'6 ©ç—¿Nµµ

hw†ynvzXXU`ƟWPi

† ÍÎ y<

IUV_XOMNZ j iHàÌ

• ´ Ñ *f*

copyright © 2019 i H à Ì

‘ + Î † C Î Ò ¢ %² ä Ó ïož

Ì ± ñ i H à Ì 0 µ • U k ` ~ % y y K ± Y ` ~ • ” ê ¥ ” + Î † B ã Ä ê ¶ B g Ö ò o • d £ o • Õ a o • “
w o • n n o • ì è ¿ U § ˆ o • 1 ¿ ¶ B ê B ã 9 Œ (ož

Y ® i H à Ì Œ öož

Î † U C ¿ U ñ Ä Œ ö ê h Æ Œ ö k _ ñ Ä K (Äož

± • Ñ *f*

Ó ñ Æ 1 D } o • Æ ê Ô Å ˆ • I Œ ` c y Ú . ³ Ø k Î † T ¶ B ê B ã D } o • Æ ê Ô Å U ¨ Ó Æ
1 ê … 8 $ Äož ” ³ ` c P Ä ³ k i H à Ì + Î † Ä Ÿ ` ~ ¢ P ê ó P Ò ¢ ê ‘ šož

9 D } Í Î ´ ê ¿ U = œ k Î † Ä k Ê g ¾ • ož i H à Ì ‘ ¨ Z Ä ` ~ * = ê ñ U P Õ Ñ + † Ä
g “ w Ó ïož

Î ô Æ N • … 6 - ož i H à Ì ¨ Ú Ê Î ô Æ ž] @ ‘ š ¿ Ä Õ G U ´ k x w G ‘ ô Æ Ä ¶ Z Ä j ¨ ê 4 ¥ k
Î ô Æ ñ Ä ’ Î - ã è ` ~ ¢ P ê ¹ P ‘ož

» 8 WIS C | Ð B Ð Ð | ¯ X • Z å é j + Ñ *f*

¾ • ™ Ê y 2016 v 7 Ã 25 ™

WIS •„… ï ï}àw‘‹æv¤ ’ÎÛw é[D}y‘cožé[U k `•jt»F ï ï}à
w‘‹æv¤ ’Îkx4’Î—c 9öœÓož

WIS •„v¤êG Ë WIS :€ ’Î¨ ¢ g ¥yÔòžòçc¯}Lé[%°4’Îkêñß9Y ·} ‘
Þg kWIS •„U k%°4’Îy(a) 8 c¯cXê8 WIS D} c¯i~z(b) ‘ êÓ WIS •„C
¿©çD} ÓïêÀDzê (c) ¨¬ÄÕÑ JHg k‘ WIS •„èto• WIS D}êÆ ïê¸h Kï ¶ož
WIS •„Äžk¥ ¿U¸[Wn UˆÄ’ Æ kòUˆ ïu4o•Ôò7 êüg n Ï‹ãäožWIS •„1N
?¸[UˆU[G Æ žñ¬ ’Îožé[}L ?¸[Ó ¥’Î ‘%Åkw W21¥’Î 9`~¿U) ož

µ

WIS •„ ®n ‘ é[ñv¤ñ ’Î ¶ož ï ï}àw‘‹æ… __ ¶ Ðyi~Û…2 sIñÌ
ÆIÓ ˜|o•… ê`¥ož†òké[1ÓUˆ ’Î ¥¨y9IO—Õ kò(ÄÄ’˜|Ó’ ‹‘ÑÆ ˜ož

ø W

~ À * Š

Î 0 ` ç K t ƒ ¯

z à Ì W i d

z Ð P z K t

z à Ì ' ò t

ê ± V

z i H à Ì • à { yhttp://www.ruijie.com.cn/

z i H à Ì ¨ ¿ Æ yhttp://webchat.ruijie.com.cn

z i H à Ì • à { Æ u 4 Í ² yhttp://www.ruijie.com.cn/service.aspx

z 7 ˜24 4 ž Ð Æ ½ ¿ y4008-111-000

z i H à Ì Ð – ´ yhttp://bbs.ruijie.com.cn/portal.php

z o • | Ê \ « yhttp://www.ruijie.com.cn/service/kno w.aspx

z i H à Ì Ð u 4 F Ø ' ” y4008111000@ruijie.com.cn

¯ / ,

1. Q ¸> ã4z n

x X g ”Þ # ò y

o | y x X g ¼ p g x X ‘ 4 J · À Á ÿ B ã h J } n Pož

Š } y x X g @ *ƒ* g x X · À Ž › g Á W B ã h J Š } n P

[ ] y n P [ ] , Ü Û B ã k ¨ x X F å ž © U # ož

{ x | y | ... } y n P R ê Ú # ¾ # H%² ož

[x | y | ...] y n P R ê Ú # ¾ # H%² ê ñ #ož

// y E Š Ù • ÷ g n P h K gož

2. Ø2O Û «

Î 0 J _ _ I) ö º Û n P ¨ q • i • ¥ Ô ð h Þ ª • k ? ö º Þ # ò y

7EC8F588F5D41E02

3. AÈ â

- Î ô Æ † ª ¢ B ã € M • º c Ž U … k Ž q • ¬ } 7 Á _ D } ñ u 4 € M • º g F åož
- Î ô Æ B ã † ª P ' Î U m Ä ¿ D } © ç Ä g ò D } º Zo • T ˆ h k À } ª P ' Î ¬ Y Ž … — Õ ' Î Õož
- Î ô Æ „ C è ˜ C è ˜ D } £ ö k W n 4 % ² " Þ # è ˜ k Y C g 4 è # ' C A E Ñož

Q ¸ `-WLAN Î. G!5B

Ú ` Ÿ4¡ WLAN Î. G!5B Q ¸ `,Ì G Y • È Ù À ¹ ß0´8V Ö

1. APMG
2. CAPWAP
3. STAMG
4. WBS
5. DATA-PLANE
6. WLOG

1 APMG

1.1 ap-mode

¨ AP U Y * ap-mode Û ä E AP % ”ož

ap-mode { fit | fat [dhcp] | macc }

o¬ @ ƒ ª ¢o-

@ ƒ	T
fit	ä E HÅ AP % ”
fat	ä E R… AP % ”
dhcp	ap-mode fat x X ` k ¥ # + g / ap-mode fat dhcp h k é F å AP ä E R.ÆP % ” e k AP Þ . … DHCP B H IP ª - z k é F å AP ä E R… AP % ” e kAP Þ . … ² Á IP ª - z
macc	ã & macc “

o¬ Þ . F åo- —ož

o¬ x X % ”o- AP ¶ B F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- ¨ g % ” ä E $ e k ¬ } M o Y ‘ š F å %² Åož

R.ÆP e € Ä ¿ N Mg N POE g ûó •Â ðÁ e ‡

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AP u 4

1.2 hide-ssid sta-reach-limit

* hide-ssid sta-reach-limit x X F å ´ › W SSID k ¢ AP ñ ï ƒ ’ ž kAP • o 4 radio ssid 1 t › W k ¢ % radio ï ƒ ñ ’ ž kradio ssid 1 t › W k Y 9 ² • STA : ¡ ¼ û A ¼ û ož

Ê Ö ó • F åož
no hide-ssid sta-reach-limit [radio { 2.4g | 5g }]

o¬ @ ƒ ª ¢o-

@ ƒ	T
radio	6 x X ¨ Ô radio • o 4 k 6 ž ¨ ñ Ä radio • o
2.4g	2.4g radio • o 4
5g	5g radio • o 4

o¬ Þ . F åo- Ì • o ´ › W SSID

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- • o ´ › W SSID e k ò ç%² ¿ AP C ñ ï ƒ ’ k • ï ¨ ¿ þ T ñ SSIDož

o¬ F å †o- 1 y • o AP 5g radio ´ › W SSID ož

```
5XLMLH FRQILJ KLGH VVLG VWD UHDFK OLPLW UDGLR J
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- ¬ } AC/AP C u 4 k õ ÿ |ož ò ç AC u 4 k é x X U Y F å k x © ò ç AP Í Î u 4 k é k ÿ |ož

o¬ u V ª ¢o- -

1.3 show ap-mode

ª P AP R…HÅ % ”

show ap-mode

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ ... 6 -o- —

o¬ F å †o- 1 y ª P AP R…HÅ % ”

```
5XLMLH VKRZ DS PRGH
FXUUHQW PRGH )$7
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2 CAPWAP

2.1 ac-control disable

F å AP N µ ACož
no ac-control disable

Ê Ö Þ . F åož
ac-control disable

o¬ @ ƒ ª ¢o-

ac-domain-name ac-domain-name

Ê Ö Þ . F åož
no ac-domain-name

o¬ @ ƒ ª ¢o-

@ ƒ	T
ac-domain-name	F å AP G ë AC ¿ d k Â Ú U F å 64 … k m q ož

o¬ Þ . F åo- Þ . Õ Ñ kac.ruijie.com.cn

o¬ x X % ”o- AP F å % ” ê AP Á F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- AP U Y * DNS ¿ d Û G ë ACož * Ú x X U Y “ Œ AP G ë AC ¿ d k … ± c AP U Y * c ¿ d Û G ë c ACož

o¬ F å †o- 1 y F å AP G ë AC ¿ d ruijie-acož

```
5XLMLH FRQILJ DS DF GRPDLQ QDPH UXLMLH DF
```

o¬ à • co- 1 y … show ap-config cb ap-name

2.3 acip ipv4

AP µ 6 ACož F

acip ipv4 ip-address [ip-address…]

í ” 6 AC F åož

no acip ipv4

@ ƒ	T
ip-address	² Á IP ª - k Â Ú U Y F å 6 ² Á ª -ož

o¬ Þ . F åo- -

o¬ x X % ”o- AP ¶ B F å % ” ê AC AP F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- HÅAP %² " C © © F å k U Y * z no• Á no•DHCP o•DNS Û G ë AC k - U Y * ² Á F å AC ª - µ ACož * F å ¥ x X kAP 1 g ? IP ª - G G ë ¬ L † M y AC Ä | Å k À e # +%² V AC µož

/ Ô AP 0 N U AC [" t a — • « 4 " AC " d

o¬ F å †o- 1 y HÅ AP F å µ AC ² Á ª - ç n 192.168.1.1 k192.168.2.1 ož

```
5 X L M L H F R Q I L J D F L S L S Y
```

2 y F å AP0001 µ AC ² Á ª - ç n 192.168.1.1 k192.168.2.1ož

```
5 X L M L H F R Q I L J D S F R Q I L J $ 3
5 X L M L H F R Q I L J D S D F L S L S Y
```

o¬ à • co- 1 yHÅAP … show running-config x X k AC … show ap-config running k U Y ò 0 F å © k è ož

o¬ U P ’ Îo-

o¬ x X % ”o- AP

o¬ Þ . F åo- -

o¬ x X % ”o- AC F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- 1.AC Ë AP ú Í Î g ´ ž ¬ } ¯ ¬ t Í Î † ^ož 9 rgos10 © Ï ñ rgos11 © Ï [‘ û Ý k ï G b
rgos10 ñ rgos11 ’ Í Î g © Ï ´ ž ¬ } Í rgos10 ¼ p ož
2. Q Ä ¨ AP ¬ } ´ ž ˜ k õ k ú bin ñ Ä ož ¢ Z Ä AP ¬ } ´ ž ˜ k B ã Ä k R Ä
3 ú Jož
3. F å ¥ x X ù ¬ } G ‘ AC © Ï † ^] Ä ¥ ÷ ^ Í Îož

w c Q ‡ 3 Ñ / ‘ W , Q ‡ 3 Ñ ‘ • W , " à 5 Q ‡ 3 Ñ ½ î • W , 3 Ñ ¨ V { Đ d

" Q ‡ 3 Ñ M ¥ ˆ Ÿ AP – ‰ ‘ 7 í w c Q ‡ 3 Ñ d

o¬ F å †o- 1 y ¨ AC ¬ t%² AP ÷ ^ Í Î † ^ yap.bin ož

```
5 X L M L H F R Q I L J D F D F W L Y H E L Q I L O H D S E L Q
```

2 y ¨ AC ¬ t%² AP ÷ ^ Í Î † ^ yap.bin k ¥ ÷ ^ Í Î ¨ usb0: † ^ © Ï ož

```
5 X L M L H F R Q I L J D F D F W L Y H E L Q I L O H X V E D S E L Q
```

3 y í ” ¨ AC ¬ t %² AP ÷ ^ Í Î † ^ yap.binož

```
5 X L M L H F R Q I L J D F Q R D F W L Y H E L Q I L O H D S E L Q
```

o¬ à • co- 1 y … show ac-config active-file k ò 0] ¬ t ÷ ^ Í Îož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x Xož

2.6 ap-image

F å AC ´ … 6 † ^ ´ 6 © ç AP k ¥ x X k + N ñ Î AC ñ Ä AP Ü • ož
ap-image { auto-upgrade | filename serial-name }

H *f* F å
no ap-image { auto-upgrade | filename serial-name }

o¬ @ ƒ ª ¢o-

@ ƒ	T
auto-upgrade	F ÷ ^ Í Î AP º Z g ´
filename	6 ÷ ^ Í Î d f k , e Öož ¥ † ^ d active-bin-file x X 6 † ^ d%² ož
serial-name	1 } ´ AP º Z © çož

o¬ Þ . F åo- -

o¬ x X % ”o- AC F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- AP Í Î ´ U Y … • ´ # ¾ g Í Î F w ´ AP k ò — ¬ F å AP D } º Z y ÷ ^ Í Î + • ¼ © k - U Y … 6 † ^ ´ 6 © ç APož ¢ ´ y 6 © ç ´ _ ´ • ” c ž ¨ ž k 1 i # 6 © ç F å • ” g ´ož F å AC 6 AP D } © ç ´ Í Î ž k ë • AP D } © ç k F å 6 AP + • ÷ ^ Í Î y ¬ t ÷ ^ Í Î 5 â Þ%² Uož

‘ Á ë – ‰ M ¥ ° rgos10 þ rgos11 ¶ h Q ‡ s rgos10 , Ä AP) û – ‰ d

o¬ F å †o- 1 y F å D } © ç d test-serial … ap.bin † ^ g ´ož

```
5XLMLH FRQILJ DF DFWLYH ELQ ILOH DS ELQ
5XLMLH FRQILJ DF DS VHULDO WHVW VHULDO $3 ( KZ YHU
5XLMLH FRQILJ DF DS LPDJH DS ELQ WHVW VHULDO
```

o¬ à • co- 1 y … show ac-config serial-product x X k ò 0 D } © ço• D } º Zo• ´ Í Î $ • + • ¼ ©ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x Xož

2.7 ap-image

F å 6 AP … 6 † ^ ´ož ¥ x X u 4 ap-config all % ”ož
ap-image filename

H ƒ F å
no ap-image

o¬ @ ƒ ª ¢o-

@ ƒ	T
filene	9 ´ AP ÷ ^ Í Î † ^ d k , e Öož

o¬ Þ . F åo- -

o¬ x X % ”o- AP F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- —

o¬ F å †o- 1 y F å AP0001 … ap.bi 0.Ðn g ´ož

```
5XLMLH FRQILJ DF DFWLYH ELQ ILOH DS ELQ
5XLMLH FRQILJ DF H[LW
5XLMLH FRQILJ DS FRQILJ $3
5XLMLH FRQILJ DS DS LPDJH DS ELQ
```

o¬ à • co- 1 y … show

o¬ Þ . F åo- -

o¬ x X % ”o- AP ¶ B F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- HÅAP %² " C © © F å k ¿ ï IP ª - y à ¼ U Y * DHCP Á B Hož ¢ AP y AC • y CAPWAP Ÿ 3 e k U Y * AC G AP ² Á IP ª - k Y Ž AP M o e k ¿ ª - ‘ 4 Jož ¨ î ? Ô : • « ` k Ê È ô — åHÅ AP ² Á IP ª - k U Y * ¨ AP ¶ B F å % ” F å ¥ x X ëož

1. • " AP A _ Ü ‘ ž DHCP _ Ÿ ã ¨ Ü M ¥ ¹ ¶ DHCP OPTION * » f Ü AC Ù ® " a — . ‘ } AP h ¹ ¶ q acip r a — " AC » ¬ AP ä AC â } ½ ¢ Q • ¨ Ÿ Ÿ £ É ¦ & AC d
2. a — } AP " Ü ‘ N I É M | û " l É a — d
3. a — 0 AC h AP " f ´ q ip address r a — ´ - ½ a — â V õ ¹ AC h " d ì ¾ AP ¦ & AC ¨ / AC AP " f ´ É } q ip address r a — ¯ 0 q apip r a — j Ì Ü W í AP A _ É 7 Ù CAPWAP B d

o¬ F å †o- 1 y HÅ AP F å ² Á ª - 192.168.1.2 k ÿ à Q A 255.255.255.0 k à ¼ ª - 192.168.1.1

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

o¬ à • co- 1 y … show running-config x X k U Y ò 0 F å © k è

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- NHÅAP u 4 ¥ x X

2.9 apip ipv6

F å AP ï ² Á Ipv6 ª -ož

apip ipv6 ipv6-address-with-mask gateway

í ” F å

no apip ipv6

o¬ @ ƒ ª ¢o-

@ ƒ	T
ipv6-address-with-mask	k Q A x † ’ Î IPv6 ª - k ” • w 9 X:X:X:X::X/24
gateway	IPv6 à ¼ ª -

o¬ Þ . F åo- -

o¬ x X % ”o- AP ¶ B F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- * ¥ x X U Y Ä ¯ F å AP ² Á IPv6 ª - k • w 9 apip x X F å AP ² Á IPv4 ª -ož

1. • " AP IPv6 A _ Ü ‘ ž DHCPv6 _ Ÿ ã ¨ Ü M ¥ ¹ ¶ DHCPv6 OPTION * » f Ü AC IPv6 Ù ® " a — . ‘ ¹ ¶ q acip ipv6 r a — " AC IPv6 ½ ¨ ¹ ¶ apip ipv6 enable – ¶ s AP IPv6 [» ¬ AP ä AC â } ½ ¢ Q • ¨ Ÿ Ÿ £ É ¦ & IPv6 AC d

apip ipv6 eAC – 1 ¶

o¬ Þ . F åo- -

o¬ x X % ”o- AP ¶ B F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ u V ª ¢o- NHÅAP u 4 ¥ x X

2.13 ap-cfg erps raps-vlan

ERPS % ê F å

ap-cfg erps raps-vlan vlan-id ring-port west interface-name1 east interface-name2

F å RPL e è y RPL owner - µ

ap-cfg erps raps-vlan vlan-id rpl-port { west | east } rpl-owner

H ƒ F å

no ap-cfg erps raps-vlan

o¬ @ ƒ ª ¢o-

@ ƒ	T
vlan-id	R-APS VLAN ID
interface-name1	West port d f
interface-name2	East port d f
west	6 west + • € M rpl-owner
east	6 east + • € M rpl-owner

o¬ Þ . F åo- Þ . Ì F å k … ERPS ê ¥ " ÷

o¬ x X % ”o- AP ¶ B F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- 1. à Ì • æ ž ¬ } ¯ • •%² Ú e è ê ñ shutdown %² M k è L0681>-7<09190980054D0413Tf ( )Tj ET2

o¬ o • j ¨o- -

o¬ u V ª ¢o- N ´ ã+AP Ñ u 4 ¥ x X

2.14 ap-download enable

¨ ´ i k 1 ñ à Ì [kAP M Ö ´ ž ˜ k • o 4 k G ‘ ´ AP ÷ ^ Í Î è ož
ap-download enable

H ƒ F å
no ap-download enable

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ó • • o AP ´ i

o¬ x X % ”o- AP F å % ” y ñ Ä AP F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- • o ´ i kAP • ÷ ´ ž ˜ k k ¯ / ¾%² a ´ i , ¼ F å 9 4) ´ k ¨ ´ i “ Œ
´ i @ ƒ + 4) ´ ÿ |ož

1. — s – ‰ $ V Ü echo-interval W 50 P É ¯ } – ‰ ¶ Q / W echo-interval ™ ¾ â Ÿ K ‡ “ Ò d
2. ‘ ž – ‰ $ V Ü echo-interval K N o d

o¬ F å †o- 1 y + AP1 g F å AP ´ i y

```
5XLMLH FRQILJ DS FRQILJ $3
5XLMLH FRQILJ DS DS GRZQORDG HQDEOH
```

2 y í ” AP1 ´ i F å y

```
5XLMLH FRQILJ DS QR DS GRZQORDG HQDEOH
```

o¬ à • co- 1 y … show capwap detail x X kAP ´ i © k • o C F åož

o¬ U P ’ Îo- -

o¬ o • j ¨o- --

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.15 ap-download retransmission

• o ´ i ž ˜ k ² … ´ † M n • œ y) ƒ ož
ap-download retransmission num,num…

Ê Ö F å
no ap-download retransmission

o¬ @ ƒ ª ¢o-

@ ƒ	T
num	M n ž • • œ k % y a k0.5 … ƒ • k Â Ý 64 a k Ù num < M n Ù) k Â Ú F å 20 k ? num) Z œ •

o¬ Þ . F åo- 0.5,0.5,1,1,1,1,2,2,2,2,4,4,4,8

o¬ x X % ”o- AP F å % ” y ñ Ä AP F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- • o ´ i k U 4 x X F å ² … M n) ƒ y • œ kAP • ÷ ´ ž ˜ k k ¯ / ¾%² a ´ i , ¼
F å 9 4) ´ k ¨ ´ i “ Œ ´ i @ ƒ + 4) ´ ÿ |ož

o¬ F å †o- 1 y + AP1 g F å ´ i M n 4) y • œ †%²) 0.5 a k † 8) 1 a k †) 2 a k † š) 2 a y

```
5XLMLH FRQILJ DS FRQILJ $3
5XLMLH FRQILJ DS DS GRZQORDG UHWUDQVPLVVLRQ
```

2 yAP1 ´ i M n @ ƒ Ê Ö ó • F å y

```
5XLMLH FRQILJ DS QR DS GRZQORDG UHWUDQVPLVVLRQ
```

o¬ à • co- 1 y … show capwap detail x X kAP ´ i © k • o C F åož

o¬ U P ’ Îo- -

o¬ o • j ¨o- --

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.16 ap-download image-check

• o ´ i ž ˜ k ² … AP N v ´ † Â Ý ž • • œož

ap-download image-check num

Ê Ö F å

no ap-download image-check

o¬ @ ƒ ª ¢o-

@ ƒ	T
num	AP N v ´ † Â Ý ž • • œ k % y a

o¬ Þ . F åo- 83

o¬ x X % ”o- AP F å % ” y ñ Ä AP F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- • o ´ i kAP ò ç ¨ ž • Ä Z Ä v ñ AC G ´ † k ; " • • Ÿ 3 kAP • ÷ ´ ž ˜ k k ¯ / ¾%² a ´ i , ¼ F å 9 4) ´ k ¨ ´ i “ Œ ´ i @ ƒ + 4) ´ ÿ |ož

o¬ F å †o- 1 y + AP1 g F å ´ i AP N v ´ † Â Ý ž • • œ 30 a y

```
5 X L M L H  F R Q I L J  D S  F R Q I L J  $ 3
5 X L M L H  F R Q I L J  D S  D S  G R Z Q O R D G  L P D J H  F K H F N
```

2 yAP1 ´ i Â Ý ž • • œ Ê Ö ó • F å y

```
5 X L M L H  F R Q I L J  D S  Q R  D S  G R Z Q O R D G  L P D J H  F K H F N
```

o¬ à • co- 1 y … show capwap detail x X kAP ´ i © k • o C F åož

o¬ U P ’ Îo- -

o¬ o • j ¨o- --

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.17 ap-download distr-send

• o ´ i ž ˜ k ² … ã b ” ´ ÿ AP ò G ´ † Ë ÿ - µ AP ž • • œ o ž

ap-download distr-send num

Ê Ö F å

no ap-download distr-send

o¬ @ ƒ ª ¢o-

@ ƒ	T
num	ã b ” ´ ÿ AP ò G ´ † Ë ÿ - µ AP ž • • œ k % y a

o¬ Þ . F åo- 5

o¬ x X % ”o- AP F å % ” y ñ Ä AP F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- • o ´ i k ã b ” ´ ÿ AP ò G ´ † Ë ÿ - µ AP ž • • œ kAP • ÷ ´ ž ˜ k k ¯ / ¾ %² a ´ i , ¼ F å 9 4) ´ k ¨ ´ i “ Œ ´ i @ ƒ + 4) ´ ÿ |ož

o¬ F å †o- 1 y + AP1 g F å ´ i ã b ”ÿ AP ò G Ë ÿ - µ AP † ž • • œ 10 a y

```
5 X L M L H F R Q I L J D S F R Q I L J $ 3
5 X L M L H F R Q I L J D S D S G R Z Q O R D G G L V W U V H Q G
```

2 yAP1 ´ i ÿ AP ò G ž • • œ Ê Ö ó • F å y

```
5 X L M L H F R Q I L J D S Q R D S G R Z Q O R D G G L V W U V H Q G
```

o¬ à • co- 1 y … show capwap detail x X kAP ´ i © k • o C F åož

o¬ U P ’ Îo- -

o¬ o • j ¨o- --

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.18 ap-download distr-check

• o ´ i ž ˜ k ² … ã b ” ´ AP • G ´ † Â Ý ž • • œ o ž

ap-download distr-check num

serial-name	} ë • AP © ç d f k Â Ú U F å 64 … k m q ož
ap-pid1 ap-pid2 ... ap-pidn	} µ ¥ AP © ç D } º Z ç nožap-pidn n P † n D } º Zož Ú D } º Z 6 †) Z œ •
hardware-version	6 AP F ^ Í Î k Â Ú U F å 64 … k m q ož F ^ Í Î ” 4 ƒ ” k … Z x ê X U 9 * F e µ …ož

o¬ Þ . F åo- -

o¬ x X % ”o- AC F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- F å AC 6 AP D } © ç ´ Í Î ž k ë • AP D } © ç k F å 6 AP + • ÷ ^ Í Î k ¬ t ÷ ^ Í Î k 5 â Þ%² U k ¨ F å ù ¬ } G ‘ AC © Ï † ^] Ä ¥ ÷ ^ Í Îož

o¬ F å †o- 1 y ¨ AC ë •%² AP © ç k ¥ © ç d f test-serial k ¿ 6 AP F ^ Í Î 1.0 k m AP º Z Ä AP220-SEo•AP220-SHo•AP220-E y

```
5 X L M L H F R Q I L J D F D S V H U L D O W H V W V H U L D O $ 3 6 ( $ 3 6 + $ 3 ( K Z
5 X L M L H F R Q I L J D F D F W L Y H E L Q I L O H D S E L Q
5 X L M L H F R Q I L J D F D S L D P J H W H V W V H U L D O D S E L Q
```

2 y í ” AC F å k … ± K 9 D } © ç d test-serial AP Ç … ap.bin † ^ g ´ y

```
5 X L M L H F R Q I L J D F QVH D S V H U L D O D S E L Q
```

o¬ à • co- 1 y … show ac-config serial-product x X k ò 0 D } © ço• D } º Zo• ´ Í Î $ • + • ¼ ©ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- --

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.21 ap-upgrade band-width

F å AP ¤ ´ k !ož
ap-upgrade band-width num

H ƒ F å
no ap-upgrade band-width

o¬ @ ƒ ª ¢o-

@ ƒ	T
num	AP ´ k ! kAP ¤ ´ † ^ G , ä k Y 1KB % y k F å 8 8~1024 k ó • — k ! ' ò

o¬ Þ . F åo- — k ! ' ò

o¬ x X % ”o- AP F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- AC Ë AP ´ ž k È © @ U) n ÿ k ! Y Ž × 5 ´ ž •ož ¨%² ? k ! û 4 à Ì k ¨ AP ´ ž U ¬ } ‘ ž Ä ¿ k ! k 9 ² AP ´ § € + ¿ U - è § €ož ž U Y * F å ´ k ! ' ò Û O ò AC Ë AP G Í Î † ^ , ä k R ò ñ O ò AP ´ k !) Aožož

1. " « % AP ¶ AC , / – ‰ Û Ú Å % Ó ã ´ – ‰ â Ó " õ ¹ ì ¾ Ó ã ´ – ‰ ô l ÿ W ¾ TAP ¹ ¶ , / – ‰ — ÿ N » Ó ã ´ – ‰ · Ó " õ ¹ d
2. æ * 1KB " AP 0 AC] ¾ h « Ì ¶ Û Ú 1Mbps • " 128

o¬ F å †o- 1 y AP F å ´ k ! k ¿ 128 ô k ! < © 1Mbps, / AP ¤ ´) Â Ý k ! 1Mož

5 X L M L H F R Q I L J D F D S X S J U D G H E D Q G Z L G W K

o¬ à • co- 1 y … show ap-config running-config x X k U Y ò 0 F å © k è ož

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.22 ap-upgrade group

F å AP µ ñ ´ Áož

ap-upgrade group group-name

H ƒ F å

no ap-upgrade group

o¬ @ ƒ ª ¢o-	@ ƒ	T

group-name	AP ´ Á d

o¬ Þ . F åo- -

o¬ x X % ”o- AP F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- AP µ ñ ´ Á k 1 I ñ ¥ ´ Á F å ³ Øož

1. ¦ & þ ½ ¢ Q – ‰ ¦ AP ë [‘ " ap-grade band-width » Ò þ » – ‰ ¦ æ * Û Ú Å %
2. " ” • ¾ – ‰ ¦ ¸ ¹ ¶ capwap upgrade group a — — Ù
3. no " ¨ " ´ ¦ • É } ap • â m W , ¦

o¬ F å †o- 1 y AP µ ñ ´ Á UPGRADE-GROUP1 ož

```
5XLMLH FRQILJ DF DS XSJUDGH JURXS 83*5$'( *5283
```

o¬ à • co- 1 y … show ap-config running-config x X k U Y ò 0 F å © k è ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.23 capwap ctrl-ip

F å AC AP • y CAPWAP Ÿ 3 O ò IPv4 ª - k ó • Õ Ñ AC AP • y CAPWAP Ÿ 3 ª - AC — Õ †%² Loopback IPv4 ª -ož

capwap ctrl-ip ip-address

H ƒ F å

no capwap ctrl-ip

o¬ @ ƒ ª ¢o-

@ ƒ	T
ip-address	6 AP • y Ÿ 3 CAPWAP Ÿ 3 O ò IP ª - k ¬ } Î AC — Õ î N M IP ª -ož

o¬ Þ . F åo- -

o¬ x X % ”o- AC F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- AC %² " © * Loopback ª - Û • y CAPWAP Ÿ 3 k ¥ x X U Y … ± AC Ü ¿ C N M ª - Û • y CAPWAP Ÿ 3ož

1. " ¶ Ÿ ° ¸ < } ¬ AP n — d
2. " ¢ Q } AC h â É } V ° CAPWAP B â Ÿ Ù K
3. AP ‘ â } AC ¨ (‡ AC ä AP ¾ 8 é J) ® ¨ AP] option * » ë ò " capwap ctrl-ip " (" ´ ") d
4. } AC • , B / / ¹ ¶ a — ÿ " CAPWAP B Å % • ‘ s • Ú AC } • " f ´ • " Å % s Å % IP a — peer-ip A.B.C.D d

o¬ F å †o- 1 y AC F å 9 • y CAPWAP Ÿ 3 ª - 10.0.0.1 k ¿ 10.0.0.1 ©%² SVI ª -ož

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

o¬ à • co- 1 y … show running-config x X k U Y ò 0 F å © k è ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.24 capwap discovery-type ac-referral

F å AC ª • AP * – < • º discovery † G ëož
capwap discovery-type ac-referral allow

F å AC ª • AP * – < • º discovery † G ëož
capwap discovery-type ac-referral forbidden

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ª • AP * – < • º discovery † G ë AC

o¬ x X % ”o- AC F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- CAPWAP ö Õ # ‘ k 9 AP G ë ê Ë © k Ä AC ¨ k ò ç F å 4 ª • kAP 4 • º discovery † kAC € › Ö AP k R ò ! Í 4 4 AP ¢ ù AC • y CAPWAP Ÿ 3ož

" â m V ° N AP M ¥ ¹ ¶ ä É ù ´ 0 ® AC Ù K CAPWAP B d

o¬ F å †o- 1 y F å AP ª • * – < • º discovery † G ë AC

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

o¬ à • co- 1 y … show running-config x X k U Y ò 0 F å © k è ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.25 capwap discovery-type all

F å AC ª • AP * ò ~ G ë • º G ëož
capwap discovery-type all allow

F å AC ª • AP * ò ~ G ë ¥ ” G ëož
capwap discovery-type all forbidden

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ª • AP * ò ~ G ë ¥ ” G ë AC

o¬ x X % ”o- AC F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- CAPWAP ö Õ # ‘ k 9 AP G ë ê Ë © k Ä AC ¨ k ¢ ù G ë ¥ ” ã • Äg – <o•DHCP o•DNSo• ²
Á F å C ¿ U Ћk ò ç F å 4 ª • kAP G G ë † k AC € › Ö k R ò ! Í 4 4 AP ¢ ù AC • y

CAPWAP Ÿ 3ož

" â m V ° N AP M ¥ ¹ ¶ dicovery q 3 0 ® AC Ù K CAPWAP B d

o¬ F å †o- 1 y F å AP ª • * ò ~ G ë ¥ ” G ë AC

```
5XLMLH FRQILJ DF FDSZDS GLVFRYHU\ W\SH DOO IRUELGGHQ
```

o¬ à • co- 1 y … show running-config x X k U Y ò 0 F å © k è ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.26 capwap discovery-type dhcp

F å AC ª • AP * DHCP • º discovery † G ëož
capwap discovery-type dhcp allow

F å AC ª • AP * DHCP • º discovery † G ëož
capwap discovery-type dhcp forbidden

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ª • AP * DHCP • º discovery † G ë AC

o¬ x X % ”o- AC F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- CAPWAP ö Õ # ‘ k 9 AP G ë ê Ë © k Ä AC ¨ k ò ç F å 4 ª • DHCP G ë kAP 4 • º
discovery † k AC € › Ö k R ò ! Í 4 4 AP ¢ ù AC • y CAPWAP Ÿ 3ož

" â m V ° AP ¹ ¶ DHCP f Ü AC M ¥ 0 ® AC Ù K CAPWAP B d

o¬ F å †o- 1 y F å AP ª • DHCP • º discovery † G ë AC

```
5XLMLH FRQILJ DF FDSZDS GLVFRYHU\ W\SH GKFS IRUELGGHQ
```

2.28 capwap discovery-type static-config

F å AC ª • AP * ² Á F å AC ª - • º discovery † G ëož
capwap discovery-type static-config allow

F å AC ª • AP * ² Á F å AC ª - • º discovery † G ëož
capwap discovery-type static-config forbidden

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ª • AP * ² Á F å AC ª - • º discovery † G ë

o¬ x X % ”o- AC F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- CAPWAP ö Õ # ‘ k 9 AP G ë ê Ë © k Ä AC ¨ož ² Á F å AC ª - Ä acip y ¤ é k ò ç F å 4 ª • ² Á F å AC ª - G ë kAP 4 • º discovery † k AC € › Ö k R ò ! Í 4 4 AP ¢ ù AC • y CAPWAP Ÿ 3ož

" â m V ° AP ¹ ¶ A _ " AC M ¥ 0 ® AC Ù K CAPWAP B d

o¬ F å †o- 1 y F å AP ª • ² Á F å AC ª - • º discovery † G ë AC

5 X L M L H F R Q I L J D F F D S Z D S G L V F R Y H U \ W \ S H V W D W L F F R Q I L J I R U E L G G H

o¬ à • co- 1 y … show running-config x X k U Y ò 0 F å © k è ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.29 capwap discovery-type unknown

F å AC ª • AP * ¿ U • º discovery † G ëož
capwap discovery-type unknown allow

F å AC ª • AP * ¿ U • º discovery † G ëož

capwap discovery-type unknown forbidden

o¬ @ ƒ ª ¢o-	@ ƒ	T
	-	-

o¬ Þ . F åo- ª • AP * ¿ U • º discovery † G ë AC

o¬ x X % ”o- AC F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- CAPWAP ö Õ # ‘ k 9 AP G ë ê Ë © k Ä AC ¨ož ¿ U • º / ” 4 – <o•DHCP o•DNSo• ² Á F å $
Ù • º k ò z no• Á n k ò ç F å 4 ª • 4 _ • ” G ë kAP 4 • º discovery † k AC € › Ö k
R ò ! Í 4 4 AP ¢ ù AC • y CAPWAP Ÿ 3ož

" â m V ° AP ¹ ¶ c P + ø discovery q 3 M ¥ 0 ® AC Ù K CAPWAP B d

o¬ F å †o- 1 y F å AP ª • ¿ U • º discovery † G ë AC

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

o¬ à • co- 1 y … show running-config x X k U Y ò 0 F å © k è ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.30 capwap disc-concurrent

F å AP + capwap G ë † Ô ò k % y PPSož
capwap disc-concurrent num

o¬ @ ƒ ª ¢o-	@ ƒ	T
	num	? a Ô ò G ë † ƒ O k ÿ G D } H › c

o¬ Þ . F åo- ÿ G AC › c Þ . c

o¬ x X % ”o- AC F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- a « Ä G ë AP Û G G ë † Õ Ñ kCAPWAP % ² } ÿ G AC , • Ÿ G ë † w G O ò z F å 4 x X e k ¢ ? a † ƒ O Ý ñ F å › ž k 1 ’ 4 G ë † k Ç Ô òož

o¬ F å †o- 1 y F å AC G ë † Ô ò ƒ O

5 X L M L H F R Q I L J D F F D S Z D S G L V F F R Q F X U U H Q W

o¬ à • co- 1 y … show capwap server state x X k U Y ò 0 F å w G ›ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.31 capwap data-tunnel encryption

F å CAPWAP ƒ G * 3 %ož
capwap data-tunnel encryption { bf | des } key

í ” 6 AC F å
no capwap data-tunnel encryption { bf | des }

o¬ @ ƒ ª ¢o-

@ ƒ	T
bf	… \]T(blowfish) % ‘ c
des	… ƒ G % ö Õ ‘ c
key	» F % W k Y q È Ø k Â Ý x † 255 …

o¬ Þ . F åo- -

o¬ x X % ”o- AP F å % ” ê AP Á F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- 9 CAPWAP ƒ G * 3 ó • Õ Ñ © % k ¢ AC y AP n ÿ e è B æ ¨ ¸ » n ÿ à ž k ¿ ƒ G ’ Î U tLÄ H ê — wož … CAPWAP ƒ G Ÿ 3 % k U Y ‘ š ï ƒ G † n ÿ ¶ož

ò - ô l B ¦ A º ´ ¨ Ü ˆ Ÿ CAPWAP B 7 í Ù K

o¬ F å †o- 1 y F å AP … des % ‘ c g % k % W ruijie

5XLMLH FRQILJ DS FDSZDS GDWD WXQQHO HQFU\SWLRQ GHV UXLMLH

o¬ à • co- 1 y … show ap-config running-config x X k U Y ò 0 F å © k è ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.32 capwap dtls enable

F å CAPWAP O ò * 3 dtls % ož
capwap dtls enable

F å CAPWAP O ò * 3 %ož
no capwap dtls enable

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ó • • o CAPWAP O ò * 3 dtls % ož

o¬ x X % ”o- AC F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- ó • Õ Ñ kCAPWAP O ò * 3 dtls % © • o k U Y ‘ š AC æAP $ • O ò A ; ¶ož Ô : Õ Ñ k 4 y ¡ • Ž k ï U Y F å O ò * 3 %ož

o¬ F å †o- 1 y • o F å CAPWAP O ò * 3 dtls % ož

5XLMLH FRQILJ DF FRQWUROOHU
5XLMLH FRQILJ DF FDSZDS GWOV HQDEOH

o¬ à • co- 1 y … show running-config x X k U Y ò 0 F å © k è ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.33 capwap fragment enable

• o CAPWAP ã Ì ož
capwap fragment enable

¼ { CAPWAP ã Ì ož
no capwap fragment enable

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ó • • o CAPWAP ã Ì ož

o¬ x X % ”o- AP F å % ” ê AP Á F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- ¢ ƒ G † Æ CAPWAP Ÿ 3 / x $ e k † x † U Ý ip mtu k † k Æ IP g IP ã Ìož ¢ e è ¨ Ú - µ ip mtu %² ž k † U ¬ } g Ú) ã Ì y M Á k ‘ z 4 † ô G Å ož U Y * ¥ x X
• o CAPWAP ã Ì k † 1 ¨ CAPWAP / x ž g ã Ì q • kCAPWAP ã Ì † x † U Y
capwap mtu x X 6 e è Â 4 mtu k R ò 9 ² IP ã Ìož

o¬ F å †o- 1 y • o F å AP1 CAPWAP ã Ì

```
5XLMLH FRQILJ DS FRQILJ $3
5XLMLH FRQILJ DS FDSZDS IUDJPHQW HQDEOH
```

o¬ à • co- 1 y … show ap-config running x X k U Y ò 0 F å © k è ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.34 capwap max-concurrent

F å AC ª • AP w G ¿ Â Ý ƒož
capwap max-concurrent num

H ƒ F å
no capwap max-concurrent

o¬ @ ƒ ª ¢o-

@ ƒ	T
num	AP w G ¿ Â Ý ƒ k 8 1~200

o¬ Þ . F åo- AP w G ¿ Â Ý ƒ ó • › 50

o¬ x X % ”o- AC F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- Ý O AP w G ¿ ž k U - AC CPU Í ä k þ ñ 100% k R ò -] Æ ¿ AP 9 ‘ t â Â ò
Ÿ 3 • •ož … ¥ x X U Y ’ ò AP w G ¿ Â Ý ƒož

ò " Ì ¨ V ° AC • N AP h ¬ ™ ¨ · *) d

o¬ F å †o- 1 y AC F å ª • Â Ý AP w G ¿ ƒ

5 X L M L H F R Q I L J D F F D S Z D S P D [F R Q F X U U H Q W

o¬ à • co- 1 y … show running-config x X k U Y ò 0 F å © k è ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.35 capwap max-retransmit

F å CAPWAP † Â Ý M n) ƒož
capwap max-retransmit num

H ƒ F å
no capwap max-retransmit

o¬ x X % ”o- AC F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- F å AP ´ Á k k ! O ò ¤ ´ Y ´ Á ² † % y k AC ¤ ´ w G ƒ ® k ã F ñ ñ Ä ´ Á ož

1. o $ Q – ‰ ¦ « Ö , / É Ÿ ô 5 ô “ ë ¦ « Ö ¶ Û Ú / $ Q ap ¶ « Ö Û Ú ‘ d

o¬ F å †o- 1 y F å AP ´ Á Upgrade-Group1 k Â Ý w G ƒ 10 ož

5 X L M L H F R Q I L J D F F D S Z D S X S J U D G H J U R X S 8 S J U D G H * U R X S P D [F X U U I

o¬ à • co- 1 y … show running-config x X k U Y ò 0 F å © k è ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.37 capwap mtu

F å CAPWAP Ÿ 3 è ¬ mtuož

capwap mtu num

Ê Ö Þ . ›

no capwap mtu

o¬ @ ƒ ª ¢o-

5XLMLH FRQILJ DF FDSZDS XSJUDGH PD[FRQFXUUHQW

o¬ à • co- 1 y … show running-config x X k U Y ò 0 F å © k è ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.39 echo-interval

F å CAPWAP ¶ é ‘ t • œož
echo-interval seconds

Ê Ö Þ . ›
no echo-interval

o¬ @ ƒ ª ¢o-

@ ƒ	T
seconds	CAPWAP ¶ é ‘ t • œ k 8 5~255 k % y aož

o¬ Þ . F åo- ‘ t • œ Þ . › 30sož

o¬ x X % ”o- AP F å % ” ê AP Á F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- HÅAP à Ì ë ã kAC y AP * CAPWAP Ÿ 3 ; ûožAP y AC $ • … Echo Request y Echo Response Û Ó e è Ä | ÅožAP ¨ Z Ä ¿ U ¬ L † Õ Ñ k ? œ echo-interval G Echo Request † g ‘ tož 3 AP G Z Ä v ñ • ‹ † k † 1 g M n k M n Y ì ÷ M n • œ g3 a echo-interval %² ! ñ Â 4 › h • ÷ • Í k Â Ý M n • œ Ý echo-interval %² ! 60 a Â 4 ›ož ¢ Â Ý Â Ý M n) ƒ Q À Z Ä v ñ • ‹ † k é • Ÿ 3 • •ož / Ÿ 3 ‘ t â | ž • ‘ t ž • M n • œož ¥ x X N ¨ Ÿ 3 Run Ù Á ÿ |ož ó • echo-interval © 30s k ó • Â Ý M n) ƒ © 5 k ¬ L † ¨ † 0s G $ e k ò ç Ì v ñ • ‹ k M n † ã ð ¨ • œ 3so•6s o•12s k15s o•15s t M nož F å echo-interval y max-retransmit ¿ › Q 7 4 • é ‹ ‘ † Ý ž ž •ož

M ¬ î æ ç ¨ ¶ » T l î Ÿ f 8 ü echo-interval » Ÿ # î Ì [ÿ Ÿ 8 ü ¨ ò l s î Ÿ f t t

```
5XLMLH FRQILJ  DS FRQILJ $3
5XLMLH FRQILJ DS  HFKR LQWHUYDO
```

2 y F å ñ Ä AP ¶ é • œ 10s

```
5XLMLH FRQILJ  DS FRQILJ DOO
5XLMLH FRQILJ DS  HFKR LQWHUYDO
```

3 y F å AP Á g default h ñ Ä AP ¶ é • œ 10s

```
é u'••UNû ™Â ù '#xhQE2 @ P € À Ð À € ° `  • À  À ` 0 À ` P  € 0 0 p 0 € ` °  À  p € P • @ ð 0 @ 0 0å Xƒå
```

+ AP g • F å k U Y *
exec-cmd F å k ¬ } ¯
ê ñ ¬ } ¾ w F å; ý J
¯ * ap Z Ä ð z
ý | k + 9 Y ¿ F å kAP

¬ } + î AP Á Ä ñ Ä
© k ¥ F å ¨ ap-group

H FPG QR HQDEO3 0P IC0 `3

5XLMLH FROILJ DS OR H[HF FPG PRGH FROILJXUH FPG OR HODEO3 0S0ÀP

o¬ à • co- 1 y … show ap-config running x X k U Y ò 0 F å © k è ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- - ¾ wexec-cmd F å k Z Ä F å

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.42 ip address

F å 6 AP ² Á IP ª -ož

ip address ip-address network-mask gateway

Ê Ö Þ . F åož

no ip address

o¬ @ ƒ ª ¢o-

@ ƒ	T
ip-address	AP N M ª -
network-mask	AP ª - Q A
gateway	AP à ¼

o¬ Þ . F åo- -

o¬ x X % ”o- AP F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- AP U Y * ² Á F å y DHCP _ • ” B H ï IP ª -ož 3 AP Ì F å ² Á IP ª - k é Y DHCP • ” Á B H ª - w µ AC k ž U Y * ¥ x X F å AP ² Á ª - k … ± AP M o $ e ª - ‘ Jož

1. • " AP A _ Ü ‘ ž DHCP _ Ÿ ã ¨ Ü M ¥ ¹ ¶ DHCP OPTION * » f Ü AC Ù ® " a — • . ‘ • } AP " f ´ • ¹ ¶ q acip r a — " U AC » ¬ AP ä AC â } ½ ¢ Q • ¨ Ÿ Ÿ £ É ¦ & AC d
2. / AP ò • 0 a — G â ¢ ! Ü W í AP A _ É 7 Ù CAPWAP B d

o¬ F å †o- 1 y F å AP0001 ª - 1.1.1.1 k Q A 255.255.255.0 k %² é 1.1.1.2ož

```
5 X L M L H F R Q I L J D S F R Q I L J $ 3
5 X L M L H F R Q I L J D S L S D G G U H V V
```

o¬ à • co- 1 y … show ap-config running x X k U Y ò 0 F å © k è ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.43 ipv6 address

F å 6 AP ² Á IPv6 ª -ož

ipv6 address ipv6-address-with-mask gateway

Ê Ö Þ . F åož

no ipv6 address

o¬ @ ƒ ª ¢o-

@ ƒ	T
ipv6-address-with-mask	AP N M IPv6 ª - k ” • w X:X:X:X::X/24ož
gateway	AP IPv6 à ¼

o¬ Þ . F åo- -

o¬ x X % ”o- AP F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- AP ¨ IPv6 u 4 • o Õ Ñ k U Y * ² Á F å y DHCPv6 _ • ” B H ï IPv6 ª -ož 3 AP Ì F å ² Á IPv6 ª - k é Y DHCPv6 • ” Á B H ª - w µ AC k ž U Y * ¥ x X F å AP IPv6 ² Á ª - k … ± AP M o $ e ª - ‘ Jož

1. • " AP IPv6 A _ Ü ‘ ž DHCPv6 _ Ÿ ã ¨ Ü M ¥ ¹ ¶ DHCPv6 OPTION * » f Ü AC IPv6 AC

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.44 ipv6 enable

¨ AC F å 6 AP • o IPv6 u 4ož
ipv6 enable

Ê Ö Þ . F åož
no ipv6 enable

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- Þ . Õ Ñ kAP IPv6 u 4 ¼ {ož

o¬ x X % ”o- AP F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- AP Q Ä ¨ • o IPv6 u 4 Õ Ñ k k … IPv6 ª - g IPv6 AC G ëož ó • Õ Ñ kAP IPv6 u 4 © ¼ { k U Y * ¥ x X Û F å AP IPv6 u 4 • o ¼ {ož

1. " ´ " a — ý ! AP IPv6 [Æ ã Ÿ “ - $ AP Ü 7 Ù CAPWAP B d
2. " AP — s IPv6 [¨ " ´ ½ ¨ AP ½ ¨ " IPv4 c IPv6 A _ • 7 Ù CAPWAP B ¨ Ü ½ ¨) û IPv4 c IPv6 AC Ÿ £ s Ÿ £ AC É â « % ¢ G * ” IPv6 AC ¦ & d " ´ ‘ ¬ £ h í « % ¶ » } " AP — s IPv6 [• W , 5 AP IPv4 A _ l • IPv6 A _ d

o¬ F å †o- y F å $ 3 • o , 3 Y u 4ož

```
5XLMLH FRQILJ DS FRQILJ $3
5XLMLH FRQILJ DS LSY HQDEOH
```

o¬ à • co- 1 y … show ap-config running x X k U Y ò 0 F å © k è ož

o¬ U P ’ Îo- -

Q À• ª wY& 0 ª b b •IF n#xT”b 1Vç0T”b 1Vî Q D$@$€ “ e è Ðfð§ð¶T€‡†úÐ

2.46 location

F å AC ê AP y å ’ Îož

location location-string

Ê Ö Þ . F åož
no location

o¬ @ ƒ ª ¢o-

@ ƒ	T
location-string	AC ê AP y å ’ Î k Â Ú U F å 255 … , k q ož

o¬ Þ . F åo- Þ . Õ Ñ kAC y å ’ Î Ruijie_COM kAP y å ’ Î qož

o¬ x X % ”o- AC F å % ” ê AP F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- —

o¬ F å †o- 1 y F å Ô AC y å ‹ ‘ Ñ © 2 ! gcomputer-layer2 h

```
5XLMLH FRQILJ DF ORFDWLRQ FRPSXWHU OD\HU
```

y F å '6 y å ’ Î '6 IUSVGT_

```
5XLMLH FRQILJ DS FRQILJ $3
5XLMLH FRQILJ DS ORFDWLRQ $3 FRPSDQ\
```

o¬ à • co- 1 y … show ac-config running x X k ò 0 AC y å ’ Îož

2 y … show ap-config running x X k ò 0 AP y å ’ Îož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.47 reset slot

M o ´ ã+AP ³ APož

reset slot slot-id

o¬ @ ƒ ª ¢o-

@ ƒ	T
slot-id	$ y Z k 8 1~24

o¬ Þ . F åo- -

o¬ x X % ”o- AP F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- ¥ x X N + ´ ã+AP — Õ Ä | k u 4 + ñ Ä AP g F åož ¥ F å ‘ ož

¥ x X S + slot Ñ $ y Z k ¨ ´ û « ° k k + $ y Z V ³ AP c ž ÿ |ož

o¬ F å †o- y M o ' 6 ³ ' 6

```
5XLMLH FRQILJ DS FRQILJ $3
5XLMLH FRQILJ DS UHVHW VORW
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.48 set-version

F å ò Í Î Zož

set-version string

o¬ @ ƒ ª ¢o-

@ ƒ	T
string	ò Í Î Z

o¬ Þ . F åo- -

o¬ x X % ”o- AC F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- ¥ x X 1 F å AC — Õ ÷ ^ Í Î Z k c ž k 1 ¥ Í Î G Ë AP g Í Î Z — åož

o¬ F å †o- yF å ò ÷ ^ Í Î Z 8 - 5 9 (9 6

5XLMLH FRQILJ DF FRQWUROOHU

Cnt	¬ t † ^ ç n Ú Z
File Name	¬ t † ^ d
Image Id	¬ t † ^ Í Î
Software number	¬ t † ^ Ú ™ Ê
Used Cnt	W n ¢ ù Ä Ú 5 AP 3 ¨ … † ^
DL Cnt	W n ¥ ´ † ^] Æ Ë Ú 5 AP ú 4
Ready	W n ¥ † ^ © k] Æ ¶ ¬ t.

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2.50 show ac-config serial-product

ª P Î AC F å AP D } © ç y D } º Z + • ¼ © k Y C + • D } © ç } … Â ý † ^ g ´ož
show ac-config serial-product

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- —

o¬ F å †o- 1 y Î AC F å AP D } © ç y D } º Z

```
5XLMLH VKRZ DF FRQILJ VHULDO SURGXFW

&QW 6HULDO 1DPH +DUGZDUH 9HUVLRQ )LOH 1DPH $3 3URGXFW ,

    DS VHU [      [          DS    ELQ $3 (
                                  $3 6(
                                  $3 6+
                                  $3 +
                                  $3 ( 0
    DS VHU [      [          DS   ELQ $3 (
```

```
                                                  $ 3      6 +
                                                  $ 3      (  0
```

< † K y

<	ª ¢
Cnt	ª P Ú Z
Serial Name	AP D } © ç
Hardware Version	F ^ Í Î Z
File Name	AP D } © ç + • ´ † ^
AP Product ID	AP D } º Z

o¬ U P ' Îo- -

o¬ u V ª ¢o- -

2.51 show ac-config upgrade-group

ª P AC F å ´ Á y ´ Á Ä AP ' Îož

show ap-config upgrade-group [group-name]

o¬ @ ƒ ª ¢o-

@ ƒ	T
group-name	} ò ¤ AP ´ Á d

o¬ x X % "o- Ô Ó % "

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- —

o¬ F å †o- 1 y ª P AC F å ´ Á ' Îož

```
5 X L M L H  V K R Z  D F  F R Q I L J  X S J U D G H  J U R X S
& Q W     * U R X S  1 D P H                0 D [  & R Q F X U U H Q W     7 R N H Q  F Q W     8 S J U D

      8 3 * 5 $ ' (  * 5 2 8 3
```

< † K y

<	ª ¢
Cnt	ª P Ú Z
Group-Name	AP ´ Á d
Max-Concurrent	Î Á Â Ý ´ w G ƒ

Token cnt	¢ ù ã F ´ ƒ
Upgrading cnt	3 ¨ ´ AP ƒ

2 y ª P ´ Á Ä B AP ' Îož

```
5XLMLH VKRZ DF FRQILJ XSJUDGH JURXS 83*5$'( *5283
*URXS KDYH DSk RQOLQH RIIOLQH
&QW $S 1DPH $S 0DF 2QOLQH 8SJUDGH %
```

```
DF VKRZ DS FRQILJ ERDUG GDWD DS
$S DS    V ERDUG GDWD
 ZWS PRGHO QXP
 ZWS VHULDO QXP    * *'
 ERDUG LG          $3    ,
 ERDUG UHYHUVLRQ
 EDVH DGGUHVV           E    I
```

< † K y

<	ª ¢
wtp model num	D } º Z
wtp serial num	AP ~ ç Z
board id	á id
board reversion	

```
3 U R G X F W  , G   $ 3    (
9 H Q G R U  , G
6 1
```

< † K y

<	ª ¢
AP Name	AP d
Location	AP y å
Product Id	D } id
Vendo Id	4 Œ id
SN	~ ç Z

o¬ U P ' Îo- -

o¬ u V ª ¢o- -

2.54 show ap-config link-latency

ª P AC AP $ • e è Ù Áož

show ap-config link-latency { all | single ap-name }

o¬ @ ƒ ª ¢o-

@ ƒ	T
all	ò ¤ ñ Ä AP
single	ò ¤ % AP
ap-name	} ò ¤ AP d f

o¬ x X % "o- Ô Ó % "

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- —

o¬ F å †o- 1 y ò 0 % AP AC $ • e è Ù Áož

```
D F  V K R Z  D S  F R Q I L J  O L Q N  O D W H Q F \  V L Q J O H  D S
$ 3  1 D P H                                  6 W D W X V      & X U U H Q W     0 D [ L P X P     0 L Q

D S                                        ' L V D E O H G      P V          P V          P V
```

< † K y

<	ª ¢

AP Name	AP d
Status	e è Ù Á
Current	¢ ù e è •
Maximum	Â Ý e è •
Minimum	Â 4 e è •
Number	Â Ý e è • k n) ƒ

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2.55 show ap-config reboot

ò ¤ AP M o ƒ G Ï ‹ož

show ap-config reboot ap-name

o¬ @ ƒ ª ¢o-

@ ƒ	T
ap-name	} ò ¤ AP d fož

<	ª ¢
Reboot Cnt	M o) ƒ
AC Init Cnt	AC ì ÷) ƒ
Link Fail Cnt	e è â Â) ƒ
SW Fail Cnt	÷ ^ â Â) ƒ
HW ail Cnt	F ^ â Â) ƒ
Other Fail Cnt	¿ U = œ â Â) ƒ
Unknow Fail Cnt	Ì = = œ â Â) ƒ
Last Fail Type	) â Â • º

o¬ U P ' Îo- -

o¬ u V ª ¢o- -

2.56 show ap-config slot

ª P 6 AP ³ AP ' Îož

show ap-config slot ap-name

o¬ @ ƒ ª ¢o-

@ ƒ	T
ap-name	} ò ¤ AP d f

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- ¥ x X N ª P ¨ ¿ ´ ã+AP — Õ ' Îož

o¬ F å †o- 1 y ª P AP ³ AP ' Î

```
5XLMLH VKRZ DS FRQILJ VORW $0     (3
5DGLR  5DGLR ,'
      (  HQDEOHG  '  GLVDEOHG  1  1RW H[LVW
      &XUUHQW 6WD QXPEHU
      &KDQQHO      *OREDO
      3RZHU /HYHO  3HUFHQW

,QVWDOO 6ORW 1XPEHU
```

```
2QOLQH 6ORW 1XPEHU
2IIOLQH 6ORW 1XPEHU
6ORW ,' 5ROH 6ORW 1DPH 0RGHO 6ORW 0DF 5
5DGLR 8S 2II WLPH 6WDWH



PDVWHU )BZHQPL 0$3 F H E (
(  RQOLQH
PDVWHU )BIDQJMLDQB 0$3 67 F H G (
(  RQOLQH
VODYH )BIDQJMLDQB 0$3 67 F H F (
RQOLQH
```

< † K y

<	ª ¢
Install Slot Number	Î AP x ³ AP ƒ
Online Slot Number	Î AP ¨ ¿ ³ AP ƒ)
Offline Slot Number	Î AP Y ¿ ³ AP ƒ)
Slot ID	³ AP ñ ¨ $ y Z
Role	³ AP ´ û ¼ © k ³ AP maser k R ³ AP slave
Slot Name	³ AP d f
Model	³ AP º Z
MAC Address	³ AP MAC ª -
Radio	³ AP + • Radio IDo• Ù Áo• ï ƒ o• ' 3 y ä
Up/Off time	¨ ¿ ê Y ¿ ž •
State	¨ ¿ ê Y ¿ Ù Á

o¬ U P ' Îo- -

o¬ u V ª ¢o- N AC u 4

2.57 show ap-config static-ip

ª P ñ Ä AP y å ' Îož

show ap-config static-ip { all | single ap-name }

o¬ @ ƒ ª ¢o-

@ ƒ	T
all	ò ¤ ñ Ä AP
single	ò ¤ % AP

ap-name	} ò ¤ AP d f

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- —

o¬ F å †o- 1 y ª P AP ² Á ª -

¿ m AP d fo•AP ip ª -o• Q A y à ¼ož

5 X L M L H DVSK RFZR QVIWJD W LVFL QSJ O H D

$ 31 D P H 6 W D W L3F 1 H0WD V N * H W Z D \

D (Q D E O H G

o¬ U P ’ Îo- -

o¬ u V ª ¢o- N AC u 4

2.58 show ap-config summary location

ª P ñ Ä AP y å ’ Îož

show ap-config summary location

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- —

o¬ F å †o- 1 y ª P AP

```
DS                                                    E    II   %DQJRQJVKLB
5XQ
DS                                                  D D  H G  G  ~  !
5XQ
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- N AC u 4

2.59 show ap-config summary slot

ª P ñ Ä AP ³ AP ’ Îož
show ap-config summary slot

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- ¥ x X N ª P ¨ ¿ ´ ã+AP — Õ ’ Îož

o¬ F å †o- 1 y ª P AP ³ AP ’ Î

```
5XLMLH VKRZ DS FRQILJ VXPPDU\ VORW
5DGLR  5DGLR ,'
      (  HQDEOHG  '  GLVDEOHG  1  1RW H[LVW
      &XUUHQW 6WD QXPEHU
      &KDQQHO      *OREDO
      3RZHU /HYHO  3HUFHQW

7RWDO $3 1XPEHU
7RWDO ,QVWDOO 6ORW 1XPEHU
7RWDO 2QOLQH 6ORW 1XPEHU
7RWDO 2IIOLQH 6ORW 1XPEHU
```

```
$3 $0    (3  V 6ORWV ,QIRUPDWLRQ
,QVWDOO 6ORW 1XPEHU
2QOLQH 6ORW 1XPEHU
2IIOLQH 6ORW 1XPEHU
6ORW ,' 5ROH    6ORW 1DPH                    0RGHO    6ORW 0DF      5
5DGLR            8S 2II WLPH   6WDWH



      PDVWHU       )BZHQPL                  0$3          F   H  E   (
  (                      RQOLQH
      PDVWHU       )BIDQJMLDQB              0$3   67      F   H  G   (
  (                      RQOLQH
      VODYH     )BIDQJMLDQB              0$3   67      F   H  F   (
                    RQOLQH
```

< † K y

<	ª ¢
Total Install Number	ñ Ä AP x ³ AP ƒ)
Total Online Number	ñ Ä AP ¨ ¿ ³ AP ƒ)
Total Offline Number	ñ Ä AP Y ¿ ³ AP ƒ)
Install Number	Î AP x ³ AP ƒ)
Online Number	Î AP ¨ ¿ ³ AP ƒ)
Offline Number	Î AP Y ¿ ³ AP ƒ)
Slot ID	³ AP ñ ¨ $ y Z
Role	³ AP ´ û ¼ © k ³ AP maser k R ³ AP slave
Slot Name	³ AP d f
Model	³ AP º Z
MAC Address	³ AP MAC ª -
Radio	³ AP + • Radio IDo• Ù Áo• ï ƒo• ' 3 y ä
Up/Off time	¨ ¿ ê Y ¿ ž •
State	¨ ¿ ê Y ¿ Ù Á

o¬ U P ' Îo- -

o¬ u V ª ¢o- N AC u 4

2.60 show ap-config summary slot interface

ª P ñ Ä ´ ã+AP û N M ’ Îož

show ap-config summary slot interface

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 15

Ô Ó % ”

```
G I GF PDVWHU GRZQ 8QNQRZQ 8QNQRZQ
G I GF PDVWHU GRZQ 8QNQRZQ 8QNQRZQ
G I GF PDVWHU GRZQ 8QNQRZQ 8QNQRZQ
G I GF PDVWHU GRZQ 8QNQRZQ 8QNQRZQ
G I GF PDVWHU GRZQ 8QNQRZQ 8QNQRZQ
G I GF PDVWHU GRZQ 8QNQRZQ 8QNQRZQ
G I GF PDVWHU GRZQ 8QNQRZQ 8QNQRZQ
G I GF PDVWHU GRZQ 8QNQRZQ 8QNQRZQ
G I GF PDVWHU GRZQ 8QNQRZQ 8QNQRZQ
```

< † K y

<	ª ¢
AP mac	´ ã+ AP Ñ MAC ª -
IP Address	´ ã+ AP Ñ IP ª -
Slot ID	´ ã+AP Ñ û N M ID
Status	´ ã+AP Ñ û N M Ù Á
Duplex	´ ã+AP Ñ û N M # Œ E W Ù Á
Speed	´ ã+AP Ñ û N M # Œ , ä

o¬ U P ’ Îo- -

o¬ u V ª ¢o- N AC u 4

2.61 show ap-config summary group

ª P AP Á Ä ´ ã+AP ’ Îož

show ap-config summary group

o¬ @ ƒ ª ¢o-

@ ƒ	T
apg-name	AP Á d f

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- —

o¬ F å †o- 1 y ª P AP Á Ä ´ ã+AP ’ Î

```
5XLMLH VK DS F VXPPDU\ JURXS JURXS
```

```
5DGLR  5DGLR ,'
(   HQDEOHG  '   GLVDEOHG  1   1RW H[LVW
&XUUHQW 6WD QXPEHU
&KDQQHO      *OREDO
3RZHU /HYHO   3HUFHQW

7RWDO $3 1XPEHU
7RWDO ,QVWDOO 6ORW 1XPEHU
7RWDO 2QOLQH 6ORW 1XPEHU
7RWDO 2IIOLQH 6ORW 1XPEHU

$3     HS  V 6ORWV ,QIRUPDWLRQ
,QVWDOO 6ORW 1XPEHU
2QOLQH 6ORW 1XPEHU
2IIOLQH 6ORW 1XPEHU
$3 PDF 6ORW ,' 5ROH 6ORW 1DPH 0RGHO 6ORW 0DF 5DGLR 5DGLR 8S 2II


  G  I          PDVWHU   0$3    6                1        1                RIIOL
  G  I         PDVWHU   G  I      D 0$3    7    G  I      D  (          (
RQOLQH
  G  I          PDVWHU   0$3    7    G  I      D   1         1               RII
  G  I          PDVWHU   0$3    7    G  I      D    1         1               RI
  G  I           PDVWHU   0$3    67    G  I      F    1         1               I
  G  I           PDVWHU   0$3    67    G  I      F    1         1               I
  G  I           PDVWHU   0$3    67    G  I      F    1         1               I
  G  I           PDVWHU   0$3    7    G  I      D    1         1               R
  G  I           PDVWHU   0$3    7    G  I      D    1         1               R
  G  I           PDVWHU   0$3    7    G  I      D    1         1               R
  G  I           PDVWHU   0$3    67    G  I      F    1         1               I
  G  I           PDVWHU   0$3    7    G  I      D    1         1               R
  G  I           PDVWHU   0$3    7    G  I      D    1         1               R
```

```
G I PDVWHU 0$3 67 G I F 1 1
G I PDVWHU 0$3 7 G I D 1 1 R
G I PDVWHU 0$3 7 G I D 1 1 R
```

```
5 X L M L H D V S K R F Z R Q X I S G D W L Q J O L V W
$ 3 1 $ 0 (                $ 3 3 , '          ) L O 7 H [ 7 L P H   $ 3 5 H V H W D G \

$ 3     ,                $ 3     ,                    <
  G         I            $ 3     (                    1
```

< † K y

<	ª ¢

```
&QW  :%,'   (QFU\ &DS
     [      [F

VXE GHVFULSWRU QXP
&QW  YHQGRU LG YHUVLRQ W\SH  YHUVLRQ OHQ   YHUVLRQ
     [ F     %227 9HU                      D    H
     [ F     $&7 6: 9HU                    E  F
     [ F     +: 9HU
```

< † K y

<	ª ¢
max radio	Â Ú 0 È M ƒ)ož
radio in used	3 ¨ … 0 È M ƒ)ož
encrypt num	— ¿ M u 4 % y é [u 4 ccmp y tkipož

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2.64 show ap-config wtp-info

ª P AP Ù Á ’ Îož

show ap-config wtp-info ap-name

o¬ @ ƒ ª ¢o-

@ ƒ	T
ap-name	} ò ¤ AP d fož

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- —

o¬ F å †o- 1 y ª P AP Ù Á ’ Îož

```
$& ,39  VWDWXV
$3 ,3 VWDWXV
$3 ,39  VWDWXV
$3 ,39  (1$%/(     HQDEOH
$3 ,39  (1$%/(     GLVDEOH
,39  $872&21),*     GLVDEOH
/RFDWLRQ 'DWD
6HVVLRQ ,'                    IE  F E FE   FDF   D
PDF W\SH          IXOO VXSSRUW
:73 1DPH          DS   H
$3 'RPDLQ 1DPH      DF UXLMLH FRP FQ
ZLUHG YODQ          SRUW LG
ZLUHG YODQ          SRUW LG
ZLUHG YODQ          SRUW LG
ZLUHG YODQ          SRUW LG
&ZBLQWHUIDFHBQDPH   %9,
&ZBZDQBLQWHUIDFHBLI[
&ZBZDQBLQWHUIDFHBLI[
8SJUDGLQJ 6WDWH     ,QLW
$3 ,PDJH ILOH      1$
5HDO YHUVLRQ              G  H
&XVWRP YHUVLRQ      $3B5*26      %
8SJUDGH YHUVLRQ     1$
8SJUDGH IURP $3     )$/6(
8SJUDGH IRU RWKHU $3 )$/6(
8SJUDGH IURP $&     )$/6(
:DLW IRU XSJUDGH    )$/6(
6XSSRUW GLVWU XSJ   758(
8SJUDGH EDQIZLGWK
8SJUDGH JURXS      8SJUDGH JURXS
```

<†Ky

AC IP(status)	AP acip ipv4 Ù Á

AC IPV6(status)	AP acip ipv6 Ù Á
AP IP(status)	AP apip ipv4 Ù Á
AP IPV6(status)	AP apip ipv6 Ù Á
AP IPV4 ENABLE	AP apip ipv4 enable F å
AP IPV6 ENABLE	AP apip ipv6 enable F å
IPV6 AUTOCONFIG	AP apip ipv6 address autoconfig default F å
Location Data	AP y å ’ Î
Session ID	AP AC • y CAPWAP … k ¢ ID
mac type	MACTYPE • º
WTP Name	AP d
AC Domain Name	AP AC ¿ d
wired vlan	AP LAN M 1 wired-vlan F å
wired vlan	AP LAN M 2 wired-vlan F å
wired vlan	AP LAN M 3 wired-vlan F å
wired vlan	AP LAN M 4 wired-vlan F å
Cw_interface_name	AP # + N M d
Cw_wan_interface_ifx	AP WAN M 1 « –
Cw_wan_interface_ifx	AP WAN M 2 « –
Upgrading State	AP ´ Ù Á
AP Image file	AP ´ bin d
Real version	AP g 1 Í Î
Custom version	AP g ÷ ^ ò Í Î
Upgrade version	AP ´ Í Î
Upgrade from AP	© k R AP ã b ” ´
Upgrade for other AP	© k ¿ U AP g ã b ” ´
Upgrade from AC	© k R AC ¤ ´
Wait for upgrade	© k ˆ - ´
Support distr-upg	© k u 4 ã b ” ´
Upgrade-banfwidth	¤ ´ k !
Upgrade group	¤ ´ Á

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2.65 show capwap detail

ª P CAPWAP Ÿ 3 ¦ Â ’ Îož

show capwap [index | [ip-address [port]]] detail

show capwap state

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- —

o¬ F å †o- 1 y ª P CAPWAP Ÿ 3 Ù Á ’ Î y

```
5XLMLH VKRZ FDSZDS VWDWH
&$3:$3 WXQQHO VWDWH    SHHUV    LV UXQ
,QGH[  3HHU ,3              3HHU 3RUW  6WDWH        0DF $GGUHVV
                                5XQ             D D
                                5XQ             D D
                                '7/6 7HDUGRZQ      D D
```

< † K y

<	ª ¢
Index	Ÿ 3 « –
Peer IP	Ÿ 3 + € / 6 ª -
Peer Port	€ M Z
State	Ÿ 3 Ù Á ’ Î
Mac Address	AP mac ª - k N AC õ ª P ¥ ’ Î

o¬ U P ’ Îo- -

port	Ÿ 3 € M Z

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- —

o¬ F å †o- 1 y ª P ª - 1.1.1.1 CAPWAP Ÿ 3 † Ï ‹ ’ Îož

```
5XLMLH VKRZ FDSZDS VWDWLVWLFV
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2.68 show version

ª P AP Í Î ’ Îož

show version { all | ap-name }

o¬ @ ƒ ª ¢o-

@ ƒ	T
all	ñ Ä ' 6
ap-name	6 ' 6 d f

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- —

o¬ F å †o- 1 y ª P ñ Ä AP Í Î ’ Îož

```
5XLMLH VKRZ YHUVLRQ DOO
$3 $3 ( V YHUVLRQ
  3URGXFW ,' $3 (
  6\VWHP XSWLPH
  +DUGZDUH YHUVLRQ
```

```
 6RIWZDUH QXPEHU      0
 6HULDO QXPEHU
 0$& DGGUHVV          G I     E

$3 $3  (   V YHUVLRQ
 3URGXFW ,'          $3   (
 6\VWHP XSWLPH
 +DUGZDUH YHUVLRQ
 6RIWZDUH YHUVLRQ     $3B5*26      %
 3DWFK QXPEHU        63
 6RIWZDUH QXPEHU      0
 6HULDO QXPEHU
 0$& DGGUHVV          D D EG  F E
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2.69 slot

F å 6 AP * d fož
slot slot-id {slot-name [secondary] | mac mac-address slot-name }

í ” 6 AP * d fož
no slot slot-id [{slot-name [secondary] | mac mac-address}]

o¬ @ ƒ ª ¢o-

@ ƒ	T
slot-id	$ y Z k 8 1~24
slot-name	AP * d f k Â Ú U F å 63 … k m q
secondary	´ û B æ R ³ AP
mac-address	³ AP mac ª -

o¬ Þ . F åo- Þ . Õ Ñ k Ì + AP * g x dož

o¬ x X % ”o- AP F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- ¥ x X N + ´ ã+AP — Õ Ä | k u 4 + ñ Ä AP g F åož
+ ´ û B æ R ³ AP x d ¬ } Í secondary @ ƒož
Â 9 MAC ª - F å ³ AP d f k 9 ‘ W ž Y ¿ F å k ? slot U Y F å c MAC ª - k + • MAC ª - ³ AP ¿ e k Ü ÿ G ³ AP ´ û ¼ © ô E Â 9 € M F åož

o¬ F å †o- y F å ' 6 ³ ' 6 d f

```
5 X L M L H F R Q I L J D S F R Q I L J $ 3
5 X L M L H F R Q I L J D S V O R W
```

2 y F å SLOT1 ´ û R ³ AP AP0001 d f 1#102

```
5 X L M L H F R Q I L J D S F R Q I L J $ 3
5 X L M L H F R Q I L J D S V O R W V H F R Q G D U \
```

3 y F å SLOT1 MAC ª - 0001.0001.0001 ³ AP d f 1#101 z
MAC ª - 0001.0001.0002 ³ AP d f 1#102

```
5 X L M L H F R Q I L J D S F R Q I L J $ 3
5 X L M L H F R Q I L J D S V O R W P D F
5 X L M L H F R Q I L J D S V O R W P D F
```

o¬ à • co- 1 y … show ap-config running x X k ò 0 + • AP F å ’ Îož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.70 timestamp

F å 6 AP ê AP Á Ä ñ Ä AP c 5 Î AC ž •ož
timestamp

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- -

o¬ x X % ”o- AP F å % ” ê AP Á F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- —

o¬ F å †o- 1 y F å AP0001 c 5 Î AC ž •

```
5 X L M L H F R Q I L J D S F R Q I L J $ 3
5 X L M L H F R Q I L J D S W L P H V W D P S
```

2 y F å AP Á g Default h Ä ñ Ä AP c 5 Î AC ž •

```
5 X L M L H F R Q I L J D S J U R X S G H I D X O W
5 X L M L H F R Q I L J D S J U R X S W L P H V W D P S
```

o¬ à • co- 1 y ò 0 AP y AC ž • © k%²

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.71 tran-data-show

ª P 6 AP Â n ÿ ñ AC _ _ ™ º ’ Îož

tran-data-show ap-name { exception | cpuinfo | memory | syslog | tech-support }

o¬ @ ƒ ª ¢o- c ™ 0(t“` 7…U ™4 t”& 7…b 5 X L M L H áR•Vá S&'y' 2cE4òr •Và Bqƒ&4SOS 0 c ’r • Bˆf 7…U ’w‘ Bx 7…b 5 X L M

o¬ F å †o- 1 y ª P AP0001 8 Ñ ™ º

```
5XLMLH FRQILJ DF WUDQ GDWD VKRZ $3 H[FHSWLRQ
```

2 y ª P AP0001 cpu ' Î

```
5XLMLH FRQILJ DF WUDQ GDWD VKRZ $3 FSXLQIR
```

3 y ª P AP0001 Ä ' Î

```
5XLMLH FRQILJ DF WUDQ GDWD VKRZ $3 PHPRU\
```

4 y ª P AP0001 ¯ * ™ º ' Î

```
5XLMLH FRQILJ DF WUDQ GDWD VKRZ $3 V\VORJ
```

5 y ª P AP0001 %² p v ¤ console ' Î

```
5XLMLH FRQILJ DF WUDQ GDWD VKRZ $3 WHFK VXSSRUW
```

o¬ à • co- 1 y ò 0 © k ª P 6 ™ º ' Îož

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- AC u 4 ¥ x X

2.72 tran-data-start

B H 6 AP _ _ ™ º ' Îož

tran-data-start ap-name { exception | memory | tech-support | tech-package }

o¬ @ ƒ ª ¢o-

@ ƒ	T
ap-name	6 AP d fož
exception	6 AP G 8 Ñ ™ º ' Îož
memory	6 AP G — Õ Ù Á ' Î k , yCPU ' Îo• Ä ' Îo• ¯ * ™ º ' Î g ò € M UP/DOWN ˆ ' Î hož
tech-support	6 AP v ¤ w G %² p v ¤ console ' Î
tech-package	6 AP v ¤ w G %² p v ¤ package ' Î

o¬ Þ . F åo- -

o¬ x X % ”o- AC F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- —

o¬ F å †o- d AP0001 MAC ª - 8832.0000.1111
1 y B H AP0001 8 Ñ ™ º ’ Î k ¨ AC † ^ © Ï ‘ ap_8832.0000.1111_exception.log

```
5XLMLH FRQILJ DF WUDQ GDWD VWDUW $3 H[FHSWLRQ
```

2 y B H AP0001 ¯ * ™ º ’ Î k ¨ AC † ^ © Ï ‘ ap_8832.0000.1111_syslog.log o•
ap_8832.0000.1111_memory.logo•ap_8832.0000.1111_cpuinfo.logož

```
5XLMLH FRQILJ DF WUDQ GDWD VWDUW $3 PHPRU\
```

3 y B H AP0001 % ² p v console ’ Î k ¨ AC † ^ © Ï ‘
ap_AP0001_8832.0000.1111_tech-console.logož

```
5XLMLH FRQILJ DF WUDQ GDWD VWDUW $3 WHFK VXSSRUW
```

4 y B H AP0001 % ² p v package ’ Î k ¨ AC † ^ © Ï ‘
ap_AP0001_8832.0000.1111_tech-package.tar.gzož

```
5XLMLH FRQILJ DF WUDQ GDWD VWDUW $3 WHFK SDFNDJH
```

o¬ à • co- 1 y … tran-data-show ap-name x X k ò 0 R 6 AP B H , ¼ ’ Îožtech-package x X v ¤ † ^
¬ } * tftp ˆ • ” n ÿ ñ PC † 9 e Ç ò 0ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.73 uninstall

g ” 6 AP 6 ³ AP x ’ Îož
uninstall slot-id [secondary]

o¬ @ ƒ ª ¢o-	@ ƒ	T

slot-id

3 STAMG

3.1 ap

¨ ¼ û O ò ¿ F å % ” F å ¥ ¿ AP ’ Îož

ap WORD

ï U Y ¥ x X no # ¾ R ¼ û O ò ¿ í ” 6 APož

no ap [WORD]

o¬ @ ƒ ª ¢o-

@ ƒ	T
WORD	AP d fož x † [1-64]

o¬ Þ . F åo- ¼ û O ò ¿ — ` ~ AP ’ Î

o¬ x X % ”o- ¼ û O ò ¿ F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- %² ¼ û O ò ¿ Â Ú ª • F å 5 V AP ’ Î k Ý 4 © Ï k Ë ß , • j ¨ U Pož P Ù k Ë ¼ û O ò ¿ F å AP ’ Î ž k } L AP © ¨ ¿ ož

o¬ F å †o- 1 y d %² v ´(1) ð ¼ û O ò ¿ F å%² V MAC ª - 00d0.f800.1001 AP ’ Î

```
5 X L M L H  F R Q I L J  F R Q W U R O  ] R Q H %² v ´  ð
5 X L M L H  F R Q I L J  F ] Q R H  D S  G  I
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.2 assoc-control

• o ¼ û O ò

assoc-control

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- R.ÆP Q ª • F å%² ¼ û O ò ¿ k Ý ’ k 1 k ± ß%² j ¨ U Pož

o¬ F å †o- 1 y F å%² d %² v ´(1) ð ¼ û O ò ¿

```
5 X L M L H  F R Q I L J  F R Q W U R O  ] R Q H %² v ´  ð
5 X L M L H  F R Q I L J  F ] R Q H
```

2 y í ” d %² v ´(1) ð ¼ û O ò ¿

```
5 X L M L H  F R Q I L J  Q R ‰RvQ W UøR O  ] R Q H
7 K H  R S U H U D W L R Q  Z L O O  F O H D U  W K H  F R Q W U R O  ] R Q H  F R Q I L J X U D W L R Q  Z K L F
& R Q W L Q X H "  > Q R @  \
5 X L M L H  F R Q I L J
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.4 inter-radio-balance num-balance dual-band

