¬ Z »

8G- 9 © ç A E Ñ

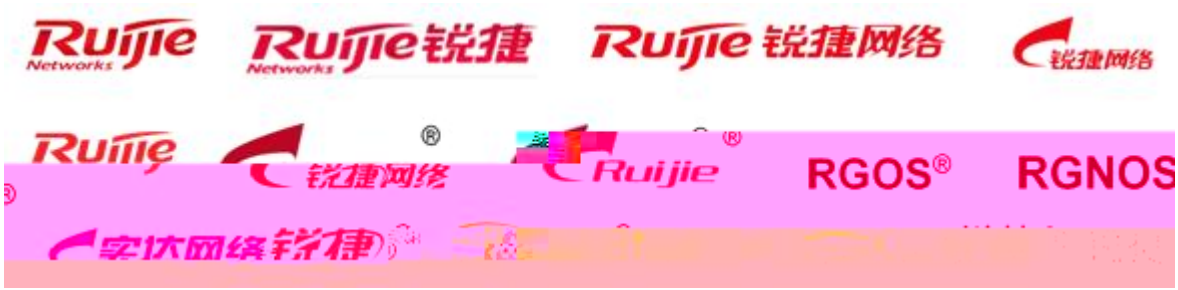
z Y `Z W RGOS11. [( X )B Z `

c U V _ X O M N Z ij H à Ì

F R S \ U Ł J K Wi 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 òo• d £o• Õ ao• “
wo• n no• ì è ¿ U § ˆo• 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

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 • ožiHàÌ‘ ¨ 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

Î0 ` çKtƒ¯

àÌWid

ÐPzKt

àÌ’òt

iHàÌ •à{y

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 Ћ 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

Ú ` Ÿ4¡2Ï4³G!5B Q ¸ –5×,Ì G Y • È Ù À ¹ ß0´8V Ö

1. Q ¸> + M6
2. Î. G!5B1u)Ú
3. LINE
4. File System
5. SYS
6. TIME RANGE
7. HTTP
8. 2Ï4³ ¹ «
9. CWMP
10. CA-MONITOR
11. õ +&Á ¦ ¨
12. 1u)Ú S k -
13. POE 1u)Ú
14. PKG_MGMT

1 w W 6 Ù „

1.1 alias

F å%² Ú x X ð dož
alias mode command-alias original-command

í ” # x X ð d k + 9 ¨ ó • ð d x X k U Ê Ö Þ . F åož
no alias mode [command-alias]

+ 9 ¨ ó • ð d x X k U Y * default Ê Ö Þ . F åož
default alias mode [command-alias]

o¬ @ ƒ ª ¢o-

@ ƒ	T
mode	ð d ñ W n x X ñ Ô x X % ”ož

command-aliasdefault

n ’Î y

```
5XLMLH V"
 V VKRZ  VKRZ  VWDUW FKDW  VWDUW WHUPLQDO VHUYLFH
```

ò ç ð d ñ W n x X 2%² % Ÿ k é k … – Z 1 x X , Ü Ûož † ò k ¨ EXEC % ” F å ð d”sv” W Á x X show version k é y

```
5XLMLH V"
 V VKRZ  VWKYR”Z YHUWLRQ” VWDUW FKDW
VWDUW WHUPLQDO VHUYLFH
```

ð d · À R ÿ µ x X g †%² … • ÷ k ù µ Ä q ož ò µ † ÿ k ò ç ¨ x X $ ù ÿ µ 4 q k < nP`c ð d y

```
5XLMLH V"
VKRZ VWDUW FKDW VWDUW WHUPLQDO VHUYLFH
```

x X ð d - U Y u 4 B H x X @ ƒ n ’Î k † ò F å N M % ” x X ð d”ia” W n”ip address ” k é ¨ N M % ” y

```
5XLMLH FRQILJ LI LD "
$ % & ' ,3 DGGUHVV
GKFS ,3 $GGUHVV YLD '+&3
5XLMLH FRQILJ LI LS DGGUHVV
```

L ç ß 4 ip address x X e µ @ ƒ ’Î k w 1 ð d Á E è Ž x Xož x X ð d ¨ … ž · À … ÿ µ k k é t œ ðož … show aliases x X U Y ò 0 © Ï ð d — åož

o¬ F å †o- 1 y — å ¶ B F å % ” k … x X ð d”def-route” W n ó • è — å”ip route 0.0.0.0 0.0.0.0 192.168.1.1” y

```
5XLMLH FRQILJXUH WHUPLQDO
5XLMLH FRQILJ DOLDV FRQILJ GHI URXWH LS URXWH
5XLMLH FRQILJ GHI URXWH"
 GHI URXWH LS URXWH
5XLMLH FRQILJ HQG
5XLMLH VKRZ DOLDVHV FRQILJ
JOREOH FRQILJXUH PRGH DOLDV
GHI URXWH LS URXWH
```

o¬ à • co- ¨ x X g Ú þ µ k F å %² % Ÿ • %² Ú x X ð dož ÿ µ % Ÿ k ò ç U Y Û W Á Ú x X k / ª ¢ ¥ ð d F å Ä |ož

o¬ U P ’ Îo- x X ð d x † Ý 19 … k ò ç Ý ’ ò é k ß ë Y U P ’ Î y

```
 2YHUO\ ORQJ DOLDV QDPH WUXQFDWHG DIWHU FKDUDFWHUV
```

ð d ñ W n Ž x X § c … x † Ý 255 … k ò ç Ý ’ ò é k ß ë Y U P ’ Î y

```
 &RPPDQG DOLDV VWULQJ WRR ORQJ
```

? x X % ” u 4 Â Ú ð d ƒ 100 k ò ç Ý ’ ò é k ß ë Y U P ’ Î y

```
 &DQ W DGG PRUH WKDQ FRPPDQG DOLDVHV LQ VLQJOH PRGH
```

œ _ _ Þ Ù = œ g † ò Ä á ^ Ћ • ð d â Â ž k é k ß ë Y U P ’ Î y

$ G G L Q J F R P P D Q G D O L D V I D L O

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

1.2 privilege

F å%² Ú x X ü g Ó ’ I 5%² x X ´ ðož

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

Ê Ö Þ . F åož

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
mode	} I Ó x X ñ K CLI x X % ”
all	1 6 x X ñ Ä ÿ x X Ó ’ k J , c Ó ’ ´ ð
level level	6 x X ê ÿ x X g Ó ’ ´ ð k ´ ð 8 0-15
reset	1 x X ü g Ó ’ Ê Ö ó • ´ ð
command-string	} I Ó x X …

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- n ª P%² B ã ¨ privilege x X U g I Ó CLI x X % ” ¼ p k c — Õ k U I Ó x X % ” ƒ O U k G ÿ J k ¨ ¶ B F å % ” k U Y … privilege ? ç ß ¢ ù ñ Ä U I Ó CLI x X % ”ož

% ”	ª ¢
config	¶ B F å % ”
exec	Ô Ó % ”
interface	N M F å % ”
ip-dhcp-pool	DHCP ª - P F å % ”
keychain	KeyChain F å % ”
keychain-key	KeyChain-key F å % ”
time-range	Time-Range% ”

o¬ F å †o- 1 y — å CLI ´ ð 1 M X ”test” k w — å ü g reload

```
H[HF PRGH DOLDV
K                KHOS
S                SLQJ
V                VKRZ
X                XQGHEXJ
XQ                XQGHEXJ
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2 Á ´ a Â

2.1 <1-99>

Ê Ö] Æ • y Telnet Client k ¢ Nož
<1-99>

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- - k Ü x À

H *ƒ* U P * ’Î F å

no banner exec

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
c	U P * ’Î ã œ … k U P * ’Î Ä • ª • ß ë • œ …ož
message	F å U P * ’Î Ä ož

c	F g Telnet N U P ’ Î ã œ … k U P ’ Î Ä • ª • ß ë • œ …ož
message	F å F g Telnet N U P ’ Î Ä ož

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- … ¥ x X U Y F å F g Telnet N U P ’ Î k ò ç p µ È Ø ã œ … e Q À ÿ µ … ké ? … 1 t © Ï ’ož
¢ ï £ — Õ k MOTD gbanner motd h Ù ¯ ª P k À e 1 ª P LOGIN U P ’ Î gbanner login hk ï è £ — Õ Y e k 1 ÿ G N • º ß ë EXEC gbanner exec h U P ’ Î ê incoming gbanner incoming h U P ’ Îož ò ç © F g Telnet é ß ë incoming U P ’ Î k ¿ U N é ß ë EXEC U P ’ Îož

o¬ F å †o- 1 y µ P † g F g Telnet N ’ Î — å y
5 X L M L H F R Q I L J E D Q Q H U L Q F R P L Q J * … ¡ H — Õ

o¬ à • co- F å e k F g Telnet N ï £ line ¿ è µ ¯ * ï % ” k U ª P ñ F å ’ Îož

ˆ<!˜ ö Êl læÂ @ p $ x ÐuPÕ U wi U u Ð

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- … ¥ x X U Y F å £ ö Ê ’ Î k ò ç p µ È Ø ã œ … e Q À ÿ µ … k é ? … 1 t © Ï ’ož
¢ ï £ è ˜ k MOTD gbanner motd h Ù ¯ ª P k À e 1 ª P LOGIN U P ’ Î gbanner login hk
ï è £ — Õ Y e k1 ÿ G N • º ß ë EXECgbanner exec h U P ’ Î ê incominggbanner incoming h
U P ’ Îož ò ç © F g Telnet é ß ë incoming U P ’ Î k ¿ U N é ß ë EXEC U P ’ Îož

o¬ F å †o- 1 y µ P † g £ ö Ê ’ Î — å y
5 X L M L H F R Q I L J E D Q Q H U O R J L Q H Q W H U \ R X U S D V V Z R U G

o¬ à • co- F å e k ï £ © Ï k U ª P ñ F å ’ Îož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.5 banner motd

F å ? ™ * = ’ Î MOTD g message of the day h
banner [motd] c message c

H *ƒ* ? ™ * = F å ’ Î
no banner [motd]

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
c	? ™ * = ’ Î ã œ … k ? ™ * = ’ Î Ä • ª • ß ë • œ …ož
message	F å ? ™ * = ’ Î Ä ož

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- … ¥ x X U Y F å ? ™ * = ’ Î k ò ç p µ È Ø ã œ … e Q À ÿ µ … k é ? … 1 t © Ï ’ož

¢ ï £ — Õ ž k MOTD gbanner motd h Ù ¯ ª P k À e 1 ª P LOGIN U P ' Î gbanner login hk
ï è £ — Õ Y e k1 ÿ G N • º ß ë EXECgbanner exec h U P ' Î ê incominggbanner incoming h
U P ' Îož ò ç © F g Telnet é ß ë incoming U P ' Î k ¿ U N é ß ë EXEC U P ' Îož
¥ x X F å U P ' Î © S + ñ Ä line ¿ è k ò ç } ¨ î Ú ¿ è W 2 MOTD U P ' Î kU Y ¨ À } line
¿ è F å no motd-banner ož

o¬ F å †o- 1 y µ P † g ? ™ * = ' Î — å y

```
5XLMLH FRQILJ EDQQHU PRWG KHOOR ZRUOG
```

o¬ à • co- F å e k ï £ © Ï k U ª P ñ F å ' Îož

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.6 banner prompt-timeout

ò ï £ • š Ý ž U P ' Î
banner prompt-timeout c message c

H ƒ ï £ • š Ý ž U P * ' Î F å
no banner prompt-timeout

o¬ @ ƒ ª ¢o-

@ ƒ	T
c	U P ï £ • š Ý ž ' Î ã œ … kU P ' Î Ä • ª • ß ë • œ …ož
message	F å U P ï £ • š Ý ž ' Î Ä ož

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- … ¥ x X U Y F å U P ï £ • š Ý ž ' Î k ò ç p µ È Ø ã œ … e Q À ÿ µ … k é ? … 1 t ©
Ï 'ož
¢ ï g £ • š Ý ž ž k ª P prompt-timeout U P ' Î gbanner prompt-timeout hož

o¬ F å †o- 1 y µ P † g £ • š Ý ž U P ' Î — å y

```
5XLMLH FRQILJ EDQQHU H[HF £•šÝž
```

o¬ à• co- F å e k ï £ line ¿ è x g £ • š k U ª P ñ F å ’ Îož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.7 banner slip-ppp

ò SLIP/PPP

o¬ u V ª ¢o- -

2.8 configure

µ ¶ B F å % ”ož

configure [terminal]

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- -

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y µ ¶ B F å % ”

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

2.9 disable

‘ z ¢ ù ï ñ ¨ ´ ðož

disable [privilege-level]

o¬ @ ƒ ª ¢o-

@ ƒ	T
privilege-level	Ó ’ ^ ´

o¬ Þ . F åo- -

o¬ x X % ”o- ¯ * ï % ”

o¬ Þ . ´ ðo- 0

o¬ … 6 -o- … ¥ x X R Ô Ó ï % ” ñ ¯ * ï % ”ožò ç Ó ’ ˆ ´ ké 1 ¢ ù Ó ’ ˆ ´ ‘ z ñ 6 Ó ’ ˆ ´ož

disable a — K N U ã « ‰ ¡ Ì ò • ã « ‰ d

o¬ F å †o- 1 y ò P † F å — Õ 1 ¢ ù Ó ’ ˆ ´ ‘ z ñ † 10 ´ y

5 X L M L H G L V D E O H

o¬ à • co- * show privilege x X ò 0 ¢ ù ï ñ ¨ ´ ð

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.10 disconnect

• • 5 Ü Telnet Client Nož

disconnect session-id

o¬ @ ƒ ª ¢o-

@ ƒ	T
session-id	5 Ü Telnet Client N k ¢ Z

o¬ Þ . F åo- -

o¬ x X % ”o- ¯ * ï % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- * ÿ µ 6 Telnet Client N k ¢ Z k • • 6 Telnet Client Nož

o¬ F å †o- 1 y ÿ µ 6 Telnet Client N k ¢ Z k • • 6 Telnet Client Nož

5 X L M L H G L V F R Q Q H F W

2.12 enable password

F å c Ó ’ ´ ð M Xož

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

í ” 6 ´ ð M Xož

no enable password [level level]

o¬ @ ƒ ª ¢o-

@ ƒ	T
level	ï Ó ’ ´ ð
0	g U # h 6 ¢ † M X …
password	ï µ Ô Ó EXEC F å C M X ¢ † k … x † 8 y1~126
7 encrypted-password	n P ÿ µ M X … % † …

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- * o — À ÿ µ % • ºož%² " Õ Ñ k Q Ä ¢ Ö ò w ¡ É — Õ % M X ž k õ ¬ } ÿ µ % • ºož
Ä | M X # ò y
· À m 1 ñ 26 Ý 4 Ê > y ƒ …ož
M X ù µ U Y Ä ù - q k x t ¿ ož • C È A q é • M X %² B ãož

" ´ G t ¦ A + ø ö Û & ¢ ¨ \ 3 Ç — • â Ÿ 7 í) & ‹ ã EXEC f ´ d â Ÿ K É º ¥
¦ A ¸ I ž Ç — È Ÿ 7 í " • • Ç — d

o¬ F å †o- 1 y µ P † — å M X pw10 y
5 X L M L H F R Q I L J H Q D E O H S D V V Z R U G S Z

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.13 enable secret

2.14 enable service

ø • ¼ { 6 Æ gSSH Server/Telnet Server/Web Server/Snmp Agent hož

enable service { ssh-server | telnet-server | [|]

@ ƒ	T
ssh-server	ø • ¼ { SSH Serverož
telnet-server	ø • ¼ { Telnet Serverož
web-server [	Web Serverož
snmp-agent	ø • ¼ { Snmp Agentož

o¬ Þ . F åo- ó • telnet-servero•snmp-agent y web-server © ø • k ssh-server © ¼ { ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14 1 ¶ 4 B F

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- -

o¬ x X % ”o- ñ Ä ³ Ô Ó % ”

o¬ Þ . ´ ðo- 0

o¬ … 6 -o- ¨ ` ~ ³ Ô Ó % ” Q } ü g end x X / U ß ñ Ô Ó % ”

o¬ F å †o- 1 y µ P † x X end ß ñ Ô Ó % ” y

```
5XLMLH FRQ
(QWHU FRQILJXUDWLRQ FRPPDQGV RQH SHU OLQH (QG ZLWK &17/ =
5XLMLH FRQILJ OLQH YW\
5XLMLH FRQILJ OLQH HQG
 0D\ 6<6 &21),*B, &RQILJXUHG IURP FRQVROH E\ FRQVROH
5XLMLH
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o kkkkkkkkkkkkn× ˆÇ@qs=Â ðÆúÀfñ¶¶¶¶¶¶¶¶¶¶u 6j ¢× ˆÇ@qs=Â ð7 Q „l 1 ‘3 4t$â t • ” ìºàta’’ç’ý1 11„ N 5 žVúÐ

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- F å 4 banner exec y banner motd k é ó • Õ Ñ k 1 ¨ ñ Ä line ¿ è ª P EXEC y MOTD U P ’ Îož ò ç Ý ¨ î Ú À } line ¿ è ¼ { EXEC y MOTD U P ’ Î kU Y … ¥ x X no ¥ ” ¨ 6 ¿ è ¼ { EXEC y MOTD U P ’ Îož

a — s banner incoming â o ´ ‡ " ´ " t banner incoming • } æ æ ¬ ¾ ± ¿ Telnet U / ¡ µ incoming ” µ ð o M ¥ } G ¬ ¾ h ‘ ž incoming ” µ ð o d

o¬ F å †o- 1 y µ P † g + line 1 ¿ è W 2 U P * ’ Î ª P y

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

o¬ à • co- F å e k ï £ © Ï k ª P ñ F å ’ Îož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.17 exec-timeout

F å LINE ñ 4 — Õ N Ý ž ž •ož
exec-timeout minutes [seconds]

H ƒ LINE N Ý ž k N K Ý žož
no exec-timeout

o¬ @ ƒ ª ¢o-

@ ƒ	T
minutes	6 Ý ž ž • ã U ƒ k H › 8 0-35791ož
seconds	g U # h 6 Ý ž ž • a ƒ k H › 8 0-2147483ož

o¬ Þ . F åo- Þ . Ý ž ž • 10 min

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç ¨ 6 ž • Ä k 4 N Z Ä ` ~ ÿ µ ÿ ß ’ Î k 1 • 4 N k w Ê Ö 4 LINE q ~ U Ù Áož

o¬ F å †o- 1 y µ P † 6 line vty 0 N Ý ž ž • 5 ã 30 a y

```
5XLMLH FRQILJ OLQH H[HF WLPHRXW
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.18 execute

ü g%² Ô ò † ^ x Xož

execute { [flash:] filename }

o¬ @ ƒ ª ¢o-

@ ƒ	T
filename	¬ } ü g † ^ è ¬ož

o¬ Þ . F åo- ³ F å x X

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- R † ^ & g ¯ H … ü gož

o¬ F å †o- 1 y µ P † n P … execute x X F å 6 N M ip † ÿ y

```
5XLMLH H[HFXWH IODVK P\ELQ FRQILJ WH[W
H[HFXWLQJ VFULSW ILOH P\ELQ FRQILJ WH[W
H[HFXWLQJ GRQH
5XLMLH FRQILJ
(QWHU FRQILJXUDWLRQ FRPPDQGV RQH SHU OLQH (QG ZLWK &17/ =
5XLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
5XLMLH FRQILJ LI *LJDELW(WKHUQHW LS DGGUHVV
5XLMLH FRQILJ LI *LJDELW(WKHUQHW HQG
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.19 exit

R F å % ” ß ñ ´ % ” ê ñ R Ô Ó % ” ß CLI µ
exit

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åvAadC4 Nõ`t dC4 Nõ`t P Vð

```
   H J  VKRZ SU"
```

2y µ P†ªPNMFå%” g ñÄxXy

```
5XLMLH FRQILJ LI *LJDELW(WKHUQHW     "
,QWHUIDFH FRQILJXUDWLRQ FRPPDQGV
 DUS          $53 LQWHUIDFH VXEFRPPDQGV
 EDQGZLGWK      6HW EDQGZLGWK LQIRUPDWLRQDO SDUDPHWHU
 FDUULHU GHOD\   6SHFLI\ GHOD\ IRU LQWHUIDFH WUDQVLWLRQV
 GDPSHQLQJ      (QDEOH HYHQW GDPSHQLQJ
 GHIDXOW        6HW D FRPPDQG WR LWV GHIDXOWV
 GHVFULSWLRQ     ,QWHUIDFH VSHFLILF GHVFULSWLRQ
 GOGS          ([HF GDWD OLQN GHWHFWLRQ FRPPDQG
 GXSOH[         &RQILJXUH GXSOH[ RSHUDWLRQ
 HIP           &RQILJ HIP IRU DQ LQWHUIDFH
 HQG           ([LW IURP LQWHUIDFH FRQILJXUDWLRQ PRGH
 H[LW          ([LW IURP LQWHUIDFH FRQILJXUDWLRQ PRGH
 H[SHUW         ([SHUW H[WHQGHG $&/
 IORZFRQWURO     6HW WKH IORZ FRQWURO YDOXH IRU DQ LQWHUIDFH
 IXOO GXSOH[     )RUFH IXOO GXSOH[ RSHUDWLRQ
 JOREDO         *OREDO $&/
 JYUS          *953 FRQILJXUH FRPPDQG
 KDOI GXSOH[     )RUFH KDOI GXSOH[ RSHUDWLRQ
 KHOS          'HVFULSWLRQ RI WKH LQWHUDFWLYH KHOS V\VWHP
 LS           ,QWHUIDFH ,QWHUQHW 3URWRFRO FRQILJ FRPPDQGV
 LSY           ,QWHUQHW 3URWRFRO 9HUVLRQ
 LVLV          ,QWHUPHGLDWH 6\VWHP  ,QWHUPHGLDWH 6\VWHP  ,6 ,6
 O            &RQILJ /  DWWULEXWH
 ODEHO VZLWFKLQJ  (QDEOH LQWHUIDFH SURFHVV PSOV SDFNHW
 ODFS          /$&3 LQWHUIDFH VXEFRPPDQGV
 OOGS          /LQN /D\HU 'LVFRYHU\ 3URWRFRO
 ORDG LQWHUYDO   6SHFLI\ LQWHUYDO IRU ORDG FDOFXODWLRQ IRU D
 PDF           0DF H[WHQGHG $&/
 PDF DGGUHVV     6HW PDF DGGUHVV
 PSOV          0XOWL 3URWRFRO /DEHO 6ZLWFKLQJ
 PWX           6HW WKH LQWHUIDFH 0D[LPXP 7UDQVPLVVLRQ 8QLW  078
 QR           1HJDWH D FRPPDQG RU VHW LWV GHIDXOWV
 QWS           &RQILJXUH 173
 SRUW JURXS     $JJUHJDWHSRUW SRUW EXQGOLQJ FRQILJXUDWLRQ
 UHGLUHFW       5HGLUHFW SDFNHWV
 UPRQ          5PRQ FRPPDQG
 VHFXULW\       &RQILJXUH WKH 6HFXULW\
```

```
 VKRZ            6KRZ UXQQLQJ V\VWHP LQIRUPDWLRQ
 VKXWGRZQ          6KXWGRZQ WKH VHOHFWHG LQWHUIDFH
 VQPS            0RGLI\ 6103 LQWHUIDFH SDUDPHWHUV
 VSHHG            &RQILJXUH VSHHG RSHUDWLRQ
 VZLWFKSRUW        6HW VZLWFKLQJ PRGH FKDUDFWHULVWLFV
 YUI            0XOWL DI 931 5RXWLQJ )RUZDUGLQJ SDUDPHWHUV RQ WK
 YUUS            9553 LQWHUIDFH VXEFRPPDQGV
 [FRQQHFW          ;FRQQHFW FRPPDQGV
```

¢ ù 29 © ç Í Î u 4 mpls,isis,VRF k F å † N • @ ð k Ž F å ¬ Y À } — Õ F å Õož3 y µ P † ª P x X e µ ñ æ @ ƒ • º y

```
5XLMLH FRQILJ DFFHVV OLVW  SHUPLW "
 $ % & '  6RXUFH DGGUHVV
 DQ\     $Q\ VRXUFH KRVW
 KRVW     $ VLQJOH VRXUFH KRVW
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.21 hostname

6 ê “ w — Õ Ñ dož

hostname name

o¬ @ ƒ ª ¢o-

@ ƒ	T
name	— Õ Ñ d k Q … … o• ƒ Y C N …ož Â Ý x † 63 …ož

o¬ Þ . F åo- Þ . Ñ d Ruijieož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- Ñ d } 9 œ ð — Õ Y C ¨ * Z y CHAP • š • Î ª — Õ ï dož

o¬ F å †o- 1 y µ P † 6 — Õ Ñ d BeiJing_Ruijie y

```
5XLMLH FRQILJ KRVWQDPH %HL-LQJB5XLMLH
%HL-LQJB5XLMLH FRQILJ
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.22 ip telnet source-interface

6 N M IP ª - • Telnet N › ª -ož

ip telnet source-interface interface-name

o¬ @ ƒ ª ¢o-

@ ƒ	T
interface-name	6 ¥ N M F å IP ª - • Telnet N › ª - k N M • º , AP Mo•Gi Mo•Loopback Mo•null Mo•Tunnel Mo•VLAN Mož

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X 9 6 N M IP ª - • ¶ B Telnet N › ª -ož ¨ … telnet x X £ N%² V Telnet Æ ˜ ž ˜ k ò ç Z Ä ¥ N % Þ 6 › N M ê › ª - k 1 … ¥ ¶ B — åož … no ip telnet source-interface x X 1 — å Ê Ö ó • ›ož

o¬ F å †o- 1 y µ P † x X k 6 Loopback 1 N M IP ª - • ¶ B Telnet N › ª - y

```
5XLMLH FRQILJ LS WHOQHW VRXUFH LQWHUIDFH /RRSEDFN
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.23 lock

¨ Ä € — å%² ¶ ž M Xož
lock

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
-	-

o¬ Þ . F åo- -

o¬ x X % ”o- ¯ * ï % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- ï * — å ž M X • ”k ¨ ‘4 N k ¢ c ž k g { Ä € µ Y … 2 ˜ |ož * Y 5 â g { Ä € µ y

†%² µ y ÿ µ lock x X k © Ï k U P ÿ µ M X z

† 8 µ y ÿ µ M X k U Y © ` Þ … ož ÿ µ e k © Ï k U P G • ÿ µ M X k À e k © Ï k Ž ” I s k

w ª P Locked ’ Î z

} Ý M • µ Ä € k ¬ } ÿ µ — å ž M Xož

} ¨ Ä € … g { Ä € k , ¬ } * ¨ line F å % ” ü g lockable x X k ¨ , • line ø • u 4 g { Ä € Ô Åož

o¬ F å †o- 1 y µ P † g {%² Ä € µ y

```
5XLMLH FRQILJ OLQH  ORFNDEOH
5XLMLH FRQILJ OLQH  HQG
5XLMLH  ORFN
3DVVZRUG  SDVVZRUG!
$JDLQ  SDVVZRUG!
/RFNHG
3DVVZRUG  SDVVZRUG!
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.24 lockable

ª • ï g { ¢ ù ¿ è ñ N Ä €ož
lockable

H *ƒ* — åož
no lockable

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
-	-

o¬ Þ . F åo- Ä € ¨ Þ . Õ Ñ u 4 lock x Xož

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- ¥ x X 9 ¨ , • ¿ è u 4 g { Ä € Ô Å k } g { Ä € U Y * ¨ EXEC % ” ü g lock x Xož
ò ç ï } ü g lock x X Û g { ¢ ù ¿ è N Ä € k < · À ¯ … x X lockable — å ¢ ù ¿ è ª • ï g
{ ¢ ù ¿ è N Ä €ož

o¬ F å †o- 1 y µ P † ¨ O ò V M ø • g { Ä € k w g { O ò V y

```
5XLMLH FRQILJ  OLQH FRQVROH
5XLMLH FRQILJ OLQH  ORFNDEOH
5XLMLH FRQILJ OLQH  HQG
5XLMLH  ORFN
3DVVZRUG  SDVVZRUG!
$JDLQ  SDVVZRUG!
/RFNHG
3DVVZRUG  SDVVZRUG!
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.25 login

¨ AAA ¼ { Õ Ñ k ¨ LINE ¿ è F å • % £ M X û àož
login

H ƒ £ M X û àož
no login

o¬ @ ƒ ª ¢o-	@ ƒ	T
	-	-

o¬ Þ . F åo- O ò V ó • ¼ { login k AUXo•TTY y VTY Ä € ó • ø • login ož

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç Z Ä o AAA ¶ Æ ké ¥ x X 9 £ • š ž • • % M X û àož L M X © © 6 VTY ê console N M F å M Xož

o¬ F å †o- 1 y µ P † ¦ P ¨ VTY — å £ M X û àož

```
5XLMLH FRQILJ QR DDD QHZ PRGHO
5XLMLH FRQILJ OLQH YW\
5XLMLH FRQILJ OLQH SDVVZRUG QRUPDWHVW
5XLMLH FRQILJ OLQH ORJLQ
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.26 login access non-aaa

¨ AAA ø • Õ Ñ k F å ¥ x X k ¨ LINE ¿ è U Y # + J ³ AAA Æ Û g • šož
login access non-aaa

W 2 ¨ AAA ø • Õ Ñ … ³ AAA Æ Û g • šož
no login access non-aaa

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ó • ¼ { ¥ ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç o AAA ¶ Æ c ž k ¨ LINE ¿ è Ý J ³ AAA • š • ” k é ¬ } F å ¥ x X k ¥ + ñ
Ä Ä € C Ä |ož

o¬ F å †o- 1 y µ P † ¦ P ¨ ø • AAA ¶ Æ ž ˜ k ¨ VTY — å Î ª ï • šož

```
5 X L M L H F R Q I L J O R J D F F H V V Q R Q D D D
5 X L M L H F R Q I L J D D D Q H Z P R G H O
5 X L M L H F R Q I L J O L Q H Y W \
5 X L M L H F R Q I L J O L Q H O R J L Q O R F D O
5 X L M L H F R Q I L J O L Q H
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.27 login authentication

¨ AAA ø • Õ Ñ k ¨ LINE ¿ è F å AAA £ • š • c ç nož
login authentication { default | list-name }

í ” £ • š • c ç nož
no login authentication { default | list-name }

o¬ @ ƒ ª ¢o-

@ ƒ	T

default	ó • • š • c ç n d
list-name	U # • c ç n d

o¬ Þ . F åo- AAA ø • Õ Ñ k ó • … default • š • což

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y µ P † ¦ P ¨ VTY ¼ û • c ç n w radius g £ • šož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.28 login local

¨ AAA ¼ { Õ Ñ k ¨ LINE ¿ è F å Î ª ï • šož

login local

H ƒ £ Î ª ï • šož

no login local

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- -

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç Z Ä o AAA ¶ Æ k é ¥ x X 9 F å LINE ¿ è £ • š ž Ú Î ª ï • šož L Î ª ï © 6
* username x X F å ï ' Îož

o¬ F å †o- 1 y µ P † ¦ P ¨ VTY — å £ Î ª • šož

```
5XLMLH FRQILJ  QR DDD QHZ PRGHO
5XLMLH FRQILJ  XVHUQDPH WHVW SDVVZRUG  WHVW
5XLMLH FRQILJ  OLQH YW\
5XLMLH FRQILJ OLQH  ORJLQ ORFDO
```

o¬ à • co- -

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.29 login privilege log

¨ Ä € ï Ó ' ´ ð U ž ˜ k ÿ ß , • ™ º ' Îož
login privilege log

H ƒ ¨ ï Ó ' ´ ð U ž ˜ ÿ ß U P ' Îož
no login privilege log

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ó • ¼ { ¥ ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç ¬ } ! O Ä € ï Ó ' ´ ð U k } F å k ¥ + ñ Ä Ä € C Ä | ož

o¬ F å †o- 1 y µ P † ¦ P ø • ï Ó ' ´ ð U U P ož

```
5XLMLH FRQILJ  ORJLQ SULYLOHJH ORJ
```

```
2y µ P†¦Pø•¥  ek ï gÓ’ˆ´U âwžkñUP ™º’Îož
5XLMLH!HQDEOH

3DVVZRUG
3DVVZRUG
3DVVZRUG

 $FFHVV GHQLHG
5XLMLH!
 6HS            6<6   35,9B$87+B)$,/ $XWKHQWLFDWLRQ WR SULYLOHJH
```

```
3y µ P†¦Pø•¥  ek ï gÓ’ˆ´U âwžkñUP ™º’Îož
5XLMLH!HQDEOH

3DVVZRUG
5XLMLH
 6HS           6<6   35,9B$87+B68&&(66 $XWKHQWLFDWLRQ WR SULYLOHJ
```

o¬ à•co- -

o¬ UP’Îo- -

o¬ o•j¨o- -

o¬ uVª¢o- -

2.30 motd-banner

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- F å 4 banner exec y banner motd k é ó • Õ Ñ k 1 ¨ ñ Ä line ¿ è ª P EXEC y MOTD U P ’ Îož ò ç Ý ¨ î Ú À } line ¿ è ¼ { EXEC y MOTD U P ’ Î kU Y … ¥ x X no ¥ ” ¨ 6 ¿ è ¼ { EXEC y MOTD U P ’ Îož

a — s banner incoming â o ´ ‡ " ´ " t banner incoming • } æ æ ¬ ¾ ± ¿ Telnet U / ¡ µ incoming ” µ ð o M ¥ } G ¬ ¾ h ‘ ž incoming ” µ ð o d

o¬ F å †o- 1 y µ P † g + Vty1 ¿ è W 2 U P MOTD ’ Î ª P y

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

o¬ à • co- F å e k ï £ © Ï k ª P ñ F å ’ Îož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.31 password

F å line ¿ è £ M Xož

password { [0] password | 7 encrypted-password }

í ” line £ M Xož

no password

o¬ @ ƒ ª ¢o-

@ ƒ	T
0	g U # h 6 ¢ † M X …
password	6 i ï line ¿ è M X ¢ † k … x † 8 y1~25
7 encrypted-password	n P ÿ µ M X … % † …

o¬ Þ . F åo- -

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y µ P † 6 line £ M X red y

```
5XLMLH FRQILJ OLQH YW\
5XLMLH FRQILJ OLQH SDVVZRUG UHG
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.32 prompt

F å ï x X N M gCLI h U Pož
prompt string

H *ƒ* ï x X N M gCLI h U P … F åož
no prompt

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
string	x X U P … … k Â x U Y F å 32 …

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç , Z Ä F å x X N M gCLI h U P … k é Y © Ï d f • U P … k U P … 1 š 5 © Ï d f J ò J ož
x X N M gCLI h U P … Q + EXEC % ” Ä |ož

Ï G ! 5 B _ Ð 1 y µ P † 1 F å x X U P … RGOS y

```
5XLMLH FRQILJ SURPSW 5*26
5XLMLH FRQILJ HQG
5*26
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.33 secret

F å line ¿ è £ MD5 U " % M Xož
secret { [0] password | 5 encrypted-secret }

í ” line ¿ è £ MD5 U " % M Xož
no secret

o¬ @ ƒ ª ¢o-

0	g U # h 6 ¢ † M X † Î k F å e 1 g MD5 U " %
password	6 i ï line ¿ è M X ¢ † k … x † y1~25
5 encrypted-secret	9 6] Æ MD5 U " % M X † Î k F å e 1 • % e M X g ‘

o¬ Þ . F åo- -

o¬ x X % ”o- line F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X 9 F å + i ï ¡ £ £ line ¿ è g • š MD5 U " % M Xož

" ´ G ¦ A + ø 5 • Û & æ ¥ A 3) g ¡ 24 É ¯ Ç — 3 ‡ 1 c 3 c 8 Q “ ø ¡ ¾ ”$” “ ø d

¹ (M G ¦ A + ø 5 d ¢ N Æ ã • ò % É ´ ¬ ¸ < ¦ A ¶ Ç — ¨ ì ‘ G ¦ A + ø 5 d

line • ¶ » ½ ¨ " password ä secret Ç — ò , Ä h " t password ä secret f 5 Ç — ¨ Ã ¨ Û & Ç — V • $ secret Ç — / secret Ç — $ ž G ¨ V Ÿ # $ password Ç — ò f 5 Ç — [$ ž G Æ ã • Ã ž G d

o¬ F å †o- µ P † 6 line £ MD5 U " % M X vty0 y

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

F å 4 M X $ e kvty0 1 g MD5 U " % kshow ß Û | ç ò ñ P y

```
V H F U H W ; Z Y [ \ X $ ' V Y ] '
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.34 session

¨ VSU Ú Ñ g " ” — Õ h ê Ë µ k * session N ñ ¿ — Õož

session { master | device device-number }

o¬ @ ƒ ª ¢o-

master	6 R Ñ N Ñ ê ñ R ’ ò á N ñ ’ ò á
device device-number	6 — Õ Z

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.35 session-timeout

F å ¢ ù LINE] Æ • y ñ i Ä € k ¢ Ý ž ž •ož
session-timeout minutes [output]

H ƒ LINE ñ i Ä € k ¢ Ý ž ž • k k ¢ K Ý žož
no session-timeout

o¬ @ ƒ ª ¢o-

minutes	6 Ý ž ž • ã U ƒ
output	© k 1 ÿ ß ƒ G - • ÿ µ k Û î • © k Ý ž

o¬ Þ . F åo- Þ . Ý ž ž • 0 min k W n K Ý žož

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç ¨ 6 ž • Ä k R ¢ ù LINE] Æ • y ñ i Ä € k ¢ k Z Ä ` ~ ÿ µ ÿ ß ’ Î k 1 • 4 N k
w Ê Ö 4 LINE q ~ U Ù Áož

o¬ F å †o- 1 y µ P † 6 line vty 0 k ¢ Ý ž ž • 5 ã U y
5 X L M L H F R Q I L J O L Q H V H V V L R Q W L P H R X W R X W S X W

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.36 show debugging

ª P ¢ ù — Õ ² ¡ • ¼ ø • ’ Îož

show debugging

o¬ @ ƒ ª ¢o-	@ ƒ	T
	-	-

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 15

o¬ ... 6 -o- -

o¬ F å †o- 1 y µ P † © ü g show debugging x X %² P † y

```
5XLMLH VKRZ GHEXJJLQJ

GHEXJ IZ JURXS GHWHFW LQWI VWDWH
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2.37 show line

ò 0 ¿ è F å ’ Îož

show line { console line-num | vty line-num | line-num }

o¬ @ ƒ ª ¢o-	@ ƒ	T
	console	ò 0 O ò V ¿ è F å ’ Îož
	vty	ò 0 Z Ä € ¿ è F å ’ Îož
	line-num	ò 0 line ¿ èož

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ F å †o- 1 y ò 0 console M F å ’ Îož

```
5XLMLH  VKRZ OLQH FRQVROH
&21    7\SH   VSHHG   2YHUUXQV
       &21
/LQH   /RFDWLRQ     7\SH   YW
/HQJWK    OLQHV  :LGWK    FROXPQV
6SHFLDO &KDUV  (VFDSH  'LVFRQQHFW  $FWLYDWLRQ
            AA[    QRQH       A0
7LPHRXWV      ,GOH (;(&   ,GOH 6HVVLRQ
            QHYHU       QHYHU
+LVWRU\ LV HQDEOHG  KLVWRU\ VL]H LV
7RWDO LQSXW       E\WHV
7RWDO RXWSXW         E\WHV
'DWD RYHUIORZ        E\WHV
VWRS U[ LQWHUUXSW    WLPHV
```

< † K y

<	ª ¢
CON	Ä € • º kCON n P O ò Vož0 n P Ä € ¿ è Ú Z k Ú Z ù µ * Z n P ¢ ù 3 ¨ … Ä €ož
Type	Ä € • º k , CONo•AUXo•TTYo•VTY ˆož
speed	‘ 5 , äož
Overruns	Ü N v overrun j ¨ ƒ O Ï ‹ ›ož
Line 0	Ä € ¿ è Ú Zož
Location: ""	¿ è location — åož
Type: "vt100"	¿ è Ã Ä € ö Õož
Special Chars	Ä € Ô : … k , Escape …o•Disconnect … y Activation …ož
Timeouts	Ä € Ý ž ž • knever n P K Ý žož
History	7 W x X “ £ • ¼ Y C Â Ý Ú) ƒož
Total input	R Ü N v ƒ G O Ï ‹ ›ož
Total output	G ñ Ü ƒ G O Ï ‹ ›ož
Data overflow	N v œ ß ƒ G O Ï ‹ ›ož
stop rx interrupt	Ü RX • ƒ O Ï ‹ ›ož

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2.38 show reload

ò 0 © Ï M • o — åož
show reload

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o-

o¬ F å †o- 1 y µ P † ò 0 © Ï M • o — å y

5 X L M L H V K R Z U H O R D G
6 \ V W H P U H O R D G V W D W H : D U P
< † K y

[redacted]	ª ¢
6 \ V W H P U H O R D G V W D W H	© Ï M Ñ Ù Á

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2.39 show running-config

ò 0 ¢ ù — Õ © Ï ∃ ¨ ˜ ˜Vs9–#˜. “9R àAptâm M . “ožp = © Ïg3™c

o¬ u V ª ¢o- -

2.40 show service

ò 0 ¢ ù Æ • o ê ¼ { Õ Ñož
show service

o¬ @ ƒ ª ¢o- @ ƒ T o¬ ` ™ TUWA Ó! < 7S MÖúÀæ •7S Màuñ ïEpD @$ï Up@$ nô Up@$ nô Up@$ nô

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- ª P] Æ • y Telnet Client † ? † ’ Î k , y N ñ) VTY Zo• Æ ˜ ª -ož

o¬ F å †o- 1 y ª P] • y Telnet Client k ¢ N ’ Îož

```
5 X L M L H  V K R Z  V H V V L R Q V
& R Q Q  $ G G U H V V
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2.42 show startup-config

ò 0 ¥ ¨ NVRAM g ³ £ â Å š Ñ H ¥ ˜ h — Õ F åož

show startup-config

o¬ @ ƒ ª ¢o-	@ ƒ	T
	-	V FP ˜o ,46˜@$ eõ`si„ AV_V 6˜@ •õ`ši„ <tS xßV 8T@$ &vñ &6˜@$ bgo' du6u å †o-

2.43 show this

ò 0 © Ï ¢ ù % ” ÿ | F å ’ Îož

show this

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- ñ Ä F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¨ range % ” U Y ª P ¢ ù % ” F åož , y

1. * line first-line last-line x X 6 F å%² 8 ¿ è k w µ LINE F å % ” z
2. * Ò °°

```
LQWHUIDFH 9/$1
 LS DGGUHVV

HQG
5XLMLH FRQILJ LI UDQJH
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2.44 speed

F å Ä € — Õ , äož
speed speed

Ê Ö Ä € — Õ , ä ó • F åož
no speed

o¬ @ ƒ ª ¢o-

@ ƒ	T
speed	Ä € — Õ n ÿ , ä k % y © bpsož + 9 g N M k Q 1 n ÿ , ä — å 9600o•19200o•38400o•57600o•115200 %² k Þ . , ä © 9600ož

o¬ Þ . F åo- Þ . , ä © 9600

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ï U Y ÿ G ¬ } Û — å ‘ 5 ¿ è f Ô äož x X speed 1 c ž — å ‘ 5 ¿ è N v , ä Y C G , äož

o¬ F å †o- 1: µ P † 1 M , ä — å 57600 bps y

```
5XLMLH FRQILJ OLQH FRQVROH
5XLMLH FRQILJ OLQH VSHHG
```

o¬ à • co- * show line x X ò 0 LINE ¿ è ñ F å , äož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.45 telnet

£ ñ Telnet Æ ˜ož

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
host	Telnet Æ ˜ IPV4 ª - ê ñ Ñ d
port	Telnet Æ ˜ TCP € M Z k ó • › 23
/source	6 Telnet ï € … › IP ê ñ › N M
ip A.B.C.D	6 Telnet ï € … › IPV4 ª -

ine0 Tc 2.€13.0 Td <05AA06EF0980 re f 560.7 540.96 07<04 /C2_AA07A26FAD>Tj /TT0 1 Tf (4tnet)]T-6 re f 560.7 540.96

í ” Î ª ïož
no username

o¬ u V ª ¢o- -

2.48 username import

R † ^ - µ ï ’ Îož
username import filename

o¬ @ ƒ ª ¢o-

@ ƒ	T
filename	† ^ d

o¬ Þ . F åo- -

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- ¥ x X 9 R Ù B - µ ï ’ Îož

o¬ F å †o- 1 y µ P † F å - µ ï ’ Î:

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.49 write

1 © Ï F å grunning-config h ‘ ñ 6 y åož
write [memory | terminal]

o¬ @ ƒ ª ¢o-

@ ƒ	T
memory	1 © Ï F å Ê µ NVRAM k ˆ c 9 copy running-config startup-config ož
terminal	ª P © Ï F å k ˆ c 9 show running-configož

o¬ Þ . F åo- -

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ ... 6 -o- ¥ x X] À Ä Á W x X k x 9 ¿ z d ... y t Ý • U k ñ Y ‰ À ‘ Û • Ž ï ... ož
ò ç ¥ † ^ ñ Ô — Õ ¨ k © Ï 1 ë • 6 † ^ w Ê µ © Ï F å z ò ç ¥ † ^ ñ Ô — Õ ¨ g U
Õ Ñ y o F å † ^ t 6 ¨ U g ¥ — Õ k ô Ðü g write [memory] x X ž ¥ — Õ 9 Ì t ú h k
é © Ï 1 ¤ | © k } 1 ¢ ù F å ‘ 9 ó • o F å † ^ /config.text k w ÿ G ï › ‹ ü g , • q
•ož

o¬ F å †o- 1 y Y P 8 ò ~ Ú — Õ ‘ © Ï F å y

```
5 X L M L H  Z U L W H
% X L O G L Q J  F R Q I L J X U D W L R Q
> 2 . @
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3 LINE

3.1 absolute-timeout

— å ¿ è Í + Ý ž ž •ož
absolute-timeout minutes

Ê Ö © Ï ó • — åož
no absolute-timeout

o¬ @ ƒ ª ¢o-

@ ƒ	T
minutes	¢ ù ¿ è Í + Ý ž ã U ƒ k H › 8 <0~60>ož

o¬ Þ . F åo- — Í + Ý ž • • òož

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- — å ¿ è Í + Ý ž ž • k Q } ž •%² ñ k ’ ï © k ¨ q • Ä € k ¿ è C k • •ož ¿ è • • ù k U P Ä €
/ 1 ß þ • ž • y

3.2 access-class

* ACL ¡ gIPv4 h O ò Ä € £ož

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

H ƒ ACL ¡ gIPV4 h O ò Ä € £ož

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
access-list-number	ACL Ú Z kU F 8 y IP ö Õ ACL(1-99 k1300-1999) zIP ý J ACL(100-199 k 2000-2699)ož
access-list-name	ACL d fož

in }òÐÒ Û É$N 4d fdžõœ'DàV@–fùà

-B>409E5062B187 0 Td 550B46>-41E 0 Tc <036B>Tj /TT0 1 Tf 90.0013 Tc 2.d [(13)5-2699) k

3.3 accounting commands

• o line ¿ è x X t “ Ã ož

accounting commands level { default | list-name }

H ƒ x X t “ Ã ož

no accounting commands level

o¬ @ ƒ ª ¢o-

@ ƒ	T
level	“ Ã x X ´ ð k 8 0~15 k Ð „ ´ ð x X ü g ž k ¬ } “ £ ’ Îož
default	ó • • š • c ç n dož
list-name	U # • c ç n dož

o¬ Þ . F åo- ¼ { ¿ è “ Ã ož

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- AAA • š È ` … k ¯ F å AAA x X “ Ã • c e k Ç • ¨ ¬ } g x X “ Ã Ä € ¿ è ož

o¬ F å †o- 1 y • o Vty 1 ¿ è x X t “ Ã k } L “ Ã x X ´ ð 15 ´ož

```
5XLMLH FRQILJ DDD QHZ PRGHO
5XLMLH FRQILJ DDD DFFRXQWLQJ FRPPDQGV GHIDXOW VWDUW VWRS
5XLMLH FRQILJ OLQH YW\
5XLMLH FRQILJ OLQH DFFRXQWLQJ FRPPDQGV GHIDXOW
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.4 accounting exec

• o line ¿ è ï ˜ | t “ Ã ož

accounting exec { default | list-name }

H ƒ Exec “ Ã ož

no accounting exec

o¬ @ ƒ ª ¢o-

@ ƒ	T
default	ó • • š • c ç n dož
list-name	U # • c ç n dož

ascii-value	¬ t Ä € k ¢ ½ p … + • ASCII › k H › 8 <0~127> ož

o¬ Þ . F åo- Ä € k ¢ ¬ t … › ñ(CR kASCII › 0x0D)ož

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç ¢ ù ¿ è — å 4 # +(autoselect) k + • ¬ t Ä € k ¢ ½ p … · À H © Ï Þ . › õ Ä |ož

o¬ F å †o- 1 y — å O ò V M + • Ä € ¬ t … Á ` p Ctrl+Yož

```
5XLMLH FRQILJ OLQH FRQVROH
5XLMLH FRQILJ OLQH DFWLYDWLRQ FKDUDFWHU
5XLMLH FRQILJ OLQH HQG
5XLMLH H[LW

3UHVV &75/ \ WR JHW VWDUWHG

5XLMLH!
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.6 authorization commands

• o ¿ è x X I Ó ož
authorization commands level { default | list-name }

H *f* x X I Ó ož
no authorization commands level

o¬ @ *f* ª ¢o-

@ *f*	T
level	} g I Ó x X ´ ð k 8 0~15 k Ð „ ´ ð x X ¬ } I Ó * e õ ü gož
default	ó • • š • c ç n dož
list-name	U # • c ç n dož

o¬ Þ . F åo- ¼ { x X I Ó ož

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- AAA • š È ` … k ¯ F å AAA x X I Ó • c e k Ç • ¨ ¬ } g x X I Ó Ä € ¿ è ož

o¬ F å †o- 1 y + Vty 1 ¿ è ï ü g 15 ´ x X g I Óož

```
5XLMLH FRQILJ DDD QHZ PRGHO
5XLMLH FRQILJ DDD DXWKRUL]DWLRQ FRPPDQGV GHIDXOW JURXS WD
5XLMLH FRQILJ OLQH YW\
5XLMLH FRQILJ OLQH DXWKRUL]DWLRQ FRPPDQGV GHIDXOW
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.7 authorization exec

• o ¿ è Exec I Ó ož

authorization exec { default | list-name }

H ƒ Exec I Ó ož

no authorization exec

o¬ @ ƒ ª ¢o-

@ ƒ	T
default	ó • • š • c ç n dož
list-name	U # • c ç n dož

o¬ Þ . F åo- ¼ { Exec I Ó ož

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- AAA • š È ` … k ¯ F å AAA Exc I Ó • c e k Ç • ¨ ¬ } g Exec I Ó Ä € ¿ è ož

o¬ F å †o- 1 y + Vty 1 ¿ è g Exec I Óož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.8 autocommand

• o line ¿ è x X ü g ož
autocommand autocommand-string

W 2 x X ü g ož
no autocommand

o¬ @ ƒ ª ¢o-

@ ƒ	T
autocommand-string	1 ü g x X gož

o¬ Þ . F åo- W 2 ¨ ¿ è autocommand ož

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- autocommand o • • © ï Y+ Ä € • ” k* ‘ 5 M — Õ • y N e kÇ * autocommand 6
Telnet x X i £ 6 Ñ ê ñ * autocommand x X B ± 6 Â 9 • Ä € Æ ož

o¬ F å †o- 1 y ¨ line vty 0 • o autocommand w g Nož

```
5 X L M L H  F R Q I L J  O L Q H  Y W \
5 X L M L H  F R Q I L J  O L Q H  D X W R F R P P D Q G  W H O Q H W
```

```
  + OLQH YWÜ Nkò y
7U\LQJ

5XLMLH VKRZ XVHUV
/LQH          8VHU        +RVW V          ,GOH       /RFDWLRQ

    FRQ                  LGOH
    YW\                  LGOH
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.9 clear line

Ž ” ¿ è N Ù Áož

clear line { console line-num | vty line-num | line-num }

o¬ @ ƒ ª ¢o-

@ ƒ	T
console	Ž ” O ò V ¿ è N Ù Áož
vty	Ž ” Z Ä € ¿ è N Ù Áož
line-num	Ž ” line ¿ èož

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- … clear line x X Ž ” ¿ è N Ù Á k 1 k ò • •] Æ N Ä €ož w 1 ¿ è Ê Ö ñ Ì) Ù Á k U Y M • • y Ä € Nož

o¬ F å †o- 1 y Ž ” LINE VTY 13 N Ù Á k ò ç ¥ VTY] Æ Ä ï € g † ò Telneto•SSH ˆ h N k ¢ k é k y ö • • Nož

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.10 databits

— å ‘ 5 ¿ è ¨ v * ’ % ” ? … ƒ G y ƒ Oož
databits bit

Ê Ö © Ï Þ . — åož
no databits

o¬ @ ƒ ª ¢o-

@ ƒ	T
bit	? … ƒ G y k H › 8 <5~8>ož

o¬ Þ . F åo- © Ï — å ‘ 5 ¿ è v * ’ % ” ƒ G y 8ož

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ‘ 5 ¿ è — Õ(ò ‘ 5 M k AUX M ˆ ˆ) ¨ v * ’ % ” D ÿ k û à 7 ƒ G y < ò ç û à D ÿ k < 6 ƒ G y 7ož ò ç Z Ä D ÿ û à k < 6 ƒ G y 8ož ƒ G y 5 ê ñ 6 Õ Ñ k Q Ä ¨ û ï — Õ õ k Ä • k w Æ o … ož

o¬ F å †o- 1 y ¨ O ò V M + • ‘ 5 ¿ è — å ¿ v * ’ % ” ƒ G y 7ož

```
5XLMLH FRQILJ OLQH FRQVROH
5XLMLH FRQILJ OLQH GDWDELWV
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.11 disconnect-character

— å • • Ä € Æ N ½ pož
disconnect-character ascii-value

Ê Ö ó • Þ . — åož
no disconnect-character

o¬ @ ƒ ª ¢o-	@ ƒ	T

Ê Ö © Ï Þ . — åož
no escape-character

o¬ @ ƒ ª ¢o-

@ ƒ	T
escape-value	ï # ß … ASCII A + • ò › k H › 8 0-255ož

o¬ Þ . F åo- Þ . Õ Ñ k¿ è] Æ — å ß … w ¿ escape-value › 30 k- < © Ctrl+^(Á ` p Ctrl+Shift+6)ož

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç — å 4 escape-character escape-value x X k ï < U Y … escape-value + • Á ` p À e ¬ N 5 p
µ x k < U Y • ¢ ù k ¢ › ñ ë • ¥ k ¢ = ÷ k ¢ >ož

o¬ F å †o- 1 y — å Vty 0 ¿ è ß … 23(+ • Á ` p (Ctrl+w))ož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.13 exec

ª • line ¿ è µ x X g µož
exec

’ ò line ¿ è µ x X g µož
no exec

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- Þ . ª • ¿ è µ x X g µož

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- 3 ª • line ¿ è µ x X g µ kU Y F å no exec ké ï £ ž * ñ F å ¿ è µ x X g µ k ò © * ¿ U Ì ’ ò ¿ è µ x X g µož

o¬ F å †o- 1 y ’ ò 1 ¿ è µ x X g µož

```
5XLMLH FRQILJ  OLQH YW\
5XLMLH FRQILJ OLQH  QR H[HF
5XLMLH  VKRZ XVHUV
/LQH          8VHU       +RVW V          ,GOH      /RFDWLRQ

    FRQ                 LGOH
    YW\                 LGOH
    YW\                 LGOH
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.14 exec-character-bits

— å ‘ 5 ¿ è x X g Ô ò(EXEC) … Ú A • ”ož
exec-character-bits { 7 | 8 }

Ê Ö © Ï Þ . — åož
no exec-character-bits

o¬ @ ƒ ª ¢o-

@ ƒ	T
7	# + 7 y … ¤ ` • x X g Ô ò … ¤ `ož
8	# + ¶ 8 y … ¤ ` • x X g Ô ò … ¤ `ož

o¬ Þ . F åo- © Ï # + ¶ 8 y … ¤ ` • x X g Ô ò … ¤ `ož

o¬ x X % ”o- LINE F å % ”

flowcontrol) k - f $ F v O k ... F ^ Û gož + 9 ÷ v O k © Ï Þ . Ä 2 o ... ã ð © Ctrl+S(XOFF k ASCII › 19) y Ctrl+Q(XON k ASCII › 17) k © Ï - U ˆ x X stop-character o• start-character Û — å [ož

o¬ F å †o- 1 y ¨ O ò V M + • ‘ 5 ¿ è k — å ¿ v O % ” ÷ v Oož

```
5XLMLH FRQILJ OLQH FRQVROH
5XLMLH FRQILJ OLQH IORZFRQWURO VRIWZDUH
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.16 history

• o line ¿ è 7 W x X “ £ k ê ñ F å line ¿ è 7 W x X “ £ Ú) ƒož
history [size size]

H ƒ line ¿ è 7 W x X “ £ ož
no history

Ê Ö line ¿ è 7 W x X “ £ Ú) ƒ
no history size

o¬ @ ƒ ª ¢o-

@ ƒ	T
size size	Ú) ƒ k H › 8 y0~256ož

o¬ Þ . F åo- Þ . Õ Ñ • o 7 W x X “ £ k Â Ý 7 W x X “ £ Ú) ƒ 10

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ ... 6 -o- -

o¬ F å †o- 1 y F å 0-5 line ¿ è 7 W “ £ Ú) ƒ 20ož

```
5XLMLH FRQILJ OLQH YW\
```

```
5XLMLH FRQILJ OLQH KLVWRU\ VL]H
```

2 y ¼ { 0-5 line ¿ è 7 W “ £ ož

```
5XLMLH FRQILJ OLQH YW\
5XLMLH FRQILJ OLQH QR KLVWRU\
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.17 length

— å 6 ¿ è Ä € % I Â Ý g ƒož
length screen-length

Ê Ö Þ . — åož
no length

o¬ @ ƒ ª ¢o-

@ ƒ	T
screen-ength	g ä › k H › 8 0-512ož

o¬ Þ . F åo- Þ . Õ Ñ k % I Â Ý g ƒ 24 gož

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y — å 6 ¿ è % I Â Ý g ƒ 10 gož

```
5XLMLH FRQILJ OLQH OHQJWK
```

o¬ à • co- -

o¬ U P ’ Îo- -

× 5 ¢ ù U Y … VTY N ƒ)ož

no line vty line-number

o¬ @ ƒ ª ¢o-

@ ƒ	T
line-number	VTY N ƒ) k 8 y0~35 ož

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y 1 U VTY N ƒ) Í ñ 20 k U VTY Ú Z 8 0-19ož

5 X L M L H F R Q I L J O L Q H Y W \

2 y 1 U VTY N ƒ) × 5 ñ 10 k U VTY Ú Z 8 0-9ož

5 X L M L H F R Q I L J Q R O L Q H Y W \

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.20 location

— å 6 ¿ è y å T ož

location location

Ê Ö © Ï Þ . — åož

no location

o¬ @ ƒ ª ¢o-

@ ƒ	T
location	¢ ù ¿ è y å T ož

o¬ Þ . F åo- -

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y — å 6 ¿ è y å T Swtich’s Line Vty 0ož

