¬ Z »

8G- 9 ©çA EÑ

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

cUV_XOMNZ ijHàÌ

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

ìHàÌ •à{yKWWS ZZZ UXLMLH FRP FQ

ìHàÌ¨¿ Æy

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

1u)Ú

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 command-alias	ð d ñ W n x X ñ Ô x X % ”ož

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

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 * ’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 incomingg

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

o¬ U P ’ Îo' µ ¯ UP ÕjÈq(Œ$b “Ü o¬ U P ’ Îo' µ ¯ UP Á*Âz' ˆÂF!i=Â ð q©p ð 1 5g'ƒ@ $@qi 0 #/ •@`F g — P ’ Î g

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) zP ý J ACL(100-199 k 2000-2699)ož
access-list-name	ACL d fož

jn }òÐÒ Û É§N4d 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  OWR F DQHL F9QW \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

```
5XLMLH FRQILJ OLQH VSHHG
```

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
start-character ascii-value

Ê Ö © Ï Þ . — åož
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- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¢ ‘ 5 ¿ è v O % ” ÷ v O ž k ÷ v O o … ö º 5 ƒ G n ÿ • ÷ož

o¬ F å †o- 1 y ¨ O ò V M + • ‘ 5 ¿ è k — å ¿ ÷ v O o … Ctrl+Y(ASCII › 25)ož

```
5XLMLH FRQILJ OLQH FRQVROH
5XLMLH FRQILJ OLQH VWDUW FKDUDFWHU
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

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 % ”ož1c960105 0 07w5

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

```
5XLMLH ILOH SURPSW QRLV\
```

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

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

```
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- -

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- - - lq9€ ˜ wb’ P œ <"2 ÜÅ ÀÁ ‘ wY% — •guwPà’— E? Ðz©P š•œð¯tXàyà·öùà "— !Ç "L p}Y$ÅÁ ü S

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

```
     –
     –
     –
     –
     –
     –
     –
     –
     –
     –
     –
     –
     –
     ––
     ––
     ––
     ––
     ––
     –––
          !
          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 í ”] ¨

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¬ @|/ https-|

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

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 \

o¬ à • co- 1 y … s /C500180055aea644005d [(FT)-7(P)]TJ /C2_6ho G ðà

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 † ^ ƒ ož

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 ’ Îg , 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 -oŦ ™.º.oÐ Ÿ aĸ(†‡$ÞÉÛ Ÿ FþÐ@} Ñ $@$mĐ¦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 ^ 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 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 Ì 10 Ú k x © + warning C ¾ M ´ ð g O ò y

5 X L M L H F R Q I J O R J J O J U G U D W H Ù P L ´ ðô@g ‘@VpP p6 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 y … •p • q`G H ˜ F R € €ó SQ €9Q2 co-

```
 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

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
 'HO\ VHQG ORJJLQJ     PHVVDJH OLQHV ORJJHG
   ORJJLQJ WR            E\ WIWS
```

< † K y

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

```
5XLMLH  VKRZ ORJJLQJ FRXQW
0RGXOH 1DPH  0HVVDJH 1DPH 6HY 2FFXU    /DVW 7LPH
                                        6<6          &21),*B,
-XO
                                    6<6      727$/
```

< † 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 @ ƒ o • 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 600ž % ”ÜÊ[illegible]•Â @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

	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-

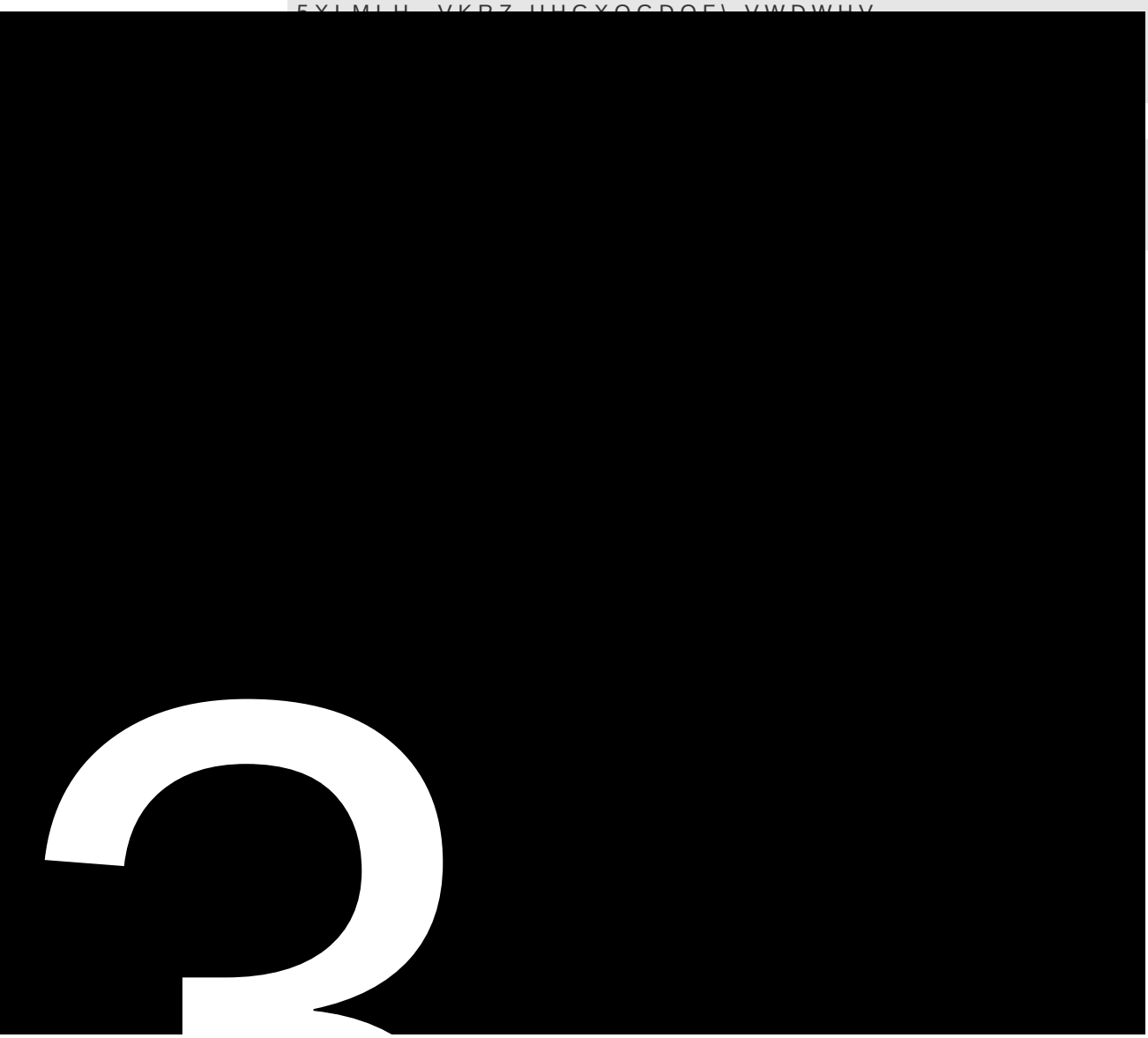
) k @ ½ Õož

o¬ F å †o- 1 y ò 0 ¢ ù ' ò á É • Ù Áož