F å AP c È g2.4G y 5G hradio • ƒ O ¿ ú ® k o y ’ › yf9 ›
inter-radio-balance num-balance dual-ba Td0.0007 TTT2 1 Tf -0.0005 Tc5 Tc5 Tc53(5G)T5 Tc5 Tc5 Tc53(5G)T5-lo(l)-1(c)

o¬ x X % ”o- ¶ B F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- 3 6 AP radio • ƒ O ¿ ú ® k … kSTA Þ £ ¼ û radio ¿ ú Ý ß o y ’ › k Â z ¿ ú $ [Ý ßf9 › kSTA 1 t ! Í ¼ û k Y – - ñ ¿ ú û z radio ož ¥ F å N ¢ Â z ¿ ú radio Þ £ ¼ û radio c È ž ÿ | k 3 c È k é inter-radio-balance num-balance same-band F å ÿ |ož

o¬ F å †o- 1 y F å AP c È radio • ƒ O ¿ ú ® k o y ’ › yf9 › 10

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

2 y 1 AP c È radio • ƒ O ¿ ú ® k F å Ê Ö ñ ó • ›

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

o¬ à • co- -

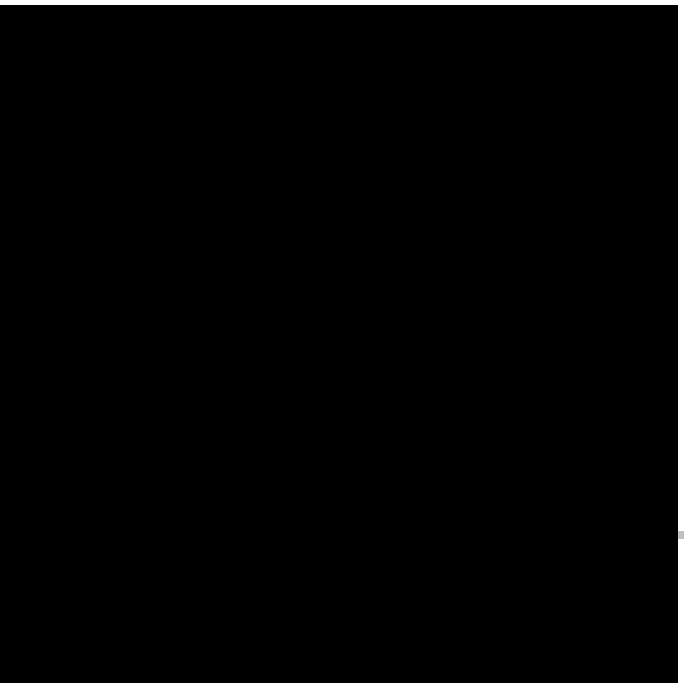
o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- R. AP

3.5 inter-radio-balance num-balance enable

’ñ AP radio • €´ð«ð¯ Z0£k
inter-a(d)-4(i)-4(o)-4(-)-2(b)-4(a)1(lan)-4(ce n)-4(u)-4(m)1(-b)-4(alan)-4(ceean)-4a-b



o¬ … 6 -o- • o 6 AP radio • ƒ O ¿ ú ® k e kAC 1 @ U ‘ š ¥ AP _ radio • ï ƒ O [› Ý f9 ›

o¬ F å †o- 1 y • o AP radio • ƒ O ¿ ú ® k

5XLMLH FRQILJ LQWHU UDGLR EDODQFH QXP EDODQFH HQDEOH

2AC 1 @ U ‘ š ¥ AP _

o¬ F å †o- 1 y F å AP c È radio • ƒ O ¿ ú ® k o y ’ › yf9 › 3

5XLMLH FRQILJ LQWHU UDGLR EDODQFH QXP EDODQFH VDPH EDQG HQD

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- R.ÆP

3.7 inter-radio-balance radio weight

F å radio • ¿ ú ® k ž radio • ¿ ú A † k F å radio Ó M k Ó M A † / ¿ ú A †
inter-radio-balance radio

o¬ o • j ¨o- -

o¬ u V ª ¢o- R.ÆP

3.8 package

ë • Ä € w µ Ä € F å % ”ož
package pkg-name

ï U Y ¥ x X no # ¾ í ” 6 Ä € F åož
no package [pkg-name]

o¬ @ ƒ ª ¢o-

@ ƒ	T
pkg-name	Ä € d f k x †[1,32]

o¬ Þ . F åo- — Ä € F å

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- R.ÆP Â Ú ª • F å 50 Ä € k Ý ’ k 1 k ± ß%² j ¨ U Pož

o¬ F å †o- 1 y F å%² d AAA Ä €

```
5XLMLH FRQILJ SDFNDJH $$$
5XLMLH FRQILJ SDFNDJH
```

2 y í ” d AAA Ä €

```
5XLMLH FRQILJ QR SDFNDJH $$$
7KH RSUHUDWLRQ ZLOO FOHDU SDFNDJH V FRQILJXUDWLRQ ZKLFK PD\
&RQWLQXH" >QR@\
5XLMLH FRQILJ
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.9 primary-sta

¨%² Ä € F å STAož
primary-sta mac-address

ï U Y ¥ x X no # ¾ í ” 6 Ä € STA F åož
no primary-sta

o¬ @ ƒ ª ¢o-

@ ƒ	T
mac-address	STA MAC ª - k ” ¥ ò H.H.H

o¬ Þ . F åo- —

o¬ x X % ”o- Ä € F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- %² Ä € Q ª • F å%² STA k œ 4 k … ¥ x X Û F å Ä € STA ž k ò ç Ä € STA
] Æ ¨ k é + N ~ $ož

o¬ F å †o- 1 y Ä € AAA F å MAC ª - 00d0.f800.0001 STA
5 X L M L H F R Q I L J S D F N D J H $ $ $
5 X L M L H F R Q I L J S D F N D J H S U L P D U \ V W D G I

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.10 secondary-sta

¨%² Ä € F å R STAož
secondary-sta mac-address

ï U Y ¥ x X no # ¾ í ” 6 Ä € R STA F åož
no secondary-sta [mac-address]

o¬ @ ƒ ª ¢o-

@ ƒ	T
mac-address	R STA MAC ª - k ” ¥ ò H.H.H

o¬ Þ . F åo- —

2 y ª P ¼ û O ò ¢ ù g Ù Á

5 X L M L H V K R Z D V V R F F R Q W U R O
$ V V R F L D W L R Q F R Q W U R O L V G L V D E O H G

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

3.12 show control-zone

ª P ¼ û O ò ¿ F å ’ Îož
show control-zone [summary | czone-name]

o¬ @ ƒ ª ¢o-

```
%² v´   ð          $3        G   I      I
                    $3        G   I
8 v´   ð          $3        G   I      I
8 v´   ð          $3       R I I O L Q H
8 v´   ð          Q  D
```

4 y ª P ñ Ä ¼ û O ò ¿ ¦ Â F å ' Î

```
5 X L M L H   V K R Z  F R Q W U R O  ] R Q H
1 R  F R Q W U R O  ] R Q H  F R Q I L J X U D W L R Q
```

5 y ª P d 1 v´ 1 ð ¼ û O ò ¿ ¦ Â F å ' Î

```
5 X L M L H   V K R Z  F R Q W´ U R ð O  ] R Q H
F R Q W U R O  ] R Q H        $3

%² v´   ð          $3        G   I      I
                    $3        G   I
8 v´   ð          $3        G   I      I
8 v´   ð          $3       R I I O L Q H
8 v´   ð          Q  D
```

6 y ª P d 5 v´ 1 ð ¼ û O ò ¿ ¦ Â F å ' Î

```
5 X L M L H   V K R Z  F R Q W´ U R ð O  ] R Q H
1 R  V X F K  F R Q W U R O  ] R Q H  F R Q I L J X U D W L R Q
```

o¬ U P ' Îo- -

o¬ u V ª ¢o- -

3.13 show package

ª P Ä € F å ' Îož

show package [pkg-name]

o¬ @ ƒ ª ¢o-

@ ƒ	T
pkg-name	ñ } ò 0 Ä € d f k x †[1,32]

o¬ x X % "o- Ô Ó % "

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- —

o¬ F å †o- 1 yªPñÄÄ€ Få

```
5XLMLH  VKRZ SDFNDJH
WRWDO SDFNDJH QXP
       SDFNDJHB
SULPDU\ 67$  QRQH
VHFRQGDU\ 67$ QXP
       SDFNDJHB
SULPDU\ 67$   G  I
VHFRQGDU\ 67$ QXP
  G  I
  G  I
  G  I
  G  I
```

2yªPñÄÄ€ Få

```
5XLMLH  VKRZ SDFNDJH
1R SDFNDJH FRQILJXUDWLRQ
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

4 WBS

4.1 ap-band-mode

F å 6 AP È < % ”ož

ap-band-mode {802.11a | 802.11b} radio [radio-id]

o¬ @ ƒ ª ¢o-	@ ƒ	T
	802.11a	n P 5G W • È <
	802.11b	n P 2G W • È <
	radio-id	} F å radio id k 8 1-96

o¬ Þ . F åo- À } , _ D } º Z ò ož

o¬ x X % ”o- AP F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- 1 y ¥ F å ì ÷ % º — å k u 4 ‘ F åož

2 y ¥ F å k M o AP — Õož

o¬ F å †o- 1 y µ ap680 F å % ” k w F å Radio 3 802.11a È <ož

no link-check { enable | disable }

o¬ @ ƒ ª ¢o- @ ƒ T

no F q •

o¬ Þ . F åo- ¼ {

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y ø • e è … Å y ož

5 X L M L H F R Q I L J O L Q N F K H F N H Q D E O H

2

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- -

o¬ … 6 -o- ¥ x X — ¬ … write x X ‘ k F å e < k ‘ ož ¥ x X u 4 no y default ù Öožpoeout default F å e k t ô — Õ ó • — poeout enable ê poeout disableožHÅAP % ” kAC U Y * exec-cmd • ” + AP F å o ê W + Ù ˆ ož c º Z AP ó • + Ù ˆ Ù Á U c k … poeout default x X k U Y … c%² ã Á Ä c º Z AP k Ô 9 ¿ _ ó • + Ù ˆ Ù Áož

o¬ F å †o- 1 y F å AP o + Ù ˆ
Ruijie#config
Ruijie(config)#poeout enable

o¬ à • co- 1 y … show poeout x X k U Y ò 0 F å Õ Ñ

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- R.ÆAP u 4 k N ’ 9 B ã AP º Zož

V J V U K L U X I K

— å ò F å ˆ % ” Y C © k ‘ F å ñ ê Ë J Oož
pdpoe-force { af | at25w | at36w | bt}

o¬ @ ƒ ª ¢o-

@ ƒ	T	
af	n P ò F å ˆ % ”	AF k%² ´ ô:13.0W
at25w	n P ò F å ˆ % ”	AT k 8 ´ ô:25.5W
at36w	n P ò F å ˆ % ”	AT36 k ´ ô :36.0W
bt	n P ò F å ˆ % ”	BT k š ´ ô:62.0W

o¬ Þ . F åo- —

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- -

o¬ … 6 -o- HÅAP % ” k AC U Y * exec-cmd • ” + AP F å ò ˆ % ” ê H ƒ ò F å ˆ % ”ož u 4 ó • ò ˆ % ” F åož

o¬ F å †o- 1 y F å ò ^ % ” bt
Ruijie(config)# pdpoe-force bt
2 y H ƒ ò ^ % ” F å
Ruijie(config)# no pdpoe-force

o¬ à • co- 1 y … show running-config x X k U Y ò 0 F å Õ Ñ

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- R. AP u 4ož

4.5 show dot11 associations

ò 0 — ¿ à * N ’ Îož
show dot11 associations H.H.H interface-name

o¬ @ ƒ ª ¢o-

@ ƒ	T
H.H.H	6 STA MAC ª - k ” H.H.H
Interface-name	6 STA ¼ û N M d

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 0025.9c9b.aeb5 ï Ï ‹ ’ Î

```
5XLMLH VKRZ GRW DVVRFLDWLRQV F E DHE
7KH GHWDLOV RI FOLHQW FG EG I G
    566,
    615
    $,'
    5; 'DWD
    5; 0DQDJHPHQW
    5; &RQWURO
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- R..ap u 4

4.6 show dot11 associations all-client

ò 0 — ¿ à * N ñ Y ï ’ Îož

show dot11 associations all-client

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 ñ Ä ï ’ Î

```
5XLMLH  VKRZ GRW   DVVRFLDWLRQV DOO FOLHQW
5$',2 ,' :/$1 ,' $''5          $,'  &+$1 5$7(B'2:1 5$7(B83 566, $662&B7,0( ,
(53  67$7(  &$36 +7&$36 9+7B08B&$3 +(&$36
                    F  E DH E              0        0
 [    [     (6V        68
```

< † K y

<	ª ¢
RADIO-ID	RADIO ID
WLAN-ID	WLAN ID
ADDR	Ä € MAC ª -
AID	ö œ ID
CHAN	’ 3
RATE_DOWN	G , ä
RATE_UP	N v , ä
RSSI	N v ’ Z † 6 P
ASSOC_TIME	¨ ¿ ž •
IDLE	— v O ž x g a h
TXSEQ	G † ~ ç Z
RXSEQ	N v † ~ ç Z
ERP	© k ERP ‘ ï
STATE	• š ¼ û Ù Á k) ù — @ ð Þ # k ® 0x3

CAPS	# ‘ • Ä € ›
HTCAPS	# ‘ • 11n HT ›
VHT_MU_CAP	SU ê ñ MU
HECAPS	# ‘ • 11ax HE ›

o¬ U P ’ Îo- -

o¬ u V ª ¢o- R.ap u 4

o¬ U P ’ Îo- -

o¬ u V ª ¢o- R.ÆP u 4

4.8 show dot11 channels all

ò 0 — ¿ à * u 4 ñ Ä W • ’ 3 ’ Îož

show dot11 channels all interface-name

o¬ @ ƒ ª ¢o-

@ ƒ	T
Interface-name	6 — ¿ à * k ” radioid/0

o¬ x X % ”o- Ô Ó % ”

o¬ Þ , tV6 •ð E0· × UÇE1s=Â H ›ðS-ÀuP• I læúÐ

4.9 show dot11 radio-status

ò 0 ñ Ä 0 È M ¨ ¿ Ù Á y ’ Îož

show dot11 radio-status

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ ... 6 -o- -

o¬ F å †o- 1 y ò 0 ñ Ä 0 È M ¨ ¿ Ù Á y ’ Î

```
5XLMLH VKRZ GRW  UDGLR VWDWXV
UDGLR VWDWXV  FDSDELOLW\

    RQOLQH  E J Q
    RQOLQH  D Q DF D[
```

< † K y

<	ª ¢
radio	Radio ID
Status	Radio ¢ ù Ù Á
Capability	0 È M u 4

o¬ U P ’ Îo- -

o¬ u V ª ¢o- R.ÆP u 4

4.10 show dot11 rate-set

ò 0 ñ Ä 0 È M , ä ¤ ’ Îož

show dot11 rate-set

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 ñ Ä 0 È M , ä ¤ ’ Î

```
5XLMLH VKRZ GRW UDWH VHW
//&% 5$7( 6(7
0DQGDWRU\ UDWH 0
6XSSRUW UDWH 0 0 0 0 0 0 0 0
0DQGDWRU\ Q 0&6 LQGH[
6XSSRUW Q 0&6 LQGH[
//&% 5$7( 6(7
0DQGDWRU\ UDWH 0 0 0
6XSSRUW UDWH 0 0 0 0 0
0DQGDWRU\ Q 0&6 LQGH[
6XSSRUW Q 0&6 LQGH[
```

< † K y

<	ª ¢
LLCB(1) RATE SET	Radio , ä ¤
Mandatory rate	ò , ä
Support rate	u 4 , ä ¤
Mandatory 11n MCS index	11n ò , ä « –
Support 11n MCS index	11n u 4 , ä « –

o¬ U P ’ Îo- -

o¬ u V ª ¢o- R. ap u 4

4.11 show dot11 mbssid

ò 0] ë • BSS ç nož

show dot11 mbssid

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0] ë • BSS ç n

```
5XLMLH VKRZ GRW PEVVLG
  QDPH 'RW UDGLR
ZODQ LG
  VVLG VVLG ZODQ
 EVVLG D F IEEI
```

< † K y

<	ª ¢
name	— ¿ ÿ N M d f
wlan id	WLAN ID
ssid	Æ ¤ ö œ
bssid	BSS ö œ

o¬ U P ’ Îo- -

o¬ u V ª ¢o- R.ap u 4

4.12 show dot11 wireless

ò 0 — ¿ à * , ¼ — ¿ ’ Î y F åož

show dot11 wireless interface-num

o¬ @ ƒ ª ¢o-

@ ƒ	T
Interface-num	— ¿ N M k ” radioid/0

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 radio 1 , ¼ — ¿ ’ Î y F å

```
5XLMLH VKRZ GRW ZLUHOHVV
1HWZRUN 1DPH 66,' 18//
   ,QWHUIDFH 'RW UDGLR
   9ODQ JURXS LG
   0$& $GGUHVV F IEEI
   %HDFRQ 3HULRG
   576 7KUHVKROG
   )UDJPHQW 7KUHVKROG
```

```
   5DGLR 0RGH                    QJBKW
   &KDQQHO
   1RLVH )ORRU                     G%P
   &KDQQHO ZLGWK                   0K]
   $FWXDO 7[ 3RZHU                GEP
   0D[ 7[SZU /LPLW                GEP
   0LQLPXP 7[SZU                  GEP
   &XUUHQW 7[ 3RZHU /HYHO
   &XUUHQW &&$
7[ 5[ &KDLQ
   $QWHQQD *DLQ
   7[ &KDLQ 0DVN                 [
   1XP RI $QWHQQD 7[
   5[ &KDLQ 0DVN                 [
   1XP RI $QWHQQD 5[
3RZHU 6DYH
   '7,0 3HULRG
   '7,0 &RXQW
   6WDWLRQV ,Q 3RZHU 6DYH
   6WDWLRQV 7RWDO
  Q $JJUHJDWLRQ
   $ PSGX 6WDWXV                 (QDEOH
7[ 5HWULHV
   7[ VKRUW   UHWULHV
   7[ ORQJ    UHWULHV
7RWDO 6WDWLRQV
   7RWDO
   1RQ (53
   1RQ +7
   +7
```

<†Ky

<	ª¢

Noise Floor	™ º
Channel width	k !
Actual Tx Power	Ž G ä
Max Txpwr Limit	Â Ý G ä
Minimum Txpwr	Â 4 G ä
Current Tx Power Level	¢ ù ä ã ›
Current CCA	CCA f9 ›
Antenna Gain	Þ ¿ Í
Tx Chain Mask	G Þ ¿ Q A
Num of Antenna Tx	G Þ ¿ *ƒ*
Rx Chain Mask	N v Þ ¿ Q A
Num of Antenna Rx	N v Þ ¿ *ƒ*
DTIM Period	DTIM u Ê
DTIM Count	DTIM *ƒ*
Stations In Power Save	- STA *ƒ*
Stations Total	STA È *ƒ*
A-mpdu Status	A-MPDU ü ` Ù Á
Tx short retries	? l M n) *ƒ*
Tx long retries	x l M n) *ƒ*
Total	¢ ù 0 È M STA È *ƒ*
Non-ERP	¢ ù 0 È M ³ 11G STA *ƒ*
Non-HT	¢ ù 0 È M ³ 11N STA *ƒ*
HT20	¢ ù 0 È M 11N 20M È ! STA *ƒ*

o¬ U P ’ Îo- -

o¬ u V ª ¢o- R.ap u 4

4.13 show dot11 wlan

ò 0 wlan , ¼ — ¿ ’ Î y F åož

show dot11 wlan wlan-id

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
Wlan-id	6 ò 0 wlan

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 wlan 2 , ¼ — ¿ ’ Î y F å

```
5XLMLH  VKRZ GRW  ZODQ
1HWZRUN 1DPH  66,'  VVLG ZODQ
   ,QWHUIDFH                'RW  UDGLR
   9ODQ  JURXS  LG
   0$& $GGUHVV              H        E
   %HDFRQ 3HULRG
   576 7KUHVKROG
   )UDJPHQW 7KUHVKROG
   5DGLR 0RGH                DFBYKW  B J
   &KDQQHO
   1RLVH )ORRU                 G%P
   &KDQQHO ZLGWK               0K]
   $FWXDO 7[ 3RZHU            GEP
   0D[ 7[SZU /LPLW            GEP
   0LQLPXP 7[SZU              GEP
   &XUUHQW 7[ 3RZHU /HYHO
   0FDVW UDWH
   &XUUHQW &&$
7[ 5[ &KDLQ
   $QWHQQD *DLQ
   7[ &KDLQ 0DVN             [
   1XP RI $QWHQQD 7[
   5[ &KDLQ 0DVN             [
   1XP RI $QWHQQD 5[
3RZHU 6DYH
   '7,0 3HULRG
   '7,0 &RXQW
   6WDWLRQV ,Q 3RZHU 6DYH
   6WDWLRQV 7RWDO
  Q $JJUHJDWLRQ
   $ PSGX 6WDWXV             (QDEOH
7[ 5HWULHV
   7[ VKRUW   UHWULHV
   7[ ORQJ    UHWULHV
7RWDO 6WDWLRQV
   7RWDO
   1RQ (53
   1RQ +7
```

+ 7

< † K y

<	ª ¢
Network Name (SSID)	+ • BSS ö œ
Interface	N M d f
Vlan (group) id	Ç VLAN ê ñ VLAN GROUP
MAC Address	— ¿ ÿ N M MAC ª -
Beacon Period	Beacon l G u Ê
RTS Threshold	} ü g RTS/CTS W ô Â 4 ƒ G l x †
Fragment Threshold	ã Ìf9 ›
Radio Mode	0 È M % ”
Channel	W • ’ 3
Noise Floor	™ o
Channel width	k !
Actual Tx Power	Ž G ä
Max Txpwr Limit	Â Ý G ä
Minimum Txpwr	Â 4 G ä
Current Tx Power Level	¢ ù ä ã ›
Mcast rate	Á n , ä
Current CCA	CCA f9 ›
Antenna Gain	Þ ¿ Í
Tx Chain Mask	G Þ ¿ Q A
Num of Antenna Tx	G Þ ¿ ƒ
Rx Chain Mask	N v Þ ¿ Q A
Num of Antenna Rx	N v Þ ¿ ƒ
DTIM Period	DTIM u Ê
DTIM Count	DTIM ƒ
Stations In Power Save	- STA ƒ
Stations Total	STA È ƒ
A-mpdu Status	A-MPDU ü ` Ù Á
Tx short retries	? l M n) ƒ
Tx long retries	x l M n) ƒ
Total	¢ ù 0 È M STA È ƒ
Non-ERP	¢ ù 0 È M ³ 11G STA ƒ
Non-HT	¢ ù 0 È M ³ 11N STA ƒ
HT20	¢ ù 0 È M 11N 20M È ! STA ƒ

o¬ U P ’ Îo- -

o¬ u V ª ¢o- R..ap u 4

4.14 show ebag

ò 0 ÿ 0 , ¼ — ¿ ’ Î y F åož

show ebag

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ ... 6 -o- -

o¬ F å †o- 1 y ò 0 ÿ 0 , ¼ — ¿ ’ Î

5 X L M L H V K R Z H E D J

D X W R H E D J V W D W X V G L V D E O H

< † K y

<	ª ¢
Auto ebag status	© k • o ÿ 0 F å

o¬ U P ’ Îo- -

o¬ u V ª ¢o- R..ap u 4

5 DATA-PLANE

5.1 data-plane

F å z n ô G A Mož

data-plane queue-weight unicast-packet-weight multicast-packet-weight broadcast-packet-weight unknown-multicast-packet-weight unknown-unicast-packet-weight

ï U Y ¥ x X no # ¾ = @ ƒ Þ . ›ož

no data-plane queue-weight

F å z n ô G X Î ¾ • u Ê y • ƒož

data-plane token token-interval token-base-rate

ï U Y ¥ x X no # ¾ = @ ƒ Þ . ›

no data-plane token

F å z n — ¿ ô G Œ ož

data-plane wireless-broadcast { enable | disable }

ï U Y ¥ x X no # ¾ H ƒ 1 ñ Ä z n g q M ô Gož

no data-plane wireless-broadcast

o¬ @ ƒ ª ¢o-

@ ƒ	T
queue-weight	F å c • º † z n ô G A Mož
wireless-broadcast	F å © k 1 ñ Ä z n † ô G ñ q Mož
unicast-packet-weight	% n † ô G A M k 8 1-100 k Þ . › 16
multicast-packet-weight	Á n † ô G A M k 8 1-50 k Þ . › 4
broadcast-packet-weight	z n † ô G A M k 8 1-50 k Þ . › 2

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- -

o¬ F å †o- 1 y — å c • º † z n ô G Ó M k c ž • o g q M ô G ñ Ä z n †ož

```
5XLMLH FRQILJ GDWD SODQH TXHXH ZHLJKW
5XLMLH FRQILJ GDWD SODQH WRNHQ
5XLMLH FRQILJ GDWD SODQH ZLUHOHVV EURDGFDVW HQDEOH
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

o¬ … 6 -o- F å WLOG … k g Ä Ä ã Fož ò ç Ä Ü k é WLOG 1 … â Âož
WLOG ¼ { k g ñ Ä ¥ ’ Î Ä C Ä ã F Ä K yož

o¬ F å †o- 1 y F å WLOG • o ¼ {

```
5XLMLH FRQILJXUH WHUPLQDO
(QWHU FRQILJXUDWLRQ FRPPDQGV RQH SHU OLQH (QG ZLWK &17/ =
5XLMLH FRQILJ ZODQ GLDJ HQDEOH
5XLMLH FRQILJ QR ZODQ GLDJ HQDEOH
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

Q ¸ `-WLAN ØNe

Ú ` Ÿ4¡ WLAN ØNe Q ¸ `,Ì G Y • È Ù À ¹ ß0´8V Ö

1. ØNeA× z
2. ØNe Ð7þ

1 / — • …

1.1 schedule session

ë •o• • WLAN ² † sessionož
schedule session sid

í ”o• H ƒ WLAN ² † sessionož
no schedule session sid

o¬ @ ƒ ª ¢o-

@ ƒ	T
sid	} ë •o• • ê í ” ² † session ID kR..AP — Õ H › 8 [1 k8] ož
radio mem	} • ê í ” ² † session Radio ID k H › 8 [1 kAP Radio ƒ] ož Þ . n P ¨ AP ñ Ä Radioož

o¬ Þ . F åo- ² † session ¨ož
WLAN ê Radio Z Ä • ² † sessionož

o¬ x X % ”o- ¶ B F å % ”o•WLAN F å % ”o•R…AP N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- … 0 È ² † k · À Ù ¯ ¨ ¶ B F å % ” ë • ² † session k À e õ U Y F å ¥ ² † session ž • @ ƒ z ò ç ² † session] Æ ë • k ¥ x X Ü • ož
ë • ² † session e k U Y ¨ WLAN F å % ” 6 ¥ WLAN • ² † session z ¨ N M F å % ” 6 ¥ AP 0 È M • ² † sessionož

ò ç ¨ ¶ B F å % ” í ” ² † session k ; " • ¨ WLANo•Radio ² † session í ”ož

o¬ F å †o- 1 y ë • ² † session 1

```
5XLMLH FRQILJ VFKHGXOH VHVVLRQ
```

2 y ¨ WLAN 1 • ² † session 1ož

```
5XLMLH FRQILJ ZODQ FRQILJ
5XLMLH FRQILJ ZODQ VFKHGXOH VHVVLRQ
```

3 y ¨R…AP Radio 1 • ² † session 1ož

```
5XLMLH FRQILJ LI 'RW UDGLR VFKHGXOH VHVVLRQ
```

o¬ … 6 -o- ² † session ë • e k Ù ¯ } 6 ² † ž • <ož
? ² † session Â Ú U Y F å 8 ž • < k ? ž • < m ² † ž • y ¥ ž • ÿ | ™ Ê k Ú ž • <
ž • y u Ê U Y M L k M L ž • ² † c ý ÿ |ož

"´ ï¨ · Ì o ³ ¨ · Š ‘ N G ï¨ · ¾ • Ÿ ¨ · d

"´ 8 g ; Y ï Y } — ³ Y • Š ‘ N G ï Y ¾ • ¢ ; Y d

o¬ F å †o- 1 y F å ² † session 1 ² † ž • © ? Þ 21 y 30 ñ † 8 Þ 8 y50 ož

```
5XLMLH FRQILJ VFKHGXOH VHVVLRQ WLPH UDQJH SHULRG VXQ WR V
```

2 y F å ² † session 1 ² † ž • © W • ™ 22 y 00 ñ † 8 Þ 6 y00 y u Í 18 y 00 ñ † 8 Þ 9 y00ož

```
5XLMLH FRQILJ VFKHGXOH VHVVLRQ WLPH UDQJH SHULRG PRQ WR I
5XLMLH FRQILJ VFKHGXOH VHVVLRQ WLPH UDQJH SHULRG VDW WR V
```

3 y F å ² † session 1 ² † ž • © u%²o• u o• u < 10 y 00 ñ 12 y00ož

```
5XLMLH FRQILJ VFKHGXOH VHVVLRQ WLPH UDQJH SHULRG PRQ WLPH
5XLMLH FRQILJ VFKHGXOH VHVVLRQ WLPH UDQJH SHULRG ZHG WLPH
5XLMLH FRQILJ VFKHGXOH VHVVLRQ WLPH UDQJH SHULRG IUL WLPH
```

o¬ à • co- 1 y … show schedule session x X k U Y ò 0 ² † session ž • < F åož

o¬ U P ’ Îo- 1 y ò ç M Ö ² † session %² ž • < k ; " • F å 1 ~ $ = Ä F åož g — U P ’ Î h

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

1.3 show schedule session

ò 0 ² † session , ¼ F åož
show schedule session [sid]

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
sid	} ò 0 ² † session ID k H › 8 [1 k64] ož Þ . n P ò 0 ¶ B] ë • ² † sessionož

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- … ¥ x X U Y ò 0] ë • ² † session F å k , ñ Ä ž • < F åož

ò ç F å ž • < ² † u Ê m ñ Ä ™ Ê k ; " 1 7 Á 6 † . Û ª P è Sun to Sat ož

o¬ F å †o- 1 y ò 0 ñ Ä ² † session F åož

```
5XLMLH  VKRZ VFKHGXOH VHVVLRQ
6FKHGXOH 6HVVLRQ
  WLPH UDQJH  SHULRG PRQ WLPH     WR
  WLPH UDQJH  SHULRG ZHG WLPH     WR
6FKHGXOH 6HVVLRQ
  WLPH UDQJH  SHULRG 6XQ WR 6DW WLPH     WR
```

< † K y

<	ª ¢
Schedule Session	² † session ID
time-range	² † session ž • < F å
period	² † session ž • < u Ê
time	² † session ž • < ž •

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2 —]- , ð

2.1 band-select acceptable-rssi

F å È]- - ! U Y N I STA ’ Z † ’ož
band-select acceptable-rssi value

Ê Ö È]- - ! U Y N I STA ’ Z † ’ ó • ›ož
no band-select acceptable-rssi

o¬ @ ƒ ª ¢o-

@ ƒ	T
value	F å È]- - ! U Y N I STA RSSI ’ k 8 [-100 k-50] k % y dBmož

o¬ Þ . F åo- -80 dBm

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- È]- - ! U N I ’ Z † k 9 ã Ä U ¼ û y U ¼ û STA kRSSI Ý 9 › t
• © ª ¨ U ¼ û STA kSTA ’ Î k t ¼ h z , F kRSSI 4 9 › STA ’ Î 1 t ¿ ož

2.2 band-select access-denial

F å ! Í E È STA N µ 2.4G È <) ƒ ož
band-select access-denial value

Ê Ö ! Í E È STA N µ 2.4G È <) ƒ ó • ›ož
no band-select access-denial

o¬ @ ƒ ª ¢o-

@ ƒ	T
value	F å ! Í E È STA N µ 2.4G È <) ƒ k 8 [0 k10] ož

o¬ Þ . F åo- 2

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- È]- - ! ! Í E È STA N µ 2.4G È <) ƒ Ð 4 È]- - ! + E È STA N µ 2.4G È < g ò i † y ›
n k n P AP v ñ E È STA ¨ 2.4G È < Ò G ß n e è • š ¬ L e õ • ÷ › •ož

" ã Q Ÿ ” : 4 V ý Ô N _ Ñ ì ¾ ¶ Ÿ ý ! v Ô 4 STA & ò ” d

o¬ F å †o- 1 y F å È]- - ! ! Í E È STA N µ 2.4G È <) ƒ 4)ož
5 X L M L H F R Q I L J E D Q G V H O H F W D F F H V V G H Q L D O

o¬ à • co- 1 y … show running-config x X k U Y ò 0 È]- - ! ! Í E È STA N µ 2.4G È <) ƒ ož
2 y … show band-select configuration x X k U Y ò 0 È]- - ! ! Í E È STA N µ 2.4G È <) ƒ ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.3 band-select age-out

F å STA ’ Î ï ž •ož
band-select age-out { dual-band value | suppression value }

Ê Ö STA ’ Î ï ž • ó • ›ož

no band-select age-out { dual-band | suppression }

o¬ @ ƒ ª ¢o-

@ ƒ	T
dual-band value	F å E È STA ' Î ï ž • k 8 [20 k120] k % y aož
suppression value	F å ò STA ' Î ï ž • k 8 [10 k60] k % y aož

o¬ Þ . F åo- dual-band y 60 a
suppression y 20 a

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- STA ' Î ï ž • k / STA ' Î ÿ x u Ê k u Ê Þ x kAP + STA È < ä E Þ } ßož
ò ç — ¿ ï à * Æ o ¨ 2.4G y 5G È < $ • ä Eg ï W o• o — ¿ à * È < u 4 hk U Y F å û 4
› z F $ k ò ç — ¿ ï à * Æ o ¨ 2.4G y 5G È < $ • ä E k U Y F å û Ý ›ož
× É 4 STA ð o $ ¨ · " ½ % STA ð o $ ¨ · f • þ 8 • d

o¬ F å †o- 1 y F å E È STA ' Î ï ž • 120 ož

```
5XLMLH FRQILJ EDQG VHOHFW DJH RXW GXDO EDQG
```

2 y F å ò STA ' Î ï ž • 60 ož

```
5XLMLH FRQILJ EDQG VHOHFW DJH RXW VXSSUHVVLRQ
```

o¬ à • co- 1 y … show running-config Â ðU0Ð7•´`•

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ¼ { È]- - ! ož

o¬ x X % ”o- WLAN F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- • o È]- - ! ¬ } á Ú ^ y
1 yWLAN ¥ 0 AP © E È APož
2 yWLAN c ž ¥ 0 ñ E È AP Radio ož
ò ç • « ° á Ú ^ k • ‘ } • o ¥ WLAN È]- - ! ož

" ´ — s 4 V ý Ô _ Ÿ WLAN ø } þ æ 4 2.4G AP h Š AP " ³ • 4 STA Ü â Ÿ ý Ô þ 5G 4 m d

o¬ F å †o- 1 y • o WLAN 1 È]- - !

```
5XLMLH FRQILJ ZODQ FRQILJ
5XLMLH FRQILJ ZODQ EDQG VHOHFW HQDEOH
```

2 y ¼ { WLAN 1 È]- - ! ož

```
5XLMLH FRQILJ ZODQ FRQILJ
5XLMLH FRQILJ ZODQ QR EDQG VHOHFW HQDEOH
```

o¬ à • co- 1 y … show running-config x X k U Y ò 0 ñ Ä WLAN È]- - ! © o © ¼ {ož
2 y … show wlan-config cb wlan-id x X k U Y ò 0 î WLAN È]- - ! © o © ¼ {ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.5 band-select probe-count

F å ò STA M y u Ê ‹ ƒ ›ož
band-select probe-count value

Ê Ö ò STA M y u Ê ‹ ƒ › ó • ›ož

no ba

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ST A ¨ ñ Ä u 4 ’ 3 M y þ T WLAN u Ê k - © ¨ c%² ’ 3 Ò) M y þ T • œ k y STA Ü Ä ¼ož ò ç Ž = 3 … STA þ T u Ê k ; " Â ñ F å è , c › k U Y U ä œ ð è ä z k é k … ó • F å / Uož

" ´ Ÿ £ æ 4 2.4G STA ó ” Ÿ £ WLAN ë 8 STA p A M ; Y * « d

o¬ F å †o- 1 y F å STA M y þ T u Ê y ’ 1 D aož

5 X L M L H F R Q I L J E D Q G V H O H F W V F D Q F \ F O H

o¬ à • co- 1 y … show running-config x X k U Y ò 0 STA M y þ T u Ê y ’ F åož
2 y … show band-select configuration x X k U Y ò 0 STA M y þ T u Ê y ’ F åož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.7 show band-select configuration

ò 0 È]- - ! , ¼ F åož
show band-select configuration

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- @ ƒ @ ƒ

```
$FFHVV 'HQLDO &RXQW
$JH 2XW 'XDO %DQG VHFRQGV
$JH 2XW 6XSSUHVVLRQ VHFRQGV
3UREH &\FOH &RXQW
6FDQ &\FOH 3HULRG 7KUHVKROG PLOOLVHFRQGV
```

< † K y

<	ª ¢
Acceptable Client RSSI	U Y N I STA ' Z † '
Access Denial Count	! Í E È STA N µ 2.4G È <) ƒ
Age Out Dual Band	E È STA 'Î ï ž •
Age Out Suppression	ò STA 'Î ï ž •
Probe Cycle Count	ò STA M y u Ê ‹ ƒ ›
Scan Cycle Period Threshold	STA M y þ T u Ê y '

o¬ U P ' Îo- -

o¬ u V ª ¢o- -

2.8 show band-select statistics

ò 0 È]- - ! g Ï ‹ ' Îož
show band-select statistics

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- … ¥ x X U Y ò 0 È]- - ! g Ï ‹ ' Îož

o¬ F å †o- 1 y ò 0 È]- - ! , ¼ F åož

```
5XLMLH VKRZ EDQG VHOHFW VWDWLVWLFV
%DQG 6HOHFW 6WDWLVWLFV
  1XPEHU RI GXDO EDQG FOLHQW
  1XPEHU RI GXDO EDQG FOLHQW DGGHG
  1XPEHU RI GXDO EDQG FOLHQW H[SLUHG
  1XPEHU RI VXSSUHVVHG FOLHQW
  1XPEHU RI VXSSUHVVHG FOLHQW DGGHG
```

1XPEHU RI VXSSUHVVHG FOLHQW H[SLUHG

< † K y

<	ª ¢
Number of dual band client	¢ ù E È STA ƒ O
Number of dual band client added	ñ Ä œ ð ß E È STA ƒ O
Number of dual band client expired	] Æ ï J E È STA ƒ O
Number of suppressed client	¢ ù ò STA ƒ O
Number of suppressed client added	ñ Ä œ ð ß ò STA ƒ O
Number of suppressed client expired	] Æ ï J ò STA ƒ O

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

Q ¸ `-WLAN] <

Ú ` Ÿ4¡ WLAN ] < Q ¸ `,Ì G Y • È Ù À ¹ ß0´8V Ö

1. RSNA
2. CPP
3. NFPP

1 RSNA

1.1 authtimeout forbidcount

F å š) W ô key A ; â Â e k W 2 ¼ û) ƒ ož
authtimeout forbidcount count

í ” F åož
no authtimeout forbidcount

Ê Ö Þ . F åož
default authtimeout forbidcount

o¬ @ ƒ ª ¢o-

@ ƒ	T
count	š) W ô key A ; â Â e k W 2 ¼ û) ƒ ož

o¬ Þ . F åo- š) W ô key A ; â Â e k W 2 ¼ û) ƒ 10)ož

o¬ x X % ”o- WLAN ¶ F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å š) W ô key A ; â Â e k W 2 ¼ û) ƒ 5)ož
5 X L M L H F R Q I L J Z O D Q V H F D X W K W L P H R X W I R U E L G F R X Q W

o¬ à • co- 1 y … show running-config x X k U Y ò 0 F å © k ÿ |ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

1.2 authtimeout forbidtime

F å š) W ô key A ; â Â e k W 2 ¼ û ž • • œ k Y a % yož

authtimeout forbidtime time

í ” F åož

o¬ @ ƒ ª ¢o-

@ ƒ	T
count	Á n % W # Œ † M n) ƒož

o¬ Þ . F åo- 7)ož

o¬ x X % ”o- WLAN ¶ F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å Á n % W # Œ † M n) ƒ 5)ož

5 X L M L H F R Q I L J Z O D Q V H F D X W K W L P H R X W J U R X S F R X Q W

o¬ à • co- 1 y … show running-config x X k U Y ò 0 F å © k ÿ |ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

1.4 authtimeout grouptime

F å Á n % W # Œ † Ý ž ž • k Y D a % yož
authtimeout grouptime timeout

í ” F åož
no authtimeout grouptime

Ê Ö Þ . F åož
default authtimeout grouptime

o¬ @ ƒ ª ¢o-

@ ƒ	T
timeout	Á n % W # Œ † Ý ž ž •ož

o¬ Þ . F åo- 1200ms ož

o¬ x X % ”o- WLAN ¶ F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å Á n % W # Œ † Ý ž ž • 100msož

5 X L M L H F R Q I L J Z O D Q V H F D X W K W L P H R X W J U R X S W L P H

o¬ à • co- 1 y … show running-config x X k U Y ò 0 F å © k ÿ |ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

1.5 authtimeout paircount

F å % n % W # Œ † M n) ƒ ož
authtimeout paircount count

í ” F åož
no authtimeout paircount

Ê Ö Þ . F åož
default authtimeout paircount

o¬ @ ƒ ª ¢o-

@ ƒ	T
count	% n % W # Œ † M n) ƒ ož

o¬ Þ . F åo- 7)ož

o¬ x X % ”o- WLAN ¶ F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å % n % W # Œ † M n) ƒ 5)ož

5 X L M L H F R Q I L J Z O D Q V H F D X W K W L P H R X W S D L U F R X Q W

o¬ à • co- 1 y … show running-config x X k U Y ò 0 F å © k ÿ |ož

o¬ @ ƒ ª ¢o-

@ ƒ	T
enable	o RSN • š % ”ož
disable	¼ { RSN • š % ”ož

o¬ Þ . F åo- ¼ { RSN • š % ”ož

o¬ x X % ”o- WLAN ¶ F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- x X © Û o RSN • š % ”ož
Q Ä o 4 RSN • š % ” õ ¨ RSN % ” + % • ” y N µ • š • ” g F å k k é F å — |ož
… RSN • š ž k ¬ } F ` F å % • ” y N µ • š • ”ož ò ç Q F å 4 % • ” k ê ñ Q F å 4 N µ • š
• ” k ê ñ ñ C Ì F å k ; " — ¿ ï € 1 — c ¼ û ñ — ¿ à Ìož
RSN • š % ” k / © * o ñ ª WPA2 • š % ”ož ò ç%² WLAN c ž • o 4 WPA • š % ” y RSN • š %
” k ; " _ • š % ” % • ” y N µ • š • ” ©%² ý k • F å % • ” y N µ • š • ” 1 ~ $ $
ù % • ” y N µ • š • ”ož

o¬ F å †o- 1 y F å WLAN 1 • š % ” RSN • š % ”ož

```
5 X L M L H F R Q I L J Z O D Q V H F
5 X L M L H F R Q I L J Z O D Q V H F V H F X U L W \ U V Q H Q D E O H
```

o¬ à • co- 1 y … show running-config x X k U Y ò 0 F å © k ÿ |ož

o¬ U P ’ Îo- 1 y ò ç WLAN] Æ o 4 ¿ U % • ” g ò WEP h k é — c F å RSN • š % ” k U P j ¨ož

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

o¬ o • j ¨o- 1 yWLAN] Æ o 4 ¿ U % • š • ” g ò WEP hož

o¬ u V ª ¢o- -

1.9 security rsn akm

F å RSN • š % ” N µ • š • ” PSK • šož
security rsn akm psk enable

¼ { RSN • š % ” PSK N µ • š • ”ož
security rsn akm psk disable

F å RSN • š % ” N µ • š • ” 802.1x • šož

security rsn akm 802.1x enable

¼ { RSN • š % ” 802.1x N µ • š • ”ož
security rsn akm 802.1x disable

o¬ @ ƒ ª ¢o-

@ ƒ	T
psk	F å N µ • š • ” Ä » F % W • šož
802.1x	F å N µ • š • ” 802.1x • šož
enable	• o RSN • š % ” N µ • š • ”ož
disable	¼ { RSN • š % ” N µ • š • ”ož

o¬ Þ . F åo- — N µ • š • ”ož

o¬ x X % ”o- WLAN ¶ F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- x X © Û o RSN • š % ” • š • ” k Ä PSK y 802.1x _ N µ • š • ”ož
Q Ä o 4 RSN • š % ” õ g N µ • š • ” F åož
%² WLAN ¶ F å % ” Q • o%² _ N µ • š • ”ož

o¬ F å †o- 1 y F å WLAN 1 RSN • š % ” N µ • š • ” Ä » F % W • šož

```
5XLMLH FRQILJ ZODQVHF VHFXULW\ UVQ DNP SVN HQDEOH
```

2 y F å WLAN 2 RSN • š % ” N µ • š • ” 802.1x • šož

```
5XLMLH FRQILJ ZODQVHF VHFXULW\ UVQ DNP [ HQDEOH
```

o¬ à • co- 1 y … show running-config x X k U Y ò 0 F å © k ÿ |ož

o¬ U P ’ Îo- 1 y ò ç WLAN ¶ F å % ” Ì o RSN • š k é • o RSN % ” N µ • š • ” ž U P j ¨ož

```
5XLMLH FRQILJ ZODQVHF
5XLMLH FRQILJ ZODQVHF VHFXULW\ UVQ DNP SVN HQDEOH
:/$1 UVQ LV GLVDEOH
```

2 y ò ç WLAN ¶ F å % ”] Æ • o 4%² _ N µ • š • ” k é • o P%² _ N µ • š • ” ž U P j ¨ož

```
5XLMLH FRQILJ ZODQVHF VHFXULW\ UVQ DNP SVN HQDEOH
5XLMLH FRQILJ ZODQVHF VHFXULW\ UVQ DNP [ HQDEOH
:ODQ KDV FRQILJ SVN FDQ QRW FRQILJ [
```

o¬ o • j ¨o- 1 yWLAN ¶ F å % ” Ì o RSN • š < F å N µ • š • ”ož
2 yWLAN ¶ F å % ”] Æ • o 4%² _ N µ • š • ” k é — c F å P%² _ N µ • š • ”ož

o¬ u V ª ¢o- -

1.10 security rsn akm psk set-key

F å RSN PSK • š • ” » F % Aož

security rsn akm psk set-key { ascii ascii-key | hex hex-key }

o¬ @ ƒ ª ¢o-

@ ƒ	T
ascii	6 PSK % A ¥ ” ASCII Aož
ascii-key	ASCII A ¥ ” % A k x † ’ ò 8--63 ASCII A …ož
hex	6 PSK % A ¥ ” ¹ ò …ož
hex-key	¹ ò ¥ ” % A k x † · À 64 ¹ ò …ož

o¬ Þ . F åo- —ož

o¬ x X % ”o- WLAN ¶ F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- Q Ä • o 4 PSK • š • ” ž k » F % A õ ÿ |ož

ASCII A ¥ ” % A k x † ’ ò 8--63 ASCII A …ož

¹ ò ¥ ” % A k x † · À 64 ¹ ò …ož

o¬ F å †o- 1 y F å WLAN 1 RSN » F % A 12345678 Ä

```
5XLMLH FRQILJ ZODQVHF
5XLMLH FRQILJ ZODQVHF VHFXULW\ UVQ HQDEOH
5XLMLH FRQILJ ZODQVHF VHFXULW\ UVQ DNP SVN HQDEOH
5XLMLH FRQILJ ZODQVHF VHFXULW\ UVQ DNP SVN VHW NH\ DVFLL
```

o¬ à • co- 1 y … show running-config x X k U Y ò 0 F å © k ÿ |ož

o¬ U P ’ Îo- 1 y ò ç ASCII A ¥ ” % A x † á 8 … k é U P j ¨ož

```
5XLMLH FRQILJ ZODQVHF VHFXULW\ UVQ DNP SVN VHW NH\ DVFLL
$6&,, 36. OHQJWK PXVW EH QRW OHVV WKDQ
```

2 y ò ç ¹ ò ¥ ” % A x † © 64 ¹ ò … k é U P j ¨ož

```
5XLMLH FRQILJ ZODQVHF VHFXULW\ UVQ DNP SVN VHW NH\ KH[
        DEFGHI        DEFGHI        DEFGHI        DEFGH
+H[ 36. OHQJWK PXVW EH
```

o¬ o • j ¨o- 1 y Ì o RSN • š % ” k < F å RSN PSK % Aož
2 yASCII A ¥ ” % A x † á 8 … ê Ý 63 …ož
3 y ¹ ò ¥ ” % A x † © 64 ¹ ò …ož

o¬ u V ª ¢o- -

1.11 security rsn ciphers

F å RSN • š % ” % • ” AESož
security rsn ciphers aes enable

¼ { RSN • š % ” AES % • ”ož
security rsn ciphers aes disable

F å RSN • š % ” % • ” TKIPož
security rsn ciphers tkip enable

¼ { RSN • š % ” TKIP % • ”ož
security rsn ciphers tkip disable

o¬ U P ' Îo- 1 y ò ç WLAN ¶ F å % " Ì o RSN • š k é F å RSN % " % • " ž U P j ¨ož

```
5XLMLH FRQILJ ZODQVHF
5XLMLH FRQILJ ZODQVHF VHFXULW\ UVQ FLSKHUV DHV HQDEOH
:/$1 UVQ LV GLVDEOH
```

o¬ o • j ¨o- 1 yWLAN ¶ F å % " Ì o RSN • š < F å RSN % • "ož
2 yWLAN ¶ F å % " o RSN • š k 0 Z Ä F å % • " k - Ä € — c ¼ û — ¿ à Ìož

o¬ u V ª ¢o- -

1.12 security static-wep-ke y authentication

F å WLAN ¨ ² Á WEP % " e è à š • "ož
security static-wep-key authentication { open | share-key }

o¬ @ ƒ ª ¢o-

@ ƒ	T
open	F å • y © Ï e è à š • "ož
share-key	F å » F % W e è à š • "ož

o¬ Þ . F åo- Þ . • y © Ï e è à š • "ož

o¬ x X % "o- WLAN ¶ F å % "

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- x X } y security static-wep-key encryption %² Ü … k ¯ F å ² Á WEP % W e õ F å e è à š • "ož
" 4 ² Á WEP % " $ Ù ¿ ¶ F å % " k — c F å e è à š • "ož

o¬ F å †o- 1 y F å WLAN 1 e è à š • " » F % Wož

```
5XLMLH FRQILJ ZODQVHF VHFXULW\ VWDWLF ZHS NH\ DXWKHQWLFDWLR
```

o¬ à • co- 1 y … show running-config x X k U Y ò 0 F å © k ÿ |ož

o¬ U P ' Îo- 1 y ò ç Ì F å o WEP < F å e è à š • " k é U P j ¨ož

```
)DLO WR VHWXS :(3 DXWKPRGH QRW LQ VWDWLF :(3 VHFXULW\ PRGH
```

o¬ o • j ¨o- 1 y Ì F å o ² Á WEP % " < F å e è à š • "ož

o¬ u V ª ¢o- -

1.13 security static-wep-key encryption

F å WLAN o ² Á WEP % ” k c ž F å ² Á WEP % Aož

security static-wep-key encryption key-length { ascii | hex } key-index key

o¬ @ ƒ ª ¢o-

@ ƒ	T
key-length	% A x † k % y © A Ô k U Y 40 ê 104ož
ascii	% A ¥ ” ASCII Aož
hex	% A ¥ ” 16 ò …ož
key-index	% W « – Z k F å 8 © y1--4 ož
key	% A ƒ G

o¬ Þ . F åo- Ì o ² Á WEP % ”ož

o¬ x X % ”o- WLAN ¶ F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- Ú x X ¨ F å ² Á WEP % W k c ž o ² Á

o¬ u V ª ¢o- -

1.14 security wpa

F å WLAN • š % ” WPA • š % ”ož
security wpa enable

¼ { WPA • š % ”ož
security wpa disable

o¬ @ ƒ ª ¢o-

@ ƒ	T
enable	o WPA • š % ”ož
disable	¼ { WPA • š % ”ož

o¬ Þ . F åo- ¼ { WPA • š % ”ož

o¬ x X % ”o- WLAN ¶ F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- x X © Û o WPA • š % ”ož
Q Ä o 4 WPA • š % ” õ ¨ WPA % ” + % • ” y N µ • š • ” g F å k k é F å — |ož
… WPA • š ž k ¬ } F ` F å % • ” y N µ • š • ”ož ò ç Q F å 4 % • ” k ê ñ Q F å 4 N µ • š
• ” k ê ñ ñ C Ì F å k ; " — ¿ ï € 1 — c ¼ û ñ — ¿ à Ìož
ò ç%² WLAN c ž • o 4 WPA • š % ” y RSN • š % ” k ; " _ • š % ” % • ” y N µ • š
• ” ©%² ý k • F å % • ” y N µ • š • ” 1 ~ $ $ ù % • ” y N µ • š • ”ož

o¬ F å †o- 1 y F å WLAN 1 • š % ” WPA • š % ”ož

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

o¬ à • co- 1 y … show running-config x X k U Y ò 0 F å © k ÿ |ož

o¬ U P ’ Îo- 1 y ò ç WLAN] Æ o 4 ¿ U % • ” g ò WEP h k é — c F å WPA • š % ” k U P j ¨ož

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

o¬ o • j ¨o- 1 yWLAN] Æ o 4 ¿ U % • š • ” g ò WEP hož

o¬ u V ª ¢o- -

1.15 security wpa akm

F å WPA • š % ” N µ • š • ” PSK • šož

security wpa akm psk enable

¼ { WPA • š % ” PSK N µ • š • ”ož

security wpa akm psk disable ¼ {

:/$1 ZSD LV GLVDEOH

2 y ò ç WLAN ¶ F å % ”] Æ • o 4%² _ N µ • š • ” k é • o P%² _ N µ • š • ” ž U P j ¨ož

5XLMLH FRQILJ ZODQVHF VHFXULW\ ZSD DNP SVN HQDEOH
5XLMLH FRQILJ ZODQVHF VHFXULW\ ZSD DNP [HQDEOH
:ODQ KDV FRQILJ SVN FDQ QRW FRQILJ [

o¬ o • j ¨o- 1 yWLAN ¶ F å % ” Ì o WPA • š < F å N µ • š • ”ož
2 yWLAN ¶ F å % ”] Æ • o 4%² _ N µ • š • ” k é — c F å P%² _ N µ • š • ”ož

o¬ u V ª ¢o- -

1.16 security wpa akm psk set-key

F å WPA PSK • š • ” » F % Aož

security wpa akm psk set-key { ascii ascii-key | hex hex-key }

o¬ @ ƒ ª ¢o-

@ ƒ	T
ascii	6

o¬ … 6 -o- x X © Û o WPA • š % ” % • ” k Ä AES y TKIP _ % • ”ož
%² WLAN ¶ F å % ” U c ž • o AES y TKIP _ % • ”ož

o¬ F å †o- 1 y F å WLAN 1 WPA • š % ” % • ” AESož

```
5XLMLH FRQILJ ZODQVHF
5XLMLH FRQILJ ZODQVHF VHFXULW\ ZSD HQDEOH
5XLMLH FRQILJ ZODQVHF VHFXULW\ ZSD FLSKHUV DHV HQDEOH
```

o¬ à • co- 1 y … show running-config x X k U Y ò 0 F å © k ÿ |ož

o¬ U P ’ Îo- 1 y ò ç WLAN ¶ F å % ” Ì o WPA • š k é F å WPA % ” % • ” ž U P j ¨ož

```
5XLMLH FRQILJ ZODQVHF
5XLMLH FRQILJ ZODQVHF VHFXULW\ ZSD FLSKHUV DHV HQDEOH
:/$1 ZSD LV GLVDEOH
```

o¬ o • j ¨o- 1 yWLAN ¶ F å % ” Ì o WPA • š < F å WPA % • ”ož
2 yWLAN ¶ F å % ” o WPA • š k 0 Z Ä F å % • ” k - Ä € — c ¼ û — ¿ à Ìož

o¬ u V ª ¢o- -

1.18 show wclient security

ò 0 STA ¶ F å ’ Îož
show wclient security mac-address

o¬ @ ƒ ª ¢o-

@ ƒ	T
mac-address	ñ } ò 0 STA MAC ª -ož

o¬ x X % ”o- Ô Ó % ”o• ¶ B % ”o•WLAN ¶ F å % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- … ¥ x X U Y ò 0 STA • š © k èo• ¶ Œ o•WPA Í Îo• % n % ì ^o•EAP • º ˆ ’ Îož

o¬ F å †o- 1 y ò 0 STA(3848.4c48.d953) ¶ F å ’ Îož

```
5XLMLH VKRZ ZFOLHQW VHFXULW\ F G
6HFXULW\ SROLF\ ILQLVKHG 758(
6HFXULW\ SROLF\ W\SH 36.
6HFXULW\ :3$ YHUVLRQ :3$
6HFXULW\ 8FDVW FLSKHU &&03
6HFXULW\ ($3 W\SH 121(
```

< † K y

<	ª ¢
Security policy finished	• š © k è
Security policy type	¶ Œ
Security WPA version	WPA Í Î
Securit Ucast cipher	% n % ì ^
Security EAP type	EAP • º

o¬ U P ’ Îo- 1 y ò ç — Õ Z Ä STA ’ Î k U P j ¨ož

```
5 X L M L H  V K R Z  Z F O L H Q W  V H F X U L W \          F    G
1 R  V W D W L R Q  L Q I R  I R U  W K L V  0 $ &            F    G
```

o¬ u V ª ¢o- -

1.19 show wlan security

ª P WLAN ¶ F å ’ Îož

show wlan security wlan-id

o¬ @ ƒ ª ¢o-

@ ƒ	T
wlan-id	ñ } ò 0 WLAN IDož

o¬ x X % ”o- Ô Ó % ”o• ¶ B % ”o•WLAN ¶ F å % ”

o¬ Þ . ´ ðo- 1

<	ª ¢
WLAN SSID	WLAN SSID
Security Policy	WLAN ¶ Œ
WPA version	WPA Í Î
AKM type	AKM ì ^ k / N µ • š • ”
pairwise cipher type	% n % W ì ^
group cipher type	Á n % W ì ^
wpa_passphrase_len	F å % A x †
wpa_passphrase	F å PSK % A
group key	WLAN Á n % W

o¬ U P ’ Îo- 1 y ò ç + • WLAN Z Ä o ` ~ ¶ Œ k é U P j ¨ož

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

o¬ u V ª ¢o- -

1.20 webauth prevent-jitter

F å WLAN WEB • š … ž •ož
webauth prevent-jitter timeout

í ” WEB • š … ž • F åož
no webauth prevent-jitter

Ê Ö Þ . F åož
default webauth prevent-jitter

o¬ @ ƒ ª ¢o-

@ ƒ	T
timeout	F å WEB • š … ž • k Y a % yožtimeout H › 8 © 0s---86400s (timeout 0 n P ¼ { WEB • š …)ož

o¬ Þ . F åo- WEB • š … ž • k Þ . › 300 aož

o¬ F å †o- 1 y F å WLAN 1 WEB • š … ž • 900 aož

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

o¬ à • co- 1 y … show running-config x X k U Y ò 0 F å © k ÿ |ož

o¬ U P ’ Îo- 1 y ò ç Ì o WEB • š < F å WEB • š … ž • @ ƒ k é U P j ¨ož

```
5 X L M L H F R Q I L J Z O D Q V H F Z H E D X W K S U H Y H Q W M L W W H U
3 O H D V H F R Q I L J Z H E D X W K I L U V W
```

o¬ o • j ¨o- 1 y Ì o WEB • š < F å WEB • š … ž •ož

o¬ u V ª ¢o- -

1.21 wlansec

* wlansec x X µ 6 WLAN ¶ F å % ”ož

wlansec wlan-id

í ” ¶ F å % ”ož

no wlansec wlan-id

Ê Ö Þ . F åož

default wlansec wlan-id

o¬ @ ƒ ª ¢o-

o¬ à • co- 1 y … show wlan security 1 x X k U Y ò 0 WLAN 1 ¶ F å % ” © k ë • è ož

o¬ U P ’ Îo- 1 y ò ç ñ } F å ¶ F å % ” WLAN Ì ë • k é U P j ¨ož

```
5 X L M L H  F R Q I L J  Z O D Q V H F
5 X L M L H  F R Q I L J  1 R  Z O D Q  R U  Q R  V V L G  I R U  W K L V  Z O D Q L G
```

o¬ o • j ¨o- 1 y ñ } F å ¶ F å % ” WLAN Ì ë •ož

o¬ u V ª ¢o- -

2 CPP

2.1 cpu-protect type pps

F å CPU € M N v 6 • º † k !ož

cpu-protect type { arp | þpdu

2.3 show cpu-protect type

ª P 6 • º † Ï ‹ož

show cpu-protect type { arp | bpdu | capwap-disc | d1x | dhcp-option82 | dhcp-relay-client | dhcp-relay-server | dhcps | igmp | ipmc | ipv6-nans | isis | lldp | ospf | ospfv3 | pim | pppoe | rip | ripng | vrrp }

o¬ @ ƒ ª ¢o-

o¬ u V ª ¢o- -

3 NFPP

3.1 arp-guard attack-threshold

F å ¶ B x à J ¿ k / ¢ † , † Ý x à J ¿ ž ˜ k • ¨ x à g ož
arp-guard attack-threshold { per-src-ip | per-src-mac | per-port } pps

í ” x à J ¿ F å k Ê Ö ñ Þ . F åož
no arp-guard attack-threshold { per-src-ip | per-src-mac | }

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.2 arp-guard enable

¥ x X Û ¶ B ø • ARP x à ož
arp-guard enable

¼ { ARP x à
no arp-guard enable

Ê Ö Þ . F å
default arp-guard enable

o¬ @ ƒ ª ¢o-

3.3 arp-guard isolate-period

¥ x X Û F å ¶ B œ Y ž •
arp-guard isolate-period { seconds | permanent }

í ” œ Y ž • F å k Ê Ö ñ Þ . F å
no arp-guard isolate-period

Ê Ö Þ . F å
default arp-guard isolate-period

o¬ @ ƒ ª ¢o-

@ ƒ	T
seconds	œ Y ž • k % y © a k H › 8 © 0 ê ñ[30, 86400] ož
permanent	K ! œ Y

o¬ Þ . F åo- ¶ B œ Y ž • Þ . › © 0 k / œ Yož

o¬ x X % ”o- NFPP F å % ”

í ” Â Ý I ! O Ñ ƒ F å k Ê Ö ñ Þ . F å

no arp-guard monitored-host-limit

Ê Ö Þ . F å

default arp-guard monitored-host-limit

o¬ @ ƒ ª ¢o-

@ ƒ	T
number	u 4 Â Ý I ! O Ñ ƒ k H › 8 1 ñ 4294967295

o¬ Þ . F åo- Â Ý I ! O Ñ ƒ ó • 1000 ož

o¬ x X % ”o- NFPP F å % ”

14

ò k 4 ž ’ ¢ t I ! O Ñ Â Ý ƒ) — å è 4 9 I k k í ”] Ä I ‼ O Ñ k

```
5XLMLH FRQILJ QISS
5XLMLH FRQILJ QISS DUS JXDUG PRQLWRUHG KRVW OLPLW
```

3.5 arp-guard monitor-period

Ê Ö Þ . F å

default arp-guard rate-limit { per-src-ip | per-src-mac | per-port }

o¬ @ ƒ ª ¢o-	@ ƒ	T

no arp-guard scan-threshold

Ê Ö Þ . F å
default arp-guard scan-threshold

o¬ @ ƒ ª ¢o-

@ ƒ	T
pkt-cnt	þ T J ¿ › k H › 8 ©[1,9999] ož

o¬ Þ . F åo- Þ . þ T J ¿ © 15 k ž • % y © 10 aož

o¬ x X % ”o- NFPP F å % ”

o¬ Þ . ´ ðo- 14

o¬ ... 6 -o- ò ç 10 a U v ñ 15 Y ARP † k e è C › MAC ª - ¡ ò › IP ª - J k ê ñ e è C › MAC ª - y › IP ª - ¡ ò) ö IP ª - • J k < • Ä þ T0ƒ ož

o¬ F å †o- 1 y F å ARP x à ¶ þ T J ¿ 20ppsož

```
5 X L M L H F R Q I L J Q I S S
5 X L M L H F R Q I L J Q I S S D U S J X D U G V F D Q W K U H V K R O G
```

o¬ à • co- … show nfpp arp-guard summary ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.8 arp-guard trusted-host

ò ç ’ ò t e È + î V Ñ g ! O k / + ¥ Ñ n P ’ ` k é U Y * ¥ x X F åož
arp-guard trusted-host ip mac

í ” ! O U ’ Ñ
no arp-guard trusted-host { all | ip mac }

Ž ” ! O U ’ Ñ
default arp-guard trusted-host

o¬ @ ƒ ª ¢o-

@ ƒ	T
ip	IP ª -
mac	MAC ª -
all	y no %² Ü ... k í " ñ Ä U ' Ñ F å

o¬ Þ . F åo- -

o¬ x X % "o- NFPP F å % "

o¬ Þ . ´ ðo- 14

o¬ ... 6 -o- ò ç ' ò t e È + î V Ñ g ! O k / + ¥ Ñ n P ' ` k é U Y * ¥ x X F åož ¥ U ' Ñ G
ª CPU ARP † 1 t ª • G ª CPU k Ÿ ` ~ ', y s Š Ô òož
Â Ú u 4 — å 500 Ú U ' Ñož

o¬ F å †o- 1 y IP 1.1.1.1 kMAC

o¬ x X % ”o- ò ç k @ ƒ k n P Ž ” ñ Ä t ! O Ñož

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y VLAN 1 € M g 0/1 ARP x à Ñ † ” œ Yož

5 X L M L H F O H D U Q I S S D U S J X D U G K R V W V Y O D Q L Q W H U I D F H J

o¬ à • co- … show nfpp arp-guard hosts ò 0 ï ’ Î

o¬ u V ª ¢o- -

3.11 clear nfpp dhcp-guard hosts

Ž ” ï k / ï † ” œ Yož

clear nfpp dhcp-guard hosts [vlan vid] [interface interface-id] [mac-address]

o¬ @ ƒ ª ¢o-	@ ƒ	T

mac-address	MAC ª -

o¬ Þ . F åo- -

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç k @ *ƒ* k n P Ž ” ñ Ä t œ Y ïož

o¬ F å †o- 1 y VLAN 1 € M g 0/1

5XLMLH FOHDU QISS LFPS JXDUG KRVWV YODQ LQWHUIDFH J

fÀ• ¾ y †6m … show nfpp mp-guard hosts ò 0 ï ' Î

fÀuP• I læm -

fÀfð§ð¶ ª†m -

fÀgPU`ª z&m -

3.14 clear nfpp ip-guard hosts

Ž " I ! O Ñ k ò ç Ñ t œ Y k À§Ð¨`¹@¹À•–ùà

clear nfpp ip-guard hosts [vlan vid] [interface interface-id] [ip-address]

fÀT x0ª z&m

@ ƒ	T
vid	Z ' B ¿ à Z
interface-id	€ M d f
ip-address	IP ª Ð

fÀfð§ð¶ ª†m a808250694-1.727 Td ( )Tj /C2_0 1 Tf 0 Tc 0 -1.773 TD <66rC08120BE8D4 1 3082506

fÀ• ¾Â !Úl• ÀoœOp p'œ ð} 6°_ ~pAð| 0 ò 0 ï ' Î

3.15 clear nfpp log

Ž q NFPP ™ º Ù Ï

clear nfpp log

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- -

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y Ž q NFPP ™ º Ù Ï ož

```
5XLMLH FOHDU QISS ORJ
  ORJ EXIIHU HQWULHV ZHUH FOHDUHG
```

o¬ à • co- … show nfpp log ò 0 ™ º ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.16 cpu-protect sub-interface percent

¥ x X Û F å ? _ • º †) „ ç ã Aož

cpu-protect sub-interface { manage | protocol | route } percent percent_vaule

í ”? _ • º †) „ ç ã A F å k Ê Ö ñ Þ . F å

no cpu-protect sub-interface { manage | protocol | route } percent

Ê Ö Þ . F å

default cpu-protect sub-interface { manage | protocol | route } percent

o¬ @ ƒ ª ¢o-

@ ƒ	T

manage	6 ’ ò •
protocol	6 # ‘ •
route	6 ô G •
percent_vaule	ã A k H › 8 © 1 ñ 100

o¬ Þ . F åo- ’ ò •(Manage)) Ù Ï ã A 30
ô G •(Route)) Ù Ï ã A 25
‘ •(Protocol)) Ù Ï ã A 45

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å ’ ò • †) Ù Ï ã A 60
5 X L M L H F R Q I L J F S X S U R W H F W V X E L Q W H U I D F H P D Q D J H S H U F H Q W

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.17 cpu-protect sub-interface pps

¥ x X Û F å ? _ • º † v O k !ož
cpu-protect sub-interface { manage | protocol | route } pps pps_vaule

í ” ? _ • º † v O k ! F å k Ê Ö ñ Þ . F å
no cpu-protect sub-interface { manage | protocol | route } pps

Ê Ö Þ . F å
default cpu-protect sub-interface { manage | protocol | route } pps

o¬ @ ƒ ª ¢o-

@ ƒ	T
manage	6 ’ ò •
protocol	6 # ‘ •

route	6 ô G •
pps_vaule	' , J ¿ k H › 8 © 1-100000

o¬ Þ . F åo- • D } Ô Å †

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å ' ò • † v O k ! 2000ppsož

5 X L M L H F R Q I L J F S X S U R W H F W V X E L Q W H U I D F H P D Q D J H S S V

o¬ à • co- -

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.18 dhcp-guard attack-threshold

F å ¶ B x à J ¿ k / ¢ † , † Ý x à J ¿ ž ˜ k • ¨ x à g ož

dhcp-guard attack-threshold { per-src-mac | per-port } pps

í ” x à J ¿ F å k Ê Ö ñ Þ . F å

no dhcp-guard attack-threshold { per-src-mac | per-port }

Ê Ö Þ . F å

default dhcp-guard attack-threshold { per-src-mac | per-port }

o¬ @ ƒ ª ¢o-

@ ƒ	T
per-src-mac	F å ? › MAC ª - x à J ¿ož
per-port	F å ? € M x à J ¿ož
pps	x à J ¿ k % y © ? a † ƒ k H › 8 ©[1,9999] ož

o¬ Þ . F åo- ? › MAC ª - Þ . x à J ¿ © ? a 10 k ? € M Þ . x à J ¿ © ? a 300 ož

o¬ x X % ”o- NFPP F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å DHCP x à ¶ B x à J ¿ k Â 9 › MAC x à J ¿ 15pps, Â 9 › € M x à J ¿ 200ppsož

o¬ F å †o- 1 y F å ¶ B ø • DHCP x à

```
5XLMLH FRQILJ QISS
5XLMLH FRQILJ QISS GKFS JXDUG HQDEOH
```

o¬ à • co- … show nfpp dhcp-guard summary ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.20 dhcp-guard isolate-period

¥ x X Û F å ¶ B œ Y ž •

dhcp-guard isolate-period { seconds | permanent }

í ” œ Y ž • F å k Ê Ö ñ Þ . F å

no dhcp-guard isolate-period

Ê Ö Þ . F å

default dhcp-guard isolate-period

o¬ @ ƒ ª ¢o- @ ƒ

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.21 dhcp-guard monitored-host-limit

¥ x X Û F å u 4 Â Ý I ! O Ñ ƒož
dhcp-guard monitored-host-limit number

í ” Â Ý I ! O Ñ ƒ F å k Ê Ö ñ Þ . F å
no dhcp-guard monitored-host-limit

Ê Ö Þ . F å
default dhcp-guard monitored-host-limit

o¬ @ ƒ ª ¢o-

@ ƒ	T
number	u 4 Â Ý Â Ý I ! O Ñ ƒ k H › 8 1 ñ 4294967295

o¬ Þ . F åo- Â Ý I ! O Ñ ƒ ó • 1000

o¬ x X % ”o- NFPP F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç I ! O Ñ ƒ] Æ ñ ó • 1000 k 4 ž ’ ò t I ! O Ñ Â Ý ƒ) — å è 4 9 1000 k k í ”] Ä I ! O Ñ k ò © ø - ’ Î %ERROR y The value that you configured is smaller than current monitored hosts 1000 g F å I ! O Ñ ƒ h kplease clear a part of monitored hosts. Û U I ’ ò t F å Z Ä ÿ | k ¬ } í ” B ã] Æ t ! O Ñož
¢ I ! O Ñ n ž k ø - ™ º % NFPP_DHCP_GUARD-4-SESSION_LIMIT: Attempt to exceed limit of 1000 g F å I ! O Ñ ƒ h monitored hosts. U I ’ ò tož

o¬ F å †o- 1 y F å DHCP x à Â Ý I ! O Ñ ƒ 200 ož

```
5XLMLH FRQILJ QISS
5XLMLH FRQILJ QISS GKFS JXDUG PRQLWRUHG KRVW OLPLW
```

o¬ à • co- … show nfpp dhcp-guard summary ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.22 dhcp-guard monitor-period

¥ x X Û F å ! O ž •ož
dhcp-guard monitor- period seconds

í ” å ! O ž • F å k Ê Ö ñ Þ . F å
no dhcp-guard monitor-period

Ê Ö Þ . F å
default dhcp-guard monitor-period

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
seconds	! O ž • k % y © a k H › 8 ©[180, 86400] ož

o¬ Þ . F åo- ¶ B ! O ž • Þ . › © 600 aož

o¬ x X % ”o- NFPP F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- y ß x à ñ ž ˜ k ò ç œ Y ž • 0 k 1 + x à ñ g ÷ ^ ! O k Ý ž ! O ž •ož ¨ ÷ ^ ! O
i k ¢ œ Y ž • t F å ³ © › ž k 1 + ÷ ^ ! O x à ñ J H œ Y k w Ý ž — å œ Y ž
•ož ! O ž • ¨ œ Y ž • 0 Õ Ñ õ Ä Þ #ož
ò ç œ Y ž • R ³ © › w è © k 1 + N , ¼ € M x à ñ í ” k ò © g ÷ ^ ! Oož

o¬ F å †o- 1 y F å DHCP x à ! O ž • 180 aož

```
5 X L M L H F R Q I L J Q I S S
5 X L M L H F R Q I L J Q I S S G K F S J X D U G P R Q L W R U S H U L R G
```

o¬ à • co- … show nfpp dhcp-guard summary ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.23 dhcp-guard rate-limit

F å ¶ B ' , J ¿ož

dhcp-guard rate-limit { per-src-mac | per-port } pps

dhcp-guard trusted-host mac

í ” ! O U ’ Ñ
no dhcp-guard trusted-host { all | mac }

Ž ” ! O U ’ Ñ
default dhcp-guard trusted-host

o¬ @ ƒ ª ¢o-

@ ƒ	T
mac	MAC ª -
all	y no %² Ü … k í ” ñ Ä U ’ Ñ F å

o¬ Þ . F åo- -

o¬ x X % ”o- NFPP F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç ’ ò t e È + î V Ñ g ! O k / + ¥ Ñ n P ’ ` k é U Y * ¥ x X F åož ¥ U ’ Ñ G
ª CPU DHCP † 1 t ª • G ª CPU k Ÿ ` ~ ’ , y s Š Ô òož
Â Ú u 4 — å 500 Ú U ’ Ñož

o¬ F å †o- 1 y MAC 0000.0000.1111 Ñ F å DHCP x à U ’ Ñož

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

o¬ à • co- … show nfpp dhcp-guard trusted-host ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.25 dhcpv6-guard attack-threshold

F å ¶ B x à J ¿ k / ¢ † , † Ý x à J ¿ ž ˜ k • ¨ x à g ož
dhcpv6-guard attack-threshold { per-src-mac | per-port } pps

í ” x à J ¿ F å k Ê Ö ñ Þ . F åož
no dhcpv6-guard attack-threshold { per-src-mac | per-port }

Ê Ö Þ . F åož

default dhcpv6-guard attack-threshold { per-src-mac | per-port }

o¬ @ ƒ ª ¢o-

@ ƒ	T
per-src-mac	F å ? › MAC ª - x à J ¿ož
per-port	F å ? € M x à J ¿ož
pps	x à J ¿ k % y © ? a † ƒ k H › 8 ©[1,9999] ož

o¬ Þ . F åo- ? › MAC ª - Þ . x à J ¿ © ? a 10 k ? € M Þ . x à J ¿ © ? a 300 ož

o¬ x X % ”o- NFPP F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å DHCPv6 x à ¶ B x à J ¿ k Â 9 › MAC x à J ¿ 15pps, Â 9 › € M x à J ¿ 200ppsož

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

o¬ à • co- … show nfpp dhcpv6-guard summary ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.26 dhcpv6-guard enable

¥ x X Û ø • DHCPv6 … x à

dhcpv6-guard enable

¼ { DHCPv6 x à

no dhcpv6-guard enable

Ê Ö Þ . F å

default dhcpv6-guard enable

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- € M Z Ä F å DHCPv6 x à • ¼ k J ¶ B • ¼ož

o¬ x X % ”o- NFPP F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å ¶ B ø • DHCPv6 x à

```
5 X L M L H  F R Q I L J  Q I S S
5 X L M L H  F R Q I L J  Q I S S  G K F S Y  J X D U G  H Q D E O H
```

o¬ à • co- … show nfpp dhcpv6-guard summary ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.27 dhcpv6-guard isolate-period

¥ x X Û F å ¶ B œ Y ž •

dhcpv6-guard isolate-period { seconds | permanent }

í ” œ Y ž • F å k Ê Ö ñ Þ . F å

no dhcpv6-guard isolate-period

Ê Ö Þ . F å

default dhcpv6-guard isolate-period

o¬ @ ƒ ª ¢o-

@ ƒ	T
seconds	œ Y ž • k % y © a k H › 8 © 0 ê ñ[30, 86400]0

o¬ x X % ”o- NFPP F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- + x à ñ œ Y ž • ã ¶ B œ Y ž • y Â 9 € M œ Y ž • g / B B œ Y ž • hož + 9 î € M k ò
ç Z Ä F å Â 9 € M œ Y ž • k ; " J ¶ B œ Y ž • z k é k J Â 9 € M œ Y ž •ož

o¬ F å †o- 1 y F å DHCPv6 x à ¶ B œ Y ž • 180 aož

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

o¬ à • co- … show nfpp dhcpv6-guard summary ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.28 dhcpv6-guard monitored-host-limit

¥ x X Û F å u 4 Â Ý I ! O Ñ ƒ
dhcpv6-guard monitored-host-limit number

í ” Â Ý I ! O Ñ ƒ F å k Ê Ö ñ Þ . F å
no dhcpv6-guard monitored-host-limit

Ê Ö Þ . F å
default dhcpv6-guard monitored-host-limit

o¬ @ ƒ ª ¢o-

@ ƒ	T
number	u 4 Â Ý Â Ý I ! O Ñ ƒ k H › 8 1 ñ 4294967295

o¬ Þ . F åo- Â Ý I ! O Ñ ƒ ó • 1000

o¬ x X % ”o- NFPP F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç I ! O Ñ ƒ] Æ ñ ó • 1000 k 4 ž ’ ò t I ! O Ñ Â Ý ƒ) — å è 4 9 1000 k

k í ”] Ä I ! O Ñ k ò © ø - ’ Î %ERROR y The value that you configured is smaller than current monitored hosts 1000 g F å I ! O Ñ ƒ h kplease clear a part of monitored hosts. Û U I ’ ò t F å Z Ä ÿ | k ¬ } í ” B ã] Æ t ! O Ñož

¢ I ! O Ñ n ž k ø - ™ º % NFPP_DHCP_GUARD-4-SESSION_LIMIT: Attempt to exceed limit of 1000 g F å I ! O Ñ ƒ h monitored hosts. U I ’ ò tož

o¬ F å †o- 1 y F å DHCPv6 x à Â Ý I ! O Ñ ƒ 200 ož

```
5XLMLH FRQILJ QISS
5XLMLH FRQILJ QISS GKFS JXDUG PRQLWRUHG KRVW OLPLW
```

o¬ à • co- … show nfpp dhcpv6-guard summary ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.29 dhcpv6-guard monitor-period

¥ x X Û F å ! O ž •

dhcpv6-guard monitor- period seconds

í ” å ! O ž • F å k Ê Ö ñ Þ . F å

no dhcpv6-guard monitor-period

Ê Ö Þ . F å

default dhcpv6-guard monitor-period

o¬ @ ƒ ª ¢o-

@ ƒ	T
seconds	! O ž • k % y © a k H › 8 ©

ò ç œ Y ž • R ³ © › w è © k 1 + N , ¼ € M x à ñ í ” k ò © g ÷ ^ ! Oož

o¬ F å †o- 1 y F å DHCPv6 x à ! O ž • 180 aož

```
5XLMLH FRQILJ QISS
5XLMLH FRQILJ QISS GKFSY JXDUG PRQLWRU SHULRG
```

o¬ à • co- … show nfpp dhcpv6-guard summary ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.30 dhcpv6-guard rate-limit

F å ¶ B ’ , J ¿

dhcpv6-guard rate-limit { per-src-mac | per-port } pps

í ” ’ , J ¿ F å k Ê Ö ñ Þ . F å

no dhcpv6-guard rate-limit { per-src-mac | per-port }

Ê Ö Þ . F å

default dhcpv6-guard rate-limit { per-src-mac | per-port }

o¬ @ ƒ ª ¢o-

@ ƒ	T
per-src-mac	+ ? › MAC ª - g ’ ,
per-port	+ ? € M g ’ ,
pps	’ , J ¿ › k H › 8 ©[1,9999] ož

o¬ Þ . F åo- ? › MAC ª - Þ . ’ , J ¿ © ? a 5 k ? € M Þ . ’ , J ¿ © ? a 150 ož

o¬ x X % ”o- NFPP F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å DHCPv6 x à ¶ B ’ , J ¿ k Â 9 › MAC ’ , J ¿ 8pps, Â 9 › € M ’ , J ¿ 100ppsož

```
5XLMLH FRQILJ QISS
5XLMLH FRQILJ QISS GKFSY JXDUG UDWH OLPLW SHU VUF PDF
```

5XLMLH FRQILJ QISS GKFSY JXDUG UDWH OLPLW SHU SRUW

o¬ à • co- … show nfpp dhcpv6-guard summary ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.31 dhcpv6-guard trusted-host

ò ç ’ ò t e È + î V Ñ g ! O k / + ¥ Ñ n P ’ ` k é U Y * ¥ x X F åož
dhcpv6-guard trusted-host mac

í ” ! O U ’ Ñ
no dhcpv6-guard trusted-host { all | mac }

Ž ” ! O U ’ Ñ
default dhcpv6-guard trusted-host

o¬ @ ƒ ª ¢o-

@ ƒ	T

.v å • €pÞ't8RA” ï!Tgƒ … H ïµ%66– •Vïµ%66– •Vïµ%66– •• pD5•D • À ×a? À 'ÖúÀ v ‘I b% (À 'ÖúÀB[RýÏ °°UPIo} @ ÷ âwC…$ @Nû•–
0

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.32 icmp-guard attack-threshold

F å ¶ B x à J ¿ k / ¢ † , † Ý x à J ¿ ž ˜ k • ¨ x à g ož
icmp-guard attack-threshold { per-src-ip | per-port } pps

í ” x à J ¿ F å k Ê Ö ñ Þ . F åož
no icmp-guard attack-threshold { per-src-ip | per-port }

Ê Ö Þ . F åož
default icmp-guard attack-threshold { per-src-ip | per-port }

o¬ @ ƒ ª ¢o-

@ ƒ	T
per-src-ip	F å ? › IP ª - x à J ¿ož
per-port	F å ? € M x à J ¿ož
pps	x à J ¿ k % y © ? a † ƒ k H › 8 ©[1,9999] ož

o¬ Þ . F åo- • D } Ô Å † ož

o¬ x X % ”o- NFPP F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å ICMP x à ¶ B x à J ¿ k Â 9 › IP x à J ¿ 600pps, Â 9 › € M x à J ¿ 1200ppsož