5 X L M L H F R Q I L J O L Q H Y W \
5 X L M L H F R Q I L J O L Q H O V R F D Q W H R Q W \ 6 Z W L F K’

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.21 monitor

u 4 ¨ Ä € ø • ™ º ª Pož
monitor

H ƒ ¨ Ä € ø • ™ º ª Pož
no monitor

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- -

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y u 4 0-5 line ¿ è Ä € ø - ™ ºož

```
5XLMLH FRQILJ  OLQH YW\
5XLMLH FRQILJ OLQH  PRQLWRU
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.22 parity

— å ‘ 5 ¿ è û à yož

parity { even | none | odd }

Ê Ö © Ï Þ . — åož

no parity

o¬ @ ƒ ª ¢o-

@ ƒ	T
even	¢ û àož
none	— û à
odd	è û à

o¬ Þ . F åo- ‘ 5 ¿ è Ô 9 — û à • ”ož

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- … î ? — Õ(ò ‘ 5 Mo• O ò V M ˆ) * ’ ž ˜ k o } L — å%² À } û à yož

o¬ F å †o- 1 y ¨ O ò V M + • ‘ 5 ¿ è k — å ¿ ¢ û àož

```
5XLMLH FRQILJ  OLQH FRQVROH
5XLMLH FRQILJ OLQH  SDULW\ HYHQ
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.23 privilege level

F å line ¿ è £ ´ ðož
privilege level level

Ê Ö line ¿ è £ ´ ðož
no privilege level

o¬ @ ƒ ª ¢o-

@ ƒ	T
level	Ó ’ ´ ð k H › 8 0-15ož

o¬ Þ . F åo- Þ . Õ Ñ kprivilege level 1ož

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y 1 0-4 VTY line ¿ è £ Ó ’ ´ ð — å 14ož

```
5XLMLH FRQILJ OLQH YW\
5XLMLH FRQILJ OLQH SULYLOHJH OHYHO
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.24 show history

ª P ¢ ù line ¿ è 7 W “ £ x Xož

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 console M F å ’ Îož

```
5XLMLH  VKRZ OLQH FRQVROH
&21    7\SH   VSHHG   2YHUUXQV
       &21
/LQH   /RFDWLRQ     7\SH   YW
/HQJWK    OLQHV :LGWK    FROXPQV
6SHFLDO &KDUV (VFDSH 'LVFRQQHFW $FWLYDWLRQ
           AA[    QRQH      A0
7LPHRXWV      ,GOH (;(&   ,GOH 6HVVLRQ
           QHYHU      QHYHU
+LVWRU\ LV HQDEOHG  KLVWRU\ VL]H LV
7RWDO LQSXW      E\WHV
7RWDO RXWSXW       E\WHV
'DWD RYHUIORZ      E\WHV
VWRS U[ LQWHUUXSW    WLPHV
```

< † K y

<	ª ¢
CON	Ä € • º kCON n P O ò Vož0 n P Ä € ¿ è Ú Z k Ú Z ù µ * Z n P ¢ ù 3 ¨ … Ä €ož
Type	Ä € • º k , CONo•AUXo•TTYo•VTY ˆož
speed	‘ 5 , äož
Overruns	Ü N v overrun j ¨ ƒ O Ï ‹ ›ož
Line 0	Ä € ¿ è Ú Zož
Location: ""	¿ è location — åož
Type: "vt100"	¿ è Ã Ä € ö Õož
Special Chars	Ä € Ô : … k , Escape …o•Disconnect … y Activation …ož
Timeouts	Ä € Ý ž ž • knever n P K Ý žož
History	7 W x X “ £ • ¼ Y C Â Ý Ú) ƒož
Total input	R Ü N v ƒ G O Ï ‹ ›ož
Total output	G ñ Ü ƒ G O Ï ‹ ›ož
Data overflow	N v œ ß ƒ G O Ï ‹ ›ož
stop rx interrupt	Ü RX • ƒ O Ï ‹ ›ož

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

3.26 show privilege

ª P ¢ ù line ¿ è Ó ' ´ ðož
show privilege

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 1

o¬ ... 6 -o- -

o¬ F å †o- ª P ¢ ù line ¿ è Ó ' ´ ðož

```
5XLMLH VKRZ SULYLOHJH
&XUUHQW SULYLOHJH OHYHO LV
```

o¬ U P ' Îo- -

o¬ u V ª ¢o- -

3.27 show users

ª P ¿ è £ ï ' Îož
show users [all]

o¬ @ ƒ ª ¢o-

@ ƒ	T
all	ª P ñ Ä U £ ¿ è ï ' Î k m ¢ ù] £ ¿ è ï ' Î k Y C Ì £ ¿ è ï ' Îož

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ ... 6 -o- -

o¬ F å †o- 1 y ª P ¢ ù] £ ¿ è ï ' Îož

```
5XLMLH VKRZ XVHUV
```

/LQH 8VHU +RVW V ,GOH /RFDWLRQ

o¬ F å †o- 1 y — å 6 ¿ è f Ô ä 115200ož

5 X L M L H F R Q I L J O L Q H V S H H G

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.29 start-character

— å ‘ 5 ¿ è ÷ v O o ...ož

o¬ u V ª ¢o- -

3.30 stopbits

— å ¨ ‘ 5 ¿ è n ÿ ? - 2 y ƒož

stopbits { 1 | 2 }

Ê Ö © Ï Þ . — åož

no stopbits

o¬ @ ƒ ª ¢o-

@ ƒ	T
1	1 2 yož
2	2 2 yož

o¬ Þ . F åo- ‘ 5 ¿ è 2 y — å 2

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ‘ 5 ¿ è , ‘ 5 — Õ(ò n Ï+ Ä €o• ² ò † ² ˜ Modem ˆ) * ’ o o ¬ } — å * ’ 2 yož

o¬ F å †o- 1 y ¨ O ò V M + • ‘ 5 ¿ è k — å ¿ 2 y 1ož

```
5XLMLH FRQILJ OLQH FRQVROH
5XLMLH FRQILJ OLQH VWRSELWV
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.31 stop-character

— å ‘ 5 ¿ è ÷ v O Ä 2 …ož

stop-character ascii-value

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y ¨ ¢ ù Ä € — å ¿ v * ’ % ” ƒ G y 7ož

5 X L M L H W H U P L Q D O G D W D E L W V

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.33 terminal escape-character

— å ¢ ù Ä € ß …ož
terminal escape-character escape-value

Ê Ö ¢ ù Ä € © Ï Þ . — åož
terminal no escape-character

o¬ @ ƒ ª ¢o-

@ ƒ	T
escape-value	ï # ß … ASCII A + • ò › k H › 8 0-255ož

o¬ Þ . F åo- Þ . Õ Ñ k¿ è] Æ — å ß … w ¿ escape-value › 30 k- < © Ctrl+^(Á ` p Ctrl+Shift+6)ož

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç — å 4 escape-character escape-value x X k ï < U Y … escape-value + • Á ` p À e ¬ N 5 p
µ x k < U Y • ¢ ù k ¢ › ñ ë • ¥ k ¢ = ÷ k ¢ >ož

o¬ F å †o- 1 y — å ¢ ù Ä € ß … 23(+ • Á ` p (Ctrl+w))ož

5 X L M L H W H U P L Q D O H V F D S H F K D U D F W H U

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.34 terminal exec-character-bits

— å ¢ ù Ä € x X g Ô ò(EXEC) … Ú A • ”ož
terminal exec-character-bits { 7 | 8 }

Ê Ö © Ï Þ . — åož
terminal no exec-character-bits

o¬ @ ƒ ª ¢o-

@ ƒ	T
7	# + 7 y … ¤ ` • x X g Ô ò … ¤ `ož
8	# + ¶ 8 y … ¤ ` • x X g Ô ò … ¤ `ož

o¬ Þ . F åo- © Ï # + ¶ 8 y … ¤ ` • x X g Ô ò … ¤ `ož

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç } ¨ x X g ÿ µ N ê ñ ª P N o • £ ¥ ê ñ ¿ ¢ Ž … k · À G ‘ — återminal exec-character-bits 8ož

o¬ F å †o- 1 y ¨ ¢ ù Ä € — å ¿ x X g Ô ò … Ú A • ” 7bitož

5 X L M L H W H U P L Q D O H [H F F K D U D F W H U E L W V

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.35 terminal flowcontrol

— å ¢ ù Ä € v O % ”ož

terminal no history

¨ ¢ ù Ä € Ê Ö line ¿ è 7 W x X “ £ Ú) ƒ
terminal no history size

o¬ @ ƒ ª ¢o-

@ ƒ	T
size size	Ú) ƒ k H › 8 y0~256ož

o¬ Þ . F åo- Þ . Õ Ñ • o 7 W x X “ £ k Â Ý 7 W x X “ £ Ú) ƒ 10

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y — å ¢ ù Ä € line ¿ è 7 W “ £ Ú) ƒ 20ož
5 X L M L H W H U P L Q D O K L V W R U \ V L] H

2 y ¼ { ¢ ù Ä € line ¿ è 7 W “ £ ož
5 X L M L H W H U P L Q D O Q R K L V W R U \

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.37 terminal length

— å ¢ ù Ä € % I Â Ý g ƒož
terminal length screen-length

Ê Ö ¢ ù Ä € Þ . — åož
terminal no length

o¬ @ ƒ ª ¢o-

@ ƒ	T
screen-ength	g ä › k H › 8 0-512ož

o¬ u V ª ¢o- -

3.40 terminal speed

terminal no start-character

o¬ @ ƒ ª ¢o-

@ ƒ	T
ascii-value	‘ 5 ¿ è ÷ v O o … + • ASCII › k H › 8 <0~255> ož

o¬ Þ . F åo- ‘ 5 ¿ è ÷ v O o … Ctrl+Q(ASCII › 17)ož

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y ¨ ¢ ù Ä € — å ¿ ÷ v O o … Ctrl+Y(ASCII › 25)ož

5 X L M L H W H U P L Q D O V W D U W F K D U D F W H U

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.42 terminal stopbits

— å ¨ ¢ ù Ä € n ÿ ? - 2 y ƒož

terminal stopbits { 1 | 2 }

Ê Ö © Ï Þ . — åož

terminal no stopbits

o¬ @ ƒ ª ¢o-

@ ƒ	T
1	1 2 yož
2	2 2 yož

o¬ Þ . F åo- ‘ 5 ¿ è 2 y — å 2

o¬ x X % ”o- Ô Ó ï % ”

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.44 terminal terminal-type

— å ¢ ù Ä € % ' Ä € • ºož
terminal terminal-type terminal-type-string

Ê Ö © Ï Þ . — åož
terminal no terminal-type

o¬ @ ƒ ª ¢o-

@ ƒ	T
terminal-type-string	Ä € • º T … k ò vt100 kansi ˆ ˆož

o¬ Þ . F åo- © Ï — å ¿ è % ' Ä € • º vt100ož

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y — å ¢ ù Ä € % ' Ä € • º ansiož

5 X L M L H W H U P L Q D O W H U P L Q D O W \ S H D Q V L

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.45 terminal width

F å ¢ ù Ä € % g Â Ý ç ƒ k /%² g ! †ož

terminal width screen-width

Ê Ö ¢ ù Ä € g !ož
terminal no width

o¬ @ ƒ ª ¢o-

@ ƒ	T
screen-width	g ! › k H › 8 0-256ož

o¬ Þ . F åo- Þ . Õ Ñ k % g Â Ý ç ƒ 79 çož

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y — å ¢ ù Ä € % g Â Ý ç ƒ 10 çož
5 X L M L H W H U P L Q D O Z L G W K

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.46 terminal-type

— å ‘ 5 ¿ è Ä € % ' Ä € • ºož
terminal-type terminal-type-string

Ê Ö © Ï Þ . — åož
no terminal-type

o¬ @ ƒ ª ¢o-

@ ƒ	T
terminal-type-string	Ä € • º T … k ò vt100 kansi ˆ ˆož

o¬ Þ . F åo- © Ï — å ¿ è % ' Ä € • º vt100ož

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ï - U Y … x X terminal-type vt100 Û Ê Ö © Ï ó • ¿ è Ä € % ' Ä € • ºož ¨ g Telnet N ˆ « ` k ï U Y ÿ G ¬ } … Î x X Û — å ¿ è Ä € % ' Ä € • ºož ¿ è g Telnet N ž ˜ k < k … ¥ Ä € • º Û g Ä € • º # Œ(Telnet # ¾ # Œ Z 0x18) k ¦ Â Ä U Y @ ð RFC 854ož

o¬ F å †o- 1 y — å O ò V M + • ‘ 5 ¿ è Ä € % ' Ä € • º ansiož

```
5XLMLH FRQILJ OLQH FRQVROH
5XLMLH FRQILJ OLQH WHUPLQDO W\SH DQVL
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.47 timeout login

— åline ¿ è £ • š Ý ž ž •ož
timeout login response seconds

Ê Ö ó • line ¿ è £ • š ž •ož
no timeout login response

o¬ @ ƒ ª ¢o-

@ ƒ	T
response	Line ¿ è ˆ - ï ÿ µ ` ~ ’ Î ž •ož
seconds	Ý ž ž • k H › 8 1-300 k % y aož

o¬ Þ . F åo- • š ˆ - ï ÿ µ Ý ž ž • k ó • 30 a

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- F å 0-5 line Vty ¿ è £ • š Ý ž • 300 aož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.48 transport input

6 line ¿ è U Y * ’ # ‘ož
transport input { all | ssh | telnet | none }

Ê Ö line ¿ è U Y * ’ # ‘ož
no transport input { all | ssh | telnet | none }

o¬ @ ƒ ª ¢o-

@ ƒ	T
all	ª • ñ Ä # ‘ož
ssh	ª • ssh # ‘ož
telenet	ª • telnet # ‘ož
none	` ~ # ‘ C ª •ož

o¬ Þ . F åo- Þ . Õ Ñ k U Y * ’ # ‘ all k / ssh y # “ ‘ k Qož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.49 vacant-message

F å line ¿ è ß £ U P ’ Îož
vacant-message [c message c]

H ƒ line ¿ è ß £ U P ’ Îož
no vacant-message

o¬ @ ƒ ª ¢o-

@ ƒ	T
c	ß £ U P ’ Î ã œ … k ß £ U P ’ Î Ä • ª • ß ë • œ …ož
message	ß £ U P ’ Îož

o¬ Þ . F åo- -

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- … ¥ x X U Y F å ß £ U P ’ Î k ò ç p µ È Ø ã œ … e Q À ÿ µ … k é ? … 1 t © Ï ’ož
¢ ï ß £ — Õ ž k v M k U P ¢ ù ¿ è ß £ U P ’ Îož

o¬ F å †o- 1 y F å line ¿ è ß £ U P ’ Î ß i H — Õož
5 X L M L H F R Q I L J O L Q H Y D F D Q W P H V V D J H # ß i H — Õ #

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.50 width

4 File System

4.1 cd

¾ w ¢ ù è ¬ ê ñ † ^ © Ïož

cd [filesystem:] [directory]

o¬ @ ƒ ª ¢o-

@ ƒ	T
filesystem:	† ^ © Ï url k e µ %² È Z k U † ^ © Ï , yflash: , , tmp: ož
directory	

dst-url	/ ¾ •) † ^ URLož) † ^ U Y ¨ Î ª ê iož

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.5 erase

s ” Z Ä † ^ © Ï — Õ ê † ^ož

erase filesystem:

o¬ @ ƒ ª ¢o-

@ ƒ	T
filesystem:	† ^ © Ï d f k e µ æ%² È Z

o¬ Þ . F åo-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- -

o¬ F å †o- -

o¬ à • co- erase $ e dir x X ò 0 † ^ ’ Î

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.6 file

ª P%² † ^ ’ Îož

file [filesystem:] file-url

o¬ @ ƒ ª ¢o-

@ ƒ	T
filesystem:	† ^ © Ï url k e µ %² È Z k U † ^ © Ï , yflash: , tmp: ož
file-url	k è ¬ † ^ d k ò ç © Y / • ã k é n P Í + è ¬ k k é n P , + è ¬ož

o¬ Þ . F åo- ó • † ^ © Ï © flash:ož

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- -

o¬ F å †o- 1 y ª P gcc U ü g † ^ ’ Î y

```
5XLMLH ILOH IODVK JFF
 XVU ELQ JFF (/) ELW /6% H[HFXWDEOH ,QWHO YHUVLRQ 6<6
VKDUHG OLEV IRU *18 /LQX[ VWULSSHG
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.7 file prompt

6 U P ´ ðož

file prompt [noisy | quiet]

o¬ @ ƒ ª ¢o-

@ ƒ	T
noisy	ñ Ä † ^ q • g G •
quiet	â 5 U P

o¬ Þ . F åo- noisy

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- -

o¬ F å †o- 1 y “ w † ^ U P ´ ð noisy % ” y
5 X L M L H I L O H S U R P S W Q R L V \

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.8 mkdir

ë •%² •) £ož
mkdir [filesystem:] directory

o¬ @ ƒ ª ¢o- @ ƒ T
filesystem: † ^ © Ï url k e µ %² È Z k U † ^ © Ï , yflash , tmp: ož
directory è ¬ d k ò ç © Y • ã k é n P Í + è ¬ k k é n P , + è ¬ož

o¬ Þ . F åo- ó • † ^ © Ï © flash: k ò ç è ¬ d Z Ä 6 k é n P ¥ † ^ © Ï ÿ è ¬ož

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- -

o¬ F å †o- 1 y ë •%² d newdir) £ y
5 X L M L H G L U
' L U H F W R U \ R I I O D V K
U Z - D Q I V W D E
U Z - D Q U F G
U Z - D Q U S P G E
I L O H V G L U H F W R U L H V
E \ W H V W R W D O E \ W H V I U H H

```
5XLMLH PNGLU QHZGLU
&UHDWHG GLU IODVK  QHZGLU
5XLMLH GLU
'LUHFWRU\ RI IODVK
    UZ            -DQ              IVWDE
    UZ            -DQ              UF G
    UZ            -DQ              USPGE
   GUZ             -DQ              QHZGLU
  ILOHV    GLUHFWRULHV
         E\WHV WRWDO          E\WHV IUHH
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.9 more

ª P%² † ^ Ä ož

more [/ ascii | /binary] [filesystem:] file-url

o¬ @ ƒ ª ¢o-

@ ƒ	T
/ascii	Y ASCII ”ª P † ^ Ä
/binary	Y 16 ò/ † Î ”ª P † ^ Ä
filesystem:	† ^ © Ï url k e µ %² È Z k U † ^ © Ï , yflash, tmp: ož
file-url	è ¬ d k ò ç © Y • ã k é n P Í + è ¬ k k é n P , + è ¬ož

o¬ Þ . F åo- Þ . Y † ^ = Ä ”Û ª P

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- -

o¬ F å †o- 1 y ª P flash M & ÿ) £ netconfig † ^ Ä y

```
5XLMLH PRUH IODVK  QHWFRQILJ
```

o¬ … 6 -o- -

o¬ F å †o- -

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.11 rename

g %² ë Ä † ^ ê † ^ æož

rename src-url dst-url

o¬ @ ƒ ª ¢o-

@ ƒ	T
src-url	- g è ¬ y † ^ d
dst-url	N v † ^ è ¬ y † ^ d

o¬ Þ . F åo- -

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- -

o¬ F å †o- 1 y 1 flash M & ÿ) £ fstab

```
5XLMLH GLU
'LUHFWRU\ RI IODVK
    UZ          -DQ          QHZ IVWDE
    UZ          -DQ          UF G
    UZ          -DQ          USPGE
 ILOHV    GLUHFWRULHV
        E\WHV WRWDO          E\WHV IUHH
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.12 rmdir

í ”%² ë Ä q) £ož

rmdir [filesystem:] directory

o¬ @ ƒ ª ¢o-

@ ƒ	T
filesystem:	† ^ © Ï url k e µ %² È Z k U † ^ © Ï , yflash: , tmp: ož
directory	

o¬ Þ . F åo- ó • † ^ © Ï © flash: ož

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- -

o¬ F å †o- 1 yrmdir x X í ” ë Ä test q) £ y

```
5XLMLH PNGLU QHZGLU
5XLMLH GLU
'LUHFWRU\ RI IODVK
    UZ          -DQ          IVWDE
    UZ          -DQ          UF G
    UZ          -DQ          USPGE
```

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.14 show file systems

ª P † ^ © Ï , ¼ ’ Îož

show file systems

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- ï % ”o• Ô Ó % ”o• ¶ B % ”o• N M % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

o¬ F å †o- 1 y ª P ñ Ä] 5 ú † ^ © Ï ’ Î y

```
5XLMLH VKRZ ILOH V\VWHPV
  6L]H .%       )UHH .%     7\SH   )ODJV  3UHIL[HV
      1$          1$       UDP     UZ  WPS
      1$          1$   QHWZRUN     UZ  WIWS
                          GLVN     UZ  IODVK
```

< † K y

<	ª ¢
Size(KB)	† ^ © Ï q • Ý 4 k % y KBož
Free(KB)	† ^ © Ï þ • q • k % y KBož
Type	† ^ © Ï • º
Flags	† ^ © Ï Ó ’ k Ä ò Ù _ y ro : Q ¯ wo: Q Ê rw: U ¯ Ê
Prefixes	† ^ © Ï ù Ö

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

4.15 show mount

ª P © Ï 5 ú ’ Îož

show mount

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- ï % ”o• Ô Ó % ”o• ¶ B % ”o• N M % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

o¬ F å †o- 1 y ª P © Ï 5 ú ’ Î y

```
5XLMLH VKRZ PRXQW
 GHY VGD RQ W\SH H[W UZ HUURUV UHPRXQW UR FRPPLW
SURF RQ SURF W\SH SURF UZ QRH[HF QRVXLG QRGHY
V\VIV RQ V\V W\SH V\VIV UZ QRH[HF QRVXLG QRGHY
IXVHFWO RQ V\V IV IXVH FRQQHFWLRQV W\SH IXVHFWO UZ
QRQH RQ V\V NHUQHO GHEXJ W\SH GHEXJIV UZ
QRQH RQ V\V NHUQHO VHFXULW\ W\SH VHFXULW\IV UZ
XGHY RQ GHY W\SH GHYWPSIV UZ PRGH
GHYSWV RQ GHY SWV W\SH GHYSWV UZ QRH[HF QRVXLG JLG PRGH
WPSIV RQ UXQ W\SH WPSIV UZ QRH[HF QRVXLG VL]H PRGH
QRQH RQ UXQ ORFN W\SH WPSIV UZ QRH[HF QRVXLG QRGHY VL]H
QRQH RQ UXQ VKP W\SH WPSIV UZ QRVXLG QRGHY
 GHY VGD RQ KDR VKDUH W\SH H[W UZ FRPPLW
ELQIPWBPLVF RQ SURF V\V IV ELQIPWBPLVF W\SH ELQIPWBPLVF UZ QR
```

< † K k Y †%² g † y

<	ª ¢
proc	5 ú › ª -
on	-
/proc	5 ú) ª -
type	-
proc	5 ú • º
(rw,noexec,nosuid,nodev)	5 ú K Å

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

4.16 tftp-client source

TFTP Client U Y Ç ï € › IP ê › N M ª - k … › N M IP ê 6 IP ª - Æ ˜ € IP ª - g * ’ož

tftp-client source {ip ip-address | interface}

o¬ à • co- 1 y … show run x X k U Y ò 0 tftp-client source ip192.168.23.236 F åož
2 y … show run x X k U Y ò 0 tftp-client source gigabitEthernet 0/0 F åož

o¬ U P ’ Îo- 1 y ò ç F å ip ª - ê ñ N M © Î ª ª - k é k U P j ¨ z ò ç © k é F å è k k ß ë ` ~ U Pož
2 y%² F å è k k ß ë ` ~ U Pož

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.17 tree

ª P%² ë Ä) £ † ^ ùož
tree [filesystem:] [directory]

o¬ @ ƒ ª ¢o-

@ ƒ	T
filesystem:	† ^ © Ï url k e µ %² È Z k U † ^ © Ï , yflash, tmp: ož
directory	è ¬ d k ò ç © Y • ã k é n P Í + è ¬ k k é n P , + è ¬ož

o¬ Þ . F åo- ó • † ^ © Ï © flash: ož

o¬ x X % ”o- ï % ”o• Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

o¬ F å †o- 1 y ª P flash:/echo µ † ^ ù y

```
5XLMLH WUHH IODVK HFKR
    FOLHQWBPRGXOH
    FOLHQWBXVHUVSDFH
    HFKRBFOL F
    HFKRBFOLHQW F
    HFKRBFOLHQW K
    HFKRBFOLHQW R
    HFKRBFOL R
    HFKRBIODJ K
    HFKR K
    HFKR NR
    HFKRBVHUYHU K
```

```
H[HFBVHWBHFKR K
H[HFBVKRZBHFKR K
0DNHILOH
PRGXOH
```

4.18 verify

‹ ‘o• ª Po• û à † ^ md5 ’ Î

verify [/md5 md5-value] filesystem: [file-url]

o¬ @ ƒ ª ¢o-

@ ƒ	T
/md5	‹ ‘ w ª P † ^ MD5 ›
md5-value	† ^ md5 › k 1 k y ‹ ‘ ß md5 › g A û
filesystem:	† ^ © Ï url k e µ %² È Z k U † ^ © Ï , yflash, tmp: ož
file-url	è ¬ d k ò ç © Y • ã k é n P Í + è ¬ k k é n P , + è ¬ož

o¬ Þ . F åo- ó • † ^ © Ï © flash: ož

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- -

o¬ F å †o- 1 y ‹ ‘ flash:/gcc md5 ’ Î y

```
5XLMLH YHULI\ IODVK JFF
 E GH GE DIIG E HI H H G F
```

2 y ‹ ‘ flash:/gcc md5 ’ Î w g A û y

```
5XLMLH YHULI\ PG E GH GE DIIG E HI H H G F IODVK JFF
 68&&(66 YHULI\LQJ IODVK JFF E GH GE DIIG E HI H H G F
5XLMLH YHULI\ PG E GH GE DIIG E HI H H G IODVK JFF
 (UURU YHULI\LQJ IODVK JFF
&RPSXWHG VLJQDWXUH E GH GE DIIG E HI H H G F
6XEPLWWHG VLJQDWXUH E GH GE DIIG E HI H H G
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

5 SYS

5.1 calendar set

— å © Ï F ^ ž •ož

calendar set { hour

```
5XLMLH  FDOHQGDU VHW
        87& )UL  0DU
```

a — / hour õ ô ¾ ¡ * “ m " ´ õ ô M - W Û & 0 ò • Ì ¨ ¢ ! ¨ 2 ‡ ¶ " h H N
µ ! Û & ¨ 2 18 | Û & e Ú ä Y q 3 2 r d

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

5.2 clock read-calendar

— å © Ï ÿ G F ^ ž • c 5 ÷ ^ ž •ož
clock read-calendar

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- -

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- -

o¬ ... 6 -o- * ¥ x X k © Ï k ÿ G — Õ ž o• × X ž — å Õ Ñ k 1 ¢ ù F ^ © Ï ž • ÿ è , • ÷ ^ ž •ož

o¬ F å †o- 1 y F å © Ï ÿ G F ^ ž • c 5 ÷ ^ ž •ož

```
5XLMLH  FORFN UHDG FDOHQGDU
6HW WKH V\VWHP FORFN IURP WKH KDUGZDUH WLPH
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

5.3 clock set

— å © Ï ÷ ^ ž •ož

clock set { hour [:minute [:second]] } [month [day [year]]]

o¬ @ ƒ ª ¢o-

@ ƒ	T
hour [:minute [:second]]	— å © Ï ÷ ^ ž • k ž y ã y a k Q k M å 6 4 ž k ã U k a k . B ã ... © Ï ¢ ù — å ›ož
month	— å Ã a k H › 8 1~12ož
day	— å ™ Ê k H › 8 1~31 k 3 ¢ Ã ¨ %² Þ k é ™ Ê k g e P ‘ož
year	— å v a k H › 8 1970~2069ož

o¬ Þ . F åo- -

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- -

o¬ ... 6 -o- 1. ž • @ ƒ · À } ÿ µ k À e 7 Á Ã a month k ™ Ê day k v year @ ƒ ¿ ~ k ÿ G ¬ } U . e µ @ ƒož t . @ ƒ k © Ï ¢ ù — å ›ož

H " ò • , Ä (Ñ ¨ · q 2012-02-29 09:33:44 r e Ú ä Ì ¨ — c Q I [â - ¶ Û & a — clock set 12 5 • ò • ¨ · - q 2012-05-29 12:33:44 r

3. ò ç ÿ µ day @ ƒ ¨ 1~31 Ä k x ¥ Ã ¨ %² Þ k é ™ Ê k ª e P ‘ož

H " 2012 - 2 e k 29 Ÿ / • " t Y 2 e 31 clock set 11:30 2 31 2012 • , Ä V o ¦ f Ÿ ò • , Ä (Ñ ¨ · • q 2012-03-02 11:30:23 r d

o¬ F å †o- 1 y 1 ¢ ù © Ï ÷ ^ ž • g • — 2012-02-01 18:23:06 h k ¾ w 6 4 ž k ¿ @ ƒ Jož

```
5XLMLH FORFN VHW
        &67 )UL 0DU
```

2 y 1 ¢ ù © Ï ÷ ^ ž • g • — 2012-02-01 18:23:06 h k ¾ w 6 4 ž 42 ã U k ¿ @ ƒ Jož

```
5XLMLH FORFN VHW
        &67 )UL 0DU
```

3 y 1 ¢ ù © Ï ÷ ^ ž • g • — 2012-02-01 18:23:06 h k k ¾ w Ã a y ™ Ê 3 Ã 2 ™ k ¿ @ ƒ Jož

```
5XLMLH FORFN VHW
```

&67)UL 0DU

a — / hour õô¾¡*“m "´ õôM -W Û&0ò•Ì¨¢! ¨2 ‡¶ "hHN
µ!Û&¨2 18 |Û&eÚä Yq 32rd

hours-offset	A ö Õ ž • U ù 4 ž ƒ ožH › 8 0~12ož ª • × X ž U ù ž • — å 00:00ož
minutes-offset	A ö Õ ž • U ù ã U ƒ ož H › 8 0~59ož 3 hours-offset] Æ — å 0 k é ª • minutes-offset - — å 0

o¬ Þ . F åo- -

o¬ x X % ”o- F å % ”

o¬ Þ . ´ ðo- -

o¬ … 6 -o- -

o¬ F å †o- 1 y ò ç , D { ¨%² ª • k ž d f ABC k ö Õ ž • A UTC ž • ½ 8:15 k / GMT+08:15ož × X ž ž • < R 2 Ã †%² ¤ Ê ¹ ñ 5 Ã † ¤ Ê 1 k × X ž ž < A ö Õ ž • U ù 01:20ož é × X ž ž < ž • A UTC ž • ½ 09:35 k x ³ × X ž ž < ž • Q A UTC ž • ½ 08:15ož

```
5XLMLH FRQILJ  FORFN WLPH]RQH $%&
6HW WLPH ]RQH QDPH $%& *07
5XLMLH FRQILJ VKRZ FORFN
      $%& :HG )HE
5XLMLH FRQILJ VKRZ FDOHQGDU
      *07 :HG )HE

5XLMLH FRQILJ FORFN VXPPHU WLPH 7=$ VWDUW )HE VDW HQG 0D
 0D\          6<6 &/2&.83'$7( 6HW VXPPHU WLPH 7=$ IURP )HEUXDU\
72 0D\ WKH UG 0RQGD\ DW DKHDG KRXU PLQXWH
6HW VXPPHU WLPH 7=$ IURP )HEUXDU\ WKH VW 6DWXUGD\ DW 72 0D
 KRXU PLQXWH

5XLMLH VKRZ FORFN
      7=$ :HG )HE

 ò ç 1 ž • — å ³ × X ž Ê • k ž d f A ô E ›  $%&
5XLMLH FOR VHW
 -DQ          6<6 &/2&.83'$7( 6HW V\VWHP FORFN  $%& 6XQ -
6HW V\VWHP FORFN  $%& 6XQ -DQ
5XLMLH VKRZ FORFN
      $%& 6XQ -DQ
```

2 y J ó • × X ž ž < ž • A ö Õ ž • ½ 1 4 ž k U . ahead C ahead e µ @ ƒ ož † ò k — å × X ž R 4 Ã †%² ¤ Ê ™ Ö:n 2:00 Ü k 10 Ã Â e%² ¤ Ê ™ Ö:n 2:00 k A ö Õ ž • ½ 1 4 žož

```
5XLMLH FRQILJ  FOR VXPPHU WLPH 3'7 VWDUW $SULO  VXQGD\  HQG
 0D\  6<6  &/2&.83'$7( 6HW VXPPHU WLPH 3'7 IURP $SULO WKH V
WKH ODVW 6XQGD\ DW  DKHDG  KRXU
6HW VXPPHU WLPH 3'7 IURP $SULO WKH VW 6XQGD\ DW  72 2FWREHU
KRXU
```

3 y ¼ { × X žož

```
5XLMLH FRQILJ  QR FORFN VXPPHU WLPH
 -DQ  6<6  &/2&.83'$7( 6HW QR VXPPHU WLPH
6HW QR VXPPHU WLPH
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

5.5 clock timezone

— å ž ož

clock timezone [name hours-offset [minutes-offset]]

¼ { ž — åož

no clock timezone

o¬ @ ƒ ª ¢o-

@ ƒ	T
name	ž d f k Q [A~Z][a~z] k Ý 4 Ê — ’ òož d x † 3~31ož
hours-offset	ž [4 ž ›ož n P F ^ ž • UTC ž • ½ ê ã hours-offset *k* H › 8 [-12, 12] k ¿ ƒ n P A F ^ ž • ã k 3 ƒ n P A F ^ ž • ½ož

o¬ Þ . ´ ðo- -

o¬ … 6 -o- -

o¬ F å †o- 1 y — å ž d f CST k ÷ ^ ž • A F ^ ž • ½ 8 4 ž ...ož

```
5XLMLH FRQILJ  FORFN WLPH]RQH &67
6HW WLPH ]RQH QDPH  &67 *07

5XLMLH VKRZ FORFN
        &67 :HG 'HF
```

2 y — å ž d f TZA k ÷ ^ ž • A F ^ ž • ã 06:13ož

```
5XLMLH FRQILJ  FORFN WLPH]RQH 7=$
6HW WLPH ]RQH QDPH  7=$ *07
```

3 y ¼ { ž — åož

```
5XLMLH FRQILJ  QR FORFN WLPH]RQH
6HW QR FORFN WLPH]RQH
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

5.6 clock update-calendar

— å © Ï ÿ G ÷ ^ ž • c 5 F ^ ž •ož

clock update-calendar

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- -

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- -

ɵ¬ … T«@O úx X @ ð

ª P y — å O ò þ È CPU … ä Â ä J ¿ k w • o ! Oož
cpu high-watermark set [[up up-value] [down down-value]]

¼ { CPU … ä ! Oož
no cpu high-watermark set

Ê Ö Þ . F åož
default cpu high-watermark set

o¬ @ ƒ ª ¢o-

@ ƒ	T
up up-value	— å CPU … ä J ¿ k H › 8 1~99ož
down down-value	— å CPU … ä ‘ J ¿ k H › 8 1~99ož

o¬ Þ . F åo- CPU J ¿ ó • › J ¿ 85% k ‘ J ¿ 75%ož

o¬ x X % ”o- F å % ”

o¬ Þ . ´ ðo- -

o¬ … 6 -o- * — å CPU … ä Â ä J ¿ k w • o ! Oož ¢ © Ï ! y ñ CPU … ä Ý ß Â ä J ¿ ª • f 8 k 1 k ø - , • U P ’ Îož

o¬ F å †o- 1 y — å CPU J ¿ ó • › k 3 ! O ¼ { é • oož

```
5XLMLH FRQILJ GHIDXOW FSX KLJK ZDWHUPDUN VHW
5HVHW GHIDXOW FSX ZDWHUPDUN PRQLWRU
6HW V\VWHP FSX KLJK ZDWHUPDUN XS GRZQ
```

2 y ¼ { CPU J ¿ ! Oož CPU

```
2SHQ FSX ZDWHUPDUN PRQLWRU
6HW V\VWHP FSX KLJK ZDWHUPDUN XS GRZQ
```

4 ž k — å 4 CPU

```
7LPH 7KX -DQ
8VHG N
0D[LQXP PHPRU\ XVHUV IRU WKLV SHULRG
3URFHVV 1DPH    +ROGLQJ
WFSLS HOI
FOL PHPRU\
UJBV\VORJG

7LPH 7KX -DQ
8VHG N
0D[LQXP PHPRU\ XVHUV IRU WKLV SHULRG
3URFHVV 1DPH    +ROGLQJ
WFSLS HOI
FOL PHPRU\
UJBV\VORJG



8VHG N
0D[LQXP PHPRU\ XVHUV IRU WKLV SHULRG
3URFHVV 1DPH    +ROGLQJ
WFSLS HOI
FOL PHPRU\
_° œ! • 3dv
```

¼ { Ä ï ä y ož

no memory low-watermark set

Ê Ö Þ . F åož

default memory low-watermark set

o¬ @ ƒ ª ¢o-

@ ƒ	T
mem-rate	Ä ï ä J ¿ k H › 8 1~100 k % y %ož

o¬ Þ . F åo- Þ . Ä ï ä J ¿ 90%ož

o¬ x X % ”o- ¶ B % ”

o¬ Þ . ´ ðo- -

o¬ … 6 -o- • o Ä ï ä y k w — å Ä ï ä J ¿ož

o¬ F å †o- 1 y F å Ä ï ä J ¿ 80% k w • o y ož

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

o¬ à • co- -

o¬ U P ’ Îo-

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

5.10 reload

M o — Õož

reload [at { hour [:minute [:second]] } [month [day [year]]]]

o¬ @ ƒ ª ¢o-

@ ƒ	T
hour [:minute [:second]]	— å M o ž y ã y a k . B ã … © Ï ¢ ù — å ›
month	— å Ã a k H › 8 1~12ož
day	— å ™ Ê k H › 8 1~31 k 3 ¢ Ã ¨ %² Þ k é ™ Ê k g e P ‘
year	— å v a k H › 8 1970~2069

o¬ U P ’ Îo- -

o g P U ` ª z

o¬ x X % ”o-

o¬ Þ . ´ ðo- -

o¬ … 6 -o- show memory history ? ü g%²) kª P Ú) < k Ú%² kÂ Ú ª P 10 kU Y memory history clear
x X Ž " 7 W Ú)ož

o¬ F å †o- 1 yª P ¢ ù _ ` Ä … Õ Ñ w 7 È O Ý 4 L ~ož

```
5XLMLH  VKRZ PHPRU\ VRUWHG
6\VWHP 0HPRU\       . WRWDO      . XVHG      . IUHH      XVHG UDWH
8VHG GHWDLO          . DFWLYH     . LQDFWLYH     . PDSSHG     . VO

3,'     7H[W .  5VV .  'DWD .       6WDFN .  7RWDO .       3URFHVV
                                                  WFSLS HOI
                                                  FOL ILOHV\VWHP
                                                  FOL PHPRU\
                                                  SLQJ HOI
                                                  UJBV\VORJG
                                                  UJBV\VORJG
                                                  OVPGHPR
                                                  UJ WW\ DGPLQ
                                                  VNEGHPR
  0RUH
```

¥ x X ª P %² ? ¼ p ' Î T n y

¼ •	ª ¢
total	© Ï È Ä
used	] … Ä
free	þ • Ä
used rate	Ä … ã A
Active	t ¼
inactive	³ t ¼
mapped	¥ 0 Ä
slab	Slab ƒ ô Ä
others	Used " 4 active k inactive k mapped k slab $ Ù Ä O

¢ ù _ ` ª P ' Î T n y

<	ª ¢
PID	i Z
Text	W A < Ý 4
Rss	Þ Ä Ý 4
Data	ƒ G < Ý 4
Stack	÷ Ý 4
Total	È ƒ ô Ä

Process	` d

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

5.15 show pci-bus

ª P 5 ¨ PCI È ¿ — Õ , ¼ ’ Îož

show pci-bus

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ” ê ¶ B % ”

o¬ Þ . ´ ðo- -

o¬ ... 6 -o- -

o¬ F å †o- 1 y ª P 5 ¨ PCI È ¿ — Õ , ¼ ’ Îož

```
5XLMLH  VKRZ SFL EXV
12
9HQGRU ,'              [
'HYLFH ,'              [
'RPDLQ EXV GHY IXQF
6WDWXV  &RPPDQG        [
&ODVV  5HYLVLRQ       [F
/DWHQF\                [
ILUVW  E\WHV RI FRQILJXUDWLRQ DGGUHVV VSDFH
                              F
          I


             GF                          D


12
9HQGRU ,'              [
'HYLFH ,'              [
'RPDLQ EXV GHY IXQF
6WDWXV  &RPPDQG        [
```

```
&ODVV   5HYLVLRQ        [F
/DWHQF\                 [
)LUVW   E\WHV RI FRQILJXUDWLRQ DGGUHVV VSDFH
                                F
          I


             GF
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

5.16 show processes cpu

ª P © Ï ` ’ Îož

show processes cpu [history [table] | [5sec | 1min | 5min | 15min] [nonzero]]

o¬ @ ƒ ª ¢o-

@ ƒ	T
5sec | 1min | 5min | 15min	7 Â 5 a U k1 ã U k5 ã U k 15 ã U ž • < Ä CPU ï ä ‘ ~ L ç ` ’ Î ç n
nonzero	ª P CPU ï ä © ` ’ Î
history	Y + • £ ¥ ” kã ð ª P ¨ > 60 ao•60 ã Uo•72 4 ž ž • < Ä k © Ï O ò þ cpu ï ä
table	Y n ¥ ” k ã ð ª P ¨ > 60 ao•60 ã Uo•72 4 ž ž • < Ä k © Ï O ò þ cpu ï ä

o¬ x X % ”o- Ô Ó % ” ê ¶ B % ”

o¬ Þ . ´ ðo- -

o¬ … 6 -o- -

o¬ F å †o- 1 y 7 © Ï ñ Ä ` ID Z ~ L ç ` ’ Î

```
5XLMLH  VKRZ SURFHVVHV FSX
6\VWHP 8SWLPH
&38 XWLOL]DWLRQ IRU ILYH VHFRQGV      RQH PLQXWH      ILYH PLQXW
VHW V\VWHP FSX ZDWHUPDUN RSHQ  KLJK       a

7DVNV 6WDWLVWLFV     WRWDO    UXQQLQJ    VOHHSLQJ   VWRSSHG
  3LG 9VG 6  35, 3      6HF      0LQ      0LQ      0LQ 3URFHVV
```

```
        6                                                    L Q L W
        6                                                    N W K U H D G G
        6                                                    P L J U D W L R Q
        6                                                    N V R I W L U T G
        6                                                    P L J U D W L R Q

  0 R U H
```

2 y 7 © Ï ñ Ä ` ID Z ~ L ç k ª P 15 ã U Ä CPU ï ä 0 ` ' Îož

```
5 X L M L H  V K R Z  S U R F H V V H V  F S X  Q R Q ] H U R
```

¥ x X ª P • ã ª P ' Î T n y

<	ª ¢
System Uptime	— Õ È g ž • k ¤ G ñ a

```
     –
     –
     –
     –
     –
     –
     –
     –
     –
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     –
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     ––
     ––
     –––
          !
          PLQXWH
        V\VWHP FSX SHUFHQW XVDJH    SHU  PLQXWH  ODVW   PLQXWH
```

6 y Y n •”ªP©Ï cpu g0 þ h¨ > 60 a U k 60 ã Uo• 72 4 ž Ä … Õ Ñ ’ Îož
¿ k†%² Ý n 300 a Ä k©Ï cpu ï ä Õ Ñ k†%² ÿ Â 5 a cpu ï ä › k % y
% k ? 4 ÿ • œ 5 aož
†8 Ý n k Â 60 ã U cpu ï ä › k % y % k ? 4 ÿ • œ 1 ã Uož
† Ý n k Â 72 4 ž cpu ï ä › k % y % k ? 4 ÿ • œ 1 4 žož
P † ò

```
5XLMLH  VKRZ SURFHVVHV FSX KLVWRU\ WDEOH
           V\VWHP FSX SHUFHQW XVDJH   >ODVW    VHFRQG@

–       –     –     –     –     –     –     –     –     –     –     –

–       –     –     –     –     –     –     –     –     –     –     –

–       –     –     –     –     –     –     –     –     –     –     –
```

```
–       –       –       –       –       –       –       –       –       –       –       –

–       –       –       –       –       –       –       –       –       –       –       –

–       –       –       –       –       –       –       –       –       –       –       –

–       –       –       –       –       –       –       –       –       –       –       –

                V\VWHP FSX SHUFHQW XVDJH    >ODVW    PLQXWH@

–       –       –       –       –       –       –       –       –       –       –       –

–       –       –       –       –       –       –
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

5.17 show processes cpu detailed

ª P 6 ` ¦ Â ’ Îož

show processes cpu detailed { process-id | process-name }

o¬ @ ƒ ª ¢o-

@ ƒ	T
process-id	ò 0 6 ` ID Z ` ’ Îož
process-name	ò 0 6 ` d ` ’ Îož

o¬ x X % ”o- Ô Ó % ” ê ¶ B % ”

o¬ Þ . ´ ðo- -

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 6 ` d ` ’ Îož

```
5XLMLH  VKRZ SURFHVVHV FSX GHWDLOHG GHPR
3URFHVV ,G
3URFHVV 1DPH    GHPR
9VGLG
```

```
3URFHVV 3SLG

6WDWH          5 UXQQLQJ
2Q &38
3ULRULW\
$JH 7LPH
5XQ 7LPH
&SX 8VDJH
   /DVV   VHF      g    h
   /DVV   PLQ      g    h
   /DVV   PLQ      g    h
   /DVV   PLQ      g    h
7W\           "
```

Code Usage : 209.6KB. / G ``â ¢ •"•Nµ!

```
5XLMLH VKRZ SURFHVVHV FSX GHWDLOHG GHPR
GXSOLFDWH SURFHVV FKRRVH RQH E\ LG QRW QDPH
QDPH GHPR LG      VWDWH 6 VOHHSLQJ
QDPH GHPR LG      VWDWH 5 UXQQLQJ
SURFHVV QDPH PRQLWRUBSURFSV GR 127 H[LVW RU 127 RQO\ RQH
```

ªP'ÎT ny

<	ª¢
Process Id	` ID Z
Process Name	` df
Process Ppid	Ë i` ID Z
State	` gÙÁ
On CPU	` ñ g CPU
Priority	` i¯´
Age Time	` o ñë¨4Ò ž•
Run Time	` o ñë¨t²†üg ž•
Cpu Usage	` ¨ > 5 aUk1 ãUk5 ãUk15 ãUž•<Ä CPU … äož ¤,ZL ›©Ì"Y¢ù¥` ñ¨þ Èþƒ cpu ï äožòk demo ` ¢ù¨ 0 þ k0 þ©OòþkïÈ»Ä OòþkéªP 0.3% g0.6% hož
Tty	Tty Zož —ÕZk)—ÕZ kòç 0 ?
Code Usage	` WA<) Ý4

2yò06 ` ID ` 'Îož

```
5XLMLH VKRZ SURFHVV FSX GHWDLOHG
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

5.18 show reboot-reason

ª P — Õ M o = œož

show reboot-reason

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- % ”o• ¶ B % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

o¬ F å †o- 1 y Q ª P Î — Õ M o = œož

```
5XLMLH VKRZ UHERRW UHDVRQ
```

o¬ Þ . ´ ðo- -

o¬ … 6 -o- -

o¬ F å †o- 1 y ª P © Ï Í Î ’ Îož

```
5XLMLH  VKRZ YHUVLRQ
6\VWHP GHVFULSWLRQ          Ruijie Indoor AP320-I (802.11a/n and 802.11b/g/n) By Ruijie Networks
6\VWHP VWDUW WLPH
6\VWHP XSWLPH
6\VWHP KDUGZDUH YHUVLRQ
6\VWHP VRIWZDUH YHUVLRQ  $3B5*26      %
6\VWHP VHULDO QXPEHU
6\VWHP ERRW YHUVLRQ
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

6 TIME RANGE

6.1 absolute

— å Í + ž • •ož

absolute { [star t time date] [end time date] }

íõ „ š

í ”] ¨ Í + ž • •ož

no absolute

o¬ @ ƒ ª ¢o-	@ ƒ	T

6.2 periodic

— å u Ê ž •ož

periodic day-of-the-week time to [day-of-the-week] time

í ”] ¨ u Ê ž •ož

no periodic day-of-the-week time to [day-of-the-week] time

o¬ @ ƒ ª ¢o-

@ ƒ	T
day-of-the-week	u Ê ž • • ÷ ê ñ È Ø © ¨ ¤ Ê Ù
time	u Ê ž • • ÷ ê ñ È Ø © ¨ Ù µ Ù ã

o¬ Þ . F åo- Z Ä F å u Ê ž •

o¬ x X % ”o- time-range % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç Ý } • î ¨%² u Ê ž • Ä ÿ | k U Y … periodic x X F å%² u Ê ž •ož

o¬ F å †o- 1 y ë •%² time range w µ time range % ”

```
5XLMLH FRQILJ WLPH UDQJH QR KWWS
5XLMLH FRQILJ WLPH UDQJH
```

2 y F å Í + ž • •

```
5XLMLH FRQILJ WLPH UDQJH SHULRGLF 0RQGD\ WR 7XHVGD\
```

o¬ à • co- 1 y … show time-range [time-range-name] x X k U Y ò 0 time range F å Õ Ñož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

6.3 show time-range

ª P time range ’ Îož

show time-range [time-range-name]

o¬ @ ƒ ª ¢o-

@ ƒ	T
time-range-name	U Y 6 ª P î time range ’ Î

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- U Y * ¥ x X à š F å time range © k 3 Gož

o¬ F å †o- 1 y ª P time range ’ Î

```
5XLMLH VKRZ WLPH UDQJH
WLPH UDQJH HQWU\ WHVW LQDFWLYH
 DEVROXWH HQG )HEUXDU\
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

6.4 time-range

ë • time range k w µ time range F å % ”ož
time-range time-range-name

í ”] ¨ time rangeož

o¬ F å †o- 1 y ë •%² time range

```
5XLMLH FRQILJ WLPH UDQJH QR KWWS
5XLMLH FRQILJ WLPH UDQJH
```

o¬ à • co- 1 y … show time-range [time-range-name] x X k U Y ò 0 time range © k ¨ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7 HTTP

7.1 enable service web-server

ø • HTTP Æ ož

enable service web-server [http | https | all]

¼ { HTTP Æ ož

{ no | default } enable service web-server [http | https | all]

o¬ @| /ˆ ˆ ¢ ¢ ¬ | | |

7.2 http port

— å HTTP Æ € Mož

http port port-number

Ê Ö Þ . € Mož

no http port

port-number	— å HTTP Æ € M k H › 8

o¬ @ ƒ ª ¢o-	@ ƒ	T

```
KWWSV VHUYHU VWDWXV HQDEOHG
KWWSV VHUYHU SRUW
```

< † K y

<	ª ¢
http server status	HTTP Æ Ù Á
http server port	HTTP Æ € M
https server status	HTTPS Æ Ù Á
https server port	HTTPS Æ € M

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

7.5 upgrade web

x WEB k ´ Î ª † ^ © Ï Ä WEB
upgrade web uri

o¬ @ ƒ ª ¢o-	@ ƒ	T
	uri	uri WEB y Î ª è ¬ož ¥ x X 9 ´ — Õ Ä y WEB ož

o¬ Þ . F åo- -

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X u 4 WEB ´ož … ¥ x X ù k ¬ ¯ … copy x X 1 WEB / µ — Õ † ^ © Ï Äož

o¬ F å †o- 1 ycopy %² web k w ´ož

```
5XLMLH FRS\ WIWS ZHE XSG IODVK ZHE XSG
5XLMLH XSJUDGH ZHE IODVK ZHE XSG
```

o¬ à • co- -

o¬ U P ’ Îo- 1 y ò ç ÿ µ cli @ ƒ + k Ë ß Y U Pož

