U J 0 V 9 4 ˚ 3 ⅃ ˝ Ω

z] X W ¥ y n v z X X U W O \ P i ^ G

ă ⁶ v χ Y 4 1 3

f r s | u l j k w ¨ 5 3 4 9 ج à ⅃ ⅄

copyright © 2016 [illegible]

[illegible]

₩ ₲ ᵀ ï ° Ķ ^ ᔕ ᓀ

- ⸗ ᐱ Ṫ ᐯ ᶣ
- Ḥ ò ẍ Ķ ^
- ⸗ ᐱ ᔑ ᔑ ^

- ᓀ à ⸗ ᐱ ḥ Ⱥ ⸗ ᔑ ᵡ http://www.ruijie.com.cn/
- ᓀ à ⸗ ᐱ ᵽ ᔮ i ̲ Ȯ ᵡ http://webchat.ruijie.com.cn
- ᓀ à ⸗ ᐱ ḥ Ⱥ ⸗ ᔑ Ȯ ᑎ ᒪ ᵀ Ḥ ᵡ ᵥ ę ᵡ http://www.ruijie.com.cn/service.aspx
- 7Ö24 ṇ Ḥ Ḥ Ȯ ᑎ ♬ ᔮ ᵡ 4008-111-000
- ᓀ à ⸗ ᐱ Ḥ o ȝ ᵡ http://bbs.ruijie.com.cn/portal.php
- Ẃ ð ᵬ ڰ ᾷ ᔑ ᵡ http://www.ruijie.com.cn/service/know.aspx
- ᓀ à ⸗ ᐱ Ḥ ᵀ Ḥ ᵀ Ʌ ᒪ ɾ ᵻ ʒ ᐟ ᵡ 4008111000@ruijie.com.cn

1.

ᵘ ᖘ Φ ᵀ Ã Ɣ Θ ḅ ï ᵡ

ᵡ ᵘ ᖘ Φ ᵚ ᒪ ᴯ ᵋ ᵘ ᖘ ᴀ Ȝ Ύ j Ψ ọ ɛ Ł ᒍ 𞋿 ᵡ ᵡ ᵋ ᵀ ᔑ È ч ´ ˜

ά ᵧ ᵡ ᵘ ᖘ Φ ᴠ Ὢ ε ᵘ ᖘ ᴀ ọ ɛ ᵠ �copy ₲ Θ ᵩ Φ ᾠ Ꮁ 𞋿 ᵡ ᵡ ᵋ ᵀ ά ч ´ ˜

[ ] ᵡ ´ ˜ ᵀ [ ] ὐ ᐯ ᵀ 𞋿 ɪ ᵽ ᵘ ᖘ ᵬ ⸗ Ḥ ĩ ᵻ J̌ 𞋿

{ x | y | … } ᵡ ´ ˜ ᵡ ᵬ ᴀ ă ^ ᴀ J̌ ° ᴀ J̌ ᴨ ᴀ

[x | y | …] ᵡ ´ ˜ ᵡ ᵬ ᴀ ă ^ ᴀ J̌ ° ᴀ J̌ ᴨ ᴀ ă ă j J̌

// ᵡ ᵠ ᵴ ά ¡ Ã Ḋ 𞋿 Φ ´ ˜ ᵚ ᵚ ├ ᵩ Φ

2.

₩ ᵩ ᵬ ᵀ ᴿ ᵞ ᵖ ´ ‰ Ő ᵀ ´ ˜ ᵽ ¨ Ḥ Ă ᵯ ᵻ ᴀ Ẓ Ỉ ᵌ . ├ Ɣ 𞋿 ş Ά ɪ ᵩ Ꝑ ‰ Ő 𞋿 Ɣ Θ ḅ ï ᵡ

-
-
-
- /

3.

- ė q ǯ æ ب ˝ ɯ̀ ˊ ⃞ ⅄ Æ ⅃ ʒ ª ḫ ڱ ˡ ǵ j ⅄ ı ḫ ڱ ̈Ḥ Ă ⱑ ⅄ ⅃ ̃Y Ł ʀ ƒ ᵝ ̈A ̃Ḥ ̈Y ⃞ ⅄ Æ ⅃ ʒ ڤ Φ ب ⅃
- ė q ɯ̀ ˊ ǯ æ ⃞ Ĭ ˜ ʒ Ụ ⱑ ˡ ǵ ᵍ ω̃ Ʊ Ę̌ ƒ ᵝ ⅄ ˚ ⃞ ŋ ḳ ε ḅ ƒ ᵝ ʒ ᴺ ὼ ڭ ⅄ ζ ı ʊ ɥ Ĭ ˜ ʒ Ụ ت Ɋ ḫ ڱ Æ ɿ ⃞ ⅄ ᵗ ʒ Ụ ⱑ ´
- ė q ⱑ ⊥ ʒ ⃞ ث ⅃ ʜ ʒ ث ⅃ ʜ ƒ ᵝ ɡ ‰ ı Ɱ ´ ˜ ˚ Ỵ Θ ï ⃞ ث ⅃ ʜ ı Ɋ ʒ ظ Φ ´ ث ⅃ ʙ ɲ ⃞ ˢ Ṗ Ґ ̈Ω

w W ? ¿ x ž ´

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. USB
8. õ +&Á ¦ ¨
9. 1u)Ú S k -
10. 2Ï4³ ¹ «
11. CA-MONITOR
12. PKG-MGMT
13. OpenFlow

1 w W 6 Ù „

x X	•
alias	F å%² Ú x X ð dož
privilege	F å%² Ú x X ü g Ó ' I 5%² x X ´ ðož
show aliases	ª P ñ Ä x X ð d ê Ô x X % ” x X ð dož

1.1 alias

F å%² Ú x X ð dož

alias mode command-alias original-command

í ” # x X ð d k + 9 ¨ ó • ð d x X k U Ê Ö Þ . F åož

no alias mode [command-alias]

+ 9 ¨ ó • ð d x X k U Y * default Ê Ö Þ . F åož

default alias mode [command-alias]

o¬ @ ƒ ª ¢o-

@ ƒ	T
mode	ð d ñ W n x X ñ Ô x X % ”ož
command-alias	x X ð dož
original-command	ð d ñ W n Ž x X § což

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 F å % "

o¬ F å †o- 1 y — å CLI ´ ð 1 M X "test" k w — å ü g reload x X Ó ' k U Y Ö y — Õož

```
5XLMLH FRQILJ SULYLOHJH H[HF OHYHO UHORDG
```

4 ž k … ´ ð 1 µ CLI µ k G ë U Y … reload x X y

```
5XLMLH!UHORDG "
/,1( 5HDVRQ IRU UHORDG
 FU!
```

ò ç } 1 reload ¶ B ÿ x X C I Ó Ë ´ ð 1 ï k é U Y … all ¼ p y

1@ yï i … ´ ð relodl ¶ B ÿ x X y

2 Á ´ a Â

show running-config	ò 0 ¢ ù — Õ © Ï 3 ¨ g F å ' Î
show service	ò 0 ¢ ù Æ • o ê ¼ { Õ Ñ
show sessions	ª P] Æ • y Telnet Client † ? † ' Î
show startup-config	ò 0 ¥ ¨ NVRAM g ³ £ â Å š Ñ H ¥ ˜ h — Õ F å
show this	ò 0 © Ï ¢ ù % " ÿ | F å ' Î
show version	ò 0%² ? © Ï ' Î
speed	F å Ä € — Õ , ä
telnet	£ ñ Telnet Æ ˜
username	— å Î ª ï d
username import	R † ^ - µ ï ' Î
username export	ï ' Î - ß ñ † ^
write	1 © Ï F å grunning-config h ' ñ 6 y å

2.1 <1-99>

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- -

o¬ x X % "o- ¯ * ï % "

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- ¥ x X 9 Ê Ö …] Æ • y Telnet Client k ¢ Nož¢ … telnet x X G Ü Telnet Client k ¢ N ž k U Y … ½ p gctrl+shift+6 x h ¶ ž ß ¥ Nož ò ç ¬ } Ê Ö ¥ N k U Y … ƒ p <1-99> x X g Ê Öož c ž k ò ç N] • y k U Y … show session x X ò 0] • y N ' Îož

o¬ F å †o- 1 y Ê Ö] Æ • y Telnet Client k ¢ Nož

5 X L M L H

o¬ à • co- -

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.2

o¬ @ ƒ ª ¢o-

@ ƒ	T
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 kMOTD gbanner motd h Ù ¯ ª P k À e 1 ª P LOGIN U P ' Î gbanner login h k
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 F g Telnet N ' Î — å y

```
5XLMLH FRQILJ EDQQHU LQFRPLQJ * ... ¡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- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.4 banner login

F å £ ö Ê ' Î cmissage c

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 ˜ kMOTD gbanner motd h Ù ¯ ª P k À e 1 ª P LOGIN U P ' Î gbanner login h k
ï è £ — Õ Y e k 1 ÿ G N • º ß ë EXEC g banner exec h U P ' Î ê incoming g banner
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 ' Îoà • co-

¿ è F å no motd-banner ož

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

1563.46B095000EF 0.606A309A6CECF.46B050517AACE0916F1199 g /C2_.90

66j 7.cC232 083F0(ba 0 r prompt-timeoutTd <09BF0AE804 Tc 7.96 f ( )Tj 7.4C004D0048.3 51E)5(6005m 0B4609E5099

o¬ u V ª ¢o- -

2.7 banner slip-ppp

ò SLIP/PPP ¿ è N U P ' Î
banner slip-ppp c message c

H ƒ SLIP/PPP ¿ è N U P ' Î
no banner slip-pp

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
* SLIP/PPP ¿ è Ng † ò è ˜ * Z N hž k+ • Ä € k ª P slip-ppp U P ' Îgbanner slip-ppp hœž

o¬ F å †o- 1 y µ P † g SLIP/PPP U P ' Î — å y

```
5XLMLH FRQILJ EDQQHU VOLS SSS * ... iH—Õ
```

o¬ à • co- -

o¬ U P ' Îo- -

o¬ o • j ¨o- -

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 [

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

o¬ à • co- 1 y … show sessions x X k U Y ò 0 6 Telnet Client N © k] Æ t • •ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.11 enable

µ Ô Ó ï % ”ož

enable [privilege-level]

o¬ @ ƒ ª ¢o-

@ ƒ	T
privilege-level	

o¬ Þ . F åo- -

o¬ x X % ”o- ¯ * ï % ”

o¬ Þ . ´ ðo- 0

o¬ ... 6 -o- ... ¥ x X R ¯ * ï % ” µ ñ Ô Ó ï % ”ož ò ç Ó ’ ˆ ´ k é 1 ¢ ù Ó ’ ˆ ´ U ñ 6 Ó ’ ˆ ´ož

o¬ F å †o- 1 y ò P † F å — Õ 1 ¢ ù Ó ’ ˆ ´ ‘ z ñ † 14 ´ y

```
5 X L M L H !  H Q D E O H


3 D V V Z R U G
```

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- -

2.12 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	]

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

```
5XLMLH FRQILJ HQDEOH SDVVZRUG SZ
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.13 enable secret

F å c Ó ’ ´ ð ¶ M Xož
enable secret [level level] { [0] password | 5 encrypted-secret }

í ” 6 ´ ð M Xož
no enable secret [level level]

o¬ @ ƒ ª ¢o-	@ ƒ	T

k Ë ß Š s U P z M X · À Y % ¥ ” ‘ kpassword M X … • % % ksecurity M X … ¶ %ož

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 V H F U H W S Z

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.14 enable service

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

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

o¬ @ ƒ ª ¢o-

2.15 exec-banner

¨ 6 line ¿ è M • ¬ t ª P EXEC U P ’ Î
exec-banner

W 2 ¨ 6 line ¿ è ª P EXEC U P ’ Î
no exec-banner

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ñ Ä ¿ è ¬ t EXEC U P ’ Î

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 kJ Y … ¥ x X no ¥ ” ¨ 6 ¿ è ¼ { EXEC y MOTD U P ’ Îož

a — s banner incoming 0.0013 T9M1Dre (-258 Tw 4.2f 0E20B1531B410A8D113>33D107870C2190FACB0511

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- -

2.17 help

ò 0 n © Ï %² ? • } ’ Îož
help

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- -

o¬ x X % ”o- ` ~ F å % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- … ¥ x X U Y ò 0 n © Ï %² ? • } ª ¢ k ¨ À } F å i kU Y *”?” Û ò 0 ¢ ù F å % ” ñ Ä x X ê î x X e ñ æ @ ƒ • ºož

o¬ F å †o- 1 y µ P † Q ª P%² ? n © Ï • } ’ Î y

```
5XLMLH KHOS
```

```
+HOS PD\ EH UHTXHVWHG DW DQ\ SRLQW LQ D FRPPDQG E\ HQWHULQJ
D TXHVWLRQ PDUN "  ,I QRWKLQJ PDWFKHV  WKH KHOS OLVW ZLOO
EH HPSW\ DQG \RX PXVW EDFNXS XQWLO HQWHULQJ D "  VKRZV WKH
DYDLODEOH RSWLRQV
7ZR VW\OHV RI KHOS DUH SURYLGHG
  )XOO KHOS LV DYDLODEOH ZKHQ \RX DUH UHDG\ WR HQWHU D
  FRPPDQG DUJXPHQW  H J  VKRZ "  DQG GHVFULEHV HDFK SRVVLEOH
  DUJXPHQW
  3DUWLDO KHOS LV SURYLGHG ZKHQ DQ DEEUHYLDWHG DUJXPHQW LV
  DQG \RX ZDQW WR NQRZ ZKDW DUJXPHQWV PDWFK WKH LQSXW
   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 LQWHUIDF
  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
```

```
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
PDF            0DF H[WHQGHG $&/
PDF DGGUHVV      6HW PDF DGGUHVV
PSOV           0XOWL 3URWRFRO /DEHO 6ZLWFKLQJ
PWX            6HW WKH LQWHUIDFH 0D[LPXP 7UDQVPLVVLRQ 8QLW  0
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
[FRQQHFW         ;FRQQHFW FRPPDQGV
```

3y µ P†ªPxXeµñæ @ƒ•ºy

```
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- -

2.18 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- -

2.19 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- -

2.20 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- -

2.21 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- -

2.22 login

¨ AAA ¼ { Õ Ñ k ¨ LINE

U

A

n

:

o

f

a

n

login local

H ƒ £ Î ª ï • šož
no login local

o¬ @ ƒ ª ¢o-	@ ƒ	T
	-	-

o¬ Þ . ™åo- -

o¬ x X % ”o- LINE ™å % ”

o¬ Þ . ´ ðo- 14

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

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

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.25 motd-banner

¨ 6 line ¿ è M • ¬ t ª P MOTD U P ’ Î
motd-banner

W 2 ¨ 6 line ¿ è ª P MOTD U P ’ Î
no motd-banner

o¬ @ ƒ ª ¢o-	@ ƒ	T
	-	-

o¬ Þ . F åo- ñ Ä ¿ è ¬ t MOTD U P ' Îož

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- -

2.26 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¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.28 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 — ¨

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.29 session

¨ VSU R g * ” — Õ h ê Ë µ k * session N ñ ’ ò á ê *ož
session { master | [device device-number] slot { m1 | m2 } }

¨ 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
slot { m1	m2 }	6 ’ ò á m1 ê m2

o¬ Þ . F åo- -

o¬ x X % ”o- ¯ * ï % ”

o¬ Þ . ´ ðo- 1

2.30 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-

'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•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- -

2.33 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

5XLMLH VKRZ UHORDG
6\VWHP UHORDG VWDWH :DUP

< † K y

<	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- -

2.34 show running-config

ò 0 ¢ ù — Õ © Ï 3 ¨ g F å ’ Î ê î N M F å ’ Îož

show running-config [interface interface]

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- -

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2.35 show service

ò 0 ¢ ù Æ • o ê ¼ { Õ Ñož

show service

o¬ @ ƒ ª ¢o-

@ ƒ	T

```
Z H E  V H U Y H U  K W W S V   G L V D E O H G
V Q P S  D J H Q W      H Q D E O H G
V V K  V H U Y H U      H Q D E O H G
W H O Q H W  V H U Y H U   G L V D E O H G
```

o¬ U P ' Îo- -

o¬ u V ª ¢o- -

2.36 show sessions

ª P] Æ • y Telnet Client † ? † ' Îož
show sessions

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % "o- ¯ * ï % "

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
```

[redacted]

o¬ Þ ZËÇo- "p‘¨¨÷ "Äp\ Š HfúÐ ` •ÕÂ P] Æ • y

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ ¨ NVRAM g ³ £ â Å š Ñ H ¥ ˜ h — Õ F å / startup-config — Õ o ž ü g F åož ¨ i H — Õ k

5 X L M L H F R Q I L J L I) D V W (W K H U Q H W

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2.39 speed

F å Ä € — Õ , äož
speed speed

Ê Ö Ä € — Õ , ä ó • F åož

o¬ @ ƒ ª ¢o-

@ ƒ	T
oob	* k Ù * ’ g%² " 6 * MGMT N M h i N ñ Telnet Æ ˜ k Q Ä ¨ — Õ À Õ MGMT ’ ò M ž ˜ õ k Ä ¥ # ¾
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 -
interface interface-name	6 Telnet ï € … › N M
via mgmt-name	6 Telnet ï € ¨ oob # ¾ ž … MGMT M

o¬ Þ . F åo- -

o¬ x X % ”o- ¯ * ï % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

o¬ F å †o- -

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.41 username

F å Î ª ï Ã Z Y C U # E•rŸP

username name [login mode { console | ssh ┼ c

telnet	' ò Ã Z £ • " telnetož
online amount number	F å Ã Z c ž ¨ ¿ ƒ Oož
permission oper-mode path	F å Ã Z + 6 † ^ q • Ó ' k op-mode n P q • % " k path n P • † ^ ê ñ) £ è ¬ož
privilege privilege-level	F å Ã Z Ó ' ´ ð k H › 8 0 ñ 15ož
reject remote-login	' ò … ¥ Ã Z g i £ož
web-auth	4 Ã Z Q 9 web • šož
pwd-modify	ª • … ¥ Ã Z web • š ï " w % A k ¥ # ¾ Q Ä ¨ F å 4 web-auth $ e õ U ož
nopassword	¥ Ã Z F å % Aož
password [0 | 7] text-string	F å Ã Z % A k0 n P ÿ µ ¢ † % A k7 n P ÿ µ % † % A k ó • ÿ µ ¢ † % Aož

o¬ Þ . F åo- -

o¬ x X % "o- ¶ B F å % "

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- ¥ x X 9 • y Î ª ï ƒ G € k ^ • š … ož

" ´ G ¦ A + ø 7 • Û & æ ¥ A 3) g ¡ Ý ô d

¹ (M G ¦ A + ø 7 d ¢ N Æ ã • ò % É ´ ¬ ¸ < ¦ A ¶ Ç — ¨ ì ' G ¦ A + ø 7 d

o¬ F å †o- 1 y µ P † F å%² ï d y M X k w Ç ï ´ ð 15 ´ y

```
5XLMLH FRQILJ XVHUQDPH WHVW SULYLOHJH SDVVZRUG SZ
```

2 y µ P † F å Ë web • š ï d y M X y

```
5XLMLH FRQILJ XVHUQDPH XVHU ZHE DXWK SDVVZRUG SZ
```

3 y µ P † F å ï test À Ä ñ Ä † ^ y) £ ¯ Ê Ó ' y

```
5XLMLH FRQILJ XVHUQDPH WHVW SHUPLVVLRQ UZ
```

4 y µ P † F å ï test " 4 config.text † ^ k ¿ † ^ y) £ À Ä ¯ o • Êo • ü g Ó ' y

```
5XLMLH FRQILJ XVHUQDPH WHVW SHUPLVVLRQ Q FRQILJ WH[W
5XLMLH FRQILJ XVHUQDPH WHVW SHUPLVVLRQ UZ[
```

o¬ à • co- -

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.42 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:

```
5XLMLH XVHUQDPH LPSRUW XVHU FVY
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.43 username export

ï ’ Î - ß ñ † ^ož
username export 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¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3 LINE

x X	•
access-class	* ACL ¡ gIPv4 h O ò Ä € £
accounting commands	• o line ¿ è x X t “ Ã
accounting exec	• o line ¿ è ï ˜	t “ Ã

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 VWI
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- -

3.3 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

o¬ Þ . F åo- ¼ { ¿ è “ Ã

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

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

o¬ F å †o- 1 y • o Vty 1 ¿ è ï ˜ | t “ Ã ož

```
5XLMLH FRQILJ  DDD QHZ PRGHO
5XLMLH FRQILJ  DDD DFFRXQWLQJ H[HF GHIDXOW VWDUW VWRS JURX
5XLMLH FRQILJ  OLQH YW\
5XLMLH FRQILJ OLQH  DFFRXQWLQJ H[HF GHIDXOW
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.4 authorization commands

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

H ƒ x X I Ó ož
no authorization commands level

o¬ @ ƒ ª ¢o-

@ ƒ	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
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- -

3.5 authorization exec

• o ¿ è Exec I Ó ož

authorization { 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

```
5XLMLH FRQILJ DDD QHZ PRGHO
5XLMLH FRQILJ DDD DXWKRUL]DWLRQ H[HF GHIDXOW JURXS UDGLXV
5XLMLH FRQILJ OLQH YW\
5XLMLH FRQILJ OLQH DXWKRUL]DWLRQ H[HF GHIDXOW
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.6 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

5 X L M L H F O H D U O L Q H Y W \

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.7 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
ascii-value	• • Ä € Æ N ½ p ASCII A + • ò › ‰H › 8 0-255ož

o¬ Þ . F åo- Þ . Õ Ñ k © Ï — å Ä € Æ N • • ½ p Ctrl+D k - < © 0x04 + • Á ` pož

o¬ x X % ”o- LINE F å % ”

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.9 exec

ª • line ¿ è. l!ÚÝ3Q9 g. Ãúõ2Ù1.ª7ãúÐd ( )Tj /C2_21 Tf 0 Tc T<6FAC0755093004927.22 -0.04 Td <04AA0A95>Tj /T

o¬ u V ª ¢o- -

3.10 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- -

3.11 length

— å 6 ¿ è Ä € % I Â Ý g ƒož

length screen-length

Ê Ö Þ . — åož
no length

@ 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
5 X L M L H F R Q I L J O L Q H O H Q J W K

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.12 line

µ ñ 6 LINE % ”ož
line [console | vty] first-line [last-line]

@ ƒ	T
console	O ò V Mož
vty	Z Ä € ¿ è k 9 Telnet ê SSH Nož
first-line	} µ first-line Ú Zož
last-line	} µ last-line Ú Zož

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y µ ñ LINE VTY 1 ñ 3 LINE % ”ož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.13 line vty

Í ¢ ù U Y … VTY N ƒ)ož

line vty line-number

× 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-

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.14 location

— å 6 ¿ è y å T ož
location location

Ê Ö © Ï Þ . — åož
no location

o¬ @ ƒ ª ¢o-

@ ƒ	T
location	¢ ù ¿ è y å T ož

o¬ Þ . F åo- -

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

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

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.15 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 SULYLOHJH OHYHO

o¬ à • co- -

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.17 refuse-message

F å line ¿ è ! Í £ U P ' Îož
refuse-message [c message c]

H ƒ line ¿ è ! Í £ U P ' Îož
no refuse-message

o¬ @ ƒ ª ¢o-

@ ƒ	T
c	! Í £ U P ' Î ã œ … k ! Í £ U P ' Î Ä • ª • ß ë • œ …ož
message	! Í £ 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 t ! Í £ — Õ ž k v M k U P ¢ ù ¿ è ! Í ï £ U P ' Îož

o¬ F å †o- 1 y F å line ¿ è ß £ U P ' Î ³ c ï ' ò £ i H — Õož

5XLMLH FRQILJ OLQH YDFDQW PHVVDJH # ³c ï ' ò £ i H — Õ #

o¬ à • co- -

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

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

+LVWRU\ LV HQDEOHG KLVWRU\ VL]H LV
7RWDO LQSXW E\WHV
7RWDO RXWSXW X„9LWH A D€ ` mL T•´" œ!' ` p 4... D •WKLDO R SÀ X,
```