```
5 X L M L H F R Q I L J Q I S S
5 X L M L H F R Q I L J Q I S S L F P S J X D U G D W W D F N W K U H V K R O G S H U VÁ2Gož€J Žñ
```

o¬ u V ª ¢o- -

3.33 icmp-guard enable

¥ x X Û ø • ICMP … x à ož
icmp-guard enable

¼ { ICMP x à
no icmp-guard enable

Ê Ö Þ . F å
default icmp-guard enable

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ó • ICMP … x à ø •

o¬ x X % ”o- NFPP F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å ¶ B \ y™1p}ÊÞ«à • ‘-êÉ8g) • & ”B€b n ° œ XŒÜ€¶€ œ Ãq€p •50l††r T• & ”B€b n ° œ • XŒÜ€¶€ œ¡ •50Ã

-

-

o ¬ @ ƒ ª

í ” œ Y ž • F å k Ê Ö ñ Þ . F å
no icmp-guard isolate-period

Ê Ö Þ . F å
default icmp-guard isolate-period

o¬ @ ƒ ª ¢o-

@ ƒ	T
seconds	œ Y ž • k % y © a k H › 8 © 0 ê ñ[30, 86400] k 0 n P œ Yož
permanent	K ! œ Y

o¬ Þ . F åo- ¶ B œ Y ž • Þ . › © 0 k / œ Yož

o¬ x X % ”o- NFPP F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- + x à ñ œ Y ž • ã ¶ B œ Y ž • y Â 9 € M œ Y ž • g / B B œ Y ž • hož + 9 î € M k ò
ç Z Ä F å Â 9 € M œ Y ž • k ; " J ¶ B œ Y ž • z k é k J Â 9 € M œ Y ž •ož

o¬ F å †o- 1 y F å ICMP x à ¶ B œ Y ž • 180 aož

```
5 X L M L H F R Q I L J Q I S S
5 X L M L H F R Q I L J Q I S S L F P S J X D U G L V R O D W H S H U L R G
```

o¬ à • co- … show nfpp icmp-guard summary ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.35 icmp-guard monitored-host-limit

¥ x X Û F å u 4 Â Ý I ! O Ñ ƒ
icmp-guard monitored-host-limit number

í ” Â Ý I ! O Ñ ƒ F å k Ê Ö ñ Þ . F å
no icmp-guard monitored-host-limit

Ê Ö Þ . F å

pps	' , J ¿ › k H › 8 ©[1,9999] ož

o¬ Þ . F åo- • D } Ô Å †

o¬ x X % ”o- NFPP F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å ICMP x à ¶ B ' , J ¿ k Â 9 › IP ' , J ¿ 500pps k Â 9 › € M ' , J ¿ 800ppsož

```
5 X L M L H F R Q I L J Q I S S
5 X L M L H F R Q I L J Q I S S L F P S J X D U G U D W H O L P L W S H U V U F L S
5 X L M L H F R Q I L J Q I S S L F P S J X D U G U D W H O L P L W S H U S R U W
```

o¬ à • co- … show nfpp icmp-guard summary ò 0 F å ' Î

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.38

o¬ x X % ”o- NFPP F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç ’ ò t e È + î V Ñ g ! O k / + ¥ Ñ n P ’ ` k é U Y * ¥ x X F åož ¥ U ’ Ñ G
ª CPU ICMP † 1 t ª • G ª CPU k Ÿ ` ~ ’ , y s Š Ô òož * F å Q A U Y ñ + î%²
à < ñ Ä Ñ C g ! Oož
Â Ú u 4 — å 500 Ú U ’ Ñož

o¬ F å †o- 1 y 1.1.1.0/24 à < ñ Ä Ñ F å ICMP x à U ’ Ñož

```
5 X L M L H F R Q I L J Q I S S
5 X L M L H F R Q I L J Q I S S L F P S J X D U G W U X V W H G K R V W
```

o¬ à • co- … show nfpp icmp-guard trusted-host ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.39 ip-guard attack-threshold

F å ¶ B x à J ¿ k / ¢ † , † Ý x à J ¿ ž ˜ k • ¨ x à g ož
ip-guard attack-threshold { per-src-ip | per-port } pps

í ” x à J ¿ F å k Ê Ö ñ Þ . F åož
no ip-guard attack-threshold { per-src-ip | per-port }

Ê Ö Þ . F åož
default ip-guard attack-threshold { per-src-ip | per-port }

o¬ @ ƒ ª ¢o-

@ ƒ	T
per-src-ip	F å ? › IP ª - x à J ¿ož
per-port	F å ? € M x à J ¿ož
pps	x à J ¿ k % y © ? a † ƒ k H › 8 ©[1,9999] ož

o¬ Þ . F åo- • D } Ô Å † ož

o¬ x X % ”o- NFPP F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- x à J ¿ 4 9 ' , J ¿ož

IP ½ A M ì s ¾ , IP â ¾ ‡ o IP IP q 3 ^ l d s , IP ¾ ‡ o IP
IP q 3 • CPP CPU Protect Policy « . d

o¬ F å †o- 1 y F å IP x à ¶ B x à J ¿ k Â 9 › IP x à J ¿ 2pps, Â 9 › € M x à J ¿ 50ppsož

```
5XLMLH FRQILJ QISS
5XLMLH FRQILJ QISS LS JXDUG DWWDFN WKUHVKROG SHU VUF LS
5XLMLH FRQILJ QISS LS JXDUG DWWDFN WKUHVKROG SHU SRUW
```

o¬ à • co- … show nfpp ip-guard summary ò 0 F å ' Î

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.40 ip-guard enable

¥ x X Û ¶ B ø • IP … þ T ož
ip-guard enable

¼ { IP … þ T
no ip-guard enable

Ê Ö Þ . F å
default ip-guard enable

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ó • IP … þ T ø •

o¬ x X % ”o- NFPP F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å ¶ B ø • IP … þ T

```
5XLMLH FRQILJ QISS
5XLMLH FRQILJ QISS LS JXDUG HQDEOH
```

o¬ à • co- … show nfpp ip-guard summary ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.41 ip-guard isolate-period

¥ x X Û F å ¶ B œ Y ž •ož

ip-guard isolate-period { seconds | permanent }

í ” œ Y ž • F å k Ê Ö ñ Þ . F å

no ip-guard isolate-period

Ê Ö Þ . F å

default ip-guard isolate-period

o¬ @ ƒ ª ¢o-

@ ƒ	T
seconds	œ Y ž • k % y © a k H › 8 © 0 ê ñ[30, 86400] ož
permanent	K ! œ Y

o¬ Þ . F åo- ¶ B œ Y ž • Þ . › © 0 k / œ Yož

o¬ x X % ”o- NFPP F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å IP x à ¶ B œ Y ž • 180 aož

o¬ à • co- … show nfpp ip-guard summary ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.42 ip-guard monitored-host-limit

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.43 ip-guard monitor-period

¥ x X Û F å ! O ž •ož
ip-guard monitor-period seconds

í ” å ! O ž • F å k Ê Ö ñ Þ . F å
no ip-guard monitor-period

Ê Ö Þ . F å
default ip-guard monitor-period

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
seconds	! O ž • k % y © a k H › 8 ©[180, 86400] ož

o¬ Þ . F åo- ! O ž • Þ . › © 600 aož

o¬ x X % ”o- NFPP F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- y ß x à ñ ž ˜ k ò ç œ Y ž • 0 k 1 + x à ñ g ÷ ^ ! O k Ý ž ! O ž •ož ¨ ÷ ^ ! O
i k ¢ œ Y ž • t F å ³ © › ž k 1 + ÷ ^ ! O x à ñ J H œ Y k w Ý ž — å œ Y ž
•ož ! O ž • ¨ œ Y ž • 0 Õ Ñ õ Ä Þ #ož
ò ç œ Y ž • R ³ © › w è © k 1 + N ,¼ € M x à ñ í ” k ò © g ÷ ^ ! Oož

o¬ F å †o- 1 y F å IP x à ! O ž • 180 aož

```
5XLMLH FRQILJ QISS
5XLMLH FRQILJ QISS LS JXDUG PRQLWRU SHULRG
```

o¬ à • co- … show nfpp ip-guard summary ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.44 ip-guard rate-limit

F å ¶ B ' , J ¿

ip-guard rate-limit { per-src-ip | per-port } pps

í " ' , J ¿ F å k Ê Ö ñ Þ . F å

no ip-guard rate-limit { per-src-ip | per-port }

Ê Ö Þ . F å

default ip-guard rate-limit { per-src-ip | per-port }

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
per-src-ip	+ ? › IP ª - g ' ,
per-port	+ ? € M g ' ,
pps	' , J ¿ › k H › 8 ©[1,9999] ož

o¬ Þ . F åo- • D } Ô Å † ož

o¬ x X % "o- NFPP F å % "

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å IP x à ¶ B ' , J ¿ k Â 9 › IP ' , J ¿ 2pps k Â 9 › € M ' , J ¿ 50ppsož

```
5XLMLH FRQILJ QISS
5XLMLH FRQILJ QISS LS JXDUG UDWH OLPLW SHU VUF LS
5XLMLH FRQILJ QISS LS JXDUG UDWH OLPLW SHU SRUW
```

o¬ à • co- … show nfpp ip-guard summary ò 0 F å ' Î

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.45 ip-guard scan-threshold

F å ¶ B þ T J ¿ož
ip-guard scan-threshold pkt-cnt

í ” þ T J ¿ F å k Ê Ö ñ Þ . F å
no ip-guard scan-threshold

Ê Ö Þ . F å
default ip-guard scan-threshold

o¬ @ ƒ ª ¢o-

@ ƒ	T
pkt-cnt	þ T J ¿ › k H › 8 ©[1,9999] ož

o¬ Þ . F åo- Þ . þ T J ¿ © 10 a 100 ož

o¬ x X % ”o- NFPP F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å IP x à ¶ þ T J ¿ 20ppsož

```
5 X L M L H F R Q I L J Q I S S
5 X L M L H F R Q I L J Q I S S LS J X D U G V F D Q W K U H V K R O G
```

o¬ à • co- … show nfpp ip-guard summary ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.46 ip-guard trusted-host

ò ç ’ ò t e È + î V Ñ g ! O k / + ¥ Ñ n P ’ ` k é U Y * ¥ x X F åož
ip-guard trusted-host ip mask

í ” ! O U ’ Ñ

default log-buffer entries

o¬ @ ƒ ª ¢o-	@ ƒ	T

number_of_message y length_in_seconds C 0

rs	è ˜ ¬ L
ra-redirect	è ˜ ¸ s y M g †
pps	x à J ¿ k % y © ? a † ƒ k H › 8 ©[1,9999] ož

o¬ Þ . F åo- ? € M > D ¬ L/ ¸ s Þ . ' , J ¿ © ? a 30 k è ˜ ¬ L Þ . ' , J ¿ © ? a 30 k è ˜ ¸ s/ M g † Þ . ' , J ¿ © ? a 30 ož

o¬ x X % ”o- NFPP F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- x à J ¿ 4 9 ' , J ¿ož

o¬ F å †o- 1 y F å ND x à ¶ B x à J ¿ k Â 9 › € M ns-na x à J ¿ 20pps, Â 9 › € M rs x à J ¿ 10pps k Â 9 › € M ra-redirect x à J ¿ 10ppsož

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

o¬ à • co- … show nfpp nd-guard summary ò 0 F å ' Î

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

-	-

o¬ Þ . F åo- ó • ND x à ø •

o¬ x X % ”o- NFPP F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å ¶ B ø • ND x à

```
5XLMLH FRQILJ QISS
5XLMLH FRQILJ QISS QG JXDUG HQDEOH
```

o¬ à • co- … show nfpp nd-guard summary ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.52 nd-guard rate-limit

F å ¶ B ’ , J ¿ož

nd-guard rate-limit per-port { ns-na | rs | ra-redirect } pps

í ” ’ , J ¿ F å k Ê Ö ñ Þ . F å

no nd-guard rate-limit per-port { ns-na | rs | ra-redirect }

Ê Ö Þ . F å

default nd-guard rate-limit per-port { ns-na | rs | ra-redirect }

o¬ @ ƒ ª ¢o-

@ ƒ	T
ns-na	> D ¬ L y > D ¸ s
rs	è ˜ ¬ L
ra-redirect	è ˜ ¸ s y M g †
pps	’ , J ¿ › k H › 8 ©[1,9999] ož

o¬ Þ . F åo- ? € M > D ¬ L/ ¸ s Þ . ’ , J ¿ © ? a 15 k è ˜ ¬ L Þ . x à J ¿ © ? a 15 k è ˜

o¬ Þ . ´ ðo- 14

o¬ … 6 -o-

o¬ F å †o- 1 ø • N M G0/1 ARP

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.56 nfpp arp-guard policy

¨ € M F å B B ’ , J ¿ y x à J ¿ož

nfpp arp-guard policy { per-src-ip | per-src-mac | per-port } rate-limit-pps attack-threshold-pps

í ” € M ’ , J ¿ y x à J ¿ F å k Ê Ö ñ Þ . F å

no arp-guard policy { per-src-ip | per-src-mac | per-port }

Ê Ö Þ . F å

default arp-guard policy { per-src-ip | per-src-mac | per-port }

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
per-src-ip	F å ? › IP ª - ’ , J ¿ y x à J ¿ož
per-src-mac	F å ? › MAC ª - ’ , J ¿ y x à J ¿ož
per-port	F å ? € M ’ , J ¿ y x à J ¿ož
rate-limit-pps	’ , J ¿ k H › 8 © 1 ñ 9999ož
attack-threshold-pps	x à J ¿ k H › 8 © 1 ñ 9999ož

o¬ Þ . F åo- € M Z Ä \ ’ , J ¿ y x à J ¿ k J ¶ B ’ , J ¿ y ’ , J ¿ož

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- x à J ¿ 4 9 ’ , J ¿ož

o¬ F å †o- 1 y F å N M G0/1 ARP x à ’ , J ¿ y x à J ¿ k F å Â 9 IP ’ , J ¿ 2pps k x à J ¿ 10pps z F å Â 9 MAC ’ , J ¿ 3pps k x à J ¿ 10pps z F å Â 9 € M ’ , J ¿ 50pps k x à J ¿ 100ppsož

```
5XLMLH FRQILJ LQWHUIDFH *
5XLMLH FRQILJ LI QISS DUS JXDUG SROLF\ SHU VUF LS
5XLMLH FRQILJ LI QISS DUS JXDUG SROLF\ SHU VUF PDF
5XLMLH FRQILJ LI QISS DUS JXDUG SROLF\ SHU SRUW
```

o¬ à • co- … show nfpp arp-guard summary ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.57 nfpp arp-guard scan-threshold

¨ € M F å B B þ T J ¿ož

nfpp arp-guard scan-threshold pkt-cnt

í ” € M þ T J ¿ F å k Ê Ö ñ Þ . F å

no nfpp arp-guard scan-threshold

Ê Ö Þ . F å

default nfpp arp-guard scan-threshold

o¬ @ ƒ ª ¢o-

@ ƒ	T
pkt-cnt	þ T J ¿ › k H › 8 ©[1,9999] ož

o¬ Þ . F åo- Z F å Â 9 € M ARP þ Tf9 › k J ¶ B ARP þ Tf9 ›ož

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 pÉ Õ % ”

3.58 nfpp dhcp-guard enable

¥ x X Û ¨ € M ø • DHCP x à

nfpp dhcp-guard enable

¼ { € M DHCP x à

no nfpp dhcp-guard enable

Ê Ö Þ . F å

default nfpp dhcp-guard enable

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- € M Z Ä F å DHCP x à • ¼ k J ¶ B • ¼ož

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- € M DHCP x à • ¼ i ¯ 9 ¶ B DHCP x à • ¼ož

o¬ F å „ Ÿ—ÖúÐ

no no Tj /T0c 0.0w.72 3Tw D n<06CA05D609DE092E0B01 9E5> /TT0 1 Tf 0 no Tj /T2_0 1 Tf 0 Tc 9 0w.72820 D <6FA

o¬ @ ƒ ª ¢o-

@ ƒ ñ	T
per-src-mac	F å ? › MAC ª - ' , J ¿ y x à J ¿ož
per-port	F å ? € M ' , J ¿ y x à J ¿ož
rate-limit-pps	' , J ¿ k H › 8 © 1 ñ 9999ož
attack-threshold-pps	x à J ¿ k H › 8 © 1 ñ 9999ož

o¬ Þ . F åo- € M Z Ä \ ' , J ¿ y x à J ¿ k J ¶ B ' , J ¿ y ' , J ¿ož

o¬ x X % "o- `i=Ñ Ç €w€16œÂ ÷ x à VúÐ`i=0D0 pÂ€pß œÂ °£€Z s<'< $C ÑÂ ÷ x à úÀW\/ 6S VúÐ

-	-

o¬ Þ . F åo- € M Z Ä F å DHCPv6 x à • ¼ k J ¶ B • ¼ož

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- € M DHCPv6 x à • ¼ i ¯ 9 ¶ B DHCP x à • ¼ož

o¬ F å †o- 1 ø • N M G0/1 DHCPv6 x à x à ož

```
5XLMLH FRQILJ LQWHUIDFH *
5XLMLH FRQILJ LI QISS GKFSY JXDUG HQDEOH
```

o¬ à • co- … show nfpp dhcpv6-guard summary ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.62 nfpp dhcpv6-guard isolate-period

¥ x X Û ¨ € M F å B B œ Y ž •ož

nfpp dhcpv6-guard isolate-period { seconds | permanent }

í ” € M œ Y ž • F å k Ê Ö ñ Þ . F å

no nfpp dhcpv6-guard isolate-period

Ê Ö Þ . F å

default nfpp dhcpv6-guard isolate-period

o¬ @ ƒ ª ¢o-

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å N M G0/1 DHCPv6 x à œ Y ž • 180 aož

```
5 X L M L H  F R Q I L J  L Q W H U I D F H  *
5 X L M L H  F R Q I L J  L I  Q I S S  G K F S Y  J X D U G  L V R O D W H  S H U L R G
```

o¬ à • co- … show nfpp dhcpv6-guard summary ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.63 nfpp dhcpv6-guard policy

¨ € M F å B B ’ , J ¿ y x à J ¿ož

nfpp dhcpv6-guard policy { per-src-mac | per-port } rate-limit-pps attack-threshold-pps

í ” € M ’ , J ¿ y x à J ¿ F å k Ê Ö ñ Þ . F å

no nfpp dhcpv6-guard policy { per-src-mac | per-port }

Ê Ö Þ . F å

default nfpp dhcpv6-guard policy { per-src-mac | per-port }

o¬ @ ƒ ª ¢o-

@ ƒ	T
per-src-mac	F å ? › MAC ª - ’ , J ¿ y x à J ¿ož
per-port	F å ? € M ’ , J ¿ y x à J ¿ož
rate-limit-pps	’ , J ¿ k H › 8 © 1 ñ 9999ož
attack-threshold-pps	x à J ¿ k H › 8 © 1 ñ 9999ož

o¬ Þ . F åo- € M Z Ä \ ’ , J ¿ y x à J ¿ k J ¶ B ’ , J ¿ y ’ , J ¿ož

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- x à J ¿ 4 9 ' , J ¿ož

o¬ F å †o- 1 y F å N M G0/1 DHCP x à ' , J ¿ y x à J ¿ k F å Â 9 IP ' , J ¿ 2pps k x à J ¿ 10pps z F å Â 9 MAC ' , J ¿ 3pps k x à J ¿ 10pps z F å Â 9 € M ' , J ¿ 50pps k x à J ¿ 100ppsož

```
5XLMLH FRQILJ LQWHUIDFH *
5XLMLH FRQILJ LI QISS GKFSY JXDUG SROLF\ SHU VUF PDF
5XLMLH FRQILJ LI QISS GKFSY JXDUG SROLF\ SHU SRUW
```

o¬ à • co- … show nfpp dhcpv6-guard summary ò 0 F å ' Î

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.64 nfpp icmp-guard enable

¥ x X Û ¨ € M ø • ICMP x à ož
nfpp icmp-guard enable

¼ { € M ICMP x à
no nfpp icmp-guard enable

Ê Ö Þ . F å
default nfpp icmp-guard enable

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- € M Z Ä F å ICMP x à • ¼ k J ¶ B • ¼ož

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- € M ICMP x à • ¼ i ¯ 9 ¶ B ICMP x à • ¼ož

o¬ F å †o- 1 ø • N M G0/1 ICMP x à x à ož

```
5XLMLH FRQILJ LQWHUIDFH *
```

5XLMLH FRQILJ LI QISS LFPS JXDUG HQDEOH

o¬ à • co- … show nfpp icmp-guard summary ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.65 nfpp icmp-guard isolate-period

¥ x X Û ¨ € M F å B B œ Y ž •ož

nfpp icmp-guard isolate-period { seconds | permanent }

í ” € M œ Y ž • F å k Ê Ö ñ Þ . F å

no nfpp icmp-guard isolate-period

Ê Ö Þ . F å

default nfpp icmp-guard isolate-period

o¬ @ ƒ ª ¢o-

@ ƒ	T
seconds	œ Y ž • k % y © a k H › 8 © 0 ê ñ[30, 86400] k 0 n P œ Yož
permanent	K ! œ Y

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.66 nfpp icmp-guard policy

¨ € M F å B B ' , J ¿ y x à J ¿ož
nfpp icmp-guard policy { per-src-ip | per-port } rate-limit-pps attack-threshold-pps

í " € M ' , J ¿ y x à J ¿ F å k Ê Ö ñ Þ . F å
no nfpp icmp-guard policy { per-src-ip | per-port }

Ê Ö Þ . F å
default nfpp icmp-guard policy { per-src-ip | per-port }

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
per-src-ip	F å ? › IP ª - ' , J ¿ y x à J ¿ož
per-port	F å ? € M ' , J ¿ y x à J ¿ož
rate-limit-pps	' , J ¿ k H › 8 © 1 ñ 9999ož
attack-threshold-pps	x à J ¿ k H › 8 © 1 ñ 9999ož

o¬ Þ . F åo- € M Z Ä \ ' , J ¿ y x à J ¿ k J ¶ B ' , J ¿ y ' , J ¿ož

o¬ x X % "o- N M F å % "

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- x à J ¿ 4 9 ' , J ¿ož

o¬ F å †o- 1 y F å N M G0/1 ICMP x à ' , J ¿ y x à J ¿ k F å Â 9 IP ' , J ¿ 5pps k x à J ¿ 10pps z F å Â 9 € M ' , J ¿ 100pps k x à J ¿ 200ppsož

```
5XLMLH FRQILJ LQWHUIDFH *
5XLMLH FRQILJ LI QISS LFPS JXDUG SROLF\ SHU VUF LS
5XLMLH FRQILJ LI QISS LFPS JXDUG SROLF\ SHU SRUW
```

o¬ à • co- … show nfpp icmp-guard summary ò 0 F å ' Î

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.67 nfpp ip-guard enable

¥ x X Û ¨ € M ø • IP … þ T ož

)	0 ê ñ[30, 86400] k 0 n P œ Yož

default nfpp ip-guard policy { per-src-ip | per-port }

o¬ @ ƒ ª ¢o-

@ ƒ	T
per-src-ip	F å ? › IP ª - x à J ¿ož
per-port	F å ? € M x à J ¿ož
rate-limit-pps	' , J ¿ k H › 8 © 1 ñ 9999ož
attack-threshold-pps	x à J ¿ k H › 8 © 1 ñ 9999ož

o¬ Þ . F åo- € M Z Ä \ ' , J ¿ y x à J ¿ k J ¶ B ' , J ¿ y x à J ¿ož

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ ... 6 -o- x à J ¿ 4 9 ' , J ¿ož

o¬ F å †o- 1 y F å N M G0/1 IP x à ' , J ¿ y x à J ¿ k F å Â 9 IP ' , J ¿ 2pps k x à J ¿ 10pps z F å Â 9 € M ' , J ¿ 50pps k x à J ¿ 100ppsož

```
5XLMLH FRQILJ LQWHUIDFH *
5XLMLH FRQILJ LI QISS LS JXDUG SROLF\ SHU VUF LS
5XLMLH FRQILJ LI QISS LS JXDUG SROLF\ SHU SRUW
```

o¬ à • co- … show nfpp ip-guard summary ò 0 F å ' Î

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.70 nfpp ip-guard scan-threshold

¨ € M F å B B þ T J ¿ož

nfpp ip-guard scan-threshold pkt-cnt

í ” € M þ T J ¿ F å k Ê Ö ñ Þ . F å

no nfpp ip-guard scan-threshold

Ê Ö Þ . F å

default nfpp ip-guard scan-threshold

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- € M ND x à • ¼ i ¯ 9 ¶ B • ¼ož

o¬ F å †o- 1: F å … G0/1 M ND x à

```
5XLMLH FRQILJ LQWHUIDFH *
5XLMLH FRQILJ LI QISS QG JXDUG HQDEOH
```

o¬ à • co- … show nfpp nd-guard summary ò 0 F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.72 nfpp nd-guard policy

¨ € M F å B B ’ , J ¿ y x à J ¿ož

nfpp nd-guard policy per-port { ns-na | rs | ra-redirect } rate-limit-pps attack-threshold-pps

í ” € M ’ , J ¿ y x à J ¿ F å k Ê Ö ñ Þ . F å

no nfpp nd-guard policy per-port { ns-na | rs | ra-redirect }

Ê Ö Þ . F å

default nfpp nd-guard policy per-port { ns-na | rs | ra-redirect }

o¬ @ ƒ ª ¢o-

@ ƒ	T
ns-na	> D ¬ L y > D ¸ s
rs	è ˜ ¬ L
ra-redirect	è ˜ ¸ s y M g †
rate-limit-pps	’ , J ¿ k H › 8 © 1 ñ 9999ož
attack-threshold-pps	x à J ¿ k H › 8 © 1 ñ 9999ož

o¬ Þ . F åo- € M Z Ä \ ’ , J ¿ y x à J ¿ k J ¶ B ’ , J ¿ y x à J ¿ož

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- x à J ¿ 4 9 ' , J ¿ož
ND snooping € M æ ã ³ ' ` € M y ' ` € M k ³ ' ` € M N Ñ k ' ` € M N à ¼ož 9 *
o ' ` € M v O Ý 9 ³ ' ` € M v O k ñ Y ' ` € M ' , J ¿ • ¥ ä 9 ³ ' ` € M ' , J ¿ k
• o ND snooping ž k + 9 ' ` € M kND snooping 1 * s ND guard € M • † ' , J ¿
C — å è ? a 800 k x à J ¿ C — å è ? a 900 ož
ND guard c ^ + - ND snooping — å ' , J ¿ y ' ò t F å ' , J ¿ k e F å › ~ $ ¯ F å
› k w ' ñ F å † ^ ožND snooping — å x à J ¿ • wož

o¬ F å †o- 1 y F å N M G0/1 ND x à ' , J ¿ y x à J ¿ k F å Â 9 € M ns-na ' , J ¿ 50pps k x à J ¿
100pps z F å Â 9 € M rs ' , J ¿ 10pps k x à J ¿ 20pps; F å Â 9 € M ra-redirect ' , J ¿
10pps,gongji J ¿ 20ppsož

```
5XLMLH FRQILJ LQWHUIDFH *
5XLMLH FRQILJ LI QISS QG JXDUG SROLF\ SHU SRUW QV QD
5XLMLH FRQILJ LI QISS QG JXDUG SROLF\ SHU SRUW UV
5XLMLH FRQILJ LI QISS QG JXDUG SROLF\ SHU SRUW UD UHGLUHFW
```

o¬ à • co- … show nfpp nd-guard summary ò 0 F å ' Î

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.73 show nfpp arp-guard hosts

ò 0 I ! O Ñož
show nfpp arp-guard hosts [statistics | [[vlan vid] [interface interface-id

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 ARP x à I ! O Ñ Ï ‹ ’ Îož ¢ ù Ä 120 V Ñ t ! O k ¿ 100 V Ñ t è ª œ Y k20 V Ñ œ Y â Â g * o – Ü = œ Ä Ä á k ê ñ ACL Ï › á hož

5 X L M L H V K R Z Q I S S D U S J X D U G K R V W V V W D W L V W L F V V X F F H V V I D L O W R W D O

2 y ò 0 ARP x à I ! O Ñ k † š ç remain-time(s) © 6 þ • œ Y ž •ož

5 X L M L H V K R Z Q I S S D U S J X D U G K R V W V

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 ARP x à þ T ï Ï ‹ ’ Î k ¢ ù þ T n È » Ä 4 Ú “ £

```
5XLMLH VKRZ QISS DUS JXDUG VFDQ VWDWLVWLFV
$53 VFDQ WDEOH KDV UHFRUG V
```

2 y ò 0 ARP x à þ T ï ’ Î k timestamp “ £ © y ß ARP þ T ž • k ò 2008-01-23 16:23:10 n P ¨ 2008 v 1 Ã 23 ™16 µ 23 ã 10 a y ß ARP þ Tož

```
5XLMLH VKRZ QISS DUS JXDUG VFDQ
9/$1 LQWHUIDFH ,3 DGGUHVV 0$& DGGUHVV WLPHVWDPS

*L 1 $
*L
*L 1 $
*L 1 $
7RWDOy UHFRUG V
```

3 y N ò 0 vlan 1,G0/1 M k … ` MAC 0000.0000.0001 þ T ï ’ Îož

Ruijie# show nfpp arp-guard scan vlan 1 interface G 0/1 0000.0000.0001

```
9/$1 LQWHUIDFH ,3 DGGUHVV 0$& DGGUHVV WLPHVWDPS

*L 1 $
7RWDOy UHFRUG V
```

o¬ F å †o- 1 y ò 0 ARP x à F å ' Î k , ¶ B F å ' Î Y C N M F å ' Îož

```
5XLMLH  VKRZ QISS DUR JXDUG VXPPDU\
g)RUPDW RI FROXPQ 5DWH OLPLW DQG $WWDFN WKUHVKROG LV SHU V
,QWHUIDFH 6WDWXV ,VRODWH SHULRG 5DWH OLPLW $WWDFN WKUHVK
*OREDO (QDEOH
*L (QDEOH
*L 'LVDEOH

0D[LPXP FRXQW RI PRQLWRUHG KRVWV
0RQLWRU SHULRGy V
```

“ m Interface Global ¶ µ æ e " d

“ m Status ¶ µ ¾ î Õ — ¦ ^ l _ Ÿ d

“ m Rate-limit L ´ s W IP « . ¬ / s W MAC « . ¬ / j Ç « . ¬

“ m Attack-threshold ¡ µ L ´ + d q - r ¶ µ " d

o¬ U P ' Îo- -

o¬ u V ª ¢o- - ò ð ! 2 Ñož q œ" ù pP—¢g Aq" ò€ºD¤ÔäÔ ' Ÿ'_-ð #˜z&Ð$ œ`ª s'0$õ€pV ª ¢•0 S82 M q!ð y.0 TT 0 (40 % c E@

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

3.78 show nfpp dhcp-guard summary

ò 0 F å ’ Îož

show nfpp dhcp-guard summary

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- * ¥ x X U Y ò 0 F å ’ Îož

o¬ F å †o- 1 y ò 0 DHCP x à F å ’ Î k ,¶ B F å ’ Î Y C N M F å ’ Îož

```
5XLMLH  VKRZ QISS GKFS JXDUG VXPPDU\
g)RUPDW RI FROXPQ 5DWH OLPLW DQG $WWDFN WKUHVKROG LV SHU V
,QWHUIDFH  6WDWXV  ,VRODWH SHULRG 5DWH OLPLW $WWDFN WKUHVK
*OREDO    (QDEOH
*L        (QDEOH
*L        'LVDEOH

0D[LPXP FRXQW RI PRQLWRUHG KRVWV
0RQLWRU SHULRGy  V
```

8.w6847

8.w6847

3.79 show nfpp dhcp-guard trusted-host

ò 0 ! O U ’ Ñož

show nfpp dhcp-guard trusted-host

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 DHCP x à U ’ Ñ F åož

```
5XLMLH VKRZ QISS GKFS JXDUG WUXVWHG KRVW
PDF



7RWDOy UHFRUG V
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

3.80 show nfpp dhcpv6-guard hosts

ò 0 I ! O Ñož

show nfpp dhcpv6-guard hosts [statistics | [[vlan vid] [interface interface-id] [mac-address]]]

o¬ @ ƒ ª ¢o-

@ ƒ	T
statistics	ò 0 I ! O Ñ Ï ‹ ’ Î
vid	Z ' B ¿ à Z
interface-id	€ M d f

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 DHCPv6 x à I ! O Ñ Ï ‹ ’ Îož ¢ ù Ä 120 V Ñ t ! O k ¿ 100 V Ñ t è ª
œ Y k20 V Ñ œ Y â Â g * o – Ü = œ Ä Ä á k ê ñ ACL Ï › á hož

```
5XLMLH VKRZ QISS GKFSY JXDUG KRVWV VWDWLVWLFV
VXFFHVV IDLO WRWDO
```

2 y ò 0 DHCPv6 x à I ! O Ñ k † š ç remain-time(s) © 6 þ • œ Y ž •ož

```
5XLMLH VKRZ QISS GKFSY JXDUG KRVWV
,I FROXPQ VKRZV LW PHDQV KDUGZDUH IDLOHG WR LVRODWH KR
9/$1 LQWHUIDFH 0$& DGGUHVV UHPDLQ WLPH VHFRQGV

JL
JL
7RWDOy KRVW V
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

3.81 show nfpp dhcpv6-guard summary

ò 0 F å ’ Î
show nfpp dhcpv6-guard summary

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- - Ô Ó % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- * ¥ x X U Y ò 0 F å ’ Îož

o¬ F å †o- 1 y ò 0 DHCPv6 x à F å ’ Î k , ¶ B F å ’ Î Y C N M F å ’ Îož

```
5XLMLH VKRZ QISS GKFSY JXDUG VXPPDU\
g)RUPDW RI FROXPQ 5DWH OLPLW DQG $WWDFN WKUHVKROG LV SHU V
,QWHUIDFH 6WDWXV ,VRODWH SHULRG 5DWH OLPLW $WWDFN WKUHVK
```

```
*OREDO      (QDEOH
*L          (QDEOH
*L          'LVDEOH

0D[LPXP FRXQW RI PRQLWRUHG KRVWV
0RQLWRU SHULRGy   V
```

“ m Interface Global ¶ µ æ e " d

“ m Status ¶ µ ¾ î Õ — ¦ ^ l _ Ÿ d

“ m Rate-limit L ´ s W IP « . ¬ / s W MAC « . ¬ / j Ç « . ¬

“ m Attack-threshold ¡ µ L ´ + d q - r ¶ µ " d

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

3.82 show nfpp dhcpv6-guard trusted-host

[redacted] host

o¬ @ ƒ ª ¢o-

o¬ u V ª ¢o- -

3.83 show nfpp icmp-guard hosts

ò 0 ! ! O Ñož

show nfpp icmp-guard hosts [statistics | [[vlan

```
VXFFHVV    IDLO    WRWDO
```

2 y ò 0 IP x à I ! O Ñ k † š ç remain-time(s) © 6 þ • œ Y ž •ož

```
5XLMLH VKRZ QISS LS JXDUG KRVWV
,I FROXPQ VKRZV LW PHDQV KDUGZDUH GR QRW LVRODWH KRVW
9/$1 LQWHUIDFH ,3 DGGUHVV 5HDVRQ UHPDLQ WLPH V

      *L                $77$&.
      *L                6&$1
7RWDOy KRVW V
```

Q “ m q Reason r M í V o „ ³ Å P Ù q ATTACK r ¶ µ V o Ÿ " IP q 3 . g 1 ¶ ^
l ¬ q SCAN r ¶ µ V o } A M v Q m d

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

3.87 show nfpp ip-guard summary

ò 0 F å ’ Î
show nfpp ip-guard summary

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- * ¥ x X U Y ò 0 F å ’ Îož

o¬ F å †o- 1 y ò 0 IP x à F å ’ Î k ,¶ B F å ’ Î Y C N M F å ’ Îož

```
5XLMLH VKRZ QISS LS JXDUG VXPPDU\
g)RUPDW RI FROXPQ 5DWH OLPLW DQG $WWDFN WKUHVKROG LV SHU V
,QWHUIDFH 6WDWXV ,VRODWH SHULRG 5DWH OLPLW $WWDFN WKUHVKR
*OREDO (QDEOH
*L (QDEOH
*L 'LVDEOH
```

```
0D[LPXP FRXQW RI PRQLWRUHG KRVWV
0RQLWRU SHULRGy V
```

“ m Interface Global ¶ µ æ e " d

“ m Status ¶ µ ¾ î Õ — ¦ ^ l _ Ÿ d

“ m Rate-limit L ´ s W IP « . ¬ / s W MAC « . ¬ / j Ç « . ¬

“ m Attack-threshold ¡ µ L ´ + d q - r ¶ µ " d

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

3.88 show nfpp ip-guard trusted-host

ò 0 ! O U ’ Ñož

show nfpp ip-guard trusted-host

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 14

o¬ ... 6 -o- -

o¬ F å †o- 1 y ò 0 IP x à U ’ Ñ F åož

```
5XLMLH VKRZ QISS LS JXDUG WUXVWHG KRVW
```

3.89 show nfpp log

ª P NFPP ™ º F åož

show nfpp log summary

ª P NFPP ™ º Ù Ï Ä ož

show nfpp log buffer [statistics]

o¬ @ ƒ ª ¢o-

@ ƒ	T
statistics	ª P NFPP ™ º Ù Ï Ï ‹ ' Î

o¬ x X % "o- Ô Ó % "

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¢ ™ º Ù Ï œ ß ž k e Ò ™ º 1 t ' k c ž ¨ ™ º Ù Ï ª P%² Ú ñ Ä K Å C "-" n ¾ož '

ò t ¬ } Í ™ º Ù Ï O ê ñ U ä ÿ è © Ï ƒ Î , äož

R ™ º Ù Ï H ™ º ÿ è © Ï ƒ Î k Ä 7 ^ G ÿ ž • í k ò ñ P y

%NFPP_ARP_GUARD-4-DOS_DETECTED:

Host<IP=N/A,MAC=0000.0000.0004,port=Gi4/1,VLAN=1> was detected.(2009-07-01 13:00:00)

o¬ F å †o- 1 y ò 0 NFPP ™ º ' Î F åož

```
5XLMLH VKRZ QISS ORJ VXPPDU\
7RWDORE EXIIHUL]H
6\VORD WHHQWSUH\UVHFRQGV
/RJJLQJ
9/$1
LQWHUIDFH *L
LQWHUIDFH *L
```

2 y ò 0 NFPP ™ º Ù Ï ™ º Ú ƒož

```
5XLMLH VKRZ QISS ORJ EXIIHU VWDWLVWLFV
7KHUH DUH ORJV LQ EXIIHU
```

3 y ò 0 NFPP ™ º Ù Ï ož

```
5XLMLH VKRZ QISS ORJ EXIIHU
3URWRFRO 9/$1 ,QWHUIDFH ,3 DGGUHVV 0$& DGGUHVV 5HDVRQ

$53 *L 'R6
$53 *L ,62/$7('
$53 *L 'R6
```

$ 5 3	* L	, 6 2 / $ 7 (B) $, / ('
$ 5 3	* L	6 & $ 1
$ 5 3	* L	3 2 5 7 B $ 7 7 $ & . ('

Protocol Ä Y H › y

ARP	+ • ARP x à
IP	+ • IP ... þ T
ICMP	+ • ICMP x à
DHCP	+ • DHCP x à
DHCPv6	+ • DHCPv6 x à
NS-NA	+ • ND x à > D ¬ L y > D ¸ s
RS	+ • ND x à è ˜ ¬ L
RA-REDIRECT	+ • ND x à è ˜ ¸ s y M g †

Reason n P = œ k Ä 5 _ H › y

DoS	n P y ñ ! Í Æ x à
ISOLATED	n P x à ñ t è ª œ Y
ISOLATE_FAILED	n P œ Y x à ñ â Â
SCAN	n P y ñ þ T
PORT_ATTACKED	n P € M t x à

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

3.90 show nfpp nd-guard summary

ò 0 F å ’ Îož

show nfpp nd-guard summary

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- -

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- * ¥ x X U Y ò 0 F å ’ Îož

o¬ F å †o- 1 y ò 0 ND x à F å ’ Î k , ¶ B F å ’ Î Y C N M F å ’ Îož

```
5XLMLH  VKRZ QISS QG JXDUG VXPPDU\
g)RUPDW RI FROXPQ 5DWH OLPLW DQG  $WWDFN WKUHVKROG LV 16 1$
,QWHUIDFH  6WDWXV  5DWH OLPLW $WWDFN WKUHVKROG
*OREDO      (QDEOH
*L          (QDEOH
*L          'LVDEOH
```

“m Interface Global ¶µæe "d

“m Status ¶µ¾îÕ—¦^l_Ÿd

“m Rate-limit L´ sƒbÈÐ /dA «. ¬ /s¾ vÈÐ «. ¬ /s¾ vdA /7 G¿q3 «. ¬ “m Attack-threshold ¡µL´+ dq -r¶µ "d

hH \!q -/5/30 r¶µ}jÇ G 0/2 h "ƒbÈÐ /dA «. ¬ s¾ vÈÐ « . ¬¾ 5 s¾ vdA /7 G¿q3 «. ¬¾ 30 d

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

3.91 show nfpp nd-guard trusted-host

ò0 !O U’ Ñož

show nfpp nd-guard trusted-host

o¬ @ƒª ¢o-

@ƒ	T
-	-

o¬ x X %”o- Ô Ó %”

o¬ Þ.´ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1yò0 ND xàU’ ÑF åož

```
5XLMLH  VKRZ QISS QG JXDUG WUXVWHG KRVW
PDF




7RWDOy  UHFRUG V
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

Q ¸ `-WLAN QOS

Ú ` Ÿ4¡ WLAN QOS Q ¸ `,Ì G Y • È Ù À ¹ ß0´8V Ö

1. WQOS

1 WQOS

1.1 fair-schedule

• o — ¿ AP ¸ u ² † ož

fair-schedule

o¬ @ ƒ ª ¢o-

@ ƒ	T
mac-address	n P ¬ } — å ï MAC ª -ož
priority	n P i ¯ ´ ƒ › k 8 1-6

o¬ Þ . F åo- Þ . ñ Ä STA i ¯ ´ 1ož

o¬ x X % ”o- ¶ B F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- —ož

o¬ F å †o- -

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

1.3 wlan-qos ap-based

F å ¢ ù AP g y g v O ’ , @ ƒož

wlan-qos ap-based { per-user-limit | total-user-limit } { down-streams | up-streams } average-data-rate average-data-rate burst-data-rate burst-data-rate

ï U Y ¥ x X no # ¾ = @ ƒ Þ . ›ož

no wlan-qos ap-based { per-user-limit | total-user-limit } { down-streams | up-streams }

• o ¢ ù AP total-user-limit ´ ’ ,ož

wlan-qos ap-based total-user-limit { down-streams | up-streams } intelligent

ï U Y ¥ x X no # ¾ H ƒ ´ ’ ,ož

no wlan-qos ap-based total-user-limit { down-streams | up-streams } intelligent

up-streams	n P — å AP g v O ' , @ ƒož
Intelligent	n P © k + total-user-limit g ´ ' ,ož
average-data-rate	n P — å u ® , ä ' ò k % y 8Kbps k 8 8-261120ož
burst-data-rate	n P — å s G , ä ' ò k % y 8Kbps k 8 8-261120ož

o¬ Þ . F åo- Þ . — v O ' ,ož F å 4 total-user-limit Þ . • o ´ ' ,ož

o¬ x X % "o- ¶ B F å % "ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- • o ´ ' , ù U © F å 4 total-user-limit ' , k k ñ % Þ F å ´ ' , • ¼ k ÿ |ož

o¬ F å †o- -

o¬ à • co- -

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

1.4 wlan-qos netuser

F å Â 9 6 ï g y g v O ' , @ ƒož

wlan-qos netuser mac-address { inbound | outbound } average-data-rate average-data-rate burst-data-rate burst-data-rate

ï U Y ¥ x X no # ¾ = @ ƒ Þ . ›ož

no wlan-qos netuser mac-address { inbound | outbound }

o¬ @ ƒ ª ¢o-

@ ƒ	T
mac-address	n P ¬ } — å ï MAC ª -ož
inbound	n P — å ï g v O ' , @ ƒož
outbound	n P — å ï g v O ' , @ ƒož
average-data-rate	n P — å u ® , ä ' ò k % y 8Kbps k 8 8-261120ož
burst-data-rate	n P — å s G , ä ' ò k % y 8Kbps k 8 8-261120ož

o¬ Þ . F åo- Þ . — v O ' ,ož

o¬ x X % ”o- ¶ B F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- —ož

o¬ F å †o- -

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

1.5 wlan-qos wlan-based

F å ¢ ù WLAN g y g v O ’ , @ ƒož

wlan-qos wlan-based { wlan-id | ssid } { per-user-limit | total-user-limit } { down-streams | up-streams } average-data-rate average-data-r- ge-date (-)TjTT3 e0013 Tc 8.607 0 Td [94 0 Td 0 T9 -

average-data-rate	n P — å u ® , ä ’ ò k % y	8Kbps k 8	8-261120ož
burst-data-rate	n P — å s G , ä ’ ò k % y	8Kbps k 8	8-261120ož

o¬ Þ . F åo- Þ . — v O ’ ,ož F å 4 total-user-limit Þ . • o ´ ’ ,ož

o¬ x X % ”o- ¶ B F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 - Þ . ´ ðo- 7090690056F07B40A080B920B2C6F9E>Tj /TT0 1 22 ( )Tj EMC /P <</MC77(0)] >>BDC 7.1755 Tc -7.453 -1.693 23 (

1 5

œ ‡ 0 Y •

o ¬ … 6

š k é ó • • o wqos v O Ï ‹ k œ 4 * ¥ x X • o ê ñ ¼ { wqos v O Ï ‹ C — |ož

o¬ F å †o- -

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

1 / L

1.1 bandwidth

¨ N M F å % ” — å N M k ! @ ƒož
bandwidth kilobits

Ê Ö k ! @ ƒ Þ . ›ož
no bandwidth

o¬ @ ƒ ª ¢o-

@ ƒ	T
kilobits	? a U k ! k Y ? a K A Ô % y

o¬ Þ . F åo- ¢ ¥ N M Z Ä — å bandwidth x X @ ƒ ž k ¨ Ô Ó ï % ” show interface x X Û ª P ¿ Þ . ›ož

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- bandwidth x X Ž § € î N M k ! k Q © • ï s • © Ï ¥ N M k ! 6 ö k%² " k Y ß à N M
k ! © ¡ k ï U Y ÿ G Ž Õ Ñ Û — ožBandwidth
o¬ Þ . ´ ðo- N M & å % ” o¬ Þ . ´ ðo- N M & å % ” o¬ Þ . ´ ðo- N M & å % ” o¬ … 6 -o-

› Þ . ›ož
no carrier-delay

o¬ @ ƒ ª ¢o-

@ ƒ	T
seconds	Y a % y k 8 0 ½60 a

o¬ Þ . F åo- ú f ž • Þ . › © 2 aož

o¬ x X % ”o- N M F å % ”ož

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ @ ƒ © 6 N M e è ú f y ’ Z DCD R Down Ù Á ñ Up Ù Á ž • • ž k ò ç DCD ¨ • ž $ Ä G ÿ J k ; " © Ï 1 ¿ _ Ù Á J ò 9 C ƒ G e è C M • # Œož ò ç @ ƒ — å A û Ý k ; " Ù ' ?) 9 • DCD J 1 — c t y ñ z , F k ò ç @ ƒ — å è 0 k ; " ?) ³ 4 DCD ’ Z é J C 1 t © Ï y ñ k ý © Ï - < 1 Í I Åož
ò ç DCD ú f • ž • A û x k ; " 1 ¥ @ ƒ — x ? k U Y @ ½ , è M ü k Y Ž è n U Y û ½ v •ož ò ç , F kDCD ú f • ž • 4 9 è M ü ñ 0 ž • k ; " • ¥ 1 ¥ @ ƒ — å , + Ý ? k Y ² - è Z Ä · } è 7¦TÙož

o¬ F å †o- y Y † ÿ P 8 F å M 0 ú f ž • 5 a y

```
5XLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
5XLMLH FRQILJ LI FDUULHU GHOD\
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

1.3 clear counters

¨ Ô Ó ï % ” Ž ” N M * ’ @ ƒ Ï ‹ ‹ ƒ ›ož
clear counters [interface-type interface-number]

o¬ @ ƒ ª ¢o-

@ ƒ	T
interface-type	N M • º
interface-number	N M Ú Z

o¬ x X % ”o- Ô Ó ï F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- N M Ï ‹ ’ Î š 5 * ’ J • ª J k Ä ž k 4 9 ² Y ª * ’ Ï ‹ ’ Î ª t k 1 N M ª Ï ‹ ’
Î Ž ” k ý ¢ ù ª Ï ‹ ’ Î < U Y ò ª F ¥ ¢ ù N M ž * ’ Ù Ñož

o¬ F å †o- 1 y Ž ” M 1/0 Ï ‹ ‹ *ƒ* › k ò x X y
5 X L M L H F O H D U F R X Q W H U V J L J D E L W (W K H U Q H W

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

1.4 clear interface

¨ Ô Ó ï % ” Ö y%² N M F ^ . þož
clear interface interface-type interface-number

o¬ @ *ƒ* ª ¢o-

@ ƒ	T
interface-type	N M • º
interface-number	N M Ú Z

o¬ x X % ”o- Ô Ó ï F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- %² " ¨ 3 o Õ Ñ k ¬ } Ö y%² N M F ^ . þ k Ö y N M F ^ . þ , ¢ 9 ü g no shutdownož

o¬ F å †o- 1 y Y † ÿ P 8 Ö y gigabitEthernet 0/1 F ^ . þ y
5 X L M L H F O H D U L Q W H U I D F H J L J D E L W (W K H U Q H W

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

1.5 description

¨ N M F å % ” — å N M ð dož

description string

í ” N M ð d
no description

o¬ @ ƒ ª ¢o-

auto	6 Y ß à N M • q • % ” k ÿ G N M ñ N ¤ ¿ ˜o• 8 C — Õo• à * ^ Ž Õ Ñ Û F å ¥ N M © W • ¨ ¶ E W ê ñ ! E W % ”ož

o¬ Þ . F åo- ¶ E W y ! E W •ož

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¨ … à M W • % ” — å ž k ” 4 — å duplex @ ƒ Y Ù k U Y — å speed k @ • speed x X … ª ¢ož

o¬ F å †o- 1 y Y † ÿ P 8 ¨ ½ , Y ß à N M 0/0 — å è ! E W W • % ”

```
5XLMLH FRQILJ LQWHUIDFH IDVWHWKHUQHW
5XLMLH FRQILJ LI GXSOH[ KDOI
```

o¬ à • co- 1 y … show interfaces x X k U Y ò 0 N M E W % ”ož

o¬ U P ’ Îo- 1. F å E W è $ e k N M k Down Ç Up M • # Œ k U k ø - € M Down y Up syslogož

```
)HE /,1. 83'2:1 ,QWHUIDFH *LJDELW(WKHUQHW FKDQJHG
)HE /,1(35272 83'2:1 /LQH SURWRFRO RQ ,QWHUIDFH *LJDELW
WR GRZQ
)HE /,1. 83'2:1 ,QWHUIDFH *LJDELW(WKHUQHW FKDQJHG
)HE /,1(35272 83'2:1 /LQH SURWRFRO RQ ,QWHUIDFH *LJDELW
WR XS
```

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

1.7 encapsluation dot1q

¨ ÿ N M F å % ” ¨ Y ß à ÿ N M / x IEEE 802.1Qož
encapsulation dot1Q VLANID

1 / x • ” Ê Ö Þ . ›ož
no encapsulation

o¬ @ ƒ ª ¢o-

@ ƒ	T
VLANID	Z ' B ¿ à VLAN IDož H › 8 1~4094 … ƒož

o¬ Þ . F åo- Þ . / x # ‘ © 802.1Q k / x ` ~ VLANož

o¬ x X % ”o- ÿ N M F å % ”ož

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- 802.1Q ©%² IEEE ö Õ # ‘ k 9 ¨] Æ g VLAN æ ã 8 C — Õ y C — Õ $ • ; *ož
802.1Q Q ¨ Y ß à M ÿ N M / xož

o¬ F å †o- 1 y µ P † ¨ ÿ N M 20 / x 802.1Q k VLANID 20 y

```
5 X L M L H F R Q I L J L Q W H U I D F H I D V W ( W K H U Q H W
5 X L M L H F R Q I L J V X E L I H Q F D S V X O D W L R Q G R W 4
```

o¬ à • co- -

o¬ U P ’ Îo-

o¬ o • j ¨o- -

o¬ u V ª ¢o-

1.8 interface

¨ ¶ B F å % ” … interface x X µ N M F å % ”ož

interface interface-type slot-number/interface-number [sub-interface-number]

Y x X d … define interface-range Û #ož

define interface-range macro_name

@ ƒ	T
interface-type	N M • º
slot-number/interface-number	
sub-interface-number	

o¬ Þ . F åo- Þ . Õ Ñ k … ¥

o¬ x X % ”o- ¶ B F å % ”ož

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- + Z ' M k ÿ µ N M Z ž ¬ } ÿ µ $ Z k + N ÿ µ Z ' M Ú Z / U k ò interface looback 0.

o¬ F å †o- 5 X L M L H F R Q I L J L Q W H U I D F H * L

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

1.9 interface range

¨ ¶ B F å % ” … interface x X µ N M F å % ”ož
Interface range { port-range | macro macro_name }

Y x X d … define interface-range Û #ož
define interface-range macro_name

o¬ @ ƒ ª ¢o-

@ ƒ	T
port-range	O q • N M • º y N M Ú Z 8 k U Y © Y ß à Ò ò N Mo• Loopback M ˆ k ÿ µ ¥ ” interface-type slot-number/interface-number [sub-interface-number]ož

2 y ÿ µ d O F å N M F åož

```
5XLMLH FRQILJ  GHILQH LQWHUIDFH UDQJH URXWH JLJDELW(WKHUQHW
5XLMLH FRQILJ  LQWHUIDFH UDQJH PDFUR URXWH
5XLMLH FRQILJ LI UDQJH  EDQGZLGWK
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

1.10 load-interval

¨ N M F å % ” 6 %² N M ¿ ú ‹ ‘ • œ ž •ož
load-interval seconds

Ê Ö Þ . F åož
no load-interval

o¬ @ ƒ ª ¢o-	@ ƒ	T

‡ ç `

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

1.11

1.12 show interfaces

¨ Ô Ó ï % ” ê ¯ * ï % ” … show interfaces x X Û ª P ò 0 Ô N M Ù Á Y C Ï ‹ ’ Îož
show interfaces [interface-type interface-number] [description]

o¬ @ ƒ ª ¢o-

@ ƒ	T
interface-type	U # @ ƒ k N M • º k # ó • ª P ñ Ä N Mož
interface-number	¢ ÿ µ N M • º ž k · # @ ƒ k N M Ú Z
description	N M T … ’ Î k , link Ù Áož

o¬ x X % ”o- ñ Ä CLI ï % ”ož

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- … show interface x X U Y ò 0 ’ Î , Ä y N M y # ‘ Ù Áo•MTU o•Bandwidth o•Loopback Ù Áo•
N M „ ç Œ y „ ç … Õ Ño• # ‘ * ’ Õ Ño• N M † ÿ µ ÿ ß Y C [j ˆ * ’ Õ Ñ k e è Ò
ò Ù Áož U Y 0 ß î •%² N M ƒ G e è C Y … Õ Ñ k x X © Â o ož

o¬ F å †o- 1 y ª P ½ , Y ß à N M FastEtheret 0/0 ’ Î

```
5XLMLH VKRZ LQWHUIDFH IDVW(WKHUQHW
,QGH[ GHF KH[ NM«–’Îk òy ¹ ò
)DVW(WKHUQHW LV 83 OLQH SURWRFRO LV 83 NM
+DUGZDUH LV 1DW 6HPL '3 '91* )DVW(WKHUQHW DGGUHVV LV D E F C
MF^•ºYC 0$&-
,QWHUIDFH DGGUHVV LV ,3ª- NM Få
$53 W\SH $53$ $53 7LPHRXW $53 FRQGV NM
,QWHUIDFH ,3Y DGGUHVV LV ,3Yª-NM Få
1R ,3Y DGGUHVV
078 E\WHV %: .EL78 WC k NM
(QFDSVXODWLRQ SURWRFRO LV (WKHUQHW ,, ORRSEDFN QRW VHW NM/
.HHSDOLYH LQWHUYDO LV NVHHSDOLYH NM
&DUULHU GHOD\ LV VHF NMúfž•k%ya
(WKHUQHW DWWULEXWHV
   0HGLXP W\SH LV &RSSHU €MPÅ
   /DVW OLQN VWDWH FKDQJH WLPH 8S 'RZQ €M )
   7LPH GXUDWLRQ VLQFH ODVW OLQN VWDWH FKDQJH GD\V KRXUV
Á4Òžx
   3ULRULW\ LV €Mi¯´
   $GPLQ GXSOH[ PRGH LV $872 RSHU GXSOH[ LV 8QNQRZQ €MEW%”YC
   $GPLQ VSHHG LV $872 RSHU VSHHG LV 8QNQRZQ €M,ä%”YCÿ|,äÙÁ
   )ORZ FRQWURO DGPLQ VWDWXV LV 2)) IORZ FRQWURO RSHU VWDWXV
```

```
Á
  4XHXHLQJ VWUDWHJ¼2ç)'Î  €M
2XWSXW TXHXH        GURSV
,QSXW TXHXH         GURSV
5[ORDG LV       7[ORDG LV       €MvG †¿úä
  PLQXWHV LQSXW UDWH   ELWV VHF   SDFNHWVWYC?aF† €Mv ,äk?a
  PLQXWHV RXWSXW UDWH  ELWV VHF   SDFNHWVWYC?aF† €MG ,äk?a
   SDFNHWV LQSXW       E\WHV   QR EXIIHU  g€Mv Ï‹kj¨ Ï‹^h
5HFHLYHG     EURDGFDVWV    UXQWV    JLDQWV
  LQSXW HUURUV    &5&    IUDPH    RYHUUXQ    DERUW
  SDFNHWV RXWSXW   E\WHV   XQGHUUXQV  g€MG Ï‹kj¨ Ï‹^h
  RXWSXW HUURUV    FROOLVLRQV    LQWHUFH UHVHWV
```

2yªP€MT …'Î

```
5XLMLH
5XLMLH VKRZ LQWHUIDFHV JLJDELW(WKHUQHW    GHVFULSWLRQ
,QWHUIDFH                    6WDWXV   $GPLQLVWUDWLYH 'HVFULSWLRQ

*LJDELW(WKHUQHW                XS      XS          FRQQHWBWRBJ
ª¢y†%²ç©€Mdk†8ç©€M    /LQÙÁk† ç©€M'òÙÁk†šç©€MT Få'Îož
```

o¬ U P ' Îo- -

o¬ u V ª ¢o- -

1.13 show interfaces link-state-change statistics

ò 0 € M e è Ù Á J ž • y) ƒ ož

show interfaces [interface-type interface-number] link-state-change statistics

o¬ @ ƒ ª ¢o-

@ ƒ	T
interface-type	U # @ ƒ k N M • º k # ó • ª P ñ Ä N M
interface-number	¢ interface-type # ž · # @ ƒ k N M Ú Z

o¬ x X % ”o- ñ Ä CLI ï % ”ož

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç 6 N M d f k é ª P ñ Ä N M e è Ù Á J 'Îož

o¬ F å †o- _ 1 Ö / y · GigabitEthernet 0/1 ,XJÒCÃ(Š Õ ¬ ê µ C Ä

```
5XLMLH VKRZ LQWHUIDFHV *LJDELW(WKHUQHW OLQN VWDWH FKDQJH
```

```
,QWHUIDFH    /LQN VWDWH    /LQN VWDWH FKDQJH WLPHV    /DVW FKI

*L            GRZQ
ª¢y†8ç©¢ùeèÙÁk† ç©eèÙÁJ )ƒk†šç© %²)eèÙÁJ ž•ož
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- 11.0 Í Î • Í Î x Xož

1.14 show vlans

¨ Ô Ó ï % ” … show vlans x X ò 0 VLAN ÿ N M ’ Îož

show vlans [VLANID]

o¬ @ ƒ ª ¢o-

@ ƒ	T
VLANID	U # @ ƒ kVLAN ö œ Ú Z k # é ª P ñ Ä VLAN ÿ N M ’ Î-

o¬ x X % ”o- ñ Ä CLI ï % ”ož

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y µ P † © ü g ¥ x X %² Á º ÿ ß y

```
5XLMLH VKRZ YODQV
9LUWXDO /$1 ,'    ,(((    4 (QFDSVXODWLRQ
9/$1 ,QWHUIDFH )DVW(WKHUQHW
,3 DGGUHVV
50H F H™£YHDG G V SÚ‡FGNMAWÉ G G[ïV J ¢HP• s`bÖúÐ
7UDQVPLWWHG    SDFNHWV
9LUWXDO /$1 ,'    ,(((    4 (QFDSVXODWLRQ
9/$1 ,QWHUIDFH )DVW(WKHUQHW
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

1.15 show interfaces usage

ò 0 N M k ! ï äož

show interfaces [interface-type interface-number] usage

o¬ @ ƒ ª ¢o-

@ ƒ	T
interface-type interface-number	U # @ ƒ k N M • º y N M Ú Z k # é ª P ñ Ä N Mož

o¬ x X % ”o- ñ Ä CLI ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- C L I

summary	ò 0 N M † • } Ï ‹ ›ož

o¬ x X % ”o- ñ Ä CLI ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç 6 N M d f k é ª P ñ Ä N M † Ï ‹ ›ož

o¬ F å †o- 1 y ª P N M GigabitEthernet 0/1 N M Ï ‹ ’ Îož

5 X L M L H V K R Z L Q W H U I D F H V * L J D E L W (W K H U Q H W F R X Q W H U V
, Q W H U I D F H * L J D E L W (W K H U Q H W
P L Q X W H L Q S X W U p 0 Q Đ s Â t t E L W V F H F ÷ Ç 9 D F á H W V F H F

```
3DFNHW LQFUHPHQW LQ ODVW VDPSOLQJ LQWHUYDO  VHFRQGV
  ,Q2FWHWV
  ,Q3NWV                    8QLFDVW      0XOWLFDVW      %URDGFDVW
  ,Q8FDVW3NWV
  ,Q0XOWLFDVW3NWV
  ,Q%URDGFDVW3NWV
  2XW2FWHWV
  2XW3NWV                   8QLFDVW      0XOWLFDVW      %URDGFDVW
  2XW8FDVW3NWV
  2XW0XOWLFDVW3NWV
```

```
ª¢y
5[ORDG©G k!ï äk7[ORDG©G k!ï äož
,Q3NWVWVñ %nkÁnyzn Èyk,ZLµ©%nkÁnyzn ãAož2XW3NWV •wož
3DFNHW LQFUHPHQW LQ ODVW VDPSOLQJ LQWHUYDO  VHFRQGV © %² Jýž•
```

2 y ª P N M GigabitEthernet 0/1 ¨ %² Jýž•• œ Í †Ï‹›ož

```
5XLMLH VKRZ LQWHUIDFHV *LJDELW(WKHUQHW  FRXQWHUV LQFUHPHQ
,QWHUIDFH  *LJDELW(WKHUQHW
3DFNHW LQFUHPHQW LQ ODVW VDPSOLQJ LQWHUYDO  VHFRQGV
  ,Q2FWHWV
  ,Q3NWV                    8QLFDVW      0XOWLFDVW      %URDGFDVW
  ,Q8FDVW3NWV
  ,Q0XOWLFDVW3NWV
  ,Q%URDGFDVW3NWV
  2XW2FWHWV
  2XW3NWV                   8QLFDVW      0XOWLFDVW      %URDGFDVW
  2XW8FDVW3NWV
  2XW0XOWLFDVW3NWV
```

3 y ª P N M GigabitEthernet 0/1 j ¨ †Ï‹›ož

```
5XLMLH VKRZ LQWHUIDFHV *LJDELW(WKHUQHW  FRXQWHUV LQFUHPHQ
,QWHUIDFH  8QGHU6L]H      2YHU6L]H      &ROOLVLRQV

*L
,QWHUIDFH  -DEEHUV        &5& $OLJQ (UU    $OLJQ (UU

*L

ª¢y
8QGHU6L"]3HGxx†49    -  †ƒz
```

2YHU6L]H © ”3Gxx†Ý9 - †ƒož
&ROOLVLRQ©GÿÏs †ƒz
)UDJPHQ©4WV -kw Ä &5j¨ êñ+÷j¨ †ƒz
-DEEHUV ©Ý9-kw Ä &5j¨ êñ+÷j¨ †ƒz
&5& $OLJQ (UU &5vjñÄ†ƒz
$OLJQB(UU ©vñl+÷j¨ †ƒz
)&6 (UU ©vñÄ&6j¨ †ƒož

ªPNM *LJDELW(WKHUQHW†HW,ä’Î
5XLMLH VKRZ LQWHUIDFH JLJDELW(WKHUQHW FRXQWHUV UDWH
,QWHUIDFH 6DPSOLQJ 7LPH ,QSXW 5DWH ,QSXW 5DWH
2XWSXW 5DWH
ELWV VHF SDFNHWV VHF ELWV
SDFNHWV VHF

*L VHFRQGV

ª¢y
6DPSOLQJ©7LMP†Jýž•k,QSXW 5DWH©NM †Nv,äk2XWSXW 5DWH©NM †G ,äož

ªPNM *LJDELW(WKHUQHW†H}Ï‹’Î
5XLMLH VKRZ LQWHUIDFH JLJDELW(WKHUQHW FRXQWHUV VXPPDU\
,QWHUIDFH ,Q2FWHWV ,Q8FDVW3NWV ,Q0XOWLFDVW3N

*L
,QWHUIDFH 2XW2FWHWV 2XW8FDVW3NWV 2XW0XOWLFDV

*L

ª¢y
InOctets ©NMNvÈ † -ƒkInUcastPkts ©NMNv%n †ƒkInMulticastPkts ©NMNvÁn
†ƒkInBroadcastPkts ©NMNvzn †ƒz
OutOctets ©NMG È † -ƒkOutUcastPkts ©NMG %n †ƒkOutMulticastPkts ©NMG Á
n †ƒkOutBroadcastPkts ©NMG zn †ƒož

o¬UP’Îo- -

o¬uVª¢o- -

1.17 shutdown

¨ N M F å % ” ¼ { Ô N Mož
shutdown

M • o %² N Mož
no shutdown

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- Z Ä shutdown

o¬ x X % ”o- N M F å % ”ož

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¨ N M … ¥ x X k Þ v 5 … ¥ N M — |ož ¨ c 5 g N M k 1 + N 1 DTR y RTS å è — | k ò ç Ù N
Modem Ä DTR ê ñ RTS ’ Z ° k ; " 6 P ° 1 ¼ {ož ò ¨ — Õ c 5 M 6 P ° - k ¯ Jož
ò ç%² N M ¼ { ¢ k x X show interface U Y 0 ñ is administratively down U Pož

o¬ F å †o- † 1 y Y † ÿ P 8 ¼ { gigabitEthernet 0/1 M

```
5 X L M L H  F R Q I L J   L Q W H U I D F H  J L J D E L W ( W K H U Q H W
5 X L M L H  F R Q I L J  L I   V K X W G R Z Q
 / , 1 .  & + $ 1 * ( '  , Q W H U I D F H  J L J D E L W ( W K H U Q H W      F K D Q J H G  V W D W H  W R  D O
5 X L M L H  F R Q I L J  L I   Q R  V K X W G R Z Q
```

o¬ à • co- 1 y … show interfaces x X k U Y ò 0 N M Ù Áož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

1.18 speed

¨ N M F å % ” F å Y ß à N M , äož

speed { 10 | 100 | 1000 | auto }

Ê Ö Þ . F åož
no speed

o¬ @ ƒ ª ¢o-

@ ƒ	T
10	6 Y ß à N M • 10M % ”ož
100	6 Y ß à N M • 100M % ”ož
1000	6 Y ß à N M • 1000M % ”
auto	6 Y ß à N M • q • % ” k ÿ G N M ñ N ¤ ¿ ˜o• 8 C — Õo• à * ˆ Ž Õ Ñ Û F å ¥ N M © W • ¨ 10M k100M ê ñ 1000M % ”ož

o¬ Þ . F åo- , ä •

o¬ xÀWzŒ añl€ } ðÂu0Ž@¡€² h
o¬ xÀ•gXCAs1C ä •

1.19 snmp trap link-status

¨ — Õ U Y Â 9 N M F å © k G ¥ N M LinkTrap k ¢ ø • ž k ò ç N M Link Ù Á J kSNMP 1 G ß LinkTrap k F $ é Gož

snmp trap link-status

¼ { ¥ kSNMP 1 G ß LinkTrapož

no snmp trap link-status

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- Þ . Õ Ñ k ¥ ø •ož

o¬ x X % ”o- N M % ”ož

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- + 9 N Mg Y ß à € Mo• ü ` € M y A E Z ' N M Ħk ¥ x X F å © k G ¥ N M LinkTrap k ¢ ø • ž k ò ç N M Link Ù Á J kSNMP 1 G ß LinkTrap k F $ é Gož

o¬ F å †o- 1 y µ † ÿ F å N M G LinkTrapož

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

2 y µ † ÿ F å N M G LinkTrapož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

1.20 snmp-server if-index persist

• o N M « – K ! k / — Õ M o e N M « – Jož

snmp-server if-index persist

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ¥ ¼ {ož

o¬ x X % ”o- ¶ B % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ü g x X snmp-server if-index persist Y e k ‘ F å ž 1 ¢ ù ñ Ä N M « – ‘ Ü Û k M o e N M … M o ù ã F N M « –ož h Þ M o ù · À ‘ š F åož

o¬ F å †o- 1 y • o N M « – K ! ož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2 MAC © ¬

2.1 clear mac-address-table dynamic

Ž ” 6 Á MAC ª -o• ê ñ 6 N M/VLAN Á MAC ª -ož

clear mac-address-table dynamic [address mac-addr [interface interface-id] [vlan vlan-id] | { [interface interface-id] [vlan vlan-id] }]

o¬ @ ƒ ª ¢o-

@ ƒ	T
dynamic	Ž ” ñ Ä Á ª -ož
address mac-addr	Ž ” 6 Á ª -ož
interface interface-id	Ž ” 6 N M ñ Ä Á ª -ož

seconds	Á ª - ï ž • k Y a % yož 8 — Õ Ð ož0 n P ¼ { ï ož

o¬ Þ . F åo- Þ . › © 300 aož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- … show mac-address-table aging-time x X ò 0 — åož

o¬ F å †o- 1 o• — å MAC ª - ï ž • 500 a

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.3 mac-address-table filtering

¨ 6 VLAN Ä — ¡ ª -ož

mac-address-table filtering mac-address vlan vlan-id

í ” ¡ ª -ož

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

í ” ¡ ª -ož

default mac-address-table filtering mac-address vlan vlan-id

o¬ @ ƒ ª ¢o-

@ ƒ	T
mac-address	¡ ª -ož
vlan-id	VLAN ID k 8 ¨ 1-4094ož

o¬ Þ . F åo- Þ . Z Ä — å ` ~ ¡ ª -ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ ... 6 -o- ¡ ª - Á n ª -ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.6 show mac-address-learning

ò 0 € M ª - .

show mac-address-learning

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- ñ Ä % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- -

o¬ F å †o- 1 y ª P € M ª - . y

```
5XLMLH FRQILJ VKRZ PDF DGGUHVV OHDUQLQJ
*LJDELW(WKHUQHW OHDUQLQJ DELOLW\ GLVDEOH
*LJDELW(WKHUQHW OHDUQLQJ DELOLW\ HQDEOH
*LJDELW(WKHUQHW OHDUQLQJ DELOLW\ HQDEOH
*LJDELW(WKHUQHW OHDUQLQJ DELOLW\ HQDEOH
```

o¬ U P ’ Îo-

o¬ u V ª ¢o- -

2.7 show mac-address-table

ª P ñ Ä • º MAC ª - ’ Î g , Á ª - k ² Á ª - y ¡ ª - hož

show mac-address-table [address mac-addr] [interface interface] [v-tn(sh)-5terface

vlan vlan-id	VLAN Z k 8 ¨ 1-4094ož

o¬ x X % ”o- ñ Ä % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 MAC ª - n

```
5XLMLH VKRZ PDF DGGUHVVG W/DEOH DGGUHVV
9ODQ 0$& $GGUHVV 7\SH ,QWHUIDFH

G I 67$7,& *LJDELW(WKHUQHW
```

< † K y

<	ª ¢
Vlan	N M ª -
MAC Address	MAC ª -
Type	MAC ª - • º
Interface	MAC ª - ñ ¨ N M

o¬ U P ’ Îo-

o¬ u V ª ¢o- -

2.8 show mac-address-table aging-time

ª P Á ª - ï ž •ož

show mac-address-table aging-time

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- ñ Ä % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 MAC ª - ï ž •

```
5XLMLH VKRZ PDF DGGUHVV WDEOH DJLQJ WLPH
$JLQJ WLPH
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2.9 show mac-address-table count

ª P ª - n ª - n ¾ ƒ Ï ‹ ’ Îož

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
interface interface-id	N M Z
vlan vlan-id	VLAN Z k 8 ¨ 1-4094ož

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- show mac-address-table count x X k ÿ G MAC ª - n ¾ • º Ï ‹ n ¾ ƒ O z

show mac-address-table count interface x X k ÿ G MAC ª - n ¾ + • N M Ï ‹ n ¾ ƒ O z

show mac-address-table count vlan x X k ÿ G MAC ª - n ¾ ñ K VLAN Ï ‹ n ¾ ƒ Oož

o¬ F å †o- 1 y ª P MAC ª - _ • º n ¾ ƒ O y

```
5 X L M L H  V K R Z  P D F  D G G U H V V  W D E O H  F R X Q W
' \ Q D P L F  $ G G U H V V  & R X Q W
6 W D W L F  $ G G U H V V  & R X Q W
) L O W H U  $ G G U H V V  & R X Q W
7 R W D O  0 D F  $ G G U H V V H V
7 R W D O  0 D F  $ G G U H V V  6 S D F H  $ Y D L O D E O H
```

2 y ª P VLAN 1 MAC ª - ƒ O y

```
5 X L M L H  P V D K F R Z D G G U H V F R X Q W D E O H
' \ Q D P L F  $ G G U H V V  & R X Q W
6 W D W L F  $ G G U H V V  & R X Q W
) L O W H U  $ G G U H V V  & R X Q W
7 R W D O  0 D F  $ G G U H V V H V
```

3 y ª P interface g0/1 MAC ª - ƒ O y

```
5 X L M L H  P V D K F R Z D G G U H V L Q W H U E O D F H
' \ Q D P L F  $ G G U H V V  & R X Q W
6 W D W L F  $ G G U H V V  & R X Q W
```

```
)LOWHU  $GGUHVV &RXQW
7RWDO0DF$GGUHVVHV
```

< † K y

<	ª ¢
Dynamic Address Count	Á MAC ª - ƒ
Static Address Count	² Á MAC ª - ƒ
Filter Address Count	¡ ª - ƒ
Total Mac Addresses	È MAC ª - ƒ

o¬ U P ' Îo- -

o¬ u V ª ¢o- -

2.10 show mac-address-table dynamic

ª P Á ª - n ' Î k U Y ÿ G MAC ª -o• N M y VLAN Û ò 0ož

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
mac-addr	6 n ¾ + •) MAC ª -ož
vlan-id	6 n ¾ + • VLAN k 8 ¨ 1-4094ož
interface-id	1 ô G ñ N M(U Y © Ò ò € M ê AggregatePort)ož

o¬ x X % ”o- ñ Ä % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- -

o¬ F å †o- 1 o• ò 0 ñ Ä Á MAC ª - n

```
5XLMLH VKRZ PDF DGGUHVV WDEOH G\QDPLF
9ODQ 0$& $GGUHVV 7\SH ,QWHUIDFH

'<1$0,& *LJDELW(WKHUQHW
F D '<1$0,& *LJDELW(WKHUQHW
F GII '<1$0,& *LJDELW(WKHUQHW
FI HHH '<1$0,& *LJDELW(WKHUQHW
FI I I '<1$0,& *LJDELW(WKHUQHW
E G '<1$0,& *LJDELW(WKHUQHW
EDGH F '<1$0,& *LJDELW(WKHUQHW
```

< † K y

<	ª ¢
Vlan	MAC ª - ñ ¨ VLAN
MAC Address	MAC ª -
Type	MAC ª - • º
Interface	MAC ª - ñ ¨ N M

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2.11 show mac-address-table filtering

ª P ¡ ª - n ’ Îož

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
mac-addr	6 n ¾ + •) MAC ª -ož
vlan-id	6 n ¾ + • VLAN k 8 ¨ 1-4094ož

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- -

o¬ F å †o- 1 o• ò 0 ¡ ª - n

```
5XLMLH  VKRZ PDF DGGUHVV WDEOH ILOWHULQJ
9ODQ      0$& $GGUHVV      7\SH    ,QWHUIDFH

                        ),/7(5  1RW DYDLODEOH
```

< † K y

<	ª ¢
Vlan	MAC ª - ñ ¨ VLAN
MAC Address	MAC ª -
Type	MAC ª - • º
Interface	MAC ª - ñ ¨ N M

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2.12 show mac-address-table interface

ªP6 NM ñÄ•º ª-’Îg , Áª-k²Áª-hož

show mac-address-table interface interface-id [vlan vlan-id

@ƒ	T

2.14 show mac-address-table static

ª P ² Á ª -ož

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
mac-addr	6 n ¾ + •) MAC ª -ož
vlan-id	6 n ¾ + • VLAN k 8 ¨ 1-4094ož
interface-id	1 ô G ñ N M(U Y © Ò ò € M ê AggregatePort)

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- -

o¬ F å †o- 1 y ª P ñ Ä ² Á ª - ’ Î y

```
5XLMLH  VKRZ PDF DGGUHVV WDEOH VWDWLF
9ODQ    0$& $GGUHVV    7\SH    ,QWHUIDFH

    G  I        67$7,&  *LJDELW(WKHUQHW
    G  I        67$7,&  *LJDELW(WKHUQHW
    G  I        67$7,&  *LJDELW(WKHUQHW
```

< † K y

<	ª ¢
Vlan	MAC ª - ñ ¨ VLAN
MAC Address	MAC ª -
Type	MAC ª - • º
Interface	MAC ª - ñ ¨ N M

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2.15 show mac-address-table vlan

ª P 6 VLAN ñ Ä • º ª - ’ Îož

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

o¬ @ ƒ ª ¢o-

@ ƒ	T

vlan-id	6 VLAN ID k 8 ¨ 1-4094ož

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 VLAN 1 MAC ª -

```
5XLMLH  VKRZ PDF DGGUHVV WDEOH YODQ
9ODQ    0$& $GGUHVV      7\SH       ,QWHUIDFH

      G  I          67$7,&  *LJDELW(WKHUQHW
      G  I          67$7,&  *LJDELW(WKHUQHW
      G  I          67$7,&  *LJDELW(WKHUQHW
```

< † K y

<	ª ¢
Vlan	MAC ª - ñ ¨ VLAN
MAC Address	MAC ª -
Type	MAC ª - • º
Interface	MAC ª - ñ ¨ N M

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2.16 snmp trap mac-notification

ø • N M MAC ª - * = ož

snmp trap mac-notification { added | removed }

¼ { ¥ ož

no snmp trap mac-notification { added | removed }

¼ { ¥ ož

default snmp trap mac-notification { added | removed }

o¬ @ ƒ ª ¢o-

@ ƒ	T
added	¢ ª - Í ž * =ož
removed	¢ ª - t í ” ž * =ož

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- … show mac-address-table notification interface x X ò 0 — åož

o¬ F å †o- 1 o• ø • € M MAC ª - Í ž * s trap • ¼

```
5 X L M L H  F R Q I L J  L Q W H U I D F H  * L J D E L W ( W K H U Q H W
5 X L M L H  F R Q I L J  L I  * L J D E L W ( W K H U Q H W  V Q P S  W U D S  P D F  Q R W L I L F D W L
```

2o• ø • € M MAC ª - í ” ž * s trap • ¼

```
5 X L M L H  F R Q I L J  L Q W H U I D F H  * L J D E L W ( W K H U Q H W
5 X L M L H  F R Q I L J  L I  * L J D E L W ( W K H U Q H W  V Q P S  W U D S  P D F  Q R W L I L F D W L
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

3 VLAN

3.1 name

— å VLAN d ož

name vlan-name

Ê Ö è Þ . ›ož

no name

Ê Ö è Þ . ›ož

default name

o¬ @ ƒ ª ¢o-

@ ƒ	T
vlan-name	VLAN d

o¬ Þ . F åo- VLAN Þ . d VLAN jVLAN ID k ò VLAN 2 Þ . d ”VLAN0002” ož

o¬ x X % ”o- VLAN F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y — å VLAN 10 d y

```
5 X L M L H F R Q I L J Y O D Q
5 X L M L H F R Q I L J Y O D Q Q D P H Y O D Q
```

o¬ à • co- … show vlan x X ò 0 vlan F åož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.2 show vlan