```
7KH ILOHQDPH IRUPDW LV LQYDOLG SOHDVH LQSXW FRUUHFW ILOHQDPH
```

2 y ò ç † ^ ¨ k Ë ß Y U Pož

```
7KH ILOH > GDWD [[[[@ GR QRW H[LVW
```

3 y ò ç WEB ” + k Ë ß Y U Pož

```
:HE SDFNDJH IRUPDW LQYDOLG
4yòç WEB ÍÎ +kËßY UPož
:HE SDFNDJH YHUVLRQ XQFRPSDWLEOH
5yòçÄ ák- x âÂkËßY UPož
:HE SDFNDJH LQVWDOO IDLO IRU KDYH QR HQRXJK PHPRU\
6yòç xè kËßY UPož
:HE SDFNDJH XSJUDGH VXFFHVVIXOO\
```

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.6 upgrade web download

ú w x k ´ tftp Æ ˜ WEB

upgrade web download tftp: path

o¬ @ ƒ ª ¢o-

@ ƒ	T
tftp: path	path tftp Æ ˜ WEB è ¬ k ¥ x X n P * ¿ * Ò ò M R Æ ˜ ú WEB k w ´

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X © R

4 y ò ç WEB Í Î + k Ë ß Y U Pož

:H E S D F N D J H Y H U V L R Q X Q F R P S D W L E O H

5 y ò ç Ä á k - x â Â k Ë ß Y U Pož

:H E S D F N D J H L Q V W D O O I D L O I R U K D Y H Q R H Q R X J K P H P R U \

6 y ò ç x è k Ë ß Y U Pož

:H E S D F N D J H X S J U D G H V X F F H V V I X O O \

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.7 webmaster level

— å Web • • š ï d y % Aož

webmaster level privilege-level username name password { password | [0 | 7] encrypted-password }

Ê Ö Þ . F åož

no webmaster level privilege-level [username name]

o¬ @ ƒ ª ¢o-

@ ƒ	T
privilege-level	ï Ç Ó ' ˆ ´ ož
name	ï dož
password	ï M Xož
0 | 7	M X % • º k0 — % k 7 • % %ož Þ . 0ož
encrypted-password	M X † Îož

o¬ Þ . F åo- ó • ï Ç Ó ' ˆ ´ 0 k ¢ † % A adminož

ó • ï Ç Ó ' ˆ ´ 2 k ï d guest k ¢ † % A guestož

o¬ x X % ”o- ¶ B % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¨ … Web Server ž ˜ k ¬ } g • • š õ µ Web ¼ µož … ¥ x X — å Web • • š ï d y % Aož

ü g no webmaster level privilege-level í ” 6 Ó ' ˆ ´ ñ Ä ï d % Aož

ü g no webmaster level privilege-level username name í ” 6 ï d y % Aož

` ä A ò 8 Q ã « ‰ " $ Q ã « ‰ « • ¶ » " 10 Q ` ä A ò d

, Ä o — Ù f Q Ì Ü admin Ì Ü ä guest Ì Ü ã f Q Ì Ü â ¶ „ W , ¶ A ò d c / guest

ÌÜo së level 2 ã« } web j ú ¡,ÄÎš ã«d•8TÌÜ admin së level 0 ã « } web j•8TÌÜú N _Ÿ É¯¶»©€cP•8ÌÜÉÑã ÌÜ¶À9 šK í ¦ ÌÜsë level 1 ã«d

o¬ Få †o- Få Web ••š ïÇ Ó'^´ 0k ïd ruijie k % A adminož

5XLMLH FRQILJ ZHEPDVWHU OHYHO XVHUQDPH UXLMLH SDVVZRUG DG

o¬ à•co- -

o¬ UP'Îo- 1 yòçí"ó•Få admin ê guest •š'ÎkËßY UPož

QRWLFH &DQQRW FDQFHO WKH GHIDXOW XVHU FRQILJXUH

2yòç? Ó'^´kFå ïdÝ 10 kËßY UPož

QRWLFH FRQILJXUH ZHEPDVWHU OHYHO G VHUYHU UHDFKHG PD[DC

3yòçFå ïd ñêÝ 32 ... kËßY UPož

QRWLFH 8VHUQDPH WRR ORQJ 3OHDVH HQWHU OHVV WKDQ FKDUDFV

o¬ o•j¨o- -

o¬ uVª¢o- -

8 x ž z ¹

8.1 clear logging

Ž ” Ä Ù Ï ™ º ’ Îož
clear logging

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 1

udp-port port	6 ™ º Ñ € M Z g ó • € M Z	514 h

o¬ Þ . F åo- ó • g ` ~ Syslog Server G ™ º ’ Î

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

	& ì 0 o Ü ³ ¶ 4K þ 1M Bytes d
level	™ º ' Î M Å k R 0 ñ 7ož U Y … ´ ð d f k - U Y + N … ƒ ož

o¬ Þ . F åo-

/ j Õ o Ö Ì 0 n ˜ • • + ø ' !

& ì 0 o o 128K Bytes d

™ º ' Î M Å ó • 7ož

o¬ x X % "o- ¶ B F å % "

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- Ä Ù Ï q • © ² ê … k ò ç 6 Ý 4 Ä t Ê k é Â • ™ º ' Î 1 t ~ $ož } ò 0 Ä Ù Ï
™ º ' Î k ¬ … Ô Ó ï x X show logging ož
Ä Ù Ï ™ º ' Î © ž Å k — Õ M o ê ñ ü g Ô Ó ï x X clear logging kÙ Ï ™ º ' Î 1
t Ž "ož ò ç } æ í | Ê k • ¥ 1 ™ º Ê ñ ý J FLASH ê ñ G Ë Syslog Serverož
™ º ' Î ã Y 8 ´ ð y

¼ p	ˆ ´	T
Emergencies	0	¬ Ä Õ Ñ k © Ï 3 o gož
Alerts	1	¬ } y / J H R ' w 3 | Ê Critical 2.1288 Tc -18.207 -1.693-2(1)]TJ /C2_0 1 Tf 9E

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.4 logging console

— å ª • ¨ O ò V ª P ™ º ' Î ´ ð
logging console [level]

W 2 ¨ O ò V ø - ™ º †ož
no logging console

o¬ @ ƒ ª ¢o-

@ ƒ	T
level	™ º † M Å k 8 R 0 ñ 7ož U Y … ´ ð d f k - U Y + N … ƒ ož ¼ 9 ™ º ' Î M Å ¦ Â ª ¢ k ¬ @ Á ò o¬ … 6 -œž

o¬ Þ . F åo- 7 gDebugging k ² ¡ ' Î)

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- — å%² ™ º M Å Y e k ¨ ƒ › ˆ 9 ê z 9 ¥ M Å ´ ð ™ º † 1 t ª P ¨ O ò V ož
* show logging x X U Y ò 0 ™ º — å , ¼ @ ƒ y Ï ‹ož
™ º ' Î ã Y 8 ´ ð y

¼ p	ˆ ´	T
Emergencies	0	¬ Ä Õ Ñ k © Ï 3 o gož
Alerts	1	¬ } y / J H R ‘ w 3 | Ê
Critical	2	M } Õ Ñ
Errors	3	j ¨ ' Î
Warnings	4	Š s ' Î
Notifications	5	¯ * • º k ¬ } ¼ h M } ' Îož
Informational	6	ª ¢ Å ' Î
Debugging	7	² ¡ ' Î

o¬ F å †o- 1 y µ P † — å ª • ¨ O ò V ª P ™ º ' Î ´ ð 6 y
5 X L M L H F R Q I L J O R J J L Q J F R Q V R O H L Q I R U P D W L R Q D O

o¬ à • co- 1 y... show logging x X kU Y ò 0 — å ª • ¨ O ò V ª P ™ º ’ Î ´ ð y] Æ ÿ ß ñ O ò V µ ™ º Ú)ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.5 logging count

ø • ™ º Ï ‹ ož
logging count

Ž ” ™ º Ï ‹ ƒ G w ¼ { ™ º Ï ‹ ož
no logging count

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ™ º Ï ‹ ¼ {ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- * 4 x X ø • ™ º Ï ‹ ož R x X ø • ž • ÷ Ï ‹ož ü g no logging count x X ž k Ï ‹ t ¼ { k w Ï ‹ ƒ G t Ž ”ož

o¬ F å †o- 1 y ø • ™ º Ï ‹ y
5 X L M L H F R Q I L J O R J J L Q J F R X Q W

o¬ à • co- 1 y … show logging x X k U Y ò 0 © k ø • ™ º Ï ‹ ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.7 logging delay-send interval

F å ™ º • Ë Æ ˜ ž • • œ o ž
logging delay-send interval seconds

Ê Ö ™ º • Ë Æ ˜ ž • • œ è ó • › o ž
no logging delay-send interval

o¬ @ ƒ ª ¢o-

@ ƒ	T
seconds	™ º • ž • • œ g % y a h

o¬ Þ . F åo- ó • ž • • œ © 3600 a g 1 4 ž b ž

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- * 4 x X — å ™ º • Ë Æ ˜ ž • • œ o ž U Y — å 8 600 ~ 65535 k % y y a o ž

o¬ F å †o- 1 y F å ™ º • ž • • œ © 600 a g 1 ã U h y
5 X L M L H F R Q I L J O R J J L Q J G H O D \ V H Q G L Q W H U Y D O

o¬ à • co- 1 y … show logging x X k U Y ò 0 ™ º • ž • • œ o ž

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.8 logging delay-send server

F å ™ º • Ë Æ ˜ ª - y • ”o ž
logging delay-send server { ip-address } mode { ftp user username password [0 | 7] password | tftp }

í ” ™ º • Ë Æ ˜ ª - y • ”o ž
no logging delay-send server {

o¬ @ ƒ ª ¢o-

@ ƒ	T
ip-address	N v ™ º ' Î Æ ˜ IP ª -
username	6 ftp Æ ˜ ï d
password	6 ftp Æ ˜ % A
0	g U # h W n š e æ password % A ¢ † † Î
7	W n š e æ password Æ • % % % † † Î

o¬ Þ . F åo- ó • g ` ~ FTP ê ñ TFTP Server G ™ º ' Îož

o¬ x X % "o- ¶ B F å % "

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X 6 %² FTP ê ñ TFTP Server Û N v — Õ ™ º ' Îož ï È » U Y F å 5 FTP ê ñ TFTP Server k ?%² V Æ ˜ Q F å FTP ê TFTP %² _ k™ º ' Î 1 c ž G Ë F å ñ Ä FTP ê ñ TFTP Serverož

o¬ F å †o- 1 y µ P † 6 %² ª - 192.168.23.12o• ï d admino• % A admin FTP Server y
5 X L M L H F R Q I L J O R J J L Q J G H O D \ V H Q G V H U Y H U P R G H I W S X V

o¬ à • co- 1 y … o¬ F å ó ¢ 14 Ü 3 Ü o¬ o¬ ..6 -6 -o-

o¬ Þ . F åo- Þ . Õ Ñ ¼ { • ž ™ º ÿ ß ñ O ò V y i Ä €ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- U Y … 4 x X ø • • ž ™ º ÿ ß ñ O ò V y i Ä €ož

o¬ F å †o- 1 y µ P † ø • • ž ™ º ÿ ß ñ O ò V y i Ä € y
5 X L M L H F R Q R L J J L Q J G H O D \ V H Q G W H U P L Q D O

o¬ à • co- 1 y … show logging x X k U Y ò 0 ™ º ÿ ß ñ O ò V y i Ä € • ¼ Ù Áož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.10 logging facility

— å ™ º ’ Î — Õ ›
logging facility facility-type

Ê Ö — Õ › ó • ›(23) ož
no logging facility

o¬ @ ƒ ª ¢o-

@ ƒ	T
facility-type	Syslog — Õ › k À } — å › ¬ @ ð … 6 -ož

o¬ Þ . F åo- ¨ • o RFC5424 ™ º ” Õ Ñ k — Õ › Þ . 16 g Local0 kLocal use hž
¨ Z Ä • o RFC5424 ™ º ” Õ Ñ k — Õ › Þ . 23 gLocal7 k Local use bž

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ™ º ’ Î — Õ › 9 ã - ™ º ’ Î i ¯ ´ k À } ‹ ‘ ¸ ” y
priority g i ¯ ´ h = Facility g — Õ › h * 8 + serverity g ™ º ˆ ´ bž

‹ ‘ ß Û e ™ º ¡ ¯ ´ k 1 • ™ º † %² B ã G Ë ™ º Æ ˜ k ™ º Æ ˜ U Y 9 ö º c ™ º
Û › k ò o• ¡ + • ™ º › ™ ºož

n © Syslog U — Õ › y

Numerical Code	Facility
0 (kern)	Kernel messages
1 (user)	User-level messages
2 (mail)	Mail system
3 (daemon)	System daemons
4 (auth1)	security/authorization message
5 (syslog)	Messages generated internally by syslogd
6 (lpr)	Line printer system
7 (news)	USENET news
8 (uucp)	Unix-to-Unix copy system
9 (clock1)	Clock daemon
10 (auth2)	security/authorization message
11 (ftp)	FTP daemon
12 (ntp)	NTP daemon
13 (logaudit)	Log audit
14 (logalert)	Log alert
15 (clock2)	Clock daemon
16 (local0)	Local use
17 (local1)	Local use
18 (local2)	Local use
19 (local3)	Local use
20 (local4)	Local use
21 (local5)	Local use
22 (local6)	Local use
23 (local7)	Local use

ó • — Õ › (local7)23 ož

o¬ F å †o- 1 y µ — å Syslog — Õ › kernel y

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.11 logging file

1 ™ º ’ Î ‘ ¨ † ^ k ™ º † ^ U Y ‘ ¨ F &o• ý J FLASH %² _ož

logging file { flash: filename } [max-file-size] [level]

H ƒ ¨ ý J FLASH “ £ ™ º ’ Îož

no logging file

o¬ @ ƒ ª ¢o-

@ ƒ	T
flash	™ º † ^ # + ‘ ¨ ý J FLASH ¢
filename	™ º † ^ dož k † ^ • º k ¡ txt • ºož
max-file-size	™ º † ^ Â Ý ›ož R 128K ñ 6M bytes k Þ . Ý 4 128Kož
level	ª • t “ £ ñ ™ º † ^ ™ º ’ Î ´ ðož U Y … ´ ð d f k - U Y + N … ƒ ož Þ . Ê ñ ý J FLASH ™ º ´ ð 6ož ¼ 9 ™ º ’ Î ´ ð k ¬ @ ðo¬ … 6 -œž

o¬ F å †o- 1 y µ P † 1 ™ º ’ Î “ £ ¨ ý J FLASH k † ^ d syslog.txt k † ^ Ý 4 128K k ™ º ’ Î ´ ð 6ož
5 X L M L H F R Q I L J O R J J L Q J I L O H I O D V K V \ V O R J

o¬ à • co- 1 y … show logging x X k U Y ò 0 — å ™ º ’ Î ‘ ¨ ý J FLASH , ¼ @ ƒ ož

o¬ U P ’ Îo- 1 y ò ç F å ž ˜ ™ º † ^ d x † Ý 20 … k • ò F å ž † ^ d x † 21 k é U P j ¨ož
(U U R U 7 K H I L O H O H Q J W K P X V W Q R W E H O R Q J H U W K H Q & X U U H Q W I L

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.12 logging file numbers

F å © Ï ™ º ’ Î Ê µ ý J FLASH † ^ ƒož
logging file numbers numbers

H ƒ F å ™ º † ^ ƒ k Ê Ö ó • ›ož
no logging file numbers

o¬ @ ƒ ª ¢o-

@ ƒ	T
numbers	™ º † ^ ƒ k 8 y2~32 k % y y

o¬ Þ . F åo- ™ º † ^ ƒ ó • 16 ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- * 4 x X — å ™ º † ^ ƒož U Y * no logging file numbers x X k 1 ™ º † ^ ƒ Ê Ö ó • ›
16 ož
“ w ™ º † ^ ƒ k © Ï k í ”] Æ D ÿ ™ º † ^ k œ 4 k ò ç 4 - ³ ý J FLASH q • k ï ¬
} ô í ” © Ï] Æ D ÿ ™ º † ^ g í ” $ ù U Y ¯ * tftp 1 ™ º † ^ n ÿ ñ Ù Æ ˜ **b**ž † ò y © Ï •
o ™ º Ê † ^ e k ó • k Ê 16 ™ º † ^ k w • — — Õ] Æ D ÿ 4 16 ™ º † ^ k 4 ž Ý “ w ™ º †
^ ƒ 2 k © Ï D ÿ • ™ º ’ Î 1 ¨ « – › 0 y 1 ™ º † ^ g • ² ê ~ $ M Ê kx
© $ ù] Æ D ÿ « – › 2 ñ 16 ™ º † ^ © k ‘ k © Ï k í ” k ï U Y ÿ G ¬ } ô í ” ™ º
† ^ož

o¬ F å †o- 1 y µ P † F å ™ º † ^ ƒ 8 ož
5 X L M L H F R Q I L J O R J J L Q J I L O H Q X P E H U V

o¬ à • co- 1 y … show run x X k U Y ò 0 — å ™ º † ^ ƒož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.13 logging filter direction

1 ª î • g ™ º ’ Î ¡ Jož
logging filter direction { all | buffer | file | server | terminal }

Ž ” + ª î • g ™ º ’ Î ¡ q •ož
no logging filter direction { all | buffer | file | server | terminal }

o¬ @ ƒ ª ¢o-

@ ƒ	T
all	¡ ª ñ Ä • g ™ º ’ Î g , y Console • go• VTY Ä €o• ™ º Ù Ï o• ™ º † ^o• ™ º Æ ˜ h
buffer	¡ ª ™ º Ù Ï ™ º ’ Î g / show logging x X ª P ß Û ™ º ’ Î h
file	¡ ª ™ º † ^ ™ º ’ Î
server	¡ ª ™ º Æ ˜ ™ º ’ Î g u 4 + À } Æ ˜ g F å h
terminal	¡ ª O ò V y VTY Ä € g , Telnet/SSH ˆ h ™ º ’ Î

o¬ Þ . F åo- ¡ ª ñ Ä • g ™ º ’ Î k / all

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

Yo¬ … 6 -oT ™ º ÕV aq(†$pÚÂ Fp@} Ñ $@$mÐ¦DQúÀ$p¨ Nœ!ð %ÁRG ‹ /

h Þ y ò ç F å ™ º Æ ˜ ¶ B • g k / F å x X logging filter direction server k é % Þ F å ¡ Æ ˜ 1
â | k / ñ Ä ™ º Æ ˜ ® F c%² ¡ • é C • ºož

o¬ F å †o- 1 y µ † ÿ F å ¡ ª terminal

6 À } % ² do• “ … d fo• ™ º ˆ ´ož

5. î ? Õ Ñ k ï U Ý ¡ J î ? • º ™ º ’ Î k é U Y … % F • é k ¨ F å ž k Q ¬ }

6 % ² do• ™ º ˆ ´ o• “ … d f ¢ %² _ož

ò " ð o ¶ Ò Ÿ • / / æ Q $ Ÿ • ä : ò $ Ÿ • / ½ ¨ " t ¢ , f Ö ` c Y š ø

g ð o ‰ • æ Q $ Ÿ ¥ • ‰ : : ò $ d

o¬ F å †o- 1 y F å ™ º ’ Î ¡ • é ¤ G F k % ² d LOGINo• ™ º ˆ ´ 5o• “ … d f LOGOUT y

```
5XLMLH FRQILJ ORJJLQJ ILOWHU UXOH H[DFW PDWFK PRGXOH /2*,1 PQ
```

2 y F å ™ º ’ Î ¡ • é % F k % ² d SYS y

```
5XLMLH FRQILJ ORJJLQJ ILOWHU UXOH VLQJOH PDWFK PRGXOH 6<6
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.15 logging filter type

F å ™ º ’ Î ¡ • ºož

logging filter type { contains-only | filter-only }

Ê Ö ™ º ’ Î ¡ • ºož

no logging filter type

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
contains-only	Q m kW n yQ ÿ ß m 4 ¡ • é L µ ¼ p ’ Î ™ º k ¿ Z Ä m ¡ • é L µ ™ º k ÿ ßož
filter-only	Q ¡ kW n y1 ¡ J m 4 ¡ • é L µ ¼ p ’ Î ™ º k k ÿ ß ? ¡ J ™ º ’ Îož

o¬ Þ . F åo- Þ . ¡ • º Q ¡

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- 6. î ? Õ Ñ k ¢ 1 ñ î % ² % ² ø ß Û ™ º ' Î ß Ú k U k – Ü Ä € µ ß ë ó l k ï A ¼ ¶
4 • ™ º ' Î ž ˜ k U Y ¨ — Õ µ • Q ¡ %² ™ º ¡ • º k 1 ó l ™ º ' Î ¡ Jož
7. î ? Õ Ñ k ï U Q ¼ ¶ î ? ™ º ' Î © k D ÿ k é U Y ¨ — Õ µ • Q m %² ™ º ¡ •
º k • m 4 4 • é ™ º ' Î õ ÿ ß ñ Ä € µ k • Ž 9 € (î ? 7 ^ © k Ä G ÿož

} ¬ • ë ¶ Q / q g Ã r ä q ¶ Ò r ã f 5 ¶ Ò + ø g ‡ ½ ¢ ¨ ¹ Ÿ " ¢ 5 ¶ Ò + ø d

} " ¶ Q / / " t ¶ Ò º ¿ c ¶ Ò + ø ì ¾ " ¶ Ò Ÿ • Š " â V “ Ò ‡ â V)
û ¶ Ò ´ d

o¬ F å †o- 1 y µ † ÿ F å ™ º ' Î ¡ • º Q m y

```
5XLMLH FRQILJ  ORJJLQJ ILOWHU W\SH FRQWDLQV RQO\
```

o¬ à • co- -

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.16 logging flash flush

1 © Ï Ù Ï ™ º ' Î y / Ê µ ñ FLASH † ^ ož
logging flash flush

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¨ © Ï • o ™ º ' Î Ê FLASH † ^ e k — Õ D ÿ ™ º ' Î k ¯ Ù ¨ © Ï ™ º Ù Ï k Q Ä ¢ Ù Ï
ê ž ˜ ñ Ê e k õ k 1 Ù Ï ™ º ' Î Ê µ ñ FLASH † ^ k U Y * ¥ x X — å 1 © Ï Ù Ï
™ º ' Î y / Ê µ ñ FLASH † ^ ož

" logging flash flush a — ¨ " ¢ ± ´ ¢ ± " K ‡ Ü É } / j Õ / ð o ß &

þ FLASH 3 Ñ /

o¬ F å †o- 1 y µ P † 1 © Ï Ù Ï ™ º ' Î y / Ê µ ñ FLASH † ^ ož

```
5 X L M L H  F R Q I L J   O R J J L Q J  I O D V K  I O X V K
```

o¬ à • co- 1 y … dir x X k U Y ò 0 Ê µ ñ FLASH ¢ ™ º † ^ož

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.17 logging flash interval

F å © Ï ™ º ' Î Ê µ ý J FLASH ž • • œož
logging flash interval seconds

H ƒ F å ™ º ' Î Ê FLASH ž • • œ k Ê Ö ó • ›ož
no logging flash interval

o¬ @ ƒ ª ¢o-

@ ƒ	T
interval seconds	™ º ' Î Ê µ ñ FLASH † ^ ž • • œ k 8 y1~51840 k % y y a

o¬ Þ . F åo- ™ º ' Î Ê µ FLASH † ^ ž • • œ ó • 3600s k / y1 4 žož

o¬ x X % "o- ¶ B F å % "

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- * 4 x X — å ™ º ' Î ' ñ FLASH † ^ ž • • œ k R x X F å e • ÷ ‹ žož U Y * no logging
flash interval x X k 1 ™ º ' Î Ê FLASH † ^ ž • • œ Ê Ö ó • › 3600sož

t ¥ G , Ä ^ ¶ 4 ® à ß FALSH 3 Ñ ¨ · · O â ' " ^ Ì d

o¬ F å †o- 1 y µ P † F å ™ º ' Î Ê FLASH † ^ ž • • œ 5 ã U g300s bž

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

o¬ à • co- 1 y … show logging x X k U Y ò 0 — å ž • • œ , ¼ @ ƒ ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.18 logging life-time

F å ý J FLASH ™ º † ^ ‘ ž •ož
logging life-time

o¬ u V ª ¢o- -

8.19 logging monitor

— å ª • ¨ VTY v M gTelnet v Mo•SSH v M ˆ h ª P ™ º ’ Î ´ ðož

logging monitor [level]

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.20 logging on

ª • ™ º ’ Î ¨ c — Õ ª Pož
logging on

W 2 ™ º ’ Î ª Pož
no logging on

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ª • ™ º ’ Î ¨ c — Õ ª Pož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ™ º ’ Î N U Y ª P ¨ Console v Mo•VTY v M k- U Y “ £ ¨ c — Õ yÄ Ù Ï o•ý J FLASHo•
Syslog Serverož ¥ x X ™ º È • ¼ k ò ç ¼ { ™ º • ¼ k ñ Ä ™ º ’ Î 1 t ª P ê “ £ k ” 4 M Å ´ ð
Ý 9 1 Logož

o¬ F å †o- 1 y µ P † ¨ — Õ ¼ { ™ º • ¼ y
5 X L M L H F R Q I L J Q R O R J J L Q J R Q

o¬ à • co- 1 y … show logging x X k U Y ò 0 © k ª • ™ º ’ Î ¨ — Õ ª Pož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.21 logging policy

F å ™ º ã ´ ž ñ … ã ´ Œ ož

logging policy module module-name [not-lesser-than] level direction { all | server | file | console | monitor | buffer }

í ”%² Ú ™ º ã ´ ã ´ Œ ož

no logging policy module module-name [not-lesser-than] level direction { all | server | file | console | monitor | buffer }

í ” ñ Ä ™ º ã ´ ã ´ Œ ož

no logging policy

o¬ @ ƒ ª ¢o-

@ ƒ	T
module-name	ã ´ Œ %² d
not-lesser-than	6 ¥ # ¾ ž k W n Ý 9 ˆ 9 ñ F å ™ º ´ ð ™ º õ k 7 Á ñ F å • g ÿ ß k 4 9 ñ F å ™ º ´ ð ™ º k t ¡ J z Z Ä 6 ¥ # ¾ ž k W n 4 9 ˆ 9 ñ F å ™ º ´ ð ™ º õ k 7 Á ñ F å • g ÿ ß k Ý 9 ñ F å ™ º ´ ð ™ º k t ¡ J
level	ñ } F å ã ´ Œ ™ º ´ ð
all	¨ ñ Ä • g C g ™ º ã ´ Œ
server	Q ¨ G ª ™ º Æ ˜ • g g ™ º ã ´ Œ
file	Q ¨ ÿ ß ñ ™ º † ^ • g g ™ º ã ´ Œ
console	Q ¨ ÿ ß ñ O ò V • g g ™ º ã ´ Œ
monitor	Q ¨ ÿ ß ñ ¡ Ä € • g g ™ º ã ´ Œ
buffer	Q ¨ ‘ ñ Ù Ï • g g ™ º ã ´ Œ

o¬ Þ . F åo- Þ . Õ Ñ k g ™ º ã ´ Œ ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- 4 x X 9 F å 7 % ² y M ´ ð 1 ™ º ÿ ß ñ c) ªož

o¬ F å †o- 1 y F å SYS % ² ´ ð Ý 9 ˆ 9 5 ´ ™ º Q ª O ò V • g ÿ ß k ´ ð 4 9 ˆ 9 3 ´ ™ º Q ª Ù Ï • g ÿ ß y

```
5XLMLH FRQILJ ORJJLQJ SROLF\ PRGXOH 6<6 QRW OHVVHU WKDQ GL
5XLMLH FRQILJ ORJJLQJ SROLF\ PRGXOH 6<6 GLUHFWLRQ EXIIHU
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.22 logging rate-limit

ø • ™ º , ä ’ ò k ’ ò ? a Ä ª • ÿ ß ™ º ’ Îož

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

¼ { ™ º , ä ’ ò ož

no logging rate-limit

o¬ @ ƒ ª ¢o-

@ ƒ	T
number	? a U Ä ª • Ô ò ™ º ’ Î k 8 1~10000ož
all	— å + ñ Ä ™ º ’ Î g , ä O ò k , 0~7 ´ ñ Ä ™ º ’ Îož
console	— å ? a U Ä ª • ¨ O ò V ª P ™ º ’ Î ƒož
except	4 9 ^ 9 4 M Å ´ ð ™ º ’ Î k g , ä O ò z ó • ´ ð error(3) k + 4 9 ^ 9 error ´ ð ™ º ’ Î g , ä O òož
severity	™ º ’ Î M Å ´ ð k ´ ð Þ 4 k M Å Þ ä k 8 0~7ož

o¬ Þ . F åo- g , ä O òož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- 4 x X O ò © Ï ™ º ’ Î ÿ ßož … 4 x X k U Y … 2 Ý O ™ º ’ Î ÿ ßož

o¬ F å †o- 1 y— å ? a U Ä ª • Ô ò ñ Ä ™ º ’ Îg , debugh 10 Ú kx © + warning C ¾ M ´ ð g O ò y

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.23 logging rd on

¨ VSU ê Ë µ k } ø • ™ º M g k ª • R Ñ ê Õ Ñ ™ º ’ Î M g ñ Ñož
logging rd on

¼ { ™ º M g ož
no logging rd on

o¬ @ ƒ ª ¢o-	@ ƒ	T

¨ VSU ê Ë µ k } ø • M g ™ º , ä ' ò k ' ò ? a Ä ª • R Ñ ê Õ Ñ M g ñ Ñ ÿ ß ™ º '
Îož
logging rd rate-limit number [except [severity]]

¼ { M g ™ º , ä ' ò ož
no logging rd rate-limit

o¬ @ ƒ ª ¢o-

@ ƒ	T
number	? a U Ä ª • M g ™ º ' Î k 8 1~10000
except	4 9 ˆ 9 4 M Å ´ ð ™ º ' Î k g , ä O ò z ó • ´ ð error(3) k + 4 9 ˆ 9 error ´ ð ™ º ' Î g , ä O ò
severity	™ º ' Î M Å ´ ð k ´ ð Þ 4 k M Å Þ ä k 8 0~7

o¬ Þ . F åo- ™ º M g ' ò ? a Â Ú M g 200 Ú ™ º ' Îož

o¬ x X % "o- ¶ B F å % "

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- 4 x X O ò © Ï M g ™ º ' Î ÿ ßož … 4 x X k U Y … 2 R Ñ ê Õ Ñ M g Ý O ™ º ' Î ñ Ñož

o¬ F å †o- 1 y — å ? a U Ä ª • R Ñ M g ñ Ñ ñ Ä ™ º ' Î g , debug h 10 Ú k x © + warning C ¾ M ´ ð g O ò y
5 X L M L H F R Q I L J O R J J O J U G U D W H O D P L ´ ð ô@g '@VpPhp6 ´ O ™ º €Ð e o¬ F å †o-
o¬ … 6 -o-

4 <t 3Â ðÆúÀ

o¬ @ ƒ ª ¢o-

@ ƒ	T
interface-type	N M • º
interface-number	N M Ú Z

o¬ Þ . F åo- ó • Z Ä — å ™ º › ª -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ó • Õ Ñ k G Ë Syslog Server ™ º † › IP ª - © † G N M IP ª -ož 4 Ž 9 æ í ’ ò k U Y … ¥ x X 1 ñ Ä ™ º † › IP ª - ¡ î N M IP ª - k ý ’ ò t < * Š%² ª - œ ð R „ V — Õ G ß Û ™ º † k — 3 — Õ Ì F å ¥ › N M ê › N M Ì F å IP ª - k é ™ º † › IP ª - Q † G N M IP ª -ož

o¬ F å †o- 1 y µ P † 6 Loopback 0 ª - Syslog † › ª - y
5 X L M L H F R Q I L J O R J J L Q J V R X U F H L Q W H U I D F H O R R S E D F N

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.27 logging source ip

— å ™ º † › IP ª -ož
logging source { ip ip-address }

H ƒ 6 † › IP ª - — åož
no logging source { ip }

o¬ @ ƒ ª ¢o-

@ ƒ	T
ip-address	6 g IPV4 ™ º Ñ G ™ º † › IPV4 ª -

o¬ Þ . F åo- ó • Z Ä — å ™ º › ª -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ó • Õ Ñ k G Ë Syslog Server ™ º † › IP ª - © † G N M IP ª -ož 4 Ž 9 æ í ’ ò k U
Y … ¥ x X 1 ñ Ä ™ º † › IP ª - ¡ î IP ª - k ý ’ ò t < * Š%² ª - œ ð R „ V — Õ G
ß Û ™ º † k — 3 — Õ Ì F å ¥ IP ª - k é ™ º † › IP ª - Q † G N M IP ª -ož

o¬ F å †o- 1 y µ P † 6 ª - 192.168.1.1 Syslog † › ª - y
5 X L M L H F R Q I L J O R J J L Q J V R X U F H L S

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.28 logging statistic enable

ø • ™ º ž ož
logging statistic enable

¼ { ™ º ž ož
no logging statistic enable

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

5XLMLH FRQILJ ORJJLQJ VWDWLVWLF HQDEOH

o¬ à • co- 1 y … show logging x X k U Y ò 0 ™ º ž • ¼ Ù Áož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.29 logging statistic interval

F å ™ º ž ž • • œož
logging statistic mnemonic mnemonic interval minutes

Ê Ö ó • ™ º ž ž • • œož
no logging statistic mnemonic mnemonic

o¬ @ ƒ ª ¢o- @ ƒ

o¬ u V ª ¢o- -

8.30 logging statistic terminal

ø • ž ™ º g © Ï Å Ï ‹ ™ º h ÿ ß ñ O ò V y i Ä €ož
logging statistic terminal

¼ { ž ™ º ÿ ß ñ O ò V y i Ä €ož
no logging statistic terminal

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- Þ . Õ Ñ ¼ { ž ™ º ÿ ß ñ O ò V y i Ä €ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- U Y … 4 x X ø • ž ™ º ÿ ß ñ O ò V y i Ä €ož

o¬ F å †o- 1 y µ P † ø • ž ™ º ÿ ß ñ O ò V y i Ä € y
5 X L M L H F R Q R L W J L Q J V W D W L V W L F W H U P L Q D O

o¬ à • co- 1 y … show logging x X k U Y ò 0 ž ™ º ÿ ß ñ O ò V y i Ä € • ¼ Ù Áož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.31 logging synchronous

ø • ï ÿ µ ™ º ’ Î ÿ ß c 5 k … 2 ï 3 ¨ ÿ µ … ž t ø •ož
logging synchronous

¼ { ï ÿ µ ™ º ’ Î ÿ ß c 5 ož

no logging synchronous

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ï ÿ µ ™ º ’ Î ÿ ß c 5 ¼ {

o¬ x X % ”o- ¿ è F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- 4 x X ø • ï ÿ µ ™ º ’ Î ÿ ß c 5 k U Y … 2 ï 3 ¨ ÿ µ … ž t ø • k ò µ … Õ Ñ y
ò ç 3 ¨ ÿ µ x X ž k ø - € M UP-DOWN ™ º ’ Î k é ÿ µ x X k M • ÿ ß y

```
5XLMLH FRQILJXUH WHUPLQDO
2FW /,1. &+$1*(' ,QWHUIDFH *LJDELW(WKHUQHW FKDQJHG
2FW /,1(35272 83'2:1 /LQH SURWRFRO RQ ,QWHUIDFH *LJDELW
WR '2:1
5XLMLH FRQILJXUH WHUPLQDO ï ÿ µ x X M • ÿ ß k ò t ø •
```

o¬ F å †o- 1 y ò x X ø • O ò V µ ï ÿ µ ™ º ’ Î ÿ ß c 5 y

```
5XLMLH FRQILJ OLQH FRQVROH
5XLMLH FRQILJ OLQH ORJJLQJ V\QFKURQRXV
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.32 logging trap

— å ª • G Ë Syslog Server ™ º ’ Î ´ ðož
logging trap [level]

W 2 1 ™ º † G Ë Syslog Serverož
no logging trap

o¬ @ ƒ ª ¢o-

@ ƒ	T

level	™ º † M Åož U Y … ´ ð d f k - U Y + N … ƒ ož ¼ 9 ™ º ’ Î M Å ¦ Â ª ¢ k ¬ @ ðo¬ … 6 -œž

o¬ Þ . F åo- 6 gInformational k ª ¢ Å ’ Î h

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- } 1 ™ º ’ Î G Ë Syslog Server k Ù ¯ } … ¶ B F å x X logging F å Syslog Serverož À e k … logging trap 6 G Ë ™ º ’ Î M Å ´ ðož

* show logging x X U Y ò 0 ™ º — å , ¼ @ ƒ y Ï ‹ož

™ º ’ Î ã Y 8 ´ ð y

¼ p	ˆ ´	T
Emergencies	0	¬ Ä Õ Ñ k © Ï 3 o gož
Alerts	1	¬ } y / J H R ‘ w 3 | Ê
Critical	2	M } Õ Ñ
Errors	3	j ¨ ’ Î
Warnings	4	Š s ’ Î
Notifications	5	¯ * • º k ¬ } ¼ h M } ’ Îož
Informational	6	ª ¢ Å ’ Î
Debugging	7	² ¡ ’ Î

o¬ F å †o- 1 y µ † ÿ F å 1 ´ ð 6 ™ º ’ Î G Ë ª - 202.101.11.22 Syslog Server y

```
5XLMLH FRQILJ ORJJLQJ VHUYHU
5XLMLH FRQILJ ORJJLQJ WUDS LQIRUPDWLRQDO
```

o¬ à • co- 1 y … show logging x X k U Y ò 0 — å ª • G Ë Syslog Server ™ º ’ Î ´ ðož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.33 logging userinfo

• o “ £ ï £/ ß Log ’ Îož

logging userinfo

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- • o “ £ ï q • Log ’ Î e k ¢ Ä ï “ w — Õ F å ž k < k ø ß , • Log ’ Î U I — Õ ’ ò t k ™ º ”ò y

```
0DU            &/,   (;(&B&0'  &RQILJXUHG IURP YW\                FRPPDQG
```

o¬ F å †o- 1 y µ † ÿ F å ø • “ £ ï q • Log ’ Î y

```
5XLMLH FRQILJ  ORJJLQJ XVHU LQIR FRPPDQG ORJ
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.35 service log-format rfc5424

service timestamps Ãservice private-syslog Ãservice standard-syslog 1 k â | w › W Jož

ä E ñ › ™ º ” k é ¨ RFC5424 ™ º ” … x X logging delay-send o•logging policy o• logging statistic 1 k â | w › W Jož

¨ • › ™ º ” ä E ù e kshow logging y show logging config x X ª P Ä - k Ä ñ J ož

timestamp facility-severity-mnemonic: description

‰) © y ž • í % ² d- M Å ´ ð- " … ' Î: ¦ Â ™ º ' Î

† ÿ ò y

0 D \ 6 < 6 & 2 1) , * B , & R Q I L J X U H G I U R P F R Q V R O H E \ F R Q V R O H

¿ k \ Ä ™ º " ó • ™ º " ð ¨ 9 ž • í y ö œ k \ Ä ™ º " ž • í ù µ 5 4%² * o•

e µ 5 4%² : k ö œ ù µ 5 4%² %

o¬ F å †o- 1 y µ P † F å 1 ™ º " ² … è \ Ä ™ º "

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

o¬ à • co- 1 y … show logging x X k U Y ò 0 ™ º ª P " © k ² … \ Ä "ož

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.37 service sequence-numbers

¨ ™ º ' Î ~ Z

service sequence-numbers

H ƒ ¨ ™ º ' Î ~ Zož

no service sequence-numbers

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ™ º ' Î k ~ Zož

o¬ x X % "o- ¶ B F å % "

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- " 4 ¨ ™ º ' Î ž • í ' Î Y Ù k U Y ¨ ™ º ' Î ~ Z k ~ Z R 1 • ÷ož ~ Z Y e k < U

Y ³ o Ž ª = 3 ™ º ' Î Ä Z Ä â k Y C ™ º D ÿ ¯ e ¿ ~ož

o¬ F å †o- 1 y µ P † F å ¨ ™ º ' Î ~ Z y

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

o¬ F å †o- 1 y µ P † F å 1 ™ º ”² … è ö Õ ™ º ”

```
5XLMLH FRQILJ VHUYLFH VWDQGDUG V\VORJ
```

o¬ à • co- 1 y … show logging x X k U Y ò 0 ™ º ª P ”© k² … ö Õ ”ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.39 service sysname

¨ ™ º ’ Î © Ï dož
service sysname

H ƒ ¨ ™ º ’ Î © Ï dož
no service sysname

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ™ º ’ Î k © Ï dož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ”4 ¨ ™ º ’ Î ž • í ’ Î Y Ù k U Y ¨ ™ º ’ Î © Ï dož © Ï d Y e k ™ º G Æ ˜ e k
¨ Æ ˜ k U Y Ž ª = 3 ™ º ’ Î Û „ — Õož

o¬ F å †o- 1 y µ P † F å ¨ ™ º ’ Î © Ï d y

```
0DU 6<6 &21),* &RQILJXUHG IURP FRQVROH E\ FRQVROH
5XLMLH FRQILJ WHUPLQDO
(QWHU FRQILJXUDWLRQ FRPPDQGV RQH SHU OLQH (QG ZLWK &17/ =
5XLMLH FRQILJ VHUYLFH V\VQDPH
5XLMLH FRQILJ HQG
0DU 5XLMLH 6<6 &21),* &RQILJXUHG IURP FRQVROH E\ FRQVR
```

o¬ à • co- 1 y … show logging x X k U Y ò 0 ™ º ” © k Ä • © Ï dož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.40 service timestamps

¨ ™ º ’ Î ž • í ’ Îož

service timestamps [message-type [uptime | datetime [msec | year]]]

H *ƒ* ¨ ™ º ’ Î ø ž • í ’ Îož

no service timestamps

```
5XLMLH FRQILJ  VHUYLFH WLPHVWDPSV GHEXJ GDWHWLPH PVHF
5XLMLH FRQILJ  VHUYLFH WLPHVWDPSV ORJ GDWHWLPH PVHF
5XLMLH FRQILJ  HQG
2FW            6<6  &21),*B, &RQILJXUHG IURP FRQVROH E\ FRQVROH
```

o¬ à•co- 1

```
 7UDS ORJJLQJ  OHYHO LQIRUPDWLRQDO      PHVVDJH OLQHV ORJJHG
  ORJJLQJ WR
  ORJJLQJ WR
/RJ %XIIHU  7RWDO      %\WHV  KDYH ZULWWHQ
      6HS          5XLMLH /,1.  83'2:1 ,QWHUIDFH )DVW(WKHUQHW
      6HS          5XLMLH /,1(35272  83'2:1 /LQH SURWRFRO RQ ,QWH
FKDQJHG VWDWH WR XS
      6HS          5XLMLH /,1.  83'2:1 ,QWHUIDFH )DVW(WKHUQHW
      6HS          5XLMLH /,1(35272  83'2:1 /LQH SURWRFRO RQ ,QWH
FKDQJHG VWDWH WR GRZQ
      6HS          5XLMLH /,1.  83'2:1 ,QWHUIDFH )DVW(WKHUQHW
      6HS          5XLMLH /,1(35272  83'2:1 /LQH SURWRFRO RQ ,QWH
FKDQJHG VWDWH WR XS
```

```
 &RXQW ORJ PHVVDJHV  HQDEOH
 7UDS ORJJLQJ  OHYHO LQIRUPDWLRQDO      PHVVDJH OLQHV ORJJHG
   ORJJLQJ WR
   ORJJLQJ WR
 'HOD\ VHQG ORJJLQJ      PHVVDJH OLQHV ORJJHG
   ORJJLQJ WR              E\ WIWS
/RJ %XIIHU  7RWDO     %\WHV   KDYH ZULWWHQ      2YHUZULWWHQ
   !          7            = UXLMLH       3OHDVH FRQILJ WKH ,3 DGGUHV
   !          7           = UXLMLH &$3:$3   12B,3B$''5   1R LS DGGUHVV I
   !          7           = UXLMLH       3OHDVH FRQILJ WKH ,3 DGGUHV
   !          7            = UXLMLH &$3:$3   12B,3B$''5   1R LS DGGUHVV
   !          7            = UXLMLH 6<6   6+(//B/2*,1 >86(5#    QDPH    W
IURP  FRQVROH @ XVHU ORJLQ VXFFHVV
   !          7            = UXLMLH 6<6   6+(//B&0' >86(5#    QDPH   @>&
WDVN  UOBFRQ  FPG  HQDEOH @
```

< † K y

<	ª ¢
Syslog logging	™ º • ¼ y ø • ª P enabled, ¼ { ª P disabled
Console logging	ø - ¨ O ò V ™ º ' Î ´ ð k Y C Ï ‹
Monitor logging	ø - ¨ VTY v M ™ º ' Î ´ ð k Y C Ï ‹
Buffer logging	“ £ ¨ Ä Ù Ï ™ º ' Î ´ ð k Y C Ï ‹
Count log messages	™ º Ï ‹
Statistic log messages	™ º ž È • ¼
Statistic log messages to terminal	™ º ž ÿ ß O ò V y i Ä € • ¼
Delay-send file name	™ º • Ù ¨ — Õ Î ª † ^ do•¢ ù Ê µ † ^ « – Y C • ž • • œ
Trap logging	G Ë Syslog Server ™ º ' Î ´ ð k Y C Ï ‹
Delay-send logging	™ º • Ë Æ ~ ª - y • ” k Y C Ï ‹
Log Buffer	“ £ ¨ Ä Ù Ï ™ º †

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

8.42 show logging config

ò 0 ™ º F å @ ƒ o• Ï ‹ ’ Îož

show logging config

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

o¬ F å †o- 1 y µ P † © ¨ Z Ä • o RFC5424 ™ º ”€@RFC57D309000 c

Sysname log messages	™ º ' Î © Ï d
Count log messages	™ º Ï ‹
Trap logging	G Ë Syslog Server ™ º ' Î ´ ð k Y C Ï ‹

2 y µ P † © ¨ • o RFC5424 ™ º " Õ Ñ k ü g show logging config %² È ç y

```
5XLMLH  VKRZ ORJJLQJ
6\VORJ ORJJLQJ  HQDEOHG
 &RQVROH ORJJLQJ  OHYHO GHEXJJLQJ     PHVVDJHV ORJJHG
 0RQLWRU ORJJLQJ  OHYHO GHEXJJLQJ   PHVVDJHV ORJJHG
 %XIIHU ORJJLQJ  OHYHO GHEXJJLQJ     PHVVDJHV ORJJHG
 6WDWLVWLF ORJ PHVVDJHV  GLVDEOH
 6WDWLVWLF ORJ PHVVDJHV WR WHUPLQDO  GLVDEOH
 'HO\ VHQG ILOH QDPH V\VORJBIWSBVHUYHU &XUUHQW ZULWH LQGH[
VHFRQGV
 &RXQW ORJ PHVVDJHV  HQDEOH
 7UDS ORJJLQJ  OHYHO LQIRUPDWLRQDO     PHVVDJH OLQHV ORJJHG
   ORJJLQJ WR
   ORJJLQJ WR
 'HOD\ VHQG ORJJLQJ     PHVVDJH OLQHV ORJJHG
   ORJJLQJ WR             E\ WIWS
```

< † K y 15.64 Q Q70048004F004615.5T 0.199 g /C2_1 1 Tf 9 0 0 9 123.78 346.5Q7004809.900300030B4B037Tf ( )Tj E

Monitor logging

Buffer logging

Count log messages

o¬ u V ª ¢o- -

8.43 show logging count

ò 0 © Ï _ % ² ™ º ' Î D ÿ) ƒ k Y C Â e D ÿ ž • ˆ Ï ‹ ' Îož
show logging count

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % "o- Ô Ó ï % "

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- 4 … ™ º † Ï ‹ k¬ } ¨ ¶ B F å % " kü g logging count x Xožo 4 ™ º † Ï ‹ e k
1 + © Ï ÿ ß ™ º † g ã • Ï ‹ k Ï ‹ È ç U Y * x X show logging count g ò 0ož

o¬ F å †o- 1 y µ P † © ü g show logging count È ç y

5 X L M L H V K R Z O R J J L Q J F R X Q W
0 R G X O H 1 D P H 0 H V V D J H 1 D P H 6 H Y 2 F F X U / D V W 7 L P H
6 < 6 & 2 1) , * B ,
- X O
6 < 6 7 2 7 $ /

< † K y

<	ª ¢
Module Name	™ º % ² d
Message Name	™ º " … d f
Sev	™ º ´ ð
Occur	ø • logging count Y Û Ï ‹ ñ ¥ • ™ º Ú)
Last Time	Â e%²) D ÿ 4 • ™ º ž •

o¬ U P ' Îo- -

o¬ u V ª ¢o- -

8.44 show logging reverse

ò 0 ™ º F å @ ƒo• Ï ‹ ' Î k Y C Ä Ù Ï ™ º †ož ™ º ' Î 7 Á ž • í R • ñ › ¿ ~ ª Pož

show logging reverse

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

o¬ F å †o- 1 y µ P † © ¨ Z Ä • o RFC5424 ™ º ” Õ Ñ k ü g show logging reverse %² È ç y

```
5XLMLH VKRZ ORJJLQJ UHYHUVH
6\VORJ ORJJLQJ HQDEOHG
```

Buffer logging	“ £ ¨ Ä Ù Ï ™ º ’ Î ´ ð k Y C Ï ‹
Standard format	ö Õ ™ º ”
Timestamp debug messages	Debug ’ Î ž • í ”
Timestamp log messages	Log ’ Î ž • í ”

Sequence-number BT63bugaer BTes-8(at)]TJ /C2_0 1 Tf 0 Tc 0 Tw 18.54 -0.04 67E055AD08Tc BC00694>Tj /TT0 1

< † K y

<	ª ¢
Syslog logging	™ º • ¼ y ø • ª P enabled, ¼ { ª P disabled
Console logging	ø - ¨ O ò V ™ º ' Î ´ ð k Y C Ï ‹
Monitor logging	ø - ¨ VTY v M ™ º ' Î ´ ð k Y C Ï ‹
Buffer logging	" £ ¨ Ä Ù Ï ™ º ' Î ´ ð k Y C Ï ‹
Count log messages	™ º Ï ‹
Statistic log messages	™ º ž È • ¼
Statistic log messages to terminal	™ º ž ÿ ß O ò V y i Ä € • ¼
Delay-send file name	™ º • Ù ¨ — Õ Î ª † ^ do•¢ ù Ê µ † ^ « – Y C • ž • • œ
Trap logging	G Ë Syslog Server ™ º ' Î ´ ð k Y C Ï ‹
Delay-send logging	™ º • Ë Æ ~ ª - y • " k Y C Ï ‹
Log Buffer	" £ ¨ Ä Ù Ï ™ º †

o¬ U P ' Îo- -

o¬ u V ª ¢o- -

8.45 terminal monitor

ª • ¨ ¢ ù VTY v M ª P ™ º ' Îož
terminal monitor

¼ { ¨ ¢ ù VTY v M ª P ™ º ' Îož
terminal no monitor

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ¨ VTY v M ª • ª P ™ º ' Îož

o¬ x X % "o- Ô Ó ï % "

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- Î x X Q © — å ¢ ù VTY ž K Åož • ž K Å — å k k t K ! ' ož ¨ VTY Ä € k ¢ È Ø e k ©
Ï 1 J ó • — å ò ¥ ž K Å — å 1 â | ož O ò V - U Y ü g ¥ x X k x Ü • ož

o¬ F å †o- 1 y µ P † k — å ¢ ù VTY v M ª • ø - ™ º ’ Îož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.1 acs p

o¬ @ ƒ ª ¢o-	@ ƒ	T
	password	CPE N ACS 9 • š % Aož
	encryption-type	U F å 0 en97094165( )F9E>36B/TT0 1 Tf 0 Tc 0 T7/TT

3: ò ç ï ÿ µ % A • º ¢ † k w m ³ c …, é U P j ¨

(UURU 3DVVZRUG 6WULQJ ,QFOXGH ,QYDOLG &KDUDFWHUV

o¬ o • j ¨o-

- ò ç ï ÿ µ % A • º % † k % A x † Ý 254 ê ñ x † ¢ ƒož
- ò ç ï ÿ µ % A • º ¢ † k % A x † Ý 100ož
- ò ç ï ÿ µ % A • º ¢ † k w m ³ c …ož

o¬ u V ª ¢o- -

9.2 acs url

F å CPE N ACS URLož

acs url url

Ê Ö Þ . F åož

no acs url

o¬ @ ƒ ª ¢o-

@ ƒ	T
url	ACS URLož

o¬ Þ . F åo- qož

o¬ x X % ”o- cwmp F å % ”

o¬ Þ . ´ ðo- 1

```
5XLMLH FRQILJ FZPS
5XLMLH FRQILJ FZPS DFV XUO KWWS ZZZ WHVW FRP VHUYLFH WU VH
5XLMLH FRQILJ FZPS
```

o¬ à • co- * ¨ CPE — Õ show cwmp configuration x X ò 0 x X © k F å è ož

o¬ U P ' Îo- 1 y ò ç ACS URL ª - NULL k é U P j ¨ož

```
LQSXW DFV DWWULEXWH SDUDPHWHU LV QXOO
```

o¬ o • j ¨o- ACS URL Z 7 } L " ÿ µož
ACS URL x † Ý 256 …ož

o¬ u V ª ¢o- -

9.3 acs username

F å CPE N ACS ž 9 • š ï dož
acs username username
Ê Ö Þ . F åož
no acs username

o¬ @ ƒ ª ¢o-

@ ƒ	T
- username	CPE N ACS 9 • š ï dož

o¬ Þ . F åo- qož

o¬ x X % "o- cwmp F å % "

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- F å CPE N ACS ž 9 • š ï dož

o¬ F å †o- 1 y F å CPE N ACS ž 9 • š ï d admin

```
5XLMLH FRQILJ
(QWHU FRQILJXUDWLRQ FRPPDQGV RQH SHU OLQH (QG ZLWK &17/ =
5XLMLH FRQILJ FZPS
5XLMLH FRQILJ FZPS DFV XVHUQDPH DGPLQ
5XLMLH FRQILJ FZPS
```

o¬ à • co- * ¨ CPE — Õ show cwmp configuration x X ò 0 x X © k F å è ož

o¬ U P ’ Îo- 1 y ò ç ï ÿ µ ï d NULL k é U P j ¨ož

L Q S X W D F V D W W U L E X W H S D U D P H W H U L V Q X O O

o¬ o • j ¨o- —ož

o¬ u V ª ¢o- -

9.5 cpe inform

F å CPE u Ê Å INFORM * s ož

cpe inform [interval seconds] [start-time time]

Ê Ö Þ . F å

no cpe inform

o¬ @ ƒ ª ¢o-

@ ƒ	T
seconds	F å CPE u Ê Å INFORM * s ž • • œož % y a k H › 8 30 ½ 3600ož
time	• ÷ u Ê Å INFORM ™ Ê ž • k ” yyyy-mm-ddThh:mm:ss

o¬ Þ . F åo- ó • › 600 aož

o¬ x X % ”o- cwmp F å % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- F å CPE u Ê Å INFORM * s ož

¨ Z Ä F å INFORM 600ož % ”[illegible] @Ñ ´`žP,P ” N F

o¬ à • co- * ¨ CPE — Õ show cwmp configuration x X ò 0 x X © k F å è ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- —ož

o¬ u V ª ¢o- -

9.6 cpe password

F å ACS N CPE ž 9 • š % A, ¥ x X no ¥ ” Ê Ö Þ . F åož

cpe password { password | encryption-type encrypted-password}

Ê Ö Þ . F å

no cpe password

o¬ @ ƒ ª ¢o-

@ ƒ	T
password	ACS N CPE 9 • š % Aož
encryption-type	U F å 0 ê 7 k 0 n P — % k 7 n P • % %ož
encrypted-password	% A † Îož

o¬ Þ . F åo- encryption-type ó • 0 kencrypted-password ó • qož

o¬ x X % ”o- cwmp F å % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- F å ACS N CPE 9 • š % A k * o — À ÿ µ % • ºož%² " Õ Ñ k Q Ä ¢ Ö ò w ¡ É] Æ % e

¥ x X % A ž k õ ¬ } ÿ µ % • ºož Ä | % A ” } L ò y

6 † > C ƒ Á èož

% A ù µ U Y Ä ù - q k x t ¿ ož • C È A q é • % A %² B ãož

o¬ F å †o- 1 y F å ACS N CPE ž 9 • š % A 123 ož

o¬ U P ' Îo- 1: ò ç ï ÿ µ % A • º % † k % A x † Ý 254 ê ñ x † ¢ ƒ k é U P j ¨

(UURU ,QYDOLG (QFU\SWHG 3DVVZRUG

2: ò ç ï ÿ µ % A • º ¢ † k % A x † Ý 100, é U P j ¨.

(UURU 7KH /HQJWK RI $&6 V 3DVVZRUG LV 7RR /RQJ

3: ò ç ï ÿ µ % A • º ¢ † k w m ³ c …, é U P j ¨

(UURU 3DVVZRUG 6WULQJ ,QFOXGH ,QYDOLG &KDUDFWHUV

4: ò ç ï ÿ µ % A • º % † k w m ³ c … g ` c … Q © y ƒ 0~9o• … a~fo•A~F h k é U P j ¨ož

(UURU ,QYDOLG (QFU\SWHG 3DVVZRUG

o¬ o • j ¨o-

- ò ç ï ÿ µ % A • º % † k % A x † Ý 254 ê ñ x † ¢ ƒ ož
- ò ç ï ÿ µ % A • º ¢ † k % A x † Ý 100ož
- ò ç ï ÿ µ % A • º ¢ † k w m ³ c …ož
- ò ç ï ÿ µ % A • º % † k w m ³ c … g ` c … Q © y ƒ 0~9o• … a~fo•A~F **b**ž

o¬ u V ª ¢o- -

9.7 cpe url

F å ACS N CPE URLož

cpe url url

Ê Ö Þ . F å

no cpe url

o¬ @ ƒ ª ¢o-

@ ƒ	T
url	CPE URLož

o¬ x X % ”o- cwmp F å % ”

o¬ Þ . F åo- qož

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- F å ACS N CPE URL k ¨ Z Ä ô F å Õ Ñ kCPE 1 ÿ G ACS URL # H CPE URL k CPE URL ”} L ò y

CPE URL · À © http://ip [: port]/ ”ož

CPE URL Â Ý x † 256 …ož

o¬ F å †o- 1 y F å ACS } N CPE URL http://10.10.10.1:7547/ ož

```
5XLMLH FRQILJXUH WHUPLQDO
(QWHU FRQILJXUDWLRQ FRPPDQGV RQH SHU OLQH (QG ZLWK &17/ =
5XLMLH FRQILJ FZPS
5XLMLH FRQILJ FZPS FSH XUO KWWS
5XLMLH FRQILJ FZPS
```

o¬ à • co- * ¨ CPE — Õ show cwmp configuration x X ò 0 x X © k F å è ož

o¬ U P ' Îo- 1 y ò ç CPE URL ª - NULL k é U P j ¨ož

```
LQSXW &3( DWWULEXWH SDUDPHWHU LV QXOO
```

o¬ o • j ¨o- CPE URL Z 7 } L " ÿ µož
CPE URL x † Ý 256 …ož

o¬ u V ª ¢o- -

9.8 cpe username

F å ACS N CPE ž 9 • š ï dož
cpe username username
Ê Ö Þ . F åož
no cpe username

o¬ @ ƒ ª ¢o-

@ ƒ	T
username	F å ACS N CPE 9 • š ï d

o¬ x X % "o- cwmp F å % "

o¬ Þ . F åo- qož

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- F å ACS N CPE ž 9 • š ï dož

o¬ F å †o- 1 y F å ACS N CPE ž 9 • š ï d admin

```
5XLMLH FRQILJ
(QWHU FRQILJXUDWLRQ FRPPDQGV RQH SHU OLQH (QG ZLWK &17/ =
5XLMLH FRQILJ FZPS
5XLMLH FRQILJ FZPS FSH XVHUQDPH DGPLQ
```

9.10 disable download

F å ¼ { R ACS ú i ~ y F å † ^ ož
disable download
Ê Ö Þ . F å
no disable download

o¬ @ ƒ ª ¢o-

@ ƒ	T

o¬ x X % ”o- cwmp F å % ”

o¬ Þ . ´ ðo- 1

o¬ Þ . F åo- CPE † ^ ú • o gno disable download **b**ž

o¬ … 6 -o- F å ¼ { R ACS ú i ~ y F å † ^ ož
x X + F å Î † ^ Ü • k F å disable Õ Ñ k F å Î U Y ü gož

o¬ F å †o- 1 y F å ¼ { R ACS ú i ~ y F å † ^ ož

```
5XLMLH FRQILJ
(QWHU FRQILJXUDWLRQ FRPPDQGV RQH SHU OLQH (QG ZLWK &17/ =
5XLMLH FRQILJ FZPS
5XLMLH FRQILJ FZPS GLVDEOH GRZQORDG
5XLMLH FRQILJ FZPS
```

o¬ à • co- * ¨ CPE — Õ show cwmp configuration x X ò 0 x X © k F å è ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- —ož

o¬ u V ª ¢o- -

9.11 disable upload

F å ¼ { g ACS n F å † ^ y ™ º † ^ ož
disable upload

Ê Ö Þ . F å

no disable upload

o¬ @ ƒ ª ¢o-	@ ƒ	T

o¬ x X % ”o- cwmp F å % ”

o¬ Þ . F åo- CPE † ^ n • o gno disable upload **b**ž

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- F å ¼ { g ACS n F å † ^ y ™ º † ^

o¬ F å †o- 1 y F å ¼ { g ACS n F å † ^ y ™ º † ^ ož

```
5XLMLH FRQILJ
(QWHU FRQILJXUDWLRQ FRPPDQGV RQH SHU OLQH (QG ZLWK &17/ =
5XLMLH FRQILJ FZPS
5XLMLH FRQILJ FZPS GLVDEOH XSORDG
5XLMLH FRQILJ FZPS
```

o¬ à • co- * ¨ CPE — Õ show cwmp configuration x X ò 0 x X © k F å è ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- —ož

o¬ u V ª ¢o- -

9.12 show cwmp configuration

ª P CWMP ¢ ù F å

show cwmp configuration

o¬ @ ƒ ª ¢o-	@ ƒ	T

o¬ … 6 -o-

o¬ F å †o- 1 y ª P CWMP ¢ ù F åož

```
5XLMLH FRQILJ FZPS VKRZ FZPS FRQILJXUDWLRQ
&:03 6WDWXV HQDEOH
$&6 85/ KWWS ZZZ UXLMLH FRP FQ DFV
$&6 XVHUQDPH DGPLQ
$&6 SDVVZRUG
&3( 85/ KWWS
&3( XVHUQDPH UXLMLH
&3( SDVVZRUG
&3( LQIRUP VWDWXV GLVDEOH
&3( LQIRUP LQWHUYDO V
&3( LQIRUP VWDUW WLPH
&3( ZDLW WLPHRXW V
&3( GRZQORDG VWDWXV HQDEOH
&3( XSORDG VWDWXV HQDEOH
&3( EDFN XS VWDWXV HQDEOH
&3( EDFN XS GHOD\ WLPH V
```

< † K y

<	ª ¢
CWMP Status	CWMP … Ù Áož
ACS URL	CPE N ACS URLož
ACS username	CPE N ACS ï dož
ACS password	CPE N ACS % Aož
CPE URL	ACS N CPE URLož
CPE username	ACS N CPE ï dož
CPE password	ACS N CPE % Aož
CPE inform status	CPE u Ê Å INFORM * s Ù Áož
CPE inform interval	CPE u Ê Å INFORM * s ž • • œož
CPE wait timeout	CPE k ¢ Ý ž ž •
CPE inform start time	CPE u Ê Å INFORM • ÷ * s ™ Ê ž •ož
CPE download status	© k N I R ACS ú i ~ y F å † ^ož
CPE upload status	© k g ACS n F å † ^ y ™ º † ^
CPE back up status	© k • o i ~/ F å Ê Ö Ù Á
CPE back up delay time	i ~/ F å Ê Ö ^ - • ž •

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

9.13 show cwmp status

ª P CWMP ¢ ù g Ù Á

show cwmp 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 ª P CWMP ¢ ù g Ù Áož

```
5XLMLH FRQILJ FZPS VKRZ FZPS VWDWXV
&:03 6WDWXV HQDEOH
6HVVLRQ VWDWXV &ORVH
/DVW VXFFHVV VHVVLRQ 8QNQRZQ
/DVW VXFFHVV VHVVLRQ WLPH 7KX -DQ
/DVW IDLO VHVVLRQ 8QNQRZQ
/DVW IDLO VHVVLRQ WLPH 7KX -DQ
6HVVLRQ UHWU\ WLPHV
```

< † K y

<	ª ¢
CWMP Status	CWMP … Ù Áož
Session status	CPE ACS ¢ ù k ¢ Ù Áož
Last success session	Â e%²) è k ¢ • ºož
Last success session time	Â e%²) è k ¢ È Ø ž •
Last fail session	Â e%²) â Â k ¢ • º
Last fail session time	Â e%²) â Â k ¢ È Ø ž •
Session retry times	¢ ù k ¢ M ¡) ƒož

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

9.14 timer cpe-timeout

F å ACS — € • CPE Ý ž ž •ož

timer cpe-timeout seconds

Ê Ö Þ . F å

no timer cpe-timeout

o¬ @ ƒ ª ¢o-	@ ƒ	T

10 MONITOR

10.1 show power

ª P › ' Î k , › Â Î ' Î y › º Zo• Ù Áo• F ^ Í Îo• © ç Zož
show power

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 14

o¬ ... 6 -o- 4 x X 9 ª P — Õ › ' Î

o¬ F å †o-

o¬ U P ' Îo- N/A n P — c ¯ H

o¬ u V ª ¢o- -

10.2 show fan

ª P Ñ ” Î ó ' Î k , ? Î ó & º Zo• ~ ç Zo• W • Ù Á ^ k Y C Î ó ² , % ”o• Î ó % ² Ž ô ,
^ ' Îož
show fan [speed]

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 14

o¬ ... 6 -o- 4 x X 9 ª P — Õ Î ó ' Î k U ò 0 W • Ù Á Y C Î ó ² , ^ ' Îož

o¬ F å †o- 1. S29XS ª P Î ó ' Î

```
5XLMLH VKRZ IDQ
)DQ LG )DQ W\SH  6WDWXV

     5*B)$1    RN
5XLMLH VKRZ IDQ VSHHG
)DQ LG )DQ W\SH  6WDWXV    6SHHG 5 P  6SHHG OHYHO

     5*B)$1    RN                1 $
```

2. S29XS POE ª P Â E Î ó ’ Î

```
5XLMLH VKRZ IDQ
)DQ LG )DQ W\SH  6WDWXV

     5*B)$1    RN
     5*B)$1    RN
5XLMLH VKRZ IDQ VSHHG
)DQ LG )DQ W\SH  6WDWXV    6SHHG 5 P  6SHHG OHYHO

     5*B)$1    RN        1 $
     5*B)$1    RN        1 $
5XLMLH
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- S29XS yshow fan speed u 4 Speed(R/m) Î ó ô , B Hož