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- -

3.21 show user

ª P ¿ è £ ï ’ Îož
show user [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 XVHU
/LQH 8VHU +RVW V ,GOH /RFDWLRQ

FRQ LGOH
YW\ LGOH
YW\ LGOH
```

2 y ª P ñ Ä ¿ è ï ’ Îož

```
5XLMLH FRQILJ VKRZ XVHU DOO
```

```
/LQH        8VHU        +RVW V        ,GOH        /RFDWLRQ

    FRQ                 LGOH
    YW\                 LGOH
    YW\                 LGOH
    YW\
    YW\
    YW\
    YW\
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

3.22 speed

— å 6 ¿ è Ä € f Ô äož
speed baudrate

Ê Ö Þ . — åož
no speed

o¬ @ ƒ ª ¢o-

@ ƒ	T
baudrate	f Ô ä › k H › 8 9600-115200ož

o¬ Þ . F åo- Þ . Õ Ñ k f Ô ä 9600ož

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

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- -

3.23 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- -

3.24 terminal history

¨ ¢ ù Ä € • o line ¿ è 7 W x X “ £ k ê ñ F å line ¿ è 7 W x X “ £ Ú) ƒož
terminal history [size size]

¨ ¢ ù Ä € H ƒ line ¿ è 7 W x X “ £ ož
terminal no history

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
size size	Ú) ƒ k H › 8 y0~256ož

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

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y — å ¢ ù Ä € line ¿ è 7 W “ £ Ú) ƒ 20ož

5 X L M L H W H U P L Q D O K L V W R U \ V L] H

2 y ¼ { ¢ ù Ä € line ¿ è 7 W “ £ ož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

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

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y — å ¢ ù Ä € % I Â Ý g ƒ 10 gož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.26 terminal location

— å ¢ ù Ä € y å T ož

terminal location location

Ê Ö ¢ ù Ä € © Ï Þ . — åož

terminal 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 ¢ ù Ä € y å T Swtich’s Line Vty 0ož

5 X L M L H W H U P L Q D O O R F D W H R Q W 6 Z W L F K

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.27 terminal speed

— å ¢ ù Ä € f Ô äož
terminal speed baudrate

Ê Ö Þ . — åož
terminal no speed

o¬ @ ƒ ª ¢o-

@ ƒ	T
baudrate	f Ô ä › k H › 8 9600-115200ož

o¬ Þ . F åo- Þ . Õ Ñ k f Ô ä 9600ož

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14 1 -

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- -

3.29 timeout login

— å line ¿ 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  O R J L Q  W L P H R X W  U H V S R Q V H
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3.30 transport input

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- -

3.32 width

-0.01 1 Tf 8 -0.033 Td 1

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

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

5 X L M L H F R Q I L J O L Q H Z L G W K

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4 File System

x X	•
cd	¾ w ¢ ù è ¬ ê ñ † ^ © Ï
copy	¨ † ^ © Ï • / ¾ † ^
delete	í ”%² † ^
dir	ª P%² † ^ © Ï † ^ ç n
erase	s ” Z Ä † ^ © Ï — Õ ê † ^
file	ª P%² † ^ ’ Î

o¬ à • co- * cd y pwd x X Û w J y ò 0 ¢ ù W • è ¬ož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.2 copy

¨ † ^ © Ï • / ¾ † ^ož

copy src-url dst-url

o¬ @ ƒ ª ¢o-

@ ƒ	T
src-url	/ ¾ • › † ^ URLož › † ^ U Y ¨ Î ª ê ñ ¨ iož
dst-url	/ ¾ •) † ^ URLož) † ^ U Y ¨ Î ª ê iož

/ ¾ $•) 4¢D/ h¸3E ÐÀ! €³ >Ñ €Ü@• G $n" ´ 0ÃL Ð 0`Ðb! g þ AÀò…DiA ¨ 3˜ à

s -

o¬ o • j ¨o-

o¬ à • co- * copy y dir x X Û / ¾ y ª P † ^ ’ Îož

o¬ U P ’ Îo- -

o¬ o • j ¨o- ñ 6 / ¾ › † ^ ©) £ k) £ © — c / ¾ ož

o¬ u V ª ¢o- -

4.3 delete

í ”%² † ^ož

delete [filesystem :] file-url [/force | /recursive]

o¬ @ ƒ ª ¢o-

@ ƒ	T
filesystem:	† ^ © Ï url k e µ %² È Z k U † ^ © Ï , yflash: , usb: , 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
/force	ò í ” † ^ k ˆ - ï G •
/recursive	' ¡ í ”%²) £ ñ Ä † ^ k ,) £ Î ï

o¬ Þ . F åo- ó • † ^ © Ï © flash :ož

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

o¬ F å †o- 1 y í ” flash M & † ^ fstab y

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

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

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

< † K y

<	ª ¢
1o•2o•3. ožožož	« – Z
-rw-	Ó ' k%² † ^ U Y Ä µ ` Þ ¾ y d y n ¢ ©%²) £ r y U ¯ w y U Ê x y U ü g
10485760	† ^ Ý 4
rpmdb	† ^ d
files	† ^ ƒ) Ï ‹
directories	) £ ƒ) Ï ‹
total	È Ý 4
free	þ • U q •

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-

o¬ ... 6 -o- -

o¬ F å †o- 1 y s ” usb † ^ © Ï y

```
5XLMLH HUDVH XVE
6XUH WR HUDVH XVE " >< 1@ \
(UDVLQJ GLVN XVE
(UDVH GLVN XVE GRQH
```

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: , , usb: , 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- 1

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<
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- 1

o¬ … 6 -o- -

o¬ F å †o- 1 y “ w † ^ U P ´ ð noisy % ” y

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.8 mkdir

ë •%² •) £ož

mkdir [filesystem:] directory

o¬ @ ƒ ª ¢o-

@ ƒ	T ïU#`p@$ nû [illegible]

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

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 re W* n q 0 841.98 E7(<4D>Tj /TT0 1 0 1 0 1 0 1B96>-7<069420417078904C40620>Tj

o¬ Þ . F åo- -

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

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- 1

o¬ … 6 -o- -

o¬ F å †o- 1 y 1 flash M & ÿ) £ fstab

```
5XLMLH UHQDPH IODVK  IVWDE IODVK  QHZ IVWDE
5HQDPHG ILOH IODVK  QHZ IVWDE
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 ke µ %² È Z kU † ^ © Ï , y flash: ,, usb: ,, tmp: ož
directory	

o¬ Þ . F åo- ó • † ^ © Ï © flash: ož

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

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
   GUZ             -DQ              QHZGLU
  ILOHV    GLUHFWRULHV
```

```
        E\WHV WRWDO          E\WHV IUHH
5XLMLH UPGLU QHZGLU
UHPRYHG GLU IODVK  QHZGLU
5XLMLH GLU
'LUHFWRU\ RI IODVK
    UZ            -DQ              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- -

4.13 show file systems

ª P † ^ © Ï , ¼ ’ Îož

show file systems

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o-

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
      1$           1$    QHWZRUN     UZ  RREBWIWS
      1$           1$     [PRGHP     UZ  [PRGHP
                           GLVN     UZ  IODVK
                           GLVN     UZ  XVE
```

< † 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- -

4.14 show mount

ª P © Ï 5 ú ' Îož

show mount

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o-

o¬ Þ . ´ ðo- 1

o¬ ... 6 -o- -

o¬ F å †o- 1 y ª P © Ï 5 ú ' Î y

```
5XLMLH VKRZ PRXQW

SURF RO  SURF W\SH SURF  UZ ORHÍHF ORVXLG ORGHY
```

^ 0 À 0

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- -

4.15 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: , usb: , usb:

-ET 0.75 g 115.44 707755 TcTf 0 TBF7 m8D0

```
    PRGXOH
ƒ     HFKR NR
ƒ     HFKR PRG F
ƒ     HFKR PRG R
ƒ     HFKRBPRGXOH F
ƒ     HFKRBPRGXOH R
ƒ     HFKR R
ƒ     HFKRBVHUYHU F
ƒ     HFKRBVHUYHU R
ƒ     HFKRBV\VIV F
ƒ     HFKRBV\VIV K
ƒ     HFKRBV\VIV R
ƒ     0DNHILOH
ƒ     PRGXOHV RUGHU
ƒ     0RGXOH V\PYHUV
ƒ     PVJBIG F
ƒ     PVJBIG R
    UHDGPH
    VHUYHUBPRGXOH
    VHUYHUBXVHUVSDFH
    V\VBUJRV NR
    XVHUBVSDFH
        HFKRBVHUYHU F
        HFKRBVHUYHU R
        0DNHILOH
        PVJBIG F
        PVJBIG R          E\WHV WRWDO          E\WHV IUHH
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.16 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: , usb: , 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- 1

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 PQW 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- -

4.17 show disk

B H usb ’ Î

show disk usb/flash

o¬ @ ƒ ª ¢o-

@ ƒ	T
usb	B H usb ’ Î
flash	B H I O D ŸÎK

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ ... 6 -o-

o¬ F å †o- 1 y ò 0 usb ’ Î y

```
5XLMLH VKRZ GLVN XVE
'LVN GHY VGE 0% E\WHV
KHDGV VHFWRUV WUDFN F\OLQGHUV
8QLWV F\OLQGHUV RI E\WHV
```

2 y ò 0 flash ’ Î y

Ruijie#show disk flash

Nand flash size: 512MB

Nor flash size: 1MB

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

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 @ ƒ ož t . @ ƒ k © Ï ¢ ù — å ›ož † ò k ¢ ù F ^ ž • 2012-02-29 09:33:44 k Q w Ã a y 4 ž k ò ¿ ‘ 4 J k U ÿ µ x X calendar set 12 5 k é ¢ ù ž • J 2012-05-29 12:33:44 ož

2. ò ç ÿ µ day @ ƒ ¨ 1~31 Ä k x ¥ Ã ¨ %² Þ k é ™ Ê k ª e P ‘ož † ò k2012 v 2 Ã » 29 Þ k 3 — å 4 ™ Ê 2 Ã 31 ™ kcalendar set 11:30 2 31 2012 k é © Ï k ó • ª e Þ k ¢ ù F ^ ž • é 2012-03-02 11:30:23 ož

• " , Ä ÷ Ñ ¨ · ‡ i ò UTC ¨ · — , Ä (Ñ ¨ · ¾ • • ‡ ¨ · d

• • } vsd0 • ì n ¨ a — â [• vsd d

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

```
5XLMLH FDOHQGDU VHW
        87& )UL -XO
```

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

```
5XLMLH FDOHQGDU VHW
        87& )UL -XO
```

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

```
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- 1

o¬ … 6 -o- Q Ä — Õ ¨ vsd0 õ À Ä ¥ Ú x X k u 4 Ú vsdož
* ¥ 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- 1

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

2. 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

Q Ä — Õ ¨ vsd0 õ À Ä ¥ Ú x X k u 4 Ú vsdož

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 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- -

5.4 clock summer-time

— å × X žož

clock summer-time zone start start-month [week|last] start-date hh:mm end end-month [week| last] end-date hh:mm [ahead hours-offset [minutes-offset]

¼ { × X žož

no clock summer-time

o¬ @ ƒ ª ¢o-

@ ƒ	T
zone	× X ž d f k Q [A~Z][a~z] k Ý 4 Ê — ’ òož d x † 3~31ož
start	× X ž ÿ | Ü ÷ ž • ¼ p
start-month	Ü ÷ Ã a kH › 8 y Januaryo•Februaryo•Marcho•Aprilo•Mayo•Juneo•Julyo•Augusto•Septembero•Octobero•Novembero•Decemberož Ý 4 Ê ’ ò k - U ÿ µ … % Ÿ k ò yFebr o•FebRu ˆož
week	Ü ÷ Ã a Ü ÷ ¤ Ê ƒož H › 8 1~5ož
last	6 î Ã Â e ¤ Êož
start-date	Ü ÷ Ã a Ü ÷ ¤ Ê ¤ Ê Ù k H › 8 ySunday o•Mondayo•Tuesdayo•

	Wednesdayo•Thursdayo•Fridayo•Saturdayož Ý 4 Ê ’ ò k - U ÿ µ … % Ÿož A ò yWedo•WeDne ˆož
hh:mm	ž • k 4 žo• ã Uož
end	× X ž ÿ	È Ø ž • ¼ p
end-month	È Ø Ã a kH › 8 y Januaryo•Februaryo•Marcho•Aprilo•Mayo•Juneo•Julyo• Augusto•Septembero•Octobero•Novembero•Decemberož Ý 4 Ê ’ ò k - U ÿ µ … % Ÿ k ò yFebr o•FebRu ˆož
ahead	× X ž ÿ	Ê • k × X ž ž • A ö Õ ž • ½ Ú 5 ž • ¼ p ožož 3 — å k é ó • ½ 1 4 žož
hours-offset	A ö Õ ž • U ù 4 ž ƒožH › 8 0~12ož ª • × X ž U ù ž • — å 00:00ož
minutes-offset	A ö Õ ž • U ù ã U ƒož 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- 1

o¬ … 6 -o-

Q Ä — Õ ¨ vsd0 õ À Ä ¥ Ú x X k u 4 Ú vsdož

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 01:20ožé × 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 0
 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 0
 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
WKH ODVW 6XQGD\ DW     DKHDG  KRXU
6HW VXPPHU WLPH 3'7 IURP $SULO WKH VW 6XQGD\ DW     72 2FWREH
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 ƙ H › 8 [-12, 12] k ¿ ƒ n P A F ^ ž • ã k 3 ƒ n P A F ^ ž • ½ož

/ ‘ UTC

o¬ Þ . F åo- -

o¬ x X % ”o- F å % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- Q Ä — Õ ¨ vsd0 õ À Ä ¥ Ú x X k u 4 Ú vsdož

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

```
[illegible]
```

o¬ Þ . ´ ðo- 1

o¬ ... 6 -o- Q Ä — Õ ¨ vsd0 õ À Ä ¥ Ú x X k u 4 Ú vsdož
* ¥ x X k © Ï k ÿ G — Õ ž o• × X ž — å Õ Ñ k 1 ¢ ù ÷ ^ © Ï ž • ÿ è , • F ^ ž •ož

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

5 X L M L H F O R F N X S G D W H F D O H Q G D U
6 H W W K H K D U G Z D U H W L P H I U R P W K H V \ V W H P F O R F N

2 y — å F ^ ž • k ž — å GMT+5:10 k — × X ž — å k / F ^ ž • A ÷ ^ ž • ã 5:10ož

5 X L M L H F O R F N X S G D W H F D O H Q G D U
˜Vr V 0 W)H P• 2 SÊêâ”• – w0• 5H1(p 0 à6

5 X L M L H V K U Z F D O H Q G D U

3 y — å F ^ ž • k 3 ž • — å GMT+5:10 k × X ž — å R 2 Ã 1 ™ †1 ¤ Ê%² 6 Ã 1 ™ †2 ¤ Ê ™ •Ý, ¤ Êvsd

no cpu high-watermark set

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
high high-value	— åCPU … ä Â ä J ¿ k H › 8 2~99ož
range range-value	— å J ¿ f 8 k H › 8 1~20ož

o¬ Þ . F åo- CPU J ¿ ó • › 80% k f 8 5% g / 75%~85% hož

o¬ x X % ”o- F å % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- Q Ä — Õ ¨ vsd0 õ À Ä ¥ Ú x X k u 4 Ú vsdož
* — 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
VHW V\VWHP FSX ZDWHUPDUN KLJK a
```

2 y ¼ { CPU J ¿ ! Oož

```
5XLMLH FRQILJ QR FSX KLJK ZDWHUPDUN VHW
&ORVH FSX ZDWHUPDUN PRQLWRU
```

3 y • o ! O k J ¿ › ‘ 4 ¼ { ù] — å ›ož

```
5XLMLH FRQILJ FSX KLJK ZDWHUPDUN VHW
2SHQ FSX ZDWHUPDUN PRQLWRU
VHW V\VWHP FSX ZDWHUPDUN KLJK a
```

4 y • o ! O k w — å Â ä J ¿ › 88%o• f 8 3%ož

```
5XLMLH FRQILJ FSX KLJK ZDWHUPDUN VHW KLJK UDQJH
2SHQ FSX ZDWHUPDUN PRQLWRU
VHW V\VWHP FSX ZDWHUPDUN KLJK a
```

4 ž k — å 4 ä J ¿ › 88% k ä J ¿ ’ › 91% g88%+3% h k ’ › 85% g88%-3% hož

o¬ à • co- -

o¬ U P ’ Îo- ò ç CPU … ä Â ä J ¿ ª • f 8 © 85%~91% k ¢ CPU … ä Ý Â ä J ¿ ’ › ž k k ø - ò
Š ’ Î y

```
-DQ 5*B6<6021 &38B:$7(50$5.B+,*+ ZDUQLQJ V\VWHP FSX
```

```
ZDWHUPDUN      FXUUHQW FSX XVDJH
¢ CPU ... ä z 9 Â ä J ¿ '› ž k k ø - ò † " Š ' Î y
 - D Q          5 * B 6 < 6 0 2 1    & 3 8 B : $ 7 ( 5 0 $ 5 . Z L W K G U D Z Z D U Q L Q J V \ V W H
ZDWHUPDUN      FXUUHQW FSX XVDJH
```

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

5.8 memory low-watermark set

F å Ä z J ¿ f 9 › w • o y ož
memory low-watermark set mem-value

¼ { Ä z J ¿ y ož
no memory low-watermark set

o¬ @ ƒ ª ¢o-

@ ƒ	T
mem-value	Ä J ¿ f 9 › k H › 8 1~4294967295 k % y kož

o¬ Þ . F åo- Þ . ¼ { Ä z J ¿ y ož

o¬ x X % "o- ¶ B % "

o¬ Þ . ´ ðo- 1

o¬ ... 6 -o- • o Ä z J ¿ y k w — å Ä J ¿ f 9 › ož ¢ © Ï Ä z 9 f 9 › k 1 ø - U P ' Îož

o¬ F å †o- 1 y F å Ä z J ¿ f 9 › 500000k 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
```

o¬ à • co- -

o¬ U P ' Îo- ¢ © Ï Ä z 9 — å J ¿ › g ò — å 500000k h ž k k ø - ò ' Î y

```
5 X L M L H F R Q I L J ! - D Q V \ V O R J ) U H H 0 H P R U \ K D V G U R S S H G
```

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

5.9 memory history clear

Ž " Ä ... " £ 7 W Ú)ož

memory history clear [one-forth | half | all]

o¬ @ ƒ ª ¢o-

@ ƒ	T
one-forth	Ž ” š ã $%² Ú)ož
half	Ž ”%² ! Ú)ož
all	Ž ” ¶ B Ú)ož

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B % ”

o¬ Þ . ´ ðo- 1

o¬ Þ1- <t Mq(Œt 3Ü w=o¬ x ÿž ` Ç@p ,Pi@

&OHDU GRQH

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

5.11 show calendar

ª P © Ï F ^ ž •ož

show calendar

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ” ê ¶ B % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

o¬ F å †o- 1 y ª P © Ï F ^ ž •ož

```
5XLMLH VKRZ FDOHQGDU
*07 6XQ )HE
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

5.12 show clock

ª P © Ï ÷ ^ ž •ož

show clock

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ” ê ¶ B % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

o¬ F å †o- 1 y ¢ ¼ { ž — å ž k ª P © Ï ÷ ^ ž •ož

```
5XLMLH VKRZ FORFN
87& 7XH 'HF
```

2 y ¢ • o ž — å k ª P © Ï ÷ ^ ž •ož

```
5XLMLH VKRZ FORFN
76= :HG )HE
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

5.13 show memory

ª P Ä , ¼ ’ Îož

show memory [sorted total | history | low-watermark | process-id | process-name]

o¬ @ ƒ ª ¢o-

@ ƒ	T
sorted total	ÿ G Ä … O Û L ~
history	ª P Ä … Õ Ñ 7 W “ £
low-watermark	ª P © Ï Ä z J ¿ ›

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

```
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- -

5.15 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- 1

Process	` df Â Ú Q ª P ù 15 ... k Ý ... k t ì •

3 y 7 ` ID Z ~ L ç k w Q ª P 15 ã U Ä CPU ï ä ³ © ¿ i ' Î.

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

4 y 7 ¨ 5 a U Ä CPU ï ä ' ~ L ç k w ª P 1sec Ä CPU ï ä © ` ' Îož

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

5 y Y + • £ • " ª P © Ï O ò þ cpu ï ä k ¨ > 60 a U k 60 ã Uo• 72 4 ž Ä ... Õ Ñ ' Îož

¿ k †%² £ n 300 a Ä k © Ï O ò þ cpu ï ä Õ Ñ k & ± ö ?%² 4 5 a k º ± ö ? 5% k

* n P Â î a ž cpu ï ä › k / & ± ö Â ´ 0 †%² ö Â 5 a cpu ï ä › k % y

%ož

†8 £ n k Â 60 ã U Ä k © Ï O ò þ cpu ï ä › k % y % k & ± ö ?%² 4 1 ã Uož

† £ n k Â 72 4 ž Ä k © Ï O ò þ cpu ï ä › k % y % k & ± ö ?%² 4 1 4 žož

P † ò y

5 X L M L H V K R Z S U R F H V V H V F S X K L V W R U \

```
                V\VWHP FSX SHUFHQW XVDJH   >ODVW   VHFRQG@
    B
    –
    –
    –
    –
    –
    –
    –
    –
    –
    –
    –
    –
    –
    ––––––––––
    ––––––––––
    ––––––––––––
    ––––––––––––
    ––––––––––––
    ––––––––––––
    ––––––––––––
    ––––––––––––––––––––––––––
                              !
                              VHFRQG
       V\VWHP FSX SHUFHQW XVDJH   SHU  VHFRQG  ODVW   VHFRQG
```

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

6 y Y n • ” ª P © 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@

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

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

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

_ _ _ _ _ _ _ _ _ _ _ _

_ _ _ _ _ _ _R _ 0 P `Rl• S‡ $ _0 0 P ‘ 0_

```
2Q &38
3ULRULW\
$JH 7LPH
```

5.17 show usb-bus

ª P 5 ¨ USB È ¿ — Õ , ¼ ' Îož

show usb-bus

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ” ê ¶ B % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

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