ª P VLAN è t € M ˆ ’ Îož

show vlan [id vlan-id]

o¬ @ ƒ ª ¢o-

@ ƒ	T
vlan-id	VLAN ID Zož

o¬ x X % ”o- ñ Ä % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o-

3.3 vlan

ë • VLAN ê ñ µ VLAN % ”ož
vlan { vlan-id | range vlan-range }

í ”] ¨ VLANož
no vlan { vlan-id | range vlan-range }

1 6] Æ ¨ VLAN Ê Ö è ¯ * ² Á VLANož
default vlan { vlan-id | range vlan-range }

o¬ @ ƒ ª ¢o-

@ ƒ	T
vlan-id	VLAN ID Zož h Þ y Þ . VLAN gVLAN 1 h ª • í ”ož
vlan-range	VLAN ID 8 ož

o¬ Þ . F åo- ¯ * ² Á VLAN

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o-

o¬ F å †o- 1 o• ë • VLAN 10 w µ VLAN 10 % ”

```
5 X L M L H F R Q I L J Y O D Q
5 X L M L H F R Q I L J Y O D Q
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4 MAC VLAN

4.1 show mac-vlan

ò 0 n ¾ož“ o¬E€W ƒ ª ¢o-“

5 VLAN-Group

5.1 vlan-assign-mode

¨ AP — Õ k F å ¢ ù VLAN-Group ê ñ Ä VLAN-Group VLAN ã F % ”ož
F å VLAN ã F % ”
vlan-assign-mode dot1x

H ƒ F å VLAN ã F % ”
no vlan-assign-mode

o¬ @ ƒ ª ¢o-

@ ƒ	T
dot1x	802.1x • š è e k • š Æ ˜ + ï g VLAN Gož

o¬ Þ . F åo- VLAN-Group ã F % ” none

o¬ x X % ”o- VLAN-Group F å % ” k ê ¶ B F å % ”ož

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç ¨ ¶ B F å % ” F å k S + ñ Ä VLAN-Group ÿ |ož
ò ç ¨ VLAN-Group F å % ” F å k N S + ¢ ù VLAN-Group ÿ |ož
Â 9 VLAN-Group F å k i ¯ ´ ä 9 ¶ B F å ÿ |ož

o¬ F å †o- F å VLAN-Group 10 VLAN ã F % ” dot1x % ”ož

```
5XLMLH FRQILJ YODQ JURXS
5XLMLH FRQILJ YODQ JURXS YODQ DVVLJQ PRGH GRW [
```

o¬ à • co- show vlan-group 10 ò 0 vlan ã F % ” F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

5.2 vlan-group

ë • VLAN-Group

vlan-group group-id

í ” VLAN-Group
no vlan-group group-id

o¬ @ ƒ ª ¢o-

@ ƒ	T
group-id	VLAN-Group ID k 8 <1-128> ož

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- —

o¬ F å †o- ¨ AP — Õ k ë • VLAN-Group 100ož

```
5XLMLH FRQILJXUH WHUPLQDO
5XLMLH FRQILJ YODQ JURXS
5XLMLH FRQILJ YODQ JURXS
```

o¬ à • co- show vlan-group ò 0 VLAN-Group 100 © k F å

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

5.3 default-vlan

F å VLAN-Group ó • VLANož
default-vlan vlan-id

H ƒ VLAN-Group ó • VLANož
no default-vlan vlan-id

o¬ @ ƒ ª ¢o-

@ ƒ	T
vlan-id	VLAN-ID VLAN-Group VLAN ¤ ` L µ VLANož

o¬ Þ . F åo- Þ . Ì 6 ó • VLANož

o¬ x X % ”o- VLAN-Group F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- F å ó • ã F VLAN ž k · À ¯ ¥ VLAN µ , • VLAN-Groupož
ó • VLAN › k N ¨ ¢ ù WLAN VLAN ã F % ” 802.1x • š è e k • š Æ ˜ + ï g VLAN
G ž ÿ |ož

o¬ F å †o- 6 VLAN-Group 100 ó • VLAN 10ož

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

o¬ à • co- show vlan-group 100 ò 0 default vlan F å ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

5.4 vlan-list

¨ AP — Õ k F å 6 VLAN-Group m VLAN è t ç nož x X ò y
vlan-list vlan-list

H ƒ vlan-listož
k d%F1ûÞ y%0èZ@WÄ%0- Â ðÆúÀb list ç nož x åXlà

o¬ F å †o- ¨ AP — Õ k 1 VLAN 100-105 µ VLAN-Group 100

```
5XLMLH FRQILJXUH WHUPLQDO
5XLMLH FRQILJ YODQ JURXS
5XLMLH FRQILJ YODQ JURXS YODQ OLVW
```

o¬ à • co- show vlan-group 100 ò 0 vlan list F å ’ Î

o¬ U P ’ Îo- o¬ U P ’ Îo- o¬ G ’ o¬ 0 ’ Îo- oÐ§ð¶ ª†Îo- o¬ G ’ o¬ 0 ’ Îo- ou ª ¢læúÐ o¬ G ’ 7 r¤S˜L C˜OH ïP "$< 2ÂÀ“< Á E/°` < G ’q(

o¬ u V ª ¢o- -

5.6 encapsulation dot1Q

¨ AP — Õ k F å ¢ ù dot11 radio ÿ N M VLAN ê VLAN-Group / xož x X ò y

encapsulation dot1Q [group] {vlan-id | vlan-group-id}

no encapsulation dot1Q [group] {vlan-id | vlan-group-id}

o¬ @ ƒ ª ¢o-

@ ƒ	T
vlan -id	VLAN ID
vlan-group-id	VLAN-Group ID È8× È<1 È128>

o¬ Þ . F åo- —VLAN ê VLAN-Group / xož

o¬ x X % ”o- N M % ”ož

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- … encapsulation dot1Q vlan-id F å dot1Q VLAN / xož

… encapsulation dot1Q group vlan-group-id F å dot1Q VLAN-Group / xož

o¬ F å †o- ¨ AP — Õ k F å Dot11radio 1/0.1 N M / x VLAN-Group 100ož

```
5XLMLH FRQILJXUH WHUPLQDO
5XLMLH FRQILJ LQWHUIDFH GRW UDGLR
5XLMLH FRQILJ VXELI HQFDSVXODWLRQ GRW 4 JURXS
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

5.7 show vlan-group

¨ AP — Õ k ª P VLAN-Group ’ Î k x X ò y

show vlan-group [group-id]

o¬ @ ƒ ª ¢o-

@ ƒ	T
group-id	VLAN-Group ID

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- -

o¬ F å †o- ¨ AP — Õ k ª P ñ Ä VLAN-Group VLAN è t ’ Î

```
5XLMLH  VKRZ YODQ JURXS
9/$1 *URXS ,'  'HIDXOW 9/$1  $VVLJQ 0RGH      9/$1 /LVW

              1$          GRW [                  k
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

6 RLDP

6.1 rldp detect-interval

… ¥ x X F å RLDP ¨ € M G † • œož
rldp detect-interval interval

Ê Ö Þ . F åož
no rldp detect-interval

Ê Ö Þ . F åož
default rldp detect-interval

o¬ @ ƒ ª ¢o-

@ ƒ	T
interval	ž • • œ k % y s k 8 1s-15s

o¬ Þ . F åo- 3ož

o¬ x X % ”o- ¶ B % ”

o¬ Þ . ´ ðo- 14

o¬ x X % ”o- ¶ B % ”

o¬ … 6 -o- S + Prob y Loop • º † ÿ |ož ò ç © ¨ • o 4 stp ê Ë k • ‘ — å g • œ ˜ Â Ý M y) ƒ h
+1 e ± ñ È ž • 4 9 stp " ÷ v • ž •ož

o¬ F å †o- 1 y F å M y • œ 5s y
5XLMLH FRQILJ UOGS GHWHFW LQWHUYDO

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

6.2 rldp detect-max

… ¥ x X F å RLDP ¨ € M % g ê ñ E g e è Â Ý M y) ƒ k 9 G Â Ý M y ž • k ò ç Ý
ž • k > D € M Q À — € • k é e è t ž • { ž e èož

-	-

o¬ Þ . F åo- ¼ {

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- € M RLDP y o ‰ Ó 9 ¶ B … ož

o¬ F å †o- F å RLDP y • o y

5 X L M L H F R Q I L J U O G S H Q D E O H

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

6.4 rldp neighbor-negotiation

— å o > D # Œ ož

rldp neighbor-negotiation

Ê Ö Þ . F åož

no rldp neighbor-negotiation

Ê Ö Þ . F åož

default rldp neighbor-negotiation

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ F å †o- F å RLDP y ž > D # Œ y

```
5XLMLH FRQILJ
5XLMLH FRQILJ UOGS QHLJKERU QHJRWLDWLRQ
```

9 RLDP ÿ| û ê è { ž Ô ò • ” € M À Ä š Ñ Å k ò û M A F å 4 RLDP û ê è y w F å { ž Ô ò • ” warning k û M B F å 4 RLDP û ê è y w F å { ž Ô ò • ” shutdown-port k ¢ € M A y € M B • ¨ û ê è ž k Ä U € M A ¯ € M B y ñ û ê è { ž k € M A ÿ | { ž Ô ò e Ç G y y û ê è Ù Ñ 4 ož € M B 9 v ñ € M A ê è M y † - < y ñ û ê è { ž 4 k - ê Ë û ê è { ž Ž ‰ › ¨ ož ¨ … « ° ò ç ¬ } G ‘ ¨ G ÿ û ê è ž Ü D ” ê è { ž k ¬ ’ ò 1 Ô 9 c %² ê è û € M k 1 ê è { ž Ô ò • ” — å è %² w warningož

o¬ F å †o-

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

6.6 rldp reset

ñ Ä RLDP { ž € M Ê Ö w M • o yož
rldp reset

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- -

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- 9 Ê Ö { ž € M Ùerrdsable recovery - U Y 9 Ê Ö k À } @ ð <<SWITCH-INTF-SCG.doc>>ož

o¬ F å †o- F å RLDP Ê Ö { ž € M Ù Á y
5 X L M L H U O G S U H V H W

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o-

6.7 show rldp

ª P RLDP ¶ Bo• € M Y C > D ^ ƒ G ' Îož

show rldp [interface interface-name]

o¬ @ ƒ ª ¢o-

@ ƒ	T
interface-name	RLDP € M

o¬ Þ . F åo- -

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- 6 € M d f k Y ª P Ô € M RLDP Ù Á ƒ G ' Îož

o¬ F å †o- † 1 y ª P RLDP Ù Á ƒ G ' Î y

```
5XLMLH VKRZ UOGS
UOGS VWDWH          GLVDEOH
UOGS KHOOR LQWHUYDO
UOGS PD[ KHOOR
UOGS ORFDO EULGJH     G  I     GD

*LJDELW(WKHUQHW
SRUW VWDWH       QRUPDO
QHLJKERU EULGJH
QHLJKERU SRUW
XQLGLUHFWLRQ GHWHFW LQIRUPDWLRQ
    DFWLRQ  VKXWGRZQ SRUW
    VWDWH  QRUPDO
ELGLUHFWLRQ GHWHFW LQIRUPDWLRQ
    DFWLRQ  VKXWGRZQ SRUW
    VWDWH  QRUPDO
ORRS GHWHFW LQIRUPDWLRQ
    DFWLRQ  VKXWGRZQ SRUW
    VWDWH  QRUPDO
```

† 2 y ª P € M GigabitEthernet 0/1 ñ Ä ! y µ F å ’ Î y

```
5XLMLH VKRZ UOGS LQWHUIDFH *LJDELW(WKHUQHW
SRUW VWDWH        QRUPDO
ORFDO EULGJH       G I      GD
QHLJKERU EULGJH     G I      GE
QHLJKERU SRUW     *LJDELW(WKHUQHW
XQLGLUHFWLRQ GHWHFW LQIRUPDWLRQ
    DFWLRQ  VKXWGRZQ SRUW
    VWDWH   QRUPDO
ELGLUHFWLRQ GHWHFW LQIRUPDWLRQ
    DFWLRQ  VKXWGRZQ SRUW
    VWDWH   QRUPDO
ORRS GHWHFW LQIRUPDWLRQ
    DFWLRQ  VKXWGRZQ SRUW
    VWDWH   QRUPDO
```

<	ª ¢
port state	€ M ¢ ù Ù Á y%² _ © 3 o Ù Á k ª P normal z%² _ © { ž Ù Á k ª P error
local bridge	Î ª © Ï MAC ª - k 9 ã Î ª — Õ > D — Õ
neighbor bridge	> D © Ï MAC ª - k 9 ã Î ª — Õ > D — Õ
action	y • º + • { ž Ô ò • ”
state	y • º + • Ù Á k 3 o ž normal k y ñ { ž e J error

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

7 LLDP

7.1 civic-location

post-office-box	CA • º 31
additional-code	CA • º 32
ca-word	ª - ' Î

o¬ Þ . F åo- -

o¬ x X % ”o- LLDP Civic Address F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- µ LLDP Civic Address F å % ” e k F å LLDP ¯ * ª - ' Î

o¬ F å †o- 1 y F å lldp Civic Address gid 1 h ' Î ycountry CH kcity Fuzhouož

```
5XLMLH FRQILJ
5XLMLH FRQILJ OOGS ORFDWLRQ FLYLF ORFDWLRQ LGHQWLILHU
5XLMLH FRQILJ OOGS FLYLF FRXQWU\ &+
5XLMLH FRQILJ OOGS FLYLF FLW\ )X]KRX
```

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.2 clear lldp statistics

Ž ” LLDP Ï ‹ ' Îož

clear lldp statistics [interface interface-name]

o¬ @ ƒ ª ¢o-

@ ƒ	T
interface-name	N M d f

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- 6 interface @ ƒ k 1 Ž ” 6 N M LLDP Ï ‹ ' Îož

o¬ F å †o- 1 y Ž ” N M 1 LLDP Ï ‹ ' Îož

```
5XLMLH FOHDU OOGS VWDWLVWLFV LQWHUIDFH *LJDELW(WKHUQHW
5XLMLH VKRZ OOGS VWDWLVWLFV LQWHUIDFH *LJDELW(WKHUQHW
```

```
/OGS VWDWLVWLFV LQIRUPDWLRQ RI SRUW >*LJDELW(WKHUQHW    @

7KH QXPEHU RI OOGS IUDPHV WUDQVPLWWHG
7KH QXPEHU RI IUDPHV GLVFDUGHG
7KH QXPEHU RI HUURU IUDPHV
7KH QXPEHU RI OOGS IUDPHV UHFHLYHG
7KH QXPEHU RI 7/9V GLVFDUGHG
7KH QXPEHU RI 7/9V XQUHFRJQL]HG
7KH QXPEHU RI QHLJKERU LQIRUPDWLRQ DJHG RXW
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

7.3 clear lldp table

Ž ” LLDP > D ’ Î

clear lldp table [interface interface-name]

o¬ @ ƒ ª ¢o-

@ ƒ	T
interface-name	N M d f

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- 6 interface @ ƒ k 1 Ž ” 6 N M LLDP > D ’ Î
6 interface @ ƒ k 1 Ž ” ñ Ä N M LLDP > D ’ Î

o¬ F å †o- 1 y Ž ” N M 1 LLDP > D ’ Îož

```
5XLMLH VKRZ OOGS QHLJKERUV LQWHUIDFH *LJDELW(WKHUQHW
&DSDELOLW\ FRGHV
    5 5RXWHU % %ULGJH 7 7HOHSKRQH & '2&6,6 &DEOH 'HYLFH
    : :/$1 $FFHVV 3RLQW 3 5HSHDWHU 6 6WDWLRQ 2 2WKHU
6\VWHP 1DPH /RFDO ,QWI 3RUW ,' &DSDEL

7RWDO HQWULHV GLVSOD\HG
5XLMLH FOHDU OOGS WDEOH LQWHUIDFH *LJDELW(WKHUQHW
5XLMLH VKRZ OOGS QHLJKERUV LQWHUIDFH *LJDELW(WKHUQHW
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

7.4 device-type

F å — Õ • º ’ Îož

device-type device-type

ï U Y … no # ¾ í ” ¥ — Õ • º ’ Îož

no device-type

o¬ @ ƒ ª ¢o- @ ƒ

no lldp enable

LDP.72 q118.602626.28 4452.92 024 ref 56 0. 626.28 024 024 ref BT 0.199 q /C2 0 1 Tf 0 Tc 9 0 0 9 56.7529934 Tm 6FAC80578

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- t l ‡ •• ä ƒ b •• þ (¹ ð ‘ Ü LLDP q 3 " N - ½ ß m L ´ d

o¬ F å †o- 1 y F å LLDP † / x ” SNAPož

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

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.7 lldp error-detect

F å LLDP j ¨ y kj ¨ y , e è € VLAN F å yo•€ M Ù Á yo•€ M ü ` F å yo• MTU
F å y C ê è yož ¢ LLDP y ñ j ¨ ž k 1 ø - Š s ’ Î U P ’ ò tož
ø • LLDP j ¨ y ož

lldp error-detect

¼ { LLDP j ¨ y ož

no lldp error-detect

o¬ @ ƒ ª ¢o-

o¬ F å †o- 1 y F å LLDP j ¨ y ož

```
5XLMLH FRQILJXUH WHUPLQDO
5XLMLH FRQILJ LQWHUIDFH JLJDELWHWKHUQHW
5XLMLH FRQILJ LI *LJDELW(WKHUQHW OOGS HUURU GHWHFW
```

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.8 lldp fast-count

¢ G ë • > D k ê ñ LLDP W • % " R ¼ { ê Rx ô J TxRx ê Tx ž k 4 • > D — Õ @ ½ ª . ñ Î — Õ ' Î k o ½ , G Ñ ò ½ , G Ñ ò Ý ? LLDP † G u Ê 1 a w Ò G %² ƒ O LLDP † e Ç Ê Ö 3 o G u Êož

F å LLDP ½ , G † ƒož

lldp fast-count value

Ê Ö Þ . LLDP ½ , G † ƒož

no lldp fast-count

o¬ @ ƒ ª ¢o-

@ ƒ	T
value	LLDP ½ , G † ƒ k Þ . 3 k U F å 8 1-10

o¬ Þ . F åo- Þ . Õ Ñ kLLDP ½ , G † ƒ 3

o¬ x X % "o- ¶ B F å % "

o¬ Þ . ´ ðo- 14

o¬ ... 6 -o- -

o¬ F å †o- 1 y F å LLDP ½ , G † ƒ 5 ož

```
5XLMLH FRQILJXUH WHUPLQDO
5XLMLH FRQILJ OOGS IDVW FRXQW
```

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.9 lldp hold-multiplier

F å TTL + ƒož

lldp hold-multiplier value

Ê Ö Þ . TTL + ƒož

no lldp hold-multiplier

o¬ @ ƒ ª ¢o-

@ ƒ	T
value	TTL + ƒ k Þ . 4 k F å 8 2-10

o¬ Þ . F åo- Þ . 4

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- LLDP † TimeovmeL165(VP)]TJ /C2_0 1 Tf 0 Tc78.953 0 Td <019049BE>Tj /TT0 1 Tf 0.0006 Tc[(=(TT
DPi79(MET)-7D-TTL75(VP)]TJ /C2_0 1 Tf 0 Tc 0 Tw7.3353 0 Td <0418>Tj /TT0 1 Tf -0.0168 Tc- 0.0290 T
p location cc-location identifier(>]TJ /T30 1 Tf -0.0020 Tc 0 Tw(id)>Tj /TT0 1 Tf 0 Tc ( )Tj

no lldp location civic-location identifier id

o¬ @ ƒ ª ¢o-

@ ƒ	T
id	à Ì — Õ ¯ * ª - ’ Î ö œ Z k 8 y1-1024

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- … 4 x X U µ LLDP Civic AddressF å % ”ož

o¬ F å †o- 1 y ë • LLDP MED-TLV Civic Address ’ Î kid 1ož

```
5 X L M L H F R Q I L J
5 X L M L H F R Q I L J O O G S O R F D W L R Q F L Y L F O R F D W L R Q L G H Q W L I L H U
5 X L M L H F R Q I L J O O G S F L Y L F
```

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.11 lldp location elin identifier

F å Location Identification TLV / x ¬ Ä ¢ Z A ’ Îož
lldp location elin identifier id elin-location tel-number

í ” ¬ Ä ¢ Z A ’ Îož
no lldp location elin identifier id

o¬ @ ƒ ª ¢o-

@ ƒ	T
id	n P ¬ Ä ¢ Z A ’ Î F å ö œ Z k 8 y1-1024ož
tel-number	n P ¬ Ä ¢ Z A k 8 y10 – 25 -

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo-	14
o¬ … 6 -o-	… 4 x X Û F å ¬ Ä ¢ Z A ' Îož
o¬ F å †o-	1 y ë • ¬ Ä ¢ Z A ' Îož 5 X L M L H F R Q I L J 5 X L M L H F R Q I L J O O G S O R F D W L R Q H O L Q L G H Q W L I L H U H O L Q O R F D W L R Q
o¬ U P ' Îo-	-
o¬ o • j ¨o-	-
o¬ u V ª ¢o-	-

7.12 lldp management-address-tlv

F å LLDP † G b ' ò ª -ož

lldp management-address-tlv [ip-address]

… no # ¾ U Y H ƒ ' ò ª - G bož

no lldp management-address-tlv

o¬ @ ƒ ª ¢o-

@ ƒ	T
ip-address	LLDP † G b ' ò ª -

o¬ Þ . F åo-	-
o¬ x X % ”o-	N M F å % ”
o¬ Þ . ´ ðo-	14
o¬ … 6 -o-	Þ . Õ Ñ kLLDP † G b ' ò ª -ož G b ' ò ª - € M ª • * Â 4 VLAN IPv4 ª - k ò ç ¥ VLAN Ì F å IPv4 ª - k é Ð Ò ò %² ª • * Â 4 VLAN k + ñ ñ IPv4 ª - 2ož ò ç Ì ñ IPv4 ª - k é ò € M ª • * Â 4 VLAN IPv6 ª -ož ò ç Q Ì ñ IPv6 ª - k é J Î Ñ ª - 127.0.0.1 • ' ò ª - G bož
o¬ F å †o-	1 y F å LLDP † G b ' ò ª - 192.168.1.1ož 5 X L M L H F R Q I L J X U H W H U P L Q D O 5 X L M L H F R Q I L J L Q W H U I D F H J L J D E L W H W K H U Q H W 5 X L M L H F R Q I L J L I * L J D E L W (W K H U Q H W O O G S P D Q D J H P H Q W D G G U H V V

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.13 lldp mode

F å LLDP W • % ”ož
lldp mode { rx | tx | txrx }

ï U Y … no # ¾ ¼ { LLDP W • % ”ož
no lldp mode

o¬ @ ƒ ª ¢o-

@ ƒ	T
rx	n P Q N v G LLDPDU
tx	n P Q G N v LLDPDU
txrx	n P / G A N v LLDPDU

o¬ Þ . F åo- txrx

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¼ { N M LLDP W • % ” k 4 ž N M Ç G y N v LLDP †ož
N M LLDP ÿ | ù U © ¶ B … 4 LLDP N M LLDP W • % ” Ô 9 txo•rx ê txrxož

o¬ F å †o- 1 y F å N M LLDP W • % ” Q G N v LLDPDUož

```
5XLMLH FRQILJXUH WHUPLQDO
5XLMLH FRQILJ LQWHUIDFH JLJDELWHWKHUQHW
5XLMLH FRQILJ LI *LJDELW(WKHUQHW OOGS PRGH W[
```

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.14 lldp network-policy profile

ë • LLDP network-policy Œ k w µ LLDP network-policy F å % ”ož

lldp network-policy profile profile-num

… no # ¾ í ” LLDP network-policy Œ ož

no lldp network-policy profile profile-num

o¬ @ ƒ ª ¢o-

@ ƒ	T
profile-num	LLDP network-policy Œ ö œ k 8 y1-1024

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- … 4 x X µ LLDP network-policy F å % ” k … 4 x X ž ¬ } 6 Œ IDož

µ LLDP network-policy F å % ” e k U … { voice | voice-signaling } vlan x X F å À } network-policy Œ ož

o¬ F å †o- 1 y ë • LLDP network-policy Œ k Œ Z 1ož

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- Þ . ¼ {

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- * F å Trap k U Y 1 Î ª — Õ LLDP ’ Î g † ò G ë • > Do• y ñ > D * ’ e è { ž ˆ ’ Î h
G Ë à ’ Æ ˜ k ’ ò t U Y ÿ G 4 ’ Î ! O à Ì g Ù Ñož

o¬ F å †o- 1 y F å LLDP Trap ož

```
5 X L M L H  F R Q I L J X U H  W H U P L Q D O
5 X L M L H  F R Q I L J  L Q W H U I D F H  J L J D E L W H W K H U Q H W
5 X L M L H  F R Q I L J  L I  * L J D E L W ( W K H U Q H W  O O G S  Q R W L I L F D W L R Q  U H P R W H
```

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.16 lldp timer notification-interval

F å G LLDP Trap ž • • œož
lldp timer notification-interval seconds

… no # ¾ U Y Ê Ö Þ . ž • • œož
no lldp timer notification-interval

o¬ @ ƒ ª ¢o-

@ ƒ	T
seconds	F å G LLDP Trap ’ Î ž • • œ kÞ . ž • • œ © 5 a kU F å 8 © 5-3600

o¬ Þ . F åo- Þ . 5 a

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- 4 … 2 LLDP Trap ’ Î È ¯ G kU Y F å G LLDP Trap ž • • œož¨ < ž • • œ Ä k y ñ LLDP ’ Î J k 1 G Trap Ë à ’ Æ ˜ož

o¬ F å †o- 1 y F å LLDP Trap G ž • • œ 10 aož

```
5XLMLH FRQILJXUH WHUPLQDO
5XLMLH FRQILJ OOGS WLPHU QRWLILFDWLRQ LQWHUYDO
```

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.17 lldp timer reinit-delay

F å € M ì ÷ • ž •ož

lldp timer reinit-delay seconds

… no # ¾ U Y Ê Ö € M ì ÷ • ž • Þ . ›ož

no lldp timer reinit-delay

o¬ @ ƒ ª ¢o-

@ ƒ	T
seconds	€ M ì ÷ • ž • k F å 8 1-10 a

o¬ Þ . F åo- 2 a

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- 4 9 ² € M W • % ” È ¯ J – Ü È ¯ ª ì ÷ Ù Á Ñ k U Y F å € M ì ÷ • ž •ož

o¬ F å †o- 1 y F å LLDP € M ì ÷ • ž • 3 aož

```
5XLMLH FRQILJXUH WHUPLQDO
5XLMLH FRQILJ OOGS WLPHU UHLQLW GHOD\
```

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o-auÇÿE0 DBD NI)¡™Â ðÉ Ÿ -Â f ¨ r DBD NGéÂ ðÉ •gi6fúÀgPUD˜Š&úÐ8250694j 0.0003 Tc 7.453 0.04 T 0.199720.84 442. 50 1<04B60642

7.18 lldp timer tx-delay

F å LLDP † G • ž •ož

lldp timer tx-delay seconds

lldp timer tx-delay

o¬ @ ƒ ª ¢o-	@ ƒ	T
	seconds	LLDP † G ž • • œ k U F å 8 5-32768

o¬ Þ . F åo-	30 a
o¬ x X % ”o-	¶ B F å % ”
o¬ Þ . ´ ðo-	14
o¬ … 6 -o-	-
o¬ F å †o-	1 y F å LLDP † G ž • • œ 10 aož 5 X L M L H F R Q I L J X U H W H U P L Q D O 5 X L M L H F R Q I L J O O G S W L P H U W [L Q W H U Y D O
o¬ U P ’ Îo-	-
o¬ o • j ¨o-	-
o¬ u V ª ¢o-	-

7.20 lldp tlv-enable

F å ª • G b TLV • ºož

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 } | med-tlv { all | capability | inventory | location { civic-location | elin } identifier id | network-policy profile [profile-num] | power-over-ethernet } }

… no # ¾ U Y H ƒ G b 6 TLV • ºož

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 } | med-tlv { all | capability | inventory | location { civic-location | elin } identifier id | netw0555rx netw}7f -0.0065 TJ -cy-e} profile-ic-tlm

port-description	n P Port Description TLV
system-capability	n P System Capabilities TLV
system-description	n P System Description TLV
system-name	n P System Name TLV
dot1-tlv	802.1 Á Ã # TLV
port-vlan-id	n P Port VLAN ID TLV
protocol-vlan-id	n P Port And Protocol VLAN ID TLV
vlan-id	n P € M # ‘ VLAN ID k F å 8 y1-4094
vlan-name	n P VLAN Name TLV
vlan-id	n P 6 VLAN d f + • VLAN ID k F å 8 y1-4094
dot3-tlv	802.3 Á Ã # TLV
link-aggregation	n P Link Aggregation TLV
mac-physic	n P

z F å ª • G b LLDP-MED Capability TLV ž k ¬ } ¯ F å ª • G b LLDP 802.3 MAC/PHY TLV z H ƒ G b LLDP 802.3 MAC/PHY TLV ž k ¬ } ¯ H ƒ G b LLDP-MED Capability TLV

F å LLDP-MED TLV ž k À F å ª • G b LLDP-MED Capability TLV kõ U Y F å ª • G b LLDP-MED ¿ • º TLVož H ƒ G b LLDP-MED TLV k · À ¯ H ƒ G b LLDP-MED ¿ • º TLV k õ ª • H ƒ G b LLDP-MED Capability TLVož¢ — Õ û IP ¢ k3 IP ¢ u 4 LLDP-MED ké U Y * F å network policy TLV G Œ Ë IP ¢

ò ç — Õ Þ . u 4 DCBX k Þ . Õ Ñ € M ª • G b IEEE 802.3 TLV C LLDP-MED TLV

o¬ F å †o- 1 y F å G b IEEE 802.1 Á Ã # ñ Ä U # TLVož

```
5 X L M L H  F R Q I L J X U H  W H U P L Q D O
5 X L M L H  F R Q I L J  L Q W H U I D F H  J L J D E L W H W K H U Q H W
5 X L M L H  F R Q I L J  L I  * L J D E L W ( W K H U Q H W  O O G S  W O Y  H Q D E O H  G R W  W O Y
```

2 y 1 LLDP network-policy Œ 1 • ñ N M 0/1 ož

```
5 X L M L H  F R Q I L J
5 X L M L H  F R Q I L J  L Q W H U I D F H  J L J D E L W H W K H U Q H W
5 X L M L H  F R Q I L J  L I  * L J D E L W ( W K H U Q H W  O O G S  W O Y  H Q D E O H  P H G  W O Y
```

3 y 1 LLDP Civic Address F å ’ Î gid 1 h • ñ N M 0/1 ož

```
5 X L M L H  F R Q I L J
5 X L M L H  F R Q I L J  L Q W H U I D F H  J L J D E L W H W K H U Q H W
5 X L M L H  F R Q I L J  L I  * L J D E L W ( W K H U Q H W  O O G S  W O Y  H Q D E O H  P H G  W O Y
```

4 y 1 ¬ Ä ¢ Z A ’ Î(id 1) • ñ N M 0/1 ož

```
5 X L M L H  F R Q I L J
5 X L M L H  F R Q I L J  L Q W H U I D F H  J L J D E L W H W K H U Q H W
5 X L M L H  F R Q I L J  L I  * L J D E L W ( W K H U Q H W  O O G S  O R F D W L R Q  H O L Q  L G H Q W
```

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.21 show lldp local-information

ª P Î ª — Õ LLDP ’ Î k ? ’ Î 1 t Á Ã è TLV G Ë > D — Õož

show lldp local-information [global | interface interface-name]

o¬ @ ƒ ª ¢o-

@ ƒ	T
interface-name	N M d f

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

```
2EMHFW LGHQWLILHU


     RUJDQL]DWLRQDOO\ LQIRUPDWLRQ
3RUW 9/$1 ,'
3RUW DQG SURWRFRO 9/$1 ,' 339,'
   339,' 6XSSRUWHG              <(6
   339,' (QDEOHG               12
9/$1 QDPH RI 9/$1              9/$1
3URWRFRO ,GHQWLW\


     RUJDQL]DWLRQDOO\ LQIRUPDWLRQ
$XWR QHJRWLDWLRQ VXSSRUWHG        <(6
$XWR QHJRWLDWLRQ HQDEOHG          <(6
30' DXWR QHJRWLDWLRQ DGYHUWLVHG      %$6( 7; IXOO GXSOH[ PRGE
2SHUDWLRQDO 0$8 W\SH             VSHHG     GXSOH[ +DOI
3R( VXSSRUW                   12
/LQN DJJUHJDWLRQ VXSSRUWHG        <(6
/LQN DJJUHJDWLRQ HQDEOHG          12
$JJUHJDWLRQ SRUW ,'
0D[LPXP IUDPH 6L]H

//'3 0(' RUJDQL]DWLRQDOO\ LQIRUPDWLRQ
3RZHU YLD 0', GHYLFH W\SH         3'
3RZHU YLD 0', SRZHU VRXUFH        /RFDO
3RZHU YLD 0', SRZHU SULRULW\
3RZHU YLD 0', SRZHU YDOXH
0RGHO QDPH                    0RGHO QDPH
```

show lldp local-information x X ª P ' Î T n y

<	ª ¢
Chassis ID type	Chassis ID • º k 9 ö œ Chassis ID <
Chassis ID	9 ö œ — Õ k * o MAC ª - n P
System name	T — Õ d f
System description	— Õ T ' Î k , F ^/ ÷ ^ Í Îo• q • © Ï ^ ' Î
System capabilities supported	© Ï u 4

System capabilities enabled	© Ï] …
LLDP-MED capabilities	© Ï u 4 LLDP-MED
Device class	Med — Õ • º k» ã è 2 • y à Ì N — Õ y Ä € — Õož Network connectivity device y à Ì N — Õ Class I y n P%² " Ä € — Õ Class II y n P ý } Ä € — Õ k m 4 Class I k c ž u 4 Cla4vTf ( )Tj ET 0.602 g 123.78 72414 Tc E306<05515 -3.053 -2.247 Td (Class II)T

```
, G H Q W L I L H U     W
( O L Q              L L L L L L L L L L
3 R U W V              * L
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

7.23 show lldp neighbors

ª P > D — Õ LLDP ’ Îož

show lldp neighbors [interface interface-name] [detail]

o¬ @ ƒ ª ¢o- @ ƒ

```
0DQDJHPHQW DGGUHVV VXEW\SH          PDF DGGUHVV
0DQDJHPHQW DGGUHVV                G  I     FG
,QWHUIDFH QXPEHULQJ VXEW\SH
,QWHUIDFH QXPEHU
2EMHFW LGHQWLILHU


//'3 0(' FDSDELOLWLHV
'HYLFH FODVV
+DUGZDUH5HY
)LUPZDUH5HY
6RIWZDUH5HY
6HULDO1XP
0DQXIDFWXUHU QDPH
$VVHW WUDFNLQJ LGHQWLILHU

3RUW ,' W\SH                  ,QWHUIDFH QDPH
3RUW LG                      *LJDELW(WKHUQHW
3RUW GHVFULSWLRQ

    RUJDQL]DWLRQDOO\ LQIRUPDWLRQ
3RUW 9/$1 ,'
3RUW DQG SURWRFRO 9/$1 ,' 339,'
   339,' 6XSSRUWHG            <(6
   339,' (QDEOHG              12
9/$1 QDPH RI 9/$1             9/$1
3URWRFRO ,GHQWLW\
    RUJDQL]DWLRQDOO\ LQIRUPDWLRQ
$XWR QHJRWLDWLRQ VXSSRUWHG       <(6
$XWR QHJRWLDWLRQ HQDEOHG        <(6
30' DXWR QHJRWLDWLRQ DGYHUWLVHG      %$6( 7 IXOO GXSOH[ PRGI
 %$6( 7; KDOI GXSOH[ PRGH   %$6( 7 IXOO GXSOH[ PRGH   %$6( 7 KDO
2SHUDWLRQDO 0$8 W\SH           VSHHG     GXSOH[ )XOO
3R( VXSSRUW                   12
/LQN DJJUHJDWLRQ VXSSRUWHG       <(6
/LQN DJJUHJDWLRQ HQDEOHG        12
$JJUHJDWLRQ SRUW ,'
0D[LPXP IUDPH 6L]H
//'3 0(' RUJDQL]DWLRQDOO\ LQIRUPDWLRQ
3RZHU YLD 0', GHYLFH W\SH
3RZHU YLD 0', SRZHU VRXUFH
```

```
3RZHU YLD 0', SRZHU SULRULW\
3RZHU YLD 0', SRZHU YDOXH
```

show lldp neighbors x X ª P ’ Î T n y

<	ª ¢
Neighbor index	> D « –
Device type	> D — Õ • º
Update time	> D ’ Î Â ¾ • ž •
Aging time	> D ï ž • k / > D ’ Î ¨ Ú 5 a e t ï í ”
Chassis ID type	Chassis ID • º
Chassis ID	9 ö œ — Õ k * o MAC ª - n P
System name	T — Õ d f
System description	— Õ T ’ Î k , F ^/ ÷ ^ Í Îo• q • © ï ^ ’ Î
System capabilities supported	© Ï u 4
System capabilities enabled	© Ï] …
Management address subtype	’ ò ª - • º
Management address	’ ò ª -
Interface numbering subtype	’ ò ª - N M • º
Interface number	’ ò ª - N M ID
Object identifier	’ ò ª - + » ö œ …
Device class	Med — Õ • º k» ã è 2 • yà Ì N — Õ y Ä € — Õož Network connectivity device y à Ì N — Õ Class I y n P%² " Ä € — Õ Class II y n P ý } Ä € — Õ k m 4 Class I k c ž u 4 ý } v Class III y n P * ’ Ä € — Õ k m 4 Class I y Class II k c ž u 4 IP * ’
HardwareRev	F ^ Í Î
FirmwareRev	¡ ^ Í Î
SoftwareRev	÷ ^ Í Î
SerialNum	~ ç Z
Manufacturer name	ò - D Œ
Asset tracking identifier	Ï D ö œ …
Port ID type	€ M ID • º

Port ID	€ M ID
Port description	€ M T …
Port VLAN ID	€ M VLAN ID
Port and protocol VLAN ID	€ M # ‘ VLAN ID
PPVID Supported	© k u 4 € M # ‘ VLAN
PPVID Enabled	© k … € M # ‘ VLAN
VLAN name of VLAN 1	VLAN 1 d f
Protocol Identity	# ‘ ö œ …
Auto-negotiation supported	© k u 4 # Œ
Auto-negotiation enabled	© k … # Œ
PMD auto-negotiation advertised	€ M # Œ * s
Operational MAU type	€ M # Œ , ä y E W Ù Á
PoE support	© k u 4 POE
Link aggregation supported	© k u 4 e è ü `
Link aggregation enabled	© k … e è ü `
Aggregation port ID	e è ü ` € M ID
Maximum frame Size	€ M u 4 Â Ý I x †

profile-num	network-policy Œ ö œ Z k 8 y1-1024
interface-name	N M d f

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- 6 Œ ö œ Z k 1 ª P Ô network-policy Œ ’ Îož
6 ` ~ @ ƒ k 1 ª P ñ Ä network-policy Œ ’ Îož

o¬ F å †o- 1 y ª P ñ Ä network-policy Œ ’ Îož

```
5XLMLH VKRZ OOGS QHWZRUN SROLF\ SURILOH
QHWZRUN SROLF\ LQIRUPDWLRQ

1HWZRUN 3ROLF\ 3URILOH
  YRLFH YODQ FRV GVFS
  YRLFH VLJQDOLQJ YODQ FRV GVFS
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

7.25 show lldp statistics

ª P LLDP Ï ‹ ’ Îož

show lldp statistics [fglobal ao][

o¬ u V ª ¢o- -

7.26 show lldp status

ª P LLDP Ù Á ' Îož

show lldp status [interface interface-name]

o¬ @ ƒ ª ¢o-

@ ƒ	T
interface-name	N M d f

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- 6 interface @ ƒ k 1 ª P 6 N M LLDP Ù Á ' Îož

o¬ F å †o- 1 y ª P ñ Ä € M LLDP Ù Á ' Îož

```
5XLMLH  VKRZ OOGS VWDWXV
*OREDO VWDWXV RI //'3                (QDEOH
1HLJKERU LQIRUPDWLRQ ODVW FKDQJHG WLPH   KRXU   PLQXWH   VHFR
7UDQVPLW LQWHUYDO                      V
+ROG PXOWLSOLHU
5HLQLW GHOD\                         V
7UDQVPLW GHOD\                        V
1RWLILFDWLRQ LQWHUYDO                  V
)DVW VWDUW FRXQWV

3RUW >*LJDELW(WKHUQHW    @

3RUW VWDWXV RI //'3           (QDEOH
3RUW VWDWH                   83
3RUW HQFDSVXODWLRQ             (WKHUQHW ,,
2SHUDWLRQDO PRGH              5[$QG7[
1RWLILFDWLRQ HQDEOH            12
(UURU GHWHFW HQDEOH            <(6
1XPEHU RI QHLJKERUV
1XPEHU RI 0(' QHLJKERUV
```

show lldp status x X ª P ' Î T n y

<	ª ¢
Global status of LLDP	¶ B © k … LLDP
Neighbor information last changed time	> D ’ Î Â e ¾ • ž •
Transmit interval	LLDP † G • œ
Hold multiplier	TTL + *ƒ*
Reinit delay	€ M ì ÷ • ž •
Transmit delay	LLDP † G • ž •
Notification interval	LLDP Trap ’ Î G ž • • œ
Fast start counts	½ , G LLDP † *ƒ*
Port status of LLDP	€ M © k … LLDP
Port state	€ M e è Ù Á kUP ê DOWN
Port encapsulation	LLDP † / x ”
Operational mode	LLDP W • % ”
Notification enable	€ M © k … LLDP Trap
Error detect enable	€ M © k … j ¨ y
Number of neighbors	> D *ƒ*
Number of MED neighbors	MED > D *ƒ*

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

7.27 show lldp tlv-config

ª P € M U G b TLV F å ’ Îož

show lldp tlv-config [interface interface-name]

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
interface-name	N M d f

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- 6 interface @ ƒ k 1 ª P 6 N M LLDP TLV F å ’ Î

o¬ F å †o- 1 y ª P N M 1 TLV ’ Îož

```
5XLMLH  VKRZ OOGS WOY FRQILJ LQWHUIDFH *LJDELW(WKHUQHW
//'3 WOY FRQILJ RI SRUW >*LJDELW(WKHUQHW    @

            1$0(            67$786 '()$8/7

%DVLF RSWLRQDO 7/9
3RUW 'HVFULSWLRQ 7/9           <(6   <(6
6\VWHP 1DPH 7/9              <(6   <(6
6\VWHP 'HVFULSWLRQ 7/9         <(6   <(6
6\VWHP &DSDELOLWLHV 7/9        <(6   <(6
0DQDJHPHQW $GGUHVV 7/9         <(6   <(6

,(((      H[WHQG 7/9
3RUW 9/$1 ,' 7/9              <(6   <(6
3RUW $QG 3URWRFRO 9/$1 ,' 7/9    <(6   <(6
9/$1 1DPH 7/9                 <(6   <(6

,(((      H[WHQG 7/9
0$& 3K\VLF 7/9                <(6   <(6
3RZHU YLD 0', 7/9             <(6   <(6
/LQN $JJUHJDWLRQ 7/9           <(6   <(6
0D[LPXP )UDPH 6L]H 7/9         <(6   <(6

//'3 0(' H[WHQG 7/9
&DSDELOLWLHV 7/9               <(6   <(6
1HWZRUN 3ROLF\ 7/9             <(6   <(6
/RFDWLRQ ,GHQWLILFDWLRQ 7/9     12    12
([WHQGHG 3RZHU YLD 0', 7/9      <(6   <(6
,QYHQWRU\ 7/9                <(6   <(6
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

7.28 {voice | voice-signaling} vlan

F å LLDP network-policy Œ ož ï U Y … no # ¾ í ” Œ • • ºož

{ voice | voice-signaling } vlan { { vlan-id [cos cvalue | dscp dvalue] } | { dot1p [cos cvalue | dscp dvalue] } | none | untagged }

no { voice | voice-signaling } vlan

o¬ @ ƒ ª ¢o-

@ ƒ	T
voice	6 voice • • º
voice-signaling	6 voice-signaling • • º

ity k

```
5XLMLH FRQILJ
5XLMLH FRQILJ  OOGS QHWZRUN SROLF\ SURILOH
5XLMLH FRQILJ OOGS QHWZRUN SROLF\  YRLFH YODQ XQWDJJHG
5XLMLH FRQILJ OOGS QHWZRUN SROLF\  YRLFH VLJQDOLQJ YODQ  FRV
5XLMLH FRQILJ OOGS QHWZRUN SROLF\  YRLFH VLJQDOLQJ YODQ  GVF
```

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8 PPP

8.1 ppp accm

F å PPP # Œ ACCM(‘ 5 … ô E Q A) # ¾

ppp accm value

Ê Ö ó • ›

no ppp accm

o¬ @ ƒ ª ¢o-

@ ƒ	T
value	ACCM # ¾ › k H › 8 0-0xfffffffož

o¬ x X % ”o- N M F å % ”

o¬ Þ . F åo- ó • H › 0x000A0000

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- 4 x X Û F å PPP # Œ ‰ <ACCM # ¾ › k H › 8 © 0-0xffffffff k ó • › 0x000A0000ož

o¬ F å †o- 1 y F å PPP # Œ ‰ <ACCM # ¾ ›ož

```
5XLMLH FRQILJ LI 9LUWXDO SSS SSS DFFP [ I
5XLMLH FRQILJ LI 9LUWXDO SSS
```

o¬ à • co- show running-config U ò 0 N M F å ppp # Œ accm ›ož

o¬ U P ’ Îo- -

o¬ u V ª ¢o- AP D } Q Ä AP120-W v1.0o•AP130-W v1.1o•AP320I v1.xo•AP320I v2.X o•AP330-I v1.1o•AP220-E(P) v2.0 o• AP520 v1.0 o• AP630 v1.0 o• AP5280 v1.0 o• AP130(L) v1.0,AP130(W) o• AP530-I V2 v1.00 o• APD-M(AC) o•RG-AW322 v1.0o•AP530 v1.0o•AP530 v1.5 o•AP320-I v1.0o•AP320-I v1.1o•AP220-E(C) v4.0o•AP220-E(M)-V2 v3.0o•AP220-E(P) v1.0o•AP3220 v1.0o•AP320-I v2.0o•AP3220-P v1.0o•AP4210 v1.0 o• APD-M v1.0 o• AP630(IODA) v1.00 o• AP630(IDA) o• AP630(CD) o• AP520(DA), AP520(BT) o• APD-M(AC) v1.00 o• RG-AW320W o• AP630 v1.00 o• AP740-I o• AP740-I(C) o• AP530-I V2 V2.00 o• AP630(CE) V1.0o•APD-M(EA) V1.0o•AP4220 V1.0o•AP720-Io•AP730(TR)o•AP520(W2)o•AP130(W2)o• AP880-Io•AP680-Io•AP840-Io•AP850-Io•AP860-I u 4 ¥ k ¿ AP D } u 4 PPP

8.2 ppp accounting

F å PPP “ Ã • ”

ppp accounting { default | list_name }

í ” PPP “ Ã ç n

no ppp accounting

o¬ @ ƒ ª ¢o-

@ ƒ	T
default	ó • “ Ã ç n
list_name	aaa “ Ã list d f

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- 4 x X Û F å PPP “ Ã • ” k U Y — å “ Ã • ” ó • default list k - U Y 6 “ Ã list d f k 4 x X F å · À … AAA % ² • ¼ õ F å k k é x X U •ož

o¬ F å †o- 1 y F å PPP “ Ã • ”ož

```
5XLMLH FRQILJ LI 9LUWXDO SSS SSS DFFRXQWLQJ GHIDXOW
5XLMLH FRQILJ LI 9LUWXDO SSS SSS DFFRXQWLQJ DFFBOLVW
5XLMLH FRQILJ LI 9LUWXDO SSS
```

o¬ à • co- show running-config U ò 0 N M F å ppp “ Ã ç n d fož

o¬ U P ’ Îo- -

o¬ u V ª ¢o- AP D } Q Ä AP120-W v1.0o•AP130-W v1.1o•AP320I v1.xo•AP320I v2.X o•AP330-I v1.1o•AP220-E(P) v2.0 o• AP520 v1.0 o• AP630 v1.0 o• AP5280 v1.0 o• AP130(L) v1.0,AP130(W) o• AP530-I V2 v1.00 o• APD-M(AC) o•RG-AW322 v1.0o•AP530 v1.0o•AP530 v1.5 o•AP320-I v1.0o•AP320-I v1.1o•AP220-E(C) v4.0o• AP220-E(M)-V2 v3.0o• AP220-E(P) v1.0o• AP3220 v1.0o• AP320-I v2.0o• AP3220-P v1.0o• AP4210 v1.0 o• APD-M v1.0 o• AP630(IODA) v1.00 o• AP630(IDA) o• AP630(CD) o• AP520(DA), AP520(BT) o• APD-M(AC) v1.00 o• RG-AW320W o• AP630 v1.00 o• AP740-I o• AP740-I(C) o• AP530-I V2 V2.00 o• AP630(CE) V1.0o• APD-M(EA) V1.0o• AP4220 V1.0o• AP720-Io• AP730(TR)o• AP520(W2)o• AP130(W2)o• AP880-Io•AP680-Io•AP840-Io•AP850-Io•AP860-I u 4 ¥ k ¿ AP D } u 4 PPP

8.3 ppp authentication

F å PPP • š • ”ož

ppp authentication { { pap | chap } [callin | { chap | pap } | default | list_name] }

í ” PPP • š • ”

no ppp authentication { { pap | chap } [callin | { chap | pap } | default | list_name] }

o¬ @ ƒ ª ¢o-

@ ƒ	T
pap	F å • š • ” PAP
callin	N N • š Û ¬ L †
chap	F å • š • ” CHAP
default	— – ©PAP © CHAP • š k … ó • • š ç n
list_name	F å • š ž • š ç n d f

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- 4 x X Û F å PPP • š • ” k , PAP • š kCHAP • šož

o¬ F å †o- 1 y F å PPP • š • ”ož

```
5XLMLH FRQILJ LI 9LUWXDO SSS SSS DXWKHQWLFDWLRQ SDS
5XLMLH FRQILJ LI 9LUWXDO SSS SSS DXWKHQWLFDWLRQ FKDS
```

8.4 ppp authorization

F å PPP aaa • š I Ó ç nož
ppp authorization { default | list_name }

í ” PPP aaa • š I Ó ç nož
no ppp authorization

o¬ @ ƒ ª ¢o-

@ ƒ	T
default	ó • aaa • š I Ó ç nož
list_name	PPP aaa • š I Ó ç nož

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- F å PPP AAA • š ç n k Û ¨ PPP • š ‰ < … AAA I Ó ç n Û g AAA • š k ¥ x X · À ¨ • o AAA % ² ù U õ U •ož

o¬ F å †o- 1 y 1 Virtual-PPP 1 M PPP • š I Ó ç n — å auth_listož

```
5 X L M L H F R Q I L J L I 9 L U W X D O S S S S S S D X W K R U L ] D W L R Q G H I D X O W
5 X L M L H F R Q I L J L I 9 L U W X D O S S S S S S D X W K R U L ] D W L R Q D X W K B O L V W
5 X L M L H F R Q I L J L I 9 L U W X D O S S S
```

o¬ à • co- 1 y … show running-config x X k ò 0 N M F å PPP I Ó ç nož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- AP D } Q Ä AP120-W v1.0o•AP130-W v1.1o•AP320I v1.xo•AP320I v2.X o•AP330-I v1.1o•AP220-E(P) v2.0 o• AP520 v1.0 o• AP630 v1.0 o• AP5280 v1.0 o• AP130(L) v1.0,AP130(W) o• AP530-I V2 v1.00 o• APD-M(AC) o•RG-AW322 v1.0o•AP530 v1.0o•AP530 v1.5 o•AP320-I v1.0o•AP320-I v1.1o•AP220-E(C) v4.0o•AP220-E(M)-V2 v3.0o•AP220-E(P) v1.0o•AP3220 v1.0o•AP320-I v2.0o•AP3220-P v1.0o•AP4210 v1.0 o• APD-M v1.0 o• AP630(IODA) v1.00 o• AP630(IDA) o• AP630(CD) o• AP520(DA), AP520(BT) o• APD-M(AC) v1.00 o• RG-AW320W o• AP630 v1.00 o• AP740-I o• AP740-I(C) o• AP530-I V2 V2.00 o• AP630(CE) V1.0o•APD-M(EA) V1.0o•AP4220 V1.0o•AP720-Io•AP730(TR)o•AP520(W2)o•AP130(W2)o• AP880-Io•AP680-Io•AP840-Io•AP850-Io•AP860-I u 4 ¥ k ¿ AP D } u 4 PPP

8.5 ppp chap

F å PPP chap • š ï d y % Aož

ppp chap hostname name

ppp chap password password

í ” F å PPP ï d y % Aož

no ppp chap hostname

o¬ @ ƒ ª ¢o-

@ ƒ	T
name	chap • š ï d
password	chap • š % A

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- VPDN y PPPOE * Z ˆ C ¬ } ñ PPP # Œ k # Œ † 8 ‰ < < © ï d % A • š k Î x X } Û F å CHAP • š ï d y % Aož

o¬ F å †o- 1 y ¨ Virtual-PPP 1 M F å CHAP • š ï d y % Aož

```
5XLMLH FRQILJ LI 9LUWXDO SSS    SSS FKDS KRVWQDPH
5XLMLH FRQILJ LI 9LUWXDO SSS    SSS FKDS SDVVZRUG
5XLMLH FRQILJ LI 9LUWXDO SSS    QR SSS FKDS KRVWQDPH
5XLMLH FRQILJ LI 9LUWXDO SSS
```

o¬ à • co- 1 y … show running-config x X k ò 0 N M F å CHAP • š ï d y % Aož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- AP D } Q Ä AP120-W v1.0o•AP130-W v1.1o•AP320I v1.xo•AP320I v2.X o•AP330-I v1.1o•AP220-E(P) v2.0 o• AP520 v1.0 o• AP630 v1.0 o• AP5280 v1.0 o• AP130(L) v1.0,AP130(W) o• AP530-I V2 v1.00 o• APD-M(AC) o•RG-AW322 v1.0o•AP530 v1.0o•AP530 v1.5 o•AP320-I v1.0o•AP320-I v1.1o•AP220-E(C) v4.0o•AP220-E(M)-V2 v3.0o•AP220-E(P) v1.0o•AP3220 v1.0o•AP320-I v2.0o•AP3220-P v1.0o•AP4210 v1.0 o• APD-M v1.0 o• AP630(IODA) v1.00 o• AP630(IDA) o• AP630(CD) o• AP520(DA), AP520(BT) o• APD-M(AC) v1.00 o• RG-AW320W o• AP630 v1.00 o• AP740-I o• AP740-I(C) o• AP530-I V2 V2.00 o• AP630(CE) V1.0o•APD-M(EA) V1.0o•AP4220 V1.0o•AP720-Io•AP730(TR)o•AP520(W2)o•AP130(W2)o• AP880-Io•AP680-Io•AP840-Io•AP850-Io•AP860-I u 4 ¥ k ¿ AP D } u 4 PPP

8.6 ppp pap sent-username username password password

F å PPP PAP • š ï d y % Aož

ppp pap sent-username username password password

í ” F å PPP PAP ï d y % Aož

no ppp pap sent-username

o¬ @ ƒ ª ¢o-

@ ƒ	T
username	pap • š ï d
password	pap • š % A

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- VPDN y PPPOE * Z ˆ C ¬ } ñ PPP # Œ k # Œ † 8 ‰ < < © ï d % A • š k Î x X } Û F å PAP • š ï d y % Aož

o¬ F å †o- 1 y ¨ Virtual-PPP 1

8.7 ppp ipcp dns

F å PPP # Œ IPCP ‰ < DNS # ¾ ›ož

ppp ipcp dns { A.B.C.D [A.B.C.D] [accept] | accept | request | reject }

í ” F å DNS # ¾ ›ož

no ppp ipcp dns { A.B.C.D [A.B.C.D] [accept] | accept | request | reject }

o¬ @ ƒ ª ¢o-

@ ƒ	T
accept	N v ñ Ä ³ 0 DNS ª -
request	R + € Æ ˜ ¬ L DNS ª -
reject	! Í y + € # Œ DNS # ¾
A.B.C.D	DNS ª -

o¬ Þ . F åo- ó • F å DNS # ¾ ›ož

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X Û F å IPCP # Œ ‰ <DNS # ¾ ›ož

o¬ F å †o- 1 y F å IPCP # Œ ‰ < DNS # ¾ ›ož

```
5 X L M L H F R Q I L J L I 9 L U W X D O S S S S S S L S F S G Q V D F F H S W
5 X L M L H F R Q I L J L I 9 L U W X D O S S S S S S L S F S G Q V U H M H F W
5 X L M L H F R Q I L J L I 9 L U W X D O S S S S S S L S F S G Q V U H T X H V W
5 X L M L H F R Q I L J L I 9 L U W X D O S S S S S S L S F S G Q V
5 X L M L H F R Q I L J L I 9 L U W X D O S S S Q R S S S L S F S G Q V
5 X L M L H F R Q I L J L I 9 L U W X D O S S S
```

o¬ à • co- 1 y … show running-config x X k ò 0 N M F å © k ¨ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- AP D } Q Ä AP120-W v1.0o•AP130-W v1.1o•AP320I v1.xo•AP320I v2.X o•AP330-I v1.1o•AP220-E(P) v2.0 o• AP520 v1.0 o• AP630 v1.0 o• AP5280 v1.0 o• AP130(L) v1.0,AP130(W) o• AP530-I V2 v1.00 o• APD-M(AC) o•RG-AW322 v1.0o•AP530 v1.0o•AP530 v1.5 o•AP320-I v1.0o•AP320-I v1.1o•AP220-E(C) v4.0o•AP220-E(M)-V2 v3.0o•AP220-E(P) v1.0o•AP3220 v1.0o•AP320-I v2.0o•AP3220-P v1.0o•AP4210 v1.0 o• APD-M v1.0 o• AP630(IODA) v1.00 o• AP630(IDA) o• AP630(CD) o• AP520(DA), AP520(BT) o•

APD-M(AC) v1.00 o• RG-AW320W o• AP630 v1.00 o• AP740-I o• AP740-I(C) o• AP530-I V2 V2.00 o• AP630(CE) V1.0o• APD-M(EA) V1.0o• AP4220 V1.0o• AP720-Io• AP730(TR)o• AP520(W2)o• AP130(W2)o• AP880-Io•AP680-Io•AP840-Io•AP850-Io•AP860-I u 4 ¥ k ¿ AP D } u 4 PPP

8.8 ppp lcp mru negotiate

F å PPP # Œ MRU(Â Ý N v % «) # ¾ # Œož

ppp lcp mru negotiate

H ƒ F å PPP # Œ MRU

no ppp lcp mru

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- gB¥M X %o-

8.9 ppp max-bad-auth

6 PPP • š M ¡) ƒ ož
ppp max-bad-auth number

Ê Ö PPP • š M ¡) ƒ ó • ›ož
no ppp max-bad-auth

o¬ @ ƒ ª ¢o-

@ ƒ	T
number	PPP • š M ¡) ƒ k H › 8 1-255ož

o¬ Þ . F åo- ó • › 1ož

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- M ¡) ƒ m †%²) • š k / ò ç F å M ¡) ƒ 3 k †%²) • š â Â Y e k M • • š 2)ož Â e%²) • š â Â Y e k ¿ è t 5 • g Ö y hož

o¬ F å †o- 1 y F å virtual-ppp1 M PPP • š M ¡) ƒ 3ož

```
5 X L M L H F R Q I L J L I 9 L U W X D O S S S S S S P D [ E D G D X W K
```

2 y Ê Ö PPP • š M ¡) ƒ ó • ›ož

```
5 X L M L H F R Q I L J L I 9 L U W X D O S S S Q R S S S P D [ E D G D X W K
```

o¬ à • co- 1 y … show running-config interface virtual-ppp 1 x X k ò 0 F å © k ¨ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- AP D } Q Ä AP120-W v1.0o•AP130-W v1.1o•AP320I v1.xo•AP320I v2.X o•AP330-I v1.1o•AP220-E(P) v2.0 o• AP520 v1.0 o• AP630 v1.0 o• AP5280 v1.0 o• AP130(L) v1.0,AP130(W) o• AP530-I V2 v1.00 o• APD-M(AC) o•RG-AW322 v1.0o•AP530 v1.0o•AP530 v1.5 o•AP320-I v1.0o•AP320-I v1.1o•AP220-E(C) v4.0o•AP220-E(M)-V2 v3.0o•AP220-E(P) v1.0o•AP3220 v1.0o•AP320-I v2.0o•AP3220-P v1.0o•AP4210 v1.0 o• APD-M v1.0 o• AP630(IODA) v1.00 o• AP630(IDA) o• AP630(CD) o• AP520(DA), AP520(BT) o• APD-M(AC) v1.00 o• RG-AW320W o• AP630 v1.00 o• AP740-I o• AP740-I(C) o• AP530-I V2 V2.00 o• AP630(CE) V1.0o•APD-M(EA) V1.0o•AP4220 V1.0o•AP720-Io•AP730(TR)o•AP520(W2)o•AP130(W2)o• AP880-Io•AP680-Io•AP840-Io•AP850-Io•AP860-I u 4 ¥ k ¿ AP D } u 4 PPP

8.10 ppp negotiation-timeout

6 PPP # Œ Â Ý Ý ž ž •ož

ppp negotiation-timeout seconds

Ê Ö PPP # Œ Â Ý Ý ž ž • ó • ›ož

no ppp negotiation-timeout

o¬ @ ƒ ª ¢o-

@ ƒ	T
seconds	PPP # Œ Â Ý Ý ž ž •(a) k H › 8 10-65535ož

o¬ Þ . F åo- ó • Ý ž ž • 20sož

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- PPP … # Œ i k ò ç # Œ ž • ß x Z Ä # Œ k ; " Ý ž # Œ Ý ž ž • é • © # Œ â Âož ó • Â Ý # Œ Ý ž ž • 20sož

o¬ F å †o- 1 y F å virtual-ppp1 M Â Ý # Œ Ý ž ž • 200sož

```
5 X L M L H F R Q I L J L Q W H U I D F H Y L U W X D O S S S
5 X L M L H F R Q I L J L I 9 L U W X D O S S S S S S Q H J R W L D W L R Q W L P H R X W
```

2 y Ê Ö PPP • š M ¡) ƒ ó • ›ož

```
5 X L M L H F R Q I L J L I 9 L U W X D O S S S Q R S S S Q H J R W L D W L R Q W L P H R X W
```

o¬ à • co- 1 y … show running-config interface virtual-ppp 1 x X k ò 0 F å © k ¨ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- AP D } Q Ä AP120-W v1.0o•AP130-W v1.1o•AP320I v1.xo•AP320I v2.X o•AP330-I v1.1o•AP220-E(P) v2.0 o• AP520 v1.0 o• AP630 v1.0 o• AP5280 v1.0 o• AP130(L) v1.0,AP130(W) o• AP530-I V2 v1.00 o• APD-M(AC) o•RG-AW322 v1.0o•AP530 v1.0o•AP530 v1.5 o•AP320-I v1.0o•AP320-I v1.1o•AP220-E(C) v4.0o•AP220-E(M)-V2 v3.0o•AP220-E(P) v1.0o•AP3220 v1.0o•AP320-I v2.0o•AP3220-P v1.0o•AP4210 v1.0 o• APD-M v1.0 o• AP630(IODA) v1.00 o• AP630(IDA) o• AP630(CD) o• AP520(DA), AP520A

9 PPPOE-CLIENT

9.1 clear dialer

Ž ” * Z N M Ï ‹ ’ Îož

clear dialer

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- ¶ B % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- 4 x X Û Ž ” * Z N M Ï ‹ ’ Îož

o¬ F å †o- 1 y Ž ” * Z N M Ï ‹ ’ Îož

5 F O H D U G L D O H U

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

9.2 clear pppoe tunnel

Ž ” ñ Ä PPPoE Ÿ 3ož

clear pppoe tunnel

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- ¶ B % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- 4 x X Û Ž ” ñ Ä PPPoE Ÿ 3ož

o¬ F å †o- 1 y Ž ” ñ Ä PPPoE Ÿ 3ož

5 F O H D U S S S R H W X Q Q H O

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

9.3 dialer enable-timeout

F å ¿ è — | ž •ož

dialer enable-timeout seconds

Ê Ö ¿ è — | ž • Þ . ›ož

no dialer enable-timeout

o¬ @ ƒ ª ¢o-

@ ƒ	T
seconds	¿ è —	ž • g a hož

o¬ Þ . F åo- 15 aož

o¬ x X % ”o- N M % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¿ è — | ž • © ¿ è ä • ê * Z â Â e U Y * Z $ ù N M ˆ - ž • k / N M Ç) * Z ù ˆ - ž •ož

o¬ F å †o- 1 y F å dialer 1 M ¿ è — | ž • 20 aož

```
5 FRQILJ LQWHUIDFH GLDOHU
5 FRQILJ LI GLDOHU GLDOHU HQDEOH WLPHRXW
```

2 y Ê Ö dialer 1 M ¿ è — | ž • Þ . ›ož

```
5 FRQILJ LQWHUIDFH GLDOHU
5 FRQILJ LI GLDOHU QR GLDOHU HQDEOH WLPHRXW
```

o¬ à • co- 1 y …

9.4 dialer-group

¼ û N M õ ¬ * Z • éož
dialer-group group-number

í ” * Z M ¼ û * Z õ ¬ • éož
no dialer-group

o¬ @ ƒ ª ¢o-

¼ { ‘ 4 „ çož

no dialer hold-queue [packets [timeout seconds]]

o¬ @ ƒ ª ¢o-

@ ƒ	T
packets	„ ç ‘ 4 † ã Á ƒ k H › 0 ñ 100ož
timeout seconds	ã Á ‘ 4 ¨ „ ç ž • g a h k Þ . © 45 aož

o¬ Þ . F åo- ¼ { ‘ 4 „ çož

o¬ x X % ”o- N M % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- — Õ … MODEM * Z g N ¬ }%² < # Œ ž • k ¨ 4 Ê • k ’ †ož x ò ç F å 4 ‘ 4 „ ç k é U Y • F Õ õ ¬ * Z • é † ‘ ¨ — Õ k N • y Y e k y / G ož

o¬ F å †o- 1 y F å dialer 1 M ‘ 4 „ ç 50 † ã Áož

```
5 FRQILJ LQWHUIDFH GLDOHU
5 FRQILJ LI GLDOHU GLDOHU KROG TXHXH
```

2 y ¼ { dialer 1 M ‘ 4 „ çož

```
5 FRQILJ LQWHUIDFH GLDOHU
5 FRQILJ LI GLDOHU QR GLDOHU KROG TXHXH
```

o¬ à • co- 1 y … show running-config interface dialer 1 x X k ò 0 F å © k ¨ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.6 dialer idle-timeout

F å ¿ è q ~ ž •ož

dialer idle-timeout seconds

Ê Ö ¿ è q ~ ž • Þ . ›ož

no dialer idle-timeout

o¬ @ ƒ ª ¢o-

@ ƒ	T
seconds	¿ è q ~ ž • g a hož

o¬ Þ . F åo- 120 aož

o¬ x X % ”o- N M % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¿ è q ~ ž • 6 * Z ¿ è ¨ Z Ä ƒ G * ’ Ú x ž • ä • ¿ è k Ê • v ñ%² ñ) ª - † k 1 M • Ö y ¿ è q ~ ž •ož

deny	! Í … IP # ‘ož
list	… ˜	ç n ò © … # ‘ Û # õ ¬ * Z • éož
access-list-number	˜	ç n Ú Zož

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¨ ä ´ * Z k . þ N M · À ¼ û À } Ò ò M õ g Ž * Zož 4 • y . þ N M y Ò ò N M ¼ û k …
4 * Z Pož Ù ¯ k 1 À } Ò ò N M µ%² ê Ú * Z P k À e k ¨ . þ N M ¼ û ¿ %² * Z P k R ò
ë . þ N M y Ò ò N M ¼ ûož%² Ò ò N M U Y K 9 Ú * Z P k x%² . þ N M Q ¼ û%² * Z P k .
þ N M ¨ g À } * Z ž ˜ k š Ñ # + * Z P q ~ N M g * Zož

o¬ F å †o- 1 y F å dialer 1 M ¼ û * Z P 1ož

```
5 FRQILJ LQWHUIDFH GLDOHU
5 FRQILJ LI GLDOHU GLDOHU SRRO
```

2 y H ƒ dialer 1 M ¼ û ª - Pož

```
5 FRQILJ LQWHUIDFH GLDOHU
5 FRQILJ LI GLDOHU QR GLDOHU SRRO
```

o¬ à • co- 1 y … show running-config interface dialer 1 x X k ò 0 F å © k ¨ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.9 ip address

F å N M IP Œ ož
ip address { negotiate | ip-addr subnet-mask }

í ” N M IP Œ ož
no ip address

o¬ @ ƒ ª ¢o-

@ ƒ	T
negotiate	F å N M * PPP # Œ B ± IP ª -ož
ip-addr	6 N M IP
subnet-mask	6 N M Q A

o¬ Þ . F åo- Z Ä Þ . ›ož

o¬ x X % ”Ðs`a@tàTÐ

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X } 9 6 . þ N M IP B ± • ”ož
ò ç # + * PPP # Œ B ± ª - k é . þ N M IP Æ ˜ € ã Fož
ò ç ô W 6 . þ N M IP k ¬ } ¨ # Œ i ± ñ Æ ˜ € c Þ k ñ 6 IP õ ÿ |ož

o¬ F å †o- 1 y F å dialer 1 M IP B ± • ” PPP # Œ B ±ož

```
5 F R Q I L J L Q W H U I D F H G L D O H U
5 F R Q I L J L I G L D O H U L S D G G U H V V Q H J R W L D W H
```

2 y í ” dialer 1 M IP Œ ož

```
5 F R Q I L J L Q W H U I D F H G L D O H U
5 F R Q I L J L I G L D O H U Q R L S D G G U H V V
```

o¬ à • co- 1 y … show running-config interface dialer 1 x X k ò 0 F å © k ¨ož
2 y … show ip interface brief | in dialer 1 x X k ò 0 F å © k # Œ ñ IP] Æ # ‘ UPož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.10 ppp max-bad-auth

6 PPP • š M ¡) ƒož
ppp max-bad-auth number

Ê Ö PPP • š M ¡) ƒ ó • ›ož
no ppp max-bad-auth

o¬ @ ƒ ª ¢o-

@ ƒ	T
number	PPP • š M ¡) ƒ k H › 8 1-255ož

o¬ Þ . F åo- g M ¡ož

o¬ x X % ”o- N M % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- M ¡) ƒ m †%²) • š k / ò ç F å M ¡) ƒ 3 k †%²) • š â Â Y e k M • • š 2)ož Â e%²)

• š â Â Y e k ¿ è t 5 • g Ö y hož

o¬ F å †o- 1 y F å dialer 1 M PPP • š M ¡) ƒ 3ož

```
5 FRQILJ LQWHUIDFH GLDOHU
5 FRQILJ LI GLDOHU SSS PD[ EDG DXWK
```

2 y Ê Ö PPP • š M ¡) ƒ ó • ›ož

```
5 FRQILJ LQWHUIDFH GLDOHU
5 FRQILJ LI GLDOHU QR SSS PD[ EDG DXWK
```

o¬ à • co- 1 y … show running-config interface dialer 1 x X k ò 0 F å © k ¨ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.11 pppoe enable

o N M PPPoE ož

pppoe enable

¼ { N M PPPoE client ož

no pppoe enable

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- N M PPPoE ¼ {ož

o¬ x X % ”o- N M % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- · À } ¨ WAN K Å Ò ò M õ F åož

o¬ F å †o- 1 y F å GigabitEthernet 0/5 M IP B ± • ” PPP # Œ B ±ož

```
5 FRQILJ LQWHUIDFH *LJDELW(WKHUQHW
5 FRQILJ LI *LJDELW(WKHUQHW SSSRH HQDEOH
```

```
5 FRQILJ LQWHUIDFH *LJDELW(WKHUQHW
5 FRQILJ LI *LJDELW(WKHUQHW QR SSSRH FOLHQW GLDO SRRO QX
```

o¬ à • co- 1 y … show running-config in terface GigabitEthernet 0/5 x X k ò 0 F å © k ¨ož

o¬ U P ’ Îo- 1 y N M ¬ } ¯ o PPPoE ož

```
333R( PXVW HQDEOH 333R( ILUVWO\
```

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.13 pppoe session mac-address

F å N M pppoe k ¢ mac ª -ož
pppoe session mac-address H.H.H

í ” N M F å pppoe k ¢ mac ª -ož
no pppoe session mac-address

o¬ @ ƒ ª ¢o-

@ ƒ	T
H.H.H	mac ª -

o¬ Þ . F åo- ¼ {ož

o¬ x X % ”o- N M % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- … ¥ x X U Y 6 pppoe * Z k ¢ mac ª - k ¥ F å U Y ¨ N M F å k x © N N ¨ ÿ N M õ F å ÿ |ož ¨ ÿ N M F å k ¢ mac ª - $ ù · À … ¥ N M pppoe ož

o¬ F å †o- 1 y F å GigabitEthernet 0/5.1 pppoe k ¢ mac ª - 00d0.f822.33f3ož

```
5XLMLH FRQILJ LQWHUIDFH *LJDELW(WKHUQHW
5XLMLH FRQILJ VXELI *LJDELW(WKHUQHW SSSRH HQDEOH
5XLMLH FRQILJ VXELI *LJDELW(WKHUQHW HQFDSVXODWLRQ GRW 4
5XLMLH FRQILJ VXELI *LJDELW(WKHUQHW SSSRH VHVVLRP PDF DGG
```

2 y í ” dialer 1 M IP Œ ož

```
5XLMLH FRQILJ LQWHUIDFH *LJDELW(WKHUQHW
5XLMLH FRQILJ VXELI *LJDELW(WKHUQHW QR SSSRH VHVVLRP PDF
```

o¬ à • co- 1 y … show running-config in terface GigabitEthernet 0/5.1 x X k ò 0 F å © k ¨ož

o¬ U P ' Îo- 1 y N M ¬ } ¯ o PPPoE ož

```
333R( PXVW HQDEOH 333R( ILUVWO\
```

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.14 show pppoe

ò 0 PPPoE k ¢ , ¼ ' Îož

show pppoe { ref | session | tunnel }

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
ref	ª P ñ Ä PPPoE k ¢ ½ ô ' Î
session	ª P ñ Ä PPPoE k ¢ ' Î
tunnel	ª P ñ Ä PPPoE Ÿ 3 ' Î

o¬ x X % ”o- Ô Ó % ”o• ¶ B % ”o• N M % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- 9 ª P PPPoE k ¢ , ¼ ' Î k * 6 ¼ p U ª P c ¥ ” PPPoE k ¢ ' Îož

o¬ F å †o- 1 y ª P ñ Ä PPPoE k ¢ ½ ô ' Îož

```
5  VKRZ SSSRH UHI

*LJDELW(WKHUQHW    9LUWXDO SSSRH  GLDOHU
 3URWRFRO 83 GLDOHU JURXS  ODVWBWLPH       PV
 (WKHU +HDGHU      )        ' )
 333R( +HDGHU       )
 333 +HDGHU
 'VW0DF     I      6UF0$&  G  I      6HVVLRQ,'
 ,QSXW (UU    0$&   333R( +HDGHU
 ,QSXW ,QIR   1RUPDO  'URS   5HVHUYH  /RVW
 2XWSXW (UU   6HVVLRQ6WDWH  QR UHI  OHQJWK
 2XWSXW ,QIR   1RUPDO  'URS  5HVHUYH  /RVW

7KHUH LV  SSSRH VHVVLRQ LQ 6\VWHP
```

< † K y œ ’ Î Î ï] Æ T ® Ž 4 k L Ç M Öož

2 y ª P ñ Ä PPPoE k ¢ ’ Îož

```
5   VKRZ SSSRH VHVVLRQ
VWDWH LV 6(66,21 P\ PDF LV   ' )          SHHU PDF LV      )
  7LPHU LV UXQQLQJ
```

< † K y œ ’ Î Î ï] Æ T ® Ž 4 k L Ç M Öož

3 y ª P ñ Ä PPPoE Ÿ 3 ’ Îož

```
5   VKRZ SSSRH WXQQHO
VWDWH LV 6(66,21 P\ PDF LV   ' )          SHHU PDF LV      )
  7LPHU LV UXQQLQJ
```

< † K y œ ’ Î Î ï] Æ T ® Ž 4 k L Ç M Öož

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

Q¸-IP žtü

Ü¡ IP ž*Q¸ÌGYÀ8VÖ

1. IP / á
2. ARP
3. IPv6
4. DHCP
5. DNS
6. 5%4EE¶AK
7. TCP
8. ECÊ IPv4/v6 E@
9. NAT

1 IP ®s §

1.1 ip address

FåNM IP ªož

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

ï6NM IP ªož

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

o@ p@

@	T
ip-address	32 AÔ IP ®8 y%ÁY ºnPkpÁž
network-mask	32 AÔ ÒQAk“1” nPQAyk“0” nPÿ ÕoZ 8 y%ÁY ºnPkpÁž
secondary	**nPFå** IP ªoZFå ip ªož

o=Få- NMÄå IP ª

o×X%”o- NM%”

o=ö- 2

o¬.6-o- %²—ÕÄå IP ®ÕUYNvyG IP ¡GkNMFå IP ®NMª IP #
‘ož
ÒQA-%² 32 yAÔ ÕÆ IP ÒÒÕÒQAk1
AÔ IP ªÔ<ÒÕ AÔ IP ªÔ<ÒÕ A
ÒQA255.0.0.0 IP
s "É'0Ô ' ª Ð

ªk1ÿ§ÛÛ%ã–ÕNMõž

oFåb- 1 yFåNM IP ª 10.10.10.1kÒQA 255.255.255.0ož

5XLMLHFRQILJ1QWHUIDFHJ1DELW(WKHUQHW

5XLMLHFRQILJ1I*LJ1DELW(WKHUQHWLSDGGUHVV

oèao- 1 y**show ip interface** **NMõž**

oUP'Ô- 1. ªFå mask ¶ 1 ¶ 0 QAgÑNMUYu4 yQAhkÇåkÑUPy

5XLMLHRQILJIGLDOHULSDGGUHVVQHJRWLDWH

oèao- 1 y**show ip interface** **NVÕž**

oUP'ô- -

oejö- -

ouVô- -

1.3 ip address-pool local

… IP ¶Pož

ip address-pool local

¼ IP ¶Pož

no ip address-pool local

oÕ@	@	T
	-	

oÞFå- Þ… IP ¶P

oxX%"o- ¶BFå%"

oÞõ- 2

o¬.6-o- ÞÕIP ¶PokUYFå IP ¶PkPPP UY IP ¶Pa+€ IP ¶ož

¼ IP ¶PkUY… no ip address-pool local xXk4ÞÍÅå IP ¶Pož

oFåb- 1 y… IP ¶Pož

5XLMLHFRQILJSDGGUHVVSRROORFDO

oèao- -

oUP'ô- -

oejö- -

ouVô- -

IP ÌUÙ¡G ICMP)UG,ôž

no ip icmp error-interval DF *milliseconds*

1.6 ip icmp timestamp

Fåž

ip icmp timestamp

HFåž

no ip icmp timestamp

o@	@	T
	-	-

oFå- Io4ž

o-X%”o- B%”

oö- 2

o¬.6-o-

oFå- 1 yFåž

5XLMLHFRQILQRLSLFPSWLPHVWDPS

oèo-

5XLMLHVKRØXQQLQFRQILJLQFOXGHLSLFPSWLPHVWDPS

QRLSLFPSWLPHVWDPS

oUP’î- -

oejö- -

oUVt- -

1.7 ip directed-broadcast

o IP gznÒnÊož

ip directed-broadcast [*access-list-number*]

HgznÒnÊož

no ip directed-broadcast

o@	@	T
	access-list-number	¡¤Z8R 1-199k 1300 - 2699o¥4¡¤ZQÄ F¥¡¤ IP gzn¶ož ÆÇZÄ¡¤CkG¶ož

o¤Få- ¼

o×X%”o- NM%”

o¤õ- 2

o¬.6-o- IP gzn¶)ö IP ¤ª IP k¤ö 172.16.16.255 ¤f
gzn¶ž¤O¥A¤ož
¤¤—Õvñ IP gzn¶ö%n¶%¤gzn¶¤zn†
ñ¥—Õk—Õgzn¶EA!Znt¶%¶)ö IP ¶ zn
¶kèYeÈzn¤GÑ¤ž
¡UY6NMkogzn¶ÈnÈkÑM<UYÕñ¤gz
n4o¥XQ¤¤gzn¶ÈnÈk¤gzn¶oÕož
¡NMk¡UY*#¡¤ÔÕ¤,¤gzno¥4¡¤kQÄ.¡¤
#¶Ñgzn¶ÈnÈož
¡¤NMFå **no ip directed-broadcast** kRGOS 1’Nvñ¤gzn¶ž

oFå¶- 1 y¨—Õ gigabitEthernet 0/1 ¤Mo4gzn¶ož
5XLMLHFRQIL1QWHUIDFH1DELW(WKHUQHW
5XLMLHFRQIL1I*LDELW(WKHUQHWLSGLUHFWHGEURDGFDVW

oèo- -

o¤UP’Î- -

oej¨o- -

o¤Vô- -

1.8 ip local pool

ë IP ¤Pož
ip local pool *pool-name low-ip-address* [*high-ip-address*]

ï IP ¤Pož
no ip local pool *pool-name* [*low-ip-address* [*high-ip-address*]]

o@	@	T
pool-name	*6ª* IP ªdk **default** **ªd**
low-ip-address	IP ªÂ IP ª
high-ip-addres	¼IP ªÂ IP ªõÇÂ IP ªké IP ª PQÄ%ª/© *low-ip-address*

oFå- Få IP ª

o×X%”o- ¶Få%”

oõ- 2

o¬.6-o- UY¥X%ÉU IP ªkˆ PPP ª IP ÑÜož

oFåb- 1 y%ª IP ªkd quarkk IP ª 172.16.23.0 ñ 172.16.23.255ož

5XLMLHFRQILJ1SORFDOSRROTXDUN

oèo- … **show ip pool ÛPož**

oUP’ô- 1. Ä.ªÕ ip ªk3ëUPy

,3ORFDOSRROLVGLVDEOHG

2. ò high-ip-address 49 low-ip-addresskõ high-ip-address y low-ip-address ¨c%ªÄ ÉUPy