S29XS POE y show fan speed Q u 4 Speed-level- Î ó ô , ´ ð B H k ´ ð y 0- 2 k 1 y z , k2 y ä ,ož

c — Õ ª P ” k U ¨ [‘

10.3 show temperature

“ † ’ Î ò ¤ x X k 9 ò 0 — Õ “ †o• Y C Ù Á ˆ ’ Îož

show temperature

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 — Õ ¢ ù “ † k Y C — Õ “ † © k 3 oož

S2910-24GT4XS-E y 2 “ † µ k … †%² “ † µ g ! O k ¢ “ † ä 9 65 - k © Ï ° µ ± ° k — Õ ä “

s Š z ¢ “ † ä 9 78 - k — Õ M oož

S2910-48GT4XS-E y 2 “ † µ k … †%² “ † µ g ! O k ¢ “ † ä 9 74 - k © Ï ° µ ± ° k — Õ ä “ s Š z ¢ “ † ä 9 84 - k — Õ M oož

S29XS POE y 1 “ † µ k ¢ “ † ä 9 53 - k © Ï ° µ ð ° k — Õ ä “ s Š z ¢ “ † ä 9 58 - k © Ï ° ± ° k — Õ ä “ s Š z ¢ “ † ä 9 68 - k — Õ M oož

o¬ F å †o- 1 o•S29XS ò 0 ñ Ä á * “ † y y ’ F å y

```
5 X L M L H  V K R Z  W H P S H U D W X U H
6 O R W     & D U G B W \ S H                    & X U U H Q W  &   6 W D W X V

        6        * 7 ; 6 (                        R N
        6        * 7 ; 6 (                        R N
5 X L M L H
```

2o•S29XS POE ò 0 ñ Ä á * “ † y y ’ F å y

```
5 X L M L H  V K R Z  W H P S H U D W X U H
6 O R W     & D U G B W \ S H                    & X U U H Q W  &   6 W D W X V

        6    &    * 7 ; 6 + 3 (                     R N
5 X L M L H
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- S29XS Ä 2 “ † µ kS29XS POE Ä 1 “ † µ c — Õ ª P ” k U ¨ [‘

11 ±Cã 7

11.1 remove configuration device device-id

Ž ” î V VSU è t — Õ] Ä F å g N ¨ VSU % ” U k M o e ÿ | bž
remove configuration device device-id

o¬ @ ƒ ª ¢o-

@ ƒ	T
device-id	Ñ ” Z

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç ¬ } Ž ” VSU © Ï Ä î V è t — Õ] Ä F å k U Y … Î x Xož 4 x X ‘ M o e ÿ |ož

o¬ F å †o- Ž ” — Õ F åož
5 X L M L H F R Q I L J U H P R Y H F R Q I L J X U D W L R Q G H Y L F H

o¬ à • co- ü g ¥ x X w ‘ F å Y e k ï U M o — Õ * show run x X ò 6 — Õ F å © k] Æ t í ”ož

o¬ U P ’ Îo-

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

11.2 show manuinfo

ò 0 ¢ ù © Ï Ä ñ Ä Þ y B ^ Ï D ’ Î k 9 Ï D ’ ò k „ C B ^ • º , Ñ ”o• Î óo• ›o• ’ ò áo•

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ü g Î x X U Y ò 0 ¢ ù © Ï Ä ñ Ä Þ y B ^ Ï D ’ Îož

o¬ F å †o- -

o¬ U P ’ Îo- † 1 y % Ñ % ” Ï D ’ Î ª P ò y

```
5XLMLH VKRZ PDQXLQIR
'HYLFH
   /RFDWLRQ                &KDVVLV
   'HYLFH QDPH              5* 6
   'HYLFH 6HULDO 1XPEHU           $ % '$) )
   +DUGZDUH 9HUVLRQ          9
   0DF $GGUHVV               ' )

'HYLFH
   /RFDWLRQ                6ORW 0
   'HYLFH QDPH              0     &0
   'HYLFH 6HULDO 1XPEHU           $ % '$) )
   +DUGZDUH 9HUVLRQ          9
   6RIWZDUH 9HUVLRQ          5*26     E   5HOHDVH
   0DF $GGUHVV               ' )

'HYLFH
   /RFDWLRQ                6ORW
   'HYLFH QDPH              0      ;)3 ($
   'HYLFH 6HULDO 1XPEHU           $ % '$) )
   +DUGZDUH 9HUVLRQ          9
   6RIWZDUH 9HUVLRQ          5*26     E   5HOHDVH

'HYLFH
   /RFDWLRQ                6ORW
   'HYLFH QDPH              0      ;)3 ($
   'HYLFH 6HULDO 1XPEHU           $ % '$) )
   +DUGZDUH 9HUVLRQ          9
```

```
   6RIWZDUH 9HUVLRQ          5*26      E    5HOHDVH

'HYLFH
   /RFDWLRQ                 6ORW
   'HYLFH QDPH               0       ;)3 ($
   'HYLFH 6HULDO 1XPEHU               $ % '$) )
   +DUGZDUH 9HUVLRQ           9
   6RIWZDUH 9HUVLRQ          5*26      E    5HOHDVH

'HYLFH
   /RFDWLRQ                 3RZHU
   'HYLFH QDPH               5* 3'    ,
   'HYLFH 6HULDO 1XPEHU               $ % '$) )
   +DUGZDUH 9HUVLRQ           9

'HYLFH
   /RFDWLRQ                 3RZHU
   'HYLFH QDPH               5* 3'    ,
   'HYLFH 6HULDO 1XPEHU               $ % '$) )
   +DUGZDUH 9HUVLRQ           9

'HYLFH
   /RFDWLRQ                 )$1
   'HYLFH QDPH               0     )$1
   'HYLFH 6HULDO 1XPEHU               $ % '$) )
   +DUGZDUH 9HUVLRQ           9

'HYLFH
   /RFDWLRQ                 &KDVVLV
   'HYLFH QDPH               5* 6
   'HYLFH 6HULDO 1XPEHU               $ % '$) )
   +DUGZDUH 9HUVLRQ           9
   6RIWZDUH 9HUVLRQ          5*26      E    5HOHDVH
   0DF $GGUHVV                ' )

'HYLFH
   /RFDWLRQ                 6ORW  0
   'HYLFH QDPH               0     &0
   'HYLFH 6HULDO 1XPEHU               $ % '$) )
   +DUGZDUH 9HUVLRQ           9
   6RIWZDUH 9HUVLRQ          5*26      E    5HOHDVH
```

```
   0DF $GGUHVV                ' )

'HYLFH
   /RFDWLRQ                6ORW
   'HYLFH QDPH              0      ;)3 ($
   'HYLFH 6HULDO 1XPEHU           $ % '$) )
   +DUGZDUH 9HUVLRQ         9
   6RIWZDUH 9HUVLRQ         5*26     E   5HOHDVH

'HYLFH
   /RFDWLRQ                6ORW
   'HYLFH QDPH              0      ;)3 ($
   'HYLFH 6HULDO 1XPEHU           $ % '$) )
   +DUGZDUH 9HUVLRQ         9
   6RIWZDUH 9HUVLRQ         5*26     E   5HOHDVH

'HYLFH
   /RFDWLRQ                3RZHU
   'HYLFH QDPH              5* 3'   ,
   'HYLFH 6HULDO 1XPEHU           $ % '$) )
   +DUGZDUH 9HUVLRQ         9

'HYLFH
   /RFDWLRQ                3RZHU
   'HYLFH QDPH              5* 3'   ,
   'HYLFH 6HULDO 1XPEHU           $ % '$) )
   +DUGZDUH 9HUVLRQ         9

'HYLFH
   /RFDWLRQ                )$1
   'HYLFH QDPH              0    )$1
   'HYLFH 6HULDO 1XPEHU           $ % '$) )
   +DUGZDUH 9HUVLRQ         9
```

o¬ u V ª ¢o- -

11.3 show sysmac

ò 0 — Õ ¢ ù © Ï mac ª - ' Îož

show sysmac

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- rüæx x X X •• “ $ •‘•š•œý

```
6 O R W
8 V H U  6 W D W X V        Q R Q H
6 R I W Z D U H  6 W D W X V    Q R Q H
2 Q O L Q H  0 R G X O H
7 \ S H
3 R U W V
9 H U V L R Q
& R Q I L J X U H G  0 R G X O H
7 \ S H
3 R U W V
9 H U V L R Q
```

o¬ u V ª ¢o- -

11.5 show version slots

ò 0 % ² ¨ ¿ Ù Á ' Îož

show version slots [slot-num]

show version slots [device-id / slot-num]

o¬ @ ƒ ª ¢o-

@ ƒ	T
device-id	Ñ " Z k U # gVSU % " k ò ç } ÿ µ V $ Z k · À c ž ÿ µ % ² ñ ¨ Ñ " Z h
slot-num	V $ Z k U #

o¬ x X % "o- Ô Ó ï % "

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ü g Î x X U Y ò 0 % ² ¨ ¿ Ù Á ' Îož

o¬ F å †o- -

o¬ U P ' Îo-

```
ò 0 % ² ¨ ¿ Ù Á ' Î
5 X L M L H   V K R Z  Y H U V L R Q  V O R W V
' H Y   6 O R W   3 R U W  & R Q I L J X U H G  0 R G X O H   2 Q O L Q H  0 R G X O H     6 R I W Z D U H  6

                Q R Q H              Q R Q H              Q R Q H
                0       6 ) 3   * 7   0       6 ) 3   * 7     Q R Q H
                0       ; ) 3         0       ; ) 3         F D Q Q R W  V W D U W X S
```

```
                0      *7   6)3   0      *7   6)3     RN
     0          1 $              0     &0          PDVWHU
     0          1 $            QRQH                QRQH
```

o¬ u V ª ¢o- -

11.6 sysmac

© Ï 6 MAC ª -ož
sysmac mac-address

í ” F å † ^ ‘ MAC ’ Îož
no sysmac

o¬ @ ƒ ª ¢o-

@ ƒ	T
mac-address	— å MAC ª -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- 1 o•%² " Õ Ñ k © Ï … MAC ª - » Ê ¨ ’ ò á ê ñ Ñ ” FLASH k x ¨ VSU % ” k 9 ² MAC ª - J - • v k © Ï k 1 … MAC ª - ‘ ¨ F å † ^ k M • o e k ò ç F å † ^ ¨ Ä | MAC ª - é k i ¯ … ož * no sysmac x X U Y í ” F å † ^ MAC ’ Î k M • … ó • » Ê ¨ FLASH MAC ª -ož
2o• ¨ à ¼ % ” g 6 © Ï F å 4 auth-mode gateway x X ħk%² ? u — Õ F å 4 Ç à ¼ MAC ª - k ò ç ¾ E à ¼ — Õ k ï U Y … sysmac x X 6 à ¼ — Õ MAC ª - t Á E à ¼ — Õ MAC ª - k R ò … • Ç à ¼ — Õ · “ w F åož ¥ x X N ¨ © Ï F å à ¼ % ” ž ÿ |ož
3o• © Ï 6 MAC ª - ê ñ í ” F å † ^ ‘ MAC ª - k ® ¬ ‘ F å w M o e ÿ |ož

o¬ F å †o- † 1 y í ” F å † ^ ‘ MAC ª - y

```
5 X L M L H  Q R  V \ V P D F
```

† 2 y © Ï 6 MAC ª - y

```
5 X L M L H  V \ V P D F   G  I      H
```

o¬ à • co- ü g ¥ x X Y e k ï U * show run x X © Ï mac F å © k] Æ J ¾ož

o¬ U P ’ Îo-

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

12 a Â Â È ~

12.1 auto-sync time-period

F å E ' ò á É • ž c 5 F å † ^ ž • • œož
auto-sync time-period value

¼ { E ' ò á c 5ož
no auto-sync time-period

Ê Ö E ' ò á c 5 ž • • œ ó • ›ož
default auto-sync time-period

o¬ @ ƒ ª ¢o-

@ ƒ	T
value	c 5 ž • • œ k % y a z ž • 8 R 1 a ñ 1 Ã g2678400 a h

o¬ Þ . F åo- g c 5 startup-config y running-config † ^ k c 5 u Ê • œ 1 4 ž g3600 a bž

o¬ x X % ”o- É • F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- F å E ' ò á É • ž c 5 startup-config y running-config F å † ^ ž • • œ

o¬ F å †o- 1 y F å c 5 u Ê 60 aož

```
5XLMLH FRQILJ UHGXQGDQF\
5XLMLH FRQILJ UHG DXWR V\QF WLPH SHULRG
5HGXQGDQF\ DXWR V\QF WLPH SHULRG HQDEOHG VHFRQGV
5XLMLH FRQILJ UHG H[LW
```

2 y ¼ { c 5ož

```
5XLMLH FRQILJ UHGXQGDQF\
5XLMLH FRQILJ UHG QR DXWR V\QF WLPH SHULRG
5HGXQGDQF\ DXWR V\QF WLPH SHULRG GLVDEOHG
5XLMLH FRQILJ UHG H[LW
```

o¬ à • co- * show redundancy states ò 0

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

12.2 redundancy

µ É • F å % ”ož
redundancy

o¬ @ ƒ ª ¢o-	@ ƒ	T

redundancy forceswitch

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¨ ' ò á ü g ¥ x X k Î ' ò á 1 t Ö y k R ' ò á è • ' ò áož
ü g ½ Õ ä E ¬ } c ž À Õ Y Ú ^ y
z ¨ ' ò á ü g k ¨ R ' ò á z © Ï ñ Ä VSD ½ Õ C Öú%, o — x)ÂÞ z

	õ ô } æ p¦`Ë@è â [} VSU redundancy reload shelf

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- N Ö y R ' ò á k § € ƒ G ô G k ¨ R ' ò á Ö y Ê • k D ÿ ô G • ê ï k ¢ ' Î âož
% Ñ % ” Ö y — Õ x X ” redundancy reload shelf k / Ö y … — Õ z VSU % ” Ö y — Õ x X
” redundancy reload shelf switchid k / Ö y 6 — Õ Z — Õ k ò ç Ö y © — Õ k © Ï ½ Õ Ì
ñ ž Ù Á k é 1 - … VSU © Ï Ö

o¬ F å †o- 1 y N Ö y R ' ò áož

```
5XLMLH UHGXQGDQF\ UHORDG SHHU
7KLV RSHUDWLRQ ZLOO UHORDG WKH FXUUHQW VODYH XQLW $UH \RX V
3UHSDULQJ WR UHORDG SHHU
 y 9 6 8% ” k Ö y Ú Z — Õož
5XLMLH UHGXQGDQF\ UHORDG VKHOI
7KLV RSHUDWLRQ ZLOO UHORDG WKH GHYLFH $UH \RX VXUH WR FRQW
3UHSDULQJ WR UHORDG GHYLFH
```

o¬ U P ' Îo- 1 y ò ç N ¨ % ' ò á é Ö y R ' ò á â Âož

```
3ULYLOHJHG FRPPDQG UHORDG SHHU FDQ RQO\ H[HFXWH LQ 'XSOH[ 6X
```

o¬ u V ª ¢o- -

12.5 show redundancy states

ª P ¢ ù E ' ò á É • Ù Áož

o‹F å % 'ƒ-

) k @ ½ Õož

o¬ F å †o- 1 y ò 0 ¢ ù ' ò á É • Ù Áož

```
5XLMLH! HQDEOH
5XLMLH VKRZ UHGXQGDQF\ VWDWHV
5HGXQGDQF\ UROH PDVWHU
5HGXQGDQF\ VWDWH UHDOWLPH
$XWR V\QF WLPH SHULRG V
```

2 y ò 0 ¢ ù R ' ò á É • Ù Áož

```
5XLMLH! HQDEOH
5XLMLH VKRZ UHGXQGDQF\ VWDWHV
5HGXQGDQF\ UROH VODYH
5HGXQGDQF\ VWDWH UHDOWLPH
```

3 y ò 0 ¢ ù ˜ # ' ò á É • Ù Áož

```
5XLMLH! HQDEOH
5XLMLH VKRZ UHGXQGDQF\ VWDWHV
5HGXQGDQF\ UROH FDQGLHV
```

13 POE a Â

13.1 poe class-lldp enable

— å © Ï LLDP 8) ã ´ k ó • ø •
poe class-lldp enable

¼ { © Ï LLDP 8) ã ´ ož
no poe class-lldp enable

Ê Ö ó • F å
default poe class-lldp enable

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ó • u 4

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- — å © Ï LLDP 8) ã ´ ož

o¬ F å †o- 1 y • o © Ï LLDP 8) ã ´

```
5XLMLH FRQILJ SRH FODVV OOGS HQDEOH
5XLMLH FRQILJ HQG
5XLMLH ZULWH
```

o¬ à • co- … show poe powersupply ò 0 F å ' Î

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

13.2 poe enable

F å € M i ^ ož
poe enable

F å ¼ { € M i ^
no poe enable

Ê Ö ó • F å
default poe enable

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- € M ó • … i ^

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- * Î x X Û F å k … / ¼ { € M i ^

o¬ F å †o- 1 y ¼ { N M * L J D E L W (W K H U Q ˆ H W 0/1

```
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 S R H H Q D E O H
```

o¬ à • co- … show poe interface g0/1 ò 0 F å ' Î

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

13.3 poe legacy

¶ B • o ³ ö Õ PD Ã ož
poe legacy

¶ B ¼ { ³ ö Õ PD Ã ož

no poe legacy

Ê Ö ó • F å
default poe legacy

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ó • u 4 ³ ö Õ PD Ã

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- * Î x X Û F å k … ê ñ ¼ { € M PoE ³ ö Ã % ”ož

o¬ F å †o- 1 y • o € M * L J D E L W (W K H ³ UöÃH%”0/1
5 X L M L H F R Q I L J S R H O H J D F \

o¬ à • co- … show poe interface g0/1 ò 0 F å ' Î

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

13.4 poe max-power

— å € M Â Ý äož
poe max-power int

í ” € M Â Ý ä F å k ó • F å%²
ћo poe max-power8c1207<067 -1.7 F003>8E46F9E>Tj /TT0 1 Tf 21

o¬ Þ . F åo- ó • + € M Â Ý u 4 ä Ÿ ' ò

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- * Î x X Û F å k — å € M Â Ý äož

o¬ F å †o- 1 y — å € M * L J D E L W (W K H Û Ý Q H W 0/1 20W

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 S R H P D [S R Z H U

o¬ à • co- … show poe interface g0/1 ò 0 F å ' Î

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

13.5 poe mode

— å © Ï ˆ ' ò % ”ož

poe mode {auto | energy-saving }

í ” © Ï ˆ ' ò % ” F å k ó • F å%² ož

no poe mode

Ê Ö ó • F å

default poe mode

o¬ @ ƒ ª ¢o-

@ ƒ	T
auto	— å › ' ò % ” % ” k ¥ % ” POE — Õ U # % ”
energy-saving	— å › ' ò % ” - % ” k ¥ % ” POE — Õ ó • % ”

o¬ Þ . F åo- energy-saving

o¬ x X % ”o- ¶ B F å % ”

```
5XLMLH FRQILJ  SRH QRWLILFDWLRQ FRQWURO HQDEOH
5XLMLH FRQILJ  HQG
5XLMLH ZULWH
```

o¬ à • co- … show poe powersupply ò 0 F å ' Î

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

13.7 poe pd-description

— å € M PD T … d ož
poe pd-description pd-name

í " € M PD T … F å
no poe pd-description

Ê Ö ó • F å
default poe pd-description

o¬ @ ƒ ª ¢o-

@ ƒ	T
pd-name	PD T … d k @ ƒ … k Â x u 4 32 …ož

o¬ Þ . F åo- -

o¬ x X % "o- N M F å % "

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- — å RFC3621 pethPsePortType › kPD T …ož

o¬ F å †o- 1 y — å * L J D E L W (W K HNUMQ HPDV T1…

```
5XLMLH FRQILJXUH
5XLMLH FRQILJ LQWHUIDFH *LJDELW(WKHUQHW
5XLMLH FRQILJ LI *LJDELW(WKHUQHW SRH SG GHVFULSWLRQ DS
5XLMLH FRQILJ LI *LJDELW(WKHUQHW HQG
```

o¬ à • co- … show poe interface g0/1 ò 0 F å ' Î

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

13.8 poe power-off time-range name

— å € M ž ^ ož
poe power-off time-range name

í " € M ž ^ F åož
no poe power-off time-range

Ê Ö ó • F å
default poe power-off time-range

o¬ @ ƒ ª ¢o-

@ ƒ	T
name	# ž • • d

o¬ Þ . F åo- -

o¬ x X % "o- N M F å % "

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- * Î x X Û F å k … ê ñ ¼ { € M ž ^

o¬ F å †o- 1 y — å * L J D E L W (W K H U Q H W 8/1 ñ 17:30 ¼ {

```
5XLMLH  FRQILJXUH
5XLMLH FRQILJ  WLPH UDQJH SRH WLPH
5XLMLH FRQILJ WLPH UDQJH  SHULRGLF ZHHNGD\V    WR
5XLMLH FRQILJ WLPH UDQJH  H[LW
5XLMLH FRQILJ  LQWHUIDFH *LJDELW(WKHUQHW
5XLMLH FRQILJ LI *LJDELW(WKHUQHW    SRH SRZHU RII WLPH UDQJH S
```

o¬ à • co- … show poe interface g0/1 ò 0 F å ' Î

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

13.9 poe priority

— å N M ^ ' ò i ¯ ´ož

poe priority { low | high | critical }

í " N M ^ ' ò i ¯ ´ F å k ó • F å%²

no poe priority

Ê Ö ó • F å

default poe priority

o¬ @ ƒ ª ¢o-

@ ƒ	T
{ low | high | critical }	i ¯ ´ k Ä Low o•Higho•Critical U Y # +

o¬ Þ . F åo- Low k € M ó • i ¯ ´ z i ¯ ´

o¬ x X % "o- N M F å % "

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- * Î x X Û F å k … ê ñ ¼ { € M PoE ^ i ¯ ´ož

o¬ F å †o- 1 y — å € M * L J D E L W (W K H ü¯Q HÂ¼ 0/1

```
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  S R H  S U L R U L W \  F U L W L F D O
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  H Q G
```

o¬ à • co- … show poe interface g0/1 ò 0 F å ' Î

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

13.10 poe uninterruptible-power

— å © Ï ½ o • • Ö y ož
poe uninterruptible-power

í " © Ï ½ o • • Ö y F å k ó •%²
no poe uninterruptible-power

Ê Ö ó • F å
default no poe uninterruptible-power

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ó • ¼ {

o¬ x X % "o- ¶ B F å % "

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¨ ¶ B % " • o ½ o • • ^ k ¥ x X Q Ä ¨ ' F å e õ ¨ %² Ê o ž • ¥

o¬ F å †o- 1 y • o ½ o • • ^ w ' F å

```
5XLMLH FRQILJ SRH XQLQWHUUXSWLEOH SRZHU
5XLMLH FRQILJ HQG
5XLMLH ZULWH
```

o¬ à • co- … show poe powersupply ò 0 F å ' Î

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

13.11 poe warning-power

— å © Ï ä s Š J ¿ož
poe warnig-power int

í " © Ï ä s Š J ¿ F å k ó •%²
no poe warnig-power

Ê Ö ó • F å
default poe warnig-power

o¬ @ ƒ ª ¢o-

@ ƒ	T
int	s Š ä ã A k 8 <0-99>

o¬ Þ . F åo- 90

o¬ x X % "o- ¶ B F å % "

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- — å RFC3621 pethMainPseUsageThreshold › k ä s Š J ¿ož

o¬ F å †o- 1 y — å © Ï ä s Š J ¿ 80%ož

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

o¬ à • co- … show poe powersupply ò 0 F å ' Î

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

13.12 show poe interface

ò 0 6 € M POE F å y Ù Á ' Îož
show poe interface interface-name

o¬ @ ƒ ª ¢o-

@ ƒ	T
interface-name	N M d f

o¬ Þ . F åo- -

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ü g Î x X U Y ò 0 6 € M ê ñ Ä € M POE Ù Á

o¬ F å †o- 1 y ò 0 € M *L J D E L W (W K H U Q H W å y 1 POE Ù Á ' Îož

5 X L M L H V K R Z S R H L Q W H U I D F H *L J D E L W (W K H U Q H W
, Q W H U I D F H *L
3 R Z H U H Q D E O H G H Q D E O H
3 R Z H U V W D W X V R Q
0 D [S R Z H U 1 $
$ O O R F D W H S R Z H U 1 $
& X U U H Q W S R Z H U :
$ Y H U D J H S R Z H U :
3 H D N S R Z H U :
9 R O W D J H 9
& X U U H Q W P $
3 ' F O D V V
7 U R X E O H F D X V H 1 R Q H
3 U L R U L W \ F U L W L F D O
/ H J D F \ R I I
3 R Z H U R I I W L P H U D Q J H 1 $
3 R Z H U P D Q D J H P H Q W D X W R
S D L U V W D W X V Q R U P D O

< † K y

<	ª ¢
Interface	N M Ú Zož
Power enabled	© k] Æ • o PoE ož
Power status	PoE © k] Æ • ÷ ˆ ož
Max power	€ M u 4 Â Ý äož
Allocate power	€ M ã F äož
Current power	€ M ¢ ù ƒ ô äož
Average power	€ M ¢ ù u ® ä Ñ' € M •FVµ p' ˜ TÐj O•ˆ0Ÿ@PP r0Ð ž€M Ÿ k°l•Ÿ ¢

o¬ … 6 -o- ü g Î x X U Y ò 0 ñ Ä € M POE Ù Á ê F å

o¬ F å †o- 1 y ñ Ä € M PoE Ù Á ' Îož

```
5XLMLH VKRZ SRH LQWHUIDFHV VWDWXV
,QWHUIDFH 3RZHU  3RZHU &XUU $YJ  3HDN &XUU  7URXEOH 3'  3R
        &RQWURO 6WDWXV 3RZHU 3RZHU 3RZHU &XUUHQW &DXVH  &ODV

*L      HQDEOH RQ      :    :    :   P$              9
*L      HQDEOH RQ      :    :    :   P$              9
*L      HQDEOH RQ      :    :    :   P$              9
*L      HQDEOH RII     :    :    :  P$         1 $    9
*L      HQDEOH RQ      :    :    :   P$              9
*L      HQDEOH RQ      :    :    :   P$              9
*L      HQDEOH RQ      :    :    :   P$              9
*L      HQDEOH RQ      :    :    :   P$              9
*L      HQDEOH RQ      :    :    :   P$              9
*L      HQDEOH RQ      :    :    :   P$              9
*L      HQDEOH RII     :    :    :  P$         1 $    9
*L      HQDEOH RQ      :    :    :   P$              9
*L      HQDEOH RQ      :    :    :  P$              9
*L      HQDEOH RII     :    :    :  P$         1 $    9
*L      HQDEOH RII     :    :    :  P$         1 $    9
*L      HQDEOH RII     :    :    :  P$         1 $    9
*L      HQDEOH RII     :    :    :  P$         1 $    9
*L      HQDEOH RII     :    :    :  P$         1 $    9
*L      HQDEOH RII     :    :    :  P$         1 $    9
*L      HQDEOH RII     :    :    :  P$         1 $    9
*L      HQDEOH RII     :    :    :  P$         1 $    9
*L      HQDEOH RII     :    :    :  P$         1 $    9
```

2 y ñ Ä € M PoE F å ' Îož

```
5XLMLH VKRZ SRH LQWHUIDFHV FRQILJXUDWLRQ
,QWHUIDFH 3RZHU  3RZHU  0D[  $OORF 3RUW   3RUW  3RZHU RI
        &RQWURO 6WDWXV 3RZHU 3RZHU 3UIRULW\ /HJDF\ 7LPH UD

*L      HQDEOH RQ   1 $  1 $  FULWLFDO RII  1 $
*L      HQDEOH RQ   1 $  1 $  FULWLFDO RII  1 $
*L      HQDEOH RQ   1 $  1 $  FULWLFDO RII  1 $
*L      HQDEOH RII  1 $  1 $  FULWLFDO RII  1 $
```

```
*L       HQDEOH   RQ     1 $    1 $    FULWLFDO  RII     1 $
*L       HQDEOH   RQ     1 $    1 $    KLJK      RII     1 $
*L       HQDEOH   RQ     1 $    1 $    KLJK      RII     1 $
*L       HQDEOH   RQ     1 $    1 $    KLJK      RII     1 $
*L       HQDEOH   RQ     1 $    1 $    KLJK      RII     1 $
*L       HQDEOH   RQ     1 $    1 $    KLJK      RII     1 $
*L       HQDEOH   RQ     1 $    1 $    KLJK      RII     1 $
*L       HQDEOH   RII    1 $    1 $    KLJK      RII     1 $
*L       HQDEOH   RQ     1 $    1 $    ORZ       RII     1 $
*L       HQDEOH   RQ     1 $    1 $    ORZ       RII     1 $
*L       HQDEOH   RII    1 $    1 $    ORZ       RII     1 $
*L       HQDEOH   RII    1 $    1 $    ORZ       RII     1 $
*L       HQDEOH   RII    1 $    1 $    ORZ       RII     1 $
*L       HQDEOH   RII    1 $    1 $    ORZ       RII     1 $
*L       HQDEOH   RII    1 $    1 $    ORZ       RII     1 $
*L       HQDEOH   RII    1 $    1 $    ORZ       RII     1 $
*L       HQDEOH   RII    1 $    1 $    ORZ       RII     1 $
*L       HQDEOH   RII    1 $    1 $    ORZ       RII     1 $
*L       HQDEOH   RII    1 $    1 $    ORZ       RII     1 $
```

o¬ U P ' Îo- -

o¬ u V ª ¢o- -

13.14 show poe powersupply

ò 0 ¢ ù POE © Ï ^ Ù Áož

show poe powersupply

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ü g Î x X U Y ò 0 ¢ ù POE © Ï ^ Ù Á

o¬ F å †o- 1 y ò 0 ¢ ù POE © Ï ^ Ù Á

```
   6  ;6 VKRZ SRH SRZHUVXSSO\
```

```
'HYLFH PHPEHU
0FX VRIWZDUH YHUVLRQ
3RZHU PDQDJHPHQW                    HQHUJ\ VDYLQJ
```

aP 5 €˜ W R

14 PKG_MGMT

14.1 clear storage

Ž ” Î ª x ož
clear storage [url]

o¬ @ ƒ ª ¢o-

@ ƒ	T
url	x y Î ª url) £ ê ¶ è ¬ d

o¬ Þ . F åo- l

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- ¥ x X U Y 6 Ž ”î x ê î) £ ñ Ä x k ó • Ž ” Î ª ñ Ä x ož

o¬ F å †o-

```
5 X L M L H  F O H D U  V W R U D J H
5 H P R Y H  W K H  Z K R O H  V W R U D J H  G L U H F W R U \ " > \  Q @ \
```

o¬ à • co- ò 0 6 url

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

14.2 show component

ª P ¢ ù — Õ] x ñ Ä Á ^ C _ Á ^ ’ Îož
show component [component _name]

o¬ @ ƒ ª ¢o-

@ ƒ	T

component _name	Á ^ d fož ¢ ¨4 @ ƒ › ž k 9 ª P — Õ ñ Ä] x Á ^ C _ Á ^ Â Î ' Îož ¢ ¨4 @ ƒ › ž k 9 ª P + • Á ^ ¦ Â ' Î k û à Á ^ Ä © k … k y ¥ Á ^ k 3 o W •ož

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- ¥ x X m _ ¥ ” k k component_name @ ƒ y k ¥ @ ƒ ož ï ¨ ´ k 3 ú Á ^ ù ª ª ¬ } 4 † ¢ ù — Õ ñ Ä] x Á ^ C Á ^ Í Î ' Î k 4 ž • … k @ ƒ show component x Xož ¢ ï ¬ } ¦ Â 4 † Á ^ ž } … k @ ƒ show component x X k U B H + • Á ^ ¦ Â ' Îož * ? ' Î ï U Y • Ž 4 † Á ^ W • Ù Á k î • Á ^ Ä © k t K D ° k ¨ L ” { ž k G ' Á ^ ¶ k U ´ g • µ Ä M } Þ #ož

v Ô ¦ Ñ ° ¶ Q / V ' † o " 3 Ñ 0 • ã ¾ þ (Æ ã â ë • É E * ì show component a — Ÿ ñ n ¦ Ñ 3 Ñ } ° ¶ Q / Ÿ “ t - M ¥ Õ Ó ¾ î ë • É E * ¡)
¢ ä ' û ñ n d

o¬ F å †o- m " ” — Õ ª P ¢ ù] x ñ Ä Á ^ C _ Á ^ ' Îož

```
5XLMLH  VKRZ FRPSRQHQW
3DFNDJH  V\VPRQLW
   9HUVLRQ        FG  DD     %XLOG WLPH :HG 'HF
```

Install time	— Õ x ¥ Á ^ ž •
Description	Á ^ • % T

o¬ u V ª ¢o- -

14.3 show upgrade auto-sync

ª P — Õ c 5 ´ , ¼ F åož

show upgrade auto-sync

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- ¥ x X U Y © Ï Ä c 5 ´ F å k , Œ o• 8 y ´ è ¬.

o¬ F å †o-

o¬ U P ’ Îo- ü g e ª P £ ù © Ï c 5 ož

```
5XLMLH VKRZ XSJUDGH DXWR V\QF
   DXWR V\QF SROLF\ FRRUGLQDWH
   DXWR V\QF UDQJH YVX
   DXWR V\QF SDFNDJH IODVK HJ PBPDLQB I H ELQ
```

o¬ u V ª ¢o- -

o¬ … 6 -o- ú x †^ñÎª†^©ïeU … ¥xXÄ¯ò0 x }'Îož

o¬ Få †o- mªP x †^'Îož

```
5XLMLH  VKRZ XSJUDGH ILOH IODVK  EULGJHBHJ  PB  HD  PLSV
1DPH  EULGJH
9HUVLRQ  FG  DD
3DFNDJH W\SH  FRPPRQ FRPSRQHQW
6XSSRUW WDUJHW  HJ  P
6L]H
%XLOG WLPH  :HG 'HF
,QVWDOO GDWH  QRW LQVWDOOHG
'HVFULSWLRQ  WKLV LV D EULGJH SDFNDJH
3DFNDJH ILOHV
   3DFNDJH ILOHV
      OLE
      OLE  OLEEULGJH VR
      VELQ
      VELQ EULGJH
```

… ¥xXUYBH Ä'Îož

<	ªȼ
Name	df
Version	GbÍÎ'Î
Package type	•º
Support target	u4 D}ªȼ
Size	mÄ Ý4
Build time	Ú ž•
Install date	x™Ê
Description	T 'Î
Package files	Ä m ñÄÄ

o¬ UP'Îo- ügªP x 'Îož

```
1DPH  EULGJH
9HUVLRQ  FG  DD
3DFNDJH W\SH  FRPPRQ FRPSRQHQW
6XSSRUW WDUJHW  HJ  P
6L]H
%XLOG WLPH  :HG 'HF
```

```
,QVWDOO GDWH        QRW LQVWDOOHG
'HVFULSWLRQ        WKLV LV D EULGJH SDFNDJH
3DFNDJH ILOHV
    3DFNDJH ILOHV
```

x k ´ Î ª † ^ © Ï Ä x ož
upgrade url [force]

o¬ @ ƒ ª ¢o-

@ ƒ	T
url	url x y Î ª è ¬ož ¥ x X 9 ´ — Õ Ä y x ož
force	force n P ò ´

o¬ Þ . F åo- I

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- ¥ x X u 4 _ ÿ © Ï Á ^ x k Á ^ x ož … ¥ x X ù k ¯ … copy x X 1 / µ — Õ † ^ © Ï Äož
¢ … ¥ x Xo• 6 8 @ ƒ ž k ´ 1 7 Á c 5 F å k + F ñ © Ï B ^ g ´ož

o¬ F å †o- -

o¬ à • co- 8. … show version detail ò 0 ÿ © Ï Á ^ © k ´ è ož
9. … show component ò 0 Á ^ © k ´ è ož

o¬ U P ’ Îo- 1 m ´ è U P y

8 B J U D G X J K Q V S D F 2 H @ R U Q G H ð@

2 m x — | ê t C ° M • B H x w ü g ´ x X y

, Q Y D O L G S D F N D J H I L O H

3 m — Õ u 4 ¥ x k M • B H x w ü g ´ x X

' H Y L F H G R Q W V X S S R U W

4 m — Õ — ¬ ´ y

7 K H Y H U V L R Q L Q G H Y L F H L V Q H Z H U R U W K H V D P H

5 m ´ q • á k ò — Õ • k U & © k ñ y

1 R H Q R X J K V S D F H I R U G H F R P S U H V V

6 m ß ë M | Ê k © Ï C ° k ð •

o¬ o • j ¨o- l

o¬ u V ª ¢o- -

14.7 upgrade auto-sync package

— Õ © Ï c 5 ´ ò 8 ož
upgrade auto-sync package url

o¬ @ ƒ ª ¢o-

@ ƒ	T
url	© Ï ´ ž k ñ … ´ è ¬

o¬ Þ . F åo- %²) © Ï ´ ñ … ´ è ¬

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- • ‘ … © Ï Þ . F å

o¬ F å †o- -

o¬ à • co- 1. … show upgrade auto-sync ò 0 ¢ ù c 5 ´ Œ ož
2. ò ç url U ˆ © o • è ¬ k … stat x X Û ò U Y 3 o ˜ |ož

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

14.8 upgrade auto-sync policy

— å © Ï c 5 Œ ož
upgrade auto-sync policy [none | compatible | coordinate]

o¬ @ ƒ ª ¢o-

@ ƒ	T
none	g c 5 ´
compatible	Y Í Î ù e ‰ G Û î • © k ¬ } c 5

coordinate	Y ’ ò á ¥ © Ï ´ ‰ G k c 5 4 Í Î

o¬ Þ . F åo- coordinate

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- … ¥ x X ù ¬ } ¯ G • ´ © k] Æ < Ñož

o¬ F å †o- 1 m — Õ c 5 Œ Y ’ ò á Í Î Õož

```
5XLMLH XSJUDGH DXWR V\QF SROLF\ FRRUGLQDWH
```

o¬ à • co- 1. … show upgrade auto-sync ò 0 ¢ ù c 5 ´ Œ ož

o¬ U P ’ Îo- 1 m — å è U P y

```
8SJUDGH DXWR V\QF SROLF\ LV VHW DV FRRUGLQDWH
```

o¬ o • j ¨o- I

o¬ u V ª ¢o- -

14.9 upgrade auto-sync range

— å © Ï c 5 ´ 8 ož

upgrade auto-sync range [chassis | vsu]

o¬ F å †o- 1 m — å c 5 ´ 8 vsu © Ïož

```
5XLMLH XSJUDGH DXWR V\QF UDQJH YVX
```

o¬ à • co- 1. … show upgrade auto-sync ò 0 ¢ ù c 5 ´ 8 ož

o¬ U P ' Îo- 1 m ´ è U P y

```
8SJUDGH DXWR V\QF UDQJH LV VHW DV YVX
```

o¬ o • j ¨o- l

o¬ u V ª ¢o- -

14.10 upgrade download tftp

ú w x k ´ tftp Æ ˜ x ož

upgrade download tftp:/ path [force]

o¬ @ ƒ ª ¢o-

@ ƒ	T
path	path tftp Æ ˜ x è ¬ k ¥ x X R Æ ˜ ú x k w ´ož
force	n P ò ´

o¬ Þ . F åo- l

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- ¥ x X u 4 _ ÿ © Ï Á ^ x k Á ^ x ož … ¥ x X è x † ^ / ¾ q • w ´ož

o¬ F å †o- 1 m ´ main ož

```
5XLMLH XSJUDGH GRZQORDG WIWS                    HJ    PBPDLQB      I   H
$FFHVVLQJ WIWS                  HJ    PBPDLQB      I   H   ELQ




7UDQVPLVVLRQ ILQLVKHG ILOH OHQJWK          E\WHV
 8SJUDGH SURFHVVLQJ LV
```

```
8SJUDGH SURFHVVLQJ LV
8SJUDGH SURFHVVLQJ LV
8SJUDGH LQIR >2.@
      .HUQHO YHUVLRQ>        I G   !      I E  I@
      5RRWIV YHUVLRQ>      DG     !      EFF  H @
8SJUDGH SURFHVVLQJ LV
5HORDG WR WDNH HIIHFW
```

o¬ à • co- 10. … show version detail ò 0 ÿ © Ï Á ^ © k ´ è ož
11. … show component ò 0 Á ^ © k ´ è ož

o¬ UP ' Îo- 1 m ´ è UPy

```
8SJUDGH LQIR >2.@z
```

2m x —|êtC°M•BH x wüg ´xXy

```
,QYDOLG SDFNDJH ILOH
```

3m—Õ u4¥ x kM•BH x wüg ´xXy

```
'HYLFH GRQ W VXSSRUW
```

4m—Õ—¬ ´y

```
7KH YHUVLRQ LQ GHYLFH LV QHZHU RU WKH VDPH
```

5m ´q• ák ò—Õ•k U &©k ñy

```
1R HQRXJK VSDFH IRU GHFRPSUHVV
```

6mßë M|Êk©ÏC°kû© ÆÔòy

```
1R HQRXJK VSDFH  URRWIV EHHQ GHVWUR\HG  3OHDVH XSJUDGH LQ XER
```

o¬ o • j ¨o- l

o¬ u V ª ¢o- -

<	ª ¢
Protocol	à Ì ª - # ‘ k ¥ < ® Internetož
Address	F ^ ª - + • IP ª -ož
Age (min)	ARP Ù Ï “ £ ¨ ž • k Y ã U ‹ož ò ç © Î ª ê ñ ² Á F å k ¥ < › < ? ¿“-” n Pož
Hardware	IP ª - + • F ^ ª -ož
Type	F ^ ª - • º k Y ß à ª - ® ARPAož
Interface	IP ª - ¼ û N Mož

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

3 DHCP

3.1 address range

} ¨ DHCP ª - P ¼ û CLASS 6 CLASS ñ ã F ª - à < 8 k ª - P class F å % ”
address range x X
address range low-ip-address high-ip-address

¥ x X no ¥ ” U Y í ” ¥ à < 8 ož
no address range

o¬ @ ƒ ª ¢o-

@ ƒ	T
low-ip-address	à < 8 Ü ÷ ª -ož
high-ip-address	à < 8 Ä 2 ª -ož

o¬ Þ . F åo- Þ . ¼ û CLASS Ì F å à < 8 k ó • ª - P à < 8 ož

o¬ x X % ”o- ª - P CLASS F å % ”

o¬ … 6 -o- ¥ x X K 9 Server F å z ? CLASS + •%² à < 8 k à < 8 · À R z ª - ñ ä ª - k U Y ª •
Ú CLASS $ • à < 8 M Öož ò ç 6 ¢ 4 ª - P ¼ û CLASS k x + • à < 8 Z Ä F å k é
¥ CLASS ó • à < 8 y CLASS ñ Ô ª - P à < 8 , což

o¬ F å †o- 1 y F å ª - P mypool0 ¼ û class1 à < 8 172.168>-7<0A5>Tj /TT0 1tCLASS

class class-name

no ¥ ” U Y H ƒ #
no class class-name

o¬ @ ƒ ª ¢o-

@ ƒ	T
class-name	ÿ µ CLASS d f k U Y © … ê ƒ k ò myclass ê ñ 1ož

o¬ Þ . F åo- Þ . ª - P Ì ¼ û ` ~ CLASSož

o¬ x X % ”o- DHCP ª - P F å % ”ož

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Server F å z ? DHCP ª - P U Y ÿ G Option82 F ’ Î g ª - ã F k é \

clear ip dhcp binding { * | ip-address }

o¬ @ ƒ ª ¢o-

@ ƒ	T
*	í ” ñ Ä DCHP Ç
ip-address	í ” 6 IP ª - “ £

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Server F å z¥ x X Q Ž ” DHCP Ç k DHCP ô W Ç í ” U Y * no ip dhcp pool x X

o¬ F å †o- 1 y Ž ” 4 IP ª - 192.168.12.100 DHCP Ç

```
5XLMLH FOHDU LS GKFS ELQGLQJ
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

3.5 clear ip dhcp conflict

} Ž ” DHCP Ï s “ £ k ¨ Ô Ó ï % ” clear ip dhcp conflict x X
clear ip dhcp conflict { * | ip-address }

o¬ @ ƒ ª ¢o-

@ ƒ	T
*	í ” ñ Ä DCHP ª - Ï s “ £
ip-address	í ” 6 IP ª - Ï s “ £

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Server F å zDHCP Æ ~ y ª - Ï s ping k ¢ kDHCP ï € y ª - Ï s ª - † ä # ‘ gARP hožclear ip dhcp conflict U Y í ” 7 W Ï s “ £

o¬ F å †o- 1 y Ž ” 4 ñ Ä ª - Ï s “ £

```
5XLMLH FOHDU LS GKFS FRQIOLFW
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

3.6 clear ip dhcp history

} Ž ” DHCP 7 W “ £ k ¨ Ô Ó ï % ” clear ip dhcp history x X
clear ip dhcp history { * | mac-address }

o¬ @ ƒ ª ¢o-

@ ƒ	T
*	í ” ñ Ä DCHP ª - 7 W “ £
mac-address	í ” 6 mac ª - 7 W “ £

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Server Ž ” zServer ‘ 4 ñ Ä À Æ ã F ª - ’ Î kclear ip dhcp history U Y í ” 7 W “ £

o¬ F å †o- 1 y Ž ” 4 ñ Ä ª - 7 W “ £

```
5XLMLH FOHDU LS GKFS KLVWRU\
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

3.7 clear ip dhcp relay statistics

Ö y DHCP Ð ‹ ƒ ˜ož
clear ip dhcp relay statistics

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

clear ip dhcp

-	-

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Server F å z DHCP Æ ˜ † Ï ‹ k “ £ DHCP ª - Po• Ç o• ô W Ç y Ê Ç ƒ) k w + DHCP Æ ˜ N v y G _ • † g 4 Ï ‹ožclear ip dhcp server statistics x X U Y í ” 7 W ‹ ƒ “ £ k M • • ÷ Ï ‹ož

o¬ F å †o- 1 y Ž ” DHCP Æ ˜ Ï ‹ “ £

5 X L M L H F O H D U L S G K F S V H U Y H U V W D W L V W L F V

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

3.10 client-identifier

} # DHCP ï € Š%² ö œ g Y µ œ • ¹ ò ƒ n P h k DHCP ª - P F å x X client-identifier client-identifier unique-identifier

no ¥ ” U Y í ” ï € ö œ
no client-identifier

Ê Ö ó • ›
default client-identifier

o¬ @ ƒ ª ¢o- @ ƒ	T

d f GigabitEthernet 0/1 + • ï € ö œ
0100.d0f8.2233.b467.6967.6162.6974.4574.6865.726e.6574.302f.31 k ¿ 01 W n Y ß à ý P • º k
67.6967.6162.6974.4574.6865.726e.6574.302f.31 GigabitEthernet0/1 ¹ ò Aož¼ 9 ý P W A # k
U Y @ • RFC1700 † Address Resolution Protocol Parameters ~ -ož
Q Ä ¨ g DHCP ô W Ç # ž k õ U Y … ¥ x Xož

o¬ F å †o- 1 y # 4 MAC ª - 00d0.f822.33b4 Y ß à DHCP ï € ï € ö œož

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

o¬ à • co- * show run U • F å è

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.11 client-name

} # DHCP ï € d k DHCP ª - P F å x X client-name
client-name client-name

no ¥ ” í ” DHCP ï € d
no client-name

Ê Ö ó • ›
default client-name

o¬ @ ƒ ª ¢o-

@ ƒ	T
client-name	# DHCP ï € d ožU Y ` ~ ö Õ ASCII … ¤ožd • , e Ö ¿ d k A ò #river DHCP ï € d k # river.i-net.com.cn

o¬ Þ . F åo- Þ . Z Ä # ï € d

o¬ x X % ”o- DHCP ª - P F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Server F å z Q Ä ¨ g DHCP ô W Ç # ž k õ U Y ï ¥ x X # DHCP ï € d ož ¥ d • ¥ , e Ö ¿ d

o¬ F å †o- 1 y # 4%² … river • ï € d ož

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

o¬ à • co- * show run U • F å è

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.12 default-router

DHCP ï € Þ . à ¼ k DHCP ª - P F å x X default-router

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

no ¥ " U Y í " Þ . à ¼ #

no default-router

Ê Ö ó • ›

defaut default-router

o¬ @ ƒ ª ¢o-

@ ƒ	T
ip-address	# WINS Æ ˜ IP ª -ož } L 5 F å%²
ip-address2…ip-address8	g U # h Â Ú U Y F å 8 à ¼ož Þ . Õ Ñ Q Ä%² IP ª -

o¬ Þ . F åo- Þ . Z Ä # Þ . à ¼

o¬ x X % "o- DHCP ª - P F å % "

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Server F å z%² " Õ Ñ kDHCP ï € ¬ } R DHCP Æ ˜ B ± Þ . à ¼ ' ÎožDHCP Æ ˜ 5 ¬ } ï € 6 %² à ¼ IP ª - k ¥ ª - · À ã F Ë ï ª - ¨ c%² à <ož

o¬ F å †o- 1 y # 4 192.168.12.1 • Þ . à ¼

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

o¬ à • co- * show run U • F å è

o¬ U P ' Îo- 1 y F å ³ c ª -

```
5XLMLH GKFS FRQILJ GHIDXOW URXWHU
 (UURU LS DGGUHVV LV QRW YDOLG
```

o¬ o • j ¨o- 1. F å ³ % n ª -
2. F å Ý 8 Ä | ª -

o¬ u V ª ¢o- -

3.13 dns-server

} # DHCP ï € DNS Æ ˜ k DHCP ª - P F å x X

o¬ U P ' Îo- 1 y F å ³ c ª -

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

o¬ o • j ¨o- 1. F å ³ % n ª -
2. F å Ý 8 Ä | ª -

3.14 domain-name

} # DHCP ï € e Ö ¿ d k DHCP ª - P x X domain-name
domain-name domain-name

no ¥ " U Y í " e Ö ¿ d
no domain-name

Ê Ö ó • ›
defaut domain-name

o¬ @ ƒ ª ¢o-

@ ƒ	T
domain-name	# DHCP ï € e Ö ¿ d …

o¬ Þ . F åo- Þ . Z Ä e Ö ¿ d

o¬ x X % "o- DHCP ª - P F å % "

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Server F å zDHCP ï € B ± 4 6 e Ö ¿ d e k ¢ ˜ | À Ä c ý e Ö ¿ d Ñ ž k + N *
Ñ d < U Y 4

o¬ F å †o- 1 y Ë DHCP ï € # 4 e Ö ¿ d i-net.com.cn

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

o¬ à • co- * show run U • F å è

o¬ U P ' Îo- 1 y F å ï € e Ö ¿ d

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

o¬ o • j ¨o- -

3.16 host

} # DHCP ï € Ñ IP ª - y à Ì Q A k DHCP ª - P F å x X host
host ip-address [netmask]

no ¥ ” U Y í ” DHCP ï € IP ª - y à Ì Q A #
no host

Ê Ö ó • ›
defaut host

o¬ @ ƒ ª ¢o-

@ ƒ	T
ip-address	# DHCP ï € Ñ IP ª -
netmask	# DHCP ï € Ñ à Ì Q A

o¬ Þ . F åo- Z Ä # Ñ IP ª - y à Ì Q A

o¬ x X % ”o- DHCP ª - P F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Server F å z ò ç à Ì Q A Z Ä ¢ G # kDHCP Æ ˜ 1 ï ¥ IP ª - À à Ì Q AožA •
ª - à Ì Q A 255.0.0.0 z B • ª - à Ì Q A 255.255.0 zC • ª - à Ì Q A 255.255.255.0ož
Q Ä ¨ g DHCP ô W Ç # ž k õ U Y … ¥ x Xož

o¬ F å †o- 1 y 1 ï € IP ª - — 192.168.12.91 k Q A 255.255.255.240

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

o¬ à • co- * show run U • F å è

o¬ U P ’ Îo- 1 y F å ³ c ª -

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

o¬ o • j ¨o- 1. F å ³ c ª -

3.17 ip address dhcp

} … ± Y ß à ê ñ PPPoHDLCoFR / x N M Ü * DHCP B ± IP ª - ' Î k N M F å x X ip address dhcp

ip address dhcp

no ¥ " U Y H ƒ ¥ F å

no ip address dhcp

Ê Ö ó • ›

defaut ip address dhcp

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- Þ . N M * DHCP B ± IP ª -

o¬ x X % "o- N M F å % "

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Client F å z RGOS ÷ ^ DHCP ï € k ¨ ¬ L IP ª - ž k } L DHCP Æ ˜ U ˆ < F å @ ƒ ' Î y 1 hDHCP # ¾ 1 k ï € ÿ à Q A z 2 hDHCP # ¾ 3 k c%² ÿ à à ¼ ' Î z 3 hDHCP # ¾ 6 k DNS Æ ˜ ' Î z4 hDHCP # ¾ 15 k Ñ e Ö ¿ d zDHCP # ¾ 44 k WINS Æ ˜ ' Î g U # F å hož RGOS ÷ ^ ï € ª • ¨ PPPo•FRo•HDLC e è * dhcp B ± ª - k ¬ } Æ ˜ u 4 k) ù é [Æ ˜ u 4 ¥

o¬ F å †o- 1 y … ± FastEthernet 0 € M B ± IP ª -

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 L S D G G U H V V G K F S

o¬ à • co- * show run U • F å è

o¬ U P ' Îo- -

o¬ o • j ¨o- 1. ¨ 8 C M • ï o €

3.18 ip dhcp class

} #%² CLASS w µ ¶ B CLASS F å % " k ¶ B F å % " ip dhcp class x X

ip dhcp class class-name

no ¥ ” U Y í ” ¶ B CLASS
no ip dhcp class class-name

o¬ @ ƒ ª ¢o-

@ ƒ	T
class-name	ÿ µ CLASS d f k U Y © … ê ƒ k ò myclass ê ñ 1ož

o¬ Þ . F åo- Þ . Ì F å classož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Server F å zü g ¥ x X k< k µ ¶ B CLASS F å % ” k¨ F å % ” kU Y F å CLASS F Option82 ’ Îo•CLASS ö œ ’ Î

o¬ F å †o- 1 y F å%² ¶ B CLASS
5 X L M L H F R Q I L J L S G K F S F O D V V P \ F O D V V

o¬ à • co- * show run U • F å è

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.19 ip dhcp excluded-address

} # î ? IP ª - k … ± DHCP Æ ˜ k 1 ¿ ã F Ë DHCP ï € k ¶ B F å x X
ip dhcp excluded-address low-ip-address [high-ip-address]

¥ x X no ¥ ” U Y H ƒ _ #
no ip dhcp excluded-address low-ip-address [high-ip-address]

Ê Ö Þ . F å
default ip dhcp excluded-address low-ip-address [high-ip-address]

o¬ @ ƒ ª ¢o-

@ ƒ	T
low-ip-address	L ‹ IP ª - k ê ñ L ‹ IP ª - 8 Ü ÷ IP ª -

high-ip-address	L ‹ ª - 8 È Ø IP ª -ož Þ . Õ Ñ ¿ › low-ip-address

o¬ Þ . F åo- Þ . DHCP Æ ˜ã F … ª - P IP ª -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Server F å z ò ç Z Ä F å L ‹ IP ª - kDHCP Æ ˜k ¡ £ ã F DHCP ª - P ñ Ä IP ª -ož¥ x X U Y Ô Ñ ‘ %² ? IP ª - k9 ² ? ª - t ã F Ë DHCP ï €ož¤ G ª # L ‹ IP ª - k - U Y × 5 DHCP Æ ˜ã F ª - ž Ï s y ž •

o¬ F å †o- 1 yDHCP Æ ˜1 k ¡ £ ã F 192.168.12.100~150 8 Ä IP ª -

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

2 y í ” † 1 L ” ª - 8

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

o¬ à • co- * show run U Y € (F å è

o¬ U P ’ Îo- 1 y F å ³ c L ” ª -

```
5 X L M L H F R Q I L J L S G K H [ F O X G H G D G G U H V V
  ( U U R U Ip address 225.1.1.225 or 1.1.1.1 is not valid!
```

2 y í ” ¨ L ” ª -

```
5 X L M L H F R Q I L J Q R L S G K F S H [ F O X G H G D G G U H V V
  Range [20.1.1.1, 20.1.1.1] is not in the database.
```

o¬ o • j ¨o- 1. F å ³ c L ” ª -

2. í ” ¨ L ” ª -

o¬ u V ª ¢o- -

3.20 ip dhcp force-send-nak

} F å ò G NAK †

ip dhcp force-send-nak

H ƒ ò G

default ip dhcp force-send-nak

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- Þ . F å • o ò G NAK †

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Server F å zDHCP ï € ¨ ?) — Õ o ž ˜ C k ò $ ù … IP ª - k G DHCPREQUEST ¬ L † g Ò ³ k e È Ü Ç) … ¥DHCPREQUES14

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Server F å zDHCP Æ ˜ R DHCP ª - P ¡ £ ã F IP ª - ž k k ping q • Û y ¥ ª - © k] t ¿ Ñ) k ò ç) < “ £ Û k ò ç Z) < ã F Ë DHCP ï €ožPing q • Þ . G

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.25 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¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ¼ { DHCP relay check server-id ož

o¬ x X % ”o- ¶ B % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Server F å z ¢ F å x X ip dhcp relay check server-id e kDHCP Relay N 1 DHCP ¬ L † ô G ñ option server-id 6 Æ ˜ož ò ç Z Ä F å ¥ x X k é g ñ Ä F å DHCP Æ ˜ ô G DHCP ¬ L †ož

o¬ F å †o- 1 y o DHCP relay check server-di ož
5 X L M L H F R Q I L J L S G K F S U H O D \ F K H F N V H U Y H U L G
2 y ¼ { DHCP relay check server-id ož
5 X L M L H F R Q I L J Q R L S G K F S U H O D \ F K H F N V H U Y H U L G

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

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.26 ip dhcp relay information circuit-id format

F å DHCP option82 ÿ # ¾ circuit-id # — Õ d f ož
ip dhcp relay information circuit-id string [devicename]

¼ { DHCP option82 ÿ # ¾ circuit-id # — Õ d f ož
no ip dhcp relay information option82

o¬ @ ƒ ª ¢o-

@ ƒ	T
devicename	ï # — Õ d f

o¬ Þ . F åo- ¼ { DHCP option82 ÿ # ¾ circuit-id # — Õ d f ož

o¬ x X % ”o- ¶ B % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Relay F å z ¢ F å x X ip dhcp relay informati on circuit-id string x X ž k — Õ Ÿ DHCP
Ð k ¨ ô G DHCP ¬ L † i k ¨ DHCP ¬ L † • option ’ Îož

o¬ F å †o- 1 y F å DHCP option82 ÿ # ¾ circuit-id # — Õ d f ož
5 X L M L H F R Q I L J L S G K F S U H O D \ L Q I R U P D W L R Q F L U F X L W L G V W U L Q J G H
2 y ¼ { HCP option82 ÿ # ¾ circuit-id # — Õ d f ož
5 X L M L H F R Q I L J Q R L S G K F S U H O D \ L Q I R U P D W L R Q F L U F X L W L G V W U L Q J