```
5XLMLH VKRZ XVE EXV
'HYLFH /LQX[ )RXQGDWLRQ URRW KXE
%XV 'HYLFH ,' G E
```

o¬ U P ' Îo- -

o¬ u V ª ¢o- -

5.18 show version

ª P © Ï Í Î ' Î

show version

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ” ê ¶ B % ”

o¬ Þ . ´ ðo- 1

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- -

5.19 show cpu

ª P © Ï ` ¨ O ò þ ³ Z ' þ ' Îož

show cpu

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ” ê ¶ B % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- Q Ä — Õ ¨ vsd0 õ À Ä ¥ Ú x X k u 4 Ú vsdož

ò ç © Ï ¨ Z ' þ k ¬ } ò 0 Z ' þ cpu ï ä ' Î k @ • show processes cpu , ¼ x Xož

o¬ F å †o- 1 y ª P © Ï ` ¨ O ò þ ³ Z ' þ ' Îož

```
5XLMLH VKRZ FSX

&38 8VLQJ 5DWH ,QIRUPDWLRQ

&38 XWLOL]DWLRQ LQ RQH PLQXWH
```

6 TIME RANGE

x X	•
absolute	— å Í + ž • •
periodic	— å u Ê ž •
show time-range	ª P time range ’ Î
time-range	ë • time range k w µ time range F å % ”

6.1 absolute

— å Í + ž • •ož

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

í ”] ¨ Í + ž • •ož

no absolute

o¬ @ ƒ ª ¢o- @ ƒ

o¬ u V ª ¢o- -

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
no time-range time-range-name

o¬ @ ƒ ª ¢o-

@ ƒ	T
time-range-name	} ë • time range d ož

o¬ Þ . F åo- Z Ä F å time range

o¬ x X % ”o- ¶ B % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- Ä ? • g † ò ACL h U Â 9 ž • g k A ò • ACL ¨%² ¤ Ê î ? ž • < Ä ÿ | ˆož 4 ñ } L k · À Ù ¯ F å%² time rangeož ë • time range $ e k U Y ¨ time range % ” F å , • ž • O òož

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 USB

x X	•
show usb	ò 0 © Ï] V µ USB — Õ ’ Îož
usb remove	g ” USB — Õož

7.1 show usb

ò 0] V µ USB — Õ ’ Îož
show usb

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- ò ç Ä USB — Õ k é ª P — Õ ’ Î k k é — ÿ ßož ò ç U & + N V ¨ — Õ USB € M k show usb ª P ID ” X k ¿ X © ƒ k n P USB € M Z z ò ç U & N ¨ HUB k HUB V ¨ — Õ USB € M k show usb ª P ID ” X-Y k ¿ Xo•Y C © ƒ k X n P — Õ USB € M Z kY n P HUB $ Zož

o¬ F å †o- 1 y + N 1 U & V ¨ — Õ USB € M k µ © ª P USB ’ Î y

```
5XLMLH  VKRZ XVE
'HYLFH  0DVV 6WRUDJH
,'
85/ SUHIL[ XVE
'LVN 3DUWLWLRQV
XVE  W\SH )$7
6L]H          %    0%
$YDLODEOH VL]Hy       %    0%

'HYLFH  0DVV 6WRUDJH
,'
85/ SUHIL[ XVE
'LVN 3DUWLWLRQV
XVE  W\SH )$7
6L]H          %    0%
$YDLODEOH VL]Hy       %    0%
```

< † K y

<	ª ¢

Size	n P U & U ˜ | q •ož
Available size	n P U & þ • q •ož

2 yU & V ¨ HUB € M kHUB V ¨ — Õ USB € M k µ © ª P USB ' Î y

```
5XLMLH VKRZ XVE
'HYLFH 0DVV 6WRUDJH
,'
85/ SUHIL[ XVE
'LVN 3DUWLWLRQV
XVE W\SH YIDW
6L]H % 0%
$YDLODEOH VL]H % 0%

'HYLFH 0DVV 6WRUDJH
,'
85/ SUHIL[ XVE
'LVN 3DUWLWLRQV
XVE W\SH YIDW
6L]H % 0%
$YDLODEOH VL]H % 0%
```

< † K y

<	ª ¢
ID	— Õ Zož0 n P — Õ 0 Z USB € M k3 o•4 n P HUB V $ Zož
URL prefix	n P ¥ U & ˜ | ù Öož
Size	n P U & U ˜ | q •ož
Available size	n P U & þ • q •ož

o¬ U P ' Îo- -

o¬ u V ª ¢o- -

7.2 usb remove

g " USB — Õož

usb remove device-id

o¬ @ ƒ ª ¢o-

@ ƒ	T
device-id	— Õ Z k © USB ª P ' Î ID Zož ¥ — Õ Z U Y * show usb Û B Hož

o¬ x X % "o- Ô Ó % "

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- ¨ # ß USB — Õ $ ù k ¬ } x X g ” — Õ k Y … © Ï 3 ¨ … — Õ ò - j ¨ož ò ç — Õ g ” è k © Ï k ø - ß U P k ž • U # ß — Õož ò ç g ” â Â k ª ¢ ¥ ž ö © Ï Ä … ¥ USB — Õ k é À ˆ -%² k Ç ü g g ” q •ož

o¬ F å †o- 1 y µ g ” µ † ÿ ñ P USB — Õ y

```
5XLMLH XVE UHPRYH
2. QRZ \RX FDQ SXOO RXW WKH GHYLFH
```

ž ˜ < U Y 1 USB — Õ # ß 4ož

o¬ à • co- x X ü g è e kshow usb 1 0 ñ usb — Õ , ¼ ’ Îož 3 x X ü g â Â kshow usb U Y 0 ñ usb — Õ , ¼ ’ Îož

o¬ U P ’ Îo- 1. ü g 4 3 ú x X e k ò ç ü g è k © Ï k ø - ß ò ’ Î y

```
2. QRZ \RX FDQ SXOO RXW WKH GHYLFH
```

2. ü g 4 3 ú x X e k ò ç ü g â Â k © Ï k ø - ß ò ’ Î y

```
'HYLFH LV EXV\ QRZ WU\ DJDLQ IHZ PLQXWHV ODWHU
```

o¬ o • j ¨o- ø - Device is busy now, try again few minutes later. ª ¢ — Õ 3 ¨ t … k ¬ ¯ ¼ { ñ Ä … — Õ q •ož A • ª $ ù cd usb0:/ q • e k Z Ä ß k ü g usb remove 0 ž < k U P â Â k ž ¬ ü g cd flash:/ q • k 1 ¢ ù è ¬ ä E ñ flash k À e Ç ü g usb remove 0ož

o¬ u V ª ¢o- -

8 ±Cã 7

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- -

8.3 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• ¿ * k ? B ^ ª P ’ Î , Ú Zo• V $ Zo• d fo• ~ ç Zo• ÷ F ^ Í Î Zo• MAC ª - ˆ k ? _ —
Õ Ž u 4 B H ’ Î ¶%² ý k N ø - Ž u 4 ’ Îož
show manuinfo

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
5 X L M L H V K R Z P D Q X L Q I R
' H Y L F H

```
   /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                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
```

† 2yVSU %” ÏD’ÎªPò 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                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
'HYLFH 4'   /RFDWLRQ   C#      YLFH 4   'HYLFH QDPHm     ERhA”° œ! • 9d€ P

'HYLFH


   '`  E&   ù ‘" Ur@@ 0
```

```
   '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- -

8.4 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

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 ¦ Â ’ Îož

o¬ F å †o-

o¬ U P ’ Îo-

```
ò 0 V ¨ V $        % ²  ¦ Â ’ Î
5 X L M L H   V K R Z  Y H U V L R Q  P R G X O H  G H W D L O
' H Y L F H
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- -

8.6 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
5XLMLH  VKRZ YHUVLRQ VORWV
'HY  6ORW  3RUW &RQILJXUHG 0RGXOH  2QOLQH 0RGXOH   6RIWZDU

            QRQH            QRQH            QRQH
            0     6)3  *7   0     6)3  *7   QRQH
            0    ;)3       0    ;)3       FDQQRW VWDUWXS
            0     *7  6)3   0     *7  6)3   RN
    0        1 $            0    &0        PDVWHU
    0        1 $           QRQH            QRQH
```

o¬ u V ª ¢o- -

9 a Â Â È ~

x X	•
auto-sync time-period	F å E ' ò á É • ž c 5 F å † ^ ž • • œož
redundancy	µ É • F å % ”ož
redundancy forceswitch	ô W ü g R ä Eož
redundancy reload	Ö y ' ò áož
show redundancy states	ª P ¢ ù E ' ò á É • Ù Áož

9.1 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 hož

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- -

9.2 redundancy

µ É • F å % "ož
redundancy

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- -

o¬ x X % "o- ¶ B F å % "

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y µ É • F å % "ož

```
5XLMLH FRQILJ WHUPLQDO
5XLMLH FRQILJ UHGXQGDQF\
5XLMLH FRQILJ UHG H[LW
```

o¬ à • co- -

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.3 redundancy forceswitch

ô W ü g R ä Eož
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

o¬ F å †o- 1 y g R ä Eož

```
5XLMLH UHGXQGDQF\ IRUFHVZLWFK
7KLV RSHUDWLRQ ZLOO UHORDG WKH PDVWHUXQLW DQG IRUFH VZLWF
WR FRQWLQXH" >1 \@ \
```

o¬ U P ’ Îo-

```
y ò ç ä E ž k R ’ ò á ¨ k é U P R ’ ò á Ì < Ñož
 5HGXQGDQF\ 6ZLWFKRYHU 5HTXHVW FDQ RQO\ WDNH HIIHFW ZKLOH
```

o¬ u V ª ¢o- -

9.4 redundancy reload

Ö y ’ ò áož
redundancy reload { peer | shelf [switchid]}

o¬ @ ƒ ª ¢o-

@ ƒ	T
peer	N Ö y R ’ ò á
shelf	% Ñ % ” + R ’ ò á C g Ö y zVSU % ” ¬ 6 - Ö y — Õ Z
switchid	VSU — Õ Z kVSU % ” u 4 ¥ @ ƒ ož õ ô } æ o f ´ • â [} VSU f ´ • redundancy reloadshelf a — / ¡ Û & d

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 zVSU % ” 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 yož

o¬ F å †o- 1 y N Ö y R ’ ò áož

5 X L M L H U H G X Q G D Q F \ U H O R D G S H H U
7 K L V R S H U D W L R Q Z L O O U H O R D G W K H F X U U H Q W V O D Y H X Q L W $ U H \ R X
3 U H S D U L Q J W R U H O R D G S H H U
y 9 6 8% ” k Ö y Ú Z — Õož
5 X L M L H U H G X Q G D Q F \ U H O R D G V K H O I
7 K L V R S H U D W L R Q Z L O O U H O R D G W K H G H Y L F H $ U H \ R X V X U H W R F R
3 U H S D U L Q J W R U H O R D G G H Y L F H

o¬ U P ’ Îo- 1 y ò ç N ¨ % ’ ò á é Ö y R ’ ò á â Âož

3 U L Y L O R O • 0 • rq â Í † ƒ y ò ç "RxQ$„’>û • 0 • rq â À P ‡ 0 p Œ s ù S U U H W Sï¼ O U • û H Y C $

```
5XLMLH! HQDEOH
5XLMLH VKRZ UHGXQGDQF\ VWDWHV
5HGXQGDQF\ UROH FDQGLGDWH
5HGXQGDQF\ VWDWH QRQH
```

4 y < † K y

<	ª ¢
role	Î ’ ò á …)
state	Î ’ ò á Ù Á
Auto-sync time-period	N ¨ ’ ò á ª P k F å † ^ c 5 ž • • œ k ò ç ª P disabled k n P ž c 5

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

10 x ž z ¹

x X	•
clear logging	Ž ” Ä Ù Ï ™ º ’ Î
logging	1 ™ º “ £ ñ 6 syslog server
logging buffered	— å “ £ ™ º ’ Î Ä Ù Ï @ ƒ g ™ º ’ Î M Åo• Ù Ï Ý 4 hož
logging console	

terminal monitor	ª • ¨ ¢ ù VTY v M ª P ™ º ’ Î

10.1 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

o¬ … 6 -o- ¥ x X Q Ž ” Ä Ù Ï ™ º † Ä ož Ž ” ™ º † Ï ‹ ’ Îož

o¬ F å †o- 1 y µ P † Ž ” Ä Ù Ï ™ º † Ä ož
5 X L M L H F O H D U O R J J L Q J

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

10.2 logging

1 ™ º “ £ ñ 6 Syslog Serverož
logging { ip-address } [udp-prot port]

í ” Syslog Server ç n 6 ª - Syslog Serverož
no logging { ip-address }

Ê Ö ™ º G Syslog Server ó • € M Z g514 hož
no logging { ip-address } udp-prot

o¬ @ ƒ ª ¢o-

@ ƒ	T
ip-address	N v ™ º ’ Î Ñ IP ª -
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

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- -

10.6 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 h z
¨ Z Ä • o RFC5424 ™ º ” Õ Ñ k — Õ › Þ . 23 gLocal7 k Local use hož

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 ´ hož
‹ ‘ ß Û e ™ º i ¯ ´ 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

u 4 k w V µ ý J USB — Õ

10.8 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

¶ B F Z„Ï o là—•RðL L Ap 7 ˆ ðÃG0Ð1 ESH †ùàyðžê •˜ Êe k õDk •L€'•y•k I là—•RðL @ Sq(€ 4s † ^ ož{ I là—•

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 hož
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- -

10.10 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- ▌ ▌

o¬ ... 6 -o- ï F å 4 ™ º ¡ e k * o Õ Ñ k k Ý } 1 F ¡ • é e ™ º ' Î k ¨ ñ Ä • g C ¡ J g
, y Console • go• VTY Ä € o• ™ º Ù Ï o• ™ º † ^ o• ™ º Æ ˜ h k ò î ? Õ Ñ k ï U Q Ý ¡ ª
Ô • g ™ º ' Î k A ò y ¡ J ™ º ' Î ¬ } ñ Ä € µ k x ¬ } Ê µ ñ ™ º † ^ k ê G Ë ™ º '
Î ˜ k Q ¬ } F å ¡ ª terminal • g ™ º ' Îož

o¬ F å †o- 1 y µ † ÿ k ê G Ë ™ º '
Î ˜ k Q ¬ } F å ¡ ª

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

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

10.12 logging filter rule

F å ™ º ’ Î ¡ • éož

logging filter rule { exact-match module module-name mnemonic mnemonic-name level level | single-match [level level | mnemonic mnemonic-name | module module-name] }

í ” ™ º ’ Î ¤ G F ¡ • éož

no logging filter rule exact-match [module module-name mnemonic mnemonic-name level level]

í ” ™ º ’ Î % F ¡ • éož

no logging filter rule single-match [level level | mnemonic mnemonic-name | module module-name]

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
exact-match	¤ G F k 3 # + ¤ G F k é e µ ¡ # ¾ C ¬ } Ê Êož
single-match	% F k3 # + % F ké e µ ¡ # ¾ Q ¬ } Ê Ê ¿ %² ož
module module-name	% ² d k / Ê Ê } ¡ % ² d fož
mnemonic mnemonic-name	“ … d f k / Ê Ê } ¡ ™ º ’ Î “ … d fož
level level	™ º ’ Î ˆ ´ k / Ê Ê } ¡ ™ º ’ Î ˆ ´ ož

o¬ Þ . F åo- — ™ º ’ Î ¡ • é k g ™ º ¡

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- 3. î ? Õ Ñ k ï U Q Ý ¡ J î%² Ô ™ º ’ Î k é U Y … ¤ G F • é k ¨ F å ž k ¬ }
6 À } % ² do• “ … d fo• ™ º ˆ ´ ož
4. 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-

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

10.14 logging monitor

— å ª • ¨ VTY v M gTelnet v Mo•SSH v M ^ h ª P ™ º ’ Î ´ ðož
logging monitor [level]

W 2 ¨ VTY v M ø - ™ º †ož
no logging monitor

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 -o-ož

o¬ Þ . F åo- ª • ¨ VTY v M ª P ™ º ’ Î ´ ð 7 gDebugging k ² ¡ ’ Î h

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- } ¨ VTY v M ø - ™ º ’ Î k Ù ¯ ü g Ô Ó ï x X terminal monitor k ª • ¨ ¢ ù VTY v M ø - ™ º ’ Îož À e U Y ü g ¶ B F å % ” x X logging monitor Û # ª P ñ VTY v M µ ™ º ’ Î ´ ðož ™ º ’ Î ã Y 8 ´ ð y

¼ p	^ ´	T
Emergencies	0	¬ Ä Õ Ñ k © Ï 3 o g
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 } ’ Î
Informational	6	ª ¢ Å ’ Î
Debugging	7	² ¡ ’ Î

o¬ F å †o- 1 y µ P † F å ª • ¨ VTY v M ø - ™ º ’ Î ´ ð 6 y
5 X L M L H F R Q I L J O R J J L Q J P R Q L W R U L Q I R U P D W L R Q D O

o¬ à • co- -

o¬ U P ’ Îo- -

r uAÅ ˆ " –c”ðy•u\P ™ X“€4ƒd1 uE\ w7@v ð J ©P ’ Î •V0©p]Pp‘•z •ož ™q(€ !w0 BS ,Ug 8wuP ••éÏ ™ (

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 ˆ 9 4 M Å ´ ð ™ º ' Î k g , ä O ò z ó • ´ ð error(3) k + 4 9 ˆ 9 error ´ ð ™ º ' Î g , ä O 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 F H S W P Z D U Q L Q J V

o¬ à • co- -

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

10.17 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
-	-

o¬ Þ . F åo- • o ™ º M g ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ ... 6 -o- R Ñ ê Õ Ñ µ ™ º ' Î N U Y ª P ¨ R Ñ ê Õ Ñ Console v M k - U Y M g ñ Ñ µ g ÿ ß k , ÿ ß ñ Ñ Console v Mo•VTY v M k• U Y " £ ¨ Ñ Ä Ù Ï o• ý J FLASH y Syslog Server ož

o¬ F å †o- 1 y µ P † ¨ — Õ • o ™ º M g y

```
5XLMLH FRQILJ ORJJLQJ UG RQ
```

o¬ à • co- -

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

10.18 logging rd rate-limit

¨ 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 h 10 Ú k x © + warning C ¾ M ´ ð g O ò y

```
5XLMLH FRQILJ ORJJLQJ UG UDWH OLPLW H[FHSW ZDUQLQJV
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

10.19 logging server

1 ™ º “ £ ñ 6 Syslog Serverož
logging server [oob] { ip-address } [via mgmt-name] [udp-prot port]

í ” Syslog Server ç n 6 ª - Syslog Serverož
no logging server [oob] { ip-address } [via mgmt-name]

Ê Ö ™ º G Syslog Server ó • € M Z g514 hož
no logging server { ip-address } udp-port

o¬ @ ƒ ª ¢o-

@ ƒ	T
oob	1 ™ º Æ ˜ 6 k Ù * ’ g%² " 6 * MGMT M G ª ™ º Æ ˜ h k Q Ä ¨ — Õ À Õ MGMT ’ ò M ž ˜ õ k Ä ¥ # ¾
ip-address	N v ™ º ’ Î Ñ IP ª -
via mgmt-name	6 ™ º Ñ ¨ oob # ¾ ž … MGMT M
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

o¬ … 6 -o- ¥ x X 6 %² Syslog server Û N v — Õ ™ º ’ Îož ï U Y F å Ú 5 Syslog Serverož ™ º ’ Î 1 c ž G Ë F å ñ Ä Syslog Serverož

o¬ F å †o- 1 y µ P † 6 %² ª - 202.101.11.1 syslog server y
5 X L M L H F R Q I L J O R J J L Q J V H U Y H U

2 y µ P † 6 %² ª - 10.1.1.100 k € M Z 8099 syslog server y
5 X L M L H F R Q I L J O R J J L Q J V H U Y H U X G S S R U W

o¬ à • co- 1 y … show logging x X k U Y ò 0 — å ™ º Æ ˜ ª -ož

o¬ U P ’ Îo- 1 y ò ç — Õ] Æ F å Syslog Server Ý 5 k é U P j ¨ož

logging source { ip ip-address }

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

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 q(Œ ƒ ÂPq(‘•‰ª ª™ * ÊÒ%² “ ÊÀ˜P!ƒ5o0¨] %U IP
åo Œ Ç@p „

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	6re f 530.52	722.78 0.48 15.66

```
5XLMLH FRQILJ  ORJJLQJ XVHU LQIR
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

10.25 logging userinfo command-log

• o “ £ ï q • Log ’ Îož
logging userinfo command-log

¼ { “ £ ï q • Log ’ Îož
no logging userinfo command-log

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- — Õ k “ £ , ¼ q • Log ’ Îož

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\  FRPPDQ
```

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- -

10.26 service private-syslog

1 ™ º ”² … è \ Ä ™ º ª P ”ož
service private-syslog

H ƒ \ Ä ™ º ª P ” k w J ó • ™ º ” g ª Pož
no service private-syslog

o¬ @ ƒ ª ¢o-	@ ƒ	T
	-	-

o¬ Þ . F åo- ™ º ’ Î J ó • ™ º ” g ª Pož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ó • Õ Ñ k — Õ µ ™ º ’ Î ª P ” ò y
W L P H V W D P S I D F L O L W \ V H Y H U L W \ P Q H P R Q L F G H V F U L S W L R Q
‰) © 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

3 ø • \ Ä ™ º ” ª P k — Õ µ ™ º ’ Î ª P ” ò y
W L P H V W D P S I D F L O L W \ V H Y H U L W \ P Q H P R Q L F G H V F U L S W L R Q
‰) © 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- -

10.27 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

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ó • Õ Ñ k — Õ µ ™ º ’ Î ª P ” ò y

W L P H V W D P S I D F L O L W \ V H Y H U L W \ P Q H P R Q L F G H V F U L S W L R Q

‰) © 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

3 ø • ö Õ ™ º ” ª P k — Õ µ ™ º ’ Î ª P ” ò y

W L P H V W D P S I D F L O L W \ V H Y H U L W \ P Q H P R Q L F G H V F U L S W L R Q

‰) © 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 ö Õ ™ º ” ó • ™ º ” ð ¨ 9 ž • í k ö Õ ™ º ” ž • í ù µ 5 4 % ² * o • e µ 5

4 % ² :

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

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

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

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

10.29 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\ FRQV
```

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- -

10.30 service timestamps

¨ ™ º ’ Î ž • í ’ Îož

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

PaVï 3ß`@pyà·ðnÐI læùà

þ (ser)-13(v214(ï)-11(ce mie)-6meste)-6mpser s a g

o¬ Þ . F åo- ™ º ’ Î ž • í k ¢ ù — Õ ž •ož ò ç — Õ Z Ä RTC k é ² … — Õ o ž •ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- … Uptime # ¾ ž • ” © — Õ R) o ñ) ù g ž • k % y aož… Datetime # ¾ ž • ” ¢ ù — Õ ™ Ê k v l Ã l ™ 4 ž y ã U y aož

o¬ F å †o- 1 y µ P † F å o Log ’ Î y Debug ’ Î ž • í k ” Datetime y k w u 4 D a ª P y

```
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\ FRQVRO
```

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

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

10.31 show logging

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- ÔY n92 ý

-

o¬ Us@ ƒ ª•à’à›@

o¬ u V ª¦à¶ - ð Ç@p Ý q/¬ qUVs U• ƒ 80w 1xÂ ÷E0 wÒ

