈ ></LÄ
Time Used	¡“ÊÃ
Time Start	¡AxAEEÃ“,XÊÃ
Status	¡Ãctive ></¡“Èreate ></¡ ÎÃ'5BÈestroy ></¡ÃÃ VÈ8A'5BÄ

ÏÌGÇ

Q	EÄ
-	-

ÏGÄÈ -

5.13 web-auth allow-vlan

A’5BÎ VLAN ,X Web AxA•s6ÑÆxA•X VLAN ë<ÃÇX **no** Ï5Ï5Ë

web-auth allow-vlan *list*

no web-auth allow-vlan [*list*]

ÏÐAÈ

–D	ÆÄ
list	Ã VLAN ,X web AxA•X VLAN ë< *listÄ*

ÏÕ5BÐ 5,ÕÕ VLAN ,X Web AxA•s6ÑÙÁ’5BAÆxA•X VLAN ë<Ä

ÏÇ <G5BÄ

ÏSÎ A’5BAÆxA•X VLAN ë<ÃÎ VLAN ,XAxA•s6ÑÎ8ÆxA•X VLAN ë< Ä
ë<ÿÆ VLANÃÇKÃ VLAN ,XAxA•s6Ñ
ÙSÎ VLAN ,XAxA•s6ÑÈÔÀ’ÎX6(0Ã Web AxA•s6ÑÈ6(0Ã
;XÃÏO TRUNKÄ

ÏG5B_Ð _ 1Ö’5BAÆxA•X VLAN VLAN1Ã Ã Ã Ä
5XLMLHFRQÆEDXWKDOORZODQ

ÏÌGÇ

Q	ÆÄ
show web-auth allow-vlan	Ã VLAN ,X Web AxA•X VLAN ë<µ CÄ

ÏGÄÈ -

5.14 web-auth direct-host

A’5BÍÔxAÚ IP 8ÃÇX **no** ÍÔxAÄ

web-auth direct-host { *ipv6-address* | *ipv6-prefix/prefix-length* | *ip-address* [*ip-mask*] [**arp**] } [**port** *interface-name*]

no web-auth direct-host { *ipv6-address* | *ipv6-prefix/prefix-length* | *ip-address* [*ip-mask*] }

ÏÐAÈ

–D	ÆÄ
ipv6-address	ÔxAÏ IPv6 Ä
ipv6-prefix/prefix-length	Ô IPv6 4ÔSÈ</A¹ IPv6 8È,XÈÑÔxAÄ
ip-address	ÔÄ IPv4 Ä
ip-mask	ÃÄ IPv4 }-Ã

port *interface-name*	IP
arp	ARP CHECK IP ARP **arp** IPv4

Web

Web

Web

50

0A’5Bd#AxA•

ÏDAÐ	–D	

Ü4“¢,XÊÈÈhÈ8Ç

ÏG5B_Đ _ 1Ö'5B4“¢,XÊÈÈh 30 /Ä

5XLMLHFRQ.ZEDXWKXSGDWHLQWHUYDO

ÏGÇ

Ç	ÉÄ
-	-

ÏGÄÈ -

6 SSH

6.1 crypto key generate

á<0,ÃXÉ¡ÈG5BÈ> Ç

crypto key generate {**rsa | dsa**}

ÐAÈ	–D	£Ä
	rsa	á RSA ÿ
	dsa	á DSA ÿ

ï5,Õ5BÐ TAx%% SSH Server ïÉ¡ÄÄ

Ç <G5Bã

ÏSÐ LÔÔ SSH Server áÊE8Ç SSH á<0,ÃXÉ¡Â **enable service ssh-server** Ç SSH Server s6Ñ SSH 1 Sü RSA ÿ8 SSH 2 Sü RSA 6Ù DSA ÿÄ 8ÈpÈ RSA ÿÈ SSH1 â SSH2 FÃÈpá DSA ÿÊ SSH2 ÃÄ

DSA RSA

DSA RSA ϟ

ÏGÐ

Q	EÄ
show ssh	/4ÊÖX SSH EÿÂ¢
clear line vty *line-number*	ÊX VTY EÿÂ±

ÏGÄÈ -

6.4 ip scp server enable

5%4Â'Ô SCP á<s6Ñ5%4Â'ÛX[Ê> E¢Ê
75%4Â'ÊfDB[6Ê> ÊgÈÁxA]<1(MÄ

ip scp server enable

no ip scp server enable

ÏÌDAÈ

–D	EÄ
-	-

ÏÕ5BÐ 5,Ã'5BÔ SCP á<s6Ñ

ÏÇ <G5Bã

ÏSÔ

ÏG5B_Ð Ô scp s6Ñ

5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJLSVFSVHUYHUHQEOH

ÏGÐ

Q	AÈ
show ip ssh	ß ssh-server ,X(Ñ

ÏGÄÈ -

6.5 ip ssh authentication-retries

A'5B SSH Server ÄxA,XG,AxA•DÄÄQX no EÍMÁxA,XG,AxA•D65,Ã'
5BÄ

ip ssh authentication-retries *retry times*

no ip ssh authentication-retries

ÏÐAÈ

–D	EÄ
retry times	G5BÄxA,XG,AxA•D

ÏÕ5BÐ 5,Ã'5BG,AxA•D 3 Ä'5BG,AxA•DÈü **no ip ssh authentication-retries** ÇÃ

SA’5B6ãTAxÄ

Ð <G5Bã

ÏSÊ AQ5B SSH Server E> ÄxA•XGAxA•DÄYE› SSH Server G5B,XGAxA•DÈÁx
AëÊxAxAÈÄü **show ip ssh Q** SSH Server ,XG5BÇÄ

ÏG5B_Ð A’5BÄxA•XGAxA•D 2Ö

5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJISVVKDXWKHQWLFDWLRQHWULHV

ÏGÇ

Q	EÄ
show ip ssh	ß SSH Server ,XÕ

ÏGÄÈ -

6.6 ip ssh time-out

A’5B SSH Server ,XÄxA•CYÊÈÇX no EÍMÄxA•CYÊÈ’5B6ã,Õ’5BÄ

ip ssh time-out *time*

no ip ssh time-out

ÏDAÈ

–D	EÄ
time	[illegible]

ÏÕ,Õ5BÐ 5,Õ’5BÈCYÊÈ 120sÄ’5BCYÊÈü **no ip ssh time-out Ç5BãAx**
Ä

Ð <G5Bã

ÏSÊ AQ5B SSH Server E> ÄxA•XCYÊÈÇÄÈÊYE› 120s ÜÁx
AëÊxAxA•CYÊÈü **show ip ssh Q** SSH server ,XG5BÇÄ

ÏG5B_Ð G5BCYÊÈ 100sÖ

5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJISVVKWLPHRXW

ÏGÇ

Q	EÄ
show ip ssh	ß ssh-server ,XÕ

ÏGÄÈ -

6.7 ip ssh peer

ip ssh peer *username* **public-key** {**rsa** | **dsa**} *filename*

no ip ssh peer *username* **public-key** {**rsa** | **dsa**} *filename*

	–D	
	username	
	filename	

-

<G5Ba

-

A’5B *test* RSA ` DSA

```
5XLMLHFRQIXUHWHUPLQO
5XLMLHFRQILSVVKSHHUWHVWSXEOLFNHUVDIODVKUVDSXE
5XLMLHFRQILSVVKSHHUWHVWSXEOLFNHGVDIODVKGVDSXE
```

show ip ssh	ssh-server

ÏG5B_Ð	A’5B5ÿ(ú 2Ö 5XLMLHFRQ1XUHWHUPLQO 5XLMLHFRQ1ISVVKYHUVLRQ	
ÏÎGÇ	Q **show ip ssh**	£Ä ß SSH Server ,X(Õ
ÏGÄÈ	-	

6.9 show crypto key mypubkey

/	SSH Server Ëø,XÔ¯ÍX¡Ä
show crypto key mypubkey {**rsa/dsa**}	

ÏÐAÈ

/ SSH Server SSH Server

	SSH SSH

5XLMLHVKRVSVVK

ip ssh version {**1** | **2**}	**5B** SSH Server
ip ssh time-out *time*	**5B** SSH Server
ip ssh authentication-retries	**5B** SSH Server

-

6.11 show ssh

SSH

show ssh

–D	
-	-

-

(M

/ SSH VTY SSH (

1k

5XLMLHVKRVSVVK

-	-

-

7 GSN

7.1 security address-bind enable

AÇG5BA'ÛÃ¥1*9Ä

security address-bind enable

no security address-bind enable

–D	£Ä
-	-

5,Õ5BÐ -

yÕEîXx6Å AP ` AP ¿Å

;> AÇÃX4¥GÊÔ8ÇÒü GSN <ÔÊÕK0Ä

G5B_Ð G5B]<_ÊÈhÖ

5XLMLHFRQ1IVHFXULWDGGUHVVELQHQEOH

Q	£Ä
security gsn enable	GSN <Ô

GÄÈ -

7.2 security community

AÇG5B` smp á<KÈÂ/X]<Ä

security { [**v1 | v2**] **community** *community* | **v3 user** *username* }

no security { [**v1 | v2**] **community** *community* | **v3 user** *username* }

–D	£Ä
community	á<xf,X *community* 0Ä
username	SÇX v3]<EÂÄ

5,Õ5BÐ ÜÉG5B

<G5Bã

v3

ï5,Õ5BÐ	GKÁ
ïÐ	<G5Bã
ïSÐ	'A'ÛÔÕ GSN]<ÊÊ-G5B8ÇA'Õ GSN]<Ä
ïG5B_Ð	5XLMLHFRQJXUHWHUPLQO 5XLMLHFRQJVHFXULWVHQEOH

ïÌGÇ

Ç	ÊÄ
-	-

ïGÄÈ

-

7.5 show security evnet interval

¡]<_ÊÈhÄ

show security evnet interval

ïÐAÈ

–D	ÊÄ
-	-

Ï G Ä A

Ï G ÄAÈ â Ð

–D	ÆÄ
-	-

5,Õ5BÐ -

(Mã

/ smp server ,X IP Ä

5XLMLHVKRZVPSVHUYHU
6036HUYHU,3Ö

Q	ÆÄ
smp-server host	G5B smp server ip Ä

-

7.7 smp-server host

AÐG5Bh,X smp-server ,X ip Ä
smp-server host *ip-address*
no smp-server host

–D	ÆÄ
ip-address	smp server ,X ip

5,Õ5BÐ ÚG5B smp server

<G5Bã

;> AÐÚ **show smp-server G5B**

5XLMLHFRQJVPSVHUYHUKRVW

Q	ÆÄ
show smp-server	smp server ,XG5B

-

8

8.1 nac-author-user maximum

L$0,X IP y9DGÈ¨ **no** IP DG£$s6Ñ

nac-author-user maximum *value*

no nac-author-user maximum

–D	£Ä
value	IP DG£$Ö-1024

5,Õ5BÐ GKÁ IP DG£$s6Ñ

yã

VpA'5B,X IP y9DG£4,X IP pÉA'5BBù

_ 1Ö$0Ã 1 ,Xy9 IP p 100Ö

5XLMLHFRQ1WHUI

5XLMLHFRQ1IQFDXWKRUXVHUPD[LPXP

Q	£Ä
show nac-author-user	IP y9DG£5B4,X IP p

-

8.2 show nac-author-user

,0Ã$,X IP y9DG£5B4,X IP p

show nac-author-user

–D	£Ä
-	-

5,Õ5BÐ 5,Õ£Ä

(Mã

Ï-DAèè

–D	Ë.Ä
interface-id	*y{è*

Ï5,Õ5BÐ 5,ÇÇ[ÇÏÄ

Ïè (Mã

ÏèÇ -

ÏGÏ5B_Ð 5XLMLHVKRZZWRUPFRQWURO1DELWHWKHUHQW
,QWHUIDFH%URDGFDVW&RQWURO0XOWLFDVW&RQWURO8QFDVW&RQWURO

ÇLVDEOHGLVDEOHGLVDEOHG

ÏÎGÇÐ

Ç	Ë.Ä
storm-control	A'5By¡XN¶[ÇÄ

ÏGÄèè -

8.5 strom-control

A'5By¡XN¶[ÇÇÄÄÇX **no** ÉÇÇÄÄ,XN¶[ÇÇs6ÃÑ

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

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

ÐAèè

–D	Ë.Ä
broadcast	ÊÑN¶?X{s6ÃÑ
multicast	ÊÑN¶?X{s6ÃÑ
unicast	ÊÑN¶?X{s6ÃÑ
percent	[ÇX,RÉÈ> A'5B V 20 ></ 20%
packets	¹ pps)È> A'5B G packets per second
Rate-bps	AÇÇXÈÈÈÈ-[ÇÄ
64k-2M	¹ 64k)ÄÄ
2-100M	¹1M)ÄÄ
100M Þ	¹8M)ÄÄ

Ï5,Õ5BÐ -

ÏèÇ yG5BÄÄ

ÏèÇ ÊÑÊEG-ÇXSÄÄÊÑBÇÙXN¶[ÈÈÇÈ%46`
CYÈÄÄÇÙX;> ÄÄÑ%4ÊÑÄÑ5BFÄÄÊÑ?X{Ä
A'ÄÄÑÄÄDBÈ> N¶[ÇÄ,XSÄÄÊÑGÈ'Ü

VÊU6,h2O_,XÌXE@B67ÊÊXE@Â
Sŭ **show storm-control** **Q5Ë**

ÏG5B_Đ M6,X_ÂÊ)ÚÃ GigabitEthernet 1/1 ÌXÑsÔ5BAÕXEÉÉó)[4M Ä

```
5XLMLHFRQ1 XUHWHUPLQ O
5XLMLHFRQ1 WHUIDFH DELW(WKHUHW
5XLMLHFRQ1 IVWRUPFRQWUROPXOWLFDVW
5XLMLHFRQ1 IHQ
```

ÏĜGĐ

Q	ÈÄ
show storm-control	**/NĈĈÄ**

ÏGÄÊ -

8.6 switchport port-security

A'5B0ÃsÔÃ,XE±ÚÃÃX **no ÉÉÊÊÃA5ÈÈ** **_ÉÊÔ**

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

no switchport port-security [**violation**]

ĐAÊ

–D	ÈÄ
port-security	**y]Ĉ**
violation protect	**ÊÊXy[Ä**
violation restrict	**ÊÊXy[Ê** trapÄ
violation shutdown	**ÊÊ[Ê** Trap ĜKÁÄ

ÏĜ5BĐ y;X]<5,ĜKÁXÄ

Đ yG5Bã

ÏĈĐ ÊÃEÊMÊLÂEKÂ'ÊX MAC ž IP(ÊÝ9r)ü
ÁÿXEg9ÄÔÃs6X0ÃG5BÊ]<ÊÊ
Eo]<,XÊÊÊÊyÊÊÊÊXK]<
ĐÈpĐA'5B 1 ÀÔĜ5BĈÈÿEÈX00Ä
G5B,X]< M ÊÂ0ÃX<FÊ

ÏG5B_Đ M6,X_Ê Gigabitethernet 1/1 ĐÃsÔÂ'5BE±ÚÙ shutdownÖ

```
5XLMLHFRQ1 WHUIDFH DELWHWKHUHW
5XLMLHFRQ1 IVZWFKSRUWSRUWVHFXULW\
5XLMLHFRQ1 IVZWFKSRUWSRUWVHFXULW\YLRODWLRQVKXWGRZQ
```

ÏĜGĐ

Q	ÈÄ

show port-security	**/0]ÃXA5B]ÄÄ**

ÏGÄÀ -

8.7 switchport port-security aging

AÔ[X]<G5B5ÕÊ6ÑÔA'5B]<,XÔÈ

EÃ]A'Ô[,Xrtb8y[X]<ÄAQX **no ÉM5Ëb**

7[4,XÈGÉÕÑ

switchport port-security aging {**static** | **time time** }

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

ÏDAÀ

–D	EÄ
static	**#5ÕbG5B]<[4,XÈ** **hb7[4,XÄ**
time *time*	**#5ÕX5ÈÈ** 0É440)ÈÄ VpA'5B 0ÈÕÑL>GKÄ

switchport port-security binding *mac-address* **vlan** *vlan_id ipv4-address* | *ipv6-address*

no switchport port-security binding *mac-address* **vlan** *vlan_id ipv4-address* | *ipv6-address*

switchport port-security binding *ipv4-address* | *ipv6-address*

no switchport port-security binding *ipv4-address* | *ipv6-address*

–D	EÄ
mac-address	**4¥X¶** MAC
vlan_id	*4¥¶* MAC ,X VID
ipv4-address	*4¥* Ipv4 ,X Ip
ipv6-address	*4¥* Ipv6 ,X Ip

-

yã

-

_ 1Ö¥ 192.168.1.100 y· 10Ö

5XLMLHFRQLIWHUJ

5XLMLHFRQLIVZWFKSRUWSRUWVHFXULWELQLQ

_ 2Ö¥ 192.168.1.100 MAC 00d0.f800.5555, VID= 1 y· 10Ö

5XLMLHFRQLIWHUJ

5XLMLHFRQLIVZWFKSRUWSRUWVHFXULWELQLQIYODQ

Q	EÄ
switchport port-security	**0Ã**
switchport port-security binding interface	**(5B¥**
Switchport port-security mac-address	**A5Ã**
switchport port-security aging	**0Ã**
show port-security	**/0Ã**

-

8.9 switchport port-security binding interface

(M5B]<4¥E> IP+ MAC IP 4¥

NO0¥,X]<,Xy[E9x6¥,Xy[**no**

4¥X

interface-id	**4¥Xy·** ID
mac-address	*4¥Ã* MAC
Vlan_id	*4¥Ã* MAC ,X VID
Ipv4-address	*4¥* Ipv4 ,X Ip
Ipv6-address	*4¥* Ipv6 ,X Ip

Ï5,Õ5BÐ -

(Mã

ÏSÊ -

Ï5B_Ð _ 1Ï4 192.168.1.101lv/DB11D001D0>86f-0.0 10 Tc 2.[<0847216E>7<2C5818(i)1(d02 g/TT0 1 T8-0.0014 Tc 3.2(

ÏSÊ -

ÏG5B_Đ _ 1Ö'5B TRUNK y· 10 ,XM-Ĵ× 00d0.f800.5555 VID=2Ö

5XLMLHFRQLIQHUJ

5XLMLHFRQLIVZWFKSRUWSRUWVHFXULWPDFDGGUHVVGIYODQ

ÏGĐ

Q	£Ä
switchport port-security	**0Ã**
switchport port-security binding	**G5BY**
switchport port-security mac-address interface	**(M5Ĵ**
switchport port-security aging	**0Ã**

@ **show port-security** **/5X dĵ@ ... gpH…a_S ... 7A'I À'D**

GÄ -

8.12 switchport port-security maximum

A’5B0 Ò<Ò ù **no** **switchport port-security maximum** *value*

no switchport port-security maximum

DA

–D	EÄ
value	]Ò 1-128

5,Õ5BÐ 128

Ò yã

SÐ]<Ò ù-Õ5B|Õ4,X]<Ò ,XÈ,Õ 128 ÈpA’5B,X]<Ò

Da,X]<Ò ÈA’5BBù

G5B_Ð _ 1Ö’5B· 10 ,X0Ã<Ò 2Ö

5XLMLHFRQ1QWHUJ

5XLMLHFRQ1IVZWFKSRUWSRUWVHFXULWPD[LPXP

ÌGQ

Q	EÄ
switchport port-security	**0Ã<**
switchport port-security binding	**G5B**
Switchport port-security mac-address	**yA5Ã<**
switchport port-security aging	**0Ã<**
show port-security	**/0Ã**

GÄ -

8.13 switchport port-security sticky mac-address

yG5B Stickk MAC]<È ù **no** **switchport port-security mac-address sticky** ***mac-address*** [*vlan vlan-id*]

no switchport port-security mac-address sticky ***mac-address*** [*vlan vlan-id*]

áDÊ6Ñ Sticky MAC :4s6Ñ ù **no** Sticky MAC :4s6Ñ

switchport port-security mac-address sticky

no switchport port-security mac-address sticky

DA

–D	EÄ
mac-address	*M-Ã*

9 CPU

9.1 cpu-protect type packet-type pps pps_value

A’5B CPU 0ÃÛ2O_y[,XÄ

cpu-protect type { **arp** | **bpdu** | **dhcp** | **ipv6mc** | **igmp** | **rip** | **ospf** | **vrrp** | **pim** | **ttl1** | **unknown-ipmc** | **dvmrp** | …} **pps** *pps_value*

–D		
pps_value		

5,Õ5BÐ CPU ÍÛ2O_y[,XyÛX5,Õ 1000Ä

<G5BÄ

-

G5B_Ð M6A’5B CPU y BPDU y[ÛX_5

5XLMLHFRQJFSXSUWSHESGXSSV

6HWSDFNHWWSHESGXSSV

Q	
cpu-protect type packet-type pri *pri_num*	**A5B** CPU y,XÛ2O_y[Í,X4{Ä

S76 2Ä’ÛXM2N6ÑÈ 1X ` 6sfp 4“50Ã cpp s6Ñ

9.2 cpu-protect type packet-type pri pri_num

A’5B CPU y,XÛ2O_y[Í,X4{Ä

cpu-protect type { **arp** | **bpdu** | **dhcp** | **ipv6mc** | **igmp** | **rip** | **ospf** | **vrrp** | **pim** | **ttl1** | **unknown-ipmc** | **dvmrp** | …} **pri** *pri_num*

–D	q02C5804EC071C347B01C4>18D1198 362.54 0.48 0.48 refD1198 362.54 0.48 0.48

G5B_Đ	M6Ú BPDU y[ĥKé 7 ,X_Ö
	5XLMLHFRQJFSXSURWHFWWSHESGXSUL 6HWSDFNHWWSHESGXSUL

ÌGQ	Q	EÄ
	cpu-protect type packet-type pps *pps_value*	**A5B2Oy[XÄ**

GÄÈ	-

9.3 show cpu-protect mboard

	/1u)Ú CPU x,XØOy[,X4ªAuÇÄ
	show cpu-protect mboard

ÐAÈ	–D	EÄ
	-	-

5,Õ5BÐ	-
Q	(MÄ
SÐ	AQ1u)Ú CPU yy[,X4ªAuÇÄ

G5B_Đ	S8600 CPU
	5XLMLHVKRZFSXSURWHFWPERDUG SH3SV7RWDOURS DUS ESGX GKFS JUS LSYPF GYPUS LPS RVSI SLP ULS YUUS XQRZSPF WWO

9.5 show cpu-protect type

/2O_y[,X4AuÖ

show cpu-protect type { **arp** | **bpdu** | **dhcp** | **ipv6mc** | **igmp** | **rip** | **ospf** | **vrrp** | **pim** | **ttl1** | **unknown-ipmc** | **dvmrp** | **…**} *dvmrp*

–D	E	
slot_num	8	1-16

-

(M

A2O_y[,X4AuC

CPP ,XG5BQ..”></X CPP 2O_Ä

show cpu-protect type bpdu BPDU y[,Xy4AuÖ

5XLMLHFRQJVKRZSXSURWHFWWSHDUS

6ORW7SH3SV7RWDOURS

0DLQRDUGESGX

6ORWESGX

show cpu-protect type *packet-type*	**/** CPU x2Oy[,X4AuC

-

10 DoS

10.1 ip deny invalid-l4port

no [illegible]

ip deny invalid-l4port

no ip deny invalid-l4port

–D	[illegible]
-	-

[illegible]

[illegible]

<G5B[illegible]

-

_ [illegible]

5XLMLHFRQ[illegible]LSGH[illegible]DOLGOSRUW

_ [illegible]

5XLMLHFRQ[illegible]LSGH[illegible]DOLGOSRUW

Q	[illegible]
show ip deny invalid-l4port	[illegible]

-

10.2 ip deny invalid-tcp

[illegible] TCP y[illegible] **no [illegible]** TCP y[illegible]

ÏG5B_Ð _ 1ÄÔ'DM2© TCP y[ï6Ñ
5XLMLHFRQLLSGHQQDOLGWFS
_ 2ÄÔ'GKÁM2© TCP y[ï6Ñ
5XLMLHFRQLRLSGHQQDOLGWFS

ÏGÇ

Ç	ÆÄ
show ip deny invalid-tcp	ÆÇ TCP y[ÏX(Ö

ÏGÄÈ -

10.3 ip deny land

Ô Land ï6ÑÄÇX **no** ÉÚÁ Land ï6Ñ
ip deny land
no ip deny land

ÏÐÄÈ

–D	ÆÄ
-	-

ï,Õ5BÐ 5,ÑÛXL Land ï6ÑKÁXÄ

Ç <G5BÄ

ÏSÔ -

ÏG5B_Ð _ 1ÄÔ'D Land ï6Ñ
5XLMLHFRQLLSGHQDQ
_ 2ÄÔ'GKÁ Land ï6Ñ
5XLMLHFRQLRLSGHQDQ

ÏGÇ

Ç	ÆÄ
show ip deny land	Ç Land ÏX(Ö

ÏGÄÈ b S3760E A'ÔM2© TCP y[ï6ÑÏÏX'5BÏÇX
TCP y[À'5BZ FIN ÛÚÁ'5B ACK ÇX TCP y[Ä

10.4 ip deny spoofing-source

Ô DOS ÏÐEÇ$6ÑÄÇX **no** ÉÚÁ DOS ÏÐEÇ$6Ñ
ip deny spoofing-source

R63URWHFWLRQRGH 6WDWH

SURWHFWDDLQWLQDOLGOSRUWDWWDFN2II

ÏGÐ

Q	
-	-

ÏGÐÀÀÈ â Ð p @ ` à 0 0

10.6 show ip deny invalid-tcp

/LM2© TCP y[ÏX(Ð

show ip deny invalid-tcp

ÐAÐ

–D	EÄ
-	-

Q (MÄ

SÊ -

G5B_Đ 5XLMLHVKRZSGHQDQ
R63URWHFWLRQRGH6WDWH

SURWHFWDDLQWODQDWWDFN2Q

ÌGQ

Q	ÆÄ
[**no**] **ip deny land**	ÊKÁ Land ÌS6Ñ

GÄÈ -

11 DHCP Snooping

11.1 clear ip dhcp snooping binding

Ubc8 DHCP Snooping DBg,X|ÕÛ(Mã> 8Q

clear ip dhcp snooping binding [*mac* **| vlan** *vlan-id* **|** *ip* **| interface** *interface-id* **]**

ÏÐÀÈ

–D	£Ä	
mac	ûc8,X¦X	MAC ×
vlan-id	ûc8,X¦X	vlan id×
ip	ûc8,X¦X	IP ×
interface-id	ûÐÃ	

ÏÕ,Õ5BÐ -

ÏÐ (Mã

ÏSÛ ;> AÐ8 DHCP snooping DBg,X|Õ

ÏG5B_Ð M6c8 DHCP snooping DBg|ÕX_Ö

5XLMLHFOHDULSGKFSVRRSLÐLQLQ

5XLMLHVKRZSGKFSVRRSLÐLQLQ

7RWDOXPEHURIELQLQ

0DFSGUHVTc 0 Tw 7.413 0 62.04 507.4403186.20 1Tc T* Tc 0.9542 Tw

Ö (Mã

ÏSÊ ;> AÈ DHCP snooping s6ÑXAAÇÄ

ÏG5B_Ð M6Ô DHCP snooping AAÔ,X_Ö

5XLMLHGHEXLISGKFSVRRSLHYHW

5XLMLHGHEXLISGKFSVRRSLDFNHW

ÏGÐ

Q	ÆÄ
-	-

ÏGÄÈ -

11.3 ip dhcp snooping

ÐÔ DHCP Snooping <s6ÑÔ«G5B6G5BAÈ AÇX **no 6Ë**

GÁ DHCP Snooping s6Ñ

ip dhcp snooping

no ip dhcp snooping

ÏÐAÈ

–D	ÆÄ
-	-

```
,WHUIDFH
```

Q	E
show ip dhcp snooping	DHCP snooping ,XG5BC

-

11.4 ip dhcp snooping bootp-bind

DHCP Snooping Õ Bootp 4s6 G5BA Q **no 6**

DHCP snooping Õ Bootp 4s6

ip dhcp snooping bootp-bind

no ip dhcp snooping bootp-bind

–D	E
-	-

5,Õ5BÐ As6Ñ,ÕKÄ

<G5BÄ

5,DHCP Snooping s6Ñ Bootp y[E> E s6DHCP Snooping s6Ñ Bootp #y[E> 0yvÄ Bootp v0Ã+AÊ DHCP Snooping Ú Bootp M-Õ 4DBgÄ

G5B_Ð M6Ô DHCP Snooping Õ Bootp 4,X_S

```
5XLMLHFRQXUHWHUPLQO
5XLMLHFRQLISGKFSVRRSLQRRWSELQ
5XLMLHFRQHQ
5XLMLHVKRZSGKFSVRRSLQ
6ZWFK+&VRRSLQWDWXV(1%/(
9HULILFDWLRQIKZGGUILHOGVWDWXV(6%/(
+&VRRSLQDWDEDVHZLWHGHODWLPHVHFRQV
+&VRRSLQSWLRQWDWXV(1%/(
+&VRRSLQXSSRUW%RRWSELQVWDWXV(1%/(
,WHUIDFH
```

Q

11.5 ip dhcp snooping database write-delay

ÙG5Bx6nÊ DHCP Snooping DBg|Õm9 FLASH s6ÑÙë G5Bõ
ã> 8Ö> AQX **no 6ÑÁÊm9** FLASH s6Ñ

ip dhcp snooping database write-delay *time*

no ip dhcp snooping database write-delay

–D	£Ä
time	ó DHCP snooping DBgm9 FLASH ,XÊÈÈhÄ

ÏÕ5BÐ A¹s6Ñ,ÑÁÊm FLASH

<G5BÄ

EÊG5BAÑ DHCP Snooping DBgm9 FLASH [ÊÑ6A'ÛÊ
CÈÈOG9ª IP ÊÊÄ

Ï5B_Ð M6G5Bx6nÊm flash ÊÈÈh 3600 ,X_Ö

```
5XLMLHFRQXUHWHUPLQO
5XLMLHFRQLSGKFSVRRSLQDWDEDVHZLWHGHOD\
5XLMLHFRQHQ
5XLMLHVKRZSGKFSVRRSLQ
6ZWFK+&VRRSLQWDWXV(1%/(
9HULILFDWLRRIKZGGUILHOGVWDWXV(6%/(
+&VRRSLQDWDEDVHZLWHGHODWLPHVHFRQV
+&VRRSLQSWLRQWDWXV(1%/(
+&VRRSLQXSSRUW%RRWSELQVWDWXV(1%/(
,WHUIDFH ▼ ▼
```

Q	£Ä
show ip dhcp snooping	ß DHCP snooping ,XG5BC

ÏGÄÈ -

11.6 ip dhcp snooping database write-to-flash

ÙG5Bx6rÊ DHCP Snooping DBg,X|Õm9 FLASH [ÊÙë G5Bã
;> 8Ö

ip dhcp snooping database write-to-flash

–D	£Ä
-	-

ï5,Õ5BÐ	-
ïQ	<G5Bã
ïSÊ	EÊ;> 8ÊÊ DHCP Snooping DBg|Õm9 FLASH [Ê
ïG5B_Ð	M6Ú DHCP 4¥DBg,X|Õrm9 flash ,X_Ö

5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJLSGKFSVQRSLQDWDEDVHZLWHWRIODVK
5XLMLHFRQJHQ

ÌGÐ	Q	ÊÄ
	-	-

ïGÄÐ	-

11.7 ip dhcp snooping information option

ÒÛ DHCP AÿÊt9 option82 EÍMs6ÑÒ¤G5B6 5BAÿ AÿX

no 6ÑÍs6Ñ

ip dhcp snooping information option [standard-format]

no ip dhcp snooping information option [standard-format]

ÐAÐ	–D	ÊÄ
	standard-format	Option82 EÍMSÑ

ï5,Õ5BÐ	As6Ñ,ÕKÄ
ïQ	<G5Bã
ïSÊ	EÊG5BAÿ DHCP AÿÊ#

,QWHUIDFH	▼	▼

ÏGÐ

Q	EÄ
show ip dhcp snooping	¡ß DHCP snooping ,XG5BÇÄ

ÏGÄÈ -

11.8 ip dhcp snooping information option format remote-id

Â'5B option82 EÍM,XÈÍM remote-id 7ª+0¡Xs6ÑÒ¤G5B6 5BAÇ

;> AÇX **no 6ÈÍs6Ñ**

ip dhcp snooping information option format remote-id [string *ascii-string* **| hostname]**

no ip dhcp snooping information option format remote-id [string *ascii-string* **| hostname]**

Ïhp7ª¡UA]¹ ¹ÇÀ¡dvp6Ê8i@Ë8i@Ë.Ðx

rate-value	A’ny[yE)[È PS[Packet Per Second]

ï5,Õ5BÐ ïuÉ)[L$

ÐQ yG5Bã

ÏSÊ Ás6Ñ DHCP Snooping { VLAN Y,XÿÊ

CPP[CPU Protect Protocol] CPP DHCP
CPP DHCP Snooping CPP

ÃÊ› **show ip dhcp snooping** Ø5yG5B[Ä

ÏG5B_Ð M6A’5B0Ã 1 ,XE)[L$ 100ppsÖ

5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJWHUIDFHIDVW(WKHUQW
5XLMLHFRQJILSGKFSVQRSLQLPLWUDWH
5XLMLHFRQJIHQ
5XLMLHVKRZSGKFSVQRSLQ
6ZWFK+&VQRSLQWDWXV(1%/(
9HULILFDWLRQIKZGGUILHOGVWDWXV(6%/(
+&VQRSLQDWDEDVHZLWHGHODWLPHVHFRQV
+&VQRSLQSWLRQWDWXV(1%/(
+&VQRSLQXSSRUW%RRWSELQVWDWXV(1%/(
,QWHUIDFH

Q	ÆÄ
show ip dhcp snooping	¦ß DHCP snooping ,XG5BÇÄ

ÏGÄÈ Õ NFPP s6Ñ{ÈÇd;Ä

11.10 ip dhcp snooping suppression

ÏG5B0Ã suppression (ÊÔÿG5B[> 8Ö AÇX **no 6È0Ñ**
G5B no suppression (Ê
ip dhcp snooping suppression
no ip dhcp snooping suppression

ÏÐAÈ

–D	ÆÄ
-	-

¨5,Õ5BÐ	As6Ñ,ÕKÄ
¨Q	yG5BÄ
¨SÔ	EE-G5BAÑ0Ã DHCP AÿÈ/U6A0ÃXÉE› DHCP ã AÄ
¨G5B_Ð	M6G5B0Ã fastethernet 0/2 suppression (ÕX_Ö

```
5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJWHUIDFHIDVWHWKHUHW
5XLMLHFRQJILSGKFSVRRSLQXSSUHVVLRQ
5XLMLHFRQJIHQ
```

¡ÏGÐ	Q	ÆÄ
	-	-

¨GÄÈ	-

11.11 ip dhcp snooping trust

	ÜG5B0ÃX DHCP snooping ÏÕ TRUST ÈÔÿG5B> 8Q AQ
	,X **no 6Ä0Ã** UNTRUST Ä
	ip dhcp snooping trust
	no ip dhcp snooping trust