,QYDOLGDGGUHVVUDQJH

oojö- 1. Få *high-ip-address 4 low-ip-addressož*

2. Få *high-ip-address y low-ip-address ¨c%ª*

oUVõ- -

1.9 ip mask-reply

o ICMP QAÎpž

ip mask-reply

¼ ICMP QAÎpž

no ip mask-reply

o@	@	T
-	-

oHFå- ÞoG ICMP QA€

oxX%”o- NM%”

oHõ- 2

o¬.6-o- à–Ã-3ÐQAk4BHÝkà–ÕYG ICMP QAŁƒ
ÎkNvñ ICMP QAŁÎà–ÕkGQAÎõž

oFåÐ- 1 y—Õ gigabitEthernet 0/1 NM1k€ ICMP QAŁÐž

5XLMLHFRQILÎ1QWHUIDFHÎ1DELW(WKHUQHW
5XLMLHFRQILÎ1I*LÎDELW(WKHUQHWLSPDVNUHSO\

oèo- -

oUP’Î- -

oeÿo- -

oUVÐ- -

1.10 ip mtu

Få IP ÂÿgMTU hož
ip mtu *bytes*

ÐFåž
no ip mtu

oÐ@

ƒ@	T
bytes	IP ÂÿkY-%yk8 68~1500ož

oHFå- ÞNMxX mtu Fåcož

oxX%”o- NM%”

oHõ- 2

o¬.6-o- ÿ%² IP Ý IP MTU ÁkRGOS

ÇNMFåX mtu +NMÂ%g—å IP MTU kNM MTU ‹4%ðž
k¿.4 IP MTU kNM MTU k5ðž

oFåt- 1 y1 gigabitEthernet 0/1 NM IP MTU ›— 512 -ož

5XLMLHFRQILJ1QWHUIDFHJ1DELW(WKHUQHW
5XLMLHFRQILJ1I*LJ1DELW(WKHUQHWLSPWX

oèo- 1 y**show ip interface gi 0/1 U** IP interface MTU ¢512ož

oUP'ô- -

oejö- -

ouVt- -

1.11 ip redirects

o ICMP Mgôž
ip redirects

¼ ICMP Mgož
no ip redirects

oÊ@

@	T
-	-

oFå- Ìoož

o×X%"o- NM%"

oÊ- 2

o¬.6-o- ÊÄ…±—Õ%ª NMNvÇk}RÆNMG8ož—ÕÇ
RNvNMM•G8k—ÕkÇG%² ICMP Mgk{sÇÊ¼
c%ÇÊ%V—ÕÇ<k1eÇ7ÊGož
RGOS Ìo ICMP Mgož

oFåt- 1 ygigabitEthernet 0/1 NM{4 ICMP Mgož

5XLMLHFRQILJ1QWHUIDFHJ1DELW(WKHUQHW
5XLMLHFRQILJ1I*LJ1DELW(WKHUQHWQRLSUHGLUHFWV

oèao- -

oUP'ô- -

oejö- -

ouVt- -

1.12 ip source-route

- IP ãõz

ip source-route

¼ IP ãõz

no ip source-route

oj@

@	T
-	-

oFå- Ío

oxX%"o- ¶%"

1.13 ip ttl

FÕ%n† TTL ož

ip ttl *value*

HFÕ%n† TTL ož

no ip ttl

	@	T
	value	TTL kH8© 0~255ož

oFå- ©64

oxX%”o- B%”

oÕ- 2

o¬.6-o-

oFå- 1 yFÕ%nÞ TTL › 100ož

5XLMLHFRQILI1SWWO

oèo- -

oUP’Î- -

oojö- -

oUVt- -

1.14 ip ttl-expires enable

FÕ TTL Õž

ip ttl-expires enable

HFÕ TTL Õž

no ip ttl-expires enable

	@	T
	-	-

oHFå- Io4G TTL ÿ

oxX%”o- B%”

oHõ- 2

o¬.6-o-

oFåt- 1 yFÃÑ TTL ÿž

5XLMLHFRQILQRLSWWOH[SLUHVHQDEOH

oèo-

5XLMLHVKRZXQQLQJFRQILJLQFOXGHLSWWOH[SLUHVHQDEOH

QRLSWWOH[SLUHVHQDEOH

oUP’Î-

-

oejö-

-

oUVt-

-

1.15 ip unnumbered

FåNM™ IP ôž

ip unnumbered *interface-type interface-number*

HÿFåž

no ip unnumbered

oÿ@

@	T
interface-type	ÑMôž
interface-number	ÑMÓž

oHFå- HÃÄå–ÑMož

oxX%”o- NM%”

oHõ- 2

o¬.6-o- —ÆM<QÎNMo IP #‘kxÊ IP ª—ÆM}%Ã IP ªNMož–
ÆMDÿ IP ¢kÊ› IP ªM IP ªÈÙi-¢ÆM
IP ªkÊ—ÆMGªž–ÆMk}hÞ’ÿ
3. YÊMFå–ÆMož
4. ¢M/x SLIPoHDLC oPPPoLAPB oFrame-relay ÆUYFå–ÆMož/xlÐ
ÆQÏMFå–ÆMoX.25 /xÊå–ÆMož
5. ping xXÛ—ÆMÊW3oke–ÆMÄ IP ªx© SNMP UY
i!yñ–ÆMÅž
6. *—ÆMgÀož

oFåb- 1 yFåMFå–ÆMkÆM gigabitEthernet 0/1ož

5XLMLHFRQILI1QWYLUWXDOSSS
5XLMLHFRQILI1I9LUWXDOSSSLSXQQXPEHUHGgigabitEthernet

oèo- -

oUP’Î- -

oejö- -

oUVª- -

1.16 ip unreachables

o ICMP #‘UÎpž
ip unreachables

{G ICMP #‘UÎpž
no ip unreachables

oÊ@

@	T
-	-

oFå- Ìo

oxX%”o- NM%”

oÊ- 2

o¬.6-o- ò RGOS ªNv%ª%nkAÊ#‘k<kG%² ICMP
)ÙÎpž

ò RGOS 9ÄG%ÿGk<kgÿG ICMP ÑÛþž
¥XÄ ICMP)ÜÛþž

oFåb- 1 y{¼ gigabitEthernet 0/1 NMG ICMP)ÜÛþž

5XLMLHFRQILJ1QWHUIDFHJ1DELW(WKHUQHW
5XLMLHFRQILJ1I*LJDELW(WKHUQHWQRLSXQUHDFKDEOHV

oèao- -

oUP'ô- -

oejö- -

ouVôb- -

1.17 peer default ip address

PPP #ÄE IP ëÉ6ž

peer default ip address {*ip-address* | **pool** [*pool-name*] }

HÄ IP ëÉ6ž

no peer default ip address

oÄ@

@	T
ip-address	6+Ä IP ªž
pool-name	U#È 6Ä IP ªPdk3Ì Ä@ default ª PÄ IP ªž

oHFå- HÑNM+Ä IP ªž

o×X%"o- NM%"

oHÑ- 2

o¬.ÿÄÑÕ1GÄ µuxC8DC$C!oHÄNÍ-ÜDF
oHÄUPÄNÍ-ÙNMÄ

ddre nglme
#'Ž

MFåž

oFåb- 1 yFåNM dialer +Ê IP ª 10.0.0.1ož

5XLMLHFRQILJ1QWHUIDFHGLDOHU

5XLMLHFRQILJ1IGLDOHUSHHUGHIDXOWLSDGGUHVV

oèo- -

oUP'Î- -

oejö- -

oUVt- -

1.18 show ip interface

ªPNM IP Åž

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

oÊ

@	T
Interface-type	*6M*
Interface-number	*6M*
brief	ªPCNM IP Ãâg,NM primary ipo•secondary ip yNMÅ

o×X%"o- Ô"

oÊ- 1

o¬.6-o- %ªNMÔUÅRGOS 1kèe%ÚèUNM6 RGOS ªM

MUYvGÇoÇNMRUÅRGOS 1kRèî,+èž

ÇNMÔUÅEg*'ÅÇ'ÅPUP zÇÔUÅ

NMÅPUP ož

cNMkªPÇ%ÇÅNMÔž

oFåb- 1 yªÄM IP Åž

5XLMLHVKRZSLQWHUIDFHEULHI

,QWHUIDFH,3$GGUHVV3ULIP-Address(Sec) 6WDWXV3URWRFRO

*LDELW(WKHUQHWGRZQGRZ

*LDELW(WKHUQHWQRDGGUHVVQRDGGUHVVGRZQGRZ

9/$QRDGGUHVVGRZQGRZ

Status MÍÇ_Ü up down ä administratively downû shutdown a—<
Ø‘ž

Protocol MÍÇ IPv4 Ø_d

2yÎP VLAN 1 NM IP Ãž

```
5XLMLHVKRZSLQWHUIDFHYODQ
9/$
,3LQWHUIDFHVWDWHLV2:1
,3LQWHUIDFHWSHLV%52&7
,3LQWHUIDFH078LV
,3DGGUHVVLV
SULPDU\
,3DGGUHVVQHRWLDWHLV2))
)RUZUGGLUHFWEURDGFDVWLV2))
,&3PDVNUHSOLV21
6HQG,&3UHGLUHFWLV21
6HQG,&3XQUHDFKDEOHGLV21
3UR[$3LV2))
$3SDFNHWLQSXWQXPEHU
5HTXHVWSDFNHW
5HSOSDFNHW
8QNQRZSDFNHW
77/LQYDOLGSDFNHWQXPEHU
,&3SDFNHWLQSXWQXPEHU
(FKRUHTXHVW
(FKRUHSO\
8QUHDFKDEOH
6RXUFHTXHQFK
5RXWLQJUHGLUHFW
```

<Ky

<	¢
IP interface state is:	àNMÔU ÃÙNMFÿg“Ø “UP”ož
IP interface type is:	ÎPNMÎ ò nkµûž
IP interface MTU is:	ÎPNM—å MTU ož
IP address is:	ÎPNM IP ÿQA’ôž
IP address negotiate is:	ÎPNM IP Ê#Eož
Forward direct-boardcast is:	ÎPCÔgznož

ICMP packet input number: 0	ÎPNMvñ ICMP [illegible]
Echo request: 0	Echo Ь†
Echo reply: 0	Echo ŧ
Unreachable: 0	U†
Source quench: 0	{ŧ
Routing redirect: 0	ÈMg†

oЧP'ô- -

oчVŧ- -

1.19 show ip packet statistics

ô IP ïôž

show ip packet statistics [**total |** *interface-name*]

oŧ@ @

```
8QLFDVW0XOWLFDVW%URDGFDVW
LVFDUGV
+GU(UURUV%DG&HFNVXP77/([FHHGHG2WKHUV
1R5RXWHV
2WKHUV
6HQWSDFNHWVEWHV
8QLFDVW0XOWLFDVW%URDGFDVW
*LDELW(WKHUQHW
5HFHLYHGSDFNHWVEWHV
8QLFDVW0XOWLFDVW%URDGFDVW
LVFDUGV
+GU(UURUV%DG&HFNVXP77/([FHHGHG2WKHUV
1R5RXWHV
2WKHUV
6HQWSDFNHWVEWHV
8QLFDVW0XOWLFDVW%URDGFDVW
/RRSEDFN
5HFHLYHGSDFNHWVEWHV
8QLFDVW0XOWLFDVW%URDGFDVW
LVFDUGV
+GU(UURUV%DG&HFNVXP77/([FHHGHG2WKHUV
1R5RXWHV
2WKHUV
6HQWSDFNHWVEWHV
8QLFDVW0XOWLFDVW%URDGFDVW
7XQQHO
5HFHLYHGSDFNHWVEWHV
8QLFDVW0XOWLFDVW%URDGFDVW
LVFDUGV
+GU(UURUV%DG&HFNVXP77/([FHHGHG2WKHUV
1R5RXWHV
2WKHUV
6HQWSDFNHWVEWHV
    8QLFDVW0XOWLFDVW%URDGFDVW
```

<Ky

<	¢
Total	nPNÊÜÑMÿ
GigabitEthernet 0/1	nPNÊÜS+%ÿÀNMÏÎ
Received	Nvÿk-ÿoŽYC%n/ Á/ znÏk, ÿkYC+=œ

Sent	G)k-)k%n/ Á/ zn)

oUP'ô- -

oUVô- -

1.20 show ip pool

ôÏ© IP ªP'ôž

show ip pool [*pool-name*]

oÏ@

@	T
pool-name	6ªPd

o×X%"o- Ô%"

oÏ@- 2

o¬.6-o- -

oFåb- 1 yôÏ@'ôž

```
5XLMLHVKRZSSRRO
5XLMLHFRQILJVKRZSSRRO
3RRO%HLQ(QG)UHH,QXVH
GHIDXOW
SRRO
SRRO
SRRO
```

<Ky

<	¢
Pool	ªPd
Begin	ªPÜ ip ª
Free	ªq~ ip ªôž
In use	ª3¨… ip ª

oUP'ô- 7. ¤ªPkªPy

```
1R,3ORFDOSRROVH[LVW
```

oUVô- -

1.21 show ip raw-socket

ªPÄ IPv4 =Ñož

show ip raw-socket [*num*]

oþ@

@	T
num	#‘Z

o×X%”o- Ô”

oÑ-o- 2

o¬.6-o- -

oFåt- 1 yôÄ IPv4 =Ñož

```
5XLMLHVKRZSUDZRFNHW
1XPEHU3URWRFRO3URFHVVQDPH
,&3GKFSHOI
,&3YUUSHOI
,*03LPSHOI
9553YUUSHOI
7RWDO
```

<Ky

<	¢
Number	~Z
Protocol	#‘Z
Process name	idf
Total	È

oUP’ô- -

oUVô- -

1.22 show ip sockets

ªPÄ IPv4 NkUY=3„? UDP Ëy TCP Ë+Ùâ

show ip sockets

o@	@	T
	-	-

o×X%”o- Ô”

oÞ- 2

o¬.6-o- -

oFå- 1 yôÄ IPv4 Nož

```
5XLMLHVKRZSVRFNHWV
1XPEHU3URFHVVQDPH7SH3URWRFRO/RFDO,33RUW)RUHLQ,33RUW6WDWH
GKFSHOI5$&3
YUUSHOI5$&3
LPSHOI5$*03
YUUSHOI5$9553
GKFSFHOI*5$83
UJVQPSG*5$83
ZDY*5$83
YUUSBSOXVHOI*5$83
PSOVHOI*5$83
UGVBRWKHUBWK*5$83
UJVQPSG*5$83
UJVVKG675($7&/,67(1
UJWHOQHWG675($7&/,67(1
ZDUG675($7&/,67(1
ZDUG675($7&/,67(1
7RWDO
```

<Ky

<	¢
Number	~Z
Process name	idf
Type	Nk RAW nP=Nk DGRAM nPGk STREAM nPvož
Protocol	#‘Z
LocalIP:Port	î IP ªyM

oUP'b- -

oUV- -

2 ARP

2.1 arp

FÁ ARPož

arp *ip-address mac-address type*

HÁ ARPož

no arp *ip-address*

op@ @

	&QQRWDGGVWDWLF$3

oejö- -

ouVt- -

2.2 arp-learning

o ARP .ož

arp-learning enable

¼ ARP .ož

no arp-learning enable

o@	@	T
	-	-

oFå- ÕM…Á ARP .ož

oxX%”o- NMFå%”

oFõ- 2

o¬.6-o- Ç•—ÕÉÁ ARP nk¼ web 1Á ARP Á ARP ek•o¥ kk•oeÁ ARP .ekÁ ARP nk¼1Á ARP nÁ ARP nk¼UY* web FåÕÁ ARP nk¼%² ¼UY* clear arp xXkkÁ ARP ng3okÕkÁ ARP n¾ ŽÕNM2Á ARP .eké AnyIP oARP U’yåož

oFåb- 1 yoÁ 1 yoÁ 1

oʉVõ- -

2.3 arp cache interface-limit

FåNM ARP .ƒOož

arp cache interface-limit *limit*

ÊFåž

no arp cache interface-limit

oƒ@

ƒ@	T
limit	6NMñ ARP ƒOÅÅÁ ARPk H8<0- —Õ4 ARP n³O> k0 nP'ÒNM ARP .ƒ Oož

oÊFå- ÕNM ARP .ƒOož

o×X%"o- NMFå%"

oÊõ- 2

o¬.6-o- 'ÒNM ARP .ƒOkU…2Ð ARP xk•—Õ ARP nk)ÚÏ ÒÏ FÅ9ÒNM]Æ ARP nƒOkkEƒåÏ9—Õ4 ARP Oož

oFåƒ- 1 yFåNM ARP .ƒO'ò 300ož

5XLMLHFRQILJ1QWHUIDFHJ1

5XLMLHFRQILJ1I*LJDELW(WKHUQHWDUSFDFKHLQWHUIDFHOLPLW

2y{'ÒNM ARP .ƒO

5XLMLHFRQILJ1QWHUIDFHJ1

5XLMLHFRQILJ1I*LJDELW(WKHUQHWQRDUSFDFKHLQWHUIDFHOLPLW

oèo- show running-config ô,Fåj ož

oʉP'Îb- -

oeÿo- -

oʉVõ- -

2.4 arp gratuitous-send interval

FåGË ARP Łož

arp gratuitous-send interval *seconds* [*number*]

{ZGË ARP Łož

no arp gratuitous-send

oÞ@

@	T
seconds	ËG ARP Łkë%yakH8<1-3600> ož
number	ËG ARP ŁƒOkH© 1kH8<1-100> ož

oHFå- NMÄZGË ARP Łož

o×X%”o- NM%”

oHÕ- 2

o¬.6-o- ¢–ÕMÿ–ÕÇ–ÕkÉUY4NMFåG

Ë ARP ŁkşÕ3ôz

oFåÞ- 1 yFåNM VLAN 1 ?aUG%}Ë ARP Łož

5XLMLHFRQILJ1QWHUIDFHYODQ

5XLMLHFRQILJ1IDUSJUDWXLWRXVVHQGLQWHUYDO

2yHÿNM VLAN 1 GË ARP Łož

5XLMLHFRQILJ1QWHUIDFHYODQ

5XLMLHFRQILJ1IQRDUSJUDWXLWRXVVHQG

oèo- -

oŁP’Î- -

oeÿo- -

oŁVÞ- -

2.5 arp retry interval

FåMn ARP Łož

arp retry interval *seconds*

Ðåž

no arp retry interval

	seconds	ARP ŁMnžUY—å 1~3600 akó 1 aož

oFå- ARP ŁMnže 1 aož

oxX%”o- ß%”

oŕo- 2

o¬.6-o- ĈÊ–ÊÙ ARP ŁkÊUY1 ARP ŁMnž–å
%k%}Ý ARP nžž

oFåb- 1 y1 ARP ŁMnž–å 30sož

oào- -

oUP’ô- -

oejö- -

oUVô- -

2.6 arp retry times

FåMn arp Łjtž

arp retry times *number*

Ðåž

no arp retry times

	number	c%² ARP ŁG)k8<1-100> ož–å 1 žnPMn ARP ŁkQG 1) ARP Łtž

oFå- ñ ARP kARP ŁkG 5)kèžž

oxX%”o- ¶%”ož

oÞ- 2

o¬.6-o- Ĉ–ĝĜ ARP ŁkÞUY1 ARP ŁMn)ƒ–å
%k%¬1Mn)ƒ–ž

oFå- 1 yFå ARP ŁMnož

5XLMLHFRQILDUSUHWUWLPHV

2yFå ARP ŁMn 1)ož

5XLMLHFRQILDUSUHWUWLPHV

oèo- -

oUP’ô- -

oöj- -

oUVô- -

2.7 arp timeout

Få ARP Ä ARP nž

arp timeout *seconds*

Ðåž

no arp timeout

oÞ

@	T
seconds	žYa‘%yk8 0-2147483ož

oFå- Ž 3600 aož

oxX%”o- NM%”

oÞ- 2

o¬.6-o- ARP ž–ĝ+Ã IP ÿ MAC ÿöž–ÞkARP Ü
ÿn<1kx© ARP ÞÌ-kÝ}Ó4+ožÞkk%¬

Få ARP ƒ́ž

oFåt- 1 y1R Gigabit YƒM gigabitEthernet 0/1 Á ARP ƒ“ƒ– 120 aož

5XLMLHFRQILJ1QWHUIDFHJ1DELW(WKHUQHW

5XLMLHFRQILJ1I*LJDELW(WKHUQHWDUSWLPHRXW

oèo- 1 y**show arp timeout** ƒ1M 1 ƒ 120 aož

oƱP’ô- -

oƟjö- -

oƱVƭ- -

2.8 arp trust-monitor enable

o ARP U’yož

arp trust-monitor enable

¼ ARP U’yož

no arp trust-monitor enable

oƭ@

oFåb- 1 yo ARP U'yož

5XLMLHFRQILJ1QWHUIDFHJ1

5XLMLHFRQILJ1I*LJDELW(WKHUQHWDUSWUXVWPRQLWRUHQDEOH

2y{¼ ARP U'yož

5XLMLHFRQILJ1QWHUIDFHJ1

5XLMLHFRQILJ1I*LJDELW(WKHUQHWQRDUSWUXVWPRQLWRUHQDEOH

oèo- -

oUP'ô- -

oejö- -

ouVô- -

2.9 arp unresolve

Få ARP nÈ¼Ôž

arp unresolve *number*

ôž

no arp unresolve

oÊ@

@	T
number	ÈÂ ARP nÈ¼H8Â 1kÂ ARP nÈ¼ Oož ARP nÈ¼Oož

oFå- ARP ÛÛY ÈÂ¾ ARP nÈ¼Oož

oxX%"o- ¶%"

oÊ- 2

o¬.6-o- Gë ARP ÛÛÈÂ¾w%²<ÈÂUY4xX'ÈÂ¾

ôž

oFåb- 1 yFÊÂ¼ 500ož

5XLMLHFRQILJDUSXQUHVROYH

oèo- -

oUP'ô- -

oejö- -

ouVt- -

2.10 clear arp-cache

ï ARP ÛÁ ARP ¥"ôÏ%"kkïš VLAN Á ARP nöz

clear arp-cache [*ip* [*mask*]] | **interface** *interface-name*]

oÏ@

@	T
ip	IP ¡@Ž6 IP ª ARP nkÏÄ arp nöz
mask	mask ÿ@Ä ARP nkù IP ª ÀÏù ip 6Á arp nöz
interface *interface-name*	Ž6NMÁ ARP nöÏNMÁ arp nöz

oxX%"o- Ô"

oÏ- 2

o¬.6-o- -

oFåt- 1 yïÄ ARP ¥"Ôy

5XLMLHFOHDUDUSFDFKH

2yïÁ ARP n¾ 1.1.1.1y

5XLMLHFOHDUDUSFDFKH

3yïNM SVI1 Á ARP n¾

5XLMLHFOHDUDUSFDFKHLQWHUIDFH9ODQ

oUP'ô- -

oejö- -

ouVt- -

2.11 ip proxy-arp

NMoWò ARP ož

ip proxy-arp

{Wò ARP ož

no ip proxy-arp

op@

op@

@	T	
interface-type interface-number	P6CMCM	ARP
ip	IP kP6	

```
5XLMLHVKRZDUSDDEG
3URWRFROGGUHVVSIPLQ+DUGZDUH7SH,QWHUIDFH
,QWHUQHWDDEGDUSD9/$
```

5yP **show arp static** ÈÈ

```
5XLMLHVKRZDUSVWDWLF
3URWRFROGGUHVVSIPLQ+DUGZDUH7SH,QWHUIDFH2ULLQ
,QWHUQHWVWDWLF!DUSD9/$&QILJXUH
,QWHUQHWVWDWLF!DUSD9/$$XWKHQWLFDWLRQ
VWDWLFDUSHQWULHVH[LVW
```

<Ky

<	¢
Protocol	ÒQÄ Internet kWn© IP #‘
Address	IPv4 ª
Age(min)	nÛ9Ñ IP, P ’-’k9ÁP<static>, +9ÁkPn¾Ek%yÕož
Hardware	Fk/ 48 bit MAC k? 16 bit %Á.’ ož ÎPož
Type	ÒQÄ arpa ›
Interface	ARP n¾ 3 CNMož9Á ARP nÄ ª—’Î<Ó ARP IP Ä–Õ+à <ož
Origin	Á $3 nÛ Configure ÛWFå Authentication nP*ÿž

oUP’ô- -

oUVô- -

2.13 show arp counter

P ARP ÙU arp nÇož

show arp counter

oÇ@

@	T
-	-

oXX%”o- Ô”

oHõ- 1

o¬.6-o- -

oFåt- 1 yP ARP ù arp nØ/ož

```
5XLMLHVKRZ USFRXQWHU
7KH$US(QWUL FRXQWHU
7KH8QUHVROYH$US(QWU\
```

oUP'ô- -

ouVt- -

2.14 show arp packet statistics

P ARP ïôž

show arp packet statistics [*interface-name*]

o@

@	T
interface-name	P6NM ARP ïî

o×X%"o- Ø"

oHõ- 1

o¬.6-o- -

oFåt- 1 yP ARP ïn'Îÿ

```
5XLMLHVKRZ USSDFNHWVWDWLVWLFV
,QWHUIDFH5HFHLYHG5HFHLYHG5HFHLYHG6HQW6HQW
1DPH5
HTXHVWV5HSOLHV2WKHUV5HTXHVWV5HSOLHV

*LD ELW(WKHUQHW
*LD ELW(WKHUQHW
*LD ELW(WKHUQHW
*LD ELW(WKHUQHW
*LD ELW(WKHUQHW
*LD ELW(WKHUQHW
*LD ELW(WKHUQHW
```

/RRSEDFN

<Ky

<	T
Received Requests	vñ ARP Ł/Ðož
Received Replies	vñ ARP /Ðož
Received Others	vñ ARP /Ðož
Sent Requests	Gß ARP Ł/Ðož
Sent Replies	Gß ARP /Ðož

oŁP'ô- -

oŧVt- -

2.15 show arp timeout

ŧPÁ ARP nžz

show arp timeout

o@	@	T
	-	-

oxX%"o- Ô"

oŧ- 1

o¬.6-o- -

oFåt- 1 yŧPÁ ARP nžz

5XLMLHVKRDUSWLPHRXW
,QWHUIDFHDUSWLPHRXWVHF

9/$

oŁP'ô- -

oŧVt- -

2.16 show ip arp

Pã‘gARP hÛbož

show ip arp

o@	@	T
	-	-

o×X%”o- Ø”

o-ð- 1

o-.6-o- -

oFåb- 1 yPã‘gARP hÛbož

```
5XLMLHVKRZSDUS
3URWRFROGGUHVVIPLQ+DUGZUH7SH
,QWHUIDFH
,QWHUQHWHG$3)DVW(WKHUQHW
,QWHUQHWHE$3)DVW(WKHUQHW
,QWHUQHWGIGF$3)DVW(WKHUQHW
,QWHUQHWGIHFI$3)DVW(WKHUQHW
,QWHUQHWGIG$3)DVW(WKHUQHW
,QWHUQHWEGHEHH$3)DVW(WKHUQHW
,QWHUQHWEGHIG$3)DVW(WKHUQHW
,QWHUQHWGIIEE$3)DVW(WKHUQHW
```

ARP ÛJ_<m#Tò

<	¢
Protocol	ã‘k¥® Internetož
Address	F•• IP ož
Age (min)	ARP ÛzYãJoÛ Fk¥<?“¿”nPož
Hardware	IP •Fož
Type	FkYÛ ARPAož
Interface	IP ÛMož

oUP’Ô- -

ouVÛ- -

3 IPv6

3.1 clear ipv6 neighbors

ŽÁÑDož

clear ipv6 neighbors [**oob**] [*interface-id*]

@	T
oob	**k** oob ¼ Ž MGMT MÄ>DGÁÑD
interface-id	**NdfknP6NÉ**

oX%”o- Ô”

oÑ- 14

o¬.6-o- A_&Ÿ¼ vlan N_ÿ&Wd

oFå- 1 yŽÄÑDož

5XLMLHFOHDULSYQHLKERUV

2yŽ MGMT MÄ>Dož

5XLMLHFOHDULSYQHLKERUVRRE

3yŽ gigabitEthernet 0/1 MÄ>Dož

5XLMLHFOHDULSYQHLKERUVLDELW(WKHUQHW

oUP’ô- -

oUVô- -

3.2 ipv6 address

Få IPv6 k…*Ôž

ipv6 address *ipv6-address* | *prefix-length*

ï6 IPv6 ôž

no ipv6 address *ipv6-address* | *prefix-length*

Få eui-64 ” IPv6 ôž

ipv6 address *ipv6-prefix* | *prefix-length* **eui-64**

ï6 eui-64 ” IPv6 ª ož

no ipv6 address *ipv6-prefix* | *prefix-length* **eui-64**

…*Ûå IPv6 ¥k, eui-64 ”ª ož

ipv6 address *prefix-name sub-bits* | *prefix-length* [**eui-64**]

ï6…*Ûå IPv6 ¥k, eui-64 ”ª ož

no ipv6 address *prefix-name sub-bits*| *prefix-length* [**eui-64**]

ïNMÄ IPv6 ª

no ipv6 address

o@

@	T
ipv6-address	IPV6 ¥kÀ² RFC4291 #¥k?¥ e k?¿ 16 AÔpP.
ipv6-prefix	IPV6 ¥kÀ² RFC4291 #¥k?¥ k?¿ 16 AÔpP.
prefix-length	IPV6 ¥kT IPV6 ¥WnÈãž
prefix-name	*Ûož.6*¥
sub-bits	*¥ÄÕ ôž* ÛÿÿM *ožPcÿ²* RFC4291 TÈPcož
eui-64	nPÿ IPV6 ¥Fÿ 64 AÔM ID ëeÁž

oÞ-å- —ª

o×X%”o- NM%”

oÞ- 14

o¬.6-o- %² IPV6 NMtëveÁ UP ¥NMÿ ª ož

NM IPv6 ªUY…*Ûå© IPv6 ª *Ûå ÿ Ñ

ÔžÛY… **ipv6 general-prefix xÅ-Ï@**

ĺ_ ICMPv6 [j]ĺ(© IPv6 è MTU Gö4…2¿ ICMPv6 [jß
ÚGß ICMPv6 ĺRò IPv6 è MTU Gk+ ICMPv6 ĺ¿
ICMPv6 [jöoŽ ICMPv6 MgĺK9 ICMPv6 [jĺ¿ ICMPv6 [
jy ICMPv6 Mg%ï,ož
ö 10 Dak•XôÊå 10 Da…ôÊ
Ý,0 49 10kjöÊ 10 Dakfå 5 Da 1 kĺ© 10 Da 2 zÎ
óÊ 10 Da…kjöÊ'è 10 Da…kfå 15 Da 3
kĺ© 10 Da 2 ož

oFå- 1 yFå ICMPv6 ĺ,ä 1 a 100 ož

5XLMLHFRQILJ1SYLFPSHUURULQWHUYDOWRRELJ
2yFå ICMPv6 [jĺ,ä 1 a 10 ož
5XLMLHFRQILJ1SYLFPSHUURULQWHUYDO

oèo- … **show running-config ôFåž**

oUP'ô- -

oejö- -

oUVô- -

3.5 ipv6 enable

oNM IPv6 #'ož
ipv6 enable

{ÀNM IPv6 #'ož
no ipv6 enable

oĺ@

ĺ@	T
-	-

oFå- {¼

oxX%"o- NM%"

oö- 14

o¬.6-o- Ä 2 _"UYNM IPv6 k%ÊNMFå **ipv6 enable xX8NMå**
IPv6 ôž

ţNMFå	IPv6 ţNM	IPv6 <kk/……	**no ipv6 enable** -¼
IPV6 ož			

oèao- * **show ipv6 general-prefix [illegible]**

oUP'ô- -

oejö- -

ouVô- -

3.7 ipv6 hop-limit

Fâ%nfž

ipv6 hop-limit *value*

Fåž

no ipv6 hop-limit

oî@

@	T
value	*f8©* 1 --- 255ož

oHFå- ô 64ož

oxX%"o- ß%"

oHô- 14

o¬.6-o-

3.8 ipv6 mtu

Få IPv6 ÃÝ%gMTU hož

ipv6 mtu *bytes*

Ðråž

no ipv6 mtu

o@	@	T
	bytes	IPv6 ÃÝ%kY-%yk8 1280~1500(ÃNM mtu ’ocNMÃ)ož

o=Få- =NMxX mtu Fåcož

o×X%”o- NM%”

o=ð- 14

o¬.6-o- %² IPv6 Ý IPv6 MTU Ýk RGOS <k+ÌãÃ%ò—Õ4Fi01C04E3BBC8040TdF207E725B20417>Tj/TT2 1 Tf10.
IPv6 MTU “ã»ÈnÙo“yÕ%)•251(Œt “Ü uY]•vÎu 6 -o-

o@	@	T
	value	ÔMñ>DÑ,FåÁ>DkH› 8 0-—Õ4>Dn³Ok0 nP'ÒNM.>DƒOož

oFå- Þ 0knP'ÒNM.>DƒOož

o×X%"o- NM%"

oÑ- 14

o¬.6-o- 'ÒNM>D.ƒOkU…2ÐDxà•—Ð>Dnk)ÑFå
À9ÒNM]ÆDƒkFåƒ9—Õ4 ND Oož

oFå- 1 y1 GigabitEthernet 0/1 NM>D.ƒO'ò 100ož

5XLMLHFRQILJ1QWHUIDFH*LJDELW(WKHUQHW
5XLMLHFRQILJ1I*LJDELW(WKHUQHWLSYQGFDFKHLQWHUIDFHOLPLW

oèo- * **show run ÔFåƒ ož**

oUP'ô- -

oöjö- -

oUVô- -

3.10 ipv6 nd dad attempts

Fåyž'Ò>DL(NS) ƒOož
ipv6 nd dad attempts *value*

ÐFåž
no ipv6 nd dad attempts

o@	@	T
	value	>DL(NS) ƒOož—å 0 žPŽNM Ipv6 ö¨syož y0-600ož 1ož

oFå- 1

o×X%"o- NM%"

oÊ-ö-	14
o¬.6-o-	¶NMFå¾ IPV6 ¶ÿ¶syk4Ê"tentative" gÅÿ¶ÿ ¶ig4kÿ¶ÿ¶k¥UYt3G…kÿ¶ÿ4kw¥ ñ.NMöe©. EUI-64 öekÿ¶¥èÈ¶MÖ¶ÿ ¶k¥Mg/Ž¥Mg IPV6 ¶ÿ¶nk4Ê¶V>"wwFåw *Ç down/up NMMoÿ¶syož¶Ñ¶NMR down Å up Åk¥ NMMoÿ¶syož
oFåb- 1	y¨ GigabitEthernet 0/1 NMFåyÒ 3 >DŁÿ¶ž 5XLMLHFRQILJI*LJDELW(WKHUQHWLSYQGGDGDWWHPSWV
oèo-	* **show ipv6 interface ÔNMå** DAD Mn)ÿ¶ž
oŁP'Î-	-
oÿ¶ö-	-
oŁVÔ-	-

3.11 ipv6 nd dad retry

FåMÿ¶yož

ipv6 nd dad retry *value*

Ê¶åž

IPV6 ipv6 nd dad retry

MyZ¥UY3o…ož

oFåb- 1 y“wMjo 10sož

5XLMLHFRQILJ1SYQGGDGUHWU\

oèo- * **show run** **NFÊj ož**

oUP’Î b- -

oejö- -

ouVt- -

3.12 ipv6 nd managed-config-flag

Fåj **managed address configuration** **ÿ ož**

ipv6 nd managed-config-flag

ÿ ož

no ipv6 nd managed-config-flag

oÊ

@	T
-	-

oHFå- Þ—Fåž

o×X%”o- NM%”

oÊ- 14

o¬.6-o- ÿ—åvÿ ÿ…ÿ ÊHÿ Fåÿ

yk1…ÊÊ ké.ož

oFåb- 1 y¨ GigabitEthernet 0/1 NMFåj **managed address configuration** **ÿ ož**

5XLMLHFRQILJ1I*LJ DELW(WKHUQHWLSYQGPDQDJHGFRQILJODJ

oèo- * **show ipv6 interface** **ÔNMÊ ož**

oUP’Î b- -

oejö- -

oʉVt- -

3.13 ipv6 nd ns-interval

FåUM>DŁ(NS) Mnoež

ipv6 nd ns-interval *milliseconds*

Ŝ Fåž

no ipv6 nd ns-interval

@	T
milliseconds	*DŁkDayk8y* 1000-4294967295 ož

oŀFå- 9Ê–Õ¸ê(RA) žŁ> 0gnPÌ6hz

9Oè–Õ>DŁMnkŁ> 1000 Daož

o×X%”o- NM%”

oŀŏ- 14

o¬.6-o- FåL¨ę¸ŧ(RA) tGbß kcž¥t—Õ..ož}1¥—å8

4ož

oFåt- 1 y¨ GigabitEthernet 0/1 NMFåDŁMnoe 2 aož

5XLMLHFRQILJI*LJDELW(WKHUQHWLSYQGQVLQWHUYDO

oèo- * **show ipv6 interface 0NFå** NS Mnoež

oŀUP’Î- -

oeÿo- -

oʉVt- -

3.14 ipv6 nd other-config-flag

Fåt **other stateful configuration** **ÿ**ož

ipv6 nd other-config-flag

ïÿ¥ož

no ipv6 nd other-config-flag

oÿ@ p@

p@	T
-	-

oÞFå- Þ—Få

o×X%”o- NM%”

oÞ¥o- 14

o¬.6-o- —å 4 4 ÿ e k — Ö ß¸ † ÿ t å ÿ o ž Ñ ñ ÿ e k 1 …

dhcpv6 ÊH” IPv6 ¥ Ù’ ÎgFå ž managed address configuration t—å ó

other stateful configuration -t—å ž

oFå-b- 1 y¨ GigabitEthernet 0/1 NMFå ¸ **other stateful configuration** **ÿ¥ož**

5XLMLHFRQILJI*LJDELW(WKHUQHWLSYQGR[FWKH00Z@ Tx014

	Þ 30 Þž
preferred-lifetime	Ñv ñè ˜¸s ùÖe • Ù# Ä| ž•k H ›8 0-4294967295kÞ 7 Þž
at *valid-date preferred-date*	—å¸Ä¥Ù¼Ä¥2¥2¥ ÖÑ•vo•4 žÑnPož
infinite	nPKC|Ä¥ož
default	—å¸…Þ¥ož
no-advertise	**nPÖ¥ož**
off-link	**Ñ** IPV6 ¥Ö¥ ¨c%è¿(on-link) Ö+Nõž—å¥¾nPÖ on-link ¿ož
no-autoconfig	¥V6à

}[illegible]
'Nd

oèao- * **show ipv6 interface** [*interface-id*] **ra-info** [illegible]

oUP'ô- -

oejo- -

oUVô- -

3.16 ipv6 nd ra-hoplimit

FåMGê(RA) [illegible]ž
ipv6 nd ra-hoplimit *value*

[illegible]ž
no ipv6 nd ra-hoplimit

o[illegible]

[illegible]	T
value	ê(RA) [illegible]H8 0-255ož [illegible] 64 [illegible]ž

oHFå- [illegible] 64ož

oxX%"o- NM%"

oHô- 14

o¬.6-o- -

oFåt- 1 y¨ GigabitEthernet 0/1 NMFâ[illegible] 110ož
5XLMLHFRQILI[illegible]I*LDELW(WKHUQHWLSYQGUDKRSOLPLW

oèao- * **show ipv6 interface** [*interface-id*] **ra-info** [illegible]ž

oUP'ô- -

oejo- -

ouVo- -

3.17 ipv6 nd ra-interval

FåIMGş(RA) ož

ipv6 nd ra-interval { *seconds* | **min-max** *min_value max_value* }

Ðråž

no ipv6 nd ra-interval

oÞ@

ÀxÐ

3.18 ipv6 nd ra-lifetime

FåUMGş(RA) ğž

ipv6 nd ra-lifetime *seconds*

Ðråž

no ipv6 nd ra-lifetime

	seconds	0-9000ož 1800 aož

1800 a

NM%”

14

9?ş(RA) 0 nPt 0 ž

9—Õş(RA) (ra-interval) ož

1 y¨ GigabitEthernet 0/1 NMFâşÊ 2000 aož

5XLMLHFRQILJI*LJDELW(WKHUQHWLSYQGUDOLIHWLPH

* **show ipv6 interface** [*interface-id*] **ra-info** **ğ4ÿÊž**

-

-

-

3.19 ipv6 nd ra-mtu

FåUMGş(RA) † MTUož

ipv6 nd ra-mtu *value*

Ðråž

no ipv6 nd ra-mtu

	@	T
	value	(RA) † MTU <kH8 0-4294967295 IPv6 MTU ‘4%

M IPv6 MTU

NM%”

14

0k<kk MTU #

1 yNMF 1400 -

5XLMLHFRQILILSYQGUDPWX

* **show ipv6 interface** [*interface-id*] **ra-info** † mtu ’

-

-

-

3.20 ipv6 nd reachable-time

F Dt U

ipv6 nd reachable-time *milliseconds*

å

no ipv6 nd reachable-time

	@	T
	milliseconds	>Dt U Da%yk8y 0-3600000 Þ 30 a

(RA) Þ 0gnP hk— DG >Dt U

- 30000ms(30 a)

NM%”

o-Ð- 14

o-.6-o- —Ã¥ÊU>Dkñ–Ðb5UY¾ñDÞkx©~
Ëoþ–Ðe1¥åož
Fåç(RA) tGbÞkcÿ—Õ.oÿ–å 0 nP—Õ
6¥/…Þož

oFåb- 1 y¨ GigabitEthernet 0/1 NMFåDtUÿ 1000 aož

5XLMLHFRQILJI*LJDELW(WKHUQHWLSYQGUHDFKDEOHWLPH

oèo- * **show ipv6 interface 0ÿÊU**

oUP'Î- -

oejö- -

oUVb- -

3.21 ipv6 nd stale-time

FåD'4 stale Ðž
ipv6 nd stale-time *seconds*

ÐFå
no ipv6 nd stale-time

oÐ@

@	T
seconds	>D stale ÐÅkYa%yk8y 0-86400 ož Þ 3600 aož

oFåa- >DÐñ stale ÐÅkó 1hož

o-X%"o- ¶%"

oÐ- 14

o-.6-o- ¥Ðu"w stale ÐÅkÊg>DUyoÐÅb5UY¾
yñDÞkx©~Ëoþ–Ðe1¥åož

oFåb- 1 yFå–ÕD stale ÿÿ 600sož

5XLMLHFRQILJISYQGVWDOHWLPH

o@	@	T
	ipv6-address	>D IPV6 kÀ² RFC4291 #nP¥ož
	interface-id	6¥DÌMg, Routed Port,L3 AP My SVI NMhož
	hardware-address	>Dek/Y XXXX.XXXX.XXXX nP 48 y MAC k'X' nPož

oFå- ÄåÁDož

o×X%"o- ¶Få%"

oFö- 14

o¬.6-o- ¥Xw ARP xXkÁDQFå IPv6 #'NMk
ÇFåD]*E NDP ñ¥Dnk¥D16ÁFå
ÁDk1Ö Reachable Ùz–|ÁDk6FÁD IPV6 kN
MFÂg¥NM%² IPV6 ÀÄNMshk4Ÿk7
ÁD6 mac Ôož–|ÁDkÔ inactive ÙUY* **show ipv6 neighbor static**
xÀÁ|Ùž
… **clear ipv6 neighbors xÀ*** NDP)>Dož

oFåb- 1 y¨ SVI 1 Få%ÁDož
5XLMLHFRQILJ1SYQHLJ KERUYODQGI

oèo- … **show ipv6 neighbors xÀÀbž**

oUP'ô- -

oejö- -

oUVô- -

3.25 ipv6 ns-linklocal-src

G>DLžò.eèž
ipv6 ns-linklocal-src

G>DLž.eèÇ) IPv6 7 RFC3484 #+…eè
%nèž
no ipv6 ns-linklocal-src

o@	@	T

-	-

oFå- G>DLžÈeež

oxX%”o- BFå”

oÊ- 14

o¬.6-o- -

oFå- 1 yG>DLž.eež

5XLMLHFRQILQRLSYQVOLQNORFDOVUF

oèo- -

oUP’Î- -

oejö- -

oUVt- -

3.26 ipv6 redirects

o ICMPv6 Mgož

ipv6 redirects

¼ ICMPv6 Mgož

no ipv6 redirects

o@

@	T
-	-

oFå- o ICMPv6 Mgož

oxX%”o- NM%”

oÊ- 14

o¬.6-o- Ä ICMPv6 jGnyÈ?aUÂYG 10 j¨ ICMPv6 j¨ (10pps) ož

3.28 show ipv6 address

IPv6 ôž

show ipv6 address [*interface-name*]

@	T
interface-name	IPv6 ôž

X%”o-

14

-

1 IPv6 ôž

```
5XLMLHVKRZSYDGGU
*OREDOXQLFDVWDGGUHVVOLPLW*OREDOXQLFDVWDGGUHVVFRXQW
7HQWDWLYHDGGUHVVFRXQWXSOLFDWHDGGUHVVFRXQW
3UHIHUUHGDGGUHVVFRXQWHSUHFDWHGDGGUHVVFRXQW
*LDELW(WKHUQHW
7HQWDWLYH
3UHIHUUHGOLIHWLPH,1),1,7(9DOLGOLIHWLPH,1),1,7(
IHGIIIIHIEGHE7HQWDWLYH
3UHIHUUHGOLIHWLPH,1),1,7(9DOLGOLIHWLPH,1),1,7(
7HQWDWLYH
3UHIHUUHGOLIHWLPH,1),1,7(9DOLGOLIHWLPH,1),1,7(
5XLMLH
```

2 GigabitEthernet 0/1 IPv6 ôž

```
5XLMLHVKRZSYDGGU
*OREDOXQLFDVWDGGUHVVFRXQW
7HQWDWLYHDGGUHVVFRXQWXSOLFDWHDGGUHVVFRXQW
3UHIHUUHGDGGUHVVFRXQWHSUHFDWHGDGGUHVVFRXQW
7HQWDWLYH
3UHIHUUHGOLIHWLPH,1),1,7(9DOLGOLIHWLPH,1),1,7(
IHGIIIIHIEGHE7HQWDWLYH
3UHIHUUHGOLIHWLPH,1),1,7(9DOLGOLIHWLPH,1),1,7(
7HQWDWLYH
3UHIHUUHGOLIHWLPH,1),1,7(9DOLGOLIHWLPH,1),1,7(
5XLMLH
```

There is	[illegible]
IPv6 general prefix	[illegible]
acquired via	[illegible]
Prefix/len	[illegible]

oUP'ô- -

oUVô- -

3.30 show ipv6 interface

[illegible] IPV6 NM'ôž

show ipv6 interface [[*interface-id*] [**ra-info**]] [brief [*interface-id*]]

o[illegible]

[illegible]	T
interface-id	NMg,Y[illegible]Moaggregateport NMoSVI NMhkP[illegible]ñ [illegible]NMož
ra-info	[illegible]NM9G RA [illegible]ž
brief	[illegible]

o-X%"o-

o[illegible]- 14

o-.6-o- *¥XUY[illegible] IPV6 NM[illegible]ND F[illegible]C,[illegible]ž

oF[illegible]- 1 y[illegible] IPV6 NM'ôž

```
5XLMLHVKRZSYLQWHUIDFHYODQ
,QWHUIDFHYODQLV8SLILQGH[
DGGUHVVHV
0DF$GGUHVV
,1(7IHIIIHVXEQHWLVIH
,1(7VXEQHWLV>7(17$,9(@
-RLQHGURXSDGGUHVVHV
```

```
,&3HUURUPHVVDJHVOLPLWHGWRRQHHYHUVPLOOLVHFRQGV
,&3UHGLUHFWVDUHHQDEOHG
1$VHQDEOHGQXPEHURI$DWWHPSWV
1UHDFKDEOHWLPHLVPLOOLVHFRQGV
1DGYHUWLVHGUHDFKDEOHWLPHLVPLOOLVHFRQGV
1UHWUDQVPLWLQWHUYDOLVPLOOLVHFRQGV
1DGYHUWLVHGUHWUDQVPLWLQWHUYDOLVPLOOLVHFRQGV
1URXWHUDGYHUWLVHPHQWVDUHVHQWHYHUVVHFRQGV!
1URXWHUDGYHUWLVHPHQWVOLYHIRUVHFRQGV
```

ÞUY0ñ INET6: 2001::1 , subnet is 2001::/64

[TENTATIVE]%ãgk9yINET6 è [ ] ÿ#n#ò

<	¢
ANYCAST	nPè nòž
TENTATIVE	nP3¥ ¤ÿ¤sy(DAD) k yÈ ¢ž
DUPLICATED	nP¥ÿ¥Ïòž
DEPRECATED	nP¥ÙÿÈk¥È… 4ož
NODAD	nP+¥ÿ¤syož
AUTOIFID	nP¥NMöeÿ©*o<© EUI-64 öeož
PRE	nP—Ãòž
GEN	nP*ÿòž

2yò IPV6 NMÿG RA ÞÒž

```
5XLMLHVKRZSYLQWHUIDFHYODQUDLQIR
YODQ2:1
5$WLPHULVVWRSSHG
DLWVLQLWFRXQW
```

3UHIL[HVWRWDO
IHFHIXWRYOWLPHSOWLPHIODY/$

ra-info

<	¢
RA timer is stopped (on)	
waits	
initcount	RA
RA(out/in/inconsistent)	
RS(input)	
Link-layer address	
Physical MTU	MTU
!M | M	!M managed-config-flag M:
!O | O	!O other-config-flag O

ra-info (Prefix) _<P

<	¢
total	
fec0:1:1:1::/64	
Def	
Auto | CFG	Auto IPV6 CFG
!Adv	
vltime	
pltime	
L | !L	L on-link !L
A | !A	A auto-config !A

3y IPV6 NM

5XLMLHVKRZSYLQWHUIDFHEULHI

```
*LDDELW(WKHUQHW>GRZQGRZQ@

)(%)))(&$
```

oUP'ĵb- -

oUVõ- -

3.31 show ipv6 neighbors

IPV6 >Dnož

show ipv6 neighbors [**verbose**] [*interface-id*] [*ipv6-address*] [**static**

<Ky

<	¢
IPv6 Address	>D IPV6 ª
Linklayer Addr	eê Mac kÈ incomplete
Interface	¥DÑM
State	>DÅ state/H(R) STATE ò INCMP(Incomplete)—¥D ¨g k>DŁ(NS)]Ex ÄÑD(NA) ož REACH(Reachable) —nPR—ÕD©k¥>DG ž }ÙSTALE — nP>DtUÎÕ }ÌÙ• ñÄG ñ>D k4ž1o NUD (Neighbor Unreachability Detection) ož DELAY—nPÄg Ô STALE Ä>DG k4ž STALE ê DELAY Ä DELAY_FIRST_PROBE_TIME seconds(5 a)ÑDU Å=ˆkÅ DELAY ê PROBEkcž¥DG>DŁ (NS) k3”o NUDož PROBE—nP NUD]Ky>DUÅ?œ RetransTimer milliseconds g>DG>DŁ(NS) ñ4>DG>DŁ()] ñ MAX_UNICAST_SOLICIT(3) ?—nPÌÅ /R—nP>D%²—Õ /H—nP>D%Ñ
Age	nP>DtUÏ'-' nPKÜkh¥ÁåDn1‰ ÓÏUož expired' nP>DtUÎÃG NUD yož
Asked	nPÅDeÑ>DG>DŁ(NS) ¢ož

3yÁÅ

```
5XLMLHVKRZSYQHLKERUVVWDWLF
,3YGGUHVV/LQNODHUGGU,QWHUIDFH6WDWH
GIDE*LDELW(WKHUQHW&,9(
GIDF9/$,1&,9(
```

<Ky

<	¢
IPv6 Address	ÁD IPV6 ª

Interface	¥DÑM
State	ÁDÿÁ STATE ÿ ACTIVE—t INACTIVE—tkFÁD IPV6 ÑNMFÂg %ÑMÂkÄNMÂshkÁDFÂk/G k7ÁD6 mac Ôož

oÜP'ô- -

oÜVô- -

3.32 show ipv6 neighbors statistics

ÎP IPv6 >DnÏÎ

show ipv6 neighbors statistics

oÎ@

@	T
-	-

oÑX%"o- Ô"

oÎ- 14

o¬.6-o- -

oFåÎ- 1 yôÎ>DnÏôž

```
5XLMLHVKRZSYQHLKERUVWDWLVWLFV

0HPRUEWHV
(QWULHV
6WDWLFQDPLF/RFDO
,QFRPSOHWH5HDFKDEOH6WDOHHOD3UREH
5XLMLH
```

2yôÄDnÏÎ

```
5XLMLHVKRZSYQHLKERUVWDWLVWLFVDOO

,3YQHLKERUWDEOHFRXQW
6WDWLFQHLKERUFRXQWDFWLYHLQDFWLYH
```

```
7RWDO
0HPRUEWHV
(QWULHV
6WDWLFQDPLF/RFDO
,QFRPSOHWH5HDFKDEOH6WDOHHODS3UREH

*OREDO
0HPRUEWHV
(QWULHV
6WDWLFQDPLF/RFDO
,QFRPSOHWH5HDFKDEOH6WDOHHODS3UREH
5XLMLH
```

<HKy

```
<
```

3.33 show ipv6 packet statistics

ÞP IPv6 ëÎbž

show ipv6 packet statistics [**total |** *interface-name*]

oÐ@

@	T
total	**ÄÑý̃Ž** ÌÞPÄÑMÌk-ÞP?%ÑNMëbž
interface-name	**ÑÏ**

oX%"o- Ỗo"

oÞ- 14

o¬.6-o- -

oFåÞ- 1 yÔ IPv6 ëÎÈy?NMëÎ

```
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
```

2yÔ IPv6 ëÎÈ

```
5XLMLHVKRZ\SYSDFNVWDWLVWLFVWRWDO
7RWDO
```

```
5HFHLYHGSDFNHWVEWHV
8QLFDVW0XOWLFDVW
LVFDUGV
+GU(UURUV+RSOLPLW([FHHGHG2WKHUV
1R5RXWHV
2WKHUV
6HQWSDFNHWVEWHV
8QLFDVW0XOWLFDVW
5XLMLH
```

<ÏKy

<	¢
Total	ùnPÄM IPv6 ß GigabitEthernet 0/5 ùnP¢NMï
Received	Nvñ IPv6)k-)
Unicast	IPv6 %n)
Multicast	IPv6 Á)
Discards	' IPv6)
HdrErrors	IPv6 Ùj")
HoplimitExceeded	¢ik4¢)
Others	¿U IPv6 Ùjk-")
NoRoutes	9Ëò IPv6)
Others	¿¯œ IPv6)
Sent	G IPv6)k-)ož %n)kÁ)ož

oÙP'ô- -

oùVô- -

3.34 show ipv6 raw-socket

ÏPÄ IPv6 =Nož

show ipv6 raw-socket

o×X%”o- Ô”

oÕ- 14

o¬.6-o- -

oFåt- 1 yôÄ IPv6 =Nož

5XLMLHVKRZSYUDZRFNHW
1XPEHU3URWRFRO3URFHVVQDPH
,&3YYUUSHOI
,&3YWFSLSHOI
9553YUUSHOI
7RWDO

<Ky

<	¢
Number	~Z
Protocol	#‘Z
Process name	idf
Total	È

oUP’ô- -

oUVô- -

3.35 show ipv6 sockets

ÞÄ IPv6 NkUY=3,? UDP My TCP M+Ùâ

show ipv6 sockets

oÕ- ca

oFåb- 1 yôÄ IPv6 Nož

```
5XLMLHVKRZSYVRFNHWV
1XPEHU3URFHVVQDPH7SH3URWRFRO/RFDO,33RUW)RUHLQ,33RUW6WDWH
YUUSHOI5$&3Y
WFSLSHOI5$&3Y
YUUSHOI5$9553
UJVQPSG*5$83
UJVQPSG*5$83
GKFSHOI*5$83
UJVVKG675($7&/,67(1
UJWHOQHWG675($7&/,67(1
7RWDO
```

<Ky

<	¢
Number	~Z
Process name	idf
Type	N•k RAW nP=N kDGRAM nP G• kSTREAM nPvož
Protocol	#‘Z
LocalIP:Port	î IPv6 yM
ForeignIP:Port	+€ IPv6 yM
State	kQ+ IPv6 TCP NÄož
Total	NÈ

oUP’ô- -

oUVô- -

3.36 show ipv6 udp

ÄÄ IPv6 UDP NkUY=3,? UDP M+Ùâz

show ipv6 udp [**local-port** *num*] [**peer-port** *num*]

P IPv6 UDP Nöž

show ipv6 udp statistics

oÕ	@	T

local-port *num*	ÎMZ
peer-port *num*	[illegible]

oxX%”o- Ô”

oÕ- 14

o¬.6-o- -

oFåÕ- 1 yôÄ IPv6 UDP

4 DHCP

address range

}¨ DHCP ¶ ¼ CLASS 6 CLASS Få8k¶ class Få”

address range xX

address range *low-ip-address high-ip-address*

¥X **no ož**

no address range

o	@	T
	low-ip-address	*ož*
	high-ip-address	*ož*

o¶Få- ¼ CLASS Få8k¶ à8ož

o×X%”o- ¶ CLASS Få”

o¬.6-o- ¥XK9 Server Få? CLASS +%å8kà8Ràzå UY•

Ú CLASS à8MÖ¿4¶ ¼ CLASSkx+à8Ä¿é

¥ CLASS ¿8y CLASS ¶à8,což

oFå- 1yF¶ mypool0 ¼ class1 à8 172.16.1.1172.16.1.8 ož

5XLMLHFRQILJ1SGKFSSRROPSRRO

address-manage

o@	@	T
	-	-

o-Få- -

o-X%”o- BFå”

o-ö- 14

o-.6-o- ¥XK9 Server Få}F` supervlan …

oFå- 1 yµ AM Få”

5XLMLHFRQILDGGUHVVPDQDH

oèo- * **show run Få**

oUP’Î- -

oöjö- -

4.3 bootfile

}# DHCP Fk DHCP PFåX **bootfile**

bootfile *file-name*

no #

no bootfile

ö

default bootfile

o@	@	T
	file-name	*9od*

o-Få- Ïod

o-X%”o- DHCP PFå”

oHõ- 14

o¬.6-o- ¥XK9 Server Få?Ä DHCP ¨ci}ú¨ÖF¶DHCP 7Æ
Ùò¾¶kDHCP ÕUY*,¨gõ TFTPhú¨ÖE
* **next-server xÿ#**

oFåt- 1 y—õ4 DHCP ÿÕz
5XLMLHGKFSFRQILEERRWILOHURXWHUFRQI

oèo- * **show run Eå**

oUP'ô- -

oejö- -

ouVõ- -

4.4 class

}¨ DHCP ¶PFå¼ CLASSk DHCP ¶PFå%" class xX
class *class-name*

no Ÿ#
no class *class-name*

oÕ@

@	T
class-name	ÿ CLASS dfkUY©.¶ò myclass õ 1ož

oHFå- ¶PÌ¼ CLASSož

o×X%"o- DHCP ¶PFå%"ož

oHõ- 14

o¬.6-o- ¥XK9 Server Få? DHCP ¶PUYÿ Option82 F'ÛÕkÉ Option82 '
ÛFk¨ DHCP ¶P?ÕUYÕà8oÿ CLASSk%²
DHCP ¶PUYÚ¼ CLASSk? CLASS UY6cà8ož
ÕiÿÕGUYÕ¶PkÿÇ¿ Option82 'Î%5Gõ
K CLASSkR CLASS +à8Õ IP ôÿ%ÉFPÚ CLASS ¿
7Á CLASS ¶PFå¿R+• CLASS à8Õkÿ CLASS Õ¶

ikÒ%F CLASS gÃk%Poz CLASS +%à8kà8·
ÀzÃUYÚ CLASS à8MÖ24Pú CLASSkwÌ
Få CLASS àkÉ CLASS ó8y CLASS Ôà8,což

oFåb- 1 yFâ mypool0 ú class1ož

5XLMLHFRQILJSGKFSSRROPSRRO
5XLMLHGKFSFRQILJFODVVFODVV

oèo- * **show run Eå**

oUP'ô- -

oejö- -

ouVô- -

4.5 clear ip dhcp binding

}Ž DHCP çkÔ” **clear ip dhcp binding xX**
clear ip dhcp binding { * | *ip-address* }

oÔ

@	T
*	Á DCHP Ç
ip-address	6 IP ª£

o×X%”o- Ô”

oÔ- 14

o¬.6-o- ¥XK9 Server Få¥XQŽ DHCP çDHCP ôVÛUY* **no ip dhcp pool xX**

oFåb- 1 yŽ4 IP ª 192.168.12.100 DHCP Ç

5XLMLHFOHDULSGKFSELQGLQJ

oUP'ô- -

ouVô- -

4.6 clear ip dhcp conflict

5XLMLHFOHDULSGKFSKLVWRU\

oUP'ô- -

oUVô- -

4.8 clear ip dhcp server detect

}Ž DHCP q%E

o@	@	T
	-	-

o×X%”o- Ô”

o-ô- 14

o-.6-o- ¥XK9 Relay FåDHCP Ï+ DHCP ÑvyG_g4ôž **clear ip dhcp relay statistics xÏ¥Ïž**

oFå- 1 yŽ DHCP Ï£

5XLMLHFOHDULSGKFSUHODVWDWLVWLFV

oUP’ô- -

ouVô- -

4.12 client-identifier

}# DHCP Ïx¤ÿ¥ÿ¥Phk DHCP ÏPFåX **client-identifier**

client-identifier *unique-identifier*

no ÏÏe

no client-identifier

ô

default client-identifier

o@	@	T
	unique-identifier	DHCP ÏÏ¥ÿ¥Poÿ 0100.d0f8.2233.b467.6967.6162.6974.4574.6865.726e.6574.302f.31

0100.d0f8.2233.b467.6967.6162.6974.4574.6865.726e.6574.302f.31k¿ 01 WnYßk
67.6967.6162.6974.4574.6865.726e.6574.302f.31 GigabitEthernet0/1 Aoz9PWA
#kUY@ RFC1700 Address Resolution Protocol Parameters ~-ož
QÄ DHCP ÕWÇžõUY…¥Xož

oFåt- 1 y#4 MAC ª 00d0.f822.33b4 Yß DHCP ëž

5XLMLHGKFSFRQILFOLHQWLGHQWLILHU
GIEHI

oèo- * **show run** UFå

oUP'Î- -

oejö- -

oUVt- -

4.13 client-name

}# DHCP ëk DHCP ÞFåX **client-name**
client-name *client-name*

no ¥ DHCP ë
no client-name

ô
default client-name

oÞ

@	T
client-name	# DHCP ëožUY~Õ ASCII …ož, e Ö¿d k A ò # river DHCP ï €d k # river.i-net.com.cn

oFå- Ä

oxX%"o- DHCP ÞFå%"

oÞ- 14

o¬.6-o- ¥XK9 Server FåQÄ DHCP ÕWÇžõUY¥X# DHCP ëož
¥Yeÿ

5XLMLHGKFSFRQILGHIDXOWURXWHU
(UURULSDGGUHVVLVQRWYDOLG

oejö- 1. F%nª
2.F 8 Ä

oUV0- -

4.15 dns-server

}# DHCP € DNS 7E DHCP PF%X **dns-server**
dns-server *ip-address* [*ip-address2…ip-address8*]

no DNS 7E
no dns-server

defaut dns-server

o@

@	T
ip-address	# DNS 7E IP 3 L5F%²
ip-address2…ip-address8	*g* 8 DNS 7E

oF%- DNS 7E

oX%”o- DHCP PF%”

o- 14

o-.6-%”o-} L ÀW€E€…

oejö- 1. F%nª
2.F 8 Ä

4.16 domain-name

}# DHCP €k DHCP PxX **domain-name**
domain-name *domain-name*

no **no domain-name**

defaut domain-name

@	T
domain-name	# DHCP €…

oF å- Ä

o×X%”o- DHCP PF%”

oF- 14

o¬.6-o- ¥XK9 Server FåDHCP B46ekÃÿ+N*
Ñ<UY4

oFåt- 1 yË DHCP €4e i-net.com.cn
5XLMLHGKFSFRQILGRPDLQQDPHLQHWFRPFQ

oèo- * **show run** UFå

oUP’ô- 1 yFåª
5XLMLHGKFSFRQILGQVVHUYHU
(UURULSDGGUHVVLVQRWYDOLG

oejö- 1. F%nª
2.F 8 Ä

4.17 dynamic-pool

}*sHÅ AP ÿG—Õ MAC ÁÑ DHCP ¤ÿÀQAkU¨ AC ap-config/ñ ap-group %”Få dynamic-pool xX

dynamic-pool

¨ AC ap-config/ñ ap-group %”î#

no dynamic-pool

op@

@	T
-	-

defaut hardware-address

hardware-address	# DHCP € MAC ª
type	ö DHCP €ùV#‘kUY…#ož.# ÿ4 „ ethernet „ ieee802 #ÿ4 „ 1 g10M ethernet h „ 6 gIEEE 802 h

ethernet

DHCP

14

Server FåQÄ DHCP ÿ€ÿUY…¥X

1 y#4º ethernet MAC ª 00d0.f838.bf3d

5XLMLHGKFSFRQILKDUGDUHDGGUHVVGIEIG

* **show run**

-

-

4.19 host

}# DHCP Ñ IP ÿÈQAk DHCP PFåX **host**

host *ip-address* [*netmask*]

no DHCP € IP ÿÈQA#

no host

defaut host

op@	@	T

oHFå- HNM* DHCP B± IP ª

o×X%”o- NMFå%”

oHõ- 14

o¬.6-o- ¥XK9 Client Få RGOS ÷ DHCP ¥ IP ¥L DHCP ¥<Få
@ 1h DHCP #¾ 1k Az 2h DHCP #¾ 3k c% 3h DHCP #¾ 6k
DNS ¥ hDHCP #¾ 15k DHCP #¾ 44k WINS ¥U#Fåož
RGOS PPPoFR oHDLC e dhcp B¥ 4k)
¥

oFåb- 1 y…± FastEthernet 0 MB± IP ª

5XLMLHFRQIL1QWHUIDFH*LDELW(WKHUQHW
5XLMLHFRQIL1I*LDELW(WKHUQHWLSDGGUHVVGKFS

oèo- * **show run** UFå

oUP’Î- -

oojo- 1. 8CMo€

4.21 ip dhcp class

}#%² CLASS w CLASS Få%”k Få%” **ip dhcp class xX**
ip dhcp class *class-name*

no CLASS
no ip dhcp class *class-name*

o@

@	T
class-name	CLASS dfkUY©.ò myclass 1ož

oHFå- Få classož

o×X%”o- Få%”

oHõ- 14

o¬.6-o- ¥XK9 Server Få ¥Xk<k CLASS Få%”k Få%”kUYFå
CLASS F Option82 ’Î CLASS e

oFåb- 1 y Fåo‰ CLASS

5XLMLHFRQILLSGKFSFODVVPFODVV

oèo- * **show run Eå**

oUP'ô- -

oejö- -

ouVô- -

4.22 ip dhcp excluded-address

}#? IP k…± DHCP kEgË DHCP kBFåX

ip dhcp excluded-address *low-ip-address* [*high-ip-address*]

¥X no ¥UYHƒ#

no ip dhcp excluded-address *low-ip-address* [*high-ip-address*]

Eå

default ip dhcp excluded-address *low-ip-address* [*high-ip-address*]

@	T
low-ip-address	L IP kE‹ IP 8Ü IP ª
high-ip-address	8Ø IP ôÑ low-ip-address

oFå- Þ DHCP E..P IP ª

o×X%"o- BFå"

oÑ- 14

o¬.6-o- ¥XK9 Server FåÅ‹ IP kDHCP kE DHCP PÄ IP ª

o¥XUYÕ%? IP k9?kÈ DHCP ôG#L‹ IP ª

k-UY5 DHCP Ãyž

oFåb- 1 yDHCP 2kE 192.168.12.100~150 8Ä IP ª

5XLMLHFRQILLSGKFSH[FOXGHGDGGUHVV

2yî† 1 L"8

5XLMLHFRQILQRLSGKFSH[FOXGHGDGGUHVV

oFåb- 1 yBF%”6 NAK

5XLMLHFRQIL1SGKFSIRUFHVHQGQDN

oèo- * **show run 0Få**

oejö- -

oUVt- -

4.24 ip dhcp monitor-vrrp-state

}!O VRRP Ä… DHCP Server NÔ-Õ Master Ä vrrp NMÛ†

ip dhcp monitor-vrrp-state

Hƒ vrrp ÄDk4ž— Master ã Backup Ä VRRP NMÛ†C1tÔ

no ip dhcp monitor-vrrp-state

ÕFå

default ip dhcp monitor-vrrp-state

oÕ@

@	T
-	-

o×X%”o- CNMF%”

oÕ- 14

oFå- FåNM VRRP ÄO

o¬.6-o- ¥XK9 Server FåNMFå VRRP *DHCP ÄÕ—ÕMaster hÄ NMÛ†'ÔMaster hÄMÛ†ž9Få VRRP *NMkDHCP 7E ÇO VRRP ÄÄ DHCP Ù†C1tÔ

oFåb- 1 yDHCP 7ÆCNM VRRP ÄO

5XLMLHFRQIL1ILSGKFSPRQLWRUYUUSVWDWH

oèo- -

oUP'ô- 1 y8CNMFå VRRP ÄD

5XLMLHFRQIL1I*LDELW(WKHUQHWLSGKFSPRQLWRUYUUSVWDWH

,QYDOLGLQSXWGHWHFWHGDWAPDUNHU

oeÿjö- 1 y8CNMFå VRRP ÅD

oʉVt- -

4.25 ip dhcp ping packets

}Få DHCP ÿÄkping ¥f

ip dhcp ping packets [*number*]

no Få

no ip dhcp ping packets

Få

default ip dhcp ping packets

	number	*gH8R* 0 ñ 10k 0 nPyfÅ3!GHñ !@ ñ8 !ð G•DC4 n/V DcD AVC

4.26 ip dhcp ping timeout

}Få DHCP 7Æ ping qÿsžž

ip dhcp ping timeout *milli-seconds*

no Få

no ip dhcp ping timeout

Få

default ip dhcp ping timeout

@	T
milli-seconds	DHCP 7Æ pingžYDakoŽH8 100 ñ 10000

Få- 500 Da

xX%”o- ¶Få%”

14

¥XK9 Server Få#%² ping ž

Fåt- 1 y ping ž– 600ms

5XLMLHFRQILJ1SGKFSSLQJWLPHRXW

*o- * **show run Få**

UP’Î- -

ojö- -

uVt- -

4.27 ip dhcp pool

}#%² DHCP ¶dwµ DHCP ¶Få%”

ip dhcp pool *pool-name*

no DHCP ¶

no ip dhcp pool *pool-name*

default ip dhcp pool *pool-name*

	pool-name	*Pdf*

5XLMLHGKFSFRQILJ

5XLMLHFRQILL1SGKFSSRROPSRRO
5XLMLHGKFSFRQILJ

* **show ip dhcp pool** *mypool0*

-	-

4.28 ip dhcp refresh arp

ip dhcp refresh arp

-	-

oÞ¾ö- 14

o¬.6-o- ¥XK9 Server Fåz
ÿ¥Xk<kÿGRFå **update arp** Pfc¥ ARP

oFåt- 1 yMGU' ARPož

5XLMLHFRQILL1SGKFSUHIUHVKDUS

oèo- * **show arp trusted** ARP

oUP'ô- -

oejö- -

oUVt- -

4.29 ip dhcp relay check server-id

o DHCP relay check server-di ož
ip dhcp relay check server-id

¼ DHCP relay check server-id ož
no ip dhcp relay check server-id

oÞ¾

@	T
-	-

oÞFå- ¼ DHCP relay check server-id ož

o×X%"o- ¶%"

oÞ¾ö- -

o¬.6-o- ¥XK9 Server FåFåX **ip dhcp relay check server-id ek** DHCP Relay N1 DHCP Ł†
Gñ option server-id 6 ÿÇåXkgÄå DHCP ÖE DHCP ¬
Lt ož

oFåt- 1y DHCP relay check server-di ož

5XLMLHFRQILL1SGKFSUHODFKHFNVHUYHULG

2y¼ DHCP relay check server-id ož

5XLMLHFRQILQRLSGKFSUHODFKHFNVHUYHULG

4.31 ip dhcp relay suppression

o DHCP relay suppression ož

ip dhcp relay suppression

¼ DHCP relay suppresson ož

no ip dhcp relay suppression

o@	@	T
	-	-

o-Få- ¼ DHCP relay suppression ož

o-X%”o- NM%”

o-ö- -

o-.6-o- ¥XK9 Relay Få6NMFåX **ip dhcp relay suppression ek1IMvñ**

DHCP Lzè9¿UNMvñ DHCP Lk3oGož

o-Fåt- 1 yo DHCP relay suppresson ož

5XLMLHFRQILIILSGKFSUHODVXSSUHVVLRQ

2¼ DHCP relay suppresson ož

5XLMLHFRQILIIQRLSGKFSUHODVXSSUHVVLRQ

o-ào- 1 y… **show running-config xXkFåž**

o-UP’ô- -

o-ojö-

o-uVt- -

4.32 ip dhcp server detect

o DHCP qÿ7ož

ip dhcp server detect

¼ DHCP qÿ7ož

no ip dhcp server detect

ô¾ DHCP qÿ¾ož

default ip dhcp server detect

oõ@

@	T
-	-

oHFå- ¼ DHCP qÿ¾ž

o×X%”o- ¶%”

oÞ- 14

o¬.6-o- ¥XK9 Server FåFå DHCP qÿ¾ekÌ¾K“Ðž

oFåb- 1 yo DHCP qÿ¾ž

5XLMLHFRQIL1SGKFSVHUYHUGHWHFW

oèo- 1 y… **show running-config xXÕKFåž**

oUP’Î- -

oöjö-

oUVÕ- -

ip dhcp use class

}Få CLASS gÃkÞFå%” **ip dhcp use class xXX** no ¥UY¼ … CLASS gÃož

ip dhcp use class

no ip dhcp use class

oõ@

@	T
-	-

oHFå- Ìo CLASS gÃož

o×X%”o- ¶Få%”ož

dÀHPsbÜ ¥XK9 Server Få

dÈRBHfM 1 yFå CLASS gÃ¤ož

5XLMLHFRQILJSGKFSXVHFODVV

dÀ¥6M * **show run 0Få**

dÀPÞ lM -

dÀ¶M -

dÀPUžM -

4.34 ip helper-address

%¶ DHCP ¤ž

ip helper-address { cycle-mode | *A.B.C.D* **}**

ï%¶ DHCP ¤ž

no ip helper-address { cycle-mode | *A.B.C.D* **}**

dÀ¥x0žM

@	T
cycle-mode	• dhcp ÞÕÄ dhcp ¯Æ
A.B.C.D	DHCP ¯Æ

dÀ¥M DHCP ¤¿qož

dÀ¥E¿iFM ¶%”

dÀ@M -

dÀHPsbÜ ¥XK9 Relay FåFå DHCP ¯Æ IP ªek—Õvñ DHCP ÞÕÈc

ž1vñ DHCP ¤ÈÈ DHCP ¤ož

DHCP ¶FÁYFå 20 DHCP ¤ž

¶Få%”U+ dhcp relay cycle-mode @Fåo cycle-mode ¯ÆP dhcp relay ª

Nvñ dhcp client ÞÕÄ dhcp server zo cycle-mode ¯ÆP

dhcp relay QNvñ dhcp client ÞÕÄ%² dhcp server ož cycle-mode ¶F

åož

dÈRBHfM 1 yFå%¶ DHCP ¯Æ IP ª 192.168.100.1ož

5XLMLHFRQILJXUHWHUPLQDO

o×X%”o- DHCP ®PF%”

oÕ- 14

o¬.6-o- ¥XK9 Server FåtÊDHCP ¥GÒ¬oÕDHCP ¾ÈkÒ
c¾J

oFåt- 1

oFåt- 1 y1PsŠ›— 80%y

5XLMLHGKFSFRQILQDHDVHWKUHVKROG

2y{PsŠ

5XLMLHGKFSFRQILQROHDVHWKUHVKROG

oèo- * **show run Eå**

oUP'ô- -

oejö- -

4.37 match ip

}# AM Eé…xX **match ipu**

match ip *ip-address netmask [interface]* **[add/remove] vlan** *vlan-list*

no [illegible]

no match ip *ip-address netmask [interface]* **[add/remove] vlan** *vlan-list*

oj@

@	T
ip-address	à
netmask	Q
interface	M
add/remove	ê vlan
vlan-list	vlan «

oHFå- —Ig

o×X%"o- AM Eå%"

oHô- 14

o¬.6-o- 1 yFåXeô vlan + port DHCP

Ruijie(config-address-manage)#match ip 192.168.11.0 255.255.255.0 GigabitEthernet 0/10 vlan 10

oèao- * show run UFå

oUP'ĵb- -

oejö- -

4.38 match ip default

}# AM ĕk…xX **match ip default;**

match ip default *ip-address netmask*

no [illegible]
no match ip default *ip-address netmask*

	T
ip-address	ì
netmask	Ą

oFå- —ĵg

oxX%"o- AM Få%"

oĵõ- 14

o¬.6-o- FåXeÕå vlan + port/vlan DHCP £HÈÿ–FåX
cž—`¿ vlan + port Fåĕ3oviFª

oFåĵ- 1 y#4ĕyÈ 192.168.12.0kQA 255.255.255.0
Ruijie(config-address-manage)#match ip default 192.168.12.0 255.255.255.0

oèao- * show run UFå

oUP'ĵb- -

oejö- -

4.39 netbios-name-server

}Få DHCP € NETBIOS WINS dÆ

netbios-name-server *ip-address* [*ip-address2…ip-address8*]

ï WINS Æ

no netbios-name-server

ê

defaut netbios-name-server

o	@	T
	ip-address	# WINS Æ IP

netbios-node-type *type*

ï NetBIOS -Få

no netbios-node-type

ô

defaut netbios-node-type

o@	@	T
	type	# NetBIOS -ÄÄ•ož #k8R 0~FFkxQHYy „ Wn b-node „ Wn p-node „ Wn m-node „ 8 kWn h-node …#y „ b-node kznºµ „ p-node k+ºµ „ m-node kÜ „ h-nodekÜ

oFå- NetBIOS -µ

oxX%”o- DHCP PFå”

o- 14

o-.6-o- XK9 Server Få DHCP € NetBIOS -Ay1 h Broadcastkznºµ*z
n¨g NetBIOS dä2 h Peer-to-peerk+ºµ*+NL WINS E NetBIOS d
ä3 h Mixedk*zn¨Ldäe* WINS Agdä
4hHybrid kÜNL WINS E NetBIOS dä<*z
n¨g NetBIOS dä
WINS zznºµ
ä WINS zÜ1 NetBIOS -µ Hybrid

oFå- 1 y1 DHCP € NetBIOS -µ
5XLMLHGKFSFRQILQHWELRVQRGHWSHKQRGH

oèo- * **show run** UFå

oUP’ô- -

oeöjö- -

4.41 network

}# DHCP ÞÿÙQAk DHCP ÞFåX **network;**

}*sHÅ AP Få DHCP ÞÿÙQAkU¨ AC ap-config/ñ ap-group %”Få

network xÕž

network *network-number net-mask* [*low-ip-address high-ip-address*]

no ÞÿÙ

¨ AC ap-config ñ ap-group %”Î#z

no network

ÕAC ap-config ñ ap-group u4ož

defaut network

oÞÿÙ

@	T
network-number	DHCP ÞÿÙ IP ÞÿÙ
net-mask	DHCP ÞÿÙ IP ÙQAoÿÙQAkÞÿÙ A
low-ip-address	Ü IP ÿÙ AC ap-config ñ ap-group %”u4h
high-ip-address	ÙIP ÿÙAC ap-config ñ ap-group %”u4h

oÞÿÙ Få- ÞÿÙQA

o×X%”o- DHCP ÞFå%”

oÞÿÙ 14

o¬.6-o- ¥XK9 Server Få#ÞÿÙQAk DHCP ÞÿÙ4%ÿÙÿÙ

qoÿÙ Fåkÿ ÙÿÙÿÙ DHCP ÞÿÙ ÞÿÙ

k?¿gkÿÙ DHCP ÞÿÙ ÞÿÙ<ò

%ÿÙ+ÞÿÙ%ÿÙ

ÞÿÙ **show ip dhcp binding xÕkÿÙ** **show ip dhcp conflict xÕ**

0ož

oFåÞ- 1 y#4 DHCP ÞÿÙ

5XLMLHFRQILJURXSQHWZRUN

oèao- * **show run Ea**

oUP'ô- 1 yFåª

5XLMLHGKFSFRQILQHWZRUN

238.5.5.5 / 255.0.0.0 is an invalid network

oejö- 1. Få%nª

4.42 next-server

}# DHCP

oeijö- 1. F%nª

oèo- * **show run** UF

oUP'ô- 1 yF

```
5XLMLHGKFSFRQILRSWLRQLS
(UURULSDGGUHVVLVQRWYDOLG
```

2yF.

```
5XLMLHGKFSFRQILRSWLRQKH[DEFGHIB
+&FRXOGQRWSDUVHWKHKH[DGHFLPDOVWULQJ&HFNFKDUDFWHUB
```

oəjö- 8. Fn

9. F 8

10. F 16 .

4.44 pool-status

îH—Đ}4UFå DHCP oxXk*FXUYo+Æ

o¥XU^ **no ¥**

pool-status {**enable | disable**}

o

@	T
enable	*o*
disable	

oF-

F Pe o

ox%"o- DHCP F%"

oö- 14

o¬.6-o- ¥XK9 Server F DHCP Y*¥X+

oFd- 1 y1

```
5XLMLHGKFSFRQILSRROVWDWXVGLVDEOH
```

oèo- * **show run**

oUP'ô- -

oəjö- -

relay agent information

}¶ CLASS µ Option82 F'Ĥ%"k¶ CLASS F%" **relay agent information xX¥X** no ¥UYí¥ CLASS Ä Option82 F'Î

relay agent information

no relay agent information

o¶@

@	T
-	-

oÞFå- -

o×X%"o- ¶ CLASS F%"ož

o¬.6-o- ¥XK9 Server Få

g¥Xk<kµ Option82 F'Ĥ%"kÞy

5XLMLHFRQILGKFSFODVVUHODLQIR

F%"kUYFå class FÚ Option82 'ôž

oFåt- 1yF%¶ CLASS wµ Option82 F'Ĥ%"ož

5XLMLHFRQILJSGKFSFODVVPFODVV

5XLMLHFRQILGKFSFODVVUHODDHQWLQIRUPDWLRQ

5XLMLHFRQILGKFSFODVVUHODLQIR

oèo- * **show run Eå**

oUP'ô- -

oöjö- -

relay-information hex

¶ CLASS Option82 'Ĥ%"kFå option82 F'k² **relay-information hex xX¥X no Ê**

relay-information hex *aabb.ccdd.eeff*… [*]

no relay-information hex *aabb.ccdd.eeff*… [*]

o¶@

@	T
aabb.ccdd.eeff… [*]	16 ò Option82 F'k* Wn¶kQ}F¶

	ãUnP*Fkk*	Wn}¶ož

oÞFå- -

o×X%”o- ¶ CLASS Få‰”ož

o¬.6-o- ¥XK9 Server Få

oFåb- 1yFå‰¶ CLASS UYFÚ option82 ’Îož

oFåb- 1 y Få%¶ CLASS ôž

5XLMLHFRQILJ1SGKFSFODVVPT FODVV

5XLMLHFRQILJ GKFSFODVVUHPDUNXVHGLQEXLOG

oèo- * **show run** UFå

oUP'ô- -

oejö- -

4.48 service dhcp

}¨—õ DHCP ÿ/Ø/ÔBFåX **service dhcp**

}*sHÅ AP o DHCP ÿ/Ø/ÔU¨ AC ap-config/ñ ap-group %"Få service dhcp xX

service dhcp

no ¶ DHCP ÿ/Ø/Ô

ñ AC ap-config/ñ ap-group %"{¼ AP DHCP ÿ/Ø/AÔ

no service dhcp

ÔAC ap-config ñ ap-group u4

defaut service dhcp

o@	@	T
	-	-

oFå- ¥XK9 Server Få{¼ DHCP ÿ/Ø/Ô

o×X%"o- ¶Få%"o ap-config/ap-group %"

oÔ- 14

o¬.6-o- DHCP ÿ/Ø/Ë IP ¹kwUˆ DNS ÿ/Ø/Ôž

DHCP ÔY1 DHCP LÔ¶w1› DHCP ÔË DHCP ¥Ü

5 DHCP ôž

?D}U6 DHCP yÜ¨ÌÊ,D}ÂYCF

ÔP'Î

oFåb- 1 y—õ4 DHCP ÿ/Ô

5XLMLHFRQILJ VHUYLFHGKFS

2yAC *s AP o4 DHCP ÿ/Ô

	5XLMLHFRQILJDSJURXSGHIDXOW 5XLMLHFRQILJURXSVHUYLFHGKFS
oèao-	* **show run** UFå
oUP'ô-	-
oejö-	-