```
5XLMLH 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
```



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 Â Ý Q H W 0/1 0W

```
5XLMLH FRQILJ LQWHUIDFH *LJDELW(WKHUQHW
5XLMLH FRQILJ LI *LJDELW(WKHUQHW SRH PD[ SRZHU
```

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 ^ ' ò % "ož

poe mode {auto | energy-saving }

í " © Ï ^ ' 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 PQ E W å 0 / Ù Á ' Îož

```
5XLMLH VKRZ SRH LQWHUIDFH *LJDELW(WKHUQHW
,QWHUIDFH                *L
3RZHU HQDEOHG             HQDEOH
3RZHU VWDWXV              RQ
0D[ SRZHU                1 $
$OORFDWH SRZHU             1 $
&XUUHQW SRZHU                :
$YHUDJH SRZHU                :
3HDN SRZHU                   :
9ROWDJH                      9
&XUUHQW                      P$
3' FODVV
7URXEOH FDXVH              1RQH
3ULRULW\                  FULWLFDO
/HJDF\                  RII
3RZHU RII WLPH UDQJH       1 $
3RZHU PDQDJHPHQW           DXWR
 SDLU VWDWXV              QRUPDO
```

< † K y

<	ª ¢
Interface	N M Ú Zož
Power enabled	© k] Æ • o PoE ož
Power status	PoE © k] Æ • ÷ ^ 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•^0Ÿ@PP r0Ð

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 @ *f* › ž k 9 ª P — Õ ñ Ä] x Á ^ C _ Á ^ Â Î ' Îož ¢ ¨4 @ *f* › 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 @ *f* y k ¥ @ *f* 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 @ *f* show component x Xož ¢ ï ¬ } ¦ Â 4 † Á ^ ž } … k @ *f* 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- 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 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 Þ J U D Þ ¥ X J K Q V Þ D ÞF2H @ 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

```
5XLMLH GKFS FRQILJ FOLHQW QDPH ULYHU
```

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

```
5XLMLH GKFS GRQDXW URXWHU
```

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 # Ê - Ä ož
ip dhcp relay information ci rcuit-id format {hex | ascii} [string]

¼ { DHCP option82 ÿ # ¾ circuit-id # Ê - Ä ož
no ip dhcp relay information circuit-id format {hex | ascii}

o¬ @ ƒ ª ¢o-

@ ƒ	T
hex	Ê - Ä ” ¹ ò ƒ
ascii	Ê - Ä ” ascii A
string	Circuit-id ÿ # ¾ # Ê - Ä

o¬ Þ . F åo- ¼ { DHCP option82 ÿ # ¾ circuit-id # Ê - Ä 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 circuit-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 circuit-id # Ê - Ä 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 I R U P D W K H [
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 I R U P D W D V F

2 y ¼ { DHCP option82 ÿ # ¾ circuit-id # Ê - Ä 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 I R U P D W
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 I R U P D W

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- -

3.27 ip dhcp relay information circuit-id string

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@– • £ ` 0 0 @– 0`@‘ åÀ ` P`@‘ ` ` Q@ É •g7<"qðÆúÀ ˆžP
-	-

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 @– • £ ` @S 0p´ ` 0 ðN\ 0f 0 f @P à W(*¬SPiœ • 3d 0T x dð,y`Ð ð

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

o¬ F å †o- 1 y ¨ intterface vlan 1 F å%² DHCP Æ ˜ IP ª - 192.168.11.1

```
5XLMLH FRQILJXUH WHUPLQDO
(QWHU FRQILJXUDWLRQ FRPPDQGV RQH SHU OLQH (QG ZLWK &17/ =
5XLMLH FRQILJ LQWHUIDFH YODQ
5XLMLH FRQILJ LI LS KHOSHU DGGUHVV
```

2 y í ” intterface vlan 1] Æ F å DHCP Æ ˜ IP ª - 192.168.11.1

```
5XLMLH FRQILJ LI QR LS KHOSHU DGGUHVV
```

3 y F å%² ¶ B DHCP Æ ˜ IP ª - 192.168.100.1ož

```
5XLMLH FRQILJXUH WHUPLQDO
(QWHU FRQILJXUDWLRQ FRPPDQGV RQH SHU OLQH (QG ZLWK &17/ =
5XLMLH FRQILJ LS KHOSHU DGGUHVV
```

4 y í ” $ ù F å ¶ B DHCP Æ ˜ IP ª - 192.168.100.1ož

```
5XLMLH FRQILJ QR LS KHOSHU DGGUHVV
```

5 y • op]TJ /C2_0 1 Tf 0 Tc <2.4130 Td [<07C6>5070-7<05098F9E>TTJ /TT0 1 Tf 0

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

` Â Ð†Â bSdBh Nñ• ™.6’ˆC@’w2TW r x0

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 Uožà Q k ñ ü E ä Ð ž € Ž ° $ p Æ ï Æ » Å ² o ¬ 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
```

<	ª ¢
IP	IP ª -
res_state	unres y Ì † ä kres y † ä
flags	0 y > N — ¼ k 1 y > N , ¼
interfae	N M d f

o¬ U P ’ Îo-

o¬ u V ª ¢o-

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 è ’ ò ëù’ • Ó% ñ$G Â ðU0Ð;Ð