¨ÐAÈ	–D	ÆÄ
	-	-

¨5,Õ5BÐ	5,ÑÃ UNTRUST Ä
¨Q	yG5BÄ
¨SÔ	EE-G5BAÑÿÖ DHCP á<,X0Ã5B TRUST Ä TRUST 0ÃX DHCP ¡ y[>7EÈNTRUST 0ÃX DHCP ¡y[›Ä
¨G5B_Ð	M6G5B0Ã **fastethernet** 0/1 TRUST ;X_Ö

```
5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJWHUIDFHIDVW(WKHUHW
5XLMLHFRQJILSGKFSVRRSLQUXVW
5XLMLHFRQJIHQ
5XLMLHVKRZSGKFSVRRSLQ
6ZWFK+&VRRSLQWDWXVÖ1%/(
```

show ip dhcp snooping	ß DHCP snooping ,XG5BÇÄ

ÏGÄÈ -

11.13 ip dhcp snooping vlan

ÒÔ VLAN ,X DHCP Snooping s6ÑÏüG5BÈG5BÄÇÄQX **no 6È**
ÓÍÍ VLAN ,X DHCP Snooping s6Ñ
ip dhcp snooping vlan {*vlan-rng* **|** {*vlan-min* [*vlan-max*]}}
no ip dhcp snooping vlan {*vlan-rng* **|** {*vlan-min* [*vlan-max*]}}

ÏÐÄÈ

–D	ÉÄ
vlan-rng	dhcp snooping s6ÑX vlan 8È
vlan-min	dhcp snooping s6ÑX vlan ÌÄ
vlan-max	dhcp snooping s6ÑX vlan ÌÄ

ÏÕ,Ñ5BÐ 5,Ñ% DHCP Snooping s6ÑÝ VLANÄ

ÏÇ <G5BÄ

ÏÔÒ ÉÉG5BÄÇÄ,X VLAN YÔ DHCP Snooping s6ÑÑGKÂ VLAN ,X DHCP Snooping s6Ñs6ÑÏÔÒ DHCP Snooping <Ô,XÎÄ

ÏG5B_Ð ÿ6ü VLAN1000 Ô DHCP Snooping s6Ñ_Ñ

5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJLSGKFSVQRSLQODQ
5XLMLHFRQJHQ

ÏÌGÇ

Ç	ÉÄ
ip dhcp snooping	DHCP Snooping ,X<ÔÄ

ÏGÄÈ -

11.14 ip dhcp snooping vlan *vlan-id* information option change-vlan-to vlan

Ô option82 ÉÍM,XÉÍM circuit-idÊ circuit-id ,X VLAN ÛÙ VLANÄÔüG5BÈ
G5BÄÇÄ AÇX **no 6ÑÍs6Ñ**
ip dhcp snooping vlan *vlan-id* **information option change-vlan-to vlan** *vlan-id*
no ip dhcp snooping vlan *vlan-id* **information option change-vlan-to vlan** *vlan-id*

ÏÐÄÈ

–D	ÉÄ

vlan-id	ûE> ó,X VLAN

ï5,Õ5BÐ As6Ñ,ÕKÁ

ÐQ yG5Bã

ÏSÐ EÊG5BAÐQ DHCP AÿÏ# option82 EÍMÌÈ option82 ,XÈÍM circuit-id ,X VLAN Â,X VLANÈDHCP á<B option82 EÍMµCE> ÚÄ

ÏG5B_Ð M6G5Bü DHCP AÿÏ# option82 EÍMÌÈ option82 ,XÈÍM circuit-id ,X VLAN4094 Â VLAN4093 ,X_Ö

5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJIWHUIDFHIDVW(WKHUQW
5XLMLHFRQJILSGKFSVQRSLQODQQRUPDWLRQSWLRQKDQYODWRYODQ
5XLMLHFRQJIHQ

ÌGQ

Q	ÈÄ
-	-

ÏGÄÈ -

11.15 ip dhcp snooping vlan *vlan-id* information option format-type circuit-id string

ÙG5B option 82 EÍM,XÈÍM circuit-id ÿ¾XYÄã ASCIIÂ> EÏÙü <G5BÊG5BAÐQ AQX **no 6ÈÉs6Ñ**

ip dhcp snooping vlan *vlan-id* **information option format-type circuit-id string** *ascii-string*

no ip dhcp snooping vlan *vlan-id* **information option format-type circuit-id string** *ascii-string*

ÏÐAÈ

–D	ÈÄ
vlan-id	DHCP AÿÏü VLAN
ascii-string	Circuit ID Ù,Xÿ¾XY•Ci.52ef119.46 260.6 0.48 15Ci.52ef119.46 260.6 0.48 15Ci.52ef1

5XLMLHFRQ1WHUIDFHIDVW(WKHUQW

Ö Q -

ÖSÊ ;> 8Ã DHCP Snooping ,XG5BÄ%

ÖG5B_Ð ß M6;ß DHCP Snooping G5B%_Ö

```
5XLMLHVKRZSGKFSVRRSLQ
6ZWFK+&VRRSLQWDWXV(1%/(
9HULILFDWLRRIKZGGUILHOGVWDWXV(6%/(
+&VRRSLQDWDEDVHZLWHGHODWLPHVHFRQV
+&VRRSLQSWLRQWDWXV(1%/(
+&VRRSLQXSSRUW%RRWSELQVWDWXV(1%/(
,WHUIDFH
```

ÖÌGÐ

Q	ÆÄ
ip dhcp snooping	DHCP snooping <G5BÔÄ
ip dhcp snooping verify mac-address	DHCP snooping y[mac "ÔÄ
ip dhcp snooping write-delay	G5Bnê flash ,XÊÈÈhÄ
ip dhcp snooping information option	ü DHCP Aÿ[t9 option82 EÍMÄ
ip dhcp snooping bootp-bind	Ô DHCP Snooping Õ Bootp 4¥s6Ñ
ip dhcp snooping trust	A'5B0Ã DHCP snooping trust Ä

ÖGÄÈ -

11.18 show ip dhcp snooping binding

Ö;ß DHCP Snooping DBg,XÇÈMÈ> 8Ö

show ip dhcp snooping binding

ÖÐÄÈ

–D	ÆÄ
-	-

Ö,Õ5BÐ -

Ö Q (Mã

ÖSÊ ;> 8Ã DHCP Snooping DBg,ÍXÇÄ

ÖG5B_Ð ß M6/_Ö

```
5XLMLHVKRZSGKFSVRRSLQLQLQ
7RWDOXPEHURIELQLQ
0DFGGUHVV,SGGUHVV/HDVHVHF7SH9/$,WHUIDFH

GKFSVRRSLQDVW(WKHUHW
```

ÏÎGÐ

Q	ÆÄ
ip dhcp snooping binding	**G5B** DHCP snooping M-Õ
clear ip dhcp snooping binding	**Ì** DHCP snooping |Õ

ÏGÄÈ -

vlan-id	></ vlan 4Ë

ï5,Õ5BÐ Ý VLAN ÐKÁ DAI y["s6Ñ

Ïq <G5BÄ

ÏSÎ ÛS8qÈjLÛü DAI s6Ñ

ÏG5B_Ð G5BÈ VLAN 1 ÿ,X ARP y[Ä

5XLMLHFRQLJSDUSLQSHFWLRQ

5XLMLHFRQLJSDUSLQSHFWLRQODQ

ÏÏGq

Q	EÄ
show ip arp inspection vlan	/ VLAN Û DAI y["s6Ñ

ÏGÄÐ -

12.3 DHCP Snooping

ÿ VLAN ,Xh,X DAI s6Ñ,X ARP y[,X0ÿX(Ñ ARP y[LÛEÛ,X ÛÈXqB DHCP Snooping DBg,X,ÌGÇ. VpüÑBgE> ÏG5BÈk"EEÄDHCP Snooping ,ÌGG5BAË5ÉDHCP Snooping Q5Ä

13 IP Source Guard

13.1 ip source binding

ü IP 64¥DBgÏM-ÕÈ **no** **6ÁÍ,XÑ**

ip source binding *mac-address* **vlan** *vlan-id ip-address* **[interface** *interface-id* **| ip-mac | ip-only]**

no ip source binding *mac-address* **vlan** *vlan-id ip-address* **[interface** *interface-id* **| ip-mac | ip-only]**

–D	£Ä	
mac-address	M-ÊX¡X	MAC ×
vlan-id	M-ÊX¡X	vlan id×
ip-address	M-ÊX¡X	IP ×
interface-id	M-ÊX2,X0Ã	
ip-mac	**4¥,X2O**	IP+MAC 4¥
ip-only	**4¥,X2O™**	IP 4¥

5,Õ5BÐ üÏM-ÕXÄ

<G5BÄ

EE‹G5B8ÕEÉE› IP Source Guard ,XÄÐEE› DHCP 5> 4ÕÄ

G5B_Ð M6A'5BG5BÎM-ÕÃ 1 ,X_Ö

5XLMLHFRQJXUHWHUPLQO

5XLMLHFRQJ1SVRXUFHELQLQODQWHUIDFH)DVW(WKHUQW

5XLMLHFRQJHQ

5XLMLHVKRZSVRXUFHELQLQ

0DFGGUHVV,SGGUHVV/HDVHVHF7SH9/$,QWHUIDFH

LQLQWHVWDWLF)DVW(WKHUQW

7RWDOXPEHURIELQLQ

Q	£Ä
show ip source binding	¡ß IP 64¥DBg,XÇ

-

13.2 ip verify source

ÿÎX IP Source Guard s6Ñ **no** **6ÁÍs6Ñ**

ip verify source [**port-security**]

no ip verify source [**port-security**]

–D	£Ä
port-security	G5B IP Source Guard s6Ñ> î IP+MAC "#Ä

GKÄ

yG5BÄ

EE·AÛX IP Source Guard s6Ñ> î IP ,X"ÈÈ> î IP+MAC ,X"#

IP Source Guard s6Ñ DHCP Snooping ,XM2ÈÄÈ Trust ¥M2 DHCP Snooping {,XG5B IP Source Guard s6Ñ IP Source Guard s6Ñ

M6G5By· 1 ÞX IP Source Guard s6Ñ

5XLMLHFRQJXUHWHUPLQO

5XLMLHFRQJWHUIDFHIDVW(WKHUHW

5XLMLHFRQJILSYHULIVRXUFH

5XLMLHFRQJIHQ

Q	£Ä
show ip source binding	ß IP Source Guard £$<NM

-

13.3 show ip source binding

AÛ IP ¥DBg,XÇÄ

show ip source binding [*ip-address*] [*mac-address*] [**dhcp-snooping**] [**static**] [**vlan** *vlan-id*] [**interface** *interface-id*]

–D	£Ä
ip-address	/ĥ ip ,X¥Ç×
mac-address	/ĥ mac ,X¥Ç×
dhcp-snooping	**/ÑÇ×**
static	**/ÑÇ×**
vlan-id	/ĥ vlan ,X¥Ç×
interface-id	/ĥy;X¥ÇÄ

-

(Mã

ÏSÊ -

ÏG5B_Đ M6/_Ö

5XLMLHVKRZSVRXUFHELQLQWDWLF
0DFGGUHVV,SGGUHVV/HDVHVHF7SH9/$,QWHUIDFH

LQLQWHVWDWLF)DVW(WKHUQW
7RWDOXPEHURIELQLQ

ÏGÊ

Q	ÆÄ
ip source binding	A'5B IP 64¥M-Ã

ÏGÄÈ -

13.4 show ip verify source

AÇ IP Source Guard ÆÇ<NM

show ip verify source [**interface** *interface-id*]

ÐAÈ

–D	ÆÄ
interface-id	/ĺy¡XÆÇ<NMÄ

ÏÕ5BÐ -

Ç (Mã

ÏSÊ Sü **interface** ÐÊÍhyüÔ IP Source Guard s6ÃÕÃVÇÖ

-

14 DHCPv6 snooping

14.1 ipv6 dhcp snooping

ÜSü dhcpv6 snooping s6ÑÒ3<ÔÄÇX **no 6ÈÁ** dhcpv6 snooping s6Ñ

ipv6 dhcp snooping

no ipv6 dhcp snooping

ÏÐÀÈ	–D	ÉÄ
	-	-

ÏÕ5BÐ 5,ÕKÁXÄ

ÏÇ <G5Bã

ÏSÐ SÄÇ6,X dhcpv6 snooping s6Ñü **show ipv6 dhcp snooping Q** dhcpv6 snooping s6Ñ

ÏG5B_Ð _ 1Ô6,X dhcpv6 snooping s6Ñ

5XLMLHFRQLJSYGKFSVQRSLQ

ÏÎGÇ	Q	ÉÄ
	show ipv6 dhcp snooping	**/** dhcpv6 snooping s6ÑX<G5BÇ

ÏGÄÈ -

14.2 ipv6 dhcp snooping binding-delay

G5BÇX4¥><NMÊÏ#Ê<,Xs6ÑÄÇX **no 6ÈÁs6Ñ**

ipv6 dhcp snooping binding-delay *seconds*

no ipv6 dhcp snooping binding-delay

ÏÐÀÈ	–D	ÉÄ
	tim98 4ÒÄ5 16 E424 004 ÒÄ8 8 7 9 1026 2 ÁÏ 1 ÏÇ602 g119 1261 419 048 ref1196 3662 1481 5 ref2469 1862 1	

KÈ'ü'Ý# IPv6 0UÊ¤.Ê¢$<Ä

Ï G5B_Ð _ 1Ï¢Ã¤><NMÊ³ 10 /¡ï¢Ã¤><Ä

5XLMLHFRQ1SYGKFSVRSLQLQHOD\

ÏGÇ

Ç	ÉÄ
-	-

ÏGÄÈ -

ï5,Õ5BÐ -

ïÐ <G5Bã

ïSÊ ;> 8ÃÐ dhcpv6 snooping 4¥DBg,XÇm9 flash [ÂÛÈ¾
|¢ flash AÏü flash ,XÇÄ

ïG5B_Ð _ 1Ô dhcpv6 snooping 4¥DBg,XÇrÊm9 flash
5XLMLHFRQLISYGKFSVQRSLQDWDEDVHZLWHWRIODVK

ïÌGÇ

Q	ÆÄ
-	-

ïGÄÈ -

14.5 ipv6 dhcp snooping filter-dhcp-pkt

G5B0ÃÅ,X dhcpv6 AÏÈÄÇX **no 6ÈÁs6Ñ**
ipv6 dhcp snooping filter-dhcp-pkt
no ipv6 dhcp snooping filter-dhcp-pkt

ïÐÄÈ

–D	ÆÄ
-	-

ï5,Õ5BÐ 5,ÕKÁ

ïÐ yG5Bã

ïSÊ G5BÃÐÃ,XÝ dhcpv6 AÏÈU6A0ÃÉE› dhcpv6
ãAÏ

ïG5B_Ð _ 1Ö5B0Ã fastethernet 0/1 ý dhcpv6 AÏÈ
5XLMLHFRQLIQWHUIDFHIDVWHWKHUQW
5XLMLHFRQLIILSYGKFSVQRSLQOWHUGKFSSNW

ïÌGÇ

Q	ÆÄ
-	-

ïGÄÈ -

14.6 ipv6 dhcp snooping ignore dest-not-found

G5BÑ9,ÂX0ÃRB,XÔÄÇX **no 6ÈÁ** DHCPv6 ¡hy[,X0ÃÄ

ipv6 dhcp snooping ignore dest-not-found

no ipv6 dhcp snooping ignore dest-not-found

–D	E
-	-

5,Õ5BÐ 5,ÕKÁ

<G5Bã

DHCPv6 ,X[hy[EÈÔqC* MAC ><,X2Èp DHCPv6 ,X[hy[x6Rá MAC ĺ,X0]<5×%ÈÈGy[Ä

UjX5%4Ñ5%425%4%95Ã'Ĉ1sÈ MAC :4ÊÈ

ÑÑÄÈÊ'ÔÏÄ3 DHCPV6_SNOOPING-5-DEST_NOT_FOUND:

Could not find destination port. Destination MAC [mac-address]ÈÈÑ}H5%,X DHCPv6 6Ñ

7ÔÈÊRá MAC ĺ0,Ãxy[Ó6ÈÕ VLAN

,X0ÃÄ

G5B_Ð _ 1Ö5BÑ9,Ã0ÑBµXÔÄ

5XLMLHFRQLISYGKFSVQRSLQRUHGHVWQWIRXQ

Q	E
show ipv6 dhcp snooping	/ dhcpv6 snooping s6,Ñ<G5BÇ

GÄÈ -

14.7 ipv6 dhcp snooping information option

Ô DHCPv6 AÿÏt9 option18/37 EÍMs6ÑÔ«G5BÃ5BAÇ AQ

,X **no 6ÑÁs6Ñ**

ipv6 dhcp snooping information option [standard-format]

no ipv6 dhcp snooping information option [standard-format]

–D	E
standard-format	Option18/37 EÍMSÃ

5,Õ5BÐ As6Ñ,ÕKÄ

<G5Bã

EE-G5BAÇ DHCPv6 AÿÏ# option18/37 ÇÈDHCPv6 á<B option18/37

EÍMÇEÇEÇEÇ}ÃÈÐÜ<G5BÇ|3ÜÔNMSÑ

```
5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJLSYGKFSVRRSLQRUPDWLRQSWLRQ
5XLMLHFRQJHQ
5XLMLHVKRZSYGKFSVRRSLQ
6ZWFK+&YVRRSLQWDWXVÜ1%/(
+&YVRRSLQODQ
+&YVRRSLQOLVDWDWXVÜ1%/(WLPHVHFRQV
QRVQ00À0À0pÈÀ60
```

ÏGÄÈ -

14.9 ipv6 dhcp snooping link-detection

G5B0Ã LINK DOWN Ê8A0|Ã¤><NM,XÔÄÄQ **no 6ÈÁs6Ñ**

ipv6 dhcp snooping link-detection

no ipv6 dhcp snooping link-detection

ÏDAÈ	–D	ÆÄ
	-	-

Ï5,Õ5BÐ 5,ÕKÁ

ÏÐ <G5Bã

ÏSÊ TAxÈÃ LINK DOWN Ê8A0|Ã¤><NMÄ6ÈÃ LINK DOWN Ê 7|Ê8A0|Ã¤X4¤><NMÄ

ÏG5B_Ð _ 1Ö5B0Ã LINK DOWN Ê|Ê8A0|ÃX|Ã¤><NMÄ

5XLMLHFRQ1SYGKFSVQRSLQLQGHWHFWLRQ

ÏÌGÐ	Q	ÆÄ

@0.02 15.6 ref0603 T308 -0.0148 Tw1-0.09 0 01-0.09 125.1359050603 Tm[(sho)17(w)-25(i)8(pv)11(6)-1(d)-6(hcp snoo)6(ping)>]TJTT

ÏG5B_Ð	-

ÏÎGÐ	Ç	ÆÄ

–D	£Ä
vlan-id	ûE> ó,X VLAN

5,Õ5BÐ As6Ñ,ÕKÁ

yG5Bã

EE G5BAÛ DHCPv6 AÿÏ# option18 interface-idÂ VLAN Â,X VLANÈDHCP á<B option18 EÝMÇE> ÓÄ

G5B_Ð G5Bü DHCPv6 AÿÏt9 option18 interface-idÈÝM,X VLAN4094 Â VLAN4093 ,X _Ö

5XLMLHFRQJXUHWHUPLQO
5XLMLHFRQJWHUIDFHIDVW(WKHUHW
5XLMLHFRQJILSYGKFSVRSLQODQ LQRUPDWLRQSWLRQKDHYODQWRYODQ
5XLMLHFRQJIHQ

Q	£Ä
-	-

GÄÈ -

14.13 ipv6 dhcp snooping vlan *vlan-id* information option format-type interface-id string

Û DHCP AÿÏt9 option18 EÝMÈ Ú Option18 interface-id 7%XY•
Ãã ASCIIÂ> E@ ÄÔüG5BÐ G5BAÛ AQX **no 6Ñ**
GÁs6Ñ

ipv6 dhcp snooping vlan *vlan-id* **information option format-type interface-id string** *ascii-string*

no ipv6 dhcp snooping vlan *vlan-id* **information option format-type interface-id string** *ascii-string*

–D	£Ä
vlan-id	DHCPv6 AÿÏü VLAN
ascii-string	Interface-id 0,X7%XY•

5,Õ5BÐ As6Ñ,ÕKÁ

yG5Bã

EE G5BAÛ DHCPv6 AÿÏ# option18 interface-id 7%YÈDHCPv6 á u<B option18 EÝMÇE> ÓÄ

Ï5B_Ð G5Bü DHCPv6

ÏGÄÈ	-

14.15 ipv6 verify source

G5B0Ã¥ÔÄ¥ÇX **no 6ÈÉÃ¥Ä**

ipv6 verify source [**port-security**]

no ipv6 verify source

ÏDAÈ	–D	ÉÄ
	port-security	MAC + IPV6 Ý¥ÈÉ MAC ¥ IPV6 FÕÜ¥><NMÊÉÉ8–DÊ IPV6 Ê¥ ¥y[¥ IPV6 0Ü¥><NMÈÁÉÉ×

Ï5,Õ5BÐ	5,ÕKÁ
Ï¥	0Ã5Bã
ÏSÊ	4¥ÔÊ6ÍA' IPV6 ÉÉ› DHCPV6 xf9ª IPV6 ÈÙu)Ú5BM-Ã¥,XÊÉ?ÄÄ
ÏG5B_Ð	_ 1Ö5B0Ã fastethernet 0/1 Ô MAC+IPV6 Ê¥X4¥Ô 5XLMLHFRQLJWHUIDFHIDVWHWKHUQW 5XLMLHFRQLJILSYYHULIVRXUFHSRUWVHFXULW\

ÏÌGÇ	Q	ÉÄ
	-	-

ÏGÄÈ	-

14.16 renew ipv6 dhcp snooping database

Ô DHCPv6 snooping s6ÑLÔ|! flash ,XÇÐ DHCPv6 Snoo/C2gri5(onC2gr-6(g)

–

flash

14.18 show ipv6 dhcp snooping binding

/ dhcpv6 snooping

ï5,Õ5BÐ -

ïQ (Mã

ïSÊ EÈ8Ã dhcpv6 snooping 4Ô<,XÝÇÄ

ïG5B_Ð _ 1Ö

```
5XLMLHVKRZSYGKFSVQRSLQUHIL[
7RWDOXPEHURISUHIL[
0DFGGUHVV,3Y3UHIL[/HDVHV9/$,WHUIDFH

GIID
```

ïGÐ

Q	EÄ
-	-

ïGÄÈ -

14.20 show ipv6 dhcp snooping statistics

/ dhcpv6 snooping ØÚ dhcpv6 y[,X4ÃuÇÄ

show ipv6 dhcp snooping statistics

ïÐÄÈ

–D	EÄ
-	-

ï5,Õ5BÐ -

ïQ (Mã

ïSÊ EÈ8Ã dhcpv6 snooping ØÚ dhcpv6 y[,X4ÃuÇÄ

ïG5B_Ð _ 1Ö dhcpv6 snooping ØÚ dhcpv6 y[,X4ÃuÇ

```
5XLMLHVKRZSYGKFSVQRSLQWDWLVWLFV
3DFNHWV3URFHVVHGE+&Y6QRSLQ
3DFNHWVURSSHG%HFDXVH
5HFHLYHGRXWUXVWHGSRUWV
5HODIRUZUG
1RELQLQWU\
%LQLQDLO
8QRXDFNHW
8QRXWSXWLWHUIDFH
1RHQXKPHPRU\
GPLQLOWHUGKFSYSNW
```

+‰	Aè
Received on untrusted ports	ü untrust ÞXá<ĥy[
Relay forward	ÿEÔ Relay ,Xy[
No binding entry	release/decline y[ĥ,X4¥><NMâ6ÙÊ [>ö
Binding fail	><NM4¥Bùa Xy[ÊÔ@$
Unknown packet	ÞX DHCP #y[Ä
Unknown output interface	ÞÎXy[Ê MAC Rè trust ÜÝ G5B
No enough memory	ÜÝÇÞXY,

Admin filter-dhcpv6-pkt

```
5XLMLHVKRZSYVRXUFHELQLQ
7RWDOXPEHURIELQLQ
0DFGGUHVV,SYGGUHVV/HDVHVWSH9ODQVHUIDFH

GIGDPLFID
```

ÏGĐ

Q	EÄ
-	-

ÏGÄÈ -

14.22 clear ipv6 dhcp snooping binding

ĉ8 dhcpv6 snooping 4¥DBg,XÝCÄ

clear ipv6 dhcp snooping binding [*ipv6-address*] [*mac-address*] [**vlan** *vlan_id*] [**interface** *interface_name*]

ÏĐAÈ

–D	EÄ
ipv6-address	ÈA¹ ipv6 ĥ,X4¥><NM
mac-address	Ä mac ĥ,X4¥><NM
vlan *vlan_id*	Ä VLAN ĥ,X4¥><NM
interface *interface_name*	ÈAyĥ,X4¥NM

ÏĐ5,Õ5BĐ -

ÏĐ (Mã

ÏSĐ EEAÑ8 dhcpv6 snooping 4¥DBg4ÑXÝCÄ

ÏG5B_Đ _ 1Ñ8 dhcpv6 snooping 4¥DBg,XÝC

```
5XLMLHFOHDULSYGKFSVRRSLQLQLQ
```

ÏGĐ

Q	EÄ
-	-

ÏGÄÈ -

14.23 clear ipv6 dhcp snooping prefix

ĉ8 dhcpv6 snooping 4Ô<,XÝCÄ

clear ipv6 dhcp snooping prefix [*ipv6-prefix*] [*mac-address*] [**vlan** *vlan_id*] [**interface** *interface_name*]

14.25 debug ipv6 dhcp snooping

Ô dhcpv6 snooping ,XAAÔÄÄQ **no 6ÈÑ,XAAÔÄ**

debug ipv6 dhcp snooping {event | packet}

no debug ipv6 dhcp snooping {event | packet}

ÏÐAÈ

–D	ÆÄ
event	_ÊOAÇÈÊCþ DHCPv6 SNP ,XþÑ VLANÃ AP ,XÑ<NMÃ8ÑXÑ 1
packet	dhcpv6 y[2OAÇÈÊCþ DHCPv6 y[,XÑÃ> È sãÇÄ

ÏÕ5BÐ 5,ÕKÁ

ÏÐ (Mã

ÏÊÐ ÊÊAÈ dhcpv6 snooping s6ÑXAÇÄ

ÏÕ5B_Ð _ 1Ô dhcpv6 snooping ,X_ÊOAÇ

5XLMLHGHEXÎSYGKFSVÇRSLÐYHÇ

ÏÌÇÐ

Q	ÆÄ
-	-

ÏÄÈ -

16 NFPP

16.1 arp-guard attack-threshold

G5B<Ï“Ëy[EôCYEÏ“,XÊx,ï Ä

arp-guard attack-threshold {**per-src-ip** | **per-src-mac** | **per-port**} *pps*

ÐAÈ	

ï5,Õ5BÐ	TAx ARP kï6Ñ
¡Q	NFPP G5Bã
ïSÊ	-
ïG5B_Ð	5XLMLHFRQIQSS 5XLMLHFRQIQSSDUSXDUGHQEOH

ÏGÇ	Q	ÆÄ
	nffp arp-guard enable	**0Ð** ARP kï6Ñ
	show nfpp arp-guard summary	**G5B**

ïGÄÈ	-

16.3 arp-guard isolate-period

AÇG5B<Lh/ÊÈ

arp-guard isolate-period {*seconds* | **permanent**}

ÏÐÄÈ	–D	ÆÄ
	seconds	Lh/ÊÈÈÈ 0 ê[30, 86400] Ä
	permanent	**Ï/•**

ï5,Õ5BÐ	<Lh/ÊÈX5,Õ 0Ëáh/Ä
¡Q	NFPP G5Bã
ïSÊ	-
ïG5B_Ð	5XLMLHFRQIQSS 5XLMLHFRQIQSSDUSXDUGLVRODWHSHULRG

ÏGÇ	Q	ÆÄ
	nfpp arp-guard isolate-period	**0Ñ5BÏ/Ê**
	show nfpp arp-guard summary	**G5B**

ïGÄÈ	-

16.4 arp-guard monitored-host-limit

AÇG5BÕXÊDÄ

arp-guard monitored-host-limit *number*

show nfpp arp-guard summary	**G5B**
show nfpp arp-guard hosts	**[illegible]**
clear nfpp arp-guard hosts	**[illegible]**

GÄ[illegible] -

16.6 arp-guard rate-limit

G5B<L[illegible]“

arp-guard rate-limit {per-src-ip | per-src-mac | per-port} *pps*

[illegible]

–D	[illegible]Ä
per-src-ip	[illegible] IP E> L[illegible]ó
per-src-mac	[illegible] MAC E> L[illegible]ó
per-port	[illegible]
pps	L[illegible]“[illegible][1,9999] Ä

5,Õ5BÐ [illegible] IP [illegible] MAC ,X5,Õ[illegible]“[illegible] 4[illegible]X5,Õ[illegible]“[illegible] 100 [illegible]

[illegible] NFPP G5Bã

[illegible] -

G5B_Ð 5XLMLHFR[illegible]S

[redacted]

Q NFPP G5Bã

SÊ Vp 10 /s 15 þ ARP y[ÈÃ MAC ĥ5ã IP ÈÒÃ MAC ã IP ĥ5àÂ IP ÃxÉeÄ

G5B_Đ

```
5XLMLHFRQQSS
5XLMLHFRQQSSDUSXDUGVFDQWKUHVKROG
```

ÌGQ

Q	ÉÄ
nfpp arp-guard scan-threshold	**0Ã5B“**
show nfpp arp-guard summary	**G5B**
show nfpp arp-guard scan	ß ARP ≥<
clear nfpp arp-guard scan	ÈÙ ARP ≥<

GÄÈ -

16.8 clear nfpp arp-guard hosts

Ù8,¥Èp>Lh/ÈÒ28Lh/•

clear nfpp arp-guard hosts [**vlan** *vid*] [**interface** *interface-id*] [*ip-address* | *mac-address*]

ÐAÈ

–D	ÉÄ
vid	<.5%Ë
interface-id	0ÃÄ
ip-address	IP
mac-address	MAC

Õ5BÐ (Mã

Q VpáDÈ</Ù8Ý,¥XÄ

SÊ -

G5B_Đ ^ VLAN 1 0Ã g 0/1 ,X28Lh/Ä

```
5XLMLHFOHDUQSSDUSXDUGKRVWVYODQWHUIDFHJ
```

ÌGQ

Q	ÉÄ
arp-guard attack-threshold	**G5B“**

nfpp arp-guard policyk-threshold ÈÙ nfpp arp-guarhppsicsick-threshold

16.9 clear nfpp arp-guard scan

Ù8 ARP 2<Ä

clear nfpp arp-guard scan

ÐAÈ

–D	ÉÄ
-	-

5,Õ5BÐ -

Q (Mã

SÔ -

G5B_Ð 5XLMLHFOHDUQSSDUSXDUGVFDQ

ÌGÐ

Q	ÉÄ
arp-guard scan-threshold	**G5B“**
nfpp arp-guard scan-threshold	**G5B“**
show nfpp arp-guard scan	ß ARP 2<

GÄÈ -

16.10 clear nfpp define *name* hosts

Ù8,{Èp>Lh/ÈÔ28Lh/Ä

clear nfpp define *name* **hosts** [**vlan** *vid*] [ ] [*ip-address*] [ ] [ ]

ÐAÈ

–D	ÉÄ
name	*7%Ï2Ó*
vid	<.5%Ë

Ï5B_Ð ÙÈ87ñ2O_ tcp ,X VLAN 1 0Ãg 0/1 ,X,¥XÄ

5XLMLHFOHDUQSSGHILQWFSKRVWVYODQWHUIDFHJ

ÏGÐ

Q	ÆÄ
show nfpp define hosts	**/7ñ¿Ï2OXh/Ð**

ÏGÄÈ -

16.11 clear nfpp dhcp-guard hosts

ÙÈ8Ñ28Lh/Ä

clear nfpp dhcp-guard hosts [*vlan vid*] [**interface** *interface-id*] [*mac-address*]

ÏÐÄÈ

–D	ÆÄ
vid	<.5%Ë
interface-id	0ÃÄ
mac-address	MAC

Ï5,Õ5BÐ -

Ï

• Ä

ï5,Õ5BÐ	-
ïÇ	(Mã
ïSÐ	VpáDÈ</È8ÝSÏÇ(ÏBA%SÐ

16.14 clear nfpp ip-guard hosts

Q	E Ä
show nfpp log	**/** NFPP G5B4¢

GÄÈ -

16.16 cpu-protect sub-interface {manage|protocol|route} percent

A9G5BÐ2O_y[4K,X,RÚ

cpu-protect sub-interface {*manage*|*protocol*|*route*} **percent** *percent_vaule*

–D	E Ä
percent_vaule	,RÈ 1 100

5,G5BÐ 1u)Ú2O(Manage) 4¢RÚ 30
E2O(Route) 4¢RÚ 25
A2O(Protocol) 4¢RÚ 45

<G5Bã

SÊ -

G5B_Ð 5XLMLHFRQJFSXSURWHFWVXELQWHUIDFHPDQDHSHUFHQW

Q	E Ä
cpu-protect sub-interface { *manage* | *protocol* | *route* } **pps**	A'5BÐ2O_y[,X4K,X,RÚ !

