'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 ê ¥ ¬Ó ™ ðtD• P€

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 *f* ” 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

```
5XLMLH FRQILJ DF  DS VHULDO WHVW VHULDO $3  6( $3  6+ $3  ( KZ
5XLMLH FRQILJ DF  DFWLYH ELQ ILOH DS ELQ
5XLMLH FRQILJ DF  DS LDPJH WHVW VHULDO DS ELQ
```

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

```
5XLMLH FRQILJ DF  QVHU VHULDO DS ELQ
```

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 *f* 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-

@ ƒ	T
num	CAPWAP è ¬ mtu Ý 4 k @ ƒ 8 68~1500 k Y - % y

o¬ Þ . F åo- ó • mtu Ý 4 1500 -

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

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- ¢ ƒ G † Æ CAPWAP Ÿ 3 / x $ e † x † Ý CAPWAP Ÿ 3 è ¬ MTU ž kCAPWAP 1 + ¥ ƒ

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
```

id	´ ã+ Ñ N map slot Ú Z
all	´ ã+ Ñ ñ Ä map

once x X Q ü g%²) k g ‘

o¬ Þ . F åo- —

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

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- %² ? F å x X) ù Q Ä AP u 4 kAC Z Ä + • F å x X k ò ç Ý ¨ AC + AP g • F å k U Y * ap-config exec-cmd x X Û ëož ¬ } h Þ © k ò ç ¬ } H ƒ ê ñ ¾ w exec-cmd F å k ¬ } ¯ … no exec-cmd x X í ” + • F å k À e Ç … exec-cmd x X g F g ê ñ ¬ } ¾ w F å; ý J exec-cmd … ¿ U Y * AC G + • x X ñ MAP k ¨ MAP ü g x X k ¿ • y ¯ * ap Z Ä ð z

ò ç c ž + ap-config all y % Þ ap-config g F å k + 9 ¨ ¿ AP k e F å k ÿ | k + 9 Y ¿ F å kAP ¿ k é 7 Á i ¯ ´ ap-config > ap-config all • ” ÿ | z

%² ? F å x X Q Ä ap-config % ” u 4 k ò ap-group Z Ä + • F å x X k ò ç ¬ } + î AP Á Ä ñ Ä AP g ¥ • x X F å k U Y ¨ ¥ AP Á ü g exec-cmd x X Û ë z ¬ } h Þ © k ¥ F å ¨ ap-group % ” w ‘ k Q © , ¢ 9 ¨ ¢ ù AP Á ñ Ä AP ü g ¥ x X%²)ož

o¬ F å †o- 1 y F å AC ¼ { AP EWEB

```
5 X L M L H  F R Q I L J  D S  F R Q I L J  $ 3
5 X L MAC H °.F.«RQ@PQLF-EWEBB¬ H [EWEBF P Ga•!'R&GEH,û PMÂQ H«x%»XQ5HXEMGH QFRQLJEDÓt4Ð À R QHLC
```

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- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

2.45 link-latency

F å y AC 6 AP Á Ä AP $ • e è Ù Áož
link-latency

H ƒ F å
no link-latency

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 • o y 6 AP-0001 AC $ • e è Ù Á k w ò 0 + • e è Ù Á ’ Îož

```
5XLMLH FRQILJ DS FRQILJ $3
5XLMLH FRQILJ DS OLQN ODWHQF\
```

2 y • o AP Á default y AC AP e è Ù Á k w ò 0 6 AP-0001 e è Ù Á ’ Îož

```
5XLMLH FRQILJ DS JURXS GHIDXOW
5XLMLH FRQILJ DS JURXS OLQN ODWHQF\
```

o¬ à • co- 1 y … show ap-config link-latency x X ò 0 AC AP $ • e è Ù Á ’ Îož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- N AC u 4 ¥ x X

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

```
5XLMLH VKRZ DF FRQILJ XSJUDGH JURXS
&QW     *URXS 1DPH                0D[ &RQFXUUHQW    7RNHQ FQW    8SJUD
      83*5$'( *5283
```

< † 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	

```
3URGXFW ,G $3 (
9HQGRU ,G
61
```

< † 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

```
DF VKRZ DS FRQILJ OLQN ODWHQF\ VLQJOH DS
$3 1DPH                          6WDWXV      &XUUHQW    0D[LPXP   0LQ
DS                               'LVDEOHG    PV         PV         PV
```

< † 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 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

2.57 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 QVIWDWLFL QSO H D
$ 31 D P H 6 W D W L3F 1 HWD 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 K R F R Q I L G D W L Q J O L V W

$ 3 1 $ 0 ($ 3 , ') L O H [7 L P H $ 3 5 H V E W D G \

$ 3 , $ 3 , <

G I $ 3 (1

< † K y

<	ª ¢
AP NAME	AP d

```
&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- -

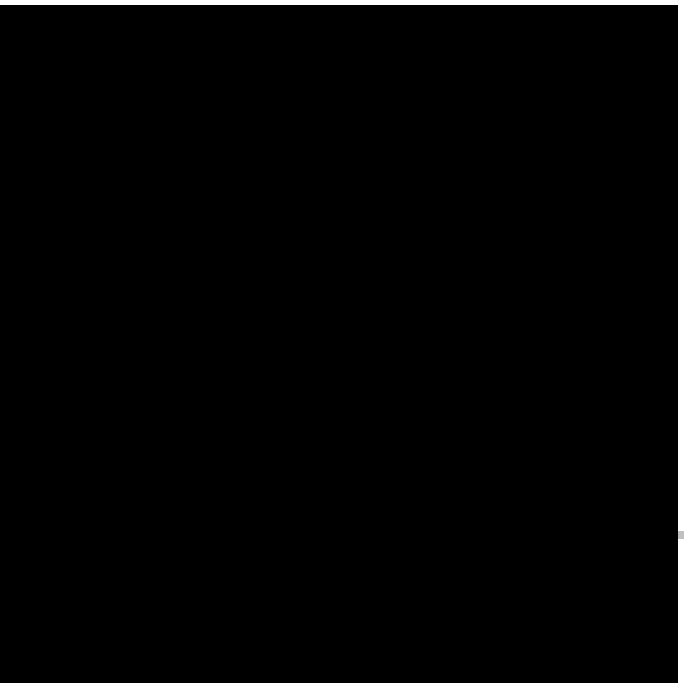
o¬ U P ’ Îo- -

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 Ẅ U R ðO  ] 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 Ẅ U R ðO  ] 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-

```
$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 /92Tj 05 Tj 0iTj 0s(s)aip

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 Ê Ñ

o¬ x X Ð’ C2 úÀW€E€• ! 3 V H F Xu •D4,R’W^V ^

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

fÀ•à’à´`žVm -

fÀW€E€,PiFm Ô Ó % ”

fÀ•à’à›@O m 14

fÀHP• s`bÖm ò ç k @ ƒ k n P Ž ” ñ Ä t ! O Ñož

fÀ´`žPB Hfm 1 y VLAN 1 € M g 0/1 IP x à Ñ † ” œ Yož

5XLMLH FOHDU QISS LS JXDUG KRVWV YODQ LQWHUIDFH J

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

fÀuP• I læm -

fÀf`§ð¶ ª†m -

fÀgPU`ª z&m -

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 åT àg å

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
permanent	

o¬ Þ . F åo- 0 / 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 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

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 Tf9 › k J ¶ B

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- `ì=Ñ Ç €w€ßdåÂ‘ßÆZxuà VúÐ`ì=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 DUS 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- - o9”.Â œ h 2 </ªÞÜ" • < DTS7Â o= p• ”À ” p • VÎ

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\
7RWDORRE XIIHVWL]H
6\VORERDWHHQWSUHUVHFRQGV
/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

ï U Y ¥ x X no # ¾ ¼ { ¥ ož
no fair-schedule

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- Þ . • oož

o¬ x X % ”o- ¶ B % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- -

o¬ F å †o- -

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

1.2 sta-fair

F å 6 ï ¸u ² † i ¯ ´ož
sta-fair mac-address priority priority

ï U Y … ¥ x X no x X = @ ƒ Þ . ›ož

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-rate

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- -

1.6 wqos fs enable

… • o wqos v O Ï ‹ ož
wqos fs enable

¼ { wqos v O Ï ‹ ož
no wqos fs enable

o¬ @ ƒ ª ¢o-

@ ƒ	T

o¬ Þ . F åo- Þ . • o wqos v O Ï ‹ ož

o¬ x X % ”o- ¶ B F å % ”ož

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- ¥ x X 9 m - ³ WEB • š /1X • š ê Ë k • o wqos v O Ï ‹ ož ò ç] Æ Ä F å 4 WEB • š /1X •

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 ! @ ƒ ož
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 N . W ØÇ @ qsÜ d N W . Ø Ç @ qsÜ d N W . Ø Ç @ qsÜ 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•Bandwidtho•Loopback Ù Áo• N M „ ç Œ y „ ç … Õ Ño• # ‘ * ’ Õ Ño• N M † ÿ µ ÿ ß Y C [j ^ * ’ 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 ,3ª-NM Få
1R ,3Y DGGUHVV
078    E\WHV %:    .EDLWV CkNM
(QFDSVXODWLRQ SURWRFRO LV (WKHUQHW ,, ORRSEDFN QRW VHW NM/
.HHSDOLYH LQWHUYDO LV NM SDFNHWV
&DUULHU GHD\ 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
Á 4 Ò ž x
   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
5HFHLYHG    SDFNHWV
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'RPDLQV ÿÏs †ƒz
)UDJPHQWV -kw Ä &5j¨êñ+÷j¨ †ƒz
-DEEHUV ©Ý9-kw Ä &5j¨êñ+÷j¨ †ƒz
&5& $OLJQ (UU &5vjÄ†ƒz
$OLJQB(UU ©vñl+÷j¨ †ƒz
)&6 (UU ©vñ)Ä6j¨ †ƒož

 ªPNM *LJDELW(WKHUQHW ,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
6DPSOLQJ7LPHJý ž•k,QSXW 5DWHVHM †Nv,äk2XWSXW 5DWHM †G ,äož

 ªPNM *LJDELW(WKHUQHW ,Ì}Ï‹’Î
5XLMLH VKRZ LQWHUIDFH JLJDELW(WKHUQHW FRXQWHUV VXPPDU\
,QWHUIDFH ,Q2FWHWV ,Q8FDVW3NWV ,Q0XOWLFDVW3N

*L
,QWHUIDFH 2XW2FWHWV 2XW8FDVW3NWV 2XW0XOWLFDV

*L
```

ª¢y

InOctets © N M N v È † -ƒ kInUcastPkts © N M N v % n †ƒ kInMulticastPkts © N M N v Á n †ƒ kInBroadcastPkts © N M N v z n †ƒz

OutOctets © N M G È † -ƒ kOutUcastPkts © N M G % n †ƒ kOutMulticastPkts © N M G Á n †ƒ kOutBroadcastPkts © N M G z n †ƒož

o¬ U P ’ Îo- -

o¬ u V ª¢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 * ^ Ž Õ Ñ Û F å ¥ N M © W • ¨ 10M k100M ê ñ 1000M % ”ož

o¬ Þ . F åo- , ä •

o¬ x X % ”o- N M F å % ”ož

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¨ … à M • — å ž k” 4 — å speed @ ƒ Y Ù k • ¥ — å dulpex k- < © E W % ” y 10/100M , ä •ož ¿ dulpex y speed x X … ò n y

dulpex	speed	W • % ”
full	10	g W • ¨ 10M ¶ E W % ”
Full	100	g W • ¨ 100M ¶ E W
Half	10	g W • ¨ 10M ! E W
Half	100	g W • ¨ 100M ! E W
Auto	auto	Y ß à M W • ¨ • % ”

o¬ F å †o- y Y † ÿ P 8 ¨ ½ , Y ß à N M 0/0 — å è 10/100M • W • % ”

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

o¬ à • co- 1 y … show interfaces x X k U Y ò 0 N M , äož

o¬ U P ’ Îo-

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

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

```
5XLMLH FRQILJXUH WHUPLQDO
5XLMLH FRQILJ YODQ JURXS
5XLMLH FRQILJ YODQ JURXS GHIDXOW YODQ
```

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
anTF9E0t

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 0.72 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-auÇ¯0 DBD NÞ¡™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

```
, 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

ÿ¡ IP ÿ*Q¸ÌGYÿ8VÖ

1. IP / á
2. ARP
3. IPv6
4. DHCP
5. DNS
6. 5%4EE¤AK
7. TCP
8. ECÊ IPv4/v6 Ę@
9. NAT

1 IP fs § §

1.1 ip address

FåNM IP ªž

ip address *ip-address network-mask* [**secondary**]

ï6NM IP ªž

no ip address [*ip-address network-mask* [**secondary**]

o@

@	T
ip-address	32 AÿÔ IP ªk8 y%ÆÝ ªnPkÆž
network-mask	32 AÿÔQAk“1” nPQAyk“0” nPÿbz? 8 y%ÆÝ ªnPkÆž
secondary	**nPFå** IP ªÐFå ip ªž

oFå- NMÆå IP ª

oXX%”o- NM%”

oÐ- 2

o¬.6-o- %²—ÕÆå IP kõÝNvyG IP fGkNMFå IP kNMg IP #

‘ož

ÐA-%² 32 yAÆõ IP ÆÐãÐAk1

AÊ• IP ªÿ<ÐÆÐ AÊ• IP ªÿ<ÐÆãž A

ÐA255.0.0.0 IP

s "É'0Ô ' ª Ð

•k1 ÊZ NM

oF 1 yF NM IP 10.10.10.1k A 255.255.255.0ož

5XLMLHFRQILL QWHUIDFH DELW(WKHUQHW

5XLMLHFRQILL I*L DELW(WKHUQHWLSDGGUHVV

oè o- 1 y **show ip interface** NF

oU P’ - 1. F mask ¶ 1 0 QAg MUYu4 yQAhk åak UPy

5XLMLHRQILIGLDOHULSDGGUHVVQHRWLDWH

oè¤o- 1 y**show ip interface**

oЧP'ô- -

oəjö- -

oнVФ- -

1.3 ip address-pool local

… IP Pož

ip address-pool local

¼ IP Pož

no ip address-pool local

o@	@	T
	-

oHFå- Þ.. IP P

oxX%"o- BFå"

oHÖ- 2

o¬.6-o- HÕP PokUYFå IP PkPPP UY IP PE+€ IP ož

¼ IP PkUY… no ip address-pool local xXk4Ł'Åå IP Pož

oFåd- 1 y… IP Pož

5XLMLHFRQILSDGGUHVVSRROORFDO

oè¤o- -

oЧP'ô- -

oəjö- -

oнVФ- -

IP ÞUÿ¢G ICMP)UG,ðž

no ip icmp error-interval DF *milliseconds*

1.6 ip icmp timestamp

F

ip icmp timestamp

HF

no ip icmp timestamp

@	T
-	-

oH-

oxX%”o-

oH-

o¬.6-o-

oF 1 yF

5XLMLHFRQILQRLSLFPSWLPHVWDPS

oo-

5XLMLHVKRXQQLQFRQILJLQFOXGHLSLFPSWLPHVWDPS

QRLSLFPSWLPHVWDPS

oUP’-

-

oj-

-

oV-

-

1.7 ip directed-broadcast

o IP gzn E

ip directed-broadcast [*access-list-number*]

Hgzn E

no ip directed-broadcast

o@	@	T
	access-list-number	]QZ8R 1-199k 1300 - 2699o4]QZQÄ F¥Q IP gznE H#QZnCkGE

oH-å- ¼

oxX%”o- NM%”

oH- 2

o¬.6-o- IP gznE IP n IP k 172.16.16.255 f
gznXO¥A
—Ovñ IP gznE%n%gznt
—Ok—OgznEA!Znt%E)ö IP zn
kèYeEznGj
UY6NMkogznnEkM<UYGzgz
n4oXQgznnkgzn3oGož
NMkUY*#]QOG?gzno4]QkQÄ.]Q
#GggznnEož
MFå **no ip directed-broadcast** kRGOS 1’Nvgznt

oF-1- 1 y—Õ gigabitEthernet 0/1 Vo4gznGož
5XLMLHFRQILDQWHUIDFHDDELW(WKHUQHW
5XLMLHFRQILDI*LDELW(WKHUQHWLSGLUHFWHGEURDGFDVW

o-o- -

oUP’b- -

o-jo- -

oV- -

1.8 ip local pool

ë IP Pož

ip local pool *pool-name low-ip-address* [*high-ip-address*]

í IP Pož

no ip local pool *pool-name* [*low-ip-address* [*high-ip-address*]]

o

@	T
pool-name	*6* IP dk**default** d
low-ip-address	IP IP
high-ip-addres	IP IP IP PQ*low-ip-address*

oF- F IP

oxX%”o- F%”

o- 2

o¬.6-o- UY¥X%É IP Pk^ PPP IP ž

oF- 1 y% IP Pkd quarkk IP 8 172.16.23.0 ñ 172.16.23.255ož

5XLMLHFRQILJSORFDOSRROTXDUN

o- … **show ip pool P ož**

oP’- 1. Z.P IP Pk3UPy

,3ORFDOSRROLVGLVDEOHG

2. high-ip-address 49 low-ip-address high-ip-address y low-ip-address c%
UPy

,QYDOLGDGGUHVVUDQ

o- 1. F *high-ip-address low-ip-addressož*

2. F *high-ip-address y low-ip-address c*

oV- -

1.9 ip mask-reply

o ICMP QA ž

ip mask-reply

¼ ICMP QA ž

no ip mask-reply

o

@	T
-	-

oHFå- HoG ICMP QA€

oxX%”o- NM%”

oHø- 2

o¬.6-o- à ßr3QAk4BH¥kà ÕYG ICMP QAЬƒ
ìkNvñ ICMP QAЬà ÇkGQAþž

oFåd- 1 y—Õ gigabitEthernet 0/1 NM1k€ ICMP QAЬdž
5XLMLHFRQILG1QWHUIDFH1G1DELW(WKHUQHW
5XLMLHFRQILG1I*LD1DELW(WKHUQHWLSPDVNUHSO\

oèo- -

oUP’ô- -

oəjö- -

oнVø- -

1.10 ip mtu

Få IP Ãy%gMTU hož

ip mtu *bytes*

Ø Fåž

no ip mtu

o		
bytes	IP Ãy%kY-%yk8	68~1500ož

oHFå- HNMxX mtu Fåcož

oxX%”o- NM%”

oHø- 2

o¬.6-o- ç‰² IP Ý IP MTU ÁkRGOS

ç¼NMFåaX mtu +NMÅÇ%g—å IP MTU kNM MTU ¼4%ðz
¥ç.4 IP MTU kNM MTU k5ož

oFåð- 1 y1 gigabitEthernet 0/1 NM IP MTU ›— 512 -ož

```
5XLMLHFRQILJ1QWHUIDFH1DELW(WKHUQHW
5XLMLHFRQILJ1I*LDELW(WKHUQHWLSPWX
```

oàao- 1 y**show ip interface gi 0/1 U** IP interface MTU ÿ512ož

oUP'ô- -

oejö- -

ouVð- -

1.11 ip redirects

o ICMP Mgðž
ip redirects

¼ ICMP Mgož
no ip redirects

oðð		
	@	T
	-	-

oHFåa- ¤ož

o×X%"o- NM%"

oHð- 2

o¬.6-o- ÈÜ…±—Õ%³NMNvÐk}R¥MMG8ožÇ—ÕÐ
RNvNMMG8k—ÕkÐG%² ICMP MgksÐ¾
c%ÐÙ³V—ÕÐG<k1eÐ7ÅGož
RGOS ¤ ICMP Mgož

oFåð- 1 ygigabitEthernet 0/1 NM¼ ICMP Mgož

```
5XLMLHFRQILJ1QWHUIDFH1DELW(WKHUQHW
5XLMLHFRQILJ1I*LDELW(WKHUQHWQRLSUHGLUHFWV
```

oè¤o- -

oЧP'ô- -

oəjö- -

oиV¶- -

1.12 ip source-route

e IP ¤ô¿

ip source-route

¼ IP ¤ô¿

no ip source-route

o¶¤	@	T
	-	-

oH¥å- Þo

o×X%"o- ß%"

1.13 ip ttl

F%n† TTL ož

ip ttl *value*

H%n† TTL ož

no ip ttl

@	T
value	TTL kH8© 0~255ož

oH-å- 64

oxX%”o- %”

oH- 2

o¬.6-o-

oF- 1 yF%n TTL › 100ož

5XLMLHFRQILGSWWO

oo- -

oUP’b- -

oojo- -

ouV- -

1.14 ip ttl-expires enable

F TTL ž

ip ttl-expires enable

H F TTL ž

no ip ttl-expires enable

@	T
-	-

oHFå-	Þo4G TTL
oxX%”o-	%”
oHö-	2
o¬.6-o-	
oFåd- 1	yF TTL
	5XLMLHFRQILQRLSWWOH[SLUHVHQDEOH
oèo-	5XLMLHVKRØXQQLQFRQILJLQFOXGHLSWWOH[SLUHVHQDEOH QRLSWWOH[SLUHVHQDEOH
oUP’ò-	-
oöjö-	-
ouVö-	-

1.15 ip unnumbered

FåM™ IP ž

ip unnumbered *interface-type interface-number*

H¥åž

no ip unnumbered

o

@	T
interface-type	M ž
interface-number	M Íž

oHFå-	åM ož
oxX%”o-	NM%”
oHö-	2

o¬.6-o- —ÍM<Q¯NMo IP #‘k×Ê IP ª—ÍM}‰Ã IP ªNMož–
ÍMDÿ IP ¢kŒ› IP ‰M IP ³ÐÈi-¢‰M
IP ªkŒ—ÍMG‰ž–ÍMk}hª’ý
3. Y‰MFå–ÍMož
4. ¢M/x SLIPo⊢HDLC o⊢PPPo⊢LAPB o⊢Frame-relay ¥UYFå–ÍMožØlÐ
¥Q‰MFå–ÍMož.25 /x€å–ÍMož
5. ping xXŷ—ÍM€W8oke—ÍMŽ IP ³ž© SNMP UY
i!yñ–ÍM‰ž
6. *—ÍMg‰ož

oF‰d- 1 yF‰MFå–ÍMk‰M gigabitEthernet 0/1ož
5XLMLHFRQIL1QWYLUWXDOSSS
5XLMLHFRQIL1I9LUWXDOSSSLSXQQXPEHUHGgigabitEthernet

o‰o- -

oU⊢P’Ô- -

oª⊢Ö- -

o¤V‰- -

1.16 ip unreachables

o ICMP #‘U⊢Ôž
ip unreachables

{¢ ICMP #‘U⊢Ôž
no ip unreachables

o⊢‰- | ¢@ | T |
|---|---|
| - | - |

oH⊢å- ‰

ox×X%”o- NM%”

oH‰- 2

o¬.6-o- ò RGOS ªNv‰³‰%nŁA‰#‘k<kG%² ICMP
)U⊢Ôž

ò RGOS 9 %ÐGk<kgÐG ICMP Ñ

¥X ICMP)

oF 1 y¼ gigabitEthernet 0/1 NMG ICMP)

5XLMLHFRQIL QWHUIDFH DELW(WKHUQHW

5XLMLHFRQIL I*L DELW(WKHUQHWQRLSXQUHDFKDEOHV

oè o-

oU P' o-

oej o-

ou V o-

1.17 peer default ip address

PPP #E IP E

peer default ip address {*ip-address* | **pool** [*pool-name*] }

H IP E

no peer default ip address

o

@	T
ip-address	6+ IP
pool-name	U#È 6 IP Pdk3F default P IP

oH F å- H NM+ IP

ox X%”o- NM%”

oH o- 2

o¬ .

oP UP N Z- ÙNM

ddre nglme

#‘

MFåž

oFåb- 1 yFÅlM dialer +E IP ª 10.0.0.1ož

```
5XLMLHFRQILJQWHUIDFHGLDOHU
5XLMLHFRQILJIGLDOHUSHHUGHIDXOWLSDGGUHVV
```

oèo- -

oUP'ô- -

oejö- -

ouV®- -

1.18 show ip interface

ªPNM IP Ëž

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

o®ª

¡@	T
Interface-type	*6M*
Interface-number	*6Ë*
brief	ªPCNM IP Ãå,NM primary ipo•secondary ip yNMË

o×X%"o- Ô"

oHõ- 1

o¬.6-o- %ªNMÔUËRGOS 1kè‰ëèžNM6® RGOS ª¼

MUYvG¢oõNMRUËËRGOS 1kRèî,+èž

ÑMÔUËÝEg*'ËÇËPUP zÿNÔUË

NMËPUP ož

cNMkPÈ¡%ÿÈÈNMÔbž

oFåb- 1 yªÄlM IP Ëž

```
5XLMLHVKRZSLQWHUIDFHEULHI
,QWHUIDFH,3GGUHVV3ULIP-Address(Sec) 6WDWXV3URWRFRO
*LDELW(WKHUQHWGRÇGRÇ
*LDELW(WKHUQHWQRDGGUHVVQRDGGUHVVGRÇGRÇ
9/$QRDGGUHVVGRÇGRÇ
```

- Status MÇ Ü up down ä administratively downû shutdown a—<

- Protocol MÇ IPv4 d

2y VLAN 1 NM IP

```
5XLMLHVKRZSLQWHUIDFHYODQ
9/$
,3LQWHUIDFHVWDWHLV2:1
,3LQWHUIDFHWSHLV%52$7
,3LQWHUIDFH078LV
,3DGGUHVVLV
SULPDU\
,3DGGUHVVQHRWLDWHLV2))
)RUZDUGGLUHFWEURDGFDVWLV2))
,&3PDVNUHSOLV21
6HQG,&3UHGLUHFWLV21
6HQG,&3XQUHDFKDEOHGLV21
3UR[\$3LV2))
$3SDFNHWLQSXWQXPEHU
5HTXHVWSDFNHW
5HSOSDFNHW
8QNQRZQSDFNHW
77/LQYDOLGSDFNHWQXPEHU
,&3SDFNHWLQSXWQXPEHU
(FKRUHTXHVW
(FKRUHSO\
8QUHDFKDEOH
6RXUFHTXHQFK
5RXWLQJUHGLUHFW
```

<Ky

<	¢
IP interface state is:	àNMÔUÅNMF¼ÿ‘Ø “UP”ož
IP interface type is:	PNMkànkµûž
IP interface MTU is:	PNM—å MTU ož
IP address is:	PNM IP ÿQA’ôž
IP address negotiate is:	PNM IP ¢#Eož
Forward direct-boardcast is:	P gnož

ICMP packet input number: 0	₱NMvñ ICMP ₫₺
Echo request: 0	Echo Ь†
Echo reply: 0	Echo ₫
Unreachable: 0	U†
Source quench: 0	{₫
Routing redirect: 0	₪g†

oЧP’ĵb- -

oиV₫- -

1.19 show ip packet statistics

ð IP ₫bž

show ip packet statistics [**total |** *interface-name*]

o₫ℓ

ℓ@	

```
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	nPNBBMj
GigabitEthernet 0/1	nPNBS+%NMi
Received	Nvjk-jozC%n/ Á/ znk, jkYC+-œe

Sent	G}k-}k%n/ Á/ zn}

oЧP'ô- -

oчV@- -

1.20 show ip pool

ðï© IP ₱'ôž

show ip pool [*pool-name*]

o@ê

@	T
pool-name	6₱d

oxX%"o- @"

oH@- 2

o¬.6-o- -

oFåd- 1 yð@'ôž

```
5XLMLHVKRZSSRRO
5XLMLHFRQILJVKRZSSRRO
3RRO%H1Q(QG)UHH,QXVH
GHIDXOW
SRRO
SRRO
SRRO
```

<₭y

<	¢
Pool	₱d
Begin	₱Ë ip ª
Free	@q~ ip ðž
In use	@3¨… ip ª

oЧP'ô- 7. ê₱k@y

```
1R,3ORFDOSRROVH[LVW
```

oчV@- -

1.21 show ip raw-socket

PÄ IPv4 =Nož

show ip raw-socket [*num*]

	@	T
	num	#‘Z

oXX%”o-

2

o-

o¬.6-o-

-

oF 1 yÄ IPv4 =Nož

```
5XLMLHVKRZSUDZRFNHW
1XPEHU3URWRFRO3URFHVVQDPH
,03GKFSHOI
,03YUUSHOI
,*03LPSHOI
9553YUUSHOI
7RWDO
```

<Ky

<	
Number	~Z
Protocol	#‘Z
Process name	idf
Total	È

oUP’-

-

oV-

-

1.22 show ip sockets

PÄ IPv4 NkUY=3? UDP My TCP M+Ù

show ip sockets

o

oxX%”o-

o-

o.6-o-

o 1

col	#‘Z
P:Port	IP

oЧP’ô- -

oиV- -

2 ARP

2.1 arp

FÁ ARPož

arp *ip-address mac-address type*

HÁ ARPož

no arp *ip-address*

op@ @

	&QQQRWDGGVWDWLF$3
oɵjö-	-
oʁVȣ-	-

2.2 arp-learning

ɵ ARP .ož

arp-learning enable

ɬ¼ ARP .ož

no arp-learning enable

oȣ		
	@	T
	-	-

oȟFå- ÕM…Á ARP .**ož**

oxX%”o- NMFå‰”

oȟõ- 2

o¬.6-o- Ç•—Õ Á ARP nk¼ web 1Á ARP á ARP ekʻɵ¥
kkéɵ Á ARP .ekÁ ARP nkg1Á
ARP nk¼ ARP nkUY* web Fåg Á ARP nk¼²
kUY* clear arp xXkkÁ ARP ng3okÁ ARP n¼
ŽÐNM2Á ARP .eké AnyIP oARP U’yȣž

oFåd- 1 yɵÁ 1 yɵÁ 1

oнVФ- -

2.3 arp cache interface-limit

FåNM ARP .ƒOož

arp cache interface-limit *limit*

ÐFåž

no arp cache interface-limit

oƒ

ƒ@	T
limit	6NMñ ARP ƒÅÁ ARPk H8<0- —Õ4 ARP n¾Q> k0 nP'NM ARP .*f* Oož

oHFå- NM ARP .ƒOož

oxX%"o- NMF‰"

oHÑ- 2

o¬.6-o- 'NM ARP .ƒOkU…2Ð ARP xå•—Ð ARP nk)ÚÏÞž FÅ9NM]Æ ARP nƒkkÉƒÞ¤09—Õ4 ARP Oož

oF‡Ð- 1 yFåNM ARP .ƒO'ò 300ož

```
5XLMLHFRQILJQWHUIDFH
5XLMLHFRQILJ*LJELW(WKHUQHWDUSFDFKHLQWHUIDFHOLPLW
```

2y¿'NM ARP .ƒO

```
5XLMLHFRQILJQWHUIDFH
5XLMLHFRQILJ*LJELW(WKHUQHWQRDUSFDFKHLQWHUIDFHOLPLW
```

oè¤o- show running-config Ô,F‰ož

oЫP'Ô- -

oə¡ö- -

oнVФ- -

2.4 arp gratuitous-send interval

FâËÉ ARP Ьož

arp gratuitous-send interval *seconds* [*number*]

¶ÉËÉ ARP Ьož

no arp gratuitous-send

oÞ@					
	p@	T			
	seconds	Ë	ARP Ьk%yakH8<1-3600>		ož
	number	Ë	ARP Ьf0kh©	1kH8<1-100>	ož

oHFå- NMÄÉ ARP Ьož

oxX%”o- NM%”

oHÞ- 2

o¬.6-o- ¢–ÕMš–ßÇ–ßkéUY4NMFâ
Ë ARP Ьkş03âž

oFåÐ- 1 yFgNM VLAN 1 ?aUG%)Ë ARP Ьož

```
5XLMLHFRQILJIQWHUIDFHYODQ
5XLMLHFRQILJIDUSIDWXLWRXVVHQGLQWHUYDO
```

2yHgNM VLAN 1 GË ARP Ьož

```
5XLMLHFRQILJIQWHUIDFHYODQ
5XLMLHFRQILJIQRDUSIDWXLWRXVVHQG
```

oèo- -

oÞP’Ô- -

oəjÖ- -

oÞV0- -

2.5 arp retry interval

FåÝn ARP Ьžž

arp retry interval *seconds*

Ê¥åž

no arp retry interval

o	(@	T		
	seconds	ARP ЬMnŽUY—å	1~3600 akó	1 aož

oH¥å- ARP ЬMnžе 1 aož

o»X%”o- ¶%”

oH-

o¬.6-o- ÇÊë–ÊG ARP ЬkÊUY1 ARP ЬMnž–å

%k%¾Ý ARP nžž

oF¬å- 1 y1 ARP ЬMnž–å 30sož

oà-

oЬP’Ê-

oÖ¨-

oъVÊ-

2.6 arp retry times

F¥Mn arp ЬÝžž

arp retry times *number*

Ê¥åž

no arp retry times

o	(@	T		
	number	c%² ARP ЬG)k8<1-100>	o–å	1 knPMn
		ARP ЬkQG 1) ARP Ьžž		

oH¥å- ÊÑ ARP kARP ЬkG 5)kàžž

oxX%”o- ‰%”ož

oH-o- 2

o¬.6-o- C€ê-ÐÙG ARP ЬkÐUY1 ARP ЬMn)ƒ—å
%‰%¾1Mn)ƒ—Ðž

oFåd- 1 yFå ARP ЬMnož
5XLMLHFRQILGUSUHWUWLPHV

2yFå ARP ЬMn 1)ož
5XLMLHFRQILGUSUHWUWLPHV

oèo- -

oЬP’ô- -

oəjö- -

oнVo- -

2.7 arp timeout

Få ARP Ø ARP nÐž
arp timeout *seconds*

Ð-åž
no arp timeout

o‰	@	T
seconds	Ya%yk8	0-2147483ož

oH-å- H 3600 aož

oxX%”o- NM%”

oH-o- 2

o¬.6-o- ARP ¥—Q+Á IP ÿ MAC ¥ö—Ð kARP Ü
¥n<Ðkx© ARP ‰!-ÐÝ}K4+oŽÐkk€%¬

Få ARP ŕž

oF‡å0- 1 y1R Gigabit Y8M gigabitEthernet 0/1 Á ARP ¥“ŕ– 120 aož

5XLMLHFRQILL1QWHUIDFH1DELW(WKHUQHW

5XLMLHFRQILL1I*LDELW(WKHUQHWDUSWLPHRXW

oè¤o- 1 y**show arp timeout** ¤M 1 ŕ 120 aož

oUP'ô- -

oəjö- -

ou‹Vœ- -

2.8 arp trust-monitor enable

• ARP U'yož

arp trust-monitor enable

¼ ARP U'yož

no arp trust-monitor enable

op@

oF-å0- 1 yo ARP U'yož

```
5XLMLHFRQILJ QWHUIDFH 
5XLMLHFRQILJ I*LJELW(WKHUQHWDUSWUXVWPRQLWRUHQDEOH
```

2y¼ ARP U'yož

```
5XLMLHFRQILJ QWHUIDFH 
5XLMLHFRQILJ I*LJELW(WKHUQHWQRDUSWUXVWPRQLWRUHQDEOH
```

oè¤o- -

oUP'ô- -

oejÖ- -

ou¬V®- -

2.9 arp unresolve

Få ARP nÌ¶Ø¾ž

arp unresolve *number*

ô¾ž

no arp unresolve

o¶Ø

¶@	T
number	¼ ARP n¶¶H8Â 1k¾ ARP n¶¼ Ooø ARP n¶Ø¾ož

oH-Få- ARP ÙÛY ¶¾ ARP n¶Ø¾ož

ox¤X%"o- ¶%"

oH¶Ø- 2

o¬.6-o- Cë ARP Ù¶Ø¶¾w%<¶¶UY4xX'¶¾
ø¾ž

oF-å0- 1 yF¶¶¼ 500ož

```
5XLMLHFRQILJ USXQUHVROYH
```

oè¤o- -

oЧP'ĵo- -

oəjö- -

oиV®- -

2.10 clear arp-cache

ĩ ARP ĵûÁ ARP ¥"ê¾‰"kkĩš VLAN Á ARP nðž

clear arp-cache [*ip* [*mask*]] | **interface** *interface-name*]

o¦ê

¡@	T
ip	IP ¡ĵŽ6 IP ª ARP n¼ÁÄ arp nðž
mask	mask ĵûAj¡ŽÄ ARP n¼ù IP ª ¡ĵÄù ip 6Á arp nðž
interface *interface-name*	ŽõNMÁ ARP nðÄNMÁ arp nðž

o×X%"o- ¢ê"

o¦ê- 2

o¬.6-o- -

oFåd- 1 yĩÄ ARP ¼"ê¥

```
5XLMLHFOHDUDUSFDFKH
```

2yĩÁ ARP n¾ 1.1.1.1y

```
5XLMLHFOHDUDUSFDFKH
```

3yĩNM SVI1 Á ARP n¥¼

```
5XLMLHFOHDUDUSFDFKHLQWHUIDFH9ODQ
```

oЧP'ĵo- -

oəjö- -

oиV®- -

2.11 ip proxy-arp

ŃMoWò ARP ož

ip proxy-arp

ţẄò ARP ož

no ip proxy-arp

o

op@

@	T	
interface-type interface-number	P6CMCM	ARP
ip	IP kP6	

```
5XLMLHVKRWUSDDEG
3URWRFROSGUHVVSIPLQ+DUGWUH7SH,QWHUIDFH
,QWHUQHWDDEGDUSD9/$
```