```
 6WDQGDUG IRUPDW IDOVH
 7LPHVWDPS GHEXJ PHVVDJHV GDWHWLPH
 7LPHVWDPS ORJ PHVVDJHV GDWHWLPH
 6HTXHQFH QXPEHU ORJ PHVVDJHV HQDEOH
 6\VQDPH ORJ PHVVDJHV HQDEOH
 &RXQW ORJ PHVVDJHV HQDEOH
 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 ,QW
FKDQJHG VWDWH WR XS
      6HS 5XLMLH /,1. 83'2:1 ,QWHUIDFH )DVW(WKHUQHW
      6HS 5XLMLH /,1(35272 83'2:1 /LQH SURWRFRO RQ ,QW
FKDQJHG VWDWH WR GRZQ
      6HS 5XLMLH /,1. 83'2:1 ,QWHUIDFH )DVW(WKHUQHW
      6HS 5XLMLH /,1(35272 83'2:1 /LQH SURWRFRO RQ ,QW
FKDQJHG VWDWH WR XS
```

<†Ky

<	ª¢
Syslog logging	™º•¼y ø•ªP enabled, ¼{ªP disabled
Console logging	ø-¨OòV ™º'Î ´ðkYCÏ‹
Monitor logging	ø-¨ VTY vM ™º'Î ´ðkYCÏ‹
Buffer logging	"£¨Ä ÙÏ ™º'Î ´ðkYCÏ‹
Standard format	öÕ™º "
Timestamp debug messages	Debug 'Îž•í "
Timestamp log messages	Log 'Îž•í "
Sequence-number log messages	~Z•¼
Sysname log messages	™º'Î ©Ïd
Count log messages	™ºÏ‹
Trap logging	G Ë Syslog Server ™º'Î ´ðkYCÏ‹
Log Buffer	"£¨Ä ÙÏ ™º †

2y µP†©¨•o RFC5424 ™º " ÕÑ küg show logging %² Èçy

```
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
```

'HOD\ VHQG ILOH QDPH V\VORJBIWSBVHUYHU &XUUHQW ZULWH LQGH

ORJJHG

show logging config

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 1

13(w)-20(l)7(ogg)6(in)6(g c)5(onfig)]TJ /TT0 1 Tf 0 2676062DTd (1)Tj 7.1755 Tc -7.4053 0.007 Td (- Tj /C2_0 109.86j Eonfig)8 75FAD>T

```
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
 'HOD\ VHQG ILOH QDPH V\VORJBIWSBVHUYHU  &XUUHQW ZULWH LQGH
VHFRQGV
 &RXQW ORJ PHVVDJHV  HQDEOH
 7UDS ORJJLQJ  OHYHO LQIRUPDWLRQDO      PHVVDJH OLQHV ORJJHG
   ORJJLQJ WR
   ORJJLQJ WR
 'HOD\ VHQG ORJJLQJ      PHVVDJH OLQHV ORJJHG
   ORJJLQJ WR              E\ WIWS
```

< † K y

<	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 ‹

o¬ U P ' Îo- -

o¬ u V ª ¢o- -

10.33 show logging count

ò 0 © Ï _ % ² ™ º ' Î D ÿ) ƒ k Y C Â e D ÿ ž • ^ 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

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- -

11 CA-MONITOR

x X	•
show power	ª P › ’ Î

11.2 show fan

ª P Ñ ” Î ó ’ Î k , ? Î ó & º Zo• ~ ç Zo• W • Ù Á ˆ k Y C Î ó ² , % ”o• Î ó % ² Ž
ô ,o• Î ó Î 3 • º ˆ ’ Îož
show fan
show fan [attribute]

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 ñ Ä Î ó & º Zo• ~ ç Zo• W • Ù Á Y C Î ó ² , % ” ˆož

o¬ F å †o- 1. ª P Â E Î ó ’ Î

```
5XLMLH VKRZ IDQ
IDQ LG W\SH        VWDWXV     +DUGZDUH 9HUVLRQ 6HULDO 1XPEHU

      0     )$1 ) RN
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o-

11.3 show temperature

“ † ’ Î ò ¤ x X k 9 ò 0 á * “ †o• y ’ F å ˆož
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 ? ™ á * ¢ ù “ † y _ “ † y ’ F åož
“ † y ’ ã •y s Š “ † y . • “ †ož
s Š “ † y á * “ † Ý s Š “ † k µ á Alarm I ð °ož
. • “ † y / “ † k á * “ † Ý ¥ “ † µ á Alarm I ± °ož

o¬ F å †o- 1 y ò 0 ñ Ä á * “ † y y ’ F å y

```
5XLMLH VKRZ WHPSHUDWXUH
6ORW &DUGBW\SH 7HPSBQDPH &XUUHQW

5* 6 *7 ;6 DLUBRXWOHW 2.
DLUBLQOHW 2.
ERDUG 2.
FSX 2.
VZLWFK 2.
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o-

11.4 power-mode dc

› DC/AC ÿ µ % ” F å k 9 F å 6 $ y › DC/AC ÿ µ % ”ož
no power-mode dc [slotid]

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- … ¥ x X 9 F å 6 $ y › DC/AC ÿ µ % ” z
3 … AC › k é ¬ } F å AC % ” k ê ñ — ¬ F å z
3 … › DC k é ¬ } F å DC % ” k Þ . AC % ” z
ò ç ¨ › Ž ÿ µ % ” y F å c k é show power ª P ß ÿ µ 9 @ ƒ Ž k Ä%² ž [

o¬ F å †o-

```
5XLMLH FRQILJ
5XLMLH FRQILJ SRZHU PRGH GF
5XLMLH FRQILJ QR SRZHU PRGH GF
5XLMLH
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

12 PKG_MGMT

x X	•
show component	ª P ¢ ù — Õ] x ñ Ä Á ^ C _ Á ^ ' Îož
show subsys	ª P y ¨ — Õ U kernel krootfs ÿ © Ï Á ^ož
show upgrade file	ª P — Õ † ^ © Ï Ä y x † ^ ' Îož
upgrade	… %² x ñ © Ï g ´
upgrade download tftp	ú x w ´
clear storage	Ž ” Î ª x ož

12.1 show component

ª P ¢ ù — Õ] x ñ Ä Á ^ C _ Á ^ ' Îož

show component [component _name]

o¬ @ ƒ ª ¢o-

@ ƒ	T
component _name	Á ^ d fož ¢ ¨ 4 @ ƒ › ž k 9 ª P — Õ ñ Ä] x Á ^ C _ Á ^ Â Î ' Îož ¢ ¨ 4 @ ƒ › ž k 9 ª P + • Á ^ ¦ Â ' Î k û à Á ^ Ä © k … k y ¥ Á ^ k 3 o W •ož

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- ¥ x X m _ ¥ ” k k component_name @ ƒ y k ¥ @ ƒ ož ï ¨ ´ k 3 ú Á ^ ù ª ª ¬ } 4 † ¢ ù — Õ ñ Ä] x Á ^ C Á ^ Í Î ' Î k 4 ž • … k @ ƒ show component x Xož ¢ ï ¬ } ¦ Â 4 † Á ^ ž } … k @ ƒ show component x X k U B H + • Á ^ ¦ Â ' Îož * ? ' Î ï U Y • Ž 4 † Á ^ W • Ù Á k î • Á ^ Ä © k t K D ° k ¨ L ” { ž k G ' Á ^ ¶ k U ´ g • µ Ä M } Þ #ož

v Ô ¦ Ñ ° ¶ Q / V ' † o " 3 Ñ 0 • ã ¾ þ (Æ ã â ë • É E * ì show component “bÂÐr 8Ub 8ÃÛ!ä Œ• G4†àu #YXD&úÀ•à'à›@O úÐ ÷E0RÐ 'D"Pi@y à y Á ¦ Â — Á ^ Í ^ C Â

```
    9HUVLRQ        FG  DD     %XLOG WLPH  :HG 'HF
    6L]H         ,QVWDOO WLPH  :HG  0DU
    'HVFULSWLRQ  WKLV LV D V\VWHP PRQLW SDFNDJH
    5HTXLUHG SDFNDJHV  1RQH

3DFNDJH EULGJH
    9HUVLRQ        FG FGD     %XLOG WLPH  :HG 'HF
    6L]H         ,QVWDOO WLPH  :HG  0DU
    'HVFULSWLRQ  WKLV LV D EULGJH SDFNDJH
    5HTXLUHG SDFNDJHV  1RQH
```

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<	ª ¢
Package	Á ^ d f
Version	Á ^ Í Î Z
Build time	Á ^ ¨ Æ ˜ Ú è ž •
Size	Á ^ m Ä Ý 4
Install time	— Õ x ¥ Á ^ ž •
Description	Á ^ • % T
Required packages	‰ Ó „ ? Á ^

m " ” — Õ ª P ¢ ù — Õ] x Ô Á ^ ’ Îož

```
5XLMLH  VKRZ FRPSRQHQW EULGJH
SDFNDJH EULGJH
```

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```
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
```

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<	ª ¢
Name	d f
Version	G b Í Î ' Î
Package type	• º
Support target	u 4 D } ª ¢
Size	m Ä Ý 4
Build time	Ú ž •
Install date	x ™ Ê
Description	T ' Î
Package files	Ä m ñ Ä Ä

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```
1DPH EULGJH
9HUVLRQ FG DD
3DFNDJH W\SH FRPPRQ FRPSRQHQW
```

```
OLE
OLE  OLEEULGJH VR
VELQ
VELQ EULGJH
```

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12.3

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o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- ¥ x X u 4 _ ÿ © Ï Á ^ x k Ñ ë — Õ x k Á ^ x k ½ m 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- 1 m — Õ ´ main ož

```
5XLMLH XSJUDGH XVE   HJ   PBPDLQB      I   H   ELQ
 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 V\VWHP WR WDNH HIIHFW
```

o¬ à • co- 5. … show version detail ò 0 ÿ © Ï Á ^ © k ´ è ož
6. … show component ò 0 Á ^ © k ´ è ož
7. … show patch ò 0 ½ m © k x è ož

o¬ U P ’ Îo- 1 m ´ è U P y

```
8SJUDGH LQIR >2.@
```

2 m x — | ê t C ° M • B H x w ü g ´ x X y

```
,QYDOLG SDFNDJH ILOH
```

3 m — Õ u 4 ¥ x k M • B H x w ü g ´ x X

```
'HYLFH GRQ W VXSSRUW
```

4 m — Õ — ¬ ´ y

```
7KH YHUVLRQ LQ GHYLFH LV QHZHU RU WKH VDPH
```

5 m ´ q • á k ò — Õ • k U & © k ñ y

```
1R HQRXJK VSDFH IRU GHFRPSUHVV
```

6 m ß ë M | Ê k © Ï C ° k û © Æ Ô ò y

1R HQRXJK VSDFH URRWIV EHHQ GHVWUR\HG 3OHDVH XSJUDGH LQ XERF

7 m © Ï] ¨ m k ¬ ¯ 3 › m

$OUHDG\ H[LVW SDWFK SOHDVH XQLQVWDOO EHIRUH XSJUDGH

8 m m 9 ¥ © Ï k ¾ E m y

3DWFK FRPSDWLELOLW\ HUU

9 m ¥ — Õ — c … 4 m ´ k M • B H m y

VRPH RULJLQ FPSQW KDV FKDQJH

o¬ o • j ¨o- l

o¬ u V ª ¢o- -

12.5 upgrade download tftp

ú w x k ´ tftp Æ ˜ x ož

upgrade download tftp:/ path [force]

upgrade download oob_tftp:/ path [force] [via mgmt {number}]

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 ´
via mgmt number	ò ç © oob_tftp • ” n ÿ w ¨ Ú MGMT M ž U Y g # + + • M

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o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- ¥ x X u 4 _ ÿ © Ï Á ^ x k Ñ ë — Õ x k Á ^ x k ½ m 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- 8. … show version detail ò0ÿ©ÏÁ^©k ´è ož

9. … show component ò0 Á^©k ´è ož

10. … show patch ò0½m ©k xè 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
```

7m©Ï]¨m k¬¯3›m y

```
$OUHDG\ H[LVW SDWFK  SOHDVH XQLQVWDOO EHIRUH XSJUDGH
```

8mm 9¥©Ïk¾Em y

```
3DWFK FRPSDWLELOLW\ HUU
```

9 m ¥ — Õ — c … 4 m ´ k M • B H m y

```
6RPH RULJLQ FRPSRQHQW KDV FKDQJH
```

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o¬ u V ª ¢o- -

12.6 clear storage

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clear storage [url]

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@ ƒ	T
url	x y Î ª url) £ ê ¶ è ¬ d

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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-

```
5XLMLH FOHDU VWRUDJH
5HPRYH WKH ZKROH VWRUDJH GLUHFWRU\">\ Q@\
5XLMLH FOHDU VWRUDJH XVE
5HPRYH WKH ILOH RU GLUHFWRU\ XVE IURP WKH VWRUDJH">\ Q@\
5XLMLH
```

o¬ à • co- ò 0 6 url

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

13 OpenFlow

x X	•
of controller-ip	• o OpenFlow k N O ò ˜ož
of mode	— å ¢ ù — Õ © k u 4 N Ú O ò ˜ož
of stp	— å ¢ ù — Õ © k u 4 STPož
show of	ª P ¢ ù — Õ O ò ˜ N Ù Áož
show of flowtable	ª P ¢ ù — Õ v n n ¾ož
show of port	ª P ¢ ù — Õ € M ’ Îož
show of flowtable	ª P ¢ ù — Õ v n n ¾ož
of set [enable | disable]]	— å ¢ ù — Õ © k u 4 STPož

13.1 of controller-ip

• o OpenFlow k N O ò ˜ož

of controller-ip ip-address [port port-id] interface [interface-id]

¼ { OpenFlow k • • O ò ˜ož

no of controller-ip [ip-address]

o¬ @ ƒ ª ¢o-

@ ƒ	T
ip-address	O ò ˜ ip ª -ož ¨ no x X k 3 k 4 @ ƒ é n P ¼ { ¢ ù ñ Ä O ò ˜(OpenFlow1.0 N u 4 N % V O ò ˜)
port port-id	O ò ˜ ˜ | € M,OpenFlow1.0 Þ . 6633ož
Interface Mgmt /L interface-id	N M ID k U Y © k Ù ’ ò N M - U Y © k Ä ¯ * Y ß à Ò ò N M (Ä ? — Õ U Z Ä ’ ò N M) J k Ù % ” k * ’ ò M

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14-

o¬ … 6 -o- -

o¬ F å †o- 1 y • o OpenFlowož

```
5XLMLH RI FRQWUROOHU LS
```

ê ñ:

```
5XLMLH RI FRQWUROOHU LS SRUW
5XLMLH FRQILJ RI FRQWUROOHU LS LQWHUIDFH JLJDELW(WKH
```

2 y • • OpenFlowož

```
5XLMLH QR RI FRQWUROOHU LS
```

o¬ U P ' Îo- 1 y • o OpenFlowož
6 W D U W L Q J 2 S H Q) O R Z
2 y ¼ { OpenFlowož
& O R V H 2 S H Q) O R Z

o¬ u V ª ¢o- -

13.2 of mode

— å OpenFlow — Õ O ò ˜ % ”ož
of mode [single | multiple]
= OpenFlow — Õ % O ò ˜ % ”ož
no of mode

o¬ @ *ƒ* ª ¢o- @ *ƒ* T
- -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- — å — Õ o % O ò ˜ % ” ê ñ — å — Õ o Ú O ò ˜ % ” k ¨ N OpenFlow O ò ˜ $ ù … k Þ . % O ò ˜ % ”ož

o¬ F å †o- 1 y • o — Õ % O ò ˜ % ”ož
5 X L M L H F R Q I L J R I P R G H V L Q J O H
2 y • o — Õ Ú O ò ˜ % ”ož
5 X L M L H F R Q I L J R I P R G H P X O W L S O H
3 y ó • % O ò ˜ % ”ož
5 X L M L H F R Q I L J Q R R I P R G H

o¬ U P ' Îo- • o Ú O ò ˜ % ” k U c ž N Ú O ò ˜ož
5 X L M L H F R Q I L J R I P R G H V L Q J O H
5 X L M L H F R Q I L J R I F R Q W U R O O H U L S L Q W H U I D F H J L J D E L W (W K H
5 X L M L H F R Q I L J R I F R Q W U R O O H U L S L Q W H U I D F H J L J D E L W (W K H
& R Q W U R O O H U 0 R G H L V 6 L Q J O H F D Q W F R Q Q H F W H G
5 X L M L H F R Q I L J Q R R I F R Q W U R O O H U L S
5 X L M L H F R Q I L J R I P R G H P X O W L S O H
5 X L M L H F R Q I L J R I F R Q W U R O O H U L S L Q W H U I D F H J L J D E L W (W K H
5 X L M L H F R Q I L J R I F R Q W U R O O H U L S L Q W H U I D F H J L J D E L W (W K H
5 X L M L H F R Q I L J

o¬ u V ª ¢o- -

13.3 of stp

— å OpenFlow — Õ © k • o SDN O ò ˜ STP ê ñ • o Î ª STP ož

[no] of stp

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o¬ … 6 -o- # + o — å — Õ … Î ª STP © ê ñ — å — Õ … SDN O ò ˜ STP ož N ¢ OpenFlow … e Ä |ož

Þ . ¼ { Î ª STP k … SDN O ò ˜ g STP ’ òož

o¬ F å †o- 1 y • o — Õ STPož

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13.5 show

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o¬ Þ . ´ ðo-

o¬ ... 6 -o-

o¬ F å †o- 1

o¬ U P ’ Îo-

)/2: (1'

< † K y

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KEY	n P v n ¼ p <
SMAC	› MAC ª -
DMAC	) MAC ª -
SIP	› IP ª -
DIP	) IP ª -
INPORT	ÿ µ € M
VLANID	VLAN ID
ETYPE	Y ß à † • º ¿
VLAN PRIORITY	VLAN < ` k i ¯ ´ ¿
TCP/UDP_SPORT	n ÿ C › € M Z
TCP/UDP_DPORT	n ÿ C) € M Z
DSCP	IP C DSCP ¿
IP_PROTOCOL	IP C # ‘ ¿
WILDCARD	OpenFlow # ‘ Q A y k 9 n P „ ? ¿ Ä |
SIP_MASK	› IP ª - Q A
DIP_MASK	) IP ª - Q A
PRIORITY	n ¾ i ¯ ´
IDLE_TIMEOUT	n ¾ q ~ ï ž •
HARD_TIMEOUT	n ¾ Í + ï ž •
SEND_FLOW_REM	n ¾ ï e © k * s Ë O ò ˜ k1 n P ¬ } * s k0 n P ¬ } * sož
ACTION	n P v n g <
ACTION_SIZE	n P v n g < Ý 4
OUTPUT_PORT	n P v n ÿ ß € M
SET_VLAN_ID	n P } — å VLANID
SET_VLAN_PCP	n P } — å VLAN i ¯ ´
STRIP_VLAN	n P } ü Y VLAN

SET_SM l 214.93N115.7 .93N 55Tw Tf 0 Tc 24.0SRC re f 3 -0.04 Td <0A6E0950024 10A6E095008760A6E0A67041E06

13.6 show of port

ò 0 OpenFlow — Õ ¢ ù € M ' Îož

show of port

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o¬ Þ . ´ ðo- 14

o¬ ... 6 -o- }• o N SDN O ò ˜ e g ü g of controller-ip x X h k õ 3 G ª P € M ' Îož

o¬ F å †o- 1 y ò 0 — Õ € M ' Îož

```
5XLMLH VKRZ RI SRUW
```

o¬ U P ' Îo- ò 0 € M ' Îož

```
2SHQ)ORZ€ZM'Î
5XLMLH VKRZ RI SRUW
673 LV FRQWUROOHG E\ 6'1 &RQWUROOHU

,'    ,);    ,17(5)$&(                    &21),*     63((' /,1.  '83/(;
           *LJDELW(WKHUQHW                    [       8QNQRZQ  '2:1  8C
           *LJDELW(WKHUQHW                    [       8QNQRZQ  '2:1  8C
           *LJDELW(WKHUQHW                    [       8QNQRZQ  '2:1  8C
           *LJDELW(WKHUQHW                    [       8QNQRZQ  '2:1  8C
           *LJDELW(WKHUQHW                    [       8QNQRZQ  '2:1  8C
           *LJDELW(WKHUQHW                    [       8QNQRZQ  '2:1  8C
           *LJDELW(WKHUQHW                    [       8QNQRZQ  '2:1  8C
           *LJDELW(WKHUQHW                    [       8QNQRZQ  '2:1  8C
           *LJDELW(WKHUQHW                    [       8QNQRZQ  '2:1  8C
           *LJDELW(WKHUQHW                    [       8QNQRZQ  '2:1  8C
           *LJDELW(WKHUQHW                    [       8QNQRZQ  '2:1  8C
           *LJDELW(WKHUQHW                    [       8QNQRZQ  '2:1  8C
           *LJDELW(WKHUQHW                    [       8QNQRZQ  '2:1  8C
           *LJDELW(WKHUQHW                    [       8QNQRZQ  '2:1  8C
           *LJDELW(WKHUQHW                    [       8QNQRZQ  '2:1  8C
           *LJDELW(WKHUQHW                    [       8QNQRZQ  '2:1  8C
/,1.63((''83/(;

2SHQ)ORZ€ZM'Î
5XLMLH VKRZ RI SRUW
```

```
673 LV FRQWUROOHG E\ 6'1 &RQWUROOHU
,'    ,);    ,17(5)$&(          63((' /,1. '83/(;    7;B3.7      5;B3.7
          *LJDELW(WKHUQHW     8QNQRZQ  '2:1   8QNQRZQ
          *LJDELW(WKHUQHW     8QNQRZQ  '2:1   8QNQRZQ
          *LJDELW(WKHUQHW     8QNQRZQ  '2:1   8QNQRZQ
          *LJDELW(WKHUQHW     8QNQRZQ  '2:1   8QNQRZQ
          *LJDELW(WKHUQHW     8QNQRZQ  '2:1   8QNQRZQ
          *LJDELW(WKHUQHW     8QNQRZQ  '2:1   8QNQRZQ
          *LJDELW(WKHUQHW     8QNQRZQ  '2:1   8QNQRZQ
          *LJDELW(WKHUQHW     8QNQRZQ  '2:1   8QNQRZQ
          *LJDELW(WKHUQHW     8QNQRZQ  '2:1   8QNQRZQ
          *LJDELW(WKHUQHW     8QNQRZQ  '2:1   8QNQRZQ
          *LJDELW(WKHUQHW     8QNQRZQ  '2:1   8QNQRZQ
          *LJDELW(WKHUQHW     8QNQRZQ  '2:1   8QNQRZQ
          *LJDELW(WKHUQHW     8QNQRZQ  '2:1   8QNQRZQ
          *LJDELW(WKHUQHW     8QNQRZQ  '2:1   8QNQRZQ
          *LJDELW(WKHUQHW     8QNQRZQ  '2:1   8QNQRZQ
          *LJDELW(WKHUQHW     8QNQRZQ  '2:1   8QNQRZQ
```

< † K y

<	ª ¢
STP is controlled by SDN controller/local device.	STP SDN O ò ˜ ê Î ª ’ òož
PORTID	€ M ö œ
IFX	€ M N M « –
CONFIG	¢ ù SDN O ò ˜ + € M F å
LINK	¢ ù € M LINK Ù Á
SPEED	¢ ù € M W • , ä k N € M UP e Ä |
DUPLEX	¢ ù € M E W Ù Á k N € M UP e Ä |
INTERFACE	€ M N M « – d f
TX_PKT	G † ƒ
RX_PKT	N v † ƒ

o¬ u V ª ¢o- -

w W ? ¿ X Þ ¯ @ &

Ú ` Ÿ4¡ ¹ þ5% x 6 Q ¸ –5×,Ì G Y • È Ù À ¹ ß0´8V Ö

1. y ·
2. MAC
3. Aggregate Port
4. VLAN
5. MAC VLAN
6. Super VLAN
7. Protocol VLAN
8. Private VLAN
9. MSTP
10. GVRP
11. LLDP
12. QINQ
13. 1u)Ú*ü ¹ þ5% y · Q ¸
14. HASH-SIMULATOR
15. ERPS

1 / L

˚ Ök ! @ Þ. o
no bandwidth

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		? a U k ! k Y ? a 1 A Ô % y

o‹ Þ. F åo› ¢ ¥ N M Z ˜ å bandwidth x X @ k ¤ ÔÓ ï % show interface x X Û‘ P ¿ Þ. o

o‹ x X % o› N M F å%

o‹ Þ. · ðo›

o‹ 6 -o› bandwidth x X § î N M k ! k Q ' ï s ' ˇ ¥ N M k ! 6 ök ó ÕÑ k Y ßà
N M k ! ' ÿG M 2 O T Q , ä— k òç˜ ‹ } U Y \ 6 k (G T J] O J Z N Q ' Ł @ k
k § Òòe Ł N M 1 3 k !o

o‹ F å o› y Y ÿP 8 F åN M k ! @ 1 H V Y y