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

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.28 ip dhcp relay information option82

o DHCP option82 ož
ip dhcp relay information option82

¼ { DHCP option82 ož
no ip dhcp relay information option82

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ¼ { DHCP option82 ož

o¬ x X % ”o- ¶ B % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Relay F å z ¢ F å x X ip dhcp relay information option82 x X ž k — Õ Ÿ DHCP Đ k ¨
ô G DHCP ¬ L † i k ¨ DHCP ¬ L † • option ’ Îož

o¬ F å †o- 1 y o DHCP option82 ož

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

2 y ¼ { DHCP option82 ož

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

o¬ à • co- 1 y … show

o¬ Þ . ´ ðo-03 Tc -7.407 -1.733 T-( )Tj /C2_0 1 Tf 0 Tc T* <6FAC048509000736062D6FAD>Tj /TT0 1 Tf37opti79E036B>536 5m 432.6 5m4866F32-1.7

o¬ … 6 -o- ¥ x X K 9 Relay F å z ¢ F å x X ip dhcp relay information remote-id format x X ž k — Õ Ÿ DHCP
Ð k ¨ ô G DHCP ¬ L † i k ¨ DHCP ¬ L † • option ’ Îož
o¬ F å †o- 1 y F å DHCP option82 ÿ # ¾ remote-id # Ê - Ä ož

5XLMLH FRQILJ QR LS GKFS UHOD\ LQIRUPDWLRQ UHPRWH LG VWULQJ

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

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.31 ip dhcp relay suppression

o DHCP relay suppression ož
ip dhcp relay suppression

¼ { DHCP relay suppresson ož
no ip dhcp relay suppression

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ¼ { DHCP relay suppression ož

o¬ x X % ”o- N M % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Relay F å ž¨ 6 N M F å x X ip dhcp relay suppression e kŁ I U ¥ N M v ñ DHCP ¬ L † z ò + 9 ¿ U N M v ñ DHCP ¬ L † k é 3 o ô Gož

o¬ F å †o- 1 y o DHCP relay suppresson ož ož

o¬ u V ª ¢o- -

3.32 ip dhcp relay-information remote-id format

F å î N M DHCP option82 ÿ # ¾ remote-id # Ê - Ä ož
ip dhcp relay-information re mote-id format {hex | ascii} [string]

¼ { î N M DHCP option82 ÿ # ¾ remote-id # Ê - Ä ož
no ip dhcp relay-information re mote-id format {hex | ascii}

o¬ @ ƒ ª ¢o-

@ ƒ	T
hex	Ê - Ä ” ¹ ò ƒ
ascii	Ê - Ä ” ascii A
string	Remote-id ÿ # ¾ # Ê - Ä

o¬ Þ . F åo- ¼ { î N M DHCP option82 ÿ # ¾ remote-id # Ê - Ä ož

o¬ x X % ”o- N M % ”

o¬ Þ . ´ ðo- 14 # Ê

no ip dhcp server arp-detect

Ê Ö ó • ¼ { DHCP ï ¿ y ož
default ip dhcp server arp-detect

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ¼ { DHCP ï ¿ y ož

o¬ x X % ”o- ¶ B % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Server F å z F å DHCP Æ ˜ © k y ï ¿ož ò ç ï ¿ e%² < ž • Ä Z Ä M • ¿ k é › v ã F Ë ¥ ï ª -ož

o¬ F å †o- 1 y o DHCP ï ¿ y ož

```
5XLMLH FRQILJ LS GKFS VHUYHU DUS GHWHFW
```

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

o¬ U P ’ Îo- -

o¬ o • j ¨o-

o¬ u V ª ¢o- -

3.35 ip dhcp use class

} F å o CLASS g ª - ã F k ¶ B F å % ” ip dhcp use class x X k ¥ x X no ¥ ” U Y ¼ { … CLASS g ª - ã Fož
ip dhcp use class
no ip dhcp use class

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- Þ . o CLASS g ª - ã Fož

o¬ x X % ”o- ¶ B F å % ”ož

o¬ … 6 -o- ¥ x X K 9 Server F å z

o¬ F å †o- 1 y F å o CLASS g ª - ã Fož

```
5XLMLH FRQILJ LS GKFS XVH FODVV
```

o¬ à • co- * show run U 0 ñ F å è

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.36 ip helper-address

• %² ¶ B ê + • N M DHCP Æ ˜ ª -ož

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

í ”%² ¶ B ê + • N M DHCP Æ ˜ ª -ož

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
cycle-mode	• o dhcp ¬ L † ô G ñ Ä dhcp Æ ˜
A.B.C.D	DHCP Æ ˜ ª -

o¬ Þ . F åo- DHCP Æ ˜ ç n qož

o¬ x X % ”o- ¶ B % ”o• N M % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Relay F å z¨ F å DHCP Æ ˜ IP ª - e k— Õ 1 v ñ DHCP ¬ L † 1 ô G Ë zc ž k 1 v ñ DHCP Æ ˜ € • † ô G Ë DHCP ï €ož
DHCP Æ ˜ ª - U Y ¶ B F å k - U Y ¨ C N M F åož ¶ B ê ñ ? C N M Â Ú U Y F å 20
DHCP Æ ˜ ª -ož ¨ N M v ñ DHCP ¬ L † ž k Ù ¯ … N M DHCP Æ ˜ ç n z ò ç N M µ Z Ä F å DHCP Æ ˜ ç n k é … ¶ B F å DHCP Æ ˜ ç nož
¶ B F å % ” U + dhcp relay cycle-mode @ ƒ g F å k¢ o cycle-mode ž ˜ n P dhcp relay ª • N v ñ dhcp client ¬ L † ô G ñ Y • é ñ Ä dhcp server ¢ o cycle-mode ž ˜ n P dhcp

relay Q N v ñ dhcp client ¬ L † ô G ñ Y • é †%² dhcp server ožcycle-mode Q ¨ ¶ B F å
% ” F å k • 9 ¶ B y N M k ó • o ož

Ê Ö ó • ›
defaut lease

o¬ @ ƒ ª ¢o-

@ ƒ	T
days	# c Ê ž • k Y Þ % y
hours	g U # h # c Ê ž • k Y 4 ž % yož # 4 ž ƒ ù · À # Þ ƒož Þ . 0
minutes	g U # h # c Ê ž • k Y ã U % yož # ã U ù · À # Þ ƒ y 4 ž ƒ , Þ . 0
infinite	# Z Ä ’ ò c Ê

o¬ Þ . F åo- ² Á ª - P Þ . c Ê infiniteož ¿ ª - P Þ . c Ê %² Þ

o¬ x X % ”o- DHCP ª - P F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Server F å z ¢ c Ê ½ ñ ž kDHCP ï € k G Ò c ¬ LožDHCP Æ ˜%² " k ª • Ò c k Ò c ª - ‘ 4 J

o¬ F å †o- 1 y 1 DHCP c Ê — 1 4 ž
5 X L M L H G K F S ÐRIQMLHJ
2 y 1 DHCP c Ê — 1 ã U
5 X L M L H G K F S F R Q I L J O H D V H

o¬ à • co- * show run U • F å è

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

3.38 lease-threshold

} # DHCP ª - P s Š ã A k DHCP ª - P F å x X lease-threshold
lease-threshold percentage

no ¥ ” ¼ { s Š
no lease-threshold

Ê Ö ó • ›

defaut lease-threshold

o¬ @ ƒ ª ¢o-

	„ 8 k W n h-node … # y „ b-node k z n º - µ „ p-node k + ^ º - µ „ m-node k Œ ` º - µ „ h-node k Ö ` º - µ

o¬ Þ . F åo- Þ . Z Ä # NetBIOS - µ • º

o¬ x X % ”o- DHCP ª - P F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Server F å z ³ ÷ DHCP ï € NetBIOS - µ • º Ä š _ y 1 hBroadcast k z n º - µ k * z
n • ” g NetBIOS d † ä z 2 hPeer-to-peer k + ^ º - µ k * + N ¬ L WINS Æ ˜ g NetBIOS d
† ä z3 hMixed k Œ ` º - µ k ¯ * z n • ” ¬ L d † ä k e * WINS Æ ˜ N g d † ä z
4 hHybrid k Ö ` º - µ k Ù ¯ + N ¬ L WINS Æ ˜ g NetBIOS d † ä k ò ç Z Ä ± ñ • ‹ k < * z
n • ” g NetBIOS d † äož
Þ . Õ Ñ k ³ ÷ q • © Ï - µ • º z n º ê ñ Ö ` ºož ò ç Z Ä F å WINS Æ ˜ k < z n º - µ z
ò ç F å 4 WINS Æ ˜ k < Ö ` º - µož • ‘ 1 NetBIOS - µ • º — Hybrid

o¬ F å †o- 1 y 1 ³ ÷ DHCP ï € NetBIOS - µ — Ö ` º - µ y
5 X L M L H G K F S F R Q I L J Q H W E L R V Q R G H W \ S H K Q R G H

o¬ à • co- * show run U • F å è

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

3.41 network

} # DHCP ª - P à Ì Z y à Ì Q A k DHCP ª - P F å x X network;
network network-number net-mask [low-ip-address high-ip-address]

no ¥ ” U Y í ” # z
no network

Ê Ö ó • ›ož
defaut network

o¬ @ ƒ ª ¢o-

@ ƒ	T
network-number	DHCP ª - P IP ª - à Ì Z
net-mask	DHCP ª - P IP ª - à Ì Q Aož ò ç Z Ä # Q A k Þ . À à Ì Q A
low-ip-address	U Ü ÷ IP ª -
high-ip-address	U È Ø IP ª -

o¬ Þ . F åo- Þ . Z Ä # à Ì Z y à Ì Q A

o¬ x X % ”o- DHCP ª - P F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Server F å z # • • ª - P ÿ à C ¿ Q A k DHCP Æ ˜ U ˆ 4%² U ã F Ë ï € ª - q •ož ” ³ Ä ª - L ‹ F å k k é ñ Ä ª - P ª - C Ä U ã F Ë ï €ož DHCP ¨ ã F ª - P ª - k © 7 ¿ ~ g k ò ç ¥ ª -] Æ ¨ DHCP Ç n ê ñ y ñ ¥ ª -] Æ ¨ ¥ à < ¨ k < ò %² ª - k + ñ ã F%² Ä | ª -ož

ª - ã F Õ Ñ U show ip dhcp binding x X ò 0 kª - y Ï s Õ Ñ U show ip dhcp conflict x X ò 0ož

o¬ F å †o- 1 y # 4 DHCP ª - P à Ì Z 192.168.12.0 k Q A 255.255.255.240

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

o¬ à • co- * show run U • F å è

o¬ U P ’ Îo- 1 y F å ³ c ª -

```
5 X L M L H G K F S F R Q I L J Q H W Z R U N
238.5.5.5 / 255.0.0.0 is an invalid network
```

o¬ o • j ¨o- 1. F å ³ % n ª -

3.42 next-server

} # DHCP ï € o i ¬ } ˜ | o Æ ˜ ç n k DHCP ª - P F å x X next-server

next-server ip-address [ip-address2…ip-address8]

no ¥ ” U Y í ” o Æ ˜ ç n #

no next-server

Ê Ö ó • ›

defaut next-server

@ ƒ	T
ip-address	# o Æ ˜ IP ª - k * o TFTP Æ ˜ož } L 5 F å%²
ip-address2…ip-address8	g U # h Â Ú U Y F å 8 o Æ ˜

o¬ Þ . F åo- — Þ . F å

o¬ x X % ”o- DHCP ª - P F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Server F å z # Ú o Æ ˜ ž k Ê ¨ ù µ i ¯ Ó ä kDHCP ï € Q Ä L ¨ ù ã o Æ ˜ * ’ â Â k õ k # + %² o Æ ˜ož

o¬ F å †o- 1 y DHCP ï € 6 4 o Æ ˜ 192.168.12.4

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

o¬ à • co- * show run U • F å è

o¬ U P ’ Îo- 1 y F å ³ c ª -

```
5 X L M L H G K F S F R Q I L J Q H [ W V H U Y H U
% Error: ip address(238.5.5.5) is invalid!
```

o¬ o • j ¨o- 1. F å ³ % n ª -
2. F å Ý 8 Æ ˜ ª - ç n

3.43 option

} F å DHCP Æ ˜ # ¾ k DHCP ª - P F å x X option
option code { ascii string | hex string | ip ip-address }

no ¥ ” U Y í ” option #
no option

Ê Ö ó • ›
defaut option

@ ƒ	T

¥ x X U ^ ¥ ” pool-status enable | disable

o¬ @ ƒ ª ¢o-

	@ ƒ	T
enable o ª - P		
disable ¼ { ª - P		

o¬ Þ . F åo- F å 4 ª - P e ¥ ª - P o

o¬ x X % ”o- DHCP ª - P F å % ”

o¬ Þ . ´ ðo-

o¬ … 6 -o- ¥ x X K 9Server F å z ¨ … DHCP Æ ˜ U Y * ¥ x X Û ž ¼ { ê ñ o + • ª - P

o¬ F å †o- 1 y 1 ª - P ¼ {

5XLMLH GKFS FRQILJ SRRO VWDWXV GLVDEOH

o¬ à • co- * show run U • F å è

o¬ U P ’ Îo-

o¬ o • j ¨o-

3.45 relay agent information

} ¨ ¶ B CLASS µOption82 F ’ Î F å % ” k ¶ BCLASS F å % ” relay agent x X k ¥ x X no ¥ ” U Y í ” ¥CLASS ñ ÄOption82 F ’ Î rel

	@ ƒ	T
- -		

o¬ Þ . F åo- o¬ x X % ”o- ¶ BCLASS F å % ”ož

o¬ … 6 -o- ¥ x X K 9Server F å z ü g ¥ x X k < k µOption82 F ’ Î F å % ” k ª P y

5XLMLH FRQILJ GKFS FODVV UHOD\LQIR

¨ F å % ” k U Y F å class F Ú Option82 ’ Îož

o¬ F å †o- 1 y F å%² ¶ B CLASS w µ Option82 F ’ Î F å % ”ož

5XLMLH FRQILJ LS GKFS FODVV P\FODVV

5XLMLH FRQILJ GKFS FODVV UHOD\ DJHQW LQIRUP@ÆåF R Q

o¬ à • co- * show run U • F å è

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

3.47 remark

} ¨ ¶ B CLASS F å T ¥ CLASS

o¬ x X % ”o-

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- Client F å z ª P • ï € ªÀO ‘• ip ª - , ¼ ’ Î

o¬ F å †o- 1 DHCP

```
5XLMLH VKRZ GKFS OHDVH
7HPS ,3 DGGU IRU SHHU RQ ,QWHUIDFH )DVW(WKHUQHW
7HPS VXE QHW PDVN
'+&3 /HDVH VHUYHU VWDWH %RXQG
'+&3 WUDQVDFWLRQ LG EHHG
/HDVH VHFV 5HQHZDO VHFV 5HELQG VHFV
7HPS GHIDXOW JDWHZD\ DGGU
1H[W WLPH ILUHV DIWHU
5HWU\ FRXQW &OLHQW ,' G I H ( )
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • jª†úÐ -

3.50 show ip dhcp binding

ª P DHCP ª - Ça@mPM

show ip dhcp binding [ip-address]

o¬ @ ƒª z&úÐ

o¬ F å †o- 1 y ª P DHCP ª - Ç Õ Ñ

```
5XLMLH VKRZ LS GKFS ELQGLQJ
7RWDO QXPEHU RI FOLHQWV
([SLUHG FOLHQWV
5XQQLQJ FOLHQWV
```

```
5XLMLH  VKRZ LS GKFS FRQIOLFW
,3 DGGUHVV     'HWHFWLRQ 0HWKRG
                    3LQJ
```

ªP È ç _ <m#fA ò y

IP address	U ã F Ë DHCP ï € IP ª-ož
Detection Method	Ï s y • což

o¬ à • co- -

o¬ U P ' Îo- -

o¬ o • j ¨o- -

3.52 show ip dhcp history

ªP DHCP 7 W c ³ " £

show ip dhcp history

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- — Þ . g

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ ... 6 -o- ¥ x X K 9 Server F å z ¥ x X U Y ª P DHCP] ã F c ³ ' Î

o¬ F å †o- 1 y ª P DHCP] ã F c ³ ' Î

```
5XLMLH VKRZ LS GKFS KLVWRU\
([SLUHG FOLHQWV
,3 DGGUHVV      +DUGZDUH DGGUHVV     /HDVH H[SLUDWLRQ
                DEFG  DF       ,'/(
                DEFG  DH       ,'/(
                DEFG  DG       ,'/(
5XQQLQJ FOLHQWV
```

ªP È ç _ <m#fA ò y

IP address	] ã F Ë DHCP ï € IP ª-ož

Total	ª - P U ˆ ã F ª - P È ƒ ož
Distributed	] ã F ª - ƒ)ož
Remained	, Ì ã F y U Ö þ • ª - ƒ)ož

o¬ à • co-

o¬ U P ’ Îo-

o¬ o • j ¨o-

3.54 show ip dhcp pool

ª P DHCP Æ ˜ ª - P … Õ Ñ C ¿ ï ä ˆ ’ Î

Remained	, Ì ã F y U Ö þ • ª - ƒ)ož
Percentage	¢ ù ª - P ª - ï ä

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

3.55 show ip dhcp relay-statistics

ª P DHCP Æ ˜ _ _ Ï ‹ ƒ G

show ip dhcp relay-statistics

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- — Þ . g

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X K 9 Relay F å

o¬ F å †o- 1. ª P DHCP -Relay _ _ Ï ‹ ƒ G

```
5XLMLH VKRZ LS GKFS UHOD\ VWDWLVWLFV
&\FOH PRGH

0HVVDJH                    &RXQW
'LVFRYHU
2IIHU
5HTXHVW
$FN
1DN
'HFOLQH
5HOHDVH
,QIR
%DG
```

'LUHFWLRQ	&RXQW
5[FOLHQW	
5[FOLHQW XQL	
5[FOLHQW EUR	
7[FOLHQW	
7[FOLHQW XQL	
7[FOLHQW EUR	
5[VHUYHU	

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

3.56 show ip dhcp server statistics

ª P DHCP Æ ˜ _ _ Ï ‹ ƒ G

show ip dhcp server statistics

o¬ @ ƒ ª ¢o-

@ ƒ	T

```
0HVVDJH                    5HFHLYHG
%2275(48(67
'+&3',6&29(5
'+&35(48(67
'+&3'(&/,1(
'+&35(/(($6(
'+&3,1)250

0HVVDJH                    6HQW
%2275(3/<
'+&32))(5
'+&3$&.
'+&31$.
'+&35(47,0(6
'+&35(468&7,0(6
',6&29(5 352&(66 (5525
/($6( ,1 3,1*67$7(
12 /($6( 5(6285&(
6(59(5,' 12 0$7&+

UHFY
VHQG
```

ªP È ç _ < m #fA ò

Address pools	ª- P ƒ
Automatic bindings	ª- Ç ƒ)ož
Manual bindings	ô W ª- Ç ƒ)ož
Expired bindings	Ê ª- Ç ƒ)ož
Malformed messages	DHCP N I ñ 3 o † ƒ)ož
Message Received or Sent	DHCP Æ ˜N v y G ?_ † ƒ)ož
DHCPREQTIMES	DHCP v ñ ¬L †È ƒ)
DHCPREQSUCTIMES	DHCP v ñ ¬L t è Ô ò †ƒ)
DISCOVER-PROCESS-ERROR	DHCP v ñ DISCOVER †Ô ò ß j ƒ)
LEASE-IN-PINGSTATE	¢ ù Ô ¨ PING y Ù Á c ³ ƒ)
NO-LEASE-RESOURCE	—ª- U ã F ª- P ƒ)
recv	v ñ DISCOVER kREQUEST k INFORM †M È ƒ)

send	Î • G € • † ƒ) Ï ‹

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

3.57 show ip dhcp socket

ª P DHCP Æ ˜ ñ N « –

show ip dhcp socket

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y ª P DHCP Æ ˜ ì N « –

```
U X L M L H  V K R Z  L S  G K F S  V R F N H W
G K F S  V R F N H W
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

4 DNS

4.1 clear host

Ž ” Á Ñ d Ù Ï nož
clear host [* | host-name]

o¬ @ ƒ ª ¢o-

@ ƒ	T
host-name	U Y í ” î 6 Á ¿ d Ù Ïož
*	n P í ” ñ Ä Á ¿ d Ù Ï

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- Ñ d Ù Ï n ¥ 0 “ £ k Ä Û › y

* ip host ² Á F å z
* DNS Á .ož ü g ¥ x X k k í ” ¢ ù * DNS Á . ñ Ñ d “ £ož

o¬ F å †o- 1 y Y F å k k í ” Ñ d-IP ª - Ù Ï n ñ Ä Á . ñ ¥ 0 “ £ Ä

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

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

4.2 ip domain-lookup

o DNS g ¿ d † äož
ip domain-lookup

¼ { DNS ¿ d † ä ož
no ip domain-lookup

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- Þ . Õ Ñ ø • DNS ¿ d † ä

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X ø • DNS ¿ d † ä • ¼ k ü g ¥ x X k é o DNS g ¿ d † äož

o¬ F å †o- 1 y ¼ { DNS ¿ d † ä ož

```
5XLMLH FRQILJ QR LS GRPDLQ ORRNXS
```

o¬ à • co- * show run ò 0 F å k ¨ ip domain-lookup F åož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.3 ip host

ô W F å Ñ d y IP ª - ¥ 0ož

ip host host-name ip-address

í ” Ñ ç nož

no ip host host-name ip-address

o¬ @ ƒ ª ¢o-

@ ƒ	T
host-name	— Õ Ñ d
ip-address	— Õ IP ª -

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o-

o¬ F å †o- 1 y ² Á F å www .test.com ¿ d 192.168.5.243

```
5XLMLH FRQILJ LS KRVW ZZZ WHVW FRP
```

o¬ à • co- show run ò 0 F å k ¨ ñ F å x X
show hosts ò 0 ¢ ù ¿ d y IP + • ¼ © k ¨ ñ F å ¿ d y IP + • n ¾

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.4 ip name-server

F å ¿ d Æ ˜ IP ª -ož
ip name-server { ip-address }

í ” F å ¿ d Æ ˜ož
no ip name-server { ip-address }

o¬ @ ƒ ª ¢o-

@ ƒ	T
ip-address	¿ d Æ ˜ IP ª -

o¬ Þ . F åo- Þ . Z Ä F å ¿ d Æ ˜

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- Q Ä F å 4 ¿ d Æ ˜ õ g Á ¿ d † äož
• DNS Server IP ª -ož ?) ü g Ú x X k — Õ C k • %² DNS Serverož ¢ — c R †%² Server B H ñ ¿ d ž k — Õ k : ¡ g e Ò Ù Server G DNS ¬ L k + ñ 3 G v ñ › • 2ož
© Ï Â Ú u 4 6 Æ ˜ož í ” DNS Server ž k ò ç Ó 6 4 ip-address @ ƒ k é Q í ” 6 Æ ˜ k k é í ” ñ Ä DNS Æ ˜ ª -ož

o¬ F å †o- -

o¬ à • co- show run ò 0 F å k ¨ ñ F å x X

o¬ U P ’ Îo- -

5 FTP-Server

5.1 ftp-server enable

o FTP Æ ˜
ftp-server enable

Ê Ö Þ . F å
default ftp-server enable

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ¼ { Ù Á

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¢ FTP Æ ˜o žk* FTP ï€UY $ Nkw g†^ nê ú^q•k·À cžFå4xX
y ftp-server topdir x X õ … FTP ï€˜| FTP Æ ˜ †^

o¬ F å †o- 1 y o FTP Æ ˜w ’ò ï€N ˜| syslog ÿ) £ y

```
5XLMLH FRQILJ IWS VHUYHU WRSGLU V\VORJ
5XLMLH FRQILJ IWS VHUYHU HQDEOH
```

2 y ¼ { FTP Æ ˜y

```
5XLMLH FRQILJ QR IWS VHUYHU HQDEOH
```

o¬ à • co- 1: show ftp-server U 0 ñ F å è ož

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

5.2 ftp-server login timeout

o¬ @ ƒ ª ¢o-

@ ƒ	T
time	q ~ ž ’ g % y y ã U z 8 y1-3600 h

o¬ Þ . F åo- ó • ž ’ 10 ã U

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- F å FTP k ¢ q ~ ž ’ožò ç ¢ ù k ¢ ¨ 6 ž ’ Z Ä g ` ~ q • g k ¢ q ~ h kFTP Æ ˜ / U
• N] Æ â | k ò • • ¥ ï N
k ¢ q ~ ž • © 6 ¨%² FTP k ¢ R) FTP q • è e ñ) FTP q • • ÷ $ • ž •ož Æ ˜ ¨%²
FTP x X Æ è eg ò%² † ^ ¶ B n ÿ B e h R 0 • ÷ ‹ ‘ k ¢ q ~ ž • z ¨ x X ñ Û ž ˜
2 ‹ ‘ k ¢ q ~ ž •ož œ 4 k ¢ q ~ ž ’ F å w k + î ? ô ž † ^ n ÿ q • k Û ` ~ § €

o¬ F å †o- 1 y Y P 8 ò ~ F å q ~ ž ’ 5 ã U y

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

2 y Y P 8 ò ~ Ê Ö q ~ ž ’ ó • › g10 ã U h y

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

o¬ à • co- 1. show ftp-server U 0 ñ F å è

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

5.5 ftp-server topdir

’ ò FTP ï € Ü g † ^ ¯ Ê q •) £ 8
ftp-server topdir directory

… ¥₩’ ï X W 2 ï € ˜ | FTP Æ ˜ ` ~ † ^
no ftp-server topdir

Ê Ö Þ . F å
default ftp-server topdir

o¬ @ ƒ ª ¢o-

@ ƒ	T
directory	FTP ï € Ü g q • ½ C) £

o¬ Þ . F åo- ó • — ½ C) £ — å g ª • ¯ Ê ` ~) £ h

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- FTP Æ ˜ ½ C) £ ’ 4 ï € £ e U Y ˜ | † ^) £ 8 ož · À 3 G 6 ½ C) £ õ • FTP ï € ˜ | FTP Æ ˜ † ^
3 Z Ä F å ¥ x X kFTP ï € 1 — c ˜ | Æ ˜ ` ~ † ^ ê) £

o¬ F å †o- 1 y Y P 8 ò ~ o FTP Æ ˜ w ’ ò ï € N ˜ | syslog ÿ) £ož

```
5XLMLH FRQILJ IWS VHUYHU WRSGLU V\VORJ
5XLMLH FRQILJ IWS VHUYHU HQDEOH
```

2 y Y P 8 ò ~ H ƒ ÿ) £ F åož

```
5XLMLH FRQILJ QR IWS VHUYHU WRSGLU
```

o¬ à • co- 1 yshow ftp-server U 0 ñ F å è

o¬ U P ’ Îo- 1 y Ì F å ˜ |) £

```
)73659 86(5 +DYHQ W FRQILJ WRSGLU
```

2 y F å ¨) £

```
5XLMLH FRQILJ IWS VHUYHU WRSGLU DE
IROGHU DE GRQ W H[LVW
```

o¬ o • j ¨o- 1. F å ³ c) £
2. Ì F å) £

o¬ u V ª ¢o- -

5.6 ftp-server username password

F å FTP Æ ˜ £ ï d y % A
ftp-server username username password [type] password

… ¥ x X no ¥ ” H ƒ ï d F å
no ftp-server username username

Ê Ö Þ . F å

default ftp-server username username

o¬ @ ƒ ª ¢o-

@ ƒ	T
username	£ ï d
password	£ % A

o¬ Þ . F åo- ó • — ï d k — % A

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- F å ï € • FTP Æ ˜ ž ¬ } U ˆ ï dož ï € £ ž ¬ } c ž U ˆ 3 G ï d y % A õ £ož
ï d Â Ý x † 64 … k • ª • Ä q ož ï d U Y 6 † >o• ! … ƒ y ! … … Z Á èožFTP
Æ ˜ Â Ú Q F å%² ï d
% A · À m > ê ƒ k % A ù e U Y Ä q k x 1 t ¿ z % A • q • % A %² B ãož
¢ † % A Â 4 x † 1 …o• Â Ý x † 25 … z % † % A Â 4 x † 4 …o• Â Ý x † 52
…
FTP Æ ˜ · À F å £ ï d y £ % A Y Ž + ï € N g ï a à š k % A y ï%²%² F +ož FTP Æ
˜ u 4 d ï £ k ò ç Ž ” 4 ï d F å ï € 1 — c * Æ ˜ ï a à š

o¬ F å †o- † 1 y Y P 8 ò ~ F å ï d user y

```
5XLMLH FRQILJ IWS VHUYHU XVHUQDPH XVHU SDVVZRUG SDVV
```

† 2 y Y P 8 ò ~ H ƒ ï d F å y

```
5XLMLH FRQILJ QR IWS VHUYHU XVHUQDPH XVHU
```

o¬ à • co- 1: show ftp-server U • F å è

o¬ U P ’ Îo- 1: Ì F å ï d k ï : ¡ N

```
)73659 86(5 +DYHQ W FRQILJ XVHUQDPH
```

2. F å ï d x

```
5XLMLH FRQILJ VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVGGGGGGG
8VHUQDPH DEFGHIJKMLMNOQQ VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
is NULL or too long, max length is 64.
```

3 yServer € Ì F å % A k ï : ¡ N

```
)73659 3$66 +DYHQ W FRQILJ SDVVZRUG
```

4 y F å % † % A x † ß ?

```
5XLMLH FRQILJ IWS VHUYHU XVHUQDPH XVHU SDVVZRUG
,QYDOLG HQFU\SWHG SDVVZRUG PLQ OHQJWK LV PD[ OHQJWK LV
```

5 y F å ¢ † % A ß x

```
   > @WUDQV W\SH $6&,,  FWUO VHUYHU ,3          > @
                        FOLHQW ,3          >   @
XVHUQDPH D          SDVVZRUG  3/$,17 EEEE      FRQQHFW QXP> @
XVHUQDPH D          SDVVZRUG  3/$,17 EEEE      FRQQHFW QXP> @
XVHUQDPH D          SDVVZRUG  3/$,17 EEEE      FRQQHFW QXP> @
XVHUQDPH D          SDVVZRUG  3/$,17 EEEE      FRQQHFW QXP> @
XVHUQDPH D          SDVVZRUG  3/$,17 EEEE      FRQQHFW QXP> @
XVHUQDPH D          SDVVZRUG  3/$,17 EEEE      FRQQHFW QXP> @
XVHUQDPH D          SDVVZRUG  3/$,17 EEEE      FRQQHFW QXP> @
XVHUQDPH D          SDVVZRUG  3/$,17 EEEE      FRQQHFW QXP> @
XVHUQDPH D          SDVVZRUG  3/$,17 EEEE      FRQQHFW QXP> @
```

o¬ à • co- -

o¬ U P ’ Îo-

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

6 FTP Client

6.1 copy flash

… FTP Client Î ª — Õ † ^ n ñ Æ ˜où

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
username	£ FTP Server Ã Z d k x † ' ò 32 - k U m : o• @ o• / y q ^ … k U .
password	£ FTP Server Ã ï % A k x † ' ò 32 - k U m : o• @ o• / y q ^ … k U .
dest-address	˜ | FTP Server IP ª -
remote-directory	U # FTP Server † ^ è ¬ d k x † ' ò 255 - k u 4 q y † … k ò ç q k n P FTP Æ ˜ ¢ ù W • è ¬
remote-file	i Æ ˜ † ^ d k x † ' ò 255 - k u 4 q y † …
local-directory	U # Î ª — Õ † ^ æ è ¬ k ò ç 6 4 ¥ † ^ è ¬ k é · À ' š ¥ † ^ æ è ¬] Æ 7 ¯ ë • k 4 x X u 4 † ^ æ ë • z ò ç q é n P ¨ — Õ ¢ ù) £ k x † ' ò 255 - k u 4 q y † …
local-file	Î ª — Õ † ^ d k x † ' ò 255 - k u 4 q y † …

o¬ Þ . F åo- —

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y R ï d user k % A pass k IP ª - 192.168.23.69 FTP Server k — Õ home) £ local-file † ^ n ñ FTP Server root) £ k † ^ x d remote-file

```
5XLMLH FRS\ IODVK KRPH ORFDO ILOH IWS XVHU SDVV#                    URR
```

o¬ à • co- ¨ FTP Server root) £ ò 0 local-file † ^ © k ¨ k ¨ ú è k ¨ ú â Âož

o¬ U P ' Îo- n è k ø • debug ftp-client k U P , • j ¨ k è k U P successož

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

6.2 copy ftp

… FTP Client R Æ ˜ † ^ ú ñ — Õož

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
username	£ FTP Server Ã Z d k x † ' ò 32 - k U m : o• @ o• / y q ^ … k U .
password	£ FTP Server Ã ï % A k x † ' ò 32 - k U m : o• @ o• / y q ^ … k U .
dest-address	˜ | FTP Server IP ª -
remote-directory	U # FTP Server † ^ è ¬ d k x † ' ò 255 - k u 4 q y † … k ò ç q k n P FTP Æ ˜ ¢ ù W • è ¬
remote-file	i Æ ˜ † ^ d k x † ' ò 255 - k u 4 q y † …
local-directory	U # Î ª — Õ † ^ æ è ¬ k ò ç 6 4 ¥ † ^ è ¬ k é · À ' š ¥ † ^ æ è ¬] Æ 7 ¯ ë • k 4 x X u 4 † ^ æ ë • z ò ç q é n P ¨ — Õ ¢ ù) £ k x † ' ò 255 - k u 4 q y † …
local-file	Î ª — Õ † ^ d k x † ' ò 255 - k u 4 q y † …

o¬ Þ . F åo- —

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 yR ï d user k% A pass kP ª - 192.168.23.69 FTP Server root) £ ú † ^ d remote-file † ^ ñ — Õ home) £ k ¥ † ^ d local-fileož

```
5XLMLH FRS\ IWS XVHU SDVV#                URRW UHPRWH ILOH IODVK KR
```

2 y — Õ home) £ local-file † ^ n ñ FTP Server root) £ k † ^ x d remote-fileož

```
5XLMLH FRS\ IODVK KRPH ORFDO ILOH IWS XVHU SDVV#          URR
```

o¬ à • co- … dir ¨ Î ª ª — Õ ò 0 local-file † ^ © k ¨ k ¨ ú è k ¨ ú â Âož

o¬ U P ’ Îo- ú è k ø • debug ftp-client k U P , • j ¨ k è k U P successož

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

6.3 ftp-client ascii

… † Î gASCII h • ” g FTP n ÿož
ftp-client ascii

H ƒ † Î n ÿ • ” k … 8 ò n ÿ • ”ož
no ftp-client ascii

Ê Ö Þ . F å. ož
default ftp-client

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ó • Õ Ñ FTP n ÿ % ” 8 ò gBINARY h • ”

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- _ É ° default a — ¨ Ü FTP Client K ì ˜ " ‡ ô l U „ N PASV º ´ 3 Ñ Ž Û •) % BINARY f ´ º j W IP â) û ^ G d

o¬ F å †o- 1 y F å … † Î gASCII h • ” g

3 yFTP Client

5XLMLH FRQILJ IWS FOLHQW VRXUFH DGGUHVV

2 y F å FTP Client

’ò TFTP ï€ Ü g†^¯Êq•)£8 ož
tftp-server topdir directory

… ¥xX no ¥”¨,W2 ï€˜| TFTP Æ ˜ `~†^ož
no tftp-server topdir

Ê Ö Þ . F åož
default tftp-server topdir

o¬ @ ƒª ¢o-

@ ƒ	T
directory	TFTP ï€ Ü g q• ½C)£k / nPÿ)£ož

o¬ Þ . F åo- ó•—½C)£—åg ª•¯Ê`~)£h

o¬ x X %”o- ¶BFå%”

o¬ Þ .´ ðo- 14

o¬ … 6-o- TFTP Æ ˜½C)£’ 4 ï€ £eUY˜| †^)£8 ož·À3G6 ½C)£õ • TFTP ï€˜| TFTP Æ ˜ †^
3ZÄFå¥xXkTFTP ï€1—c˜|Æ ˜ `~†^ê)£

o¬ Få †o- 1 yo TFTP Æ ˜w’ò ï€N ˜| syslog ÿ)£ož

```
5XLMLH FRQILJ WIWS VHUYHU WRSGLU V\VORJ
5XLMLH FRQILJ WIWS VHUYHU HQDEOH
```

2yHƒÿ)£ Fåož

```
5XLMLH FRQILJ QR WIWS VHUYHU WRSGLU
```

o¬ à•co- 1 yshow run U0ñFåè

o¬ UP’Îo- 1 yFå ¨)£ož

```
WRSGLU DE GRQ W H[LVW
```

2yFå³c)£ož

```
5RRW GLU WRR ORQJ PD[ OHQJWK LV
```

o¬ o•j¨o- 4. Få ¨)£
5. Få³c)£

o¬ uVª¢o- -

8 ¯ › ä ù4ì Z p V ¿

8.1 clear rping table all

Ž ” Rping ñ Ä n ¾ož

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
owner	ï « –
test-name	y ¡ « –

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- 4 x X Û í ” — Õ Rping ’ ò ï ñ Ä M y , ¼ n ¾ož

o¬ F ã g PÅnû ™ðÃCêÀ ñ G eB ðÉ ÒÀ@œœ Â ðÀ ñ po KÀ¦à@là»æi`

ffff k w — å › IP ª - 192.168.21.99ož

```
o• SLQJ
5XLMLH SLQJ OHQJWK QWLPHV GDWD IIII VRXUFH V
6HQGLQJ E\WH ,&03 (FKRHV WR WLPHRXW LV VHFRQ
   SUHVV &WUO & WR EUHDN !


6XFFHVV UDWH LV SHUFHQW URXQG WULS PLQ DYJ PD[
ªP GHWDLSQ1QJ
SLQJ OHQJWK QWLPHV GDWD IIII VRXUFH WLP
6HQGLQJ E\WH ,&03 (FKRHV WR WLPHRXW LV VHFRQG
   SUHVV &WUO & WR EUHDN !
5HSO\ IURP E\WHV WLPH PV 77/
5HSO\ IURP E\WHV WLPH PV 77/
5HSO\ IURP E\WHV WLPH PV 77/
5HSO\ IURP E\WHV WLPH PV 77/
5HSO\ IURP E\WHV WLPH PV 77/
5HSO\ IURP E\WHV WLPH PV 77/
5HSO\ IURP E\WHV WLPH PV 77/
5HSO\ IURP E\WHV WLPH PV 77/
5HSO\ IURP E\WHV WLPH PV 77/
5HSO\ IURP E\WHV WLPH PV 77/
5HSO\ IURP E\WHV WLPH PV 77/
5HSO\ IURP E\WHV WLPH PV 77/
5HSO\ IURP E\WHV WLPH PV 77/
5HSO\ IURP E\WHV WLPH PV 77/
5HSO\ IURP E\WHV WLPH PV 77/
5HSO\ IURP E\WHV WLPH PV 77/
5HSO\ IURP E\WHV WLPH PV 77/
5HSO\ IURP E\WHV WLPH PV 77/

6XFFHVV UDWH LV SHUFHQW URXQG WULS PLQ DYJ PD[ P
```

ò• 29 ,yQ‡â [vrf "hH'´ õ© ¬• "È»n˜•• " yd

o¬ à•co- -

o¬UP'Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.3 show rping detail

ò 0 Rping ' Îož

show rping detail

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”o• ¶ B % ”o• N M % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- … ¥ x X U Y ò 0 — Õ Rping ' ò + » È ƒ k ï ƒ ˆ ' Îož

o¬ F å †o- 1 y ò 0 Rping ¦ Â ' Î

```
5XLMLH VKRZ USLQJ GHWDLO
7RWDO RZQHU QXPEHU
7RWDO WHVW QXPEHU
RZQHU XVHU
  WHVW QDPH WDJHWB VWRUDJH W\SH YRODWLOH
  WHVW QDPH WDJHWB VWRUDJH W\SH QRQ9RODWLOH
RZQHU XVHU
  WHVW QDPH WDJHWB VWRUDJH W\SH SHUPDQHQW
  WHVW QDPH WDJHWB VWRUDJH W\SH UHDG2QO\
```

< † K y

<	ª ¢
Total owner number	ï È ƒ
Total test number	y ¡ È ƒ
owner	ï d
test name	y ¡ d
storage type	" ¾ g ¥ • º

o¬ U P ' Îo-

o¬ u V ª ¢o- -

8.4 traceroute

ª P IPv4 ƒ G R › ª - ñ) ª - ñ Æ à ¼ož

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
address	6) IPv4 ª - ê ¿ dož
number	6 G M y ƒ O k 8 y1~255ož
source	6 † › IPv4 ª - ê › N Mož ¿ k ê › N M ª - g † ò 127.0.0.1 h ª • • › ª -
seconds	6 Ý ž ž • k 8 y1~10 g a hož
minimum maximum	6 Â 4 y Â Ý TTL › k 8 y1~255ož

o¬ Þ . F åo- Þ . Ý ž ž • 3 a k G M y ƒ O 3 k Â 4 y Â Ý TTL ã ð 1 y 255ož

o¬ x X % ”o- ¨ ¯ * ï % ” k Q g Â Î traceroute z ¨ Ô Ó ï % ” k U Y g traceroute ý J ož

o¬ Þ . ´ ðo- 0

o¬ … 6 -o- Traceroute x X } 9 ò à Ì * Å k w ¨ à Ì { ž G ÿ ž k Õ G y { ž G ÿ y åož } … ¿ d k é } ¯ F å ¿ d Æ ˜ k À } F å ¬ @ ð DNS F å B ãož

o¬ F å †o- 1 y ç à Ì * traceroute † ÿož

```
5 X L M L H  W U D F H U R X W H
  S U H V V  & W U O  &  W R  E U H D N  !
7 U D F L Q J  W K H  U R X W H  W R
                        P V H F    P V H F    P V H F
                        P V H F    P V H F   P V H F
                        P V H F    P V H F    P V H F
                        P V H F     P V H F     P V H F
                           P V H F     P V H F     P V H F
                           P V H F    P V H F     P V H F
                          P V H F    P V H F     P V H F
```

R µ È ç U Y 0 ñ k R › ª - } ˜ | IP ª - 61.154.22.36 Ñ k à Ì ƒ G C Æ 4 „ ? à ¼ g1 l6 h k c ž Ë ß 4 ñ ¥ à ¼ ñ 0 Ë ž •ož

2 y ç à Ì î ? à ¼ * traceroute † ÿož

```
5 X L M L H  W U D F H U R X W H
  S U H V V  & W U O  &  W R  E U H D N  !
7 U D F L Q J  W K H  U R X W H  W R
```

P V H F P V H F P V H F

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9 TCP

9.1 ip tcp keepalive

¥ x X Û • o TCP ‘ t ož

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

o¬ @ ƒ ª ¢o-	@ ƒ	T
	interval num1	y k Þ 0 ðu6f -1— ˆ œÐI ‡@PP †ùà

5XLMLH FRQILJ LS WFS NHHSDOLYH LQWHUYDO WLPHV LGOH SHULR

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.2 ip tcp mss

— åTCP N MSS Â Ý ›ož
ip tcp mss max-segment-size

Ê Ö Þ . F åož
no ip tcp mss

o¬ @ ƒ ª ¢o-

@ ƒ	T
max-segment-size	MSS ’ ›ož % y - k H › 8 68-10000ož ó • … ÿ G MTU ‹ ‘ ± ñ MSSož

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ip tcp mss • < © ’ ò / 1 • y TCP N MSS Â Ý ›ož ` ~ • • y N # Œ MSS › Ý F å ›ož ò ç } × 4 N Â Ý MSS › k U Y F å ¥ x X k%² " Õ Ñ ¬ } F åož ó • … ÿ G MTU ‹ ‘ ± ñ MSS k ò ñ P y
IPv4 TCP y MSS = + € IP ª - + • ß M IP MTU - 20 - IP Ù B - 20 - TCP Ù Bož
ò ç ¥ N u 4 î ? # ¾ k; " MSS } × > # ¾ 4 - + ÷ e x † ›ožò MD5 # ¾ } × > 20 - k MD5 # ¾ x † 18 - k + ÷ e 20 -ož
ò ç ï F å 4 MSS k Ž ÿ | MSS © R ÿ G MTU ‹ ‘ ± ñ MSS y ï F å MSS H û 4 ›ož

o¬ F å †o- 1 y — å TCP N MSS ’ › 1300 -ož

5XLMLH FRQILJ LS WFS PVV

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.3 ip tcp path-mtu-discovery

ø • TCP è ¬ MTU G ë ož

ip tcp path-mtu-discovery [age-timer minutes | age-timer infinite]

¼ { TCP è ¬ MTU G ë ož

no ip tcp path-mtu-discovery

o¬ @ ƒ ª ¢o-

@ ƒ	T
age-timer minutes	TCP ¨ G ë PMTU e k M • g M y ž • • œož % y ã U k H › 8 10-30ož Þ . › 10ož
age-timer infinite	TCP ¨ G ë PTMU e k M • M yož

o¬ Þ . F åo- ¼ {ož

o¬ x X % ”o- ¶ B % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- TCP è ¬ Â Ý n ÿ % « G ë © 7 RFC1191 ë k U Y U ožpÒ Nñ ï Eäo ž Ž °$p.Æï Æ» Å²o¬u% yÚ¥ Ýl kk

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.4 ip tcp send-reset

ª • ¨ v ñ € M U TCP † ž G reset †ož
ip tcp send-reset

W 2 ¨ v ñ € M U TCP † ž G reset †ož
no ip tcp send-reset

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- v ñ € M U TCP † ž G reset †ož

o¬ x X % ”o- ¶ B % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- %² " Õ Ñ kTCP % ² ¨ ã G TCP † ž k ò ç ñ ¥ † ñ K TCP N ; " k › Ö%² reset
† Y Ä 2 + € TCP Nož x © - k è x à ñ x à) ö k Ý O € M U TCP † k + — Õ -
è x à k U Y * Y x X Û W 2 + € M U † G reset †ož

o¬ F å †o- 1 y W 2 ¨ v ñ € M U TCP † ž G reset †ož
5 X L M L H F R Q I L J Q R L S W F S V H Q G U H V H W

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.5 ip tcp synwait-time

— å • y N SYN † Ý ž ž •ož
ip tcp synwait-time seconds

Ê Ö Þ . ›ož
no ip tcp synwait-time

o¬ @ ƒ ª ¢o-

@ ƒ	T
seconds	SYN † Ý ž ž •ož % y a k H › 8 5-300 k Þ . › 20ož

o¬ Þ . F åo- Þ . Ý ž ž • 20 a

o¬ x X % ”o- ¶ B % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç à Ì ¨ SYN x à k × 5 SYN Ý ž ž • U Y … 2%² ? Ï › ƒ ô k x + Ò SYN x à ñ | çož

size	v M Ý 4ož % y © - k H › 8 128-(65535 << 14) k Þ . › © 65535ož

o¬ Þ . F åo- Þ . › © 65535 -

o¬ x X % ”o- ¶ B % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- TCP N v Ù Ï Û Ù R + € N v ñ ƒ G k ? ƒ G e Ò k t • i ~ ¯ Hož%² " Õ Ñ k TCP v M
› F ¥ N v Ù Ï q ~ q • Ý 4ož + 9 k ! A û Ýo• Ä Ý O ƒ G N k Í Ý v M U Y ª K U ä TCP
n ÿ Å ož
ò ç v M Ý 9 65535 - k • o v M ý Ý ož

o¬ F å †o- 1 y — å v M Ý 4 16386 -ož
5 X L M L H F R Q I L J L S W F S Z L Q G R Z V L] H

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.7 service tcp-keepalives-in

• o TCP Æ ˜ € ‘ t ož
service tcp-keepalives-in [interval] [garbage]

¼ { TCP Æ ˜ € ‘ t
no service tcp-keepalives-in

o¬ @ ƒ ª ¢o-

@ ƒ	T
interval	G ‘ t † ž • • œ k % y © a k H › 8 © 1 ñ 65535 k Þ . › © 60 a
garbage	‘ t † ` k%² - —	ƒ G k ó • ` kož

o¬ Þ . F åo-

o¬ x X % ”o- ¶ B % ”

5XLMLH FRQILJ VHUYLFH WFS NHHSDOLYHV RXW JDUEDJH

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.9 show tcp connect

ª P © Ï ¢ ù IPv4 TCP N Â Î ’ Îož

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

ª P © Ï ¢ ù IPv4 TCP N Ï ‹ ’ Îož

show tcp connect statistics

o¬ @ ƒ ª ¢o-

@ ƒ	T
local-ip a.b.c.d	Î ª IP ª -
local-port num	Î ª € M
peer-ip a.b.c.d	+ € IP ª -
peer-port num	+ € € M
statistics	ò 0 IPv4 TCP N Ï ‹ ’ Î

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 © Ï ¢ ù IPv4 TCP N Â Î ’ Îož

5XLMLH VKRZ WFS FRQQHFW
1XPEHU /RFDO $GGUHVV)RUHLJQ $GGUHVV 6WDWH 3URFH
/,67(1 UJ VVKG
/,67(1 UJ WHOQHWG
(67$%/,6+(' UJ WHOQHWG

< † K y

<	ª ¢

Number	~ Zož
Local Address	Î ª ª - € M Z k È Z e µ ƒ © € M Z k A ò “1.1.1.1:23” “23” © € M Zož
Foreign Address	€ ª - € M Z k È Z e µ ƒ © € M Z k A ò “1.1.1.1:23” “23” © € M Zož
State	TCP N ¢ ù Ù Á k Ä 11 _ U Ù Á y CLOSE ' y N] • • LISTEN y ! n Ù Á SYNSENT ySYN †] G ß k) W ô ‰ < SYNRCVD ySYN †] N v ñ k) W ô ‰ < ESTABLISHED y N] • y FINWAIT1 y Î €] Æ G ß FIN † FINWAIT2 y Î € G ß FIN †] Æ t G • CLOSEWAIT y Î € v ñ 4 + € FIN † LASTACK y Î € v ñ 4 + € FIN † k À e Î € G ß 4 \ FIN † CLOSING y Î € G ß FIN † k ¨ + € › • ¥ FIN † ACK † ñ Û $ ù v ñ 4 + € FIN † TIMEWAIT yÎ € G FIN † t G • 4 kw Î € -] Æ G • 4 N v ñ FIN †
Process name	i d f

2 y ò 0 © Ï ¢ ù IPv4 TCP N Ï ‹ ’ Îož

```
5XLMLH VKRZ WFS FRQQHFW VWDWLVWLFV
6WDWH &RXQW

(67$%/,6+('
6<1B6(17
6<1B5(&9
),1B:$,7
),1B:$,7
7,0(B:$,7
&/26('
&/26(B:$,7
/$67B$&.
/,67(1
&/26,1*
7RWDO
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

9.10 show tcp parameter

ª P © Ï ¢ ù TCP @ ƒ ’ Î

show tcp parameter

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 © Ï ¢ ù tcp @ ƒ ’ Î

```
5XLMLH VKRZ WFS SDUDPHWHU
+DVK WDEOH LQIRUPDWLRQ
  (VWDEOLVKHG KDVK EXFNHW VL]H
  %LQG KDVK EXFNHW VL]H
0HPRU\ LQIRUPDWLRQ
  *OREDO PHPRU\ OLPLW  ORZ       SUHVVXUH       KLJK       XQLW  S
  3HU VRFNHW UHFHLYH EXIIHU VL]H  PLQ      GHIDXOW      PD[
  3HU VRFNHW VHQG EXIIHU VL]H  PLQ      GHIDXOW      PD[       XQ
  &XUUHQW DOORFDWHG PHPRU\
  &XUUHQW PHPRU\ SUHVVXUH IODJ
6<1 VSHFLILF LQIRUPDWLRQ
  0D[ 6<1B5(&9 VRFNHWV SHU /,67(1 VRFNHW
  0D[ 6<1 UHWULHV
  0D[ 6<1 $&. UHWULHV
7LPHZDLW VSHFLILF LQIRUPDWLRQ
  0D[ WLPHZDLW VRFNHWV
  &XUUHQW WLPHZDLW VRFNHWV
  7LPHZDLW UHF\FOH
  5HXVH WLPHZDLW SRUW
.HHSDOLYH LQIRUPDWLRQ
  .HHSDOLYH RQ
  ,GOH SHULRG     VHFRQGV
  ,QWHUYDO    VHFRQGV
```

```
0D[ SUREHV
```

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 IPv4 TCP N è ¬ MTUož

```
5 X L M L H  V K R Z  W F S  S P W X
1 X P E H U  /R F D O  $ G G U H V V  )R U H L J Q  $ G G U H V V  3 0 7 8
```

< † K y

<	ª ¢
Number	~ Z
Local Address	Î ª ª - € M Z k È Z e µ ƒ © € M Z k A ò “192.168.195.212.23” “23” © € M Zož
Foreign Address	€ ª - € M Z k È Z e µ ƒ © € M Z k A ò “192.168.195.212.23” “23” © € M Zož
PMTU	è ¬ MTUož

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

9.12 show tcp port

ª P © Ï ¢ ù TCP € M … Õ Ñož

show tcp port [num]

o¬ @ ƒ ª ¢o-

@ ƒ	T
num	€ M Z

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 © Ï ¢ ù IPv4 TCP € M … Õ Ñož

```
5 X L M L H  V K R Z  W F S  S R U W
7 & 3  F R Q Q H F W L R Q V  R Q  S R U W
1 X P E H U  /R F D O  $ G G U H V V  )R U H L J Q  $ G G U H V V  6 W D W H
                                                ( 6 7 $ % / , 6 + ( '
7 R W D O
```

```
7&3 FRQQHFWLRQV RQ SRUW
1XPEHU /RFDO $GGUHVV )RUHLJQ $GGUHVV 6WDWH
7RWDO
```

< † K y

<	ª ¢
Number	~ Z
Local Address	Î ª ª - € M Zož
Foreign Address	€ ª - € M Zož
State	TCP N ¢ ù Ù Á k Ä 11 _ U Ù Á y CLOSED: N] • • LISTEN y ! n Ù Á SYNSENT ySYN †] G ß k) W ô ‰ < SYNRCVD ySYN †] N v ñ k) W ô ‰ < ESTABLISHED y N] • y FINWAIT1 y Î €] Æ G ß FIN † FINWAIT2 y Î € G ß FIN †] Æ t G • CLOSEWAIT y Î € v ñ 4 + € FIN † LASTACK y Î € v ñ 4 + € FIN † k À e Î € G ß 4 \ FIN † CLOSING yÎ € G ß FIN † k¨ + € › • ¥ FIN † ACK † ñ Û $ ù v ñ 4 + € FIN † TIMEWAIT y Î € G FIN † t G • 4 k w Î € -] Æ G • 4 N v ñ FIN †

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

9.13 show tcp statistics

ª P © Ï ¢ ù TCP Ï ‹ ’ Î k m † N v ’ Î k) W ô ’ Î k time-wait N ’ Î
show tcp statistics

o¬ @ ƒ ª ¢o-	@ ƒ	T

o¬ x X % ”o- Ô Ó % ”

10 Æ] IPv4 ¼ Ã

10.1 clear ip ref packet statistics

Ž ” IPv4 ½ ô ¢ ù † Ï ‹ ’ Îož

clear ip ref packet statistics

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 Ž ” IPv4 ½ ô ¢ ù † Ï ‹ ’ Îož

5 X L M L H F O H D U L S U H I S D F N H W V W D W L V W L F V

o¬ U P ’ Îo- -

o¬ u V ª ¢o-

10.2 show ip ref adjacency

ª P Ô > N - µ ’ Î ê ¢ ù ñ Ä > N - µ ’ Îož

show ip ref adjacency [glean | local | ip-address | interface interface_type interface_number | discard | statistics]

o¬ @ ƒ ª ¢o-

@ ƒ	T
glean	¤ ` > N - µ
local	Î ª > N - µ
ip-address	> N %² é IP
interface_type	6 N M • º
interface_number	6 N M Ú Z
discard	ª P ’ > N - µ

o¬ u V ª ¢o-

10.3 show ip ref exact-route

ª P IP † G ä ô G è ¬ož

show ip ref exact-route source_ipaddress dest_ipaddress

o¬ @ ƒ ª ¢o-

@ ƒ	T
source_ipaddress	† › IP ª -
dest_ipaddress	†) IP ª -

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- * ¥ x X k 6 IP † › IP ª -) IP ª - k U Y ª P ß Ô † ô G è ¬ož

o¬ F å †o- 1 y ò 0 R 192.168.217.74 ñ 192.168.13.1 ô G è ¬ož

type local0AE806AC6F9E>]TJ /TT2.047>]TJ /TT06FAD>CE 12AC03E 5.2574E0555>-7<045907AA09500 0 T29406142.0

interface	ß N M
linklayer	8 C ã

glean adj	F ñ M ü > N † ƒ)
forar	F ñ ô G > N † ƒ)
redirect	M g Ô ò † ƒ)
ttl expiration	† TTL Ý ž † ƒ)
no ip routing	ª • ô G Î ª † ƒ)

o¬ U P ’ Îo- -

o¬ u V ª ¢o-

10.5 show ip ref resolve-list

ª P IPv4 ½ ô † ä ’ Îož
show ip ref resolve-list

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 ª P IPv4 ½ ô † ä ’ Îož

```
5XLMLH VKRZ LS UHI UHVROYH OLVW
,3                  UHVBVWDWH IODJV LQWHUIDFH
                    XQUHV           *LJDELW(WKHUQHW
```

<

10.6 show ip ref route

ª P ¢ ù IPv4 ½ ô ñ Ä è ' Îož

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
default	6 ó • è
ip	6 è) IP
mask	6 è Q A
statistics	Ï ‹ ' Î

o¬ x X % "o- Ô Ó % "

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- U Y ª P ¢ ù IPv4 ½ ô è ' Î k U Y 6 ª P ó • è o• 6 IP/MASK F è o• ñ Ä è ' Îož

o¬ F å †o- 1 y ª P ¶ B ½ ô n ñ Ä è ' Îož