GÄÈ -

16.17 cpu-protect sub-interface {manage|protocol|route} pps

A9G5BÐ2O_y[,X,GÄ

cpu-protect sub-interface {***manage|protocol|route***} **pps** *pps_vaule*

–D	E Ä
pps_vaule	LS4"È 1-8192

5,G5BÐ 1u)Ú2O(Manage) ,X5,Ê 3000
E2O(Route) ,X5,Ê 3000
A2O(Protocol) ,X5,Ê 3000

<G5Bã

ÏÊÐ	-
ÏG5B_Ð	5XLMLHFRQJFSXSURWHFWVXELQWHUIDFHPDQHSSV
ÏÌGÐ	Q	EÄ

Ï Q NFPP G5Bã

ÏSÊ -

ÏG5B_Đ 5XLMLHFRQ LQSS
5XLMLHFRQ LQSSGKFSJXDUGDWWDFNWKUHVKROGSHUVUFPDF
5XLMLHFRQ LQSSGKFSJXDUGDWWDFNWKUHVKROGSHUSRUW

ÏÎGÐ

Q	ÆÄ
nfpp dhcp-guard policy	**G5BXÄ“**
show nfpp dhcp-guard summary	**G5B**
show nfpp dhcp-guard hosts	**Ø**
clear nfpp dhcp-guard hosts	**Ø**

ÏGÄÈ -

16.20 dhcp-guard enable

AÇÔ DHCP LÏs6Ñ
dhcp-guard enable

ÏÐÄÈ

–D	ÆÄ
-	-

ÏÏ,Õ5BÐ 0ÃÍG5B DHCP kÎÈ*ÔÄ

Ï Q NFPP G5Bã

ÏSÊ -

ÏG5B_Đ 5XLMLHFRQ LQSS
5XLMLHFRQ LQSSGKFSJXDUGHQEOH

ÏÎGÐ

Q	ÆÄ
nffp dhcp-guard enable	**0Ð** DHCP kÏs6Ñ
show nfpp dhcp-guard summary	**G5B**

ÏGÄÈ -

16.21 dhcp-guard isolate-period

AÇG5B<Lh/ÊÈ
dhcp-guard isolate-period {*seconds* | **permanent**}

ÏGÐ	Q	ÆÄ
	show nfpp dhcp-guard summary	**G5B**

ÏGÄÈ -

16.23 dhcp-guard monitor-period

AÐG5B,¥ÊÃ

dhcp-guard monitor- period *seconds*

ÐAÈ	–D	ÆÄ
	seconds	,¥ÊÈÈ[180, 86400] Ä

ÏÕ5BÐ <,¥ÊÈX5,Õ 600 /Ä

Ð NFPP G5Bã

ÏÐ "5,XÊpLh/ÊÈ 0ÊÈ> ECÊÈYÊÊÈCÊÈ/ß
Èh/ÊÈG5BM2LÊ/ÊECÊ,X5ÙÈ@h/ÊÈYÊ'5BLh/•
ÊÃÊÈh/ÊÈ 0 ,XÊ
VpLh/ÊÈM2LÊÊÈ,G0,ÃX5ÙÈ5ÊÈ> ECÊÄ

ÏG5B_Ð 5XLMLHFRQÐSS
5XLMLHFRQÐSGKFSXDUGPRQWRUSHULRG

ÏGÐ	Q	ÆÄ
	show nfpp dhcp-guard summary	**G5B**
	show nfpp dhcp-guard hosts	**Ð**
	clear nfpp dhcp-guard hosts	**ÈÈ•**

ÏGÄÈ -

16.24 dhcp-guard rate-limit

G5B<LÊ4"Ä

dhcp-guard rate-limit { **per-src-mac** | **per-port**} *pps*

ÐAÈ	–D	ÆÄ
	per-src-mac	**Ð** MAC E> LÊó
	per-port	**Ð**
	pps	LÊ4"ÈÈ[1,9999] Ä

ÏÕ5BÐ **Ð** MAC ,X5,ÕÊ4"Ð 5 ÈÃX5,ÕÊ4"Ð 150 Ä

16.26 dhcpv6-guard enable

AQÔ DHCPv6 Lï6Ñ

dhcpv6-guard enable

ÐAÈ	–D	£Ä
	-	-

ï,Õ5BÐ 0ÃÍ5B DHCPv6 kÏÈ*ÔÄ

ÐQ NFPP G5Bã

ÏÔ -

ÏG5B_Ð 5XLMLHFRQQS
5XLMLHFRQQSGKFSYXDUGHQEOH

ÏÏGÐQ

Q	£Ä
nffp dhcpv6-guard enable	**0Ã** DHCPv6 kï6Ñ
show nfpp dhcpv6-guard summary	**G5B**

ÏGÄÈ -

16.27 dhcpv6-guard isolate-period

AQG5B<Lh/ÊÈ

dhcpv6-guard isolate-period {*seconds* | **permanent**}

ÐAÈ	–D	£Ä
	seconds	Lh/ÊÈÈ 0 ê[30, 86400] È 0 ></áh/Ä
	permanent	**ï/•**

ï,Õ5BÐ <Lh/ÊÈX5,Õ 0Ëáh/Ä

ÐQ NFPP G5Bã

ÏÔ ï,ÌXLh/ÊÈLh/ÊÈ0,ÃXLh/ÊÈFÌ/ÊÈpÃ
pÏÍG5Bî0,ÃXLh/ÊÈwG*Lh/ÊÈ0,ÃXLh/ÊÈ

ÏG5B_Ð 5XLMLHFRQQS
5XLMLHFRQQSGKFSYXDUGLVRODWHWLPHRXW

ÏÏGÐQ

Q	£Ä

nfpp dhcpv6-guard isolate-period	**0Ã5Bl/È**
show nfpp dhcpv6-guard summary	**G5B**

ÏGÄÈ -

16.28 dhcpv6-guard monitored-host-limit

AÇG5BÕXÇD

dhcpv6-guard monitored-host-limit *number*

ÏÐAÈ

–D	ÆÄ
number	ÕXÇDÈÈ 1 4294967295

ÏÕ5BÐ 5,ÕXÇD 1000 þ

ÏÇ NFPP G5Bã

ÏSÐ Vp,¥D4E'TAx,X 1000 ÈÊu)Ì,¥XÛ,Â'5Bã 1000È ÕÀ,¥ÈÐÇ%ERROR Ö The value that you configured is smaller than current monitored hosts 1000Ä5B,X,¥DÅ Èlease clear a part of monitored hosts. 9¤ Gf1u)Ì,G5B'ÜÕÕ8FÉE,¥XÄ ¥>Ì% NFPP_DHCP_GUARD-4-SESSION_LIMIT: Attempt to exceed limit of 1000Ä5B,¥DÅ monitored hosts. Gf1u)ÌÄ

ÏG5B_Ð

```
5XLMLHFRQIQSS
5XLMLHFRQIQSSGKFSXDUGPRQWRUHGKRVWOLPLW
```

ÏÏGÇ

Q	ÆÄ
show nfpp dhcpv6-guard summary	**G5B**

ÏGÄÈ -

16.29 dhcpv6-guard monitor-period

AÇG5B,¥ÊÈ

dhcpv6-guard monitor- period *seconds*

ÏÐAÈ

–D	ÆÄ
seconds	,¥ÊÈÈ[180, 86400] Ä

ÏÕ5BÐ <,¥ÊÈX5,Õ 600 /Ä

ÏÇ NFPP G5Bã

ÏÊÕ	"5LXLpLh/KÈ 0ÊÈ> ECÊÇYÊÊKÊCÊÇE/ß Ìh/KÈ>G5BM2LÊÊ/ECÊÇX5ÙÌ³Êh/ÈCYÊ'5BLh/• ÊÇÊÈh/KÈ 0 ,XÊ% VpÌh/KÈM2LÊÊÊ/G0ÃX5ÙÈ5È> ECÊÇÄ
ÏG5B_Ð	5XLMLHFRQIIGSS 5XLMLHFRQIIGSSGKFSYXXDUGPRQWRUSHULRG

ÏÌGÊÇ	Q	EÄ
	show nfpp dhcpv6-guard summary	**G5B**
	show nfpp dhcpv6-guard hosts	**Ê**
	clear nfpp dhcpv6-guard hosts	**ÈÊ•**

ÏGÄÈ	-

16.30 dhcpv6-guard rate-limit

G5B<LÊ4“

dhcpv6-guard rate-limit { **per-src-mac** | **per-port**} *pps*

ÏÐÄÈ	–D	EÄ

16.31 global-policy

AQG5B7ŕkÏ2O_,Xb60ÃE4“Ä

global-policy {per-src-mac | per-src-ip | per-port} *rate-limit-pps attack-threshold-pps*

–D	E Ä
per-src-ip	**bd** IP/VID/0Ãy> Eq4Au
per-src-mac	**bd** MAC/VID/0Ãy> Eq4Au
per-port	**bp[yX()0Ãq4Au**
rate-limit-pps	**4**
attack-threshold-pps	**4**

5,Õ5BÐ -

Q NFPP 7ŕ2O_G5Bã

SÐ ŕkÏ2O_NOA2O_uEq4Au,XÍOsÈbd IP Ay$
MAC Ay> bX7ŕy[Eq4Auèb0,XEq4AuèÍ2O,XL$
E4“Ä“Ä$4“ãÑbÏ“ÄqCYEL$4“ÊA2O,X7ŕ2O_y
[ÉqCYEÏ“ÈÐ logÈÕ trapÊbXÍ2OÈ
EÉG5B,XLh/ÊÃE> Lh/ÇÄ

G5B_Ð 5XLMLHFRQQSS
5XLMLHFRQQSSQSSGHILQWFS
5XLMLHFRQQSSGHILQOREDOSROLFSHUVUFLS
5XLMLHFRQQSSGHILQOREDOSROLFSHUSRUW

ÌGÇ

Q	E Ä
show nfpp define summary	**/7ŕkÏ2O_G5B**
nfpp define *name* **policy**	**G5BÃÄ“**

GÄÈ -

16.32 icmp-guard attack-threshold

G5B<Ï“Èy[EÇYEÏ“,XÊx,ï Ä

	IP **cmp-guard rate-limit**
	NFPP
	-
	5XLMLHFRQIGS 5XLMLHFRQIGSLFPSXDUGDWWDFNWKUHVKROGSHUVUFLS 5XLMLHFRQIGSLFPSXDUGDWWDFNWKUHVKROGSHUSRUW

16.34 icmp-guard isolate-period

AQG5B<Lh/ÊÃ

icmp-guard isolate-period {*seconds* | **permanent**}

–D	£Ä	
seconds	Lh/ÊÈÈ	0 ê[30, 86400] È 0 ></áh/Ä
permanent	**b/•**	

5,Õ5BÐ <Lh/ÊÈX5,Õ 0Ëáh/Ä

NFPP G5Bã

5,XLh/ÊÈLh/ÊÈ0,XLh/ÊÈFL/ÊÈpÃ
püÍG5Bî0,XLh/ÊÈwGxLh/ÊÈb0,XLh/ÊÃ

G5B_Ð 5XLMLHFRQQSS
5XLMLHFRQQSSLFPSXDUGLVRODWHSHULRG

Q	£Ä
nfpp icmp-guard isolate-period	0Ã5BFL/ÊÈ
show nfpp icmp-guard summary	**G5B**

GÄÈ -

16.35 icmp-guard monitored-host-limit

AQG5BÕXÔD

icmp-guard monitored-host-limit *number*

–D	£Ä	
number	ÕXÔDÈÈ	1 4294967295

5,Õ5BÐ 5,ÕXÔD 1000 Ä

NFPP G5Bã

Vp,¥D4E'TAx,X 1000 ÈÊu)Ú,¥XÔ,Â'5Bã 1000ã
ô8,¥,¥ÈÐ,C%ERROR Ö The value that you configured is smaller than current monitored hosts 1000Ä5B,X,¥DÅ Èplease clear a part of monitored hosts. 9¤
Gf1u)Ú,G5BüÕô8FÉ,¥XÄ
¥Ê% NFPP_ICMP_GUARD-4-SESSION_LIMIT: Attempt to exceed limit of 1000Ä5B,X,¥DÅmonitored hosts. Gf1u)Ú

G5B_Đ	5XLMLHFRQQSS 5XLMLHFRQQSSLFPSXDUGPRQWRUHGKRVWOLPLW

ÌGĐ	Q	EÄ
	show nfpp icmp-guard summary	**G5B**

GÄ -

16.36 icmp-guard monitor-period

AQG5B,¥KÊÃ

icmp-guard monitor-period *seconds*

ĐAÈ	–D	EÄ
	seconds	,¥KÊÈ[180, 86400] Ä

5,Õ5BĐ <,¥KÊX5,Õ 600 /Ä

Q NFPP G5Bã

SÐ "5,XÊpLh/KÈ 0ÈÙ> ECÊÈYÊKÊCÊÈ/ß
Èh/KÈG5BM2LÊ/ECÊ,X5Ù¹Ê/ÈYÊ'5BLh/•
KÊKÈh/KÈ 0 ,XÊ
VpLh/KÈM2LÊÊ,G0,X5ÒÈ5> ECÊÄ

G5B_Đ	5XLMLHFRQQSS 5XLMLHFRQQSSLFPSXDUGPRQWRUSHULRG

ÌGĐ	Q	EÄ
	show nfpp icmp-guard summary	**G5B**
	show nfpp icmp-guard hosts	**¥<**
	clear nfpp icmp-guard hosts	**ÈÈ•**

GÄ -

16.37 icmp-guard rate-limit

G5B<LÊ4"Ä

icmp-guard rate-limit { **per-src-ip** | **per-port**} *pps*

ĐAÈ	–D	EÄ
	per-src-ip	**¥** IP E> LÊó

per-port	[illegible]
pps	L[illegible] [1,9999] Ä

Ï5,Õ5BÐ [illegible] IP ,X5,Õ[illegible] ,X5,Õ[illegible] ,X5,Õ[illegible] {5Ë KÖ

S26	200
S2924G	200
S3250E	250
S3760	420
S3760E	250
S5750	130
S5760	130
S86	M8606-CM M8610-CM 400 M8606-CM II M8610-CM II M8614-CM II 2000

5,Õ5BÐ	5,ÕÁ'5B)¡Ã
Q	NFPP G5Bã
SÐ	Vp1u)¡Ã> ,{GÁ'><//ÃEAQ5BÄ¡Ã T CPU ,X ICMP y[ÁÆ CPU¡,XL5Ã:)ÃE G5B}-ÃÐ 5%%ÁÃ> ,{Ä Ã'5B 500 5¡Ã
G5B_Ð	5XLMLHFRQ QSS 5XLMLHFRQ QSSLFPSXDUGWUXVWHGKRVW

ÌGQ	Q	ÆÄ
	show nfpp icmp-guard trusted-host	**G5B**

GÄÈ	-

16.39 ip-guard attack-threshold

G5B<Ä"Ey[EÊYEÄ",XÊx,ä Ä

ip-guard attack-threshold {**per-src-ip** | **per-port**} *pps*

ÐAÈ	–D	ÆÄ
	per-src-ip	**G5B** IP ,XÄ"Ä
	per-port	**G5BÃÄ"Ä**
	pps	Ä¡Ÿ[1,9999] Ä

5,Õ5BÐ	IP ,X5,Õ"Ÿ	20 ÈÃX5,Õ"Ÿ	200 ¡Ä

ckj/C2_0 1 TfNFP0 Tc 1.193 0 Td[<0D[(ckF07114>-7<2C5/TT0 1 C4>5E30C140E-0.0028 Tc 16.2 -45.233 -1.727 T.022T

show nfpp ip-guard summary	**G5B**
show nfpp ip-guard hosts	**Q**
clear nfpp ip-guard hosts	**Ì•**

ÏGÄÈ x6Ã IP LÈ6Õ IP LÄ

16.40 ip-guard enable

AÇ<Ô IP L6Ñ

ip-guard enable

ÏÐÀÈ

–D	ÆÄ
-	-

ÏÕ5BÐ TÀx IP L6Ñ

ÏÇ NFPP G5Bã

ÏÊÐ -

ÏG5B_Ð 5XLMLHFRQQSS
5XLMLHFRQQSSLSXDUGHQEOH

ÏÌGÇ

Q	ÆÄ
nffp ip-guard enable	**0Ã** IP L6Ñ
show nfpp ip-guard summary	**G5B**

ÏGÄÈ -

16.41 ip-guard isolate-period

AÇG5B<Lh/ÊÆ

ip-guard isolate-period {*seconds* | **permanent**}

ÏÐÀÈ

–D	ÆÄ
seconds	Lh/ÊÈÈ 0 ê[30, 86400] Ä
permanent	**Ì/•**

ÏÕ5BÐ <Lh/ÊÈX5,Õ 0Ìáh/Ä

ÏÇ NFPP G5Bã

ÏÊÐ -

	number	Õ,Ô¢DÈÈ×	1 4294967295

ï5,Õ5BÐ	5,Õ,Ô¢D	1000 Ä	
¢Ð	NFPP G5Bã		
ÏSÊÐ	Vp,¢D4E'TA-x,X	1000 ÈÊu)Ú,¢XÔ,Â'5Bã	1000È
	ô8,¢,¢ÈÐ¢"%ERROR	Ö The value that you configured is smaller than	
	current monitored hosts 1000Ä5B,X,¢DÅ	Èplease clear a part of monitored hosts." 9¤	
	Gf1u)Ú,G5BÜÏÊÔ8FÚE,¢XÄ		
		106 55	

show nfpp ip-guard summary	**G5B**

GÄÈ -

16.45 ip-guard scan-threshold

G5B<2“Ä

ip-guard scan-threshold *pkt-cnt*

ÐAÈ

–D	ÆÄ
pkt-cnt	2“È[1,9999] Ä

5,Õ5BÐ 5,Ø“ 10 /¦ 100 Ä

Q NFPP G5Bã

SÔ -

G5B_Ð 5XLMLHFRQQSS
5XLMLHFRQQSSLSXDUGVFDQWKUHVKROG

ÌGÐ

Q	ÆÄ
nfpp ip-guard scan-threshold	**0Ã5B2“**
show nfpp ip-guard summary	**G5B**

GÄÈ -

16.46 ip-guard trusted-host

Vp1u)Ã> ,{GÁ¹></ÃEAQ5BÄ

ip-guard trusted-host *ip mask*

no ip-guard trusted-host {**all** | *ip mask*}

ÐAÈ

–D	ÆÄ
ip	IP
mask	IP ,X}-Õ
all	` **no ÔKÈÃ5B**

5,Õ5BÐ -

Q NFPP G5Bã

SÔ Vp1u)Ã> ,{GÁ¹></ÃEAQ5BÄÃ

T CPU ,X IP y[ÚÄ¥E CPUÈ,XLÈÄ:ÒÄ
Ò'5B 500 5Ã

G5B_Ð ^ 1.1.1.0/24 5%%Ý5BÃ

```
5XLMLHFRQIQS
5XLMLHFRQIQSLSXDUGWUXVWHGKRVW
```

ÏGÐ

Q	ÆÄ
show nfpp ip-guard trusted-hosts	Ã

GÄÈ -

16.47 isolate-period

AÇG5BLh/ÊÃ
isolate-period {*seconds* | **permanent**}

ÐAÈ

–D	ÆÄ
seconds	Lh/ÊÈÈ 0 5[30, 86400] È 0 ></áh/Ä
permanent	Ì/•

5,Õ5BÐ Lh/ÊÈX5,Õ 0Ìáh/Ä

Ð NFPP 7%2O_G5Bã

SÐ Lh/ÊÈ 0 Ê%2O_,Xy[E)[CYEÄ“,XúLh/ÈÃÕÝ¾
n2O_,Xy[Ä

G5B_Ð

```
5XLMLHFRQIQS
5XLMLHFRQIQSQSSGHILQWFS
5XLMLHFRQIQSSGHILQLVRODWHSHULRGSHUPDQW
```

ÏGÐ

Q	ÆÄ
show nfpp define summary	/7%Ï2O_G5BÇ

GÄÈ -

16.48 log-buffer entries

G5B NFPP 4Ã
log-buffer entries *number*

ÐAÈ

–D	ÆÄ

number	4ÈÈ5DÈÈ[0,1024]

Ï5,Õ5BÐ TÀx4ã 256Ä

Ïð NFPP G5Bã

ÏÊÐ -

log-buffer entries *number*	**G5B** NFPP 4Ä
show nfpp log summary	**/** NFPP G5B4Ä

ÏGÄÈ -

16.50 logging

G5B NFPP A)ø4 VLAN 0ÃXÄ

logging vlan *vlan-range*

logging interface *interface-id*

ÏÐÄÈ

–D	ÆÄ
vlan-range	LÔA)ûJ VLAN 8È,XÇÈg9ã1-3,5 Ä
interface-id	*ÊÔÃ*

ÏÕ,ÕG5BÐ ÍÑÃ)Ä

ÏÇ NFPP G5Bã

ÏSÔ EÊAÇ> EÇ)ûJ VLAN 8ÈÔÃ,XÇÄÈG5B

ÊXG2ÊÔÇÊÈÃ^,4Ä

ÏG5B_Ð 1u)Ú%) VLAN 1Ã VLAN 2ÃVLAN 3 ` VLAN 5 ,XÈG5BVÖ

5XLMLHFRQIJS

5XLMLHFRQIJSORJ0ODQ

1u)Ú%)0Ã G 0/1 ,XÈG5BVÖ

5XLMLHFRQIJS

5XLMLHFRQIJSORJ0WHUIDFH*

ÏÎGÇ

Q	ÆÄ
show nfpp log summary	**/** NFPP G5B4Ä

ÏGÄÈ -

16.51 match

AÇÔ7%ÏG!Xy[2O_Ä

match [etype *type***] [src-mac** *smac* **[src-mac-mask** *smac_mask***]] [dst-mac** *dmac* **[dst-mac-mask** *dst_mask***]] [protocol** *protocol***] [src-ip** *sip* **[src-ip-mask** *sip-mask***]] [src-ipv6** *sipv6* **[src-ipv6-masklen** *sipv6-masklen***]] [dst-ip** *dip* **[dst-ip-mask** *dip-mask***]] [dst-ipv6** *dipv6* **[dst-ipv6-masklen** *dipv6-masklen***]][src-port** *sport***] [dst-port** *dport***]**

ÏÐÄÈ dport

type	*ÕÊ2O*
smac	*ß* mac
smac_mask	*ß* mac }-Õ
dmac	*Â* mac
dmac_mask	*Â* mac }-Õ
protocol	IPv4/v6 y[#Ë
sip	*ß* IPv4
sip_mask	*ß* IPv4 }-Õ
sipv6	*ß* IPv6
sipv6_masklen	*ß* IPv6 }-ÕSz
dip	*Â* IPv4
dip_mask	*Â* IPv4 }-Õ
dipv6	*Â* IPv6
dipv6_masklen	*Â* IPv6 }-ÕSz
sport	*ßÕÊ*
dport	*ÂÕÊ*

ÏÕ5BÐ -

Q NFPP G5Bã

ÏÕ ÎX7ïkÏ2O_ÂA2O_ÜG¦Xy[+Ï

ÏG5B_Ð 5XLMLHFRQ5S
5XLMLHFRQ5SQSSGHILQWFS
5XLMLHFRQ5SGHILQPDWFKHWSH[SURWRFRO[

ÏGQ

Q	ÊÄ
show nfpp define summary	**/7ïkÏ2O_G5B**

ÏGÄÈ -

16.52 monitored-host-limit

AQG5BÕÂD
monitored-host-limit *number*

ÏÐÄÈ

–D	ÊÄ		
number	ÕÂDÈÈ	1	4294967295

ÏÕ5BÐ 5,ÕÂD 1000 Ä

Q NFPP 7ïk2O_G5Bã

ÏSÊ	Vp¡¥D4E'TA×,X	1000 ÈÊu)¡¥XÔ,Â'5B5	1000È
	ô8¥¥È5Ç%ERROR	Ö	The value that you configured is smaller than
	current monitored hosts 1000Ä5B,X¡¥DÅ	È	please clear a part of monitored hosts. 9¤
	Gf1u)¡Ĺ5B'ùÊÔ8FÉ¡¥XÄ		
	'¡¥ ¡ÊD ¹¹% NFPP_DEFINE-4-SESSION_LIMIT:		Attempt to exceed limit of
	name(7¾¡ÏO_¾ is 1000	Ä5B,X¡¥DÅ monitored hosts.	¤Gf1u)¡Ä

ÏG5B_Ð	5XLMLHFRQQSS
	5XLMLHFRQQSSQSSGHILQWFS
	5XLMLHFRQQSSGHILQPRQWRUHGKRVWOLPLW

ÏÎGÐ

16.54 nd-guard attack-threshold

G5B<Ï“Ùy[EôYEÏ“,XÊx,ù Ä

nd-guard attack-threshold per-port {**ns-na** | **rs** | **ra-redirect**} *pps*

–D	£Ä	
ns-na	**FAËÊ@**	
rs	**CÃAË**	
ra-redirect	**CÃ@nå[**	
pps	*Ï£Ÿ[*1,9999]	Ä

5,Õ5BÐ pÃAË @5,Õ£Ï“£ 30 ÈÃ<AÈX5,Õ£Ï“£ 30 ÈÃ<
/@ Gnå[,X5,Õ£Ï“£ 30 Ä

NFPP G5Bã

Ï“ãÃL£Ï“Ä

5XLMLHFRQIQSS
5XLMLHFRQIQSSQXDUGDWWDFNWKUHVKROGSHUSRUWQQ
5XLMLHFRQIQSSQXDUGDWWDFNWKUHVKROGSHUSRUWUV
5XLMLHFRQIQSSQXDUGDWWDFNWKUHVKROGSHUSRUWUDUHGLUHFW

Q	£Ä
nfpp nd-guard policy	**G5BX£Ï“**
show nfpp nd-guard summary	**G5B**

-

16.55 nd-guard enable

AQ<Ô ND kÏ6Ñ

nd-guard enable

–D	£Ä
-	-

5,Õ5BÐ TAx ND kÏ6Ñ

NFPP G5Bã

-

G5B_Đ	5XLMLHFRQIQSS 5XLMLHFRQIQSSQXDUGHQEOH

ÏGĐ	Q	EÄ
	nffp nd-guard enable	**0Ð** ND kš6Ñ
	show nfpp nd-guard summary	**G5B**

GÄÈ	-

16.56 nd-guard rate-limit

G5B<LÉ4“Ä

nd-guard rate-limit per-port {**ns-na** | **rs** | **ra-redirect**} *pps*

ÐAÈ	–D	EÄ
	ns-na	**FAË@**
	rs	**CÃAË**
	ra-redirect	**CÃ@nå[**
	pps	LÉ4“ÈÈ[1,9999] Ä

5,Õ5BÐ	pÃAË @5,ÕÉ4“Ł 15 ÈÃ<AÈX5,Ð“Ł 15 ÈÃ< /@ Gnå[,X5,Ð“Ł 15 Ä

Ð	NFPP G5Bã

SÐ	-

G5B_Đ	5XLMLHFRQIQSS 5XLMLHFRQIQSSQXDUGUDWHOLPLWSHUSRUWQQ 5XLMLHFRQIQSSQXDUGUDWHOLPLWSHUSRUWUV 5XLMLHFRQIQSSQXDUGUDWHOLPLWSHUSRUWUDUHGLUHFW

ÏGĐ	Q	EÄ
	nfpp nd-guard policy	**G5BXÈ4“**

Ï–DAÈ	–D	ÆÄ
	-	-

Ï5,Õ5BÐ 0ÃÝ5B ARP kÏÔÈ*ÔÄ

ÏÐ yG5Bã

ÏSÔ 0Ã,X ARP kÏÔb< ARP kÏÔÄ

Ï5B_Ð 5XLMLHFRQ1WHUIDFH*
5XLMLHFRQ1IQSSDUSXDUGHQEOH

ÏÎGÇ

Ç	ÆÄ
arp-guard enable	**Ô** ARP kÏ6Ñ

16.59 nfpp arp-guard policy

0Ã5BF¼XL$4“Ì“Ä

ÏSÊÐ -

ÏG5B_Ð

```
5XLMLHFRQLIQWHUIDFH*
5XLMLHFRQLIQSSDUSXDUGVFDQWKUHVKROG
```

ÏÎGÐ

Q	ÆÄ
arp-guard scan-threshold	**G5B“**
show nfpp arp-guard summary	**G5B**
show nfpp arp-guard scan	ß ARP ²<
clear nfpp arp-guard scan	ÈÙ ARP ²<

ÏGÄÈÐ -

16.61 nfpp define

AÐÎ7ïkÏ2O_Ä

nfpp define *name*

ÏÐAÈÐ

–D	ÆÄ
name	*7ïkÏ2O_Ä*

ÏÕ,Õ5BÐ -

ÏÐ NFPP G5Bã

ÏSÊÐ ÎX7ïkÏ2O_

ÏG5B_Ð

```
5XLMLHFRQLIQSS
5XLMLHFRQLIQSSQSSGHILÐWFS
5XLMLHFRQLIQSSGHILÐ
```

ÏÎGÐ

Q	ÆÄ
show nfpp define summary	**/7ïkÏ2O_G5B**

ÏGÄÈÐ -

16.62 nfpp define *name* enable

AÐÎÕX7ïk2O_kÏs6Ñ

nfpp define *name* **enable**

ÏÐAÈÐ

–D	ÆÄ

name	7?¼Ï2_áÄ

ï5,Õ5BÐ -

ÐQ yG5Bã

ÏSÊÐ NO,Ä7?¼ÈG5BZ matchÃ rate-count Ã rate-limit ` attack-threshold ÈG5B6Ñ ÈG5BBÄ

ÏG5B_Ð 5XLMLHFRQLJQWHUIDFH*
5XLMLHFRQLJQSSGHILQWFSHQDEOH

ÏÌGÐQ

Q	ÈÄ
show nfpp define summary	/7?¼Ï2O_G5BÇ

ÏGÄÈÐ -

16.63 nfpp define *name* isolate-period

AÐQÃG5BFL4n/ÊÃ
nfpp define *name* **isolate-period** {*seconds* | fi7 03Th0 13(n 03(nt-0.0049 0 0 9 62.04 5m<160005104B82AF220CF3

16.64 nfpp define *name* policy

0Ã5BF¼XL£4“Ï“Ä

nfpp define *name* **policy** {**per-src-ip | per-src-mac** | **per-port**} *rate-limit-pps attack-threshold-pps*

ÏDAÈ

–D	£Ä
per-src-ip	**G5B** IP ,XÏ“Ä
per-port	**G5BÃÏ“Ä**
rate-limit-pps	**£È** 1 9999Ä
attack-threshold-pps	**ÏÈ** 1 9999Ä

Q	E
dhcp-guard enable	**Ô** DHCP kï6Ñ
show nfpp dhcp-guard summary	**G5B**

-

16.66 nfpp dhcp-guard isolate-period

AQ0Ã5BFL/h/ÊÃ

nfpp dhcp-guard isolate-period {*seconds* | **permanent**}

–D	E
seconds	Lh/ÊÈÈÈ 0 ê[30, 86400] È 0 ></áh/Ä
permanent	**L/•**

5,Õ5BÐ 5,Õ5BFL/h/ÊÈ*Lh/ÊÃ

yG5Bã

-

5XLMLHFRQLIQWHUIDFH*

5XLMLHFRQLIQSSGKFSXDUGLVRODWHSHULRG

Q	E
dhcp-guard isolate-period	**G5B/Ê**
show nfpp dhcp-guard summary	**G5B**

-

16.67 nfpp dhcp-guard policy

0Ã5BF¼XL$4“Ä

nfpp dhcp-guard policy { **per-src-mac** | **per-port**} *rate-limit-pps attack-threshold-pps*

–D	E
per-src-mac	**G5B** MAC ,XL$4“Ä
per-port	**G5BÃÄ**
rate-limit-pps	**ÄÈ** 1 9999Ä
attack-threshold-pps	**ÄÈ** 1 9999Ä

5,Õ5BÐ 0ÃÝÅXL$4“ÈÈ,XL$4“L$4“Ä

Q	yG5Bã
SÊ	¼“ãÃL$4“Ä
G5B_Đ	5XLMLHFRQLIQWHUIDFH* 5XLMLHFRQLIQSSGKFSXDUGSROLFSHUVUFPDF 5XLMLHFRQLIQSSGKFSXDUGSROLFSHUSRUW

Q	EÄ
dhcp-guard attack-threshold	**G5B“**
dhcp-guard rate-limit	**G5B“**

16.69 nfpp dhcpv6-guard isolate-period

nfpp dhcpv6-guard isolate-period {*seconds* | **permanent**}

	–D		
seconds		0 [30, 86400]	0

5XLMLHFRQLIQSSGKFSYXDUGSROLFSHUSRUW

ÏGÐ

Q	EÄ
dhcpv6-guard attack-threshold	**G5B“**
dhcpv6-guard rate-limit	**G5B“**
show nfpp dhcpv6-guard summary	**G5B**
show nfpp dhcpv6-guard hosts	**Ÿ**
clear nfpp dhcpv6-guard hosts	**ÈÄ•**

ÏGÄÈ -

16.71 nfpp icmp-guard enable

AÿQÐ ICMP kï6Ñ

nfpp icmp-guard enable

ÏÐÄÈ

–D	EÄ
-	-

ï5,Õ5BÐ 0ÃÍ5B ICMP kÏÈ*ÔÄ

ÏÐ yG5Bã

ÏSÐ 0Ã ICMP kÏb< ICMP kÏÄ

ÏG5B_Ð 5XLMLHFRQLIQWHUIDFH*

5XLMLHFRQLIQSSLFPSXDUGHQEOH

ÏGÐ

Q	EÄ
icmp-guard enable	**Ô** ICMP kï6Ñ
show nfpp icmp-guard summary	**G5B**

ÏGÄÈ -

16.72 nfpp icmp-guard isolate-period

AÿQÃ5BFL/h/ÊÃ

nfpp icmp-guard isolate-period {*seconds* | **permanent**}

ÏÐÄÈ

–D	EÄ
seconds	Lh/ÊÈÈ 0 5[30, 86400] È 0 ></áh/Ä
permanent	**h/•**

̈5,Õ5BĐ	5,ØŸ5BF⁄h/ÉÈ¤Lh/ÉÃ
̈Ð	yG5Bã
̈Sθ	-

Ġ5B_Đ

```
5XLMLHFRQILJWHUIDFH*
5XLMLHFRQILJQISSLFPSJXDUGLVRODWHSHULRG
```

ÏĠĐ

Ç	ĒÄ
icmp-guard isolate-period	**G5B/Ê**
show nfpp icmp-guard summary	**ß5B**

ĠÄð -

16.73 nfpp icmp-guard policy

0Õ5BF¼XLĒö"Ï"Ä

nfpp icmp-guard policy { **per-src-ip** | **per-port**} *rate-limit-pps attack-threshold-pps*

ĐAð

–D	ĒÄ
per-src-ip	**G5B** IP ,XLĒö"Ï"Ä
per-port	**G5BÃÄÄ**
rate-limit-pps	**ÉÈ** 1 9999Ä
attack-threshold-pps	**ÏÈ** 1 9999Ä

̈5,Õ5BĐ	0ÃÝ¾XLĒö"Ï"È¤,XLĒö"ÌĒö"Ä
̈Ð	yG5Bã
̈Sθ	Ï"áÑLĒö"Ä

Ġ5B_Đ

```
5XLMLHFRQILJWHUIDFH*
5XLMLHFRQILJQISSLFPSJXDUGSROLF\SHUVUFLS
5XLMLHFRQILJQISSLFPSJXDUGSROLF\SHUSRUW
```

ÏĠĐ

Ç	ĒÄ
icmp-guard attack-threshold	**G5È"**
icmp-guard rate-limit	**G5É"**
show nfpp icmp-guard summary	**ß5B**
show nfpp icmp-guard hosts	**Ï**
clear nfpp icmp-guard hosts	**ÈÆ•**

GÄÈ -

16.74 nfpp ip-guard enable

AÇ0Ð IP L86Ñ

nfpp ip-guard enable

ÐAÈ

–D	EÄ
-	-

5,Õ5BÐ 0ÃÝ5B IP LÊÈ*ÊÄ

Ð yG5Bã

SÐ 0,X IP LÊb<LÊÄ

G5B_Ð IP

ÏÎGÐ

Q	ÆÄ
ip-guard isolate-period	**G5B/Ê**
show nfpp ip-guard summary	**G5B**

ÏGÄÀ -

16.76 nfpp ip-guard policy

0Ã5BF¼XL£4“Ì“Ä

nfpp ip-guard policy {**per-src-ip** | **per-port**} *rate-limit-pps attack-threshold-pps*

ÏÐÀÀ

–D	ÆÄ
per-src-ip	**G5B** IP ,XÏ“Ä
per-port	**G5BÃÏ“Ä**
rate-limit-pps	**ÆÈ** 1 9999Ä
attack-threshold-pps	**ÏÈ** 1 9999Ä

ÏÏ,Õ5BÐ 0ÃÝÁXL£4“Ì“Ìs,XL£4“Ì“Ä

ÏÐ yG5Bã

ÏSÐ Ï“áÃL£4“Ä

ÏG5B_Ð

5XLMLHFRQLIQWHUIDFH*
5XLMLHFRQLIQSSLSXDUGSROLFSHUVUFLS
5XLMLHFRQLIQSSLSXDUGSROLFSHUSRUW

ÏÎGÐ

Q	ÆÄ
ip-guard attack-threshold	**G5B“**
ip-guard rate-limit	**G5B“**
show nfpp ip-guard summary	**G5B**
show nfpp ip-guard hosts	**Ï**
clear nfpp ip-guard hosts	**ÈÈ**

ÏGÄÀ -

16.77 nfpp ip-guard scan-threshold

0Ã5BF¾Ä

nfpp ip-guard scan-threshold *pkt-cnt*

ÏÐÀÀ

–D	ÆÄ
pkt-cnt	**¾“È**[1,9999] Ä

ï5,Õ5BÐ	ïG5Bî0ÃX IP 2“È¥ ARP 2“Ä
¡Q	yG5Bã
ÏSÊ	-
ÏG5B_Ð	5XLMLHFRQ1WHUIDFH* 5XLMLHFRQ1IQSSLSXDUGVFDQWKUHVKROG

ÌGÐ	Q	ÉÄ
	ip-guard scan-threshold	**G5B“**
	show nfpp ip-guard summary	**¡G5B**

ÏGÄÈ	-

16.78 nfpp nd-guard enable

Ag0Ð	ND kï6Ñ

nfpp nd-guard enable

ÏÐÄÈ	–D	ÉÄ
	-	-

ï5,Õ5BÐ	0ÃÍG5B ND kÏÒ¥ÒÄ
¡Q	yG5Bã
ÏSÊ	0ÃX ND kÏÒb<ÒÄ
ÏG5B_Ð	5XLMLHFRQ1WHUIDFH* 5XLMLHFRQ1IQSSQXDUGHQEOH

ÌGÐ	Q	ÉÄ
	nd-guard enable	**Ò** ND kï6Ñ
	show nfpp nd-guard summary	**¡G5B**

ÏGÄÈ	-

16.79 nfpp nd-guard policy

0ÃG5BF¼XLÉ4“Ä	

nfpp nd-guard policy per-port {**ns-na** | **rs** | **ra-redirect**} *rate-limit-pps attack-threshold-pps*