```
Ruijie(config)#interface gigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# bandwidth 64
```

o‹ à co› -

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

1.2 carrier-delay

¤ N M F å% x X I G X X O K X ¤JNKNR Gåœ f o
carrier-delay {[milliseconds] m | up [milliseconds] m down [milliseconds] m }

˚ ÖÞ. o
no carrier-delay

o‹ @ “ ¢o›	@	T
	m	U # @ k ó Y a % y k 8 ‰ ao
	ðm	U # @ k 4 … p k T [S Y D a % y k 8 d D a
	p	U # @ k åœ f y Z *) * R * U] T Ù æ ; V Ù

ø	U # @ k åœ f y Z *) * R ; V Ù æ * U] T Ù

o‹ Þ. F åo› œ f Þ. ' ao

o‹ x X % o› N M % o

o‹ Þ. · ðo›

o‹ 6 -o› œ f '6 N M e Ł œ f y Z *) * R * U] T Ù æ ; V Ù Œ æ R ; V æ * U] T Ù k
òç *) * ¤ $ ~ G ÿJ k ; " ' ˇ 1 ¿ _ Ù J ò 9 C G e Ł C M # o
òç *) * œ f A ß x k ; " 1 ¥ @ x ? k U Y @ ‰ , Ł M ük Y Ł n U Y ß ‰ “ v o
òç, F k*) * œ f 4 9 Ł M üæ 0 k ; " ¥ 1 ¥ @ å, + Ý? k Y † - Ł Z ~ •
} Ł ›TÙø

o‹ F å o› y F åN M œ f ao

```
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 F D U U L H U G H O D \
```

y F åN M œ f D ao

```
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 F D U U L H U G H O D \ P L O O L V H F R Q G
```

yF åN M e Ł œ f y Z *) * R * U] T Ù æ ; V Ù D a k R Up Ù æ Down
D 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 F D U U L H U G H O D \ X S P L O O L V H F
```

o‹ à co› y show interfaces x X k U Y ò0 N M œ f o

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

1.3 clear counters

N M o
clear counters [ ]

o‹ @ “ ¢o›

@	T
	N M ” y N M Zo

o‹ x X % o› ÔÓ% o

o‹ Þ. · ðo›

o‹ 6 -o› N M ˘ U Y * ÔÓ% x X Y N U] O T Z K X Y L G I ÔÓ% I R K G X I U [T Z K X Y
1 N M ˘ 'o òç 6 N M k Ø 1 æ ˜ N M 'o

o‹ F å o› y N M - O M G H O Z + Z N K X T K Z o
8 [O P O K I R K G X I U [T Z K X Y - O M G H O Z + Z N K X T K Z

o‹ U P ¸o› -

o‹ u V “ ¢o› -

1.4 clear interface

N M F ^ Öyo
clear interface ¡

o‹ @ “ ¢o›

@	T
¡	N M ” y N M Zo

o‹ x X % o› ÔÓ% o

o‹ Þ. · ðo›

o‹ 6 -o› ¥ x X Q + A E M k 8 C ü‘ M Ł t M k Ł M y C ü‘ M Ł t M ˜ |o üg ¥ x X , ¢
9 + N M ˙ üg shutdown y no shutdown x Xo

o‹ F å o› 1 y + N M GigabitEthernet 1/1 g F ^ Öyo
5 X L M L H F O H D U L Q W H U I D F H * L J D E L W (W K H U Q H W

o‹ U P ¸o› -

o‹ u V “ ¢o› -

1.5 description

åN M ðdo

description

˚ ŒŁ Þ. o
no description

o‹ @ “ ¢o›

@	T
Y Z X O T M	N M ðdo

o‹ Þ. F åo› Þ. Z ˜ ðdo

o‹ x X % o› N M F å%

o‹ Þ. · ðo›

o‹ 6 -o› show interfaces x X ò0 N M ¸ k , ðdo

o‹ F å o› 1 y ¸ N M GigabitEthernet 1/1 F åðd GBIC-1o

```
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  G H V F U L S W L R Q  * % , &
```

o‹ à co› 1 y show interfaces x X k U Y ò0 N M ðdo
2 y show interfaces description x X k U Y ò0 N M ðdo

o‹ U P ¸o› y òçðd x Ý k Ø U P j ¤o

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

o‹ o j ¤o› -

o‹ u V “ ¢o› -

1.6 duplex

åN M E W % o
duplex { auto | full | half }

˚ ŒŁ Þ. o

half	n P ! E Wo

o‹ Þ. F åo› ¶ E W y ! E W o

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› N M E W K ¯ N M ” ˜ …o U Y show interfaces x X ò0 N M E W åo

o‹ F å o› 1 y N M GigabitEthernet 1/1 E W % F åŁ ¶ E Wo

```
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 G X S O H [ I X O O
```

o‹ à co› y show interfaces x X k U Y ò0 N M E W % o

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

1.7 errdisable recovery

å M ˚ Ö
errdisable recovery [interval

```
5XLMLH FRQILJ  HUUGLVDEOH UHFRYHU\
5XLMLH FRQILJ  HQG
```

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

1.9 negotiation mode

ł Œ … { # % o
negotiation mode { on | off }

˚ ŒŁ Þ. o
no negotiation mode

o‹ @ “ ¢o›

@	T
on	ł # % o
off	… { # % o

o‹ Þ. F åo› … { # % o

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› N M # Ù y N M # ÿ% w ¶ c k N M # Ù * o N M , äo E Wo v O
y # ÿ% » c — o

o‹ F å o› 1 y ł GigabitEthernet 1/1 v O O ò
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 H J R W L D W L R Q P R G H R Q

o‹ à co› 1 y show interfaces x X k U Y ò0 N M # % o

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

1.10 interface

¥ x X ' % - ! x X k µN M F å% o
interface

o‹ @ “ ¢o›	@	T

Interface range { g |

˚ ŒÞ. F åo
no load-interval

o‹ @ “ ¢o›

@	T
ed	% y a k H 8 5 æ600

o‹ Þ. F åo› 10 ao

o‹ x X % o› N M F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› 1 y ¤ N M 4 x X U Y 6 ? Ú5 ÿµÿß ¿ œ ÕÑk%† " ' ? 10 a %†) ? a ÿµÿß y A Ôo ÿk òç¤ N M GigabitEthernet 0/1 1 4 @ ¾w Ł 180 a k show interface gigabitEthernet 0/1 U Y 0 æ y

```
 P L Q X W H V  L Q S X W  U D W H   E L W V  V H F   S D F N H W V  V H F
 P L Q X W H V  R X W S X W  U D W H   E L W V  V H F   S D F N H W V  V H F
```

o‹ F å o› 1 y Y ÿP 8 ¤ Y ßàM GigabitEthernet 0/1 å¿ œ Ł 180 a

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

o‹ à co› -

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

1.13 mtu

åN M MTU
mtu ed

o‹ @ “ ¢o›

@	T
ed	64 l?(c D } ´ Ý c k / Ì —)

o‹ Þ. F åo› Þ. 1500o

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› åN M æ u 4 MTU k / e Ł C G B ª ´ Ýx o) ø Q u 4 åÒò M MTUo

o‹ F å o› 1 y M GigabitEthernet 1/1 MTU å 9000o

```
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  P W X
```

o‹ à co› 1 y show interfaces x X k U Y ò0 N M MTUo

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

1.14 protected-ports route-deny

F å M $ C Ł o
protected-ports route-deny

o‹ @ “ ¢o›

@	T
-	-

o‹ Þ. F åo› M $ C Ł Z ˜

o‹ x X % o› ¶ B F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› Þ. ÕÑ k M $ C Ł w Z ˜ t k U Y * å M $ g Ł Û
º M $ Ł

o‹ F å o› 1 y F å M C Ł o

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

o‹ à co› -

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

1.15 shutdown

¤ N M F å% k ¥ x X … { N Mo
shutdown

ł N Mo
no shutdown

o‹ @ “ ¢o›	@	T
	-	-

o‹ Þ. F åo› N M òŮ ' UPo

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› + 9 N M g Y ßà Mo ü‘ M y A E Z ’ N M h k ¥ x X … { N M k N M ¿ F åQ À ¤ k x ' Ü
o show interfaces x X ò0 N M Ůo

-- / ° ö ‡ 4 ® Ù . ³ no shutdown Ç ´ ¶ Ÿ V Ÿ “ Ç q _ ª g ” µ ð o d

o‹ F å o› 1 y … { ü‘ M 1 o

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

2 y ł ü‘ M 1o

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

o‹ à co› 1 y show interfaces x X k U Y ò0 N M Ůo

o‹ U P ¸o›

o‹ o j ¤o› -

o‹ u V “ ¢o› -

1.16 snmp trap link-status

¤ Õ U Y ´ 9 N M F å' k G ¥ N M LinkTrap k ¢ ł k òçN M Link Ù J kSNMP 1 G ß LinkTrap k F $ Ø Go

snmp trap link-status

… { ¥ kSNMP 1 G ß LinkTrapo

no snmp trap link-status

o‹ @ “ ¢o›

@	T
-	-

o‹ Þ. F åo› Þ. ÕÑ k ¥ ł o

o‹ x X % o› N M % o

o‹ Þ. · ðo› 14

o‹ 6 -o› + 9 N M g Y ßà Mo ü‘ M y A E Z ’ N M h k ¥ x X F å' k G ¥ N M LinkTrap k ¢ ł k òçN M Link Ù J kSNMP 1 G ß LinkTrap k F $ Ø Go

o‹ F å o› 1 y µ ÿF åN M G LinkTrapo

```
5XLMLH FRQILJ LQWHUIDFH *LJDELW(WKHUQHW
5XLMLH FRQILJ LI *LJDELW(WKHUQHW QR VQPS WUDS OLQN VWDWXV
```

2 y µ ÿF åN M G LinkTrapo

```
5XLMLH FRQILJ LQWHUIDFH *LJDELW(WKHUQHW
5XLMLH FRQILJ LI *LJDELW(WKHUQHW VQPS WUDS OLQN VWDWXV
```

o‹ à co› -

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

1.17 snmp-server if-index persist

o N M « K ! k / ÕM o e N M « Jo
snmp-server if-index persist

o‹ @ “ ¢o›	@	T
	-	-

o‹ Þ. F åo› ¥ … {o

o‹ x X % o› ¶ B %

o‹ Þ. · ðo› 14

o‹ 6 -o› ügx X snmp-server if-index persist Y e k F å 1 ¢ ø æ ˜ N M « ÜÛk M o e N M
M o ø ª F N M « o h ÞM o ø • À F åo

o‹ F å o› 1 y o N M « K ! o

```
5XLMLH FRQILJ VQPS VHUYHU LI LQGH[ SHUVLVW
```

o‹ à co› -

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

1.18 speed

åN M , äo
speed [10 | 100 | 1000 | 10G | auto]

˚ ŒŁ Þ. o
no speed

o‹ @ “ ¢o›	@	T
	10	n P N M , ä 10Mbpso
	100	n P N M , ä 100Mbpso
	1000	n P N M , ä 1000Mbpso

10G	n P N M , ä 10Gbpso
auto	n P N M , ä o

o‹ Þ. F åo› , äÞ. ' o

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› òçN M ' ü‘ M Ł t k Ø ¥ N M , ä ü‘ M , ä— o N M ßü‘ M \ , ä
åo show interfaces x X ò0 åo N M ” c k“ å , ä ”- k ˜ æ c k ò SFP ”
N M < “ , ä 10Mo

o‹ F å o› 1 y M GigabitEthernet 1/1 , ä åŁ 100Mbpso

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

o‹ à co› 1 y show interfaces x X k U Y ò0 N M , äo

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

1.19 split interface

ï U ¤ ¶ B % x X Û1 40G M ª Ł 4 10G Mo
split interface FortyGigabitEthernet

4 10G M ` ‘ Ł%† 40G Mo
no split interface FortyGigabitEthernet

o‹ @ “ ¢o›

@	T
	N M ÚZ

o‹ Þ. F åo› M Ô9 ` ‘ Ù o

o‹ x X % o› ¶ B %

o‹ Þ. · ðo› 14

o‹ 6 -o› -

o‹ F å o› 1 y 40G M FortyGigabitEthernet 0/65 ª Ł 4 10G Mo
5 X L M L H F R Q I L J V S O L W L Q W H U I D F H) R U W \ * L J D E L W (W K H U Q H W

o‹ à co› -

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

1.20 switchport

¤ N M F å% k ‘ ~ @ switchport x X k 1%† N M å 2 C % o
switchport

k ‘ ~ @ no switchport x X 1 ¥ N M å 3 C % o
no switchport

o‹ @ “ ¢o›

o‹ o j ¤o› -

o‹ u V “ ¢o› -

1.21 switchport access

1%† M å Access M k w 1 6 u %† VLAN Ł t Mo
switchport access vlan

1 ¥ M 6 u æ Þ.

1.22 switchport mode

6 %† 8 C M % k U Y 6 ¥ N M Access M Œ æ Trunk Mo
switchport mode { access | trunk }

1 ¥ N M % ˚ Ö Þ. o
no switchport mode

o‹ @ “ ¢o›

@	T
access	å8 C M Access Mo
trunk	å8 C M Ttrunk Mo

o‹ Þ. F åo› 8 C M Þ. % Access

o‹ x X % o› N M F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› òç M % ' Access k Ø ¥ M Q %† VLAN Ł to U Y switchport access vlan x X 6 ¥ N M ' %† VLAN Ł to

òç%† M % ' Trunk k Ø ¥ N M U Y ' Ú VLAN Ł to ¥ N M U Y K 9 ? VLAN ¥ N M U VLAN çn — k Trunk M ' U VLAN çn æ ˜ VLAN Ł to U Y switchport trunk x X Û # N M U VLAN çno

o‹ F å o› 1 bitEtherA1k F å ruk Mo

o‹ @ “ ¢o›

@ T

- -

o‹ Þ. F å o› M

o‹ x X % o› N M %

1-4 Þ. · ð o›

o‹ 6 -o› ¢ e ¨ Õ î ? M $; , * k U 1 ? M å Mo N N ' 8 C * k C Ł

À U Y * k òç C - e ¨ * k U Y ˙ F å¶ B x X protected-ports route-denyo

o‹

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 p ° € P W

5 X L M L H F R Q I L J L I * L J D E L W p ° € P W V Z L W F K S R U W S U R W H F W H G

o‹ à co› -

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

1.24fswitchport trunkf

@ T

Trunk M U VLAN çno @ vlan-list U Y '%† VLAN k - U

Y '%† ' ç VLAN k Y 4 VLAN ID ª k Y Ý VLAN ID ¨ A k

g- h Z No òy 10-20o < $ U Y g, h Z kòy 1-10,20-25,30,33

allowed vlanf ¡ all m # ' U VLAN çn m æ ˜ u 4

native vlan	F å Native VLANo

o‹ Þ. F åo› Þ. U VLAN çn å' all k Þ. Native VLAN Ø ' VLAN 1

o‹ x X % o› N M F å%

o‹ Þ. · ðo› 14

o‹ 6 -o›

z Native VLAN y

Trunk M k } K 9%† native VLANo æ µ native VLAN k < ' 6 ¤ N M v G UNTAG k C t ' K 9 VLAN o“ Àk N M Þ. VLAN IDg / IEEE 802.1Q PVID h< ' native VLAN VLAN IDo c k ¤ Trunk M G K 9 native VLAN l k Ø • ÀJ UNTAG o

z U VLAN çn y

%† Trunk M Þ. U Y n ÿ¸ Õu 4 æ ˜ VLAN g1 l4094 h v Oo x ' k - U Y * å Trunk M U VLAN çn Û òî ? VLAN v O * Trunk Mo

o‹ F å o› 1 y Trunk M GigabitEthernet 1/1 Native VLAN F å VLAN 2o

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

o‹ à co› 1 y show interfaces switchport x X k U Y ò0 M 8 C ¸o

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

1.25 show interfaces

ò0 N M å ¸o

show interfaces [ ] [description | switchport | trunk]

o‹ @ “ ¢o›

@	T
	N M ” y N M ÚZo
description	N M T ¸k , link Ùo
switchport	8 C N M ¸k Q + 8 C N M ˜ |o
trunk	Trunk M ¸k + Òò M y ü‘ M ˜ |o

o‹ x X % o› ÔÓ%

o‹ Þ. · ðo› 14

o‹ 6 -o› òç @ k Ø “ P N M ´ ¸ ¸o

o‹ F å o› 1 y ¢ GigabitEthernet 0/1 Trunk M k ò0 N M ¸o

```
6 Z L W F K $ V K R Z L Q W H U I D F H V * L J D E L W ( W K H U Q H W
, Q G H [ G H F K H [
```

```
SDFNHWV RXWSXW    E\WHV    XQGHUUXQV    GURSSHG
RXWSXW HUURUV    FROOLVLRQV    LQWHUIDFH UHVHWV
```

2 y ¢ GigabitEthernet 0/1 Access M k ò0 N M ¸o

```
6ZLWFK$ VKRZ LQWHUIDFHV *LJDELW(WKHUQHW
,QGH[ GHF    KH[
*LJDELW(WKHUQHW    LV '2:1    OLQH SURWRFRO LV '2:1
```

G I

V H W

```
,QGH[ GHF    KH[
*LJDELW(WKHUQHW    LV '2:1   OLQH SURWRFRO LV '2:1
  +DUGZDUH LV %URDGFRP     *LJDELW(WKHUQHW
  ,QWHUIDFH DGGUHVV LV  QR LS DGGUHVV
  078     E\WHV  %:        .ELW
  (QFDSVXODWLRQ SURWRFRO LV (WKHUQHW ,,  ORRSEDFN QRW VHW
  .HHSDOLYH LQWHUYDO LV    VHF   VHW
  &DUULHU GHOD\ LV   VHF
  (WKHUQHW DWWULEXWHV
    /DVW OLQN VWDWH FKDQJH WLPH
    7LPH GXUDWLRQ VLQFH ODVW OLQN VWDWH FKDQJH   GD\V   KRXUV
    /DVWFKDQJH WLPH   'D\   +RXU   0LQXWH   6HFRQG
    3ULRULW\ LV
    0HGLXP W\SH LV &RSSHU
    $GPLQ GXSOH[ PRGH LV $872  RSHU GXSOH[ LV 8QNQRZQ
    $GPLQ VSHHG LV $872  RSHU VSHHG LV 8QNQRZQ
    )ORZ UHFHLYH FRQWURO DGPLQ VWDWXV LV 2)) IORZ VHQG FRQWURO
    )ORZ UHFHLYH FRQWURO RSHU VWDWXV LV 8QNQRZQ IORZ VHQG FRQ
    6WRUP &RQWURO  %URDGFDVW LV 2))  0XOWLFDVW LV 2))  8QLFDVW L
  %U BSOHH[ GLZ'G3UP)E XWHJJ ... ðÔC
    3R SWHWG S´H€ Æ`\0`U DGQ...!û  ´`€Æ`0`  D  Q...!ûp0•ð@³(C        łö P HHG ° 0‘  ‘0‘ aP
    7DJJHG YODQ LG                    9/$1 ł‚ö
    8QWDJJHG YODQ LG QRR0000€ p@  €p0•ð@³P‘# 3p 0û J DQ    łö
```

o‹ U P ¸o› -

o‹ u V “ ¢o› -

1.26 show interfaces counters

ò0 N M v G ˇ ¸o

show interfaces [ ] counters [increment | error | rate | summary]

o‹ @ “ ¢o›

@	T
	U # @ k N M ” y N M ÚŽ k # Ø “ P æ ˜ N M
increment	ò0 ¤ %† J ý ˝ ˇ
error	ò0 j ¤ ˇ ¸o
rate	ò0 N M v G , ä
summary	ò0 N M } ˇ o

o‹ x X % o› æ ˜ CLI ï %

o‹ Þ. · ð› 14

o‹ 6 -o› òç 6 N M d f k Ø “ P æ ˜ N M ˇ o

o‹ F å o› 1 y “ P N M GigabitEthernet 0/1 N M ˇ ¸o

```
5 X L M L H  V K R Z  L Q W H U I D F H V  * L J D E L W ( W K H U Q H W  F R X Q W H U V
, Q W H U I D F H  * L J D E L W ( W K H U Q H W
  P L Q X W H  L Q S X W  U D W H  y  E L W V  V H F  S D F N H W V  V H F
  P L Q X W H  R X W S X W  U D W H  y  E L W V  V H F  S D F N H W V  V H F
5 [ O R D G
, Q 2 F W H W V
, Q 3 N W V  8 Q L F D V W  0 X O W L F D V W  % U R D G F D V W
, Q 8 F D V W 3 N W V
, Q 0 X O W L F D V W 3 N W V
, Q % U R D G F D V W 3 N W V
7 [ O R D G
2 X W 2 F W H W V
2 X W 3 N W V  8 Q L F D V W  0 X O W L F D V W  % U R D G F D V W
2 X W 8 F D V W 3 N W V
2 X W 0 X O W L F D V W 3 N W V
2 X W % U R D G F D V W 3 N W V
8 Q G H U V L ] H  S D F N H W V
2 Y H U V L ] H  S D F N H W V
```

```
FROOLVLRQV
)UDJPHQWV
-DEEHUV
&5& DOLJQPHQW HUURUV
$OLJQPHQW(UURUV
)&6(UURUV
GURSSHG SDFNHW HYHQWV GXH WR ODFN RI UHVRXUFHV
SDFNHWV UHFHLYHG RI OHQJWK LQ RFWHWV
3DFNHW LQFUHPHQW LQ ODVW VDPSOLQJ LQWHUYDO VHFRQGV
  ,Q2FWHWV
  ,Q3NWV 8QLFDVW 0XOWLFDVW %URDGFDVW
  ,Q8FDVW3NWV
  ,Q0XOWLFDVW3NWV
  ,Q%URDGFDVW3NWV
  2XW2FWHWV
  2XW3NWV 8QLFDVW 0XOWLFDVW %URDGFDVW
  2XW8FDVW3NWV
  2XW0XOWLFDVW3NWV

“¢y
5[OR'DNG k!ï äk7[ORDG 'G k!ï äo
,Q3N'W¥æ %nk`nyzn ¨yk,ZLµ'%nk`nyzn ªAo 2XW3NWV wo
3DFNHW LQFUHPHQW LQ ODVW VDPSOLQJ LQWHUYDaCh V´HFRoQGV ' %† Jý

2y“PNM GigabitEthernet 0/1 ¤ %† Jý ˝ ˇ o
5XLMLH VKRZ LQWHUIDFHV *LJDELW(WKHUQHW FRXQWHUV LQFUHPHQ
,QWHUIDFH *LJDELW(WKHUQHW
3DFNHW LQFUHPHQW LQ ODVW VDPSOLQJ LQWHUYDO VHFRQGV
  ,Q2FWHWV
  ,Q3NWV 8QLFDVW 0XOWLFDVW %URDGFDVW
  ,Q8FDVW3NWV
  ,Q0XOWLFDVW3NWV
  ,Q%URDGFDVW3NWV
  2XW2FWHWV
  2XW3NWV 8QLFDVW 0XOWLFDVW %URDGFDVW
```

```
  2XW8FDVW3NWV
  2XW0XOWLFDVW3NWV
```