5yP **show arp static**

```
5XLMLHVKRWUSVWDWLF
3URWRFROSGUHVVSIPLQ+DUGWUH7SH,QWHUIDFH2UL1Q
,QWHUQHWVWDWLF!DUSD9/$RQILXUH
,QWHUQHWVWDWLF!DUSD9/$XWKHQWLFDWLRQ
VWDWLFDUSHQWULHVH[LVW
```

<Ky

<	
Protocol	Internet kWn© IP #‘
Address	IPv4
Age(min)	IP, P ’-’k9 <static>,
Hardware	F/ 48 bit MAC ? 16 bit % .’
Type	arpa ›
Interface	ARP n¾ 3 CNMo9 ARP n ARP IP
Origin	3 n Configure Authentication

oUP’-

-

oV-

-

2.13 show arp counter

P ARP arp n

show arp counter

o

	T
-	-

oX%”o-

oH- 1

o¬.6-o- -

oFad- 1 yP ARP b arp n

```
5XLMLHVKRZUSFRXQWHU
7KHSUS(QWUFRXQWHU
7KH8QUHVROYHSUS(QWU\
```

oUP'b- -

oV- -

2.14 show arp packet statistics

P ARP b

show arp packet statistics [*interface-name*]

o

@	T
interface-name	P6NM ARP

oX%"o- "

oH- 1

o¬.6-o- -

oFad- 1 yP ARP n'y

```
5XLMLHVKRZUSSDFNHWVWDWLVWLFV
,QWHUIDFH5HFHLYHG5HFHLYHG5HFHLYHG6HQW6HQW
1DPH5
HTXHVWV5HSOLHV2WKHUV5HTXHVWV5HSOLHV

*LDELW(WKHUQHW
*LDELW(WKHUQHW
*LDELW(WKHUQHW
*LDELW(WKHUQHW
*LDELW(WKHUQHW
*LDELW(WKHUQHW
*LDELW(WKHUQHW
```

/RRSEDFN

<Ky

<	T
Received Requests	vñ ARP Ьƥož
Received Replies	vñ ARP ƥož
Received Others	vñ ARP ƥož
Sent Requests	Gß ARP Ьƥož
Sent Replies	Gß ARP ƥož

oЬP'ĵb- -

oвV@- -

2.15 show arp timeout

₱Á ARP nžž

show arp timeout

o@ | ƥ@ | T |
|---|---|
| | - | - |

oxX%"o- @"

o#@- 1

o¬.6-o- -

oFåd- 1 y₱Á ARP nžž

5XLMLHVKRØUSWLPHRXW
,QWHUIDFHDUSWLPHRXWVHF

9/$

oЬP'ĵb- -

oвV@- -

2.16 show ip arp

P¤‘gARP hûož

show ip arp

o@

@	T
-	-

oXX%”o- Û”

o- 1

o¬.6-o- -

oFåo- 1 yP¤‘gARP hûož

```
5XLMLHVKRZSDUS
3URWRFROGGUHVVWPLQ+DUGZUH7SH
,QWHUIDFH
,QWHUQHWG$3DVW(WKHUQHW
,QWHUQHWHE$3DVW(WKHUQHW
,QWHUQHWGIGF$3DVW(WKHUQHW
,QWHUQHWGIHFI$3DVW(WKHUQHW
,QWHUQHWGIG$3DVW(WKHUQHW
,QWHUQHWEGHEHH$3DVW(WKHUQHW
,QWHUQHWEGHIG$3DVW(WKHUQHW
,QWHUQHWGIIEE$3DVW(WKHUQHW
```

ARP ûJ_<m#Tù

<	¢
Protocol	¤‘k¥® Internetož
Address	F¤• IP ¤ž
Age (min)	ARP ûŒ¥Yåûoø¤ F¤¥<?“¿”nPož
Hardware	IP ¤+F¤ž
Type	F¤Y¤ ARPAož
Interface	IP ¤MMož

oUP’ô- -

ouV¤- -

3 IPv6

3.1 clear ipv6 neighbors

ŽÅnDož

clear ipv6 neighbors [**oob**] [*interface-id*]

o@	@	T
oob	**k** oob þ¼ Ž MGMT MÅ>DGÁnD
interface-id	**NWfknP6NÁ**

oxX%”o- Ô”

oH0- 14

o¬.6-o- A_&Å• vlan N_þ&Wd

oF0- 1 yŽÅnDož

```
5XLMLHFOHDULSYQHL8ERUV
```

2yŽ MGMT MÅ>Dož

```
5XLMLHFOHDULSYQHL8ERUVRRE
```

3yŽ gigabitEthernet 0/1 MÅ>Dož

```
5XLMLHFOHDULSYQHL8ERUV1DELW(WKHUQHW
```

oUP’ô- -

ouV0- -

3.2 ipv6 address

Få IPv6 k…*Ôž

ipv6 address *ipv6-address* | *prefix-length*

ì6 IPv6 ož

no ipv6 address *ipv6-address* | *prefix-length*

Få eui-64 ” IPv6 ož

ipv6 address *ipv6-prefix* | *prefix-length* **eui-64**

ï6 eui-64 ” IPv6 ª
no ipv6 address *ipv6-prefix* | *prefix-length* **eui-64**

…*Ûå IPv6 ¥, eui-64 ”ª
ipv6 address *prefix-name sub-bits* | *prefix-length* [**eui-64**]

ï6…*Ûå IPv6 ¥, eui-64 ”ª
no ipv6 address *prefix-name sub-bits*| *prefix-length* [**eui-64**]

ïNMÄ IPv6 ª
no ipv6 address

o	@	T
	ipv6-address	IPV6 ¥ª² RFC4291 #¥k?¥ k?¿ 16 AÛP.
	ipv6-prefix	IPV6 ª² RFC4291 #¥k?¥ ª?¿ 16 AÛP.
	prefix-length	IPV6 Ø IPV6 ¥Wnª
	prefix-name	*Ûož.6*
	sub-bits	*ÒÕÔ²* RFC4291 TPcož
	eui-64	nP IPV6 Û 64 AÛM ID œ

oÛå-

—ª

o×X%”o-

NM%”

oÛ-

14

o¬.6-o-

%² IPV6 NMtwe UP NM IPv6 ª *Û Ñ
ÔUY… **ipv6 general-prefix x -L@**

ICMPv6 IPv6 è MTU ICMPv6 ICMPv6 IPv6 è MTU ICMPv6 ICMPv6 ICMPv6 ICMPv6 ICMPv6 ICMPv6 Mg 10 Da 10 Da 10 Da 49 10 10 Da 5 Da 1 10 Da 2 10 Da 10 Da 15 Da 3 10 Da 2

oFå 1 yFå ICMPv6 1 a 100

5XLMLHFRQILJ SYLFPSHUURULQWHUYDOWRRELJ

2yFå ICMPv6 1 a 10

5XLMLHFRQILJ SYLFPSHUURULQWHUYDO

oè o- … **show running-config**

oU P’ b- -

oe j o- -

ou V - -

3.5 ipv6 enable

oNM IPv6 #‘

ipv6 enable

NM IPv6 #‘

no ipv6 enable

o

@	T
-	-

oF å- ¼

ox X%”o- NM%”

o - 14

o¬.6-o- Ä 2 UY NM IPv6 k% MFå **ipv6 enable x**

IPv6

ÇlMFå	IPv6 ¦NM	IPv6 <kb/……	**no ipv6 enable -ŧ¼**
IPV6 ož			

oà¤o- * **show ipv6 general-prefix ¡¢£¤¥¦§¨ž**

oЫP’ô- -

oəjö- -

oъVф- -

3.7 ipv6 hop-limit

F€ś%nфž

ipv6 hop-limit *value*

Ð¤Fåž

no ipv6 hop-limit

o¡¢£	@	T
value	¡¢£¤¥¦§¨©	1 --- 255ož

oH¤Få- ¤ 64ož

o×X%”o- ¤%”

oH¤ö- 14

o¬.6-o- ¥XQ+%n¡k+]áöVà

5Ã¤Ö%n¢

3.8 ipv6 mtu

Få IPv6 MTU hož

ipv6 mtu *bytes*

no ipv6 mtu

bytes	IPv6 MTU 1280~1500(NM mtu

NMxX mtu Få

NM%”

14

IPv6 IPv6 MTU RGOS IPv6 MTU “ã» uo“ Ü uY]• Œt “Ü uY]•vÎu 6 -o-

		T
	value	ÔMñ>DŽ8,Á§åA>DkH› 8 0-—Õ4>Dn³Qk0 nP’ÔM.>DƒDož

	Þ 0knP’ÔM.>DƒDož
	NM%”
	14
	’ÔM>D.ƒDkU…2ÐDxà•—ÿÕ>Dnž)ÐÉå À9ÔM]ÆDƒkkÉÿÐ09—Õ4 ND Oož
1	y1 GigabitEthernet 0/1 NM>D.ƒD’ò 100ož
	5XLMLHFRQILJ1QWHUIDFH*LJDELW(WKHUQHW 5XLMLHFRQILJ1I*LJDELW(WKHUQHWLSYQGFDFKHLQWHUIDFHOLPLW
	* **show run ÔFÉÿož**
	-
	-
	-

3.10 ipv6 nd dad attempts

FÉåyžÒ>DЬ(NS) ƒDož

ipv6 nd dad attempts *value*

ÐFÉåž

no ipv6 nd dad attempts

		T
	value	ÐƒDž—å 0 žPŽ¾NM Ipv6 ÿÿyož2y0-600oƒž 1ož

1	
	NM%”

oH- 14

o¬.6-o- NMF‰³ IPV6 ¸oïsyk4"tentative" g
ïig4k¥UYt3G…k4kw¥
ñ.NMœe©. EUI-64 œekïeeCMK4
k¸MMg/ŠMMg IPV6 ,¸nk4V>“wwF
*Ç down/up NMMoïsyož NMR down up k¥
NMoïsyož

oF- 1 y¨ GigabitEthernet 0/1 NMF 3 >DL
5XLMLHFRQILL*LDELW(WKHUQHWLSYQGGDGDWWHPSWV

oè- * **show ipv6 interface** NMF DAD Mn)ž

oU- -

oë- -

oV- -

3.11 ipv6 nd dad retry

F/Syož
ipv6 nd dad retry *value*

ža
ipv6 nd dad retry

ţMyŽk¥UY3o…ož

oFåb- 1 y“wMĵ@e 10sož

```
5XLMLHFRQILJ1SYQGGDGUHWU\
```

oèo- * **show run W6ĵož**

oUP’Ô- -

oəjö- -

ouV@- -

3.12 ipv6 nd managed-config-flag

F¸managed address configuration ÿož

ipv6 nd managed-config-flag

ĵ¥ož

no ipv6 nd managed-config-flag

o@	@	T
-	-

oHFå- Þ—Fåž

ox%X%”o- NM%”

oH@- 14

o¬.6-o- ¥—å¥ç¥ĵ…¥ĵ¥HºÿF¸å¥

yk1…¥ĵ¥ké.ož

oFåb- 1 y¨ GigabitEthernet 0/1 NMF¸managed address configuration ÿož

```
5XLMLHFRQILJ1I*LJELW(WKHUQHWLSYQGPDQDJHGFRQILJODJ
```

oèo- * **show ipv6 interface 0NMFåž**

oUP’Ô- -

oəjö- -

oнVФ- -

3.13 ipv6 nd ns-interval

FåIM>DЬ(NS) Mnež

ipv6 nd ns-interval *milliseconds*

Ê Fåž

no ipv6 nd ns-interval

o	(@	T
	milliseconds	*DMDay%8y* 1000-4294967295 ož

oHFå- 9ÊGê(RA) kb 0gnPÒhz

9Oò–Õ>DЬMnkb 1000 Daož

o×X%”o- NM%”

oHФ- 14

o¬.6-o- FåL ê (RA) tGbß kc¥t—Õ. ož}1¥—å

4ož

oFåd- 1 y¨ GigabitEthernet 0/1 NMFåDЬMne 2 aož

5XLMLHFRQILJI*LDELW(WKHUQHWLSYQGQVLQWHUYDO

oà- * **show ipv6 interface 0NFå** NS Mnež

oЬP’Ô- -

oəjö- -

oнVФ- -

3.14 ipv6 nd other-config-flag

Fê **other stateful configuration** ž

ipv6 nd other-config-flag

ï¥ož

no ipv6 nd other-config-flag

o@

@	T
-	-

oHFå-

Þ—Få

o»X%”o-

NM%”

oH-

14

o¬.6-o-

—å4 yek—GE s †ytåyozÑ yek1…

dhcpv6 ÊH” IPv6 ¥Ù’ FåžmanagedaddressconfigurationtåÉ

otherstatefulconfiguration-tåž

oFåb- 1 y¨ GigabitEthernet0/1NMFêother stateful configuration ¥ož

5XLMLHFRQILL1I*LDELW(WKHUQHWLSYQGRP ÊpM(ÈÈ(ÈÈ¥E¦iFÐª 6€BÐ t — åož

o ¬ x X

	Þ 30 Þž
preferred-lifetime	Ñv ñè ˜¸s ùŒe • Ù# Ä| ž•k H ›8 0-4294967295kÞ 7 Þž
at *valid-date preferred-date*	—åÐy‰Ä2k2Ð ðÑvo4 žÐnPož
infinite	nPKCÄÞž
default	—å…ÞÐž
no-advertise	**nPÞož**
off-link	Ñ IPV6 ÐÐ c%èÐon-link) O+NÞž–å¥¤PÐ
no-autoconfig	

}

‘Nd

oèo- * **show ipv6 interface** [*interface-id*] **ra-info** ôêô

oUP’ô- -

oəjö- -

ouVô- -

3.16 ipv6 nd ra-hoplimit

FåMGê(RA) ƒž

ipv6 nd ra-hoplimit *value*

ô-åž

no ipv6 nd ra-hoplimit

o@ƒ

ƒ@	T
value	ê(RA) ƒH8 0-255ož ƒ© 64 éž

oF-å- ƒ© 64ož

oxX%”o- NM%”

oHô- 14

o¬.6-o- -

oF-åd- 1 y¨ GigabitEthernet 0/1 NMFêêƒ 110ož

5XLMLHFRQILJ1I*LDELW(WKHUQHWLSYQGUDKRSOLPLW

oèo- * **show ipv6 interface** [*interface-id*] **ra-info** ôêô

oUP’ô- -

oəjö- -

oиV@- -

3.17 ipv6 nd ra-interval

FåIMGê(RA) dž

ipv6 nd ra-interval { *seconds* | **min-max** *min_value max_value* }

Ð¬åž

no ipv6 nd ra-interval

o@ ÀxÐ

3.18 ipv6 nd ra-lifetime

FåMGê(RA) ê
ipv6 nd ra-lifetime *seconds*

ê
no ipv6 nd ra-lifetime

o		T
seconds	1800 aož	0-9000ož

oF-å- 1800 a

ox X%”o- NM%”

oH- 14

o¬.6-o- ê 9?ê(RA) 0 nP ê 0
9—Õê(RA) (ra-interval) ož

oF-å- 1 y¨ GigabitEthernet 0/1 NMFê 2000 aož
5XLMLHFRQILJ LI*LJ ELW(WKHUQHWLSYQGUDOLIHWLPH

oà o- * **show ipv6 interface** [*interface-id*] **ra-info** ê

oU P’ ô- -

oəjö- -

ou V- -

3.19 ipv6 nd ra-mtu

FåMGê(RA) † MTUož
ipv6 nd ra-mtu *value*

ê
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%”

oH- 14

o¬.6-o- —ÕF§U>Dkñ–Ø5UY¾ÿDßkxC~
Ø¿oþ–Õ¼e1F¥aož
Fåş(RA) tGbß3kcÆ—Õ.oş–å 0 nP—Õ
6¥/…þož

oFåd- 1 y¨ GigabitEthernet 0/1 NMFåDtUž 1000 aož
5XLMLHFRQILJ1I*LDELW(WKHUQHWLSYQGUHDFKDEOHWLPH

oèo- * **show ipv6 interface 0ş**

oUP'ô- -

oəjo- -

ouVd- -

3.21 ipv6 nd stale-time

FåD‘4 stale Øž
ipv6 nd stale-time *seconds*

Ø
no ipv6 nd stale-time

op

@	T
seconds	>D stale Ø¼Ya%yk8y 0-86400 ož Þ 3600 aož

oF- >DØñ stale Ø¼ò 1hož

oxX%”o- %”

oH- 14

o¬.6-o- ¥å“w stale Ø¼Ê>DUyoØ5UY¾
yñDßkxC~Ø¿oþ–Õ¼e1F¥aož

oFåd- 1 yFå–ÕD stale ÿž 600sož
5XLMLHFRQILJ1SYQGVWDOHWLPH

	ipv6-address	>D IPV6 RFC4291 #nP¥ož
	interface-id	6¥D MG, Routed Port,L3 AP My SVI NMhož
	hardware-address	>De Y XXXX.XXXX.XXXX nP 48 y MAC ’X’ nP

Å

B F ”

14

¥X w ARP xXk DQF IPv6 #‘NMk

F D] E NDP ¥Dnk D1 F å

D Reachable F D IPV6

MF g¥M% IPV6 Mshk4 k7

D6 mac ož– D inactive U Y* **show ipv6 neighbor static**

… **clear ipv6 neighbors x** * NDP)>Dož

1 y¨ SVI 1 Dož

5XLMLHFRQILJ SYQHLK ERUYODQGI

… **show ipv6 neighbors x bž**

-

-

-

3.25 ipv6 ns-linklocal-src

G>DLž .eož

ipv6 ns-linklocal-src

G>DLž .e) IPv6 RFC3484 #+…e

nž

no ipv6 ns-linklocal-src

	ipv6-address	>D IPV6 RFC4291 #nP¥ož
	interface-id	6¥D MG, Routed Port,L3 AP My SVI NMhož
	hardware-address	>De Y XXXX.XXXX.XXXX nP 48 y MAC ’X’ nP

-	-

oHFå- G>DЬkkeeðž

oxX%”o- ₿Få%”

oHð- 14

o¬.6-o- -

oFåd- 1 yG>DЬž.eðž

5XLMLHFRQILQRLSYQVOLQNORFDOVUF

oèo- -

oЬP’ô- -

oəjö- -

oнVð- -

3.26 ipv6 redirects

e ICMPv6 Mgož

ipv6 redirects

¼ ICMPv6 Mgož

no ipv6 redirects

@	T
-	-

oHFå- he ICMPv6 Mgož

oxX%”o- NM%”

oHð- 14

o¬.6-o- Ä ICMPv6 jGnyðP?aUÛYG 10 j¨ ICMPv6 j¨

(10pps) ož

3.28 show ipv6 address

P IPv6 ªÐž

show ipv6 address [*interface-name*]

	@	T
	interface-name	*NfkPÄ* IPv6 ðž

»X%”o-

Ô”

14

-

1 yÔÎ—ÕÃ IPv6 ðž

```
5XLMLHVKRZSYDGGU
*OREDOXQLFDVWDGGUHVVOLPLW*OREDOXQLFDVWDGGUHVVFRXQW
7HQWDWLYHDGGUHVVFRXQW'SOLFDWHDGGUHVVFRXQW
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
```

2yÔÎ—ÕM GigabitEthernet 0/1 Få IPv6 ðž

```
5XLMLHVKRZSYDGGU1
*OREDOXQLFDVWDGGUHVVFRXQW
7HQWDWLYHDGGUHVVFRXQW'SOLFDWHDGGUHVVFRXQW
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	
IPv6 general prefix	*
acquired via	H
Prefix/len	

o Ъ P ' ô - -

o ъ V - -

3.30 show ipv6 interface

IPV6 NM ' ô ž

show ipv6 interface [[*interface-id*] [**ra-info**]] [brief [*interface-id*]]

o

interface-id	NM g , Y aggregateport NMo S VI NM h k P ñ Ä M o ž
ra-info	ô ¥ M 9 G RA
brief	

o ¤ X % ” o -

o -

14

o ¬ . 6 - o - * ¥ X U Y ô IPV6 NM F å N D F å C , ž

o F å - 1 y IPV6 NM ' ô ž

```
5XLMLHVKRZSYLQWHUIDFHYODQ
,QWHUIDFHYODQLV8SLILQGH[
DGGUHVVHV
0DFGGUHVV
,1(7IHIIIHVXEQHWLVIH
,1(7VXEQHWLV>7(17,9(@
-RLQHGURXSDGGUHVVHV
```

```
,&03HUURUPHVVDJHVOLPLWHGWRQHHYHUPLOOLVHFRQGV
,&03UHGLUHFWVDUHHQDEOHG
1LVHQDEOHGQXPEHURISWWHPSWV
1UHDFKDEOHWLPHLVPLOOLVHFRQGV
1DGYHUWLVHGUHDFKDEOHWLPHLVPLOOLVHFRQGV
1UHWUDQVPLWLQWHUYDOLVPLOOLVHFRQGV
1DGYHUWLVHGUHWUDQVPLWLQWHUYDOLVPLOOLVHFRQGV
1URXWHUDGYHUWLVHPHQWVDUHVHQWHYHUVHFRQGV!
1URXWHUDGYHUWLVHPHQWVOLYHIRUVHFRQGV
```

ÞUY0ñ INET6: 2001::1 , subnet is 2001::/64

[TENTATIVE]%ĝk9yINET6 ê [ ] ÿm#ò

<	¢
ANYCAST	nP¥nºž
TENTATIVE	nP3¥gsy(DAD) k y¥ žz
DUPLICATED	nP¥ÿ¥Mžz
DEPRECATED	nP¥J[¥k¥.. 4ož
NODAD	nP+g¥syož
AUTOIFID	nP¥KMœe¥*o<© EUI-64 œeož
PRE	nP—¥ž
GEN	nP*¥žz

2y0 IPV6 NM9G RA ¥z

```
5XLMLHVKRZSYLQWHUIDFHYODQUDLQIR
YODQ2:1
5WLPHULVVWRSSHG
ZLWVLQLWFRXQW
VWDWLVWLFV5RXWLQLQFRQVLVWHQW56LQSXW
/LQNODHUDGGUHVV
3KVLFDO078
1URXWHUDGYHUWLVHPHQWVOLYHIRUVHFRQGV
1URXWHUDGYHUWLVHPHQWVDUHVHQWHYHUVHFRQGV!
)ODJV02GSY078
1DGYHUWLVHGUHDFKDEOHWLPHLVPLOOLVHFRQGV
1DGYHUWLVHGUHWUDQVPLWWLPHLVPLOOLVHFRQGV
1DGYHUWLVHG&U+RS/PLWLV
```

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

```
*LDELW(WKHUQHW>GRQGRQ@

)(%)))(
```

oUP’ô- -

oVô- -

3.31 show ipv6 neighbors

P IPV6 >Dnož

show ipv6 neighbors [**verbose**] [*interface-id*] [*ipv6-address*] [**static**

<Ky

<	¢
IPv6 Address	>D IPV6 ª
Linklayer Addr	e Mac k incomplete
Interface	¥DÑM
State	>D state/H(R) STATE INCMP(Incomplete)—¥D g k>D(NS) x D(NA) ož REACH(Reachable) —nPR—D k g>DG STALE — nP>Dt ìÙ• ÄG ñ> D k 4 1 o NUD (Neighbor Unreachability Detection) ož DELAY—nP g STALE >DG k4 STALE DELAY DELAY_FIRST_PROBE_TIME seconds(5 a)DU DELAY PROBEkc¥DG>D (NS) k3”o NUDož PROBE—nP NUD y>DU? RetransTimer milliseconds g>DG>D(NS) ñ1>D>D] ñ MAX_UNICAST_SOLICIT(3) ?—nP /R—nP>D²—Õ /H—nP>DÑ
Age	nP>Dt nPK khÁaDn1‰ Uož expired’ nP>Dt NUD yož
Asked	nP>DeG>DG>D(NS) ož

3y ÁD

```
5XLMLHVKRZSYQHL&ERUVVWDWLF
,3Y6GUHVV/LQNOD+U6GU,QWHUIDFH6WDWH
GIDE*LDELW(WKHUQHW&,9(
GIDF9/$,1&,9(
```

<Ky

<	¢
IPv6 Address	ÁD IPV6 ª

Interface	¥DÑM
State	ÁDÿ STATE ÿ ACTIVE—t INACTIVE—tkÁD IPV6 kNMFg %NMkMshkÁDFk/G k7ÁD6 mac ož

oЬP’ô- -

oнV@- -

3.32 show ipv6 neighbors statistics

₱ IPv6 >Dnk

show ipv6 neighbors statistics

op@

@	T
-	-

oxX%”o- @”

oÁ@- 14

o¬.6-o- -

oFå0- 1 y0B>Dnkž

```
5XLMLHVKRZSYQHL&ERUVWDWLVWLFV

0HPRUEWHV
(QWULHV
6WDWLFQDPLF/RFDO
,QFRPSOHWH5HDFKDEOH6WDOHHODUHP
5XLMLH
```

2y0ÁDnk

```
5XLMLHVKRZSYQHL&ERUVWDWLVWLFVDOO

,3YQHL&ERUWDEOHFRXQW
6WDWLFQHL&ERUFRXQWDFWLYHLQDFWLYH
```

```
7RWDO
0HPRUEWHV
(QWULHV
6WDWLFQDPLF/RFDO
,QFRPSOHWH5HDFKDEOH6WDOHHODS3UREH

*OREDO
0HPRUEWHV
(QWULHV
6WDWLFQDPLF/RFDO
,QFRPSOHWH5HDFKDEOH6WDOHHODS3UREH
5XLMLH
```

<HKy

```
<
```

3.33 show ipv6 packet statistics

P IPv6 ž

show ipv6 packet statistics [**total |** *interface-name*]

@	T
total	ÏÏ ÏPÄMk-P?%NMž
interface-name	Ï

Ô”

14

-

yð IPv6 ž

```
Ï
Ï
Ï
```

5HFHLYHGSDFNHWVEWHV
8QLFDVW0XOWLFDVW
LVFDUGV
+GU(UURUV+RSOLPLW([FHHGHG2WKHUV
1R5RXWHV
2WKHUV
6HQWSDFNHWVEWHV
8QLFDVW0XOWLFDVW
5XLMLH

<Ky

<	¢
Total	ùnPÄM IPv6 ¥ GigabitEthernet 0/5 ùnP¢NM¥
Received	Nvñ IPv6 ¥k-¥
Unicast	IPv6 %n¥
Multicast	IPv6 Á¥
Discards	' IPv6 ¥
HdrErrors	IPv6 Ðj'¥
HoplimitExceeded	¢ik4¢¥
Others	¿U IPv6 Ðjk-'¥
NoRoutes	9¢ IPv6 ¥
Others	¢ IPv6 ¥
Sent	G IPv6 ¥k-¥o %n¥kÁ¥o

oÐP'ô- -

oÐV¢- -

3.34 show ipv6 raw-socket

P¤Ä IPv6 =¤o

show ipv6 raw-socket

oxX%”o- Ô”

oH6- 14

o¬.6-o- -

oFad- 1 yÔÄ IPv6 =Nož

```
5XLMLHVKRZSYUDZRFNHW
1XPEHU3URWRFRO3URFHVVQDPH
,&3YYUUSHOI
,&3YWFSLSHOI
9553YUUSHOI
7RWDO
```

<K y

<	¢
Number	~Z
Protocol	#‘Z
Process name	idf
Total	È

oUP’Ô- -

oVÔ- -

3.35 show ipv6 sockets

P Ä IPv6 NkUY=3? UDP My TCP M+Ù

show ipv6 sockets

o

oF-d- 1 y0Ä 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
UJVHOQHWG675(&7$/,67(1
7RWDO
```

<Ky

<	¢
Number	~Z
Process name	idf
Type	N k RAW nP=N kDGRAM nP ß• kSTREAM nPv0ž
Protocol	#‘Z
LocalIP:Port	î IPv6 y£M
ForeignIP:Port	+€ IPv6 y£M
State	&Q+ IPv6 TCP NÄož
Total	NÈ

oU-P’ô- -

ouV0- -

3.36 show ipv6 udp

PÄ IPv6 UDP NkUY=3? UDP £M+Ù2Z

show ipv6 udp [**local-port** *num*] [**peer-port** *num*]

P IPv6 UDP Nöž

show ipv6 udp statistics

op	@	T

local-port *num*	ê¶MZ
peer-port *num*	ê¶I

oxxX%”o- Ô”

oH¶- 14

o¬.6-o- -

oFåd- 1 yôÃ IPv6 UDP

4 DHCP

address range

}¨ DHCP Ƥ₩ CLASS 6 CLASS Ƒå8kƤ 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*

oⱵFå- ₩ CLASS ÌFå8k■■à8ož

o»X%”o- Ƥ CLASS Få‰”

o¬.6-o- ¥XK9 Server Få? CLASS +%å8kà8ÌRz■UY■

Ú CLASS ■8MÖ■4₩ CLASSkx+à8Ä■é

¥ CLASS ■8y CLASS ■à8,což

oFå■- 1yF■ mypool0 ₩ class1 à8 172.16.1.1172.16.1.8 ož

5XLMLHFRQIL1SGKFSSRROPSRRO

address-manage

@	T
-	-

-

¶F

14

¥XK9 Server F} F` supervlan …

1 yµ AM €

5XLMLHFRQILJDGGUHVVPDQDH

* **show run**

-

-

4.3 bootfile

}# DHCP DHCP PF X **bootfile**

bootfile *file-name*

no

no bootfile

default bootfile

@	T
file-name	*o*

o

DHCP PF

oH-

14

o¬.6-o-

¥XK9 Server Fa? DHCP 6i}ú0F DHCP 7E

DHCP TFTPh0

* **next-server x#**

oF 1 y—Õ4 DHCP

5XLMLHGKFSFRQILERRWILOHURXWHUFRQI

o*o-

* **show run**

oUP'-

-

o-

-

ou-

-

4.4 class

}¨ DHCP CLASSk DHCP class xX

class *class-name*

no

no class *class-name*

	T
class-name	CLASS dfkUY©. myclass 1

oH- 4

CLASS

oxX%"o- DHCP %"

oH- 14

o¬.6-o-

¥XK9 Server Fa? DHCP PUY Option82 F' Option82 '

DHCP P? UY CLASSk%²

DHCP PUY CLASSk? CLASS UY6c8

GUY PkG¿ Option82 '‰5G

K CLASSkR CLASS +8 IP CLASS

7Á CLASS P CLASS 8 CLASS

ïkÈ%F CLASS gÃk¾Poz² CLASS +¥%à8kà8·
À²zÃUY¢Ú CLASS à8MÓ²4P¿¼ CLASSkwÌ
Få CLASS àkÉ CLASS à8y CLASS Èà8,což

oFåb- 1 yF® mypool0 ¿¼ class1ož

```
5XLMLHFRQILJ1SGKFSSRROPSRRO
5XLMLHGKFSFRQILJFODVVFODVV
```

oèo- * **show run Eå**

oÞP'ô- -

oëjö- -

oÞV0- -

4.5 clear ip dhcp binding

}Ž DHCP ÇkØ” **clear ip dhcp binding xX**

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

o0

@	T
*	Á DCHP Ç
ip-address	6 IP ª£

o×X%”o- Ø”

oH0- 14

o¬.6-o- ¥XK9 Server Få¥XQŽ DHCP ÇDHCP 0VÇUY* **no ip dhcp pool xX**

oFåb- 1 yŽ4 IP ª 192.168.12.100 DHCP Ç

```
5XLMLHFOHDULSGKFSELQGLQJ
```

oÞP'ô- -

oÞV0- -

4.6 clear ip dhcp conflict

5XLMLHFOHDULSGKFSKLVWRU\

oЬP’ĵ- -

oъV⓿- -

4.8 clear ip dhcp server detect

}Ž DHCP q⁋Æ

o	@	T
	-	-

oxX%”o- Ø”

oH- 14

o¬.6-o- ¥XK9 Relay FåDHCP ð+ DHCP ÑvyG_g4b **clear ip dhcp relay statistics x**

oF-1 yŽ DHCP

5XLMLHFOHDULSGKFSUHODVWDWLVWLFV

oUP’b- -

ouV- -

4.12 client-identifier

}# DHCP DHCP PFåX **client-identifier**

client-identifier *unique-identifier*

no

no client-identifier

default client-identifier

o	@	T
	unique-identifier	DHCP Po 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 WnYg
67.6967.6162.6974.4574.6865.726e.6574.302f.31 GigabitEthernet0/1 o
#kUY@ RFC1700 Address Resolution Protocol Parameters ~-ož
Qg DHCP WVGzUY…¥Xož

oFd- 1 y#4 MAC ª 00d0.f822.33b4 Y DHCP z
5XLMLHGKFSFRQILFOLHQWLGHQWLILHU
GIEHI

oo- * **show run** UFå

oUP'b- -

oojo- -

ouV- -

4.13 client-name

}# DHCP k DHCP PFåX **client-name**
client-name *client-name*

no DHCP
no client-name

default client-name

@	T
client-name	# DHCP oUY~Õ ASCII … e Ç¿d k A ò # river DHCP ï €d k # river.i-net.com.cn

oF- F

oX%"o- DHCP PF%"

o- 14

o¬.6-o- ¥XK9 Server FQg DHCP WVGzUY¥X# DHCP o
¥¥e@

5XLMLHGKFSFRQILG GHIDXOWURXWHU
(UURULSDGGUHVVLVQRWYDOLG

oəjÖ- 1. F‰nª
2.Fš 8 ¡Ë

oʊV®- -

4.15 dns-server

}# DHCP € DNS Æ DHCP ₱PF‰X **dns-server**
dns-server *ip-address* [*ip-address2…ip-address8*]

no ¥ DNS Æ
no dns-server

ê
defaut dns-server

o¶ê

@	T
ip-address	# DNS Æ IP ¾ÿL5F‰²
ip-address2…ip-address8	*g* 8 DNS Æ

oH₣å- ¤Æ DNS Æ

o×X%”o- DHCP ₱PF‰”

oH®- 14

o¬.6-%”o-} L ÀW€E€…

oəjö- 1. F%nª

2.Fá 8 ¡Ä

4.16 domain-name

}# DHCP ëQk DHCP ÞxX **domain-name**

domain-name *domain-name*

no

no domain-name

defaut domain-name

@	T
domain-name	# DHCP ëQ…

oÞFå- ÞÆQ

o×X%”o- DHCP ÞF%”

oÞ- 14

o¬.6-o- ¥XK9 Server FåDHCP Þ46eQekpÑéQ+N*

ÑK<UY4

oFåd- 1 yË DHCP ë4eQ i-net.com.cn

5XLMLHGKFSFRQILGRPDLQQDPHLQHWFRPFQ

oèo- * **show run** UFå

oUP’ô- 1 yFåª

5XLMLHGKFSFRQILGQVVHUYHU

(UURULSDGGUHVVLVQRWYDOLG

oəjö- 1. F%nª

2.Fá 8 ¡Ä

4.17 dynamic-pool

}*sHÅ AP ÿG—Õ MAC ÁR DHCP P¾ÿ¿QAkU¨ AC ap-config/ñ ap-group %”Få dynamic-pool xX

dynamic-pool

¨ AC ap-config/ñ ap-group %”Ì#

no dynamic-pool

op@

@	T
-	-

ê

defaut hardware-address

o

@	T
hardware-address	# DHCP € MAC ª
type	œ DHCP €ûV#‘kUY…ƒožŽ.# ÿ¼ „ ethernet „ ieee802 ƒÿ¼ „ 1 g10M ethernet h „ 6 gIEEE 802 h

oF-

HZª

ÿFžkP ethernet

oX%”o- DHCP PF‰”

o-

14

o¬.6-o- ¥XK9 Server FQÄ DHCP ŸWÇžŸY…¥X

oF-1- y#4º ethernet MAC ª 00d0.f838.bf3d

5XLMLHGKFSFRQILKDUGZUHDGGUHVVGIEIG

o*o- * **show run**

oUP’Î- -

oÿo- -

4.19 host

}# DHCP Ñ IP ÿÈAk DHCP PF X **host**

host *ip-address* [*netmask*]

no DHCP € IP ÿÈA#

no host

ê

defaut host

op@	@	T

oHFå- HNM* DHCP B± IP ª

oxX%”o- NMFå‰”

oHß- 14

o¬.6-o- ¥XK9 Client Få RGOS ÷ DHCP ¥ IP ¥L DHCP ¥<Få
¥@ 1h DHCP #¾ 1k¥Az 2h DHCP #¾ 3kc%¥¼ 3h DHCP #¾ 6k
DNS ¥4 hDHCP #¾ 15k¥zDHCP #¾ 44k WINS ¥U#Fåož
RGOS PPPoFR oHDLC eè dhcp B¥}¥4k)¥
¥4¥

oFåb- 1 y…± FastEthernet 0 MB± IP ª

```
5XLMLHFRQIL1QWHUIDFH*LDELW(WKHUQHW
5XLMLHFRQIL1I*LDELW(WKHUQHWLSDGGUHVVGKFS
```

oèo- * **show run** UFå

oUP’b- -

oəjö- 1. 8CMò€

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©.è ò | myclass ã 1ož |

oHFå- Få classož

oxX%”o- Få‰”

oHß- 14

o¬.6-o- ¥XK9 Server Fåü¥Xk<k CLASS Få‰”k¨Få‰”kUYFå
CLASS F Option82 ’bCLASS ê

oF₫- 1 y F‰ CLASS

5XLMLHFRQILG1SGKFSFODVVPFODVV

o¤o- * **show run**

oUP'ô- -

oəjö- -

ouV®- -

4.22 ip dhcp excluded-address

}#? IP k…± DHCP DHCP FaX

ip dhcp excluded-address *low-ip-address* [*high-ip-address*]