ÏDAÊ	–D	ÉÄ
	ns-na	**FAËÉ@**
	rs	**CÃAÉ**
	ra-redirect	**CÃAAAAAAC[illegible]**

mac-address	MAC

ï5,Õ5BÐ -

ÐQ (Mã

ÏSÐ -

Ï5B_Ð _ 1ÐÏ,X4ÃuÇÄ

5XLMLHVKRQSSDUSXDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO

!Ý 120 Ä•¥È 100 Ä•ÊLh/È 20 ÄÊh/BÈCK,Xs
Ý,ÇÈÈÐÇÅ
_ 2ÐÏÈ remain-time(seconds) Û-,XLh/ÊÈ

5XLMLHVKRQSSDUSXDUGKRVWV
,IFROXPQKRZLWPHDQKDUGZUHGRQWLVRODWHXVHU
9/$LQWHUIDFH,3DGGUHVV0&GGUHVVUHPDLQWLPHV

ÏL
ÏL
ÏL
ÏL
7RWDOÖRVWV

ÏÏGÐQ

Q	ÈÄ
clear nfpp arp-guard hosts	ÈÏ

ÏGÄÈ -

16.81 show nfpp arp-guard scan

¦ß ARP ²<

show nfpp arp-guard scan [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*] [*mac-address*]]]

ÏÐÄÈ

–D	ÈÄ
statistics	ß ARP ²<,XA),5D
vid	ÏÏ
interface-id	0ÄÏ
ip-address	IP
mac-address	MAC

ï5,Õ5BÐ -

ÏQ (Mã

ÏSÊÐ -

ÏG5B_Ð

```
5XLMLHVKRQSSDUSXDUGVFDQWDWLVWLFV
$3VFDQWDEOHKDVUHFRUGV
ÄARP 2<EÝ 4 5A),Ä
```

```
5XLMLHVKRQSSDUSXDUGVFDQ
9/$LQWHUIDFH,3DGGUHVV0&GGUHVVWLPHVWDPS

t1$
t
t1$
t1$
7RWDOÖHFRUGV
```

timestamp A),X"Î# ARP 2XÊÈ2008-01-23 16:23:10 ></ü 2008 H 1 Ü 23 ¹ 16 & 23 Ú 10 /¦Î# ARP 2Ä

```
5XLMLHVKRQSSDUSXDUGVFDQODQWHUIDFH*
9/$LQWHUIDFH,3DGGUHVV0&GGUHVVWLPHVWDPS

t1$
7RWDOÖHFRUGV
```

ÏÏGQ

Q	EÄ
arp-guard scan-threshold	**G5B“**
nfpp arp-guard scan-threshold	**G5B2“**
clear nfpp arp-guard scan	**Ì** ARP 2<

ÏGÄÈ -

16.82 show nfpp arp-guard summary

¡G5BÇÄ

show nfpp arp-guard summary

ÏÐÄÈ

–D	EÄ
-	-

ï5,Õ5BÐ -

Ö (Mã

ÖSÔ EÊ ÃG5BÇÄ

Ö5B_Đ 5XLMLHVKRQSSDUSXDUGVXPPDU\
ÄRUPDWRIFROXP5DWHOLPLWDQ$WWDFNWKUHVKROGLVSHUVUFLSSHUVUFPDFSHUSRUWÅ
,QWHUIDFH6WDWXV,VRODWHSHULRG5DWHOLPLW$WWDFNWKUHVKROG6FDQWKUHVKROG
ÔOREDO(QEOH
ÊL(QEOH
ÊLLVDEOH

0D[LPXPFRXQWRIPRQWRUHGKRVWV
0RQWRUSHULRGÖ

Interface	Global
Status	
Rate-limit	IP / MAC /
Attack-threshold	“ - ”

ÌGÐ

Q	ÊÄ
arp-guard attack-threshold	**G5B“**
arp-guard enable	**Ô** ARP kÏs6Ñ
arp-guard isolate-period	**G5B/Ê**
arp-guard monitor-period	**G5Ê**
arp-guard monitored-host-limit	**G5Ô**
arp-guard rate-limit	**G5B“**
arp-guard scan-threshold	**G5B“**
nfpp arp-guard enable	**0Ñ** ARP kÏs6Ñ
nfpp arp-guard isolate-period	**G5B/Ê**
nfpp arp-guard policy	**G5B“**
nfpp arp-guard scan-threshold	**G5B“**

ÏGÄÈ -

16.83 show nfpp define hosts

¡ÇÄ

show nfpp define hosts *name*h

statistics	¥X4ªAuÇ
vid	<.5%Ë
interface-id	0ÃÄ
ip-address	IP
mac-address	MAC
ipv6-address	IPv6

Ï5,Õ5BÐ (Mã

Ï¤ -

ÏSÊ ÃDE> E¸Ä

Ï5B_Ð

```
5XLMLHVKRÇSSGHILÇKRVWV   WFS WDWLVWLFV
HILÇWFSÖ
VXFFHVVIDLOWRWDO
```

ÏÝ 120 ÄLh/È 100 Ä/äÈ0 Ä/BÄ

```
5XLMLHVKRÇSSGHILÇKRVWVWFS
HILÇWFSÖ
,IFROXPÇKRZLWPHDÇKDUGZUHGRÇWLVRODWHKRVW
9/$LÇWHUIDFH,3DGGUHVV0$GGUHVVUHPDLÇWLPHV

Ï
Ï
7RWDOÖRVWV
```

ÏÎGÇ

Ö (Mã

SÔ EEA5BCÄ name ><//,X7ïkÏO_

G5B_Đ 5XLMLHVKRQSSGHILQVXPPDUWFS
HILQWFSVXPPDU\
PDWFKHWSH[SURWRFRO[
0D[LPXPFRXQWRIPRQWRUHGKRVWV
0RQWRUSHULRGÖ
ÄRUPDWRIFROXP5DWHOLPLWDQ$WWDFNWKUHVKROGLVSHUVUFLSSHUVUFPDFSHUSRUWÅ
,QWHUIDFH6WDWXV,VRODWHSHULRG5DWHOLPLW$WWDFNWKUHVKROG
OREDO(QEOH
(QEOH
LVDEOH

Interface Global

Status

ÌGÐ

Q	EÄ
match	**7ïkÏGXy[2O**
policy	**7ïkÏ4“**
isolate-period	**7ïkÏ/È**
monitor-period	**7ïkÏÊ**
monitored-host-limit	**7ïkÏÔ**

GÄÈ -

16.85 show nfpp define trusted-host

¼XÃ
show nfpp define trusted-host *name*

ÐAÈ

–D	EÄ
name	*7ïkÏ2Oá*

5,Õ5BÐ -

Ö (Mã

SÔ -

G5B_Đ ¼5BÄ
5XLMLHVKRQSSGHILQWUXVWHGKRVWWFS

HILĘWFS
,3DGGUHVVPDVN

7RWDOÖHFRUGV

ÏĞĢ

Ą	Ł Ä
trusted-host	**G5Ø¼kĪ**

-

16.86 show nfpp dhcp-guard hosts

¹ĢÄ

show nfpp dhcp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

ĐAĝ

–D	Ł Ä
statistics	**ĢX4ŻAuĢ**
vid	<.5%Ë
interface-id	0áBtlÊEeĞ'dBF·vĢdXT·v7ãĝĝĢĢĢ-DGFĝGBA”ĝGNĝGG Hnß8b–Hn9ĝĢĢË

```
1
7RWDOKRVWV
```

ÏGÐ

Q	EÄ
clear nfpp dhcp-guard hosts	**BK**

ÏGÄÐ -

16.87 show nfpp dhcp-guard summary

¦G5BÇÄ

show nfpp dhcp-guard summary

ÏÐÄÐ

–D	EÄ
-	-

ÏÕ5BÐ -

Ð (Mã

ÏÊ EÊÄÕG5BÇÄ

ÏG5B_Ð

```
5XLMLHVKRÐSSGKFSXDUGVXPPDU\
ÄRUPDWRIFROXPÐDWHOLPLWDQWWDFNWKUHVKROGLVSHUVUFLSSHUVUFPDFSHUSRUWÅ
,WHUIDFH6WDWXV,VRODWHSHULRG5DWHOLPLWWWDFNWKUHVKROG
OREDO(DEOH
L(DEOH
LLVDEOH

0D[LPXPFRXWRIPRDWRUHGKRVWV
0RDWRUSHULRGÖ
```

Interface Global

Status

Rate-limit IP / MAC /

Attack-threshold “ - ”

ÏGÐ

Q	EÄ
dhcp-guard attack-threshold	**G5B“**
dhcp-guard enable	**Ô** DHCP kÏ6Ñ
dhcp-guard isolate-period	**G5B/Ê**
dhcp-guard monitor-period	**G5BÊ**

dhcp-guard monitored-host-limit	**G5**
dhcp-guard rate-limit	**G5**
nfpp dhcp-guard enable	**0** DHCP k6Ñ
nfpp dhcp-guard isolate-period	**G5**
nfpp dhcp-guard policy	**G5**

nfpp dhcpv6-guard policy	**G5B**

-

16.90 show nfpp icmp-guard hosts

show nfpp icmp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

–D	E
statistics	**X4Au**
vid	<.5%Ë
interface-id	0
ip-address	IP

-

(M

ÏÐAÐ	–D	EÄ
	-	-

ï5,Õ5BÐ -

ÏÐ (Mã

ÏSÐ EÏAÇ5BÇÄ

ÏG5B_Ð

5XLMLHVKRÇSSLFPSXDUGVXPPDU\
ÄRUPDWRIFROXP5DWHOLPLWDQ$WWDFNWKUHVKROGLVSHUVUFLSSHUVUFPDFSHUSRUWÅ
,QWHUIDFH6WDWXV,VRODWHSHULRG5DWHOLPLW$WWDFNWKUHVKROG
ÏOREDO(QEOH
ÏL(QEOH
ÏLLVDEOH

0D[LPXPFRXQWRIPRQWRUHGKRVWV
0RQWRUSHULRGÖ

Interface Global

Status

Rate-limit IP / MAC /
Attack-threshold “ - ”

ÏÏGÇ Ç120 Td<058.94 358.52 mh5380057857 Tc 7Tc 7Tc 7Tc 7Tc 7Tc 02 3Td0.902 g12519A345CD1B00640071>]TJTT0 1

ÏÐAÐ	–D	£Ä
	-	-

ÏÐ,Õ5BÐ -

ÏÐ (Mã

ÏÐ -

ÏÐ5B_Ð ¡Ã5BÄ

5XLMLHVKRQSSLFPSXDUGWUXVWHGKRVW
,3DGGUHVVPDVN

7RWDOÜHFRUGV

ÏÐ	Q	£Ä

5Ý	120 Ä Lh/È	100 Ä h/ä È0	Ä h/B Ä
5XLMLHVKRQ DSSLSX DUGKRVWV ,IFROXPQ VKRZ VLWPHDQ VKDUGZ DUHGRQ WLVRODWHKRVW 9/$LQ WHUIDFH,3DGGUHVV5HDVRQ HPDLQ WLPHV L$7& L6& 7RWDOÖ RVWV			

“ Reason ”	“ ATTACK ”	IP
“ SCAN ”		

ÏGQ ’F °

Status				
Rate-limit	IP	/	MAC	/
Attack-threshold	“ - ”			

ÏÎGÐ

Q	ÆÄ
ip-guard attack-threshold	**G5B“**
ip-guard enable	**Ô** IP L26Ñ
ip-guard isolate-period	**G5B/Ê**
ip-guard monitor-period	**G5ÊK**
ip-guard monitored-host-limit	**G5ÊD**
ip-guard rate-limit	**G5B“**
nfpp ip-guard enable	**0Ô** IP L26Ñ
nfpp ip-guard isolate-period	**G5Bb/Ê**
nfpp ip-guard policy	**G5BÊ“**

ÏGÄÈ -

16.95 show nfpp ip-guard trusted-host

¡ÊXÃ

show nfpp ip-guard trusted-host

ÏÐAÈ

–D	ÆÄ
-	-

ÏÕ,Ã5BÐ -

ÏÐ (Mã

ÏSÔ -

ÏG5B_Ð ¡Ã5BÄ

```
5XLMLHVKRQSSLSXDUGWUXVWHGKRVW
,3DGGUHVVPDVN



7RWDOÖHFRUGV
```

ÏÎGÐ

Q	ÆÄ
ip-guard trusted-host	**G5ÊXÃ**

```
$3      $
$       $
```

Protocol Ö
ARPÄ ARP kÄ
IPÄ IP LÅ
ICMPÄ ICMP kÄ
DHCPÄ DHCP kÄ
DHCPv6Ä DHCPv6 kÄ
NS-NAÄ ND kÏXFÄÉ@
RSÄ ND kÏXCÃ<AÉ
RA-REDIRECTÄ ND kÏXCÃ<@nå[Å

Reason ></sÉ 5 /Ö
DoS ></”#aÏ
ISOLATED ></5>•@h/•
ISOLATE_FAILED ></Lh/5Bù
SCAN ></”Ø
PORT_ATTACKED ></0ÃÏ

Q	ÉÄ
clear nfpp log	**ÒN** NFPP 4ç

-

16.97 show nfpp nd-guard summary

¡G5BÇÄ

show nfpp nd-guard summary

–D	ÉÄ
-	-

(Mã

-

EÉÄÇG5BÇÄ

5XLMLHVKRÇSQXDUGVXPPDU\
ÄRUPDWRIFROXPÇDWHOLPLWDQ$WWDFNWKUHVKROGLV161$65$(',5(&Å
,QWHUIDFH6WDWXV5DWHOLPLW$WWDFNWKUHVKROG
OREDO(QDEOH

ŁQEOH
ŁLVDEOH

Interface Global

Status

Rate-limit / / / /
Attack-threshold “ - ”

“ -/5/30 ” G 0/2 /
5 / 30

Q	ŁÄ
nd-guard attack-threshold	**G5B“**
nd-guard enable	**Ô** ND kš6Ñ
nd-guard rate-limit	**G5B“**
nfpp nd-guard enable	**0Ð** ND kš6Ñ
nfpp nd-guard policy	**G5BÄ“**

-

16.98 trusted-host

G5Bá¶XÃ
trusted-host {*mac mac_mask* | *ip mask* | *IPv6/prefixlen*}
no trusted-host {**all |** *ip mask* | *IPv6/prefixlen* }

–D	ŁÄ
mac	mac
mac_mask	mac ,X}-Õ
ip	IP
mask	IP ,X}-Õ
IPv6/prefixlen	IPv6 }-ÕSz
all	` **no ÔKÈG5B**

5,Õ5BÐ 5,ÕÁ’5B)Ã

NFPP 7?2O_G5Bã

Vp1u)Ã> ,{GÁ></ÃEAQ5BÄÃ
T CPU ,X ICMP y[>AE CPUÃ,XLÃ:ÃEG5B}-ÃÕ

17

17.1 security-mode compatible

5,Ã x6]<s6Ñ RGOS Pã,ÈÈÇ **security-mode compatible A5B**
PÊ0A5B RGOS M2Pã,Èü **no Ç5Ö**
security-mode compatible
no security-mode compatible

Ï–DAÈ	–D	ÉÄ
	-	-

Ï5,Õ5BÐ 5,Õ5BÈ x6]<s6Ñ RGOS Pã,

Ï Ç <G5Bã

ÏSÊ

Ï G5B_Ð _ 1Ö5B]<s6Ñ M2 RGOS Pã,Ö

,ÇOÇ

-ACL&QOS

Ü¡ ACL&QOS Q¸–5¸ÌGYÈ8VÖ

1. ACL
2. IP QOS

1 ACL

1.1

[illegible]

[illegible]	ÿ
id	A“KÂ<DÃ8È IP ÚÛ ACLÖ 1-99È 1300-1999 IP =) ACLÖ 100-199È 2000-2699 MAC =) ACLÖ 700–799 Š) ACLÖ 700–2899
name	ACL á
sn	ACL ><NMcË Ö(A5B{)
start-sn	cËKŸ
inc-sn	cËG£
deny	VpG¦A“KÂ
permit	VpGÀÆ“KÂ
port	ÃÃ,4È IPv6 ,XA+Ã‰ ipv6È icmpÈ tcp Èudp Ð 0-255È IPv4Ã eigrpÈ greÈ ipinipÈ igmpÈ nosÈ ospfÈ icmpÈ udpÈ tcpÈ ip ,X ÃÃ< IP ÃÃ,X 0-255 4ÃGÐÃ,V icmp/tcp/udp 1) (Ã> AÈ
interface idx	Eg9G¦Xy·
src	y[ÃÃ4Å
[illegible]	[illegible] 0.255.0.32
src-ipv6-pfix	ÃÃ IPv6 5ÃÃ42O_
dst-ipv6-pfix	,ÃX IPv6 5ÃÃ42O_
pfix-len	PÈCK}-Ã
src-ipv6-addr	ÃÃ IPv6
dst-ipv6-addr	,ÃX IPv6
dscp	ÃÃ-Ã, -ÃÈ 8È 0-63 [illegible]

precedence	y[,X¼{ÿ-7 Å
range	y[,X0Ãx
time-range tm-rng-name	y[E$XÊÄ tm-rng-name
tos	y[,Xá2O_Ä-15Å
cos	y[cos (0-7)
cos inner cos	y[YF¼ tag ,X cos
icmp-type	ICMP y[,XÊ2O_Ä-255 Å
icmp-code	ICMP y[,XÊ2O_-Ã-255 Å
icmp-message	ICMP y[,XÊ2O_á
operator port[port]	Operator ¡00Ä-aÈq- 1bÈt- bÈeq- 1bÈrange- 8Å port 0ÃLÔpÃÊ,X¡00ÃpÃ
src-mac-addr	$,X(=)Ú
dst-mac-addr	,Â,X,X(=)Ú
VID vid	ûJ,X vlan id
VID inner vid	ûnYF¼ tag ,X vid
ethernet-type	F%2O_Ãg9 0x D
match-all tcpf	G! tcp flag ,X!Ý
text	¨Gp
in	É9Ay¡,Xy[E> E$
out	Á¡yEgÎXy[E> E$
{rule mask offset}+	rule AE,XÈmask AE,X}-Õ offset #GÃ5#G≥< “+”Ë</7Ã

y[¾VÖ

AA AA AA AA AA AA BB BB BB BB BB BB CC CC DD DD

DD DD EE FF GG HH HH HH II II JJ KK LL LL MM MM

NN NN OO PP QQ QQ RR RR RR RR SS SS SS SS TT TT

UU UU VV VV VV VV WW WW WW WW XY ZZ aa aa bb bb

h#G≥<VÖ

+¦	ÿ

F	SSAP(ßéA“KÂ)+‰	19	T	TCP ß0Ã	46

TCP

destination-mac-address | **any**} [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*]

ôGÞ/#,X Expert =)A“KÂ<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**} [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)Ö

access-list *id* {**deny** | **permit**} **tcp** [**VID** [*out*][**inner** *in*]]{*source source-wildcard* | **host** *Source* | **any**} {**host** *source-mac-address* | **any** } [**operator** port [*port*]] {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [**operator port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag*]

User Datagram Protocol (UDP)Ö

access-list *id* {**deny** | **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*Tf -0.0019 Tc 5.287 025

tos	**y[¥2O_**
tos	**y[¥2O_**Ä-15Å
icmp-type	ICMP y[,X€2O_Ä-255 Å
icmp-code	ICMP y[,X€2O_-Ã-255 Å
icmp-message	ICMP y[,X€2O_áÄ
operator	¡00Ä-5È eq- 1bÈ gt-bÈ eq- 1bÈ range- 8Å
port [*port*]	0Ã *range* [illegible]
host *source-mac-address*	¶,X(=)Ä
host *destination-mac-address*	,Â X,X(=)Ä
VID *vid*	ûÛ,X vid E> G!
ethernet-type	¶%2O_
match-all	G! *tcp flag* Ý
tcp-flag	tcp flag ûÛ
text	¨Gp

ï5,Õ5BÐ ùÿ ACL

ÏQ¸ <G5Bã

ÏSÛ ZSÄ“KÂ<ÍDBE> EÇ¡NOEÊQ¸ **access-list n**[illegible]

[illegible]

ÉÛ IP A“KÂ< Ä-99È 1300-1999Â E> {Ä

=) IP A“KÂ<Ä00-199 È 2000-2699Â¶,ÂXE> ¸X{Ä

MAC =)A“KÂ<Ä00-799 Â¶,ÂX MAC ¶%2O_E> G! Expert =)A“

KÂ<Ä700-2899 Â¶6Ç,X4ÊÃ VLAN ID E> GE¸Ä

Í Ý CÃ A,ÃÇ CÃ A,ÃÇ CÃ A,ÂÂ“KÂ<?¶-D áÕ

precedence *precedence*/**tos** *tos*/**fragments**/**range** *lower upper*/**time-range** *time-range-name*Ä

TCP Flag [illegible]

urg

ack

psh

rst

syn

fin

y[4{ÄÏÕ

critical

flash

flash-override

immediate

internet

network

priority

routine

á2O_åXÖ

max-reliability

max-throughput

min-delay

min-monetary-cost

normal

ICMP y[Æ2O_åXÖ

administratively-prohibited

dod-host-prohibited

dod-net-prohibited

echo

echo-reply

fragment-time-exceeded

general-parameter-problem

host-isolated

host-precedence-unreachable

host-redirect

host-tos-redirect

host-tos-unreachable

host-unknown

host-unreachable

information-reply

information-request

mask-reply

mask-request

mobile-redirect

net-redirect

net-tos-redirect

net-tos-unreachable

net-unreachable

network-unknown

no-room-for-option

option-missing

packet-too-big

parameter-problem

port-unreachable

precedence-unreachable

protocol-unreachable

redirect

router-advertisement

router-solicitation

source-quench

source-route-failed

time-exceeded

timestamp-reply

timestamp-request

ttl-exceeded

unreachable

M6 TCP 0ÃÊCP Ã0ÃÊÃÛK¦X0Ã

bgp

chargen

cmd

daytime

discard

domain

echo

exec

finger

ftp

ftp-data

gopher

hostname

ident

irc

klogin

kshell

login

nntp

pim-auto-rp

pop2

pop3

smtp

sunrpc

syslog

tacacs

talk

telnet

time

uucp

whois

www

M6 UDP 0ÃÊUDP ÃÔ0ÃÊÃÔ0K',X0Ã

biff

bootpc

bootps

discard

dnsix

domain

echo

isakmp

mobile-ip

nameserver

netbios-dgm

netbios-ns

netbios-ss

ntp

pim-auto-rp

rip

snmp

snmptrap

sunrpc

syslog

tacacs

talk

tftp

time

who

xdmcp

5%2O_ Ethernet-type VÖ

aarp

arp

SHUPLWDQDQDQDQ\

ÏÎGQÞ

Q¸	£Ä
show access-lists	**ÁÂ**
mac access-group	**ÿÞü** MAC =)A“KÂ<

ÏGÄÈ -

1.3 deny

+ÊX(deny) ,X5ÊÞy[EÊÄ

1) IP ÂÊ“KÂ<

[*sn*] **deny** {*source source-wildcard* | **host** *source* | **any| interface** *idx* }[**time-range** *tm-range-name*]

2) IP =)A“KÂ<

[*sn*] **deny protocol** *source source-wildcard destination destination-wildcard* [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*]

ÔGÞÞ,X IP =)A“KÂ<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*] [**fragment**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)

[*sn*] **deny tcp** {*source source-wildcard* | **host** *Source* | **any**} [*operator* **port** [*port*]] {*destination destination-wildcard* | **host** *destination* | **any**} [*operator* **port**

E¥Ã¿Ø%O_ ethernet-type ê cos +Ê‰

[*sn*] **deny** {[*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*]

E¾¾¸ 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*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*]

ôGPØÆ‚X expert =)A“KÂ<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*] [**fragment**] [**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*] [**fragment**] [**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*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*]

Address Resolution Protocol (ARP)

[*sn*] **deny arp** {**vid** *vlan-id*}[*source-mac-address source-wildcard* **|host** *source-mac-address* | **any**] [**host** *destination –mac-address* | **any**] {*sender-ip sender-ip–wildcard* | **host** *sender-ip* | **any**} {*sender-mac sender-mac-wildcard* | **host** *sender-mac* | **any**} {*target-ip target-ip–wildcard* | **host** *target-ip* | **any**}

5) IPV6 =)A“KÂ<

[*sn*] **deny protocol**{*source-ipv6-prefix*/*prefix-length* | **any** | **host** *source-ipv6-address* } {*destination-ipv6-prefix / prefix-length* | **any**| *hostdestination-ipv6-address*} [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*]

ôGPØÆ‚X IPV6 =)A“K{ê<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*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragment**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)

[*sn*] **deny tcp** {*source-ipv6-prefix / prefix-length* | **host***source-ipv6-address* | **any**}[*operator* **port**[*port*]] {*destination-ipv6-prefix /prefix-length* | **host** *destination-ipv6-address* | **any**} [*operator* **port** [*port*]] [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag*]

User Datagram Protocol (UDP)

[sn] **deny udp** {*source-ipv6-prefix/prefix-length* | **host** *source-ipv6-address* | **any**} [*operator* **port** [*port*]] {*destination-ipv6-prefix /prefix-length* | **host** *destination-ipv6-address* | **any**}[*operator* **port** [*port*]] [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*]

Ï–DAÈ

–D	ÉÄ
Sn	ACL ><NMcË
source-ipv6-prefix	¶ IPv6 5¶6¶2O_.
destination-ipv6-prefix	,Â¥ IPv6 5¶6¶2O_
prefix-length	PÊK}-Õ
source-ipv6-address	¶ IPv6
destination-ipv6-address	,Â¥ IPv6
dscp	Â-Õ•
dscp	-ÕÈ 8È 0-63.
flow-label	ÛR
flow-label	ÛRÈ 0-1048575
protocol	*ó* IPV6 ,XA¹Ã IPV6 | icmp | tcp | udp ž0-255>
time-range	*y[Ê*
time-range-name	y[E$XÊÄ

Ï5,Õ5BÐ ü)Ý><NMÄ

ÏQ¸Ð ACL G5Bã

ÏSÔ ü ACL G5BãG5B ACL ,XE$Ê<NMÄ

ÏG5B_Ð _ 1Ö/)ÊÔ Expert Extended ACL AÈ ACL ¦ IP 192.168.4.12 Jã MAC 001300498272 ,XÝ TCP y[Ä

5XLMLHFRQILJH[SHUWDFFHVVOLVWH[WHQGHG
5XLMLHFRQILJH[SQDFOGHQWFSKRVW
KRVWDQDQ\
5XLMLHFRQILJH[SQDFOSHUPLWDQDQDQDQ\
5XLMLHFRQILJH[SQDFOVKRZDFFHVVOLVWV
H[SHUWDFFHVVOLVWH[WHQGHG
GHQWFSKRVWKRVWDQDQ\
SHUPLWDQDQDQDQ\
5XLMLHFRQILJH[SQDFO

_ 2Ö6 IP =) ACL S8×ÊÂ¥± IP 192.168.4.12 ,Xõ TCP 0Ã 100 ,X
áÈhÿ· gigabitethernet 1/1Ã

5XLMLHFRQILJLSDFFHVVOLVWH[WHQGHGLSH[WDFO
5XLMLHFRQILJH[WQDFOGHQWFSKRVWHTDQ\

mac access-group	MAC =) ACL ,Xyhŭ
ip access-list	IP ACL ,Xn
mac access-list	MAC =) ACL ,Xn
expert access-list	Ğ ACL ,Xn
ipv6 access-list	IPV6 =) ACL n
permit	**ÅEnQ¸**

ÏGÄÈ -

1.4 expert access-group

ÎÔh,X EXPERT ACL hŭ,XyÄÄ¸Q¸X no EÍMÈÄ

expert access-group {*id* | *name*} {**in** | **out**}

no expert access-group {*id* | *name*} {**in** | **out**}

ÏÐAÈ

–D	ÆÄ
id	Expert A“KÂ<,X4Ä700-2899 Å
name	Expert A“KÂ<,Xá
in	É9Ay¡Xy[E> E$
out	ÁyEgÎXy[E> E$

ÏÕ,Ã5BÐ yÙÍŭExpert ACL Ä

ÏQÐ yG5Bã

ÏSÔ ÔÙ,X ACL hŭAyÈÍy¡XEg9EgÎDBÆ> {ÄÙX

	+<ÁÆ¢E¯9YF5¼Å
reflect	¶¡¼ ACL

Ï¿,Õ5BÐ yÙÍ¶ÙACL Ä

ÙQ¸Ð yG5Bã

ÙÉÐ Sº **ip access-group Q¸ÚÁÊÙyÈ8ÚÙ**

ÙG5B_Ð ¶M6,X/_ü fastEthernet0/0 ÞÆA“KÊ< 120 É¯9,Xy[E> E¸Ð

```
5XLMLHFRQILJLQWHUIDFHIDVW(WKHUQHW
5XLMLHFRQILJLILSDFFHVVJURXSLQ
```

ÏÎGQ¸Ð

Q¸	ÆÄ
access-list	**nAÊ**
show access-lists	**¸ÁÊ**

ÙGÄÈð -

1.7 ip access-list

AÐQ¸Ñ IP ACL ê) IP ACLÈÆ9AÐG5BÈÚÆQ¸X no E¶M8A¹ ACLÄ

ip access-list {**extended** | **standard**} {*id* | *name*}

no ip access-list {**extended** | **standard**} {*id* | *name*}

ÐÄÈð

–D	ÆÄ
id	IP A“KÊ<,X4Ê-99È300-1999 Ê)È00-199 È000-2699 Å
name	IP A“KÊ<,Xá

Ï¿,Õ5BÐ ù¸Ý ACL

ÙQ¸Ð <G5Bã

ÙÉÐ ¸Ñ ACL G5Bã)G5Bã¸<ÈÊã ACL ,XA5BÈ43Ê× **deny ` permit**

Q¸ÊÚÁÊù **show access-lists Q¸** ACL A5BÄ

ÙG5B_Ð _ 1Ñ ACLÖ

```
5XLMLHFRQILJLSDFFHVVOLVWVWDQGDUGVWGDFO
5XLMLHFRQILJVWGQDFOVKRZDFFHVVOLVWV
LSDFFHVVOLVWVWDQGDUGVWGDFO
5XLMLHFRQILJVWGQDFO
```

_ 2 Ñ) ACLÖ

```
5XLMLHFRQILJLSDFFHVVOLVWH[WHQGHG
5XLMLHFRQILJH[WQDFOVKRZDFFHVVOLVWV
```

LSDFFHVVOLVWH[WHQGHG

ÏĬGQÐ

1.9 ipv6 access-list

AQÎ¸ IPV6 =) ACL ÈE9AG5BÄA¹Q¸X no EÝMÎ8A¹ ACL

ipv6 access-list *name*

no ipv6 access-list *name*

Ï–DAÈ	–D	ÉÄ ipv6 access-list

no mac access-group {*id* | *name*} {**in** | **out**}

Ï–DAÈ

in }

–D	EÄ
id	MAC A“KÂ<,X4Ë00-799 Å
name	MAC A“KÂ<,Xá

in

B4 AT45BJ{ 1.602 g119 46 723.32 41915.1 ref119 46 61.58 0.48 75{

PDFDFFHVVOLVWH[WHQGHGPDFDFO

_ 2Õ MAC =) ACLÖ

5XLMLHFRQILJPDFDFFHVVOLVWH[WHQGHG

5XLMLHFRQILJPDFQDFOVKRZDFFHVVOLVWV

PDFDFFHVVOLVWH[WHQGHG

ÏÎGQÐ

Q¸	ÆÄ
show access-lists	ß mac =)2OA“KÂ<

ÏGÄÀ -

1.14 no sn

ô8 ACL ,Xþ<NM

no *sn*

Ï–DAÀ

–D	ÆÄ
sn	ACL ,Xþ<NM,XcË

ï5,Õ5BÐ -

ÏQÐ ACL G5Bâ

ÏSÐ ü ACL G5Bâ8 ACL ><NM

ÏG5B_Ð

5XLMLHFRQILJLSYDFFHVVOLVWH[WHQGHGYDFO

5XLMLHFRQILJLSYQDFOSHUPLWLSYKRVWDQ\

5XLMLHFRQILJLSYQDFOGHQLSYKRVWDQDQ\

5XLMLHFRQILJLSYQDFOVKRZDFFHVVOLVWV

LSYDFFHVVOLVWH[WHQGHGYDFO

SHUPLWLSYKRVWDQ\

GHQLSYDQDQ\

5XLMLHFRQILJLSYQDFOQR

5XLMLHFRQILJLSYQDFOVKRZDFFHVVOLVWV

LSYDFFHVVOLVWH[WHQGHGYDFO

SHUPLWLSYKRVWDQ\

5XLMLHFRQILJLSYQDFO

ÏÎGQÐ

Q¸	ÆÄ
show access-lists	ÁÂ
ip access-list	ip ACL ,Xn
ipv6 access-list	IPV6 =) ACL n
deny	**n4ÁÀ** ACL ><NM

destination-mac-address | **any**} [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*]

ÔGPJ#,X Expert =)A“KÂ<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*] [**fragment**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)

[*sn*] **permit tcp** [**VID** [*out*][**inner** *in*]]{*source source-wildcard* | **host** *Source* | **any**} {**host** *source-mac-address* | **any** } [*operator* **port** [*port*]] {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [*operator* **port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all**

gramd[(ontro)-ProtoUDP0 Td(TCP)

[ ] [**VID** *f r*]a[*g m e n t* *in* |

perator **port** [*port*]] [**precedence** *precedence*] [**tos** *tos* **y**

per] [**time-range** *time-range-name*

Ï–DAÈ	–D	ÆÄ
	-	-

Ï5,Õ5BÐ ü)Ÿ><NM

ÏQ¸Ð ACL G5BÈ

ÏSÊÐ ü ACL G5BÈ G5B ACL ,XAÈ 5Ê<NM

ÏG5B_Ð _ 1Ö(V)ÎÔ Expert Extended ACL AÈ¸ ACL AÈ IP 192.168.4.12 JÈ MAC 001300498272 ,XÝ TCP y[Ä

5XLMLHFRQILJH[SHUWDFFHVVOLVWH[WHQGHGH[SDFO
5XLMLHFRQILJH[SQDFOSHUPLWWFSKRVWKRVWDQDQ\
5XLMLHFRQILJH[SQDFOGHQDQDQDQDQ\
5XLMLHFRQILJH[SQDFOVKRZDFFHVVOLVWV
H[SHUWDFFHVVOLVWH[WHQGHGH[SDFO
SHUPLWWFSKRVWKRVWDQDQ\
GHQDQDQDQDQ\
5XLMLHFRQILJH[SQDFO

_ 2Ö6 IP =) ACL S8×ÈÂ×ÀÈ IP 192.168.4.12 ,X8o TCP 0Ã 100 ,X
áÈ ÿ· gigabitethernet 1/1Ä5BÖ