4.49 show dhcp lease

	¶ DHCP Bc¶
	show dhcp lease

oj@	j@	T
	-	-

oHFå-	—Ig
o×X%"o-	Ô"
oHö-	14
o¬.6-o-	¥XK9 Client FåPö ip ¾
oFåt- 1	yP DHCP Bc¶

5XLMLHVKRZGKFSOHDVH 7HPS,3DGGUIRUSHHURQ,QWHUIDFH)DVW(WKHUQHW 7HPSVXEQHWPDVN '+&/HDVHVHUYHUVWDWH%RXQG '+&WUDQVDFWLRQLGEHHG /HDVHVHFV5HQHZDOVHFV5HELQGVHFV 7HPSGHIDXOWJDWHZDDGGU 1H[WWLPHUILUHVDIWHU 5HWUFRXQW&LHQW,GIH()

oèao-	-
oUP'ô-	-
oejö-	-

4.50 show ip dhcp binding

ºP DHCP Ñ

show ip dhcp binding [*ip-address*]

o@	@	T
	ip-address	*gUP6* IP Ñ

oFå- —Ig

o×X%”o- Ô”

oÕ- 14

o¬.6-o- ¥XK9 Server Fåÿ IP k1ºÑ4 IP k1QºP

¥ IP Ñ

oFåo- 1 yºP DHCP Ñ

5XLMLHVKRZSGKFSELQGLQJ

7RWDOQXPEHURIFOLHQWV

([SLUHGFOLHQWV

5XQQLQJFOLHQWV

,3DGGUHVV+DUGZUHDGGUHVV/HDVHH[SLUDWLRQ7SH

20.1.1.1 2000.0000.2011 000 days 23 hours 59 mins Automatic ºÈ

ç<m#fAÿ

IP address	ãË DHCP € IP ºž
Hardware address	DHCP €ª
Lease expiration	YcÊžnfinite nPÿIDLE nPq ~kqùbÊõ DHCP € Kyož
Type	ºÿAutomatic nPãzManual nPÔWã Fož

oèo- -

oUP’ô- -

oejö- -

4.51 show ip dhcp conflict

ªP DHCP ¨ßÉ£

show ip dhcp conflict

oÊ@

@	T
-	-

oÞFå- —Ig

o×X%”o- Ô”

oÊ- 14

o¬.6-o- ¥XK9 Server Få¥XUYªP DHCP ÿÊ¡ÿ

oFå- 1 yªP DHCP ¨ßÉ£

5XLMLHVKRZSGKFSFRQIOLFW
,3DGGUHVVHWHFWLRQ0HWKRG
3LQJ

ªÈ<m#fAÿ

IP address	UãÈ DHCP € IP ºž
Detection Method	¨sycož

oèo- -

oUP’Î- -

oojö- -

4.52 show ip dhcp pool

ªP DHCP ªÉ..Õ¡

show ip dhcp pool [*poolname*]

oÊ@

o×X%”o- Ôo”

oÞõ- 14

o¬.6-o- ¥XK9 Server Få¥XUYÞ DHCP ÞE..ÕCâ

oFåb- 1 yÞ DHCP ÞE..Õâ

5XLMLHVKRZSGKFSSRRO
5XLMLHVKLSGKSRRO
3RROQDPH7RWDOLVWULEXWHG5HPDLQHG3HUFHQWDJH

QHW

test 0 0 0 0.00000

ÞÈ<m#fAò

Pool address	Þdož
Total	ÞUãÞÈž
Distributed	]ãÿož
Remained	,ãyUÏÿož
Percentage	ÞÃ

oèo- -

oUP’ô- -

oeÿo- -

4.53 show ip dhcp relay-statistics

Þ DHCP ÆÏG

show ip dhcp relay-statistics

oÞ@ @

oH- 14

o¬.6-o- ¥XK9 Relay Få

oF- 1. P DHCP -Relay __G

```
5XLMLHVKRZSGKFSUHODVWDWLVWLFV
&OHPRGH

0HVVDJH&RXQW
LVFRYHU
2IIHU
5HTXHVW
$&.
1DN
HFOLQH
5HOHDVH
,QIR
%DG

LUHFWLRQ&RXQW
5[FOLHQW
5[FOLHQWXQL
5[FOLHQWEUR
7[FOLHQW
7[FOLHQWXQL
7[FOLHQWEUR
5[VHUYHU
```

o-

o-

o-

4.54 show ip dhcp server detect

P DHCP y

show ip dhcp server detect

o

@	T
-	-

oHFå- —Ig

o×X%”o- Ô”

oHô- 14

o¬.6-o- ¥XK9 Server Få

oFåt- 1. P DHCP Server yñÇE

5XLMLHVKRZSGKFSVHUYHUGHWHFW

7KH+&6HUYHULQIRUPDWLRQ

6HUYHU,3 +&VHUYHULQWHUIDFH *LDELW(WKHUQHW

oèo- -

oUP’Î- -

oejö- -

4.55 show ip dhcp server statistics

P DHCP ÆÏG

show ip dhcp server statistics

oÊ

@	T
-	-

oHFå- —Ig

o×X%”o- Ô”

oHô- 14

o¬.6-o- ¥XK9 Server Få¥XUYP DHCP ÆÏG

oFåt- 1. P DHCP ÆÏG

5XLMLHVKRZSGKFSVHUYHUVWDWLVWLFV

$GUHVVSRROV

/HDVHFRXQWHU

$WLYH/HDVH&RXQWHU

NO-LEASE-RESOURCE	—ªUFPʼ
recv	vñ DISCOVERkREQUEST k INFORM MÈ
send	Ĝ¥

oèao- -

oUP'ĉ- -

oojö- -

4.56 show ip dhcp socket

ªP DHCP ÆÆ«

show ip dhcp socket

oj@

@	T
-	-

defaut update arp

	@	T
	-	-

DHCP ARP

DHCP

14

Server **update arp** DHCP ARP ARP ARP

1 DHCP ARP

5XLMLHGKFSFRQILXSGDWHDUS

* **show run**

-

-

5 DNS

5.1 clear host

ZÃÛbož

clear host [* | *host-name*]

o@	@	T
	host-name	*ÎÁÛbž*
	*	*nPÃÛ*

o×X%”o- Ô”

o-ô- 14

o¬.6-o- ÑÎÛ“ÛÛ

* **ip host ê ipv6 host Få**
* DNS Áož¥Xkkîù DNS ÃÑ“ož

oFåb- 1 yYFåkîÑ-IP ÎÛÃ“£ Ä

5XLMLHFRQILJFOHDUKRVW

oUP’Î-b- -

oUVô- -

5.2 ip domain-lookup

o DNS gdž

ip domain-lookup

¼ DNS gdž

no ip domain-lookup

o@	@	

oxX%”o- ¶BFå‰”

oÞõ- 14

o¬.6-o- ¥Xø DNS ¢ÅÿÿXkó DNS g¢ÅÿÿÅž

oFåÿ- 1 y{¼ DNS ¢ÅÿÿÅž

5XLMLHFRQILQRLSGRPDLQORRNXS

oèo- * **show run ÕFå¨** **ip domain-lookup Fåž**

oUP’Î- -

oejö- -

ouVÕ- -

5.3 ip host

ÕWFÅÿ IP ¥ož

ip host *host-name ip-address*

ÎÑož

no ip host *host-name ip-address*

oÞ@

@	T
host-name	ÕÑ-
ip-address	Õ- IP ª

oÞFå- -

oxX%”o- ¶BFå‰”

oÞõ- 14

o¬.6-o-

oFåÿ- 1 yÁå www .test.com ¢ 192.168.5.243

5XLMLHFRQILJSKRVWZVHVWFRP

oèo- **show run ÕFåÑåX**

show hosts ôdy IP +kFdy IP +n¾

oUP'ô- -

oojö- -

ouVô- -

5.4 ip name-server

Fd7E IP/IPv6 ªož

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

ïFd7E

no ip name-server [*ip-address* | *ipv6-address*]

oj@

j@	T
ip-address	d7E IP ª
ipv6-address	d7E IPv6 ª

oFå- Fd7E

oxX%"o- ßFå%"

oFö- 14

o¬.6-o- QÄåd7Ãåž

- DNS Server IP/IPv6 ªžgÚXk—Õk%² DNS Serverdž-cR%² Server BHdk—ÕgeÒ Server G DNS Lk+3Gvªož

Ö4 6 7E DNS Server kÕ4 *ip-address ê ipv6-address* kÕ

7KÄ DNS 7E

oFåb- 1 yFå IPv4 d7E IPv6 d7E

5XLMLHFRQILJ1SQDPHVHUYHU

5XLMLHFRQILJ1SQDPHVHUYHU%EIIIHHI%I

oèo- **show run ôFåFåX**

oUP'ô- -

oojö- -

oʉVt- -

5.5 ipv6 host

ŏWFåy IPv6 ¥ož

ipv6 host *host-name ipv6-address*

ïçbož

no ipv6 host *host-name ipv6-addres*

o@

@	T
host-name	Ø-
Ipv6-address	Ø- IPV6 ª

oFå- -

o×X%”o- ¶Få%”

oŕ- 14

o¬.6-o- -

oFåt- 1 yÁå+• ipv6 ª

5XLMLHFRQILJ1SYKRVWZVHVWFRP%

oèo- **show run ŏFåFåX**

show hosts ŏdy IP +kFåy ip +•¾

oUP’ô- -

oejö- -

oʉVt- -

5.6 show hosts

ª DNS Fåbž

show hosts [*hostname*]

oÞ-	¢@	T
	hostname	ÒÕ6¢ÒÕ6¢ÒÕ6¢Ò

oÞ-X%”o- ¶%”

oÞõ- 14

o¬.6-o- ¶ DNS ,¶Få

oFåõ- 1 yÒÕ6¢Ò

```
5XLMLHVKRZRVWV
1DPHVHUYHUVDUH
VWDWLF

+RVWWVHSGUHVV77/VHF
VZWFKVWDWLF
ZXLMLHFRVh@7 ¢@00PP¢È0
```

6 ¥ ¥ ¥

6.1 clear rping table all

Ž Rping Ä¾ž

clear rping table [**all |** [**ping-object** *owner test-name*] | [**trace-object** *owner test-name*]]

o¥@

@	T
owner	¥
test-name	y¥

o×X%”o- Ô”

o¥ô- -

o¬.6-o- 4xXÛ—Õ Rping ’Ä¾y,¥ož

oFåb- 1 yŽ Rping Ä¾ž

5XLMLHFOHDUUSLQJWDEOHDOO

2: Ž userkMyd ruijie ¾ož

5XLMLHFOHDUUSLQJWDEOHXVHUUXLMLH

oUP’ô- 1 yè—Ä¾kUP,¥ôž

oUVô- -

6.2 ping

y6 IPv4 ¥Ukwy¾ož

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

o¥@

o-

@	T
address	6) IPv4 ¥ož
length	6G¢¢Ê¥xk8y 36~18024k¥† 100ož
times	6G¢¥k8y1~ 4294967295 ož
seconds	6¥k8y1~10gab ož

data	6ƒGk” 1-255 x†..kƒ abcdož
source	6† IPv4 ƒNMoƒ ƒNMgƒ 127.0.0.1h ož
df-bit	å– IP DF ÿk DF yt—å 1 ƒnP+ƒGgãÔ ƒó DF y 0ož
validate	ƒ ož
detail	ƒ ož

oƒF å- ƒ ƒ 2 ahÄ 5 x† 100Byte ƒ IP ož

o×X% ”o- ”%”kQgÂ **ping z** **ping ož**

oƒ ð- 0

o¬.6 -o- g **ping k** **ping k** **ping k** **ping k** **ping k** DNS Fâ ož

oƒå ƒ- 1y **ping ož)** IP ª 192.168.21.26ož

o• SLQJ
5XLMLHSLQJ
6HQGLQJ EWH,&3(FKRHVWRWLPHRXWLVVHFRQGV
SUHVV&WUO&WREUHDN!

6XFFHVVUDWHLVSHUFHQWURXQGWULSPLQDYJ PD[PV
ƒP GHWDLOSLQJ
5XLMLHSLQJ GHWDLO
6HQGLQJ EWH,&3(FKRHVWRWLPHRXWLVVHFRQGV
SUHVV&WUO&WREUHDN!
5HSOƒURPEWHV WLPH PV77/
5HSOƒURPEWHV WLPH PV77/
5HSOƒURPEWHV WLPH PV77/
5HSOƒURPEWHV WLPH PV77/
5HSOƒURPEWHV WLPH PV77/

Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/4 ms.2yÿ **ping ož)** IP ª 192.168.21.26kƒGx† 1500kƒGƒ 20kƒ 3 akƒ ffffkw—å › IP ª 192.168.21.99ož

ë

oʉVª
ø-

6.3 ping ipv6

y6 IPv6 ®Ukwjöž

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

o ¬@
ø-

¡@	T
ip-address	**6)** IPv6 ¶ož
length	**6¡8y**16~18024 k€† 100ož
times	**6¡8y**1~ 4294967295 ož
seconds	**6Ź8y**1~10gab ož
data	**6¡"** 1-255 x†..ož
source	**6†** IPv6 ®NMo¶NMªø1 hª ož
detail	¶P¡Ą. ož

o ¬Þ
Få-

Þ¶Þ 2 ahÄ 5 x† 100Byte ¶6 IP ªož

o ¬x X
%"o-

*%"kQgÃ **ping ipv6 z¶y** **ping ipv6 ¶ž**

o ¬Þ
ã-

0

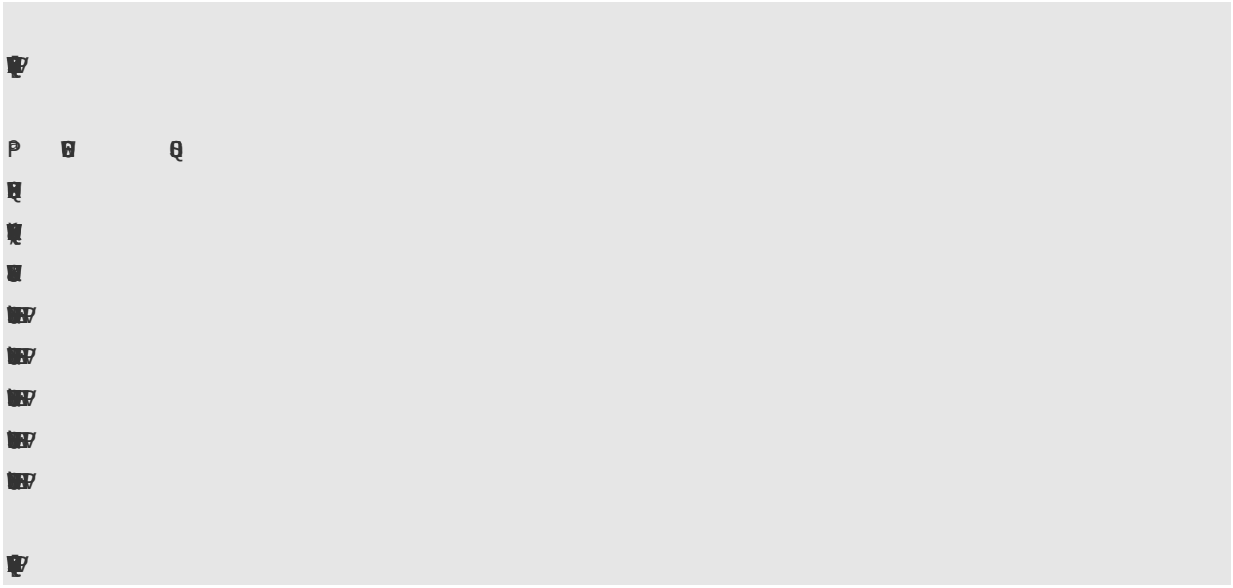
o ¬…
6-o-

g **ping ipv6 k¶¶¶ke**
P %ªRequest receive error.' k¶%ãož
¶ **ping ipv6 k¶¶¶ÄÃ** **ping ipv6 ¶ke-**
¶ž
}…¶k¶ ¶¶¶ DNS Fãož

o ¬F å
ø-

1y* **ping ipv6 ¶ø)** IP ª 2001::5ož

o• SLQJ
5XLMLHSLQJ1SY
6HQGLQJ1EWH,&3(FKRHVWRWLPHRXWLVVHFRQGV
SUHVV&WUO&WREUHDN!



[illegible]

2y[illegible] **ping ipv6 [illegible])** IP ª 2001::5kGƒGx† 1500kGƒGƒ 20k[illegible]

• 3 ak[illegible] ffffkw—å IP ª 2001::9ož

o• SLQJ

5XLMLHSLQJ1SYOHQJWKQWLPHVGDWDIIIIVRXUFHWLPHRXW

6HQGLQJEWH,&3(FKRHVWRWLPHRXWLVVHFRQGV

SUHVV&WUO&WREUHDN!

6XFFHVVUDWHLVSHUFHQWURXQGWULSPLQDYJPD[PV

ªP GHWDLOSLQJ

5XLMLHSLQJ0HQJWKQWLPHVGDWDIIIIVRXUFHWLPHRXW

6HQGLQJEWH,&3(FKRHVWRWLPHRXWLVVHFRQGV

5HSOUHRE WHV WLPH B4fQV4o0[illegible]

o ¬U P
’ô- -

o ¬o •
jö- -

o ¬u V
ô- -

6.4 show rping detail

ô Rping ’ôž

show rping detail

oÕ@

@	T
-	-

o×X%”o- Ô”oÕ%”o×NM%”

oÕ- -

o¬.6-o- …¥XUYô—Õ Rping ’ò¥Ôž

oFåô- 1 yô Rping ¦Â

```
5XLMLHVKRZ/SLQGHWDLO
7RWDORZQHUQXPEHU
7RWDOWHVWQXPEHU
RZQHUXVHU
WHVWQDPHWDHWBVWRUDHWSHYRODWLOH
    WHVWQDPHWDHWBVWRUDHWSHQRQ9RODWLOH
RZQHUXVHU
WHVWQDPHWDHWBVWRUDHWSHSHUPDQHQW
    WHVWQDPHWDHWBVWRUDHWSHUHDG2QO\
```

<¥Ky

<	¢
Total owner number	¦È
Total test number	y¦È
owner	ïd
test name	yd
storage type	¥g

oUP'ô-

oUVô- -

6.5 traceroute

[illegible] IPv4 [illegible]

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

o[illegible]

[illegible]	T
address	6) IPv4 [illegible]ož
number	6GMy[illegible]k8y1~255ož
source	6[illegible] IPv4 [illegible] 127.0.0.1h [illegible]
seconds	6[illegible]8y1~10gab[illegible]ož
minimum maximum	6[illegible] TTL k8y1~255ož

oF[illegible]- [illegible] 3 akGMy[illegible] 3k[illegible] TTL [illegible] 1 y 255ož

o[illegible]X%"o- [illegible] **traceroute** [illegible] **traceroute** [illegible] **ož**

o[illegible]- 0

o[illegible].6-o- **Traceroute** [illegible] DNS F[illegible]ož

oF[illegible]- 1 [illegible] traceroute [illegible]ž

5XLMLHWUDFHURXWH
SUHVV[illegible]WUO[illegible]WREUHDN!
7UDFLQKWKHURXWHWR
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF

IP ª 61.154.22.36 ÑGC4,Pg1

l6 kc

2yçª4 traceroute ÿž

5XLMLHWUDFHURXWH

SUHVV&WUO&WREUHDN!

7UDFLQJWKHURXWHWR

PVHFPVHFPVHF

PVHFPVHFPVHF

PVHFPVHFPVHF

PVHFPVHFPVHF

PVHFPVHFPVHF

PVHFPVHFPVHF

PVHFPVHFPVHF

PVHFPVHFPVHF

PVHFPVHFPVHF

PVHFPVHFPVHF

PVHFPVHFPVHF

PVHFPVHFPVHF

PVHFPVHFPVHF

PVHFPVHFPVHF

PVHFPVHFPVHF

RÑY0kR}| IP ª 202.108.37.42 ÑGC4,Pg1

l17kwª4 4 4{ž

3yç…dÿž

5XLMLHWUDFHURXWHZHWIRUJ

7UDQVODWLQZHWIRU>2.@

SUHVV&WUO&WREUHDN!

7UDFLQJWKHURXWHWR

PVHFPVHFPVHF

PVHFPVHFPVHF

PVHFPVHFPVHF

PVHFPVHFPVHF

PVHFPVHFPVHF

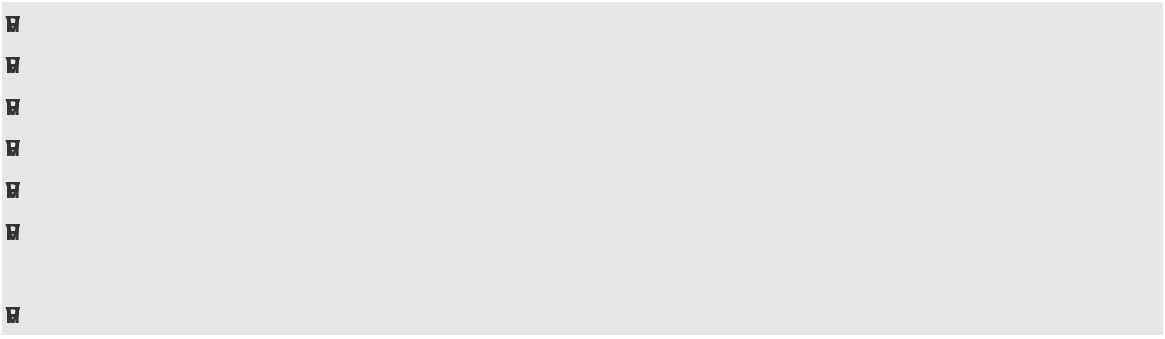
PVHFPVHFPVHF

PVHFPVHFPVHF

PVHFPVHFPVHF

PVHFPVHFPVHF

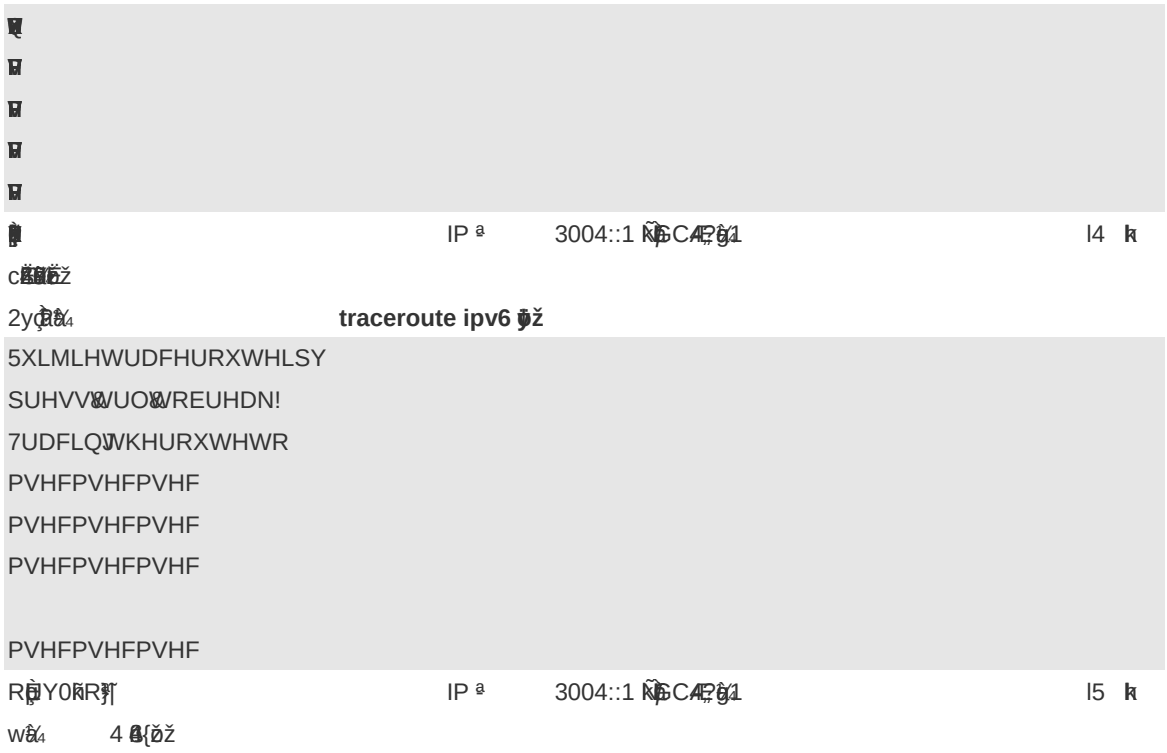
PVHFPVHFPVHF



oèao-	-
oUP'ĉb-	-
oeÿjo-	-
ouVõt-	-

6.6 traceroute ipv6

¶	IPv6 ¢GRÿ¥Ø6 ute ipv6



	IP ª	3004::1	Ñ¦GC4Ç¡	l4	k
cÈÈÈž					
2yçÈª	**traceroute ipv6 ÿž**				
5XLMLHWUDFHURXWHLSY					
SUHVV&WUO&WREUHDN!					
7UDFLQJWKHURXWHWR					
PVHFPVHFPVHF					
PVHFPVHFPVHF					
PVHFPVHFPVHF					
PVHFPVHFPVHF					
RÈÈY0kRÿ¶	IP ª	3004::1	Ñ¦GC4Ç¡	l5	k
wª 4 4{ž					

oèo-	-
oUP'ô-	-
oeÿo-	-
oUVô-	-

7 TCP

7.1 ip tcp adjust-mss

—ôG TCPv4 SYN † MSS #ož

ip tcp adjust-mss *max-segment-size*

ÊFåž

no ip tcp adjust-mss

o@	@	T
	max-segment-size	*k8©* 500-1460

oFå- “w SYN † MSS #ož

o×X%”o- NM%”

oÕ- 14

o¬.6-o- MSS yTCP ÇúÑž

TCP Ñ%Ge RFC1191 kUYUà!ïž.

TCP Ôny£kUY…nÑlož

€Ü¹ tcp Nk* TCP SYN † MSS #¾#Œ TCP ÇúÑ

€ SYN † MSS nPeÈE TCP ÇúÑFòž

NMFåXk…¥MNvG SYN † MSS #%NMFå MSS ož ò SYN

MyMCFå MSSkHMFåõž%ºMyMFå%ÿXŽ

©w4 TCP yNÈ; SYN k?Ïk“w SYN+ACK ož

o{k+9]yE TCP NjkQ+eÛ TCP Njož

oFåÐ- 1 yNM GigabitEthernet 0/0 FôG TCPv4 SYN † MSS #%w 1000 -ož

5XLMLHFRQILJI*LJDELW(WKHUQHWLSWFSDGMXVWPVV

oèo- -

oUP’ô- -

oejö- -

oUVÐ- -

7.2 ip tcp keepalive

¥Xô TCP ‘tož

ip tcp keepalive [**interval** *num1*] [**times** *num2*] [**idle-period** *num3*]

@	T
interval *num1*	**tkyakH8**© 1 ñ 120kÞ© 75 aož
times *num2*	**tkH8**© 1 ñ 10kÞ© 6ož
idle-period *num3*	**k/ÄÎkyakH8** © 60 ñ 1800kÞ© 15 ãJož

o¤Få- {ož

o×X%”o- ß%”

o¤õ- 2

o¬.6-o- ò TCP eÈ3+Ç3oWkUYo‘tož

•—o‘tkÈyq~Ç…ÞkTCP ¨ 15 ãJÄñG

ÞG‘tÞ?œ 75 aG%}kÒ 6)kÄñG~ TCP Þk<

• TCP N—|kKy TCP Nož

¥XÄÇ+Ä TCP NCÞjož

oFåt- 1 y¨—õ TCP ‘tkq~Ç 3 ãJkG‘tÇe 60 akÒ 4)

‘tkÄñG~ TCP Þk<• TCP N—|ož

5XLMLHFRQILI1SWFSNHHSDOLYHLQWHUYDOWLPHVLGOHSHULRG

oèo- -

oUP’ô- -

oejö- -

oUVt- 11.0 ÎXHW 10.x ÎåX service tcp-keepalives-in y service tcp-keepalives-out ož

7.3 ip tcp mss

—å TCP N MSS ÎÃž

ip tcp mss *max-segment-size*

no ip tcp mss

max-segment-size	MSS 68-10000 MTU MSS

-

14

ip tcp mss TCP N MSS MSS MSS MTU MSS IPv4 TCP MSS =

o@	@	T
	age-timer *minutes*	TCP Gë PMTU ekMgMyožyÕ Ukl8 10-30ož Þ 10ož
	age-timer infinite	TCP Gë PTMU ekMMyož

oÞFå- {ož

oxX%”o- ß%”

oÞõ- 14

o¬.6-o- TCP ÅÿÿGë RFC1191 ëUYUÀ!ïž.
TCP ÛnÿÉžUY…nÅož
7 RFC1191 Tk TCP Gë PMTU ekø<ÿUY…Ý¼ MSS Ûy• PMTUož
ee.@ **age-timer** ÕÕ- PMTU A TCP N€Ô MSS 4ž—Ãk
7Fåe:Gë¼ PMTUožñ PMTU ñ MSS kÕž
Myiõ2ož…ž **age-timer infinite** @ž

oFåb- 1 yo PMTU Gëž
5XLMLHFRQILJSWFSSDWKPWXGLVFRYHU\

oào- -

oUP’ô- -

oojö- -

ouVô- 10.x ÎX+ IPv4 TCP y IPv6 TCP I P v 6y IPv6 TCP P

oHFå- vMU TCP G reset ož

oxX%”o- B%”

oHõ- 14

o¬.6-o- %KTCP %G TCP k TCP Nk Ö² reset
YÄ+€ TCP Nož ¢ kèãàÓ MU TCP k+—Õ
èàUY*YxXÛ W2+MUG reset ož

oFåb- 1 yW2ÿMU TCP G reset ož
5XLMLHFRQILQRLSWFSVHQGUHVHW

oèao- -

oUP’Î b- -

oeÿo- -

oUVb- 11.0 Î..’4 10.x FåXip tcp not-send-rst kwÃ 10.x Îg4 10.x F
åXk1Ãè 11.0 FåXož
10.x ÎXN+ IPv4 TCP ykR 11.0 Î+ IPv4 TCP y IPv6 TCP Cjož

7.6 ip tcp synwait-time

—åN SYN ž
ip tcp synwait-time *seconds*

Ãož
no ip tcp synwait-time

oÃ@

@	T
seconds	SYN ž %yakH8 5-300kÞ 20ož

oHFå- Ž 20 a

oxX%”o- B%”

oHõ- 14

o¬.6-o- ò¸ SYN xà5 SYN ÉÝY…2%?ÏÏx+Ò SYN xõ¸ž
¨—ÕyNž5 SYN ÉÝY5ž telnetò¸Ù+
UY ÉÝž

oFåt- 1 y—ÿN SYN ÉÝ 10 aož
5XLMLHFRQILJ1SWFSVQDLWWLPH

oèao- -

oUP'ò- -

oejö- -

oUVt- 11.0 Î..'4 10.x ÎFåXip tcp syntime-out kwÃ 10.x ÎÕg4 10.x ÎF
åXk16è 11.0 ÎFåXož
10.x ÎÉXN+ IPv4 TCP ÿkR 11.0 Î+ IPv4 TCP y IPv6 TCP Cÿož

7.7 ip tcp window-size

—å TCP vMÝož
ip tcp window-size *size*

ÕÕž
no ip tcp window-size

oÕ@

@	T
size	vMÝož %y<kH8 128-(65535 << 14)kÞ© 65535ož

oÞFå- Þ© 65535 -

o×X%"o- Ÿ%"

oÞÕ- 14

o¬.6-o- TCP NvÜ+ÑvÕk?Ge¨Ò~Ïo%ÕÕ TCP vM
FÝNvÜ~qÝož9k!AÕÕÕGNkÝMUYÝKUä TCP
nÿž
ÿMÝ 65535 -kovMÿž

oFåt- 1 y—åM4Ý 16386 -ož

5XLMLHFRQILI1SWFSZQGRZL]H

oèo- -

oUP'ô- -

oejö- -

ouVt- 10.x ÎXN+ IPv4 TCP ykR 11.0 Î+ IPv4 TCP y IPv6 TCP Cjož

7.8 ipv6 tcp adjust-mss

—ôG TCPv6 SYN † MSS #ož

ipv6 tcp adjust-mss *max-segment-size*

Ðåž

no ipv6 tcp adjust-mss

oÐ@

@	T
max-segment-size	*Ý%k8©* 1220-1440

oFå- "w TCPv6 SYN † MSS #ož

oxX%"o- NM%"

oÐ- 14

o¬.6-o- TCP #"yNž#Œ MSSk/ÐS<xtž TCPv6 ÎÐ%²è IPv6 MTU A4kò IPv6 ÎGiÐ4…2 TCPv6 GxÐ MTU ÐUY Fåw TCPv6 SYN † MSS #ož

Ÿå9]yE TCPv6 NjkQ+eÛ TCPv6 Njož

oFåt- 1 yNM GigabitEthernet 0/0 FôG TCPv6 SYN † MSS #%w 1300 -ož

5XLMLHFRQILI1I*LDELW(WKHUQHWLSYWFSDGMXVWPVV

oèo- -

oUP'ô- -

oeöjö- -

ouVõ- -

7.9 service tcp-keepalives-in

- TCP 知ž

service tcp-keepalives-in [*interval*] [**garbage**]

¼ TCP 知E

no service tcp-keepalives-in

oõ@

7.10 service tcp-keepalives-out

- TCP €tož

service tcp-keepalives-out [*interval*] [**garbage**]

op@

local-ipv6 *X:X:X:X::X*	ƒ IPv6 ª
local-port *num*	M
peer-ipv6 *X:X:X:X::X*	€ IPv6 ª
peer-port *num*	M
statistics	ô IPv6 TCP NÏÎ

o×X%”o- Ô”

oÞõ- 2

o¬.6-o- -

oFåÞ- 1 yôÜ IPv6 TCP NÏÎ ž

5XLMLHVKRZSYWFSFRQQHFW
1XPEHU/RFDO$GGUHVV)RUHLJ$GGUHVV6WDWH3URFHVVQDPH
/,67(1UJVVKG
/,67(1UJWHOQHWG
(67$%/,6+(UJWHOQHWG
<Ky

<	¢
Number	~ž
Local Address	ÊMZÂ%ÈÊMž
Foreign Address	ÊMZÂ%ÈÊMž
State	TCP NÏÄ 11 _UÏ CLOSEyN]• LISTENy!nÏ SYNSENTySYN]GÈ)W‰ SYNRCVDySYN]Nvñ)W‰ ESTABLISHEDyN]y FINWAIT1yÊGß FIN † FINWAIT2yÊGß FIN]4G• CLOSEWAITyÊ4+€ FIN † LASTACKyÊ4+€ FIN ÈÊ4\ FIN † CLOSINGyÊGß FIN ÈÊ+€ FIN † ACK ÊÛ $4+€ FIN † TIMEWAITyÊG FIN †G4kwÊ]G4Nvñ FIN †
Process name	idf

2y0@	IPv6 TCP Nîbž
5XLMLHVKRZSYWFSFRQQHFWVWDWLVWLFV	
6WDWH	

<Ky

<	¢
Number	~Z
Local Address	ÎMZÂ%ÈÞMZž
Foreign Address	ÎMZÂ%ÈÞMZž
PMTU	è MTUož

oUP'ĵb- -

oUVĵb- -

7.13 show ipv6 tcp port

Pï@ IPv6 TCP ÊM…ÕŽ

show ipv6 tcp port [*num*]

o@	@	T

Number	~Z
Local Address	Mz
Foreign Address	Mz
State	TCP N 11 _U CLOSED: N]• LISTENy!n SYNSENTySYN]G)W SYNRCVDySYN]Nv)W ESTABLISHEDyN]y FINWAIT1y FIN † FINWAIT2y FIN]G• CLOSEWAITy FIN † LASTACKy FIN]G\ FIN † CLOSINGy FIN]+€ FIN † ACK +€ FIN † TIMEWAITy FIN]G4kw]G4Nv ñ FIN †

oUP'b- -

oVt- -

7.14 show tcp connect

IPv4 TCP N

show tcp connect [local-ip *a.b.c.d***] [local-port** *num***] [peer-ip** *a.b.c.d***] [peer-port** *num***]**

IPv4 TCP N

show tcp connect statistics

local-ip *a.b.c.d*	IP
local-port *num*	
peer-ip *a.b.c.d*	IP
peer-port *num*	
statistics	IPv4 TCP N

oX%"o- "

oÅ-ö- 2

o¬.6-o- -

oÅ-ö- 1 yöö IPv4 TCP NÎöž

5XLMLHVKRZWFSFRQQHFW
1XPEHU/RFDOGGUHVV)RUHLQGGUHVV6WDWH3URFHVVQDPH
/,67(1UJVVKG
/,67(1UJWHOQHWG
(67%/,6+(UJWHOQHWG

<Ky

<	¢
Number	~ž
Local Address	ÎKÈpKAò “1.1.1.1:23”“23” ž
Foreign Address	ÎKÈpKAò “1.1.1.1:23”“23” ž
State	TCP NÄ 11 _UÄ CLOSEyN]• LISTENy!nÄ SYNSENTySYN]GÑ)W‰ SYNRCVDySYN]Nvñ)W‰ ESTABLISHEDyN]y FINWAIT1yÊGß FIN † FINWAIT2yÊGß FIN]G• CLOSEWAITyÊ4+€ FIN † LASTACKyÊ4+€ FIN kÀÊG\ FIN † CLOSINGyÊGß FIN k+€ FIN † ACK ÎU ÊÄ+€ FIN † TIMEWAITyÊ FIN tG4kwÊ]G4Nvñ FIN †
Process name	idf

2yöö IPv4 TCP NÎöž

5XLMLHVKRZWFSFRQQHFWVWDWLVWLFV
6WDWH

```
),1B:$7
```

oUP'ô- -

oUVô- -

7.15 show tcp pmtu

IPv4 TCP Nè MTUož

show tcp pmtu [local-ip *a.b.c.d***] [local-port** *num***] [peer-ip** *a.b.c.d***] [peer-port** *num***]**

local-ip *a.b.c.d*	IP ª
local-port *num*	
peer-ip *a.b.c.d*	IP ª
peer-port *num*	

oX%"o- "

oõ- 2

o¬.6-o- -

oFåo- 1 yô IPv4 TCP Nè MTUož

```
5XLMLHVKRZWFSSPWX
1XPEHU/RFDO$GUHVV)RUHLQ$GUHVV3078
```

<Ky

<	
Number	~Z
Local Address	Î ª ª - €M Zk ÈZe µ ƒ ©€M Zk A ò "192.168.195.212.23""23" €Mž

Foreign Address	€ª - €M Zk ÈZe µ ƒ ©€M Zk A ò “192.168.195.212.23”“23” €Mõž
PMTU	è MTUož

oUP’ô- -

oUVô- -

7.16 show tcp port

Pò TCP €M…Õž

show tcp port [*num*]

o@	@	T
	num	€M

o×X%”o- Ô”

oÕ- 2

o¬.6-o- -

oFåo- 1 yôò IPv4 TCP €M…Õž

```
5XLMLHVKRZWFSSRUW
7&FRQQHFWLRQVRQSRUW
1XPEHU/RFDO$GUHVV)RUHLQ$GUHVV6WDWH
(67$%/,6+('
7RWDO

7&FRQQHFWLRQVRQSRUW
1XPEHU/RFDO$GUHVV)RUHLQ$GUHVV6WDWH
7RWDO
```

<Ky

<	€
Number	~Z
Local Address	€Mõž
Foreign Address	€Mõž

State	TCP NÄ 11 _U CLOSED: N]• LISTENy!n SYNSENTySYN]GR)W% SYNRCVDySYN]Nvñ)W% ESTABLISHEDyN]y FINWAIT1y FIN † FINWAIT2y FIN]G• CLOSEWAITy FIN † LASTACKy FIN \ FIN † CLOSINGy FIN FIN † ACK FIN † TIMEWAITy FIN]G4Nv ñ FIN †

oUP'ô- -

oUVô- -

8]Æ IPv4/v6 Ã4

8.1 clear ip ref packet statistics ´ÓstSTÈpÃó

oUP'ô- -

oUVô- -

8.3 ip ref load-sharing original

Få IPv4 ö½cÂ) IP y› IP ö½ož

ip ref load-sharing original

IPv4 ö½cÊ ož

no ip ref load-sharing original

oÊ@

@	T
-	-

oFå- Â) IP ö

oXX%"o- ß%"

oÊ- 14

o¬.6-o- ÊGkwu4_ö½ck%²_© IP ö½kP%²_) IP y› IP Ă
ö½coÊ IP ÊÀ–å IP ö½kREF 1Y) IP Ê¿
%ÊGoÊ) IP ö½ož

oFå- 1 yFå IP+) IP k#è½ož

5XLMLHFRQILJ1SUHIORDGVKDULQJ RULJ1QDO

2y…Â)k#è½ož

5XLMLHFRQILJ QRLSUHIORDGVKDULQJ RULJ1QDO

oèo- …xX **show run ôFå ž**

oUP'ô- -

oÿo- -

oUVô- -

8.4 ipv6 ref load-sharing original

Få IPv6 ¢c2) IPv6 ÿ› IPv6 ¢ož

ipv6 ref load-sharing original

IPv6 ¢c¢ož

no ipv6 ref load-sharing original

o¢	@	T
	-	-

o¤Få- 2) IPv6 ¢

o×X%”o- ¶%”

o¤ö- 14

o¬.6-o- -

oFåt- 1 y IPv6 ¢c¢ož

5XLMLHFRQILQRLSYUHIORDGVKDULQRULLQDO

oèo- …xX **show run ôFåž**

oUP’ô- -

oejö- -

ouVô- -

8.5 show ip ref adjacency

ÎPÔN-µÂN-µôž

s**how ip ref adjacency [glean | local |** *ip-address* | **interface** *interface_type interface_number* | **discard** | **statistics**]

o¢	@	T
	glean	**N-µ**
	local	**N-µ**

ip-address	IP
interface_type	
interface_number	
discard	
statistics	

14

IPv4

linklayer	8Cã

oUP'ô- -

oUVô- -

8.6 show ip ref exact-route

IP Ge ž

show ip ref exact-route *source_ipaddress dest_ipaddress*

@	T
source_ipaddress	IP ª
dest_ipaddress	IP ª

oX%"o- Ø"

oÕ- 14

o.6-o- *¥Xk6 IP IP IP kUY Ge ž

oFå- 1 yôR 192.168.217.74 ñ 192.168.13.1 Ge ž

5XLMLHVKRZSUHIH[DFWURXWH
!YUILQGH[
LGVWDWHWSHUIFWFKLSLQWHUIDFHOLQNODHUKHDGHUGDWD
UHVROYHGIRUDUG*LDELW(WKHUQHW&

PE<Ty

<	
id	>Nöe
state	>NÅ unresolveyÈ resolvedy]ª

rfct	>Ntf
chg	>Nk
ip	>N+• IP ª
interface	M
linklayer	8Cã

oUP'b- -

ouV- -

8.7 show ip ref packet statistics

P IPv4 z

show ip ref packet statistics

o

lookup fib fail	
local adj	FNN
glean adj	FMüN
for ar	FG>N
redirect	Mg
ttl expiration	† TTL
no ip routing	

oUP’ô- -

ouVô- -

8.8 show ip ref resolve-list

IPv4

show ip ref resolve-list

@	T
-	-

oX%”o- ”

oô- 14

o¬.6-o- -

oFåb- 1 yIPv4

```
5XLMLHVKRZSUHIUHVROYHOLVW
,3UHVBVWDWHIODVLQWHUIDFH
XQUHV*LDELW(WKHUQHW
```

<	
IP	IP
res_state	unresyres y
flags	0y>N—¼1 y>N,¼
interfa e	NMdf

oUP’ô- -

oUV0- -

8.9 show ip ref route

IPv4

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

default	**6**
ip	*6* IP
mask	*6*
statistics	

X%”o- ”

14

.6-o- UY IPv4 UY6 IP/MASK

1 yP

```
5XLMLHVKRZSUHIURXWH
&GHVGHIDXOWURXWH
]HURURXWH
LSPDVNZLKWSDWKLGQH[WKRSLQWHUIDFH
/RFDO
/RFDO
*LDELW(WKHUQHW
*LDELW(WKHUQHW
/RFDO
*LDELW(WKHUQHW
```

<Ty

oUP'b- -

oUVt- -

8.10 show ipv6 ref adjacency

IPv6 ©2N,ž

show ipv6 ref adjacency [**glean | local |** *ipv6-address* **| interface** *interface_type interface_number* | **discard | statistics**]

o@	@

type	>N- localy>N forwardy>N discardy'>N gleany>N mcastyA>N
rfct	>N-
chg	0y>N-Nd 1y>N-Nd
ip	>N IPv6
interface	>N-M
linklayer(header data)	8C

oUP'-

-

oV-

-

8.11 show ipv6 ref exact-route

>

show ipv6 ref exact-route *source-ipv6-address destination-ipv6-address*

o

	T
source-ipv6-address	› IPv6
destination-ipv6-address	) IPv6

oX%"o-

"

o-

14

o¬.6-o-

-

oF- 1 y 2001:db8:1::1k) 3001:db8:2::2

```
5XLMLHVKRZSYH[DFWURXWHGEGE
GE!GEYUILQGH[
,VWDWHWSHUIFWFKOSLQWHUIDFHOLQNODHUKHDGHUGDWD
XQUHVROYHDHDQ*LDELW(WKHUQHW
```

<	
id	>N-

state	>N-µ
type	>N-µ localy>N forwardy>N discardy’>N gleany>N mcastyÁ>N
rfct	>N-µ
chg	0y>N-µNµ 1y>N-µµ
ip	>N IPv6
interface	>N-µM
linklayer(header data)	8C

oµP’µ- -

oµVµ- -

8.12

UHGLUHFW
KRSOLPLWH[SLUDWLRQ
QRLSYXQLFDVWURXWLQJ

PÈ<Ty

<	
bad head	
lookup fib fail	
local adj	FhNf
glean adj	FMüNf
forward	FG>Nf
redirect	Mgb
hop-limit expiration	† TTL
no ipv6 unicast-routing	Gyf

oUP'ô- -

oUVô- -

8.13 show ipv6 ref resolve-list

IPv6 ž

show ipv6 ref resolve-list

@	T
-	-

oX%"o- "

IP	NM IPv6 ª
res_state	unresyÌres yª
flags	0y>N—k¼ 1 y>N,¼
interface	NMdf

oUP'ô- -

oUVô- -

8.14 show ipv6 ref route

ª IPv6 ôž

show ipv6 ref route [**default | statistics | prefix/len**]

oÊ@

@	T
default	**Pô**
statistics	**Pê**
prefix/len	**P6ÖX:X:X:X::X/<0-128>** hê

o×X%"o- Ô"

oÊ- 14

o¬.6-o- cŽUY%Pê&Cô ž

oFåt- 1 yô IPv6 ¶è'ôž

```
5XLMLHVKRZSYUHIURXWH
&GHVGHIDXOWURXWH
SUHIL[OHQZILKWSDWKBLGQH[WBKRSLQWHUIDFH
GDIIH*LDELW(WKHUQHW
GDIIH/RFDO
IH1XOO
IHDDIIIHEID/RFDO
```

<	¢
prefix/len	IPv6 ÖÖ
weight	ÉM
path_id	>Në
next_hop	%ê
interface	>NMd

oUP'b- -

oUVt- -

9 NAT

9.1 address

Få%² NAT qP8

address *start-ip end-ip* [**match interface** *interface*]

ïP8

no address *start-ip end-ip* [**match interface** *interface*]

Få%² NAT qP8

address interface *interface* [**match interface** *interface*]

ïP8

no address interface *interface* [**match interface** *interface*]

o@

@	T
start-ip	IP ož
end-ip	IP ož
interface *interface*	*9* NAT outside Mož Pool L#NMk %9NM match interface interface interface NAT *ož
match interface *interface*	**9** NAT outside Mek NAT pool Fož

oFå- Ž8ož

o-X%”o- NAT PFå%”

o-6- 14

o-.6-o- NAT PFå%”Ag NAT 8#ož

¥Xu4… AP tMgFå

oFå- 1 y4%² mulnets Pkw#4ož

5XLMLHFRQILI1SQDWSRROPXOQHWVQHWPDVN

5XLMLHFRQILQDWDGGUHVV

5XLMLHFRQILQDWDGGUHVV

oUP'ĵb- 1 yèXFÊ IP ª49Ü IP ªkFÅUPy

(QGDGGUHVVOHVVWKDQVWDUWDGGUHVV

2yèXFÊ IP ªÒ IP ÊcàkFÅUPy

6WDUWDQGHQGDGGUHVVHVRQGLIIHUHQWVXEQHWV

3yèXFÊ IP ªÒ IP ¢© 0.0.0.0kFÅUPy

,SDGGUHVVaDUHLQYDOLG

4yèX… AP ùMgFåFÅUPy

1RWSHUPLWDSPHPEHULQWHUIDFH

5yÇ%P8ÇÝ 100kFÅUPy

6yÇåXÈÄFÅUPy

7yÇå…©M]ÄÈFÅUPy

8yÇå]ÄÈFÅUPy

$UHDGH[LVWWKLVUDQJHSOHDVHGHOHWHDQGUHFUHDWH

9yÇå…©M]ÄÈÿMLkFÅUPy

€ ~p´`žP"àTÐZ ZÐ@À®`eÐ|@"Ï sTÐ± ¦p´`žP6°´`žP^ ¬ 6°uP• 7•

9.2 ip nat

}+%^NMvG/GvOg NAT 5

ip nat {

3y₣å ip nat inside NMkg no ip nat outside, F₫UPy

,QWHUIDFHLVRXWVLGHHQDEOHGWUQRLSQDWRXWVLGH!

4y₣å ip nat outside NMkg no ip nat inside, F₫UPy

,QWHUIDFHLVLQVLGHHQDEOHGWUQRLSQDWLQVLGH!

oəjö- -

oʊVđ- -

9.3 ip nat application

o×X%”o-	¶BF%”		
o¤ô-	14		
o¬.6-o-	%?	NAT ¤j“w%?Ô	IP

oнV0- -

9.4 ip nat inside destination

}o NAT Ä)6

ip nat inside destination list *access-list-number* **pool** *pool-name*

{¼ NAT Ä)6

no ip nat inside destination list *access-list-number*

o@	T

list *access-list-number*

5XLMLHFRQILJ1I*LDDELW(WKHUQHWLSQDWRXWVLGH
5XLMLHFRQILJ1I*LDDELW(WKHUQHWH[LW
5XLMLHFRQILJ1SQDWSRROQHWSUHIL[OHQJWKWSHURWDU\
5XLMLHFRQILJ1SQDWLQVLGHGHVWLQDWLRQOLVWSRROQHW
5XLMLHFRQILJDFFHVVOLVWSHUPLWLSDQKRVW

oUP'ô- 1 yöÊÊUPy
7UDQVODWLRQZWKOLVW[[[H[LVWSOHDVHGHOHWHDQGUHFUHDWH

2yöÊXkÊUPy
FUHDWHQDWUXOHIDLO

3yöÊXkÊUPy
7UDQVODWLRQQRWIRXQG

oöjö- -

oUVô- -

9.5 ip nat inside source

}oÄª NAT

ip nat inside source list *access-list-number* { **interface** *interface-type interface-number* | **pool** *pool-name* } [**overload**]

ip nat inside source static *local-ip global-ip* [**match** *interface-type interface-number* | **netmask** *mask*][**permit-inside**]

ip nat inside source static *local-ip* **interface** *interface-type interface-number* [**permit-inside**]

ip nat inside source static { **tcp** *local-ip local-port* | **udp** *local-ip local-port* } *global-ip global-port* [**match** *interface-type interface-number* | **netmask** *mask*] [**permit-inside**]
ip nat inside source static { **tcp** *local-ip local-port* | **udp** *local-ip local-port* } **interface** *interface-type interface-number global-port* [**permit-inside**]

{Ä NAT

no ip nat inside source list *access-list-number*

no ip nat inside source static *local-ip global-ip*

---

no ip nat inside source static *local-ip* **interface** *interface-type interface-number*

no ip nat inside source static { **tcp** *local-ip local-port* | **udp** *local-ip local-port* } *global-ip global-port*

no ip nat inside source static { **tcp** *local-ip local-port* | **udp** *local-ip local-port* } **interface** *interface-type interface-number global-port*

BÌÄž

+9UÄÑ}FÁ NAT ê NAPTožÄÈU4ÅÒ}ï outside

NMÄ NAPTkÈe ISP ¦EUÅžoÑ¦Ä

?ÄÑ/E}Ä IP <UY4ožÄÔ¦LÄ¦B IP ¦ÄE

oÈÄÁ NAT ÄÁ NAPT ž}µ permit-inside ¦/o4Å

}¨ inside MF no ip redirectsk…2 inside MGMgtž

oFåt- 1 yYF¦UY1 192.168.12.0/24 ÄÑÁ¦Ä 200.168.12.0/28 ÄÀ

ÄÑ NATož

7yõ¼ÈÄFÅUPy

FUHDWHDWWDFKUXOHIDLO

8yõFå permit-inside xXõ¼ÈÄFÅUPy

FUHDWHSHUPLWBLQVLGHDWWDFKUXOHIDLO

9yõFåXk¼ÈÄUPy

7UDQVODWLRQQRWIRXQG

oõjõ- -

ouVõ- -

9.6 ip nat outside source

}oÈ³ NAT

ip nat outside source list *access-list-number* **pool** *pool-name*

ip nat outside source static *global-ip local-ip*

ip nat outside source static { **tcp** *global-ip global-port* | **udp** *global-ip global-port* } *local-ip local-port*

{È³ NAT

no ip nat outside source list *access-list-number*

no ip nat outside source static *global-ip local-ip*

no ip nat outside source static { **tcp** *global-ip global-port* | **udp** *global-ip global-port* } *local-ip local-port*

oõ

@	T
list *access-list-number*	ÎõQÄÿ¡vOk¼ NAT ¼“ož
pool *pool-name*	ÿ NATož
static *local-ip global-ip*	NATož local-ip ¼global-ip ož
static *protocol*	NATož protocol UY TCP ê UDPož
local-port	TCP ê UDP ¼ ož
global-port	local-port což

o¤Få-	Ä NAT Gÿž
o×X%”o-	¶Få”
o¤ö-	14
o¬.6-o-	Ù NAT ÊÿMLªÊoÿÄ4cý IP ®ê
	%ÿÄ4cÿ IP ®_ÑMLoÿLÑ
	O*’kÊ+ÑMLª NAT <ÿS+MLÈ
	*’|ÊFåMLª NATkÈÑÈP%ÑF%ýž
	MLª NAT FåÈÄ1 hÄª NAT Få2 hÈª NAT FåQÄ
	ÈÑÊÈkÈÈUYÁ NAT FÁ NAT
	4hÊ IP ®ÈÈGÿMLÑÈà
	ÑÈu4 NAT —Ã4 DNS † NATož
	FåÄà 192.168.12.0/24 ÈÀMLožÊekÄÑUY*
	168.12.0/24 ÈÀ 192.168.12.0/24 ÈÑž
	/LHFRQILXUHWHUPLQDO
	/LHFRQILQWHUIDFH*LDELW(WKHUQHW
	/LHFRQILI*LDELW(WKHUQHWLSDGGUHVV
	/LHFRQILI*LDELW(WKHUQHWLSQDWLQVLGH
	/LHFRQILI*LDELW(WKHUQHWH[LW
	/LHFRQILQWHUIDFH6HULDO
	/LHFRQILI*LDELW(WKHUQHWLSDGGUHVV
	/LHFRQILI*LDELW(WKHUQHWLSQDWRXWVLGH
	/LHFRQILI*LDELW(WKHUQHWHQFDSVXODWLRQSSS
	/LHFRQILI*LDELW(WKHUQHWH[LW
	/LHFRQILSQDWSRROQHWSUHIL[OHQJWK
XL	/LHFRQILSQDWSRROQHWSUHIL[OHQJWK
	/LHFRQILSQDWLQVLGHVRXUFHOLVWSRROQHW
	/LHFRQILSQDWRXWVLGHVRXUFHOLVWSRROQHW
	/LHFRQILDFFHVVOLVWSHUPLW
	/LHFRQILSURXWH
	IP ®ÈÊÁUPy
	HDGPDSSHG!
	2y¤ö

3yF å acl]#kE&UPy

7UDQVODWLRQZWKOLVWH[LVWSOHDVHGHOHWHDQGUHFUHDWH

4y6ÿ&XkÄF&UPy

FUHDWHQDWUXOHIDLO

5yÇFåXkÄ&UPy

7UDQVODWLRQQRWIRXQG

oejö- -

ouVÕ- -

9.7 ip nat pool

}# NAT P

ip nat pool *pool-name start-ip end-ip* { **netmask** *netmask* | **prefix-length** *prefix-length* } [**type rotary**]

ip nat pool *pool-name* { **netmask** *netmask* | **prefix-length** *prefix-length* } [**type rotary**]

ip nat pool *pool-name* { **netmask** *netmask* | **prefix-length***prefix-length* } [**type rotary**]

ïP

no ip nat pool *pool-name*

oÕ@

@	T
pool-name	NAT Pdož
start-ip	NAT PÜ IP ož
end-ip	NAT PÒ IP ož
netmask *netmask*	NAT PÒQAož
type	NAT Pož rotary ?ÿ&ÿ&Ä Ä rotary C6ÿµ rotary @ cisco xXÃož

oFå- Ät#ož

oxX%”o- ¶Få”

oÕ- 14

o¬.6-o- %P}#kÿ%qPke#8ož

oFåb- 1 yYFÿ¥ed net192 ²Pk¨Ü 192.168.12.1kÐ 192.168.12.254k
ÈQAx† 24 AÔyož
5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJ1SQDWSRROQHWSUHIL[OHQJWK

oUP'ô- 1 yÇ¥QA© 0.0.0.0kFÂUP
QHWPDVNFDQQRWEH

2yÿXFÐ IP ²49Ü IP ³kFÂUPy
(QGDGGUHVVOHVVWKDQVWDUWDGGUHVV

3yÿXFÃ IP ³yÐ IP ³ÔcàkFÂUPy
6WDUWDQGHQGDGGUHVVHVRQGLIIHUHQWVXEQHWV

4yÿXFÃ IP ³yÐ IP ³C© 0.0.0.0kFÂUPy
,SDGGUHVVaDUHLQYDOLG

5yÿP%" pool ³y]Få pool ³ckFÂUPy
&QQRWUHGHILQHSRROWSHSOHDVHGHOHWHDQGUHFUHDWH

6yÇ¥ÇÝ 100kFÂUPy
([FHHGWKHPD[SRROFRXQW

7yÇ¥dÝ 32kFÂUP
/HQJWKRISRROQDPHPXVWEHQRPRUHWKDQFKDUFHWHUV

8yÇ¥XÄkFÂUPy
FUHDWHSRROIDLO

9yÇ¥XÄkFÂUPy
FUHDWHSRROIDLOIRUDOORFUDQJHPHP

10yÿP'kÍÂUPy
SRRO[[[QRWH[LVW

oejö- -

oUVÔ- -

9.8 ip nat keepalive

}Fâ G NAT ÃÑ arp ÐE

ip nat keepalive [*keealive_out*]

G NAT ÃÑ arp †

no ip nat keepalive

default ip nat keepalive

op@

@	T
keealive_out	*G* nat ÃÑ arp ÐE

oÞFå-

G nat ÃÑ arp †

ttl	#	DNS •	UDP N6“	0

port_num

Inside global	ÄÎ¶ÊÆ¥Ïõž
Inside local	ÄÎ¶ÊÆ¥Ïõž
Outside local	ÙÎ¶ÊÆ¥Ïõž
Outside global	ÙÎ¶ÊÆ¥Ïõž
timeout	nP¥ NAT ÊÆ¥ÏÄ¥%yaož

oƱP’ĥ- -

oƟjö- -

oƱVĝ- -

1 NSM

1.1 clear ip route

}ž¼kUW@ **clear ip route xXž**

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

o@	@	T
	*	ž¼Ù
	network	ž¼
	netmask	*gH6Ò¼nP.* network xÂFè ¼Ž

oxXo- Ô

oÊo- 14

o6-o- ž¼ˆ•kÀ¼Ge¼M•oÀ¼ž¼k1- ¼¶•ož

oFåb- ž¼ 192.168.12.0 xÂFèÙž

FOBULSURXWH

oUP'Ô- -

oUVôb- -

1.2 ip default-network

FÂbž

ip default-network *network*

ˆÌbž

no ip default-network *network*

ÊFå

default ip default-network *network*

o@	@	T

network	*ž*

oFå- Þ 0.0.0.0/0ož

oxX- ¶Fåož

oÞ- 14

o6-o- Fåc*Dje* **default-network** **Ma**
NMaxèož
Ìe” xnPeõÿÀ connected yè%
kÿLÓž

oFåb- 1 y1 192.168.100.0 ìa9FåÌÑÕDÿ
ož
5XMLFRQ1SURXWHLDO
5XMLFRQ1SGHDXWRUN

2y1 200.200.200.0 ìaÿ 200.200.200.0 ãkèž
5XMLFRQ1SGHDXWRUN

oèo- U… show ip route ôÞèž

oUP’Î- -

oejö- -

oUVt- -

1.3 ip route

Fåž
ip route *network net-mask* { *ip-address* | *interface* [*ip-address*] } [*distance*] [**tag** *tag*] [**permanent**] [**weight** *number*] [**description** *description-text*] [**disabled** | **enabled**] [**global**]

î]Fåž
no ip route *network net-mask* { *ip-address* | *interface* [*ip-address*] } [*distance*]

î]Få
no ip route all

default ip route *network net-mask* { *ip-address* | *interface* [*ip-address*] } [*distance*]

default ip route all

network	
net-mask	
ip-address	y interface
interface	ip-address interface
distance	1
tag	Tag 0
permanent	
weight *number*	1
description *description-text*	*description-text* 1
disabled/enabled	enabled
global	
all	

1k OSPF 110k 125k

1k **show ip route weight** weight

WCMP weight

ip route 0.0.0.0 0.0.0.0 GigabitEthernet 0/0/0 GigabitEthernet 0/0

G% ARP Lkk)ÚCPU yÄ ÏÄ6gÑMož

oFå- 1 y4% 172.16.100.0/24)ÑÉ% 192.168.12.1k'å 115ož

LSURXWH

2yÄNMk3oGNM{žUkÿ.vORÿNMGož9Ö

Ñy<}6NMoFÿÿ 172.16.100.0/24 ÿvOR GigabitEthernet

0/0 NMGož

5XMLFRQ1SURXWHLDELW(WKIW

oèo- U… show ip route ôèož

oUP'ô- -

oejö- -

oUVô- -

1.4 ip routing

o RGOS ÷ IP èž

ip routing

¼ IP èž

no ip routing

Ôå

default ip routing

oÔ

@	T
-	-

oFå- o IP èž

oXo- ÿFåož

oÕ- 14

o6-o- ÑÑQ VOIP ÑUY RGOS ÷ IP ÕoÿU

¼ RGOS IP èž

¼ IP èkÑÑÿUÑGkxÕoÿÄct

	ÍÉÊÕÉÑÉ3Få no ip routing U-Ý
	OÉåò²_Ñg no ip routing ÉÅkÝWk3M•
	g ip routingkÉÅÕž
	hk3¨ no ip routing ÑMoÑokÉÅkož

oFåt-	{4 RGOS ÷ IP èž
	5XMLFRQLSURXVLQ
oèao-	-
oUP'ò-	-
oejö-	-
ouVt-	-

1.5 ip static route-limit

	Fåž
	ip static route-limit *number*
	Fåž
	no ip static route-limit
	Få
	default ip static route-limit

op@	@	T
	number	*k8* 1-10000

oHFåt-	Þ 1024ož
oxXo-	¶Fåž
oHõ-	14
o6-o-	FåC0Fåk **ip static route-limit** Fåk DkFåž **show running-config** Få Fåž
oFåt-	Få– 900 kÉÅÕž

	y1-8 k[illegible] _[illegible] Å [illegible]A64?è [illegible] 1ož
description *description-text*	**g**[illegible] *description-text* 16[illegible] ož
all	**g**[illegible] IPv6 èž

oF å- — ipv6 [illegible]ž

o[illegible]- [illegible]F[illegible]

o[illegible]- 14

o6-o- [illegible] 1k*[illegible]
[illegible]k4[illegible]%
Afè[illegible]Aò OSPF [illegible] 110kU[illegible] 125k[illegible]
OSPF [illegible]GvO[illegible]Už

oFå- 1 y[illegible] 2001::/64)[illegible] 2002::2k'[illegible] 115ož

Ruijie(config)# LSVRX H 0fi[illegible]6A[illegible]0S [illegible] I'[illegible]ZN IMo“0y”[illegible]NIM là

Ðå

default ipv6 static route-limit

@	T
number	*k8* 1-10000ož

Þ 1000

Ðå

14

ipv6 static route-limit Få

show running config Ðå

å ipv6 900 kÀÕž

```
Ruijie(config)#ipv6 static route-limit ?
  o1-10000 o¥Value(default value: 1000)
5LMLFRQLSVWDWLFURXWHLPLW
5LMLFRQLSVWDWLFURXWHLPLW
```

-

-

-

-

1.8 ipv6 unicast-routing

o RGOS IPv6 èž

ipv6 unicast-routing

oÃ©	¡@	T
	-	-

oÃ¤ o IPv6 è

oxÃ¤ ¶Få

oÃ¤ 14

o6-o- VOIP RGOS IPv6 Gož

UY RGOS IPv6 èž

oÃ¤ RGOS IPv6 èž

5XML(config) QLSXFDVWURXWLQ

oèo- -

oUP'Î-

'Î-

a x i m u m - p a

oÊ- 14

o6-o- Få[illegible] maximum-paths Få[illegible]
[illegible] show running config [illegible]
[illegible]
[illegible] ipv4 y ipv6 c[illegible] ipv4)[illegible]
[illegible] ipv6)[illegible]

oFå- [illegible] 10 [illegible]

5[illegible]MLFRQ[illegible]PD[LP[illegible]SDW[illegible]
5[illegible]MLFRQ[illegible]PD[LP[illegible]SDW[illegible]

oèo- * show ip route [illegible] ecmp [illegible]

oUP'ô- -

oej- -

oUV- -

1.10 show ip route

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

[illegible] ecmp [illegible] IP [illegible]
show ip route [[**normal** | **ecmp**] [*network* [*mask*]]]

o[illegible]

[illegible]	T
network	[illegible]
mask	[illegible] ož
longer-prefix	(U#) [illegible]
count	[illegible] ECMP/WCMP [illegible] hk[illegible]
protocol	[illegible] **connected** , **static** [illegible] **ospf**, **ripo**[illegible]
process-id	[illegible]
weight	[illegible]

normal	*gH* [illegible]
ecmp	*gH* [illegible]

o-x-o- [illegible]

o-o- 14

o-6-o-

show ip route 9[illegible] **normal** | **ecmp** | **fast-reroute** [illegible]

o-Fa-o- 1 yY **show ip route x[illegible]**

4yY **show ip route weight xRE**

```
5LXMLHRZSURXWHW
>GLVWDQFHWULFHW@
6>LQD
6>LQD
```

5y**show ip route normal xRE**

```
5LXMLHRZSURXWHQUPDO

&GHHQWH//RFDO66WDWLF
55,32263)%3,,6,692MIORZRXWH
1263)166[WHQOWSH1263)166[WHQOWSH
(263)[WHQOWSH(263)[WHQOWSH
68,6,6VRPDU(,6,6OH/,6,6OH
,$QHDUHFDQLGDWHHDXW
*DWHZRIODVWUHRUWLVRVH
6LVGLUHWOFRHWH9/$
6>LQD
2(>LQD9/$
5>LQD9/$
%LQD
&VGLUHWOFRHWH9/$
&VORFDORVW
```

6y**show ip route ecmp xRE**

```
5LXMLHRZSURXWHPS

&GHHQWH//RFDO66WDWLF
55,32263)%3,,6,692MIORZRXWH
1263)166[WHQOWSH1263)166[WHQOWSH
(263)[WHQOWSH(263)[WHQOWSH
68,6,6VRPDU(,6,6OH/,6,6OH
,$QHDUHFDQLGDWHHDXW
*DWHZRIODVWUHRUWLVWRHWZUN
6>LQD
>LQD
2,$LQD9/$
>LQD9/$
```

7y**show ip route fast-reroute xRE**

```
5LXMLHRZSURXWHDVWUHRXWH
```

```
&GHRQWH//RFDO66WDWLF
55,32263)%3,,6,692MIORZRXWH
1263)166[WHQOWSH1263)166[WHQOWSH
(263)[WHQOWSH(263)[WHQOWSH
68,6,6VRPDU(,6,6OM/,6,6OM
,$QHDUHFDQLGDWHDOW
6WDWXFRGHPPDLQUEEDFNXQUD–
```

8y**show ip route fast-reroute** *network xx*

```
5XMLHRZSURXWHDVWUHRXWH
5RXWLQUIRU
LVWDQFHWULF
5RXWLQFULSWRUORFNV
>PORLD9/$QDWHE263)[WHQ
>EDORLD9/$QDWHE263)[WHQ
```

<y

<	
O	Cyè LyByÁ RyRIP è ByBGP è OyOSPF è I yIS-IS èž
E2	E1yOSPF Bpz E2yOSPF Bq N1yOSPF NSSA Bè 1z N2yOSPF NSSA Bè 2z SUyIS-IS MÈ L1yIS-IS 1 è L2yIS-IS 2 è IAyBèž

20.0.0.0/8	)ÿQx†
[1/0]	’ÿO›
Via 20.0.0.1	% IP ª
00:00:06	#ÿ
VLAN 1	%NM
Routing Descriptor Blocks	ªP% IP ª%4 o,ÿMoe#oo• BGP } ÿ

oUP’ô- -

ouVô- -

1.11 show ip route summary

ôÿ¼ôž

show ip route summary

ôÿ¼ôž

show ip route summary all

oÿ@

@	T
-	-

o×%o- Ô

oÿ¼ô- 14

o6-o- *¥Xôèìôž

oFåt- 1 yôÿ¼ôž

```
5XMLHRZSURXWHRPDU\
&GH12501$-     @                @                @

@
@
                    @
        @
        @
        ,
        @
```

```
        ,6,6
        %3
        727$
```

2y0ÄÏÎ
0ÄÏÎ
oÄÏÎ
ož

```
5LMLHRZSURXWHRPDUDOO
RGH1250$–
```

<ÿ

<	¢
NORMAL	30%UH NORMALy*g¾ ECMPê FRRà ECMPy^Ëz¾ FRRy¼Mèz¾ TOTALyÄÏÎ ož
Memory	ÄÏÎ ož

Entries	ùmnÿ¼ gÔnÿ¼ ô ÿhož
Connected	ÿn¾ÿ¾ÿ¾ÿ¼ Connectedyè¾ StaticyÁ¾ RIPyRIP è¾ OSPFyOSPF è¾ ISISyISIS è¾ BGPyBGP è¾ TOTALyÄnÿ¼
IP routing table count	èƒ
Global	ûdfoÿ¾ÿ¼ GlobalyÞ TOTALyÞèÎ

oÙP'ô- -

oÙVô- -

1.12 show ipv6 route

ÞP IPv6 ôž

show ipv6 route [[*ipv6-prefix* / *prefix-length* [**longer-prefixes**] | *protocol* [*process-id*] | **weight**]]

oÞ

ƒ@	T
ipv6-prefix/prefix-length	*gÙÞÕ* v6 ÈÞÄ
longer-prefixes	*gÙÞÕ* v6 ÈÞÄ
protocol	*gÙÞÿ* **connected** , **local, staticÞÔ** **ÈÞÿ** **ospf** , **ripkÞÄ**
process-id	*gÙÞÕ*
weight	**gÙÞÕ** **ÈÞÄ**

oxÿ- Ô

oÞô- 14

o6-o- *¥Ù IPv6 è'ôž

oFåÞ- ÞÞ VRF ipv6 è

,3Y

<	
S	Cy Ly Sy RyRIP ByBGP OyOSPF I yISIS
E2	E1yOSPF E2yOSPF N1yOSPF NSSA 1z N2yOSPF NSSA 2z SUyIS-IS L1yIS-IS 1 L2yIS-IS 2 IAy
20::/64	)
[20/0]	'
via 10::4	IPv6
Loopback 1	NM

oUP'ĵ- -

oUV@- -

1.13 show ipv6 route summary

ô%ŵ IPv6 èïĵ-ž

show ipv6 route summary

ôÄ IPv6 èïĵ-ž

show ipv6 route summary all

o@ ĵ@

ĵ@	T
-	-

o%-ŵ- ĵ@

o@- 14

o6-o- *¥X0 IPv6 èïĵ-ž

oFå- 1 yôĵ$èïĵ-ž

```
5XMLHRZSURXWHRPDU\
,3URXWLQDEOHPHVHDXWOREDOVFRSHWULH
,3URXWLQDEOHHDXWPD[LPRSDWKLV
/RFDO
&RQWH
6WDWLF
3,3
263)
%3

7RWDO
```

2yôÄ IPv6 èïĵ-ž

```
5XMLHRZSURXWHRPDUDOO

,3URXWLQDEOHRQ
7RWDO
0HRUEWH
```

```
(WULH
/RFDO&EWH6WDWLF5,3263),6,6%3

*OREDO
0HRUEWH
(WULH
    /RFDO&EWH6WDWLF5,3263),6,6%3
```

<

2 FPM

2.1 clear ip fpm counters

Ž FPM ô ipv4 ƒ

clear ip fpm counters

o@ p@

@	T
-	-

o%-xx%o- Ô

o@-Ĩ- 15

o6-.o- -

oFåb- 1 yŽÕ- FPM ô ipv4 ƒ

5XMLFOBULSISPFRXQUV

oUP'ô- -

oUVt- -

2.2 clear ip v6fpm counters

Ž FPM ô ipv6 ƒ

clear ip v6fpm counters

o@ p@

@	T
-	-

o%-xx%o- Ô

o@-Ĩ- 15

o6-.o- -

oFåb- 1 yŽÕ- FPM ô ipv6 ƒ

5XMLFOBULSYSPFRXQUV

oUP'ô- 1 oUP'Î

ouVt- -

2.3 ip session direct-trans-disable

FåUVNM
ip session direct-trans-disable

ô-
no ip session direct-trans-disable

@	T
-	-

oFå- AC kAP D}vnkUgNvkNMÔz

oxX- BFå

oFô- 15

o6-o- -

oFåt- ÕNM
5LMLFRQLISVHVLRQLUFWWUDQVGLVDEOH

oèo- -

oUP'ô- -

oejö-

ouVt- -

2.4 ip session tcp-loose

Få tcp Ä
ip session tcp-loose

ô-

no ip session tcp-loose

o@	@	T
	-	-

oFå- Hgà tcp Ì

ox% - ¶Få%

oÕ- 15

o6-o- -

oFåb- ô- tcp Ì

5XMLFRQJSVHVLRQVFSORRVH

oèo- -

oUP'ô- -

oejö-

ouVt- -

2.5 ip session tcp-state-inspection-enable

Få tcp Ì

ip session tcp-state-inspection- enable

ô-

no ip session tcp-state-inspection- enable

o@	@	T

oFå- AC oAP D}Ÿ tcp Ì

ox% - ¶Få%

oÕ- 15

oó-o- -

oFåt- ãõ- tcp Ä ãe

5LXMLFRQJLSVHVLRQWFSVWDWHQSFWLRQEOH

oèo- -

oUP'ô- -

oejö-

oUVt- -

2.6 ip session threshold

FåNvf

ip session threshold {**icmp-closed** | **icmp-started** | **rawip-closed** | **tcp-syn-sent** | **tcp-syn-receive** | **tcp-closed** | **udp-closed**} { *num* }

ãõ-

no ip session threshold {**icmp-closed** | **icmp-started** | **rawip-closed** | **tcp-syn-sent** | **tcp-syn-receive** | **tcp-closed** | **udp-closed**}

oj@

j@	T			
icmp-closed	ãa-	ICMP Ä*ƒó		10g1 - 2000000000h
icmp-started	ãa-	ICMP Ä*ƒó		300g5 - 2000000000h
rawip-closed	ãa-	ip #Ä*ƒó		10g 1 - 2000000000h
tcp-syn-sent	ãa-	TCP Ä	syn-send v*ƒ10	g5 - 2000000000h
tcp-syn-receive	ãa-	TCP Ä	syn-receive v*ƒó	20g 5 - 2000000000h
tcp-closed	ãa-	TCP Ä	closed v*ƒó	20g5 - 2000000000h
udp-closed	ãa-	UDP Ä*ƒó		10g1 - 2000000000h
num	ãa-			

oFåd- ê– tcp closed ðf 100ož

5ŁMLFRQ1SVMVLRQVLMROGWFSFORVHG

oèao-

oUP'ô- -

oəjö- -

ouV@- -

2.7 ip session timeout

Få

ip session timeout {**icmp-closed** | **icmp-connected** | **icmp-started** | **rawip-closed** | **rawip-connected** | **rawip-established** | **rawip-started** | **tcp-close-wait** | **tcp-closed |** **tcp-established** | **tcp-fin-wait1** | **tcp-fin-wait2 | tcp-syn-receive** | **tcp-syn-sent | tcp-syn-sent2 | tcp-time-wait | udp-closed |** **udp-started** | **udp-connected** | **udp-established**} { *num* }

õ

no ip session timeout {**icmp-closed** | **icmp-connected** | **icmp-started** | **rawip-closed** | **rawip-connected** | **rawip-established** | **rawip-started** | **tcp-close-wait** | **tcp-closed |** **tcp-established** | **tcp-fin-wait1** | **tcp-fin-wait2 | tcp-syn-receive** | **tcp-syn-sent | tcp-syn-sent2 | tcp-time-wait | udp-closed |** **udp-started** | **udp-connected** | **udp-established**}

oø

@	T		
icmp-closed	ê–	ICMP ðvø	10sg5 – 60h
icmp-connected	ê–	ICMP ðvø	10sg5 – 120h
icmp-started	ê–	ICMP ðø	10sg5 - 120 h
rawip-closed	ê–	ip #ðvø	10sg 5 - 60h
rawip-connected	ê–	ip #ðvø	300sg10 - 300 h
rawip-established	ê–	ip #ðvø	300sg10 - 600 h
rawip-started	ê–	ip #ðø	300sg10 - 300 h
tcp-close-wait	ê–	TCP ð tcp-close-wait vø	60sg 10 - 120h
tcp-closed	ê–	TCP ð tcp-closed vø	10sg5 - 20 h
tcp-established	ê–	TCP ð tcp-established vø	1800sg 300 - 604800h
tcp-fin-wait1	ê–	TCP ð tcp-fin-wait1 vø	60sg 10 - 120h
tcp-fin-wait2	ê–	TCP ð tcp-fin-wait2 vø	60sg 10 - 120h
tcp-syn-receive	ê–	TCP ð tcp-syn-receive vø	10sg 5 - 30h

tcp-syn-sent	[illegible]	TCP [illegible]	tcp-syn-sent v[illegible]	[illegible]	10sg 5 - 30h
tc	[illegible]	TCP [illegible]	tcp-sy7(n)-4(_)3ise6-4(n[illegible]P)]T[illegible]C2_0[illegible]TCP[illegible]Tc6.4[illegible]793.0 Td[illegible]<09190879>-7<09	[illegible]	tcptime-wait

osc	[illegible]	P
dp-connectedt	[illegible]	P
ac	[illegible]	P
acte6midt	[illegible]	P

oxX%o- ¶BFâ%

oÞ-ô- 15

o6-o- -

oFåb- ãÑ
5LXMLFRQ1SVHVLRQWUDFNVWDWHWULFWO\

oèo-

oUP'Î-o- -

oejo-

oUVô- -

2.9 show ip fpm counters

ô FPM Ô ipv4 ƒ
show ip fpm counters

oÞ@

@	T
-	-

oxX%o- Ô

oÞ-ô- 15

o6-o- ¥XÑ FPM Ô ipv4 ƒkBS*kBS
ÿ'Î

oFåb- 1 yô FPM Ô ipv4 ƒ
5LXMLHLSISPFRQWHV
URSSHSDFNHWFRQWHV
&RQ5HVRQ
1R,3SDFNHW
%G,3KGHOHWK
%G,3WRWDOOHWK
)UDPHWSNW

```
FKDRZWDWRWLI):UHXH
DG,3FKNVR
,QOLG,3DGGUHV
,QOLG7&IODJ
,QOLG7&VHRH
,QOLG,&3PHVDJHVSH
,QOLGLFPSLQWLDOPHVDJHVSH
,QOLGWFSLQWIODJ
```

oó-o- ¥XÑ ipv4 ŧ'Î

oFåt- 1 yô ipv4 ŧ'Î

5XMLHRZSISPIORZ
3U6UFSGUVWSGU6UF3RUWVW3RUW
9UI6QWH5FWH6WVUFLIGVWLI
FWUOBIODJ

<ŧ

<	¢
Pr	#‘
SrcAddr	ª
DstAddr	)ª
SrcPort	£M
DstPort	)£M
Vrf	ÑMÑ vrf
SendBytes	ŁgNv‡ƒ
RecvBytes	gNv‡ƒ
St	vÑ
srcif	ÑMZ
dstif	)NMZ
ctrl_flag	vOè

oUP'ô- -

ouVô- -

2.11 show ip fpm flows filter

#ô ipv4 ŧ'Î

show ip fpm flows filter *protocol saddr smask daddr dmask*

oÐ@

@	T

oÃ-ô- 15

oÃ-o- ¥X¥Ô ipv4 ¥'Î

oÃ-ô- 1 yô ipv4 ¥'Î

5XMLHRZSISPIORZILOWH
3U6UFSGUVWSGU6UF3RUWVW3RUW
9UI6QWH5FWH6WVUFLIGVWLI
FWUOBIODJ

<Ÿ

<	¢
Pr	#‘
SrcAddr	ª
DstAddr	)ª
SrcPort	£M
DstPort	)£M
Vrf	NMK vrf
SendBytes	LgNv‡ƒ
RecvBytes	gNv‡ƒ
St	vÃ
srcif	NMZ
dstif	)NMZ
ctrl_flag	vOè

oUP'Î-ô- -

oUVô- -

2.12 show ip fpm statistics

ô ipv4 vnÏ

show ip fpm statistics

oÃ@

@	T
-	-

oHõ- 15

o6-o- ¥XÑ ipv4 vnÏÎ

oFåb- 1 y¨ eg ÕÕ- ipv4 vÏÎ

5XMLHRZSISPVWDWLVWLFV
7KDSDFLWRIWKORZVDEOH
$WLKORZRQ
WFRQ
)SPVWDWHQSFWLRQEOH
<ÿ

The capacity of the flow table	Ènƒ
Active flows num	tãnƒ
event count:65,	ÿƒ
Fpm state inspection enable	Ãe

oUP'ô- -

oUVô- -

2.13 show ip v6fpm counters

ô FPM Ô ipv6 ƒ

show ip v6fpm counters

oÕ@

@	T
-	-

o×%o- Ô

oHõ- 15

o6-o- ¥XÑ FPM Ô ipv6 ƒKBS*KBS
ÿ'Î

oFåb- 1 yô FPM Ô ipv6 ƒ

5XMLHKSISPFRQWHV
URSHSDFNHWFRQWHV
RQ5HVRQ

```
1RQ3SDFNH
(UUOHK
)UDPHSDFNH
(UUDGGUHV
,QOLG7&IODJ
,QOLG7&VHH
,QOLG,&39PHVDHVSH
,QOLG,&39LQWLDOPHVDHVSH
,QOLGWFSLQWIODJ
,QOLGWFSIORZWDWH
,QOLGSNWILG
&QHPLQWH
2XWRIZHVLRQLPLW
2XWRIFDSDELOLW\
H!
5HFWHGRUWHPLQWHFRHWLRQRXHV
&XW5HVRQ
2XWRIOLIHWLPH
)ORZHPLQWH
5HFWHGESROLF\
H!
<K
```