¥X no ¥UYH*ƒ*#

no ip dhcp excluded-address *low-ip-address* [*high-ip-address*]

Få

default ip dhcp excluded-address *low-ip-address* [*high-ip-address*]

o

@	T
low-ip-address	IP
high-ip-address	IP low-ip-address

oF₫- Þ DHCP IP ª

oxX%"o- F‰"

o- 14

o¬.6-o- ¥XK9 Server F IP DHCP DHCP IP ª

oXUY? IP 9? DHCP IP ª

k-UY DHCP yž

oF₫- 1 yDHCP 192.168.12.100~150 8Ä IP ª

5XLMLHFRQILG1SGKFSH[FOXGHGDGGUHVV

2y† 1 L"

5XLMLHFRQILGQRLSGKFSH[FOXGHGDGGUHVV

oF å 1 y NAK

5XLMLHFRQILI SGKFSIRUFHVHQGQDN

o o- * **show run**

o o- -

o V - -

4.24 ip dhcp monitor-vrrp-state

}!O VRRP DHCP Server Master vrrp NM

ip dhcp monitor-vrrp-state

H vrrp Master Backup VRRP NM

no ip dhcp monitor-vrrp-state

å

default ip dhcp monitor-vrrp-state

o

	T
-	-

o X%” o- CNMF%”

o 14

o F å- F å NM VRRP O

o .6-o- ¥XK9 Server F NMF VRRP DHCP Master h

NM Master h NM 9 F å VRRP NMkDHCP

VRRP DHCP

oF å 1 yDHCP CNM VRRP O

5XLMLHFRQILI ILSGKFSPRQLWRUYUUSVWDWH

o o- -

o P’ 1 y8CNMF å VRRP

5XLMLHFRQILI I*LD ELW(WKHUQHWLSGKFSPRQLWRUYUUSVWDWH

,QYDOLGLQSXWGHWHFWHGDWAPDUNHU

oəjö- 1 y8CNMFå VRRP Ø

oʉV0- -

4.25 ip dhcp ping packets

}Få DHCP ÿ ping ¾f

ip dhcp ping packets [*number*]

no Få

no ip dhcp ping packets

Få

default ip dhcp ping packets

o	@	T
number	*g8R*	0 ñ 10k 0 nP ýÁ3!GĦñ !@ ñ8 !ð G•DC4 n/V DcD AVC

4.26 ip dhcp ping timeout

}Få DHCP Æ ping q

ip dhcp ping timeout *milli-seconds*

no F å

no ip dhcp ping timeout

F å

default ip dhcp ping timeout

o	@	T
	milli-seconds	DHCP Æ ping Da 100 ñ 10000

oF å- H 500 Da

oxX%”o- F%”

oH- 14

o¬.6-o- ¥XK9 Server F#%² ping

oF - 1 y ping 600ms

5XLMLHFRQILJSGKFSSLQWLPHRXW

o o- * **show run F**

oP’ -

o j -

oV -

4.27 ip dhcp pool

}#%² DHCP dwµ DHCP F%”

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

-	-

oH@- 14

o¬.6-o- ¥XK9 Server Få
ğ¥Xk<kÿGRFå **update arp** ARP

oFåb- 1 yM€GU' ARPož

```
5XLMLHFRQILJSGKFSUHIUHVKDUS
```

oèo- * **show arp trusted** ARP

oUP'b- -

oəjö- -

ouV@- -

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

o@	@	T
	-	-

oHFå- ¼ DHCP relay check server-id ož

o×X%"o- B%"

oH@- -

o¬.6-o- ¥XK9 Server FåFåX **ip dhcp relay check server-id ek**DHCP Relay N1 DHCP Ь†
Gñ option server-id 6 XkgFå DHCP DHCP ¬
Lož

oFåb- 1y DHCP relay check server-di ož

```
5XLMLHFRQILJSGKFSUHODFKHFNVHUYHULG
```

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

	@	T
	-	-

¼ DHCP relay suppression ož

NM%”

-

¥XK9 Relay Fa6NMFaX **ip dhcp relay suppression ek1lNMñ**
DHCP Lz9UNMvñ DHCP Lk3oGož

yo DHCP relay suppresson ož

5XLMLHFRQILIILSGKFSUHODVXSSUHVVLRQ

2¼ DHCP relay suppresson ož

5XLMLHFRQILIIQRLSGKFSUHODVXSSUHVVLRQ

y… **show running-config xkkFaž**

-

-

-

4.32 ip dhcp server detect

o DHCP q¥Eož

ip dhcp server detect

¼ DHCP q¥Eož

no ip dhcp server detect

@ DHCP q
default ip dhcp server detect

@	T
-	-

DHCP q

14

%”

Server F Få DHCP q

1 yo DHCP q

5XLMLHFRQILJ SGKFSVHUYHUGHWHFW

1 y… **show running-config x F**

-

-

ip dhcp use class

} CLASS g k F%” **ip dhcp use class x X** no ¥UY¼

… CLASS g ož

ip dhcp use class

no ip dhcp use class

@	T
-	-

CLASS g ož

F%”ož

dÀÀPsbÖl ¥XK9 Server Fåa

dÀRBHfM 1 yFå CLASS gÆož

5XLMLHFRQIL1SGKFSXVHFODVV

dÀ¥6M * **show run 0Fåa**

dÀÀP+ lM -

dÀ®M -

dÀPUž®M -

4.34 ip helper-address

%Þ DHCP Æ

ip helper-address { cycle-mode | *A.B.C.D* }

î%Þ DHCP Æ

no ip helper-address { cycle-mode | *A.B.C.D* }

dÀxžÀ®M

@	T
cycle-mode	o dhcp ÞÖÄ dhcp Æ
A.B.C.D	DHCP Æ

dÀ¥M DHCP Æqož

dÀÀVEEPiFM Þ%”

dÀ@M -

dÀÀPsbÖl ¥XK9 Relay FåFå DHCP Æ IP ek—Õvñ DHCP Þ1ÖËc

k1vñ DHCP ÆË DHCP ž

DHCP ÞFÁYFå 20 DHCP Æ

ÞF‰”U+ dhcp relay cycle-mode F‰ cycle-mode ÞP dhcp relay

Nvñ dhcp client ÞÖÄ dhcp server z cycle-mode ÞP

dhcp relay QNvñ dhcp client ÞÖ¥‰² dhcp server ožcycle-mode ÞF

åož

dÀRBHfM 1 yF‰Þ DHCP Æ IP 192.168.100.1ož

5XLMLHFRQILJXUHWHUPLQDO

oxX%”o- DHCP ₱F‰”

oH- 14

o¬.6-o- ¥XK9 cª4J Server Fåc DHCP ¢GÇ oD DHCP ⅞kÈkÒ

oFåd- 1

oF-å0- 1 y1ÞPsŠ›— 80%y

5XLMLHGKFSFRQILQDHDVHWKUHVKROG

2y{ÞPsŠ

5XLMLHGKFSFRQILQROHDVHWKUHVKROG

oè¤o- * **show run Þå¤**

oUP'ô- -

oëjö- -

4.37 match ip

}# AM ÉÉ…xX **match ipu**

match ip *ip-address netmask [interface]* **[add/remove] vlan** *vlan-list*

no Þ

no match ip *ip-address netmask [interface]* **[add/remove] vlan** *vlan-list*

o@ê

@	T
ip-address	è¤
netmask	Q
interface	N
add/remove	ê vlan
vlan-list	vlan «

oÞF-å- —þg

o«X%"o- AM É%"

oÞê- 14

o¬.6-o- 1 yF-åXeêJ vlan + port DHCP

Ruijie(config-address-manage)#match ip 192.168.11.0 255.255.255.0 GigabitEthernet 0/10 vlan 10

oèo- * show run UF

oUP'ô- -

oöjö- -

4.38 match ip default

}# AM ö…xX **match ip default;**

match ip default *ip-address netmask*

no
no match ip default *ip-address netmask*

	T
ip-address	è
netmask	Æ

oF- —

oxX%"o- AM %"

oö- 14

o¬.6-o- F XeÐ vlan + port/vlan DHCP £ H ç– F X
cž—~¿ vlan + port F 3ovi ª

oF 1 y#4 ýZ 192.168.12.0kQA 255.255.255.0
Ruijie(config-address-manage)#match ip default 192.168.12.0 255.255.255.0

oèo- * show run UF

oUP'ô- -

oöjö- -

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*

ĺ NetBIOS -ßtå

no netbios-node-type

ß

defaut netbios-node-type

o	@	T
	type	# NetBIOS -ßÄ•ož ƒk8R 0~FFkßxQHYy „ Wn b-node „ Wn p-node „ Wn m-node „ 8 kWn h-node …#y „ b-node kznºµ „ p-node k+ºµ „ m-node kºŒ „ h-nodekºµ

oHFå- HÄ NetBIOS -ºµ

oxX%”o- DHCP ºPFß”

oHß- 14

o¬.6-o- ¥XK9 Server Fåª÷ DHCP € NetBIOS -ßy1 h Broadcastkznºµ*z

n¨g NetBIOS dß2 h Peer-to-peerk+ºµ*+NЬ WINS ßE NetBIOS d

ß3 h Mixedkºµ*znЬdße* WINS ÆgdÄ

4hHybrid kºµÈNЬ WINS ßE NetBIOS dßş<*z

n¨g NetBIOS dß

hÕ¤ºµnßÅå WINS ÆznºÞ

ßå WINS Æºµ1 NetBIOS -ºµ– Hybrid

oFåß- 1 y1ª÷ DHCP € NetBIOS -µ–ºµ

5XLMLHGKFSFRQILQHWELRVQRGHWSHKQRGH

oè¤o- * **show run** UFå

oЬP'ô- -

oɵjö- -

4.41 network

}# DHCP ₱ÿ¿QAk DHCP ₱PFåX **network;**

}ɬsHÅ AP Få DHCP ₱ÿ¿QAkU¨ AC ap-config/ẽ ap-group %”Få

network x¿ž

network *network-number net-mask* [*low-ip-address high-ip-address*]

no ₱

¨ AC ap-config ẽ ap-group %”ĺ#z

no network

ẽAC ap-config ẽ ap-group u4ož

defaut network

o₱ẽ

@	T
network-number	DHCP ₱ IP ¿
net-mask	DHCP ₱ IP ¿QAoẏQAk₱Q A
low-ip-address	¿Ü IP ẏg AC ap-config ẽ ap-group %”u4h
high-ip-address	¿ØP ẏgAC ap-config ẽ ap-group %”u4h

oH₱Få- H¿ÿ¿QA

o»X%”o- DHCP ₱PF¿%”

oH₱ẽ- 14

o¬.6-o- ¥XK9 Server Få#₱ÿ¿QAk DHCP ¿Ø4%¿UẽĒ

ęo¿ÆF¿kẽ¿CÜẽẽDHCP ẽ₱ª

k¿¿gk₱E DHCP ¿ÿ¿₱¿k<ò

%¿k+ẽ%¿₱ž

ẽÕ **show ip dhcp binding x¿kÿ¿Õ** **show ip dhcp conflict x¿**

0ož

oFå¿- 1 y#4 DHCP ₱¿

5XLMLHFRQILJURXSQHWZRUN

oèo- * **show run Ëå**

oÙP'ô- 1 yFåª

5XLMLHGKFSFRQILJQHWZRUN
238.5.5.5 / 255.0.0.0 is an invalid network

oəjö- 1. Få‰nª

4.42 next-server

}# DHCP

oəjö- 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'Ĥå‰"k₿ CLASS Få‰" **relay agent information xK¥X** no ¥UY'¥ CLASS Ä Option82 F'Î

relay agent information

no relay agent information

o₿@

@	T
-	-

oĦFå- -

ox%X%"o- ₿ CLASS Få‰"ož

o¬.6-o- ¥XK9 Server Få

g¥Xk<kµ Option82 F'Ĥå‰"k₱y

5XLMLHFRQILG KFSFODVVUHODLQIR

Få‰"kUYFå class FÚ Option82 'ĵž

oFåd- 1yFå‰₿ CLASS wµ Option82 F'Ĥå‰"ož

5XLMLHFRQILG1SGKFSFODVVPFODVV

5XLMLHFRQILG KFSFODVVUHODDHQWLQIRUPDWLRQ

5XLMLHFRQILG KFSFODVVUHODLQIR

oèo- * **show run Bå**

oUP'ĵo- -

oəjö- -

relay-information hex

₿ CLASS Option82 'Ĥå‰"kFå option82 F'ĵ² **relay-information hex xK¥X no ₩**

relay-information hex *aabb.ccdd.eeff…* [*]

no relay-information hex *aabb.ccdd.eeff…* [*]

o₿@

@	T
aabb.ccdd.eeff… [*]	16 ò Option82 F'ĵ* Wn¶kQ}Fβ

	ãUnP*Fkk*	Wnђ₣ož

oĦFå- -

oxX%”o- ₿ CLASS F‰”ož

o¬.6-o- ¥XK9 Server Få

oFåb- 1yF‰₿ CLASS UYFÚ option82 ’bž

oFåd- 1 y Få‰ CLASS ê

5XLMLHFRQILJ SGKFSFODVVPF ODVV

5XLMLHFRQILJ KFSFODVVUHPDUNXVHGLQEXLOG

oèo- * **show run** UFå

oUP'ô- -

oøjö- -

4.48 service dhcp

}¨—õ DHCP ÿÆD/ÊB Fåx **service dhcp**

}¹sHÅ AP o DHCP ÿÆD/ÊU¨ AC ap-config/ê ap-group %"Få service dhcp xX

service dhcp

no ¢¼ DHCP ÿÆD/Ê

ê AC ap-config/ê ap-group %"¢¼ AP DHCP ÿÆD/AÊ

no service dhcp

ÊAC ap-config ê ap-group u4

defaut service dhcp

o¢ê

@	T
-	-

oFåd- ¥XK9 Server Få¢¼ DHCP ÿÆD/Ê

o»X%"o- ¢Få‰"oeap-config/ap-group %"

oFê- 14

o¬.6-o- DHCP ÆEYÈ IP ¹kwUˆ DNS ÆÈ¥Ê

DHCP ÊY1 DHCP Ł6ÈÈv1› DHCP 6Ë DHCP ¥Ü

5 DHCP ô

?D}UÈ DHCP yÈ¿Ïš¥à}ÊÈ,Ð}Â¥YCF

ÊP'Î

oFåd- 1 y—õ4 DHCP ÿÆÊ

5XLMLHFRQILJ VHUYLFHGKFS

2yAC *s AP o4 DHCP ÿÆÊ

```
5XLMLHFRQILJDSSURXSGHIDXOW
5XLMLHFRQILJURXSVHUYLFHGKFS
```

oèo- * **show run** UF-å

oUP'ô- -

oəjö- -

4.49 show dhcp lease

ᵖ DHCP Bt‹ˆ

show dhcp lease

op℗	@	T
	-	-

oH-å- —ıg

ox%X%"o- Ø"

oHß- 14

o¬.6-o- ¥XK9 Client FåP-ß ip ;ª¼

oF-åd- 1 yᵖ DHCP Bt‹ˆ

```
5XLMLHVKRZGKFSOHDVH
7HPS,3DGGUIRUSHHURQ,QWHUIDFH)DVW(WKHUQHW
7HPSVXEQHWPDVN
+&/HDVHVHUYHUVWDWH%RXQG
+&WUDQVDFWLRQLGEHHG
/HDVHVHF5HQHZOVHF5HLQGVHFV
7HPSGHIDXOWDWHØDGGU
1H[WWLPHUILUHVDIWHU
5HWUFRXQW&LHQW,GIH()
```

oèo- -

oUP'ô- -

oəjö- -

4.50 show ip dhcp binding

₱ DHCP Ñ

show ip dhcp binding [*ip-address*]

o	@	T
	ip-address	*g* 6 IP

o-

—

o-

”

o-

14

o-

¥XK9 Server F IP 1₱ 4 IP 1Q₱

¥ IP Ñ

o- 1 y₱ DHCP Ñ

```
5XLMLHVKRZSGKFSELQGLQJ
7RWDOQXPEHURIFOLHQWV
([SLUHGFOLHQWV
5XQQLQJFOLHQWV

,3DGGUHVV+DUGZDUHDGGUHVV/HDVHH[SLUDWLRQ7\SH
```

20.1.1.1 2000.0000.2011 000 days 23 hours 59 mins Automatic ₱È

ç<m#fA

IP address	ÑË DHCP € IP ž
Hardware address	DHCP €
Lease expiration	Yc nfinite nP IDLE nP ~ DHCP € Kyož
Type	Automatic nP zManual nP W Fož

o- -

o- -

o- -

4.51 show ip dhcp conflict

ᵖ DHCP ¨ØÆ£

show ip dhcp conflict

o℗	ℓ@	T
	-	-

oHF å-

—Þg

o×X%”o-

Ø”

oHß-

14

o¬.6-o-

¥XK9 Server Få¥XUYᵖ DHCP ÿ¥ßê

oFåd- 1 yᵖ DHCP ¨ØÆ£

```
5XLMLHVKRZSGKFSFRQIOLFW
,3DGGUHVVHWHFWLRQ0HWKRG
3LQJ
```

ᵖÊ±<m#fAÿ

IP address	UßË DHCP € IP ê ž
Detection Method	¨sy¢ož

oà o-

-

oÞP’ô-

-

oəjö-

-

4.52 show ip dhcp pool

ᵖ DHCP ᵖÆ..Õß

show ip dhcp pool [*poolname*]

o℗

oxX%”o- Ø”

oHø- 14

o¬.6-o- ¥XK9 Server Fa¥XUY DHCP E..ØCa

oFa- 1 y DHCP E..Øa

```
5XLMLHVKRZSGKFSSRRO
5XLMLHVKLSGKSRRO
3RROQDPH7RWDOLVWULEXWHG5HPDLQHG3HUFHQWDH
QHW
test 0 0 0 0.00000
E<m#fAò
```

Pool address	dož
Total	PUEPž
Distributed	]Eož
Remained	,EyUž
Percentage	a

oè- -

oUP'- -

oj- -

4.53 show ip dhcp relay-statistics

DHCP Æ

show ip dhcp relay-statistics

o @

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
oxX%”o-	Ô”
oHß-	14
o¬.6-o-	¥XK9 Server Få
oFåd- 1.	P DHCP Server yõ¡E

```
5XLMLHVKRZSGKFSVHUYHUGHWHFW
7KH&6HUYHULQIRUPDWLRQ
6HUYHU,3 &VHUYHULQWHUIDFH *LDELW(WKHUQHW
```

oèo-	-
oUP’ô-	-
oöjö-	-

4.55 show ip dhcp server statistics

P DHCP ÆEG

show ip dhcp server statistics

o@ø

@	T
-	-

oHFå-	—Ig
oxX%”o-	Ô”
oHß-	14
o¬.6-o-	¥XK9 Server Få¥XUYP DHCP ÆG
oFåd- 1.	P DHCP ÆEG

```
5XLMLHVKRZSGKFSVHUYHUVWDWLVWLFV
GUHVVSRROV
/HDVHFRXQWHU
WLYH/HDVH&RXQWHU
```

NO-LEASE-RESOURCE	—ªUáP)‹
recv	vñ DISCOVERkREQUEST k INFORM MÈ
send	ê5ë

oèo- -

oUP'ô- -

oəjö- -

4.56 show ip dhcp socket

ª DHCP Æ«

show ip dhcp socket

o@	@	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

ŽÆÛbž

clear host [* | *host-name*]

op@	@	T
host-name	*b@Ûbž*
*	*nP@Ü*

oxX%”o- Ô”

oH@- 14

o¬.6-o- ÑÛbŽ“kÔ

* **ip host ê ipv6 host Áå**
* DNS Áo ¥XkkîÛ DNS Á“6ž

oF Ô- 1 yYFåkîÑ-IP “£ Ä

5XLMLHFRQILÆOHDUKRVW

oÙP’Ô- -

oÞV@- -

5.2 ip domain-lookup

o DNS g@ž

ip domain-lookup

¼ DNS g@ž

no ip domain-lookup

op@ | @ |
---|---|---

oxX%”o- ‰FÅ”

oH- 14

o¬.6-o- ¥Xø DNS gdfgj¥Xké DNS gdž

oFåd- 1 y¼ DNS gdž

```
5XLMLHFRQILJQRLSGRPDLQORRNXS
```

oèo- * **show run ÔFå¨ ip domain-lookup Fåž**

oUP’ô- -

oèjö- -

ouVô- -

5.3 ip host

ôWFåy IP ¥ož

ip host *host-name ip-address*

îñôž

no ip host *host-name ip-address*

o‰ê

@	T
host-name	ø-
ip-address	Õ- IP ª

oHFå- -

oxX%”o- ‰FÅ”

oH- 14

o¬.6-o-

oFåd- 1 yÁå www .test.com g 192.168.5.243

```
5XLMLHFRQILJSKRVWZVHVWFRP
```

oèo- **show run ÔFåÑåX**

show hosts ðdy IP +k£Fåy IP +n¾

oÙP'Î-

-

oəjÖ-

-

oʊV¶-

-

5.4 ip name-server

FåÆE IP/IPv6 ê ž

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

îFåÆE

no ip name-server [*ip-address* | *ipv6-address*]

o¶ê

@	T
ip-address	åÆE IP ª
ipv6-address	åÆE IPv6 ª

oHFå-

HÆåÆE

o×X%"o-

¶FÅ‰"

oH¶-

14

o¬.6-o-

QÏÅdÆÅž

- DNS Server IP/IPv6 ê ž ýkXk—Ök%² DNS Server ž cR%² Server BHåk—kÕgeÒ Server G DNS Ьk+ƒGvåož Ï4 6 ê ž DNS Server kÕ4 *ip-address* ê *ipv6-address* k ÆÅ DNS ê ž

oFåb- 1 yFå IPv4 åÆE IPv6 åÆE

```
5XLMLHFRQILJ SQDPHVHUYHU
5XLMLHFRQILJ SQDPHVHUYHU%EIIIHHI%I
```

oèo-

show run ðFåFåX

oÙP'Î-

-

oəjÖ-

-

oиVФ- -

5.5 ipv6 host

ØVFå IPv6 ž

ipv6 host *host-name ipv6-address*

ˆõž

no ipv6 host *host-name ipv6-addres*

o | | |
|---|---|
| *host-name* | |
| *Ipv6-address* | IPV6 ª |

oFå- -

oxX%”o- F%”

o 14

o¬.6-o- -

oF 1 yÁ+• ipv6 ª

5XLMLHFRQILJSYKRVWVHVWFRP%

oo- **show run FF**

show hosts y IP + Fy ip +¾

oUP’o- -

oo- -

oиVФ- -

5.6 show hosts

P DNS Fž

show hosts [*hostname*]

o	@	T
	hostname	06

oxX%”o-

14

oF-

DNS ,F

oF- 1

```
5XLMLHVKRZRVWV
1DPHVHUVHUVDUH
VWDWLF

+RVWWSHGGUHVV77/VHF
VZWFKVWDWLF
ZXLMLHFRVh@7 @00PP
```

6 ƏpZ¥

6.1 clear rping table all

Ž Rping Ä¤ož

clear rping table [**all |** [**ping-object** *owner test-name*] | [**trace-object** *owner test-name*]]

o¤ |@	p@	T
	owner	ï«
	test-name	yï«

o»X%”o- Ø¤”

o«Ø- -

o¬.6-o- 4xXÛ—Õ Rping ’Ä¤y,¤ož

oF¤ð- 1 yŽ Rping Ä¤ož

```
5XLMLHFOHDUUSLQGVDEOHDOO
```

2: Ž userkMyd ruijie ¤ož

```
5XLMLHFOHDUUSLQGVDEOHXVHUUXLMLH
```

oЫP’ò- 1 yè–Ø¤kéUP,¤ož

oы¥Ø- -

6.2 ping

y6 IPv4 ¤Ukwy¤ož

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

o¤ |@	p@	T
address	6) IPv4 ¤ož
length	6G¢ƒ6Ê«xk8y 36~18024k¤† 100ož
times	6G¢ƒk8y1~ 4294967295 ož
seconds	6k8y1~10gab¤ž

data	6 Sk” 1-255 x† . k abcdož
source	6 † IPv4 M g 127.0.0.1h ž
df-bit	– IP DF DF yt—å 1 nP+ gã Ô o DF y 0ož
validate	ž
detail	. ož

o F
å-

2 ah Ä 5 x† 100Byte IP ž

o X%
”o-

% ”kQg Ã **ping** **ping** ž

o
ð-

0

o¬.6
-o-

g **ping k** **ping k** G
x Ý Ã **ping** **z**
} dk F å @ DNS F ãž

oF å
ð-

1y **ping ðž)** IP ª 192.168.21.26ož

```
o•  SLQJ
5XLMLHSLQJ
6HQGLQJEWH,&3(FKRHVWRWLPHRXWLVVHFRQGV
SUHVV&WUO&WREUHDN!

6XFFHVVUDWHLVSHUFHQWURXQGWULSPLQDYPD[ PV
P  GHWDLOSLQJ
5XLMLHSLQJCHWDLO
6HQGLQJEWH,&3(FKRHVWRWLPHRXWLVVHFRQGV
SUHVV&WUO&WREUHDN!
5HSO\URPEWHV WLPH PV77/
5HSO\URPEWHV WLPH PV77/
5HSO\URPEWHV WLPH PV77/
5HSO\URPEWHV WLPH PV77/
5HSO\URPEWHV WLPH PV77/
```

Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/4 ms.2y **ping ðž)** IP ª
192.168.21.26k 5x† 1500k ƒ 20k 3 ak ffffkw—å
› IP ª 192.168.21.99ož

ë

oʁV^a
ê- -

6.3 ping ipv6

y6 IPv6 ¢Ukwjê

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

o ¬@
ê-

@	T
ip-address	**6)** IPv6 ê
length	**6** **8y** 16~18024 k 100
times	**6** **8y** 1~ 4294967295
seconds	**6** **8y** 1~10ga
data	**6** ” 1-255 x†
source	**6** † IPv6 M M 1 h
detail	

o ⊣Þ
Få- 2 ahÄ 5 x† 100Byte IP

o ⊣x X
%”o- ”%”kQgÃ **ping ipv6 z** **ping ipv6 j**

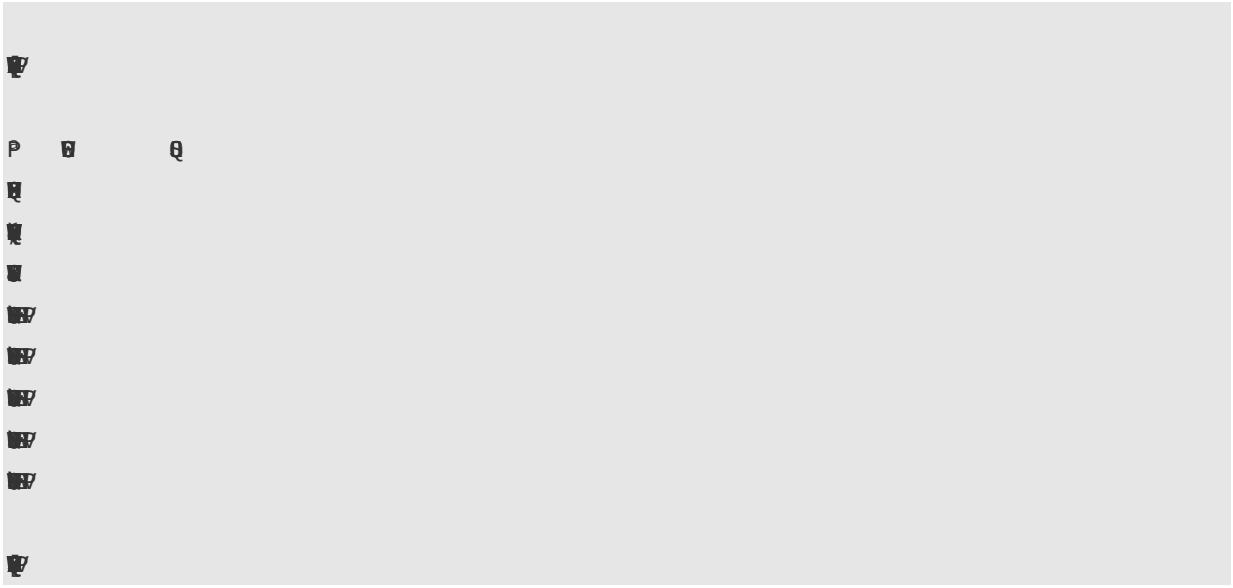
o ⊣Þ
õ- 0

o ¬… g **ping ipv6 k**
6-o- **P** %Request receive error.’ k
ping ipv6 k **ping ipv6 j**
}… DNS F

o ⊣F å 1y **ping ipv6 ê)** IP 2001::5

ê-

```
o•  SLQJ
5XLMLHSLQ1SY
6HQGLQ(EWH,&3(FKRHVWRWLPHRXWLVVHFRQGV
SUHVV&UOW&REUHDN!
```



2yÿ **ping ipv6 hö)** IP ª 2001::5kGfGx† 1500kGfƒ 20kž

• 3 akfS ffffkw—å IP ª 2001::9ož

o• SLQJ

5XLMLHSLQ1SYOHQJWKQWLPHVGDWDIIIIVRXUFHWLPHRXW

6HQGLQEWH,&3(FKRHVWRWLPHRXWLVVHFRQGV

SUHVV&VUOX&WREUHDN!