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 Mož¥ F å † ÿ k¤) 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'Þ Ì×

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 ƒ ož
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 k F å ² Á è ƒ k Ý — å ’ož* **show running-config** **ð**
ð ž

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$/ –
```

1 AAA

1.1 aaa accounting commands

aaa accounting commands *level* **default** *list-name* **start-stop** *method1* *method2*

no aaa accounting commands *level* **default** *list-name*

level	

1.2 aaa accounting exec

aaa accounting exec **default** *list-name* **start-stop** *method1* *method2*

no aaa accounting exec **default** *list-name*

default	
list-name	
method	**none** **o•group**
none	**g**
group	

show aaa method-list xÆYô]Få

1.3 aaa accounting network

aaa accounting network **default** *list-name* **start-stop** *method1* *method2*

no aaa accounting network **default** *list-name*

default	
list-name	*Æçdož*
start-stop	
method	**Àõ%çÕ**
none	
group	

start-stopkõž

```
show aaa method-list xMYô]Fåçbž
```

1.4 aaa accounting update

aaa accounting update

no aaa accounting update

-	

```
```

show aaa accounting update xÞMYÛnÛ¸pož

1.5 aaa accounting update periodic

aaa accounting update periodic *interval*

no aaa accounting update periodic

interval	

show aaa accounting update xÞMYÛnÛ¸ŽaŽ

1.6 aaa authentication dot1x

aaa authentication dot1x

aaa authentication dot1x default *list-name method1 method2*

no aaa authentication dot1x default *list-name*

default	
list-name	
method	
local	
none	
group	

aaa

authentication dot1x

show aaa method-list

1.8 aaa authentication login

aaa authentication login Få

aaa authentication login **default** *list-name* *method1* *method2*

no aaa authentication login **default** *list-name*

default	
list-name	**‰**
method	**Ò**
local	**ÎÇ¢ïš**
none	**gäš**
group	**ýéšù4**
subs	**…**

aaa

authentication login xÑÛ#ç9

show aaa method-list xÆMY0]Få

1.9 aaa authentication web-auth

aaa authentication web-auth FõW

aaa authentication web-auth default *list-name method1 method2*

no aaa authentication web-auth default *list-name*

default	
list-name	**õW**
method	**À**
local	**ÎÇ0š**
none	**gäš**
group	**gÆ4**
subs	**…**

aaa authentication web-auth x