```
5XLMLH VKRZ LS UHI URXWH
&RGHV      GHIDXOW URXWH
          ]HUR URXWH
 LS PDVN          ZHLJKW  SDWK LG     QH[W KRS        LQWHUIDFH
                                        /RFDO
                                        /RFDO
                                        *LJDELW(WKHUQHW
                                        *LJDELW(WKHUQHW
                                        /RFDO
                                        *LJDELW(WKHUQHW
```

ª P È ç _ < T y

<	ª ¢
ip/mask	) IP ª - y Q A x †
path-id	> N « – ö œ
weight	è Ó M
next_hop	%² é
interface	ÿ ß N M

o¬ u V ª ¢o-

w W ? ¿ / 6 · Ò

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

1. NSM

1 NSM

1.1 clear ip route

} Ž q è n Ù k U Y ¨ Ô Ó ï % ” ü g **clear ip route xžž**

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

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
*	Ž q ¶ B è Ù
network	
netmask	*g nP.* network Â x F è n è k Ž q Ù

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- Ž q è Ù k í ” + • è k À e ‡ G è # ‘ M • .ož · À h Þ ò ç Ž q … è n Ù k 1 - è … à Ì ? ¶ * ’ •ož

o¬ F å †o- Ž q 192.168.12.0 Â x F ñ è n ¾ Ù ož

F O H D U L S U R X W H

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

1.2 ip default-gateway

¨ 8 C — Õ F å ó • à ¼ož

ip default-gateway *ip-address*

í ” ó • à ¼ož

no ip default-gateway

Ê Ö Þ . F å

default ip default-gateway

o¬ @ ƒ ª ¢o-

@ ƒ	T
ip-address	ó • à ¼ ipv4 ª -

o¬ Þ . F åo- Ì F å ó • à ¼

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç ¨ — Õ = 3 1 ƒ G G ñ „%²) ö ª - ž k 1 ¥ ƒ G G ñ ó • à ¼ož

o¬ F å †o- — å ó • à ¼ 192.168.1.1ož

L S G H I D X O W J D W H Z D \

o¬ à • co- U … **show ip redirects xðéž**

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

1.3 ip default-network

F å Þ . à Ìož

ip default-network *network*

í ” Þ . à Ìož

no ip default-network *network*

Ê Ö Þ . F å

default ip default-network *network*

o¬ @ ƒ ª ¢o-

@ ƒ	T
network	à ž

o¬ Þ . F åo- Þ . 0.0.0.0/0ož

o¬ x X % ”o- ¶ B F å % ”ož

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- F å Þ . à Ì) © 4 D ÿ Þ . è k * **default-network**

Þ . à Ì È © Y“*” Z • ã k n P © Þ . è ˜ # ñož ò ç Þ . à Ì Ä connected è y Z Ä %² à´`B@ u `•z••à’à• Là•

	ê ñ ñ C 6 ož ¢ Ì 6 ip-address ž k n P F å ² Á + è ož
interface	g[illegible]p-address y interface 5 } 6 %² k ê ñ ñ C 6 ož ¢ Ì 6 interface ž k n P F å ² Á ' ¡ è k ß M %² é ¨ è n # è B ±ož
distance	g[illegible]Þ 1ož
tag	g[illegible] Tag › k Þ . 0ož
permanent	g[illegible]ž
weight *number*	g[illegible]Þ 1ož
description *description-text*	g[illegible] *description-text* 1 ½60 … … ož
disabled/enabled	g[illegible]Þ enabledož

o¬ Þ . F åo- —² Á è ož

o¬ x X % ”o- ¶ B F å % ”ož

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ² Á è Þ . ’ ò å Y 1 k * — å ’ ò å Y k U Y ª • Á è ñ è ~ $ ² Á è k Q Ä ¢ Á è ñ ž k õ … ² Á è ož * — å ² Á è ’ ò å Y U Y ë ¿ è Õ a k 4 ž ² Á è k%² " A f • è ož A ò OSPF è # ‘ ’ ò å Y 110 k U Y 1 ² Á è ’ ò å Y — å 125 k ý ¢ ä OSPF

1 ½

o¬ F å †o- 1 y Í 4%² Ú ñ 172.16.100.0/24) ö à Ì ² Á è k %² é 192.168.12.1 k ' ò å Y 115ož

L S U R X W H

2 y ò ç ² Á è Z Ä 6 N M k ¢ 3 o G N M { ž ž k U k … ± ƒ G v O R ¿ N M G ož } 9 ² ¥ Õ

Ñ G ÿ k< ¬ } 6 N MožY F å † ÿ kñ) ö à Ì 172.16.100.0/24 ƒ G v O Q R GigabitEthernet 0/0

N M ô Gož

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

o¬ à • co- U … show ip route ò 0 è n Lœ s$pÝPEœg • " ®€• 7'ÞÌ×

² Á è F å âož 9 ² _ Õ Ñ k ¢ ü g no ip routing ž k ² Á è F å 1 k ¶ ž › W k 3 ï M • ü
g ip routing k ² Á è F å U Y Ê Öož
h Þ k 3 ¨ no ip routing Õ Ñ k i M o ê ñ … Ñ © Ï M o k ² Á è F å 1 k ‘ ož

o¬ F å †o- ¼ { 4 RGOS ÷ ^ IP è ož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

1.6 ip static route-limit

F å ² Á è Ú ƒ ’ož
ip static route-limit *number*

F å ó • è Ú ƒož
no ip static route-limit

Ê Ö Þ . F å
default ip static route-limit

o¬ @ ƒ ª ¢o-

@ ƒ	T
number	*k8* 1-10000

o¬ Þ . F åo- Þ . 1024ož

o¬ x X % ”o- ¶ B F å % ”ož

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- F å ² Á è ƒ ’) © 4 O ò ² Á è Ú ƒ k * **ip static route-limit** F å ² Á è ƒ ’ e k
D ÿ ò | ç kF å ² Á è ƒ k Ý — å ’ož* **show running-config** [illegible]
[illegible]

o¬ F å †o- — å ² Á è ƒ ’ 900 Ú k À e Ê Ö ó • ›ož

o¬ à • co- * show ip route ò 0 À } ecmp è Õ Ñož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

1.8 show ip redirects

ª P ó • à ¼ož

show ip redirects

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X 9 ª P — Õ à ¼ F åož U Y ¨ 8 C — Õ … k ê ñ ¨ C — Õ ü g 4 no ip routing x X e … ož

o¬ F å †o- µ show ip redirects ÿ ß È çož

5 X L M L H V K R Z L S U H G L U H F W V

' H I D X O W * D W H Z D \

< † K y

<	ª ¢
Default Gateway	ó • à ¼ ip ª -

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

1.9 show ip route

ò 0 IP è n ’ Îož

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

ÿ G è ecmp K Å ˆ ò 0 IP è n ’ Îož

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

o¬ @ *ƒ* ª ¢o-	@ *ƒ*	T

network

```
5              >      @ YLD                    9/$1
%              >     @ YLD
&                LV GLUHFWO\ FRQQHFWHG  9/$1
&                  LV ORFDO KRVW
```

2 y Y **show ip route** *network x*

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

3 y Y **show ip route count x**

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

4 y Y **show ip route weight x**

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

5 y**show ip route normal x**

```
5XLMLH VKRZ LS URXWH QRUPDO

&RGHV   &   &RQQHFWHG  /   /RFDO  6   6WDWLF
      5   5,3  2   263)  %   %*3  ,   ,6 ,6  9   2YHUIORZ URXWH
      1    263) 166$ H[WHUQDO W\SH    1    263) 166$ H[WHUQDO W\SH
      (    263) H[WHUQDO W\SH    (    263) H[WHUQDO W\SH
      68   ,6 ,6 VXPPDU\  /    ,6 ,6 OHYHO    /    ,6 ,6 OHYHO
      ,$   ,QWHU DUHD      FDQGLGDWH GHIDXOW
*DWHZD\ RI ODVW UHVRUW LV QR VHW
6              LV GLUHFWO\ FRQQHFWHG  9/$1
6              >   @ YLD
2 (            >      @ YLD                    9/$1
5              >      @ YLD                    9/$1
%              >     @ YLD
&                LV GLUHFWO\ FRQQHFWHG  9/$1
&                  LV ORFDO KRVW
```

6 y**show ip route ecmp x**

```
5XLMLH VKRZ LS URXWH HFPS

&RGHV  &  &RQQHFWHG /  /RFDO  6  6WDWLF
      5  5,3  2  263) %  %*3 ,  ,6 ,6  9  2YHUIORZ URXWH
      1  263) 166$ H[WHUQDO W\SH  1  263) 166$ H[WHUQDO W\SH
      (  263) H[WHUQDO W\SH  (  263) H[WHUQDO W\SH
      68  ,6 ,6 VXPPDU\ /  ,6 ,6 OHYHO  /  ,6 ,6 OHYHO
      ,$  ,QWHU DUHD  FDQGLGDWH GHIDXOW
*DWHZD\ RI ODVW UHVRUW LV  WR QHWZRUN
6  >  @ YLD
  >  @ YLD
2 ,$  >  @ YLD  9/$1
  >  @ YLD  9/$1
```

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

```
5XLMLH VKRZ LS URXWH IDVW UHURXWH

&RGHV  &  &RQQHFWHG /  /RFDO  6  6WDWLF
      5  5,3  2  263) %  %*3 ,  ,6 ,6  9  2YHUIORZ URXWH
      1  263) 166$ H[WHUQDO W\SH  1  263) 166$ H[WHUQDO W\SH
      (  263) H[WHUQDO W\SH  (  263) H[WHUQDO W\SH
      68  ,6 ,6 VXPPDU\ /  ,6 ,6 OHYHO  /  ,6 ,6 OHYHO
      ,$  ,QWHU DUHD  FDQGLGDWH GHIDXOW
6WDWXV FRGHV  P  PDLQ HQWU\ W  EDFNXS HQWU\  D –

W
0
0
0
0
```

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

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

<†Ky

<	ª¢
O	ª¢¥è ›è #‘ož¥ <U H› y

	C y + è z L y Î ª è zS y ² Á è z R yRIP è z B yBGP è z O yOSPF è zI yIS-IS è ož
E2	è • ºož ¥ < U H › y E1 yOSPF Ù B è • º p z E2 yOSPF Ù B è • º q z N1 yOSPF NSSA Ù B è • º 1 z N2 yOSPF NSSA Ù B è • º 2 z SU yIS-IS M È è z L1 yIS-IS 1 ´ è z L2 yIS-IS 2 ´ è z IA y è ¿ Ä B è ož
20.0.0.0/8	) ö à Ì à Ì ª - y Q A x †
[1/0]	' ò å Y n † O ›
Via 20.0.0.1	%² é

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- * ¥ x X U Y ò 0 è n Ï ‹ ’ Îož

o¬ F å †o- 1 y ò 0 ¶ B è n Ï ‹ ’ Îož

```
5XLMLH  VKRZ LS URXWH VXPPDU\
&RGHV  12650$/ –
```

2 y ò 0 ñ Ä è n Ï ‹ ’ Îož

```
 5XLMLH  VKRZ LS URXWH VXPPDU\ DOO
&RGHV  12650$/ –
```

wWg

Ü<Q5,GYB8VÖ

1. AAA
2. RADIUS
3. TACACS+
4. 802.1x
5. Web AxAG5BQ¸
6. SCC
7. < IP+MAC 4¥
8. PASSWORD-POLICY
9. 0Ã<
10. STORM-CONTROL
11. SSH
12. GSN
13. CPP
14. DHCP Snooping
15. ARP Check
16. DAI
17. IP Source Guard
18. L5%G ARP Pk
19. NFPP
20. DOS *

1 AAA

1.1 aaa accounting commands

+ñ NAS ïgxXtg“Ã”ïož

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

HxfX“Ãž

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

op@

@	T	
level	}g“ÃXã8	0~15kÃXüž-ïož

2yò group ºu44“ÃÉUPjöž

7KHDFFRXQWLQJGRHVQRWVXSSRUWWKLVWSHRIJURXS

3yòMÖåxXkeFå$ÄåÄåž

oejö- -

ouVô- -

1.2 aaa accounting exec

+£ NAS ¯tg“Ã”ôž

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

Hƒ Exec “Ãž

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

oÕ@

@	T
default	Ÿ@#¢ç• Exec “Ãož
list-name	#%² Exec “ÃçkUY©ož
method	**ÀnoneO•groupÕ@ÇÕ** 4 ¢
none	**gÃ**
group	**gÃÙ4** RADIUS y TACACS+Ã

oHFå- {“Ã

oxX%”o- ß%”ož

oHõ- 14

o6-o- RGOS QÄÉkõo Exec “Ãõ

c nonekÉg Exec “Ãž

o“ÃkÉ NAS CLI ¯kG“ÃgStart h’ÎÉ

¯kG“ÃgStop h’ÎÉ%ÄÉß Start ’Îk¨

ÉkGß Stop ’Îož

FÅ Exec “ÃekÀÿgxX“ÃkÉjož

oFåb- 1 yP†.. RADIUS +£ NAS tg“Ã9ÔQ'6Tp±ož

oèo- … **show aaa method-list xMYô]Få** Exec “Ãn’ôž

oUP’ô- 1 yÃ6 groupkÉUPjöž

ÚRXS,LVQRWH[LVWHG

2yò group ºu44“ÃÉUPjöž

7KHDFFRXQWLQJGRHVQRWVXSSRUWWKLVWSHRIURXS

3yÒMÖåxXkFå$ÄåÄaž

oejö- -

oUVô- -

1.3 aaa accounting network

ÕÕk}+Îtg“Ãž

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

HÌÃž

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

oÊ@

@	T
default	Network “Ãož
list-name	*Ãndož*
start-stop	ÎtyÈ“Ã“Ãè o“ÃCgÌož
method	4 €
none	g“Ã
group	RADIUS y TACACS+ÁE

oFå- {“Ã

oXX%”o- ¶%”ož

oÕ- 14

o6-o- RGOS ÏÉ“KÅÛg“Ãž **start-stopkÃž**

oFå- 1 yP†.. RADIUS +Ìg“ÃwyÈ“Ã

5XLMLHFRQILJDDDDFFRXQWLQJQHWZRUNGHIDXOWVWDUWVWRSJURXSUDGLXV

oèao- … **show aaa method-list xMYô]FÃçbž**

oUP'ô- 1 yÃ6 groupkÉUPjöž

*URXSLVQRWH[LVWHG

2yò group ºu44"ÃÉUPjöž

7KHDFFRXQWLQJGRHVQRWVXSSRUWWKLVWSHRIJURXS

3yÇMÉåxXkÉåŞÄåž

oejö- -

oUVô- -

1.4 aaa accounting update

o"ÃºQ¶"ÃÃž

aaa accounting update

¡"ÃÃž

no aaa accounting update

oÃ@	@	T
-	-

oFå- "ÃÇž

oxX%"o- ¶%"ož

oÃ- 14

o6-o- Ä AAA ÃÃÃE AAA ÃÃXåÃ
ož

oFå- 1 yPÃÃž

5XLMLHFRQILJDDDQHZRGHO

5XLMLHFRQILJDDDDFFRXQWLQJXSGDWH

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

oUP'î- -

oöjö- -

ouVô- -

1.5 aaa accounting update periodic

aaa accounting update periodic *interval*

no aaa accounting update periodic

interval	"ÑYÑ%ykÂ	1 Ñlož

oFå- 5 Ñlož

oxX%"o- Ñ%"ož

oÑ- 14

o6-o- AAA AAA

oFå- 1 yPÎ- 1 Ñ"ÑÑ

5XLMLHFRQILDDDQHPRGHO

5XLMLHFRQILDDDDFFRXQWLQXSGDWH

5XLMLHFRQILDDDDFFRXQWLQXSGDWHSHULRGLF

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

oUP'î- 1 yMÏåxXkFåÑåž

oöjö- -

ouVô- -

1.6 aaa authentication dot1x

}… AAA g 802.1X ĩgB̧FåX **aaa authentication dot1x** Få 802.1X ĩ
€ç¸ož
aaa authentication dot1x { **default** | *list-name* } *method1* [*method2*...]

ï 802.1X ĩç¸ož
no aaa authentication dot1x { **default** | *list-name* }

o@ @

@	T
default	**ĩ€ç¸ç•** 802.1X ĩ¸ož
list-name	#%² 802.1X ĩç¸kUY©¸ož
method	Ò¸local o•none o•group ĩ¸$%k%ç¸Ã 4 €
local	**ĩ¸Ĝ¸gš**
none	**gš**
group	**ĩ¸ĩ¸ù4** RADIUS Ã€

o¤Få- -

o×X%”o- B̧%”ož

o¤ĩ- 14

o6-o- ĩ¸- AAA 802.1X ¶€À. AAA g 802.1X ĩ¸ĩ¸Ã. **aaa authentication dot1x xÃ¶ç¸9** 802.1X ĩ¸ž
Q¶ĩ¸ĩ¸ç¸ož

oFå- p#%d rds_d1x AAA 802.1X ĩç¸ĩ¸ç¸… RADIUS ¶€
ĩ¸ĩ¸%ĩ¸ñ RADIUS ¶€ĩ¸ĩ¸ož

5XLMLHFRQILJDDDDXWKHQWLFDWLRQGRW[UGVBG[JURXSUDGLXVORFDO

o¤o- … **show aaa method-list xMYô]Få** 802.1X ĩç¸ĩ¸ož

oUP’ĩ- 1 yĩ¸ĩ¸ groupkÚPjöž

ÚRXSĻVQRWH[LVWHG

2yò¸ group ù44ĩ¸ÚPjöž

7KHDXWKHQWLFDWLRQGRHVQRWVXSSRUWWKLVWSHRIJURXS

3yçMËåxXkëåsÄåž

oøjö- -

oʉVõ- -

oUP'ô- 1 yÃ6 groupkÉUPjöž

'URXS,LVQRWH[LVWHG

2yò group ºu44ÃkÉUPjöž

7KHDXWKHQWLFDWLRQGRHVQRWVXSSRUWWKLVWSHRIURXS

3yÒMÉåxXkÉåsÄåž

oejö- -

oUVô- -

1.8 aaa authentication login

}… AAA g LogingÃkÿ$FåX **aaa authentication login Få** Login ěç
ęož

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

Îěçęož

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

oÃ@

@	T
default	ÉÉµçę• Login ěož
list-name	% Login ěçkUY©ož
method	Ò local o•noneo•groupo•subsÃ$%k%ěçÃ 4 ç
local	ÎÛGäš
none	gäš
group	ÁÉÃkÙ4 RADIUS y TACACS+ÁE
subs	… subs ÎGěož

oFå- -

oxX%"o- Ã%"ož

oÃ- 14

oÃ-o- òÕ- AAA ÉÃ¥Ë< À. AAA g Login ÉÃ. **aaa authentication login xÃ$ç9** Login ěož

Qpkõpgäõž

å– Login šekÀÿg Login ßkéÿ

oFåb- 1 yP#%ºd list-1 AAA Login šçoõç… RADIUS ¶E

gkÿ%Ãñ RADIUS ¶Ggõž

5XLMLHFRQILDDDDXWKHQWLFDWLRQORLQOLVWURXSUDGLXVORFDO

oèo- … **show aaa method-list xMYô]Få** Login šç'ôž

oUP'ô- 1 yÃ6 groupkÚPjöž

URXSLVQRWH[LVWHG

2yò group u44kÚPjöž

7KHDXWKHQWLFDWLRQGRHVQRWVXSSRUWWKLVWSHRIURXS

3yÇMÄåxXkFå$Äåž

oejö- -

ouVô- -

1.9 aaa authentication web-auth

}… AAA g8W Web kgßFåX **aaa authentication web-auth FÃW** Web •

šçož

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

ïšçož

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

oÃ@

@	T
default	Ÿ€µçÕW Web šož
list-name	**ÃW** Web šçkUY©ož
method	Ò local o none o group o subs ÃÿÃ%k%çÕ Ä 4 €
local	**ÎÚGgš**
none	**gäš**
group	**gkÿ4** RADIUS ÁE
subs	**…** subs Ggõž

oHFå- -

o×X%”o- ¶%”ož

oHõ- 14

o6-o- Õ- AAA ÕW Web ¶ÈÀ. AAA gÕW Web ¶ÈÓ
À. **aaa authentication web-auth xÕ#ç9ÕW** Web ¶ož
QÄÕpgož

oFåb- 1 yP#%d rds_web AAA ÕW Web ¶ç¯… RADIUS
¶ÈÑ RADIUS ¶ÈNygkož
5XLMLHFRQILJDDDDXWKHQWLFDWLRQZEDXWKUGVBZEJURXSUDGLXVQRQH

oèo- … **show aaa method-list xMYô]Få** web-auth ¶ç’ôž

oUP’ô- 1 yÕ6 groupkÚPjöž
URXSLVQRWH[LVWHG

2yò group 9u44ÈÚPjöž
7KHDXWKHQWLFDWLRQGRHVQRWVXSSRUWWKLVWSHRIJURXS

3yÇMÖåxXkFå$Äåž

oeÿö-
o¬ U V!ðÆúÀfð§ð¶ ª†úÐ

default	[illegible]
list-name	#%xXIÓçkUY©ož
method	[illegible]
none	**gIÓ**
group	[illegible] TACACS+7E

oFå- ¼ AAA xXIÓž

o×X%”o- ¶%”ož

oFõ- 14

o6-o- RGOS u4+ÜgxXgIÓwgÍXk AAA 1×XGfE
kÜXkÉXtgkkÉXgkwkÜxXtÚ
Pož
FåXIÓxXõXõgkX+9 14 ÝÜ
kÉXõ© 14 ´ož
FåxXIÓekÀgxXIÓkÉjož

oFå- 1 yP†.. TACACS+7E 15 ´xXgIÓ
5XLMLHFRQILDDDDXWKRUL]DWLRQFRPPDQGVGHIDXOWÜRXSWDFDFV

oèo- … **show aaa method-list xMYõ]FåXÓçÎož**

oUP’Î- 1 yÕ6 groupkÉUPjöž
ÜRXS,LVQRWH[LVWHG

2yò group ¤44IÓÉUPjöž
7KHDXWKRUL]DWLRQGRHVQRWVXSSRUWWKLVWSHRIÜRXS

3yÇMÖåxXkÉåsÄåž

oejö- -

oUVõ- -

1.11 aaa authorization config-commands

}… AAA +Få%”g ,¶Få%”C ¥%”h xXgIÓüg¶FåxX **aaa authorization config-commandsož**

aaa authorization config-commands

¼ AAA +Få%”xXgIÓž

no aaa authorization config-commands

@	T
-	-

¼ AAA +Få%”xXgIÓž

%”ož

14

Q+Få%”gÕ%”hxXgIÓUY¥X

no [illegible]

oÕ..

oHFå- ¼ AAA +ÒVÊgxXIÓž

oxX%”o- ¶%”ož

oHõ- 14

o6-o- RGOS u4ÐVÿUÏÜYÊ-VÊ-gxXIÓž
ÿ4OVxXIÓÿÐVÿXIÓ1ÿož

oFåt- 1 yPFÊVÿXIÓ
5XLMLHFRQILDDDDXWKRUL]DWLRQFRQVROH

oèo- -

oUP’Î- -

oeÿo- -

ouVõ- -

1.13 aaa authorization exec

}… AAA +ñ NAS CLI ÿ Exec IÓÐÿ¶FåX **aaa authorization execož**

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

¼ AAA Exec IÓž

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

oÿ@

@	T
default	¶€#¢ç• Exec IÓož
list-name	#%² Exec IÓçkUY©ož
method	Ìocal •none •group ¶%k%¢çÃ 4 ¢
local	ÎÜ¢gIÓ
none	gIÓ
group	ÿÉÓu4 RADIUS y TACACS+Ź

oHFå- ¼ AAA Exec IÓž

oxX%”o- ¶%”ož

oÞ- 14

o6-o- RGOS u4+ñ NAS CLI ïlÓ¿ CLI Ó0~15 ñoÞ94
Login ¥g Exec lÓž Exec lÓ¤ CLI pž
Få Exec lÓekÀÿg Exec lÓ¥Íÿoÿ

oFå- 1 yP†.. RADIUS ÿE Exec lÓ
5XLMLHFRQILJDDDDXWKRUL]DWLRQH[HFGHIDXOWJURXSUDGLXV

oèo- … **show aaa method-list xMYô]Få** Exec lÓ¿ÎÒž

oUP’Î- 1 yÞ6 groupkÚPjöž
ÚRXSLVQRWH[LVWHG

2yò group ¤44lÓÚPjöž
7KHDXWKRUL]DWLRQGRHVQRWVXSSRUWWKLVWSHRIJURXS

3yÒMÖåxXkFå$Fåž

oejö- -

ouVô- -

1.14 aaa authorization network

}… AAA +¶àÆg, PPPo• SLIP #ˆ ñ g lÓÿ¶ Få X **aaa authorization networkož**

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

¼ AAA lÓž

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

oÞ

@	T
default	¥ÉÿÇ• Network lÓož
method	None ogroupÞ%k%ÇÃ 4 €
none	**gÀÓ**
group	**gÉÓ4** RADIUS y TACACS+Ä

oHFå- ¼ AAA Network lÓž

oxX%”o- ¶%”ož

oHõ- 14

o6-o- RGOS u4+Ãö PPPoSLIP #glÓÇåIÓeÄ
ÑMglÓž
UY6_clÓkäs%ÿQÄÄÈp
glÓÇÅÇeÈož
RADIUS ê TACACS+ÄÇÅÊÓÇÈÓ
ÊkQÄÄBHÌÓž

oFåb- 1 yÇ†.. RADIUS ÄÈÓ
5XLMLHFRQILDDDDXWKRUL]DWLRQQHWZUNGHIDXOWURXSUDGLXV

oèo- … **show aaa method-list xX0]Få** Network lÓç’Îož

oHlÈ 1 yÃ6 groupkÊjöž
URXS,LVQRWH[LVWHG

2yò group u44lÓÇ
7KHDXWKRUL]DWLRQGRHVQRWVXSSRUWWKLVWSHRIURXS

3yÇMÈåxXkÊåsÄåž

oejö- -

ouVÊ- -

1.15 aaa domain

gå%”kFåÅž
aaa domain { **default** | *domain-name* }

H¥Xož
no aaa domain { **default** | *domain-name* }

oÊ@

@	T
default	ÊTx06¶bÊ

domain-name	*ğf*

oHFå- Ëåğž

oxX%”o- ¶%”ož

oHö- 14

o6-o- 6Ôd AAA Fåž default Få-<ÇÎÕ-
cnož *domain-name* ğÊÇÎ ğnož
ö4Ã 32 ğž

oFåt- 1 yPPåFå
5XLMLHFRQILDDDGRPDLQUXLMLHFRP
5XLMLHFRQILDDDGRPDLQ

oèo- … **show aaa domain xÕÊž**

oUP’ô- **-**

oejö- -

ouVt- -

1.16 aaa domain enable

Ôd AAA ÈÊÏÏÏ AAA ÎÊ¿
d AAA Fåž
aaa domain enable

{Ïž
no aaa domain enable

oÊ@

@	T
-	-

oHFå- Ôd AAA Fåž

oxX%”o- ¶%”ož

oHö- 14

o6-o- gÂd AAA Fåj-Fåž

oFåb- 1 yÂd AAA yE

5XLMLHFRQILJDDDGRPDLQHQDEOH

oèo- … **show aaa domain xXFåž**

oUP'Î b- **-**

oejö- -

ouVt- -

1.17 aaa local authentication attempts

Få login Ïfjž

aaa local authentication attempts *max-attempts*

oÏ@

@	T	
max-attempts y	*jH8*	1~2147483647ož

oHFå- Þ3)ož

o×X%"o- Ï%"ož

oHö- 14

o6-o- ¥XFå Login Ïfjž

oFåb- 1 yFå Login Ïfjf 6)

5XLMLHFRQILJXUHWHUPLQDO

5XLMLHFRQILJDDDORFDODXWKHQWLFDWLRQDWWHPSWV

oèo- … **show aaa lockout xXgFåž**

oUP'Î b- **-**

oejö- -

ouVt- -

1.18 aaa local authentication lockout-time

Få login [illegible]

aaa local authentication lockout-time *lockout-time*

[illegible]	@	T

lockout-time [illegible]

o@	@	T
	-	-

o-Få- ø AAA ¥ syslogož

o-X%”o- ¶%”ož

o-ö- 14

o-o- Ó ž AAA ¥ syslogkUk-ö UYF ¥
X{ož

o-Fåt- 1 yP{ø aaa ¥ syslogož
5XLMLHFRQILQRDDDORHQDEOH

o-o- … **show running-config xXø** aaa ¥ syslog ¥ož

o-UP’ô- **-**

o-jö- -

o-Vt- -

1.20 aaa log rate-limit

}²… AAA ¥ syslog ø ä aaa log rate-limit xXgFåž
aaa log rate-limit *num*

Ê AAA ¥ syslog ø ä ž
no aaa log rate-limit

o@

oHo- 14

o6-o- Ó%ž AAA ¥ syslogkUk-ÕÃ¥UYFåx
XÊU. syslog øäž

oFåt- 1 yP?‡.. AAA ¥ syslog øa 10 Ú
5XLMLHFRQILDDDORUDWHOLPLW

oèo- … **show running-config xÕ** AAA ¥ syslog øäž

oUP'Î- **-**

oejö- -

ouVt- -

1.21 aaa new-model

}… RGOS AAA ¥gBFåX **aaa new-model …** AAAož
aaa new-model

¼ AAA ¥
no aaa new-model

oÕ-

@	T
-	-

oHFå- ¼ AAA ¥

o×X%"o- B%"ož

oHo- 14

o6-o- ¥X© AAA xXkÕ.. AAA ¥<À. **aaa new-model …** AAA ¥
Ä AAAkÄ AAA xX1©Fåž

oFåt- 1 yP‡.. AAA ¥
5XLMLHFRQILDDDQHPRGHO

oèo- … **show running-config xÖ** AAA Ïöž

oUP'î- **-**

oejö- -

oUVt- -

1.22 access-limit

ê-kQ+ IEEE802.1x Ïöž
access-limit *num*

H-fÇ'òž
no access-limit

oÇ

@	T
num	ÇÇ IEEE802.1x ï

oFå- HÇ'ož

oxX%"o- Få%"ož

oÇ- 14

o6-o- ¥X+Çg'òž

oFå- 1 yPÇå– ruijie.com Ç 20ož

5XLMLHFRQILDDDGRPDLQUXLMLHFRP
5XLMLHFRQILDDDGRPDLQDFFHVVOLPLW

oèo- … **show aaa domain xMYÇÇÇ**

oUP'î- **-**

oejö- -

oUVt- -

1.23 accounting network

Få%”Få Network “Ãçož

accounting network { **default |** *list-name* }

HxXož

no accounting network

o@	@	T
	default	Kõ Fåç
	list-name	*ocdf*

oFå- Ãçož default cçož

o×X%”o- Få%”ož

oõ- 14

o6-o- ó… Network “Ãçož

oFåo- 1 yPPâ– Network “Ãçy

5XLMLHFRQILJDDDGRPDLQUXLMLHFRP

5XLMLHFRQILJDDDGRPDLQDFFRXQWLQQHWZUNGHIDXOƒ

o•Ão- list-na 9F72001909BB0045D6 ÈÂ w F Ð n • o¬ Þ . ´ ðo-

1.24 authentication dot1x

Få%”Få IEEE802.1x ěçož

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

HxfXož

no authentication dot1x

@	T
default	Kö Fåç
list-name	*ěçdf*

default ěçož

xX%”o- Få%”ož

14

6%² 802.1x ěçož

1 802.1x ěçy

5XLMLHFRQILJDDDGRPDLQUXLMLHFRP

5XLMLHFRQILJDDDGRPDLQDXWKHQWLFDWLRQGRW[GHIDXOW

… **show aaa domain xMYöç** 802.1x ěçFåož

1 yěçdXkeUPjöž

0HWKRGOLVWQDPHLVWRRORQJ

2yěçç9FåeUPjöž

:$1,1PHWKRGOLVWQDPHG|RUWKLVWSHLVQRWH[LVWHG

3yMFåxXkeFå$Aåž

-

-

1.25 authorization network

Få%”Få Network lÇöž

authorization network { **default** | *list-name* }

HxXož

no authorization network

@	T
default	lÇöFåç
list-name	*6ç df*

Få- default çöž

X%”o- Få%”ož

14

6-o- -

Fåb- 1 yPPå– Network lÇöy

5XLMLHFRQILJDDDGRPDLQUXLMLHFRP

5XLMLHFRQILJDDDGRPDLQDXWKRUL]DWLRQQHWZRUNGHIDXOW

…o- … **show aaa domain xMYög** Network lÇöFåbž

UP’ô- 1 yçöçdXbUPjöž

0HWKRGOLVWQDPHLVWRRORQJ

1.26 clear aaa local user lockout

Žtgïož

clear aaa local user lockout { **all** | **user-name** *word* }

o@

@	T
all	*nRgï*
user-name *word*	6tgï ID

o×X%”o- Ô”ož

o-Ö- 14

o6-o- ŽtgïkUYBŽUY6Žož

oFåt- 1 yŽgïož

5XLMLHFOHDUDDDORFDOXVHUORFNRXWDOO

oUP’Ô- 1 yŽ6%žwkUP’Ôž

8VHU;XQORFNHG

oUVt- -

1.27 show aaa accounting update

P“Ãž

show aaa accounting update

o@

@	T
-	-

o×X%”o- Ô”oB%”o NM%”

o-Ö- 14

o6-o- P“Ãk,“ÃC“Ãž

oFåt- 1 yP“Ãk

5XLMLHVKRDDDDFFRXQWLQXSGDWH

oUP'ô- -

oUVô- -

1.28 show aaa domain

ÞÃ¤ž

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

oÞ@

@	T
default	¥6Þ@
domain-name	@

o×X%"o- Ô"oB%"oNM%"ož

oÞ- 14

1.29 show aaa group

¤	AAA FÃž

show aaa group

o@	@	T
	-	-

o×X%”o-	Ô”o¶%”o•NM%”ož
o¦ô-	14

oF@ 14

o6-o- ¥XPu login gF@z

oFåb- 1 yPu login gFå

5XLMLHVKRDDDORFNRXW
/RFNWULHV
/RFNWLPHRXWPLQXWHV

oUP'b- -

oUP'ô- -

oUVô- -

1.32 show aaa user

ƒP aaa ï¼ž

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

oƒ@

ƒ@	T
all	ôÄ AAA ïÎ
lockout	ôÙg AAA ç'Î
by-id *session-id*	ô session id AAA ïÎ
by-name *user-name*	ô AAA ïÎ

oXX%"o- Ô"oB%"oNM%"ož

oƒô- 14

o6-o- ƒP AAA ï¼ž

oFåƒ- 1 yƒƒP AAA ï¼

```
5XLMLHVKRZDDDXVHUDOO

,G1DPH
Z

5XLMLHVKRZDDDXVHUELG

,G1DPH
Z
```

```
5XLMLHVKRZDDDXVHUEQDPHZ

,G1DPH
Z



5XLMLHVKRZDDDXVHUORFNRXW
```

1DPH7ULHV/RFN7LPHRXWPLQ 5XLMLH

oUP'ô- -

oUVô- -

1.33 state

ãÄ¿ož
state { **block** | **active** }

ãÅ¿ož
no state

oã@

@	T
block	FÃ¿
active	Ã¿–

oFå- ãÄ¿ož

oxX%"o- Få%"ož

oõ- 14

o6-o- 6FãÄ¿ož

oFå- 1 yPPå¿ož

5XLMLHFRQILJDDDGRPDLQUXLMLHFRP 5XLMLHFRQILJDDDGRPDLQVWDWHEORFN

oèo- … **show aaa domain xMYôÄ¿ož**

oUP'ô- **-**

oojö- -

oUVô- -

1.34 username-format

Få%”Få NAS AÿkÌ‚ÎÕž

username-format { **without-domain** | **with-domain** }

Ôåž

no username-format

@	T
without-domain	ÿ‚Î
with-domain	Î

Få- ÑÕÎÕž

X%”o- Få%”ož

ô- 14

6-o- Få%”kFå NAS S+6ÿkÌ‚ÎÕž

Fåb- 1 yPPå‚Î

5XLMLHFRQILDDDGRPDLQUXLMLHFRP

5XLMLHFRQILDDDGRPDLQXVHUQDPHGRPDLQZWKRXWGRPDLQ

ò- … **show aaa domain xMYÔkÌ‚ÎÕž**

UP’Î- **-**

ÿ- -

Vô- -

2.1 aaa g

μ
a

ï
n

op

Vp Få

p= $ÀÈ€TP

Np= [redacted]

oʉVt- -

2.2 ip radius source-interface

6 RADIUS ž

ip radius source-interface *interface-name*

ˆ6 RADIUS ž

no radius source-interface *interface-name*

@	T
interface-name	radius NM

Få- Þ radius Cå–

xX%”o- %”

14

6-o- 45¨ radius E nas ˆWOkUY¥XÊ– radius ž
xX16NM%² ip radius ¥XCÕž

Fåt- 1 y6 radius R FastEthernet 0/0 NMBH ip Û radius ž
5XLMLHFRQILJSUDGLXVVRXUFHLQWHUIDFHIDVW(WKHUQHW

ào- xX **show running-config UYô** radius NMFâ

UP’Î- -

ojö- -

ʉVt- -

2.3 radius attribute

FÃÅž

radius attribute { *id* | **down-rate-limit** | **dscp** | **mac-limit** | **up-rate-limit** } **vendor-type** *type*

no radius attribute { *id* | **down-rate-limit** | **dscp** | **mac-limit** | **up-rate-limit** } **vendor-type**

id	id <1-255>
type	type <1-255>

Q+

id	×	type
1	max down-rate	1
2	qs	2
3	user ip	3
4	vlan id	4
5	ersio to client	5
6	net ip	6
7	user unt7	0

Td2

ÿ

id	×	type
1	ma down-rate	76
2	qos	77
3	user ip	3
4	vlan id	4
5	version to client	5
6	net ip	6
7	user name	7
8	password	8
9	file-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	ile-name-	15
16	max up-rate	75
17	version to server	17
18	flux-max-high32	18
19	flux-max-low32	19
20	proxy-avoid	20
21	dailup-avoid	21
22	ip privilege	22
23	login privilege	42
24	limit to user number	50

o×X%”o- ¶%”

o-ö- 14

o6-o- ¥XUYFÃÅY cèž

oFåb- 1 y1 max up-rate # 211ož

5XLMLHFRQILJUDGLXVDWWULEXWHYHQGRUWSH

oèo- … **show radius vendor-specific ôÅÕž**

oUP'ô- 1 yÕå id Ä8ÄÜPjöž

QRDSSOLFDWLRQIRUWKHLG

2yÕÅÜPj¨

WKHYHQGRUWSHKDGDOORFDWHGE;

oejö- -

oUVô- -

2.4 radius set qos cos

å– radius G qos NM cos ›

radius set qos cos

ô radius G qos ›

no radius set qos cos

oÕ@

@	T
-	-

oFå- Þ qos Få dscp ›

oxX%"o- ¶%"

oÕ- 14

o6-o- -

oFåb- 1 y å– radius G qos NM cos ož

5XLMLHFRQILJUDGLXVVHWTRVFRV

oèo- … **show running-config ô** qos Fâ

oUP'ô- -

radius vendor-specific extend

Q¤ÆÆ id

no radius vendor-specific extend

o¤	¢@	T
	-	-

o¤Få- Q¤ÆÆ id

o×X%”o- ¶%”

o¤ó- 14 ° Q µ ª Ž U ú x

op@	@	T

oFåt- 1 yFåW Web ŠÃgMnož

5XLMLHFRQILJUDGLXVVHUYHUDFFRXQWXSGDWHUHWUDQVPLW

oèo- xX **show running-config ôFåž**

oUP'ô- -

oejö- -

ouVô- -

2.9 radius-server account vendor

Få RADIUS "fLk,DÄÅ

radius-server account vendor [cmcc | microsoft | cisco] package

ÊÅ"fLk,DÄÅ

no radius-server account vendor *vendor_name* **package**

default radius-server account vendor *vendor_name* **package**

oÊ@

@	T
cmcc | microsoft | cisco	DÄcmcc gkmicrosoft ¥cisco Ã

o×C8%NÊFÀ>fci,R•V†

2.10 radius-server attribute class

Få RADIUS Class K

radius-server attribute class

RADIUS Class K

no radius-server attribute class

† ä ¹ ²ÆùàˆÂ‡ V

o

ietf	6 ETFg RFC3580h•Õk… •õ•y 00-D0-F8-33-22-ACož
normal	*6nP* MAC ªgfh k… .õe oy00d0.f833.22ac ož
unformatted	*5Ëy00d0f83322ac* ož

oFå- … unformatted ”

o×X%”o- ¶%”

oÕ- 14

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

oFåb- 1 yP# RADIUS Calling-Station-ID KÅ IETF ”ož
5XLMLHFRQILUDGLXVVHUYHUDWWULEXWHPDFIRUPDWLHWI

oèo- … **show running-config ô** radius Á mac ”ãž

oUP’ô- -

oejö- -

ouVô- -

2.12 radius-server authentication attribute

Få RADIUS ¼k6KÅ
radius-server authentication attribute *type* **package**

Få radius ¼k6KÅ
radius-server authentication attribute *type* **unpackage**

Õ6KÅkÕå
no radius-server authentication attribute *type* **package**
default radius-server authentication attribute *type* **package**
no radius-server authentication attribute *type* **unpackage**
default radius-server authentication attribute *type* **unpackage**

	@	T
	type	Radius K 1-255

RFC

xX%”o-

14

¥XFå RADIUS

RFC

no default xX1K

1 yP† radius NAS-PORT-ID

5XLMLHFRQILJUDGLXVVHUYHUDXWKHQWLFDWLRQDWWULEXWHXQSDFNDJH

¨ radius radius 87 KÅ

2.13 radius-server authentication vendor

Få RADIUS

radius-server authentication vendor [cmcc | microsoft | cisco] package

no radius-server authentication vendor *vendor_name* **package**

default radius-server authentication vendor *vendor_name* **package**

	@	T
	cmcc | microsoft | cisco	cmcc gkmicrosoft cisco Ã

xX%”o-

14

¥XFå RADIUS

oFåb- 1 yP† radius ŠK cmcc ÄÅž

5XLMLHFRQILJUDGLXVVHUYHUDXWKHQWLFDWLRQYHQGRUFPFFSDFNDJH

oèo- ¨ radius ÄUYô radius ŠK cmcc }LÄÅ

2.14 radius-server dead-criteria

Fõ- RADIUS ÄÕž

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

Õ- RADIUS ÄÕ

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

oÕ-

@	T
time *seconds*	F RADIUS ÄE 3G RADIUS ÄÕ å- 1-120 aož
tries *number*	Få%² RADIUS ÄE L RADIUS ÄE UÅ- 1-100ož

oFå- **time** *seconds* ó 60 aož

tries *number* ó 10)ož

oXX%”o- ¶%”

oÕ- 14

o6-o- %V RADIUS RADIUS ÄE

ÙoXXkÙY+ÙÕž

oFåb- 1 yP6x 120 akÕ 20)ož

5XLMLHFRQILJUDGLXVVHUYHUGHDGFULWHULDWLPHWULHV

oèo- … **show radius parameter UYÕ-** RADIUS ÄÕž

oUP’Ô- -

oejo- -

oUVt- -

2.15 radius-server deadtime

Fã2g0UÅ RADIUS ¶E¬x¡ož
radius-server deadtime *minutes*

Ã2g0UÅ RADIUS ¶E¬x¡ož
no radius-server deadtime

o@	@	T
	minutes	Ã2g0 RADIUS ¶E¬x% yUož Å– 1-1440 Ug 24 4ož

oFå- *minutes* ó 0 Ug/… RADIUS ¶EkÇ¤ RADIUS ¶E¬h

o×X%”o- ¶%”

oÕ- 14

o6-o- ÕÕ%V RADIUS ¶E¬Myk; **radius-server deadtime** ¶E¬ RADIUS ¶E¬ RADIUS ¶E0UÅ **radius-server deadtime 6xtÕÅ**

oFåt- 1 yP62Gx 1 Uož
5XLMLHFRQILJUDGLXVVHUYHUGHDGWLPH

oèo- … **show radius parameter UYÕ2g0UÅ** RADIUS ¶E¬ž
xFåož

oUP’ô- -

oojö- -

oUVt- -

2.16 radius-server host

6 RADIUS

radius-server host { *ipv4-address* } [**auth-port** *port-number*] [**acct-port** *port-number*] [**test username** *name* [**idle-time** *time*] [**ignore-auth-port**] [**ignore-acct-port**]] [**key** [**0** | **7**] *text-string*]

6 RADIUS

no radius-server host { *ipv4-address* }

@	T
ipv4-address	RADIUS IPv4
auth-port *port-number*	RADIUS UDP 0kH8 0 - 65535k 0k
acct-port *port-number*	RADIUS UDP 0kH8 0 - 65535k 0k
test username *name*	RADIUS
idle-time *time*	RADIUS 60 1-1440 24
ignore-auth-port	RADIUS
ignore-acct-port	RADIUS
key [**0** | **7**] *text-string*	0 %k7 %%k 0

RADIUS Ñ

%”

14

4… RADIUS ë AAA RADIUS **radius-server host xX** RADIUS

1 yP#%² IPv4 ëRADIUS

```
5XLMLHFRQILJUDGLXVVHUYHUKRVW
```

2yP#%² IPv4 ë RADIUS Mykyo 60 ã Uk{4“Ã UDP Myož

```
5XLMLHFRQILJUDGLXVVHUYHUKRVWWHVWXVHUQDPHWHVWLGOHWLPHLQRUHDFFWSRUW
```

… **show radius server UY** RADIUS

-

oeijö- -

ouVõ- -

2.17 radius-server key

#ÌgÕ- RADIUS ÏÊFMXož

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

H6FMXož

no radius-server key

oÕ-

@	T
text-string	FMXÎ
0 | **7**	MX%k0 %k 7 %%ož

oFå- ÄFMXož

oxX%”o- ß%”

oÕ- 14

o6-o- FMXÕ- RADIUS ÏÊG*ÊoxÕ- RADIUS ÏÊk

Õ- RADIUS ÏÊcFMXož

oFå- 1 yP# RADIUS ÏÊMX aaaož

5XLMLHFRU@

2.18 radius-server retransmit

Fõ- RADIUS ÿYMG)ƒož

radius-server retransmit *retries*

ÕMG)ƒož

no radius-server retransmit

ƒ@	T
retries	RADIUS :MG)ƒKH8© 1-100ož

Få- ÓMG)ƒ 3ož

xX%”o- ß%”

ÕÕ- 14

6-o- AAA %ˆc+ÿ5UÕÕ-

ÕÕ6)ƒ RADIUS ÕÕMGÕž

Fåb- 1 yP6MG)ƒ 4ož

5XLMLHFRQILJUDGLXVVHUYHUUHWUDQVPLW

ào- xX **show radius parameter UYô** radius Mn)ƒFåož

UP’ô- -

ojö- -

uVô- -

2.19 radius-server source-port

Fõ- RADIUS ÿMož

radius-server source-port *port*

ÕÕž

no radius-server source-port

oó-o- ¥XFÕ4G RADIUS 1ž

oFå-o- 1 yp1ž 10 aož

5XLMLHFRQILJUDGLXVVHUYHUWLPHRXW

oèo- … **show radius parameter UYÒÕ4G** RADIUS 1ãož

oUP'ô- -

oejö- -

ouVô- -

2.21 server auth-port acct-port

- AAA Ãno ož

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

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

oj@

j@	T
ip-addr	7E ip ª
port1	1E
port2	7Ã

oFå- Få

o×X%"o- Ã%"ož

oÕ- 14

oó-o- 6Ã6Mož

oFå- 1Ö p7E ss 7E 192.168.4.12 wÕ 5 yM 6ož

5XLMLHFRQILJDDDJURXSVHUYHUUDGLXVVV

5XLMLHFRQILJVUDGLXVVHUYHUDFFWSRUWDXWKSRUW

5XLMLHFRQILJVUDGLXVHQG

5XLMLHVKRZDDDJURXS

7SH5HIHUHQFH1DPH

UDGLXVUDGLXV

WDFDFVWDFDFV
UDGLXVVV

oèo- … **show radius group xX** RADIUS Ñ~z

oUP'Î-

o,xXo- -

xX	T

```
0DOIRUPHG0VJ
%DGXWKHQWLFDWRU0VJ
3HQGLQ5HTXHVWV
```

oUP'ô- -

oUVô- -

2.23 show radius attribute

```
RADIUS B0003 Tc 7/C2_0 1 Tf0Tj/0c -7.2682228<060056C56F9E
```

```
/RIQ,S+RVW
/RIQ6HUYLFH
/RIQ7FS3RUW
5HSO\0HVVDJH
&OOEDFN1XP
&OOEDFN,G
)UDPHG5RXWH
)UDPHG,3\1HWZRUN
6WDWH
&DVV
9HQGRU6SHFLILF
6HVVLRQ7LPHRXW
,GOH7LPHRXW
7HUPLQDWLRQ$FWLRQ
&OOHG6WDWLRQ,G
&OOLQJ6WDWLRQ,G
1DV,G
3UR[\6WDWH
/RIQ/$6HUYLFH
/RIQ/$1RGH
/RIQ/$*URXS
)UDPHG$SSOH7DON/LQN
)UDPHG$SSOH7DON1HW
)UDPHG$SSOH7DON=RQH
$FW6WDWXV7\SH
$FWHOD7LPH
$FW,QSXW2FWHWV
$FW2XWSXW2FWHWV
$FW6HVVLRQ,G
$FW$XWKHQWLF
$FW6HVVLRQ7LPH
$FW,QSXW3DFNHW
$FW2XWSXW3DFNHW
$FW7HUPLQDWH&DXVH
$FW0XOWL6HVVLRQ,'
$FW/LQN&RXQW
$FW,QSXW*LJDZRUGV
$FW2XWSXW*LJDZRUGV
(DSH(DOOHQJH
1DV3RUW7\SH
3RUW/LPLW
```

```
)LUVW5HTXHVWV
5HWUL5HTXHVWV
$FFHSW5HVSRQVHV
5HMHFW5HVSRQVHV
&DOOHQJH5HVSRQVHV
0DOIRUPHG0VJ
%DG$XWKHQWLFDWRU0VJ
3HQGLQ5HTXHVWV
7LPHRXW5HTXHVWV
8QNQRZQWSH0VJ
2WKHUURSV
```

oUP'ô- -

oUVô- -

2.25 show radius group

ÎP RADIUS Áåž

show radius group

oÎ@	@	T
	-	-

oXX%"o- ÎB%"oÔ"oNM%"

oÎ@- 14

oÎ-o- -

oFåb- 1 yÎP RADIUS Áåž