6XFFHVVUDWHLVSHUFHQWURXQGWULSPLQDY PD[PV

P GHWDLOSLQJ

5XLMLHSLQ1HQJWKQWLPHVGDWDIIIIVRXUFHWLPHRXW

6HQGLQEWH,&3(FKRHVWRWLPHRXWLVVHFRQGV

5HSO\WR WLPH B4fQV4o0fQV6o0UREWWLPH B4fQY4o0fQY6o0UREWWLPH B4fQ4o0fQ6o0UREWWLPH B4fQ4o0fQ6o0

o¬U P
’ô- -

o¬o • -
jö-

o¬u V -
ô-

6.4 show rping detail

ô Rping ’ôž

show rping detail

o	@	T
	-	-

o»X%”o- Ô”o%”oNM%”

oô- -

o¬.6-o- …¥XUYô—Õ Rping ’ô

oFåô- 1 yô Rping

```
5XLMLHVKRØSLQG HWDLO
7RWDORØHUQXPEHU
7RWDOWHVWQXPEHU
RØHUXVHU
WHVWQDPHWBVWRUDHWSHYRODWLOH
    WHVWQDPHWBVWRUDHWSHQRQ9RODWLOH
RØHUXVHU
WHVWQDPHWBVWRUDHWSHSHUPDQHQW
    WHVWQDPHWBVWRUDHWSHUHDG2QO\
```

<Ky

<	
Total owner number	
Total test number	y
owner	d
test name	yd
storage type	g¥

oЧP'ô-

oч\V0-

-

6.5 traceroute

₱ IPv4 ƒGRÿ

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

o@

@	T
address	6) IPv4 ž
number	6GMyƒDk8y1~255ož
source	6† IPv4 ŠlMožŠlMª
seconds	6ǩ8y1~10gaož
minimum maximum	*6ÿÂŸ* TTL k8y1~255ož

oF-å- Hǩ 3 akGMyƒD 3kÂyŸ TTL ã 1 y 255ož

ox X%"o- **traceroute z traceroute ÿ**
ož

oH0- 0

o¬.6-o- **Traceroute x**
kÿ

oFåd- 1 yç traceroute ÿž

```
5XLMLHWUDFHURXWH
SUHVV&UOO&REUHDN!
7UDFLQKWKHURXWHWR
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
```

IP ª 61.154.22.36 k

l6 k

2yç traceroute

5XLMLHWUDFHURXWH
SUHVV&WUO&WREUHDN!
7UDFLQJWKHURXWHWR
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF

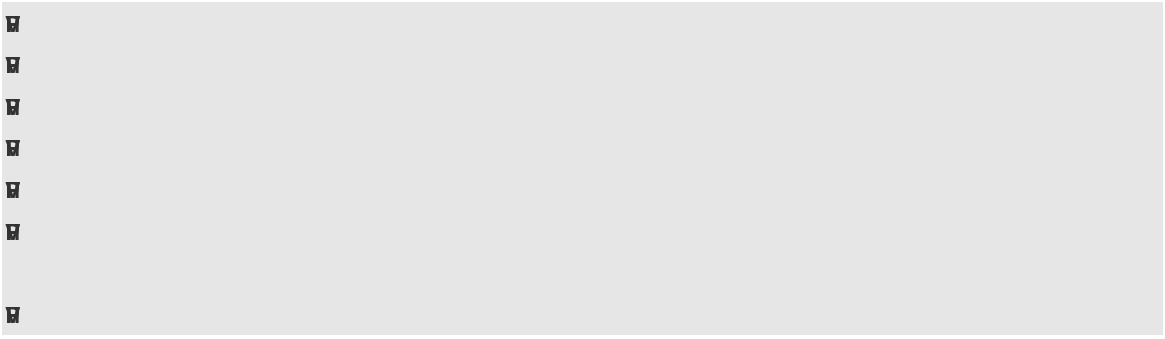
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF

IP ª 202.108.37.42 k

l17k

3yç

5XLMLHWUDFHURXWHZHWIRUJ
7UDQVODWLQZHWIRUJ2.@
SUHVV&WUO&WREUHDN!
7UDFLQJWKHURXWHWR
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF
PVHFPVHFPVHF



oèo- -

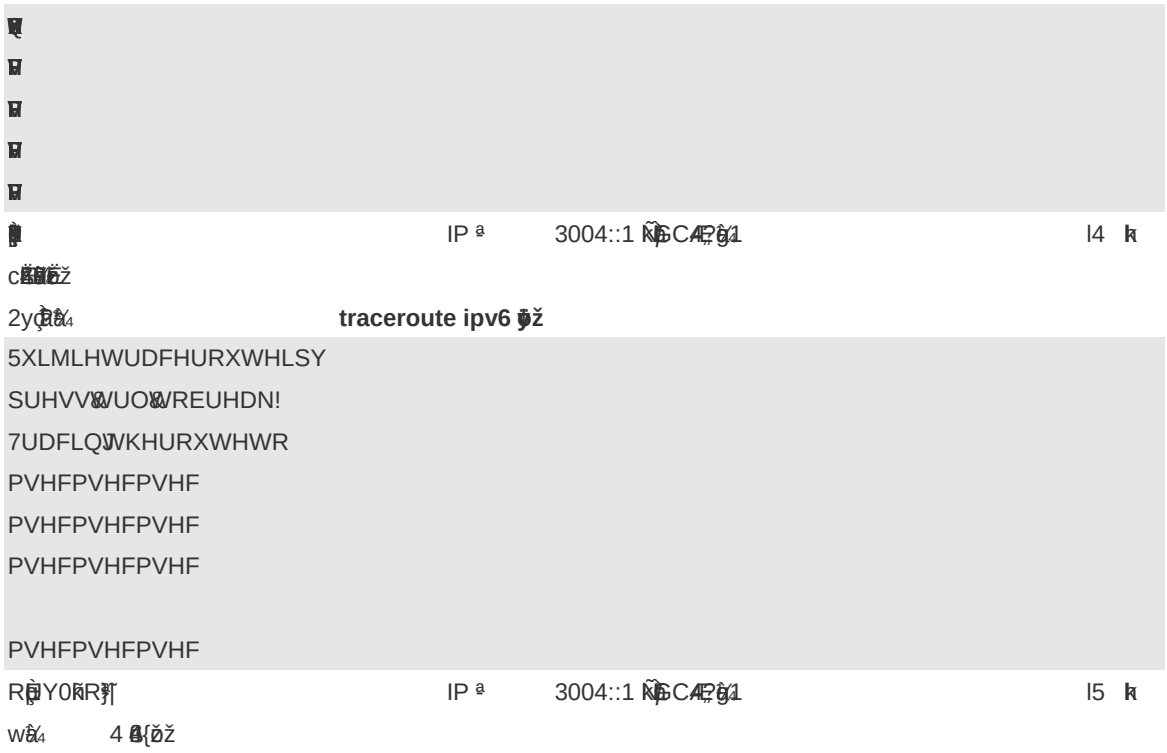
oЧP’ĵb- -

oəjö- -

oчV@- -

6.6 traceroute ipv6

ᵽ IPv6 ĵGRᵽ6 ute ipv6



oèo-

-

oЧP’ô-

-

oəjö-

-

oчVΘ-

-

7 TCP

7.1 ip tcp adjust-mss

—ê TCPv4 SYN † MSS #ø

ip tcp adjust-mss *max-segment-size*

ê å

no ip tcp adjust-mss

o	@	T
max-segment-size	k8©	500-1460

oå- “w SYN † MSS #ø

o X%”o- NM%”

oø- 14

o¬.6-o- MSS yTCP

TCP RY%G

TCP Ônýkv Y…nlož

tcp N* TCP SYN † MSS #%#Œ TCP

€ SYN † MSS nPe TCP

NMFåXk…MNvG SYN † MSS #wNMFå MSS ož ò SYN

MyMCFå MSSkHMFåož%MyMFå%ZXŽ

v4 TCP yNA; SYN kÂk“w SYN+ACK ž

o{k+9]yE TCP NkQ+e TCP Nož

oF1- yNM GigabitEthernet 0/0 F TCPv4 SYN † MSS #w 1000 -ož

5XLMLHFRQILL*LDELW(WKHUQHWLSWFSDGMXVWPVV

oo- -

oUP'o- -

oöjö- -

oV- -

7.2 ip tcp keepalive

¥Xê TCP ‘tož

ip tcp keepalive [**interval** *num1*] [**times** *num2*] [**idle-period** *num3*]

o

@	T
interval *num1*	1 ñ 120k© 75 aož
times *num2*	1 ñ 10k© 6ož
idle-period *num3*	© 60 ñ 1800k© 15 ož

o-

{ož

o-

%”

o-

2

o-.6-o- ò TCP e3+oWkUYo‘tož

•—o‘tk TCP ¨ 15

k‘tk?œ 75 aG%}kG 6)k~G TCP k<

• TCP N—|kKy TCP Nož

¥X+Ä TCP NCjož

o- 1 y¨—õ TCP ‘tkq~ 3 kG‘t 60 ak 4)

‘tk~G TCP k<• TCP N—|ož

5XLMLHFRQILL1SWFSNHHSDOLYHLQWHUYDOWLPHVLGOHSHULRG

o-

-

o-

-

o-

-

o- 11.0 XkHW 10.x service tcp-keepalives-in service tcp-keepalives-out ož

7.3 ip tcp mss

—å TCP N MSS ž

ip tcp mss *max-segment-size*

no ip tcp mss

max-segment-size	MSS 68-10000 MTU MSS

- -
- 14 IP y MSS =
- **ip tcp mss** TCP N MSS MSS MTU MSS IPv4 TCP MSS =

o	@	T
	age-timer *minutes*	TCP Gë PMTU ekMgMyžžyŠkl8 10-30ož Þ 10ož
	age-timer infinite	TCP Gë PTMU ekMMyož

oHFå- {ož

oxX%”o- ß%”

oHö- 14

o¬.6-o- TCP ky%GG@ RFC1191 kUYUà!ïžz.

TCP ÔnýŠzkYY…nßlož

7 RFC1191 Tk TCP Gë PMTU ekžeÊzUY…Ý¼ MSS ÛIy• PMTUož

ee.@ **age-timer** ôdõ- PMTU A TCP N¢ÛE MSS 4k—Ck

7Fke>:GÝ¼ PMTUožñ PMTU ñ MSS kžk

Myiš2ožk… **age-timer infinite** @z

oFåb- 1 yo PMTU Gëž

5XLMLHFRQILJ1SWFSSDWKPWXGLVFRYHU\

oèo- -

oUP’b- -

oəjö- -

ouVö- 10.x ÎkX+ IPv4 TCP y IPv6 TCP I P v 6y IPv6 TCP P

oH¥Fåd- vßMU TCP ¢G reset ¢ž

o×¤X%”o- ¶ß%”

oH¥ß- 14

o¬.6-o- %ßÕTCP %ßG TCP ¥¢¶ TCP N¦Ø²² reset
¥Ÿ¥Ä+€ TCP Nož¤è¤èäà¥ÞÓ¤ßMU TCP ¦+—Õ
èäUY*YxXÛ/2+ßMUG reset ¢ž

oF¤å¢- 1 yW2ÿvßMU TCP ¢G reset ¢ž
5XLMLHFRQILQRLSWFSVHQGUHVHW

oè¤o- -

oÙP’Ò- -

oè¤ÿö- -

o¤Vß- 11.0 Î..’4 10.x Î¤åXip tcp not-send-rst kwÃ 10.x ¦ß4 10.x Î
¤åXk1ßè 11.0 Î¤åXož
10.x ¦¥XN+ IPv4 TCP ¦kR 11.0 Î+ IPv4 TCP y IPv6 TCP C¦ož

7.6 ip tcp synwait-time

—¦åN SYN ¥ž
ip tcp synwait-time *seconds*

ß¢ž
no ip tcp synwait-time

o¶ß

¶@	T
seconds	SYN ¥ž %yakH8 5-300k¢ 20ož

oH¥Fåd- ¥¥ 20 a

o×¤X%”o- ¶ß%”

oH¥ß- 14

o¬.6-o- ê SYN xß SYN ÉY…2%?þx+Ò SYN xþž
¨—ÕyNŽ SYN ÉY5Žò telnetoÀ[+
UY Éž

oFåd- 1 y—ÿN SYN É 10 aož
5XLMLHFRQILJSWFSVQZLWWLPH

oèo- -

oUP'ô- -

oejö- -

ouVø- 11.0 Î..'4 10.x FåXip tcp syntime-out kwÃ 10.x Îg4 10.x F
åXk1Fè 11.0 FåXož
10.x ÉXN+ IPv4 TCP jkR 11.0 Î+ IPv4 TCP y IPv6 TCP Cjož

7.7 ip tcp window-size

—å TCP vMÝož
ip tcp window-size *size*

ðž
no ip tcp window-size

oþ

@	T
size	vMÝož %y<xH8 128-(65535 << 14)k© 65535ož

oF-å- © 65535 -

ox%"o- %"

oß- 14

o¬.6-o- TCP NvÐ+ßvGk?Gek~Ho%ß TCP vM
F¥NvÐ~qÝož9k!AÝßGNkÝMUY¥KUä TCP
nåž
ÐMÝ 65535 -kovMÝž

oF-å0- 1 y—åM¥ 16386 -ož

5XLMLHFRQILL1SWFSZQGRZL]H

oè¤o- -

oUP'ô- -

oəjö- -

ou-V0- 10.x ¥XN+ IPv4 TCP jkR 11.0 ¥ IPv4 TCP y IPv6 TCP Cjož

7.8 ipv6 tcp adjust-mss

—ê TCPv6 SYN † MSS #ø

ipv6 tcp adjust-mss *max-segment-size*

ê å

no ipv6 tcp adjust-mss

o ê

@	T
max-segment-size	*k8©* 1220-1440

oH-å- “w TCPv6 SYN † MSS #ø

ox%X%”o- NM%”

oH ê- 14

o¬.6-o- TCP #“ÿNŽ#Œ MSSk ê<xdž TCPv6 mß‰²è IPv6 MTU A4kò IPv6 ê ¥4…2 TCPv6 Gxé MTU ¥UY F w TCPv6 SYN † MSS #ø

¥å9]yŒ TCPv6 NjkQ+eŷ TCPv6 Njož

oF-å0- 1 yÑM GigabitEthernet 0/0 Fê TCPv6 SYN † MSS #%w 1300 -ož

5XLMLHFRQILL1l*LDELW(WKHUQHWLSYWFSDGMXVWPVV

oè¤o- -

oUP'ô- -

oөjÖ- -

oиV@- -

7.9 service tcp-keepalives-in

ө TCP ¤Ež

service tcp-keepalives-in [*interval*] [**garbage**]

¼ TCP ¤E

no service tcp-keepalives-in

7.10 service tcp-keepalives-out

- TCP ¥ŁoŽ

service tcp-keepalives-out [*interval*] [**garbage**]

op@

local-ipv6 *X:X:X:X::X*	IPv6
local-port *num*	
peer-ipv6 *X:X:X:X::X*	IPv6
peer-port *num*	
statistics	IPv6 TCP

o»X%”o-

o-

2

o¬.6-o-

-

oF 1 IPv6 TCP

```
5XLMLHVKRZSYWFSFRQQHFW
1XPEHU/RFDO$GGUHVV)RUHLJQ$GGUHVV6WDWH3URFHVVQDPH
/,67(1(56VVKG
/,67(1(5WHOQHWG
(67$%/,6+(5WHOQHWG
```

<Ky

<	
Number	~
Local Address	MZÂ%È
Foreign Address	MZÂ%È
State	TCP N 11 _U CLOSEyN] LISTENy!n SYNSENTySYN]GR)W SYNRCVDySYN]Nvñ)W ESTABLISHEDyN]y FINWAIT1y FIN † FINWAIT2y FIN] CLOSEWAITy FIN † LASTACKy FIN † CLOSINGy FIN † ACK TIMEWAITy FIN † FIN †
Process name	idf

2yðÖ IPv6 TCP NÏbž

5XLMLHVKRZSYWFSFRQQHFWVWDWLVWLFV

6WDWHG

<Ky

<	¢
Number	~Z
Local Address	ÎMZÊ%ÈÐMžž
Foreign Address	ÎMZÊ%ÈÐMžž
PMTU	è MTUož

oЧP’ĵ- -

oчV- -

7.13 show ipv6 tcp port

Pĵ IPv6 TCP ÑM…Õž

show ipv6 tcp port [*num*]

o	@	T

Number	~Z
Local Address	‰Mžž
Foreign Address	‰Mžž
State	TCP N‰Ä 11 _U‰l CLOSED: N]• LISTENy!n‰l SYNSENTySYN]tGk)W‰o SYNRCVDySYN]tNvk)W‰o ESTABLISHEDyN]y FINWAIT1y‰tEß FIN † FINWAIT2y€ß FIN]t• CLOSEWAITy‰A+€ FIN † LASTACKy‰A+€ FIN k(ÀÈ‰\ FIN † CLOSINGy€ß FIN k+€ FIN † ACK ‰ ‰A+€ FIN † TIMEWAITy€ FIN t‰G•4kw€]‰G•4Nv ñ FIN †

oЏP’‰- -

oиV‰- -

7.14 show tcp connect

P‰ IPv4 TCP N‰ž

show tcp connect [local-ip *a.b.c.d***] [local-port** *num***] [peer-ip** *a.b.c.d***] [peer-port** *num***]**

P‰ IPv4 TCP N‰ž

show tcp connect statistics

o‰

‰	T
local-ip *a.b.c.d*	‰ IP ª
local-port *num*	‰
peer-ip *a.b.c.d*	€ IP ª
peer-port *num*	‰
statistics	‰ IPv4 TCP N‰

oxX%”o- ‰”

oH- 2

o¬.6-o- -

oF-d- 1 y Ud IPv4 TCP N z

```
5XLMLHVKRZVFSFRQQHFW
1XPEHU/RFDOGGUHVV)RUHLQGGUHVV6WDWH3URFHVVQDPH
/,67(1U9VKG
/,67(1U9WHOQHWG
(67$%/,6+(U9WHOQHWG
```

<Ky

<	¢
Number	~ z
Local Address	MZ MZA “1.1.1.1:23”“23” z
Foreign Address	MZ MZA “1.1.1.1:23”“23” z
State	TCP N A 11 _U l CLOSEyN]• LISTENy!n l SYNSENTySYN]GR)W‰ SYNRCVDySYN]Nv)W‰ ESTABLISHEDyN]y FINWAIT1y FIN † FINWAIT2y FIN]• CLOSEWAITy +€ FIN † LASTACKy +€ FIN k \ FIN † CLOSINGy FIN k+ FIN † ACK f +€ FIN † TIMEWAITy FIN tG4kw]G4Nv FIN †
Process name	idf

2y Ud IPv4 TCP N z

```
5XLMLHVKRZVFSFRQQHFWVWDWLVWLFV
6WDWH
```

```
),1B:$7
```

oЧP’ĵb- -

oиV@- -

7.15 show tcp pmtu

f 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***]**

o@

@	T
local-ip *a.b.c.d*	f IP ª
local-port *num*	M
peer-ip *a.b.c.d*	€ IP ª
peer-port *num*	M

oxX%”o- @”

o@- 2

o¬.6-o- -

oFa- 1 yô IPv4 TCP Nè MTUož

```
5XLMLHVKRZVFSSPWX
1XPEHU/RFDO$GGUHVV)RUHLJQ$GGUHVV3078
```

<Ky

<	@
Number	~Z
Local Address	Î ª ª - €M Zk ÈZe µ ƒ ©€M Zk A ò “192.168.195.212.23”“23” MZž

Foreign Address	€ª - €M Zk ÈZe µ ƒ ©€M Zk A ò “192.168.195.212.23”“23”
PMTU	è MTUož

oЧP’ô-

-

oчV0-

-

7.16 show tcp port

P0 TCP M…Ñ

show tcp port [*num*]

op

@	T
num	

ox%”o-

”

oH0-

2

o¬.6-o-

-

oFa0- 1 y0 IPv4 TCP M…Ñ

```
5XLMLHVKRWVFSSRUW
7&FRQQHFWLRQVRQSRUW
1XPEHU/RFDO$GGUHVV)RUHLJQ$GGUHVV6WDWH
(67%/,6+('
7RWDO

7&FRQQHFWLRQVRQSRUW
1XPEHU/RFDO$GGUHVV)RUHLJQ$GGUHVV6WDWH
7RWDO
```

<Ky

<	
Number	~Z
Local Address	M
Foreign Address	M

State	TCP N CLOSED: N]• LISTENy!n SYNSENTySYN] SYNRCVDySYN] ESTABLISHEDyN] FINWAIT1y FINWAIT2y CLOSEWAITy LASTACKy CLOSINGy TIMEWAITy ñ FIN †

oP’-

ou-

8 JE IPv4/v6 ÑX4

8.1 clear ip ref packet statistics ¢ST

oЧP’ô- -

oчV@- -

8.3 ip ref load-sharing original

Få IPv4 @cÂ) IP y› IP @ož

ip ref load-sharing original

IPv4 @cÊž

no ip ref load-sharing original

o@	@	T
	-	-

oHFå- Â) IP @

o×X%”o- @%”

oH@- 14

o¬.6-o- @6kwu4_@ck%²_)© IP @kP%²_) IP y› IP Ă
@coB IP k–å IP @kREF 1Y} IP Ê¿
%@6oÂ) IP @ož

oFå@- 1 yFå IP+) IP k#ècož
5XLMLHFRQIL1SUHIORDGVKDULQR5UL1QDO
2y…Â)k#ècož
5XLMLHFRQILQRLSUHIORDGVKDULQR5UL1QDO

oè¤o- …xX **show run ÔFåž**

oЧP’ô- -

oəjÖ- -

oчV@- -

8.4 ipv6 ref load-sharing original

Få IPv6 IPv6 IPv6

ipv6 ref load-sharing original

IPv6

no ipv6 ref load-sharing original

		T
	-	-

-

14

-

1 y IPv6

5XLMLHFRQILJ RLSYUHIORDGVKDULQ RULJQDO

…xX **show run**

-

-

-

8.5 show ip ref adjacency

s**how ip ref adjacency [glean | local |** *ip-address* | **interface** *interface_type interface_number* | **discard** | **statistics**]

		T
	glean	**-**
	local	**-**

ip-address	IP
interface_type	
interface_number	
discard	
statistics	

14

IPv4

linklayer	8Cã

oЧP'ô- -

oиV@- -

8.6 show ip ref exact-route

₱ IP ©G6èž

show ip ref exact-route *source_ipaddress dest_ipaddress*

o@ | @ | T |
|---|---|
| *source_ipaddress* | IP ª |
| *dest_ipaddress* | IP ª |

oxX%"o- Ô"

o#@- 14

o¬.6-o- *¥Xk6 IP IP IP kUY₱©èž

oFª@- 1 yðR 192.168.217.74 ñ 192.168.13.1 Gèž

```
5XLMLHVKRZSUHIH[DFWURXWH
!YUILQGH[
LGVWDWHWSHUIFWFKLSLQWHUIDFHOLQNODHUKHDGHUGDWD
UHVROYHGIRUDUG*LDELW(WKHUQHW
```

₱Ê<Ty

<	¢
id	>Nœe
state	>NÆ unresolveyæ resolvedy]æ

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	FN
glean adj	FMN
for ar	FN
redirect	MgN
ttl expiration	† TTL N
no ip routing	N

oUP’b- -

ouV- -

8.8 show ip ref resolve-list

P IPv4 ž

show ip ref resolve-list

o | @ | T |
|---|---|
| - | - |

oXX%”o- ”

o- 14

o.6-o- -

oFab- 1 yP IPv4 ž

```
5XLMLHVKRZSUHIUHVROYHOLVW
,3UHVBVWDWHIODYLQWHUIDFH
XQUHV*LDELW(WKHUQHW
```

<	
IP	IP
res_state	unresy res y
flags	0y>N—k¼1 y>N,¼
interfa e	NMdf

oUP’b- -

oиV-

8.9 show ip ref route

IPv4

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

default	
ip	IP
mask	
statistics	

”o-

14

o-6-o- UY IPv4 UY6 IP/MASK

o- 1 y

```
5XLMLHVKRZSUHIURXWH
&GHVGHIDXOWURXWH
]HURURXWH
LSPDVN/LKWSDWKLGQH[WKRSLQWHUIDFH
/RFDO
/RFDO
*LDELW(WKHUQHW
*LDELW(WKHUQHW
/RFDO
*LDELW(WKHUQHW
```

oЧP'ĵ- -

oчV@- -

8.10 show ipv6 ref adjacency

₱ IPv6 ₪N,½ž

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
```

₱Ê<Ty

<	¢
bad head	₣
lookup fib fail	
local adj	F₣NƑ
glean adj	FM¤NƑ
forward	FG>NƑ
redirect	MgƑ
hop-limit expiration	† TTL ¥
no ipv6 unicast-routing	6yƑ

oЧP'ô- -

oнV- -

8.13 show ipv6 ref resolve-list

₱ IPv6 ž

show ipv6 ref resolve-list

o	@	T
-	-

oxX%”o- ”

IP	NM IPv6
res_state	unresy res y
flags	0y>N— 1 y>N,¼
interface	NMdf

oUP’b- -

ou V- -

8.14 show ipv6 ref route

P IPv6 ž

show ipv6 ref route [**default | statistics | prefix/len**]

o		T
default	
statistics	
prefix/len	X:X:X:X::X/<0-128> h

ox X%”o- ”

o- 14

o¬.6-o- cžJY%

o - 1 y IPv6 ’b

```
5XLMLHVKRZSYUHIURXWH
&GHVGHIDXOWURXWH
SUHIL[OHQZLL&WSDWKBLGQH[WBKRSLQWHUIDFH
GDIIH*LDELW(WKHUQHW
GDIIH/RFDO
IH1XOO
IHDDIIIHEID/RFDO
```

<	
prefix/len	IPv6
weight	
path_id	>N
next_hop	%
interface	>N Md

oЧP’ô-

oчV0-

9 NAT

9.1 address

F‰² NAT qP8

address *start-ip end-ip* [**match interface** *interface*]

îP8

no address *start-ip end-ip* [**match interface** *interface*]

F‰² NAT qP8

address interface *interface* [**match interface** *interface*]

îP8

no address interface *interface* [**match interface** *interface*]

o@

@	T
start-ip	IP ž
end-ip	IP ž
interface *interface*	*9* NAT Ø outside M Pool L# NM interface interface interface }% match NAT *ož
match interface *interface*	**9** NAT Ø outside M NAT pool F ž

oF-

8ož

oX%”o- NAT PF‰”

o 14

o¬.6-o- NAT PF‰” NAT 8#ož

¥Xu4… AP gF

oF 1 y4%² mulnets Pkw#4ž

```
5XLMLHFRQILJSQDWSRROPXOQHWVQHWPDVN
5XLMLHFRQILJQDWDGGUHVV
5XLMLHFRQILJQDWDGGUHVV
```

oЧPˆò- 1 yœXFÐ IP ¥49Ë IP ¥kFÅUPy

(QGDGGUHVVOHVVWKDQVWDUWDGGUHVV

2yœXFÐ IP ¥yØ IP ÐcàkFÅUPy

6WDUWDQGHQGDGGUHVVHVRQGLIIHUHQWVXEQHWV

3yœXFÐ IP ¥yØ IP €© 0.0.0.0kFÅUPy

,SDGGUHVVaDUHLQYDOLG

4yœX… AP ¥MgFåFÅUPy

1RWSHUPLWDSPHPEHULQWHUIDFH

5y%P8ÞÝ 100kFÅUPy

6yõ¥XŽÅFÅUPy

7yõÅ…ÑM¥ÆkFÅUPy

8yõÅ]ÆkFÅUPy

ÑUHDGÐ[LVWWKLVUDQÐHSOHDVHGHOHWHDQGUHFUHDWH

9yõÅ…ÑM¥ÆÐyMLkFÅUPy

€ ~p´`žP”àTÐZ ZÐ@À®`eÐ|@”Ï sTÐ± ¦p´`žP6°´`žP^ ¬ 6°uP• 7•

9.2 ip nat

}+%ÑMvGÞvOg NAT ê

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-	₿F₴‰”		
o₴₴-	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*

```
5XLMLHFRQILJLI*LJELW(WKHUQHWLSQDWRXWVLGH
5XLMLHFRQILJLI*LJELW(WKHUQHWH[LW
5XLMLHFRQILJLISQDWSRROQHWSUHIL[OHQJWKWSHURWDU\
5XLMLHFRQILJLISQDWLQVLGHGHVWLQDWLRQOLVWSRROQHW
5XLMLHFRQILJLIDFFHVVOLVWSHUPLWLSDQKRVW
```

oЧP’ĵ- 1 yţ[ÅKEÅUPy

```
7UDQVODWLRQZWKOLVW[[[H[LVWSOHDVHGHOHWHDQGUHFUHDWH
```

2yţ[ÅXžĂF-ÅUPy

```
FUHDWHQDWUXOHIDLO
```

3yţ[FåXkĂÅUPy

```
7UDQVODWLRQQRWIRXQG
```

oөjö- -

oчVĂ- -

9.5 ip nat inside source

}oÄ³ 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**]

{Ä³ 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*

op

BÀ

+9U NAT ê NAPTo outside

NM NAPTk ISP IP <UY4o IP

o NAT NAPT permit-inside

} inside MF no ip redirectsk…2 inside MGMg

oF 1 yYF UY1 192.168.12.0/24 200.168.12.0/28

NATož

7y FUHDWHDWWDFKUXOHIDLO

8y Få permit-inside xX FUHDWHSHUPLWBLQVLGHDWWDFKUXOHIDLO

9y Få Xk 7UDQVODWLRQRWIRXQG

oəjö- -

oʉVⓇ- -

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*

{Ø³ 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*

oⓇ

Ⓐ	T
list *access-list-number*	NAT
pool *pool-name*	NATož
static *local-ip global-ip*	NATož ocal-ip global-ip
static *protocol*	NATož rotocol UY TCP ê UDPož
local-port	CP ê UDP
global-port	local-port což

oH-Få- Ø³ NAT Gÿž

ox»X%”o- ¶FÅ%”

oH-õ- 14

o¬.6-o- Ø³ NAT Ê}¥MLª¶Ê¤ožØ4cý IP ¥ê

%ÿØØ4c¶ IP ¥_õMLoÝMLØ

©*'k¤¸-ÕMLª NAT <ÿS+MLØ

*'|ÊFåMLª NATkØØaÊ%ÕF%ÿž

MLª NAT FåØÃy1 hØ³ NAT Få2 hØ³ NAT FåQÄ

ØMLØ¸FØkØUYÁ NAT FÅ NAT

Fåž

Øà-Ê4¹hÆ IP ¥õÞKGÿMLÕØà

%¶TÞÑe4 NAT —Õ4 DNS † NATož

oF-ô- 1 yY Fåk/Øà 192.168.12.0/24 ØàMLožÆEekØÑY*

192.168.12.0/24 ØÀà 192.168.12.0/24 àÑž

5XLMLHFRQILJXUHWHUPLQDO

5XLMLHFRQILJQWHUIDFH*LJDELW(WKHUQHW

5XLMLHFRQILJI*LJDELW(WKHUQHWLSDGGUHVV

5XLMLHFRQILJI*LJDELW(WKHUQHWLSQDWLQVLGH

5XLMLHFRQILJI*LJDELW(WKHUQHWH[LW

5XLMLHFRQILJQWHUIDFH6HULDO

5XLMLHFRQILJI*LJDELW(WKHUQHWLSDGGUHVV

5XLMLHFRQILJI*LJDELW(WKHUQHWLSQDWRXWVLGH

5XLMLHFRQILJI*LJDELW(WKHUQHWHQFDSVXODWLRQSSS

5XLMLHFRQILJI*LJDELW(WKHUQHWH[LW

5XLMLHFRQILJISQDWSRROQHWSUHIL[OHQJWK

5XLMLHFRQILJISQDWSRROQHWSUHIL[OHQJWK

5XLMLHFRQILJISQDWLQVLGHVRXUFHOLVWSRROQHW

5XLMLHFRQILJISQDWRXWVLGHVRXUFHOLVWSRROQHW

5XLMLHFRQILJDFFHVVOLVWSHUPLW

5XLMLHFRQILJISURXWH

oÙP'ô- 1 y¥Fê IP ¥ÆkÊÅUPy

2y¥Fê)ö

3y₣å acl]Ø€ÉÅUPy

```
7UDQVODWLRQZWKOLVWH[LVWSOHDVHGHOHWHDQGUHFUHDWH
```

4yõ¸ÅXźØF₪UPy

```
FUHDWHQDWUXOHIDLO
```

5yÇ₣₪XkÉÅUPy

```
7UDQVODWLRQQRWIRXQG
```

oɵjÖ- -

oʉV₡- -

9.7 ip nat pool

}# NAT ₱

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**]

î₱

no ip nat pool *pool-name*

o₱₴

₡@	T
pool-name	NAT ₱dož
start-ip	NAT ₱Ë IP ₴ž
end-ip	NAT ₱Ø IP ₴ž
netmask *netmask*	NAT ₱₴Aož
type	NAT ₱₴ož rotary ₴?₣₫ož Ä rotary C₴₴µ rotary ₡@ cisco xXÃož

oH₣å- Ät#ož

oxX%”o- ₴₿F₴%”

oH₴- 14

o¬.6-o- ₴%₱}#₴₴%₴q₱ke#₴ož

oF₫ 1 yYF 4d net192 P U 192.168.12.1k 192.168.12.254k
Q Ax† 24 A ž
5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJ1SQDWSRROQHWSUHIL[OHQJWK

oU P' - 1 y RQA© 0.0.0.0kF UP
QHWPDVNFDQQRWEH

2y XF 49 IP kF UPy
(QGGUHVVOHVVWKDQVWDUWDGGUHVV

3y XF IP y IP kF UPy
6WDUWDQGHQGGUHVVHVRQGLIIHUHQWVXEQHWV

4y XF IP y IP © 0.0.0.0kF UPy
,SDGGUHVVaDUHLQYDOLG

5y P%" pool y]Få pool kF UPy
QQQRWUHGHILQHSRROWSHSOHDVHGHOHWHDQGUHFUHDWH

6y DÝ 100kF UPy
([FHHGWKHPD[SRROFRXQW

7y dÝ 32kF UP
/HQJWKRISRROQDPHXVWEHQRPRUHWKDQFKDUFHWHUV

8y XkF UPy
FUHDWHSRROIDLO

9y XkF UPy
FUHDWHSRROIDLOIRUDOORFUDQGHPHP

10y kf UPy
SRRO[[[QRWH[LVW

oe j ö- -

ou V - -

9.8 ip nat keepalive

}Fô NAT ÑÑ arp ¢e

ip nat keepalive [*keealive_out*]

G NAT ÑÑ arp †

no ip nat keepalive

default ip nat keepalive

op@

@	T
keealive_out	*G* nat ÑÑ arp ¢e

oH-å- G nat ÑÑ arp †

ttl	#	DNS •	UDP N6“	0

port_num

9.10 show ip nat translations

₱ NAT ß“ßž

show ip nat translations [*dev_id*] [*slot_id*] [*acl_num*] [**icmp** | **tcp** | **udp**] [**verbose**]

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@	T
icmp	₱ icmp nat ß“ßž
tcp	₱ tcp nat ß“ßž
udp	₱ udp nat ß“ßž
acl_num	acl Ƶ Qu4ỿ aclk9₱Ä
verbose	₱₱ NAT ß“ßž
dev_id	Õ ID
slot_id	**$ ID

o»X%”o- Ø”

o₱ß- 1

o¬.6-o- ¥XUY₱ IP NAT ß“₱ßß“kËB₱€¶MZËB₱€¶MZÙ

B₱€¶MZÙB₱€¶MZze **verbose** (₱₱¼,¼

timeout ¥¼₱“ßž

oFåß- 1 y₱ NAT ß“£

```
5XLMLHVKRZSQDWWUDQVODWLRQVYHUERVH
WLPHRXWIRU1$7&ORZ
WLPHRXWIRU1$7&ORZDIWHUFIN,1RUST
WLPHRXWIRU1$7&ORZDIWHUFIN6<1
WLPHRXWIRU1$83ORZ
WLPHRXWIRU1$16ORZ
WLPHRXWIRU1$,&3ORZ
3UR,QVLGH0REDO,QVLGHORFDO2XWVLGHORFDO2XWVLGH0REDOWLPHRXWYUI
WFSWLPHRXW
XGSWLPHRXW
```

<₭y

<	¢
Pro	#“ßž “udp”nP£ UDP ß“£ “tcp”nP£ TCP ß“ßžicmp” nP£ ICMP ß“ßž

Inside global	Æ₿€₩ž
Inside local	Æ€₩ž
Outside local	Ò€₩ž
Outside global	Ò₿€₩ž
timeout	nP¥ NAT 6“ %yaož

oЧP'ĵ- -

oəjö- -

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1 NSM

1.1 clear ip route

}ǎkUŷ clear ip route xx

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

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*	ǎ
network	ǎ
netmask	network

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ǎ 192.168.12.0

FOBULSURWH

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1.2 ip default-network

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ip default-network *network*

no ip default-network *network*

default ip default-network *network*

op

	T

network	

oHFå- Þ 0.0.0.0/0ož

oxX- ßFåož

oHö- 14

o6-o- **default-network**

connected

oFåd- 1 y1 192.168.100.0

ož

5LMLHRQ1SURWRFROLO

5LMLHRQ1SGHDXOWVHUN

2y1 200.200.200.0 200.200.200.0 ž

5LMLHRQ1SGHDXOWVHUN

oèo- U… show ip route ôHèž

oUP'ô- -

oəjö- -

ouVö- -

1.3 ip route

Fáž

ip route *network net-mask* { *ip-address* | *interface* [*ip-address*] } [*distance*] [**tag** *tag*] [**permanent**] [**weight** *number*] [**description** *description-text*] [**disabled** | **enabled**] [**global**]

ĩ]Fáž

no ip route *network net-mask* { *ip-address* | *interface* [*ip-address*] } [*distance*]

ĩ]Fá

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 Ьkk)ЌCPU yÄ ö 6gâMož

oFåb- 1 yÍ4Ź% 172.16.100.0/24)â% 192.168.12.1k'å 115ož

LSURXWH

2yâNMkâoGNM{ŽUkâSvORNMGož9Ê

Ñ¼<}6NMoÆ¼jè 172.16.100.0/24 âSvOR GigabitEthernet

0/0 NMâož

5ŽMLHRQ1SURXWHLDELW(WŽÆ

oèo- U… show ip route ôèož

oЬP'b- -

oəjö- -

oнVê- -

1.4 ip routing

o RGOS ≙ IP èž

ip routing

¼ IP èž

no ip routing

êå

default ip routing

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oHFå- o IP èž

oxX- ßFåož

oHê- 14

o6-o- VOIP RGOS ≙ IP 6ož

¼ RGOS IP èž

¼ IP èk UGkxöoÆt

no ip routing U-Ý

no ip routing

ip routing

no ip routing

oFåb- IP RGOS

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1.5 ip static route-limit

ip static route-limit *number*

no ip static route-limit

default ip static route-limit

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number		1-10000

Þ 1024

14

ip static route-limit

show running-config

900

	y1-8 k¶ _é¼¼ÿ¶å Ã¶¼kc¶é¼A64?è ¼OA¶é¼ 1ož
description *description-text*	**g¶é¼Ã¶** *description-text* 16¼
all	**g¶é¼Ã¶** IPv6 èž

oH¶å- — ipv6 é¼ž

ox¼¼o- ¶Få‰

oH¶ö- 14

o6-o- é¼ 1k*å¼Ué¼Q
éé¼¼é¼¼k4é¼%
Afèžò OSPF è'å 110kUY¶é¼– 125k¶
OSPF é¼GvOÀUé¼¶ž

oF¬å‰- 1 yí¶é¼‰ 2001::/64)é¼‰ 2002::2k’å 115ož