```
```

show aaa method-list x

```
```

```
```

o¬ U V!ðÆúÀfð§ð¶ ª†úÐ

default	
list-name	
method	Ä
none	gIÓ
group	gIÓ4

show aaa method-list xÐ¥Ô]FåÍÓçÎbž

1.11 aaa authorization config-commands

aaa

authorization config-commandsož

aaa authorization config-commands

no aaa authorization config-commands

no

1.13 aaa authorization exec

aaa

authorization execož

aaa authorization exec **default** *list-name* *method1* *method2*

no aaa authorization exec **default** *list-name*

default	
list-name	
method	**À**
local	**ÎÍ¢gIÓ**
none	**gIÓ**
group	**gÉÓ4**

show aaa method-list xÞMYÔ]Få

1.14 aaa authorization network

aaa

authorization networkož

aaa authorization network **default** *list-name* *method1* *method2*

no aaa authorization network **default** *list-name*

default	
method	À
none	gÈÓ
group	ÉÈÓµ4

show aaa method-list xØ0]Få

1.15 aaa domain

aaa domain default *domain-name*

no aaa domain default *domain-name*

default	

domain-name	*d*

domain-name

show aaa domain x

1.16 aaa domain enable

aaa domain enable

no aaa domain enable

-	

show aaa domain x

1.17 aaa local authentication attempts

aaa local authentication attempts *max-attempts*

max-attempts	

show aaa lockout x

1.18 aaa local authentication lockout-time

aaa local authentication lockout-time *lockout-time*

lockout-time	

-	

show running-config xbø

1.20 aaa log rate-limit

aaa log rate-limit *num*

no aaa log rate-limit

show running-config xx

1.21 aaa new-model

aaa new-model …

aaa new-model

no aaa new-model

-	

aaa new-model …

show running-config xa

1.22 access-limit

access-limit *num*

no access-limit

num	

show aaa domain xa

1.23 accounting network

accounting network **default |** *list-name*

no accounting network

default	
list-name	*6çdf*

list-name72001909BB0045D6 ÈÂ w F Đ n • o¬ Þ . ´ ðo-

1.24 authentication dot1x

authentication dot1x default *list-name*

no authentication dot1x

default	
list-name	*6ç0df*

show aaa domain x

1.25 authorization network

authorization network default *list-name*

no authorization network

default	
list-name	*6ç¤df*

show aaa domain xÆMY0¢

1.26 clear aaa local user lockout

clear aaa local user lockout all user-name *word*

all	*n*Ø*g*ï
user-name *word*	

1.27 show aaa accounting update

show aaa accounting update

-	

1.28 show aaa domain

show aaa domain default *domain-name*

default	
domain-name	

1.29 show aaa group

show aaa group

-	

1.32 show aaa user

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

all	ðÄ
lockout	ðð
by-id *session-id*	*ð*
by-name *user-name*	*ð*

1.33 state

state block active

no state

block	
active	

show aaa domain x

1.34 username-format

username-format without-domain with-domain

no username-format

without-domain	
with-domain	

show aaa domain x

2.1 aaa g

a

n

2.2 ip radius source-interface

ip radius source-interface *interface-name*

no radius source-interface *interface-name*

interface-name	

show running-config UYð

2.3 radius attribute

radius attribute *id* **down-rate-limit dscp mac-limit up-rate-limit vendor-type** *type*

no radius attribute *id* **down-rate-limit dscp mac-limit up-rate-limit vendor-type**

id	
type	

id	**×**	**type**

id	×	type

show radius vendor-specific

2.4 radius set qos cos

radius set qos cos

no radius set qos cos

show running-config

radius vendor-specific extend

no radius vendor-specific extend

Q Ž ú

show running-config ôFåž

2.9 radius-server account vendor

radius-server account vendor [cmcc | microsoft | cisco] package

no radius-server account vendor *vendor_name* **package**
default radius-server account vendor *vendor_name* **package**

cmcc | microsoft | cisco	

2.10 radius-server attribute class

radius-server attribute class

no radius-server attribute class

-	

show running-config

2.11 radius-server attribute 31

radius-server attribute 31 mac format ietf | normal | unformatted

no radius-server attribute 31 mac format

ietf	
normal	*6nP*
unformatted	*k*[illegible]

show running-config ô

2.12 radius-server authentication attribute

radius-server authentication attribute *type* **package**

radius-server authentication attribute *type* **unpackage**

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**

type	

2.13 radius-server authentication vendor

radius-server authentication vendor [cmcc | microsoft | cisco] package

no radius-server authentication vendor *vendor_name* **package**
default radius-server authentication vendor *vendor_name* **package**

cmcc | microsoft | cisco	

2.14 radius-server dead-criteria

radius-server dead-criteria **time** *seconds* **tries** *number* **tries** *number*

no radius-server dead-criteria **time** *seconds* **tries** *number* **tries** *number*

time *seconds*	
tries *number*	

time *seconds* ó

tries *number* ó

show radius parameter UYÕÕ-

2.15 radius-server deadtime

radius-server deadtime *minutes*

no radius-server deadtime

minutes	Ê§gØ

minutes ó

radius-server deadtime ¡Ø¥

radius-server deadtime 6ŠtÕØŽ

show radius parameter UY0Ø2g0UŠ

2.16 radius-server host

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*

no radius-server host *ipv4-address*

ipv4-address	
auth-port *port-number*	
acct-port *port-number*	
test username *name*	¤¥
idle-time *time*	FgÕÔUÐ
ignore-auth-port	[¼
ignore-acct-port	[¼
key **0** **7** *text-string*	FâÐWkFÐåÉ¾UY6 ‰

radius-server host xX

show radius server UYð

2.17 radius-server key

radius-server key 0 7 *text-string*

no radius-server key

text-string	
0 7	

2.18 radius-server retransmit

radius-server retransmit *retries*

no radius-server retransmit

retries	

show radius parameter UYð

2.19 radius-server source-port

radius-server source-port *port*

no radius-server source-port

show radius parameter UY[illegible]G

2.21 server auth-port acct-port

no [illegible]

server *ipv4-addr* **auth-port** *port1* **acct-port** *port2*

no server *ipv4-addr* **auth-port** *port1* **acct-port** *port2*

o[illegible]

ip-addr	
port1	
port2	

show radius group x

2.23 show radius attribute

-

2.25 show radius group

show radius group

-	

2.26 show radius parameter

show radius parameter

-	

2.28 show radius vendor-specific

show radius vendor-specific

-	

3 TACACS+