```
5XLMLHVKRZUDGLXVJURXS
    5DGLXVJURXSUDGLXV
9UIQRWVHW
6HUYHU
6HUYHUNHUXLMLH
$XWKHQWLFDWLRQSRUW
$FFRXQWLQJSRUW
6WDWH$WLYH
```

ò	29 yQ[illegible]	vrfhHò[illegible]yd	

oUP'ô- -

oUVô- -

2.26 show radius parameter

[illegible] RADIUS [illegible]

show radius parameter

o[illegible]

@	T
-	-

oXX%"o- [illegible]%"o[illegible]"oNM%"

o[illegible]- 14

o6-o- -

oFåt-

op@

ouVõ- -

2.28 show radius vendor-specific

ÿP RADIUS ÄÅaž

show radius vendor-specific

oÿ@

@	T
-	-

oxX%”o- ß%”oÕ”oNM%”

oÿ- 14

o6-o- -

oFåo- 1 yÿP RADIUS ÄÅaž

5XLMLHVKRØDGLXVYHQGRUVSHFLILF

IOX[PD[KLK
IOX[PD[ORZ
SUR[DYRLG
GLDOXSDYRLG
LSSULYLOHH
ORLQSULYLOHH
LSYPXOWLFDVWDGGUH
VV

oUP'ô- -

oUVô- -

3 TACACS+

3.1 aaa group server tacacs+

4xXFå TACACS+ÁÉc TACACS+ÃÁž

aaa group server tacacs+ *group-name*

ÍÁž

no aaa group server tacacs+ *group-name*

op@

@	T
group-name	TACACS+ÁÉÁfU”radius” y”tacacs+” g,Ž4k

3.2 ip tacacs source-interface

6 TACACS+ž

ip tacacs source-interface *interface-name*

ï6 TACACS+ž

no tacacs source-interface *interface-name*

@	T
interface-name	tacacs+NM

Þ tacacs+Å–

X%”o- %”

14

45¨ tacacs+ nas ’ÎWOkUY¥Xå– tacacs+ž

¥X16NM%² ip tacacs+¥XÇž

y6 tacacs+R gigabitEthernet 0/0 NMBH ip ž

5XLMLHFRQILJSWDFDFVVRXUFHLQWHUIDFHJDELW(WKHUQHW

xX **show running-config UYô** tacacs+NMFž

-

-

-

3.3 server

- TACACS+ž

server {*ipv4-address* }

ïž

no server {*ipv4-address* }

	@	T
	ipv4-address	Æ IPv4 ª

Få- Åž

xX%”o- TACACS+ Å%”ož

14

6-o- FåxXkÀX **aaa group server tacacs+µ** TACACS+Å%”ož
TACACS+ÅÅ Å%”k* **tacacs-server host xÅÆ**
õž
TACACS+Lož

Fåd- 1 yµFå%d tac1 TACACS+Å%Å%² 1.1.1.1 TACACS+Æ
ož

5XLMLHFRQILJDDDJURXSVHUYHUWDFDFVWDF
5XLMLHFRQILJVWDFDFVVHUYHU

ào- xX **show running-config UYÔÆ** server Fåož

UP’ô- 1 yô server 9FåUPjöž

:DUQLQ6HUYHULVQRWGHILQHG

ojö- -

uVô- -

3.4 show tacacs

Py_ TACACS+ÆgÕž
show tacacs

	@	T
	-	-

xX%”o- Ô”oB%”oNM%”ož

oH6-	14	
o6-o-	¥£XPy_	TACACS+

oó-o- 4… TACACS+ë AAA TACACS+ÓY… **tacacs-server host xX**

TACACS+ž

oFåt- 1 yP#%² IPv4 ëTACACS+ ž

5XLMLHFRQILJWDFDFVVHUYHUKRVW

oèo- … **show radius server UYô** TACACS+Fåž

oUP'ô- -

oejö- -

ouVô- -

3.6 tacacs-server key

#ÌÓ- TACACS+ÓF%Wož

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

HÓF%Wož

no tacacs-server key

oÓ@

@	T
text-string	FMXôž
**0	7**	**MX** %k 7 %%ož

oFå- ÓF%Wož

oxX%"o- ¶%"

oÓ- 14

oó-o- XFÔF%Wož%Wžę… **tacacs-server host xX key** ž

oFåt- 1 yP# TACACS+FMX aaaož

5XLMLHFRQILJWDFDFVVHUYHUNHDDD

oèo- … **show running-config UYô** TACACS+FMXFåž

oUP'ô- -

oejö- -

ouVt- -

3.7 tacacs-server timeout

Fõ- TACACS+ ž

tacacs-server timeout *seconds*

ôž

no tacacs-server timeout

@	T	
seconds	%yahož–	1-1000 aož

oFå- ó 5 a

oxX%"o- %"

oõ- 14

o6-o- F… **tacacs-server host**

xX timeout ž

oFå- 1 yP1ž 10 aož

5XLMLHFRQILJWDFDFVVHUYHUWLPHRXW

oèo- … **show running-config UYô** TACACS+ ž

oUP'ô- -

oejö- -

ouVt- -

4 802.1x

4.1 aaa authorization ip-auth-mode

F$ ip IÓ”ož

aaa authorization ip-auth-mode { **disable | supplicant | radius-server | dhcp-server | mixed** }

@	T
disable	*{IÓ*
supplicant	*Supplicant U ip €*
radius-server	*Radius Æ ip €*
dhcp-server	*dhcp Ã ip €*
mixed	*Æ ip*

o- ¼

o-X%”o- $%”

o- 15

o-o- supplicant IÓ”Nu4iH supplicantož

radius-server IÓ”}Æ* framed-ip KÂ ip ož

dhcp-server IÓ”}Ãe dhcp snooping ã dhcp relayož

cÿIÓ”ÿY… mixed IÓ”ož

oFå- 1 yFå supplicant IÓ ipož

5XLMLHFRQILJDDDDXWKRUL]DWLRQLSDXWKPRGHVXSSOLFDQW

oào- 1 y… **show running-config ôFåž**

oUP’Î- -

oeÿ- +9AEÑ- ip IÓFÏ%YCÚ¶CÄ-FÎ

kÂ«Ãž

oUVô- -

4.2 clear dot1x user all

ïÃ- dot1x öž

clear dot1x user all

o@	@	T
	-	-

oFå-	-
oX%”o-	Ô”
oö-	15
o6-o-	XUY1Ã- dot1x ïož
oFå- 1	yïÄ dot1x ïož
	5XLMLHFOHDUGRW[XVHUDOO
oUP’ô-	-
oVö-	-

4.3 clear dot1x user id

Ÿ dot1x ï session id Ûjož

clear dot1x user id *session-id*

o@	@	T
	session-id	dot1x ïš session id

oFå-	-
oX%”o-	

o6-o- }1Ô session id dot1x ïšUY4xXož

oFåt- 1 yí session id 12345678 dot1x ïož

5XLMLHFOHDUGRW[XVHULG

oUP'ô- -

oUVt- -

4.4 clear dot1x user mac

ÿG dot1x ï mac Ûjož

clear dot1x user mac *mac-addr*

o@ @ T

mac-addr dot1x ïš MAC ª

oFå- -

o×X%"o- Ô"

o6- 15

o6-o- }1Ô mac ª dot1x ïšUY4xXož

oFåt- 1 yí mac ª 0012.3456.789A dot1x ïož

5XLMLHFOHDUGRW[XVHUPDF$

oUP'ô- -

oUVt- -

4.5 clear dot1x user name

ÿG dot1x ïdÛjož

clear dot1x user name *name-str*

oʉVt- -

4.7 dot1x auth-address-table address

Fåʉ§ož

dot1x auth-address-table address *mac-addr* **interface** *interface*

oƒ@

@	T
mac-addr	ƒ mac ª
interface	ƒ

oHFå- -

oxX%”o- ƒ%”

oƒ- 15

o6-o- ’6ƒMQÄ mac ÄYg 802.1x ěž

oFåt- 1 yFåʉ§ož

5XLMLHFRQILJRW[DXWKDGGUHVVWDEOHGIFELQWHUIDFHIDVWHWKHUQHW

oʉP’ô- -

oʉVt- -

oH6- 15

4.10 dot1x auth-fail vlan

FÅ vlanož

dot1x auth-fail vlan *vlan-id*

{Å vlanož

no dot1x auth-fail vlan

o@	@	T
	vlan-id	Å vlan

oHFå- {¼

oxX%”o- NM%”

oHõ- 15

o6-o- eÅ-UY]ÕYFåxXož

oFåb- 1 yFå vlanož

5XLMLHFRQILJIGRW[DXWKIDLOYODQ

oUP’Î-o- -

ouVt-o- -

4.11 dot1x auth-mode

Fåo”ož

dot1x auth-mode { **eap | chap | pap** }

o@	@	T
		ó eap

oHFå- eap %”

oxX%”o- ¶%”

oFõ- 15

o6-o- %”#+HÐ supplicant yÕ4Õž

oFåt- 1 yFå chap %”ož

5XLMLHFRQILJ GRW[DXWKPRGHHDS

oUP’Î- -

oUVt- -

4.12 dot1x auth-with-order

Få 802.1x ÿ MAB ÿyiõž

dot1x auth-with-order

oÕ@	@	T

dot1x auto-req

{¼

no dot1x auto-req

oP@		T
	-	-

oHFå- N18K	¢¼Uo

o×X%”o-	¶%”
oHõ-	15
o6-o-	Bæ MAB ÊÑ¼ÊUY#+ež
oFåb- 1	yFåž
	5XLMLHFRQILG RW[DXWRUHT
oUP’ô-	-
oUVõ-	-

4.14 dot1x auto-req packet-num

FõÊÑ¼ÊUž

dot1x auto-req packet-num *num*

oP@

oþ@	¢@	T
		-

oÞFå-	Þo

o×X%”o-	¶%”,E¢PiFõoÞõ-

oUP'î- -

oUV0- -

4.18 dot1x critical

F[illegible]

dot1x critical

{[illegible]

no dot1x critical

o[illegible]

[illegible]	T

oF[illegible]- [illegible]

oxX%"o- NM%"

o[illegible]- 15

o6-o- RADIUS }cF[illegible]

oF[illegible]- 1 yF[illegible]

5XLMLHFRQILJ[illegible]DELW(WKHUQHWGRW[FULWLFDO

oUP'î- -

oUV0- -

4.19 dot1x critical recovery action reinitialize

F[illegible]

dot1x critical recovery action reinitialize

{[illegible]

no dot1x critical recovery action reinitialize

oUP'ô- -

oUVt- -

4.21 dot1x dbg-filter

S+Ô mac ¾ôž

dot1x dbg-filter *H.H.H*

¾ôž

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

@	T	
H.H.H	¾	Mac ª

Få-	¾

xX%"o- ¶%"

15

6-o- ¾ {zUY¥X+¾k9¾-

¾ôž

Fåt- 1 yFÔ mac ¾ôž

5XLMLHFRQILGRW[GEJLOWHUGI

oUP'ô- -

oUVt- -

4.22 dot1x default

Ô dot1x Fåž

dot1x default

o@	@	T

oFå-	
oxX%”o-	%”%”
oõ-	15
o6-o-	FåÓ dot1x xX$k4¼MFåUYR4xX
oFå- 1	yÊ dot1x ?Fåž
	5XLMLHFRQILGRW[GHIDXOW
oUP’ô-	-
oVô-	-

4.23 dot1x default-user-limit

FåMUÿ
dot1x default-user-limit *num*

ôž
no dot1x default-user-limit

o@	@	T
	num	Mÿÿ@ 1-1000000oÿ/ ”ÿž

oFå-	¼
oxX%”o-	NM%”
oõ-	15
o6-o-	ÿ%MUÿUY¥X’òž
oFå- 1	yFåMUÿž

5XLMLHFRQILJIGRW[GHIDXOWXVHUOLPLW

oUP'ô- -

oUVt- -

4.24 dot1x dynamic-vlan enable

FåMÁ VLAN ož

dot1x dynamic-vlan enable

{ÅMÁ VLAN ož

no dot1x dynamic-vlan enable

o@	@	T
		¼

oFå- ¼

oxX%"o- NM%"

oFo- 15

o6-o- }+ÞE VLAN ÕYFåxXož

oFåt- 1 yFåMUož

5XLMLHFRQILJIGRW[GQDPLFYODQHQDEOH

oUP'ô- -

oUVt- -

4.25 dot1x guest-vlan

FåOM guest vlanož

dot1x guest-vlan *vlan-id*

{ÅOM guest vlanož

no dot1x guest-vlan

	vlan-id	*M}µ* guest vlan

	¼
	NM%”
	15
	N¨ 802.1x IOMxÖYFåxXz MÁ vlan ó Få guest vlan ÊFåCKÅ vlanož
1	yFåOM guest vlan 20ož 5XLMLHFRQILIIGRW[XHVWYODQ
	-
	-

4.26 dot1x mac-auth-bypass

Fåo MAB ož

dot1x mac-auth-bypass

¼ MAB ož

no dot1x mac-auth-bypass

	¼

	¾

o6-o- MU%+Ž

oFå- 1 yF% MAB ž

5XLMLHFRQILJIL DELW(WKHUQHWGRW[PDFDXWKE SDVV

oUP'ô- -

oUV- -

4.27 dot1x mac-auth-bypass multi-user

Få MAB ž

dot1x mac-auth-bypass multi-user

¥ MAB ž

no dot1x mac-auth-bypass multi-user

@	T
	¥

oFå- ÚU MAB ¼

oxX%"o- NM%"

o- 15

o6-o- MUž

oFå- 1 yFå MAB ž

5XLMLHFRQILJIL DELW(WKHUQHWGRW[PDFDXWKE SDVVPXOWLXVHU

oUP'ô- -

oUV- -

4.28 dot1x mac-auth-bypass timeout-activity

Få MAB ž

oFåt- 1 yFå MAB tož

5XLMLHFRQILJIILDELW(WKHUQHWGRW[PDFDXWKEVSDVVYLRODWLRQ

oUP'ô- -

oUVt- -

4.30 dot1x mac-auth-bypass vlan

Få MAB VLANož

dot1x mac-auth-bypass vlan *vlan-list*

¼ MAB VLAN

no dot1x mac-auth-bypass vlan *vlan-list*

op@

@	T
vlan-list	ož

oþ@	*j@*	T		
	num	request/challenge ¶Mn)ƒó	3kFå	1-10

oÞFå-	3

oxX%”o-	¶%”

oÞõ-	15

oʉVt- -

4.33 dot1x port-control auto

FM 802.1x ož

dot1x port-control auto

{M 802.1x š

no dot1x port-control auto

o@	@	T

oFå- 4

oxX%”o- NM%”

oo- 15

o6-o- Bæ 802.1x ÀåXož

oFåt- 1 yFM 802.1x ož

5XLMLHFRQILJIILDELW(WKHUQHWGRW[SRUWFRQWURODXWR

oUP’Î- -

oʉVt- -

4.34 dot1x port-control-mode

FMIO%”ož

dot1x port-control-mode { mac-based | port-based | port-based single-host}

MIO%”Â mac IO

no dot1x port-control-mode

o@	@	T

oHFå-	Hâ	mac IO
o×X%”o-	NM%”	
oHö-	15	
o6-o-	}LIOM%Fâ	MAC IO%”z
	÷OMÄ%kUDY*kUYFâMIO%”	
	âMIO%”kQNYFåxX	
oFåt- 1	yFâMIOož	
	5XLMLHFRQILIILDELW(WKHUQHWGRW[SRUWFRQWUROPRGHSRUWEDVHG	
oUP’ô-	-	
oUVt-	-	

4.35 dot1x private-supplicant-only

Fåhöž

dot1x private-supplicant-only

{Hé

ouVt- -

4.36 dot1x probe-timer alive

FåHyžož

dot1x probe-timer alive *time*

	@	T		
	time	*ýžkyakó*	250oFå	1-65535

oFå-	250
oxX%”o-	B%”
oFo-	15
o6-o-	ěkyžZ6MyBUož
oFåt- 1	yFåHyžož
	5XLMLHFRQILGRW[SUREHWLPHUDOLYH
oUP’ô-	-
ouVt-	-

4.37 dot1x probe-timer interval

oHõ-		15
o6-o-		0Uož
oFåt-	1	yFåHÿ?uêž
		5XLMLHFRQILJ GRW[SUREHWLPHULQWHUYDO
oUP'î-		-
oUVt-		-

4.38 dot1x pseudo source-mac

Fž. mac Õ-ß 802.1x † mac ôž

4.39 dot1x re-authentication

Fåvšž
dot1x re-authentication

{Mš
no dot1x re-authentication

o@	@	T

oFå-	¼
oxX%”o-	¶%”
oõ-	15
o6-o-	MšÄkOÉ¼ž
oFåt- 1	yFåvšž
	5XLMLHFRQILGRW[UHDXWKHQWLFDWLRQ
oUP’Î-	-
ouVt-	-

4.40 dot1x reauth-max

Få request/id Mn)ýž
dot1x reauth-max *num*

o@	@	T
	num	request/id Mn)ký 3kFå 1-10

oFå-	AEõ- 3
oxX%”o-	¶%”

oFõ- 15

o6-o- ôUož

oFåb- 1 yFå request/id MN)ôž

5XLMLHFRQILGRW[UHDXWKPD[

oUP'Î- -

oUVõ- -

4.41 dot1x redirect

FåW su ´ož

dot1x redirect

{8W su ´

no dot1x redirect

oP

@	T
	´4

4.42 dot1x stationarity enable

FåW2ĝ́ož

dot1x stationarity enable

{W2ĝ́

no dot1x stationarity enable

o@	@	T
	-	-

oFå- Ĥg

o-X%”o- B%”

oFô- 15

o6-o- ÂMIO%”ĝ́UMUYFåxXož

oFåt- 1 yFåW2ĝ́ož

5XLMLHFRQILJ GRW[VWDWLRQDULWHQDEOH

oUP’ô- -

oUVô- -

4.43 dot1x timeout quiet-period

FåŽož

dot1x timeout quiet-period *time*

o@	@	T		
	time	ÂŽ%ako	10kFå	0-65535

oG-o-		ÅUož
oFåt-	1	yFåž
		5XLMLHFRQILJGRW[WLPHRXWTXLHWSHULRG
oUP'ô-		-
oUVô-		-

4.44 dot1x timeout re-authperiod

Fåž

dot1x timeout re-authperiod *time*

op@	@	T	
	time	*Mžyakó*	3600kFå

o@	@	T
	time	5kFå 1-65535

oFå- 5	a
oX%”o-	%”
oõ-	15
o6-o-	À 802.1x radius 802.1x radius kÕ@ radius Fåz
oFåt- 1	yFåz 5XLMLHFRQILGRW[WLPHRXWVHUYHUWLPHRXW
oUP’ô-	-
oVôt-	-

4.46 dot1x timeout supp-timeout

Få request/challenge Mnoz

dot1x timeout supp-timeout *time*

o@	@	T
	time	request/challenge Mnoyakó 3kFå 1-65535

oFå- 3	a
oX%”o-	%”
oõ-	15
o6-o-	Uož
oFåt- 1	yFå request/challenge Mnoz 5XLMLHFRQILGRW[WLPHRXWVXSSWLPHRXW
oUP’ô-	-

oʉVõ- -

4.47 dot1x timeout tx-period

Få request/id Množ

dot1x timeout tx-period *time*

	p@	T		
	time	request/id Mnk%yakó	3kFå	1-65535

oHFå-	AEõ-	3 a	
oxX%”o-	B%”		
oõ-	15 @x=		
o6-o-	Uož		
oFå- 1	yFž		
	5XLMLHFRQILGRW[WLPHRXWW[SVà		
oPVùâ-	-		
oʉVõ-	-		

oxX%”o- ₿%”

oH6- 15

o6-o- … H3C

4.50 dot1x valid-ip-acct timeout

FkBH	IP ž
dot1x valid-ip-acct timeout *time*	
ñž	
no dot1x valid-ip-acct timeout	

o@	@	T
	time	ó 5

oF å-	ó 5

o-X%”o-	$%”
oñ-	15
o6-o-	o4BH IP $ñG“ñG“ñ@ěVT€

4.53 show dot1x auth-address-table

ôUÕ¸ož

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

oÕ@

@	T
addr	Ä mac Ð
Interface	ÕMÐ

oÐFå-

-

o×X%”o-

Ô”oÐ%”o×NM%”

oÕ-

15

o6-o-

UÕ¸ož

oFåb- 1

yôUÕ¸ož

```
5XLMLHVKRZGRW[DXWKDGGUHVVWDEOH
,QWHUIDFHSGGUHVV

)DGIFH
)DDF

5XLMLHVKRZGRW[DXWKDGGUHVVWDEOHLQWHUIDFHIDVW(WKHUQHW
,QWHUIDFHSGGUHVV

)DGIFH

5XLMLHVKRZGRW[DXWKDGGUHVVWDEOHDGGUHVVGIFH
,QWHUIDFHSGGUHVV

)DGIFH
```

<Ky

<	¢
Interface	ÕM
Address	UÕN mac ª

oUP’Ô-

-

oʉVô- -

4.54 show dot1x auto-req

ôÅ¿ø
show dot1x auto-req

oÅ¿ø

¿@	T

o×X%”o- Ô”oB%”o^NM%”

oÅ¿ø- 15

o6-o- ¥XUYô 802.1x ÅÅ¿ø

oFåô- 1 yôÅ¿ø

5XLMLHVKRZGRW[DXWRUHT
$XWR5HT(QDEOHG
8VHUHWHFW(QDEOHG
3DFNHW1XP
5HT,QWHUYDO6HFRQGV

<Ky

<	¢
Auto-Req	ÅÅ
User-Detect	ÿÅ
Req-Interval	Ge

oʉP’Î- -

oʉVô- -

4.55 show dot1x max-req

ô request/challenge Mn)ø ž
show dot1x max-req

oÅ¿ø

¿@	T

<Ky

<	¢
Interface	IOMdf
Mode	£M%”
Dynamic-User	

oʉVt- -

4.58 show dot1x probe-timer

ôEMy@z

show dot1x probe-timer

o@	@	T

o×X%”o- Ô”oB%”o^NM%”

oÈ- 15

o6-o- ¥XUYôEMy@z

oFåt- 1 yôEMy@

5XLMLHVKRZGRW[SUREHWLPHU
+HOOR,QWHUYDO
+HOORSDLYH

<Ky

<	¢
Hello Interval	MyuÊ
Hello Alive	Myx

oUP’ô- -

oʉVt- -

4.59 show dot1x re-authentication

ôMÈz

show dot1x re-authentication

o@	@	T

o×X%”o- Ô”oB%”o^NM%”

oÞõ- 15

o6-o- ¥XUYõMÅ¼ž

oFåb- 1 yõMÅ¼

5XLMLHVKRZGRW[UHDXWKHQWLFDWLRQ

5HDXWK(QDEOHGLVDEOHG

<Ky

<	¢
Reauth-Enabled	MÅ¼

oUP'ô- -

ouVõ- -

4.60 show dot1x reauth-max

õ request/id Mn)ƒž

show dot1x reauth-max

oÞ@

ƒ@	T

o×X%"o- Ô"oB%"oNM%"

oÞõ- 15

o6-o- ¥XUYõ request/id Mn)ƒž

oFåb- 1 yõ request/id Mn)ƒ

5XLMLHVKRZGRW[UHDXWKPD[

5HDXWK0D[7LPHV

<Ky

<	¢
Reauth-Max	request/id Mn)ƒ

oUP'ô- -

oʉVt- -

4.61 show dot1x summary

ôš°ôž

show dot1x summary

@	T

o×X%”o- Ô”oB%”o NM%”

o-ô- 15

o6-o- ôš°kKUY=3ÔM%kAôš]E

óž

oFåt-

<Ky

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

oUP’ô- -

oʉVt- -

4.62 show dot1x timeout quiet-period

ôÂ¥ž

show dot1x timeout quiet-period

oÊ@

@	T

o×X%”o- Ô”oB%”o×NM%”

oÊ¥- 15

o6-o- ôÂ¥ž

oFåt- 1 yôÂ¥

5XLMLHVKRZGRW[WLPHRXWTXLHWSHULRG

4XLHW3HULRG6HFRQGV

<Ky

<	¢
Quiet-Period	Â¥

oUP’Î- -

ouVt- -

4.63 show dot1x timeout re-authperiod

ôMšž

show dot1x timeout re-authperiod

oÊ@

@	T

o×X%”o- Ô”oB%”o×NM%”

oÊ¥- 15

oG-o- ÔMěž

oFåb- 1 yÔMěe

5XLMLHVKRZGRW[WLPHRXWUHDXWKSHULRG

5HDXWK3HULRG6HFRQGV

<Ky

<	¢
Reauth-Period	Měe

oUP'Ô- -

oUVÔ- -

4.64 show dot1x timeout server-timeout

ÔÉž

show dot1x timeout server-timeout

oÊ@

@	T

oxX%"o- Ô"oB%"oNM%"

oÊ- 15

oG-o- ÔÉž

oFåb- 1 yÔÉE

5XLMLHVKRZGRW[WLPHRXWVHUYHUWLPHRXW

6HUYHU7LPHRXW6HFRQGV

<Ky

<	¢
Server-Period	ÉE

oUP'Ô- -

oUVÔ- -

4.65 show dot1x timeout supp-timeout

ô request/challenge Množ

show dot1x timeout supp-timeout

ô@	@	T

o-X%”o- Ô”oB%”oNM%”

o-ô- 15

oG-o- ô request/id Množ

oFåb- 1 yô request/id Mnoe

```
5XLMLHVKRZGRW[WLPHRXWW[SHULRG

7[3HULRG6HFRQGV
```

<Ky

<	¢
Tx-Period	request/id Mnoe

oUP'ô- -

oUVô- -

4.67 show dot1x user id

Gï id ôpôž

show dot1x user id *id*

oÊ@

@	T
id	š id

oxX%"o- Ô"oB%"oNM%"

oÊ- 15

oG-o- … show dot1x summary ô]"kR#+ï idk4xX%5ôîôž

oFåb- 1 yôÂ

```
5XLMLHVKRZGRW[XVHULG

8VHUQDPHWVXVHU
8VHULG
7SHVWDWLF
0DFDGGUHVVLVDHDD
9ODQLGLV
,QQHU9/$LG
$FHVVIURPSRUWL
7LPHRQOLQHGDVKPV
8VHULSDGGUHVVLV
```

0D[XVHUQXPEHURQWKLVSRUWLV
$XWKRUL]DWLRQVHVVLRQWLPHLVVHFRQGV
6XSSOLFDQWLVSULYDWH

Permit proxy user	¥Wò
Permit dial user	¥Z
IP privilege	¥ IP Ó
user acl-name	¥G ACL ’Î

oUP’ô- -

oUVô- -

4.69 show dot1x user name

Gïdôpôž

show dot1x user name *name*

oÕ@

@	T
name	ã…

o×X%”o- Ô”oB%”o×NM%”

oÕ- 15

o6-o- … show dot1x summary ôj”kR#+k4xX%5ôîôž

oFåb- 1 yôpÂ

```
5XLMLHVKRZGRW[XVHUQDPHWVXVHU

8VHUQDPHWVXVHU
8VHULG
7SHVWDWLF
0DFDGGUHVVLVDHDD
9ODQLGLV
,QQHU9/$LGSFFHVVIURPSRUWL
7LPHRQOLQHGDVKPV
8VHULSDGGUHVVLV
0D[XVHUQXPEHURQWKLVSRUWLV
$XWKRUL]DWLRQVHVVLRQWLPHLVVHFRQGV
6XSSOLFDQWLVSULYDWH
6WDUWDFFRXQWLQJ
3HUPLWSUR[XVHU
```

3HUPLWGLDOXVHU
,3SULYLOHJHLV
XVHUDFOQDPHWVXVHUBBB

<Ky

<	¢
User name	ïdf
User id	ï id
Type	¤
Mac address	ï mac ª
Vlan id	ï vlan id
Access from port	¤M
Time online	¿
User ip address	ï IP ª
Max user number on this port	¥M/Ñ
Authorization session time	¥Ó
Supplicant is private	¥¤ su
Start accounting	¥“.Ã
Permit proxy user	¥Vò
Permit dial user	¥
IP privilege	¥ IP Ó
user acl-name	¥G ACL ’Î

oƱP’ô- -

oƱVô- -

authentication { *method-list* }

Mož
no authentication

@	T
method-list	*cndož*

Þ.. default což

%”o- %”ož

14

AAA /" web

1 y6 eportalv2 %á. mlist1 což

27

o¬ … • ¾ ož %á

ip-only-mode	**N** IP %”kN1 IP ’ÎGõnzCÌ MAC ’Õk Îÿ%”

oHFå- **ip-mac-modeož**

o×X%”o- %Få%”ož

oHõ- 14

o6-o- -

oFåt- 1 y6 eportalv2 %ÿ%”N IP %”ož

5XLMLHFRQILJWPSOWHSRUWDOYELQGPRGHLSRQOPRGH

oèo- … **show web-auth template ÔÕÿ**

oUP’Î- -

oejö- -

ouVt- -

5.4 clear web-auth direct-host

clear web-auth direct-host [range]

ÿ@	T

o×X%”o- Ô%”ož

oHõ- 14

o6-o- -

oFåt- 1 y1Ã

5XLMLHFOHDUZEDXWKGLUHFWKRVW

2y1Ã

Ruijie# clear web-auth direct-host range

oUP'î- -

oUV0- -

5.5 clear web-auth direct-site

clear web-auth direct-site [range]

	@	T

oxX%"o- Ø"ož

oÞ- 14

o6-o- -

oFå- 1 y1

5XLMLHFOHDUZEDXWKGLUHFWVLWH

1y1

Ruijie# clear web-auth direct-site range

oUP'î- -

oUV0- -

5.6 clear web-auth user

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

@	T	
ip-address	6	IPv4 ož
mac-address	6	MAC
name-string	6	

oxX%"o- Ø"ož

oÞ- 14

ouVt0- -

5.8 http redirect direct-arp

å* ARP 8ož

http redirect direct-arp { *ip-address* [*ip-mask*] }

ïFåž

No http redirect direct- arp { *ip-address* [*ip-mask*] }

o@

@T0CjCj	T
ip-address	Ipv4 ož
Ip-mask	*gH*Ipv4 QAož

oFå- Ï ARP ïož

oxX%"o- ßFå%"ož

o@- 14

o6-o- o ARP CHECK žARP .IOkï.Õ- ARPk4žkXÛg6

ª à ARP .ož

oFåb- 1

ãož

http redirect direct-site { *ipv4-address* [*ip-mask*] [**arp**]| *mac-address* | range *starip-address endip-address*} [description *description-str*] [group *group-name*]

ïãož

no http redirect direct-site { *ipv4-address* [*ip-mask*] | *mac-address* | range *startip-address endip-address* }

@	T
Ipv4-address	ãž Ipv4 ºž
Ip-mask	*g*ãž Ipv4 ºQAož
Arp	[illegible]

ouV0- -

5.10 http redirect port

åGÔMZ HTTP

ouVõ- -

5.11 http redirect session-limit

http redirect session-limit	HTTP kpMìs	HTTP kpÈž

5.12 http redirect timeout

ÉMgNÿ
http redirect timeout *seconds*

ÉMgNÿ 3 aož
no http redirect timeout

	seconds	ÉMgNÿ *seconds* *k H8* 1-10ož

ÉMgNÿ 3 aož

xX%”o- ÎFå”

14

ÉMgNÿ HTTP GET/HEAD
Ö HTTP Mg GET/HEAD TCP
Nož

1 ÉMgNÿ 4ož
5XLMLHFRQILKWWSUHGLUHFWWLPHRXW

… **show web-auth parameter xÎFå**

UP’ô- -

ö- -

Vô- -

5.13 ip

}Få portal 7E IP ÿ%Å”xX **ipož**
ip { *ip-address* }

Ž HTTP Mg IP ož

no ip

o@	*@*	T
	ip-address	portal 7Æ IPv4 ºž

oFå-	Ã–	portal 7Æ	IP ºž

o×X%”o-	%5å%”

oÕ-	14

interface-num	*M«*

oHFå- Fåž

oxX%”o- ¶BFå%”ož

oHö- 14

o6-o- -

oFåt- 1 yM¢ portal *Mož

5XLMLHFRQILJ1SSRUWDOVRXUFHLQWHUIDFHSUHDWHSRUW

oèo- … **show running-config ÔÊå**

oUP’ô- -

oejö- -

ouVt- -

5.15 port

å– portal ÃÊMož

port { *port-num* }

MÊMÊMož

no port

oÊ@

port	T
	portal *Mož

oHFå- HMZ 50100kÂ UDP #ož

oxX%”o- %Få%”ož

oHö- 14

o6-o- -

oFåt- 1 y6 eportalv2 KEZ 10000ož

5XLMLHFRQILJWPSOWHSRUWDOYSRUW

oèo- … **show web-auth template ÔÕÕ**

oUP'Î- -

oejö- -

ouVt- -

5.16 show web-auth control

PšOFåž

show web-auth control

oÕ@

@	T
-	-

oUP'ô- -

oUVô- -

5.17 show web-auth direct-arp

P+* ARP 8ož

show web-auth direct-arp

oP@

5.18 show web-auth direct-host

ÎP² web 8ož

show web-auth direct-host [range]

@	T
-	-

oX%”o- Ô”

14

6-o- ÎX0Fâ

oFå- 1 yPež

```
5XLMLHVKRZIEDXWKGLUHFWKRVW
LUHFWKRVWV
$GUHVV0DVN3RUW$3%LQGLQ$URXSHVFULSWLRQ

$P070DV1$00000030A0inã
```

<	¢
Start Address	Ŝ ip
End Address	Ŝ ip
Port	ï IP Ã¢ož
Group	KÁ
Description	T'Î

oUP'ô- -

oUVô- -

5.19 show web-auth direct-site

ïP+¢8ož

show web-auth direct-site [range]

@	T
-	-

oX%"o- Ô"

oÕ- 14

o6-o- -

oFåÕ- 1 yïP+¢Fåož

```
5XLMLHFRQILJVKRZEDXWKGLUHFWVLWH
LUHFWVLWHV
$GGUHVV0DVN$3%LQGLQ$URXSHVFULSWLRQ

2II1$$
2Q1$$
5XLMLHFRQILJ
```

<	¢

Addres	IP ôž
Mask	IP ÇAož
ARP Binding	Ç ARP Çž
Group	KÁ
Description	T'Î

2. P+ÈÀå

5XLMLHFRQILJVKRZEDXWKGLUHFWVLWHUDQJH

LUHFWVLWH5DQJHV

6WDUWGGUHVV(QGGGUHVVURXSHVFULSWLRQ

1$$

5XLMLHFRQILJ

5:Wn$2sCBKhBFaf.$W%nQBbEXH$$D0ÀRapYRvq$%TFaf.$W%nQubEXH%ThÛbETC:Wp14Fxcp,H4Fxcxh v(&WnRaxH

oÈ-o-

oFåt- 1 yFåt@

```
5XLMLHFRQILJ VKRZ EDXWKLSPDSSLQJ

1DPHLSRUWDO
,S
8UO
,S0DSSLQJ

1DPHHSRUWDOY
,S
8UOKWWSHSRUWDOLQGH[MVS
,S0DSSLQJ
*OREDO5XLMLHFRQILJ
```

oèo-

oUP'î-

oejö-

oUVt-

5.21 show web-auth parameter

HTTP MgFåž

show web-auth parameter

	@	T
	-	-

oxX%"o-

14

oÈ-o- 90 web

oFåb- 1 yP HTTP MgFåž

```
5XLMLHVKRZEDXWKSDUDPHWHU
VHVVLRQOLPLW
WLPHRXW
```

<	¢
session-limit	c%Ž HTTP kpž
timeout	ÓMgNbž

oUP'ô- -

oUVô- -

5.22 show web-auth portal-check

‹ë **portal-check ¢54**

show web-auth portal-check

op@	@	T

oFå- Fåž

o×X%"o- Ô"

oÕ- 14

o6-o-

oFåb- 1 yFå portal-check :

```
5XLMLHVKZESRUWDOFKHFN
&HFN(QDEOH
,QWHUYDOV
7LPHRXWV
5HWUDQVPLW
(VFDSH(QDEOH
1RNLFNLVDEOH
```

oèo-

oUP'ô- -

oojo- -

ouVt- -

5.23 show web-auth rdport

TCP)Mož

show web-auth rdport

@	T
-	-

oX%"o- Ô"

oÕ- 14

o6-o- -

oFåt- 1 yP TCP)MFåž

```
5XLMLHVKRZIEDXWKUGSRUW
5G3RUW

5XLMLH
```

oUP'ô- -

ouVt- -

5.24 show web-auth syslog ip

show web-auth syslog ip *ip-address*

@	T

Ip-address	*Gï* ip ò

o-X%”o- Ô”

o-Ö- 14

o6-o- ÎXÿ€ ’ÿ¥Xu4Ö=Ö¡ož

oFåt- 1 yP“6ž

5XLMLHVKRZIEDXWKVVORLS
$GGUHVVRUHLQGH[&XUUHQWLQGH[
,QGH[
7LPH
%HKDYLRU21/,1(
0DFGIH
9LG
3RUWL
7LPHXVHGG
)ORZXS
)ORZGRZ

,QGH[
7LPH
%HKDYLRU2))/,1(
0DFGIH
9LG
3RUWL
7LPHXVHGG
)ORZXS
)ORZGRZ

<	¢
Index	“Ź
Time	“Gÿ
Behavior	kWnã
MAC	ï mac
Vid	ï vid

Timeused	ž
Flow UP	ïgvO
Flow down	ïgvO

oUP'ô- -

oUVô- -

5.25 show web-auth template

P portal Ãž

show web-auth template

oP@

@	T
-	-

oX%"o- Ô"

oÃ- 14

o6-o- ÎXÔÃ

oFåt- 1 yPž

```
5XLMLHVKRZHEDXWKWHPSODWH
:HEDXWK7HPSODWH6HWWLQJV

1DPHHSRUWDOY
8UOKWWSHSRUWDOLQGH[MVS
,S
%LQG0RGHLSPDFPRGH
7SHY

1DPHHSRUWDOY
8UOKWWSHSRUWDOLQGH[MVS
,S
%LQG0RGHLSRQOPRGH
7SHY
3RUW
$FWPOLVW
$XWKPOLVW
```

5XLMLH

<	¢
Name	%df
Url	¾Æ
Ip	ÆE IP ª
Type	ÆE%W portal ÆE v1k8W v2
Port	ÆMkN8W portal ÆE
Acctmlist	“ÃçdkN8Wš
Authmlist	šçdkN8Wš

oUP’ô- -

ouVô- -

5.26 show web-auth user

ÞÄÎk,ï IP ºNMoÎ ož

show web-auth user { **all | ip** *ip-address* | **mac** *mac-address* **| name** *name-string* }

@	T
ip-address	ó IPv4 ºož
mac-address	ó MAC ª
name-string	ó

oxX%”o- Ô”ož

oÞ- 14

o6-o-

oFåt- 1 yP web ÞFåÎ ož

5XLMLHVKRZEDXWKXVHUDOO

XUUHQWXVHUQXPRQOLQH

GGUHVV2QOLQH7LPH/LPLW7LPH8VHG6WDWXV1DPH

```
2QGG$WLYH
2QGG$WLYH
2IIGG&HDWH
2IIGGHVWUR\

5XLMLHVKRZEDXWKXVHULS
GGUHVV
0DFGI
3RUWL
2QOLQH2Q
7LPH/LPLWG
7LPH8VHGG
7LPH6WDUW
6WDWXV$WLYH
```

<	
Address	ï IP ž
Mac	ï MAC ž
Port	N ož

no url

	@	T
	url-string	¥¥http://” ê “https://”ãkéUPFåX† 255 ož

	%Wk8WÏÃ–	portal ¥
	%Ã%”ož	
	14	
	1UP	**http redirect homepage** [*url-string*]aPaÿd–
	url %VöL!	http://[ip-address] [ip-address]¶ IP aü– IP d
1	y6 eportalv1 %¥	http://www.web-auth.net/loginož
	5XLMLHFRQILJWPSOWHSRUWDOYXUOKWWSZHEDXWKQHWORJ1Q	
	…	**show web-auth template**
1	oc URL ”ož	
	(UURU,QYDOLGKRPHSDJH85/	
	-	
	-	

5.28 web-auth dhcp-check

ÂBFå web š dhcp ¥QÄ dhcp ãgöž

web-auth dhcp-check

Ãåž

no web-auth dhcp-check

	@	T
	-	-

oHFå-	{ož
oxX%”o-	ßFå%”ož
oHö-	14
o6-o-	-
oFåb- 1	yÂßFå dhcp ß
	5XLMLHFRQILZIEDXWKGKFSFKHFN
oèo-	… **show running-config ÔÂå**
oUP’Î-	-
oojö-	-
oUVö-	-

5.29 web-auth direct-host

å– IP/MAC 8ož

web-auth direct-host { *ipv4-address* [*ip-mask*] [**arp**] | *mac-address* | range *starip-address endip-address* } [**port** *interface-name*] [description *description-str*] [group *group-name*]

Hö ž

no web-auth direct-host { *ipv4-address* [*ip-mask*] | *mac-address* | range *starip-address endip-address* }

oß@	@	T
	Ipv4-address	ö– IPv4 [illegible]

oFå-	[illegible]	Web [illegible]
o×X%”o-	[illegible]	
o[illegible]-	14	
o6-o-	[illegible]	Web [illegible]

Þ.. **eportalv1 ‰**

o×X%”o- NMFå”ož

oÞö- 14

o6-o- }è Web kÀ¶ž
91%ÊOk÷ÖNM%á Fåtž ož
Ãe¶%á ÕÆ

oFåt- 1 yÆM gigabitEthernet 0/14 o Web ož

5XLMLHFRQILJ1QWHUIDFH1DELW(WKHUQHW
5XLMLHFRQILJ1LDELW(WKHUQHW

oèao- * **show web-auth control ÔIOMFå**

oUP’Î- -

oejö- -

oUVt- -

5.31 web-auth linkdown-timeout

/L **down dgÈ**
web-auth linkdown-timeout {timeout}

ÎFåž
no web-auth linkdown-timeout

oÞ@

@	T
timeout	**ž**

oÞFå- 60s ož

o×X%”o- Config Få”

oÞö- 14

o6-o-

oeijö- -

oʉVt- -

5.33 web-auth portal key

%Wož

web-auth portal key *key-string*

Ž HTTP WEB ŁtMge• WEB Ł%Wož

no web-auth portal key

@	T
key-string	255 ož

oFå- %Wož

oxX%”o- ‰”ož

oŕ- 14

o6-o- }è Web %Wož

%WNu4‰Fåu4%Wož

oFåt- 1 y%W *web-authož*

5XLMLHFRQILZEDXWKSRUWDONHZEDXWK

oèo- * **show running-config ŕFå**

oUP’î- -

oeijö- -

oʉVt- -

5.34 web-auth portal-check

y portal %Uož

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

oHFå- {ož

oxX%”o- ¶FåÃ%”ož

oHõ- 14

o6-o- ïÊe/nÃ¥ Portal ù{Ãe
ÕÃ½ Portal ¿ïÿ

oFåt- 1 yFå portal ÿ
5XLMLHFRQILÆEDXWKSRUWDOHVFDSH

oèo- … **show running-config ÔÃå**

oUP’Î- **-**

oejö- -

ouVt- -

5.36 web-auth template

ïÿ%”W%Få%”ož
web-auth template eportalv1

ïÿ%Få%ž
web-auth template { template-name } **v1**

ïÿ6W%Få%”ož
web-auth template eportalv2

ïÿ#8W%Få%”ož
web-auth template { *template-name* } **v2**

ï%ãXož
no web-auth template { *template-name* }

o@	@	T
	eportalv1	**%**
	eportalv2	**%**
	template-name	*%*

o-Få-	Få	
o-X%”o-	Få”ož	
o-ö-	14	
o-o-	eportalv1 fPf)û ip ä ur **http redirect ä http redirect homepage** **http redirect ä http redirect homepage a 6qLAmä**	

Ôåž
no web-auth update-interval

o@	@	T
	seconds	**ÎÅ%aoŽ18** 30-3600ož 180 aož

oFå- 180 aož

oxX%”o- ¶FÅ%”ož

oÕ- 14

o6-o- -

oFåt- 1 yÂ%e 60 aož

5XLMLHFRQILJ7EDXWKXSGDWHLQWHUYDO

oèo- … **show running-config ÔÅ**

oUP’ô- -

oojö- -

ouVô- -

5.38 web-auth vlan-control

6Ms vlan ¢ož
web-auth vlan-control vlan-list

ÔMIOož
no web-auth vlan-control

o@	@	T
	vlan-list	**š** vlan ¢

oFå- 6– vlankÔMIOož

oxX%”o- ¶FÅ%”ož

oHö- 14

o6-o-

oFåt- 1 y6 vlan 1 ÿ¥ž

5XLMLHFRQILJ1LDELW(WKHUQHWW

oèo- … **show running-config ÔÅå**

oUP'Î- -

oejö- -

oUVt- -

5.39 web-auth station-move arp-detect

Få¼ ARP Myož ¼ ARP Myek MAC ÿ¥sekÿ¥UY+Ngkÿ ARP Myož

no web-auth station-move arp-detect

ÔÅž

default web-auth station-move arp-detect

@	T

oHFå- Ìož

o×X%"o- ¶FÅ%"ož

oHö- 14

o6-o- -

oFåt- 1 y¼ ARP Myož

5XLMLHFRQILQRZEDXWKVWDWLRQPRYHDUSGHWHFW

oèo- … **show running-config ÔÅå**

oUP'ô- -

oejö- -

ouVt- AEuVu4

5.40 web-auth station-move auto

Få *mapping-list* ç¿ç¿ç/ vlan Ág¿ç

Få web-auth mapping xXh

web-auth station-move auto [**apply-mapping** [*mapping-list*]]

ïFåž

no web-auth station-move auto

o@

@	T
-	-

oFå- Fåž

oxX%"o- Config Få%"

oö- 14

o6-o- cçUFUFkFÅ vlan ÿCskFåçekNcçc•

cÿskccg}¥cžsàž_cçNS+TwÿÅ

|kTwÿsÿž

oFåt- -

oào- … **show running-config ÔÅ**

oUP'ô- -

oejö- portal ÅE 210 ÅÅ

Å1- Twk2- TwçÕTwç 0ož

ouVt- AEuVu4 auto xX

6 SCC

6.1 wWkT=

œ	m#
vlanlist	s VLAN ç
interval	guÊ
thredshold	gvOy’

6.2 direct-vlan

Få VLANož

direct-vlan *vlanlist*

ïs VLAN Få

no direct-vlan *vlanlist*

@	T
vlanlist	VLAN

oeöjö- -

ouVö- -

6.3 nac-author-user maximum

F&M IPv4 ïO'òž

nac-author-user maximum *max-user-num*

H&M IPv4 ïO'ò

no nac-author-user maximum

oö@

@	T
max-user-num	IPv4 ïO'òH8[1,1024] ož

oFå- &M IPv4 ïO'ò-

o×X%"o- NM%"

oö- 14

o6-o- 4'%&M IPv4 ïKUYîxXgFåž

oFå- 1 y'&M Gi 0/1 IPv4 ïK 100y

5XLMLHFRQILJ1QWJJDELW(WKHUQHW

5XLMLHFRQILJ1ILJDELW(WKHUQHWQDFDXWKRUXVHUPD[LPXP

oèo- 1 y… **show nac-author-user xXYöNMù** IPv4 ïO'ož

6.4 offline-detect interval threshold

Fåk6žÊvOêOgž

offline-detect interval *interval* **threshold** *thredshold*

ĝöå

default offline-detect

{ž

no offline-detect

@	T	
interval	vOyuk%yŠUkAEÑ}H8[6, 65535]	ož
threshold	*vOykHHÐ}/bÆ"*	

show direct-vlan [**interface** *interface-name*]

		T
	interface-name	NMdf

6-4

7 IP+MAC –

7.1 address-bind

IP+MAC

address-bind { *ip-address* } *mac-address*

IP+MAC

no address-bind { *ip-address* } *mac-address*

ip-address	Ç	IPv4
mac-address	Ç	MAC

—

14

-

1 IPv4+MAC

```
5XLMLHFRQILJXUHWHUPLQDO
(QWHUFRQILJXUDWLRQFRPPDQGVRQHSHUOLQH(QGZWK&7/=
5XLMLHFRQILJDGGUHVVELQGGI
```

1 … **show run** **show address-bind**

-

-

-

7.2 address-bind binding-filter logging

Fåž
address-bind binding-filter logging [**rate-limit** *rate*]

Fåž
no address-bind binding-filter logging

o@	@	T
	rate-limit *rate*	ß IPv4+MAC ßåÜ 10 ÚUFå ÜÚ 1-120 Ú

oFå- ßM

o×X%”o- ßFå%”

oÕ- 14

o6-o- Få rate-limit ßPßÜ 10 Úž
oßkß. IPv4+MAC ßkåÕž
oßkßÜ åkkUPtßž

oFåb- FßM

5XLMLHFRQILJXUHWHUPLQDO
(QWHUFRQILJXUDWLRQFRPPDQGVRQHSHUOLQH(QGZWK&7/=
5XLMLHFRQILJDGGUHVVELQGELQGLQJLOWHUORJIQJ
5XLMLHFRQILJHQG

oèo- 1 y… **show run xÕož**

oUP’Î- -

oejö- -

oUVÕ- -

7.3 address-bind install

ßÇ
address-bind install

{Ç
no address-bind install

o@	@	T
	-	-

oFå- oÇž

o×X%”o- ßFå%”

oÕ- 14

o6-o- oeß IPv4+MAC ÇÒò IPv4 Ôož

oFåb- 1 yÕ- gigabitethernet 1/1 Ä 8 Ãy

5XLMLHFRQILJXUHWHUPLQDO
(QWHUFRQILJXUDWLRQFRPPDQGVRQHSHUOLQH(QGZWK&7/=
5XLMLHFRQILJDGGUHVVELQGGI
5XLMLHFRQILJDGGUHVVELQGLQVWDOO

oèo- 1 y… **show run xÕož**

oUP’Î- -

oejö- -

oUVÕ- -

7.4 address-bind uplink

FÕ
address-bind uplink *interface-id*

Õ”
no address-bind uplink *interface-id*

o@	@	T

	interface-id	AEMã L2AP M

oHFå-

oxX%”o-

oHõ- 14

7RWDO%LQG6GUHVVHVLQ6VWHP
,36GUHVV%LQGLQ06GU

GI

<Ky

<	¢
Total Bind Addresses in System	IPv4+MAC Ç
IP Address	Ç IP ª
Binding MAC Addr	Ç MAC ª

oUP’ô-

-

ouV0-

-

7.6 show address-bind uplink

PFMož

show address-bind uplink

op

@	T
-	-

oxX%”o-

Ô”

9DE092E09B TdF00 9 56.7 341.16 Tm<6FACTj/TT8560AAA07A26FAD>Tj/14T0 1 Tf( )Tj0.0003 Tc 7.453 0.04 Td(-)Tj7.1755 Tc -7.453 -14

oЧP'ĥ- -

oнVđ- -

8.2 password policy min-size

’ˆMXÂxϕž

password policy min-size *length*

ˆ’ˆMXÂxϕž

ï’ÌMÎ¶FåMXož

no password policy no-repeat-times

o@	*@*	T
	times	ÎMX81~31ož

oFå- ’ÌMÎMXož

o×X%”o- ¶FåÌ%”

oÎ- 14

o6-o- •o4ekÎMX1t“ÛMX7W“ôå–
MXYÌkÏÏUPkMX³wÂž
UYFåMX7W“ÎMX7W“ÎÂW“ÎMX7
W“£~ÎMX7W“ôž

t®ÏÏ– **enable password**

o@	@	T
	-	-

oFå- {MXykåMXğMXyož

o×X%”o- ¶Få%”

o6- 14

o6-o- o44ekÏMXÏFåUPsÿ
1oÃdMXz
2o•Qm%MXož

t®ÄC— **enable passwordc enable secret** ¶— **username** *name* **password** *password* a”— Line fKÇ

oFåt- 1 yPFåMXò
5XLMLHFRQILJDVVZRUGSROLFVWURQJ

oèo- 1 y… **show password policy xKÀ6kMXÏ**

oÿT’Îo-

o¤† • °j¨-o-

o¤t Z¦ê¢-o-

3DVVZRUGPLQVL]H(QDEOHGFKDUDFWHUV
3DVVZRUGOLIHFFOH(QDEOHGGDV
3DVVZRUGQRUHSHDWWLPHV(QDEOHGPD[KLVWRUUHFRUG

<ky

<	¢
Password encryption	MXk%¥
Password strong-check	kMXò
Password secret-dictionary-check	k‰Aå
Password min-size	’MXÂx†
Password life-cycle	’MXµÊ
Password no-repeat-times	’MÕMX

oUP’ô- -

ouV- -

9 OLµ

9.1 show port-security

show port-security [**address** [**interface** *interface-id*] | **binding** [**interface** *interface-id*] | **interface** *interface-id* | **all**]

@	T
address	
binding	
interface *interface-id*	
all	

o-X%”o- Ø”

o-ø- 14

o-o- ¡XÏ@ÄNM¶Ø3}0)ÀNM¶

¶å¶Ø interface address binding ož

oFå- 1 y¶Ï

5XLMLHVKRZRUWVHFXULW\
126HFXUH3RUW0D[6HFXUH$GUXUUHQW$GUXUUHQW,S%LQGXUUHQW,S0DF%LQG6HFXULW$WLRQ
RXQWRXQWRXQWRXQW

LSURWHFW

7RWDOVHFXUHDGGUHVVHVLQ6VWHP
7RWDOVHFXUHELQGLQJVLQ6VWHP

<Ky

<	¢
NO.	“£Ø
Secure Port	Ãdfož
MaxSecureAddr(count)	¶Ø
CurrentAddr(count)	¶Ø
CurrentIpBind (count)	¶N IP ¶

CurrentIpMacBind (count)	¶M¼ IP+MAC ¶Ç¿
Security Action	¶M+ÿ¶Ô¿
Total secure addresses in System	¶Ô¿
Total secure bindings in System	¶Ô¿

2y¶R4NM Gigabitethernet 0/1 ¶M¶å

5XLMLH\pSy¶R4NM

switchport port-security [violation { protect |70012 1-5(stricT/TT0 1 Tf0.00012 6c 0.0026152 3.91366 Td({)]TT2 1 Tf0.00

9.3 switchport port-security aging

%¶M¶ž
switchport port-security aging { **static** | **time** *time* }

ê9.¶ž
no switchport port-security aging { **static** | **time** }

o@

@	T
static	nP¶ž9VF¶.¶kkQ 9.¶ž
time *time*	**nP¶8©** 0l1440 k%y¶ož å– 0k¶ž

oFå- ¶ž

o×X%"o- NMF%"

oF¶- 14

o6-o- UYNMF%"xX no switchport port-security aging time {%¶…
xX no switchport port-security aging static ê9¶ž

j DOT1X DOT1X s¶¶
d

®¶ê¶WVe

oFå¶- ¶ gigabitethernet 1/1 ¶ 8 ¶y

```
5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJQWHUIDFH1DELWHWKHUQHW
5XLMLHFRQILJIVZWFKSRUWSRUWVHFXULWDJQWLPH
5XLMLHFRQILJIVZWFKSRUWSRUWVHFXULWDJQWDWLF
5XLMLHFRQILJIHQG
```

oòo- 1 y… **show port-security xX UYê¶ž**

oUP'ô- -

oöo- -

¶	-

9.4 switchport port-security binding

¶WF¶	IP+› MAC ¶
UYµAEÑÇt'ož	
switchport port-security binding [*mac-address* **vlan** *vlan_id*] { *ipv4-address* }	
¶ïÇž	
no switchport port-security binding [*mac-address* **vlan** *vlan_id*] { *ipv4-address* }	

¶WF¶	IP ¶
AEÑÇt'ož	
switchport port-security binding { *ipv4-address* }	

¶ïÇž	
no switchport port-security binding { *ipv4-address* }	

¶	¶@	T
	mac-address	Ç MAC ª
	vlan_id	Ç MAC VID
	ipv4-address	Ç Ipv4 Ip ª

¶Få-	-
¶X%"o-	NMFå%"
¶ö-	14
¶6-o-	1yÈ.¶ IP+MACkÑ IP Ç MAC ¶YtÕz
	2y+9¶ IP Ç†
	tÕož
	A_j¶
¶Fåt- 1	yÇ 192.168.1.100 ÑM 10y

```
5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJIQWHUIDFHJJDELWHWKHUQHW
5XLMLHFRQILJIIVZWFKSRUWSRUWVHFXULWELQGLQJ
5XLMLHFRQILJIIHQG
```

2yÇ	192.168.1.100 MAC ª	00d0.f800.5555, VID= 1	ÑM	10y

5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJIQWHUIDFHJJDELWHWKHUQHW
5XLMLHFRQILJIIVZZWFKSRUWSRUWVHFXULWELQGLQJGIYODQ
5XLMLHFRQILJIIHQG

oèao- 1 y… **show port-security xXUYÔMÎ¶¶ž**

oUP'ĉb- -

oejö- -

ouVĉ- -

9.5 switchport port-security binding-filter logging

F¶ž
switchport port-security binding-filter logging [**rate-limit** *rate*]

F¶ž
no switchport port-security binding-filter logging

oĉ@	@	T

rate-limit *rate*

oèo- 1 y… **show run xKUYÊ¿ž**

oUP'Î-

oejö-

oUVô-

9.6 switchport port-security interface binding

ôWFÊ¿g› IP+› MAC ÇÊ¿.

UYµEÑÇt'ož

switchport port-security interface *interface-id* **binding** [*mac-address* **vlan** *vlan_id*] ¶*pv4-address*

oFåb- 1 yÇ 192.168.1.100 ÑM 10y

5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJZWFKSRUWSRUWVHFXULWLQWHUIDFHEILQGLQJ
5XLMLHFRQILJHQG

2yÇ 192.168.1.100 MAC ª 00d0.f800.5555, VID= 1 ÑM 10y

5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJZWFKSRUWSRUWVHFXULWLQWHUIDFHEILQGLQJIYODQ
5XLMLHFRQILJHQG

oèao- 1 y… **show port-security xKUYÒMÎ¶ž**

oUP'Î- -

oejö- -

ouVÒ- -

9.7 switchport port-security interface mac-address

ÒWF¶ž

switchport port-security interface *interface-id* **mac-address** *mac-address* [**vlan** *vlan-id*]

ÎF¶ž

no switchport port-security interface *interface-id* **mac-address** *mac-address* [**vlan** *vlan-id*]

o¶@

¶@	T
interface-id	***M*** IDož
mac-address	¶ž
vlan-id	MAC ª VIDkH8 1~4094ož ▲ } TRUNK ¶ vlan-id ¶

oHFå- -

o×X%"o- ¶BFå%"

oHÒ- 14

o6-o- -

oFåb- å– TRUNK ¶M 10 ¶ 00d0.f800.5555 VID=2y

5XLMLHFRQILJXUHWHUPLQDO

5XLMLHFRQILJVZWFKSRUWSRUWVHFXULWLQWHUIDFHJPDFDGGUHVVGIYODQ

5XLMLHFRQILJHQG

oèo- 1 y… **show port-security xXUYÔMÎ¶ž**

oUP'Î- -

oejö- -

ouVÔ- -

9.8 switchport port-security mac-address

ÔWF¶ž

switchport port-security mac-address *mac-address* [**vlan** *vlan-id*]

ÎFå

no switchport port-security mac-address *mac-address* [**vlan** *vlan-id*]

o¶@

¶@	T
mac-address	¶
vlan-id	MAC ª VIDož } TRUNK ¶ vlan-id ¶

oHFå- -

o×X%"o- NMF%"

oHö- 14

o6-o- -

oFåb- å– TRUNK NM 10 ¶ 00d0.f800.5555 VID=2y

5XLMLHFRQILJXUHWHUPLQDO

5XLMLHFRQILJLQWHUIDFHJLDELWHWKHUQHW

5XLMLHFRQILJIVZWFKSRUWSRUWVHFXULWPDFDGGUHVVGIYODQ

	[illegible]

oèao- 1 y… **show port-security xXUYÔMÎ¶ž**

oUP'ô- -

oejö- -

ouVô- -

9.9 switchport port-security mac-address sticky

Få Stickk MAC ¶ž

switchport port-security mac-address sticky *mac-address* [**vlan** *vlan-id*]

ÎFåž

no switchport port-security mac-address sticky *mac-address* [**vlan** *vlan-id*]

… Sticky MAC ªož

switchport port-security mac-address sticky

¼ Sticky MAC ª

no switchport port-security mac-address sticky

o¶@

@	T
mac-address	MAC ªož
vlan-id	MAC ª VIDož } TRUNK [illegible] vlan-id [illegible]

oFå- Sticky MAC .[illegible]ž

oxX%"o- NMFå%"

o[illegible]- 14

o6-o- Sticky MAC %²_Ô MAC [illegible] Sticky MAC [illegible]ož

oFå- 1 yå– TRUNK NM 10 [illegible] 00d0.f800.5555 VID=2y

[illegible]		
[illegible]		
[illegible]		
[illegible]		
2yåM	10	Sticky MAC ªy
5XLMLHFRQILJXUHWHUPLQDO		
5XLMLHFRQILJ1QWHUIDFHJ1DELWHWKHUQHW		
5XLMLHFRQILJ1IVZZWFKSRUWSRUWVHFXULWVVWLFNPDFDGGUHVV		
5XLMLHFRQILJ1IHQG		

oèo- 1 y…

oFåb- åM 10 ¶M 2y

5XLMLHFRQILJXUHWHUPLQDO

5XLMLHFRQILJLQWHUIDFHJLDELWHWKHUQHW

5XLMLHFRQILJLIVZWFKSRUWSRUWVHFXULWPD[LPXP

5XLMLHFRQILJLIHQG

oèo- 1 y… **show port-security xKUYôMÎ¶ž**

oUP'ô- 1 yÅ9ÞUPjöž

6HWWLQJYDOXHLVOHVVWKDQWKHFXUUHQWPD[LPXP

oejö- 1 yÅ49ùž

ouVô- -

10 STORM-CONTROL

10.1 show storm-control

storm-control broadcast [{ **level** *percent* | **pps** *packets* | *rate-bps* }]

{¼d%nÎÐ¼

no storm-control unicast

{ÁÎÐ¼

no storm-control multicast

{ÁznÎÐ¼

no storm-control broadcast

Ëd%nÎÐFå

default storm-control unicast

ÂÎÐFå

default storm-control multicast

ÊnÎFå

default storm-control broadcast

o	*@*	T
	level *percent*	YkÂgåè 20 nP 20%ož
	pps *packets*	Y PPS %ygå/– packets per secondož
	rate-bps	¸äž

oFå- Ì=d%noÁoznÎÐ¼

o×X%”o- NMFå%”ož

oÕ- 14

o6-o- %€MNvÕznoÙÈd%nÈ%ÇÎ<kDÿk-à

ÿÕ¿gjèÀ%ÎÊÄ-Ôÿž

ÕYÃnoÙyÌ=d%nÇvgÎÒòÀNvÃnoÙÈd%n

OÈÕÎ¶V2,Ô+ÇvÊogÕ1ÊoÒž

oFåb- 1y ÿÀ FastEthernet 0/1 MÎÐòwå–

, ä4M ož

5XLMLHFRQILJ1QWIDVW(WKHUQHW

5XLMLHFRQILJ1I)DVW(WKHUQHWVWRUPFRQWUROPXOWLFDVW

oèo- 1y… **show storm-control xÕ** FastEthernet 0/1 MÎÐòž

11 SSH

11.1 crypto key generate

crypto key generate { **rsa | dsa** }

	rsa	RSA %W
	dsa	DSA %W

SSH Server

SSH Server

SSH 1 … RSA %WzSSH 2 … RSA DSA %Wo

RSA %Wké SSH1 SSH2 DSA %Wk

SSH2

DSA ä RSA db8

DSA ä RSA

f5Absd

RSA VoAbf 512 * DSA VoAbf 360

2048 SSH2 / SCP 3 NAb)g

768 RSA ä DSA VoAb VoAbf 768 *

768

WAb **no crypto key generate** **crypto key zeroize a WAbd**

1 rsa %Wož

5XLMLHFRQILJXUHWHUPLQDO

5XLMLHFRQILJFUSWRNH\HQHUDWHUVD

1 **show crypto key mypubkey rsa** rsa %W rsa

1 rsa %Wk P#+%Wy C

```
5XLMLHFRQILJFUSWRNHJHQHUDWHUVD
&RRVHWKHVL]HRIWKHUVDNHPRGXOXVLQWKHUDQJHRIWR
DQGWKHVL]HRIWKHGVDNHPRGXOXVLQWKHUDQJHRIWRIRURXU
6LQDWXUH.HV&RRVLQDNHPRGXOXVUHDWHUWKDQPDWDNH
DIHPLQXWHV

+RPDQELWVLQWKHPRGXOXV>@
UVD    %WÿUP'Î
*HQHUDWLQJELW56$NHV>RN@
*HQHUDWLQJELW56$NHV>RN@
UVD    %WÿUP'Î
*HQHUDWLQJELW56$NHV>IDLO@
*HQHUDWLQJELW56$NHV>IDLO@
```

2ÿ rsa

oUVô- -

11.2 crypto key zeroize

í SSH %Wož

crypto key zeroize { **rsa** | **dsa** }

oÊ@

@	T
rsa	í RSA %W
dsa	í DSA %W

oFå- -

oxX%”o- ßFå%”

oÊ- 14

o6-o- 4xXÎ%Wož%Wtíek SSH Server Å DISABLEoÊ/4 SSH Serverk}ü **no enable service ssh-server xXž**

oFåt- 1 yíÊ rsa %Wož

5XLMLHFRQILJXUHWHUPLQDO

5XLMLHFRQILJFUSWRNH]HURL]HUVD

oèo- 1 y… **show crypto key mypubkey rsa xXô** rsa %WÎ%Ô• rsa k]íž

oUP’ô- 1 yò rsa %W]ÊUPkí rsa %Wož

5XLMLHFRQILJFUSWRNH]HURL]HUVD

.HVWREHUHPRYHG

$OURXWHUFHUWVLVVXHGXVLQJWKHVHNHVZOODOVREHUHPRYHG

RRXUHDOOZQWWRUHPRYHWKHVHNHV>HVQRÊV

-DQ3(%8*VVKGGHOHWHNHILOHUVDBSULYDWHELQ

-DQ3(%8*VVKGGHOHWHNHILOHUVDBSULYDWHELQ

2yò rsa %WÊUP rsa %Wöž

5XLMLHFRQILJFUSWRNH]HURL]HUVD

7KHVSHFLILHG56$NHSDLUGRHVQRWH[LVW

oejö- 1 y… no y default xXÔ%Wké%W1ctíož

ouVt- -

11.3 disconnect ssh

]yE SSH Nkt ož

disconnect ssh [**vty**] *session-id*

oj@

@	T		
vty	]yE	vty N	
session-id	]yE	SSH NkZH8	0~35

oHFå- -

oxX%”o- Ô”

oHô- 14

o6-o- ß SSH NkZyE SSH Noß VTY NkZ6

SSH NoZ• SSH Nož

oFåt- 1 yß SSH NkZyE SSH Nož

EW

2yß VTY NkZ6 SSH Nož

5XLMLHGLVFRQQHFWVVKYW\

oèo- 1 y… **show ssh xKUYô6** SSH NkZ6ž

oUP’ô- -

oejö- -

ouVt- -

11.4 ip scp server enable

ô- SCP ôz

ip scp server enable

¼ SCP ož

no ip scp server enable

@	T
-	-

Få- å– SCP ož

xX%”o- ¶Få%”

ö- 14

6-o- UY+N+ÕkYC1ÎÕeÅGY%¥
gnkÕÕž

Fåt- 1 yo scp ož

5XLMLHFRQILJXUHWHUPLQDO

5XLMLHFRQILJ1SVFSVHUYHUHQDEOH

ào- 1 y… **show ip ssh xKUYô** SCP ož

UP’Î- -

ojö- -

uVô- -

11.5 ip ssh authentication-retries

å– SSH Server ¥Mjpž

ip ssh authentication-retries *retry times*

ž•

no ip ssh authentication-retries

@	T	
retry times	F&jkH8	0~5

oFå-	Mšf	3)ož	
o-X%”o-	¶Få”		
oõ-	14		
o6-o-	¥XFå	SSH Server gMšpÝ	SSH Server

o×X%”o-	¶BF&”
o¤o-	14

o×X%”o- ¶BFå%”

oÞ- 14

o6-o- -

oFåt- 1 yå– *test* ú4 RSA y DSA ¸Wtž

5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJ1SVVKSHHUWHVWSXEOLFNHUVDIODVKUVDSXE
5XLMLHFRQILJ1SVVKSHHUWHVWSXEOLFNHGVDIODVKGVDSXE

oèo- -

oUP’ô- 1 yÞ¶Ý SSH Public Key u4Ý 1024 kéUPÝ8ož

5XLMLHFRQILJ1SVVKSHHUWHVWSXEOLFNHUVDIODVKUVDSXE
7RRPDQSXEOLFNHVVVWHPVXSSRUWPD[SXEOLFNH\

2yÞ¶WtkéUP¸Wtl|ož

5XLMLHFRQILJ1SVVKSHHUWHVWSXEOLFNHUVDIODVK
,QYDOLGILOHQDPH

oöjö- -

ouVt- -

11.9 ip ssh time-out

å– SSH Server ž

ip ssh time-out *time*

1ž

no ip ssh time-out

oÞ

@	T	
time	*H8*	1~120sk%ya

oFå- ž 120sož

o×X%”o- ¶BFå%”

oHõ- 14

o6-o- ¥XFå SSH Server gÿ2NINLÿ 120s Å
ÿ2ž

oFåb- 1 yFÿ 100sy

5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJSVVKWLPHRXW

oèo- 1 y… **show ip ssh xKUYô** SSH Server ÿ2ôž

oUP'ô- -

oejö- -

ouVô- -

11.10 ip ssh version

å– SSH Server ôž
ip ssh version { **1** | **2** }

1ôž
no ip ssh version

oÿ@

@	T
1	ÿ SSH Server Nu4 SSH1 ÿNL
2	**Få** SSH Server Nu4 SSH2 ÿNL

oHFå- Ã SSH Î 1 y 2ož

o×X%"o- ÿBFå%"

oHõ- 14

o6-o- ¥XÊå SSH Server ñ4 SSH N#ÿ SSH Server ñ4Ã SSH1
SSH2k… SSH 1 ñ SSH2 €UYNoåÎ- 1 ñ 2kQ¬Î SSH
ÿÏož

oFåb- 1 yåÎ… 2y