5XLMLHFRQILJLSDFFHVVOLVWH[WHQGHG
5XLMLHFRQILJH[WQDFOSHUPLWWFSKRVWHTDQ\
5XLMLHFRQILJH[WQDFOVKRZDFFHVVOLVWV
LSDFFHVVOLVWH[WHQGHG
SHUPLWWFSKRVWHTDQ\
5XLMLHFRQILJH[WQDFOH[LW
5XLMLHFRQILJLQWHUIDFHJLJDELWHWKHUQHW
5XLMLHFRQILJLILSDFFHVVJURXSLQ
5XLMLHFRQILJLI

_ 3Ö6 MAC =) ACL S8×ÈÂ×ÀÈ MAC 0013.0049.8272 ,X8ÈÃO 100

OOT

ÏQ¸Ð yG5Bã

ÏSÐ G5By]<EF'

ÏG5B_Ð 5XLMLHFRQILJLIVHFXULWDFFHVVJURXS

ÏÎGQ¸Ð

Q¸	£Ä
show secu-acl	**¡¶B**

ÏGÄÈ -

1.17 security global access-group

G5B<]<EF'

security global access-group {*id*|*name*}

no security global access-group

Ï–DAÈ

–D	£Ä
id	ACL id
name	ACL á

Ï5,Õ5BÐ -

ÏQ¸Ð <G5Bã

ÏSÐ G5B<]<EF'

ÏG5B_Ð 5XLMLHFRQILJVHFXULWJOREDODFFHVVJURXS

ÏÎGQ¸Ð

Q¸	£Ä
show secu-acl	**¡¶B**

ÏGÄÈ -

1.18 security uplink enable

G5By]<EF',X_ê

security uplink enable

no security uplink enable

Ï–DAÈ

–D	£Ä
-	-

ï5,Õ5BÐ	-
ÏQ¸Ð	yG5Bã
ÏSÊÐ	G5B]<EÎF¦,X_ê·
ÏG5B_Ð	5XLMLHFRQILJLIVHFXULWXSOLQNHQDEOH

ÌÎGQÐ	Q¸	ÊÄ
	show secu-acl	**ÎB**

ÏGÄÀ	-

1.19 show access-group

/yÞ¥,X ACL G5B

show access-group [**interface** *interface*]

ÏÌDAÀ	–D	ÊÄ
	interface	ûÌ,Xy·

ï5,Õ5BÐ	-
ÏQ¸Ð	(Mã
ÏSÊÐ	/yÞ¦X ACLÀ/<F¥yÞ¦X ACL
ÏG5B_Ð	5XLMLHVKRZDFFHVVJURXS LSDFFHVVOLVWVWDQGDUGLSVWG $SOLHG2QLQWHUIDFHÎLJDELW(WKHUQHW LSDFFHVVOLVWVWDQGDUGLSVWG $SOLHG2QLQWHUIDFHÎLJDELW(WKHUQHW LSDFFHVVOLVWH[WHQGHG $SOLHG2QLQWHUIDFHÎLJDELW(WKHUQHW LSDFFHVVOLVWH[WHQGHG $SOLHG2QLQWHUIDFHÎLJDELW(WKHUQHW

ÌÎGQÐ	Q¸	ÊÄ
	ip access-group	**Ú** ip A“KÂ<hÎy·
	mac access-group	**Ú** mac A“KÂ<hÎy·
	expert access-group	**Ú** expert A“KÂ<hÎy·
	ipv6 traffic-filter	**Ú** ipv6 A“KÂ<hÎy·

ÏGÄÈ -

1.20 show access-lists

/Ý ACL G5Bôá,X ACL

interface	ûl,Xy·

ï5,Õ5BÐ -

ÏQÐ (Mã

ÏSÐ /yG5B,X Expert ACLÈ*uÛyÐÝG6(Expert ACLÄ

ÏG5B_Ð 5XLMLHVKRZH[SHUWDFFHVVJURXSLQWHUIDFHJLJDELWHWKHUQHW
H[SHUWDFFHVVJURXSHHLQ
$SOLHG2QLQWHUIDFH*LJDELW(WKHUQHW

ÏÎGQÐ

Q¸	£Ä
expert access-list	Expert =) ACL n

ÏGÄÀ -

1.22 show ip access-group

/yG5B,X IP ACL

show ip access-group[**interface** *interface*]

ÏÌDAÀ

–D	£Ä
interface	ûl,Xy·

ï5,Õ5BÐ -

ÏQÐ (Mã

ÏSÐ /yG5B,X IP ACLÈ*uÛyÐÝG6(,X IP ACLÄ

ÏG5B_Ð 5XLMLHVKRZLSDFFHVVJURXSLQWHUIDFHJLJDELWHWKHUQHW
LSDFFHVVJURXSDDDLQ
$SOLHG2QLQWHUIDFH*LJDELW(WKHUQHW

1.23 show ipv6 traffic-filter

/yG5B,X IPV6 A“KÂ<

show ipv6 traffic-filter [**interface** *interface*]

–D	EÄ
interface	ûl,Xy·

-

(Mã

/yG6(,X IPv6 ACLÈ'uÛyÈÝ;X IPv6 ACLÄ

5XLMLHVKRZLSYWUDIILFILOWHULQWHUIDFHJLJDELWHWKHUQHW
LSYWUDIILFILOWHUYLQ
$SOLHG2QLQWHUIDFHŁJDELW(WKHUQHW

Q¸	EÄ
ipv6 access-list	IPV6 2O_ ACL n

-

1.24 show mac access-group

/0ÃG5B,X MAC A“KÂ<

show mac access-group[**interface** *interface*]

–D	EÄ
interface	ûl,Xy·

-

(Mã

/yG6(,X MAC ACLÈ'uÛyÈÝG6(,X MAC ACLÄ

5XLMLHVKRZPDFDFFHVVJURXSLQWHUIDFHJLJDELWHWKHUQHW
PDFDFFHVVJURXSPPLQ
$SOLHG2QLQWHUIDFHŁJDELW(WKHUQHW

Q¸	EÄ
mac access-list	MAC =) ACL n

ÏGÄÈ	-

1.25 svi router-acls enable

Ô svi router-acls s6Ñ SVI ACL ÍMXCÃ¸ÿÈQ¸X no EÍMG KÁ¹s6Ñ

svi router-acls enable

[**no**] **svi router-acls enable**

Ï–DAÈ	–D	ÉÄ
	no	É svi router-acls s6Ñ

Ï5,Õ5BÐ	SVI Router ACLs TÁxGKÁ
ÏQÈ	<G5Bã
ÏSÊ	-
ÏG5B_Ð	5XLMLHFRQILJVYLURXWHUDFOVHQDEOH

ÏGQÐ	Q¸	ÉÄ
	-	-

ÏGÄÈ	-

2 IP QOS

2.1

[illegible] QoS G5BÈÔÙ QoS Ý,X&µCÖ

[illegible]Ô6(1 þ policy-map×

[illegible] policy-map [illegible] class-map×

[illegible] class-map Ô6(1 þ ACLÈ¹ ACL ,XÝ ACE NOK,Ÿ[illegible]×

[illegible]6(,X ACE ,X[illegible]G5B]< ACL”08V,XL[illegible]

5,[illegible]oS s6[illegible]KÁ[illegible]GA[illegible]Xy[illegible] Policy Map G6([illegible]’ 5BZy;X[illegible]y;X QoS s6[illegible]>[illegible]GKÁ[illegible]y;X QoS s6[illegible]EE[illegible]y;X Policy Map A’ 5B[illegible]y;X[illegible]’ Off G[illegible] QOS ,X5,[illegible]5BÖ

5,[illegible]5B	5,[illegible] CoS	0
	K[illegible]	8
	K[illegible]BE[illegible]©	WRR
	QueueWeight	1:1:1:1:1:1:1:1
	WRR Weight Range	1:15
	DRR Weight Range	1:15
	[illegible]	No Trust

Cos K[illegible]XT[illegible]x[illegible]<

Cos K[illegible]	CoS	K[illegible]
	0	1
	1	2
	2	3
	3	4
	4	5
	5	6
	6	7
	7	8

CoS to DSCP T[illegible]x[illegible]<

CoS to DSCP	CoS	DSCP
	0	0
	1	8
	2	16
	3	24
	4	32

	5	40
	6	48
	7	56

IP-Precedence to DSCP TAxØ<

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

DSCP to CoS ,XTAxØ<

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

SÊÕ	S2900 DRR Weight Range

2.2 class maps

Î ACLÖ

ip access-list {**extended** | **standard**} { *acl-id* | *acl-name* }

ê **mac access-list extended** {*acl-id* | *acl-name*}

ê **expert access-list extended** {*acl-id* | *acl-name*}

ê **ipv6 access-list extended** *acl-name*

ê **access-list acl-id 2ÖÇÄ** ACL ,ÌG08VÅ

Î class mapÈÈ9 class map G5BÕ

[**no**] **class-map** *class-map-name*

ÎÅ¹ class map ,XGÊÕ

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

[**no**] **match ip dscp** *dscp-value1* [*dscp-value2* [*dscp-valueN*]]

[**no**] **match ip precedence** *ip-pre-value1* [*ip-pre-value2* [*ip-pre-valueN*]]

Ï–DAÈ

–D	£Ä
acl-name	4ÊX ACL ,Xá
acl-id	4ÊX ACL ,X id
class-map-name	ÛÎX class map ,Xá
dscp-vlaueN	ÛG¦X ip dscp
ip-pre-valueN	ÛG¦X ip precedence
no class-map *class-map-name*	ô8AÊX class map
no match access-group *acl-name*| *acl-id*	ô8AÊG!
no match ip dscp *dscp-value1* [*dscp-value2* [*dscp-valueN*]]	ô8G¦X ip dscp
no match ip precedence *ip-pre-value1* [*ip-pre-value2* [*ip-pre-valueN*]]	**ô8G¦X** ip precedence

Ï5,Õ5BÐ -

ÏQÐ <G5Bã

ÏSÊ -

ÏG5B_Ð _ 1Õ MAC ACL,Qá me

5XLMLHFRQILJPDFDFFHVVOLVWH[WHQGHGPH

_ 2Ö5B ACL ?

5XLMLHFRQILJH[WPDFOSHUPLWKRVWDQ\

_ 3ÈÕ ACL A5B

5XLMLHFRQILJH[WPDFOH[LW

_ 4Õ class-map,Qá cm

5XLMLHFRQILJFODVVPDSFP

_ 5Ö6(ACL

5XLMLHFRQILJFPDSPDWFKDFFHVVJURXSPH

_ 6ÈÕ class-map A5B

5XLMLHFRQILJPDSH[LW

_ 7Õ class-mapÈQá cm-dscpÈG! DSCP 8È 16È24È EÊÕ5B

5XLMLHFRQILJFODVVPDSFPGVFS

5XLMLHFRQILJFPDSPDWFKLSGVFS

5XLMLHFRQILJFPDSH[LW

ÏÎGQÐ

Q¸	£Ä
show mac access-lists	-
show ip access-lists	-
show class-map	-

ÏGÄÈ ô none-tos s6Ñ

2.3 drr-queue bandwidth

A5B DRR Az¸ãXKG¸Ä

drr-queue bandwidth *weight1...weight8*

no drr-queue bandwidth

–D	£Ä
weight1...weight8	8È 9,Õ5B
no	65¸Õ

5,Õ5BÐ 9,Õ5B

Q¸ã <G5Bã

5Ð -

G5B_Ð 5XLMLHFRQILJGUUTXHXHEDQGZLGWK

ÌGQ¸Ð

Q¸	£Ä
show mls qos queueing	-

GÄÀ -

2.4 interface rate-limit

0Ã¸ÍL$XA5BÄ

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

no rate-limit

–D	£Ä
input	Eg9L$ó
output	gÎ¸
bps	¸¸
burst-size	(Kbyte)dscp-list 8È{ãà
no	65¸Õ

5,Õ5BÐ -

Q¸ã yG5Bã

5Ð -

G5B_Ð 5XLMLHFRQILJLQWHUIDFHIDVW(WKHUQHW

5XLMLHFRQILJLIUDWHOLPLWLQSXW

ÏÎGQÐ

Q¸	ÆÄ
show mls qos interface	-

ÏGÄÀÐ -

2.5 mls qos cos

G5By¡X CoS Ä

mls qos cos *default-cos*

no mls qos cos

Ï–DAÀÐ

–D	ÆÄ
default-cos	07
no	*6ÃÕ*

ï5,Õ5BÐ CoS 0

ÏQÐ yG5Bã

ÏSÐ -

ÏG5B_Ð 5XLMLHFRQILJLQWHUIDFHJLJDELWHWKHUQHW
5XLMLHFRQILJLIPOVTRVFRV

ÏÎGQÐ

Q¸	ÆÄ

show mls qos interface *interface-id*

ÏQÐ	<G5Bã
ÏSÐ	-
ÏG5B_Ð	5XLMLHFRQILJPOVTRPDSFRVGVFS

ÏÌGQÐ

Q¸	ÆÄ
show mls qos maps	**/** dscp-cos maps,dscp-cos maps ` ip-prec-dscp maps

ÏGÄÐ -

2.7 mls qos map dscp-cos

A5By[,XYF¼ DSCP Ø CoS Ä

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

no mls qos map dscp-cos

ÏÐAÐ

–D	ÆÄ

dscp-list

no	**6ã¸Õ**

5,Õ5BÐ 9,Õ5B

Q¸Ð <G5Bã

SÊÐ -

G5B_Ð 5XLMLHFRQILJPOVTRPDSLSSUHFGVFS

ÌGQÐ

Q¸	ÆÄ
show mls qos maps	**/** dscp-cos maps,dscp-cos maps ` ip-prec-dscp maps

GÄÈ -

2.9 mls qos scheduler

A5BEgÎKÁz1kÄ

mls qos scheduler [**sp** | **rr** | **wrr** | **drr**]

no mls qos scheduler

ÐAÈ

–D	ÆÄ
sp	**4ÉÁz**
rr	**Ãz**
wrr	**ÛÃz**
drr	**ÃÃz**
no	**6ã¸Õ**

5,Õ5BÐ 5,Õ wrr Az

Q¸Ð <G5Bã

SÊÐ -

G5B_Ð 5XLMLHFRQILJPOVTRVVFKHGXOHUVS

ÌGQÐ

Q¸	ÆÄ
show mls qos scheduler	-

GÄÈ -

policy-map-name	0Î/K policymap ,Xá
no policy-map *policy-map-name*	8AÐ policy map
class-map-name	4Î/K class map ,Xá
no class *class-map-name*	ô8ADÉO
new-dscp	„ DSCP 8È{5ã
new-cos	„ CoS 8È 0-7
rate-bps	kbps
burst-byte	kbyte
drop	
dscp-value	DSCP 8È{5ã
cos-value	CoS 8È 0-7

ï5,Õ5BÐ -

ÏQ¸Ð <G5Bã

ÏSÎÐ -

ÏG5B_Ð _ 1Ï policy map,Qá po

5XLMLHFRQILJSROLFÎPDSSR

_ 2Ö6(class-map cm

5XLMLHFRQILJSPDSFODVVFP

_ 3Ö5B# dscp 10

5XLMLHFRQILJSPDSFVHWLSGVFS

_ 4Ö5B# 1M, (6£ 4096k,CYL$0C„ dscp 16

5XLMLHFRQILJSPDSFSROLFHH[FHHGDFWLRQGVFS

ÏÎGQÐ

Q¸	£Ä
show policy-map	-

ÏGÄÐ -

2.12 priority-queue

A5BEgÎKÁz1kÄ

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

ÏÐAÐ

–D	£Ä
priority-queue	SP (S2900 2ÄÛS8600 2ÄÛ
no priority-queue	WRR

ï5,Õ5BÐ EgÎK5BEÛ WRR

ÏQÐ	<G5Bã
ÏSÐ	-
ÏG5B_Ð	5XLMLHFRQILJQRSULRULWTXHXH

ÏÎGQÐ	Q¸	ÐÄ
	show mls qos queueing	-

ÏGÄÐ	-

2.13 priority-queue cos-map

G5BEgÎKÊ6(,X CoS Ä

priority-queue cos-map *qid cos0* [*cos1* [*cos2* [*cos3* [*cos4* [*cos5* [*cos6* [*cos7*]]]]]]]

no priority-queue cos-map

ÏÐÄÐ	–D	ÐÄ
	qid	**ÛÎX** id
	cos7	*cos0 ...* **ÖX** CoS
	no	**65Õ**

ÏÕ5BÐ	8,Õ5BÄVÄ
ÏQÐ	<G5Bã
ÏSÐ	-
ÏG5B_Ð	5XLMLHFRQILJSULRULWTXHXHFRVPDS

ÏÎGQÐ	Q¸	ÐÄ

ÐAð	–D	

2.18 show mls qos queueing

/ QoS K¢(cos-to-queue map,wrr weight,drr weight) Ä

show mls qos queueing

ÐAð	–D	£Ä

2.20 show mls qos scheduler

/0Ã{KÁzÄ

show mls qos scheduler

ÐAÈ	–D	ÉÄ
	-	-

ÏÕ5BÐ -

ÏQÐ (Mã

ÏSÐ -

ÏG5B_Ð 5XLMLHVKRZPOVTRVVFKHGXOHU

	ÉÄ	

2.22 show policy-map

/ QoS policy me0iþp r]p

ÏGÄÈ -

2.24 wfq-queue bandwidth

Ãz1kSü wfq ,XÈQ¸G5B,Ì,XÞÄ

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

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

ÏÐÄÈ

–D	ÆÄ
queue-id	Ä
min	Ã
max	Ã

Ï5,Õ5BÐ min ÔÃ kbpsÄ

max ÔÃ kbpsÄ

ÏQÞ yG5Bã

ÏSÐ KSü wfq 1kÃzÎÈÄQÃ5B0ÃÔÄ

ÏG5B_Ð KSü wfq 1kÃzÖ

5XLMLHFRQILJPOVTRVVFKHGXOHUZIT

5XLMLHFRQILJVKRZPOVTRVVFKHGXOHU

G5BÃÔÄ

5XLMLHFRQILJLIZITTXHXHEDQGZLGWK

5XLMLHFRQILJLIZITTXHXHEDQGZLGWK

5XLMLHFRQILJLIVKRZUXQQLQJ

ÌÎGQÞ

Q¸	ÆÄ
show mls qos scheduler	ß QOS Ãzã

ÏGÄÈ -

2.25 wfq-queue sp

Ãz1kSü wfq ,XÈQ¸G5B,Ì,XÞÄ{(sp) Ä

wfq-queue *queue-id* **sp**

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

ÏÐÄÈ

–D	ÆÄ
queue-id	Ä
sp	ÄÃ1Ã

Ï Ö,Õ5BÐ S¨ü sp

Ï Q¸Ð <G5Bõ

Ï Ô Ü S/pÜ <G5Bõ¿2À

Ï !5B Ô S/pÜ < G!5B õ ¿0~µ2¯À

2.27 virtual-group

[illegible] Aggregate Port A5B[illegible] no E[illegible]

virtual-group *virtual-group-number*

no virtual-group *virtual-group-number*

–D	[illegible]	
virtual-group-number	[illegible]	128 [illegible]

[illegible]

[illegible]

[illegible] Aggregate Port[illegible]

[illegible] 48 [illegible]

[illegible] 24 [illegible] 24 [illegible]

[illegible] 1/3 G5B[illegible] 3 ,X[illegible]

5XLMLHFRQILJLQWHUIDFHJLJDELWHWKHUQHW

5XLMLHFRQILJLIYLUWXDOJURXS

Q¸	[illegible]	
show virtual-group	[illegible]	

[illegible] -

ÑÃ4Q¸–5¸ÌÈ8VÖ

1. VRRP
2. VRRP Plus
3. BFD
4. RLDP
5. TPP
6. GRTD
7. SEM

1 VRRP

1.1 debug vrrp

QÇÔ VRRP ÎÏÃ VRRP _ÊRRP y[ÊÃÔÄ **no 6ÊÁ6Ñ**

debug [**ipv6**] **vrrp**

no debug [**ipv6**] **vrrp**

ÏÐÈ –D]

–D	£Ä
ipv6	h*ü IPv6Ä,Õ IPv4Ä

GKÁ¹AAÊ

(M*ã

-

Ô VRRP ÎÍAAÊÄ

5XLMLHGHEXJUVUSHUURUV

5XLMLHGHEXJLSUVUSHUURUV

9553,39Y553*USGMUWLVHPHQWIURPKDVZORQJFKHFNVXP

9553,39Y553*USGMUWLVHPHQWIURPKDVZORQJFKHFNVXP

9553,39Y553*USGMUWLVHPHQWIURPKDVZORQJFKHFNVXP

M6,X/µ><ŷ97¾ 192.168.1.1 JÍ IPv4 VRRP 4˜ 1 ,X VRRP EÊ¹JÁÃ

Q¸	£Ä
-	-

-

1.3 debug vrrp events

QÔ VRRP _ÊAÊÄ **no 6ÉÊÄ**

debug [**ipv6**] **vrrp events**

no debug [**ipv6**] **vrrp events**

–D	£Ä
ipv6	h*ü IPv6Ä,Õ IPv4Ä

GKÁ¹AAÊ

(M*ã

-

Ô VRRP _ÊAÊÄ

5XLMLHGHEXJUVUSHMQWV

5XLMLHGHEXJLSUVUSHMQWV

9553,39Y553*US(MQWGMUWKLJKHURUHTXDOSULRULW\

9553,39Y553*US(MQWGMUWKLJKHURUHTXDOSULRULW\

9553,39Y553*US(MQWGMUWKLJKHURUHTXDOSULRULW\

ÏÎGQÐ

Q¸	ÆÄ
-	-

ÏGÄÈ -

1.4 debug vrrp packets

QÔ VRRP DBÙÀÔÄ **no 6ÉÔÄ**

debug [**ipv6**]

1.5 debug vrrp state

QÔ VRRP (ÕXAÂGÄ **no 6ÕÊÄ**

debug [**ipv6**] **vrrp state**

no debug [**ipv6**] **vrrp state**

ÏÐÈ

–D	£Ä
ipv6	h*ü IPv6Ä,Õ IPv4Ä

ï5,Õ!5BÐ GKÁÂÂÊ

ÏQÐ (M*ã

ÏS*Ô -

ÏG!5B_Ð Ô VRRP (ÕXAÂGÄ

5XLMLHGHEXJUUSVWDWH

5XLMLHGHEXJLSUUSVWDWH

9553,39553*USDGGSULPDULUWXDO,3VWDUWXS

5XLMLHGHEXJLSUUSVWDWH

9553,39553*USDGGSULPDULUWXDO,3VWDUWXS

M6,X/µ<>â Fastethernet 0/0 ¡X IPv4 VRRP 4˜ IPv6 VRRP 4ˆG!5BZ IP¦È VRRP ÃÄ

ÏÌGQÐ

Q¸	£Ä
-	-

ÏGÄÈÐ -

1.6 show vrrp

Q/ IPv4 VRRP 5Ù IPv6 VRRP ,XV5ÙVÄ

show [**ipv6**] **vrrp** [**brief** | *group*]

ÏÐÈ

–D	£Ä
ipv6	h*ü IPv6Ä,Õ IPv4Ä
brief	/ VRRP ,XV‰
group	/,X VRRP 4Ë

ï5,Õ!5BÐ -

ÏQÐ (M*ã

Ï S*Ê Ð Vps S*Ã¥DÐX VRRP 4¸ˆXÄ‰

Ï G!5B_Ð _ 1ÓX VRRP 4‰

```
5XLMLHVKRØUS
)DVW(WKHUQHW*URXS
6WDWHLV%DFNXS
9LUWXDO,3DGGUHVVLVFRQILJXUHG
9LUWXDO0&GGUHVVLVH
$GMUWLVHPHQWLQWHUØOLVVHF
3UHHPSWLRQLVHQDEOHG
PLQGHODLVVHF
3ULRULWLV
0DVWHU5RXWHULVSULRULWLV
0DVWHU$GMUWLVHPHQWLQWHUØOLVVHF
0DVWHURØLQWHUØOLVVHF
)DVW(WKHUQHW*URXS
6WDWHLV0DVWHU
9LUWXDO,3DGGUHVVLVFRQILJXUHG
9LUWXDO0&GGUHVVLVH
$GMUWLVHPHQWLQWHUØOLVVHF
3UHHPSWLRQLVHQDEOHG
PLQGHODLVVHF
3ULRULWLV
0DVWHU5RXWHULVORFDOSULRULWLV
0DVWHU$GMUWLVHPHQWLQWHUØOLVVHF
0DVWHURØLQWHUØOLVVHF
5XLMLHVKRØSUUS
*LJDELW(WKHUQHW*URXS
6WDWHLV0DVWHU
9LUWXDO,3ØGGUHVVLVDVIROORØ
)(

9LUWXDO0&GGUHVVLVH
$GMUWLVHPHQWLQWHUØOLVVHF
$FFHSWB0RGHLVHQDEOHG
3UHHPSWLRQLVHQDEOHG
PLQGHODLVVHF
3ULRULWLV
0DVWHU5RXWHULV)(ORFDOSULRULWLV
0DVWHU$GMUWLVHPHQWLQWHUØOLVVHF
0DVWHURØLQWHUØOLVVHF
5XLMLH
```

_ 2Ö VRRP 4¸ˆXV‰

```
5XLMLHVKRZ7USEULHI
,QWHUIDFH*US3UL7LPH2Z Q3UH6WDWH0DVWHUDGGU*URXSDGGU
)D3%DFNXS
)D30DVWHU
5XLMLHVKRZ7SY USEULHI
,QWHUIDFH*US3ULWLPHU2Z Q3UH6WDWH0DVWHUDGGU*URXSDGGU
*L30DVWHU)()(
5XLMLH
```

ÏGQÐ¸	Q¸	£Ä/480.199 0.-7-5416 -2.50(-480.0(1480.199 13n 20-5.76 135(0.48 0(5420.309

```
0DVWHURZQLQWHUYDOLVVHF
)DVW(WKHUQHW*URXS
6WDWHLV0DVWHU
9LUWXDO,3DGGUHVVLVFRQILJXUHG
9LUWXDO0&GGUHVVLVH
GHMUWLVHPHQWLQWHUYDOLVVHF
3UHHPSWLRQLVHQDEOHG
PLQGHODLVVHF
3ULRULWLV
0DVWHU5RXWHULVORFDOSULRULWLV
0DVWHUGHMUWLVHPHQWLQWHUYDOLVVHF
0DVWHURZQLQWHUYDOLVVHF
```

_ 2Ö5%· gigabitEthernet 0/13 ÞX IPv6 VRRP %%

```
5XLMLHVKRZSYUUSLQWHUIDFHJLJDELW(WKHUQHW
*LJDELW(WKHUQHW*URXS
6WDWHLV0DVWHU
9LUWXDO,3YDGGUHVVLVDVIROORZV
)(

9LUWXDO0&GGUHVVLVH
GHMUWLVHPHQWLQWHUYDOLVVHF
$FHSWB0RGHLVHQDEOHG
3UHHPSWLRQLVHQDEOHG
PLQGHODLVVHF
3ULRULWLV
0DVWHU5RXWHULV)(ORFDOSULRULWLV
0DVWHUGHMUWLVHPHQWLQWHUYDOLVVHF
0DVWHURZQLQWHUYDOLVVHF
```

ÏÎGQÐ

Q¸	£Ä
vrrp ip	*ü VRRP s6ÑA5B<.ÂÎX IP
vrrp ipv6	*ü VRRP s6ÑA5B<.ÂÎX IPv6

ÏGÄÈ -

1.8 show vrrp packet statistics

AÐQ¸*0¹ß VRRP y[¥X4ÂuÇÄ

show vrrp packet statistics [*interface-type interface-number*]

ÏÐÈ

–D	£Ä
interface-type interface-number	y2O_ỳ4Ë

¨5,Õ!5BÐ	-
¨Q¸Ð	(M*ã
¨S*Ð	-
¨G!5B_Ð	_ 1ÖX VRRP y[4ÃuÇÄ

```
Ruijie#show vrrp packet statistics

Total
  InReceives: 1000 packets, InOctets: 250, InErrors: 50
  OutTransmits: 900, OutOctets: 230
VLAN 1
  InReceives: 300 packets, InOctets: 100, InErrors: 6
  OutTransmits: 275, OutOctets: 75
VLAN 2
  InReceives: 500 packets, InOctets: 150, InErrors: 24
  OutTransmits: 450, OutOctets: 125
```

_ 2ÖX VLAN 2 ,X VRRP y[4ÃuÇÄ

```
Ruijie#show vrrp packet statistics vlan 2

VLAN 2
  InReceives: 500 packets, InOctets: 150, InErrors: 24
  OutTransmits: 450, OutOctets: 125
```

¨ÌGQÐ	Q¸	ÆÄ
	-	-

¨GÄÈ	-

1.9 vrrp accept_mode

Q¸*ü IPv6 VRRP <.ÇÃ<,Xy[ys6Ñ **no 6ÉÑ**

vrrp ipv6 *group* **accept_mode**

no vrrp ipv6 *group* **accept_mode**

¨ÐÈ	–D	ÆÄ
	group	VRRP 4Ë

¨5,Õ!5BÐ	Master (ÕX IPv6 VRRP ÃÇÂX IPv6 <.ÇÃ<,X IPv6 ,Xy[Ä NA ` NS y[ÃuÇ!5B Accept_Mode FÑOÈÄ Owner (ÕX IPv6 VRRP Master (ÕÇÃ<È ÃuÝÇ!5B Accept_Mode ÈÑÕÂX IPv6 <.ÇÃ<,X IPv6 ,Xy[Ä
¨Q¸Ð	yG!5Bã
¨S*Ð	5%4ºG!5BÊ!5B,XÐ Master (ÕX<.ÇÃ<*Ä ¼ IPv6 VRRP !ÝG!5BÄ

Ğ!5B_Đ VRRP 4˜ 1 *ü IPv6 VRRP <.ĈÃ<,Xy[ys6Ñ

no vrrp delay

–D	£Ä
minimum *min-seconds*	2Ï4¦ÊXÊ£È
reload *reload-seconds*	y(¦ÊXÊ£È

ÏÕ¸Ó!5BÐ yüÓ!5B VRRP ÃÊ¦Ä VRRP ÃÊ¦£È¦X8È 0~60 /Ä

ÏQ¸Ð yG!5Bã

ÏS*Ð G!5BQ¸Ï4¦ÈÙ(¦Ãy¦X VRRP ÃÊÜ¦5à
1,Ì¦h,XÊ£à¦ VRRP ÃÊM2v4G!5BÃpÊ¦ VRRP Êy
¦p VRRP y¦ÊÈÜ¦ VRRP #5%4ºyG!5B!8QÊ¦ IPv4 VRRP
` IPv6 VRRP ÊÄ

ÏG!5B_Ð ÿ¦Z VRRP ÃÊ¦XÊ¦
5XLMLHFRQILJLIUUSGHODPLQLPXPUHORDG

ÏÎGQ¸Ð

Q¸	£Ä
vrrp ip	*ü IPv4 VRRP s6ÑA5B<.ÂÛX IP
vrrp ipv6	*ü IPv6 VRRP s6ÑA5B<.ÂÛX IPv6

ÏGÄÈ -

1.12 vrrp description

Q¸ IPv4 VRRP 5Ù IPv6 VRRP ÛÊÄÄ **no 6Ä4¦5ÊBÄ**

vrrp [**ipv6**] *group* **description** *text*

no vrrp [**ipv6**] *group* **description**

Building B – Marketing and AdministrationÄ

5XLMLHFRQILJLQWHUIDFH)DVW(WKHUQHW

5XLMLHFRQILJLILSDGGUHVV

5XLMLHFRQILJLIVUSLS

5XLMLHFRQILJLIVUSGHVFULSWLRQ“ [illegible]

[illegible]

[illegible] [illegible]

ÏGQÐ

Q¸	£Ä
vrrp ip	*ü VRRP s6ÑA5B<.ÂÎX IP
vrrp ipv6	*ü VRRP s6ÑA5B<.ÂÎX IPv6

ÏGÄÈ -

1.13 vrrp ip

Qÿ*ü IPv4 VRRP s6ÑA5BAÑs6ÑÑÁÑ1RÀ2ÎPv6smDv5B^3mDD

ÏÎGQÐ

Q¸	£Ä
show vrrp	/!,X VRRP A5B

ÏGÄÈ -

1.14 vrrp ipv6

Qÿ¡*ü IPv6 VRRP s6ÑA5Bh,X<.³ IPv6 Ä **no 6Ñ6ÿ¡*** IPv6 VRRP s6Ñ*.³ IPv6 ,XA5BÄ

vrrp *group* **ipv6** *ipv6-address*

no vrrp *group* **ipv6** *ipv6-address*

ÏÐÈ

–D	£Ä
group	<.³A|Ûx VRRP 4Ë
ipv6-address	<.³A|Ûx IPv6

ÏÕ¸Õ!5BÐ yÿ*ü IPv6 ,X VRRP s6Ñ

ÏQÐ yG!5Bã

ÏS*Ô IPv6 ,X VRRP â IPv4 ,X VRRP E*ü 1255 ,X4ÑÎX VRRP 4ÑÖü b IPv4 VRRP ` IPv6 VRRPÄÔ!5B,XÑOJÒÑÒÑOJW<.³ ÕÑÕÑÄ

ÏG!5B_Ð ÿ· Fa0/0 *ü IPv6 ,X VRRP s6Ñ¹ VRRP 4Ë 1È.³ IPv6 FE80::1 ` 2001::1Ä

5XLMLHFRQILJLQWHUIDFH)DVW(WKHUQHW

‘ [illegible]

ÏÎGQÐ

Q¸	£Ä
	£7Ïor&s0Ð Uð

–D	EÄ	
ipv6	h*ü IPv6Ä,Õ IPv4Ä	
group	VRRP 4Ë	
delay *seconds*	ü7Ä Master DÑ,XÊÄ,Õ 0 /Ä	

5,Õ!5BÐ yb*ú VRRP s6Ñ

ÊÜ VRRP s6ÑRRP 4TAx0ü4Ä

Qp yG!5Bã

S*Ê Vp VRRP 4ü4ÊÜ7Ä4{Pb! Master ,X4{Ëú4Ä¹

VRRP 4¯XAÜp VRRP 4ÜM2v4ÈÜ7Ä4{Pb! Master ,X

4{Ë3ã4Ä¹ VRRP 4¯XAÜ VRRP 4¯S*p%y· IP Ëã

[illegible]

level	VRRP 4¸˜Xï4{

ï5¸Õ!5BÐ yb*ý VRRP s6Ñ
ê0ü VRRP s6ÑVRRP 4TAxJï4{ 100Ä

ÜQ5Ð yG!5Bã

Ï*ê0 AÐQ¸A5B VRRP 4¸˜Xï4{Ä

Ü!5B_Ð _ 1Ø5B IPv4 VRRP 4˜ 1 ,Xï4{ 254Ä
5XLMLHFRQILJLIVUSSULRULW\

_ 2Ø5B IPv6 VRRP 4˜ 1 ,Xï4{ 254Ä
5XLMLHFRQILJLIVUSLSSULRULW\

ÏÜGQÐ

Q¸	Ð:Ä
vrrp ip	*ü VRRP s6ÑA5B<.ªA¸ÛX IP
vrrp ipv6	*ü VRRP s6ÑA5B<.ªA¸ÛX IPv6

ÜÄÃð -

1.17 vrrp timers advertise

QA5B IPv4 VRRP 4ÕÙ IPv6 VRRP 4ÀÆÕ VRRP EîXKÈhÄ **no 6ÕÄ4T¬ xÃBÄ**

vrrp [**ipv6**] *group* **timers advertise** *interval*

no vrrp [**ipv6**] *group* **timers advertise**

Ðð

–D	Ð:Ä
ipv6	h*ü IPv6Ä¸Õ IPv4Ä
group	VRRP 4Ë
interval	VRRP EÆÕÈh(ª¸!)