3.1 aaa group server tacacs+

aaa group server tacacs+ *group-name*

no aaa group server tacacs+ *group-name*

group-name

3.2 ip tacacs source-interface

ip tacacs source-interface *interface-name*

no tacacs source-interface *interface-name*

interface-name	

show running-config UYð

3.3 server

server *ipv4-address*

no server *ipv4-address*

ipv4-address	Æ

aaa group server tacacs+µ

tacacs-server host xÅÆ

õž

show running-config UYõÆ

3.4 show tacacs

show tacacs

-	

tacacs-server host xX

show radius server UYð

3.6 tacacs-server key

tacacs-server key 0 | 7 *text-string*

no tacacs-server key

text-string	
0 | 7	**M**

tacacs-server host

xX key

show running-config UYð

3.7 tacacs-server timeout

tacacs-server timeout *seconds*

no tacacs-server timeout

seconds	

tacacs-server host

xX timeout

show running-config UY

4 802.1x

4.1 aaa authorization ip-auth-mode

aaa authorization ip-auth-mode disable | supplicant | radius-server | dhcp-server | mixed

disable	¥µÓ
supplicant	*Supplicant Ù ip £*
radius-server	*Radius Æ ip £*
dhcp-server	*dhcp £ ip £*
mixed	Æ *ip*

oñê-

show running-config ðFåž

-

oəp-

-

4.2 clear dot1x user all

clear dot1x user all

-

4.3 clear dot1x user id

clear dot1x user id *session-id*

session-id	

-

4.4 clear dot1x user mac

clear dot1x user mac *mac-addr*

mac-addr	

-

4.5 clear dot1x user name

clear dot1x user name *name-str*

4.7 dot1x auth-address-table address

dot1x auth address table address *mac-addr* **interface** *interface*

mac-addr	
interface	

4.10 dot1x auth-fail vlan

dot1x auth-fail vlan *vlan-id*

no dot1x auth-fail vlan

vlan-id	

4.11 dot1x auth-mode

dot1x auth-mode eap | chap | pap

4.12 dot1x auth-with-order

dot1x auth with order

dot1x auto-req

no dot1x auto-req

-	

4.14 dot1x auto-req packet-num

dot1x auto-req packet-num *num*

num	

4.18 dot1x critical

dot1x critical

no dot1x critical

4.19 dot1x critical recovery action reinitialize

dot1x critical recovery action reinitialize

no dot1x critical recovery action reinitialize

4.21 dot1x dbg-filter

dot1x dbg-filter *H.H.H*

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

H.H.H	

4.22 dot1x default

dot1x default

4.23 dot1x default-user-limit

dot1x default-user-limit *num*

no dot1x default-user-limit

num	[illegible]

4.24 dot1x dynamic-vlan enable

dot1x dynamic-vlan enable

no dot1x dynamic-vlan enable

4.25 dot1x guest-vlan

dot1x guest-vlan *vlan-id*

no dot1x guest-vlan

vlan-id	

4.26 dot1x mac-auth-bypass

dot1x mac-auth-bypass

no dot1x mac-auth-bypass

4.27 dot1x mac-auth-bypass multi-user

dot1x mac-auth-bypass multi-user

no dot1x mac-auth-bypass multi-user

	64

4.28 dot1x mac-auth-bypass timeout-activity

4.30 dot1x mac-auth-bypass vlan

dot1x mac-auth-bypass vlan *vlan-list*

no dot1x mac-auth-bypass vlan *vlan-list*

vlan-list	[illegible]ož

num	

4.33 dot1x port-control auto

dot1x port-control auto

no dot1x port-control auto

op

4.34 dot1x port-control-mode

dot1x port-control-mode { mac-based | port-based | port-based single-host}

no dot1x port-control-mode

op

4.35 dot1x private-supplicant-only

dot1x private-supplicant-only

4.36 dot1x probe-timer alive

dot1x probe-timer alive *time*

o

time	*ýžkýaké*

4.37 dot1x probe-timer interval

4.38 dot1x pseudo source-mac

4.39 dot1x re-authentication

dot1x re-authentication

no dot1x re-authentication

op

4.40 dot1x reauth-max

dot1x reauth-max *num*

op

num	

4.41 dot1x redirect

dot1x redirect

no dot1x redirect

4.42 dot1x stationarity enable

dot1x stationarity enable

no dot1x stationarity enable

op

-	

4.43 dot1x timeout quiet-period

dot1x timeout quiet-period *time*

op

time	*ä¾ï¿½ï¿½*

4.44 dot1x timeout re-authperiod

dot1x timeout re-authperiod *time*

time		

time	

4.46 dot1x timeout supp-timeout

dot1x timeout supp-timeout *time*

time	

4.47 dot1x timeout tx-period

dot1x timeout tx-period *time*

time	

@x=

4.50 dot1x valid-ip-acct timeout

dot1x valid-ip-acct timeout *time*

no dot1x valid-ip-acct timeout

time	无

4.53 show dot1x auth-address-table

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

addr	*Ë*
Interface	*Ë*

-

4.54 show dot1x auto-req

show dot1x auto-req

-

4.55 show dot1x max-req

show dot1x max-req

4.58 show dot1x probe-timer

show dot1x probe-timer

-

4.59 show dot1x re-authentication

show dot1x re-authentication

-

4.60 show dot1x reauth-max

show dot1x reauth-max

-

4.61 show dot1x summary

show dot1x summary

-

4.62 show dot1x timeout quiet-period

show dot1x timeout quiet-period

-

4.63 show dot1x timeout re-authperiod

show dot1x timeout re-authperiod

-

4.64 show dot1x timeout server-timeout

show dot1x timeout server-timeout

-

4.65 show dot1x timeout supp-timeout

show dot1x timeout supp-timeout

-

4.67 show dot1x user id

show dot1x user id *id*

id	ß

-

4.69 show dot1x user name

show dot1x user name *name*

name	*…*

-

authentication *method-list*

no authentication

method-list	*єŋdož*

ip-only-mode	**N**

ip-mac-modeož

show web-auth template

5.4 clear web-auth direct-host

clear web-auth direct-host [range]

5.5 clear web-auth direct-site

clear web-auth direct-site [range]

5.6 clear web-auth user

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

ip-address	*IP*
mac-address	*MAC*
name-string	*name*

5.8 http redirect direct-arp

http redirect direct-arp *ip-address ip-mask*

No http redirect direct- arp *ip-address ip-mask*

ip-address	
Ip-mask	*g*[illegible]

http redirect direct-site *ipv4-address ip-mask* **arp** *mac-address starip-address endip-address description-str group-name*

no http redirect direct-site *ipv4-address ip-mask mac-address* | *startip-address endip-address*

Ipv4-address	
Ip-mask	

Arp

5.10 http redirect port

5.11 http redirect session-limit

http redirect session-limit

5.12 http redirect timeout

http redirect timeout *seconds*

no http redirect timeout

seconds	**ő MgNŽ** *seconds* *ĸ H8*

show web-auth parameter xßF@

5.13 ip

ipož

ip *ip-address*

no ip

ip-address	

interface-num	*M«*

-

show running-config ðß å

5.15 port

port *port-num*

no port

port	

show web-auth template

5.16 show web-auth control

show web-auth control

-	

5.17 show web-auth direct-arp

show web-auth direct-arp