3 y “ P N M GigabitEthernet 0/1 j ¤ ˇ o

```
5XLMLH VKRZ LQWHUIDFHV *LJDELW(WKHUQHW FRXQWHUV LQFUHPHQ
,QWHUIDFH 8QGHU6L]H 2YHU6L]H &ROOLVLRQV

*L
,QWHUIDFH -DEEHUV &5& $OLJQ (UU $OLJQ (UU

*L

“¢y
8QGHU'6L]H 3Gxx 49 - z
2YHU6L]H ' 3Gxx Ý9 - o
&ROOLVLRQV 'Gy ˇs z
)UDJPHQW -kw ˜ &5j¤ Œæ+÷j¤ z
-DEEHUV 'Ý9 -kw ˜ &5j¤ Œæ+÷j¤ z
&5& $OLJQ (UU &5j¤ ˜ z
$OLJQB(UU 'væl+÷j¤ z
)&6 (UU 'væ)˜&6j¤ o

  “PNM *LJDELW(WKHUQHW ¸
5XLMLH VKRZ LQWHUIDFH JLJDELW(WKHUQHW FRXQWHUV UDWH
,QWHUIDFH 6DPSOLQJ 7LPH ,QSXW 5DWH ,QSXW 5DWH
2XWSXW 5DWH
ELWV VHF SDFNHWV VHF ELWV
 SDFNHWV VHF


*L VHFRQGV


“¢y
6DPSOLQJ 7LPH k,QSXW 5DWH NM Nv,äk2XWSXW 5DWH NM G ,äo

  “PNM *LJDELW(WKHUQHW ¸
5XLMLH VKRZ LQWHUIDFH JLJDELW(WKHUQHW FRXQWHUV VXPPDU\
,QWHUIDFH ,Q2FWHWV ,Q8FDVW3NWV ,Q0XOWLFDVW3N

*L
```

, Q W H U I D F H	2 X W 2 F W H W V	2 X W 8 F D V W 3 N W V	2 X W 0 X O W L F D V

1.28 show interfaces status

ò0 N M Ù ¸o
show interfaces [ ] status

o‹ @ “ ¢o›

@	T
	N M ” y N M ÚZo
status	ò0 N M _ _ Ù ¸ k , , äy E W o

o‹ x X % o› ÔÓ%

o‹ Þ. · ðo› 14

o‹ 6 -o› òç 6 N M d f k Ø “ P æ ˜ N M Ù ¸o

o‹ F å o› 1 y “ P N M GigabitEthernet 0/1 Ù ¸o

```
5 X L M L H  V K R Z  L Q W H U I D F H V  * L J D E L W ( W K H U Q H W  V W D W X V
, Q W H U I D F H  6 W D W X V  9 O D Q  ' X S O H [  6 S H H G  7 \ S H

* L J D E L W ( W K H U Q H W  X S  ) X O O  0  F R S S H U
```

o‹ U P ¸o› -

o‹ u V “ ¢o› -

1.29 show interfaces status err-disable

ò0 N M Ù ¸o
show interfaces [ ] status err-disable

o‹ @ “ ¢o›

@	T
	U # @ k N M ” y N M ÚZ k # Ø “ P æ ˜ N Mo

o‹ x X % o› æ ˜ CLI ï %

o‹ Þ. · ðo› 14

o‹ 6 -o› òç 6 N M d f k Ø “ P æ ˜ N M M Ù ¸o

o‹ F å o› 1 y “ P N M GigabitEthernet 0/1 M Ù ¸o

2 MAC © ¬

x X	
clear mac-address-table dynamic	` “ ›o
mac-address-learning (µ A)	oo … { ¶ B MAC “ › . o
mac-address-learning	

o‹ Þ. · ðo› 2

o‹ 6 -o› U Y show mac-address-table dynamic x X ò0 `“ › n ˜ o

o‹ F å o› 1 y í æ ˜ `“ ›

```
5XLMLH FOHDU PDF DGGUHVV WDEOH G\QDPLF
```

o‹ U P ¸o› -

o‹ u V “ ¢o› -

2.2 mac-address-learning (µ A)

ł ¶ B MAC “ › . o
mac-address-learning enable

… { ¶ B MAC “ › . o
mac-address-learning disable

˚ Ö¶ B MAC “ › . o
default mac-address-learning

o‹ @ “ ¢o›

@	T
enable	o ¶ B MAC “ › . o
disable	… { ¶ B MAC “ › . o

o‹ Þ. F åo› ¶ B “ › . o

o‹ x X % o› ¶ B %

o‹ Þ. · ðo› 14

o‹ 6 -o› ¢ ¶ B MAC “ › . … { k ¶ B c g MAC “ › . z ¢ ¶ B MAC “ › . o k 7 M MAC “ › . ÿ|o

o‹ F å o› 1 y … { ¶ B “ › . y

```
5XLMLH FRQILJ PDF DGGUHVV OHDUQLQJ GLVDEOH
```

o‹ à co› -

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

2.3 mac-address-learning

ł N M MAC “ › . o
mac-address-learning

… { N M MAC “ › . o
no mac-address-learning

… { N M MAC “ › . o
default mac-address-learning

o‹ @ “ ¢o›

@	T
-	-

o‹ Þ. F åo› “ › . o

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› ¤ o ¶ M … { MAC “ › . k … { “ › . M F å ¶ o

o‹ F å o› 1 y … { N M “ › . y
5XLMLH FRQILJ LI LQWHUIDFH LG QR PDF DGGUHVV OHDUQLQJ

o‹ à co› -

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

2.4 mac-address-table aging-time

å ` “ › ï o

mac-address-table aging-time ed

˚ ÖÞ. o

no mac-address-table aging-time

˚ ÖÞ. o

default mac-address-table aging-time

o‹ @ “ ¢o›

@	T
ed	` “ › ï k Y a % yo 8 Õ— o 0 n P … { ï o

o‹ Þ. F åo› Þ. ' 300 ao

o‹ x X % o› ¶ B F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› show mac-address-table aging-time x X ò0 åo

o‹ F å o› 1 o å MAC “ › ï 500 a

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

o‹ à co› -

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

2.5 mac-address-table filtering

¤ 6 VLAN ˜ ¡ “ ›o

mac-address-table filtering ed vlan ed

í ¡ “ ›o

no mac-address-table filtering ed vlan ed

í ¡ “ ›o

default mac-address-table filtering vlan

o‹ @ “ ¢o›	@	T
		¡ “ ›o
		VLAN ID k 8 ¤ 1-4094o

o‹ Þ. F åo› Þ. Z ˜ å‘ ~ ¡ “ ›o

o‹ x X % o› ¶ B F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› ¡ “ › ` n “ ›o

o‹ F å o› 6 MAC “ › 0000.0202.0303 å VLAN 3 ˜ ¡ “ ›

```
5XLMLH FRQILJ PDF DGGUHVV WDEOH ILOWHULQJ YODQ
```

o‹ à co› show mac-address-table filtering x X ò0 ¡ “ › åo

o‹ U P ¸o› 1 y U P å ¡ “ › y

```
&DQ QRW VHW WKLV ILOWHU DGGUHVV
```

o‹ o j ¤o› -

o‹ u V “ ¢o› -

2.6 mac-address-table notification

ł . MAC “ › * s o “ › * s MIB y “ › * s 7 W £ n £ ´ Ý o

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

˚ ÖÞ. o

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

˚ ÖÞ. o

default mac-address-table notification [interval | history-size]

o‹ @ “ ¢o›	@	T
	interval	åG MAC “ › Trap k Þ. 1 a k 8 ¤ 1-3600o

history-size ■	MAC * = 7 W £ n n ¾ ´ Ý k Þ. 50 k 8 ¤ 1-200o

o‹ Þ. F åo› Þ. 1 a k n ⅜o * s ´ Ý* s 50o

o‹ x X % o› ¶ B F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› MAC “ › * = N S + ` “ › y ¶ “ › k ò+ 9 † ` “ › J 1 k D ÿ Trap * =o U Y ¤ ¶ B F å% * x X snmp-server enable traps mac-notification Ûf Œ … { ÕG MAC “ › Trap o

o‹ F å o› 1 y å MAC “ › * s y ?) ´ Ý* s MAC “ ›

```
5XLMLH FRQILJ PDF DGGUHVV WDEOH QRWLILFDWLRQ
5XLMLH FRQILJ PDF DGGUHVV WDEOH QRWLILFDWLRQ LQWHUYDO
5XLMLH FRQILJ PDF DGGUHVV WDEOH QRWLILFDWLRQ KLVWRU\ VL]H
```

o‹ à co› -

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

2.7 mac-address-table static

å%† † ` “ ›o

mac-address-table static ■ vlan ■ interface ■

í %† † ` “ ›o

no mac-address-table static ■ vlan ■ interface ■

í %† † ` “ ›o

default mac-address-table static ■ vlan ■ interface ■

o‹ @ “ ¢o›

@	T
■	6 n ¾) MAC “ ›o
■	6 n ¾ VLAN k 8 ¤ 1-4094o
■	1 ôG æ N M(U Y ' Òò M Œ AggregatePort)o

òç6 VLAN ˜ Œ 6 N M MAC `“ › . æ k … { ¥ VLAN ˜ Œ ¥ N M MAC “ › . o

òç VLAN ˜ Œ N M ` MAC “ › . k MAC “ › O] ˇ æ k k Ú

` MAC “ › k ò' › MAC “ › \ ï o x ' k … { VLAN ˜ Œ N M MAC `“ › . o

show mac-address-table max-dynamic-mac-count x X ò0 ¥ VLAN ˜ Œ ¥ N M `“ › n òy

. Õ‰

o‹ F å o› 1 y VLAN 1 ˜ ` MAC “ › .

```
5XLMLH FRQILJXUH WHUPLQDO
(QWHU FRQILJXUDWLRQ FRPPDQGV RQH SHU OLQH (QG ZLWK &17/ =
5XLMLH FRQILJ YODQ
5XLMLH FRQILJ YODQ PD[ G\QDPLF PDF FRXQW
```

2 y GigabitEthernet 0/1 ` MAC “ › .

```
5XLMLH FRQILJXUH WHUPLQDO
(QWHU FRQILJXUDWLRQ FRPPDQGV RQH SHU OLQH (QG ZLWK &17/ =
5XLMLH FRQILJ LQWHUIDFH *LJDELW(WKHUQHW
5XLMLH FRQILJ LI *LJDELW(WKHUQHW PD[ G\QDPLF PDF FRXQW
```

o‹ à co› -

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

2.9 show mac-address-learning

ò0 M “ › .

show mac-address-learning

o‹ @ “ ¢o›

@	T
-	-

o‹ x X % o› æ ˜ %

o‹ Þ. · ðo› 2

o‹ 6 -o› -

o‹ F å o› 1 y “ P M “ › . y

```
5XLMLH FRQILJ VKRZ PDF DGGUHVV OHDUQLQJ
*LJDELW(WKHUQHW OHDUQLQJ DELOLW\ GLVDEOH
*LJDELW(WKHUQHW OHDUQLQJ DELOLW\ HQDEOH
*LJDELW(WKHUQHW OHDUQLQJ DELOLW\ HQDEOH
*LJDELW(WKHUQHW OHDUQLQJ DELOLW\ HQDEOH
```

o‹ U P ¸o›

o‹ u V “ ¢o› -

2.10 show mac-address-table

“ P æ ˜ ” MAC “ › ¸ g , `“ › k † ` “ › y ¡ “ › ho

show mac-address-table [address d] [interface d] [vlan d]

o‹ @ “ ¢o›

@	T
address d	6 MAC “ ›o
interface d	N M Zo
vlan d	VLAN Z k 8 ¤ 1-4094o

o‹ x X % o› æ ˜ %

o‹ Þ. · ðo› 2

o‹ 6 -o› -

o‹ F å o› 1 y ò0 MAC “ › n

```
5XLMLH VKRZ PDF DGGUHVVG W/DEOH DGGUHVV
9ODQ 0$& $GGUHVV 7\SH ,QWHUIDFH

G I 67$7,& *LJDELW(WKHUQHW
```

< K y

<	“ ¢
Vlan	N M “ ›
MAC Address	MAC “ ›
Type	MAC “ › ”
Interface	MAC “ › æ ¤ N M

o‹ U P ¸o›

o‹ u V “ ¢o› -

2.11 show mac-address-table aging-time

“ P ` “ › ï o

show mac-address-table aging-time

o‹ @ “ ¢o›

@	T
-	-

o‹ x X % o› æ ˜ %

o‹ Þ. · ðo› 2

o‹ 6 -o› -

o‹ F å o› 1 y ò0 MAC “ › ï

```
5XLMLH VKRZ PDF DGGUHVV WDEOH DJLQJ WLPH
$JLQJ WLPH
```

o‹ U P ¸o› -

o‹ u V “ ¢o› -

2.12 show mac-address-table count

“ P “ › n “ › n ¾ ˇ ¸o

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

o‹ @ “ ¢o›

@	T
interface	N M Z
vlan	VLAN Z k 8 ¤ w O £ Z › n ¾ + ˇ M Z w mac-address-table count

```
5XLMLH  VKRZ PDF DGGUHVV WDEOH FRXQW
'\QDPLF $GGUHVV &RXQW
6WDWLF  $GGUHVV &RXQW
)LOWHU  $GGUHVV &RXQW
7RWDO 0DF $GGUHVVHV
7RWDO 0DF $GGUHVV 6SDFH $YDLODEOH
```

2 y “ P VLAN 1 MAC “ › O y

```
5XLMLH  PVKRZ DGGUHVV WDEOH FRXQW
'\QDPLF $GGUHVV &RXQW
6WDWLF  $GGUHVV &RXQW
)LOWHU  $GGUHVV &RXQW
7RWDO 0DF $GGUHVVHV
```

3 y “ P interface g0/1 MAC “ › O y

```
5XLMLH  PVKRZ DGGUHVV WDEOH LQWHUIDFH
'\QDPLF $GGUHVV &RXQW
6WDWLF  $GGUHVV &RXQW
)LOWHU  $GGUHVV &RXQW
7RWDO 0DF $GGUHVVHV
```

< K y

<	“ ¢
Dynamic Address Count	` MAC “ ›
Static Address Count	† ` MAC “ ›
Filter Address Count	¡ “ ›
Total Mac Addresses	¨ MAC “ ›

o‹ U P ¸o› -

o‹ u V “ ¢o› -

2.13 show mac-address-table dynamic

“ P ` “ › n ¸ k U Y ÿG MAC “ ›o N M y VLAN Ûò0o

show mac-address-table dynamic [address [illegible]] [interface [illegible]] [vlan [illegible]]

o‹ x X % o› æ ˜ %

o‹ Þ. · ðo› 2

o‹ 6 -o› -

o‹ F å o› 1 o ò0 æ ˜ ` MAC “ › n

```
5XLMLH  VKRZ PDF DGGUHVV WDEOH G\QDPLF
9ODQ    0$& $GGUHVV      7\SH       ,QWHUIDFH

                      '<1$0,&  *LJDELW(WKHUQHW
          F D          '<1$0,&  *LJDELW(WKHUQHW
          F  GII       '<1$0,&  *LJDELW(WKHUQHW
          FI HHH        '<1$0,&  *LJDELW(WKHUQHW
          FI I  I      '<1$0,&  *LJDELW(WKHUQHW
        E    G         '<1$0,&  *LJDELW(WKHUQHW
        EDGH  F        '<1$0,&  *LJDELW(WKHUQHW
```

< K y

<	“ ¢
Vlan	MAC “ › æ ¤ VLAN
MAC Address	MAC “ ›
Type	MAC “ › ”
Interface	MAC “ › æ ¤ N M

o‹ U P ¸o› -

o‹ u V “ ¢o› -

2.14 show mac-address-table filtering

“ P YïUQ ‘x @ ℃ y 22 o‹ < Ý$«ä D#p B9s 5 VU à s æ9s 2, Œ„ƒÒ9s 5 ^ YØ) Z—c* R9s 2, Q)"j Z—jm 9s 5

o‹ 6 -o› -

o‹ F å o› 1 o ò0 ¡ “ › n

```
5XLMLH VKRZ PDF DGGUHVV WDEOH ILOWHULQJ
9ODQ 0$& $GGUHVV 7\SH ,QWHUIDFH

),/7(5 1RW DYDLODEOH
```

< K y

<	“ ¢
Vlan	MAC “ › æ ¤ VLAN
MAC Address	MAC “ ›
Type	MAC “ › ”
Interface	MAC “ › æ ¤ N M

o‹ U P ¸o› -

o‹ u V “ ¢o› -

2.15 show mac-address-table max-dynamic-mac-count

“ P ` MAC “ › . o

show mac-address-table max-dynamic-mac-count { vlan [ë] | interface [é] }

o‹ @ “ ¢o›

@	T
vlan	ò0 æ ˜ 6 4 ` MAC “ › . VLAN ˜ MAC “ › . ÕÑ
ë	ò0 6 VLAN ˜ ` MAC “ › . y . ÕÑk 8 ¤ 1-4094o
interface	ò0 æ ˜ 6 4 ` MAC “ › . N M MAC “ › . ÕÑ
é	ò0 6 N M ` MAC “ › . y . ÕÑ

o‹ x X % o› ÔÓ%

o‹ Þ. · ðo› 2

o‹ 6 -o› -

o‹ F å o› 1o ò0 æ ˜ 6 4 ` MAC “ › . VLAN ˜ MAC “ › . ÕÑ

```
5XLMLH VKRZ PDF DGGUHVV WDEOH PD[ G\QDPLF PDF FRXQW YODQ
9ODQ /LPLW 0$& FRXQW /HDUQLQJ

<(6
```

2o ò0 6 VLAN ˜ ` MAC “ › . ÕÑ

```
5XLMLH VKRZ PDF DGGUHVV WDEOH PD[ G\QDPLF PDF FRXQW YODQ
9ODQ /LPLW 0$& FRXQW /HDUQLQJ

<(6
```

< K y

<	“ ¢
Vlan	Vlan id
Limit	MAC “ ›
MAC count	¢ ø VLAN ˜ æ ` MAC “ ›
Learning	¥ VLAN MAC “ › . ' k … {

3o ò0 æ ˜ 6 4 ` MAC “ › . N M MAC “ › . ÕÑ

```
5XLMLH VKRZ PDF DGGUHVV WDEOH PD[ G\QDPLF PDF FRXQW LQWHUIDFH
,QWHUIDFH /LPLW 0$& FRXQW /HDUQLQJ

*LJDELW(WKHUQHW <(6
```

4o ò0 6 N M ` MAC “ › . ÕÑ

```
5XLMLH VKRZ PDF DGGUHVV WDEOH PD[ G\QDPLF PDF FRXQW LQWHUIDFH
,QWHUIDFH /LPLW 0$& FRXQW /HDUQLQJ

*LJDELW(WKHUQHW <(6
```

< K y

<	“ ¢
Interface	Interface id
Limit	MAC “ ›
MAC count	¢ ø N M æ ` MAC “ ›
Learning	¥ N M MAC “ › . ' k … {

o‹ U P ¸o› -

o‹ u V “ ¢o› -

2.16 show mac-address-table interface

“ P 6 N M æ ˜ ” “ › ¸ g , `“ › k † ` “ › ho

show mac-address-table interface vlan]

o‹ @ “ ¢o›

@	T
ë	6 N M(U Y ' Òò M Œ AggregatePort)o
ì	6 n ¾ VLAN k 8 ¤ 1-4094o

o‹ x X % o› ÔÓ%

o‹ Þ. · ðo› 2

o‹ 6 -o› -

o‹ F å o› 1o ò0 6 N M MAC “ ›

5 X L M L H V K R Z P D F D G G U H V V W D E O H L Q W H U I D F H * L J D E L W (W K H U Q H W
9 O D Q 0 $ & $ G G U H V V 7 \ S H , Q W H U I D F H
0 0 7 \ S % , Q W H U I D F H à•Dð @ 0 0 0 0 0 0 0 0 !

o‹ Þ. · ðo› 2

o‹ 6 -o› -

o‹ F å o› 1 o ò0 MAC “ › * s ¶ B F å ¸

```
5XLMLH VKRZ PDF DGGUHVV WDEOH QRWLILFDWLRQ
0$& 1RWLILFDWLRQ )HDWXUH (QDEOHG
,QWHUYDO 6HF
0D[LPXP +LVWRU\ 6L]H
&XUUHQW +LVWRU\ 6L]H
```

< K y

<	“ ¢
Interval(Sec)	* s MAC “ ›
Maximum History Size	MAC “ › * s 7 W £ n ´ Ýn ¾
Current History Size	¢ ø £ Ú)

2o ò0 N M MAC “ › J * s Ù

```
5XLMLH VKRZ PDF DGGUHVV WDEOH QRWLILFDWLRQ
0$& 1RWLILFDWLRQ )HDWXUH (QDEOHG
,QWHUYDO 6HF G 0$&› * = a
0D[LPXP +LVWRU\ 6L]H 0$&= 7 Wó £ n ´ Ýn ¾ Ú
&XUUHQW +LVWRU\ 6L]H ¢ ø £ Ú)
5XLMLH VKRZ PDF DGGUHVV WDEOH QRWLILFDWLRQ LQWHUIDFH *LJDELW
,QWHUIDFH 0$& $GGHG 7UDS 0$& 5HPRYHG 7UDS

*LJDELW(WKHUQHW (QDEOHG (QDEOHG
```

< K y

<	“ ¢
Interface	N M
MAC Added Trap	MAC “ › * s ÕÑ
MAC Removed Trap	MAC “ › í * s ÕÑ

o‹ U P ¸o› -

o‹ u V “ ¢o› -

2.18 show mac-address-table static

“ P † ` “ ›o

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

o‹ @ “ ¢o›

@	T
d	6 n ¾) MAC “ ›o
d	6 n ¾ VLAN k 8 ¤ 1-4094o
d	1 ôG æ N M(U Y ' Òò M Œ AggregatePort)

o‹ x X % o› ÔÓ%

o‹ Þ. · ðo› 2

o‹ 6 -o› -

o‹ F å o› 1 y “ P æ ˜ † ` “ › ¸ y

```
5XLMLH  VKRZ PDF DGGUHVV WDEOH VWDWLF
9ODQ    0$& $GGUHVV     7\SH        ,QWHUIDFH

      G  I          67$7,&  *LJDELW(WKHUQHW
      G  I          67$7,&  *LJDELW(WKHUQHW
      G  I          67$7,&  *LJDELW(WKHUQHW
```

< K y

<	“ ¢
Vlan	MAC “ › æ ¤ VLAN
MAC Address	MAC “ ›
Type	MAC “ › ”
Interface	MAC “ › æ ¤ N M

o‹ U P ¸o› -

o‹ u V “ ¢o› -

2.19 show mac-address-table vlan

“ P 6 VLAN æ ˜ ” “ › ¸o

show mac-address-table vlan [d]

o‹ @ “ ¢o›

@	T
d	6 VLAN ID k 8 ¤ 1-4094o

o‹ x X % o› ÔÓ%

o‹ Þ. · ðo› 2

o‹ 6 -o› -

o‹ F å o› 1 y ò0 VLAN 1 MAC “ ›

```
5XLMLH  VKRZ PDF DGGUHVV WDEOH YODQ
9ODQ    0$& $GGUHVV      7\SH       ,QWHUIDFH

      G  I          67$7,&  *LJDELW(WKHUQHW
      G  I          67$7,&  *LJDELW(WKHUQHW
      G  I          67$7,&  *LJDELW(WKHUQHW
```

< K y

<	“ ¢
Vlan	MAC “ › æ ¤ VLAN
MAC Address	MAC “ ›
Type	MAC “ › ”
Interface	MAC “ › æ ¤ N M

o‹ U P ¸o› -

o‹ u V “ ¢o› -

2.20 snmp trap mac-notification

ł N M MAC “ › * = o

snmp trap mac-notification { added | removed }

… { ¥ o

no snmp trap mac-notification { added | removed }

… { ¥ o

default snmp trap mac-notification { added | removed }

o‹ @ “ ¢o›

@	T
added	¢ “ › ˝ * =o
removed	¢ “ › t í * =o

o‹ x X % o› N M F å%

|

o‹ F å o› 1 o ł M MAC “ › ˝ * s trap ...