ï5¸Õ!5BÐ yb*ý VRRP s6Ñ
ê0ü VRRP s6Ñ4TAxA¸ÛXEÆÕÈh 1 /ª¸Ä

ÜQ5Ð yG!5Bã

Ï*ê0 Vp!Aê VRRP 4¸˜XAÐÚh,XKÈhÆÕ VRRP EÐE7å¾ VRRP ¸(Ñ
4{ªWC¸Ä

Ü!5B_Ð _ 1Ø5B IPv4 VRRP EÆÕÈh 4 /ª¸Ä
5XLMLHFRQILJLIVUSWLPHUVDGYUWLVH

1.19 vrrp track

Q¸*ü VRRP ,XyCÇþ6Ñ **no 6ÉÁs6Ñ**

vrrp *group* **track** { *interface-type interface-number* | **bfd** *interface-type interface-number ipv4-addess* } [*priority*]

vrrp ipv6 *group* **track** *interface-type numbe* [*priority*]

no vrrp [**ipv6**] *group* **track** *interface-type number*

Q¸*ü VRRP ,X IP/IPv6 CÇþ6Ñ no 6ÉKÁs6Ñ

vrrp *group* **track** *ipv4-address* [**interval** *interval-value*] [**timeout** *timeout-value*] [**retry** *retry-[illegible]e*] [*priority*]

vrrp ipv6 *group* **track** { *ipv6-global-address* | *ipv6-linkm[illegible]*

Vp VRRP 4˜4*ü (Own)Ø%yrL IP!ÈÊ¹ VRRP 4˜,X¼{ 255ÈÑ!5B,¥ IP
6!¥Ä

Ï!5B_Ð _ 1Ö VRRP 4˜ 1 Í Routed Port Fa1/1 E> ,¥p Fa1/1 JÒÊ VRRP 4˜,X¼{â 30×
ü Fa1/1 ,XJÒÃÊ VRRP 4˜ 1 ,X¼{6Ä

5XLMLHFRQILJLIUUSWUDFN)DVW(WKHUQHW

_ 2Ö¢þ 1000::1 ÃÄ

5XLMLHFRQILJLIUUSLSWUDFN

_ 3Ö¢þ5%4ÿ· VLAN 1 ¡x FE80::1 ÃÊ¡

5XLMLHFRQILJLIUUSLSWUDFN)(ÿDQ

_ 4Ö!5BÛ VRRP 4˜E› BFD C¢þ,XF• 192.168.1.3

5XLMLHFRQILJXUHWHUPLQDO

ÏÐÀè	–D	£Ä
	2	**Sü** VRRPv2 y[£Ñ
	3	**Sü** VRRPv3 y[£Ñ

Ï‚,Õ!5BÐ yG!5B IPv4 VRRP ,Xy[£Ñ VRRPv2Ä

ÏQ¸Ð yG!5Bã

Ï*ÐÛ ‚ IPv4 VRRP 5×% VRRPv2 ` VRRPv3 ,XP&ÛÑ!ÕB5%4ºL)ÿWE¥½ VRRP y [,X£ÑVRRPv2 ‚ RFC3768È VRRPv3 ‚ RFC 5798. !8Q¸£Ò IPv4 VRRPÄ

Ï!5B_Ð yG!5B IPv4 VRRP y[,X£Ñ
5XLMLHFRQILJLIVUSMUVLRQ

ÏÎGQ¸Ð	Q¸	£Ä
	vrrp ip	*ü VRRP s6ÑA5B<.ÂÎX IP
	vrrp timers advertise	A5B VRRP E£ÕÈh

ÏÄè -

2 VRRP Plus

2.1 debug vrrp balance

	ÂÀÔÈ¥	VRRP Plus µÄ
	debug vrrp balance [**errors | messages | packets | state | timer | event**]	
ÏÈÀ	–D	ÎrfVÂ%JHÀÎrf*H*H&H)%ÀQH)%ÀQH)%&1ùERTÔÀ{ÄÄ

Ï S*Ê Ð Vpa S*Ã ÉÝ DÉ X VRRP Plus 4¸ XA 4Ä ‰

Ï G!5B_Ð _ 1Ö X VRRP Plus 4¸ XA 4Ä ‰

```
5XLMLHVKRØ USEDODQFH
9/$*URXS
6WDWHLV%9*
9LUWXDO,3DGGUHVVLV
+HOORWLPHVHFKROGWLPHVHF
/RDGEDODQFLQJKRVWGHSHQGHQW
5HGLUHFWWLPHVHFIRUØ UGHUWLPHRXWVHF
:HLJKWLQJFRQILJXUHGWKUHVKROGVORØ UXSSHU
7UDFNREMHFWVWDWHGRØ QGHFUHPHQWØ LJKW
7KHUHDUHIRUØ UGHUV
)RUØ UGHUORFDO
0Ø GGUHVV
H
2Ø QHU,LVGIDE
)RUØ UGHU
0Ø GGUHVV
DD
2Ø QHU,LVGI
```

_ 2Ö VRRP Plus 4¸ XV‰

```
5XLMLHVKRØ USEDODQFHEULHI
,QWHUIDFH*US6WDWH*URXSG GU0Ø GGU
9/$%9*H
```

Ï GQÐ

Q¸	ÉÄ
vrrp balance	*ü VRRP Plus s6Ñ
vrrp load-balancing	A5B VRRP Plus ,XBÉ Q>51*+9
show vrrp balance interface	/ûy¸X VRRP Plus E¤ (Ö

Ï GÄÈ -

2.3 show vrrp balance interface

/ûy¸X VRRP Plus 4¸ X|0Ä ‰

show vrrp balance interface *type number* [**brief**]

Ï ÐÈ

¨5,Õ!5BÐ	-
¨Q¸ÐÐ	(Mã
¨S*Ûð	-
¨G!5B_Ð	/5%· FastEthernet 0/0 ÞX VRRP Plus |0
	5XD€XKPP›UU6PEPD€4X€W4XU€4X€PDW4(W4€€W488(8ã

6P0esD€X€%ã

6P9€€6PDttU¸8JP€PP€PP€@

¨5,Õ!5BÐ yb*ú VRRP Plus s6Ñ

¨Qþ yG!5Bã

¨S*Ð NOG!5B VRRP s6Ñ VRRP Plus s6Ñ

¨G!5B_Ð ý interface FastEthernet 0/0 *ü VRRP Plus s6Ñ

5XLMLHFRQILJLQWHUIDFH)DVW(WKHUQHW
5XLMLHFRQILJLIVUSLS
5XLMLHFRQILJLIVUSEDODQFH

¨ÌGQÐ

Q¸	£Ä
vrrp load-balancing	A5B VRRP Plus ,XBÊQ>51*+9
show vrrp balance	/ VRRP Plus ,XE¤ (Õ
show vrrp balance interface	/ûy¡X VRRP Plus E¤ (Õ

¨GÄÈ -

2.5 vrrp forwarder preempt

AQ*ùA5B VRRP Plus ÃÏXE¥4s6Ñ **no 6ãGÉ6Ñ**

vrrp *group* **forwarder preempt**

no vrrp *group* **forwarder preempt**

¨ÐÈ

–D	£Ä
group	ûÄÏ VRRP Plus ÃÏE¥4s6Ñ

¨5,Õ!5BÐ AE¥4

¨Qþ yG!5Bã

¨S*Ð NOG!5B VRRP Plus s6Ñ¥4s6Ñ

¨G!5B_Ð ý interface FastEthernet 0/0 *Z VRRP Plus ÃÏXE¥4s6Ñ

5XLMLHFRQILJLQWHUIDFH)DVW(WKHUQHW
5XLMLHFRQILJLIVUSLS
5XLMLHFRQILJLIVUSEDODQFH
5XLMLHFRQILJLIVUSIRUZDUGHUSUHHPSW

¨ÌGQÐ

Q¸	£Ä

vrrp balance

5XLMLHFRQILJLIVUSEDODQFH
5XLMLHFRQILJLIVUSZILJKWLQJORZUXSSHU

ÏÎGQÐ

Q¸	£Ä
vrrp balance	*ü VRRP Plus s6Ñ
show vrrp balance	/ VRRP Plus ,XE¤ (Ō
show vrrp balance interface	/ûy¡X VRRP Plus E¤ (Ō

ÏGÄÈ -

3 BFD

3.1 bfd

G!5BBFD Â±X–DÄÃE› no QE> ô8 BFD Â±DÄ

bfd interval *milliseconds* **min_rx** *milliseconds* **multiplier** *multiplier-value*

no bfd interval

ÏÐÀ

–D	£Ä
Interval milliseconds	G!5BÈÃ BFD ÂÈ•X BFD {y[KÈh<Ò milliseconds Ã!5B,X8È 50ms 10000msÄ¹–DrL3 echo y[,XKÈh –DÄ
min_rx milliseconds	G!5B BFD ÂÿF•X BFD {y[KÈh<ÈD milliseconds Ã!5B,X8È 50ms 10000msÄ
multiplier multiplier-value	G!5BÿXKÈh<ÙÕÃX BFD {y[,XD,ÊD multiplier-value Ã!5B,X8È 3 50Ä

ÏÕ,Ã!5BÐ Â±DÙ5,Ð BFD Â±NOG!5BEo–D

ÏQÐ yG!5Bã

ÏS*Ô AQÂÆ L3 AP yE> G!5BÄ

CÃ<ÙÜ BFD s6ÑO*Ÿs6Ñ

ÏG!5B_Ð ü Routed Port y· FastEthernet 0/2 Ò!5B BFD Â±DÄ

5XLMLHFRQILJLQWHUIDFHIDVW(WKHUQHW

5XLMLHFRQILJLIQRVZWFKSRUWCÃ<ÙQÑ9

5XLMLHFRQILJLIEIGLQWHUÿOPLQBU[PXOWLSOLHU

ÏÎGQÐ

Q¸	£Ä
bfd all-interfaces	**S6ÑÃ** BFD 6(|Ä
clear bfd	**ô8** BFD Â±AuDBÄ
ip ospf bfd	**S6ÑE** OSPF â BFD 6(|Ä
ip rip bfd	**S6ÑE** RIP â BFD 6(|

ÏGÄÐ -

3.2 bfd all-interfaces

S6ÑX OSPFÄ RIPÅ BFD 6(\|Ä*ü **no QÑ6Ñ**

bfd all-interfaces

no bfd all-interfaces

ÏÐÈ	–D	EÄ
	-	-

Ï¸Õ!5BÐ GKÝ¡X OSPFÄ RIPÅ BFD 6(|

ÏQÐ CÃG!5Bã

Ï*Ô /ÃÕÑGKÝAŒ OSPFÄ RIPÅ BFD 6(|Ö

üÈ OSPFÄ RIPÅÃÈ[**no**] **bfd all-interfaces** Q¸6ÑÝŒ OSPFÄ RIPÅ BFD 6(|Ä

ÿÈ› **ip ospf bfd** [**disable**]ê **ip rip bfd** [**disable**]Q¸S6ÑKÛyAŒ OSPF Ä RIPÅ BFD 6(|Ä

Ï!5B_Ð ü OSPF CÃG!5Bã6ÑÝAŒ OSPF â BFD 6(|Ä

5XLMLHFRQILJURXWHURVSI

5XLMLHFRQILJURXWHUEIGDOOLQWHUIDFHV

ÏÌGQÐ

Ï¨G!5B_Ð G!5Bü routed port ÊÉ› BFD ÍÐÃ 1.1.1.2È¡ý¡X BFD (Õ

5XLMLHFRQILJLQWHUIDFH)DVW(WKHUQHW

5XLMLHFRQILJLIQRVCÃ<ÍÐQÑ9

5XLMLHFRQILJLILSDGGUHVV

5XLMLHFRQILJLIEIGELQGSHHULSVRXUFHLSSURFHVVSVW

ÏÌGQÐ

Q¸	ÉÄ
-	-

ÏGÄÈ -

3.4 bfd cpp

*ü BFD ÄÄ*ü **no ÇÍ** BFD ÄÄ

bfd cpp

no bfd cpp

ÏÐÈ

–D	ÉÄ
-	-

Ï¨5,Õ!5BÐ 5,Ñ% BFD ÄÄ*ü

ÏQÐ <G!5Bã

Ï¨S*Ûõ BFD M2ÐÄÄÈp*ü BFD s6ÑÄÄÈ*ü BFD ÄÄ*ü BFD ÄÄ*ü

Vp*ü BFD s6ÑÄÄÈ*ü BFD y[4ÉÄÄÈÄÛ

Ú BFD y[6ÉÐÇÄÛ BFD ÄÛÄs6ÑÄ*ü

Ï¨G!5B_Ð *ü BFD ÄÄ*ü

5XLMLHFRQILJEIGFSS

ÏÌGQÐ

Q¸	ÉÄ
-	-

ÏGÄÈ -

3.5 bfd echo

Ô echo ÄÄ*ü **no ÇÍ** echo ÄÄ

bfd echo

no bfd echo

Ï-DAèð

–D	£Ä
-	-

Ï5,Õ!5BÐ 5,ßW BFD ?A±S6Ñ echo ã

ÏQ¸Þ yG!5Bã

Ï5*ÐÞ AÐQ¸ÁŒE L3 AP yG!5BÄ

5,ßW5BZ BFD ?A±D,XÆÜ+?¦S6Ñ echo ã echo y[,XÆÕÕEhÞ

KÈhG*?A±G!5B,X Interval milliseconds ` min_rx milliseconds –DÄ

ü BFD *ü echo ã LÔü BFD ?A¸XF¬Aþ **no ip redirects** Q¸ÉÕ ICMP Gɲ

ÿ[,Xs6Ñ **no ip deny land** Q¸Ý DDOS s6Ñ (L!6 Land-based)ÄÄ

Echo ßW BFD ?A¸X0ZÜ+F5Ñ6Ñ6ÑÄ

ÏG!5B_Ð ü Routed Port y· FastEthernet 0/2 ÐG!5B echo ãÄ

```
5XLMLHFRQILJLQWHUIDFHIDVW(WKHUQHW
5XLMLHFRQILJQRVZWFKSRUWCÃ<ÞQ¸Ñ9
5XLMLHFRQILJLIEIGHFKR
```

ÏÏGQÞ

Q¸	£Ä
bfd	**G5B** BFD ?A±DÄ
ip redirects	**S6Ñ** ICMP Gɲÿ[s6Ñ
bfd slow-timer	**G5B6EóêÊÈ**

ÏGÄèð -

3.6 bfd slow-timer

G!5BBFD ü ECHO s6ßEóÊXÊÃÊÈÐ BFD ÜÞÆÕ BFD {y[Ä›

*ü **no** ÉÞÐ

bfd slow-timer *milliseconds*

no bfd slow-timer

Ï-DAèð

–D	£Ä
milliseconds	BFD ,X6EóÊÈÐÆÃ!5B8È 1000 30000, Ð!5B 5,Õ 1000Ä

Ï5,Õ!5BÐ 5,Õ 1000ms

ÏQ¸Þ <G!5Bã

Ï5*ÐÞ -

ÏG!5B_Ð G!5Bslow-timer 14000 !¿Ä

5XLMLHFRQILJEIGVORZLPHU

Ï¸Q¸Ð yG!5Bã

Ï*Ô /Ã6ÑÙKÁAŒ OSPF â BFD 6(|Ö
1È OSPF CÃÈE[**no**] **bfd all-interfaces** Q¸S6ÑÙ¼ OSPF â BFD 6(|Ä
2ÿÈE› **ip ospf bfd** [**disable**]Q¸S6ÑKÂyÞX OSPF â BFD 6(|Ä

Ï G!5B_Ð ü Routed Port y· FastEthernet 0/2 ÐKÁ OSPF #â BFD 6(|Ä

5XLMLHFRQILJLQWHUIDFH)DVW(WKHUQHW
5XLMLHFRQILJLIQRVZWFKSRUWCÃ<!8QÑ9
5XLMLHFRQILJLILSRVSIEIGGLVDEOH

ÏÌGQÐ

Q¸	ÆÄ
bfd	**G5B** BFD Â±DÄ
bfd all-interfaces	**S6ÑÙ¼** BFD 6(|

ÏGÄÈ -

3.9 ip rip bfd

S6ÑÞX RIP â BFD 6(|Ä ü **disable GÈÚ¼** RIP #â BFD 6(|ÄÈE› **no Q**
ô8G5BÄ
ip rip bfd [**disable**]
nM[r-6ó)6(r1)6ó)6

ĬGÄâê -

3.10 ip route static bfd

G!5BIPv4 M-ÕÃâ BFD 6(|ËE› **no Ò8G5BÄ**

ip route static bfd [**vrf** *vrf-name*] *interface-type interface-number gateway* [**source** *ip-address*]

no ip route static bfd [**vrf** *vrf-name*] *interface-type interface-number gateway* [**source** *ip-address*]

Ï-DAâê

–D	ËÄ
vrf *vrf-name*	G!5BM-ÕÃ<2,X VRF áÄ
interface-type *interface-number*	*á2Oy4Ä*
gateway	*á* IPÈ BFD ,XF• IPÄ-ÕÃG!5BÔÇF¸XÉE› BFD E> ÄEÁÃ,XÃÄ
source *ip-address*	*á* BFD ÂÆ*¡Xá IP , VpF• IP ÎCÇXÄG!5BA¹ –DÄ

Ï5,Õ!5BÐ ú¥!5BM-õ BFD 6(|

ÏQê <G!5Bã

Ï5*Ð G!5BÊj.BÆ¼¸X BFD ÂÆDÄÆG!5B

Ï!5B_Ð S6Ñ-ÕÃG6(BFD h*ÈE› BFD á 172.16.0.2 FKÈXEÁÃÄ

```
5XLMLHFRQILJLQWHUIDFH)DVW(WKHUQHW
5XLMLHFRQILJLIQRVZWFKSRUWCÃ<!8QÇÑ9
5XLMLHFRQILJLILSDGGUHVV
5XLMLHFRQILJLIEIGLQWHUZOPLQBU[PXOWLSOLHU
5XLMLHFRQILJLSURXWHVWDWLFIEIG)DVW(WKHUQHW
5XLMLHFRQILJLSURXWH)DVW(WKHUQHW
```

ÎĬGQÐ

Q¸	ËÄ
bfd	**G5B** BFD ÂÆDÄ

ĬGÄâê -

3.11 set ip next-hop verify-availability

G!5B1*+9CÃâ BFD 6(|È*ü BFD ê TRACK ÊÇËE› **no QÉ6Ñ**

set ip next-hop verify-availability *next-hop-address* { **track** number **| bfd** [**vrf** *vrf-name*] *interface-type interface-number gateway* }

no set ip next-hop verify-availability *next-hop-address* { **track** *number* | **bfd** [**vrf** *vrf-name*]

interface-type interface-number gateway }

Ï–DAèð

–D	Ë.Ä
vrf *vrf-name*	VRF æÄ
next-hop-address	Ô Ç IP
track	Ë.Ë› Track ßÔÇ
Number	track Ê54Ë.
bfd	Ë.Ë› BFD ß> F#
interface-type *interface-number*	*ß2Ô4Ë.*
gateway	ß IPÈ BFD ,XF• IPÄ-ÕÃG!5BÔÇF•XÉË› BFD E> ÄË@Ã,XÆÄ

ï5,Õ!5BÐ 5,Ð*+9CÃG6(BFD s6Ñ

ÏQæ CÃÒ!5Bã

Ï5*Ô G!5BÊj.BË• IP Ĥ,Xy¡X BFD ÎA±DÄG!5B

Ï!5B_Ð S6Ñ*+9CÃG6(BFD h*ÈË› BFD ß 172.16.0.2 FKÞXE@Ã

```
5XLMLHFRQILJXUHWHUPLQDO
(QWHUFRQILJXUDWLRQFRPPDQGVRQHSHUOLQH(QGZKW7/=
5XLMLHFRQILJURXWHPDS([DPSOHSHUPLW
5XLMLHFRQILJURXWHPDSPDWFKLSDGGUHVV
5XLMLHFRQILJURXWHPDSVHWLSSUHFHGHQFHSULRULW\
5XLMLHFRQILJURXWHPDSVHWLSQH[WKRSMULIDMLODELOLWEIG)DVW(WKHUQHW

5XLMLHFRQILJURXWHPDSHQG
```

ÏÎGQÞÐ

Q¸	Ë.Ä
bfd	**G!5B** BFD ÎA±DÄ

ÏGÄèð -

3.12 show bfd neighbors

/ BFD ÎAÞ

show bfd neighbors [**vrf** *vrf-name*] [**client** { **ospf | rip | vrrp | static-route | vrrp-balance | pst** }] [**ipv4** *ip-addess* | **ipv6** *ip-addess*] [**details**]

Ï–DAèð

–D	Ë.Ä
vrf *vrf-name*	**F2X** VRF æÄ
client	**ôhÞ**

ospf	ûb/	OSPF 6(|,X BFD ÎÀµ€
rip	ûb/	RIP 6(|,X BFD ÎÀµ€
vrrp	ûb/	VRRP 6(|,X BFD ÎÀµ€
static-route	ûb/	StaticRoute 6(|,X BFD ÎÀµ€
pbr	ûb/	PBR 6(|,X BFD ÎÀµ€
vrrp-balance	ûb/	VRRP Plus 6(|,X BFD ,XÎÀµ€
pst	ûbÝÝÕ	BFD 6(|,XÎÀµ€
ipv4 *ip-addess*	ûb/	IPv4 (MnÎÀ±XÎÀµ€
ipv6 *ip-addess*	ûb/	IPv6 (MnF•XÎÀµ€
details	ÀÀš	

ÏÏ,Õ!5BÐ -

ÏÏQ¸Ð (Mã

ÏÏ*ÛÐ ü **show bfd neighbors** ÞÈurAddr ></ÎÀ±X$ÎÊ</þ

NeighAddr	²ÁÉ•X IP
LD/RD	²ÁÉ0Ãš
RH/RS	²Á‰ÝÃ(Õ
Holdown(mult)	²Á½ hello y[,XÊÈÀÉCÊÐ
State	²Á¼(Õ
Int	²Á½XyË
Session state is UP and using echo function with 50 ms interval	²ÁG*ü echoõá echo ,XÊÈÀÉh (Á¢Ú¼ ü Echo ¼
Local Diag	²Á±XÁÊ¢
Demand mode	²ÁÁ¼‰#
Poll bit	²Á±XG!5BÂv
MinTxInt	²ÁG!5B,XÊÕÈh
MinRxInt	²ÁG!5B,XÊKÈh
Multiplier	²ÁG!5B,XCÊÐ
Received MinRxInt	²ÁÉ0ÃG!5B,XÊÕÈh
Received Multiplier	²ÁÉ0ÃG!5B,XCÊÐ
Holdown (hits)	²ÁÊÈÀÉ±X Ð
Hello (hits)	²Á½ hello Ê±XyÊÈh
Rx Count	²Á¥ BFD y[,XÊÐ
Rx Interval (ms) min/max/avg	²Á¥,XÊÈhÊÉhÈKÈh
Tx Count	²ÁÉÕ BFD y[,XÊÐ
Tx Interval (ms) min/max/avg	²ÁÉÕXÊÈhÊÉhÈKÈh
Registered protocols	²Á±Xh*Á2O_
Uptime	²ÁÉÐ UP ,XÊÈ
Last packet	²Á±XÊÐ BFD y[Ê¢

ÏÎGQÐ		
	Q¸	ÉÄ
	-	-

ÏGÄÊ -

3.13 vrrp bfd

S6ÿÝX VRRP â BFD 6(|É master CÃ<ÊÉÄ› **no** ÊÉ6Ñ

vrrp *group-number* **bfd** *ip-addess*

no vrrp *group-number* **bfd** *ip-addess*

Ï-DAÊ		
	–Ð	ÉÄ
	group-number	*ÐÍ* VRRP 4Ê ü BFD # master CÃÊÉÄ
	ip-addess	*ÐÊ* IP

Ï5,Ð!5BÐ 5,Ê VRRP G*ü BFD Ê master ÉÑÃÊ<ÉÄ

ÏQÐ yG!5Bã

Ï S*Ô G!5BÊj.BÉ• IP Í h,Xy¡X BFD Â±DÄ 4G!5BÄ
Vp VRRP 4¸ÎÃ<, LÔÉÉ AÇ¸G!5BÃÑÃ<,XF• IPÄ

ÏG!5B_Ð G!5BS6ÑVRRP G6(BFD h*ÈÉ› BFD ÊÃ<KÈ¸XÉ©ÃÄ

5XLMLHFRQILJXUHWHUPLQDO
(QWHUFRQILJXUDWLRQFRPPDQGVRQHSHUOLQH(QGZWK&7/=
5XLMLHFRQILJLQWHUIDFH)DVW(WKHUQHW
[redacted]

ÏÏGQÐ

Q¸	ÉÄ
bfd	**G5B** BFD Â±DÄ

ÏGÄÈ -

4 DLDP

4.1 clear dldp

È8 dldp 6b up/down D,X4Au¸CÈGÊ> 4AuÄ

clear dldp [**interface** *interface-name* [*ip-address*]]

Ï–DAÈ

–D	EÄ
interface-name	ýÄ
ip-address	Ã IP

ï5,Õ!5BÐ -

ÏQÊ (Mã

ÏS*Ûì DLDP Ã,JÒÃ up/down D,X4Au¸CÈ> Q8Ûì,X up/down 4Au DÈ JÈ8ÛAuÄÈ bÝÂÛ IP 8bÝ¸Ê&X up/down 4Au DÂÝÂÛ IP È</È8,X up/down 4Au õ DÄ

ÏG!5B_Ð _ 1È8,X up/down 4Au DÖ

5XLMLHFOHDUGOGS

_ 2È8 interface vlan 1 yX up/down 4Au DÖ

5XLMLHFOHDUGOGSLQWHUIDFHYDQ

_ 3È8 interface vlan 1 yGbÛÃÛ 10.83.132.1 ,X up/down 4Au DÖ

5XLMLHFOHDUGOGSLQWHUIDFHYDQ

ÏÏGQÊ

Q¸	EÄ
-	-

ÏGÄÈ -

4.2 dldp

Ô DLDP ÑÃQ¸X **no 6GÊ** IP ,X DLDP ÑÃ

dldp *ip-address* [**next-hop** *ip-address*] [**interval** *tick* | **retry** *retry-num* | **resume** *resume-num*]

no dldp *ip-address*

Ï–DAÈ

–D	£Ä
ip-address	´ÿ¡ IP Ä
next-hop *ip-address*	ÃÈÇ IP Ä
interval *tick*	vÈÃ 5~6000)È tickÈO 5 ,XHDÄ tick= 10msÅ
retry *retry-num*	¢Ã 1~3600Ä
resume *resume-num*	´ÿ¡ÃÈÃ DOWN (Õ UP !ÈÔE4,Á DLDP ÿ[DÈ¹–D8È 1~200Ä

Ï5,Õ!5BÐ tick 100tickÄs ÈÃ retry-num 3 È resume-num 3 Ä

ÏQÐ yG!5BÄ

Ï5*Ô EÈG!5BQ¡ DLDP ÿ6Ñ¡5%JÒÃp,XÇÄ

Ï G!5B_Ð _ 1ÔÛ 10.83.132.10 ,X DLDP ÿ6Ñ

```
5XLMLHFRQILJ
5XLMLHFRQILJLQWHUIDFHÝDQ
5XLMLHFRQILJLI9/$LSDGGUHVV
5XLMLHFRQILJLI9/$GOGS
```

_ 2Ô5%!%Û 10.83.131.10 ,X DLDP ÿ6Ñ

```
5XLMLHFRQILJ
5XLMLHFRQILJLQWHUIDFHÝDQ
5XLMLHFRQILJLI9/$LSDGGUHVV
5XLMLHFRQILJLI9/$GOGSQH[WKRS
```

_ 3ÖKÁÛ 10.83.132.10 ,X DLDP ÿ6Ñ

```
5XLMLHFRQILJ
5XLMLHFRQILJLQWHUIDFHÝDQ
5XLMLHFRQILJLI9/$QRGOGS
```

ÏGQÐ

Q¸	£Ä
-	-

ÏGÄÈ -

4.3 dldp passive

A5B dldp ÿ¡ÄQ¸X **no 6ÿ¡Ã**

dldp passive

no dldp passive

Ï–DAÈ	–D	£Ä
	-	-

ï5,Õ!5BÐ		ã
ÏQ¸Ð	yG!5Bã
ï5*Ûì	rL5%4È¥pøÃÛÑ DLDPÈ£øÃ¥ ICMP Echo 9r)¸£ÈÃ¸ü -G¸Ãxy[ÄÙÑÃÛ*ü ICMP Echo ÛÃX#D9.BAxy[,Xž ÃÃ¸ÄÛÈÃ¸Xpè8V,ÕÈÛ CPU C$,X5ÄÄ !8¸Ã¥ ICMP Echo ,XAÛ!5B	ãÄ¥y ICMP Echo ,XAÛ!5Bä¦õ Ä
ÏG!5B_Ð	G!5BDLDP ,X5¦Ö

```
5XLMLHFRQILJ
5XLMLHFRQILJLQWHUIDFHÖDQ
5XLMLHFRQILJLI9/$LSDGGUHVVA5B ÖDQ ,X ,3
5XLMLHFRQILJLI9/$GOGSSDVVLH
```

ÏÌGQÐ	Q¸	£Ä
	-	-

ÏGÄÈ	-

4.4 show dldp

/ DLDP ¦XG!5B4ÃuÇÄ

show dldp [**interface** *interface-name*] [**statistic**]

Ï–DAÈ	–D	£Ä
	interface-name	ýÄ
	statistic	*4ÃÇ*

ï5,Õ!5BÐ	-
ÏQ¸Ð	(Mã
ï5*Ûì	£Ûì statistic GK+9/,ÛÝÄ4ÃuÇÄÝá /Ã(MnýÄ¥XG!5B4ÃuÇÄ
ïG!5B_Ð	_ 1Ö¥XG!5BÇÖ

```
5XLMLHVKRZGOGS
,QWHUIDFH7SH,S1H[WKRS,QWHUÖO5HWU5HVXPH6WDWH
```

```
9O3DVVLM8S
9O3DVVLM8S
9O3DVVLM8S
```

_ 2)Ÿ· vlan 2 ¦XG!5BÇÖ

```
5XLMLHVKRZGOGSLQWIDFHYDQ
,QWHUIDFH7SH,S1H[WKRS,QWHUYO5HWU5HVXPH6WDWH

9O3DVVLM8S
```

_ 3)ÿX4³AuÇÖ

```
5XLMLHVKRZGOGSVWDWLVWLF
,QWHUIDFH7SH,SUHFRUGWLPH8SFRXQWRZQFRXQW

9O3DVVLMKPV
9O3DVVLMGKPV
```

_ 4)Ÿ· vlan 2 ¦X4³AuÇÖ

```
5XLMLHVKRZGOGSVWDWLVWLFLQWHUIDFHYDQ
,QWHUIDFH7SH,SUHFRUGWLPH8SFRXQWRZQFRXQW

9O3DVVLMKPV
```

+!‰	AÈ
	A¹µC></*ïb4³Au up/down õD,XÊÈ‰Sz/ÅhÊÈS,X/ã
record-time	*y***d**h**m**sÈG,X y></HÈ d></ÿÈ h></ÊÈ m></ÚsÈ s

5 REUP

5.1 link state track

*JÒÃÕ¯¢µÄ*ÄÇ¸X **no EÍGÕÄ**

link state track [*num*]

no link state track [*num*]

–D	ÆÄ
num	JÒÃ.Ü¸X ID

5¸Õ!5BÐ -

Q¸Ð <G!5Bã

S*Ð NOÎÒÃ¯¢µÄÕÃÕ¸XC¯¢µÄ

G!5B_Ð ÎÒÃÕ¯¢µ˜

5XLMLHFRQILJOLQNVWDWHWUDFN

Q¸	ÆÄ
link state group	**ÚÃÕ¸**

GÄÈ -

5.2 link state group

ÚÃÕ¸XJÒÃÕ¯¢µÄ*ÄÇ¸X **no EÍÚÃÕ¸ÈÃ**

Ġ!5B_Đ

-	-

ï5,Õ!5BÐ ý

ÏQÐ <G!5BÄ

ï5*Ô JÒÑÊÊbÞx6,X MAC ><ÚÞÈ DBÄ
ÊB#XÈÒÞx6E> MAC ><È,XÐÄ ÒÞx6Ô
y MAC È,XÔÄ

ïG!5B_Ð y MAC È
5XLMLHFRQILJPDFDGGUHVVWDEOHPRMXSGDWHUHFHLM

ÏÌGQÐ

Q¸	ÈÄ
mac-address-table move update transit	**ÔÈÕ** MAC È,XÐÄ

ïGÄÈ -

5.5 mac-address-table move update receive vlan

G!5BÐÚ MAC È,X VLANÄ
mac-address-table move update receive vlan *vlan-range*
no mac-address-table move update receive vlan *vlan-range*

ïÐÈ

–D	ÈÄ
vlan-range	ÐÚ MAC È,X VLAN 8Ã

ï5,Õ!5BÐ TAxÝ VLAN ÐÚ MAC È.Ä

ÏQÐ <G!5BÄ

ï5*Ô EÈ!8QÇKÁ VLAN ÞXÐÚ MAC È s6ÑKÐÚ MAC È,X VLAN ¡
ÃÈ› MAC È[96ÀÒ,X3ÈgÈÒÃp,X/6Ñ!Ä

ïG!5B_Ð G!5BÐÚ MAC È,X VLAN
5XLMLHFRQILJQRPDFDGGUHVVWDEOHPRMXSGDWHUHFHLMÝDQ

ÏÌGQÐ

Q¸	ÈÄ
mac-address-table move update receive	**Ô** REUP y MAC È,XÔÄ

ïGÄÈ -

5.6 mac-address-table move update transit

ÊÕ MAC È¸,XÔÄ

mac-address-table move update transit

no mac-address-table move update transit

ÏÐÀ	–D	ÉÄ
	-	-

ÏÕ¸Ô!5BÐ 5,ÕÕÄ

ÏQÐ <G!5BÄ

ÏS*Ô ÅÒÕÊÊDB#XÊÔtô,Xx6ÊÕ MAC È¸,Xs 6Ñ

ÏG!5B_Ð Ô MAC È¸

5XLMLHFRQILJPDFDGGUHVVWDEOHPRMXSGDWHWUDQVLW

ÏÎGQÐ	Q¸	ÉÄ
	mac-address-table move update transit	**ÔÊÕ** MAC È¸,XÔÄ

ÏGÄÀ -

5.7 mac-address-table move update transit vlan

A5B0ÊÕ MAC È¸,X VLANÄ

mac-address-table move update transit vlan *vid*

no mac-address-table move update transit vlan

ÏÐÀ	–D	ÉÄ
	vid	*Ê* MAC È¸,X VLAN IDÄ

ÏÕ¸Ô!5BÐ TAx0,ÃXTAx VLAN ÊÕ MAC È¸Ä

ÏQÐ yÃ5BÄ

ÏS*Ô JÒÊÊÕ MAC È¸,Xs6ÊÒÙ MAC È¸Ä

ÏG!5B_Ð G!5B0ÊÕ MAC È¸,X VLAN

5XLMLHFRQILJLIPDFDGGUHVVWDEOHPRMXSGDWHWUDQVLWÕDQ

ÏÎGQÐ	Q¸	ÉÄ

mac-address-table move update transit	**Ô** REUP ¥ÕÕ MAC ¥È,XÔÄ

ÏGÄÈ -

5.8 mac-address-table update group

A5Bx6,X MAC ¥ÄÄ

mac-address-table update group [*group-num*]

no mac-address-table update group

ÏÐÈ

–D	£Ä
group-num	MAC ¥È,X ID

ÏÕ,Ö!5BÐ TAx,X¥È ID 1Ä

ÏÿÏ,X MAC ¥ÄÄ

ÏQÐ yÃ5BÄ

ÏS*Ô ÃÄ MAC ÈÐÈXÕÈx6,X!7DBÈgÃÐ MAC

¥È,XA5BÃÄ,XÝÃÐ MAC ¥ÈÑÈ6Ã

> DBÈg,Xs6Ñ

ÏG!5B_Ð 0Ã MAC ¥È

5XLMLHFRQILJLIPDFDGGUHVVWDEOHXSGDWHJURXS

ÏÏGQÐ

Q¸	£Ä
show mac-address-table update group	**x6¥** MAC ¥ÈÇÄ

ÏGÄÈ -

5.9 switchport backup interface

G!5BREUP ,XJÒÑ

switchport backup interface *interface-id*

no switchport backup

ÏÐÈ

–D	£Ä
interface *interface-id*	ÑÒÃX0Ã IDÄ

ÏÕ,Ö!5BÐ ÏÿÏJÒÑ

ÏQÐ yG!5BÄ

Ï*Ð ãX0ÃÃD,X interface-id Í,X0ÃÃÒ*ÓpÈ
E6ÃÒ,X6gÄ

Ï!5B_Ð A5BÔÒÃ5B fa 0/1 0Ãa 0/2 ÑÃ

5XLMLHFRQILJLQWHUIDFHID
5XLMLHFRQILJLIVZWFKSRUWEDFNXSLQWHUIDFHID

ÏGQÐ

Q¸	ÆÄ
show interface switchport backup	**x6ÃBÄ**

ÏGÄÈ -

5.10 switchport backup interface preemption

G!5BREUP ,XJÒÃ4s6Ñ
switchport backup interface *interface-id* **preemption mode** { **forced** | **bandwidth** | **off** }
switchport backup interface *interface-id* **preemption delay** *delay-time*
no switchport backup interface *interface-id* **preemption delay**