```
Ruijie(config)#
```

å

default ipv6 static route-limit

		T
	number	*8* 1-10000ož

Þ 1000

14

ipv6 static route-limit F

show running config

å

ipv6 900

```
Ruijie(config)#ipv6 static route-limit ?
  o1-10000  o¥Value(default value: 1000)
5LMLFRQ1SYWDWLFURXWHLPLW
5LMLFRQ8LSYWDWLFURXWHLPLW
```

-

-

-

-

1.8 ipv6 unicast-routing

o RGOS IPv6 èž

ipv6 unicast-routing

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oxX- BFå

oHî- 14

o6-o- VOIP RGOS ≙ IPv6 Gož

U¥4 RGOS IPv6 èž

oFåb- 4 RGOS ≙ IPv6 èž

5LXMLL(config) QLSKXFDVWURXWLQ

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a x i m u m - p a

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o- F maximum-paths F
show running config
ipv4 y ipv6 c ipv4)
ipv6)

oF- 10

5 MLH RQ PD[LPXP SDWK
5 MLH RQ PD[LPXP SDWK

o- * show ip route ecmp

o- -

o- -

o- -

1.10 show ip route

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

ecmp IP
show ip route [[**normal** | **ecmp**] [*network* [*mask*]]]

o-

	T
network	*g*
mask	*g* *ož*
longer-prefix	(U#) PF6
count	*g* ECMP/WCMP hkP
protocol	*g* **onnected** , **static** **ospf**, **ripo**
process-id	*g*
weight	*g*

normal	*gH*
ecmp	*gH*

oxXo- Vo BFå NMFåeFåE

oHo- 14

o6-o-

show ip route 9 normal | ecmp | fast-reroute

oFåo- 1 yY **show ip route x**

4yY **show ip route weight x**

```
5LMLVHRZSURXWHV
>GLVWDQFHWULFN@
6>LD
6>LD
```

5y**show ip route normal x**

```
5LMLVHRZSURXWHQUPDO

RGHVRQWS//RFO66WDWLF
55,32263)%,,6,692LORZRXWH
1263)166WHQOWSH1263)166WHQOWSH
(263)WHQOWS(263)WHQOWSH
68,6,6VPDU,6,6OH/,6,6OH
,QWHUFDQLGDWHDW
*DWHRIODVWUHVRVW
6LVGLUHFWOFRQQWS9/$
6>LD
2(>LD9/$
5>LD9/$
%LD
&VGLUHFWOFRQQWS9/$
&VORFDORVW
```

6y**show ip route ecmp x**

```
5LMLVHRZSURXWHPS

RGHVRQWS//RFO66WDWLF
55,32263)%,,6,692LORZRXWH
1263)166WHQOWSH1263)166WHQOWSH
(263)WHQOWS(263)WHQOWSH
68,6,6VPDU,6,6OH/,6,6OH
,QWHUFDQLGDWHDW
*DWHRIODVWUHVRVWQ9RUN
6>LD
>LD
2,6LD9/$
>LD9/$
```

7y**show ip route fast-reroute x**

```
5LMLVHRZSURXWHDVWUHRXWH
```

```
RGHVRQEWH//RFDO66WDWLF
55,32263)%,,6,692HIORZRXWH
1263)166HWHQOWSH1263)166HWHQOWSH
(263)HWHQOWS(263)HWHQOWSH
68,6,6VPDU\,6,6OHY/,6,6OHY
,QWHUDFHQLGDWHHDW
6WDWXFRGHPPDLQUEEDFNXQUD–
HW
HW
HW
HW
HW
```

8y**show ip route fast-reroute** *network x*

```
5LMLHRZSURXWHDVWUHRXWH
5RXWLQJUIRU
LVWDQFHWULF
5RXWLQFULSWRUORFNV
>PORYD9/$EDWHE263)HWHQ
>EDORYD9/$EDWHE263)HWHQ
```

<y

<	
O	oUy Cy LyySy RyRIP e ByBGP e OyOSPF e l yIS-IS e
E2	eUy E1yOSPF Bz E2yOSPF B N1yOSPF NSSA B 1z N2yOSPF NSSA B 2z SUyIS-IS M L1yIS-IS 1 e L2yIS-IS 2 e lAyBe

20.0.0.0/8	
[1/0]	
Via 20.0.0.1	IP
00:00:06	
VLAN 1	NM
Routing Descriptor Blocks	IP BGP

o -

o -

1.11 show ip route summary

show ip route summary

show ip route summary all

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o 14

o *

o 1 y

```
5 MLV RZSURX VMRPDU\
RGV12505-
```

```
,6,6
%3
727$
```

2y0ÆÏž

```
5LMLHRZSURXWHRPDUDOO
RGH1250$-
```


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<	¢
NORMAL	NORMALy¯g¾ ECMPê FRRy¼è¾ TOTALyÆž
Memory	)Æž

Entries	...mnÝ¼ g...nÝ¼
Connected	...gn¾...UÝH Connectedy...¾ StaticyÁ¾ RIPyRIP ...¾ OSPFyOSPF ...¾ ISISyISIS ...¾ BGPyBGP ...¾ TOTALy...nÝ¼
IP routing table count	...f
Global	...dfo...UÝH GlobalyÞ TOTALyÞ...

oÐP'Ô- -

oÐV- -

1.12 show ipv6 route

Þ IPv6 ...

show ipv6 route [[*ipv6-prefix* / *prefix-length* [**longer-prefixes**] | *protocol* [*process-id*] | **weight**]]

o...

...	T
ipv6-prefix/prefix-length	*g...* v6 ...Þ
longer-prefixes	*g...* v6 ...Þ
protocol	*g...***connected** , **local, static**Þ ...**ospf** , **ripk**Þ
process-id	*g...*
weight	**g...**

o...

o... 14

o...o- *¥... IPv6 ...

o...- Þ VRF ipv6 ...

,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’ô- -

ouV- -

1.13 show ipv6 route summary

0% IPv6 ô
show ipv6 route summary

0Ä IPv6 ô
show ipv6 route summary all

o | @ | T
- | -

ox% -

o - 14

o6-o- *¥ IPv6 ô

oF - 1 y0 ô

```
5 MLRZSRWRPDU\
,3RWLQDEOHPHVVDJHWREDVFRQULW
,3RWLQDEOHHDWPD[LPXPSDWKLV
/RFDO
&RE
6WDWLF
3,3
263)
%

7RWDO
```

2y0Ä IPv6 ô

```
5 MLRZSRWRPDUDOO

,3RWLQDEOHRV
7RWDO
0RUEW
```

```
(QVULH
/RFDO&RQWUROOHU6WDWLF5,3263),6,6%3

*OREDO
0DQDJHPHQW
(QVULH
    /RFDO&RQWUROOHU6WDWLF5,3263),6,6%3
```

<

2 FPM

2.1 clear ip fpm counters

Ž FPM ô ipv4 ƒ

clear ip fpm counters

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	-	-

	ô
	15
	-

	1	yžÕ FPM ô ipv4 ƒ
	5	MLHOBULSISPFRQVH V

	-
	-

2.2 clear ip v6fpm counters

Ž FPM ô ipv6 ƒ

clear ip v6fpm counters

	p@	T
	-	-

	ô
	15
	-

	1	yžÕ FPM ô ipv6 ƒ
	5	MLHOBULSISPFRQVH V

oUP’ô- 1 oUP’Î

ouV- -

2.3 ip session direct-trans-disable

F ZVN

ip session direct-trans-disable

no ip session direct-trans-disable

-	-

oF AC kAP D}ynkUN kN

ox- F

o 15

o- -

oF N

5LMLFRQLSVVVLRQLUFWUDQGLVDEOH

o- -

oUP’ô- -

oj-

ouV- -

2.4 ip session tcp-loose

F tcp

ip session tcp-loose

6-

no ip session tcp-loose

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ox%o- ¶BF‰

oHÖ- 15

o6-o- -

oFåb- p- tcp Ø

5LMLHRQ1SVHVLRQFSORRVH

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oUP'Ô- -

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ouV?- -

2.5 ip session tcp-state-inspection-enable

F tcp Ø

ip session tcp-state-inspection- enable

6-

no ip session tcp-state-inspection- enable

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oF-å- AC oAP D}Ÿ tcp Ø

ox%o- ¶BF‰

oHÖ- 15

oG-o- -

oF d- tcp

5 MLH RQ 1SV V LRQ FSVWDWH SH WLRQ EOH

oa o- -

oU P’ b- -

oj ö-

oV - -

2.6 ip session threshold

F N v

ip session threshold {**icmp-closed** | **icmp-started** | **rawip-closed** | **tcp-syn-sent | tcp-syn-receive** | **tcp-closed | udp-closed**} { *num* }

no ip session threshold {**icmp-closed | icmp-started** | **rawip-closed | tcp-syn-sent | tcp-syn-receive** | **tcp-closed | udp-closed**}

o

	T		
icmp-closed	ICMP		10g1 - 2000000000h
icmp-started	ICMP		300g5 - 2000000000h
rawip-closed	ip #		10g 1 - 2000000000h
tcp-syn-sent	TCP	syn-send v 10	g5 - 2000000000h
tcp-syn-receive	TCP	syn-receive v	20g 5 - 2000000000h
tcp-closed	TCP	closed v	20g5 - 2000000000h
udp-closed	UDP		10g1 - 2000000000h
num			

oFåd- ê– tcp closed ðf 100ož

5ŁMLFRQ1SVMVLRQVLMROGWFSFORVHG

oèao-

oUP'ô- -

oəjö- -

ouV@- -

2.7 ip session timeout

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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	**a**	TCP	tcp-syn-sent v	10sg 5 - 30h
tc	**a**	TCP	tcp-sy7(n)-4(_)3ise6-4(n)-2(P)]TJ/C2_0 1 Tf0 TTc6.4 7 9 3 0 Td[<09190879>-7<09	tcp-time-wait

osc	**a**	P
dp-connectedt	**a**	P
ac	**a**	P
acte6midt	**a**	P

oxx%o- ¶ÞF‰o

oH#o- 15

o6-o- -

oFåb- ###
5ŁMLHRQ1SVWVLRQUDFNVWDWWWULFWO\

oèao-

oUP'ĵb- -

oəjo-

ouVo- -

2.9 show ip fpm counters

ô FPM ô ipv4 ƒ
show ip fpm counters

op@ | @ | T
- | -

ox%o- ô

oH#o- 15

o6-o- ¥ô FPM ô ipv4 ƒkBSkBS
ŵ'Î

oFåb- 1 yô FPM ô ipv4 ƒ
5ŁMLWKSISPFRQVHV
URSSHSDFNWFRQVHV
&RQ5HVQ
1RQ3SDFNW
2G,3HGHOHWK
2G,3WRWDOOWK
)UDPWSNW

```
FRQIDRZZDWDWEQWLI):UHXH
GG,3FFNVR
,QOLG,3GGUHV
,QOLG7&IODJ
,QOLG7&VHQH
,QOLG,&3PVDWSH
,QOLGLFPSLQWLDOPVDWSH
,QOLGWFSLQWIODJ
```

o-o- ipv4

o- 1 y ipv4

5MLMRSISPIOR
3U6UFGUVWGU6UF3RUWVW3RUW
9UI6QWM5FWM6WVUFLIGVWLI
FWUOBIODJ

<

<	
Pr	#‘
SrcAddr	
DstAddr	)
SrcPort	
DstPort	)
Vrf	NMF vrf
SendBytes	gNv*f*
RecvBytes	gNv*f*
St	v
srcif	NMZ
dstif	)NMZ
ctrl_flag	vO

oP’- -

o- -

2.11 show ip fpm flows filter

ipv4

show ip fpm flows filter *protocol saddr smask daddr dmask*

o

@	T

oH- 15

o6-o- ipv4 ’Î

oF- 1 y ipv4 ’Î

5MLMRZSISPIORZILOWH
3U6UFGGUVWGGU6UF3RUWVW3RUW
9UI6QWM5FWM6WVUFLIGVWLI
FWUOBIODJ

<

<	
Pr	#‘
SrcAddr	
DstAddr	)
SrcPort	M
DstPort	)M
Vrf	NMR vrf
SendBytes	gNv
RecvBytes	gNv
St	v
srcif	NMZ
dstif	)NMZ
ctrl_flag	vO

oP’- -

oV- -

2.12 show ip fpm statistics

ipv4 vn

show ip fpm statistics

o

@	T
-	-

oHê- 15

o6-o- ¥ØÝ ipv4 vnÎ

oFåb- 1 y¨ eg ê- ipv4 vÎ

```
5ØMLHRZSISPVWDWLVWLFV
7KDSDFLWRIWKHORZVDEOH
$FWLYHORZVQXP
HQWFRXQW
)SPVWDWHQSHFWLRQEOH
```

<¥K

The capacity of the flow table	ènf
Active flows num	tãnf
event count:65,	ãf
Fpm state inspection enable	åe

oUP'ô- -

ouVê- -

2.13 show ip v6fpm counters

ô FPM Ô ipv6 f

show ip v6fpm counters

op® | @ | T |
|---|---|
| - | - |

ox%ô- Ô

oHê- 15

o6-o- ¥ØÝ FPM Ô ipv6 fkBSkBS

¥'Î

oFåb- 1 yô FPM Ô ipv6 f

```
5ØMLHKSNSPFRQVHV
URSHSDFNHWFRQVHV
RQV5HVQ
```

```
1RQ3SDFNW
(UUORK
)UDPHVSDFNW
(UUDGGUV
,QOLG7&IODJ
,QOLG7&VHH
,QOLG,&39PVDW
,QOLG,&39LQWLDOPVDW
,QOLGWFSLQWIODJ
,QOLGWFSIORZWDWH
,QOLGSNWILG
&QHPLQW
2WRIIZVRQLPLW
2WRIFDSDELOLW\
(!
5HFRWHRUWHPLQWFRQWLQXRXV
&QW5HVRQ
2WRIOLIWLPH
)ORZHPLQW
5HFRWEESROF\
(!
<K
<
```

o6-o- ¥ØÐ× ipv6 ŧ'Î

oF-å- 1 yô ipv6 ŧ'Î

5ØMLѵRZSNSPIORØZ

3U6DGGUDGGU6SRUW

SRUW6ЫE5FE9UIVWVUFBLIGVWBLGFWUOBIODipv6

oH-ø 15

o6-o- ¥ØØ¥0 ipv6 ŧ'Î

oF-åŧ- 1 yô ipv6 ŧ'Î

5ŁMLŁMRZSŁSPIORŻ
3U6DGGUDGGU6SRUW

Q]<

ÿ]<Q GY 8VÖ

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 ÍẃW

1.1 accounting

‰“Ãož

accounting { *method-list* }

Mœ‰Ãož

no accounting

	@	T
	method-list	*cdož*

Þ.. default což

%Ã‰”ož

14

Mêož

no authentication

o@	T
method-list	*cndož*

oHFå- Þ.. default což

o»X%"o- %ãå‰"ož

oHß- 14

o6-o- ±/Ÿ¶ AAA /" web ¥¶KI[td

ß¶

oF±d- 1 y6 eportalv2 %á. mlist1 šož

```
Ruijie(config.tmplt.eportalv2)#authentication mlist1
```

oèo- … **show web-auth template Ô@**

oЫP'Ô- -

oəjÖ- -

ouV@- -

1.3 bindmode

‰@"ož

bindmode { **ip-mac-mode** | **ip-only-mode** }

M‰@"ož

no bindmode

o@	T
ip-mac-mode	IP+MAC %"k1 IP+MAC 'ÌGn¾
ip-only-mode	**N** IP %"kN1 IP 'ÎGnžÇàMAC 'Õk •J%"

oHFå- **ip-mac-modeož**

oxX%”o- %ßå‰”ož

oHß- 14

o6-o- -

oFåd- 1 y6 eportalv2 %ß‰”N IP %”ož

```
Ruijie(config.tmplt.eportalv2)# bindmode ip-only-mode
```

oèo- … **show web-auth template ßß**

oUP’ò- -

oøjö- -

ouVß- -

1.4 clear web-auth acl

ßÃ web d%Få

clear web-auth acl [white-url | black-url | black-ip | black-port]

oß

@	T	
white-url	6Nî%Å	URL
black-url	6Nî%Å	URL
black-ip	6Nî%Å	IP
black-port	6Nî%Å	Port

oxX%”o- ß”ož

oHß- 14

o6-o- -

oFåd- 1 y1å%Få

```
Ruijie# clear web-auth acl
```

oUP’ò- -

oнV0-

oиV0- -

1.7 clear web-auth user

ðõ

clear web-auth user { **all** | **ip** *ip-address* | **mac** *mac-address*

oH	
o	%ß
oH	14
o	-
oF	1 yF

```
Ruijie(config.tmplt.wechat)# escape interval 5 online-time 10
```

o	… **show web-auth template**
o	**-**
o	-
o	-

1.9 escape user-try-auth

escape user-try-auth *counts* **online-time** *minutes*

no escape user-try-auth

	T
counts	4)
minutes	

oH	
o	%ß
oH	14

o6-o- -

oFåd- 1 yFßy

```
Ruijie(config.tmplt.wechat)#escape user-try-auth 4 online-time 15
```

oЬP'ô- -

oəjö- -

oнVФ- -

1.10 fmt

2 W%ßåæ”kå4g† url ”ož

fmt { cmcc-ext1 | cmcc-ext2 | cmcc-mtx | cmcc-normal | cmcc-ext3 | ct-jc | cucc| ruijie| custom }

1 W%ßåæ”kå4g† url ”ož

fmt { ace | ruijie| custom }

ñ URL ßg 1 Vx 2 VÂ URL ßž

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]**

oß

@	T
cmcc-ext1	**gy** url ”ož
cmcc-ext2	**kg** url ”ož
cmcc-ext3	**f/** ,'g AC 4Œ URL ”ož
cmcc-mtx	**g** AC 4Œ url ”ož
cmcc-normal	**gÕ** url ”ož
ct-jc	**ß** url ”ož
cucc	**Lû** url ”ož
ace	**u4** ACE ôž
ruijie	**iH** url ”ož

custom	ðž
userip-str	ï ip +ø
usermac-str	ï mac +ø
uservid-str	ï vid +ø
userid-str	ï id +ø
nasip-str	Õ ip +ø
nasid-str	NAS Õ ID +ø
nasid2-str	NAS Õ ID +ø(u4ò nasid)
ac-name	ø+ø
apmac-str	û AP MAC ª+ø
url-str	url +ø
ssid-str	SSID +ø
port-str	ø+ø
ac-sno-str	ac Õ+ø
ap-sno-str	ap Õ+ø
extern-str	portal }%?
md5	md5 %
des	des %
des_ecb	des_ecb %
des_ecb3	des_ecb3 %
none	ÿ

oHFå- ó ruijie ”ož

ox×X%”o- %ßå‰”ož

oHß- 14

o6-o- ---

Ç portal ÆÑ8kå url ž

10.x nèQ¥a— http redirect url-fmt {cmcc-normal | cmcc-ext1 | cmcc-ext2} ÿ url

+ø 11.x ìya¬ùå"âgÆP• fmt "a¬É

oFåd- 1 y¼g url gÿ¹ž

```
Ruijie(config.tmplt.eportalv2)#fmt cmcc-ext1
```

oèo- … **show web-auth template ß‰**

oUP'î- -

oəjö- -

oʁVŒ- -

1.11 free-auth

å— wifi ðž

free-auth pc

ĺ³ wifi ðÕ— ipož

no free-auth

oŒ

@	T
-	-

oÞFå- ÞFåž

oxX%”o- %Ëå%”ož

oÞð- 14

oG-o-

[pc 4jG

oFåŒ- 1 yFå pc ðå

```
Ruijie(config.tmplt.wechat)#free-auth pc
```

oèo- … **show web-auth template ôŒ**

oʊP’ô- **-**

oɔjö- -

oʁVŒ- -

1.12 gateway-id

å— wifidog ÕÆ wifidog ð gw_id ɔž

gateway-id *string*

ĺ wifidog ÕÆ wifidog ð gw_id ɔž

no gateway-id

		T		
	string	*FÕE*	wifidog #‘<	gw_id ›

1-10

%Error: Invalid IP address.

oəjö- -

ouVø- -

1.15 http redirect direct-site

åež

http redirect direct-site { *ipv6-address* | *ipv4-address* [*ip-mask*] [**arp**] }

ïåož

no http redirect direct-site { *ipv6-address* | *ipv4-address* [*ip-mask*] [*ip-mask*] }

op@

@	T
Ipv6-address	å Ipv6 ž
Ipv4-address	å Ipv4 ž
ip-mask	g å IPv4 QAož
arp	g 4 ARP CHECK ķ}+å 8g ARP å **arp** – IPv4 ž

oF-å- Iž

ox X%”o- F%”ož

oF- 14

o6-o- o Web k Web 3}y?

UYΓ?y4xXoK9 ,UYΓ

oož

å 50

oFd- 1 yå– IP ª 172.16.0.1 ž

Ruijie(config)# http redirect direct-site 172.16.0.1

oèo- … **show web-auth direct-site**

oUP’ô- 1 yè IP/QA”ož

%Error: Invalid IP address.

oəjö- -

oнVФ- -

1.16 http redirect port

åGjßMZ HTTP WEB ЬgMgož

http redirect port *port-num*

ĺ+jßMZ HTTP WEB ЬgMgož

no http redirect port *port-num*

oßP- | ø | T |
|---|---|
| *port-num* | HTTP WEB Ь)ßMZož |

oHFå- ЬjGßM 80 HTTP ŧž

oxX%”o- ßFå%”ož

oHß- 14

o6-o- 1oßk4ŧGß HTTP kõÛ HTTP kÛ
kßkõßa1ŠßawgÏŸ
ßž
2oHkõÕGßMZ 80 HTTP kÛkßž
3oj¾ÕßMZ HTTP k4xXož
4oßå 10 c)ßMZkßMZ 80 -mß8äž

oF-åŧ- 1 y+GßMZ 8080 HTTP WEB ЬgMgož

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

2y+GßMZ 80 HTTP WEB ЬgMgož

```
Ruijie(config)# no http redirect port 80
```

oè-o- … **show web-auth rdport** ŧßMŠÕ

oЬP’ŧ- 1 yß=d#‘ßMkAò 23ož

```
%Error: Can't set local reserved port(23) as redirection port.
```

oøjŧ- -

oиV@- -

1.17 http redirect session-limit

http redirect timeout *seconds*

ÉMgNŽ 3 aož

no http redirect timeout

o@	@	T
	seconds	**MgNŽ** *seconds* *ˆ H8* 1-10ož

oHFå- HMgNŽ 3 aož

ox%”o- F‰”

oHo- 14

o6-o- MgNŽ VêGß HTTP GET/HEAD Hà›

Ö HTTP Mg GET/HEAD xŽ TCP

Nož

oFåd- 1 yMgNŽ 4ož

```
Ruijie(config)# http redirect timeout 4
```

oào- … **show web-auth parameter x@**

oUP’ô- -

oəjö- -

ouVo- -

1.19 ip

}Få portal Æ IP kü%Eå”xX **ipož**

ip { *ip-address* }

Ž HTTP Mg IP ož

no ip

o@	@	T
	ip-address	portal Æ IPv4 ož

oHFå- ZÅ– portal Æ IP ož

o»X%”o-	%ßå”
oH®-	14

oH-ø-	14
o6-o-	-
oF-åø- 1	yW.¢ portal *'ßlož
	Ruijie (config)# ip portal source-interface Aggregateport 1
oè¤o-	… **show running-config ôß**
oUP'ô-	-
oəjö-	-
ou-Vø-	-

1.21 iportal nat enable

FåA web ø4 NAT ož

iportal nat enable

ôåž

no iportal nat enable

oəjö- -

ouVØ- -

1.22 iportal retransmit

FåÆ web š http NMn)ƒž

iportal retransmit *times*

ÊåžÆ

no iportal retransmit

o@	@	T
	times	*M*

oHFå- é 3)ož

oxX%”o- ‰Få‰”ož

oHÊ- 14

oG-o- -

oFåÐ- 1 yFå http NMn)ƒ 5)ož

```
Ruijie (config)# iportal retransmit 5
```

oèo- … **show running-config Ê**

oUP’Ò- -

oəjö- -

ouVØ- -

1.23 iportal service

FåÆ web ÆÉáž

iportal service [internet *internet-name***] [local** *local-name* **]**

ÊåžÆ

1.27 online-popup

ø§sêž

online-popup *url-string*

ï¨sêž

no online-popup

oøê		
	ø@	T
	url-string	*sêDž*

oHFå-

HFåž

o×X%”o-

%ÉÅ‰”ož

oHê-

14

oG-o-

» http://g https://è–

oFåD- 1

yFåzs¼

```
Ruijie(config.tmplt.iportal)#online-popup http://www.ruijie.com.cn
```

oèo-

… **show web-auth template ôø**

oUP’ô-

-

oəjö-

-

ouVø-

-

1.28 page-suite

øž

page-suite *filename*

ï6øž

no page-suite

o@	@	T
	Filename	*ož*

oHFå- Hkqz

o×X%”o- %ßå‰”ož

oHø- 14

o6-o-

	kg“”tp	FLASH	portal/zip á

oFåb- 1 y6ßÆ

```
Ruijie(config.tmplt.iportal)#page-suite ruijiepage
```

oè o- … **show web-auth template ô@**

oUP’ò- **-**

oøjö- -

ouVø- -

1.29 port

å– portal ?ÆMož

port { *port-num* }

MßÆMZož

no port

o@	@	T
	port	portal ?ÆMZkçÑ http Mož

oHFå- HMZ 50100kÂ UDP #‘ož

o×X%”o- %ßå‰”ož

oHø- 14

o6-o- -

oFåd- 1 y6 eportalv2 ØZ 10000ož

```
Ruijie(config.tmplt.eportalv2)#port 10000
```

oèo- … **show web-auth template ô®**

oUP'ô- -

oəjö- -

ouVø- -

1.30 redirect

Ø4g"lož

redirect { http | js }

ØIg"ož

no redirect

op®	ø@	T
http	*J*	HTTP 302 #'Ÿ url ôž
js	*J*	HTTP 200 ‰ js Ÿ url ôž

oHFå- ÞH"J jskcmcc ,¼ jsož

o»X%"o- %ßå‰"ož

oHø- 14

o6-o- -

oFåd- 1 y6Mg"† httpož

o»ße0 Td[(HT)-4(T)-11(P)19(21TF0 1J/C2_0 7DB07F2093TT0A2Tf9>-7<)Tj/C2_0 0919

1.34 show web-auth control

show web-auth control

	@	T
	-	-

14

-

1

```
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	

oxX%”o- Ô”

oß- 14

o6-o- -

oFåd- 1 yP+*{tFaž

```
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 ož
Mask	IP QAož

oUP’ô- -

ouVß- -

1.36 show web-auth direct-host

P² web ßož

show web-auth direct-host

oß | @ | T |
|---|---|
| - | - |

oxX%”o- Ô”

oß- 14

o6-o- ìXßFå

oFåd- 1 yPßž

```
Ruijie# show web-auth direct-host
```

Direct hosts:

<	¢
Address	IP ðž
Mask	IP ¢QAož
ARP Binding	© g ARP Q¸Ž

oЧP‘Ô- -

oиV¢- -

1.38 show web-auth noise

ÞFå@

show web-auth noise

o@	@	T

oÞFå- Fåž

oxX%”o- Ô”

oÞ- 14

o6-o-

oFå- 1 yÞ‘:™

```
Ruijie#show web-auth noise
Noise Enable:       On
  Aging Timer:      1min
  Hit  Counts:      3
```

oèo-

oЧP‘Ô- -

oəjö- -

oиV¢- -

1.39 show web-auth parameter

ÞP HTTP MgFåž

show web-auth parameter

o@	@	T
	-	-

oxX%”o- Ô”

oÞ- 14

o6-o- 9Ô web ÞÞž

oFåÞ- 1 yÞ HTTP MgFåž

```
Ruijie# show web-auth parameter
  session-limit: 10
  timeout:       5
```

oxXº%”o- Ø”

oHö- 14

oG-o-

oFåd- 1 yFå portal-check :

```
Ruijie#sh web portal-check
Check:              Enable
  Interval:      3s
  Timeout:       5s
  Retransmit:   3
Escape:             Enable
Nokick:             Disable
```

oèo-

oUP’ô- -

oöjö- -

ouVø- -

1.41 show web-auth rdport

ÞP TCP)ÉMož

show web-auth rdport

oßø

ø@	T
-	-

```
Ruijie#show web-auth    rdport
Rd-Port:
80 443
Ruijie#
```

oЧP’ô- -

oиVФ- -

1.42 show web-auth template

₱ portal ₱ãž

show web-auth template

o₱	@	T
-	-

ox%”o- Ô”

oH- 14

o6-o- ìXôPã

oF-ô- 1 y₱ž

```
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	%ædf
Url	¾Æ
Ip	ÆE IP ª
Type	¾Ð%¾W portal ÆE v1k8W v2kÃ intra
Port	ÆE¦'ÐMkN8W portal ÆE
Acctmlist	"éõ¸dkN8WyÃ
Authmlist	ëõ¸dkN8WyÃ

oЧP'ĵb- -

oчV®- -

1.43 show web-auth user

ª®ÃÜ¸ï IP ê›NMoÃÐž

show web-auth user { **all** | **ip** *ip-address* | **mac** *mac-address* | **name** *name-string* | **session-id** *num* | **escape** }

o®ê

¡@	T	
ip-address	6ï	IPv4 êž
mac-address	*6ï*	MAC ª
name-string	*6ïd*	
num	*6ï*	AAA k¢ ID

oxX%"o- Ø"

oHß- 14

o6-o-

escape }Ð wifi ®[¦ß

oFåd- 1 yª web ßFyÃÐž

```
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 ¤ž
Mac	ï MAC ¤ž
Port	NÕ¼ož
Online	Kçž
Time Limit	Už’¤0 nP‘¤ž
Time Used	Ìß¤ž
Time Start	¾o¤ž
Status	¼Active nP¤o½Create nP¤ë• å¤Destroy nP¤ïo¤ž
Name	¨dk%¥WÕP¨dk¤

oЧP’ò- -

oч\V¤- -

1.44 temporary-permit

å– wifi

{¼ wifi ¥gož

no temporary-permit

o@	@	T
	seconds	*F¥gžo¥¥ak¥* 30s ~ 60s

oH¥Fåž- H¥Fåž

o»X%”o- %ßåß%”ož

oH¥ð- 14

oG-o- -

oF¥ð- 1 yF¥g

```
Ruijie(config.tmplt.wechat)# temporary-permit 30
```

oßo- … **show web-auth template ô@**

oUP’ô- **-**

oðjö- -

ouVô- -

1.45 time-interval

time-interval *{ hour }*

no time-interval

o@	@	T
	hour	1 4žH8 0-24ož

oH¥Fåž- Þ 1 4ož

o»X%”o- %ßåß%”ož

oHß- 14

o6-o- "N 0ßÝd

oFåd- 1 yFåsße 2 4ž

```
Ruijie(config.tmplt.iportal)#time-interval 2
```

oèao- … **show web-auth template ô®**

oUP'ô- **-**

oəjö- -

ouVd- -

1.46 url

å— portal ßž

url *url-string*

ß ßž

no url

o®

@	T
url-string	ß#http://" ê "https://"ßkéUPFåX† 255 ož

oHFå- ßZÅ— portal ßž

o×X%"o- %ßå‰"ož

oHß- 14

o6-o-

å0P **http redirect homepage** [*url-string*]a"Paßd—

url ß%VðL! http://[ip-address] [ip-address]¶ IP a"ü IP d

oFåd- 1 y6 eportalv1 %ß¿http://www.web-auth.net/login" ož

```
Ruijie(config.tmplt.eportalv1)#url http://www.web-auth.net/login
```

oè¤o- … **show web-auth template ûß@**

oÐP'ô- 1 oê URL ”ož

```
%Error: Invalid homepage URL.
```

oæjö- -

oÐVê- -

1.47 version

ëÅ— wifi ßž

version {1.0 | 16wifi | 3.0 }

êô. wifi ßž

no version

oßê

@	T
-	-

1.48 webauth

WLANSEC %”ø web ðž

webauth

ïƀåž

no webauth

o@	T
-	-

oHFå- ¿ž

oxX%”o- ¶BFå‰”ož

oHß- 14

o6-o- -

oFåd- 1 yFßž

```
Ruijie (config)# web-auth accounting jitter-off
```

oèo- … **show running-config ô**

oUP’ô- -

oəjö- -

ouVß- -

1.50 web-auth accounting v2

6“ãžož

web-auth accounting v2 { default | *name* **}**

ßåž

no web-auth accounting v2 { default | *name* **}**

o@	T
name	“ædf

oHFå- ßåž

oxX%”o- ¶ß‰Fß”ož

oHß- 14

o6-o- -

oFåd- 1 yFåçož

```
Ruijie (config.tmplt.eportalv2)# web-auth accounting v2 default
```

oèo- … **show running-config ôß**

oUP'Ô- **-**

oëjö- -

ouV®- -

1.51 web-auth authentication v2

Få web šož

web-auth authentication v2 [default | *name*]

ïFåž

no web-auth authentication v2 [default | *name*]

o@ß

@	T
name	6 web š

oHFå- é. aaa 6éož

oxX%"o- ßFå%"ož

oHß- 14

o6-o- **-**

oFåd- 1 yFåož

```
Ruijie (config.tmplt.eportalv2)# web-auth authentication v2 default
```

oèo- … **show running-config ôß**

oUP'Ô- **-**

oëjö- -

ouV®- -

1.52 web-auth acl

d%UYßUY¦Bädd%UYßc¦Bäž

web-auth acl {

no web-auth bind-portal

o@	@	T
	string	**Ç** portal Æ

oHFå- ož

oxX%”o- WLANSEC F‰”ož

oHß- 14

o6-o- -

oFåd- 1 yFå MAC ?’Ç portal Æž

```
Ruijie (wlansec)# web-auth bind-portal eportalv2
```

oèo- … **show running-config ô**

oUP’ô- **-**

oejo- -

1.54 web-auth dhcp-check

Få web š dhcp ßQÄ dhcp ãgšž

web-auth dhcp-check

ôåž

no web-auth dhcp-check

o@	@	T
	-	-

oHFå- {ož

oxX%”o- ßF‰”ož

oHß- 14

o6-o- **-**

oF 1 y dhcp