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

2o ł M MAC “ › í * s trap ...

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

o‹ U P ¸o› -

o‹ u V “ ¢o› -

2.21 aggregateport-admin vlan

F å AP M ò VLANo

aggregateport-admin vlan ▮

í AP M ò VLANo

no aggregateport-admin vlan ▮

í AP M ò VLANo

default aggregateport-admin vlan ▮

o‹ @ “ ¢o›

@	T
▮	6 q VLAN çno

o‹ Þ. F åo› Þ. Z ˜ F å‘ ~ AP M ò VLANo

o‹ x X % o› ¶ B F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› òç‹ } AP M ª ò y G k Ø ¥ üg 4 F å¾ AP M N v æ ò VLAN k 7 ` ò Ôòk ‡ ò VLAN k 7 ` G Ôòo

o‹ F å o› 1 y F å AP M ò VLAN

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

o‹ à co› -

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

3 Aggregate Port

x X	
aggregateport capacity mode	F å AP O % o
aggregateport load-balance	F å‰%† AP v O u k co
aggregateport member linktrap	F å AP Ł t M G LinkTrap * s o
aggregateport minimum member	F å LACP Ł t M ´ 4
aggregateport primary-port	F å AP Ł t M i # Mo
fcoe field	F å6 ¿ œ ª ˝ % Æ FCOE ¿ œ ª %
interface aggregateport	F å AP M Œ æ µ AP M N M F å% o

o‹ à co›

o‹ Œ— A #ŸK` d ‡b ÀgP¡™ cöê ñùà

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

o‹ à co› U Y * show running x X ò0 F å' k ¤o

* show aggregateport capacity x X ò0 ¢ ø AP AA # !Q ƒÂ T <ba ƒÉ ðX ~ÃÀ.'.0 ÀcQ •'3g ÐÑ ÆLarÎ'8 sÉ—5 G-ß4YW

s AP Ç — Ù ì ˜ 8 AP Ç • • T l Û & q 3 W IP ä , IP) û h Ó

o‹ x X % o› ¶ B % Œ æ N M F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› ¤ î ? u 4 ´ 9 6 AP M F åv O u k D } k µ6 AP M N M % g v O u k c F åk F
åÿ| e k ¥ AP M < k Y F å v O u k c g W o ¤ ? D } µk ï U Y ¤ AP M N M %
no aggregateport load-balance x X ¥ AP M F å v O u k c â| k òÿ| ¢ ø Õ
ÿ| AP ¶ B v O u k co

o‹ F å o› 1 y F å´ 9) MAC “ › AP ¶ B v O u k c y
5 X L M L H F R Q I L J D J J U H J D W H S R U W O R D G E D O D Q F H G V W P D F

2 y ¤ AP 1 M F å´ 9) MAC “ › v O u k c y
5 X L M L H F R Q I L J L Q W H U I D F H D J J U H J D W H S R U W
5 X L M L H F R Q I L J L I $ J J U H J D W H 3 R U W D J J U H J D W H S R U W O R D G E D O D Q F H

o‹ à co› show aggregateport load-balance x X ò0 å v O u k co

oR U P ¸o› c1e1°¨'P F I

```
5XLMLH  VKRZ LQWHUIDFH DJJUHJDWHSRUW
 …
 $JJUHJDWH 3RUW ,QIRUPDWLRQV
       $JJUHJDWH 1XPEHU
       1DPH   $JJUHJDWH3RUW
       0HPEHUV   FRXQW
       3ULPDU\ 3RUW  *LJDELW(WKHUQHW
       *LJDELW(WKHUQHW          /LQN 6WDWXV  8S    /DFS 6WDWXV  VX
```

o‹ à co› U Y * show running x X ò0 F å' k ¤o

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

3.4 aggregateport member linktrap

F å AP Ł t M G LinkTrap * s o
aggregateport member linktrap

… { AP Ł t M LinkTrap * s o
no aggregateport member linktrap

o‹ @ “ ¢o›

@	T
-	-

o‹ Þ. F åo› Þ. ÕÑ kAP Ł t M LinkTrap * s ' … { o

o‹ x X % o› ¶ B F å% o

o‹ Þ. · ðo› 14

o‹ 6 -o› N M % k * [no] snmp trap link-status x X Û å AP Ł t M ' k G LinkTrap * s k ò ¥ ¤ ¶ B F å% k [no] aggregateport member linktrap x X Û å AP Ł t M ' k G LinkTrap * s o

o‹ F å o› 1 y µ ÿ 9 ł AP Ł t M LinkTrap * s y

```
5XLMLH  FRQILJXUH WHUPLQDO
5XLMLH FRQILJ  DJJUHJDWHSRUW PHPEHU OLQNWUDS
```

o‹ à co› U Y * show running x X ò0 F å' k ¤o

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

3.5 aggregateport primary-port

F å AP Ł t M i # M
aggregateport primary-port

ï U no # ¾ ÖÞ. F å
no aggregateport primary-port

o‹ @ “ ¢o›

@	T
-	-

o‹ Þ. F åo› Þ. ÕÑ k M ' i # Mo

o‹ x X % o› N M F å% o

o‹ Þ. · ðo› 14

o‹ 6 -o› %† AP M Q “ F å¾† i # Mo

o‹ F å o› 1 y µ ÿ 9 1 GigabitEthernet 0/1 F å AP i # M y

```
5XLMLH FRQILJ LQWHUIDFH *LJDELW(WKHUQHW
5XLMLH FRQILJ LI *LJDELW(WKHUQHW SRUW JURXS PRGH DFWLYH
5XLMLH FRQILJ LI *LJDELW(WKHUQHW DJJUHJDWHSRUW SULPDU\ SR
5XLMLH FRQILJ LI *LJDELW(WKHUQHW HQG
5XLMLH VKRZ LQWHUIDFH DJJUHJDWHSRUW
 …
 $JJUHJDWH 3RUW ,QIRUPDWLRQV
      $JJUHJDWH 1XPEHU
      1DPH $JJUHJDWH3RUW
      0HPEHUV FRXQW
      3ULPDU\ 3RUW *LJDELW(WKHUQHW
      *LJDELW(WKHUQHW /LQN 6WDWXV 8S /DFS 6WDWXV EQ
```

o‹ à co› U Y * show running x X ò0 F å' k ¤o

o‹ U P ¸o› 1. ‡ Ł t M F åi # M k U P j ¤

o‹ @ “ ¢o›

@	T
vlan	ÿG ÿµ FCOE VLAN g v O ª Fo
src-port	ÿG ÿµ FCOE M Z g v O ª Fo
src-id	ÿG FCOE source ID g v O ª Fo
dst-id	ÿG FCOE destination ID g v O ª Fo
rx-id	ÿG FCOE Responder Exchange ID g v O ª Fo
ox-id	ÿG FCOE Originator Exchange ID g v O ª Fo
fabric-id	ÿG FCOE FC àÌ Fabric ID g v O ª Fo

o‹ Þ. F åo› Þ. % kFCOE ¿ œ ª src-ido dst-ido ox-ido

o‹ x X % o› ¿ œ ª ˝ % Æ F å% o

o‹ Þ. · ðo› 14

o‹ 6 -o› F å¥ x X k ‹ } fl º ¿ œ ª ˝ ” % Æo

o‹ F å o› 1 y µ ÿ' F å FCOE ¿ œ ª % src-id o src-port y

```
5XLMLH FRQILJ ORDG EDODQFH SURILOH DSO
5XLMLH FRQILJ ORDG EDODQFH SURILOH IFRH ILHOG VUF LG VUF SRUW
```

o‹ à co› show load-balance-profile ò0) ø F åo

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

3.7 interface aggregateport

F åY ßà AP M Œ æ µY ßà AP M N M F å% o
interface aggregateport þ

í AP Mo
no interface aggregateport þ

o‹ @ “ ¢o›

@	T
þ	AP N M Zo

o‹ Þ. F åo› Þ. ÕÑ kAP M Ì t º o

o‹ x X % o› ¶ B F å% o

o‹ Þ. · ðo› 14

o‹ 6 -o› ¢ AP M] ˇ º k F å interface aggregateport x X µ AP M N M F å% z ¢ AP M Ì º k
F å interface aggregateport k fl º AP M k òçº Ł k Ø µ AP M N M F å% o

o‹ o j ¤o› -

o‹ u V “ ¢o› -

3.9 l2 field

F å6 ¿ œ ª ˝ % Æ 8 C ¿ œ ª % o
l2 field [src-mac] [dst-mac] [l2-protocol] [vlan] [src-port]

˚ ÖÞ. o
no l2 field

o‹ @ “ ¢o›

@	T
src-mac	ÿG ÿµ8 C MAC “ › g v O ª Fo
dst-mac	ÿG ÿµ8 C) MAC “ › g v O ª Fo
l2-protocol	ÿG ÿµ8 C 8 C # ” g v O ª Fo
vlan	ÿG ÿµ8 C VLAN g v O ª Fo
src-port	ÿG ÿµ8 C M Z g v O ª Fo

o‹ Þ. F åð› Þ. % k 8 C ¿ œ ª src-mac o dst-mac o vlan o

o‹ x X % o› ¿ œ ª ˝ % Æ F å% o

o‹ Þ. · ðð› 14

o‹ 6 -o› F å¥ x X k ‹ } fl º ¿ œ ª ˝ ” % Æo

o‹ F å o› 1 y µ ÿ' F å8 C ¿ œ ª % src-mac o src-port y

```
5XLMLH FRQILJ ORDG EDODQFH SURILOH DSO
5XLMLH FRQILJ ORDG EDODQFH SURILOH O ILHOG VUF PDF VUF SRUW
```

o‹ à co› show load-balance-profile ò0) ø F åo

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

3.10 lacp port-priority

F å LACP AP Ł t M M i fl ·o
lacp port-priority

˚ Ö LACP AP Ł t M M i fl ·o
no lacp port-priority

o‹ @ “ ¢o›

@	T

þ	M LACP M i fl · k Þ. ' 32768 k 8 ' 0-65535o

o‹ Þ. F åo› Þ. ' 32768o

o‹ x X % o› N M % o

o‹ Þ. · ðo› 14

o‹ 6 -o› -

o‹ F å o› 1 y µ ÿ 9 F å M Gi0/1 LACP M i fl · 4096 y

```
5 X L M L H  F R Q I L J  L Q W H U I D F H  J L J D E L W ( W K H U Q H W
5 X L M L H  F R Q I L J  L I  * L J D E L W ( W K H U Q H W  O D F S  S R U W  S U L R U L W \
```

o‹ à co› show lacp summary x X ò0) ø F åo

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

3.11 lacp short-timeout

F å LACP AP Ł t M Ý % ? Ý % o
lacp short-timeout

˚ Ö LACP AP Ł t M Ý % x Ý % o
no lacp short-timeout

o‹ @ “ ¢o›

@	T
-	

o‹ Þ. F åo› Þ. ' x Ý % o

o‹ x X % o› N M % o

o‹ Þ. · ðo› 14

o‹ 6 -o› x Ý % k M 30 a G %† LACP k90 a Ì v æ / Ý o
? Ý % k M 1 a G %† LACP k3 a Ì v æ / Ý o

o‹ F å o› 1 y µ ÿ 9 F å M Gi0/1 LACP M Ý % ? Ý y

```
5 X L M L H  F R Q I L J  L Q W H U I D F H  J L J D E L W ( W K H U Q H W
5 X L M L H  F R Q I L J  L I  * L J D E L W ( W K H U Q H W  O D F S  V K R U W  W L P H R X W
```

o‹ à co› show lacp summary x X y show run ò0) ø F åo

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

```
)ODJV   6   'HYLFH LV 6UHTX H$&3'8V
)   'HYLFH LV UHTXHVW$&3'8V
$   'HYLFH LV LQ DFWLYH PRGH        3   'HYLFH LV LQ SDVVLYH PRGH
$JJUHJDWH SRUW
/RFDO LQIRUPDWLRQ
                    /$&3 SRUW      2SHU    3RUW     3RUW
3RUW     )ODJV     6WDWH     3ULRULW\       .H\     1XPEHU  6WDWH

*L       )$        EQGO                    [       [       [ G
*L       6$        EQGO                    [       [       [ G
3DUWQHU LQIRUPDWLRQ
                /$&3 SRUW                 2SHU    3RUW     3RUW
3RUW     )ODJV     3ULRULW\      'HY ,'       .H\     1XPEHU   6WDWH

*L       6$                G   I           [       [       [ G
*L       6$                G   I           [       [       [ G
```

Õh y µ Flags < k F n P ‰ u ° k - < ' ? Ý % kS n P ª u ° k - < ' x Ý % o

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

3.12 load-balance-profile

º ˝ % % Æ k w µ˝ % % Æ % o
load-balance-profile [illegible]

í ¥ % Æo
no load-balance-profile [illegible]

o‹ @ “ ¢o›

@	T
[illegible]	% Æ d fo u 4 ´ Ú 31 o

o‹ Þ. F åo› Þ. Z ˜ º ‘ ~ ˝ % % Æo

o‹ x X % o› ¶ B F å% o

o‹ Þ. · ðo› 14

o‹ 6 -o› ¶ B Q u 4%† % Æo

o‹ F å o› 1 y µ ÿ 9 º %† % Æ d apl ˝ ” % Æ y

```
5XLMLH FRQILJ   ORDG EDODQFH SURILOH DSO
```

o‹ à co› show load-balance-profile ò0) ø F åo

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

3.13 mpls field

	AP N M Zo
load-balance	“ P AP v O u k co
summary	“ P AP ? Úe Ł d } ¸o

o‹ Þ. F åo› -

o‹ x X % o› _ % fi U ügo

o‹ Þ. · ðo› 1`0 0 0 0 0 0 0 `0 0 0 0 0 0 0 S

o‹ 6 -o› òçZ ˜ 6 AP N M Z k Ø æ ˜ AP ¸ 1 t “ P ßÛo

o‹ F å o› 1 y ò0 A E Ñ çy ¿ AC ' çD } AP 1 F å ¸ y

5 X L M L H V K R Z D J J U H J D W H S R U W V X P P D U \
`0 0 0 0 0 0 0 `0 0 0 0 0 0 0 0 0 P p `0

“ ¢ y

Configuration Capacity Mode ' ï ¢ ø F å O % g 9 Ì M o ' ˇ k æ Y ÿ| h

Effective Capacity Mode ' ¢ ø ÿ| O %

Available Capacity ' ¢ ø U O % g H F å O % y ÿ| O % A ⁄ h

Total Number ' ¢ ø ' ˇ ´ ÝU AP O kUsed '] AP kAvailable ' þ U AP o

o‹ U P ¸o› -

o‹ u V “ ¢o› -

3.17 show lacp summary

“ P LACP e Ł ü‘ Ù˚o

show lacp summary [ÿ]

o‹ @ “ ¢o›

@	T
key-name	6 LACP AP N M Zo

o‹ Þ. F åð› -

o‹ x X % o› _ % fi U ügo

o‹ Þ. · ðð› 14

o‹ 6 -o› òçZ ˜ 6 key-number k Ø æ ˜

o‹ o j ¤o› -

o‹ u V “ ¢o› -

3.18 show load-balance-profile

“ P ˝ % åo
show load-balance-profile [▯]

o‹ @ “ ¢o›

@	T
▯	% Æ d fo

o‹ Þ. F åo› -

o‹ x X % o› _ % fi U ügo

o‹ Þ. · ðo› 14

o‹ 6 -o› òçZ ˜ 6 ▯ k Ø æ ˜ ˝ % % Æ ˛ 1 t “ P ßÛø

o‹ F å o› 1 y ò0 % Æ module0 ˝ ” v O fi k F å ˛ y

```
5XLMLH VKRZ ORDG EDODQFH SURILOH PRGXOH
/RDG EDODQFH SURILOH PRGXOH
3DFNHW +DVK )LHOG
,3Y VUF LS GVW LS
/ VUF PDF GVW PDF YODQ
```

o‹ à co› -

o‹ U P ˛o› -

o‹ o G6 o‹ U P fl G6 oo mq(t w C ðÀ 0 10 H3uYm ‘ BB.— BT 0.3.38 443.1 0.24 re7F0B4 r4w 9.32 Tm ( )T206C002115.42 re f Td (14)T

4 VLAN

x X	
add	g ¢ ø VLAN %† Œ%† ` Access N Mo
name	å VLAN d o
qinq-admin	F å˜ C ò VLAN o
show vlan	“ P VLAN Ł t M ¸o
switchport access	1%† M å access port k w 1 6 u %† VLAN Ł t Mo
switchport mode	6 %† 8 C N M gswitch port h % o
switchport trunk	%† trunk port 6 %† native VLAN y F å Trunk M U VLAN çno
vlan	F å¥ x X µ VLAN Œ æVLAN range F å% o

4.1 add

g ¢ ø VLAN %† Œ%† ` Access N Mo
add interface { | range }

R ¢ ø VLAN í %† Œ%† ` Access N Mo
no add interface { range

R ¢ ø VLAN í %† Œ%† ` Access N Mo
default add interface { | range }

o‹ @ “ ¢o›

@	T
	8 C Y ßàN M Œ æ 8 C AP M
range	8 C Y ßàN M 8 Œ æ 8 C AP M 8

o‹ Þ. F åo›

5 X L M L H F R Q I L JJ@UQ I J@ Å€ @t@t@ 0 À p € P •@° ` € 2¤• À @°P0 Àp Q W W H U W H D O Q4ð 0
æ ˜ 8 C Y ßàN M C K 9 VLAN1o

o‹ x X % o› VLAN F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› ¥ x X Q + Access M ˜ |o
¥ x X F å| çc ¤ N M % 6 ¥ N M æ K VLAN x X g / switchport access vlan h | ç
%† z + 9 _ ¥ N M µ VLAN x X k F åÿ| = Ø ' e F å x X ~ $ ø µF å x Xo
¥ x X 1 8 C AP M æ ¢ ø VLAN k ¥ F åQ + 8 C AP M ÿ| k + 9 8 C AP M Ł t M |o

o‹ F å o› 1 y g VLAN20 µ GigabitEthernet 0/10 N Mo

```
5 X L M L H F R Q I L J X U H W H U P L Q D O
5 X L M L H F R Q I L J X UQ I J@ 1 Q4ð 0
```


5 X L M L H F R Q I L JJ@UQ I J@ Å€ epµp ¤@ 0 À p 0¤@ 14ñ 5 O VW D

2 y g VLAN200 µ GigabitEthernet 0/1~ GigabitEthernet 0/10 N Mo

```
5XLMLH FRQILJXUH WHUPLQDO
5XLMLH FRQILJ YODQ
5XLMLH FRQILJ YODQ DGG LQWHUIDFH UDQJH *LJDELW(WKHUQHW
5XLMLH VKRZ YODQ
5XLMLH VKRZ YODQ
9/$1 1DPH 6WDWXV 3RUWV

9/$1 67$7,& *L *L *L *L
*L *L *L *L
*L *L *L *L
*L *L
9/$1 67$7,& *L *L *L *L
*L *L *L *L
*L *L
```

3 y g VLAN20 µ AggregatePort 10 Mo

```
5XLMLH FRQILJXUH WHUPLQDO
6ZLWFK$ FRQILJ YODQ
6ZLWFK$ FRQILJ YODQ DGG LQWHUIDFH DJJUHJDWHSRUW
5XLMLH VKRZ LQWHUIDFH DJJUHJDWHSRUW VZLWFKSRUW
,QWHUIDFH 6ZLWFKSRUW 0RGH $FFHVV 1DWLYH 3URWHFWHG 9/$1 OI

$JJUHJDWH3RUW HQDEOHG $&&(66 'LVDEOHG $//
```

o‹ à co› show vlan U Y ò0 M ' k Q ¤ µ VLAN ˜o

o‹ U P ¸o› -

o‹ o j ¤o› 1 y µ N M ' 8 C A E Mo

2o µ N M ' Access Mo

3o µ N M ' AP Ł t Mo

o‹ u V “ ¢o› -

4.2 name

å VLAN d o

name

˚ ŒŁ Þ. o

no name

˚ ŒŁ Þ. o

default name

o‹ @ “ ¢o›

@	T
	VLAN d

o‹ Þ. F åo› VLAN Þ. d VLAN jVLAN ID k ò VLAN 2 Þ. d ”VLAN0002” o

o‹ x X % o› VLAN F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› -

o‹ F å o› 1 y å VLAN 10

4.4 show vlan

“ P VLAN Ł t M ¸o
show vlan [id]

o‹ @ “ ¢o›	@	T

˚ ÖÞ. F åo
default switchport access vlan

o‹ @ “ ¢o›	@	T
	ä	M } µ VLAN IDo

o‹ Þ. F åo› Access M Þ. N µ VLAN 1o

o‹ x X % o› N M F å% o

o‹ Þ. · ðo› 14

o‹ 6 -o› òç µ VLAN ¤ k k fl º %† VLAN k Àe M µ VLAN z òç VLAN] ˘ ¤ k Ø 1 ¥ M µ6 VLANo
òç¥ M '%† trunk port k üg ¥ q o

o‹ F å o› 1 y F å M access VLAN

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

o‹ à co› -

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

4.6 switchport mode

6 %† 8 C N Mgswitch port h % kU Y 6 ¥ N M access porto trunk porto hybrid porto uplink port k Œ æ 802.1Q 3o
switchport mode { access | trunk | hybrid | uplink }