5.18 show web-auth direct-host

show web-auth direct-host [range]

-	

5.19 show web-auth direct-site

show web-auth direct-site [range]

-	

5.21 show web-auth parameter

show web-auth parameter

-	

5.22 show web-auth portal-check

portal-check 254

show web-auth portal-check

5.23 show web-auth rdport

show web-auth rdport

-	

5.24 show web-auth syslog ip

show web-auth syslog ip *ip-address*

Ip-address	*Ši*

5.25 show web-auth template

show web-auth template

-	

5.26 show web-auth user

show web-auth user **all | ip** *ip-address* **mac** *mac-address* **| name** *name-string*

ip-address	*IP*
mac-address	*MAC*
name-string	*name*

no url

url-string	[illegible]

http redirect homepage *url-string*

show web-auth template [illegible]

5.28 web-auth dhcp-check

web-auth dhcp-check

no web-auth dhcp-check

-	

-

show running-config

5.29 web-auth direct-host

web-auth direct-host *ipv4-address p-mask* **arp** *mac-address starip-address endip-address* **port** *interface-name description-str group-name*

no web-auth direct-host *ipv4-address p-mask mac-address* | *starip-address endip-address*

Ipv4-address	

eportalv1 ‰

ˆ‡

show web-auth control ÔlOMF‰

5.31 web-auth linkdown-timeout

down dg‰

web-auth linkdown-timeout {timeout}

no web-auth linkdown-timeout

timeout	‡

5.33 web-auth portal key

web-auth portal key *key-string*

no web-auth portal key

key-string	[illegible]

web-authož

show running-config [illegible]Få

5.34 web-auth portal-check

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

show running-config ûßå

5.36 web-auth template

web-auth template eportalv1

ÿ¿¾ÀÂÃÄÅÆÇÈÉÊËÌÍÎÏÐÑÒÓÔÕÖ×ØÙÚÛÜÝÞßàáâãäåæçèéêëìíîïðñòóôõö÷øùúûüýþÿ
web-auth template v1

web-auth template eportalv2

web-auth template *template-name* **v2**

no web-auth template *template-name*

eportalv1	
eportalv2	
template-name	

http redirect **http redirect homepage**

http redirect **http redirect homepage**

no web-auth update-interval

seconds	**[illegible]**

show running-config [illegible]

5.38 web-auth vlan-control

web-auth vlan-control

no web-auth vlan-control

vlan-list	**[illegible]**

show running-config

5.39 web-auth station-move arp-detect

no web-auth station-move arp-detect

default web-auth station-move arp-detect

show running-config

5.40 web-auth station-move auto

mapping-list ç¼©å†™

web-auth station-move auto apply-mapping *mapping-list*

no web-auth station-move auto

-	

show running-config é…ç½®

6 SCC

6.1 wWkT=

6.2 direct-vlan

direct-vlan *vlanlist*

no direct-vlan *vlanlist*

vlanlist

6.3 nac-author-user maximum

nac-author-user maximum *max-user-num*

no nac-author-user maximum

max-user-num	

show nac-author-user x

6.4 offline-detect interval threshold

offline-detect interval *interval* **threshold** *thredshold*

default offline-detect

no offline-detect

interval	
threshold	*vkÿ‰kHHÐ}/bÆ'* *Ð*

show direct-vlan interface *interface-name*

interface-name	

6.6 show nac-author-user interface

show nac-author-user interface *interface-name*

interface-name	

7 IP+MAC –

7.1 address-bind

address-bind *ip-address mac-address*

no address-bind *ip-address mac-address*

ip-address	
mac-address	Ç

show run **show address-bind**

7.2 address-bind binding-filter logging

address-bind binding-filter logging **rate-limit** *rate*

no address-bind binding-filter logging

rate-limit *rate*	

show run x

7.3 address-bind install

address-bind install

no address-bind install

-	

show run xßož

7.4 address-bind uplink

address-bind uplink *interface-id*

no address-bind uplink *interface-id*

interface-id	

7.6 show address-bind uplink

show address-bind uplink

-	

8.2 password policy min-size

password policy min-size *length*

no password policy no-repeat-times

times	*j*Ø*Ik*8

enable password

-	

enable passwordc enable secret ä¾—

¶ **username** *name* **password** *password* **ä"—**

show password policy xÀ¿6kMÞŸ

o¤† • °j¨-o-

o¤t Z¦ê¢-o-

show running-config ê write ĸ

8.6 show password policy

show password policy

-	

9 OLµ

9.1 show port-security

show port-security address interface *interface-id* **binding interface** *interface-id* **interface** *interface-id* **all**

address	
binding	P[illegible]NM[illegible]ž
interface *interface-id*	P6NM[illegible]ž
all	P[illegible]ž

[redacted]

switchport port-security violation protect 70012 1-5(tricTJTT0 1 Tf0.00012 6c 0.0026152 3.91366 Td({)]TJT2 1 Tf0.00

9.3 switchport port-security aging

switchport port-security aging static time *time*

no switchport port-security aging static time

static	
time *time*	**nP**

show port-security x

9.4 switchport port-security binding

switchport port-security binding *mac-address* **vlan** *vlan_id* *ipv4-address*

no switchport port-security binding *mac-address* **vlan** *vlan_id* *ipv4-address*

switchport port-security binding *ipv4-address*

no switchport port-security binding *ipv4-address*

mac-address	
vlan_id	Ç
ipv4-address	Ç

show port-security x

9.5 switchport port-security binding-filter logging

switchport port-security binding-filter logging rate-limit *rate*

no switchport port-security binding-filter logging

rate-limit *rate*

show run xKUY

9.6 switchport port-security interface binding

switchport port-security interface *nterface-id* **binding** *mac-address* **vlan** *vlan_id* *ipv4-address*

show port-security x

9.7 switchport port-security interface mac-address

switchport port-security interface *interface-id* **mac-address** *mac-address* **vlan** *vlan-id*

no switchport port-security interface *interface-id* **mac-address** *mac-address* **vlan** *vlan-id*

interface-id	
mac-address	
vlan-id	

show port-security xKUY

9.8 switchport port-security mac-address

switchport port-security mac-address *mac-address* **vlan** *vlan-id*

no switchport port-security mac-address *mac-address* **vlan** *vlan-id*

mac-address	
vlan-id	

show port-security x

9.9 switchport port-security mac-address sticky

switchport port-security mac-address sticky *mac-address* **vlan** *vlan-id*

no switchport port-security mac-address sticky *mac-address* **vlan** *vlan-id*

switchport port-security mac-address sticky

no switchport port-security mac-address sticky

mac-address	
vlan-id	