ÏÐÈ

–D	ÆÄ
interface *interface-id*	ÑÒÃX0Ã IDÄ
mode { **forced** | **bandwidth** | **off** }	*B4Ö* **forced** ã **bandwidth** ã **off** ÈÄ
delay *delay-time*	A5Bv4,XÊÊÃ

Ï,Õ!5BÐ v4s6ÑAxGK(Ã
v4ÊTAx 35 /Ä

ÏGÄÈ -

5.11 switchport backup interface prefer

G!5BREUP ,XJÒÃ VLAN BÊQ>5Ä*AÇ¸X **no EÍÎ8G5BX** vlan BÊQ1*+9Ä

switchport backup interface *interface-id* **prefer instance** *instance-range*

no switchport backup interface *interface-id* **prefer**

ÏÐÈ

Ï G!5B_Ð /JÒÕÑ

```
5XLMLHVKRZQWHUIDFHVVZWFKSRUWEDFNXSGHWDLO
6ZWFK%DFNXS,QWHUIDFH3DLUV
$FWLYH,QWHUIDFH%DFNXS,QWHUIDFH6WDWH

*L*L$FWLYH8S%DFNXS6WDQGE\
,QWHUIDFH3DLU*L*L
3UHHPSWLRQ0RGH2II
3UHHPSWLRQHODVHFRQGV
%DQGZGWK*L0ELWV*L0ELWV
```

ÏÎGQÐ

Q¸	ÐÄ
-	-

ÏGÄÈ -

5.13 show link state group

/JÒÕÑ¢¢¢¸XÇÄ

show link state group *num*

ÏÐÈ

–D	ÐÄ
num	JÒÕÑ¢¢¢¸ ID

Ï¸Õ!5BÐ -

ÏQÐ (M EXEC G!5Bã

ÏS*Ð -

Ï G!5B_Ð /JÒÕÑ¢¢¢¸

```
5XLMLHVKRZOLQNVWDWHJURXS
/LQN6WDWH*URXS6WDWXV(QDEOHG83
8SVWUHDP,QWHUIDFHV*L8S
RZQVWUHDP,QWHUIDFHV*LZQ*LZQ
/LQN6WDWH*URXS6WDWXVLVDEOHGRZQ
8SVWUHDP,QWHUIDFHV
RZQVWUHDP,QWHUIDFHV
8S,QWHUIDFHXSZQ,QWHUIDFHRZQLV,QWHUIDFHGLVDEOHG
```

ÏÎGQÐ

Q¸	ÐÄ
-	-

ÏGÄÈ -

5.14 show mac-address-table update group

/È¸XÇÄ

show mac-address-table update group [**detail**]

DÈ	–D	**E**Ä

6 RLDP

6.1 debug rldp

Ô rldp áA×ÔÄÇ¸X no 6ÈKÁ×ÔÄ

debug rldp [**packet | event | error**]

undebug rldp [**packet | event | error**]

ÏÐÈ

–D	£Ä
packet	¥ rldp y[,XA×ÇÄ
event	0(ÕXA×ÇÄ
error	£/¥ÓÃ,XA×ÇÄ

ÏÕ¸Õ!5BÐ -

ÏÇÐ (M EXEC G!5Bã

ÏS*Ô -

ÏG!5B_Ð -

ÏÌGQÐ

Q¸	£Ä
-	-

ÏGÄÈ -

6.2 rldp detect-interval

S*ÄÇG!5B RLDP 0ÃÕ#[,XKÈhÄ

rldp detect-interval *interval*

no rldp detect-interval

ÏÐÈ

–D	£Ä

ÏG!5B_Ð	G!5Bv¥KÈh	5s
	5XLMLHFRQILJUOGSGHWHFWLQWHUÐO	

ÏÎGQÐ	Q¸	£Ä

ÏQÐ <G!5BÄ

Ï5*Ð ¥4 RLDP ÐÃ RLDP !6Ñ¤ Ä

ÏG!5B_Ð 5XLMLHFRQILJUOGSHQDEOH

ÏÎGQÐ

Q¸	£Ä
rldp port	**G5B0Ã** RLDP s6Ñ

ÏGÄÐ -

6.5 rldp port

AÐG!5B0Ã rldp ÐO_Lp)Ð

rldp port { **unidirection-detect | bidirection-detect | loop-detect** } { **warning | shutdown-svi | shutdown-port | block** }

no rldp port { **unidirection-detect | bidirection-detect | loop-detect** }

ÏÐÐ

–D	£Ä
unidirection-detect	)åÒÃO_
bidirection-detect	ÃO
loop-detect	ÃO
warning	Ó
shutdown-svi	shutdown 0Ã svi
shutdown-port	shutdown 0Ã
block	GKÓÃ:4E€

ÏÕ,Õ!5BÐ -

ÏQÐ yG!5BÄ

Ï5*Ð ¥4 RLDP ÒÃ RLDP !6ÑK0*Ä

ÏG!5B_Ð ü fas 0/1 G!5BZ rldp ÐO_)CÃp)GKÓÃ4E€

5XLMLHFRQILJLQWHUIDFHIDV

5XLMLHFRQILJLIUOGSSRUWORRSGHWHFWEORFN

ÏÎGQÐ

Q¸	£Ä
rldp enable	**<** rldp G!5BQ¸

ÏGÄÐ -

6.6 rldp reset

AÐQ¸SÝ• **rldp shutdown ê disable** ÞÕÃÊ¸9 rldp Ä

rldp reset

ÏÐÈ	–D	ÊÄ
	-	-

ÏÕ,Õ!5BÐ -

ÏQÐ (MÄ

ÏS*Ô -

Ï!5B_Ð 5XLMLHUOGSUHVHW

ÌÏGQÐ	Q¸	ÊÄ
	rldp enable	Rldp <G!5BQ¸

ÏGÄÈ -

6.7 show rldp

/ rldp ,X0ÃÄ

show rldp [**interface** *interface-id*]

ÏÐÈ	–D	ÊÄ
	interface *Interface-id*	ô0Ã

ÏÕ,Õ!5BÐ -

ÏQÐ (M EXEC G!5Bã

ÏS*Ô -

Ï!5B_Ð -

ÌÏGQÐ	Q¸	ÊÄ
	-	-

ÏGÄÈ -

7 TPP

7.1 show tpp

Ï G!5B_Ð	ÔKÁ%Lxs6Ñ

8 GRTD

8.1 diagnostic bootup level

A5B bootup #© (CK#©)¸X14{Ä

diagnostic bootup level { **bypass | minimal | complete** }

–D	£Ä
GK+ **bypass**	£> bootup #©
GK+ **minimal**	

ÏQÐ <G!5Bã

Ï*Ð AQ¸Ï(u)ÚÉ5ÞXÁ¿ÊÑ(u)ÚÄ

ÏG!5B_Ð _ 1ÔÄ@Ê¸5DA5B 1000 5Ö

UXLMLHFRQILJGLDJQRVWLFHMQWORJVL]H

_ 2ÔÄ@Ê¸5D6ã,Õ

UXLMLHFRQILJQRGLDJQRVWLFHMQWORJVL]H

ÏÌGQÐ

Q¸	ÆÄ
show diagnostic events	**ÆÊ**

ÏGÄÈ -

8.3 diagnostic loopback-test

A5B0ÃÊX0Ã ID ÐÃÄ

diagnostic loopback-test [**slot** *slot_id* [**sub_sysytem** *subsys_id*]] **port** { **all | range** *potr_range* | *port_id* } **loopback** { **mac | phy | none** }

ÏÌDAÈ

–D	ÆÄ			
range_value	0Ñ	1/1-24Ä4!,X	1 Ñ	IDÄ

slot

ÏGQÐ	Q¸	ÆÄ
	-	-

-

ÏGÄÈ -

8.4 diagnostic monitor active

bu)Ś4*5ÔNM,X9,¥AÕ5B%*Ã*Q¸X no 6Ã5B/U!6(Š

Ã

bˆ

ï5,Õ!5BÐ	)Ï3ÂCÊÑ4Ë{*Ä
ÏQÐ	<G!5Bã
ÏS*Ð	-
ÏG!5B_Ð	_ 1Ö5B)Ï3ÂCÊÑ4ÈÄ [redacted] _ 2Ö5B)Ï3ÂCÊÑ4Ë UXLMLHFRQILJQRGLDJQRVWLFPRQLWRUVVORJ

ÏGQÐ

Q¸	ÈÄ
-	-

ÏGÄÈ -

8.7 diagnostic monitor threshold

A5B1u)Ú45oÄNM9¸{ÆÉ4ÁB¸XÂÐÄ

diagnostic monitor threshold [**slot** *slot_id* [**sub_sysytem** *subsys_id*]] *slot_s_id*

Ï G!5B_Ð _ 1Ö5 2 ,XÁ¤M,X9¸¥AC4ÁB¡XÂ¤DA5B 50Ä

UXLMLHFRQILJGLDJQRVWLFPRQLWRUWKUHVKROGVORWWHVWDOOIDLOXUHFRXQW
UXLMLHFRQILJ
7KHWHVWFDQQRWEHXVHGDVKHDOWKPRQLWRULQJWHVW
7KHWHVWFDQQRWEHXVHGDVKHDOWKPRQLWRULQJWHVW

_ 2Ö BOX A¡ÛXÁ¤M,X9¸¥AC4ÁB¡XÂ¤D65¸Ã

UXLMLHFRQILJQRGLDJQRVWLFPRQLWRUWKUHVKROGWHVWDOO

ÏÏGQÐ

Q¸	ÆÄ
show diagnostic content	[illegible]

ÏGÄÈ -

8.8 diagnostic packet

A5B[illegible]XKSz[illegible]X1[illegible]

diagnostic packet [**slot** *slot_id* [**sub_sysytem** *subsys_id*]] [**length** *lengtn_size*] [**num** *num_count*] [**time_out** *tick_count*]

Ï–DAÈ

–D	ÆÄ
slot *slot_id*	[illegible]
sub_sysytem *subsys_id*	[illegible] 0-1Ä [illegible] **show version** [illegible] cpu idÄ
length	[illegible]
num	[illegible]
time_out	[illegible] tickÄ

Ï5,Õ!5BÐ -

ÏQÐ (Mã

Ï S*Ô **diagnostic packet** [illegible]

Ï G!5B_Ð _ 1Ö5BÑ 1 ÆÄ

UXLMLHGLDJQRVWLFSDFNHWVORWOHQJWKQXPWLPHRXW

ÏÏGQÐ

Q¸	ÆÄ
-	-

ÏGÄÈ -

8.9 diagnostic schedule

A5BÐu)Ê45»ÆNMAuæ¢XÊÈ<Ä

diagnostic schedule [**slot** *slot_id* [**sub_sysytem** *subsys_id*]] **test** { **all |** *test-id* | **range** *test-range* } { **daily** *hh:mm* | **on** *year month day_of_month hh:mm* | **weekly** *day_of_week hh:mm* }

no diagnostic schedule [**slot** *slot_id* [**sub_sysytem** *subsys_id*]] **test** { **all |** *test-id* | **range** *test-range* } { **daily** *hh:mm* | **on** *year month day_of_month hh:mm* | **weekly** *day_of_week hh:mm* }

Ï–DAè

–D	Ë
slot *slot_id*	Ñ
sub_sysytem *subsys_id*	0-1 **show version** cpu id
daily	h:mm
weekly	ay_of_week <h:mm
on	

ï5,Õ!5BÐ ÆNM,XAuæÊÈ<5,ÑÑNÄ

ÏQ¸ <G!5BÆ

ÏÓ*Ð ÃÃ5B¸,X¸ÊÈ> ÆÄ
ÃÃ5B¸X¸ÊÈ> ÆÄ
ÃÃ5B¸£,X¸ÊÈ> ÆÄ
ÓÆNMÊÃÑUèÊÈ> AuæÄ
ÆG!5BÊÈXÆAuèÊÈG!5BÊÈWÃXÆAuÆe

ÏG!5B_Ð _ 1 5 2 ,XÆNM 1Ã 2 A5B! 10 & 10 É> Æ©
UXLMLHFRQILJGLDJQRVWLFVFKHGXOHVORWWHVWUDQJHGDLO\

_ 2 5 2 ,XÆNM 1 A5B 2010 H 9 Ü 10 Ë10:10 E> Æ©
UXLMLHFRQILJGLDJQRVWLFVFKHGXOHVWRQVHSWHPEHU

_ 3 5 2 ,XÆNM 1 A5B!£,X 10:10 E> Æ©
UXLMLHFRQILJGLDJQRVWLFVFKHGXOHVWÆHNOÆGQHVGD\

_ 4 5 2 ,XÆNM 1 ,X Æ<Ë,X 10:10 E> Æ©
UXLMLHFRQILJQRGLDJQRVWLFVFKHGXOHVORWWHVWÆHNOÆGQHVGD\

ÏÎGQÐ

Q¸	Ë
show diagnostic schedule	

ÏGÄè -

8.10 diagnostic start

Ø¸> ÆÄ

diagnostic start [**slot** *slot_id* [**sub_sysytem** *subsys_id*

ÏQÞ (Mã

ÏS*Ð -

ÏG!5B_Ð _ 10Ï64 5 5 ,XQ¸> AÆ©

UXLMLHGLDJQRVWLFVWRSVORW

ÏÏGQÞ

Q¸	ÆÄ
-	-

ÏGÄÈ -

8.12 show diagnostic bootup

/ bootup ÆÏ4{Ä

show diagnostic bootup level

ÏÏDAÈ

–D	ÆÄ
level	bootup ÆÏ4{

Ï5,Õ!5BÐ -

ÏQÞ (Mã

ÏS*Ð -

ÏG!5B_Ð UXLMLHVKRZGLDJQRVWLFERRWXSOHYO

&UUHQWERRWXSGLDJQRVWLFOHYOR&PSOHWH

ÏÏGQÞ

Q¸	ÆÄ
-	-

ÏGÄÈ -

8.13 show diagnostic content

/1u)Ú45,XAÆ©Ì1u)Ú45,XÆ©MÃ©M2Ã©M,XG!

5B1¢Ä

show diagnostic content [**slot** *slot_id* [**sub_sysytem** *subsys_id*]]

ÏÏDAÈ

–D	ÆÄ
sub_sysytem *subsys_id*	ÆÄ 0-1Ì **show version** Ï cpu idÄ

```
393HUSRUWWHVW3HUGHLFHWHVW1$
'1LVUXSWLMWHVW1RQGLVUXSWLMWHVW1$
,1RWDKHDOWKPRQLWRULQJWHVW1$
))L[HGPRQLWRULQJLQWHUYDOWHVW1$
(6DVHQDEOHGPRQLWRULQJWHVW1$
$0RQLWRULQJLQDFWLM0RQLWRULQJLQLQDFWLM1$
<2.HWHVW1RQNHWHVW1$
53RZUGRZQOLQHFDUGVDQGHHGUHORDGPDLQERUG1$
.5HTXLUHUHVHWWLQJWKHOLQHFDUGDIWHUWKHWHVWFRPSOHWHG1$

WHVWLQWHUYDO7KUH
,7HVW1DPH$WWULEXWHVGDKKPPVVVKROG

3RUW/RRSEDFN7HVW!03QRWFRQILJ1$
,QEDQG6HOI7HVW!QRWFRQILJ1$
0DF6HOI7HVW!QRWFRQILJ1$
7HVW&OG!;QRWFRQILJ1$
7HVW3&;
7HVW1DQG)ODVK!QRWFRQILJ1$
7HVW1RU)ODVK!QRWFRQILJ1$
7HVW,&QRWFRQILJ1$
7HVWGU!QRWFRQILJ1$
00&,,

LDJQRVWLFWHVWVXLWHDWWULEXWHV
0&LQLPDOERRWXSOHMOWHVW&RPSOHWHERRWXSOHMOWHVW1$
393HUSRUWWHVW3HUGHLFHWHVW1$
'1LVUXSWLMWHVW1RQGLVUXSWLMWHVW1$
,1RWDKHDOWKPRQLWRULQJWHVW1$
))L[HGPRQLWRULQJLQWHUYDOWHVW1$
(6DVHQDEOHGPRQLWRULQJWHVW1$
$0RQLWRULQJLQDFWLM0RQLWRULQJLQLQDFWLM1$
<2.HWHVW1RQNHWHVW1$
53RZUGRZQOLQHFDUGVDQGHHGUHORDGPDLQERUG1$
.5HTXLUHUHVHWWLQJWKHOLQHFDUGDIWHUWKHWHVWFRPSOHWHG1$

WHVWLQWHUYDO7KUH
,7HVW1DPH$WWULEXWHVGDKKPPVVVKROG

2XWEDQG6HOI7HVW!0QRWFRQILJ1$
,QEDQG6HOI7HVW!&QRWFRQILJ1$
0DF6HOI7HVW!QRWFRQILJ1$
7HVW&OG!&QRWFRQILJ1$
7HVW3&&QRWFRQILJ1$
```

```
7HVW1DQG)ODVK!3ÇQRWFRQILJ1$
7HVW1RU)ODVK!3ÇQRWFRQILJ1$
7HVW,&ÇQRWFRQILJ1$
7HVWGU!ÇQRWFRQILJ1$
,Q%DQG&DQQHO7HVW!1
2XW%DQG&DQQHO7HVW!1
```

+!‰	AÈ
ID	#ÑM id
Test Name	#ÑMÁ
Attributes	#ÑM2Ê4ÁÈ5©!5BÛÄ
test interval	#ÊKÈhÈb2Ï9,¥A©
threshold	,¥ÑMÛÒ

ÏGQÞ

Q¸	ÆÄ
diagnostic monitor interval	A5B,¥ÊKÈh
diagnostic monitor threshold	**5BÛÒ**

ÏGÄÈ -

8.14 show diagnostic description

/ÑM,XA4ÁÈ

show diagnostic description [

ÏÎGQÐ

Q¸	ÆÄ
diagnostic event-log size	A5B_Â)Þ

ÏGÄÈ -

8.16 show diagnostic result

8.17 show diagnostic schedule

/Ø u)Ú¼5A5BQ,XAuÆÊÈ<Ä

show diagnostic schedule [**slot** *slot_id* [**sub_sysytem** *subsys_id*]]

Ï–DAÈ

–D	ÆÄ
slot *slot_id*	Ã
sub_sysytem *subsys_id*	2ÄÊÈ 0-1Ò **show version** Ã cpu idÄ

Ï5,Õ!5BÐ -

ÏQÐ (Mã

Ï5*Ô -

Ï!5B_Ð

UXLMLHVKRZGLDJQRVWLFVFKHGXOHVORWDOO
XUUHQW7LPH 87XUL2FW
LDJQRVWLFIRU0RGXOH
6FKHGXOH
7REHUXQRQ-DQXDU\
7HVW,VWREHH[HFXWHG
6FKHGXOH
7REHUXQRQ6HSWHPEHU
7HVW,VWREHH[HFXWHG
LDJQRVWLFIRU0RGXOHLVQRWVFKHGXOHG
LDJQRVWLFIRU0RGXOHLVQRWVFKHGXOHG
LDJQRVWLFIRU0RGXOHLVQRWVFKHGXOHG

ÏÌGQÐ

Q¸	ÆÄ
diagnostic schedule	A5B1u)Ú¼5,XAuÆÊÈ

ÏGÄÈ -

8.18 show diagnostic status

/!ÁÆÕ

show diagnostic status

Ï–DAÈ

–D	ÆÄ
status	!ÆÕ

Ï5,Õ!5BÐ -

ÏQÐ (Mã

Ï*Ê -

Ï!5B_Ð

UXLMLHVKRZGLDJQRVWLFVWDWXV
%8%RRWXSLDJQRVWLFV+0+HDOWK0RQLWRULQJLDJQRVWLFV
22QHPDQGLDJQRVWLFV6&6FKHGXOHGLDJQRVWLFV

6ORWHVFULSWLRQXUUHQW5XQQLQJ7HVW5XQE\

0*76)31$$
0*76)31$$
00&,,7HVW1DQG)ODVK2'

+!‰	AÈ
Slot	ÑÈ
Description	45ê1u)Ú,XáÄ
Current Running Test	!7Ê¤ ,XÄÑM
Run by	2b¾Ãã

ÏÌGQÐ

Q¸	ÊÄ
-	-

ÏGÄÈ -

9 IP Event Dampening

9.1 dampening

[illegible] ip event dampening [illegible] **no EMGÍX** ip event dampening s6Ñ

dampening [*half-life-period* [*reuse-threshold* *suppress-threshold* *max-suppress* [**restart** [*restart-penalty*]]]]

no dampening

–D	EÄ
half-life-period	[illegible]1-30> [illegible]Ax 5sÄ
reuse-threshold	[illegible]1-20000> [illegible]Ax 1000Ä
suppress-threshold	[illegible]1-20000> [illegible]Ax 2000Ä
max-suppress	[illegible]1-255> [illegible]Ax half-life-period ,X 4 Ä
restart *restart-penalty*	[illegible]1-20000> [illegible]Ax 2000Ä

[illegible]

show interface dampening	**ý**es6,ñ¶

Ï*Ð 8ÛZ interface-idÐÂÛy¡X dampening µÄ

Ï G!5B_Ð /ý¡X dampening A²¢µÄ

```
5XLMLHVKRZQWHUIDFHGDPSHQLQJ
(WKHUQHW
)ODSV3HQDOW6XSS5HXVH7P+DOI/5HXVH96XSS90D[67P0D[35HVWDUW
)$6(
```

+!‰	Aà
Flaps	y5Ë@
Penalty	y!5½ã
Supp	!ú¢
ReuseTm	NXAu28eEÞÊ(s)
HalfL	>D(s)
ReuseV	28eKÞ$
SuppV	ÊKÞ$

10.2 action counter

ü SEM G!5BÃ G!5B1*+9|0È SEM QÁ AuD<ÄQ¸X no 6ãbîc8bÛR,X> |Ä

action *label* **counter name** *counter-name* **value** *counter-value* **op** { **dec** | **inc** | **nop** | **set** }

no action ***label***

Ï–DAÈ

–D	ÉÄ
label	>|ÛR
name *counter-name*	0ADÿ
value *counter-value*	0Sÿ
op { **dec**	**inc**	**nop**	**set** }	0Sÿ

ï5,Õ!5BÐ 5,Õ!5B> |

ÏQÐ SEM G!5Bã

ÏS*Û –D **name** *counter-name* Û,XAuD<ÈÔÈS*GÃ

ÏG!5B_Ð ,ÿÏogin faile ÿAuD< Authenticate_Faile t 1Ä

5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB

5XLMLHFRQILJDSSOHWHMQWWDJPRQLWRUBORJVVORJSDWWHUQORJLQIDLOH

5XLMLHFRQILJDSSOHWDFWLRQFRXQWHUQDPHXWKHQWLFDWHB)DLOHRSLQFDOXH

5XLMLHFRQILJDSSOHWFRPPLW

5XLMLHFRQILJDSSOHWH[LW

ÏÎGQÐ

Q¸	ÉÄ
smart manager applet	**nÎ¸X** SEM 1*+9

ÏGÄÈ -

10.3 action exit

ü SEM G!5BÃ G!5B1*+9|0ÈÈ6 1*+96ÈÎA5BEÕÈQ¸X no 6ãbîc8bÛ

1R,X> |Ä

action *label* **exit** [*result*]

no action *label*

ÏÐÈ

–D	ÉÄ
label	> |,XÛR
result	Exit ,XEÈÄx 1

ï5,Õ!5BÐ TÄxÿ%1*+9Ê² 1Ä

ÏQ¸Ð SEM G!5Bã

Ï5*Ð ê Ð È*+9,XÇ1Y*+9Ç ÄB1*+9,XE³ 1 4Á ÏXpE¨
² 0 Ç!6E¤ Ä 4Á E¤ Ä
1*+9,XE³ action exit ÇÈEAxÐ‰ 1Ä

ÏG!5B_Ð _ 1ê Ð ÐÑ Q¸ È Eg9 write memoryÈJ!6*ÇJ/*ü

```
5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB
5XLMLHFRQILJDSSOHWHMQWWDJPRQLWRUBFOLFOLSDWWHUQØLWHPHPRUVQFHV
5XLMLHFRQILJDSSOHWDFWLRQSXWVFDQQRWGRWKLV
5XLMLHFRQILJDSSOHWDFWLRQH[LW
5XLMLHFRQILJDSSOHWFRPPLW
5XLMLHFRQILJDSSOHWH[LW
```

_ 2ê Ð ÐÑ Q¸ È Eg9line ÈQ¡¸ aaa new-model È

```
> *ÇÄ
5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB
5XLMLHFRQILJDSSOHWHMQWWDJPRQLWRUBFOLFOLSDWWHUQOLQHVQFHV
5XLMLHFRQILJDSSOHWDFWLRQFOLFRPPDQGHQDEOH
5XLMLHFRQILJDSSOHWDFWLRQFOLFRPPDQGDDDQHØRGHO
5XLMLHFRQILJDSSOHWFRPPLW
5XLMLHFRQILJDSSOHWH[LW
```

ÏÎGQ¸Ð

Q¸	E Ä
smart manager applet	nÎQ¸ ,X SEM 1*+9

ÏGÄê Ð -

10.4 action publish-event

ü SEM G!5Bê G!5B1*+9|0È Application Event È ÇÕÄQ¸X no 6ãÜ 8ÛÛ
1R,X> |Ä

action *label* **publish-event** **subset** *subset-id* **type** *event-type* [**arg1** *argument-data*] [**arg2** *argument-data*] [**arg3** *argument-data*] [**arg4** *argument-data*]
no action *label*

ÏDAê Ð

–D	E Ä
label	>Ø
subset *subset-id*	¥ Ø
type *event-type*	¥ Ø
arg1 *argument-data*	_Ø 1
arg2 *argument-data*	_Ø 2
arg3 *argument-data*	_Ø 3

arg4 *argument-data*	_Ø 4

ï5,Õ!5BÐ 5,õ!5B> |

ïQ¸Ð SEM G!5Bã

ïS*Ð !8G!5Bâ event application G!Ï*Ä> action publish-event ,X1*+9{*ÈÈJ subset ` type ,ÏÈX event application ÏÄ

ïG!5B_Ð ,¥+ action publish-event ¥X_Ð!Šš ID 100ÈO_ ID 50Ì,¡«

```
5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB
5XLMLHFRQILJDSSOHWHMQWWDJPRQLWRUBHMQWQRQH
5XLMLHFRQILJDSSOHWDFWLRQSXEOLVKHMQWVXEVHWWSHDUJSDUDB
5XLMLHFRQILJDSSOHWFRPPLW
5XLMLHFRQILJDSSOHWH[LW
```

ÏGQ¸Ð

Q¸	ÆÄ
smart manager applet	**nÎ¸X** SEM 1*+9
event application	

ïGÄÈ -

10.5 action reload

ü SEM G!5BÈ G!5B1*+9|0È AÛ¡ÄÇ¸X no 6ãÏ8ÛÛR,X> |Ä

action *label* **reload**

no action *label*

ïÐÈ

–D	ÆÄ
label	>|Ø

ï5,Õ!5BÐ 5,õ!5B> |

ïQ¸Ð SEM G!5Bã

ïS*Ð -

ïG!5B_Ð H,¢‡ 20M Ê¡AÛ

```
5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB
```

ÏÎGQÐ	Q¸	ÆÄ

smart manager applet

Ï–DAÈ

–D	ÆÄ
label	>|Ø
priority *priority-level*	Ø[
msg *msg-text*	X
facility *string*	Ø

ï5,Õ!5BÐ 5,Õ!5B> |

ÏQÐ SEM G!5Bã

ÏS*Ô -

ÏG!5B_Ð H cpu ÿ[CÆ› 95%È,Ä

5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB

5XLMLHFRQILJDSSOHWHMQWWDJPRQLWRUBFSXVVPRQFSXVFRSHVVWHPHQWURSJWHQWUDO

5XLMLHFRQILJDSSOHWDFWLRQVVORJPVJVVWHPEXV\

5XLMLHFRQILJDSSOHWFRPPLW

5XLMLHFRQILJDSSOHWH[LW

4 32 ه ـ Action syslog ـ

ÏÎGQÐ

Q¸	ÆÄ
smart manager applet	**nÎ¸X** SEM 1*+9

ÏGÄÈ -

10.8 action wait

ü SEM G!5BÈ G!5B1*+9|0È1*+96Î/00ÄQ¸X no 6ãÎ8ÛR,X> |Ä

action *label* **wait** *wait-seconds*

no action *label* **wait**

Ï–DAÈ

–D	ÆÄ
label	>|Ø
wait-seconds	Ø

ï5,Õ!5BÐ 5,Õ!5B> |

ÏQÐ SEM G!5Bã

ÏS*Ô -

ÏG!5B_Ð ¸> **show arp Ð¸** **clear arp-cache 1Y** 5 /¸JsÄ

5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB

5XLMLHFRQILJDSSOHWHMQWWDJPRQLWRUBFOLFOLSDWWHUQVKRZUSVQFHV

5XLMLHFRQILJDSSOHWDFWLRQFOLFRPPDQGHQDEOH

5XLMLHFRQILJDSSOHWDFWLRQZLW

5XLMLHFRQILJDSSOHWDFWLRQH[LW

5XLMLHFRQILJDSSOHWFRPPLW

5XLMLHFRQILJDSSOHWH[LW

ÏÏGQÐ¸

10.10 description

ü SEM G!5BÃ G!5B SEM 1*+9,XÉÄÄÇ¸X no 6ãbÙ8 SEM 1*+9,XÉÄ

description *string*

no description

Ï–DAÈ

–D	ÉÄ
string	ÆÄ SEM 1*+9,X[¢

ï5,Õ!5BÐ 5,Õ!5B SEM 1*+9,XÉÄ

ÏQÐ SEM G!5Bã

ÏS*Ô

ï G!5B_Ð _ 1Ö!5B! SEM 1*+9 ÉÄ Descrption_For_SEM_Applet

5XLMLHFRQILJDSSOHWGHVFULSWLRQHVFUSWLRQB)RUB6(0B$SOHW

_ 2Ö8! SEM 1*+9ÉÄ

5XLMLHFRQILJDSSOHWQRGHVFULSWLRQ

ÏÎGQÐ

Q¸	ÉÄ
smart manager applet	**nÎ¸X** SEM 1*+9

ÏGÄÈ -

10.11 event application

ü SEM G!5BÃ G!5B,¥<,¥ **action publish-event** ¥Ê no 6ãbÛ8Û

ÆX_Ê

event tag *event-name* [**correlate** { **andnot** | **and** | **or** }] **application subset** *subset-id* **type** *event-type*

no event tag *event-name*

Ï–DAÈ

–D	ÉÄ
event-name	_Æ
correlate { **andnot** | **and** | **or** }	¶ÊÉ¥ÊÄÈX5Ê2Ïand ></Ê2Ïr ></Ê2Ïandnot ></Ê2Ï
subset *subset-id*	¥Ê ID
type *event-type*	¥Ê ID

ï5,Õ!5BÐ 5,Õ!5B_Ê

ÜQþÐ SEM G!5Bã

Ü*ÐÔ event application ¢¸¼ action publish-event ¥X_ÊÐ*+9PE|Ô*+9,X,ÂXÄ *subset-id ` event-type* *ùÐX ¥Ê *subset-id ` event-type* PolicyÄ ÃÕ*¡X event GÊÐ

GÊ	*Ê
_application_subset	¥Mn_ÊX1š
_application_type	¥Mn_ÊX2O_
_application_data1	¥ÊX–D 1
_application_data2	¥ÊX–D 2
_application_data3	¥ÊX–D 3
_application_data4	¥ÊX–D 4

Ü!5B_Ð ,¥ action publish-event ¥X_Ê1š ID 100È2O_ ID 50È¸¼

```
5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB
5XLMLHFRQILJDSSOHWHMQWWDJPRQLWRUBHMQWDSSOLFDWLRQVXEVVWHPWSH
5XLMLHFRQILJDSSOHWDFWLRQVVORJPVJ+DMHMQWVXEVHWBDSSOLFDWLRQBVXEVHWWSH
BDSSOLFDWLRQBWSH
5XLMLHFRQILJDSSOHWFRPPLW
5XLMLHFRQILJDSSOHWH[LW
```

ÏÎGQÞÐ

Q¸	Ê.Ä
smart manager applet	**nôbÞX** SEM 1*+9
action publish-event	**¥** application event ,X action