```
5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJ1SVVKYHUVLRQ
```

oèo- 1 y… **show ip ssh xKUYô** SSH Server ù4 SSH #ôž

oUP'ô- -

oejö- -

ouVô- -

11.11 show crypto key mypubkey

ÞP SSH Server %W%WBôž

show crypto key mypubkey { **rsa | dsa** }

oÞ@

@	T
rsa	ÞP RSA %W
dsa	ÞP DSA %W

o×X%"o- Ô"oBFå"

oÞ- 14

o6-o- ÞJE SSH Server %W%WBôž%W%Wdo%WB
ôž

oFåo- 1 yÞJE SSH Server %W RSA %WBôž

```
5XLMLHFRQILJVKRZUSWRNHPSXENHUVD
.HSDLUDVHQHUDWHGDW87&DQ
.HQDPH56SULYDWH
8VDH66+3XUSRVH.H\
.HLVQRWH[SRUWDEOH
.HDWD
$$$(P+-[20/:05W2PS:,84,W91P/G524N]
,15HV=1XG)(LI=]I/63T&7:/IZ

.HSDLUDVHQHUDWHGDW87&DQ
.HQDPH56SULYDWH
8VDH66+3XUSRVH.H\
```

```
.HLVQRWH[SRUWDEOH
.HDWD
$$$$ZNYX7,5=%G$S/,WQ:+/K((L%E=*YQ
/(<<I4VS</=4I6V*;20VF]L2$N4
<Ky
```

<	¢
Key pair was generated at	%Wy
Key name	%Wd
Usage	%W¢..
Key Data	%WBA

oUP'ô- -

oUVt- -

11.12 show ip ssh

P SSH Server jFaž

show ip ssh

@	T
-	-

oX%"o- Ô"oBFa"

oÕ- 14

o6-o- P SSH Server jFažyÎKo SSH ServeroMyž

!	tsë	SSH Q"NsëjAbp	SSH Qt

oFaÎ- 1 yP SSH Server jFaž

```
P 66+6HUYHU 6& ÒÎ
5XLMLHFRQILJVKRZSVVK
66+LVDEOHYHUVLRQ
SOHDVHHQHUDWHUVDDQGGVDNHWRHQDEOH66+
$WKHQWLFDWLRQWLPHRXWVHFV
$WKHQWLFDWLRQUHWULHV
66+6&6HUYHUGLVDEOHG
```

```
ÎP 66+6HUYHU 6& ]Ø Â
5XLMLHFRQILJVKRZSVVK
66+(QDEOHYHUVLRQ
$WKHQWLFDWLRQWLPHRXWVHFV
$WKHQWLFDWLRQUHWULHV
66+6&6HUYHUHQDEOHG
```

<Ky

<	¢
SSH Enable/Disable	SSH Server Æ ¼
version 1|2	SSH Server u4 SSH #Î
please generate rsa and dsa key to enable SSH	ÿ rsa/dsa %Wô SSH Server Æ
Authentication timeout	¥
Authentication retries	¥Mšf
SSH SCP Server enaled/disabled	SSH SCP Æ ¼

oUP'ô- -

ouVô- -

11.13 show ssh

ÎP]yÆ SSH NN'ôž

show ssh

oô@

@	T
-	-

oxX%"o- Ô"oBFå"

oÎô- 14

o6-o- ÎP]yÆ SSH NN'ôžyNñ VTY ZSSH ô•'coŝo•
NÅdož

oFåb- 1 yÎP]yÆ SSH NN'ôž

```
5XLMLHVKRZVVK
&QQHFWLRQ9HUVLRQ(QFUSWLRQ+PDF&RPSUHVV6WDWH8VHUQDPH
EORZLVK]OLE6HVVLRQVWDUWHGWHVW
DHVFEFKPDFVKD]OLE6HVVLRQVWDUWHGWHVW
```

<Ky

oʉV0- -

12.2 security community

Få SMP ■ož

security { [**v1** | **v2**] **community** *community* | **v3 user** *username* }

ťc SMP ■ož

no security { [**v1** | **v2**] **community** *community* | **v3**

F§ñ¸ÿÂ¿ž

security event inteval *interval*

F§ñ¸ÿÂ¿ž

no security event inteval

op@

@	T	
interval	*[illegible]H8*	1-65535 a

no security gsn enable

@	T
-	-

oFåt- ô¶ñÂ¥ze

5XLMLHVKRZ7HFXULWLHYHQWLQWHUYDO
(YHQWVHQGLQLQWHUYDO6HFRQGV

<Ky

<	¢
Event sending interval(Seconds): x	¶ñÂ¥ze x a

oUP'ô- -

ouVô- -

12.6 show smp-server

ô SMP ÆE IP ªož

show smp-server

oÊ@

@	T
-	-

o×X%"o- Ô"oB%"oNM%"

oÊ- 14

o6-o- -

oFåt- ô SMP ÆE IP ª

5XLMLHVKRZ7PSVHUYHU
6036HUYHU,3

<Ky

<	¢
SMP-Server IP: x	SMP IP ©ª x

oUP'ô- -

ouVô- -

12.7 smp-server host

Få SMP Æ IP ªož

smp-server host *ip-address*

ï SMP Æ IP ªož

no smp-server host

@	T
ip-address	SMP Æ IP ª

- -

- ×X%”o- ¶Få%”

- 14

- 6-o- -

- 1y Få SMP Æ IP ª 192.168.30.9ož

5XLMLHFRQILJVPSVHUYHUKRVW

2y ï SMP Æ IP ªož

5XLMLHFRQILQRVPSVHUYHUKRVW

- … show smp-server ÎFåž

5XLMLHVKRZVPSVHUYHU

6036HUYHU,3

- -

- -

- -

13 CPP

13.1 clear cpu-protect counters

Ž CPP Ïbž

clear cpu-protect counters [device *device_num***]**

o@

@	T
device_num	**device** **Uz** VSU device 9nP+ **device** **knP**

o-X%”o- ”

	@	T
	-	-

	”
	14
	-
	1

oHö- 14

o6-o- -

oFåb- 1 yFå CPU €Mk! 32000 ppsož

5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJFSXSURWHFWFSXEDQGZGWK
5XLMLHVKRZFSXSURWHFWFSX
FSXSRUWEDQGZGWKSSV

oèo- ÃE› **show cpu-protect cpu Q5B** CPU 0,Ãxúž

oUP'ô- -

oejö- -

oUVô- -

13.4 cpu-protect traffic-class traffic-class-num bandwidth

Fîçkbž
cpu-protect traffic-class *traffic-class-num* **bandwidth** *bandwidth_value*

1îçÔ
no cpu-protect traffic-class *traffic-class-num* **bandwidth**

oÊ@

@	T
traffic-class-num	*k{.HeD}[k]Ã@}ÊnÃ* *Õž*
bandwidth_value	*k{.H8* 0-100000g ppsknPFÅkbž

oHFå- _iÕkD},k]Ã@}Ôž

o×X%"o- ¶%"

oHö- 14

o6-o- -

oFåb- 1 yFîç 5 k! 3500 ppsož

5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJFSXSURWHFWWUDIILFFODVVEDQGZLGWK
5XLMLHVKRZFSXSURWHFWWUDIILFFODVV
7UDIILFFODVV%DQGZLGWKSSV5DWHSSVURSSSV

oèao- UY* **show cpu-protect traffic-class** *traffic-class-num xÃ¡Ãbž*

oUP'Î-b- -

oejö- -

ouVt- -

13.5 cpu-proctect type packet-type bandwidth

Fåtkbž
cpu-protect type *packet-type* **bandwidth** *bandwidth_value*

1Ftkbž
no cpu-protect type *packet-type* **bandwidth**

o@

@	T
packet-type	*AÃ¡D}[k}Ò@Ãž*
bandwidth_value	*k.H8* 0-32000gpps knPFÃkbž

oFå- _kFÃ},k}Ò@Ãž

o-X%"o- B%"

oÃ- 14

o6-o-

oFåb- 1 yFå bpdu k! 200 ppsož

5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJFSXSURWHFWWSHESGXEDQGZLWGWK
5XLMLHFRQILJVKRZFSXSURWHFWWSHESGX
3DFNHW7SH7UDIILFFODVV%DQGZLGWKSSV5DWHSSVURSSSV7RWDO7RWDOURS

		ESGX
oèao-	…	**show cpu-protect type** *packet-type xÊ*ež
oUP'ĵo-	-	
oejö-	-	
oUVĵo-	-	

13.6 cpu-protect type packet-type traffic-class

oèo- … **show cpu-protect type** *packet-type xõ*ž

oUP'î- -

oejö- -

ouVt- -

13.7 show cpu-protect

ᵗ CPP ,ÑÂ¨îbž

show cpu-protect [device *device_num***]**

oÕ@

@	T
device_num	**device** µUz¨ VSU Õ device 9nP+ ÑÃ3ù **device** µknPÕž

oxX%"o- _%"Ugož

oÕ- 14

o6-o- -

oFåt- 5XLMLHVKRZ ESXSURWHFWVORW
FSXSRUWEDQGZ ZGWKSSV
7UDIILFFODVV%DQGZ ZGWKSSV5DWHSSVURSSSV

3DFNHW7SH7UDIILFFODVV%DQGZ ZGWKSSV5DWHSSVURSSSV7RWDO7RWDO URS

ESGX
DUS
WSS

```
GRW[
ȳUS
UOGS
ODFS
UHUS
UHXS
OOGS
FGS
GKFSV
GKFSV
GKFSFOLHQW
GKFSVHUYHU
GKFSUHODF
GKFSUHODV
RSWLRQ
WXQQHOESGX
WXQQHOȳUS
XQNQRǪYPF
[ȳLSPF
VWDUȳLSPF
XQNQRǪYPF
[ȳLSPF
VWDUȳLSPF
XGSKHOSHU
GYPUS
LȾS
LFPS
RVSI
RVSI
SLP
SLPY
ULS
ULSQJ
YUUS
YUUSY
WWO
WWO
KRSOLPLW
ORFDOLSY
ORFDOLSY
YXFURXWH
```

```
YXFURXWH
UWKRVW
POG
QGVQSQVQD
QGVQSUV
QGVQSUDUHGLUHFW
HUSV
PSOVWWO
PSOVWWO
PSOVFWUO
LVLV
E$
FIP
EDXWK
IFRHILS
IFRHORFDO
EIG
PLFUREIG
PLFUREIGY
GOGS
RWKHU
WULOO
HIP
LSYDOO
LSRSWLRQ
PW
GQV
VGQ
VGQBRIBIHWFK
VGQBRIBFRS\
VGQBRIBWUDS
Y[ODQQRQXF
ORFDOWHOQHW
ORFDOVQPS
ORFDOVVK
```

oP’- -

oV- -

13.8 show cpu-protect cpu

ŕP cpu ŕMFåbž

show cpu-protect cpu

o@	@	T
	-	-

o×X%”o- _%”Ëgož

oŕõ- 14

o6-o- -

oFåb- 1 yô cpu ŕMFåbž

```
5XLMLHVKRZSXSURWHFWFSX
FSXSRUWEDQGZGWKSSV
```

oUP’ô- -

oUVô- -

13.9 show cpu-protect mboard

ŕPÕ- CPP ,ŕÄĈïbž

show cpu-protect mboard

o@	@	T
	-	-

o×X%”o- _%”Ëgož

oŕõ- 14

o6-o- -

oFåb-

```
5XLMLHVKRZSXSURWHFWPERDUG
FSXSRUWEDQGZGWKSSV
7UDIILFFODVV%DQGZGWKSSV5DWHSSVURSSSV
```

3DFNHW7SH7UDIILFFODVV%DQGZGWKSSV5DWHSSVURSSSV7RWDO7RWDOURS

ESGX
DUS
DUSGDL
DUSSUR[\
WSS
G#66h@66470000000000000$005PPP@Q0Q4PQ3dv@
JYUS
UOGS
ODFS
UHUS
UHXS
OOGS

```
GYPUS
L℘S
LFPS
RVSI
RVSI
SLP
SLPY
ULS
ULSQJ
YUUS
YUUS
WWO
WWO
HUUBKRSBOLPLW
ORFDOLSY
ORFDOLSY
URXWHKRVWY
URXWHKRVWY
POG
QGVQSQVQD
QGVQSUV
QGVQSUDUHGLUHFW
QGQRQVQS
HUSV
PSOVWWO
PSOVWWO
PSOVFWUO
LVLV
E$
FIP
IFRHILS
IFRHORFDO
EIGHFKR
EIGFWUO
PDGS
LSRWKHU
LSRWKHU
QRQLSRWKHU
WULOO
WULOORDP
HIP000000
```

oUP'ĵ- -

oUVt- -

13.10 show cpu-protect summary

PÕ- CPP ,Ñ€ïĵ
show cpu-protect summary

oÕ@

@	T
-	-

oX%"o- _%"Ugož

oÕ- 14

o6-o- -

oFåt- 5XLMLHVKRZ ESXSURWHFWVXPPDU\
FSXSRUWEDQGZ LGWKSSV
7UDIILFFODVV%DQGZ LGWKSSV5DWHSSVURSSSV

3DFNHW7SH7UDIILFFODVV%DQGZ LGWKSSV5DWHSSVURSSSV7RWDO7RWDO URS

ESGX
DUS
WSS
GRW[
J YUS
UOGS

```
ODFS
UHUS
UHXS
OOGS
FGS
GKFSV
GKFSV
GKFSFOLHQW
GKFSVHUYHU
GKFSUHODF
GKFSUHODV
RSWLRQ
WXQQHOESGX
WXQQHOYUS
XQNQRQYPF
[YLSPF
VWDUYLSPF
XQNQRQYPF
[YLSPF
VWDUYLSPF
XGSKHOSHU
GYPUS
LPS
LFPS
RVSI
RVSI
SLP
SLPY
ULS
ULSQJ
YUUS
YUUSY
WWO
WWO
KRSOLPLW
ORFDOLSY
ORFDOLSY
YXFURXWH
YXFURXWH
UWKRVW
POG
```

show cpu-protect traffic-class {*traffic-class-num* **| all} [device** *device_num***]**

	traffic-class-num	*[HeD}[k]Ã@ÃnÃ* *Õž*
	all	*ÕžÃ*
	device_num	**device** **VSU** device 9nP+ **device**

	_%”Ugož
	14
	-
1	5XLMLHVKRZSXSURWHFWWUDIILFFODVVDOO 7UDIILFFODVV%DQGZGWKSSV5DWHSSVURSSSV
	-
	-

13.12 show cpu-protect type

show cpu-protect type *packet-type* **[device** *device_num***]**

	packt-type	*[HeD}[k]Ã@ÃnÃ*
	all	*ÕžÃ*
	device_num	**device** **VSU** device 9nP+

	ÑÕ3ù	**device pkn**Põ

oxX%”o- _%”Ogož

oÑõ- 14

o6-o- -

oFåb- 1 yôÕ- icmp Fâ'îož

5XLMLHFRQILJ VKRZ ESXSURWHFWWV SHLFPS

3DFNHW7V SH7UDIILFFODVV%DQGZ ZGWKSSV5DWHSSVURSSSV7RWDO7RWDOURS

LFPS

oUP’ô- -

ouVô- -

14 DHCP Snooping

14.1 clear ip dhcp snooping binding

}í DHCP Snooping GÃ¥Ô"ü4xXož

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

o@ ¶

@	T	
mac	*ô*	MAC ôž
vlan-id	*ô*	vlan idož
ip	*ô*	IP ôž
interface-id	*Ôož*	

o-X%"o- Ô"

o-ô- 14

o-o- ü¥XkUYí DHCP snooping GÃž

ãN-Up– IP Source Guard _Ç DHCP 7Ì¥
Ôd

oFåb- 1 yµ DHCP snooping GÃ

5XLMLHFOHDULSGKFSVQRRSLQELQGLQJ
5XLMLHVKRZSGKFSVQRRSLQELQGLQJ
7RWDOQXPEHURIELQGLQJ
120&(66,3$(66/(6(6(&<3(9/$,17(5)&

oUP'ô- -

oUVô- -

14.2 ip dhcp snooping

-	-

oHFå- ¥¼ož

oxX%”o- ¶ßFå%”

oHõ- 14

o6-o- HÕ DHCP Snooping N+ Bootp ¡ÕGoèk DHCP Snooping + Bootp #¡ÕLÁ¼ož Bootp ÊkDHCP Snooping 1 Bootp ¶ß€ ož

oFåt- 1 y@ DHCP Snooping u4 Bootp ÿÇ

5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJISGKFSVQRRSLQEERRWSELQG
5XLMLHFRQILJHQG

oèo- 1 y… **show ip dhcp snooping xXUYô** DHCP Snooping ¢u4 Bootp Çÿž

oUP’Î- -

oejö- -

ouVô- -

14.4 ip dhcp snooping check-giaddr

o DHCP Snooping u4Ô Relay Ltž
ip dhcp snooping check-giaddr

¼ DHCP snooping u4Ô Relay Ltž
no ip dhcp snooping check-giaddr

oÊ@

@	T
-	-

oHFå- ¥¼ož

oxX%”o- ¶ßFå%”

oHö- 14

o6-o- o4ekBæ Relay Lÿ DHCP Snooping ÇÏkò IP Source Guard/dot1x
ïkkÚ-ëàž
o4ekFå ip dhcp snooping verify mac-addresskké Relay DHCP Lkt'k-
ëBHòž

oFåt- 1 yø DHCP Snooping u4Ô Relay Lÿ

5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJISGKFSVQRRSLQJFKHFNJIDGGU
5XLMLHFRQILJHQG

oào- 1 y… **show run xKUYò** DHCP Snooping ku4Ô Relay Lÿ

oUP'Î- -

oojö- -

oUVò- -

14.5 ip dhcp snooping database write-delay

ž DHCP Snooping ÇÊ FLASHož
ip dhcp snooping database write-delay *time*

ÇÊ FLASH ož
no ip dhcp snooping database write-delay

oÇ

@	T	
time	*ÇÊkyakH8*	600~86400

oHFå- Ïkož

oxX%"o- ÇFå%"

oHö- 14

o6-o- FåXkUY1 DHCP Snooping ÇÊ FLASH ÿUY2Ñoekî
à-ÌMBH IP ÿUY3o*ož

lÉÑ¶æ flash ãd

oFåt- 1 yçåÉÑ flash ãe 3600 ÿ

5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJLSGKFSVQRRSLQGLDWDEDVHØLWHGHOD\
5XLMLHFRQILJHQG

oèo- 1 y… **show ip dhcp snooping xKUYôdž**

oUP'ô- -

oejö- 1 yåÊÄž

oUVô- -

14.6 ip dhcp snooping database write-to-flash

Fãö- DHCP Snooping ÇÊ¶ FLASH ôž
ip dhcp snooping database write-to-flash

oÊ¶	@	T
	-	-

oFå- -

oxX%"o- ¶Få%"

oÊ¶- 14

o6-o- ÿ4xXkUYž DHCP Snooping ÇÊ¶ FLASH ôž
ÇÊ¶ QINQ ñ QINQ ÿFÇÈ flash ÎkÇ¶ flash †
ÊÑž

oFåt- 1 yÇ DHCP ÇÊ¶ flash ÿ

5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJLSGKFSVQRRSLQGLDWDEDVHØLWHWRIODVK
5XLMLHFRQILJHQG

oèo- -

oUP'î- -

oeö- 1 y DHCP Relay option82 cžoŽ-Â DHCP † option82 <Ïož

oUVî- -

14.8 ip dhcp snooping information option format remote-id

å option82 #Ôy%"Žÿÿ¾ remote-id #Ñož

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

Hå option82 #ÿ¾ remote-id #Ñož

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

oÎ@

@	T
string *ascii-string*	Option82 #¾ remote-id ÿÄož
hostname	Option82 #¾ remote-id ÿÄož

oFå- ¥ož

oXX%"o- ¶Få%"

oÑ- 14

oÇ-o- FåXk¢ DHCP †option82 #ok Ôy%"Ž1 option82 #ÿ¾ remote-id åÄož

oFå- 1 yFå DHCP Ьµ option82 #¾ remote-idkÄÑÿ

5XLMLHFRQILJXUHWHUPLQDO

5XLMLHFRQILJLSGKFSVQRRSLQJLQIRUPDWLRQRSWLRQIRUPDWUHPRWHLGKRVWQDPH

oèo- 1 y… **show ip dhcp snooping xKUYô** Option82 #¾ož

oUP'î- 1 yxXÿ@ *ascii-string Ý* 63 'ÿUPjöž

)DLOHGWRH[HFXWHFRPPDQGEHFDXVHRI5HPRWH,VWULQJFDQQRWH[FHHGFKDUDFWHUV

oeö- -

oUVî- -

14.9

14.10 ip dhcp snooping loose-forward

o DHCP Snooping ãõož

ip dhcp snooping loose-forward

¼ DHCP Snooping ãõož

no ip dhcp snooping loose-forward

o@	@	T
	-	-

oFå- ¼ož

oxX%”o- ¶Få%”

oõ- 14

o6-o- o4e DHCP Snooping ç¾Oekï DHCP ÒBHñx© DHCP Snooping k“ç¾ož

oFåt- 1 y@ DHCP snooping ãÿ

5XLMLHFRQILJXUHWHUPLQDO

5XLMLHFRQILJLSGKFSVQRRSLQJORRVHIRUZDUG

5XLMLHFRQILJHQG

oèo- 1 y… **show run xXUYô** DHCP Snooping ãõ¢ož

oUP’Î- -

oejö- -

ouVô- -

14.11 ip dhcp snooping suppression

FåUM suppression ÏGÑMÄ DHCP tož

ip dhcp snooping suppression

HKNM suppression Ůž

no ip dhcp snooping suppression

o@	@	T
	-	-

oFå- Ýož

o×X%”o- NMFå%”

oÞ- 14

o6-o- 1 yFåXkUÍ UNTRUST NMÄ DHCP ŧW2¥NMÄ DHCP ¨ ož

2y¥XFåCAEMoAP MFå%”kyÞjoŽUNM1FÂž

oFåb- 1 yÞå GigabitEthernet 0/2 suppression ÿÙ

5XLMLHFRQILJXUHWHUPLQDO

5XLMLHFRQILJ1QWHUIDFHt.DELW(WKHUQHW

5XLMLHconfig-if-GigabitEthernet 0/2LSGKFSVQRRSLQJVXSSUHVVLRQ

5XLMLHconfig-if-GigabitEthernet 0/2HQG

oèo- 1 y… **show run xXÔ+NMFÂž**

oUP’ô- 1 y¢ DHCP TRUST MFåÚPjož

)DLOHGWRH[HFXWHFRPPDQGEHFDXVHRI6HFXULWTFRQILJFRQIOLFW

2yÄÞ AIóž

FåÑM DHCP snooping ’Ä UNTRUST Mož

no ip dhcp snooping trust

oÕ@

@	T
-	-

oÞFå- ÞÑM UNTRUST Mož

o×X%”o- NMFå%”

oÞõ- 14

o6-o- 1 yFåXk1Nc DHCP ÄMFå TRUST MožTRUST NMvÄ DHCP €
t3oGkUNTRUST NMvÄ DHCP €t’ož
2y¥XFåCAEMoAP MÃ¥NMkyjož UNMFåX1kÂž

(b]Ü DHCP ùÇ TRUST Ç

oFåt- 1 yÇåM GigabitEthernet 0/1 TRUST Mÿ
5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJ1QWHUIDFH*LDELW(WKHUQHW
5XLMLHconfig-if-GigabitEthernet 0/1 LSGKFSVQRRSLQJ WUXVW
5XLMLHconfig-if-GigabitEthernet 0/1 HQG

oèo- 1 y… **show ip dhcp snooping xKUYôNMÄž**

oUP’ô- 1 yÇNMFå¿UNÞ¥k¿å– TRUST Mož
)DLOHGWRH[HFXWHFRPPDQGEHFDXVHRI6HFXULWFRQILJFRQIOLFW

2yÇ 2 CAEMoAP MÃ¥NMÿ¥XkÉUPjöž
)DLOHGWRH[HFXWHFRPPDQGEHFDXVHRI&QILJXUHLVQRWVXSSRUWHGRQFXUUHQWLQWHUIDFH

oojö- -

ouVô- -

14.13 ip dhcp snooping verify mac-address

ø MAC ôž

ip dhcp snooping verify mac-address

{¼ MAC ãž

no ip dhcp snooping verify mac-address

@	T
-	-

Få- ¥ž

×X%”o- ¶F&”

14

6-o- › MAC ãÛ UNTRUST NM DHCP

vlan-max	dhcp snooping ÿ vlan ’ož

oFå- ÑÕ¶ DHCP Snooping ekÄ VLAN C1o DHCP Snooping ož

o×X%”o- ¶Få%”

oÑ- 14

o6-o- FåXk16 VLAN ä DHCP Snooping k-U{6 VLAN DHCP Snooping oÄ DHCP Snooping ¶Ãÿ ož

oFåb- 1 yj@ VLAN1000 ø DHCP Snooping ÿ

5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJSGKFSVQRRSLQJYODQ
5XLMLHFRQILJHQG

2yj@ VLAN1

	@	T
	vlan-word	*ÿ*

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

no ip dhcp snooping vlan *vlan-id* **information option format-type circuit-id string** *ascii-string*

o@

@	T
vlan-id	DHCP Ьm VLAN

o@	@	T
	-	-

oFå- -

oxX%”o- Ö”

oö- 14

o6-o- ÿ4xXkUYžõÎµ DHCP Snooping Gež

3ÑÿÿÑÛ

ÿÑÃ

oFå- 1 yÕÎµ DHCP Snooping Gÿ

5XLMLHUHQHZSGKFSVQRRSLQGDWDEDVH

oèo- 1 yxX **show ip dhcp snooping bindingkUYôE-pž**

oUP’ô- -

oejö- -

ouVô- -

14.19 show ip dhcp snooping

}ô DHCP Snooping ÕÎÖ”ÿ4xXÀPsbÿ<aÎpfdÿU•3h8ÕxwlÿBApRVvÈ“ÿ 6WF“5ÁxBtÏ8CPaVÎa#:ÕrwlÿBq‰wlÿBHa9.’auÿ

```
5XLMLHVKRZSGKFSVQRRSLQJ
6ZWFK'+&VQRRSLQJVWDWXV(1$%/(
'+&VQRRSLQ9HULILFDWLRQRIKDGGUVWDWXV',6$%/(
'+&VQRRSLQGDWDEDVHZLWHGHODWLPHVHFRQGV
'+&VQRRSLQRSWLRQVWDWXV',6$%/(
'+&VQRRSLQ6XSSRUWERRWSELQGVWDWXV',6$%/(

,QWHUIDFH7UXVWHG5DWHOLPLWSSV

*LDELW(WKHUQHW<(6XQOLPLWHG
HIDXOW1R
```

<#Ky

<	¢
Switch DHCP snooping status	¶ DHCP Snooping ©ož
Verification of hwaddr field status	DHCP snooping † mac ðž
DHCP snooping database write-delay time	ãž
DHCP snooping option 82 status	© DHCP Ьµ option82 #ðž
DHCP snooping Support Bootp bind status	©ø DHCP Snooping u4 Bootp Çž
Interface	NMdfož
Trusted	¥M© TRUST Mož
Rate limit	¥M DHCP ¶›

oUP'ô- -

ouVô- -

14.20 show ip dhcp snooping binding

ô DHCP Snooping ƒ¶ôž

show ip dhcp snooping binding

oÕ@	@	T

oFåt- 1 yPÿ

```
5XLMLHVKRZSGKFSVQRRSLQELQGLQJ
7RWDOQXPEHURIELQGLQJ
120&(66,3$(66/(6(6(&<3(9/$,17(5)&

+&6QRRSLQ1DELW(WKHUQHW
```

<Ky

<	¢
Total number of bindings	ù DHCP Snooping Binding Gpž
NO.	“£Z
MacAddress	ï MAC ºž
IpAddress	ï IP ºž
Lease(sec)	“£ºž
Type	“ºž
VLAN	Ñ VLANož
Interface	ÑÉMkÄÑM

oUP’ô- -

oUVô- -

15 ARP Check

15.1 arp-check

ARP

arp-check

ARP

no arp-check

-	-

ARP Check

NMF

14

ARP ARP

GigabitEthernet 0/1 ARP Check

```
5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJQWHUIDFHGLDELW(WKHUQHW
5XLMLHFRQILJIGLDELW(WKHUQHWDUSFKHFN
5XLMLHFRQILJIGLDELW(WKHUQHWHQG
```

1 y… **show interfaces arp-check list** ARP Check

-

-

-

15.2 show interface arp-check list

ôNMŽ ARP Check nõž

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

oÕ@

@	T
interface-type	ÄMº
interface-number	ÄMŹ

o×X%”o- Ôõ”

oÕ- 14

o6-o- ÿ4xXkUYôù IP ÇFÕž

oFåt- Ÿ

```
5XLMLHFRQILJVKRZQWHUIDFHDUSFKHFNOLVW
INTERFACE                SENDER MAC     SENDER IP        POLICY SOURCE

GigabitEthernet 0/1)DGGUHVVELQG
GigabitEthernet 0/1)SRUWVHFXULW\
GigabitEthernet 0/4SRUWVHFXULW\
GigabitEthernet 0/5)DGGUHVVELQG
GigabitEthernet 0/7)$SDXWKPRGH
GigabitEthernet 0/)61
```

<Ky

<	¢
INTERFACE	NMdf
SENDER MAC	› MAC ª
SENDER IP	› IP ª
POLICY SOURCE	“Ê

oUP’ô- -

oUVô- -

16 DAI

16.1 ip arp inspection trust

FåCM DAI U'Mož

ip arp inspection trust

FåCM DAI U'Mož

no ip arp inspection trust

o@	@	T
	-	-

oFå- MÔÅž

o×X%"o- NMFå%"

o@- 14

o6-o- ¥NMvñ ARP Ú– DAI ž UY1¥NMåkhPę
¥NMvñ ARP k[Což

oFåt- YFå1 gigabitEthernet 0/19 NMåy

5XLMLHFRQILJXUHWHUPLQDO
5XLMLHFRQILJ1QWHUIDFHJ1DELW(WKHUQHW
5XLMLHFRQILJ1L1DELW(WKHUQHWLSDUSLQVSHFWLRQWUXVW
5XLMLHFRQILJ1L1DELW(WKHUQHWHQG

oèo- 1 y… **show ip arp inspection interface xKUYÔMKFåž**

oUP'ô- -

oejo- -

oUVô- -

16.2 ip arp inspection vlan

Få VLAN o DAI ož

ip arp inspection vlan { *vlan-id* | *word* }

Få VLAN ¼ DAI ož

no ip arp inspection vlan { *vlan-id* | *word* }

op@

@	T
vlan-id	nP vlan Ź H8 1~4094ož
word	vlan 8kò 1,3-5,7,9-11

oH Få- Ä VLAN {DAIqPP••PPa

16.3 show ip arp inspection interface

ôMkFåÕž

show ip arp inspection interface

o@	@	T
	-	-

o×X%”o- Ô”

o-ô- 14

o6-o- ¥XUYôÕMkFå DAI ’Mož

oFåt- 1 yôÕM DAI ’Ù

5XLMLHVKRZSDUSLQVSHFWLRQLQWHUIDFH
,QWHUIDFH7UXVW6WDWH

LDELW(WKHUQHW7UXVWHG
HIDXOW W

<	¢
Interface	NMdf
Trust State	’Ù

oUP’ô- -

oUVô- -

16.4 show ip arp inspection vlan

P VLAN ko DAI òž

show ip arp inspection vlan [*vlan-id* | *word*]

o@	@	T
	vlan-id	nP vlan Ú H8 1~4094ož
	word	vlan 8kò 1,3-5,7,9-11

o×X%”o- Ô”

oÕ- 14

o6-o- ¥XUYôÃ- VLAN DAI ½ž

oFå- 1 yôÄ VLAN DAI ¼

5XLMLHVKRZSDUSLQVSHFWLRQYODQ
9ODQ&RQILJXUDWLRQ

(QDEOH

<Ky

17 IP Source Guard

17.1 ip source binding

¨ IP ¡¿Ãož

ip source binding *mac-address* **{ vlan** *vlan-id* **}** *ip-address* { **interface** *interface-id* **| ip-mac | ip-only** }

ï+Ãož

no ip source binding *mac-address* **{ vlan** *vlan-id* **}** *ip-address* { **interface** *interface-id* **| ip-mac | ip-only** }

o@

@	T
mac-address	Á MAC ož
vlan-id	Á vlan id3© QINQ Ã}k6Ò vlan idož
ip-address	Á IP ož
interface-id	Ãož
ip-mac	IP+MAC ož
ip-only	IP ož

o-Få- Ãož

o-X%"o- ¶Få%"

o-ö- 14

o-o- 1 yFåxXUYBã IP Source Guard yk}* DHCP ¨gï%Ò ož
2yQu4Ãµ 2 CAEMoAP Mo/xÿNM¥XgFåžM1Fåž
3yUYFBÇBÕYÃM* IP Source Guard yož

¶Ãç"ÇeÒ

Ãã

oFåt- 1 yÃEMÿ

5XLMLHFRQILXUHWHUPLQDO
5XLMLHFRQILISVRXUFHELQGLQYODQLQWHUIDFH*DELW(WKHUQHW
5XLMLHFRQILHQG

2yÊ&Ä8ÿkwÊ IP+MAC ÿ

5XLMLHFRQILJXUHWHUPLQDO

5XLMLHFRQILJLSVRXUFHELQGLQJYODQLSPDF

5XLMLHFRQILJHQG

3yÊ&Ä8ÿkwÊ IP ÿ

5XLMLHFRQILJXUHWHUPLQDO

5XLMLHFRQILJLSVRXUFHELQGLQJYODQLSRQO\

5XLMLHFRQILJHQG

oèo- 1 y… **show ip source binding xKUYô** IP ÿ€ež

oUP'ô- 1 y… no xXÍÁÅÅÅkÉUPjöž

)DLOHGWRH[HFXWHFRPPDQGEHFDXVHRI1RVXFKELQGLQJHQWU\

>PDF S Q Ø

2yFÅ3ÿ VLAN wkÉUPjöž

)DLOHGWRH[HFXWHFRPPDQGEHFDXVHRI9/$QRWH[LVW

3yFÅ3ÿMSCAEMoAP MÅxÿMkÉUPjöž

)DLOHGWRH[HFXWHFRPPDQGEHFDXVHRI&QILJXUHLVQRWVXSSRUWHGRQFXUUHQWLQWHUIDFH

oejö- -

oUVô- -

17.2 ip verify source

M IP Source Guard ož

ip verify source [**port-security**]

{M IP Source Guard ož

no ip verify source

oÊ@ @ yyÉ[gEVdVRTÂÂàyÒyyÒ0àÿyÉ[yFÅMB•

	vlan-id	IM IP Source Guard Oò vlan id

	NMF%”

	14

1	yo IP Source Guard Mk¥XUYOM? VLAN I IP Source Guard Oò ? VLAN 8Ä IP tyò Nygož 2yM¼ IP Source Guard ek6Ù VLAN -ktŽož 3yu4Ä µ 2 CAEMoAP Mo/xÿM ÇN IP Source Guard ÇHó VLANd

1	yeM IP Source Guard w6Ù VLANy 5XLMLHFRQILXUHWHUPLQDO 5XLMLHFRQILIQWHUIDFHLDELW(WKHUQHW 5XLMLHFRQILIILDELW(WKHUQHWLSYHULIVRXUFH 5XLMLHFRQILIILDELW(WKHUQHW

1	y… **show run xXUYòxKFož**

	-

	-

	-

17.4 show ip source binding

IP Ĝ-ož

show ip source binding [*ip-address*] [*mac-address*] [**dhcp-snooping**] [**static**] [**vlan** *vlan-id*] [**interface** *interface-id*]

	ip-address	IP+• ip Ĝ

mac-address	P+• mac Î¢
dhcp-snooping	PÃ¢
static	PÃ¢
vlan-id	P+• vlan Î¢
interface-id	P+ÄÏµMÎ¢

o×X%”o- Ô»”

oÞ- 14

o6-o- ÿ4xXkUYôù IP 9pUÇpx0tPHÈmPMà

oFåt- 1 yÞÿ

```
5XLMLHVKRZSVRXUFHELQGLQJVWDWLF
5XLMLHVKRZSVRXUFHELQGLQJVWDWLF
7RWDOQXPEHURIELQGLQJV
1208&(66,3$(66/(6(6(&<3(9/$,17(5)&

,QILQLWH6WDWLFORED
,QILQLWH6WDWLFLDELW(WK00002
,QILQLWH6WDWLFORED
,QILQLWH6WDWLFORED
```

<K3y

<	¢
Total number of bindings	ù Binding Ç€
NO.	“£
MACADDRESS	ï MAC ª
IPADDRESS	ï IP ª
LEASE(SEC)	“£
TYPE	“£
VLAN	Ñ VLAN
INTERFACE	ÄMdf

oUP’ô- -

oUô- -

17.5 show ip verify source

ô IP Source Guard ¡¤ž

show ip verify source [**interface** *interface-id*]

o@

@	T
interface-id	¤+ÄÏM¡¾

o-X%”o- Ô”

o-ô- 14

o6-o- ü4xXkUYôu IP ¶Õu IP Source Guard u4“Ä
y

z Inactive-restrict-offkÇKNMÄ IP Source Guard ož

z Inactive-not-applyk9Ïc-1Ç¡ò¤ž

z ActivekÇ¾¡¾ž

oFåt- 1 yÇy

```
5XLMLHVKRZSYHULIVRXUFH
7RWDOQXPEHURIELQGLQJ
12,17(5)&,/7(57<3(),/7(567$86,3$(660$(66
9/$7<3(


*OREDO,30&QDFWLYHQRWDSSO\
6WDWLF
*LDELW(WKHUQHW,321/<$FWLYH
+&6QRRSLQJ
*OREDO,321/<$FWLYH
6WDWLF
*OREDO,30&WLYH
6WDWLF
*LDELW(WKHUQHW816(7,QDFWLYHUHVWULFWRII
+&6QRRSLQJ
*LDELW(WKHUQHW,321/<$FWLYHHQDO
<Ky
```

<	¢
NO.	“£Z
INTERFACE	ÄÏNM
FILTERTYPE	Œ
FILTERSTATUS	Ä

IPADDRESS	ï IP ª
MACADDRESS	ï MAC ª
VLAN	ñ VLAN
TYPE	ÿ, DHCP Snooping ÿ Fÿ

oʉP'ĵ- -

oʉVĵ- -

18 T» ARP °

18.1 anti-arp-spoofing ip

ã¼ arp -áž
anti-arp-spoofing ip *ip-address*

ï'ã¼ arp -áž
no anti-arp-spoofing ip *ip-address*

o@	*ip-address*	T ã¼ IP ª

oFå- ¥y

o×X%"o- NMFå%"

oÕ- 14

o6-o- 1 o• ¥Xã¼ arp -á… show anti-arp-spoofing xXÕåž
2o• ¥XNu48CMFåž

oFåb- 1 yã¼ arp -áž
5XLMLHFRQILÎQWHUIDFHIDVW(WKHUQHW
5XLMLHFRQILÎIDQWLDUSVSRRILQÎS

oèo- **show run ÕFåFåXž**
show anti-arp-spoofing PNMã¼ arp -ãbž

oUP'Î- -

oejö- -

oUVÕ- -

18.2 show anti-arp-spoofing

ºPÄMã¼ arp -ãbž

show anti-arp-spoofing

oÞ@

¡@	T
-	-

o×X%”o- ¶%”

oÞ- 14

o6-o- ºPÄMã¼ arp -ã

oFåb- 1 yºPÄMã¼ arp -ã

```
5XLMLHVKRDQWLDUSVSRRILQJ
123257,367$86
```

1 Gi0/1 192.168.1.1 active <Ky

<	¢
NO	~Z
PORT	M'Î
IP	ã¼ IP ª
STATUS	nÞÄ

oUP'Îb- -

oUVÞ- -

19 NFPP

19.1 arp-guard attack-threshold

F[illegible]xà[illegible]ož

arp-guard attack-threshold {**per-src-ip** | **per-src-mac** | **per-port**} *pps*

ïxà[illegible]ož

no arp-guard attack-threshold {**per-src-ip** | **per-src-mac** | **per-port**}

[illegible]ož

default arp-guard attack-threshold {**per-src-ip** | **per-src-mac** | **per-port**}

o[illegible]

[illegible]	T
per-src-ip	**F[illegible]** IP [illegible]ž
per-src-mac	**F[illegible]** MAC [illegible]ž
per-port	**F[illegible]xà[illegible]ž**
pps	*xà[illegible]* [1,19999] ož

o[illegible]- [illegible]

o[illegible]X%”o- NFPP F[illegible]%”

o[illegible]- 14

o[illegible]- xà[illegible]9’,[illegible]ž

o[illegible]- 1 [illegible] ARP x[illegible] IP xà[illegible] 2pps[illegible] MAC xà[illegible] 3pps,[illegible]xà[illegible]

¿ 50ppsož

5XLMLHFRQILQISS

5XLMLHFRQILQISSDUSXDUGDWWDFNWKUHVKROGSHUVUFLS

5XLMLHFRQILQISSDUSXDUGDWWDFNWKUHVKROGSHUVUFPDF

5XLMLHFRQILQISSDUSXDUGDWWDFNWKUHVKROGSHUSRUW

o[illegible]o- … **show nfpp arp-guard summary** [illegible]

o[illegible]UP’[illegible]- -

oeijö- -

oʉVt- -

19.2 arp-guard enable

¥XÛ¶ø ARP xàž

arp-guard enable

¼ ARP xàž

no arp-guard enable

Ðråž

default arp-guard enable

oÞ

¡@	T
-	-

oHå- ó ARP xàž

o×X%”o- NFPP Få%”

oÞ- 14

o6-o- -

oFåt- 1 yFß¶ø ARP xàž

5XLMLHFRQILQISS

5XLMLHFRQILQISSDUSXDUGHQDEOH

oào- … **show nfpp arp-guard summary ÞFåž**

oUP’î- -

oeijö- -

oʉVt- -

19.3 arp-guard isolate-period

¥XÊÊ¶¥ož

arp-guard isolate-period {*seconds* | **permanent**}

ïvÊÊ¶ož

no arp-guard isolate-period

Êåž

default arp-guard isolate-period

o@

@	T
seconds	¥ž%yakH8© 0 [30, 86400] ož
permanent	**¥ož**

oFå- ¶¥© 0k/¥ož

o×X%”o- NFPP Få%”

oÊ- 14

o6-o- -

oFå- 1 yFå ARP x¶¥ž 180 aož

5XLMLHFRQILQISS

5XLMLHFRQILQISSDUSXDUGLVRODWHSHULRG

oèo- … **show nfpp arp-guard summary ÊFåž**

oUP’Î- -

oejö- -

ouVt- -

19.4 arp-guard isolate-forwarding enable

¥XÊ¶¥GkÊFåž

arp-guard isolate-forwarding enable

{¥6Gož

no arp-guard isolate-forwarding enable

Ðråž

default arp-guard isolate-forwarding enable

op@

@	T
-	-

oHFå- ¥6Gož

o×X%”o- NFPP Få%”

oHõ- 14

o6-o- -

oFåt- 1 yFåt6Gož

5XLMLHFRQILQISS

5XLMLHFRQILQISSDUSXDUGLVRODWHIRUZDUGLQHQDEOH

oèo- -

oUP’Î- -

oejö- -

oUVt- -

19.5 arp-guard monitored-host-limit

¥XÊå4ÅOÑž

arp-guard monitored-host-limit *number*

ÎÅOÑåÐråž

no arp-guard monitored-host-limit

Ðråž

default arp-guard monitored-host-limit

op@

number	u4ÂOÑH8	1 ñ 4294967295ož

oFå- ÂOÑ 20000 ož

o×X%”o- NFPP Få%”

oÕ- 14

o6-o- ÇOÑE 20000 k4ÂOÑ9 20000kí
”]ÄOÑÎ %ERRORy The value that you configured is smaller than current monitored hosts 20000gFåOÑ kplease clear a part of monitored hosts. ÛI’ÒF
ÇÃ}ÏBÄÕž
ÎOÑ%ÕÕ NFPP_ARP_GUARD-4-SESSION_LIMIT: A ttempt to exceed limit of ARP 20000gFåOÑ monitored hosts. UI’Òož

oFåt- 1 yFå ARP xÂOÑ 200 ož

5XLMLHFRQILQISS
5XLMLHFRQILQISSDUSXDUGPRQLWRUHGKRVWOLPLW

oèo- …

oHFå- Ok© 600 aož

oxX%”o- NFPP Få%”

oHõ- 14

o6-o- yKãÿ 0k1+xãÿ Ok Ó ž Dik
ÿ Få1+Dxå Fÿ kwå ž D
ž 0 Ãož
ÿ Rwk1+N, Mxå ÿ Dož

oFå- 1 yFå ARP xÕ ž 180 aož

5XLMLHFRQILQISS
5XLMLHFRQILQISSDUSXDUGPRQLWRUSHULRG

oèo- … **show nfpp arp-guard summary ÕFåž**

oUP’Î- -

oejö- -

oUVõ- -

19.7 arp-guard rate-limit

Få’,ÿ
arp-guard rate-limit {per-src-ip | per-src-mac | per-port} *pps*

ï’,ÿ Få ž
no arp-guard rate-limit {per-src-ip | per-src-mac | per-port}

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

op

@	T
per-src-ip	**+?** IP ÿ’,ož
per-src-mac	**+?** MAC ÿ’,ož
per-port	**+Mgpž**
pps	’,ÿ%yÿ[H8[1,19999] ož

oFå- Fâ}, kÀ@Fâ 9D}, ¼ **Tož**

o×X%”o- NFPP Fâ%”

oFô- 14

o6-o- -

oFåt- 1 yFå ARP xB’,J@ IP ’,J 2ppsÂ MAC ’,J 3pps,ÂM’,J

¿ 50ppsož

5XLMLHFRQILQISS

5XLMLHFRQILQISSDUSXDUGUDWHOLPLWSHUVUFLS

5XLMLHFRQILQISSDUSXDUGUDWHOLPLWSHUVUFPDF

5XLMLHFRQILQISSDUSXDUGUDWHOLPLWSHUSRUW

oèo- … **show nfpp arp-guard summary ôFâž**

oHõ- 14

o6-o- -

oFåb- 1 yFå. ARP xÂ¶Ve6’,ož

5XLMLHFRQILQIISS

5XLMLHFRQILQIISSDUSXDUGUDWHOLPLWIRUZDUGLQJHQDEOH

oèo- -

oUP’ô- -

oejö- -

ouVô- -

19.9 arp-guard scan-threshold

[redacted]

no arp-guard scan-threshold

default arp-guard scan-threshold

op

pkt-cnt	[1,19999] ož

oHFå-

p k t - c n T f g / T T 3 c n t 4 j / C 2 _ 1

5XLMLHFRQILQISSDUSXDUGVFDQWKUHVKROG

oèao- … **show nfpp arp-guard summary ôFâž**

oUP'ô- -

oejö- -

ouVô- -

19.10 clear nfpp arp-guard hosts

ŽIOÑÑ{k}"ôož

clear nfpp arp-guard hosts [**vlan** *vid*] [**interface** *interface-id*] [*ip-address* | *mac-address*]

op

@	T
vid	Ž
interface-id	Mdfož
ip-address	IP ož
mac-address	MAC ož

oxX%"o- Ô"

oŕ- 14

o6-o- -

oFåt- 1 y VLAN 1 M g 0/1 ARP xÑ ož

5XbDÑ@q99@PSXDPGD@ÀIDYO@EqAIÑqRÏÑD•

opYPI ló- -

ogYcô-

-	-

oxX%”o- Ô”

oFõ- 14

o6-o- -

oFåt- 1 yŽ ARP xpnož

5XLMLHFOHDUQISSDUSXDUGVFDQ

oUP’ô- -

ouVt- -

19.12 clear nfpp define name hosts

ŽIOÑÑ{k}¨tož

clear nfpp define *name* **hosts** [**vlan** *vid*] [**interface** *interface-id*] [*ip-address*] [*mac-address*]

op

19.13 clear nfpp dhcp-guard hosts

Žk/ïvé ž

clear nfpp dhcp-guard hosts [*[*

5XLMLHFOHDUQISSLFPSXDUGKRVWVYODQLQWHUIDFHJ

oUP'ô- -

oUVô- -

19.15 clear nfpp ip-guard hosts

ŽIOKÑ¢k}¨¥ož

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

op

@	T
vid	Bž
interface-id	Mdfož
ip-address	IP ož

oxX%"o- Ô"ïH"DÌWÈ/ÊÒ -

oeöjö- -

ouVt0- -

19.18 cpu-protect sub-interface {manage|protocol|route} pps

¥XÊâ¥VOkbž

cpu-protect sub-interface {***manage|protocol|route***} **pps** *pps_vaule*

î?¥VOkFåÊFåž

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

ÊFåž

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

op@

@	T	
pps_vaule	',ÿ%yâ¥H8©	1-100000ož

19.19 define

¥XÊÛxâž

define *name*

ï#xâž

no define *name*

ÊÞåž

default define *name*

o

p@	T
name	*#âfož*

oFå- -

o×X%”o- NFPP Få%”

oÊ- 14

o6-o- ëxâž

oFåt- 1:ëxà tcp

5XLMLHFRQILQISS

5XLMLHFRQILQISSGHILQHWFS

5XLMLHFRQILQISSGHILQH

oèo- … **show nfpp define summary** *name* ÊÞž

oUP’Î- -

oejö- -

ouVt- -

19.20 define name enable

¥XÊÛo#xàž

define *name* **enable**

{#xàž

no define *name* **enable**

Ðråž

default define *name* **enable**

op@

@	T
name	*#ofož*

oFå- {#xàž

per-src-mac	Fâ MAC xàž
per-port	FâMxàž
pps	xà%yâ[H8[1,19999] ož

oHFå- Fâ},kÀ{Fâ9D},¼Tož

o×X%”o- NFPP Fâ%”

oHô- 14

o6-o- -

oFåt- 1 yFå DHCP xâ xà9 MAC xà 15pps,ÔMxà 200ppsož

5XLMLHFRQILQISS
5XLMLHFRQILQISSGKFSXDUGDWWDFNWKUHVKROGSHUVUFPDF
5XLMLHFRQILQISSGKFSXDUGDWWDFNWKUHVKROGSHUSRUW

oèo- … **show nfpp dhcp-guard summary ôFâ**

oUP’ô- -

oejö- -

ouVô- -

19.22 dhcp-guard enable

¥Xô DHCP xàž
dhcp-guard enable

¼ DHCP xà
no dhcp-guard enable

Fâ
default dhcp-guard enable

op

@	T
-	-

oHFå- MÆå DHCP xâ ož

o×X%”o- NFPP Få%”

oÞõ- 14

o6-o- -

oFå- 1 yFß ø DHCP xàž

5XLMLHFRQILQISS

5XLMLHFRQILQISSGKFSXDUGHQDEOH

oào- … **show nfpp dhcp-guard summary ôFå**

oUP’ô- -

oejö- -

oUVô- -

19.23 dhcp-guard isolate-period

¥XÊß ø ž

dhcp-guard isolate-period {*seconds* | **permanent**}

ïø ¥ÊåÊ ž

no dhcp-guard isolate-period

Ê ž

default dhcp-guard isolate-period

op

@	T
seconds	ø ¥ %ya@kH8© 0 [30, 86400] k 0 nP ø ž
permanent	**ø ž**

oÞå- ß ø © 0k/ø ž

o×X%”o- NFPP Få%”

oÞõ- 14

o6-o- +xà ß ø ž Ô ø /BB ø ž 9 ¥ ¥

oFåb- 1 yFå DHCP xÂÕÑ 200 ož

5XLMLHFRQILQISS

5XLMLHFRQILQISSGKFSXDUGPRQLWRUHGKRVWOLPLW

oèo- … **show nfpp dhcp-guard summary ôFåž**

oUP'ô- -

oejö- -

ouVô- -

19.25 dhcp-guard monitor-period

¥XÊÊ ož

dhcp-guard monitor-period *seconds*

ïÊÊ ož

no dhcp-guard monitor-period

Ê ož

default dhcp-guard monitor-period

oÊ

@	T
seconds	Ok%ykH8[180, 86400] ož

oFå- 600 aož

o×X%"o- NFPP Få"

oÊ- 14

o6-o- yÊ 0k1+xÊ Ok Dik

0 ož

ÊÊ 0k1+N, 4xÊ ož

oFåb- 1 yFå DHCP xÊ 180 aož

5XLMLHFRQILQISS

5XLMLHFRQILQISSGKFSXDUGPRQLWRUSHULRG

oèo- … **show nfpp dhcp-guard summary ôFåž**

oUP'ô- -

oojö- -

ouVô- -

19.26 dhcp-guard rate-limit

Få'¸ož

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

î'¸ÊåÊåž

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

Êåž

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

op

@	T
per-src-mac	**+?** MAC ¸'¸ož
per-port	**+Mgjž**
pps	'¸%yÊ[H8[1,19999] ož

oFå- Få},k}Ê}¼Tož

oxX%"o- NFPP Få%"

oFö- 14

o6-o- -

oFåb- 1 yFå DHCP xÊ'¸ÊÂ MAC '¸ 8pps,ÂM'¸ 100ppsož

5XLMLHFRQILQISS

5XLMLHFRQILQISSGKFSXDUGUDWHOLPLWSHUVUFPDF

5XLMLHFRQILQISSGKFSXDUGUDWHOLPLWSHUSRUW

oèo- … **show nfpp dhcp-guard summary ôFåž**

oUP'ô- -

oeÿö- -

oʉVt- -

19.27 global-policy

¥XÊåxÊÑ’,ÿxàž

global-policy {per-src-mac | per-src-ip | per-port} *rate-limit-pps attack-threshold-pps*

î’,ÿxÊåÊÑ

no global-policy {per-src-mac | per-src-ip | per-port}

Ðåž

9 g /C2_1 1 .22.407 -1.733<0B940B920B2C

oèo- … **show nfpp define summary** *name* ðž

oUP'ô- -

oejö- -

oUVt- -

19.28 icmp-guard attack-threshold

Fåxà/Ýxàgož

icmp-guard attack-threshold { **per-src-ip** | **per-port**} *pps*

ìxàåÐåž

no icmp-guard attack-threshold { **per-src-ip** | **per-port** }

Ðåž

default icmp-guard attack-threshold { **per-src-ip** | **per-port** }

op

@	T
per-src-ip	Få IP xàž
per-port	FåMxàž
pps	xà%yàkH8[1,19999] ož

oFå- Få},kÀ@Fåo9D},¼Tož

oxX%"o- NFPP Få%"

oFå- 14

o6-o- -

oFåb- 1 yFå ICMP xàxà IP xà 600pps,ÂMxà 1200ppsož

5XLMLHFRQILQISS

5XLMLHFRQILQISSLFPSXDUGDWWDFNWKUHVKROGSHUVUFLS

5XLMLHFRQILQISSLFPSXDUGDWWDFNWKUHVKROGSHUSRUW

oèo- … **show nfpp icmp-guard summary** ÐFåž

oUP'ô- -

19.30 icmp-guard isolate-period

icmp-guard isolate-period {*seconds* | **permanent**}

no icmp-guard isolate-period

default icmp-guard isolate-period

	seconds	0 [30, 86400] k 0 nPöož
	permanent	

0k/öož

NFPP

14

+xöBöyÂMög/BBöbz9MkÄ
ÂMökBözkkÂMöož

1 yFå ICMP xBöz 180 aož

5XLMLHFRRGDpÏRRGSGSGÄWCPaVÄPÄKRRGSGSGÖK{@SG5PVÄK[F@WLGSGLVÄ64px9ÄÄÄ

no icmp-guard monitored-host-limit

default icmp-guard monitored-host-limit

	number	1 ñ 4294967295

20000

NFPP

14

20000 20000

%ERROR: The value that you configured is smaller than current monitored hosts 20000. Please clear a part of monitored hosts.

%NFPP_ICMP_GUARD-4-SESSION_LIMIT: Attempt to exceed limit of ICMP 20000 monitored hosts.

1 ICMP 200

```
5XLMLHFRQILJLISS
5XLMLHFRQILJLISSLFPSXDUGPRQLWRUHGKRVWOLPLW
```

… **show nfpp icmp-guard summary**

-

-

-

19.32 icmp-guard monitor-period

icmp-guard monitor-period *seconds*

no icmp-guard monitor-period

Fåž

default icmp-guard monitor-period

	seconds	Ok%yakH8[180, 86400] ož

Få- 600 aož

xX%”o- NFPP Få”

14

6-o- yKåÿ 0k1+xãÐkÿÿÐik

0 aož

ÿÐ1+N,Mxãkÿ ož

Fåt- 1 yFå ICMP xÐž 180 aož

5XLMLHFRQILQISS

5XLMLHFRQILQISSLFPSXDUGPRQLWRUSHULRG

oèo- … **show nfpp icmp-guard summary** 0Fåž

oUP’ô- -

oejö- -

ouVt- -

19.33 icmp-guard rate-limit

Få’,ož

icmp-guard rate-limit { **per-src-ip** | **per-port**} *pps*

ï’,ÿÐ Fåž

no icmp-guard rate-limit {per-src-ip | per-port}

Fåž

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

op

@	T
per-src-ip	**+?** IP ’g’,ož
per-port	**+Mgpž**
pps	’,J%yaKH8[1,19999] ož

oFå- Få},kÀ@Fåo9D},¼Tož

oxX%”o- NFPP Få%”

oFå- 14

o6-o- -

oFåb- 1 yFå ICMP xB’,J9 IP ’,J 500ppskÂM’,J 800ppsož

5XLMLHFRQILQISS
5XLMLHFRQILQISSLFPSXDUGUDWHOLPLWSHUVUFLS
5XLMLHFRQILQISSLFPSXDUGUDWHOLPLWSHUSRUW

oèo- … **show nfpp icmp-guard summary ôFåž**

oUP’ô- -

oejo- -

ouVô- -

19.34 icmp-guard trusted-host

FôDU’Ñž
icmp-guard trusted-host *ip mask*

ÎDU’Ñž
no icmp-guard trusted-host {**all |** *ip mask*}

ŽDU’Ñ ož
default icmp-guard trusted-host

op

@	T
ip	IP ož