```
Ruijie (config)# web-auth dhcp-check
```

o … **show running-config**

o **-**

o -

o -

1.55 web-auth direct-host

IP 8o

web-auth direct-host { *ipv4-address* [i*p-mask*] [**arp**] | *ipv6-address* | *mac-address*} [**port** *interface-name*]

H

no web-auth direct-host { *ipv4-address* [i*p-mask*] | *ipv6-address* | *mac-address*}

@	T
Ipv4-address	IPv4 o
Ipv6-address	IPv6 o
ip-mask	IPv4 Ao
port *interface-name*	IP g
arp	ARP CHECK IP 8g ARP **arp** IPv4 o
mac-address	MAC

H Web o

o 1

o 14

o Web o

o 50 o

oF 1 y IP 172.16.0.1 o

```
Ruijie(config)# web-auth direct-host 172.16.0.1
```

2y MAC 0000:5e00:0101 o

```
Ruijie(config)# web-auth direct-host 0000:5e00:0101
```

oèo- … **show web-auth direct-host xØ@**

oUP'Ô- 1 yè IP/QA”

```
%Error: Invalid IP address.
```

oəjö- -

ouV®- -

1.56 web-auth dkey-compatible url-parameter

åÕ URL @ž

web-auth dkey-compatible url-parameter *string*

HÁ URLož

no web-auth dkey-compatible url-parameter

o@

@	T
string	post @ž

oHFå- ÞZÄåÃÖž

o×X%”o- ßFå”ož

oH®- 14

o6-o- ož

oFåd- 1 yå post @ loginož

```
Ruijie(config)# web-auth dkey-compatible url-parameter login
```

oèo- … **show running-config xØ@**

oUP'Ô- -

oəjö- -

ouV®- -

1.57 web-auth enable

ßMo Web ßßÃ **web-auth port-control xX**

web-auth enable [**eportalv1 | eportalv2 |** *template-name*]

ßM¼ Web ßž

no web-auth enable

op

{ž

no web-auth logging enable

	num	SYSLOG øk?aUø SYSLOG [0, 65535] k 0 ’ò

oFå- ¼ web š SYSLOG ož

oX%”o- FÅ‰”ož

o- 14

o-o- ¥XN’‰3o SYSLOGk‘o M SYSLOG l’òž

oFåb- 1 yF‰² SYSLOG ø,ož

```
Ruijie(config)# web-auth logging enable 0
```

oào- * **show running-config**

oUP’Îb- -

oøjö- -

ouV- -

1.59 web-auth noise

Fåš web

web-auth noise [**aging** *agmin*] [**hit** *times*]

å

no web-auth noise

	agmin	1 lkH 1-30ož
	times	ip ñ times)k< ó 3)kH 3-100ož

oFå- ¥

oxX%”o- ßFå‰”ož

oHø- 14

o6-o- -

oFåd- 1 yFåßz

```
Ruijie (config)# web-auth noise aging 1 hit 3
```

oèo- … **show running-config ô6**

oUP’ô- **-**

oəjö- -

ouVø- -

1.60 web-auth offline-detect

Få wlansec ğkõžÊvOêÖg

web-auth offline-detect interval *interval* **flow** *thredshold*

ßå

default web-auth offline-detect

no web-auth offline-detect

o

@	T		
interval	*vQukÊ%ßH*1, 65535]	kó	15 ßož
threshold	*vkÖ%kH*0, 4294967294]	k0	nP¥Öyož

oFå- 15 ßU¥Öy¿

oxX%”o- wlansec %”

oHø- 14

o6-o-

10.x o‘ž wlansec Hæ”dN»‰ 11.x ‘Ńž wlansec ¥d

oFåd- 1 yFå wlansec 1 5 ßJkOz9 5kBytes ž1ÿ

```
Ruijie(config)#wlansec 1
Ruijie(config-wlansec)# web-auth offline-detect interval 5 flow 5120
```

oèo- 1 y… **show running** xXUYôš,Fåž

oUP'ô- -

oejö- -

1.61 web-auth ping

y portal ßJož

web-auth ping [**interval** *minutes*] [**retry** *times*]

ôåž

no web-auth ping

op@

@	T		
minutes	**yuÊó**	1 ßJkH8	1-65535ož
times	**ÝnÞó**	3)kH8	0-65535ož

oFåd- ¼ ping ož

oxX%"o- ßFå%"ož

oHô- 14

o6-o- -

oFåd- 1 yFå ping yuÊ 5 ßJkMn)ƒ 4)ož

```
Ruijie (config)# web-auth ping interval 5 rerty 4
```

oèo- … **show running-config ô**

oUP'ô- -

oejö- -

oʊV0- -

1.62 web-auth portal

6š. Portal ØŽ

web-auth portal { eportalv1 | eportalv2 | iportal | wechat | wifidog | *name* **}**

ÎFåž

no web-auth portal { eportalv1 | eportalv2 | iportal | wechat | wifidog | *name* **}**

o@	T

oHFå- ¤H Portal ÆE url ”ož

oxX%”o- ¶BFå‰”ož

oHß- 14

o6-o- -

oFåd- 1 y¼ Portal #‘ jož

```
Ruijie (config)# no web-auth portal extension
Ruijie (config)# http redirect url-fmt ext1
```

oèo- … **show running-config ß**

oUP’Î- -

oəjïo- -

ouVß- -

1.64 web-auth portal key

ßE’%Wož

web-auth portal key *key-string*

žÍ HTTP WEB ŁtMge• WEB ŁßE’%Wož

no web-auth portal key

o@	T	
key-string	ßÍ	255 ož

oHFå- ŁZ‰Wož

oxX%”o- ¶BFå‰”ož

oHß- 14

o6-o- }è Web ßE’%Wož

WNu4BFåu4?y%Wož

oFåd- 1 y%W *web-authož*

```
Ruijie(config)# web-auth portal key web-auth
```

oèo- * **show running-config**

oUP'ô-

oəjö-

ouVø-

1.65

Ruijie (config)# web-auth portal-attribute textinfo

oà o- … **show running-config ô**

oU P'ô- **-**

oə jö- -

ou V- -

1.66 web-auth portal-check

y portal Ø Jož

web-auth portal-check [**interval** *intsec*] [**timeout** *tosec*] [**retransmit** *retires*]

ô åž

no web-auth porta-check

o @

@	T		
intsec	**yu ó**	10 akH8	1-1000ož
tosec	**ó**	5 akH8	1-1000ož
retries	**nj ó**	3)kH8	1-100ož

oH Få- ¼ portal yož

ox X%"o- Få%"ož

oH ô- 14

o6 -o-

U M" Y{

3

oF ô- 1 yFå portal yož

Ruijie (config)# web-auth portal-check interval 20 timeout 2 retransmit 2

oà o- … **show running-config ô**

oU P'ô- **-**

oөjö- -

oиVθ- -

1.67 web-auth portal-escape

Få portal !ɣ¥Få portal ?ŒUɛ¼Nþž

web-auth portal-escape

ßåž

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
-	-

14

-

```
Ruijie (config)# web-auth sm
```

-

detection

oèo- …

1.72 web-auth template

ë/µ‰²W‰ÉÅ‰”ož

web-auth template eportalv1

ë/µ#%²W‰ÉÅ‰”ož

web-auth template { template-name } **v1**

ë/µW‰ÉÅ‰”ož

web-auth template eportalv2

ë/µ#8W‰ÉÅ‰”ož

web-auth template { *template-name* } **v2**

ë/µ‰ÉÅ‰”ož

web-auth template iportal

ë/µ#‰ÉÅ‰”ož

web-auth template { template-name } **intra**

ë/µ wifidog %ÉÅ‰”ož

web-auth template wifidog

ë/µ# wifidog %ÉÅ‰”ož

web-auth template { *template-name* } **wifidog**

ë/µ wifi ‰ÉÅ‰”ož

web-auth template wechat

ë/µ#³ wifi ‰ÉÅ‰”ož

web-auth template { template-name } **wechat**

ì%åXož

no web-auth template { *template-name* }

o

@	T
eportalv1	**W**
eportalv2	**W**
iportal	

iporta

	template-name	
oHFå-		
oxX%”o-	¶BFå‰”ož	
oHõ-	14	
o6-o-	¶& eportalv1 fPf)û ip ä urlØP **http redirect ä http redirect homepage** **aP2- http redirect ä http redirect homepage a g0** **äL-d**	
	P **portal-server aNgád–**	
	‘N_ë Web _¡Q¶ portal ûÉ portal û"o eportalv1 fPVÆË eportalv1 fP{gÃ IP ä url ÆAb‘)û url ª% VðL! http:///*ip-address*)d portal û IP IP	

o@	@	T		
	seconds	**aoE18**	30-3600oď	180 aož

oHFå- 180 aož

oxX%”o- ßF%”ož

oHö- 14

oG-o- -

oFåd- 1 y@ 60 aož

Ruijie (config)# web-auth update-interval 60

oèo- … **show runing-config ö**

oUP’ô- -

oəjö- -

ouVö- -

1.74 web-auth valid-ip-acct

F H IP kH IP 1tž

web-auth valid-ip-acct [**timeout** *seconds*]

åž

no web-auth valid-ip-acct

o@	@	T		
	seconds	IP k%yyako	30 aož	

oHFå- Fåž

oxX%”o- ßF%”ož

oHö- 14

oG-o- "sU wifi M+“ô

oFåd- 1 yF®H IP ž 1 ß

```
Ruijie(config)# web-auth valid-ip-acct timeout 60
```

oèo- … **show running-config ô®**

oUP'Îb- **-**

oəjö- -

ouV®- -

1.75 web-auth wechat-check

F® wifi ¾E

web-auth wechat-check interval *minutes*

¦¾E

no web-auth wechat-check

o®p

(@	T
minutes	!¾F® 30 ß

oH¬å- F®ž

ox×X%"o- ¶ßF®%"ož

oH®- 14

o6-o- ù¿¨ï_¾© **escape a**

oFåd- 1 yF®ž

```
Ruijie (config)# web-auth wechat-check interval 30
```

oèv=o¦¨¾F®

oиVФ- -

1.76 web-auth wechat-escape

Få wifi ÿ

web-auth wechat-escape interval *minutes* **times** *count*

Ф ÿ

no web-auth wechat-escape

H **show running-config** **Pož**

web-auth wechat-escape recover

o	@	T
	minutes	! 60
	count	5

oHF å- F ž

oxX%”o- ß F ”ož

oH - 14

oG-o- **escape a**

oF 1 yF ÿ

```
Ruijie (config)# web-auth wechat-escape interval 30 times 10
```

o … **show running-config**

oЏP’ò- -

oэjÖ- -

oиVФ- -

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 %þFå

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 %þFå

no web-auth wifidog-template *name*

o

@	T
name	%á
wlanid-start	IO wlan
wlanid-end	*IO* wlan
portal-ip-addr	portal
nas-ip-addr	å wifidog ip GÜ
url-string	portal
perception	*F*

oF å-

F

ox X%”o-

F%”

o

14

o6-o-

wlansec wlansec M¥N_d

oF d-

F wifidog %þF

5XLMLHFRQILJZHEDXWKZLILGRJWHPSODWHDDDZODQUDQJHSRUWDOLSQDVLS

XUOKWWSDXWKZLILGRJ XWK

o o-

… **show running-config**

oU P’ b-

-

o j o-

-

oV -

-

1.79 web-auth wlan-ac-ip

F lg URL ACIP

web-auth wlan-ac-ip *ipv4*

ÎFåž

no web-auth wlan-ac-ip

op@

oH- 14

o6-o-

oFåd- 1 yFå winterface

Ruijie (wlansec)# web-auth winterface winterface

oèo- … **show running-config**

oUP'b- -

oejo- -

ouV- -

2 AAA

2.1 aaa accounting commands

+ß NAS ğxXtg“Ä’ŧož

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

3yÿMËåxXkÉå$Åž

oɔÿö- -

oɯVÐ- -

2.2 aaa accounting exec

+£ NAS ˆtg“Ñ‘ožž

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

H*f* Exec “ñžž

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

oÐ

@	T
default	Ø#ç• Exec “ñžž
list-name	#%² Exec “ñçkUY©ož
method	Ànone ogroup ”ß%k%ç¤Ñ 4 c
none	gÃ
group	gÑ4 RADIUS y TACACS+Æ

oHFå- ‰Ã

oxX%”o- ß%”ož

oHÑ- 14

o6-o- RGOS QÏ4ßkÑo Exec “Ñgß•

c nonekÉg Exec “ñžž

o“ñkÑ NAS CLI ßG“ñgStart h’ßÉ

ßG“ñgStop h’ßÉ%ZÑß Start ’k¨

ßkGß Stop ’ožž

Få Exec “ñekÀÿgxX“ßkÉjožž

oFåd- 1 yÐ‡.. RADIUS +£ NAS tg“ÑwÿÐ“Ã

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

où- … **show aaa method-list x**]ß Exec “ñç’ožž

oU P’ô- 1 yÐÄ6 groupkÉPjöž

%Group XXX is not existed

2yò group º44“ÑÉJPjöž

The accounting does not support this type of group

3yÒMËåxXkÉåÞÄåž

oɔjö- -

ouVº- -

2.3 aaa accounting network

9ãk}+Ïtg“Ðž

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

Hþðž

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

oþ@

@	T	
default	¥ê#ıcç•	Network “ðož
list-name	ðçdož	
start-stop	Ïtyè“Ñ“Ñ+Ñkè o“ÑCèjþož	
method	Àè@%çÑ	4 €
none	g“Ã	
group	ðÉÑù4	RADIUS y TACACS+ÁÉ

oHFå- {“Ã

ox X%”o- ß%”ož

oHõ- 14

o6-o- RGOS *ÐÉ“ÑÅÛg“ðþ¼ **start-stopkÐž**

oFåd- 1 yÞ‡.. RADIUS +èg“Ñwÿè“ÿÃ

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

oèo- … **show aaa method-list x**èÐ]ðçÎž

oЧP’b- 1 yçÖÄ6 groupkЧPjöž

%Group XXX is not existed

2yò group ¥u44“ÑЧPjöž

The accounting does not support this type of group

3yÿMËåxXkËeå$Påž

oəjö- -

oнVÐ- -

2.4 aaa accounting update

o“Ñ9B“.ñž

aaa accounting update

¿“ñž

no aaa accounting update

oÞ

@	T
-	-

oHFå- “Ñ%ž

o×X%”o- B%”ož

oHÐ- 14

o6-o- çÖÄ AAA ÑEñqE AAA ÑEXñ¼

ož

oFåb- 1 yPPñž

Ruijie(config)# aaa new-model

Ruijie(config)# aaa accounting update

oèo- … **show aaa accounting update** xMÑpož

oЧP’b- -

oəjö- -

oнVФ- -

2.5 aaa accounting update periodic

aaa accounting update periodic *interval*

no aaa accounting update periodic

interval	“	1

oHF 5

oxX%”o-

oHФ- 14

oG-o- AAA AAA

oF 1 y 1

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

oo- … **show aaa accounting update**

oUP’Ô- 1 y

oэ-

oнVФ-

2.6 aaa authentication dot1x

} AAA g 802.1X **aaa authentication dot1x** F 802.1X

2.7 aaa authentication enable

}… AAA g Enable ßB#Fåx **aaa authentication enable** ê Enable šçož

aaa authentication enable default *method1* [*method2*...]

ï šçož

no aaa authentication enable default

o ê

@	T
default	ê# ç• Enable šož Enable ê 9 ß š) Qu4 ågož
method	À ocal o•noneogroup o•enable”ß%k%ç Á 4 • c
local	**îG gš**
none	**gš**
group	**ê ù4** RADIUS y TACACS+Æ
enable	**…** enable cgš

oH Få-

-

ox X%”o-

ß%”ož

oH ê-

14

o6-o-

ê Õ- AAA Enable ‹ Æ Ë < À. AAA g Enable ‹ # G Ê À. **aaa authentication enable x ê ç 9** Enable šž

Q ß Z ê ã g ä šž

Enable šçF ek Enable ¥ ož

oF å d- :1 y P # AAA Enable ä šçošç… RADIUS ß ê•

š ç % Z Ä ñ RADIUS ê ß g ä šž

```
Ruijie(config)# aaa authentication enable default group radius local
```

oè o- … **show aaa method-list x ê]ê** Enable šç'îž

oU P'î- 1 y ê Ä 6 groupkÉ Pjöž

```
%Group XXX is not existed
```

2yò group ù44 kÉ Pjöž

```
The authentication does not support this type of group
```

3yÿMËåxXkÉåšÄåž

oɔjö- -

ouVö- -

2.8 aaa authentication iportal

}… AAA gÕ- Portal Web šçBFåX **aaa authentication iportal** Õ- å Portal Web šçož

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

ïšçož

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

o@ê

@	T
Default	Portal Web šçož
list-name	Õ- Portal Web šçkUY©ož
method	Local o•noneo•groupo•subs”4
local	
none	
group	RADIUS Æ
subs	… subs

oHFå- -

ox×X%”o- %”ož

oHõ- 14

oGo- Õ- AAA Õ- Portal Web Æ. AAA gÕ- Portal Web š **aaa authentication iportal** Õ- Portal Web šž

oFåd- 1 yP#%d rds_web AAA Õ- Portal Web šçoçož… RADIUS

oè¤o- … **show aaa method-list xÆ6]ê** iportal šç’ôž

oÙP’ô- 1 yçØÄ6 groupkÉPjöž

%Group XXX is not existed

2yç group ÿ44ŠÉPjöž

The authentication does not support this type of group

3yçMËåxXkeÉå$ÄåžÄ

oæjö- -

oÙVÐ- -

2.9 aaa authentication login

}… AAA g LogingÉŠçÐFåX

authentication login xß#ç9 Login šž

Qp¿ZÑ¤gäšž

å– Login šekÀ¥g Login ß¼é¡ž

oF¬ð- 1 yÞ#%ð list-1 AAA Login šçoÑç¯... RADIUS ¾E

g¼%ŽÄñ RADIUS ¼ßgšž

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

oè¤o- … **show aaa method-list x¤ß]ê** Login šç’ðž

oÙP’ð- 1 yçÄ6 groupkÉPjöž

```
%Group XXX is not existed
```

2yç group º44¼ÉPjöž

```
The authentication does not support this type of group
```

3yçMËåxXk¤åä$Äåž

oè¤i¼Um%!R¥å\Y¥ºa VPU¼SPÀ¼Vã=ÀÉyçÞÀ¼Ó#‡ ¦@l tpÙgÐ2A¿ÒÝÇ`ßVÇ`ßG¼'VáY@R3

oHFå- -

oxX%”o- ß%”ož

oHß- 14

o6-o- ¿ÕÕ AAA PPP ¶ÆÈ<À. AAA g PPP ¨ß#GÆÂ. **aaa authentication ppp** xßÆ¿9 PPP ßž

QÆZÆÆÆgßž

oFåb- :1 yÆ#%ê rds_ppp AAA PPP ßçoßç... RADIUS ¶Æ

gßÆ%ÆZÆñ RADIUS ¶ÆÆgßž

```
Ruijie(config)# aaa authentication ppp rds_ppp group radius local
```

oèo- … **show aaa method-list** xßÕ]ß PPP ßç’bž

oÙP’b- 1 yÆÆ6 groupkÉÙPjöž

```
%Group XXX is not existed
```

2yç group Ø44ßÉÙPjöž

```
The authentication does not support this type of group
```

3yÇMÈåxXkÆåš$Åaž

oèjö- -

oÙVß- -

2.11 aaa authentication sslvpn

}… AAA g sslvpn ßÆÆßFåX **aaa authentication sslvpn** Få sslvpn ß

çož

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

ï sslvpn ßçož

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

oÆ

Æ@	T

	e
local	**ûlG0š**
none	**gš**
group	**gÉ4** RADIUS Æ
subs	**…** subs ÿ-Gšž

oHFå- -

oxX%”o- ß%”ož

oHö- 14

o6-o- ÕÿÈ sslvpn kÆÀ. AAA g sslvpn ÈÕÈ. **aaa authentication sslvpn xÔ#ç9** sslvpn šž QÞZÈãpgšž

oF-d- 1 yÞ#%d rds_sslvpn AAA sslvpn šçoš¯… RADIUS ÈZÄñ RADIUS Ìçg• šž

```
Ruijie(config)# aaa authentication sslvpn rds_sslvpn group radius local
```

oè¤o- … **show aaa method-list xÔ]ê** sslvpn šç'Ôž

oUP'Ô- 1 yçÄ6 groupkÉPjöž

```
%Group XXX is not existed
```

2yç group Ø44šÉPjöž

```
The authentication does not support this type of group
```

3yÇMÈåxXkÈeå$Äåž

oəjö- -

ouV0- -

2.12 aaa authentication web-auth

}… AAA g8W Web šçßFåX **aaa authentication web-auth ÕW** Web • šçož

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

ï šçož

no aaa authentication web-auth { **default** | *list-name* }

o@	T
default	Ø#ıçõW Web šož
list-name	õW Web šçkUY©ož
method	local o•noneo•groupo•subs”ß%k%ïçõ 4
local	ïGšž
none	gäšž
group	14 RADIUS Æ
subs	… subs šžž

o-Fåž -

o×X%”o- ß%”ož

o-ö- 14

o6-o- õ- AAA õW Web À. AAA gõW Web

À. **aaa authentication web-auth x9õW** Web šž

Qõ šçž

oFåž- 1 y#%d rds_web AAA õW Web šçõ… RADIUS

RADIUS Nygkšož

```
Ruijie(config)# aaa authentication web-auth rds_web group radius none
```

oèo- … **show aaa method-list x** web-auth šçž

oUP’ž- 1 y6 groupkUPjöž

```
%Group XXX is not existed
```

2yç group 44kUPjöž

```
The authentication does not support this type of group
```

3yçMËåxXkõåš$Äåž

oəjö- -

ouVö- -

2.13 aaa authorization commands

+9]fi NAS CLI ¡q… AAA xXIÉgxXgIKŒV2

ũ¡xXoğ‡BFåX **aaa authorization commandsož**

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

{¼ AAA xXIÓž

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

o‰ê

¡@	T
level	}glkÓXß 0~15l‰X}HÓeõ gož
default	‰ê#ecçxXIó
list-name	#%žXIÓçkUY©cž
method	Ànoneo• group”ß‰k%ècçÂl 4 e
none	**glÓ**
group	**gKÓ4** TACACS+Æ

3yÿMËåxXkÉå$Åž

oɔjö- -

oɯV@- -

2.14 aaa authorization config-commands

}… AAA +Få‰”g ,¶BFå‰”C¿‰”h xX gIÓügB¶BFåX **aaa authorization config-commandsož**

aaa authorization config-commands

¼ AAA +Få‰”xXgIÓž

no aaa authorization config-commands

o@

@	T
-	-

oFå- ¼ AAA +Få‰”xXgIÓž

oxX%”o- ¶%”ož

oF@- 14

o6-o- Ò+Få‰”g@”hxXgIÓUY¥X **no @**

@gxÓgož

oFå- 1 yÞFå‰”xXIÓ

2.15 aaa authorization console

}… AAA +* Oò V £k ñ g x X g I Ó ü ¶ B F å X **aaa authorization consoleož**

aaa authorization console

{¼ AAA +*OòVßxXIÓž

no aaa authorization console

o ß	@	T
	-	

o H F å - {¼ AAA +*OòVßxXIÓž

o x X %”o - ß%”ož

o H ß - 14

o 6 - o - RGOS u4 ã O ò V ¿ U Ê U Y ê ò V K g x X I Ó ž

ê 4 O ò V x X I Ó ß ò V è x X I Ó ą 1 j ož

o F å d - 1 y ß r F ê ò V £ X I Ó

	@	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* }

@	T
default	Network lÓž
method	group” %k%ç Ã 4
none	
group	RADIUS y TACACS+Æ

¼ AAA Network lÓž

%”

14

RGOS u4+ PPPoSLIP #‘glÓ åÓ

lMglÓž

UY6_cl ¥ Q Z

gl e Ó ž

RADIUS ê TACACS+ Æ

kQ BHÈÓž

1 yÞ‡.. RADIUS

2.18 aaa domain

Ëå‰”kFåž

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

H¥Xož

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

o@	@	T
	default	¥Få
	domain-name	*6df*

oFå- ZÄåž

o×X%”o- %”ož

oÎ- 14

o6-o- 6d AAA Äåz default Få-<XÎ-

co ož *domain-name 6dFåkoož*

4Få 32 ož

oFåd- 1 yPÄåFy

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

oo- … **show aaa domain x**ž

oP’d- **-**

oj- -

oV- -

2.19 aaa domain enable

d AAA Äåž

d AAA Äåž

aaa domain enable

{¼ž

no aaa domain enable

@	T
-	-

¼d AAA ¼ž

¶%”ož

14

g¼d AAA Fåj}Fž

y¼d AAA ¼

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

… **show aaa domain x¼ž**

-

-

-

ocal authentication attempts

Få login ¼ž

aaa local authentication attempts *max-attempts*

2.22 aaa local user allow public account

Få Web á Web ãusername ã subshktãož

aaa local user allow public account

o	@

oxX%”o- ‰%”ož

oH-o- 14

o6-o- ÝÖž AAA ‰ syslogkUk-‰ÖÄUY*F‰
XÇ‰ož

oF‰- 1 yÞ?‰ø aaa ‰ syslogož

```
Ruijie(config)# no aaa log enable
```

oè‰o- … **show running-config x‰** aaa ‰ syslog ‰ož

oUP’‰- **-**

oöjö- -

ou‰V‰- -

2.24 aaa log rate-limit

}².. AAA ‰ syslog ø‰ä aaa log rate-limit xXgF‰ž

aaa log rate-limit *num*

Ê AAA ‰ syslog ø‰ž

no aaa log rate-limit

o‰ø

‰@	T
num	*a‰* syslog ‰ 0 - 65535y 0ynP’ø‰ä 1 - 65535yUF‰‰kó 5ož

oH‰- 5 k/?aø 5 Ú AAA ‰ syslogož

oxX%”o- ‰%”ož

oH-o- 14

o6-o- ÝÖž AAA ‰ syslogkUk-‰ÖÄUY*F‰x
X‰Ù. syslog ø‰ž

oF‡å‰- 1 yβ?†.. AAA ¥š syslog øœa 10 Ú

```
Ruijie(config)# aaa log rate-limit 10
```

oè‰o- … **show running-config xß** AAA ¥š syslog øëž

oЫP’Ô- **-**

oəjÖ- -

oъV® - -

2.25 aaa new-model

}… RGOS AAA ¥ßB‡FåX **aaa new-model …** AAAož
aaa new-model

{¼ AAA ¥ßž
no aaa new-model

o¡®

@	T
-	-

oH‡å- {¼ AAA ¥ßž

o»X%”o- ß%”ož

oH® - 14

o6-o- ¥X© AAA xXk‰.. AAA ¥ß≤À. **aaa new-model …** AAA ¥ßž
ç‰ AAAkå AAA xX1©Fåž

oF‡å‰- 1 yβ?†.. AAA ¥ßž

```
Ruijie(config)# aaa new-model
```

oè‰o- … **show running-config 0 Td®91904850A080578045 r AAA¥ßž**

2.26 access-limit

ê‘kQ+ IEEE802.1x ‰ž

access-limit *num*

H‡Ð’òž

no access-limit

o‰ê

@	T	
num	ê‰Q	IEEE802.1x ï

o‰Få-

H‰Dož

oxX%”o-

Fê‰”ož

o‰ê-

14

oG-o-

default	¥6ÐÞFåç
list-name	*6ecdf*

oHFå- Zëcçžéç¼ÜkÕ¥ default ecož

oxX%”o- Få‰”ož

oHß- 14

o6-o- ê… Network “ÕçoŽ

oFåd- 1 yPPFå– Network “ÕçoŽy

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

oèo- … **show aaa domain xMß** Network “ÕçFåž

oUP’ô- 1 yõecdXÝ¼UPjöž

```
Method list name is too long
```

2yõecç9FåUPjöž

```
%WARNING: method list named XXX for this type is not existed
```

3yçMËåxXk¥eå$Fåž

oəjö- -

ouVß- -

2.28 authentication dot1x

Få”Få IEEE802.1x ¥ož

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

H¥Xož

no authentication dot1x

op¥ê

¥@	T
default	¥6ÐÞFåç
list-name	*6ecdf*

oH- 14

o6-o- -

oFad- 1 yP?P– Network lQy

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

oao- … **show aaa domain xM** Network lQFb

oUP'b- 1 yçcqdXbUPjöž

```
Method list name is too long
```

2yçcq9FaUPjöž

```
%WARNING: method list named XXX for this type is not existed
```

3yMÄaxXkeaa$Äaž

oöjö- -

ouV- -

oЧP'ô- 1 yğ%žwKЧP'ôž

```
User XXX unlocked
```

oчV@- -

2.31 show aaa accounting update

P“#@ž

show aaa accounting update

op@	@	T
	-	-

oxX%”o- @”oB%”oNM%”

oH@- 14

o6-o- P“#%“@wC“@ž

oF@- 1 yP“#%

```
Ruijie# show aaa accounting update
```

oЧP'ô- **-**

oчV@- -

2.32 show aaa domain

P@ž

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

op@	@	T
	default

oFåb- 1 yβ₱₱6g domain.com ĵbž

```
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'ĵb- -

ouV@- -

2.33 show aaa lockout

₱Q login gF@z

show aaa lockout

o@

@	T
-	-

o»X%"o- @"o$%"o‹NM%"ož

oH@- 14

o6-o- ¥X₱Q login gF@z

oFåb- 1 y₱Q login gFå

```
Ruijie# show aaa lockout
Lock tries:       3
Lock timeout:    15 minutes
```

oUP'ĵb- -

ouV@- -

2.34 show aaa group

ᵽ AAA F

show aaa group

	@	T
	-	-

Ô”o B%”o NM%”ož

14

¥X AAA

1 y AAA E

```
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
```

-

-

2.35 show aaa method-list

ᵽ AAA ož

show aaa method-list

	@	T
	-	-

Ô”o B%”o NM%”ož

14

o6-o- ¥XP AAA Ëqož

oF-d- 1 yPP AAA eqož

```
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'Î-

-

ouV-

-

2.36 show aaa user

P aaa ï¼Ûž

show aaa user { **all | lockout | by-id** *session-id* **| by-name** *user-name* }

o-

@	T
all	ÐÄ AAA Ïî
lockout	Ðg AAA ç'Î
by-id *session-id*	*Ð6* session id AAA Ïî
by-name *user-name*	*Ð6ï* AAA Ïî

oX%"o- Ð"oB%"oNM%"ož

oH-

14

o6-o-

P AAA ï¼Ûž

oF-d- 1 yPP AAA ï¼Ÿ

```
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#
```

oЧP’ĵ- -

oиV@- -

2.37 state

@ž
state { **block** | **active** }

@ž
no state

o@	@	T
	block	F@

oʁV@- -

3.2 ip radius source-interface

6 RADIUS ¶ž

ip radius source-interface *interface-name*

ĺ6 RADIUS ¶ž

no radius source-interface *interface-name*

o℗℠

℘@	T
interface-name	radius ¶NM

oĦ₣å- Þ radius ¶©å–

o×X%”o- ¶%”

oĦ¶- 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

oxX%”o- ฿%”

oH0- 14

o6-o- ¥XUYF&Y cèž

oF₫0- 1 y1 max up-rate ₩ 211ož

Ruijie(lT-ate ₩ y 6 Ö 1 Ñ

the vendor type had allocated by XXXX

oəjö- -

ouVt- -

3.5 radius vendor-specific extend

å– radius ïÆŒ id

radius vendor-specific extend

Ê¢ïÆŒ id

no radius vendor-specific extend

op@	@	T
	-	-

oHFå- Q¢ïÆŒ id

oxX%”o- ¢%”

oHö- 14

o6-o- ¥XU+ÄŒ id KÅÁÆž

oFåd- 1 yFå radius ïÅÆŒ idož

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

oèo- … **show running-config ïÆ¢ož**

oUP’ô- -

oəjö- -

ouVt- -

3.6 radius vendor-specific attribute support

Få radius u4ãu•oïÆÅ

radius vendor-specific attribute support { cisco | huawei | ms}

Få radius u4ÃwoÄÅ

no radius vendor-specific attribute support { cisco | huawei | ms}

op@ @

oH-Få- H-åMn“ðz

ox-X%”o- ß%”

oHð- 14

o6-o- FåW Web ßðMnkMnoßðož

oF-åd- 1 yFåW Web ßðMnož

Ruijie(config)#radius-server account update retransmit

oè-o- xX **show running-config ðž**

oU-P’b- -

oöjo- -

ou-Vß- -

3.8 radius-server attribute 31

6 RADIUS Calling-Station-ID KgÅÂ MACh”ož

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

ð RADIUS Calling-Station-ID KgÅÂ MACh”

no radius-server attribute 31 mac format

oß

@	T
ietf	6 ETFg RFC3580 h • õ k … ‘-’ • ãe 00-D0-F8-33-22-ACož
normal	*6onP* MAC gß h k.. ‘.’ ê ß00d0.f833.22ac ož
unformatted	*6k* ß 00d0f83322ac ož

oH-Få- … unformatted ”

ox-X%”o- ß%”

oH-
14

o6-o-
B ã RADIUS ¶Eg } 9 802.1x •ɜn U Q œ IETF ” k _ Õ 1
Calling-Station-ID KÅ IETF ”ož

oFåd- 1
yP# RADIUS Calling-Station-ID KÅ IETF ”ož

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

oè-o-
… **show running-config** radius Á mac ”åž

oUP’ô-
-

oəjö-
-

ouVø-
-

3.9 radius-server attribute class

Få RADIUS Class Kå

radius-server attribute class user-flow-control { **format-16bytes** | **format-32bytes** }

o¬ u V ª sKl" %ðo¬ u V ª |pÖ“q(Œt < RADIUS •à’é´ðÆúÀg

oèo- … **show running-config** ô radius Fåž

oUP’ô- -

oəjö- -

ouV@- -

3.10 radius-server dead-criteria

F- RADIUS

radius-server dead-criteria { **time** *seconds* [**tries** *number*] | **tries** *number* }

- RADIUS

no radius-server dead-criteria { **time** *seconds* [**tries** *number*] | **tries** *number* }

o

@	T
time *seconds*	F RADIUS 3G RADIUS å– 1-120 aož
tries *number*	Fa e%² RADIUS L RADIUS ú –100ož

oHFå- **time** *seconds* ó 60 aož

tries *number* ó 10)ož

oxX%”o- %”

oH- 14

o6-o- % RADIUS RADIUS

UoXkUY+ž

oF-åd- 1 y 120 ak 20)ož

```
Ruijie(config)# radius-server dead-criteria time 120 tries 20
```

oèo- … **show radius parameter U** RADIUS åož

oЬPʼô- -

oəjö- -

oъVФ- -

3.11 radius-server deadtime

F@gÔUЙ RADIUS ¶Ł–xtož
radius-server deadtime *minutes*

@gÔUЙ RADIUS ¶Ł–xtož
no radius-server deadtime

o¶@

@	T	
minutes	*F@gØ* yŭožЈ–	RADIUS ¶Ł–% 1-1440 ŭg 24 4ŏž

oH-å- *minutes* ó 0 ŭg/… RADIUS ¶kÇ¤ RADIUS ¶Ł–h

o×X%”o- ¶%”

oH¶- 14

o6-o- ¶%Ѵ RADIUS ¶4Myk‟ **radius-server deadtime** ¶Ł–
RADIUS

2yβ#%² IPv4 ë RADIUS MykyœÊ 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
```