```
[redacted]
[redacted]
[redacted]
[redacted]
```

```
```

```
```

show port-security x[illegible]

```
```

10 STORM-CONTROL

10.1 show storm-control

storm-control broadcast **level** *percent* **pps** *packets* *rate-bps*

no storm-control unicast

no storm-control multicast

no storm-control broadcast

default storm-control unicast

default storm-control multicast

default storm-control broadcast

level *percent*	
pps *packets*	
rate-bps	

show storm-control x

11 SSH

11.1 crypto key generate

crypto key generate rsa | dsa

rsa	
dsa	

enable service

ssh-server x

no crypto key generate **crypto key zeroize a**

show crypto key mypubkey rsa x

11.2 crypto key zeroize

crypto key zeroize rsa | dsa

rsa	f'
dsa	f'

no enable service ssh-server xžž

show crypto key mypubkey rsa xžž

11.3 disconnect ssh

disconnect ssh vty *session-id*

vty	*]yE*
session-id	

show ssh xKUY06

11.4 ip scp server enable

ip scp server enable

no ip scp server enable

-	

show ip ssh xkUYð

11.5 ip ssh authentication-retries

ip ssh authentication-retries *retry times*

no ip ssh authentication-retries

retry times	

show ip ssh xkUYð

11.6 ip ssh cipher-mode

ip ssh cipher-mode cbc ctr others

no ip ssh cipher-mode

cbc	ê
ctr	ê
others	ê

test 64

11.9 ip ssh time-out

ip ssh time-out *time*

no ip ssh time-out

time	*8*

show ip ssh xkUYð

11.10 ip ssh version

ip ssh version 1 | 2

no ip ssh version

1	*ß*
2	**Få**

show ip ssh xKUYô

11.11 show crypto key mypubkey

show crypto key mypubkey rsa | dsa

rsa	**₱**
dsa	**₱**

11.12 show ip ssh

show ip ssh

-	

11.13 show ssh

show ssh

-	

12.2 security community

security **v1** **v2** **community** *community* **v3 user** *username*

no security **v1** **v2** **community** *community* **v3**

security event inteval *interval*

no security event inteval

interval	*秒*

no security gsn enable

12.6 show smp-server

show smp-server

-	

12.7 smp-server host

smp-server host *ip-address*

no smp-server host

ip-address	

13 CPP

13.1 clear cpu-protect counters

clear cpu-protect counters [device *device_num***]**

device_num	**device**

-	

show cpu-protect cpu

show cpu-protect traffic-class *traffic-class-num* x

13.5 cpu-proctect type packet-type bandwidth

cpu-protect type *packet-type* **bandwidth** *bandwidth value*

no cpu-protect type *packet-type* **bandwidth**

o

packet-type	*E*
bandwidth_value	*k*

show cpu-protect type *packet-type xxx*

13.6 cpu-protect type packet-type traffic-class

show cpu-protect type *packet-type* x

13.7 show cpu-protect

show cpu-protect [device *device_num***]**

device_num	**device**
	device

13.8 show cpu-protect cpu

show cpu-protect cpu

13.9 show cpu-protect mboard

show cpu-protect mboard

13.10 show cpu-protect summary

show cpu-protect summary

show cpu-protect traffic-class {*traffic-class-num* **| all} [device** *device_num***]**

traffic-class-num	*{-HD}[k]Q}nR* *pz*
all	*z*
device_num	**device** *¨*
	device *knPz*

13.12 show cpu-protect type

show cpu-protect type *packet-type* **[device** *device_num***]**

packt-type	*{-HD}[k]Q}z*
all	*z*
device_num	**device** *¨*

	device µ4knP8z

14 DHCP Snooping

14.1 clear ip dhcp snooping binding

clear ip dhcp snooping binding *ip* *mac* **vlan** *vlan-id* **interface** *interface-id*

mac	[illegible]
vlan-id	[illegible]
ip	[illegible]
interface-id	[illegible] ože

14.2 ip dhcp snooping

show ip dhcp snooping xKUYð

14.4 ip dhcp snooping check-giaddr

ip dhcp snooping check-giaddr

no ip dhcp snooping check-giaddr

show run xKUYô

14.5 ip dhcp snooping database write-delay

ip dhcp snooping database write-delay *time*

no ip dhcp snooping database write-delay

time	*t-BEyakH8*

show ip dhcp snooping xKUY

14.6 ip dhcp snooping database write-to-flash

ip dhcp snooping database write-to-flash

14.8 ip dhcp snooping information option format remote-id

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

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

string *ascii-string*	
hostname	

show ip dhcp snooping xkUYð

ascii-string Ý

14.9

14.10 ip dhcp snooping loose-forward

ip dhcp snooping loose-forward

no ip dhcp snooping loose-forward

show run xKUYð

14.11 ip dhcp snooping suppression

ip dhcp snooping suppression

no ip dhcp snooping suppression

show run xKô+NMFðž

no ip dhcp snooping trust

show ip dhcp snooping xKUY0NMBz

14.13 ip dhcp snooping verify mac-address

ip dhcp snooping verify mac-address

no ip dhcp snooping verify mac-address

vlan-max	

5XLMp€` @'eÀ0,}O ð '` p @`0 'ßD '`A€ @ @1/$0@0•Đ FWL !$5!†Q| o¬Få †o-

5XLMÂ€° @'eÀ0,}O ð '` p @`0 'ßD '`A€ @ @3YMFPCCB

4 Td [<040F0[illegible]0.439 g /C2_1 1 Tf 9 0 0 9 123.36 522

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*

vlan-id	

show ip dhcp snooping bindingkUYôŽ-pž

14.19 show ip dhcp snooping

14.20 show ip dhcp snooping binding

show ip dhcp snooping binding

15 ARP Check

15.1 arp-check

arp-check

no arp-check

show interfaces arp-check list xKUYôNMÿ

15.2 show interface arp-check list

show interface *interface-type interface-number* **arp check list**

interface-type	
interface-number	ÑMÐ

16 DAI

16.1 ip arp inspection trust

ip arp inspection trust

no ip arp inspection trust

show ip arp inspection interface xKUYOMKFaž

16.2 ip arp inspection vlan

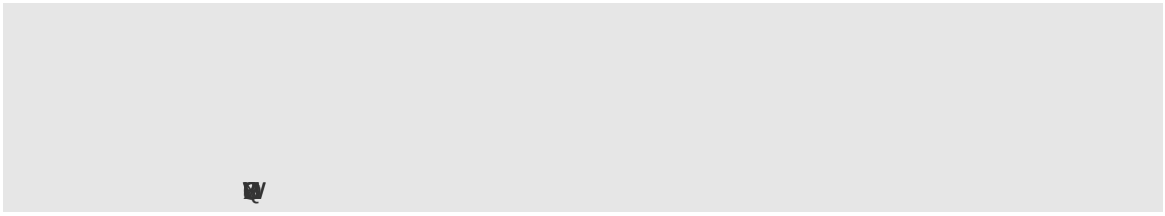
ip arp inspection vlan *vlan-id word*

no ip arp inspection vlan *vlan-id word*

vlan-id	
word	

16.3 show ip arp inspection interface

show ip arp inspection interface



16.4 show ip arp inspection vlan

show ip arp inspection vlan *vlan-id word*

vlan-id	
word	

17 IP Source Guard

17.1 ip source binding

ip source binding *mac-address* **{ vlan** *vlan-id* **}** *ip-address* **interface** *interface-id* **| ip-mac | ip-only**

no ip source binding *mac-address* **{ vlan** *vlan-id* **}** *ip-address* **interface** *interface-id* **| ip-mac | ip-only**