ÜGÄÃè -

10.12 event cli

ü SEM G!5BÈ!5B,¥<,¥Q¸> ÄÐQ¸X no 6ãüô8hÛÞX_Ê

event tag *event-name* [**correlate** { **andnot** | **and** |**or** }] **cli pattern** *regular-expression* [**sync** { **yes** [**default** *wait-time*] | **no skip** { **yes** | **no** } }] [**mode** *variable*] [**occurs** *num-occurrences*] [**period** *period-value*]

no event tag *event-name*

Ï–DAè

–D	Ê.Ä
event-name	_Ê
correlate { **andnot**	**and**	**or** }	þ_Ê-ÝÊÜÐX5Ê2Ïand ></È2Ïor ></È2Ïandnot ></JÈ2Ï
pattern *regular-expression*	Ê
sync { **yes**	**no** }	ÞÊ ¸Ä

skip { **yes** | **no** }	no
default *wait-time*	30 /¦
mode *variable*	
occurs *num-occurrences*	Event LØ,XG! ÐÄA x 1
period *period-value*	occurs <ÊE› period-value ,X occurs 0 CÊccurs 1 ÊB–DÄ

mode EMÚQ¿pEg9ÊEMÈ>GÄ

default EMÚQ¿Y9E=4ÊEMÈ¿¼ **sync** EM **yes** Ê

Ä

occurs EM_Ê9LÔ¿ÚXpôÜÊ' *num-occurrences* È

Ê

period EM **occurs** EMÚÊ

SEM SEM Action cli ž Ò ž Ò , ž Ò **pattern** ± ÷ ž Ò , ÷ ž Ò ,

enable

configure terminal

[no] smart manager applet

Exit

SEM ÉKQÄ

ÃS*¡X event GÉÐ

GÊ	*Èè
_cli_msg	*Èg9,XQ¿ Ý
_cli_msg_count	*Èg9,XQ¿ KSz
_cli_mode	*¡XQõ

Ò!5B_Ð _ 1ÜQ¿ Eg9ÈEg9 **show ip route** Ê

5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB

5XLMLHFRQILJDSSOHWHMQWWDJPRQLWRUBLQSXWFOLSDWWHUQVKRZSURXWHVQFQRVNLSQR

5XLMLHFRQILJDSSOHWDFWLRQVVORJPVJVKRZSURXWHUXQQLQJ

5XLMLHFRQILJDSSOHWDFWLRQ[LW

5XLMLHFRQILJDSSOHWFRPPLW

5XLMLHFRQILJDSSOHWH[LW

_ 2ÜQ¿ Eg9ÈEg9 **shutdown** Ê6ÄÄ

5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB

5XLMLHFRQILJDSSOHWHMQWWDJPRQLWRUBLQSXWFOLSDWWHUQVKXWGRZQPRGHLQWHUIDFH

5XLMLHFRQILJDSSOHWDFWLRQSXWVFDQQRWGRWKLV

5XLMLHFRQILJDSSOHWDFWLRQ[LW

5XLMLHFRQILJDSSOHWFRPPLW

5XLMLHFRQILJDSSOHWH[LW

ÎÒGQÐ

Q¸	ÊÄ
smart manager applet	**nÒÜ** SEM 1*+9

ÒÄÈ -

10.13 event counter

ü SEM G!5B¥ G!5B,¥ <,¥ SEM AuD<ÄQ¸X no 6ãbn8ûÄX_Ê

event tag *event-name* [**correlate** { **andnot** | **and** | **or** }] **counter name** *counter-name* **entry-op** *operator* **entry-val** *entry-value* **exit-op** *operator* **exit-val** *exit-value*

no event tag *event-name*

Ï–DAÈ

–D	ÉÄ
event-name	_Ê
correlate { **andnot** | **and** | **or** }	¸ÊÄ¸ÊÉ¸Ý4ÏÈ¸X5Ê2Ïand ></6Ê2Ïor ></6Ê2Ïandnot ></JÊ2Ï
name *counter-name*	ûÄ
entry-op *operator*	¸ eq 1b ge ûb1b gt ûb le ãb1b lt ãb ne ãb1b

Ï G!5B_Ð G!5B1*+9,¥AuD< Test_CounterÈ Test_Counter ,Xb1b 10 Ê*+9A),Ê
Test_Counter 5B0È Test_Counter ,Xb 5 Ê6¸¥Ä

5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB
5XLMLHFRQILJDSSOHWHMQWWDJPRQLWRUBFRXQWHUFRXQWHUQDPH7HVWB&XQWHUHQWURSJH
HQWUDOH[LWRSJWH[LWDO
5XLMLHFRQILJDSSOHWDFWLRQFRXQWHUQDPH7HVWB&XQWHURSVHWDOXH
5XLMLHFRQILJDSSOHWFRPPLW
5XLMLHFRQILJDSSOHWH[LW

ÏGQÐ

Q¸	ÆÄ
smart manager applet	**nb¸X** SEM 1*+9
action counter	

ÏGÄÈ -

10.14 event cpp

ü SEM G!5B6 G!5Bb CPP ,X_ÊQ¸X no 6ab8b8ÄX_Ê
event tag *event-name* [**correlate** { **andnot** | **and** | **or** }] **cpp parameter** { *counter-name* | **any** } **type** { **pps** | **total** | **drop** } **op** *operator* **value** *value* [**slot** { *slotid* | **mboard** }] **poll-interval** *poll-int-value*
no event tag *event-name*

Ï–DAÈ

Ï*Ð Ã*¡X event GÏÐ

Gâ	*Eè
_cpp_slot	#XS!5B
_cpp_parameter	y[2O_
_cpp_type	y[AuD2O_
_cpp_value	rL,X

Ï!5B_Ð

5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB
5XLMLHFRQILJDSSOHWHMQWWDJHMQWBFSSSDUDPHWHUDQWSHGURSRSJHDOXH
SROOLQWHUDO
5XLMLHFRQILJDSSOHWDFWLRQDFWLRQBFOLFRPPDQGHQDEOH
5XLMLHFRQILJDSSOHWDFWLRQDFWLRQBFOLFRPPDQGFRQILJXUHWHUPLQDO
5XLMLHFRQILJDSSOHWDFWLRQDFWLRQBFOLFRPPDQGFSXSURWHFWWSHBWSHSUL
5XLMLHFRQILJDSSOHWFRPPLW
5XLMLHFRQILJDSSOHWH[LW

ÏGQÐ

Q¸3V¿AÃPSVQPtVtQPiocQ¸

parameter *counter-name*	ÿXÄÂD
entry-op *operator*	ÿ/ eq 1b ge õ1b gt õ le ã1b lt ã ne á1b
entry-val *entry-value*	ÿ/
entry-type { **value** | **increment** | **rate** }	ÈÃÿ6ã
poll-interval *poll-int-value*	ÈÂhÈA 5 /¦
exit-comb { **or** | **and** }	exit-op âexit-time ,XJdG2Ï
exit-op *operator*	6ÈÃÿ eq 1b ge õ1b gt õ le ã1b lt ã ne á1b
exit-val *exit-value*	6ÈÃÿ
exit-type { **value** | **increment** | **rate** }	6ÈÃÿ6ã
exit-time *exit-time-value*	¢9Þ,S6ÿ
average-factor *average-factor-value*	➢ **rate SÈ** poll-int-value ,Ì4Au<ó

Ë,Õ!5BÐ 5,ê!5B_Ê

ÏQ¸Ð SEM G!5Bã

Ë*ÊÐ **event interface parameter** øÞÕ

–Dá	Aê
input_errors	Number of damaged packets received
input_errors_crc	Number of packets received with CRC errors
input_errors_frame	Number of framing ERR packets received
input_errors_overrun	Number of overruns and resource errors
input_packets_dropped	Number of packets dropped from input Q
interface_resets	Number of times an interface has been reset
output_buffer_failures	Number of failed buffers
output_buffer_swappedout	Number of packets swapped to DRAM
output_errors	Number of packets errored on output
output_errors_underrun	Number of underruns on output
output_packets_dropped	Number of packets dropped from output Q
receive_broadcasts	Number of broadcast packets received
receive_giants	Number of too large packets received

receive_rate_bps	Interface receive rate in bits/sec
receive_rate_pps	Interface receive rate in pkts/sec
receive_runts	Number of too small packets received
receive_throttle	Number of times the receiver was disabled
reliability	Interface reliability as a fraction of 255
rxload	Receive rate as a fraction of 255
transmit_rate_bps	Interface transmit rate in bits/sec
transmit_rate_pps	Interface transmit rate in pkts/sec
txload	Transmit rate as a fraction of 255

EÈG!5B **exit-op** ` **exit-val** Ã_ÂÈ4Ëp_ÈÊ9Ò

áE¾y4ÀÀDÃ **exit-op** ` **exit-val** 4Ë>ÈÈÈÊ

Ò entry-op ` **entry-val** 4ÈÈÀ

exit-comb ` **exit-time** G5BZ **exit-op** ` **exit-val** Ã¼ **exit-comb** ¤ **exit-op** ` **exit-val**

â exit-time ¿2È **exit-time** ¤Ê **exit-comb and** ¾

Ç exit-op ` **exit-val** EÈ4Ë› **exit-time** ÈÊ **exit-comb or**

¾ **exit-op** EW **exit-val** ` 4Ë› **exit-time** ÈÊ

6Ã

Ã*¡X event GÒ

Gâ	*Ëè

event tag *event-name* [**correlate** { **andnot** | **and** | **or** }] **none** [**sync** { **yes** [**default** *wait-time*] | **no** }]
no event tag *event-name*

10.18 event snmp

ü SEM G!5BÃ G!5B,¥<,¥ snmp Ì5ÄÇ¸X no 6ãbû8bÛÄX_Ê

event tag *event-name* [**correlate** { **andnot** | **and** | **or** }] **snmp oid** *oid-value* **get-type** { **exact** | **next** } **entry-op** *operator* **entry-val** *entry-value* **entry-type** { **value** | **increment** | **rate** } **poll-interval** *poll-int-value* [**exit-op** *operator* **exit-val** *exit-value* **exit-type** { **value** | **increment** | **rate** } [**exit-comb** { **or** | **and** } **exit-time** *exit-time-value*]] [**average-factor** *average-factor-value*]

no event tag *event-name*

Ï–DAÈ

–D	EÄ
event-name	_Â
correlate { **andnot** | **and** | **or** }	¸ÊÊÊÊ Ä and ><È or ><È andnot ></Ä
oid *oid-value*	¥ snmp oid
get-type { **exact** | **next** }	snmp ¸ÄÈ¸E¬ get next ¸
entry-op *operator*	¥ eq 1b ge ûb1b gt ûb le ãb1b lt ãb ne ãb
entry-val *entry-value*	¥
entry-type { **value** | **increment** | **rate** }	¥EWS*¡XD6ã
exit-comb { **or** | **and** }	exit-op â exit-time ,XJG2Ï
exit-op *operator*	6¥ eq 1b ge ûb1b gt ûb le ãb1b lt ãb ne ãb
exit-val *exit-value*	6ãÊ¥
exit-type { **value** | **increment** | **rate** }	6ãÊ¥6ã
exit-time *exit-time-value*	¢ Policy >¥G¸S6¡ÑÊÈ
average-factor *average-factor-value*	► rate S*È poll-int-value ,Ì4ÃÄu<ó
poll-interval *poll-int-value*	EÈhÈA 5 /¦

ï5,Õ!5BÐ 5,Õ!5B_Ê

ÏQÐ SEM G!5Bã

ÏS*Ûb EÈG!5B **exit-op** ` **exit-val** Ã_Ê4ÈÊp_ÈÊ9Ò

áE> „X¥ SNMP OID ,Xâ **exit-op ` exit-val 4Ë>EÈÊÕ**

6Èentry-op ` entry-val 4ËÕÄ

exit-comb ` exit-time G5BZ exit-op ` exit-val ¥Ë exit-comb × exit-op ` exit-val

â exit-time ¥G2Ëexit-time ¤Ê exit-comb and ¥

exit-op ` exit-val EÈ4Z› exit-time ¥Ëá exit-comb or ¥

¥ exit-op EW exit-val 4Z› exit-time ¥ÄÄ

Ãÿ event ÉÐ

Ãâ	*Ëè
_snmp_oid	SNMP OID
_snmp_oid_delta_val	SNMP OID ,XÂhKÈXÂ
_snmp_oid_val	SNMP OID ,Xª

ÏG!5B_Ð G!5B,¥ snmp oid 1.3.6.1.2.1.2.2.1.10.1 ÈÏ› 10000ÈÃ

```
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
```

ÏÎGQÐ Q¸ ÈÏaoq..4 456.144129.4 0.48 ref538.38 456.14 0.48 0.48 ref538.38

ÏQÐ SEM G!5Bã

Ï*Ð Ã*¡X event GÏÐ

Gâ	*Eè
_snmp_notif_oid	Trap OID
_snmp_notif_oid_val	Trap OID ,X

ÏG!5B_Ð ,¥ÂÎX oid 1.3.6.1.2.1.52.2.1 ,X trap ÏÈ oid ,Xô 1000 Ê*+9Ä

5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB
5XLMLHFRQILJDSSOHWHMQWWDJPRQLWRUBWUDSVQPSQRWLILFDWLRQRLGRSJW
RLGÐO
5XLMLHFRQILJDSSOHWDFWLRQVVORJPVJKDMWUDSBVQPSBQRWLIBRLGÐOXH
BVQPSBQRWLIBRLGBÐO
5XLMLHFRQILJDSSOHWDFWLRQH[LW
5XLMLHFRQILJDSSOHWFRPPLW
5XLMLHFRQILJDSSOHWH[LW

ÏÎGQÐ

Q¸	ÊÄ
smart manager applet	**nÎ¸X** SEM 1*+9

ÏGÄÐ -

10.20 event snmp-object

ü SEM G!5Bã G!5B,¥<,¥ snmp Í snmp Ì5,X get set getnext ¡ÄÏQ¸X no 6ãb
ô8ûÏX_Ê

event tag *event-name* [**correlate** { **andnot** | **and** | **or** }] **snmp-object** [**operate** { **get** | **getnext** | **set** }]
oid *oid-value* **type** *value* **istable** { **yes** | **no** } **skip** { **yes** | **no** }
no event tag *event-name*

ÏÌDAÐ

Ï Q¸ÐÐ SEM G!5Bã

Ï S*ÐÐ Ã*¡X event GÏÐ

GÏÐ	*Ïè
_snmp_oid	SNMP OID
_snmp_request_type	SNMP AËO_
_snmp_value	SNMP AË

Ï G!5B_Ð ,¥ snmp oid 1.3.6.1.2.1.1.4 ,XÊÊ¡Ä

5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB
5XLMLHFRQILJDSSOHWHMQWWDJPRQLWRUVQPSREMVQPSREMHFWRLGWSHRFWHW
5XLMLHFRQILJDSSOHWDFWLRQVVORJPVJBVQPSBRLGBVQPSBRLGBVQPSBUHTXHVWBWSH
BVQPSBUHTXHVWBWSHBVQPSBDOXHBVQPSBDOXH
5XLMLHFRQILJDSSOHWDFWLRQH[LW
5XLMLHFRQILJDSSOHWFRPPLW
5XLMLHFRQILJDSSOHWH[LW

ÏÏGQÐ

Q¸	ÏÄ
smart manager applet	**nÎ¸X** SEM 1*+9

ÏGÄÈ -

10.21 event syslog

ü SEM G!5BÊ G!5B,¥<,¥ logÄQ¸X no 6ãbÛ8ÛÄX_Ê

event tag *event-name* [**correlate** { **andnot** | **and** | **or** }] **syslog pattern** *regular-expression* [**priority** *priority-level*] [**occurs** *num-occurrences*] [**period** *period-value*] [**skip** { **yes** | **no** }]

no event tag *event-name*

Ï–DAÈ

–D	ÏÄ
event-name	_Ê
correlate { **andnot** | **and** | **or** }	¸ÊÊ¥ÊÏÏÈX5ÊÏ2Ïand ></ÊÏ2Ïr ></ÊÏ2Ïandnot ></JÊÏ2Ï
pattern *regular-expression*	Ê
priority *priority-level*	Ê
occurs *num-occurrences*	ÊÐ
period *period-value*	X **occurs** Ê *period-value* X **occurs** ÏÏ **occurs** ÊÐ´
skip { **yes** | **no** }	Ï SyslogÈ5B! yes ,XÈG!,XÏÑ9Ä¬ Ax no

Ï5,ÕÏ5BÐ 5,ÕÏ5B_Ê

ÏQ¸Ð SEM G!5Bã

Ï*Ð L!6 SEM ¥ó_Ê)Ê SEM s6Ã,ÕÈ SEM Az<ÖK,XÈ Action Syslog
Ï,ÕÈÑ• Syslog #Ñ9Ê> Ä
+bQ¸ LÈ **pattern** Ð7Ëg9ÊÕSÈ4ÏÈÖ0Ê
s0ÈÈÄ
Ã*¡X event GÏÐ

Gâ	*Ëè
_syslog_msg	Syslog Ë
_syslog_priority	Syslog ,X4{ÿ

ÏG!5B_Ð ,¥p),memory fail ÊÄ

```
5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB
5XLMLHFRQILJDSSOHWHMQWWDJPRQLWRUBORJVVORJSDWWHUQPHPRUIDLO
5XLMLHFRQILJDSSOHWDFWLRQVZWFKRMU
5XLMLHFRQILJDSSOHWFRPPLW
5XLMLHFRQILJDSSOHWH[LW
```

ÏÎGQ¸Ð

Q¸	ÊÄ
smart manager applet	**nb¸X** SEM 1*+9

ÏGÄÈ -

10.22 event sysmon

` SEM G!5BÊ G!5B,¥<,¥24ÏC6ÄÏQ¸X no 6ãbo8bÎ/X_Ê

event tag *event-name* [**correlate** { **andnot** | **and** | **or** }] **sysmon type** { **cpu** { **system** | **task** task-name } | **memory** { **system-use** | **system-free** | **task** task-name } { **percent** | **absolute** } } **entry-op** *operator* **entry-val** *entry-value* **poll-interval** *poll-int-value* [**exit-op** *operator* **exit-val** *exit-value*] [**slot** { *slot-num* | **slave** [**subsystem** *subsystem-id*] }]

no event

Ã*¡X event G÷Ë

G÷å	*Ëè
_timer_type	nÞ
_timer_time	nÞ
_timer_remain	nÞon 2O_nÊÃ÷GÅ

Ï!5B_Ð _ 1Önix ÊÈ 1257831095 G¦AÛ

```
5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB
5XLMLHFRQILJDSSOHWHMQWWDJPRQLWRUBWLPHUWLPHUDEVROXWHWLPH
5XLMLHFRQILJDSSOHWDFWLRQUHORDG
5XLMLHFRQILJDSSOHWFRPPLW
5XLMLHFRQILJDSSOHWH[LW
```

_ 2Ö600 /Ê600 second arrival

```
5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB
5XLMLHFRQILJDSSOHWHMQWWDJPRQLWRUBWLPHUWLPHUFRXQWGRZQWLPH
5XLMLHFRQILJDSSOHWDFWLRQVVORJPVJVHFRQGDUULØO
5XLMLHFRQILJDSSOHWFRPPLW
5XLMLHFRQILJDSSOHWH[LW
```

_ 3Ö 7200 ÈNÕ arp 4ç

```
5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB
5XLMLHFRQILJDSSOHWHMQWWDJPRQLWRUBWLPHUWLPHUHZWFKGRJWLPH
5XLMLHFRQILJDSSOHWDFWLRQFOLFRPPDQGHQDEOH
5XLMLHFRQILJDSSOHWDFWLRQFOLFRPPDQGFOHDUDUSFDFKH
5XLMLHFRQILJDSSOHWFRPPLW
5XLMLHFRQILJDSSOHWH[LW
```

_ 4Ö 0 ÈNCÃ

```
5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB
5XLMLHFRQILJDSSOHWHMQWWDJPRQLWRUBWLPHUWLPHUFRQFURQHQWU\
5XLMLHFRQILJDSSOHWDFWLRQFOLFRPPDQGHQDEOH
5XLMLHFRQILJDSSOHWDFWLRQFOLFRPPDQGFOHDULSURXWH
5XLMLHFRQILJDSSOHWFRPPLW
5XLMLHFRQILJDSSOHWH[LW
```

ÏÎGQÐ

Q¸	Ë:Ä
smart manager applet	**nÞ** SEM 1*+9

ÏGÄÈ -

10.24 list-config

ü SEM G!5BÈ1*+9,XG!5BÄ

list-config

Ï–DAÈ

–D	ÉÄ
-	-

5,Õ!5BÐ 5,Õ!5B

ÏQÐ SEM G!5Bã

S*Ûì -

Ï G!5B_Ð -

ÏGQÐ

Q¸	ÉÄ
commit	**19G5B**
rollback	**ÊÛ9G5B**

ÏGÄÈ -

10.25 policy record

ü SEM G!5Bã G!5B4~) CLI > |,XEgÎG!5B CLI > |EgÎXÉÄ

policy record [**per-instance** *record-size-per-policy*] [**per-policy** *record-size-per-policy*]

no policy record

Ï–DAÈ

–D	ÉÄ
per-instance *record-size-per-policy*	CLI 4~)GÈ K +8VÈÄx 50
per-policy *record-size-per-policy*	**19É¤** CLI 4~)kGÈ K +8VÈÄx 1000

5,Õ!5BÐ 5,Õ~) CLI > |,XEgÎ

ÏQÐ SEM G!5Bã

S*Ûì TÄxÈ SEM 1*+9,> CLI > |,XEgÎÄ,ÈG!5B **policy record** CLI > |>,

> , X Êí È CLI > | , X E g Î Ú• A „) A ' Û[Ê 2 Ï4 ³ ÄÄ „) [Ê, X C ÃX ãV ßÖ

/sem_record/policy_name/yyyy-mm-dd_hh-mm-ss_mspolicytriggerid.txt È /sem_record/

Ý CLI > |,XEgÎÄ,X,ÄÈ[Ê4³,X,ÄÄ policy_name 1*+9,XáÈ

/sem_record/ ,ÄÈ*+9FÑÛ,X,ÄÄ

yyyy-mm-dd_hh-mm-ss_mspolicytriggerid.txtÄ,[ÊXá[ÊXá+Ä,{*ôXÊÈ

!/ÊÛ1*+9ÊÄÄÄ

S*ü **more**

1*+9E¤ {*ôX CLI > |NMEgÊÈ–D per-instance record-size-per-policy Ê,[Ê

[illegible]

(Mn1*+9E¤ {*ô X CLI > |NMEgÂ)[ÊXCE–D per-policy record-size-per-policy

[illegible]BEW,XA)[Ê)[ÊX0ÜD per-policy record-size-per-policy A5BÄ

[illegible]EQ¸ **smart manager policy record clean** [illegible] CLI > |NMEgÂ)[Ê

[illegible]G!5B_Ð [illegible]EÔ*+9G!5B_Ä

5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB

5XLMLHFRQILJDSSOHWHMQWWDJQRQHHMQWQRQH

5XLMLHFRQILJDSSOHWDFWLRQFOLFRPPDQGHQDEOH

5XLMLHFRQILJDSSOHWDFWLRQFOLFRPPDQGVKRZUS

5XLMLHFRQILJDSSOHWSROLFUHFRUG

5XLMLHFRQILJDSSOHWFRPPLW

5XLMLHFRQILJDSSOHWH[LW

5XLMLHFRQILJH[LW

5XLMLHPRUHVHPBUHFRUG7HVWBBBW[W

6(0&5(&5),/(

6(0SROLFQDPH7HVWB

6(0SROLFWULJJHULG

6(0SROLFFOLUHFRUGWLPH)UL-DQ

5XLMLHHQDEOH

5XLMLHVKRZUS

3URWRFROGGUHVVSHPLQ+DUGZUH7SH,QWHUIDFH

P€00H0000€000004P€000000@0<<70€E000@P€9Ä 00@0000000000

ÏQÐ SEM G!5Bã

ÏS*Ð -

ÏG!5B_Ð ÊÎ*+9G!5B_Ä

5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB
5XLMLHFRQILJDSSOHWHMQWWDJQRQHHMQWQRQH
5XLMLHFRQILJDSSOHWDFWLRQVHWDUBIRUBWHVW7HVWBUXQQLQJ
5XLMLHFRQILJDSSOHWUROOEDFN
5XLMLHFRQILJDSSOHWH[LW

ÏÌGQÐ

Q¸	ÊÄ
commit	**x19G5B**

ÏGÄÈ -

10.27 show smart manager detector

(MÃ¥Ç¢Ä

show smart manager detector [**all** | *detector-name*] [**detailed | statistics**]

ÏÌDAÈ

–D	ÊÄ
all | *detector-name*	¢ ¢(Mn,X,¥Ç¢
detailed	ÆÇ
statistics	#ÆÇ

ÏÕ,Õ!5BÐ -

ÏQÐ (Mã

ÏS*Ð -

ÏG!5B_Ð _ 1Ö

VQPSQRWLILFDWLRQ
WLPHU
VQPSREMHFW

_ 2Ö **show smart manager detector cli**

Ï5,Õ!5BÐ -

ÏQ¸Ð (Mã

Ï5*Ð AÐ¸¼G£

Ï5B_Ð _ 1¸Ö **show smart manager environment** Ð¸ß

5XLMLHVKRZ7PDUWPDQDJHUHQY1URQPHQW
1R1DPH9DOXH
Ð7UBDÐ7OXHBD
Ð7UBEÐ7OXHBE

_ 2¸Ö **show smart manager environment all** Ð¸ß

5XLMLHVKRZ7PDUWPDQDJHUHQY1URQPHQWDOO
1R1DPH9DOXH
Ð7UBDÐ7OXHBD
Ð7UBEÐ7OXHBE

_ 3¸Ö **show smart manager environment** *var_a* Ð¸ß

5XLMLHVKRZ7PDUWPDQDJHUHQY1URQPHQWÐ7UBD
Ð7OXHBD

_ 4¸Ö **show smart manager environment** *var_none* Ð¸ß

5XLMLHVKRZ7PDUWPDQDJHUHQY1URQPHQWÐ7UBQRQH
1RVXFKHQY1URQPHQWÐ7ULDEOHGHILQHG

ÏÎGQ¸Ð

Q¸	£Ä
smart manager environment	-

ÏGÄÀ -

10.29 show smart manager history events

(Mã SEM event ¸£Ä

show smart manager history events [**detailed**] [**maximum** *number*]

Ï–DAÀ

–D	£Ä
detailed	¸£Ä
maximum *number*	ÐG£

Ï5,Õ!5BÐ -

ÏQ¸Ð (Mã

Ï*Ê	-	
Ï!5B_Ð	_ 1¸Ö	**show smart manager history events ¸Q¸Q**

Ï‘S*Ê Ð AÐ¸/É> E‹G!5B,X1*CÃ

Ï‘G!5B_Ð ¸ **show smart manager policy all Ï¸Ø** J State ></1*+9,X×Ø Policy Name ></1*+9,XáÄ

```
5XLMLHVKRZ7PDUWPDQDJHUSROLFDOO
1R6WDWXV3ROLF1DPH
FRPPLW7HVWB
QRWFRPPLW7HVWB
```

ÏÌGQÐ¸

Q¸	ÐÄ
-	-

ÏGÄÈ -

10.31 show smart manager policy active

(MÃ%#X1*+9r_Ä

show smart manager policy active [**class** *class-options*] [**detailed**]

Ï–DAÈ

–D	ÐÄ
class *class-options*	¸É
detailed	ÃÇ

Ï‘5,Õ!5BÐ -

ÏQÐ¸ (Mã

Ï‘S*Ê Ð AÐ¸/!7E¤ ,X1*+9r_Ä

Ï‘G!5B_Ð _ 1¸Ö **show smart manager policy active Ï¸Ø**

```
5XLMLHVKRZ7PDUWPDQDJHUSROLFDFWLM
.H33ULRULW/RZ+LJK11RUPDO
66FKHGXOLQJPRGH$FWLM33HQGLQJ

1R-RE,G366WDWXV7LPH2I(MQW(MQW7SH3ROLF1DPH
```

13SHQG:HG1RQRQH7HVWB

áÈ	Class 1*+9,X2OÿÈ	Type 1*+9,X2O_È	Event Type 1*+9,XOjþÊX2O_È	Time Registered 1*+9,¼ÊÃ
5XLMLHVKRZ	VPDUWPDQDJHUSROLFU	UHJLVWHUHG		
1R1DPH	&DVV7SH(H	MQW7SH7LPH5HJLVWHUHG		
7HVWB	DSSOHWWLPHU7KX2FW			
H	MQWBWLPHUZ	WFKGRJWLPH		
DFWLRQV	VORJPVJ	FWLRQB		
DFWLRQ	ZLW			
DFWLRQV	VORJPVJ	FWLRQB		

ÏGQÐ	Q¸	ÆÄ
	smart manager applet	**nÎ¸X** SEM 1*+9

ÏGÄÈ -

10.34 show smart manager scheduler

(M4/4)!¡ß SEM Az<,XE¤ (Ã‰

show smart manager scheduler thread

FDOVV%Ö

ÏÎGQÞ

Q¸	ÆÄ
smart manager applet	**nÎbÇX** SEM 1*+9

ÏGÄÈ -

10.35 show smart manager version

(MÃ SEM ,X(ÇÄ

show smart manager version

Ï–DAÈ

–D	ÆÄ
-	-

Ï5,Õ!5BÐ -

ÏQÞ (Mã

ÏS*Ô -

Ï!5B_Ð ; **show smart manager version** ÇÈ2 SEM Ø(È.Bn(

o,Xs6Ñ

5XLMLHVKRZ7PDUWPDQDJHUMUVLRQ

6PDUW(PEHGGHG0DQDJHU9HUVLRQ

(MQWHWHFWRUV

QDPHMUVLRQ

DSSOLFDWLRQ

VVORJ

FOL

FRXQWHU

FSS

JUWG

LQWHUIDFH

QRQH

RLU

VQPS

VQPSREMHFW

VQPSQRWLILFDWLRQ

VVPRQ

WLPHU

ÏÎGQÞ

Q¸	ÆÄ
-	-

ﯿ ، ﯿ ﺋ ،

، ﯿ ⁴ ﯿ SEM ﯿ ﭺ **commit** ﭽ Շ ﯿ

، ، ، ﯿ ﭢ ،

ﭢ ﯿ ، ،

ﭢ ﯿ ، ɀ ، ٩ ┬
∂

، ﯿ ɀ **rollback** ﭽ Շ ، ﯿ

SEM ، ⁴ SEM ، ╝ ﯿ ╋ ɀ
╟ ﯿ **smart manager policy bootup-delay**

، ﯿ SEM SEM tag ﮬ ﻕ ﻕ `
`

` ، ﯿ ` ک and

Ý Policy ŠǠ*¡X event ƓĐ

Ɠâ	*Ɇè
_event_id	ĺ⁹*+9_ẼX_ẺŶ ID
_event_type	ĺ⁹*+9,X_ẺŸ2O_ ID
_event_type_string	ĺ⁹*+9,X_ẺŸẺẼâ
_event_pub_time	_ẼX¥ẺŸÈ
_event_pub_sec	_ẼX¥ẺŸẼnix ẺẤ
_event_pub_msec	_ẼẺ

ƓG!5B_Đ _ 1ĚẼĐ Test_A ,XÎQ¸> ,X1*+9

```
5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB$
5XLMLHFRQILJDSSOHW
```

_ 2ĚẼĐ Test_B ,X1*+9ĚÚ*+9&O2OÿD Ä

```
5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB%FODVV'
5XLMLHFRQILJDSSOHW
```

ǐĨGQĐ

Q¸	ẼÄ
show smart manager policy registered	ẼẼ
smart manager policy bootup-delay	ẼB SEM 1*+9Êħ*¡XẺẤ

ƓÄĐ -

10.37 smart manager environment

ƂG!5BĐ SEM <ƓĄQ¸X no 6ẫŭ8û,X SEM <ƓĄ

smart manager environment *variable-name string*

no smart manager environment *variable-name*

Ï–DAÈ

–D	£Ä
variable-name	*n*£
string	*n*£

ï5,Õ!5BÐ 5,ã SEM <G£

ÏQ¸Ð <G!5Bã

ÏS*Ð Ý£X2O_FÑ0úÈ£XKÞS*Ü.BnÄ
<G£X1*+9S*Ä4*3Ã*+9nàXFG£*+9<
G£FG£*Ä

ÏG!5B_Ð _ 1È£Ð variable_name variable_value ,X<G£Ä
5XLMLHFRQILJVPDUWPDQDJHUHQLURQPHQWDULDEOHBQDPHDULDEOHBDOXH

ÏÎGQ¸Ð

Q¸	£Ä
show smart manager environment	**£**

ÏGÄÈ -

10.38 smart manager history

ïG!5BÈG!5B SEM £,XÊDGÄQ¸X no 6ãb6£,XÊ
DG£4TAxÄ

smart manager history size events *size*

no smart manager history size events

Ï–DAÈ

–D	£Ä
events	**A** Event £,XÊDG£
size	**Ê** 50ÈAx 50

ï5,Õ!5BÐ TAx Event ÊDG£ 50

ÏQ¸Ð <G!5Bã

ÏS*Ð

	˘	Ŋ	0	SEM	˘ Ŋ

ÏG!5B_Ð G!5BSEM Event ÊDG£ 30
5XLMLHFRQILJVPDUWPDQDJHUKLVWRUVL]HHMQWV

ÏÎGQÞ

Q¸	ÆÄ
show smart manager history events	**/ ÊÆ**

ÏGÄÈ -

10.39 smart manager policy bootup-delay

Ïi!5BÊi!5BA5B SEM 1*+9Êh*¡XÊÃ

smart manager policy bootup-delay *dealy-time*

ÏÏ–DAÈ

–D	ÆÄ	ÂÅ>•€ @

Ï¨S*Ð -

Ï¨G!5B_Ð _ 1Ð8<F¼ 1*+9,X CLI Egˆ4~)È V>±-,X4Ð68,X1*+9,X CLI Egˆ4~)Ä

5XLMLHVPDUWPDQDJHUSROLFUHFRUGFOHDQQRUHJLVWHG

_ 2Ð8<F¼ SEM 1*+9E¤ {*ó X CLI Egˆ4~)

5XLMLHVPDUWPDQDJHUSROLFUHFRUGFOHDQDOO

ÏÎGQÐ

Q¸	ÆÄ
action cli	**¸Ê**
policy record	**G5B4}~** CLI > |,XEgˆ4~)

Ï¨GÄÈ -

10.41 smart manager run

(Mã¤ KÝ none 2O_,X_ÊX1*+9Ä

smart manager run *policy-name* [*parameter*]

Ï–DAÈ

–D	ÆÄ
policy-name	none 2O_,X_ÊX1*+9,Xá
parameter	**ã¤** 5 þ

Ï¨5,Õ!5BÐ 5,Õ¤

Ï¨QÐ (Mã

Ï¨S*Ð -

Ï¨G!5B_Ð G!5Bnone 2O_,X eventÈÄ Test_1Ê,Ä

5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB

5XLMLHFRQILJDSSOHWHMQWWDJPRQLWRUBFPGQRQH

5XLMLHFRQILJDSSOHWDFWLRQVVORJPVJQRQHHMQWWULJJHUHGZWKBQRQHBDUJFDUJF

5XLMLHFRQILJDSSOHWFRPPLW

5XLMLHFRQILJDSSOHWH[LW

ÏÎGQÐ

Q¸	ÆÄ
smart manager applet	**nÎ¸X** SEM 1*+9

Ï¨GÄÈ -

10.42 smart manager scheduler

ëG!5B6!5B SEM 1*+92OÿX4/4A5B4/4,XÄ-Q¸X no 6ab6á SEM 1*+94/4TAxÄ

smart manager scheduler thread class *class-options* **number** *thread-number*

no smart manager scheduler thread class *class-options*

Ï-DAÈ

ÏQ¸Ð	(Mã
Ï*Ô	-
ÏG!5B_Ð	_ 1ÐÏNÝOÉ¸
	5XLMLHVPDUWPDQDJHUVFKHGXOHUFOHDUDOO
	_ 2ÐÏNÝ class BÈ

10.45 smart manager scheduler modify

(MBKé{Ä

smart manager scheduler modify class *class-options* **queue-priority** { **high** | **low** | **normal** }

Ï–DAÈ	–D	EÄ
	class *class-options*	*ĥ*X

smart manager applet	**nÎb¸Q¸X**	SEM 1*+9

ÏGÄÈ -

10.47 smart manager scheduler suspend

ëüG!5BÉÜ SEM AzÖKÄÇ¸X no 6ãÜ6á SEM AzÄ

smart manager scheduler suspend

no smart manager scheduler suspend

Ï–DAÈ

correlate-start *period-start-value*	[illegible] Cron [illegible]
correlate-period *correlate-period-value*	[illegible] 60 /Ä
delay *delay-value*	[illegible] 0Ä
maxrun *maxruntime-number*	[illegible] 20 /Ä

5,Õ!5BÐ 5,ã!5B trigger

Q¸ SEM G!5Bã

S*Ð -

G!5B_Ð 1*+9 Test_1 >Ã³ 10 /Ã¤

5XLMLHFRQILJVPDUWPDQDJHUDSSOHW7HVWB
5XLMLHFRQILJDSSOHWHMQWWDJQRQHHMQWQRQH
5XLMLHFRQILJDSSOHWWULJJHUGHOD\
5XLMLHFRQILJDSSOHWFRPPLW
5XLMLHFRQILJDSSOHWH[LW

ÌGQÐ

Q¸	ÆÄ
smart manager applet	**nb¸X** SEM 1*+9

GÄÐ -