3yβ#%² IPv6 ëRADIUS

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

oèo- … **show radius server U** RADIUS

oUP’ô-

oejö-

ouV0-

3.13 radius-server key

#RADIUS FMXož

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

HFMXož

no radius-server key

o@ @ T text-string

oUP’ô- -

oəjö- -

ouV0- -

3.14 radius-server retransmit

F6- RADIUS MG)ƒž

radius-server retransmit *retries*

MG)ƒž

no radius-server retransmit

o6- | @ | T |
|---|---|
| *retries* | RADIUS :MG)ƒKH8© | 1-100ož |

oF-å- MG)ƒ 3ož

oxX%”o- %”

oH6- 14

o6-o- AAA %‰ˆ+ÿ6MG6)ƒ RADIUS ?)MG6ž

oF-åd- 1 yP6MG)ƒ 4ož

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

oèo- xX **show radius parameter U6** radius Mn)ƒ-åož

oUP’ô- -

oəjö- -

ouV0- -

3.15 radius-server source-port

F6- RADIUS 6Mož

radius-server source-port *port*

ê½ž

no radius-server source-port

o¦ê½

(@	T	
port	}ê¼oŽÅ–	1-65535ož

oÞF¤å- ê¼l

o»X%”o- ¶%”

oÞê½- 14

o6¬o- Õ– RADIUS ¼lÕê½6¼lk¥XFåž

oF¤å- 1 yÞ?1G radius ¼l# 10000ož

```
Ruijie(config)# radius-server source-port 10000
```

oèo- … **show running-config U¼Õ–** radius ¼lF¤åž

oUP’Î- -

oÞj¨- -

ouV½- -

3.16 radius-server timeout

FÕê¼G RADIUS ¼ž

radius-server timeout *seconds*

ê½ž

no radius-server timeout

o¦ê½

(@	T	
seconds	¼%yabŽÅ–	1-1000 aož

oÞF¤å- ó 5 a

o»X%”o- ¶%”

oH- 14

o6-o- ¥XF RADIUS

oFd- 1 yP1 10 aož

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

oa-o- … **show radius parameter**

oUP’-

oj-

oV-

3.17 radius set qos cos

å– radius G qos NM cos ›

radius set qos cos

radius G qos ›

no radius set qos cos

@	T
-	-

oF- Þ qos Få dscp ›

oX%”o- %”

oH- 14

o6-o- -

oFd- 1 y å– radius G qos NM cos ož

```
Ruijie(config)# radius set qos cos
```

oa-o- … **show running-config** qos F

oUP’-

oəjö- -

ouVØ- -

3.18 radius support cui

å– radius u4 cui KÅ

radius support cui

{¼ radius u4 cui KÅ

no radius support cui

o@	@	T
	-	-

oHFå- Þu4 cui KÅ

oxX%”o- ß%”

oHØ- 14

o6-o- ¥XUYG}Få radius ku4 cui KÅ

oFåÐ- 1 y Få radius u4 cui KåŽ

```
Ruijie(config)# radius support cui
```

oèo- … **show running-config** Ø radius u4 cui KÅ4Ñ

oUP’Ô- -

oəjö- -

ouVØ- -

3.19 server auth-port acct-port

- AAA Ýo ßž

server { *ipv4-addr* | *ipv6-addr*} [**auth-port** *port1*] [**acct-port** *port2*]

no server { *ipv4-addr* | *ipv6-addr*} [**auth-port** *port1*] [**acct-port** *port2*]

o

@	T
ip-addr	Æ ip ª
Ipv6-addr	Æ ipv6 ª
port1	
port2	

oF å-

oxX%”o-

o -

o6 -o-

oF åd-

1Ö p Æ ss Æ 192.168.4.12 w 5 y 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
```

o à o- … **show radius group x** RADIUS

oUP’ b-

-

o ¼X o-

xX	T
aaa group server	aaa Æ
show aaa group	aaa Æ

oθ ö-

-

oV -

-

3.20 show radius acct statistics

RADIUS

oH- 14

o6-o- -

oF- 1 yP RADIUS

```
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
```

oU-P'o- -

oV- -

3.22 show radius group

P RADIUS

show radius group

o-

@	T
-	-

oX%"o- %"o"oNM%"

oH- 14

o6-o- -

oF-d- 1 yP RADIUS Ae

```
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'b- -

ou-V- -

3.23 show radius parameter

P RADIUS

show radius parameter

o	@	T
	-	-

ox-X%"o- %"o"oNM%"

oH- 14

o6-o- -

oF-d- 1 yP RADIUS

```
[redacted]
Server Timout:     5 Seconds
Server Deadtime: 0 Minutes
```

oнV0- -

3.24 show radius server

P RADIUS 7H5Z

show radius server

o5P

@	T
-	-

oxX%”o- B%”o@”oNM%”

oH0- 14

```
Statistics:
Authen: request 0, timeouts 0
Author: request 0, timeouts 0
Account: request 20, timeouts 0
```

oЬP’ô- -

oъV@- -

3.25 show radius vendor-specific

ᵽ RADIUS ЌЋåž

show radius vendor-specific

o@	@	T
	-	-

oxX%”o- ₿%”o@”oNM%”

oH- 14

oG-o- -

oF-d- 1 yᵽ RADIUS ЌЋåž

```
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

oЧP’ĥ- -

oчV⓪- -

4 802.1x

4.1 clear dot1x user all

ïÃÕ- dot1x ÖŽ

clear dot1x user all

o@ @ T

- -

oHFå- -

oxX%”o- Ô”

oHÖ- 15

o6-o- ¥XUY1Õ- dot1x ŠoŽ

oFåÞ- 1 yïÄ dot1x ŠŽ

```
Ruijie#clear dot1x user all
```

oUP’Ô- -

ouV@- -

4.2 clear dot1x user id

Ç dot1x ï session id ÛÞŽ

clear dot1x user id *session-id*

o@ @ T

- *session-id* -dot1x Š session id

oHFå- -

oxX%”o- Ô”

oHÖ- 15

o6-o- }1Ô session id dot1x ŠkUY4xXož

oF-åd- 1 yí session id 12345678 dot1x šž

```
Ruijie#clear dot1x user id 12345678
```

oUP'ô- -

ou-Vœ- -

4.3 clear dot1x user mac

y- dot1x ï mac Ûjžž

clear dot1x user mac *mac-addr*

o-ß

@	T
- *mac-addr*	-dot1x š MAC ª

oH-Fa- -

ox-X%"o- Ø"

oH-ß- 15

o6-o- }1Ô mac ª dot1x ŠkUY4xXož

oF-åd- 1 yí mac ª 0012.3456.789A dot1x šž

```
Ruijie#clear dot1x user mac 0012.3456.789A
```

oUP'ô- -

ou-Vœ- -

4.4 clear dot1x user name

y- dot1x ïdÛjžž

clear dot1x user name *name-str*

o@ | @ | T
- *name-str* | -dot1x

o-Fa- | -

ox%”o- | ”

o-0- | 15

4.6 dot1x accounting

F

dot1x accounting *list-name*

		T
	list-name	

-

15

ò aaa dot1x “ xXÊ

wlansec F

1 yF

Ruijie(config)# dot1x accounting dot1x-acct

-

-

4.7 dot1x acct-update base-on first-time server

F

dot1x acct-update base-on first-time server

no dot1x acct-update base-on first-time server

		T
	-	

-

%”

15

o6-o- BÆ¥G“ÃÊxÀ}LÀÀÆ¥G“ÃÊ
Ê“Æ¥UYFåxX

oFåd- 1 yFå+)Æ¥E“ÃÊž
Ruijie(config)# dot1x acct-update base-on first-time server

oÞP’ô- -

oÞVô- -

4.8 dot1x auth-mode

F‰”ož
dot1x auth-mode { **eap | chap | pap** }

o‰ | @ | T
- | ép( )]TJET0.75 g118.26 46324 442.68 0.24 ref118.26 64764 0.24 15.6 ref271.8 647

oH¥Fåª-	-
oxXX%”o-	¶%”k wlan ¶%”
oH¥ô-	15
o6-o-	ò aaa dot1x ¥ô4xXÊ¿¾ož wlansec F¥ª¶Fåã
oFªd- 1	yF¥Ú¶ožbož Ruijie(config)# dot1x authentication dot1x-authen
oUP’ô-	-
ouVô-	-

4.10 dot1x dbg-filter

S+Ô mac ¥ô¶ož

dot1x dbg-filter *H.H.H*

Z¶ož

no dot1x dbg-filter *H.H.H*

oô¶		
	¶@	T
	H.H.H	¶ô Mac ª

oH¥Fåª-	¶ô
oxXX%”o-	¶%”
oH¥ô-	15
o6-o-	ô¶ò{ŽUY*¥X+¶k9ã- ¶ož
oFªd- 1	yF¶ô mac ¥ô¶ož Ruijie(config)# dot1x dbg-filter 00d0.f800.0001
oUP’ô-	-

oиV0- -

4.11 dot1x default-user-limit

FåIMUþžõ

dot1x default-user-limit *num*

õž

no dot1x default-user-limit

oþ

@	T	
num	¿ ¾ ”þž	1-1000000oþ¼/

oHFå- ¾

oxX%”o- NM%”4Xãc¶RB3)ÙRFÌÀVEŽ

oHFå-	
oxX%”o-	¶%”%”
oHð-	15
o6-o-	FåÝ dot1x xX6k4¼MFåUYR4xX
oFåd- 1	yÊ dot1x ?oðåž Ruijie(config)# dot1x default
oUP’ô-	-
ouVð-	-

4.13 dot1x encryption only

Få 802.1x WEB ðž

dot1x encryption only

¼ 802.1x WEB ðž

no dot1x encryption only

oð	@	T
	-	

oHFå-	Þ 802.1x WEB ¼
oxX%”o- wlan	‰”
oHð-	15
o6-o- 802.1x	y WEB 802.1x ‰ŽUY4xXož
oFåd- 1	yFå 802.1x y WEB ðž Ruijie(config-wlansec)#dot1x encryption only
oUP’ô-	-
ouVð-	u4

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

dot1x mab-username upper

	¼
	%
	15
MAB	MAB MAB MAB
1	yFå mab

```
Ruijie(config)# dot1x mab-username upper
```

	-
	-

4.18 dot1x mab-username format

Få mab

dot1x mab-username format [with-dot | with-colon | with-hyphen]

no dot1x mab-username format

	¼
	%

oH6- 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

oF-d- 1 yFå mab ”ož
```
Ruijie(config)# dot1x mab-username format with-hyphen
```

oUP’ô- -

ouV0- -

4.19 dot1x max-req

Få request/challenge M)ož
dot1x max-req *num*

o@

@	T		
num	request/challenge M)k	3kFå	1-10

oH-å- 3

ox%”o- %”

oH6- 15

o6-o- Jož

oF-d- 1 yFå request/challenge M)ož
```
Ruijie(config)# dot1x max-req 2
```

oUP’ô- -

ouV0- -

4.20 dot1x multi-account enable

Få4%² mac Žž
dot1x multi-account enable

{ú4%² mac Ø

o6-o- U#Fåž

9² STA 4kxŽWlyßÈYFåxX.

wlan ‰”FåOyi9BFåOy

oFåb- 1 yFåOyož

no dot1x re-authentication

o@	@	T
	-	-

oHFå- H¼

oxX%”o- ß%”

oHß- 15

oG-o- MKÈÉkÒÉ{¼ž

oFåd- 1 yFßMšž

```
Ruijie(config)# dot1x re-authentication
```

oUP’ô- -

ouVß- -

4.24 dot1x timeout re-authperiod

FßMšž

dot1x timeout re-authperiod *time*

o@	@	T
time	*ßy¼ako*	3600kFå 1-65535

oHFå- 3600 a

oxX%”o- ß%”

oHß- 15

oG-o- ßJož

oFåd- 1 yFßMšž

```
Ruijie(config)# dot1x timeout re-authperiod 2400
```

oUP’ô- -

oиVØ- -

4.25 dot1x timeout quiet-period

FåžÖž

dot1x timeout quiet-period *time*

o®P

p@	T		
time	åŽ%yakó	10kFå	1-65535

oHFå- 10

oxX%”o- ß%”

oHØ- 15

o6-o- áUož

oFåÐ- 1 yFåžÖž

```
Ruijie(config)# dot1x timeout quiet-period 60
```

oЏP´Ô- -

oиVØ- -

4.26 dot1x timeout supp-timeout

Få request/challenge MnoŽ

dot1x timeout supp-timeout *time*

o®P

p@	T		
time	request/challenge Mnk9%yakó	3kFå	1-65535

oHFå- 3 a

oxX%”o- ß%”

oHØ- 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 @

oHFå- 3 a

oxX%”o-

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

oH 15

o6 o- o4BH IP IP
F

oF 1 y BH IP z

```
Ruijie(config)# dot1x valid-ip-acct timeout 10
```

oUP'Ô- -

ouV- -

4.32 dot1x-mab

F mab ož

dot1x-mab

z

no dot1x-mab

o

@	T
-	-

oF 1/4 mab

oX%"o- wlan %"

oH 15

o6 o- U#Få
WLAN . mac X

oF 1 y mab ož

```
Ruijie(config-wlansec)# dot1x-mab
```

oUP'Ô- -

ouV- Nu4

4.33 show dot1x

ô 802.1x #'@z

show dot1x

o@	@	T
	-	-

oF-å-	-

ox%"o-	@"o%"oN%"

o-o-	15

o6-o-	¥XUYô 802.1x #'@ž

oFåô- 1 yô 802.1x #'@z

```
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	@Fåa 802.1x

Authentication Mode	‰”
Total User Number	m3
Authed User Number	
Dynamic User Number	%”
Re-authentication	M
Re-authentication Period	M
Re-authentication max	
Quiet Period	
Tx Period	request/id Mn
Supplicant Timeout	request/challenge Mn
Server Timeout	
Maximum Request	
Client Online Probe	y¼
Eapol Tag	Eapol tag ¼
802.1x redirect	W su ¼
Private supplicant only	y¼

oUP’ô-

-

ouVô-

-

4.34 show dot1x auth-address-table

ôUõbž

show dot1x auth-address-table [**address** *addr*] [**interface** *interface*]

o

@	T
addr	6 mac
Interface	6

o-

-

ox%”o-

”o%”oNM%”

o-

15

o6-o-

Uõbž

oF-1

yôUõbž

```
Ruijie #show dot1x auth-address-table
```

Packet-Num : 0

Req-Interval: 30 Seconds

<Ky

<	¢
Auto-Req	Ø
User-Detect	ÿØ
Req-Interval	Sœ

oUP'ô- -

ouV0- -

4.36 show dot1x max-req

ô request/challenge M)ƒž

show dot1x max-req

op@ | @ | T |
|---|---|
| - | - |

oxX%"o-

4.37 show dot1x port-control

ðIOM'ôž

show dot1x port-control [**interface** *interface-type interface-numbe*r]

o@ @ T

interface-type

*interface-numbe*r

ox X%"o- Ô»"oB%"oNM%"

oH- 15

o6-o- ¥XUYðIOM'ôž

oF-å- 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	%"
Dynamic-User	
Static-User	
Max-User	
Authened	
MAB	Få MAB

oUP'ô- -

ouV- -

4.38 show dot1x private-supplicant-only

ð¡H

show dot1x private-supplicant-only

o@	@	T
	-	-

oxX%”o- Ô”oB%”oNM%”

oH- 15

o6-o- ¥XUYÔ¡HZ

oF-1- 1 yÔ¡HZ

```
Ruijie#show dot1x private-supplicant-only

private-supplicant-only: Disabled
```

<Ky

<	¢
private-supplicant-only	¡HZ

oUP’Ô- -

ouV- -

4.39 show dot1x probe-timer

ÔMyZ

show dot1x probe-timer

o@	@	T
	-	-

oxX%”o- Ô”oB%”oNM%”

oH- 15

o6-o- ¥XUYÔMyZ

oF-1- 1 yÔMy@

```
Ruijie#show dot1x probe-timer
Hello Interval       : 20
Hello Alive          : 60
```

<Ky

<	¢

Hello Interval	MyuÊ
Hello Alive	Myx

oUP'ô- -

ouV@- -

4.40 show dot1x re-authentication

ôMx
show dot1x re-authentication

op@ | @ | T |
|---|---|
| - | - |

ox%X%"o- @%"oB%"oNM%"

oH- 15

o6-o- ¥XUYôMx

oFåd- 1 yôMx

```
Ruijie#show dot1x re-authentication

Reauth-Enabled: Disabled
```

<Ky

<	¢
Reauth-Enabled	Mx

oUP'ô- -

ouV@- -

4.41 show dot1x reauth-max

ô request/id Mn)ƒž
show dot1x reauth-max

op@ | @ | T |
|---|---|
| - | - |

oxX%”o- Ô”oB%”oNM%”

oH- 15

o6-o- ¥XUYÔ request/id Mn)ƒž

oF-d- 1 yÔ request/id Mn)ƒ

```
Ruijie#show dot1x reauth-max

Reauth-Max: 3 Times
```

<Ky

<	¢
Reauth-Max	request/id Mn)ƒ

oUP’ô-

<	¢
ID	R AAA BH IDkU… show aaa user all xX+ é
User	ïd
MAC	é mac ª
Interface0	é
VLAN	é vlan id
Auth-State	é
Backend-State	é
Port-State	é
User-Type	é
Time	é

oЧP'ô- -

oнV@- -

4.43 show dot1x timeout quiet-period

ôéé
show dot1x timeout quiet-period

o@ | @ | T |
|---|---|
| - | - |

ox%"o- @"o%"oNM%"

o-o- 15

o6-o- ôéé

oFåd- 1 yôéé

```
Ruijie#show dot1x timeout quiet-period

Quiet-Period: 10 Seconds
```

<ky

<	¢
Quiet-Period	éé

oиVФ- -

4.44 show dot1x timeout re-authperiod

ðMěžz

show dot1x timeout re-authperiod

oфФ

@	T
-	-

oxX%”o- Ô”oB%”oNM%”

oHô- 15

o6-o- ðMěžz

oFåd- 1 yðMěe

```
Ruijie#show dot1x timeout re-authperiod

Reauth-Period: 3600 Seconds
```

<Ky

<	¢
Reauth-Period	Měe

oUP´ô- -

oиVФ- -

4.45 show dot1x timeout server-timeout

ðžz

show dot1x timeout server-timeout

oфФ

@	T
-	-

oxX%”o- Ô”oB%”oNM%”

oHô- 15

o6-o-

oF å0- 1

Ruijie#show dot1x timeout server-timeout

Server-Timeout: 5 Seconds

<K y

<	¢
Server-Period	

oUP'ô-

ouV@-

4.46 show dot1x timeout supp-timeout

request/challenge M n ž

show dot1x timeout supp-timeout

o@

@	T
-	-

oxX%"o-

15

o6-o-

request/challenge M n ž

oF å0- 1

request/challenge M n e

Ruijie#show dot1x timeout supp-timeout

Supp-Timeout: 3 Seconds

<K y

<	¢
Supp-Timeout	request/challenge M n e

oUP'ô-

ouV@-

4.47 show dot1x timeout tx-period

ô request/id Množ

show dot1x timeout tx-period

op@

oF₫ 1 y0₫

Vlan id	ï vlan id
Access from port	¶M
Time online	¢
User ip address	ï IP ª
Max user number on this port	¥ÍÞ
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	¥ ACL 'Î

oЬP'ô- -

oнVø- -

4.50 show dot1x user name

Gï mac ðÞž

show dot1x user name *name*

o	@	T
	-name	-…

oxX%”o- Ô”oB%”oNM%”

oÓ- 15

o6-o- … show dot1x summary ðï}'ÎkR#+k4xX%5ðîbž

oFåø- 1 yðÂ

```
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	df
User id	ï id
Type	
Mac address	ï mac ª
Vlan id	ï vlan id
Access from port	
Time online	
User ip address	ï IP ª
Max user number on this port	
Authorization session time	
Supplicant is private	su
Start accounting	Ã
Permit proxy user	Vò
Permit dial user	
IP privilege	¥ IP
user acl-name	ACL Î

oPˆ- -

oV- -

5 ARP Check

5.1 arp-check

ө ARP ϕž

arp-check

¼ ARP ϕž

no arp-check

(@	T
-	-

¼ ARP Check

NMFå%”§å%”

14

Ç¶ö€ÎÐÿ• ARP ¡kèà ARP ϕž

¶ GigabitEthernet 0/1 ө 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
```

1 y… **show interface arp-check list xKUßNMŽ** ARP Check nžž

-

-

-

5.2 show interface arp-check list

ôNMŸ ARP Check nžz

show { **interface** [*interface-type interface-number*] | **wlan** [*wlan-id*] } **arp-check list**

o | @ | T |
|---|---|
| | *interface-type* | Ä M |
| | *interface-number* | ÄMŽ |
| | *wlan-id* | WLAN ID |

oxX%”o-

14

o6-o- ÿ4xXkUYôù IP

oFåù-

```
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	“Ð

oUP’ô- -

oʁV@- -

6 T» ARP °

1.1 anti-arp-spoofing ip

¼ arp -áž

anti-arp-spoofing ip *ip-address*

î¼ arp -áž

no anti-arp-spoofing ip *ip-address*

o	@	T
	ip-address	¼ IP ª

oF-å- ¥

o×X%”o- ¼%”

o-0

o6-o- 1o•- 0 1 Tf 0.553 0 Td

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

o	@	T
	compatible	Ã%
	loose	!%
	strict	%

o F å-

%

o x X %” o-

F %

o -

14

o 6 - o-

-

o F å - 1

ywJ IPv6 %”y

```
Ruijie# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# address-bind ipv6-mode compatible
```

o o-

… **show run x**

o P’ -

-

o j -

-

o V -

-

7.4 address-bind uplink

F

address-bind uplink *interface-id*

”

no address-bind uplink *interface-id*

o	@	T
	interface-id	AEM L2AP M

o F å-

o x X %” 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

}ĭ DHCP Snooping ƒ¢ŠÅ¥Ô”ğ4xXož

clear ip dhcp snooping binding [*ip*] [*mac*] [**vlan** *vlan-id*] [**interface** *interface-id* | **wlan** *wlan-id*]

o®Ø

¢@	T	
mac	*6ĭ*	MAC ²ož
vlan-id	*6ĭ*	vlan idož
ip	*6ĭ*	IP ²ož
interface-id	*6ÑŒ*	
wlan-id	*6ÑŒ*	WLAN

o»X%”o-

Ô”

oÑ®-

14

o6-o-

ğ¥XkUYĭ DHCP snooping ƒ¢Šž

âN¼Uþ– IP Source Guard _Ç DHCP ‘7Ø¥

Ø¤d

oFåd- 1 yļµ DHCP snooping ƒ¢Šå

```
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
----- ------------------ --------------- ------------ ------------- ----- --------------------
```

oЬP’ĵ-

-

oʉV®-

-

8.2 ip dhcp snooping

o¶ DHCP Snooping ož

ip dhcp snooping

{# DHCP Snooping ož

no ip dhcp snooping

o@	@	T
	-	-

oHFå- ¥¼ž

oxX%”o- ¶FÅ¼”

oHß- 14

o6-o- ø DHCP Snooping ¶ekJY… show ip dhcp snooping xXô DHCP Snooping k¢ž

oFåb- 1 y@ DHCP snooping ¶¥¼

```
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping
Ruijie(config)# end
```

oàø- 1 y… **show ip dhcp snooping xKUß** DHCP Snooping ¢¢ž

oUP’ĵ- -

oəjö- -

ouV®- -

8.3 ip dhcp snooping bootp-bind

o DHCP Snooping u4 Bootp Çž

ip dhcp snooping bootp-bind

{¼ DHCP snooping u4 Bootp Çž

no ip dhcp snooping bootp-bind

o@	@	T
	-	-

oHFå- ¥¼ž

oxX%”o- ‰F‰”

oH‰- 14

o6-o- H‰ DHCP Snooping N+ Bootp ‡G‰k DHCP Snooping + Bootp #‘‡LMoz Bootp ‰kDHCP Snooping 1 Bootp ‰€ ož

oF‡- 1 y‰ DHCP Snooping u4 Bootp ‡

```
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping bootp-bind
Ruijie(config)# end
```

o‡o- 1 y… **show ip dhcp snooping x‰** DHCP Snooping ‰u4 Bootp ‡ž

oUP’‰- -

o‡j‰- -

o‡V‰- -

8.4 ip dhcp snooping check-giaddr

o DHCP Snooping u4‰ Relay H‡ž

ip dhcp snooping check-giaddr

¼ DHCP snooping u4‰ Relay H‡ž

no ip dhcp snooping check-giaddr

o‰

‰	T
-	-

oH‡- ‰žž

oxX%”o- ‰F‰”

oH‰- 14

o6-o- •4ekBæ Relay H‡ DHCP Snooping ‡‰ IP Source Guard/dot1x ‰kU-‡ž

standard-format	Option82 #ðž

oHFå- ¼¿ž

oxX%”o- ¶BFå¿”

oHðo- 14

oG-o- 1 y*FåXk1¨ DHCP Ьt option82 ˆkDHCP ¿E option82 #¾ž

2yo option82 #ðy%”ož

DHCP Snooping option82 _ DHCP Relay option82 _d

oFàd- 1 yGå DHCP Ьt option82 #¾

```
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping information option
Ruijie(config)# end
```

oàoo- 1 y… **show ip dhcp snooping** Option82 ž

oЬP’ô- -

oejo- 1 y DHCP Relay option82 cžok-Â DHCP † option82 <ž

oнVð- -

8.9 ip dhcp snooping information option format remote-id

å– option82 #ðy%”k¾ remote-id #ðbž

ip dhcp snooping information option format remote-id { **string** *ascii-string* **| hostname** }

H– option82 #¾ remote-id #ðbž

no ip dhcp snooping information option format remote-id { **string** *ascii-string* **| hostname** }

oð

@	T
string *ascii-string*	Option82 #¾ remote-id y”Ä#ož
hostname	Option82 #¾ remote-id y”Ãbž

oHFå- ¼¿ž

o»X%”o-	¶ßF¾”o
oH¾-	14

oF-å0- 1 yp6å

2y¥XFåCAEMo›AP	MßxÿNMkyþpžUNMFå¥X1kâž	
{bÜ]Ço	DHCP ùvÇ	TRUST Ç

oFåd- 1 yßåNM 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
```

oè¤o- 1 y… **show ip dhcp snooping xKUßNMÐž**

oÞP´ô- 1 yÿNMFå¿UNÐ¿ÞÞ¾¢å– TRUST Mož

```
% Failed to execute command, because of "Security config conflict".
```

2y© 2 CAEMo›AP MßxÿNMÿ¥XžéÚPjöž

```
% Failed to execute command, because of "Configure is not supported on current interface".
```

oëjÖ- -

oÞVÐ- -

8.12 ip dhcp snooping verify mac-address

ø MAC âž

ip dhcp snooping verify mac-address

{¼ MAC âž

no ip dhcp snooping verify mac-address

o@	(@	T
	-	-

oHFå- ¥ž

o×X%”o- ßFå”

oHÖ- 14

o6-o- › MAC å€Û UNTRUST NM DHCP ÞÞèÈB› MAC ª

y DHCP † CLIENT MAC <Ç¿což MAC Å1t’ož

oFåd- 1 y@ DHCP ‡ 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
```

oà¤o- 1 y… **show run xKU8?** VLAN Ô[%”ož

oЧP’ô- 1 y3å– VLAN ¨ 1~4094 8Ëé¼JPjöž

```
% Failed to execute command, because of "Not supported vlan range".
```

2y36 VLAN ké¼JPjöž

```
% Failed to execute command, because of "VLAN not exist".
```

oəjö- -

oчV@- -

8.14 ip dhcp snooping vlan vlan-id information option change-vlan-to vlan

å– option82 #Ô%”kÿ¾ circuit-id VLAN 6 VLANož

ip dhcp snooping vlan *vlan-id* **information option change-vlan-to vlan** *vlan-id*

[%¼ž

no ip dhcp snooping vlan *vlan-id* **information option change-vlan-to vlan** *vlan-id*

o@ê

@	T
vlan-id	*6gÉ* VLAN Ø

oHFå- ¼ž

o×X%”o- NMFå‰”

oHê- 14

o6-o- *Fåx Xk¢ DHCP †option82 #ÔkÔ%”k1 option82 ÿ¾ circuit-id Ê VLAN “w6 VLANož

oFåd- 1 yßå DHCP Ь option82 #k¿ 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
```

oèo- 1 y… **show run xKUŒoož**

oЧP'ô- 1 y36 VLAN ŀéPjöž

```
% Failed to execute command, because of "VLAN not exist".
```

oəjö- -

oнVŒ- -

8.15 ip dhcp snooping vlan vlan-id information option format-type circuit-id string

å— option82 #Œ)%"ŀ¥¾ circuit-id ¥Ag¥ ASCIIhwgGož

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*

oß²

(@	T
vlan-id	DHCP Ьñ VLAN
ascii-string	Circuit ID }ÆÄ

oнFå- ¥¼ož

oxX%"o- NMFå%"

oнŒ- 14

o6-o- *Få¥Xk¢ DHCP †option82 #¥kŒ)%"ŀ1 option82 ¥¾ circuit-id Å¥Äo¥k† 3 ñ 63 -ož

oFåd- 1 yßå DHCP Ьd option82 #ŀ¿ option82 ¥¾ circuit-id Ä port-name ¥

```
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
```

oèo- 1 y… **show run xKU**

oЧP'ô- 1 y36 VLAN kéPjöž

```
% Failed to execute command, because of "VLAN not exist".
```

2y36#©. 3 ñ 63 kéPjöž

```
% Failed to execute command, because of "Circuit-ID string must be 3 to 63 characters".
```

oəjö- -

oнVê- -

8.16 ip dhcp snooping vlan max-user

6 vlan

ip dhcp snooping vlan *vlan-word* **max-user** *user-number*

4ož

no ip dhcp snooping vlan *vlan-word* **max-user** *user-number*

o | | T |
|---|---|
| *vlan-word* | vlan 8 |
| *user-number* | |

oå- ¼ož

oxX%"o- NMFå%"

o¼- 14

o6-o- *FåXkoNMy VLAN DHCP

xèž

oFåd- 1 yåM 1 VLAN 1~10 C VLAN 20 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
```

oèo- 1 y… **show run xKU8koož**

oЬP’ô- 1 y3NM DHCP snooping TRUST MkéJPjöž

```
% Failed to execute command, because of "Security config
```

oəjö- -

oиVØ- -

8.18 show ip dhcp snooping

}ð DHCP Snooping ##ÕÔ”ü4xXož

show ip dhcp snooping

op@	@	T
	-	-

oxX%”o- Ø”

oHØ- 14

o6-o- ü4xXkUYÐÐ DHCP Snooping FÕž

oFåÐ- 1 yÐÐ DHCP Snooping FÕ

```
Ruijie# show ip dhcp snooping
Switch DHCP snooping    status                          :     ENABLE
DHCP snooping    Verification of hwaddr status      :     DISABLE
```

oЧP’ȏ- -

oʁV@- -

9 IP Source Guard

9.1 ip source binding

¨ IP ¢ž

ip source binding *mac-address* **vlan** *vlan-id ip-address* { **interface** *interface-id* **| wlan** *wlan-id* **| ip-mac | ip-only** }

ï+ž

no ip source binding *mac-address* **vlan** *vlan-id ip-address* { **interface** *interface-id* **| wlan** *wlan-id* **| ip-mac | ip-only** }

o@ /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
```

2y[illegible] IP+MAC

```
Ruijie# configure terminal
Ruijie(config)# ip source binding 0000.0000.0001 vlan 1 1.1.1.1 ip-mac
Ruijie(config)# end
```

3y[illegible] IP

```
Ruijie# configure terminal
Ruijie(config)# ip source binding 0000.0000.0001 vlan 1 1.1.1.1 ip-only
Ruijie(config)# end
```

oè¤o-	1	y…	**show ip source binding** xKU IP
oUP'b-	1	y…	no xX[illegible]

```
% Failed to execute command, because of "No such binding entry
[mac 0000.0000.0001 ip 1.1.1.1 vlan 2   GLOBAL]".
```

2yF[illegible] VLAN

```
% Failed to execute command, because of "VLAN 4094 not exist".
```

3yF[illegible] MAC CAEMo AP

```
% Failed to execute command, because of "Configure is not supported on current interface".
```

oəjö- -

ouV[illegible]- -

9.2 ip verify source

[illegible] IP Source Guard o

ip verify source [**port-security**]

[illegible] IP Source Guard o

no ip verify source

o[illegible]	[illegible]@	T
	port-security	Få IP Source Guard g IP+MAC yo

oH[illegible]- [illegible]o

oxX%”o- NMFå‰”§å%”

oH®- 14

o6-o- 1 y*¥XßM IP Source Guard kUY+ÿgÂ IP ykgÂ IP+MAC yož

2yNu4Ñ¼ 2 CAEMo•AP Mo•xÿNMYCÑ¼ WLAN FåXožÙN M1Fåž

•• IP Source Gourd _ßW DHCP Snooping 0A_"d/j

Ç'st IP Source Gourd _ßWVýÙJÇ¼

(ß

oFåß- 1 yßåEMy¿– WLAN IP Source Guard kN+ÿgÂ 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
```

2yßåM 2 IP Source Guard k+ÿgÂ 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
```

oè¤o- 1 y… **show ip source binding xkUß** IP Source Guard ïnžž

2y… **show run xkUßxkß**

oUP’ß- 1 yç DHCP ’MqkéUPjöž

```
% Failed to execute command, because of “Security configuration conflict in interface name".
```

oəjö- 1 y• IP Source Gourdkßaïßž

ouVß- -

9.3 Ip verify source exclude-vlan

ß6 IP Source Guard Ù VLAN ož

ip verify source exclude-vlan *vlan-id*

ï ß6 IP Source Guard Ù VLAN ož

no ip verify source exclude-vlan *vlan-id*

o Ø

@	T
vlan-id	ï ß6 IP Source Guard Oò vlan id

oH Få-

ß ¼ ž

o× X%”o-

NMFå‰”ßå%”

oH ß-

14

o6 - o- 1

yo IP Source Guard ß6 k* ¥ XUYO ß6 ? VLAN I IP Source Guard Oò ?