mac-address	
vlan-id	Á
ip-address	Á
interface-id	ložž
ip-mac	
ip-only	

show ip source binding xKUYÔ

Ѕ ⱴ ⱴ

17.2 ip verify source

ip verify source port-security

no ip verify source

vlan-id	

show run xKUYôxKFåž

17.4 show ip source binding

show ip source binding *ip-address mac-address* **dhcp-snooping static vlan** *vlan-id* **interface** *interface-id*

ip-address	

mac-address	₱+•
dhcp-snooping	₱Ã₺
static	₱Ã₺
vlan-id	₱+•
interface-id	₱+ÖÑMÊ

17.5 show ip verify source

show ip verify source interface *interface-id*

interface-id	

18 T»　　ARP °

18.1 anti-arp-spoofing ip

anti-arp-spoofing ip *ip-address*

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

ip-address	

show run ðFåÑäöž
show anti-arp-spoofing ÞNMä¼

18.2 show anti-arp-spoofing

show anti-arp-spoofing

-	

19 NFPP

19.1 arp-guard attack-threshold

arp-guard attack-threshold per-src-ip per-src-mac per-port *pps*

no arp-guard attack-threshold per-src-ip per-src-mac per-port

default arp-guard attack-threshold per-src-ip per-src-mac per-port

per-src-ip	**F**
per-src-mac	**F**
per-port	**F**
pps	*x*

show nfpp arp-guard summary

19.2 arp-guard enable

arp-guard enable

no arp-guard enable

default arp-guard enable

show nfpp arp-guard summary

19.3 arp-guard isolate-period

arp-guard isolate-period *seconds* **permanent**

no arp-guard isolate-period

default arp-guard isolate-period

seconds	
permanent	

show nfpp arp-guard summary

19.4 arp-guard isolate-forwarding enable

arp-guard isolate-forwarding enable

no arp-guard isolate-forwarding enable

default arp-guard isolate-forwarding enable

op

19.5 arp-guard monitored-host-limit

arp-guard monitored-host-limit *number*

no arp-guard monitored-host-limit

default arp-guard monitored-host-limit

op

number	

show nfpp arp-guard summary 0F

19.7 arp-guard rate-limit

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

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

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

o

per-src-ip	**+**
per-src-mac	**+**
per-port	**+**
pps	

show nfpp arp-guard summary ðFÊž

19.9 arp-guard scan-threshold

no arp-guard scan-threshold

default arp-guard scan-threshold

op

pkt-cnt	

show nfpp arp-guard summary 0F

19.10 clear nfpp arp-guard hosts

clear nfpp arp-guard hosts vlan *vid* **interface** *interface-id ip-address mac-address*

o

vid	
interface-id	
ip-address	
mac-address	

19.12 clear nfpp define name hosts

clear nfpp define *name* **hosts** **vlan** *vid* **interface** *interface-id* *ip-address* *mac-address*	
o	

19.13 clear nfpp dhcp-guard hosts

clear nfpp dhcp-guard hosts *[*

19.15 clear nfpp ip-guard hosts

clear nfpp ip-guard hosts vlan *vid* **interface** *interface-id* *ip-address*

o

vid	
interface-id	
ip-address	

19.18 cpu-protect sub-interface {manage|protocol|route} pps

cpu-protect sub-interface ***manage|protocol|route*** **pps** *pps_vaule*

no cpu-protect sub-interface *manage protocol route* **pps**

default cpu-protect sub-interface *manage protocol route* **pps**

op

pps_vaule	

19.19 define

define *name*

no define *name*

default define *name*

op

name	*#@fož*

show nfpp define summary *name ß*

19.20 define name enable

define *name* **enable**

no define *name* **enable**

default define *name* **enable**

name	*#@fož*

per-src-mac	
per-port	
pps	

show nfpp dhcp-guard summary

19.22 dhcp-guard enable

dhcp-guard enable

no dhcp-guard enable

default dhcp-guard enable

show nfpp dhcp-guard summary

19.23 dhcp-guard isolate-period

dhcp-guard isolate-period *seconds* **permanent**

no dhcp-guard isolate-period

default dhcp-guard isolate-period

seconds	
permanent	

show nfpp dhcp-guard summary 0F

19.25 dhcp-guard monitor-period

dhcp-guard monitor-period *seconds*

no dhcp-guard monitor-period

default dhcp-guard monitor-period

seconds	

show nfpp dhcp-guard summary

19.26 dhcp-guard rate-limit

dhcp-guard rate-limit per-src-mac per-port *pps*

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

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

o

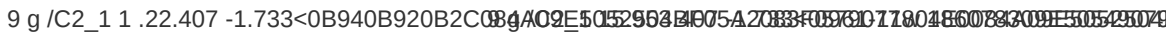
per-src-mac	**+**
per-port	**+**
pps	

show nfpp dhcp-guard summary

19.27 global-policy

global-policy {per-src-mac | per-src-ip | per-port} *rate-limit-pps attack-threshold-pps*

no global-policy {per-src-mac | per-src-ip | per-port}



show nfpp define summary *name*

19.28 icmp-guard attack-threshold

icmp-guard attack-threshold per-src-ip per-port *pps*

no icmp-guard attack-threshold per-src-ip per-port

default icmp-guard attack-threshold per-src-ip per-port

per-src-ip	
per-port	
pps	

show nfpp icmp-guard summary

19.30 icmp-guard isolate-period

icmp-guard isolate-period *seconds* **permanent**

no icmp-guard isolate-period

default icmp-guard isolate-period

seconds	
permanent	

no icmp-guard monitored-host-limit

default icmp-guard monitored-host-limit

number	

show nfpp icmp-guard summary

19.32 icmp-guard monitor-period

icmp-guard monitor-period *seconds*

no icmp-guard monitor-period

default icmp-guard monitor-period

seconds	

show nfpp icmp-guard summary

19.33 icmp-guard rate-limit

icmp-guard rate-limit per-src-ip per-port *pps*

no icmp-guard rate-limit {per-src-ip | per-port}

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

per-src-ip	**+**
per-port	**+**
pps	

show nfpp icmp-guard summary

19.34 icmp-guard trusted-host

icmp-guard trusted-host *ip mask*

no icmp-guard trusted-host all | *ip mask*

default icmp-guard trusted-host

ip	

mask	
all	**y no**

show nfpp icmp-guard summary

19.35 ip-guard attack-threshold

ip-guard attack-threshold per-src-ip per-port *pps*

no ip-guard attack-threshold per-src-ip per-port

default ip-guard attack-threshold per-src-ip per-port

per-src-ip	**F**
per-port	**F**

pps	*xdyaxH®*