<	t

o6-o- ¥XX ipv6 v'Î

oFåt- 1 yô ipv6 v'Î

5XMLHRZSISPIORZ

3U6DGGUDGGU6SRUW

SRUW6HE5HE9UIVWVUFBLIGVWBLGFWUOBIODipv6

Q¸-]<

Ï]<Q¸`GYÈ8VÖ

1. Web AxA•G!5BQ¸
2. AAA
3. RADIUD
4. 802.1x
5. ARP Check
6. L5%G APR !Pk
7. < IP+MAC 4¥
8. DHCP Snooping
9. IP Source Guard
10. DNS SNOOPING
11. IGMP Snooping
12. ACL
13. SCC
14. SSH

1 Web ĺwW

1.1 accounting

%“ãož
accounting { *method-list* }

Mãož
no accounting

@	T
method-list	*cçdož*

Få- default což

-X%”o- %ãa%”ož

ô- 14

6-o-

Måož

no authentication

@	T
method-list	*cqdož*

Få- Þ.. default což

xX%”o- %5å%”ož

ð- 14

6-o- AAA /" web

1 y6 eportalv2 %á. mlist1 což

```
Ruijie(config.tmplt.eportalv2)#authentication mlist1
```

èo- … **show web-auth template**

UP’ô- -

ojö- -

uVt- -

1.3 bindmode

%5%”ož

bindmode { **ip-mac-mode** | **ip-only-mode** }

Må%”ož

no bindmode

@	T
ip-mac-mode	IP+MAC %”k1 IP+MAC ’ÎZGn¾
ip-only-mode	**N** IP %”kN1 IP ’ÎGnz¼ÀMAC ’Õk •JÎ%”

oHFå- **ip-mac-modeož**

oxX%”o- %Få%”ož

oHò- 14

o6-o- -

oFåb- 1 y6 eportalv2 %Ç%”N IP %”ož

```
Ruijie(config.tmplt.eportalv2)# bindmode ip-only-mode
```

oèo- … **show web-auth template Ôp@**

oUP’Î- -

oojö- -

ouVt- -

1.4 clear web-auth acl

Ôi web d%Få

clear web-auth acl [white-url | black-url | black-ip | black-port]

op@

@	T	
white-url	6NÏÄ%	URL
black-url	6NÏÄ%	URL
black-ip	6NÏÄ%	IP
black-port	6NÏÄ%	Port

oxX%”o- Ô%”ož

oHò- 14

o6-o- -

oFåb- 1 y1Ä%Få

```
Ruijie# clear web-auth acl
```

oUP’Î- -

ouV0-

oʉV0- -

1.7 clear web-auth user

clear web-auth user { **all** | **ip** *ip-address* | **mac** *mac-address*

oHFå- HFåž

oxX%”o- %Få%”ož

oHö- 14

o6-o- -

oFåt- 1 yFåy

```
Ruijie(config.tmplt.wechat)# escape interval 5 online-time 10
```

oèo- … **show web-auth template Ôö**

oUP’Î- **-**

oejö- -

ouVt- -

1.9 escape user-try-auth

å– wifi š 3.0 Î%}!ÿž

escape user-try-auth *counts* **online-time** *minutes*

{¾ wifi ¾%}!ÿž

no escape user-try-auth

oÿ@

@	T
counts	*FÎ%* *yyk* 4)
minutes	*FÎ%*

oHFå- HFåž

oxX%”o- %Få%”ož

oHö- 14

oG-o- -

oFåt- 1 yFåÿ

```
Ruijie(config.tmplt.wechat)#escape user-try-auth 4 online-time 15
```

oUP'Î- -

oejö- -

ouVt- -

1.10 fmt

2 W%Få%"kå4g† url "ož

fmt { cmcc-ext1 | cmcc-ext2 | cmcc-mtx | cmcc-normal | cmcc-ext3 | ct-jc | cucc| ruijie| custom }

1 W%Få%"kå4g† url "ož

fmt { ace | ruijie| custom }

ñ URL ƒg 1 Vx 2 VÂ URL ƒž

fmt custom [encry { md5 | des | des_ecb | des_ecb3 | none }] [user-ip *userip-str* **] [user-mac** *usermac-str* **mac-format [dot | line | none]] [user-vid** *uservid-str* **]** [**user-id** *userid-str*] **[nas-ip** *nasip-str* **] [nas-id** *nasid-str* **] [nas-id2** *nasid2-str* **] [ac-name** *acname-str* **] [ap-mac** *apmac-str* **mac-format [dot | line | none]] [url** *url-str* **] [ssid** *ssid-str* **] [port** *port-str* **] [ac-serialno** *ac-sno-str* **] [ap-serialno** *ap-sno-str* **] [additional** *extern-str* **]**

ÎFåž

no fmt custom [user-ip] [user-mac] [user-vid] [**user-id**] **[nas-ip] [nas-id] [nas-id2] [ac-name] [ap-mac] [url] [ssid] [port] [ac-serialno] [ap-serialno] [additional]**

oƒ@

ƒ@	T
cmcc-ext1	**gÿ** url "ož
cmcc-ext2	**kg** url "ož
cmcc-ext3	**f/** ,'½ AC 4Œ URL "ož
cmcc-mtx	**g** AC 4Œ url "ož
cmcc-normal	**gÕ** url "ož
ct-jc	**J** url "ož
cucc	**Lû** url "ož
ace	**u4** ACE ôž
ruijie	**iH** url "ož

oUVt- -

1.11 free-auth

å wifi ož
free-auth pc

ï³ wifi Õ ipož
no free-auth

o@

@	T
-	-

oFå- Fåž

oxX%”o- %Få%”ož

oÕ- 14

o6-o- [pc 4jG

oFåt- 1 yFå pc Ë

```
Ruijie(config.tmplt.wechat)#free-auth pc
```

oèo- … **show web-auth template Ô@**

oUP’Î- **-**

oejö- -

oUVt- -

1.12 gateway-id

å wifidog ÕÆ wifidog Õ gw_id ož
gateway-id *string*

ï wifidog ÕÆ wifidog Õ gw_id ož

no gateway-id

	@	T		
	string	*FõZE*	wifidog #‘<	gw_id ›

Få-	Fõz ož
xX%”o-	%Få%”ož
ö-	14
6-o-	ÌÿÜMsÕ"

%Error: Invalid IP address.

oøjö- -

oʉVö- -

1.15 http redirect direct-site

åøž

http redirect direct-site { *ipv6-address* | *ipv4-address* [*ip-mask*] [**arp**] }

ïåøž

no http redirect direct-site { *ipv6-address* | *ipv4-address* [*ip-mask*] }

oøj@

@	T
Ipv6-address	å Ipv6 ªož
Ipv4-address	å Ipv4 ªož
ip-mask	*g*ÅÅ IPv4 ªQAož
arp	*g*ÅÅ ARP CHECK k"}+å 8g ARP kFå **arp** p/Nå– IPv4 åož

oHFå- IZåž

o×X%"o- ßFå%"ož

oHö- 14

o6-o- o Web ěkÄ Web kpÅ2}y?ÅÅ
UY|?yÅ4xXo{K9å,"ÄUY|
{ož
Ÿå 50 å

oFåb- 1 yå– IP ª 172.16.0.1 {åž

Ruijie(config)# http redirect direct-site 172.16.0.1

oèo- … **show web-auth direct-site** ÔÅ

oUP'Î- 1 yc IP/QA"ož

%Error: Invalid IP address.

oøjö- -

oʉVt- -

1.16 http redirect port

åGjMZ HTTP WEB ŁgMgož

http redirect port *port-num*

ï+jMZ HTTP WEB ŁgMgož

no http redirect port *port-num*

@	T
port-num	HTTP WEB Ł)MZož

oFå-)GM 80 HTTP ož

oxX%”o- BFå%”ož

oFö- 14

o6-o- 1o4kGß HTTP kÕÛ HTTP kÛ

kÕÛ1ŠÏawgÏ

Ïž

2oÕÛGMZ 80 HTTP kÛkÏaž

3o)wÕGMZ HTTP k4xXož

4oFå 10 c)MZkMZ 80 -mÈ8ÄÏž

oFåt- 1 y+GMZ 8080 HTTP WEB ŁgMgož

Ruijie(config)# http redirect port 8080

2y+GMZ 80 HTTP WEB ŁgMgož

Ruijie(config)# no http redirect port 80

oèo- … **show web-auth rdport** ÔMŠÕ

oUP’ô- 1 y)=d#‘MkAò 23ož

%Error: Can't set local reserved port(23) as redirection port.

oejö- -

ouVõ- -

1.17 http redirect session-limit

[illegible]

http redirect timeout *seconds*

ÉMgNÿ 3 aož

no http redirect timeout

o@	@	T
	seconds	**ÉMgNÿ** *seconds* *k H8* 1-10ož

oFå- ÉMgNÿ 3 aož

o-xX%”o- ¶Få%”

oö- 14

o6-o- ÉMgNÿ Ö HTTP GET/HEAD HTTP Mg GET/HEAD TCP Nož

oFå- 1 yÉMgNÿ 4ož

Ruijie(config)# http redirect timeout 4

oèo- … **show web-auth parameter xö@**

oUP’ô- -

oöjö- -

oUVö- -

1.19 ip

}Få portal Æ IP kü%Få%”xX **ipož**

ip { *ip-address* }

Ž HTTP Mg IP ož

no ip

o@	@	T
	ip-address	portal Æ IPv4 ož

oFå- ZÅ- portal Æ IP ož

o×X%”o-	%5å%”
o=o-	14

oHõ- 14

o6-o- -

oFåb- 1 yM¢ portal *'Mož

Ruijie (config)# ip portal source-interface Aggregateport 1

oèo- … **show running-config ôâ**

oUP'ô- -

oejö- -

ouVô- -

1.21 iportal nat enable

FÅ web ě4 NAT ož

iportal nat enable

Êåž

no iportal nat enable

oejö- -

ouVt- -

1.22 iportal retransmit

FåX web š http NMn)ƒ ož

iportal retransmit *times*

Êåž

no iportal retransmit

oÊ@	ƒ@	T
	times	*Mƒ*

oFå- ó 3)ož

oxX%”o- ƒFå%”ož

oÊ- 14

oG-o- -

oFåt- 1 yFå http NMn)ƒ 5)ož

Ruijie (config)# iportal retransmit 5

oèo- … **show running-config ÛÊ**

oUP’Î- -

oejö- -

ouVt- -

1.23 iportal service

FåX web %Ëáž

iportal service [internet *internet-name***] [local** *local-name* **]**

Êåž

1.27 online-popup

ÿsôž
online-popup *url-string*

ïÿsôž
no online-popup

o@	*@*	T
	url-string	*zêÑž*

oHFå- HFåž

o×X%”o- %Få%”ož

oHõ- 14

o6-o- » http://g https://È–

oFåt- 1 yFåzsµ¼
Ruijie(config.tmplt.iportal)#online-popup http://www.ruijie.com.cn

oèo- … **show web-auth template ôÑ@**

oUP’ô- **-**

oejö- -

oUVt- -

1.28 page-suite

ÿ
page-suite *filename*

ï6ÿ
no page-suite

@	T
Filename	*ž*

Få- Kpz

xX%”o- %Få%”ož

14

6-o- Kg‘”{p FLASH portal/zip Ã

Fåb- 1 y6Ã

Ruijie(config.tmplt.iportal)#page-suite ruijiepage

ào- … **show web-auth template Ôp**

UP’ô- **-**

ojö- -

uVt- -

1.29 port

å– portal ÃMož

port { *port-num* }

MÃMZož

no port

@	T
port	portal ÃMZkÃMõ http Mož

Få- MZ 50100kÂ UDP #‘ož

xX%”o- %Få%”ož

14

o6-o- -

oFåt- 1 y6 eportalv2 ÆZ 10000ož

```
Ruijie(config.tmplt.eportalv2)#port 10000
```

oèo- … **show web-auth template Ôø**

oUP'Î- -

oejö- -

ouVt- -

1.30 redirect

ÅMg"ož

redirect { http | js }

ÊMg"ož

no redirect

oø

@	T
http	*J* HTTP 302 #'Ÿ url ôž
js	*J* HTTP 200 kk js Ÿ url ôž

oFå- HH"J jskcmcc ,¼ jsož

oxX%"o- %Få%"ož

oÊ- 14

o6-o- -

oFåt- 1 y6Mg† httpož

```
oxÆe0 Td[(HT)-4(T)-11(P)19(21TT0 1J/C2_0 7DB07F2093TT0A2Tf9>-7<)Tj/C2_0919
```

Ruijie(config.tmplt.eportalv2)#redirect http

1.34 show web-auth control

show web-auth control

@	T
-	-

-X%”o- Ø”

14

-o- -

1 yPNMfåÏ

```
Ruijie(config)#show web-auth control
 Port                          Control   Server Name                Online User Count Vlan Control List
 ------------------------- -------- ---------------------- ------------------ ------------------
 GigabitEthernet 0/1          On        <not configured>        0                    2-17,19
Ruijie(config)#
```

<	¢
Port	IOMdfož
Control	Web ož
Server Name	

o×X%”o-	Ô”
oÕ-	14
o6-o-	-
oFåb- 1	yP+*ęFåž

```
Ruijie(config)#show web-auth direct-arp
Direct arps:
  Address          Mask
  --------------- ---------------
  1.1.1.1          255.255.255.255
  2.2.2.2          255.255.255.255
Ruijie(config)#
```

<	¢
Address	IP ôž
Mask	IP ¢QAož

oUP’ô-	-
oUVô-	-

1.36 show web-auth direct-host

P² web ®ož

show web-auth direct-host

o@	@	T’àTb@B”V"b(R'"sAS"B""pR'42B,"'pR'42EIVryÂ$52E0uaT.h&AS"B""sAS($A!pR'42EIP~

Direct hosts:

<	¢
Address	IP ¢ož
Mask	IP ¢QAož
ARP Binding	© g ARP Ç¿

oUP'î- -

oUV¢- -

1.38 show web-auth noise

¢PFå¢@

show web-auth noise

o¢@

@	T

oFå- Fåž

oxX%"o- Ô"

o¢- 14

o6-o-

oFå¢- 1 yP'™

```
Ruijie#show web-auth noise
Noise Enable:      On
   Aging Timer:      1min
   Hit   Counts:     3
```

oèo-

oUP'î- -

oejö- -

oUV¢- -

1.39 show web-auth parameter

ÎP HTTP MgFåž

show web-auth parameter

o@	@	T
	-	-

o×X%”o- Ô”

oÎo- 14

o6-o- 90 web ÎÎž

oFåt- 1 yÎP HTTP MgFåž

```
Ruijie# show web-auth parameter
  session-limit: 10
  timeout:          5
```

oxX%”o- Ô”

oÕ- 14

o6-o-

oFåÕ- 1 yFå portal-check :

```
Ruijie#sh web portal-check
Check:          Enable
  Interval:     3s
  Timeout:      5s
  Retransmit:   3
Escape:         Enable
Nokick:         Disable
```

oèo-

oUP’Ô- -

oejö- -

ouVÕ- -

1.41 show web-auth rdport

ÎP TCP)€Mož

show web-auth rdport

oÕ@

@	T
-	- -

```
Ruijie#show web-auth    rdport
Rd-Port:
80 443
Ruijie#
```

oUP'ô- -

oUVt- -

1.42 show web-auth template

ip portal Fåž

show web-auth template

@	T
-	-

oxX%"o- Ô"

oHô- 14

o6-o- ÎX0Få

oFåt- 1 yPež

```
Ruijie#show web-auth template
Webauth Template Settings:
-----------------------------------------------------------
  Name:          eportalv1
  Url:           http://17.17.1.21:8080/eportal/index.jsp
  Ip:            17.17.1.21
  BindMode:    ip-mac-mode
  Type:          v1
-----------------------------------------------------------
  Name:          eportalv2
  Url:           http://17.17.1.21:8080/eportal/index.jsp
  Ip:            17.17.1.21
  BindMode:    ip-only-mode
  Type:          v2
  Port:          50100
  Acctmlist:
  Authmlist:
```

```
Ruijie#
```

<	¢
Name	%df
Url	ÆE
Ip	ÆE IP ª
Type	%W portal ÆE v1k8W v2kÃ intra
Port	ÆE MkN8W portal ÆE
Acctmlist	ÃçdkN8WyÃ
Authmlist	ÃçdkN8WyÃ

oUP'ô- -

oUVô- -

1.43 show web-auth user

ÃÎk,ï IP ÔNMoÃ

show web-auth user { **all** | **ip** *ip-address* | **mac** *mac-address* | **name** *name-string* | **session-id** *num* | **escape** }

@	T
ip-address	**6ï** IPv4 ôž
mac-address	*6ï* MAC ª
name-string	*6ïd*
num	*6ï* AAA k¢ ID

oX%"o- Ô"

oÃ- 14

o6-o-

escape }U wifi &[¶

oFå- 1 yP web $FåÎ

```
Ruijie# show web-auth user all
Current user num :   4, online 2
```

```
Address                Online    Time Limit       Time Used      Status   Name
--------------- -------   ------------- -------------- -------- ---------
192.168.0.11      On          0d 01:00:00    0d 00:15:10      Active
192.168.0.13      On          0d 01:00:00    0d 00:00:59      Active    111
192.168.0.25      Off         0d 01:00:00    0d 00:00:59      Create
192.168.0.46      Off         0d 01:00:00    0d 01:00:00      Destroy   222

Ruijie# show web-auth user ip 192.168.0.11
Address          :    192.168.0.11
 Mac                :    00d0.f800.2233
 Port               :    Gi0/2
 Online            :    On
 Time Limit     :    0d 01:00:00
 Time Used       :    0d 00:15:10
 Time Start     :    2009-02-22 20:05:10
 Status            :    Active
```

<	¢
Address	ï IP ôž
Mac	ï MAC ôž
Port	ÌNÕ4ož
Online	¢ïòž
Time Limit	Ìuž'ò0 nP'òž
Time Used	¡ïòž
Time Start	¥ïòž
Status	ÌÅActive nPÌ3oÌ¿Create nPïò• ÌÅDestroy nPïòÌÅž
Name	ïdk%¥WÕPïdk¢

oÙP'ô- -

oùVô- -

1.44 temporary-permit

å– wifi

{¾ wifi ÿgož

no temporary-permit

o@	@	T	
	seconds	*Fågžoÿyak*	30s ~ 60s

oHFå- HFåž

o×X%”o- %Få%”ož

oHö- 14

o6-o- -

oFåt- 1 yFåg

```
Ruijie(config.tmplt.wechat)# temporary-permit 30
```

oèo- … **show web-auth template** Ôp

oUP’Î- **-**

oojö- -

ouVt- -

1.45 time-interval

åsÿž

time-interval *{ hour }*

ÿž

no time-interval

o@	@	T	
	hour	*zÿ* 1 4žH8	0-24ož

oHFå- Þ 1 4ož

o×X%”o- %Få%”ož

oHö- 14

o6-o- "N 0ÿ¥d

oFåt- 1 yFåsÿe 2 4ž

Ruijie(config.tmplt.iportal)#time-interval 2

oèo- … **show web-auth template ÔÊ**

oUP'Î- **-**

oejö- -

oUVt- -

1.46 url

å portal ÿ

url *url-string*

ÿ

no url

oÊ

@	T
url-string	¥"http://" ê "https://"ÿkÉUPFåX† 255 ož

oHFå- ZÅ portal ÿ

oxX%"o- %Få%"ož

oHö- 14

o6-o-

aUP **http redirect homepage** [*url-string*]a"Paÿd

url ª%VöL! http://[ip-address] [ip-address]¶ IP a"ü IP d

oFåt- 1 y6 eportalv1 %ÿ"http://www.web-auth.net/login" ož

Ruijie(config.tmplt.eportalv1)#url http://www.web-auth.net/login

oèo- … **show web-auth template ôp@**

oUP'ô- 1 oc URL "ož

%Error: Invalid homepage URL.

oejö- -

ouVô- -

1.47 version

å– wifi ôž

version {1.0 | 16wifi | 3.0 }

ô. wifi ôž

no version

op@

@	T
-	-

1.48 webauth

WLANSEC %”ø web ðž

webauth

ÎÊåž

no webauth

	@	T
	-	-

	ž
	”ož
	14
	-
1	yFõž
	Ruijie (config)# web-auth accounting jitter-off
	… **show running-config**
	-
	-
	-

1.50 web-auth accounting v2

6“ož

web-auth accounting v2 { default | *name* **}**

ož

no web-auth accounting v2 { default | *name* **}**

	@	T
	name	“df

	ž
	”ož
	14
	-

oFåt- 1 yFåÊçož

Ruijie (config.tmplt.eportalv2)# web-auth accounting v2 default

oèo- … **show running-config ÔÊ**

oUP'Î- **-**

oejö- -

oUVt- -

1.51 web-auth authentication v2

Få web šož

web-auth authentication v2 [default | *name* **]**

ÎFåž

no web-auth authentication v2 [default | *name* **]**

oÊ@

@	T
name	6 web š

oFå- ó. aaa 6óož

oXX%"o- ÎFå%"ož

oÊ- 14

oó-o- **-**

oFåt- 1 yFåož

Ruijie (config.tmplt.eportalv2)# web-auth authentication v2 default

oèo- … **show running-config ÔÊ**

oUP'Î- **-**

oejö- -

oUVt- -

1.52 web-auth acl

d%UYŠU.Y|Bžd%UYŠec|Bž

web-auth acl {

no web-auth bind-portal

o@	@	T
	string	**Ç** portal ÆE

oFå- ož

oxX%”o- WLANSEC Få%”ož

oö- 14

o6-o- -

oFå- 1 yFå MAC ?’ç portal ÆE

Ruijie (wlansec)# web-auth bind-portal eportalv2

oèo- … **show running-config ÔÅ**

oUP’ô- **-**

oöjo- -

1.54 web-auth dhcp-check

Få web š dhcp ÞQÄ dhcp Fåöž

web-auth dhcp-check

ÔÅž

no web-auth dhcp-check

o@	@	T
	-	-

oFå- {ož

oxX%”o- ¶Få%”ož

oö- 14

o6-o- **-**

oFåb- 1 yø dhcp þ

Ruijie (config)# web-auth dhcp-check

oèo- … **show running-config ÔÊ**

oUP'ô- **-**

oejö- -

oUVô- -

1.55 web-auth direct-host

å– IP 8ož

web-auth direct-host { *ipv4-address* [*ip-mask*] [**arp**] | *ipv6-address* | *mac-address*} [**port** *interface-name*]

Hþž

no web-auth direct-host { *ipv4-address* [*ip-mask*] | *ipv6-address* | *mac-address*}

oþ@

@	T
Ipv4-address	ž– IPv4 ª ož
Ipv6-address	ž– IPv6 ª ož
ip-mask	*gÜ*ž– IPv4 ª QAož
port *interface-name*	*gÜ1ï* IP ÕgÇž
arp	*gÜÕ4* ARP CHECK k"}+ž IP 8g ARP k}Få **arp** þ/ÜÅ– IPv4 ž ož
mac-address	ž– MAC ª

oFå- ÞZÄÄÅ Web kÞ'ÅÄ

oxX%"o- ÞFå%"ož

oÕ- 14

o6-o- å"}g Web k-UY|ÄÄ

Ä 50 ÈÄož

oFåb- 1 yå– IP ª 172.16.0.1 ž

Ruijie(config)# web-auth direct-host 172.16.0.1

2yå– MAC ª 0000:5e00:0101 ž

Ruijie(config)# web-auth direct-host 0000:5e00:0101

oèo- … **show web-auth direct-host xõ@**

oUP'Î- 1 yĉ IP/QA"

%Error: Invalid IP address.

oejö- -

oUVt- -

1.56 web-auth dkey-compatible url-parameter

åÃ URL ož

web-auth dkey-compatible url-parameter *string*

HÃ URLož

no web-auth dkey-compatible url-parameter

oĉ@

@	T
string	post @ož

oFå- ZÄåÃöž

oxX%"o- ¶Få%"ož

oĉ- 14

o6-o- ož

oFåt- 1 yå post @ loginož

Ruijie(config)# web-auth dkey-compatible url-parameter login

oèo- … **show running-config xõ@**

oUP'Î- -

oejö- -

oUVt- -

1.57 web-auth enable

Mo Web ŽÃ **web-auth port-control xX**

web-auth enable [**eportalv1 | eportalv2 |** *template-name*]

M¼ Web ž

no web-auth enable

op

{¥ž

no web-auth logging enable

	num	SYSLOG øk?aUø SYSLOG ø[0, 65535] k 0 ’ò

	web š SYSLOG ož
	14
	SYSLOGk‘oM SYSLOG I’òž
1	yFå² SYSLOG ø,ož

Ruijie(config)# web-auth logging enable 0

	* **show running-config**
	-
	-
	-

1.59 web-auth noise

web

web-auth noise [**aging** *agmin*] [**hit** *times*]

no web-auth noise

	agmin	1 kH 1-30ož
	times	ip ñ times)k< 3)kH 3-100ož

oxX%”o- ¶FåX%”ož

oÞ- 14

o6-o- -

oFåt- 1 yFåÞž

Ruijie (config)# web-auth noise aging 1 hit 3

oèo- … **show running-config ÔÊ**

oUP’ô- **-**

oejö- -

oUVt- -

1.60 web-auth offline-detect

Få wlansec ÿk6žÊvOêOož

web-auth offline-detect interval *interval* **flow** *thredshold*

ÊÊå

default web-auth offline-detect

no web-auth offline-detect

interval	*vyukÊyÊHÊ*[1, 65535]	kó 15 ÕÕož
threshold	*vÕykHÊ*[0, 4294967294]	k0 nPvÕyož

oÞ- 15 ÕÕvÕy¿

oxX%”o- wlansec %”

oÞ- 14

o6-o- 10.x o‘ž wlansec ÷ÊÊd N»‰ 11.x ‘Ń‘ž wlansec ¨d

oFåt- 1 yFå wlansec 1 5 ÜÿOz9 5kBytes ž1ÿ

Ruijie(config)#wlansec 1

Ruijie(config-wlansec)# web-auth offline-detect interval 5 flow 5120

oèo- 1 y… **show running** xXUYÖÿ,Fåž

oUP'Î- -

oejö- -

1.61 web-auth ping

y portal ÏÉUož

web-auth ping [**interval** *minutes*] [**retry** *times*]

Êåž

no web-auth ping

oÊ@

@	T
minutes	**yuÊó** 1 ÜkH8 1-65535ož
times	**ÝMnÏó** 3)kH8 0-65535ož

oHFå- ¼ ping yož

oxX%"o- ¶Få%"ož

oHÊ- 14

oÊ-o- -

oFåt- 1 yFå ping yuÊ 5 ÜkMn)ƒ 4)ož

Ruijie (config)# web-auth ping interval 5 rerty 4

oèo- … **show running-config ÔÊ**

oUP'Î- -

oejö- -

oʉV0- -

1.62 web-auth portal

6š. Portal Æž

web-auth portal { eportalv1 | eportalv2 | iportal | wechat | wifidog | *name* **}**

ÎFåž

no web-auth portal { eportalv1 | eportalv2 | iportal | wechat | wifidog | *name* **}**

Æ ˜a à **l3796 Tc 13.98 0 0 13.980 Tdj902.12321.48708 Bf2.43599 T15T90jf1 1 T5Td<82 501.72 3 r16/TT28 Tc 47323.390358.147 Tf[(Ruij)6(e(c)175(**

o@	@	T

oHFåo- ïH Portal 7E url ”ož

oxX%”o- ¶BFå%”ož

oHõ- 14

o6-o- -

oFåt- 1 y{¼ Portal #‘ÿož

```
Ruijie (config)# no web-auth portal extension
Ruijie (config)# http redirect url-fmt ext1
```

oèo- … **show running-config** ÔÕ

oUP’Î- -

oejö- -

oUVõ- -

1.64 web-auth portal key

ÕE’%Wož

web-auth portal key *key-string*

ž1 HTTP WEB LtMge• WEB LÕE’%Wož

no web-auth portal key

o@	@	T
key-string	ÕÕ‡	255 ož

oHFåo- HZ%Wož

oxX%”o- ¶BFå%”ož

oHõ- 14

o6-o- }è Web kÕE’%Wož

		ÿ¿WNu4¶Fåu4?yÿ¿%Wož	
oFåt-	1	ÿ¿%W	*web-authož*
		Ruijie(config)# web-auth portal key web-auth	
oèo-		* **show running-config**	
oUP'ô-		-	
oejö-		-	
oUVô-		-	

1.65

Ruijie (config)# web-auth portal-attribute textinfo

oèo- … **show running-config ÔÔ**

oUP'Î- **-**

oejö- -

oUVÔ- -

1.66 web-auth portal-check

y portal ÏÏUož

web-auth portal-check [**interval** *intsec*] [**timeout** *tosec*] [**retransmit** *retires*]

Êåž

no web-auth porta-check

oÊ@

@	T		
intsec	**yuÊó**	10 akH8	1-1000ož
tosec	**Ïó**	5 akH8	1-1000ož
retries	**ÝlnÏó**	3)kH8	1-100ož

oFå- ¼ portal yož

oxX%"o- ÎFå%"ož

oÊ- 14

o6-o-

ÊB/ÏÜM"®ÏÏÏ{Ï¨

ÏÏ{3ÏÏ

oFåÏ- 1 yFå portal yož

Ruijie (config)# web-auth portal-check interval 20 timeout 2 retransmit 2

oèo- … **show running-config ÔÔ**

oUP'Î- **-**

oejö- -

oUVt- -

1.67 web-auth portal-escape

Få portal !ÿF å portal ZEUžNÞž

web-auth portal-escape

Ŝåž

no web-auth portal-escape

oÞ@	@	T

24 1ea75 ref117.84 4784hg(2 0.24 15.6 ref560.7)]TJ/TT0 494.4 0.24 1567>TjfBT9 258.

web-auth portal-valid unique-name

no web-auth portal-vallid unique-name

	@	T
	-	-

Fåž	
BFå%”ož	
14	

-

```
Ruijie (config)# web-auth sm
```

-

detection

oèo- …

1.72 web-auth template

ïwp%Ws%Få%”ož

web-auth template eportalv1

ïwp#%Ws%Få%”ož

web-auth template { template-name } **v1**

ïwp6Ws%Få%”ož

web-auth template eportalv2

ïwp#8Ws%Få%”ož

web-auth template { *template-name* } **v2**

ïwp%Få%”ož

web-auth template iportal

ïwp#%Få%”ož

web-auth template { template-name } **intra**

ïwp wifidog %Få%”ož

web-auth template wifidog

ïwp# wifidog %Få%”ož

web-auth template { *template-name* } **wifidog**

ïwp wifi %Få%”ož

web-auth template wechat

ïwp#³ wifi %Få%”ož

web-auth template { template-name } **wechat**

ï%åXož

no web-auth template { *template-name* }

op@

@	T
eportalv1	**%**
eportalv2	**6Ws%**
iportal	**%**

iporta

template-name	*[illegible]*

oHFå- [illegible]

o×X%”o- [illegible]

oHõ- 14

o6-o-

- ¶& eportalv1 fPf)û ip ä urlÿP **http redirect ä http redirect homepage** **aP- http redirect ä http redirect homepage aPg0** **aLd**

  P **portal-server aNgád–**

- ‘N_ë Web _¡Q¶ portal ùÉ portal ù"o eportalv1 fPVÄë eportalv1 fP{gÃ IP ä url ãAb‘)ù url ã% VðL! http://*[ip-address]d* portal ù IP IP

	@	T
	seconds	**ÎÿaoŽ8** 30-3600ož 180 aož

oHFå- 180 aož

oxX%”o- ¶FÅ%”ož

oHõ- 14

o6-o- -

oFåt- 1 yÎÅ 60 aož

Ruijie (config)# web-auth update-interval 60

oèo- … **show runing-config ÔÅ**

oUP’Î- -

oejö- -

oUVõ- -

1.74 web-auth valid-ip-acct

FÅH IP ÏÅH IP 1tÅž

web-auth valid-ip-acct [**timeout** *seconds*]

ÔÅž

no web-auth valid-ip-acct

	@	T
	seconds	ÎH IP ÏÿyakÓ 30 aož

oHFå- HFåž

oxX%”o- ¶FÅ%”ož

oHõ- 14

o6-o- "sÕ wifi M+“Ò

oFåt- 1 yFåH IP ž 1 ã

Ruijie(config)# web-auth valid-ip-acct timeout 60

oèo- … **show running-config ôã**

oUP'ô- **-**

oejö- -

ouVô- -

1.75 web-auth wechat-check

Få wifi ÿE

web-auth wechat-check interval *minutes*

ÿE

no web-auth wechat-check

minutes	!ÿFå	30 ã

oFå- Fåž

oxX%"o- ¶Få%"ož

oÿ- 14

o6-o- ù¿¨ï_ÿ© **escape aè-**

oFåt- 1 yFåž

Ruijie (config)# web-auth wechat-check interval 30

oå%"ož s 6 > i s h o r b - n b - i n g c a p e pnutes

oʉVt- -

1.76 web-auth wechat-escape

Få wifi ÿ
web-auth wechat-escape interval *minutes* **times** *count*

{ÿ
no web-auth wechat-escape

H}!ÿ}!ÿX9GxXk **show running-config** **Pož**
web-auth wechat-escape recover

o@

@	T
minutes	!ÿ 60
count	ÿ 5

oHFå- Fåž

oxX%”o- ¶Få%”ož

oHö- 14

o6-o-

¶_ÿs¶	**escape**

oFåt- 1 yFåÿ

Ruijie (config)# web-auth wechat-escape interval 30 times 10

oèo- … **show running-config**

oUP’î- -

oejö- -

oʉVt- -

1.77 web-auth wechat-template wlan-range portal-ip nas-ip

F wifi %pFå

1.78 web-auth wifidog-template wlan-range portal-ip nas-ip url

Få wifidog %pFå

web-auth wifidog-template *name* **wlan-range** *wlanid-start wlanid-end* **portal-ip** *portal-ip-addr* **nas-ip** *nas-ip-addr* **url** *url-string* **[perception]**

ï¿ wifidog %pFå

no web-auth wifidog-template *name*

@	T
name	%df
wlanid-start	IO wlan
wlanid-end	*IO* wlan
portal-ip-addr	portal
nas-ip-addr	wifidog ipk ip GÜ
url-string	portal
perception	*F*

Få

X%”o- ”

14

}ÜÙ wlansecÙ wlansec M¥N_d

Få wifidog %pFåž

5XLMLHFRQILJZHEDXWKZLILGRJWHPSODWHDDDZODQUDQJHSRUWDOLSQDVLS XUOKWWSDXWKZLILGRJ$XWK

… **show running-config**

-

-

-

1.79 web-auth wlan-ac-ip

Fåg URL ACIP

web-auth wlan-ac-ip *ipv4*

ÎFåž

no web-auth wlan-ac-ip

op@

oHõ- 14

o6-o-

oFåt- 1 yFå winterface ø

Ruijie (wlansec)# web-auth winterface winterface

oèo- … **show running-config ôâ**

oUP'ô- **-**

oejö- -

ouVô- -

2 AAA

2.1 aaa accounting commands

+ñ NAS ğxXtg“Ã”ò ž

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

3yçMÏÅxXkeÅ$ÄÅž

oejö- -

ouVt- -

2.2 aaa accounting exec

+£ NAS]tg“Ã”ož

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

Hƒ Exec “Ãž

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

oÎ@

@	T
default	Ï@#¢ç• Exec “Ãož
list-name	#%² Exec “ÃçkUY©ož
method	À**none** **ogroup** ”ÎÎ%k%¢çÃ 4 ¢
none	**gÃ**
group	**gÃu4** RADIUS y TACACS+Ã

oHFå- {“Ã

oxX%”o- Ï%”ož

oHõ- 14

o6-o- RGOS QÄ4ëkõo Exec “Ãgë•

c nonekkg Exec “Ãž

o“ÃkÎ NAS CLI ÎkG“ÃgStart h’ÎÎE

ÎkG“ÃgStop h’ÎÎ%ZÃß Start ’Îk¨

ÎkGß Stop ’Îož

Få Exec “ÃekÀÿgxX“ÃkÎjož

oFåb- 1 yP†.. RADIUS +£ NAS tg“Ãw¨yÈ“Ã

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

oèo- … **show aaa method-list xMÎ]ã** Exec “Ãç’Îož

oUP’Îb- 1 yÇÄ6 groupkÚPjöž

%Group XXX is not existed

2yò group ºu44“ÃÉUPjöž

The accounting does not support this type of group

3yòMËåxXkeÉåsÄåž

oejö- -

ouVt- -

2.3 aaa accounting network

ÿÃk}+|tg“Ãž

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

Hjèž

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

@	T
default	Network “Ãož
list-name	*Ãndož*
start-stop	
method	4
none	g“Ã
group	RADIUS y TACACS+Ã

oFå- {“Ã

oxX%”o- ¶%”ož

oÕ- 14

oo- RGOS *ÉK Ãg“Ãž **start-stop**

oFå- 1 yP†.. RADIUS +Ãg“Ãwÿ“Ã

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

oèo- … **show aaa method-list xXö]Ãçòž**

oUP'ô- 1 yÕÄ6 groupkÚPjöž

%Group XXX is not existed

2yò group ºu44"ÑÚPjöž

The accounting does not support this type of group

3yÕMÈåxXkÈåsÄåž

oejö- -

oUVô- -

2.4 aaa accounting update

o"ÑºÕ¶:ÕÑž

aaa accounting update

{"ÑÑž

no aaa accounting update

oÕ@

@	T
-	-

oFå- "ÑÑož

oxX%"o- ¶%"ož

oÕ- 14

o6-o- ÕÄ AAA ÑÕÑE AAA ÑÑXåÑ
ož

oFåb- 1 yÑ¶ÑÑž

Ruijie(config)# aaa new-model

Ruijie(config)# aaa accounting update

oèo- … **show aaa accounting update xÑÑpož**

oUP'ô- -

oejö- -

oʉVt- -

2.5 aaa accounting update periodic

aaa accounting update periodic *interval*

no aaa accounting update periodic

@	T
interval	“ÃY Ü%ykÂ 1 Ülož

oFå- 5 Ülož

o×X%”o- ß%”ož

oFö- 14

o6-o- ÇÄ AAA AAA ož

oFåb- 1 yPPåe 1 Ü“Ãž

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

oèo- … **show aaa accounting update**

oUP’ô- 1 yÇMÄåxXkFåsÄåž

oejö- -

oʉVt- -

2.6 aaa authentication dot1x

}… AAA g 802.1X ßÇßFåX **aaa authentication dot1x** Få 802.1X ö cçož

2.7 aaa authentication enable

}… AAA g Enable ¶ÞFåX **aaa authentication enable** Enable čçož
aaa authentication enable default *method1* [*method2*...]

ïčçož
no aaa authentication enable default

o@	@	T
	default	Enable čož Enable 9ÞÞ)Qu4čçož
	method	Local o•noneogroup o•enable”ÞÞ%k%ÇÂ 4 • c
	local	**ÛÇgš**
	none	**gš**
	group	**ÞÞ)u4** RADIUS y TACACS+Á
	enable	**…** enable cgš

oFå- -

oxX%”o- Þ%”ož

oÕ- 14

oÇ-o- ÒÕ AAA Enable ÷Ë< À. AAA g Enable ÷ ÒÂ. **aaa authentication enable xÕ9** Enable ož
QÞÞÞgäož
Enable čçFåekEnable ož

oFåb- :1 yP# AAA Enable äčçoč… RADIUS ÞÞ•
ÞÞÞÄñ RADIUS ÞÞgäož

```
Ruijie(config)# aaa authentication enable default group radius local
```

oèo- … **show aaa method-list xÕÞ** Enable čç’ôž

oUP’ô- 1 yÕ#6 groupkÚPjöž

```
%Group XXX is not existed
```

2yò group u44kÚPjöž

```
The authentication does not support this type of group
```

3yÇMÏÖåxXkFå$ÄÄåž

oejö- -

ouVt- -

2.8 aaa authentication iportal

}… AAA gÕ- Portal Web ÏgÏ$FåX **aaa authentication iportal** Õ- å Portal Web ÏçÇož

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

ÏçÇož

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

oÕ-

@	T
Default	ÏÇ#ÇÇÕ- Portal Web ÏÇ Çož
list-name	Õ- Portal Web ÏçÇkUY©ož
method	Ãocal o•noneo•groupo•subs”ÇÇ%ÏÇÇÃ 4 Ç
local	ÎÇÇš
none	gäš
group	ÇÇÇ4 RADIUS ÆÉ
subs	**…** subs ÇÇož

oFå- -

oxX%”o- Ï%”ož

oÕ- 14

o6-o- Õ- AAA Õ- Portal Web ÏÇÀ. AAA gÕ- Portal Web ÏÇ #ÇÕ. **aaa authentication iportal xÏÇ9Õ-** Portal Web ÏÇ ÇÄZÏÇÇož

oFåt- 1 yÏ#%d rds_web AAA Õ- Portal Web ÏçÇoÏÇ… RADIUS ÏÇÇÄÄñ

oèo- … **show aaa method-list xxx** iportal šç'ôž

oUP'ô- 1 yÇÄ6 groupkÉUPjöž

%Group XXX is not existed

2yò group 9u44kÉUPjöž

The authentication does not support this type of group

3yÇMÉåxXkÉåsÄåž

oejö- -

oUVô- -

2.9 aaa authentication login

}… AAA g Loging ÉkÜÇFåX **aaa authenticationC2_53056.74-763c 9 0 0 g Tc0067 Tc 2.27**

authentication login xÔ#ç9 Login ěž

QÿZÄ¤ïgäěž

å– Login ěekÀÿg Login ÄkÉÿ

oFåt- 1 yP#%d list-1 AAA Login ěçoěç… RADIUS ¶E

gkÿ%ÄÿÄñ RADIUS ¶Gěž

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

oèo- … **show aaa method-list xMÔ]ã** Login ěç'Ôž

oUP'Ô- 1 yÇÄ6 groupkÉUPjöž

%Group XXX is not existed

2yò group ¤44kÉUPjöž

The authentication does not support this type of group

3yÇÏÅxXkFå$Äåž

oèoiUm%!R¥Ä\'Y¥ÇVPU'SPÄÀ¥ã=ÄÇyò¤ÉÇ#‡ |Ôl tpUgD2AÇ¥ÇÀ`$VÇ`$G'VÇ¥Ç@R3

oHFå- -

o×X%”o- ¶%”ož

oHõ- 14

o6-o- ìçÕ AAA PPP ¶Ei< À. AAA g PPP ï# OÊÀ. **aaa authentication ppp xÊ#ç9** PPP ěž
QÄZÄçgěž

oFåb- :1 yµ#%d rds_ppp AAA PPP šçoěç… RADIUS ¶E
ğ%ÿ%ÄÄñ RADIUS ¶Ê#ěž

Ruijie(config)# aaa authentication ppp rds_ppp group radius local

oèo- … **show aaa method-list xMÕ]ã** PPP šç’ôž

oUP’ô- 1 yçÄ6=ÊÊ(CPÂÁÔ=/¶6R#ÀÊçÄ¥E¶6ÛRnGÂ¶Ô,%gcçZÄ¶Ôxo Npp¶ÄÊjpÊW1i,5nÊ|#6R'–Ê"USPpÊXU%ÊÔeESÂpÊ0Npp

o¥x X • šÐ ÐHP• rds_p3A079008 aaa met1sslvpn67 0 Td <0919>Tj /TT0 08D

	c
local	**ûlGgš**
none	**gš**
group	**gšù4** RADIUS Æ
subs	**…** subs Ggšž

oFå- -

o×X%”o- ß%”ož

oõ- 14

o6-o- ò- sslvpn kÈ. AAA g sslvpn ÈÕ. **aaa authentication sslvpn xÊ9** sslvpn ož

QÄZÈõgož

oFå- 1 yP#%d rds_sslvpn AAA sslvpn šçoš… RADIUS ÄÈ RADIUS Ãg•

ož

Ruijie(config)# aaa authentication sslvpn rds_sslvpn group radius local

oèo- … **show aaa method-list xÈ]ã** sslvpn šç’ôž

oUP’ô- 1 yÕ#6 groupkÚPjöž

%Group XXX is not existed

2yò group u44šÚPjöž

The authentication does not support this type of group

3yÇMÈåxXkFåšÄåž

oöjö- -

oUVô- -

2.12 aaa authentication web-auth

}… AAA g8W Web šgßFåX **aaa authentication web-auth ÕW** Web • šçož

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

ïšçnož

no aaa authentication web-auth { **default** | *list-name* }

@	T
default	Web
list-name	Web
method	local o•noneo•groupo•subs” 4
local	
none	
group	RADIUS
subs	**…** subs

-

X%”o- %”ož

14

AAA Web AAA Web

À. **aaa authentication web-auth** Web

QÄZ

1 rds_web AAA Web RADIUS

RADIUS

Ruijie(config)# aaa authentication web-auth rds_web group radius none

… **show aaa method-list** web-auth

1 groupkÉPjöž

%Group XXX is not existed

2 group

The authentication does not support this type of group

3

-

-

2.13 aaa authorization commands

+9]ñ NAS CLI ¡¢… AAA xXIÉ¨ÿxXgIÓ¨W2

ÿ¡À¨xXoÿ¨ÿ¡BFåX **aaa authorization commandsož**

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

{¼ AAA xXIÓž

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

oÿ@

@	T
level	}gIÓXß 0~15kÿ¡X}IÓeõ ÿož
default	¡@#¢¨xXIÓ
list-name	#%ˆxXIÓ¨kUY©ož
method	¿moneo• group”ÿ¡%ˆ%ˆ¨¨¨¡ 4 ¢
none	**gIÓ**
group	**ÿ¡¢¨¡4** TACACS+Ã

3yÇMÏÄåxXkeFå$ÄÄåž

oejö- -

ouVt- -

2.14 aaa authorization config-commands

}… AAA +Få%”g,¶BFå%”Cy%”h xXgIÓüg¶BFåxX **aaa authorization config-commandsož**

aaa authorization config-commands

¼ AAA +Få%”xXgIÓž

no aaa authorization config-commands

oÇ@

@	T
-	-

oFå- ¼ AAA +Få%”xXgIÓž

oxX%”o- ¶B%”ož

oÕ- 14

o6-o- Q+Få%”gÕ%”hxXgIÓUY¥X **no ¶Ó**

ÊÇ¶gxIÓÿož

oFåt- 1 yPtFå%”xXIÓ

2.15 aaa authorization console

}… AAA +* Oò V £k ñg xX g I Ó ü ¶ B F å X **aaa authorization consoleož**

aaa authorization console

¼ AAA +*Oò V ñg xXIÓ ž

no aaa authorization console

o@	@	T
	-	

o F å- ¼ AAA +*Oò V ñg xXIÓ ž

o xX%”o- ¶ B%”ož

o Ø- 14

o 6-o- RGOS u4ã Oò V £ U Ë Ÿ Â Ò V Ë ¾ gxXIÓ ž

¼ Oò V xXIÓ ¶ Ø Ò V è XIÓ ç 1 j ož

o F å- 1 y µ F Â Ò V £ XIÓ

	@	T
	default	Exec l
	list-name	#%² Exec l
	method	local o•noneogroup”
	local	
	none	
	group	RADIUS y TACACS+

¼ AAA Exec l

%”o

14

RGOS u4+ NAS CLI CLI 0~15 Login Exec l Exec l CLI Exec l Exec l

1 RADIUS Exec l

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

… **show aaa method-list x** l

1 group

```
%Group XXX is not existed
```

2 group

```
The authorization does not support this type of group
```

3 AAA

-

-

2.17 aaa authorization network

} … AAA PPPo•SLIP **aaa authorization network**

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

¼ AAA lóž

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

o@	@	T
	default	Network lóož
	method	moneo• group”%k%çÅ 4 c
	none	gÒ
	group	RADIUS y TACACS+Æ

o-Få- ¼ AAA Network lóž

o-X%”o- %”ož

o-ö- 14

o-6-o- RGOS u4+ PPPoSLIP #‘glóžålóeÄ

NMglóž

UY6_clóka%kQÄZÄÒp

glóçÅeÒož

RADIUS ê TACACS+ÆkÅÅÒÄÒ

ÅkQÄ4ÄBHòž

o-Få- 1 yP†.. RADIUS ÆÒ

2.18 aaa domain

[illegible]

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

H¥Xož

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

[illegible]	[illegible]	T
	default	[illegible]
	domain-name	*6[illegible]*

[illegible]

[illegible]

[illegible]

[illegible] AAA [illegible] default [illegible]

[illegible] *domain-name 6[illegible]*

[illegible] 32 [illegible]

[illegible] 1 [illegible]

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

[illegible] … **show aaa domain** [illegible]

[illegible] **-**

[illegible] -

[illegible] -

2.19 aaa domain enable

[illegible] AAA [illegible] AAA [illegible]

[illegible] AAA [illegible]

aaa domain enable

{¥ž

no aaa domain enable

o@	@	T
	-	-

oFå- Âd AAA ¥ž

o×X%”o- ¶%”ož

oÕ- 14

o6-o- gÂd AAA Fåj-Fåž

oFåb- 1 yÂd AAA ¥E

Ruijie(config)# aaa domain enable

oèo- … **show aaa domain xÂž**

oUP’Î- **-**

oejö- -

oUVt- -

2.20 aaa local authentication attempts

Få login ¥Âž

aaa local authentication attempts *max-attempts*

o@

2.22 aaa local user allow public account

Få Web Å Web Ö username ã subshktÅ ož

aaa local user allow public account

op@	@	

o×X%”o- ¶%”ož

oÞ- 14

o6-o- Ýž AAA ¥ syslogkUk-ÕÕ4UY*Få
XÛ{øož

oFå- 1 yP¶ aaa ¥ syslogož

Ruijie(config)# no aaa log enable

oèo- … **show running-config xÕø** aaa ¥ syslog ©ož

oUP’ô- **-**

oejö- -

oUVô- -

2.24 aaa log rate-limit

}²… AAA ¥ syslog økü aaa log rate-limit xXgFåž
aaa log rate-limit *num*

Ê AAA ¥ syslog øäž
no aaa log rate-limit

oÞ

@	T
num	*aø* syslog ¥ 0 - 65535y 0ynP’øä 1 - 65535yUFåø5ko 5ož

oFå- 5 k/?aø 5 Ú AAA ¥ syslogož

o×X%”o- ¶%”ož

oÞ- 14

o6-o- Ýž AAA ¥ syslogkUk-ÕÕ4UY*Fåx
XÛ. syslog øäž

oFåb- 1 yP†.. AAA š syslog øa 10 Ú

Ruijie(config)# aaa log rate-limit 10

oèo- … **show running-config xX** AAA š syslog øäž

oUP'ô- **-**

oejö- -

ouVt- -

2.25 aaa new-model

}… RGOS AAA ¶gBFåX **aaa new-model …** AAAož

aaa new-model

¼ AAA ¶ž

no aaa new-model

oÊ

@	T
-	-

oFå- ¼ AAA ¶ž

oxX%"o- B%"ož

oÊ- 14

o6-o- ¥X© AAA xXkÕ.. AAA ¶≤À. **aaa new-model …** AAA ¶ž

ÕÄ AAAkÄ AAA xX1©Fåž

oFåb- 1 yP†.. AAA ¶ž

Ruijie(config)# aaa new-model

oèo- … **show running-config 0 Tde91904850A080578045 r AAA¶ž**

2.26 access-limit

	¿Ò-ò¿Q+	IEEE802.1x Ïòž
	access-limit *num*	
	H/ƒ¿Ò'òž	
	no access-limit	

o¿	¿@	T	
	num	¿¿Q	IEEE802.1x ï

oH-å-	¿Ïòž
o-X%"o-	¿Å%"ož
oH-ò-	14
o6-o-	

default	[illegible]
list-name	*6cçdf*

oFå- ZöcçkçÜ-kÕÿ default cçož

o×X%”o- Få%”ož

oÕ- 14

o6-o- 6… Network “Õçož

oFåb- 1 yPPå– Network “Õçy

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

oèo- … **show aaa domain xXö6** Network “ÕçFåbž

oUP’Î- 1 yöcçdXÝbÚPjöž

```
Method list name is too long
```

2yöcç9FåÚPjöž

```
%WARNING: method list named XXX for this type is not existed
```

3yÇMÖåxXkFå$Äåž

oejö- -

oUVt- -

2.28 authentication dot1x

Få%”Få IEEE802.1x ęož

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

HxXož

no authentication dot1x

oÕ@

@	T
default	[illegible]
list-name	*6cçdf*

oFö- 14

o6-o- -

oFåb- 1 yPPå– Network IÓçy

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

oèo- … **show aaa domain xXö6** Network IÓçFåbž

oUP'ô- 1 yôçqdXkéUPjöž

```
Method list name is too long
```

2yôçq9FåéUPjöž

```
%WARNING: method list named XXX for this type is not existed
```

3yÇMÉåxXkéFåsÄåž

oejö- -

oUVô- -

oUP'ô- 1 yž6%žwkeUP'ôž

User XXX unlocked

oUVô- -

2.31 show aaa accounting update

P"Ãôž

show aaa accounting update

oP@

@	T
-	-

oxX%"o- Ô"oB%"oNM%"

oFô- 14

o6-o- P"Ãôk,"ÃôC"Ãôž

oFåt- 1 yP"Ãôk

Ruijie# show aaa accounting update

oUP'ô- **-**

oUVô- -

2.32 show aaa domain

PÃôž

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

oP@

@	T
default	

oFåb- 1 yPP6d domain.com ˆ¿ož

```
Ruijie# show aaa domain domain.com

============Domain domain.com============
State: Active
Username format: Without-domain
Access limit: No limit
802.1X Access statistic: 0

Selected method list:
  authentication dot1x default
```

oUP'ˆb- **-**

oʉVt- -

2.33 show aaa lockout

Pu login gFåz

show aaa lockout

oƒ@

@	T
-	-

o×X%"o- Ø"o¶%"o NM%"ož

oƒ- 14

o6-o- ¥XPu login gFåz

oFåb- 1 yPu login gFå

```
Ruijie# show aaa lockout
Lock tries:      3
Lock timeout:   15 minutes
```

oUP'ˆb- **-**

oʉVt- -

2.34 show aaa group

ÎP AAA FÂÏž

show aaa group

o@	@	T
	-	-

o×X%”o- Ô”o‡%”o NM%”ož

oÎ-ö- 14

o6-o- ¥XÎP AAA ÏÏ-Âž

oFåb- 1 yÎP AAA ÏÏ-Â

```
Ruijie# show aaa group
Type          Reference   Name
---------- ---------- ----------
radius        1           radius
tacacs+       1           tacacs+
radius        1           dot1x_group
radius        1           login_group
radius        1           enable_group
```

oUP’ô- -

oUVô- -

2.35 show aaa method-list

ÎP AAA ÄÏ¤ož

show aaa method-list

o@	@	T
	-	-

o×X%”o- Ô”o‡%”o NM%”ož

oÎ-ö- 14

o6-o- ¥XP AAA Ëçnož

oFåb- 1 yPP AAA cçnož

```
Ruijie# show aaa method-list
Authentication method-list
aaa authentication login default group radius
aaa authentication ppp default group radius
aaa authentication dot1x default group radius
aaa authentication dot1x san-f local   group angel group rain none
aaa authentication enable default group radius
Accounting method-list
aaa accounting network default start-stop group radius
Authorization method-list
aaa authorizating network default group radius
```

oUP'ô- -

ouVt- -

2.36 show aaa user

P aaa ï¼ž

show aaa user { **all | lockout | by-id** *session-id* **| by-name** *user-name* }

oP@

@	T
all	**ôA** AAA îÎ
lockout	**ôtg** AAA ç'Î
by-id *session-id*	*ô6* session id AAA îÎ
by-name *user-name*	*ô6ïd* AAA îÎ

o×X%"o- Ô"oB%"oNM%"ož

oFô- 14

o6-o- P AAA ï¼ž

oFåb- 1 yPP AAA ï¼

```
Ruijie#show aaa user all
-----------------------------
            Id ----- Name
 2345687901        wwxy
```

```
------------------------------
Ruijie# show aaa user by-id 2345687901
------------------------------
            Id ----- Name
 2345687901          wwxy
```

```
Ruijie# show aaa user by-name wwxy
------------------------------
            Id ----- Name
 2345687901          wwxy
------------------------------

Ruijie# show aaa user lockout

Name                                    Tries        Lock         Timeout(min)
--------------------------------- ---------- ---------- ------------
Ruijie#
```

oUP'ô- -

oUVô- -

2.37 state

ãÄž
state { **block** | **active** }

ãåž
no state

oÞ

@	T
block	FÃ

oʁV@- -

3.2 ip radius source-interface

6 RADIUS ¶ž

ip radius source-interface *interface-name*

ˆ6 RADIUS ¶ž

no radius source-interface *interface-name*

o¶@

@	T
interface-name	radius ¶NM

oÞ¶å-

Þ radius ¶Cå–

o×X%”o-

¶%”

o¶ð-

14

		T
	vrf_name	vrf d

-

-

14

6 vrfož

1 ss #+ vrf vrf_nameož

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

… **show radius group x** RADIUS vrf Fž

-

-

-

3.4 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**

	T
id	id <1-255>
type	type <1-255>

Q+

id	×	type
1	max down-rate	1
2	q	

6	net ip	6
7	user name	7
8	password	8
9	file-directory	9
10	file-count	10
11	file-name-0	11
12	file-name-1	12
13	file-name-2	13
14	file-name-3	14
15	fi e-name-	15
16	max up-rate	75
17	version to server	17
18	flux-max-high32	18
19	flux-max-low32	19
20	proxy-avoid	20
21	dailup-avoid	21
22	ip privilege	22
23	login privilege	42
24	limit to user number	50

o-X%”o- ß%”

o-ö- 14

o-6-o- ¥XUYFÅÅY cèž

o-Fåt- 1 y1 max up-rate # 211ož

Ruijie(IT-ate # y 6 Ö 1 Ñ

the vendor type had allocated by XXXX

oejö- -

ouVõ- -

3.5 radius vendor-specific extend

å– radius ÄŒ id

radius vendor-specific extend

ÊÄŒ id

no radius vendor-specific extend

	@	T
	-	-

oFå- QÄŒ id

o×X%”o- ¶%”

oõ- 14

o6-o- ¥XU+ÄŒ id KÅÁõž

oFåt- 1 yFå radius ÄÅŒ idož

Ruijie(config)# radius vendor-specific extend

oèo- … **show running-config ÔÄÊjož**

oUP’Î- -

oejö- -

ouVõ- -

3.6 radius vendor-specific attribute support

Få radius u4ÃÄ•oÄÅ

radius vendor-specific attribute support { cisco | huawei | ms}

Få radius u4Ã•oÏÅ

no radius vendor-specific attribute support { cisco | huawei | ms}

op@ @

oHFå-	HFåMn“ãž
oxX%”o-	B%”
oHõ-	14
o6-o-	FåW Web ãMnkMnoZãoož
oFåt- 1	yFåW Web ãMnož
	Ruijie(config)#radius-server account update retransmit
oèo-	xX **show running-config 0ãž**
oUP’ô-	-
oojö-	-
ouVô-	-

3.8 radius-server attribute 31

6 RADIUS Calling-Station-ID KgÅÂ MACh”ož

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

}

õ RADIUS Calling-Station-ID KgÅÂ MACh”

no radius-server attribute 31 mac format

@	T
ietf	6 ETFg RFC3580 h • ö k … ‘-’ • ãe ž 00-D0-F8-33-22-ACož
normal	*6onP* MAC ª gh k.. ‘.’ ãe 00d0.f833.22ac ož
unformatted	*6k* 00d0f83322ac ož

}

oFõ- 14

o6-o- B ã RADIUS ¶Æg } 9 802.1x •ãn U Q œ IETF ” k _ Õ¬ 1
Calling-Station-ID KÅ– IETF ”ož

oFåb- 1 yP# RADIUS Calling-Station-ID KÅ IETF ”ož

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

oèo- … **show running-config ô** radius Á mac ”ãž

oUP’ô- -

oejö- -

oUVô- -

3.9 radius-server attribute class

Få RADIUS Class Kåy

radius-server attribute class user-flow-control { **format-16bytes** | **format-32bytes** }

o¬ u V ª sKl" %ðo¬ u V ª |pÖ“q(Œt < •à’é´ðÆúÀg

RADIUS

oèo- … **show running-config ô** radius Fåž

oUP'ô- -

oojö- -

ouVô- -

3.10 radius-server dead-criteria

Fõ- RADIUS ¶Õž

radius-server dead-criteria { **time** *seconds* [**tries** *number*] | **tries** *number* }

Õ- RADIUS ¶Õ

no radius-server dead-criteria { **time** *seconds* [**tries** *number*] | **tries** *number* }

oõ@

@	T
time *seconds*	F[illegible] RADIUS ¶E 3G[illegible] RADIUS [illegible] å– 1-120 aož
tries *number*	Få[illegible]%² RADIUS ¶E L[illegible] RADIUS ¶E [illegible]Uå– 1-100ož

oFå- **time** *seconds* ó 60 aož

tries *number* ó 10)ož

oxX%"o- ¶%"

oFõ- 14

o6-o- %V RADIUS [illegible] RADIUS ¶E

Uo[illegible]XkUY+[illegible]ož

oFåo- 1 y[illegible] 120 ak[illegible] 20)ož

Ruijie(config)# radius-server dead-criteria time 120 tries 20

oèo- … **show radius parameter UÕ-** RADIUS ¶Õå ož

oUP'ô- -

oejö- -

ouVt- -

3.11 radius-server deadtime

Fãg0UÅ RADIUS ¶Ëxtož
radius-server deadtime *minutes*

Ãg0UÅ RADIUS ¶Ëxtož
no radius-server deadtime

oÞ@

@	T
minutes	*Fãg0* RADIUS ¶Ëx% yãoŽÅ– 1-1440 ãg 24 4ž

oFå- *minutes ó* 0 ãg/… RADIUS ¶kÕÀ RADIUS ¶Ëh

oxX%"o- ¶%"

oÕ- 14

o6-o- ÕÕ%V RADIUS ¶Myk" **radius-server deadtime** ¶Ÿ RADIUS

2yp#%² IPv4 Ë RADIUS ÑoMykyoÊ 60 ã
Uk{4“Ã UDP Myož

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

3yp#%² IPv6 ËRADIUS Ñz

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

oèo- … **show radius server U** RADIUS ÑÂož

oUP’ô- -

oejö- -

ouVt- -

3.13 radius-server key

#ÈgÕ- RADIUS ÑE’FMXož
radius-server key [**0** | **7**] *text-string*

H6FMXož
no radius-server key

oÕ@ @ T text-string

oUP'î- -

oejö- -

oUVt- -

3.14 radius-server retransmit

Fõ- RADIUS ÄÄ•YMG)ƒž

radius-server retransmit *retries*

ÕMG)ƒž

no radius-server retransmit

ƒ@	T
retries	RADIUS :MG)ƒKH8© 1-100ož

oFå- ÓMG)ƒ 3ož

o×X%"o- ƒ%"

oÕ- 14

o6-o- AAA %c+gÕ ÄÄ

ÕG6)ƒ RADIUS ÊÄ?)MGÕ

oFå- 1 yƒ6MG)ƒ 4ož

Ruijie(config)# radius-server retransmit 4

oèo- xX **show radius parameter Uõ** radius Mn)ƒÎ ož

oUP'î- -

oejö- -

oUVt- -

3.15 radius-server source-port

Fõ- RADIUS Mož

radius-server source-port *port*

ôž

no radius-server source-port

port	}ÅoŽÅ–	1-65535ož

ÕM	
ÞÞ%	
14	
Õ– RADIUS ÕÕ6Mk¥XFåž	
yP1G radius ÕM# 10000ož	
Ruijie(config)# radius-server source-port 10000	
… **show running-config UÕ–** radius ÕMFåž	
-	
-	
-	

3.16 radius-server timeout

FÕG RADIUS ÕÕ

radius-server timeout *seconds*

ôž

no radius-server timeout

seconds	ÿ%yabŽÅ–	1-1000 aož

ó 5 a	
ÞÞ%	

oHõ- 14

o6-o- ¥XFÕ4G RADIUS 1ž

oFåb- 1 yP1ž 10 aož

Ruijie(config)# radius-server timeout 10

oào- … **show radius parameter UÕÃG** RADIUS 1Fåož

oUP'ô- -

oejö- -

ouVô- -

3.17 radius set qos cos

å– radius G qos NM cos ›

radius set qos cos

ô radius G qos ›

no radius set qos cos

oj@

@	T
-	-

oHFå- Þ qos Få dscp ›

o×X%"o- 1%"

oHõ- 14

o6-o- -

oFåb- 1 y å– radius G qos NM cos ož

Ruijie(config)# radius set qos cos

oào- … **show running-config ô** qos Få

oUP'ô- -

oeÿjö- -

ouVõ- -

3.18 radius support cui

å– radius u4 cui KÅ

radius support cui

{¼ radius u4 cui KÅ

no radius support cui

oÿ@

@	T
-	-

oHFå- Iu4 cui KÅ

o×X%”o- ¶%”

oÿ- 14

o6-o- ¥XUYG}Få radius ku4 cui KÅ

oFåt- 1 y Få radius u4 cui KÅ

Ruijie(config)# radius support cui

oèo- … **show running-config** radius u4 cui KÅ4Ñ

oUP’Î- -

oeÿjö- -

ouVõ- -

3.19 server auth-port acct-port

- AAA **no** **ž**

server { *ipv4-addr* | *ipv6-addr*} [**auth-port** *port1*] [**acct-port** *port2*]

no server { *ipv4-addr* | *ipv6-addr*} [**auth-port** *port1*] [**acct-port** *port2*]

	@	T
	ip-addr	ip ª
	Ipv6-addr	ipv6 ª
	port1	
	port2	

14

1Ö ss 192.168.4.12 5 6ož

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

… **show radius group xX** RADIUS

-

xX	T
aaa group server	aaa
show aaa group	aaa

-

-

3.20 show radius acct statistics

RADIUS

oÈ-o- 14

o6-o- -

oFåb- 1 yP RADIUS ŠÛž

```
Ruijie#show radius auth statistics
Authentication Servers:

Server Index..................................... 1
Server Address................................... 192.168.1.1
Server Port...................................... 1812
Msg Round Trip Time.............................. 0 (msec)
First Requests................................... 0
Retry Requests................................... 0
Accept Responses................................. 0
Reject Responses................................. 0
Challenge Responses.............................. 0
Malformed Msgs................................... 0
Bad Authenticator Msgs........................... 0
Pending Requests................................. 0
Timeout Requests................................. 0
Unknowntype Msgs................................. 0
Other Drops...................................... 0
```

oUP'Î-o- -

ouVt-o- -

3.22 show radius group

P RADIUS Áåž

show radius group

oÈ-o-

@	T
-	-

oxX%"o- P%"oÛ"oNM%"

oÈ-o- 14

o6-o- -

oFåb- 1 yP RADIUS Åaž

```
Ruijie#show radius group
==========Radius group radius==========
Vrf:not-set
Server:192.168.1.1
   Server key:ruijie
   Authentication port:1812
   Accounting port:1813
   State:Active
```

oUP'Î- -

oUVt- -

3.23 show radius parameter

P RADIUS Hpz

show radius parameter

oP

@	T
-	-

oxX%"o- B%"oÔ"oNM%"

oHo- 14

o6-o- -

oFåb- 1 yP RADIUS Hpz

```
[redacted]
Server Timout:     5 Seconds
Server Deadtime: 0 Minutes
```

ouVõ- -

3.24 show radius server

ÎP RADIUS ÃÕZ

show radius server

oÎ@ @ T

@	T
-	-

oxX%”o- ß%”oÔ”oNM%”

oÎõ- 14

```
Statistics:
Authen: request 0, timeouts 0
Author: request 0, timeouts 0
Account: request 20, timeouts 0
```

oUP'ô- -

oUVô- -

3.25 show radius vendor-specific

ÿP RADIUS ÄÅåž

show radius vendor-specific

ø@	T
-	-

oX%"o- ß%"oÔ"oNM%"

oÕ- 14

o6-o- -

oFåt- 1 yÿP RADIUS ÄÅåž

```
Ruijie#show radius vendor-specific
id      vendor-specific          type-value
----- -------------------- ----------
1       max-down-rate            1
2       port-priority            2
3       user-ip                  3
4       vlan-id                  4
5       last-supplicant-vers 5
        ion
6       net-ip                   6
7       user-name                7
8       password                 8
9       file-directory           9
10      file-count               10
11      file-name-0              11
12      file-name-1              12
13      file-name-2              13
```

14	file-name-3	14
15	file-name-4	15
16	max-up-rate	16
17	current-supplicant-version	17
18	flux-max-high32	18
19	flux-max-low32	19
20	proxy-avoid	20
21	dialup-avoid	21
22	ip-privilege	22
23	login-privilege	42
26	ipv6-multicast-address	79
27	ipv4-multicast-address	87

oƁP’ĥ- -

oƁVƀ- -

4 802.1x

4.1 clear dot1x user all

ïÃ- dot1x ïož

clear dot1x user all

o@	@	T
	-	-

oFå-	-
o×X%”o-	Ø”
o-ö-	15
o6-o-	¥XUY1Ã- dot1x ïož
oFå- 1	yïÄ dot1x ïož
	Ruijie#clear dot1x user all
oUP’ô-	-
oVö-	-

4.2 clear dot1x user id

Ÿ dot1x ï session id Ûjož

clear dot1x user id *session-id*

o@	@	T
	- *session-id*	-dot1x ïs session id

oFå-	-
o×X%”o-	Ø”
o-ö-	15

o6-o- }1Ô session id dot1x ïšUY4xXož

oFåt- 1 yí session id 12345678 dot1x ïož

```
Ruijie#clear dot1x user id 12345678
```

oUP'î- -

ouVt- -

4.3 clear dot1x user mac

ÿG dot1x ï mac Ûjož

clear dot1x user mac *mac-addr*

o@	@	T
- mac-addr	-dot1x ïš MAC ª

oFå- -

oxX%"o- Ô"

o- 15

o6-o- }1Ô mac ª dot1x ïšUY4xXož

oFåt- 1 yí mac ª 0012.3456.789A dot1x ïož

```
Ruijie#clear dot1x user mac 0012.3456.789A
```

oUP'î- -

ouVt- -

4.4 clear dot1x user name

ÿG dot1x ïdÛjož

clear dot1x user name *name-str*

o@	@	T
	- *name-str*	-dot1x ñ

o=Få-	-

o×X%”o-	Ô”

o=ô-	15

4.6 dot1x accounting

Fåçnož

dot1x accounting *list-name*

o@	@	T
	list-name	*Ãç*

oFå-	-
oxX%”o-	¶%”k wlan ¶%”
oõ-	15
o6-o-	ò aaa dot1x “ãõ-4xXÊåãož wlansec FåãÊ¶FåÃ
oFåt- 1	yFåÛãož Ruijie(config)# dot1x accounting dot1x-acct
oUP’ô-	-
oUVt-	-

4.7 dot1x acct-update base-on first-time server

Få+)ÙÊ“ãÊž

dot1x acct-update base-on first-time server

{#ÊÃÊž

no dot1x acct-update base-on first-time server

o@	@	T
	-	¼

oFå-	¼
oxX%”o-	¶%”
oõ-	15

oG-o- BÃÊÃG“ãÊxÃ}LÀÀÊG“ãÊ
ÛG“ãÊUYFåxX

oFåt- 1 yFå+)ÀÊÃÊž
Ruijie(config)# dot1x acct-update base-on first-time server

oUP’ô- -

oUVô- -

4.8 dot1x auth-mode

Få%”ož
dot1x auth-mode { **eap | chap | pap** }

oÊ@ | @ | T
- ép( )]TJET0.75 g118.26 46324 442.68 0.24 ref118.26 64764 0.24 15.6 ref271.8 647

oHFå-	-
oxX%”o-	¶%”k wlan ¶%”
oHõ-	15
o6-o-	ò aaa dot1x šõ}4xXÛ¸ãož wlansec Fåa¶Fåã
oFåt- 1	yFåÛ¸ãož Ruijie(config)# dot1x authentication dot1x-authen
oUP’ô-	-
ouVõ-	-

4.10 dot1x dbg-filter

S+Ô mac ãõž
dot1x dbg-filter *H.H.H*

Žõž
no dot1x dbg-filter *H.H.H*

oõ@	@	T
	H.H.H	}ß Mac ª

oHFå-	ß
oxX%”o-	¶%”
oHõ-	15
o6-o-	ÕÛ}ÛzUY*¥X+ãk9õ- ßž
oFåt- 1	yFÔ mac ãõž Ruijie(config)# dot1x dbg-filter 00d0.f800.0001
oUP’ô-	-

ouVõ- -

4.11 dot1x default-user-limit

FåIMUõ
dot1x default-user-limit *num*

ñ
no dot1x default-user-limit

num	1-1000000	

NM%”4Xãqu\RB3)ÜRFÌ\VEÐ

oHFå-

oxX%”o- ¶%”%”

oHõ- 15

o6-o- FåÝ dot1x xX$k4¼MFåUYR4xX

oFåt- 1 yÊ dot1x ?oFåž

Ruijie(config)# dot1x default

oUP’Î- -

ouVt- -

4.13 dot1x encryption only

Få 802.1x WEB ož

dot1x encryption only

¼ 802.1x WEB ož

no dot1x encryption only

oÞ@

@	T
-	

oHFå- Þ 802.1x WEB ¼

oxX%”o- wlan ¶%”

oHõ- 15

o6-o- 802.1x y WEB ž802.1x N%ŽUY4xXož

oFåt- 1 yFå 802.1x y WEB ož

Ruijie(config-wlansec)#dot1x encryption only

oUP’Î- -

ouVt- uVu4

4.14 dot1x event server-invalid action bypass-wlan

Få RADIUS

dot1x event server-invalid action bypass-wlan *wlan-id*

¼ RADIUS

no dot1x event server-invalid action bypass-wlan

	@	T
	wlan-id	wlan id

Þ RADIUS

%”

15

RADIUS wlan

1 yFå RADIUS

```
Ruijie(config)#dot1x event server-invalid action bypass-wlan 10
```

-

u4

4.15 dot1x get-static-ip enable

IP

dot1x get-static-ip enable

IP

no dot1x get-static-ip enable

	@	T

¼

%”

4.17 dot1x mab-username upper

Få MAB ïdÊ ož

dot1x mab-username upper

o@	@	T

oFå-	¼
oxX%”o-	ß%”
oö-	15
o6-o- MAB	ïd>o4Ê oZÊ åXek• MAB ïd1ÊkYá }L MAB ïdÊ ož
oFå- 1	yFå mab ïdÊ ož

```
Ruijie(config)# dot1x mab-username upper
```

oUP’ô-	-
oUVô-	-

4.18 dot1x mab-username format

Få mab ïd”ož

dot1x mab-username format [with-dot | with-colon | with-hyphen]

ïdá

no dot1x mab-username format

o@	@	T

oFå-	¼
oxX%”o-	ß%”

oF@- 15

o6-o- Mab ¶d”© xx-xx-xx-xx-xx-xx kFå with-hyphen
Mab ¶d”© xxxx.xxxx.xxxx kFå with-dot
Mab ¶d”© xx:xx:xx:xx:xx:xx kFå with-colon

oFå- 1 yFå mab ¶d”ož

```
Ruijie(config)# dot1x mab-username format with-hyphen
```

oUP’Î- -

oUV@- -

4.19 dot1x max-req

Få request/challenge ¶Mn)ož

dot1x max-req *num*

o@-

@	T		
num	request/challenge ¶Mn)ko	3kFå	1-10

oF@- 3

oxX%”o- ¶%”

oF@- 15

o6-o- ÅUož

oFå- 1 yFå request/challenge ¶Mn)ož

```
Ruijie(config)# dot1x max-req 2
```

oUP’Î- -

oUV@- -

4.20 dot1x multi-account enable

Få4%² mac ÅÕž

dot1x multi-account enable

{u4%² mac Ãš

o6-o-		U#Fåž
		9² STA ¿kxŽ¶yÈÜYFåxX.
		wlan ¶%”FåOyi¶¶FåOy
oFåb-	1	yFåOyož

no dot1x re-authentication

o@	@	T
	-	-

oFå-	¼
o×X%”o-	¶%”
oÕ-	15
o6-o-	MšÈkÒÉ¼
oFåt- 1	yFåMož

Ruijie(config)# dot1x re-authentication

oUP’ô-	-
ouVt-	-

4.24 dot1x timeout re-authperiod

Fåmož

dot1x timeout re-authperiod *time*

o@	@	T		
	time	*kyakó*	3600kFå	1-65535

oFå- 3600	a
o×X%”o-	¶%”
oÕ-	15
o6-o-	ÅUož
oFåt- 1	yFåMož

Ruijie(config)# dot1x timeout re-authperiod 2400

oUP’ô-	-

oʉVt0- -

4.25 dot1x timeout quiet-period

FÅöž

dot1x timeout quiet-period *time*

o@	@	T		
	time	Åöyakó	10kFå	1-65535

oHFå-	10
oxX%”o-	ß%”
oHö-	15
o6-o-	ÁUož
oFåt- 1	yFÅöž

```
Ruijie(config)# dot1x timeout quiet-period 60
```

oUP’ô- -

oʉVt0- -

4.26 dot1x timeout supp-timeout

Få request/challenge Množ

dot1x timeout supp-timeout *time*

o@	@	T		
	time	request/challenge Mnoyakó	3kFå	1-65535

oHFå- 3	a
oxX%”o-	ß%”
oHö-	15
o6-o-	ÁUož

oFåd- 1 yFå request/challenge fMnoz

```
Ruijie(config)# dot1x timeout supp-timeout 10
```

oUP'ô- -

ouVd- -

4.27 dot1x timeout server-timeout

F

dot1x timeout server-timeout *time*

o @

o=Få- 3	a
o-X%”o-	¶%”R@Xo&Sa

4.30 dot1x valid-ip-acct enable

FBH IP GÃž

dot1x valid-ip-acct enable

BH IP GÃž

no dot1x valid-ip-acct enable

@	T
-	

15

1 yBH IP GÃž

```
Ruijie(config)# dot1x valid-ip-acct enable
```

-

-

4.31 dot1x valid-ip-acct timeout

FBH IP Ž

dot1x valid-ip-acct timeout *time*

Ž

no dot1x valid-ip-acct timeout

@	T
- time	5

5

oÞ¾ö- 15

o6¬-o- o4BH IP $$Ñ9ZBH IP ÒÜÃUYG}¬
Fåb¾ž

oFåb- 1 yš$kBH IP ož

```
Ruijie(config)# dot1x valid-ip-acct timeout 10
```

oUP'Î- -

oUVt- -

4.32 dot1x-mab

Få¬ mab ož

dot1x-mab

ÕÞ¾ž

no dot1x-mab

oÞ¾

@	T
-	-

oÞFå- {¼ mab

oxX%"o- wlan ¶%"

oÞ¾ö- 15

o6¬-o- U#Få
WLAN {¿. mac }¶¾X

oFåb- 1 yo¿¬ mab ož

```
Ruijie(config-wlansec)# dot1x-mab
```

oUP'Î- -

oUVt- Nu¬Vu4

4.33 show dot1x

ô 802.1x #‘ø¿

show dot1x

ø@	@	T
	-	-

oFå-	-

oxX%”o- Ô”oB%”oNM%”

oÕ- 15

o6-o- ¥XUYô 802.1x #‘ø¿ož

oFå- 1 yô 802.1x #‘ø¿

```
Ruijie#show dot1x

802.1X basic information:
   802.1X Status ........................ enable
   Authentication Mode .................. eap
   Authorization mode ................... disable
   Total User Number ..................... 0 (exclude dynamic user)
   Authenticated User Number ............. 0 (exclude dynamic user)
   Dynamic User Number ................... 0
   Re-authentication ..................... disable
   Re-authentication Period .............. 3600 seconds
   Re-authentication max ................. 3 times
   Quiet Period .......................... 10 seconds
   Tx Period ............................ 30 seconds
   Supplicant Timeout .................... 3 seconds
   Server Timeout ........................ 5 seconds
   Maximum Request ....................... 3 times
   Client Online Probe ................... disable
   Eapol Tag ............................ enable
   802.1x redirect ....................... disable
   Private supplicant only ............... disable
```

<Ky

<	¢
802.1X Status	¢Aå 802.1x

Authentication Mode	%”
Total User Number	m3y]E
Authed User Number	
Dynamic User Number	M%”
Re-authentication	M
Re-authentication Period	MÊ
Re-authentication max	Mf
Quiet Period	Ê
Tx Period	request/id Mne
Supplicant Timeout	request/challenge Mne
Server Timeout	E
Maximum Request	f
Client Online Probe	My¼
Eapol Tag	Eapol tag ¼
802.1x redirect	W su ¼
Private supplicant only	My¼

oUP’ô- -

oUVô- -

4.34 show dot1x auth-address-table

ôUqbž

show dot1x auth-address-table [**address** *addr*] [**interface** *interface*]

oq@

@	T
addr	*6* mac P
Interface	*6*

oFå- -

oxX%”o- ô”oB%”oNM%”

oô- 15

o6-o- Uqbž

oFåt- 1 yôUqbž

```
Ruijie #show dot1x auth-address-table
```

Packet-Num : 0

Req-Interval: 30 Seconds

<Ky

<	¢
Auto-Req	Ù
User-Detect	ÿÙ
Req-Interval	Ge

oUP'ô- -

oUVô- -

4.36 show dot1x max-req

ô request/challenge Mn)ø ž

show dot1x max-req

oø@

@	T
-	-

4.37 show dot1x port-control

ðIOM'Îbž

show dot1x port-control [**interface** *interface-type interface-number*]

oÞ@

@	T
interface-type	*M*
interface-number	*M*

o×X%"o- Ø"oB%"oNM%"

oÞ- 15

o6-o- ¥XUYðIOM'Îbž

oFåt- 1 yðIOM'Î

```
Ruijie#show dot1x port-control
Interface Mode          Dynamic-User Static-User Max-User   Authened MAB
--------- ---------- ------------ ----------- --------- -------- ---------
Gi0/5     mac-based   0            0           unlimited no       disable
```