VLAN 8Ä IP tyß Nygož

2y ß6 ¼ IP Source Guard ek6Ù VLAN -ktžož

3yu4 Ø µ 2 CAEMo AP Mo xy M ß µ WLAN Fåž

ß N IP Source Guard ß HÓ VLANd

oF åd - 1

y ß ß6 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
```

oè o- 1

y… **show run x KU6 x ß6 ž**

oU P’ò-

```
-
```

oə jö-

-

oиV0- -

9.4 show ip source binding

0 IP ţG0ž

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 t
mac-address	P+• mac t
dhcp-snooping	P
static	P
vlan-id	P+• vlan t
interface-id	P+ MŢž
wlan-id	WLAN Ţž

oxX%”o- ”

oH0- 14

o6-o- g4xXkUY0 IP ţG

oF0- 1 y

```
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
```

<K

<	t
Total number of bindings	Binding ţ

NO.	“£Z
MACADDRESS	ï MAC ª
IPADDRESS	ï IP ª
LEASE(SEC)	“£ž
TYPE	“£
VLAN	₹ VLAN
INTERFACE	ÄMdfẽ– WLAN ID

oЧP’ô- -

oчV0- -

9.5 show ip verify source

ô IP Source Guard ïn³ž

show ip verify source [**interface** *interface-id*] [**wlan** *wlan-id*]

o0

	T
interface-id	P+ÄMïn¾
wlan-id	– WLAN ïn¾

oxX%”o-

o#0- 14

o6-o- ü4xXkUYôu IP ÕÛ uIP Source Guard u4“Ø

y

z Inactive-restrict-offkÛKNMZÄ IP Source Guard ož

z Inactive-system-errork9Ïc1ÛèÏ³ž

z Activekû¾nÏ³ž

oF0- 1 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	ÄNMß WLAN
FILTERTYPE	E
FILTERSTATUS	Ä
IPADDRESS	ï IP ª
MACADDRESS	ï MAC ª
VLAN	VLAN
TYPE	, DHCP Snooping

10 DNS SNOOPING

10.1 clear free-url

žš URL 'ĵbž

clear free-url

o@	T
-	-

oxX%"o- Ø"oB%"

oH- 14

o6-o- ¥XUYžš URL 'ĵbž

oF-ab- 1 yžš APP 'Î

```
Ruijie(config)#clear free-url
```

oUP'ĵb- -

oVĵ- -

10.2 free-url

Fa URLož

free-url { **weixin** | **sina** | **iphone** | **url** *url* }

Hš URLož

no free-url { **weixin** | **sina** | **iphone** | **url** *url* }

o@

oH¥å-	Þ¤Fåž	
o×X%”o-	ß%”	
oHø-	14	
o6-o-	š	URL UYcÞÓž
oFåd-	1	yFå URLož

```
Ruijie#configure terminal
Ruijie(config)# free-url weixin
Ruijie(config)#exit
```

oèo-	1	y…	**show free-url xKôš**	URL ’ôž
oÞP’ô-	-			
oəjö-	-			
o¤Vø-	-			

10.3 show free-url

ôš URL ’ôž -

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

ž Gnž

clear ip igmp snooping gda-table

@	T
-	-

Ô”

14

IGMP Snooping GnyVLAN Ío MožVLAN Ío Gnž%GnYMgUMMbMkï ož %GnYMgUMMbMkož. **clear ip igmp snooping gda-table xMož**

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

-

-

11.2 ip igmp snooping

o IGMP Snooping w– IVGL g%”ož

ip igmp snooping

IGMP Snoopingož

no ip igmp snooping

IGMP Snooping

default ip igmp snooping

@	T

-	-

oH Fåo- ¼ IGMP Snooping

ox X%”o- ß %”ê AC ap-config %”

oH ßo- 14

o6 -o- ¨ IVGL %”k_ VLAN Á v@ ÿ o ß Q ß c%² VLAN ß M
Ь N v Á v z ß v ñ%² VLAN Á v Ě Q ª c VLAN ß M G o ž AC
¨ ap-config %”* **igmp snooping x ß** AP Á k* **no igmp snooping** ¼
AP Á

oF åo- 1 yo IGMP Snooping IVGL %”ož

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

oè o- * show ip igmp snooping x Xô l IGMP Snooping Ø l

oU P’ b- 1 y ß 4 IVGL %”k é UPjòž

```
% Error: It’s invalid to configure IVGL mode in this product.
```

2y ß å8C Á Á gO è é UP ¢ 8C Á Á gOòž

o@	@	T
	-	-

oHFå- {4

oxX%”o- B%”

oHÔ- 14

o6-o- oM½¥ekÕ4vñ Leave k+NR+6nÔM¹¥lož

4ekÕ%MG dž Leave † IGMPv2 Leave

¥C IGMPv3 include ¥wk~ª Report tž

M½¥N 9Õ¤MQN%¥VÑUY-k!yÞž

oF¤t- 1 yoM½•

```
Ruijie(config)# ip igmp snooping fast-leave
```

oè¤o- * show ip igmp snooping xXÔ0F¤@

oU P’Ô- -

oej Ö- -

ou V0- -

11.4 ip igmp snooping host-aging-time

Få IGMP ÉM žž

ip igmp snooping host-aging-time *seconds*

¹ IGMP ÉM F¤ž

no ip igmp snooping host-aging-time

Ê IGMP ÉM ¥ž

default ip igmp snooping host-aging-time

o@	@	T
	seconds	ž%yakH8 1-65535ož

oHFå- 260 a

oxX%”o- ¶%”ê AC ap-confi¶%”o-t@ÃÃdP~ÃiqP7 0 Td(AC)Tj/C2_0 1 2f0 Tc 1.6C1476E.6C1464 0 Td<0919>Tj/TT01 Tf-4.29

oxX%”o-

oxX%”o- ß%”ê AC ap-config %”

oHô- 14

o6-o- z xX%îxXkßÕYFåxXk9U¨
kòqd report kM<kJož
z ¨ AC ap-config %”*xX **igmp snooping ignore-query-timer** ê AP ßMÕ
k* **no igmp snooping ignore-query-timer** ÕŽ

oFåb- 1 yFßMÕž

```
Ruijie(config)# ip igmp snooping ignore-query-timer
```

oèo- * show ip igmp snooping ôFß@

oUP’Ô- -

oeöo- -

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

ÕMHFåž
default ip igmp snooping mcast-to-unicast enable

o@ß

@	T
-	-

oHFå- è4

oxX%”o- AC ap-config %”R… AP ß%”

oHô- 14

o6-o- áËQÄ AP Ã%nož

oÁ%nêkñ APktUYÇÁ%nÊÁ%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 Ã%”F **no ip igmp snooping mcast-to-unicast enable** U¥Á%

stÃ)Î3gæ

¾s‘ÕQ¢8.sÎæ

oFåÏ- 1 y¨ ap-config %”oÁ%n

```
Ruijie(config-ap)# igmp snooping mcast-to-unicast enable
```

oè¤o- * show ip igmp snooping xXÔFÃy

oÙP’ô- -

oæjö- -

o¤Vê- -

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

Ê¥åž

default ip igmp snooping mcast-to-unicast group-range

o@ê

@	T
ip-addr	*Á8* 224.0.1.0~239.255.255.255

oÞFå- ÌFÃÁkÃÁCÁ%n

o×X%”o- AC ap-config %”R… AP Ã%”

oÞê- 14

o6-o- ÁËQÄ AP Ãß%n,Få

Fåß%nÞkUYß!oÇÃÉ?Ç}%n

ßdIAžu8ÜÞ%nßUY*kXÛ4Ã

Á%nkUYß!oÃÁ%nÉÚYÁ%

nkUYÞ%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 ß%”F

default ip igmp snooping mcast-to-unicast max-group U

oFåd- 1 y¨ ap-config %”FÃ%nÞ

```
Ruijie(config-ap)# igmp snooping mcast-to-unicast max-group 10
```

oèo- * show ip igmp snooping xXôFßy

oUP’ô- -

oəjö- -

ouVô- -

11.9 ip igmp snooping mrouter learn pim-dvmrp

oÃlMož

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

{ÃlMož

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

ÃlMFåž

default ip igmp snooping [**vlan** *vid*] **mrouter learn pim-dvmrp**

oß

@	T
vlan *vid*	6 vlanoÉ9Ä vlanož

oF-å- o4

oxX%”o- ß%”

oF- 14

o6-o- šlMo© IGMP Snooping ÁÕÁÆ“Á>DÕN,£Mož
ÑDÁšlMkšÑ- IGMP Query/DVMRP/PIM Hello ĸĕe
NMož

- oÁšlMgĸokUYBÁlMož
- Få **ip igmp snooping vlan mrouter interface xKUÁMož**
- Få **no ip igmp snooping mrouter learn pim-dvmrp xÁ** VLAN {ÁšlMož
- Få **no ip igmp snooping vlan *vid* mrouter learn pim-dvmrp xN%** VLAN {Á
  NMož

sWjg
jd

oFåd- 1 yN¨ VLAN1 oÁšlMož

```
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 xXðf@

oUP'ô- -

oejö- -

ouVð- -

11.10 ip igmp snooping querier

o IGMP Snooping ðž

ip igmp snooping [**vlan** *vid*] **querier**

¼ IGMP Snooping ðž

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

ðFå

default ip igmp snooping [**vlan** *vid*] **querier**

@	T
vlan *vid*	6 vlanoÆÄ vlanož

oHFåd- {4

oxX%”o- ß%”

oH@- 14

o6-o- ‰oðkÇ VLAN oðVLAN õož
‰¢4ðÄ VLAN ð‰¢ož

oFåd- 1 y¨ VLAN2 oðož

```
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 xXðÄ@
Î

oЧP'b- 1 yF‰Få VLAN ðéЧPj'Î

```
% Command did not take effect due to reason: IGMP switch querier is globally disabled
```

oəjö- 1 y‰ðk¯ VLAN ð4žFå VLAN ðož

ouVð- -

11.11 ip igmp snooping querier address

Få IGMP Snooping ð IP ðž

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

ĺFåž

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

ê®Fåž

default ip igmp snooping [**vlan** *vid*] **querier address**

o‰ê

‰@	T
vlan *vid*	6 vlanoðÄ vlanož
a.b.c.d	› IP ª

oH¤få- -

oxX%"o- ‰Få%"

oH@- 14

o6-o- o ‰ IP

ò VLAN 64 IP VLAN F

oF 1 yF IGMP Snooping IP 1.1.1.1o

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

2yF VLAN3 IGMP Snooping IP 1.1.1.1o

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

o * show ip igmp snooping querier ê show ip igmp snooping querier detail xX

Î

oUP'b- -

o j - -

ou V - -

11.12 ip igmp snooping querier max-response-time

F IGMP Snooping z

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

F

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

z

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

o

@	T
vlan *vid*	6 vlano
seconds	1-25o

oF- 10 a

oxX%"o- F%"

oH- 14

o6-o- ò VLAN 64 VLAN F

oFåd- 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'ô- -

oejö- -

ouVô- -

11.13 ip igmp snooping querier query-interval

Få IGMP Snooping ôž

ip igmp snooping [**vlan** *vid*] **querier query-interval** *seconds*

ïFå

no ip igmp snooping [**vlan** *vid*] **querier query-interval**

ô ž

default ip igmp snooping [**vlan** *vid*] **querier query-interval**

oô

@	T
vlan *vid*	6 vlanoÅ vlanož
seconds	%yakH 1-18000ož

oHFå- 60 a

oxX%"o- %"

oHô- 14

o6-o- ò VLAN 64 .. VLAN Fåž

oFåd- 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
```

oà¤o- * show ip igmp snooping querier ê show ip igmp snooping querier detail xXÔÞÅ@ Î

oÙP'ô- -

oøjö- -

oÙVô- -

11.14 ip igmp snooping querier timer expiry

Få IGMP Snooping ßž

ip igmp snooping [**vlan** *vid*] **querier timer expiry** *seconds*

îFåž

no ip igmp snooping [**vlan** *vid*] **querier timer expiry**

ßž

default ip igmp snooping [**vlan** *vid*] **querier timer expiry**

oß

@	T
vlan *vid*	6 vlanoÆÄ vlanož
seconds	ß%yakH8 60-300ož

oHFå- 125 a

oxX%"o- ß%"

oHß- 14

o6-o- o4ëk-U# JÂÃÂ "ß ÄÄG3

kkGÜ¿ož

ò VLAN]Fåß... VLAN Fåž

oFåd- 1 yFß 60 aož

```
Ruijie(config)# ip igmp snooping querier timer expiry 60
```

2yFå VLAN3 ß 60 aož

```
Ruijie(config)# ip igmp snooping vlan 3 querier timer expiry 60
```

oèo- * show ip igmp snooping querier ê show ip igmp snooping querier detail xXÖÅ@
Î

oЧP'ô- -

oəjö- -

oиVê- -

11.15 ip igmp snooping querier version

Få IGMP Snooping ğ IGMPv1ož
ip igmp snooping [**vlan** *vid*] **querier version 1**
å IGMP Snooping ğ IGMPv2ož
ip igmp snooping [**vlan** *vid*] **querier version 2**

ïžFå
no ip igmp snooping [**vlan** *vid*] **querier version**

Ê Få
default ip igmp snooping [**vlan** *vid*] **querier version**

o@ê

@	T
vlan *vid*	6 vlanoŽÄ vlanož

oHFå- IGMP Snooping ğ IGMPv2ož

oxX%"o- %"

oHê- 14

o6-o- ğ4 IGMPv1 ê IGMPv2ož
ò VLAN]Fåğ IGMP Î... VLAN Fåž

oFåo- 1 yğ IGMPv1ož

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

2yå VLAN3 ğ IGMPv1ož

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

oèo- * show ip igmp snooping querier ê show ip igmp snooping querier detail xXÔ
Î

oЧP’ô- -

oəjö- -

oиVô- -

11.16 ip igmp snooping query-max-response-time

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

îFå
no ip igmp snooping query-max-response-time

default ip igmp snooping query-max-response-time

o

@	T
seconds	%yakH8

oF-å0- 1 yF 100sož

```
Ruijie(config)# ip igmp snooping query-max-response-time 100
```

oè o- *

oЧP'ô- -

oəjö- -

oъVФ- -

11.18 ip igmp snooping vlan

¨ VLAN o IGMP SnoopinggIVGL %"h ož
ip igmp snooping vlan *vid*

¨ VLAN ł¼ IGMP SnoopinggIVGL %"h ož
no ip igmp snooping vlan *vid*

Ê Få
default ip igmp snooping vlan *vid*

o Ê

@	T
vid	VLAN ÍkH8 1-4094

oH Få- Ê o IGMP SnoopinggIVGL %"hÁ VLAN ® IGMP SnoopinggIVGL %"bž
Ê ì b IGMP SnoopinggIVGL %"h kÁ VLAN ì® IGMP SnoopinggIVGL %"bž

oxX%"o- Ê %"

oHÊ- 14

o6-o- Ê o IGMP SnoopinggIVGL %"hÑ.. **no ip igmp snooping vlan** *vid xK* Ø
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 ‰ Ê ž PIM Snoopingd

oFåÔ- 1 yÊ o IGMP SnoopinggIVGL %"h¨ vlan 2 ł¼ IGMP SnoopinggIVGL %"bž

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

oè o- * show ip igmp snooping vlan ÔFå@

oЧP'ô- -

oəjö- -

ou¬V@- -

11.19 ip igmp snooping vlan fast-leave enable

ê vlan ½¥ož

ip igmp snooping vlan *vid* fast-leave enable

ţ¼ vlan ½¥•

no ip igmp snooping vlan *vid* fast-leave enable

Ê vlan ½¥ßå

default ip igmp snooping vlan *vid* fast-leave enable

o@	@	T
	vid	VLAN ÓkH8 1-4094ož

oHFå- vlan ½ø

ox¤X%”o- ß%”

oHß- 14

oG-o- o vlan ½¥gÞoh

Få **no ip igmp snooping vlan fast-leave enable xKU¥G** vlan ½¥ož

vlan ½¥hÞFå ip igmp snooping fast-leave enable %ßb vlan ½¥•ïož

oFåb- 1 yţ¼ vlan ½¥ož

```
Ruijie(config)# no ip igmp snooping vlan 1 fast-leave enable
```

oè¤o- * show run ðFå@

oUP’ô- 1 yßå vlan ½¥wß½¥èÉP’Î

oөjÖ- -

oиV@- -

oнVЋ- -

11.21 ip igmp snooping vlan static interface

FЋMož

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

HFaž

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

ЋFaž

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

o@ |@	T
vid	VLAN ZkH8 1-4094ož
group-address	éž
interface-type interface-number	Mož

oFa- éM

oX%”o- %”

oЋ- 14

o6-o- IGMP Snooping GnyVLAN ZoéMoèMož

VLAN ZyéoeGnž

%GnYmélMgUéMéMbéMkï

ož

%GnYmélMgUéMéMbéMkož. **clear ip igmp snooping gda-table xéMož**

oFa- 1 yFa GigabitEthernet 0/1 vlan 1 Á 224.1.1.1 éMož

```
Ruijie(config)# ip igmp snooping vlan 1 static 224.1.1.1 interface GigabitEthernet 0/1
```

oèo- * show ip igmp snooping ôF@

oUP’o- 1 yFéMéUP’Î

```
% Error: Configure static multicast group in this port fail
```

oïo- -

oиV@- -

11.22 ip multicast wlan

oBÁÙ
ip multicast wlan

ÎFåž
no ip multicast wlan

Ðåž
default ip multicast wlan

o@ @

11.23 show ip igmp snooping

- IGMP Snooping _ŝ½ž

show ip igmp snooping [**vlan** *vid*]

- IGMP Snooping Gnož

show ip igmp snooping gda-table

- IGMP Snooping ŝMož

show ip igmp snooping mrouter

- IGMP Snooping NMŝ

s**how ip igmp snooping querier [detail | vlan** *vid***]**

op	@	T
	vlan *vid*	**6** VLANo

```
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
```

oЧP’ĵ- -

oчV- -

12 ACL

12.1 wWkT=

XBZy

œ	m#
id	ACL ƒoUF8 IP õ ACLy 1-99k 1300-1999 IP ÿ ACLy 100-199k 2000-2699 MAC ÿ ACLy700–799 ÿ ACLy2700–2899
name	ACL d
sn	ACL n¾Z(u47iÐ})
start-sn	~ZU
inc-sn	~ZÓ
deny	ç kÐ
permit	ç kÐ
port	#'Ók+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 Y@n IP #' 0-255 Ók%?M}#'òicmp/tcp/udp %g¢
interface idx	NM
src	
src-wildcard	FoUYkò 0.255.0.32
src-ipv6-pfix	› IPv6
dst-ipv6-pfix	) IPv6
pfix-len	Ay ƒ
src-ipv6-addr	› IPv6 ª
dst-ipv6-addr	) IPv6 ª
dscp	Aµ 8 0-63
flow-label	0-1048575
dst	)
dst-wildcard	)FoUYkò 0.255.0.32

fragment	
precedence	0-7h
range	
time-range tm-rng-name	tm-rng-name
tos	0-15h
cos	cos (0-7)
cos inner cos	tag cos
icmp-type	ICMP 0-255 h
icmp-code	ICMP 0-255 h
icmp-message	ICMP
operator port[port]	Operator

precedence] [**tos** ... **nge** *time-range-name*]

#+<mY

access-list *id* { **den** ...] } [**VID** [*out*] [**inner** *in*]] { **s***ource* *source-wildcard* | **hos** ... } { *destination destination-wildcard* | **host** *destination* | **any** ... **nge** *time-range-name*]

#+#‘ Protocol <

access-list *id* { **deny** | **p** ... *source-wildcard* | **host** *source* | **any** } { **host** *source-mac-a* ... **ost** *destination* | **any** } { **host** *destination-mac-address* | **a** ... **ent**] [**range** *lower upper*] [**time-range** *time-range-nam*

A

Internet Control Message Protocol (IC

access-list *id* { **deny** | **permit** } **icmp** [**VID**

{ **host** *source-mac-address* | **any** } { *desti*

destination-mac-address | **any** } [*icmp-type*] [[

dence] ... *tos*] [**fra** ... **e**

smission C...**trol Proto**...**l** (TCP)

ss-list *id* { **d**...**ny** | **permi**... **tcp** [**VID** ... *out*] [**inner** ...]] { *sour*...

	z IP ý ACLg 100-199k 2700 – 2899h z MAC ý ACLg700 – 799 h z ý ACLg2000-2699 h
deny	ę ķ ę ož
permit	ę ķ ę ož
source	ý ý

o6-o- 4[ţ.+ţ5gk[Ð¼kX **access-list**

G

IP õ ACL g1-99k 1300-1999hQ+ĝOòž

IP ý ACLg 100-199k 2000-2699hUYĜ)ĝÕòž

MAC ý ACLg700-799 hUYĜý) MAC ¾YCYĝF

ý[ţg2700-2899 hIP õ ACLohP ý ACL YC MAC ý ACL õž

ý ACL cÆå ACL ĸ Pĸý ACL UY+ VLAN ID gFţž

s 8 ¾ĝ ãèõ+¼ĝ-Ày ¶ý×ã[!

precedence *precedence*/**tos** *tos*/**fragments**/**range** *lower upper*/ **time-range** *time-named*

TCP Flag mYBĝy

urg

ack

psh

rst

syn

fin

iõfý

critical

flash

flash-override

immediate

internet

network

priority

routine

ëfý

max-reliability

max-throughput

min-delay

min-monetary-cost

normal

ICMP ĵfý

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

Y¤‘º Ethernet-type ý

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 ¥ý& ACL f¶ **no** {**sn** | **permit** | **deny**}a¥Wd

oF¤å- 1 yIP ¯ÕP†

µ IP ¯Õ¤ª 192.168.1.64 - 192.168.1.127 ¶k¿Ñ¥

```
Ruijie(config)# access-list 1 permit 192.168.1.64 0.0.0.63
```

2yIP ¿Ï¯¤P†

µ IP ¿Ï¯¤ª DNS ¿ý ICMP ¶y

```
Ruijie(config)# access-list 102 permit tcp any any eq domain log
Ruijie(config)# access-list 102 permit udp any any eq domain log
Ruijie(config)# access-list 102 permit icmp any any echo log
Ruijie(config)# access-list 102 permit icmp any any echo-reply
```

oH¥å-	ZÄ ACL hK'Î			
o»X%”o-	¶B%”			
oH®-	14			
o6-o-	4Ž0Ú	ACL ‹UYî‹X6	ACL ‹hK'ò¢	ACL ‹k

oxX%”o- ₿%”

oH-o- 14

o6-o- 4Ž0Ú ACL kUYîX6 ACL kK’ôž ACL
kîXk ACLkèÇ ACL kK’Î

oFåd- 1 yŹ 102 ACL %Ú ACL kK’ý
Ruijie(config)# access-list 102 remark deny-host-10.1.1.1

oèo- 1 y… **show access-lists** xXUYÔÄ ACL Få, ACL kK’ôž
2y… **show access-lists** *id x* ACL Få,¥ ACL kK’ôž
3y… **show access-lists** *name* ACL Få,¥ ACL kK’ôž

oUP’ô- ç%Ú ACL Mô ACL kK’kÚPj’ý
Remark is duplicate

oöjö- -

ouV- -

12.5 deny

%Ú ACL • /ï%H ACL éž

IP õ ACL

ª IP õ ACL %H ACL é

[*sn*] **deny** { *source source-wildcard* | **host** *source* | **any** } [**time-range** *tm-range-name*] [**log**]

R IP õ ACL ï%H ACL é

no { *sn* | { **deny** { *source source-wildcard* | **host** *source* | **any** } [**time-range** *tm-range-name*] [**log**] } }

IP ß“”ßÓ“ õ ACL

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**] } }

ÔØ IP ÿy¶

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** *low13 Tv 2.43 c TF0.0016 Tf*

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** } { **host** *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* |

ÔØ expert ¶y¶

Internet Control Message Protocol

[*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 ¥%Ðÿÿÿ

protocol	9 IPv6 ¥U IPv6 | icmp | tcp | udp C<0-255>
time-range	¥
time-range-name	ø f

oHFå- ZÄ ACL é ž

o»X%”o- ACL %”

oHõ- 14

o6-o- ¥ÚUY¥X6 ACL L%?!Í ACL é ž

oFåd- 1 yÞèCP%ťExpert Extended ACL k¥ ACL !í IP ª 192.168.4.12 w›
MAC ª 001300498272 Ä TCP ¤ž

```
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)#
```

2y@ IP j ACL 8k)Ó IP 192.168.4.12 Ñ^ TCP ¥M 100 k w
ÑM gigabitethernet 1/1o Ê å y

```
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
```

3y@ MAC j ACL 8k)Ó MAC 0013.0049.8272 Ñº 100 Y
lkwÑM gigabitethernet 1/1o Ê å

```
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
```

4y@ IP Õ0 ACL 8ÿ0 IP 192.168.4.12 ÑWM 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
```

5y@

expert acces

H*f* AC

no expert acc

@	
id	h
name	
in	
out	

NMZÄ

ACL }H %”HPPWEd 1 9 0 0 >*inte rfac e-nam e x*

kw %”ož

@	T
id	ACL g2700-2899 h

ê

no expert access-list resequence { *id* | *name* }

o

@	T
id	ÿ ACL Ý g2700-2899 h
name	ÿ ACL d
start-sn	ÿ 1-2147483647 h
inc-sn	~ZÓg1-2147483647 h

oF å- start-sn y10

inc-sny 10

ox X%”o- %”

oF ê- 14

o - o- ACL ÿ ý ¹ é k % ² ě k ~ ZkJ

k4 kUY X+ ACL é ¾ ZgMLk ZJ ž

oF å - 1 y+d“exp-acl” ÿ ACL é Z 21o 43 ~ZMLož

F åxXÿ

```
Ruijie# show access-lists
expert access-list extended exp-acl
 10 permit ip any any any any
 20 deny ip any any any any
```

F åxX ÿ

```
Ruijie# config
```

o¤V0- -

12.9 ip access-group

16 ACL 9NM

ip access-group { *id* | *name* } { **in** | **out** }

H*f* ACL yNM¼

no ip access-group { *id* | *name* } { **in** | **out** }

o

@	T
id	IP õ ACL ê IP ACL Ýg1-199 k1300-2699 h
name	IP õ ACL ê IP ACL d
in	+ MIg¡
out	+R MIg¡

oå- NMZÄACL ož

o X%”o- NM%”

o 14

o6-o- }±. IP õ ACL ê IP ACL kUYîX1 ACL MIkýUY+ MI gOož

oå 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
```

o¬%(Tf0 Tc 1.92 0 Td<006EA>Tj/TT0 B1209DA055A049206CTf( )Tj7.1288fD048506B8 Tc 7.38.8A>T W 0.28tEtherps-grs(12)pas

oəjö- -

oʁVθ- -

12.10 ip access-list

ë IP õACL ê IP ÿ ACL kwµ ACL %”

ip access-list { **extended**

o6-o- ŽŸlk¨ IP Õ ACL ê IP ý ACL gÙýfékk%<ek
~ZkJ±ÆŸk4ŽUYîkX+ ACL é¾ZgMLk~ZJož

oF¬åd- 1 y+Ý 1 ACL é7ÂZ 21oÉ 43 ~ZMLož

FåxXù

```
Ruijie# show access-lists
ip access-list standard 1
10 permit host 192.168.4.12
20 deny any any
```

FåxXßy

```
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** xXUYÐÄ ACL éÂZož
2y… **show access-lists** *id xß* ACL éÂZož
3y… **show access-lists** *name ß* ACL éÂZož

oÙP'ô- -

oəjö- -

oıVô- -

12.12 ipv6 access-list

ë IPv6 ACLkwÆ‰”

ipv6 access-list *name*

î¥ ACL

no ipv6 access-list *name*

op@	@	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

oxX%”o- %”

oH- 14

o6-o- IPv6 IPv6 ACLk XË IPv6 ACLož

oF- 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)#
```

o- 1 y… **show access-lists x** ACLg, IPv6 ACLhF
2y… **show access-lists** *name x* ACLg, IPv6 ACLhF

oP’- -

o- -

oV- -

12.13 ipv6 access-list resequence

+ IPV6 ACL ZgML

ipv6 access-list resequence *name start-sn inc-sn*

no ipv6 access-list resequence *name*

o

o6-o- ŽŸlk¨ IPV6 ACL g}ýf¦ék%²<ek~ZkJ±Ü

2k4kUYîkX+ ACL é³ZgMLk~ZJož

oF-d- 1 y+d“v6-acl ” IPv6 ACL é7ÂZ 21oÉÐ 43 ~ZMLož

FåxXù

```
Ruijie# show access-lists
ipv6 access-list v6-acl
 10 permit ipv6 any any
 20 deny ipv6 any any
```

FåxXsy

```
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
```

oè-o- 1 y… **show access-lists** xXUYÒÄ ACL éÂZož

2y… **show access-lists** *name* ÂZož

oUP’ô- -

oəjö- -

ouVô- -

12.14 ipv6 traffic-filter

1%ŭ IPv6 ACL ÕNM

ipv6 traffic-filter *name* { **in** | **out** }

Hƒ IPv6 ACL •

no ipv6 traffic-filter *name* { **in** | **out** }

o@

@	T
name	IPv6 ACL d
in	+MJ¡
out	+RMJ¡

oHFå- NMZÄ IPv6 ACLož

oxX%”o- NM%”

oHÐ- 14

o6-o- }±. IPv6 ACL jkUYÎkX1 ACL ÑlMkýUYëHMß IPv6 ŋOòž

oFåÐ- 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 x** IPv6 ACL Fåž

2y… **show ipv6 traffic-filter interface** *interface-name x* IPv6 ACL Fåž

oUP’Ô- -

oəjö- -

ouVÐ- -

12.15 list-remark

6 ACL hK’Î

list-remark *text*

ï ACL hK’Î

no list-remark

op

@	T
text	hK’Î

oHFå- ZÄ ACL hK’Î

oxX%”o- ACL %”

oHÐ- 14

o6-o- 4 ACL kUYÎkX6 ACL hK’ÔžUYBFå%”+N

… **access-list list-remark xX** ACL ĥK’ĵž

oF₫ð- 1 yŹ 102 IP ȳ ACL “this acl is to filter the host 192.168.4.12” hK’ŷ

```
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)#
```

oæo- 1 y… **show access-lists** xXUYÔĂ ACL F₫k, ACL hK’ĵž

2y… **show access-lists** *id xØ6* ACL F₫k,¥ ACL hK’ĵž

3y… **show access-lists** *name Ø6* ACL F₫k,¥ ACL hK’ĵž

oЏP’ĵ- -

oəjö- -

oиV₫- -

12.16 mac access-group

1%ĕJ MAC ȳ ACL ₫NMož

o6-o- }±. MAC ý ACL ýkUYîkX1 ACL ñMkýUYë¥MßYgOòž

oF-å- 1 y1df“accept_00d0f8xxxxxx_only” MAC ý ACL 9NM GigaEthernet 1/1 y

```
Ruijie(config)# interface GigaEthernet 1/1
Ruijie(config-if-GigabitEthernet 1/1)# mac access-group accept_00d0f8xxxxxx_only in
```

oè-o- 1 y… **show mac access-group x** MAC ý ACL •î

2y… **show mac access-group interface** *interface-name x* MAC ý ACL •îž

oÙP'î- -

oëjö- -

oнVê- -

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* }

o- | (@ | T |
|---|---|
| *id* | MAC ý ACL Ź700-799 h |
| *name* | MAC ý ACL d |

oH-å- ZÄ MAC ý ACLož

ox-X%”o- %”

oH-- 14

o6-o- ý+ACtgh-J. ACLkýkXë MAC ý ACLož

MAC ý ACLy

```
mac access-list extended mac-acl
```

2y‰ÚÍ 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** xXUYÎÄ ACL Fåž
2y… **show access-lists** *id* xØ6 ACL Fåž
3y… **show access-lists** *name* Ø6 ACL Fåž

oÙP'Î-

-

oëjÖ-

-

oнV®-

-

12.18 mac access-list resequence

+ MAC ý ACL é¾ZgML

mac access-list resequence { *id* | *name* } *start-sn inc-sn*

ê

no mac access-list resequence { *id* | *name* }

oß

(	T
id	MAC ý ACL Íg700-799 h
name	MAC ý ACL d
start-sn	1-2147483647 h
inc-sn	~ZÍg1-2147483647 h

oHFå- start-sn y10
inc-sny 10

ox×X%"o-

%"

oHÖ-

14

oG-o-

MAC ý ACL ÝÚ¹é¼k%²<ěk~ZkJÆ
ÍÖk4ŽkUYÎkX+ ACL é¾ZgMLk~ZJnž

oF‡å0- 1 y+d“mac-acl” MAC ÿ ACL é7%ÂZ 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
```

FåxX8y

```
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
```

oè¤o- 1 y… **show access-lists** xXUYÔÄ ACL é#Zož

2y… **show access-lists** *id x* ACL é#Zož

3y… **show access-lists** *name* ACL é#Zož

oЧP’ô- -

oəjö- -

oиV0- -

12.19 permit

%¿Ú ACL • /ï%0 ACL éž

IP õ ACL

ª IP õ ACL %0Ú ACL é

[*sn*] **permit** { *source source-wildcard* | **host** *source* | **any** } [**time-range** *tm-range-name*] [**log**]

R IP õ ACL ï%0Ú ACL é

no { *sn* | { **permit** { *source source-wildcard* | **host** *source* | **any** } [**time-range** *tm-range-name*] [**log**] } }

IP ÿ ACL

ª IP ÿ ACL %0Ú 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**] } }

Ô Ø 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* |

Rÿÿÿÿÿ ACL ï%¶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*] } }

#+<mY8 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*]

ÔØ Expert ày¶

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* |

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sn	ACL éZ
source-ipv6-prefix	› IPv6 è
destination-ipv6-prefix	) IPv6 è
prefix-length	ÿÜAy*ƒ*
source-ipv6-address	› IPv6 ª
destination-ipv6-address	) IPv6 ª
dscp	¿ÿÆµ
dscp	A¼ 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	¿f
hex	*Y* 16 òPF¼Få ACL è.
hex-mask	*Y* 16 òPFQAkFå ACL è.
offset	*F¥åFå* ACL è.

oH¬Få- ZÄ ACL éå

o×X%”o- ACL %”

oH®- 14

o6-o- ¥UY¥X6 ACL L%?¤ ACL éž

oF¬Ð- 1 y¶PòÉP%ÚExpert Extended ACL k¥ ACL ¾ IP ª 192.168.4.12 w›
MAC ª 001300498272 Ä TCP Ðž

```
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)#
```

2y@ IP ¿ ACL 8k)Õ 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 Fåk, ACL Fåž
2y… **show access-lists** *id xß6* ACL Fåk,¥ ACL Fåž
3y… **show access-lists** *name ß6* ACL Fåk,¥ ACL Fåž

oUP'ô- -

oəjö- -

ouVô- -

12.20 remark

¨ ACL Ë ACE hK'Î
remark *text*

ï ACE hK'Î
no remark *text*

op@

(@	T
text	hK'Î

oHFå- ACE ZÄK'Î

oxX%"o- ACL %"

oHß- 14

o6-o- 6 ACE hK'ôž

m • 100 Q"ânQ ACL {£ 2 ¯Ä

W, ace VÜ ace 0sëßWd

oF å0- 1 yŽ 102 IP y ACL ACE hK’y

```
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#
```

oè o- 1 y… **show access-lists** xXUYÔÄ ACL Fåbž ACL é¾K’bž

2y… **show access-lists** *id* xÆ5 ACL Fåbž ACL é¾K’bž

3y… **show access-lists** *name* Æ5 ACL Fåbž ACL é¾K’bž

oUP’b- -

oèjö- -

ouV0- -

12.21 security access-group

FåM¶3

security access-group { *id* | *name* }

ïNM¶3

no security access-group

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p@	T
id	ACL ŹkJF8y IP Õ ACLg1-99k 1300-1999b• IP y ACLg 100-199k 2000-2699b• MAC y ACLg700–799 by ACLg2700–2899 h
name	ACL d

oHF å- NMZ3Få

oxX%”o- NM%”

oH0- 14

o6-o-

oF₫ 1 yNM GigaEthernet 1/1 F3k+• ACL Ø 1y

```
Ruijie(config)# interface GigaEthernet 1/1
Ruijie(config-if-GigabitEthernet 1/1)# security access-group 1
```

o… … **show running x**

oUP'ô- -

oj- -

oV- -

12.22 security global access-group

F¶3

security global access-group { *id* | *name* }

¶3

no security global access-group

o@ @ T

oəjö- -

oʉV@- -

12.23 security uplink enable

F₿¶3ÙM

security uplink enable

HƒNM₿¶3ÙM

no security uplink enable

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	-	-

oH₣å- NM₿¶3ÙM

oxX%”o- NM%”

oH- K0‘H]₹Đ

14

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o¬ Þ u • Ù ¼à Â Ç@p ÑG ˆÇ@qs=Â ðÇ@qú • jz(ü <t q(Œt 3Ü t VUg¢o-

o	@	T
	interface *Interface-name*	6NMd
oX%”o-	”	
o-	14	
o-o-	6NM	ACLk?NM ACLkUYXož

oFd- 1 y0NM4 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.
```

2y0NM GigabitEthernet 0/3 4 ACLkYCgy

```
Ruijie# show access-group interface GigabitEthernet 0/3
ip access-list extended 101
Applied On interface GigabitEthernet 0/3 in.
```

oUP’b- -

oV- -

12.25 show access-lists

PA ACL F ACL F

show access-lists [*id* | *name*] [**summary**]

o	@	T
	id	ACL
	name	ACL d
	summary	ACL M

oX%”o- %”