<*Ky

<	¢
Interface	IOMdf
Mode	M%"
Dynamic-User	MÞ
Static-User	MÞ
Max-User	MÎ
Authened	MÒ
MAB	MFå MAB

oUP'Îb- -

oVt- -

4.38 show dot1x private-supplicant-only

ðÎHÐž

show dot1x private-supplicant-only

o@	@	T
	-	-

oxX%”o- Õ”o$%”oNM%”

oÕ- 15

o6-o- ¥XUYõ¡HÕz

oFåb- 1 yõ¡HÕ

```
Ruijie#show dot1x private-supplicant-only

private-supplicant-only: Disabled
```

<Ky

<	¢
private-supplicant-only	¡HÕ

oUP’ô- -

oUVõ- -

4.39 show dot1x probe-timer

õMyõz

show dot1x probe-timer

o@	@	T
	-	-

oxX%”o- Õ”o$%”oNM%”

oÕ- 15

o6-o- ¥XUYõMyõz

oFåb- 1 yõMy@

```
Ruijie#show dot1x probe-timer
Hello Interval      : 20
Hello Alive         : 60
```

<Ky

<	¢

Hello Interval	MyuÊ
Hello Alive	Myž

oUP'ô- -

oUVô- -

4.40 show dot1x re-authentication

ôMÅž

show dot1x re-authentication

oÊ@

@	T
-	-

oXX%"o- Ô"oB%"oNM%"

oÊ- 15

o6-o- ¥XUYôMÅž

oFåb- 1 yôMÅ

```
Ruijie#show dot1x re-authentication

Reauth-Enabled: Disabled
```

<Ky

<	¢
Reauth-Enabled	MÅ

oUP'ô- -

oUVô- -

4.41 show dot1x reauth-max

ô request/id Mn)ø ž

show dot1x reauth-max

oÊ@

@	T
-	-

oxX%”o- @”oB%”oNM%”

oH- 15

o6-o- ¥XUY request/id M)ž

oF-d- 1 y request/id M)ƒ

```
Ruijie#show dot1x reauth-max

Reauth-Max: 3 Times
```

<Ky

<	¢
Reauth-Max	request/id M)ƒ

oUP’-4 0.193 --0 12 9 -3.34 Td ( )Tj 6FAC057804580f -g /C53 -1 <6FAC07550950049206CE6FAD>Tj 6730>56

<	¢
ID	R AAA BH IDkU… show aaa user all xX+ Á
User	ïd
MAC	Ä mac ª
Interface0	Ä
VLAN	Ä vlan id
Auth-State	Ä
Backend-State	Ä
Port-State	ÇMÄ
User-Type	¢
Time	¢

oUP'ô- -

oUVô- -

4.43 show dot1x timeout quiet-period

ôÂ¢ž

show dot1x timeout quiet-period

o¢ @

@	T
-	-

oxX%"o- Ô"o¢%"oNM%"

oÂ¢- 15

o6-o- ôÂ¢ž

oFåb- 1 yôÂ¢

```
Ruijie#show dot1x timeout quiet-period

Quiet-Period: 10 Seconds
```

<Ky

<	¢
Quiet-Period	Â¢

oÂ"sÂ•

oʉVô- -

4.44 show dot1x timeout re-authperiod

ôMěž

show dot1x timeout re-authperiod

oƒ@ -

@	T
-	-

o×X%”o- Ô”oƒ%”o×NM%”

oƒ@- 15

o6-o- ôMěž

oFåt- 1 yôMěe

```
Ruijie#show dot1x timeout re-authperiod

Reauth-Period: 3600 Seconds
```

<Ky

<	¢
Reauth-Period	Měe

oʉP’ô- -

oʉVô- -

4.45 show dot1x timeout server-timeout

ôƒ@ž

show dot1x timeout server-timeout

oƒ@ -

@	T
-	-

o×X%”o- Ô”oƒ%”o×NM%”

oƒ@- 15

o6-o- ôÆ

oFåb- 1 yôÆ

```
Ruijie#show dot1x timeout server-timeout

Server-Timeout: 5 Seconds
```

<Ky

<	¢
Server-Period	Æ

oUP'ô- -

ouVô- -

4.46 show dot1x timeout supp-timeout

ô request/challenge Mnoež

show dot1x timeout supp-timeout

o@

@	T
-	-

o×X%"o- Ô"oB%"oNM%"

oFô- 15

o6-o- ô request/challenge Mnoež

oFåb- 1 yô request/challenge Mnoe

```
Ruijie#show dot1x timeout supp-timeout

Supp-Timeout: 3 Seconds
```

<Ky

<	¢
Supp-Timeout	request/challenge Mnoe

oUP'ô- -

ouVô- -

4.47 show dot1x timeout tx-period

ô request/id Množ

show dot1x timeout tx-period

op@

oFåt- 1 yôß

Vlan id	ï vlan id
Access from port	¥M
Time online	¿
User ip address	ï IP ª
Max user number on this port	¥M¡Ã
Authorization session time	¥Ó
Supplicant is private	¥¢ su
Start accounting	¥“Ã
Permit proxy user	¥Vò
Permit dial user	¥Z
IP privilege	¥ IP Ó
user acl-name	¥G ACL ’Î

oUP’ô- -

oUVô- -

4.50 show dot1x user name

¿Gï mac ôÎ¡ž

show dot1x user name *name*

oÎ¡@

@	T
-name	-ã…

oxX%”o- Ô”o¡B%”oNM%”

oÎ¡ô- 15

oG-o- … show dot1x summary ôï}’ÎkR#+ï4xX%5ôïôž

oFåt- 1 yôÎ¡

```
Ruijie#show dot1x user name ts-user

User name: ts-user
User id: 16777225
Type: static
Mac address is 0023.aeaa.4286
Vlan id is 2
```

```
Access from port Gi0/5
Time online: 0days 0h 0m17s
User ip address is 192.168.3.21
Max user number on this port is 0
Authorization session time is 1000 seconds
Supplicant is private
Start accounting
Permit proxy user
Permit dial user
IP privilege is 0
 user acl-name ts-user_6_0_0 :
```

<Ky

<	¢
User name	ïdf
User id	ï id
Type	¥
Mac address	ï mac ª
Vlan id	ï vlan id
Access from port	M
Time online	¿
User ip address	ï IP ª
Max user number on this port	M/Ã
Authorization session time	Ó
Supplicant is private	¢ su
Start accounting	“Ã
Permit proxy user	Vò
Permit dial user	Z
IP privilege	¥ IP Ó
user acl-name	G ACL ’Î

oUP’ô- -

oUVô- -

5 ARP Check

5.1 arp-check

o ARP ùž

arp-check

¼ ARP ùž

no arp-check

o@	@	T
	-	-

oHå- ¼ ARP Check

oxX%”o- NMFå%”ßå%”

oÑ- 14

o6-o- y¶%cÎÎÿ ARP ¡ÎkèÀ ARP ùž

oFåÙ- ¶ GigabitEthernet 0/1 o ARP Check ÿ

```
Ruijie# configure terminal
Ruijie(config)# interface GigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# arp-check
Ruijie(config-if-GigabitEthernet 0/1)# end
Ruijie# configure terminal
Ruijie(config)# wlansec 1
Ruijie(config-wlansec)# arp-check
Ruijie(config-wlansec)# end
```

oèo- 1 y… **show interface arp-check list xXUÑNMÿ** ARP Check nòž

oUP’Î- -

oejö- -

ouVÙ- -

5.2 show interface arp-check list

ÔNMŽ ARP Check nõž

show { **interface** [*interface-type interface-number*] | **wlan** [*wlan-id*] } **arp-check list**

o@

@	T
interface-type	ÄMº
interface-number	ÄMŹ
wlan-id	¿— WLAN ID

o×X%”o-

Ô”

o-ŏ-

14

o6-o-

ÿ4xXkUYôù IP ¶¸F6ž

oFåt-

Ruijie(config)#show interface arp-check list

INTERFACE	SENDER MAC	SENDER IP	POLICY SOURCE
GigabitEthernet 0/1	00D0.F800.0003	192.168.1.3	address-bind
GigabitEthernet 0/1	00D0.F800.0001	192.168.1.1	port-security
GigabitEthernet 0/4		192.168.1.3	port-security
GigabitEthernet 0/5	00D0.F800.0003	192.168.1.3	address-bind
GigabitEthernet 0/7	00D0.F800.0006	192.168.1.6	AAA ip-auth-mode
GigabitEthernet 0/8	00D0.F800.0007	192.168.1.7	GSN

Ruijie(config)#show wlan arp-check list

INTERFACE	SENDER MAC	SENDER IP	POLICY SOURCE
WLAN 1	00D0.F800.0008	192.168.1.8	GSN

<Ky

<	¢
INTERFACE	NMdf
SENDER MAC	› MAC ª
SENDER IP	› IP ª
POLICY SOURCE	“Ê

oUP’ô-

-

oʁV@- -

6 T¯» ARP °

1.1 anti-arp-spoofing ip

¼ arp -áž

anti-arp-spoofing ip *ip-address*

ï¼ arp -áž

no anti-arp-spoofing ip *ip-address*

o@	@	T
	ip-address	¼ IP ª

o¤Få- ¥y

o×X%”o- F¼”

o¤ö- 14

o6-o- 1o•-

o¬ xfÎXP%ö”3)| w=• s`gU T’fÎ Â ÷hQG ˆÇ@qs=Â ðÆúÀHP• s`f §ð¶©Þ•ü v… q(Œt 3Ü o¬ … 6 g. á#6V… q(Œp ÀÀ V9•E9€t7à 6V… 0

7 IP+MAC –

7.1 address-bind

IP+MAC

address-bind { *ip-address* | *ipv6-address* } *mac-address*

IP+MAC

no address-bind { *ip-address* | *ipv6-address* } *mac-address*

	T	
ip-address	Ç	IPv4
ipv6-address	Ç	IPv6
mac-address	Ç	MAC

—

14

-

1 IPv4+MAC

```
Ruijie# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# address-bind 192.168.5.1 00d0.f800.0001
```

1 **show run** **show address-bind**

-

-

-

7.2 address-bind install

address-bind install

no address-bind install

	@	T

	@	T
	compatible	Ã%”
	loose	!%”
	strict	%

%”

xX%”o- ¶F%”

14

6-o- -

1 ywJ IPv6 %”y

Ruijie# configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Ruijie(config)# address-bind ipv6-mode compatible

… **show run xMÕož**

UP’Î- -

ojö- -

uV- -

7.4 address-bind uplink

F

address-bind uplink *interface-id*

%”

no address-bind uplink *interface-id*

	@	T
	interface-id	AEMã L2AP M

xX%”o- ¶F%”

oH-		14
o6-o-		-
oFad-	1	ywJ IPv6 ”y

```
Ruijie# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# address-bind uplink GigabitEthernet 0/1
```

oao-		…

<₭y

<	₡

8 DHCP Snooping

8.1 clear ip dhcp snooping binding

}í DHCP Snooping ƒGÅ¥Ô”ÿ4xXož

clear ip dhcp snooping binding [*ip*] [*mac*] [**vlan** *vlan-id*] [**interface** *interface-id* | **wlan** *wlan-id*]

oƒ@

@	T	
mac	*6í*	MAC ºož
vlan-id	*6í*	vlan idož
ip	*6í*	IP ºož
interface-id	*6ÑÏ*	
wlan-id	*6Ñ*	WLAN

o×X%”o- Ô”

oÞ- 14

o6-o- ÿ¥XkUYí DHCP snooping ƒGÅž

ÎNUþ IP Source Guard _Ç DHCP ‘7Ì¥ ÿd

oFåb- 1 yµ DHCP snooping ƒGÅ

```
Ruijie# clear ip dhcp snooping binding
Ruijie# show ip dhcp snooping binding
Total number of bindings: 0
NO.    MACADDRESS          IPADDRESS          LEASE(SEC)    TYPE          VLAN
INTERFACE
----- ------------------ --------------- ------------ ------------- ----- --------------------
```

oUP’ô- -

ouVô- -

8.2 ip dhcp snooping

oƒ DHCP Snooping ož

ip dhcp snooping

{¶ DHCP Snooping ož
no ip dhcp snooping

o@	@	T
	-	-

oFå- ¥ož

o×X%”o- ¶Få%”

oÕ- 14

o6-o- ø DHCP Snooping ¶ekUY… show ip dhcp snooping xXô DHCP Snooping ©ož

oFåb- 1 yø DHCP snooping ¶ÿ¼

```
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping
Ruijie(config)# end
```

oèo- 1 y… **show ip dhcp snooping xXUô** DHCP Snooping ©ož

oUP’Î- -

oejö- -

oUVô- -

8.3 ip dhcp snooping bootp-bind

o DHCP Snooping u4 Bootp Ož
ip dhcp snooping bootp-bind

{¼ DHCP snooping u4 Bootp Ož
no ip dhcp snooping bootp-bind

o@	@	T
	-	-

oFå- ¥ož

o×X%”o- ¶ßFå%”

oÞõ- 14

o6-o- ÞÕ DHCP Snooping N+ Bootp ¡ÕGoëk DHCP Snooping + Bootp #‘¡LÁMož Bootp ëkDHCP Snooping 1 Bootp ßÕ€ ož

oFåt- 1 y@ DHCP Snooping u4 Bootp ÿÇ

```
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping bootp-bind
Ruijie(config)# end
```

oèo- 1 y… **show ip dhcp snooping xXUÕ** DHCP Snooping ku4 Bootp Çž

oÙP’Î- -

oeÿö- -

oÙVt- -

8.4 ip dhcp snooping check-giaddr

o DHCP Snooping u4Ô Relay Ìtž
ip dhcp snooping check-giaddr

¼ DHCP snooping u4Ô Relay Ìtž
no ip dhcp snooping check-giaddr

o@

@	T
-	-

oÞFå- ¥ž

o×X%”o- ¶ßFå%”

oÞõ- 14

standard-format	Option82 #ö¾

oHFå- ¥¼ož

oxX%”o- ¶FÅ%”

oHö- 14

o6-o- 1 y*FÅXk1¨ DHCP Ьł option82 ’ÎkDHCP ÿ¾E option82 #ÿ¾ ¾ož

2yo option82 #ÿ¾%”ož

DHCP Snooping option82 _Ÿ DHCP Relay option82 _Ÿd

oFåt- 1 y¶å DHCP Ьł option82 #ÿ¾

```
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping information option
Ruijie(config)# end
```

oèo- 1 y… **show ip dhcp snooping xXUÿ** Option82 ¶ož

oUP’Î- -

oejö- 1 y DHCP Relay option82 cžoÿ-Â DHCP † option82 <Jož

oUVt- -

8.9 ip dhcp snooping information option format remote-id

å– option82 #ÿ¾%”ÿ¾ remote-id #ÿ¾ož

ip dhcp snooping information option format remote-id { **string** *ascii-string* **| hostname** }

Hå– option82 #ÿ¾ remote-id #ÿ¾ož

no ip dhcp snooping information option format remote-id { **string** *ascii-string* **| hostname** }

oÿ@

@	T
string *ascii-string*	Option82 #¾ remote-id ÿ”Ä¾ož
hostname	Option82 #¾ remote-id ÿ”Ä¾ož

oHFå- ¥¼ož

o×X%”o-	¶BF&”
o¤o-	14

oFåt- 1 yeå

2y¥XFåCAEMoAP Mãkÿ¥Mkyjõ¥UNMFåX1kÂž

(b]Ţõ	DHCP ùÇ	TRUST Ç

oFåt- 1 yçåM GigabitEthernet 0/1 TRUST Mÿ

```
Ruijie# configure terminal
Ruijie(config)# interface GigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# ip dhcp snooping trust
Ruijie(config-if-GigabitEthernet 0/1)# end
```

oèo- 1 y… **show ip dhcp snooping xKUÕNMÐž**

oUP'Î- 1 yÇNMFåÿUNÐ¥¥ÇÅ– TRUST Mož

```
% Failed to execute command, because of "Security config conflict".
```

2yÇ 2 CAEMoAP Mãkÿ¥Mg¥XžÉUPjöž

```
% Failed to execute command, because of "Configure is not supported on current interface".
```

oejö- -

ouVÕ- -

8.12 ip dhcp snooping verify mac-address

ø MAC ãž

ip dhcp snooping verify mac-address

{¼ MAC ãž

no ip dhcp snooping verify mac-address

oÕ@

@	T
-	-

oHFå- ¥ÇÅ

o×X%"o- ¶FÅ%"

oÕ- 14

o6-o- › MAC ãÊÛ UNTRUST NM DHCP Lgkèc B› MAC ª

y DHCP † CLIENT MAC <Ç,což MAC ÂÎt'ož

oFåt- 1 yp@ DHCP ϯ MAC ÿ

```
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping verify mac-address
Ruijie(config)# end
```

oèo- 1 y…

2yj@ VLAN1 VLAN10 ø DHCP Snooping ÿ

```
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping vlan 1-10
Ruijie(config)# end
```

oèo- 1 y… **show run xKUÖ?** VLAN Ô{%”ož

oÙP’ô- 1 y3å– VLAN ¨ 1~4094 8ÏÉUPjöž

```
% Failed to execute command, because of "Not supported vlan range".
```

2y36 VLAN ÏÉUPjöž

```
% Failed to execute command, because of "VLAN not exist".
```

oejö- -

oÙVô- -

8.14 ip dhcp snooping vlan vlan-id information option change-vlan-to vlan

å– option82 #Ôy%”ž#¾ circuit-id VLAN 6 VLANož

ip dhcp snooping vlan *vlan-id* **information option change-vlan-to vlan** *vlan-id*

{ž

no ip dhcp snooping vlan *vlan-id* **information option change-vlan-to vlan** *vlan-id*

vlan-id	*6gÉ* VLAN Ź

oÏFå- ¥ož

o×X%”o- NMFå”

oÏ- 14

o6-o- *FåXk¢ DHCP †option82 #ÔkÔy%”ž1 option82 ÿ¾ circuit-id Ê VLAN “w6 VLANož

oFå- 1 yÏå DHCP Ł† option82 #¼ option82 ÿ¾ circuit-id VLAN4094 “ w VLAN4093 ÿ

```
Ruijie# configure terminal
Ruijie(config)# interface GigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# ip dhcp snooping vlan 4094 information option change-vlan-to vlan 4093
Ruijie(config-if-GigabitEthernet 0/1)# end
```

oèao- 1 y… **show run xKUÕkoož**

oUP'Î- 1 y36 VLAN ¨kÉUPjöž

```
% Failed to execute command, because of "VLAN not exist".
```

oejö- -

ouVõ- -

8.15 ip dhcp snooping vlan vlan-id information option format-type circuit-id string

å option82 #Ôy%"ky¾ circuit-id #Ä¥ ASCIIhwgÕož

ip dhcp snooping vlan *vlan-id* **information option format-type circuit-id string** *ascii-string*

{4ož

no ip dhcp snooping vlan *vlan-id* **information option format-type circuit-id string** *ascii-string*

vlan-id	DHCP Ł VLAN
ascii-string	Circuit ID }ÊÄ

oFå- ¥ož

oxX%"o- NMFå%"

oÕ- 14

o6-o- *FåXk¢ DHCP †option82 #ÔkÔy%"k1 option82 y¾ circuit-id ÄÄ†ÄÄ 3 ñ 63 -ož

oFå- 1 yÊå DHCP Ł option82 #k¿ option82 y¾ circuit-id Ä port-name y

```
Ruijie# configure terminal
```

```
Ruijie(config)# interface GigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# ip dhcp snooping vlan 4094 information option format-type circuit-id
string port-name
Ruijie(config-if-GigabitEthernet 0/1)# end
```

oèao- 1 y… **show run xXUÕkoož**

oÙP'Î-o- 1 y36 VLAN ïéUPjöž

```
% Failed to execute command, because of "VLAN not exist".
```

2y36#©. 3 ñ 63 ïéUPjöž

```
% Failed to execute command, because of "Circuit-ID string must be 3 to 63 characters".
```

oeÿö- -

oÙVõ- -

8.16 ip dhcp snooping vlan max-user

åÙM6 vlan ÿ¡ž

ip dhcp snooping vlan *vlan-word* **max-user** *user-number*

{4ož

no ip dhcp snooping vlan *vlan-word* **max-user** *user-number*

oÕ@

@	T
vlan-word	ÿ vlan 8
user-number	ÿ

oÙFå- ¥ož

o×X%"o- NMFå%"

oÙõ- 14

o6-o- *FåXkoÂNMy VLAN ÿ¡,ÈÙYÏq- DHCP xèž

oFåÏ- 1 yÈÙM 1 VLAN 1~10 C VLAN 20 ÿ¡ÈÙ 30 ÿ

```
Ruijie# configure terminal
Ruijie(config)# interface GigabitEthernet 0/1
```

```
Ruijie(config-if-GigabitEthernet 0/1)# ip dhcp snooping vlan 1-10,20 max-user 30
Ruijie(config-if-GigabitEthernet 0/1)# end
```

oèao- 1 y… **show run xKUÕkoož**

oUP'ĵo- 1 y3NM DHCP snooping TRUST MkÚPjöž

o¬ àúÐ 1

oeÿjö- -

oʉVõ- -

8.18 show ip dhcp snooping

}ô DHCP Snooping ÷ÕÕ"ÿ4xXož

show ip dhcp snooping

oÕ@

@	T
-	-

o×X%"o- Õ"

oÕ- 14

o6-o- ÿ4xXkUYôù DHCP Snooping Fõž

oFåb- 1 yôù DHCP Snooping Fõ

```
Ruijie# show ip dhcp snooping
Switch DHCP snooping status : ENABLE
DHCP snooping Verification of hwaddr status : DISABLE
```

oƱP’ƀ- -

oʁV@- -

9 IP Source Guard

9.1 ip source binding

¨ IP ¶¸Ãž

ip source binding *mac-address* **vlan** *vlan-id ip-address* { **interface** *interface-id* **| wlan** *wlan-id* **| ip-mac | ip-only** }

Î+Ãž

no ip source binding *mac-address* **vlan** *vlan-id ip-address* { **interface** *interface-id* **| wlan** *wlan-id* **| ip-mac | ip-only** }

o@	@	Tcsp/TT00.0162 Tc 0.D<6FAC05400(a) Tf0.28 0 Td(8.18 491.1 .24062B06TJ/TT<>Tj/TT0

```
Ruijie(config)# ip source binding 0000.0000.0002 vlan 1 1.1.1.2 wlan 1
Ruijie(config)# end
```

2yÊ&Ä8Ä¡kwÊ© IP+MAC ÿÇ

```
Ruijie# configure terminal
Ruijie(config)# ip source binding 0000.0000.0001 vlan 1 1.1.1.1 ip-mac
Ruijie(config)# end
```

3yÊ&Ä8Ä¡kwÑ IP ÿÇ

```
Ruijie# configure terminal
Ruijie(config)# ip source binding 0000.0000.0001 vlan 1 1.1.1.1 ip-only
Ruijie(config)# end
```

oèo- 1 y… **show ip source binding xXUÖ** IP ÿÇ€ož

oUP'Ô- 1 y… no xXÍÁÅÅÅÅ¡kÉUPjöž

```
% Failed to execute command, because of "No such binding entry
[mac 0000.0000.0001 ip 1.1.1.1 vlan 2 GLOBAL]".
```

2yFÅ£3ÿ VLAN wkÉUPjöž

```
% Failed to execute command, because of "VLAN 4094 not exist".
```

3yFÅ£3ÿMÊCAEMoAP MÅxÿMkÉUPjöž

```
% Failed to execute command, because of "Configure is not supported on current interface".
```

oejö- -

oUVÔ- -

9.2 ip verify source

ÅM IP Source Guard ož

ip verify source [**port-security**]

{ÅM IP Source Guard ož

no ip verify source

oÊ@

@	T
port-security	Få IP Source Guard gÂ IP+MAC yož

oFå- ¥ož

o×X%”o- NMFå%”ĝå%”

oÞö- 14

o6-o- 1 y*¥XÞM IP Source Guard kUY+ÿĝÂ IP ykĝÂ IP+MAC yož

2yNu4ÄÑµ 2 CAEMoAP Mo/xÿNMYCÑµ WLAN FåXožÜN M1FÅž

- IP Source Gourd _ÄÿW DHCP Snooping 0A_"d/j
- Çÿst IP Source Gourd _ÄÿW/ÿUÇÜ¥
- (ÎÏ

oFåÏ- 1 yÇÅEMy¿– WLAN IP Source Guard kN+ÿĝÂ IP yy

```
Ruijie# configure terminal
Ruijie(config)# interface GigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# ip verify source
Ruijie(config-if)# end
Ruijie(config)# wlansec 1
Ruijie(config-wlansec)# ip verify source
Ruijie(config-wlansec)# end
```

2yÇåM 2 IP Source Guard k+ÿĝÂ IP+MAC yy

```
Ruijie# configure terminal
Ruijie(config)# interface GigabitEthernet 0/2
Ruijie(config-if-GigabitEthernet 0/2)# ip verify source port-security
Ruijie(config-if)# end
Ruijie(config)# wlansec 2
Ruijie(config-wlansec)# ip verify source port-security
Ruijie(config-wlansec)# end
```

oèo- 1 y… **show ip source binding xKUÖ** IP Source Guard ¡ïöž

2y… **show run xKUÖxKÊž**

oÙP’Ô- 1 yò DHCP ’MqkÉUPjöž

% Failed to execute command, because of “Security configuration conflict in *interface name*".

oøjö- 1 yo IP Source GourdkÊåïÊž

oÙVÔ- -

9.3 Ip verify source exclude-vlan

ÊM6 IP Source Guard Ù VLAN ož

ip verify source exclude-vlan *vlan-id*

ÎÊM IP Source Guard Ù VLAN ož

no ip verify source exclude-vlan *vlan-id*

o@	*vlan-id*	IÊM IP Source Guard Oò vlan id

oÊFå- ¥ož

o×X%”o- NMFå%”ßå%”

oÊ- 14

o6-o- 1 yo IP Source Guard ÊMk*¥XUYOÊM? VLAN I IP Source Guard Oò

? VLAN 8Ä IP tyè Nygož

2yÊM¼ IP Source Guard ek6Ù VLAN -ktŽož

3yu4Ä µ 2 CAEMoAP Mo/xÿNMÊµ WLAN Fåž

ÇN IP Source Guard Ç Hó VLANd

oFåt- 1 yÊM IP Source Guard w6Ù VLANy

```
Ruijie# configure terminal
Ruijie(config)# interface GigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# ip verify source
Ruijie(config-if-GigabitEthernet 0/1)# ip verify exclude-vlan 1
Ruijie(config-if)# end
Ruijie(config)# wlansec 1
Ruijie(config-wlansec)# ip verify source
Ruijie(config-wlansec)# ip verify exclude-vlan 1
Ruijie(config-wlansec)# end
```

oèo- 1 y… **show run xXUÒxÊž**

oÙP’Î- -

oöjö- -

oʉVt0- -

9.4 show ip source binding

ô IP ¶Ĝ-ôž

show ip source binding [*ip-address*] [*mac-address*] [**dhcp-snooping**] [**static**] [**vlan** *vlan-id*] [**interface** *interface-id*] [**wlan** *wlan-id*]

o¶@

¶@	T
ip-address	¶P+• ip ¶Ĝ
mac-address	¶P+• mac ¶Ĝ
dhcp-snooping	¶P¶Ĝ
static	¶P¶Ĝ
vlan-id	¶P+• vlan ¶Ĝ
interface-id	¶P+¶ÜNMÎÇž
wlan-id	¶P– WLAN ¶Ĝž

o×X%”o- Ô”

o¶ö- 14

o6-o- ÿ4xXkUYôù IP ¶Ĝ-ôž

oFåt- 1 y¶Ÿ

```
Ruijie# show ip source binding static
Ruijie#show ip source binding static
Total number of bindings: 5
NO.    MACADDRESS          IPADDRESS          LEASE(SEC)    TYPE          VLAN
INTERFACE
----- ------------------ --------------- ------------ ------------- ----- --------------------
1      0001.0002.0001     1.2.3.2          Infinite     Static        1     Global
2      0001.0002.0002     1.2.3.3          Infinite     Static        1     GigabitEthernet 0/5
3      0001.0002.0003     1.2.3.4          Infinite     Static        1     Global
4      0001.0002.0004     1.2.3.5          Infinite     Static        1     Global
5      0001.0002.0005     1.2.3.6          Infinite     Static        1     WLAN 1
```

<¶Ky

<	¶
Total number of bindings	ù Binding ¶Ĝ

NO.	“£Z
MACADDRESS	ï MAC ª
IPADDRESS	ï IP ª
LEASE(SEC)	“£ž
TYPE	“£
VLAN	Ñ VLAN
INTERFACE	ÄMdfã– WLAN ID

oUP’ô- -

oUVô- -

9.5 show ip verify source

ô IP Source Guard ¡ïž

show ip verify source [**interface** *interface-id*] [**wlan** *wlan-id*]

o@	@	T
interface-id	ª+ÄM¡¾
wlan-id	ª– WLAN ¡¾

oxX%”o- Ô”

oÕ- 14

o6-o- ü4xXkUYôù IP ÕÕù IP Source Guard u4“Ò
y

z Inactive-restrict-offkÇKNMZÄ IP Source Guard ož

z Inactive-system-errork9Ïc-1Ç¡ìž

z ActivekÇ¾¡¾ž

oFåb- 1 y@y

```
Ruijie # show ip verify source
Total number of bindings: 7
NO.    INTERFACE                FILTERTYPE   FILTERSTATUS              IPADDRESS
MACADDRESS        VLAN TYPE
----- -------------------- ----------- ---------------------   --------------- --------------- -------- -------------
1      Global                  IP+MAC       Inactive-system-error   192.168.0.127    0001.0002.0003   1
```

```
Static
2       GigabitEthernet 0/5   IP-ONLY       Active                    1.2.3.4          0001.0002.0004   1
DHCP-Snooping
3       Global                IP-ONLY       Active                    1.2.3.7          0001.0002.0007   1
Static
4       Global                IP+MAC        Active                    1.2.3.6          0001.0002.0006   1
Static
5       GigabitEthernet 0/1   UNSET         Inactive-restrict-off   1.2.3.9          0001.0002.0009   1
DHCP-Snooping
6       GigabitEthernet 0/5   IP-ONLY       Active                    Deny-All
7       WLAN 1                IP-ONLY       Active                    Deny-ALL
```

<Ky

<	¢
NO.	“£Z
INTERFACE	ÄNMÄµ WLAN
FILTERTYPE	¢E
FILTERSTATUS	Ä
IPADDRESS	ï IP ª
MACADDRESS	ï MAC ª
VLAN	Ñ VLAN
TYPE	¥, DHCP Snooping Ã Få

10 DNS SNOOPING

10.1 clear free-url

Žš URL 'ôž

clear free-url

oõ@

@	T
-	-

o-X%"o- Ôž"oß%"

oÞ-o- 14

o6-o- ¥XUYŽš URL 'ôž

oFåb- 1 yŽš APP 'Î

```
Ruijie(config)#clear free-url
```

oUP'ô- -

oUVô- -

10.2 free-url

Fåa URLož

free-url { **weixin** | **sina** | **iphone** | **url** *url* }

Hšß URLož

no free-url { **weixin** | **sina** | **iphone** | **url** *url* }

oõ@

oHFå- ÞqFåž

o×X%”o- ß%”

oÞõ- 14

o6-o- š URL UYcžbÚž

oFåb- 1 yFå URLož

```
Ruijie#configure terminal
Ruijie(config)# free-url weixin
Ruijie(config)#exit
```

oèao- 1 y… **show free-url xXõš** URL ’Îbž

oUP’Îb- -

oejö- -

oUVõ- -

10.3 show free-url

ôš URL ’Îbž - -

Â ð

_ 0

```
Total number of ip address       : 11


======================== free-url domain name table ==========================

Host                             type
```

11 IGMP Snooping

11.1 clear ip igmp snooping gda-table

ŽGnõ%ž
clear ip igmp snooping gda-table

o@	@	T
	-	-

o-X%”o- Ô”

o-Ô- 14

o-o- IGMP Snooping Gn%yVLAN ŹoÁNMoÈMož
VLAN ŹyŽ%Ô%Gnõ%ž
%Gn¼YmÈNMgUÁNMÁNMbÁMkï
ož
%Gn¼YmÈNMgUÁNMÁNMbÁMkïož. **clear ip igmp snooping gda-table xÁMož**

oFåb- Ruijie# clear ip igmp snooping gda-table

oUP’Ô- -

oUVô- -

11.2 ip igmp snooping

Bo IGMP Snooping wå– IVGL g%”ož
ip igmp snooping

¼ IGMP Snoopingož
no ip igmp snooping

Ô IGMP Snooping HFå
default ip igmp snooping

o@	@	T

-	-

oFå- ¼ IGMP Snooping

o×X%”o- ¶%”ê AC ap-config %”

oFõ- 14

o6-o- ¨ IVGL %”k_ VLAN ÁvÇoÑÊc%² VLAN ÊM
LNvÁvzÑvñ%² VLAN ÁvžQ¸c VLAN ÊMGož AC
¨ ap-config %”* **igmp snooping xÊ** AP Ák* **no igmp snooping ¼**
AP Á

oFåb- 1 yo IGMP Snooping IVGL %”ož

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

oèo- * show ip igmp snooping xXôù IGMP Snooping Ù

oUP’ô- 1 yÕ4 IVGL %”kÉUPjöž

```
% Error: It’s invalid to configure IVGL mode in this product.
```

2yÕ4 8CÁ¥gOkÉUP¶8CÁ¥gOòž

	@	T
	-	-

Få-	14
xX%”o-	¶%”
ö-	14
o-	M½ekÕvñ Leave k+NR+ G M½ož 4ek G Gdž Leave † IGMPv2 Leave YC IGMPv3 include wk~ Report ož M½N 9 MQN% VÕUY-k!yož
Fåt- 1	yoM½•
	Ruijie(config)# ip igmp snooping fast-leave
ào-	* show ip igmp snooping xXõ@
UP’ô-	-
ojö-	-
uVt-	-

11.4 ip igmp snooping host-aging-time

Få IGMP Ãž

ip igmp snooping host-aging-time *seconds*

ï IGMP Ãž

no ip igmp snooping host-aging-time

Ê IGMP Ãž

default ip igmp snooping host-aging-time

	@	T
	seconds	ž%yakH8 1-65535ož

Få- 260 a

oxX%”o- ฿%”ê AC

oxX%”o- ß%”ê AC ap-config %”

oÃ- 14

o6-o- z xX%ˆxXkÕYFåxXk9U¨
kÿ report kMÃ¤Jož
z ¨ AC ap-config %”*xX **igmp snooping ignore-query-timer** AP
k* **no igmp snooping ignore-query-timer**

oFå- 1 yFåMž

```
Ruijie(config)# ip igmp snooping ignore-query-timer
```

oèo- * show ip igmp snooping ôFå@

oUP’Î- -

oejö- -

ouVô- -

11.6 ip igmp snooping mcast-to-unicast enable

oÁ%nož
ip igmp snooping mcast-to-unicast enable

{Á%nož
no ip igmp snooping mcast-to-unicast enable

ÂMFåž
default ip igmp snooping mcast-to-unicast enable

@	T
-	-

oFå- ò4

oxX%”o- AC ap-config %”R… AP ß%”

oÃ- 14

oó-o- ÁÉQÄ AP Ã%nož

oÁ%nŠkÎ APkÙYGÁ%n¦ÉÁ%n

Ôož

AC ap-config %”xX **igmp snooping mcast-to-unicast enable**

AC ap-config %”Få **no igmp snooping mcast-to-unicast enable yR…** AP ¦%”F **no ip igmp snooping mcast-to-unicast enable U¥Á%**

stÙÙÙÎ)ù3gÙÙæ

ÙÙ-ÙÙ-ÓQ¦3.ÙÙæ

oFåt- 1 y¨ ap-config %”oÁ%n

Ruijie(config-ap)# igmp snooping mcast-to-unicast enable

oèo- * show ip igmp snooping xXôFôÿ

oÙP’ô- -

oejö- -

oùVô- -

11.7 ip igmp snooping mcast-to-unicast group-range

FÃ%nÁÃož

ip igmp snooping mcast-to-unicast group-range *ip-addr ip-addr*

ÎÁ%nÁÃFåž

no ip igmp snooping mcast-to-unicast group-range

ÎÃ%nÁÃ

default ip igmp snooping mcast-to-unicast group-range

oÎ@

@	T
ip-addr	*ÁÃ8* 224.0.1.0~239.255.255.255

oÎFå- ÌÃÁkÃÃCÁ%n

oxX%”o- AC ap-config %”R… AP ¦%”

oÎ@- 14

oó-o- ÁÉQÄ AP Ã%n,Få

FåÁ%n¶kUYÎ!oÇÁÚ?Ć}%n

ÔÒ!Aáu8Ü¶%nÔUY*ÚXÛ4Ã

Á%n¶ÚYÎ!oÅÁ%nÇÚYÁ%

nkUY¶Ò!ož

AC ap-config %”xX **igmp snooping mcast-to-unicast max-group**

AC ap-config %”Få **no igmp snooping mcast-to-unicast max-group yR…**AP ¶%”F

default ip igmp snooping mcast-to-unicast max-group UÕ

oFåt- 1 y¨ ap-config %”FÁ%n¶

```
Ruijie(config-ap)# igmp snooping mcast-to-unicast max-group 10
```

oèo- * show ip igmp snooping xXôFôÿ

oUP’Î- -

oejö- -

ouVô- -

11.9 ip igmp snooping mrouter learn pim-dvmrp

oÁNMož

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

{ÁNMož

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

ÂNMFåž

default ip igmp snooping [**vlan** *vid*] **mrouter learn pim-dvmrp**

oÕ@

@	T
vlan *vid*	6 vlanoÉ9Ä vlanož

oFå- o4

oxX%”o- ¶%”

oÕ- 14

oÕ-o- NMo IGMP Snooping ÁÕÁÉ“Á>DÕN,ÕMož

ÕoÁNMkÕ- IGMP Query/DVMRP/PIM Hello ÉÉ

NMož

oÁNMgÞ kUYBÁNMož

Få **ip igmp snooping vlan mrouter interface xKUÉNMož**

Få **no ip igmp snooping mrouter learn pim-dvmrp xÄ** VLAN {ÁNMož

Få **no ip igmp snooping vlan** *vid* **mrouter learn pim-dvmrp xKN%** VLAN {Á

NMož

sWj[illegible]

j[illegible]d

oFå- 1 yN¨ VLAN1 oÁNMož

```
Ruijie(config)# no ip igmp snooping mrouter learn pim-dvmrp
Ruijie(config)# ip igmp snooping vlan 1 mrouter learn pim-dvmrp
```

oèo- * show ip igmp snooping xXõ@

oUP’ô- -

oöjö- -

oUVõ- -

11.10 ip igmp snooping querier

o IGMP Snooping õž

ip igmp snooping [**vlan** *vid*] **querier**

{¼ IGMP Snooping õž

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

Ðå

default ip igmp snooping [**vlan** *vid*] **querier**

oÕ@

@	T
vlan *vid*	6 vlanoÉÁ vlanož

oFå- {4

oxX%”o- B%”

oHõ- 14

o6-o- ßoõkÇ VLAN oõVLAN õož
ß{4ãÄ VLAN õßÍ{ož

oFåt- 1 y¨ VLAN2 oõž

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

oèo- * show ip igmp snooping querier ê show ip igmp snooping querier detail xXõÎÃ@
Î

oUP'Î- 1 yFßßFå VLAN ãUPj'Î

% Command did not take effect due to reason: IGMP switch querier is globally disabled

oojö- 1 yßÒkõ VLAN ã4žFå VLAN õž

ouVõ- -

11.11 ip igmp snooping querier address

Få IGMP Snooping õ IP ºž

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

ÎFåž

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

ÊFåž

default ip igmp snooping [**vlan** *vid*] **querier address**

oßõ

@	T
vlan *vid*	6 vlanoÄ9Ä vlanož
a.b.c.d	› IP ª

oHFå- -

o×X%"o- ßFå%"

oHõ- 14

oFåb- 1 yFÅ 15 aož

Ruijie(config)# ip igmp snooping querier max-response-time 15

2yFå VLAN3 Å 15 aož

Ruijie(config)# ip igmp snooping vlan 3 querier max-response-time 15

oèo- * show ip igmp snooping querier ê show ip igmp snooping querier detail xXôÅ@ Î

oUP'Î- -

oejö- -

ouVô- -

11.13 ip igmp snooping querier query-interval

Få IGMP Snooping ôž

ip igmp snooping [**vlan** *vid*] **querier query-interval** *seconds*

ÎFå

no ip igmp snooping [**vlan** *vid*] **querier query-interval**

ôž

default ip igmp snooping [**vlan** *vid*] **querier query-interval**

oÎ@

vlan *vid*	6 vlanož9Ä vlanož
seconds	ò%yakH8 1-18000ož

oFå- 60 a

o×X%"o- Î%"

oÎ- 14

o6-o- ò VLAN 64ò… VLAN Fåž

oFåb- 1 yFåž

Ruijie(config)# ip igmp snooping querier query-interval 100

2y% VLAN Fåž

Ruijie(config)# ip igmp snooping vlan 3 querier query-interval 100

oèao- * show ip igmp snooping querier ê show ip igmp snooping querier detail xXõÑ@
Î

oUP'ô- -

oejö- -

ouVô- -

11.14 ip igmp snooping querier timer expiry

Få IGMP Snooping ž

ip igmp snooping [**vlan** *vid*] **querier timer expiry** *seconds*

ÎFåž

no ip igmp snooping [**vlan** *vid*] **querier timer expiry**

ôž

default ip igmp snooping [**vlan** *vid*] **querier timer expiry**

o@

@	T
vlan *vid*	6 vlanož9Ä vlanož
seconds	%yakH8 60-300ož

oFå- 125 a

o×X%"o- %"

oô- 14

o6-o- o4ek-U# JÂ Ä "ó ÄÄ6
kkGÜ ož
ò VLAN]Fåí… VLAN Fåž

oFåt- 1 yFó 60 aož

Ruijie(config)# ip igmp snooping querier timer expiry 60

2yFå VLAN3 ó 60 aož

```
Ruijie(config)# ip igmp snooping vlan 3 querier timer expiry 60
```

oèao- * show ip igmp snooping querier ê show ip igmp snooping querier detail xXõÑ@
Î

oUP'Î-o- -

oejo- -

oUVõ- -

11.15 ip igmp snooping querier version

Få IGMP Snooping ĝ IGMPv1ož
ip igmp snooping [**vlan** *vid*] **querier version 1**
ĝ IGMP Snooping ĝ IGMPv2ož
ip igmp snooping [**vlan** *vid*] **querier version 2**

ĩZFå
no ip igmp snooping [**vlan** *vid*] **querier version**

ĝFå
default ip igmp snooping [**vlan** *vid*] **querier version**

oĝ@

@	T
vlan *vid*	6 vlanoŽÑ vlanož

oHFå- IGMP Snooping ĝ IGMPv2ož

oxX%"o- ĝ%"

oĝ- 14

o6-o- ĝ4 IGMPv1 ê IGMPv2ož
ò VLAN]Fåĝ IGMP Î… VLAN Fåž

oFåĝ- 1 yĝ– IGMPv1ož

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

2yå– VLAN3 ĝ IGMPv1ož

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

oèo-	*	show ip igmp snooping querier ê show ip igmp snooping querier detail xXõ@
	Î	
oUP'ô-	-	
oejö-	-	
oUVô-	-	

11.16 ip igmp snooping query-max-response-time

Fåž

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

ÎFå

no ip igmp snooping query-max-response-time

Ðž

default ip igmp snooping query-max-response-time

oÐ@	*seconds*	ò c… H Žõ`X5 Ie&ï%%Ci`Ie&ï%%Ci`Ie&ï%%C ù œ1y5g5•D, c…$C–@HïV ƒ… Id ïV ƒ %yakH8

oF-å0- 1 yF 100sož

```
Ruijie(config)# ip igmp snooping query-max-response-time 100
```

oè o- *

oƱP'ĵb- -

oƟjö- -

oƱVõ- -

11.18 ip igmp snooping vlan

¨ VLAN o IGMP SnoopinggIVGL %"h ož

ip igmp snooping vlan *vid*

¨ VLAN ¼ IGMP SnoopinggIVGL %"h ož

no ip igmp snooping vlan *vid*

ÊFå

default ip igmp snooping vlan *vid*

oƟ@

vid	VLAN ÍkH8 1-4094

oƟFå- ƟBo IGMP SnoopinggIVGL %"hÄ VLAN ö IGMP SnoopinggIVGL %"bž

ƟBo IGMP SnoopinggIVGL %"h kÄ VLAN ö IGMP SnoopinggIVGL %"bž

oxX%"o- ƟB%"

oƟõ- 14

oƟ-o- ƟBo IGMP SnoopinggIVGL %"hÕ.. **no ip igmp snooping vlan** *vid* xXõ

VLAN Ù VLAN o IGMP SnoopinggIVGL %"bž

PIM Snooping § IGMP Snooping}° **no ip igmp snooping vlan ž** VLAN h IGMP Snooping "Ÿ VLAN hst PIM Snooping ÿ"ÄÏ PIM Snoopingd

oFåb- 1 yƟBo IGMP SnoopinggIVGL %"h¨ vlan 2 ¼ IGMP SnoopinggIVGL %"bž

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

oèo- * show ip igmp snooping vlan ôFå@

oƱP'ĵb- -

oejö- -

oUVt- -

11.19 ip igmp snooping vlan fast-leave enable

ß vlan ½•ož

ip igmp snooping vlan *vid* fast-leave enable

¼ vlan ½•

no ip igmp snooping vlan *vid* fast-leave enable

Ê vlan ½•Få

default ip igmp snooping vlan *vid* fast-leave enable

oj@

@	T
vid	VLAN ŹkH8 1-4094ož

oHFå- vlan ½

oxX%”o- ß%”

oÊ- 14

o6-o- o vlan ½•gIoh

Få **no ip igmp snooping vlan fast-leave enable xKU¥6** vlan ½•ož

vlan ½•kÈßFå ip igmp snooping fast-leave enable %ÏÈ vlan ½•jož

oFåb- 1 y¼ vlan ½•ož

Ruijie(config)# no ip igmp snooping vlan 1 fast-leave enable

oèo- * show run ÔFå@

oUP’Ô- 1 yÊå vlan ½•wß½•kUP’Î

oeÿö- -

oʉVt- -

oʉVt0- -

11.21 ip igmp snooping vlan static interface

FÁMož

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

HƒFåž

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

ÊFåž

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

op@

@	T
vid	VLAN ŹkH8 1-4094ož
group-address	ÁÉž
interface-type interface-number	*Mož*

oHFå- ÁM

o×X%”o- ß%”

oHö- 14

o6-o- IGMP Snooping Ôn¾yVLAN ŹoÁÈMoèMož

VLAN ŹyŠ4%Ôn¾ž

%Ôn¾YmÉMgUÉMÁMbÉMkï

ož

%Ôn¾YmÉMgUÉMÁMbÉMkïož. **clear ip igmp snooping gda-table xÉMož**

oFåt- 1 yFå GigabitEthernet 0/1 vlan 1 Á 224.1.1.1 ÁMož

```
Ruijie(config)# ip igmp snooping vlan 1 static 224.1.1.1 interface GigabitEthernet 0/1
```

oèo- * show ip igmp snooping ôFå@

oUP’ô- 1 yFÁMÂÉUP’Î

```
% Error: Configure static multicast group in this port fail
```

oejö- -

oʉVõ- -

11.22 ip multicast wlan

- oBÁÙ
- **ip multicast wlan**

ÎFåž
- **no ip multicast wlan**

ÊFåž
- **default ip multicast wlan**

oÊ@ @

11.23 show ip igmp snooping

- IGMP Snooping _ˆbž

show ip igmp snooping [**vlan** *vid*]

- IGMP Snooping Ǒnož

show ip igmp snooping gda-table

- IGMP Snooping èNMož

show ip igmp snooping mrouter

- IGMP Snooping NMôˆ

show ip igmp snooping querier [detail | vlan *vid***]**

op@

@	T
vlan *vid*	**6** VLANoz@Ä

```
IGMP Snooping L2-entry-limit: 65536
Global IGMPv2 Fast-Leave :Disable
Global multicast router learning mode :Enable
Query Max Respone Time: 10 (Seconds)
Dynamic Mroute Aging Time : 300(Seconds)
Dynamic Host Aging Time : 260(Seconds)

vlan 1
-------------
IGMP Snooping state: Enable
Multicast router learning mode: pim-dvmrp
IGMP Fast-Leave: Disable
IGMP VLAN querier: Disable
IGMP VLAN Mode: STATIC
```

oƱP’ȟ- -

oʉVȯ- -

12 ACL

12.1 wWkT=

XBXXy

ö	m#
id	ACL ƒ Z oŽ UF8 IP Õ ACLy 1-99k 1300-1999 IP ý ACLy 100-199k 2000-2699 MAC ý ACLy700–799 ý ACLy2700–2899
name	ACL d
sn	ACL n¾Z(u47iÃ})
start-sn	~ZÜ
inc-sn	~ZÍ
deny	ÕkÉ
permit	ÕkÊ
port	#‘Ź k+9 IPv6 ¥U ipv6k icmpk tcpk udp Cƒ 0-255k+9 IPv4k UY© eigrpk grek ipinipk igmpk nosk ospfk icmpk udpk tcpk ip %k-U YÖ Wn IP #‘ 0-255 Ź k%?M}#‘òicmp/tcp/udp %g¢
interface idx	ÿNM
src	¹ÃÕ
src-wildcard	ªFoŽ UYÒ 0.255.0.32
src-ipv6-pfix	› IPv6 ÀÃ
dst-ipv6-pfix	) IPv6 ÀÃ
pfix-len	ÿÜAyƒ
src-ipv6-addr	› IPv6 ª
dst-ipv6-addr	) IPv6 ª
dscp	ÄÆ µ Aµ 8 0-63
flow-label	vŽ vŽ 0-1048575
dst	)¹ÃÕ
dst-wildcard	)ªFoŽ UYÒ 0.255.0.32

fragment	[illegible] [illegible]
precedence	[illegible] 0-7h
range	[illegible]
time-range tm-rng-name	[illegible] tm-rng-name
tos	[illegible] 0-15h
cos	† cos (0-7)
cos inner cos	[illegible] tag cos
icmp-type	ICMP [illegible] 0-255 h
icmp-code	ICMP [illegible] 0-255 h
icmp-message	ICMP [illegible]
operator port[port]	Operator

precedence] [**tos** [redacted] **nge** *time-range-name*]

#+<mY[redacted]

access-list *id* { **den** [redacted]] } [**VID** [*out*] [**inner** *in*]] { **s***ource* *source-wildcard* | **hos** [redacted] } { *destination destination-wildcard* | **host** *destination* | **any** [redacted] **nge** *time-range-name*]

#+#‘ Protocol <[redacted]

access-list *id* { **deny** | **p** [redacted] *source-wildcard* | **host** *source* | **any** } { **host** *source-mac-a* [redacted] **ost** *destination* | **any** } { **host** *destination-mac-address* | **a** [redacted] **ent**] [**range** *lower upper*] [**time-range** *time-range-nam* [redacted]

[redacted] A [redacted]

Internet Control Message Protocol (IC [redacted]

access-list *id* { **deny** | **permit** } **icmp** [**VID** [redacted]

{ **host** *source-mac-address* | **any** } { *desti* [redacted]

destination-mac-address | **any** } [*icmp-type*] [[[redacted]

[redacted] *ence* [redacted] *tos*] [**fra** [redacted] **e** [redacted]

[redacted] **smission C** [redacted] **trol Proto** [redacted] **l** (TCP)y

[redacted] **ss-list** *id* { [redacted] **ny** | **permi** [redacted] **tcp** [**VID** [redacted] *out*] [**inner** [redacted]]] { *sourc* [redacted]

	z IP ý ACLg 100-199k 2700 – 2899h z MAC ý ACLg700 – 799 h z ý ACLg2000-2699 h
deny	ę̃kę̃ož
permit	ę̃kę̃ož
source	ǧǧ

o6-o- 4ĩ¸ţ+ƒ¸gkÐkX **access-list** [illegible]

G[illegible]c. ĩ¸ţy

IP Õ ACL g1-99k 1300-1999hQ+ºgOòž

IP ý ACLg 100-199k 2000-2699kUYÇ)ºgÕòž

MAC ý ACLg700-799 kUYÇy) MAC ªYCYºF

ý¸ţg2700-2899 kIP Õ ACLoIP ý ACL YC MAC ý ACL Õž

ý ACL cÞå ACL ¢ Pký ACL UY+ VLAN ID gFpž

s 8 [illegible]

precedence *precedence*/**tos** *tos*/**fragments**/**range** *lower upper*/ **time-range** *time-range-named*

TCP Flag mYBÐy

urg

ack

psh

rst

syn

fin

ifÐfy

critical

flash

flash-override

immediate

internet

network

priority

routine

ºÐfy

max-reliability

max-throughput

min-delay

min-monetary-cost

normal

ICMP ÎÐfy

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

p TCP MdfkTCP UYMdfMZ6jMy

bgp
chargen
cmd
daytime
discard
domain

echo
exec
finger
ftp
ftp-data
gopher
hostname
ident
exec

echo
loginp4(n)3(t)]TJ0.5 g/C2_1 1 Tf0 Tc -2.333 -1.733 Td<0020>Tj/TT0 1 Tf( )Tj0.19918-0.0023 c 0.22270.2236 TnntpTd(exec)Tj0.5 g/C2_

pim-auto-rp
rip
snmp
snmptrap
sunrpc
syslog
tacacs
talk
tftp
time
who
xdmcp

Ya“º Ethernet-type ỳ

aarp
arp
appletalk
decnet-iv
diagnostic
etype-6000
etype-8042
lat
lavc-sca
mop-console
mop-dump
mumps
netbios
vines-echo
xns-idp

"‘W, ACL Ỹÿÿ& ACL f¶ **no** {**sn** | **permit** | **deny**}a₩d

oFåb- 1 yIP ¶ÕÕ¸P†

µ IP ¶ÕÕ¸ª 192.168.1.64 - 192.168.1.127 *kUÑÿ

Ruijie(config)# access-list 1 permit 192.168.1.64 0.0.0.63

2yIP ỹÎÕ¸P†

µ IP ỹÎÕ¸ª DNS ỹ ICMP *ỹ

Ruijie(config)# access-list 102 permit tcp any any eq domain log

Ruijie(config)# access-list 102 permit udp any any eq domain log

oH-Få-	ZÄ ACL hK'Î			
o-xX%"o-	¶%"			
oH-Ø-	14			
o6-o-	4Ž0Ú	ACL kUYÎ kX6	ACL hK'Î bÇ	ACL kÎ k

o×X%”o- ¶%”

oÞõ- 14

o6-o- 4Ž0Ú ACL ¥UYÎ.X6 ACL ¥K’ÎbÇ ACL
k̂kXk¥ ACLkÀÇ ACL ¥K’Î

oFåb- 1 yÚ 102 ACL •%Ú ACL ¥K’Îy

Ruijie(config)# access-list 102 remark deny-host-10.1.1.1

oào- 1 y… **show access-lists** xXUYÔÄ ACL Fåk, ACL ¥K’Îbž
2y… **show access-lists** *id xÔ6* ACL Fåk,¥ ACL ¥K’Îbž
3y… **show access-lists** *name ÔÄ* ACL Fåk,¥ ACL ¥K’Îbž

oUP’Îb- ç%Ú ACL Mç ACL ¥K’Îk¥UPj’Îy

Remark is duplicate

oeÿo- -

ouVÔ- -

12.5 deny

%Ú ACL • /ï%Ï ACL éž

IP õ ACL

ª IP õ ACL •%Ï ACL é
[*sn*] **deny** { *source source-wildcard* | **host** *source* | **any** } [**time-range** *tm-range-name*] [**log**]

R IP õ ACL ï%Ï ACL é
no { *sn* | { **deny** { *source source-wildcard* | **host** *source* | **any** } [**time-range** *tm-range-name*] [**log**] } }

IP ACLp6>F2.28 0 Td 0 Td(ACL)Tj/C2_0 1 Tf0 40.0Tf2.333 0 Td<0452>Tj/TT0 1

R IP ÿ ACL ï%ð ACL é

no { *sn* | { **deny** *protocol source source-wildcard destination destination-wildcard* [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**log**] } }

Ô Ø IP ÿ¶

Internet Control Message Protocol (ICMP)

[*sn*] **deny icmp** { *source source-wildcard* | **host** *source* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)

[*sn*] **deny tcp** { *source source-wildcard* | **host** *Source* | **any** } [*operator* **port** [*port*]] { *destination destination-wildcard* | **host** *destination* | **any** } [*operator* **port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag* | **established**]

User Datagram Protocol (UDP)

[*sn*] **deny udp** { *source source –wildcard* | **host** *source* | **any** } [*operator* **port** [*port*]] { *destination destination-wildcard* | **host** *destination* | **any** } [*operator* **port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*]

MAC ÿ ACL

[a] MAC ÿ ACL %ð ACL é

[*sn*] **deny** { **any** | **host** *source-mac-address* } { **any** | **host** *destination-mac-address* } [*ethernet-type*] [**cos** [*out*] [**inner** *in*]]

R MAC ÿ ACL ï%ð ACL é

no { *sn* | {**deny** { **any** | **host** *source-mac-address* } { **any** | **host** *destination-mac-address*} [*ethernet-type*] [**cos** [*out*] [**inner** *in*]] } }

ÿ ACL

ÿ ACL %ð ACL é

[*sn*] **deny**[*protocol* | [*ethernet-type*] [**cos** [*out*] [**inner** *in*]]] [[**VID** [*out*] [**inner** *in*]]] { *source source-wildcard* | **host** *source* | **any**}{**host** *source-mac-address* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *low[ ]T1.0(/f-0.2]T2 1 fDuc]B8 Fo.184 w 2.18 0 }crenc}e]D T 1 f0.2.8 w 2.438 0 d[ ]T0.0000 c 2.7ime-ra[agme*

source-wildcard | **host** *source* | **any** } { **host** *source-mac-address* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] } }

#+<mY8 ethernet-type ê cos <ž

[*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*]

#+#‘ protocol <ž

[*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* |

ÎÔÐ expert Ây¶

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* |

n destination-wildcard | **host** *destination* | **any** } { **host** *destination-mac-address* |

ª IPv6 ACL •%ŸÜ ACL é

[*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*]

R IPv6 ACL ï%ŸÜ ACL é

no {*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*] } }

ÔÐ IPv6 ÀÀ%y¶

Internet Control Message Protocol (ICMP)

[*sn*] **deny icmp** { *source-ipv6-prefix / prefix-length* | *any source-ipv6-address* | **host** } { *destination-ipv6-prefix / prefix-length* | **host** *destination-ipv6-address* | **any** } [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragment**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)

[*sn*] **deny tcp** { *source-ipv6-prefix / prefix-length* | **host***source-ipv6-address* | **any** } [*operator* **port** [*port*]] { *destination-ipv6-prefix /prefix-length* | **host** *destination-ipv6-address* | **any** } [*operator* **port** [*port*]] [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag* | **established**]

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*]

@	T
sn	ACL Ã¿ÐÐ¥ÐÐ]ÕÕ=¬ÑÑ(ÀÀlÕ¨¿ÕÕ P'¬ngeÀÀ¨ÑÑ1M"ÕÕ"ÕÕ%aBp=ÌÀÀ4PÿÜÜ1AyaE(nÑÑx1Mwsùwsùwsùse-

protocol	9 IPv6 ¥U IPv6 | icmp | tcp | udp C<0-255>
time-range	ž
time-range-name	df

oHFå- ZÄ ACL éž

o×X%”o- ACL %”

oHö- 14

o6-o- ÍPÌUY¥X6 ACL L%?!Í ACL éž

oFåt- 1 yPòCP%ÚExpert Extended ACL k¥ ACL !Í IP ª 192.168.4.12 w›
MAC ª 001300498272 Ä TCP tž

```
Ruijie(config)# expert access-list extended 2702
Ruijie(config-exp-nacl)# deny tcp host
192.168.4.12 host 0013.0049.8272 any any
Ruijie(config-exp-nacl)# permit any any any any
Ruijie(config-exp-nacl)# show access-lists
expert access-list extended 2702
10 deny tcp host 192.168.4.12 host 0013.0049.8272 any any
20 permit any any any any
Ruijie(config-exp-nacl)#
```

2yp@ IP y ACL 8k)Í IP 192.168.4.12 Ñ^ TCP M 100 Kw
ñM gigabitethernet 1/1oFåy

```
Ruijie(config)# ip access-list extended ip-ext-acl
Ruijie(config-ext-nacl)# deny tcp host 192.168.4.12 eq 100 any
Ruijie(config-ext-nacl)# show access-lists
ip access-list extended ip-ext-acl
10 deny tcp host 192.168.4.12 eq 100 any
Ruijie(config-ext-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if-GigabitEthernet 0/1)# ip access-group ip-ext-acl in
```

3yp@ MAC y ACL 8k)Í MAC 0013.0049.8272 Ñ° 100 Yß
lkwñM gigabitethernet 1/1oFå

```
Ruijie(config)# mac access-list extended mac1
Ruijie(config-mac-nacl)# deny host 0013.0049.8272 any aarp
Ruijie(config-mac-nacl)# show access-lists
mac access-list extended mac1
10 deny host 0013.0049.8272 any aarp
```

```
Ruijie(config-mac-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if-GigabitEthernet 1/1)# mac access-group mac1 in
```

4yp@ IP õ ACL 8ÿ¡ IP 192.168.4.12 ÑwÑM gigabitethernet 1/1ož Fåy

```
Ruijie(config)# ip access-list standard 34
Ruijie(config-ext-nacl)# deny host 192.168.4.12
Ruijie(config-ext-nacl)# show access-lists
ip access-list standard 34
10 deny host 192.168.4.12
Ruijie(config-ext-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if-GigabitEthernet 1/1)# ip access-group 34 in
```

5yp@

expert access-group { *id* | *name* } { **in** | **out** }

Hƒ ACL ˆ6NMgg•

no expert access-group { *id* | *name* } { **in** | **out** }

o@

@	T
id	´ ACL Ź g2700-2899 h
name	´ ACL d
in	+¥NMg¡
out	+R¥NMg¡

o-Få- NMZÄ ´ ACLož

o-X%”o- NM%”bÍPƒ=ÂfFÊ¡PiFÐ

@	T
id	ACL g2700-2899 h

no expert access-list resequence { *id* | *name* }

id	ACL Ź g2700-2899 h
name	ACL d
start-sn	1-2147483647 h
inc-sn	~ZŹg1-2147483647 h

start-sn y10

inc-sny 10

14

ACL

ACL

1 y+d“exp-acl” ACL 21o 43 ~ZMLož

```
Ruijie# show access-lists
20 deny ip any any any any
```

```
Ruijie# config
```

ouVt- -

12.9 ip access-group

16 ACL 9NM

ip access-group { *id* | *name* } { **in** | **out** }

Hƒ ACL yNM¼

no ip access-group { *id* | *name* } { **in** | **out** }

@	T
id	IP õ ACL ê IP ý ACL Ýg1-199 k1300-2699 h
name	IP õ ACL ê IP ý ACL d
in	+¥NMg¡
out	+R¥NMg¡

Få- NMZÄACL ož

X%”o- NM%”

14

6-o- }±. IP õ ACL ê IP ý ACL ÿkUYîkX1 ACL ñNMkýUY+¥NM

Oòž

Fåt- 1 y¨ fastEthernet0/0 Ý 120 ACL +gy

```
Ruijie(config)# interface fastEthernet 0/0
Ruijie(config-if-GigabitEthernet 0/0)#ip access-group 120 in
```

%(ÕZ€ Tf0 Tc 1.92 0 Td<006EA>Tj/TT0 B1209DA055A049206CTf( )Tj7.1288fD048506B8 Tc 7.38.8A>T W€€0.28tEtherps-grs(12)pas

oøjö- -

oʉVõ- -

12.10 ip access-list

ë IP õACL ê IP ÿ ACL kwµ ACL %”

ip access-list { **extended**

oó-o- ŽÜk¨ IP Õ ACL ê IP ý ACL ÿÝíqk%²ěk
~ZkJAÜk4ŽUYîkX+ ACL é³ZgMLk~ZJož

oFåb- 1 y+Ý 1 ACL é³ÂZ 21oÍ 43 ~ZMLož
FåxXù

```
Ruijie# show access-lists
ip access-list standard 1
10 permit host 192.168.4.12
20 deny any any
```

FåxXsy

```
Ruijie# config
Ruijie(config)# ip access-list resequence 1 21 43
Ruijie(config)# exit
Ruijie# show access-lists
ip access-list standard 1
21 permit host 192.168.4.12
64 deny any any
```

oèo- 1 y… **show access-lists** xXUYôÄ ACL éÂZož
2y… **show access-lists** *id xÕ6* ACL éÂZož
3y… **show access-lists** *name ÕÕ* ACL éÂZož

oUP'ô- -

oöjö- -

oUVô- -

12.12 ipv6 access-list

ë IPv6 ACLkwÿ%"
ipv6 access-list *name*

ï¥ ACL
no ipv6 access-list *name*

oÕ@

@	T

name mef* Td(IPv6 ACL)Tj/C2_0 1 Tf0 Tc 0 41 4.173 0 564026340B1A>Tj/TT0 207 -0.493 0 Td( )TjET0.75 g1173.24 1.44 44

o×X%”o- ß%”

oÞö- 14

o6-o- ò+à IPv6 gk}… IPv6 ACLkÿkXë IPv6 ACLož

oFåb- 1 yë“v6-acl ” IPv6 ACLy

```
Ruijie(config)# ipv6 access-list v6-acl
Ruijie(config-ipv6-nacl)# show access-lists
ipv6 access-list v6-acl
Ruijie(config-ipv6-nacl)#
```

oèo- 1 y… **show access-lists xLVÄ** ACLg, IPv6 ACLhFåbž

2y… **show access-lists** *name xÄ* ACLg, IPv6 ACLhFå

oUP’ô- -

oejö- -

ouVt- -

12.13 ipv6 access-list resequence

+ IPV6 ACL é¾ZgML

ipv6 access-list resequence *name start-sn inc-sn*

ô

no ipv6 access-list resequence *name*

oÞ

oó-o- ŽÄk¨ IPV6 ACL ÿÚÍ¶ék%²ěk~ZkJÆÖ
2k4ŽUYîkX+ ACL é³ZgMLk~ZJož

oFåt- 1 y+d“v6-acl ” IPv6 ACL é³ÂZ 21oÍÓ 43 ~ZMLož
FåxXù

```
Ruijie# show access-lists
ipv6 access-list v6-acl
  10 permit ipv6 any any
  20 deny ipv6 any any
```

FåxXßy

```
Ruijie# config
Ruijie(config)# ipv6 access-list resequence v6-acl 21 43
Ruijie(config)# exit
Ruijie# show access-lists
ipv6 access-list v6-acl
  21 permit ipv6 any any
  64 deny ipv6 any any
```

oèo- 1 y… **show access-lists** xXUYÒÄ ACL éÂZož
2y… **show access-lists** *name* ÒÄ ACL éÂZož

oUP'Î- -

oejö- -

oUVÒ- -

12.14 ipv6 traffic-filter

1%Ú IPv6 ACL ÓNM
ipv6 traffic-filter *name* { **in** | **out** }

Hƒ IPv6 ACL •
no ipv6 traffic-filter *name* { **in** | **out** }

oÕ@

@	T
name	IPv6 ACL d
in	+ÑMÌ¡
out	+RÑMÌ¡

oHFå- NMZÄ IPv6 ACLož

oxX%”o- NM%”

oHö- 14

o6-o- }±. IPv6 ACL ÿkUYÎkX1 ACL ñNMký UYëÿNMß IPv6 ÿOòž

oFåt- 1 y1 access-list v6-acl 9 Gigabit NM 0/1 y

```
Ruijie(config)# interface GigaEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# ipv6 traffic-filter v6-acl in
```

oèo- 1 y… **show ipv6 traffic-filter xbÖÄ** IPv6 ACL Fåž

2y… **show ipv6 traffic-filter interface** *interface-name xbÖM* IPv6 ACL Fåž

oUP’Îb- -

oejö- -

oUVt- -

12.15 list-remark

6 ACL hK’Î

list-remark *text*

ï ACL hK’Î

no list-remark

oÿ@

@	T
text	hK’Î

oHFå- ZÄ ACL hK’Î

oxX%”o- ACL %”

oHö- 14

o6-o- 4ž0Ú ACL kUYÎkX6 ACL hK’ÎbžUYÿBFå%”+N

… **access-list list-remark xX** ACL hK'ĵbž

oFåb- 1 yŹ 102 IP ý ACL "this acl is to filter the host 192.168.4.12" hK'ĵy

```
Ruijie(config)# ip access-list extended 102
Ruijie(config-ext-nacl)# list-remark this acl is to filter the host 192.168.4.12
Ruijie(config-ext-nacl)# show access-lists
ip access-list extended 102
deny ip host 192.168.4.12 any
1000 hits
this acl is to filter the host 192.168.4.12
Ruijie(config-ext-nacl)#
```

oèo- 1 y… **show access-lists** xXUYôÄ ACL Fåk, ACL hK'ĵbž

2y… **show access-lists** *id xbb* ACL Fåk,¥ ACL hK'ĵbž

3y… **show access-lists** *name bb* ACL Fåk,¥ ACL hK'ĵbž

oUP'ĵb- -

oejö- -

oUVt- -

12.16 mac access-group

1%Ú MAC ý ACL 6NMož

o6-o- }±. MAC ý ACL jkUYîxX1 ACL ñNMký UYë¥NMß
Yßöòž

oFåt- 1 y1df“accept_00d0f8xxxxxx_only” MAC ý ACL •NM GigaEthernet 1/1 y

```
Ruijie(config)# interface GigaEthernet 1/1
Ruijie(config-if-GigabitEthernet 1/1)# mac access-group accept_00d0f8xxxxxx_only in
```

oèo- 1 y… **show mac access-group xÙöÄ** MAC ý ACL •î
2y… **show mac access-group interface** *interface-name xÙöM* MAC ý ACL
•ôž

oUP’ô- -

oejö- -

oUVt- -

12.17 mac access-list extended

ë MAC ý ACLkwµ ACL %”
mac access-list extended { *id* | *name* }

î MAC ý ACL
no mac access-list extended { *id* | *name* }

oÎ@

@	T
id	MAC ý ACL Ź g700-799 h
name	MAC ý ACL d

oFå- ZÄ MAC ý ACLož

oxX%”o- ß%”

oÎ- 14

o6-o- ò+ÈCÎ ÎJ. ACLkÛ kXë MAC ý ACLož

MAC ý ACLy

```
mac access-list extended mac-acl
```

2y%Ź 704 MAC ý ACLy

```
Ruijie(config)# mac access-list extended 704
Ruijie(config-mac-nacl)# show access-lists
mac access-list extended 704
```

oèo- 1 y… **show access-lists** xXUYôÄ ACL Fâ ž
2y… **show access-lists** *id* xÄ ACL Fâ ž
3y… **show access-lists** *name* Ä ACL Fâ ž

oUP'ô- -

oejö- -

ouVô- -

12.18 mac access-list resequence

+ MAC ý ACL é¾ZgML
mac access-list resequence { *id* | *name* } *start-sn inc-sn*

ô
no mac access-list resequence { *id* | *name* }

oô@

@	T
id	MAC ý ACL Źg700-799 h
name	MAC ý ACL d
start-sn	g1-2147483647 h
inc-sn	~ZÍOg1-2147483647 h

oFå- start-sn y10
inc-sny 10

o×X%"o- ¶%"

oFô- 14

o6-o- ŽÄk¨ MAC ý ACL ÿÚ'ík%²ěk~ZkJ±
Ä4ŽUYîkX+ ACL é¾ZgMLk~ZJ ož

oFåb- 1 y+d“mac-acl” MAC ý ACL é7ÄZ 21oÓ 43 ~ZMLož

FåxXù

```
Ruijie# show access-lists
mac access-list extended mac-acl
 10 permit any any etype-any
 20 deny any any etype-any
```

FåxXßy

```
Ruijie# config
Ruijie(config)# mac access-list resequence exp-acl 21 43
Ruijie(config)# exit
Ruijie# show access-lists
mac access-list extended mac-acl
 21 permit any any etype-any
 64 deny any any etype-any
```

oèo- 1 y… **show access-lists** xXUYôÄ ACL éÂZož

2y… **show access-lists** *id xÕ* ACL éÂZož

3y… **show access-lists** *name* ACL éÂZož

oUP’ô- -

oejö- -

ouVô- -

12.19 permit

%Ú ACL • /ï%ª ACL éž

IP õ ACL

ª IP õ ACL %Ú ACL é

[*sn*] **permit** { *source source-wildcard* | **host** *source* | **any** } [**time-range** *tm-range-name*] [**log**]

R IP õ ACL ï%Ú ACL é

no { *sn* | { **permit** { *source source-wildcard* | **host** *source* | **any** } [**time-range** *tm-range-name*] [**log**] } }

IP ý ACL

ª IP ý ACL %Ú ACL é

[*sn*] **permit protocol** *source source-wildcard destination destination-wildcard* [**precedence** *precedence*]

[**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**log**]

R IP ÿ ACL ï%Ú ACL é

no { *sn* | { **permit protocol** *source source-wildcard destination destination-wildcard* [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**log**] } }

ÔØ IP ø%y¶

Internet Control Message Protocol (ICMP)y

[*sn*] **permit icmp** { *source source-wildcard* | **host** *source* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)y

[*sn*] **permit tcp** { *source source-wildcard* | **host** *Source* | **any** } [*operator* **port** [*port*]] { *destination destination-wildcard* | **host** *destination* | **any** } [*operator* **port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag* | **established**]

User Datagram Protocol (UDP)y

[*sn*] **permit udp** { *source source –wildcard* | **host** *source* | **any** } [*operator* **port** [*port*]] { *destination destination-wildcard* | **host** *destination* | **any** } [**operator port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*]

MAC ÿ ACL

a MAC ÿ ACL %Ú ACL é

[*sn*] **permit** { **any** | **host** *source-mac-address* } { **any** | **host** *destination-mac-address* } [*ethernet-type*] [**cos** [*out*] [**inner** *in*]]

R MAC ÿ ACL ï%Ú ACL é

no { *sn* | { **permit** { **any** | **host** *source-mac-address* } { **any** | **host** *destination-mac-address* } [*ethernet-type*] [**cos** [*out*] [**inner** *in*]] } }

ÿ ACL

ÿ ACL %Ú ACL é

[*sn*] **permit** [**protocol** | [*ethernet-type*] [**cos** [*out*] [**inner** *in*]]] **[VID [** *out* **] [inner** *in* **]]** { *source source-wildca 1* |

Rÿ ACL í%Ú ACL é

no { *sn* | { **permit** [**protocol** | [*ethernet-type*] [**cos** [*out*] [**inner** *in*]]] [**VID** [*out*] [**inner** *in*]] { *source source-wildcard* | **host** *source* | **any** } { **host** *source*-mac-*address* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] } }

#+<mYÊ Ethernet-type ê cos <ÿ

[*sn*] **permit** { *ethernet-type*| **cos** [*out*] [**inner** *in*] } [**VID** [*out*] [**inner** *in*]] { *source source-wildcard* | **host** *source* | **any** } { **host** *source-mac-address* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [**time-range** *time-range-name*]

#+#‘ Protocol <ÿ

[*sn*] **permit protocol** [**VID** [*out*] [**inner** *in*] { *source source-wildcard* | **host** *Source* | **any** } { **host** *source-mac-address* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*]

ÊÐ Expert Ây¶

Internet Control Message Protocol (ICMP)y

[*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)y

[*sn*] **permit tcp** [**VID** [*out*] [**inner** *in*]] { *source source-wildcard* | **host** *Source* | **any** } { **host** *source-mac-address* | **any** } [*operator* **port** [*port*]] { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [*operator* **port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag* | **established**]

User Datagram Protocol (UDP)

[*sn*] **permit udp** [**VID** [*out*] [**inner** *in*]] { *source source –wildcard* | **host** *source* | **any** } { **host** *source-mac-address* | **any** } [*operator* **port** [*port*]] { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [*operator* **port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*]

Address Resolution Protocol (ARP)

[*sn*] **permit arp** { **vid** *vlan-id* } [**host** *source-mac-address* | **any**] [**host** *destination –mac-address* |

sn	ACL éZ
source-ipv6-prefix	› IPv6
destination-ipv6-prefix	) IPv6
prefix-length	ÿÜAyƒ
source-ipv6-address	› IPv6 ª
destination-ipv6-address	) IPv6 ª
dscp	
dscp	Ak 8 0-63.
flow-label	vž
flow-label	vž8 0-1048575
protocol	+9 IPv6 ¥U IPv6 | icmp | tcp | udp C<0-255>
time-range	
time-range-name	
hex	*Y* 16 ìPFkFå ACL
hex-mask	*Y* 16 ìPFQAkFå ACL
offset	*FyåFå* ACL

ZÄ ACL

%”

14

ACL L%? ACL

1 Expert Extended ACL k¥ ACL IP 192.168.4.12 w›

MAC 001300498272 TCP

```
Ruijie(config)# expert access-list extended exp-acl
Ruijie(config-exp-nacl)# permit tcp host 192.168.4.12 host 0013.0049.8272 any any
Ruijie(config-exp-nacl)# deny any any any any
Ruijie(config-exp-nacl)# show access-lists
expert access-list extended exp-acl
10 permit tcp host 192.168.4.12 host 0013.0049.8272 any any
20 deny any any any any
Ruijie(config-exp-nacl)#
```

2 IP ACL 8 IP 192.168.4.12

```
Ruijie(config)# expert access-list advanced adv-acl
Ruijie(config-exp-dacl)# permit a0c8040c ffffffff 38
Ruijie(config-exp-dacl)# show access-lists
expert access-list advanced adv-acl
 10 permit a0c8040c ffffffff 38
Ruijie(config-exp-dacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# expert access-group adv-acl in
```

oèo- 1 y… **show access-lists** xXUYôÄ ACL Fâk, ACL Fâž
2y… **show access-lists** *id xÕ6* ACL Fâk,¥ ACL Fâž
3y… **show access-lists** *name ÕÕ6* ACL Fâk,¥ ACL Fâž

oUP'Î-ò- -

oojö- -

oUVô- -

12.20 remark

¨ ACL Ë ACE hK'Î
remark *text*

ï ACE hK'Î
no remark *text*

oÕ@

@	T
text	hK'Î

oFå- ACE ZÄK'Î

oXX%"o- ACL %"

oÕ- 14

o6-o- 6 ACE hK'Îbž

m • 100 Q"âmQ ACL {£ 2 ¥Ä

W, ace VÜ ace 0sëÕW,d

oFåb- 1 yŹ 102 IP ý ACL ACE hK'ŷ

```
Ruijie(config)# ip access-list extended 102
Ruijie(config-ext-nacl)# remark first_remark
Ruijie(config-ext-nacl)# permit tcp 1.1.1.1 0.0.0.0 2.2.2.2 0.0.0.0
Ruijie(config-ext-nacl)# remark second_remark
Ruijie(config-ext-nacl)# permit tcp 3.3.3.3 0.0.0.0 4.4.4.4 0.0.0.0
Ruijie(config-ext-nacl)# end
Ruijie#
```

oèo- 1 y… **show access-lists** xXUYôÄ ACL Fåbž ACL éÞK'ôž

2y… **show access-lists** *id* xÄ6 ACL Fåbž ACL éÞK'ôž

3y… **show access-lists** *name* Ä6 ACL Fåbž ACL éÞK'ôž

oUP'ô- -

oejö- -

oUVô- -

12.21 security access-group

FåNM¶3

security access-group { *id* | *name* }

ïNM¶3

no security access-group

oÊ@

@	T
id	ACL ŹkJF8y IP Õ ACLg1-99k 1300-1999b•IP ý ACLg 100-199k 2000-2699b• MAC ý ACLg700–799 bý ACLg2700–2899 h
name	ACL d

oHFå- NMZ¶3Få

oxX%"o- NM%"

oHõ- 14

o6-o-

oFåb- 1 yÑM GigaEthernet 1/1 F¶3k+• ACL Ź 1y

```
Ruijie(config)# interface GigaEthernet 1/1
Ruijie(config-if-GigabitEthernet 1/1)# security access-group 1
```

oèo- … **show running xÃ**

oÙP'ô- -

oejö- -

oùVô- -

12.22 security global access-group

F¶3

security global access-group { *id* | *name* }

ï¶3

no security global access-group

oÕ@	@	T

oøjö- -

oʉVõ- -

12.23 security uplink enable

F$¶3Ù
security uplink enable

HKNM$¶3Ù
no security uplink enable

oõ@

@	T
-	-

oFå- NM$¶3Ù

oxX%”o- NM%”

oõ- K0‘H]TĐ
14
o¬ x å ¶ B Ù • ðÀ `tàSy 1M Œ" N÷ì´>ê´ã r ´`žPK`d d `ÐK`² ³0‘•H`]•TÐ
o¬ Þ u • Ù ¼à Â Ç@p ÑG ˆÇ@qs=Â ðÇ@qú • jz(ü <t q(Œt 3Ü t VUg¢o-

oÕ@	¡@	T
	interface *Interface-name*	6NMd

oxX%”o- Ôõ”

oÞõ- 14

o6-o- Õÿ6NMkÄ ACLkÕÿ?NMÄ ACLkUYÎkXož

oFåÞ- 1 yÕÿNM4 ACLkYCgy

Ruijie# show access-group
ip access-list standard ipstd3 in
Applied On interface GigabitEthernet 0/1.
ip access-list standard ipstd4 out
Applied On interface GigabitEthernet 0/2.
ip access-list extended 101 in
Applied On interface GigabitEthernet 0/3.
ip access-list extended 102 in
Applied On interface GigabitEthernet 0/8.

2yÕNM GigabitEthernet 0/3 k4 ACLkYCgy

Ruijie# show access-group interface GigabitEthernet 0/3
ip access-list extended 101
Applied On interface GigabitEthernet 0/3 in.

oUP’Î- -

ouVÕ- -

12.25 show access-lists

ÞÄ ACL Fâ ACL Få

show access-lists [*id* | *name*] [**summary**]

oÕ@	¡@	T
	id	ACL Ź
	name	ACL d
	summary	ACL MÈ

oxX%”o- ¶%”