1 ¥ N M % ˚ Ö Þ. o
no switchport mode

1 ¥ N M % ˚ Ö Þ. o
default switchport mode

o‹ @ “ ¢o›	@	T
	access	å¾† switch port access porto
	trunk	å¾† switch port trunk porto
	hybrid	å¾† switch port hybrid porto
	uplink	å¾† switch port uplink porto

o‹ Þ. F åo› switch port Þ. % accesso

o‹ x X % o› N M F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› òç%† switch port % ' access kØ ¥ N M Q %† VLAN Ł to U Y switchport access vlan x X 6 ¥ N M ' î%† VLAN Ł to
òç%† switch port % ' trunk k ó µæ ˜ VLAN k - U Y * x X switchport trunk allowed 1 M µ ß6 VLANo
òç%† switch port % ' uplink k ó - ' µæ ˜ VLANo Trunk M c ' kuplink M ÿß C k Tag k / k üY ó VLAN ˜ Tago - U Y * x X switchport trunk allowed 1 M µ ß 6 VLANo
òç%† switch port % ' hybrid k ó - ' µæ ˜ VLAN k Trunk M c ' k U Y * x X switchport hybrid allowed 6 M ' Y Tag ŒUNTag ¥ µo

o‹ F å o› 1 y 1 M 1 å access M

```
5 X L M L H F R Q I L J L Q W J
5 X L M L H F R Q I L J L I *L J D E L W ( W K H U Q H W V Z L W F K S R U W P R G H D F F H V V
```

2 y 1 M 1 å trunk M

```
5 X L M L H F R Q I L J L Q W J
5 X L M L H F R Q I L J L I *L J D E L W ( W K H U Q H W V Z L W F K S R U W P R G H W U X Q N
```

3 y 1 M 1 å uplink M

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

4 y 1 M 1 å hybrid M

```
5 X L M L H F R Q I L J L Q W J
5 X L M L H F R Q I L J L I *L J D E L W ( W K H U Q H W V Z L W F K S R U W P R G H K \ E U L G
```

o‹ à co› U Y * show interface switch x X ò0

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

4.7 switchport hybrid allowed

1 M Y Tag ŒUNTag ¥ µ6 VLAN çn k Œ æ 1 M R 6 VLAN çn ßo
switchport hybrid allowed vlan { { [add | only] tagged ▮ | [add] untagged ▮ } | remove ▮ }

1 hybrid M ˚ Œł ó K ¯o
no switchport hybrid allowed vlan

1 hybrid M ˚ Œł ó K ¯o
no switchport hybrid allowed vlan

o‹ @ “ ¢o›	@	T

add	1 M µ VLAN k 6
only	1 M µ VLAN, c ß ¤ VLAN çn VLAN k 6
tagged	1 M Y Tag ¥ µ6 VLAN k ¥ VLAN R ¥ M ÿß ' k Tago
untagged	1 M Y UNTag ¥ µ6 VLAN k ¥ VLAN R ¥ M ÿß Y UNTag ¥ ÿß
remove	1 M R VLAN í
	6 µŒ ß VLAN çn

o‹ Þ. F åo› ó hybrid M K 9 æ ˜ VLAN k M Y Tag ¥ µæ ˜ 4 ó VLAN Y Ù ¿ VLAN k ó VLAN Y UNTag ¥ µ

o‹ x X % o› N M F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› -

o‹ F å o› 1 y 1 hybrid M Y UNTag ¥ µ VLAN 20 y VLAN30 y

```
5XLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
5XLMLH FRQILJ LI *LJDELW(WKHUQHW VZLWFKSRUW PRGH K\EULG
5XLMLH FRQILJ LI *LJDELW(WKHUQHW VZLWFKSRUW K\EULG DOORZHC
5XLMLH FRQILJ LI *LJDELW(WKHUQHW VZLWFKSRUW K\EULG DOORZHC
```

2 y 1 hybrid M Y Tag ¥ µ VLAN 40 y VLAN 50 y

```
5XLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
5XLMLH FRQILJ LI *LJDELW(WKHUQHW VZLWFKSRUW PRGH K\EULG
5XLMLH FRQILJ LI *LJDELW(WKHUQHW VZLWFKSRUW K\EULG DOORZHC
5XLMLH FRQILJ LI *LJDELW(WKHUQHW VZLWFKSRUW K\EULG DOORZHC
```

3 y 1 hybrid M g VLAN 20 y

```
5XLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
5XLMLH FRQILJ LI *LJDELW(WKHUQHW VZLWFKSRUW PRGH K\EULG
5XLMLH FRQILJ LI *LJDELW(WKHUQHW VZLWFKSRUW K\EULG DOORZHC
```

4 y 1 hybrid M Y Tag ¥ µ VLAN 20 k c g ¿ U æ ˜ VLAN y

```
5XLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
5XLMLH FRQILJ LI *LJDELW(WKHUQHW VZLWFKSRUW PRGH K\EULG
5XLMLH FRQILJ LI *LJDELW(WKHUQHW VZLWFKSRUW K\EULG DOORZHC
```

o‹ à co› * show interface [ ] ò0o

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

4.8 switchport hybrid native

6 hybrid M ó VLANo
switchport hybrid native vlan

˚ Öó o
no switchport hybrid native vlan

˚ Öó o
default switchport hybrid native vlan

o‹ @ “ ¢o›

@	T
	6 hybrid M ó VLAN k ó VLAN ˜ R ¥ N M ÿß C k Tag.

Native VLAN ' VLAN 1o

M F å%

native vlan e knative vlan R hybrid M ÿß C k Tago k Tag R hybrid M Û

x X % ”o-y`‘•¿7 ’Ã$p5 † ‚Ì Às † X À ð Ä× Â r¾î —0Ðz•g$pØ$| FúÀ•à’à·âÊ‡)p¨Õú4 - •TÐ§‰$pÐ

remove	1 trunk M ß6 VLAN çn
except	1 trunk M ß6 VLAN çn kw 1 M µ VLAN çn $ Ù ¿ æ ˜ VLAN
only	1 trunk M µ6 VLAN çn kw 1 M ß VLAN çn $ Ù ¿ U æ ˜ VLAN
▮	6 q VLAN çn

o‹ Þ. F åo› Þ. ÕÑ ktrunk M y uplink M K 9 æ ˜ VLANo

o‹ x X % o› N M F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› %† trunk/uplink M Þ. U Y n ÿ¸ Õu 4 æ ˜ VLAN g 1 l 4094 h v Oo x ' k - U Y * å trunk/uplink M U VLAN çn Û òî ? VLAN v O * trunk/uplink Mo

4.10 switchport trunk native vlan

6 trunk/uplink M ó VLANo
switchport trunk native vlan ■

˚ ÖÞ. F åo
no switchport trunk native vlan

˚ ÖÞ. F åo
default switchport trunk native vlan

o‹ @ “ ¢o›	@	T
	■	6 native vlan id

o‹ Þ. F åo› Þ. ÕÑ ktrunk/uplinK ó VLAN VLAN 1o

o‹ x X % o› N M F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› 6 trunk M native vlan e k k Tag Ûó ' native vlan z native vlan ˜ R ¥ trunk M ß> k Tag t üYo

o‹ F å o› 1 y 6 trunk M GigabitEthernet 0/10 M native vlan VLAN 10 y

```
5XLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
5XLMLH FRQILJ LI *LJDELW(WKHUQHW VZLWFKSRUW PRGH WUXQN
5XLMLH FRQILJ LI *LJDELW(WKHUQHW VZLWFK WUXQN QDWLYH YOD
```

2 y 6 trunk M GigabitEthernet 0/10 M native vlan VLAN 10 y

```
5XLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
5XLMLH FRQILJ LI *LJDELW(WKHUQHW VZLWFKSRUW PRGH XSOLQN
5XLMLH FRQILJ LI *LJDELW(WKHUQHW VZLWFK WUXQN QDWLYH YOD
```

o‹ à co› -

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

4.11 vlan

º VLAN Œ æ µ VLAN % o
vlan { ■ | range ■

í] ¤ VLANo
no vlan { ■ | range ■ }

1 6]˘ ¤ VLAN ˚ ÖŁ fl * † ` VLANo
default vlan { ■ | range ■

5 MAC VLAN

x X	
mac-vlan enable	ł M MAC VLAN
mac-vlan mac-address	F å† ` MAC VLAN n ¾
show mac-vlan	ò0 MAC VLAN n ¾
show mac-vlan interface	ò0 o MAC VLAN M çn

5.1 mac-vlan enable

ł M MAC VLAN o

mac-vlan enable

… { M MAC VLAN o

no mac-vlan enable

˚ Ö M MAC VLAN o

default mac-vlan enable

o‹ @ “ ¢o›

@	T
-	-

o‹ Þ. F åo› M MAC VLAN … {

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› • À¤ M o MAC VLAN … e k ¶ B F å MAC VLAN n ¾ ¤ M ÿ|o MAC VLAN N u 4 ¤ hybrid M o k ¿ M u 4o

o‹ F å o› 1 y ł M MAC VLAN y

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

o‹ à co› -

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

5.2 mac-vlan mac-address

F å† ` MAC VLAN n ¾á

mac-vlan mac-address [mask] vlan [priority]

í † ` MAC VLAN n ¾á

no mac-vlan mac-address [mask] vlan [priority]

í † ` MAC VLAN n ¾á

default mac-vlan mac-address [mask] vlan [priority]

o‹ @ “ ¢o›

@	T
	6 MAC

5.3 show mac-vlan

ò0 MAC VLAN n ¾

show mac-vlan { all | dynamic | static | vlan | mac-address [mask] }

o‹ @ “ ¢o›

@	T
all	“ P MAC-VLAN n æ ˜ n ¾
dynamic	“ P ` F å MAC-VLAN n ¾
static	“ P † ` F å MAC-VLAN n ¾
vlan	“ P 6 VLAN MAC-VLAN n ¾
mac-address	7 MAC “ P MAC-VLAN n ¾
mask	“ P 6 MAC “ › 8 MAC-VLAN n ¾

o‹ x X % o› æ ˜ %

o‹ Þ. · ðo› 2

o‹ 6 -o› 6 mac-address @ k x Ì 6 mask @ k “ P % MAC “ › MAC-VLAN n ¾
c 6 mac-address y mask @ k “ P 6 MAC “ › 8 MAC VLAN n ¾

o‹ F å o› 1 y “ P ¶ B MAC-VLAN n ¾y

```
5XLMLH  VKRZ PDF YODQ DOO
7KH IROORZLQJ 0$& 9/$1 DGGUHVVHV H[LVW
6  6WDWLF  '  '\QDPLF
0$& $''5      0$6.          9/$1 ,'  35,2  67$7(

              IIII II                    6
              IIII IIII                  6
              IIII IIII IIII             '
              IIII IIII IIII             '
              IIII IIII IIII             6 '
              IIII IIII IIII             6
              IIII IIII IIII             6 '
7RWDO 0$& 9/$1 DGGUHVV FRXQW
```

o‹ U P ¸o› -

o‹ u V “ ¢o› -

5.4 show mac-vlan interface

ò0 o MAC VLAN M çno

show mac-vlan interface

o‹ @ “ ¢o›

@	T
-	-

o‹ x X % o› æ ˜ %

o‹ Þ. · ðo› 2

o‹ 6 -o› ¤ M o MAC VLAN e k 4 x X G F å' k Ł o

o‹ F å o› 1 y ò0 MAC “ › n

```
5XLMLH VKRZ PDF YODQ LQWHUIDFH
0$& 9/$1 LV HQDEOHG RQ IROORZLQJ LQWHUIDFH

)DVW(WKHUQHW
)DVW(WKHUQHW
```

o‹ U P ¸o› -

o‹ u V “ ¢o› -

6 Super VLAN

x X	
proxy-arp	¥ x X ł VLAN ARP W ò o
show supervlan	ò0 Super VLAN C Sub VLAN F åo U Y 6 ò0 î Super VLAN F å
subvlan	å Super VLAN Sub VLANo
subvlan-address-range	å Sub VLAN IP “ › 8
supervlan	F å Super VLANo

6.1 proxy-arp

o ARP W ò o

proxy-arp

… { ARP W ò o

no proxy-arp

˚ ÖÞ. F åo

default proxy-arp

o‹ @ “ ¢o›

@	T
-	-

o‹ Þ. F åo› Þ. ł

o‹ x X % o› VLAN %

o‹ Þ. · ðo› 14

o‹ 6 -o› Super VLAN y Sub VLAN ARP W ò• Àc ł ı Ü o

o‹ F å o› 1 y ARP W ò o

```
5XLMLH FRQILJ YODQ
5XLMLH FRQILJ YODQ SUR[\ DUS
```

2 y … { ARP W ò

```
5XLMLH FRQILJ YODQ
5XLMLH FRQILJ YODQ QR SUR[\ DUS
```

o‹ à co› 1 y show supervlan [ ] ò0o

o‹ U P ¸o› -

o‹ u V “ ¢o› -

6.2 show supervlan

ò0 æ ˜ Super VLAN y Sub VLAN F åÕ

show supervlan

ò0 6 Super VLAN C ¿ Sub VLAN F åÕ

show supervlan [ ]

o‹ @ “ ¢o›

@	T
	• À' Super VLAN VLAN id

o‹ x X % o› æ ˜ %

o‹ Þ. · ðo› 14

o‹ 6 -o› ¥ x X U Y ò0 Super VLAN y ¿ Sub VLAN + … ' y ¿ ¸o

o‹ F å o› 1 y ò0 6 Super VLAN F åÕ

```
6ZLWFK$ FRQILJ LI UDQJH  VKRZ VXSHUYODQ
VXSHUYODQ LG  VXSHUYODQ DUS SUR[\  VXEYODQ LG  VXEYODQ DUS SU

                  21                   21
                                      21
                                      21
```

2 y ò0 æ ˜ Super VLAN F åÕ

```
6ZLWFK$ FRQILJ LI UDQJH  VKRZ VXSHUYODQ
VXSHUYODQ LG  VXSHUYODQ DUS SUR[\  VXEYODQ LG  VXEYODQ DUS SU

                  21                   21
                                      21
                                      21
                  21                   21
```

2 1

< K y

<	“ ¢
V X S H U Y O D Q L G	Super VLAN VLAN ID

```
6 Z L W F K $  F R Q I L J   Y O D Q
6 Z L W F K $  F R Q I L J  Y O D Q   Q R  V X E Y O D Q
```

3 y default x X í 6 Sub VLANo

```
6 Z L W F K $  F R Q I L J   Y O D Q
6 Z L W F K $  F R Q I L J  Y O D Q   G H I D X O W  V X E Y O D Q
```

4 y default x X í æ ˜ Sub VLANo

```
6 Z L W F K $  F R Q I L J   Y O D Q
6 Z L W F K $  F R Q I L J  Y O D Q   G H I D X O W  V X E Y O D Q
```

o‹ à co› 1 y show supervlan [ ] x X k U Y ò0 6 Super VLAN Sub VLAN F åÕÑ

o‹ U P ¸o› 1 y òç VLAN % ' Super VLAN k Ø U P j ¤o

```
Y O D Q   L V  Q R W  D  V X S H U Y O D Q
```

2 y òçF å VLAN ' † ` VLAN k ' ` VLAN k U P j ¤

```
7 K H  Y O D Q  L V  G \ Q D P L F  Y O D Q
```

3 y ¤ F å Sub VLAN k òç¿ Super VLAN] ˇ F å4 SVI k k ¸ ? Sub VLAN ª F%† +
ï U C M k U k ˇ Æ ò ååˊo

```
the vlan can't be set as subvlan for lack of resourceso
```

o‹ o j ¤o› 1 y 1 ¤ VLAN F åŁ Sub VLANo
2 y ' ¤ Super VLAN VLAN % F å Sub VLANo
3 y c Super VLAN Sub VLAN ˜ M Lo
4 yVLAN] ˇ F å4 VLAN C M k ˙ 1 ¿ F å Sub VLAN k âˊo
5 y 1 ` VLAN F å Sub VLANo

o‹ u V “ ¢o› -

6.4 subvlan-address-range

F å Sub VLAN ˜ ï IP “ › 8 o
subvlan-address-range

H Sub VLAN IP “ › 8 o
no subvlan-address-range

˚ ÖÞ. F åð
default subvlan-address-range

o‹ @ “ ¢o›

@	T
	IP 8 Ü÷
	IP 8 ´ Ý

o‹ Þ. F åo› Z ˜ IP “ › 8 o

o‹ x X % o› VLAN %

o‹ Þ. · ðo› 14

o‹ 6 -o› F å4 IP “ › 8 e kSub VLAN ˜ ï IP “ › òç ¤ ¥ 8 ˜ k * o

o‹ F å o› 1 y å Sub VLAN IP “ › 8 o

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

o‹ à co› 1 y show supervlan [ ] x X k U Y ò0 6

o‹ x X % o› VLAN %

o‹ Þ. · ðo› 14

o‹ 6 -o› Q 1] ¤ VLAN F åŁ Super VLANo
F å Super VLAN e kòç¥ VLAN Z ˜ F å VLAN C M k‹ } Super VLAN F å%† VLAN C M SVI
y IP “ › k ý¿ Sub VLAN ı ç VLAN * o
Super VLAN ˜ Z ˜ ‘ ~ ÒòMo
VLAN 1 F å Super VLANo
Super VLAN ¿ Super VLAN Sub VLANo c òkSub VLAN - F å Super VLANo

o‹ F å o› 1 y F å VLAN Super VLAN

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

o‹ à co› 1 y show supervlan [ ] x X k U Y ò0 6 Super VLAN F åÕÑ

o‹ U P ¸o› 1 y òç¥ VLAN] ˘ ' ¿ VLAN Sub VLANo

```
W K H Y O D Q L V R W K H U V X S H U Y O D Q V V X E Y O D Q
```

o‹ o j ¤o›

o‹ u V “ ¢o› -

2 y òç Protocol VLAN ÿà VLAN Ý F ^ O òk Ø U P j ¤o

```
(UURU )DLOHG WR VHW WKH HQWU\
```

o‹ o j ¤o› -

o‹ u V “ ¢o› -

7.2 protocol vlan ipv4

¤ N M ÿà VLANo

protocol vlan ipv4

¤ N M H ÿà VLANo

no protocol vlan ipv4

o‹ @ “ ¢o›

@	T
-	-

o‹ Þ. F åo› ó … {

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› N M • À' Trunk Œ æHybrid % o

o‹ F å o› 1 y ¤ N M ÿà VLANo

```
5XLMLH FRQILJ LQWHUIDFH *LJDELW(WKHUQHW
5XLMLH FRQILJ LI *LJDELW(WKHUQHW VZLWFKSRUW
5XLMLH FRQILJ LI *LJDELW(WKHUQHW VZLWFKSRUW PRGH K\EULG
5XLMLH FRQILJ LI *LJDELW(WKHUQHW SURWRFRO YODQ LSY
```

o‹ à co› show protocol-vlan ipv4 x X “ P protocol-vlan F åÕÑ

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

7.3 protocol-vlan profile

F å# VLAN profileo
protocol-vlan profile m frame-type þ ether-type þ
protocol-vlan profile m frame-type LLC DSAP ü SSAPü

í î profile F åo
no protocol-vlan profile m

æ ˜ profile F åo
no protocol-vlan profile

o‹ @ “ ¢o›

@	T
m	profile «
þ	”y Y ßà ”
ü	ˇ	µ ”

o‹ Þ. F åo› ó … {

o‹ x X % o› ¶ B F å%

o‹ Þ. · ðo› 14

o‹ 6 -o›] F å « Z n ¾k U + N ¾w n ¾k ‹ } fl í n ¾k ˙ F å n ¾z

o‹ F å o› 1 y F å# VLAN ¶ B n ¾

```
5XLMLH FRQILJ SURWRFRO YODQ SURILOH IUDPH W\SH (7+(5, HWKHU
5XLMLH FRQILJ SURWRFRO YODQ SURILOH IUDPH W\SH //& '6$3 66
```

o‹ à co› show protocol-vlan profile x X “ P protocol-vlan F åÕÑ

o‹ U P ¸o› 1 y òç# VLAN + «] F å¶ B F åo

```
3URWRFRO YODQ SURILOH [[ KDV EHHQ DSSOLHG SOHDVH GHOHWH LW
```

2 y òç# VLAN] ˜ , c Frame C Ethernet ”¶ B F åk U ˙ F åo

```
(WKHU W\SH $$53 KDV EHHQ VHW
```

o‹ o j ¤o› -

o‹ u V “ ¢o› ´ 9 DUNE / Ì º # VLAN k Q u 4 Y ßà ” Ø G k ¥ D } x X Z ˜ ”z ¿ U D } u 4
”y Y ßà ” Ø G k x X ”y Y ßà ” • # ¾ø

7.4 protocol-vlan profile

î profile æ ¥ N Mo

protocol-vlan profile m vlan d

N M î profileo

no protocol-vlan profile d

N M æ ˜ profileo

no protocol-vlan profile

o‹ @ “ ¢o›

@	T
m	profile «
d	VLAN ID k1- D } u 4 ´ Ý VLAN

o‹ Þ. F åo› ó … {

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› 1 y N M • À' Trunk Œ æHybrid % o

2 y] F å « Z n ¾k U + N ¾w n ¾k ‹ } fl í n ¾k ˙ F å n ¾z

o‹ F å o› 1 y M # VLAN

```
5XLMLH FRQILJ LI SURWRFRO YODQ SURILOH YODQ
```

o‹ à co› show protocol-vlan profile x X “ P protocol-vlan F åÕÑ

o‹ U P ¸o› 1 y òç# VLAN + « ¶ B F å9 Ì F åo

```
3URWRFRO YODQ SURILOH KDVQ W EHHQ FUHDWHG SOHDVH FUHDWH
```

2 y òç# VLAN + « ¶ B F å] ¤ N M k ‹ } fl í ¥ n ¾ø

```
3URWRFRO YODQ SURILOH KDV EHHQ DSSOLHG RQ WKH SRUW SOHDVH
```

o‹ o j ¤o› -

o‹ u V “ ¢o› -

7.5 show protocol-vlan

“ P Protocol VLAN F åo

show protocol-vlan [profile [d] | ipv4]

o‹ @ “ ¢o›

@	T
d	profile «

o‹ x X % o› ÔÓ%

o‹ Þ. · ðo› 2

o‹ 6 -o› show protocol-vlan x X “ P protocol-vlan F åÕÑ

o‹ F å o› 1 y ò0 Protocol VLAN F å ¸o

```
5XLMLH VKRZ SURWRFRO YODQ

LS PDVN YODQ



LQWHUIDFH LSY VWDWXV

*L HQDEOH

SURILOH IUDPH W\SH HWKHU W\SH '6$3 66$3 LQWHUIDFH YODQ

(7+(5,, [ ID

*L
```

< K y

<	“ ¢
ip	ip “ ›
mask	ip Q A
vlan	+ vlan
interface	N M d
ipv4 status	ipv4 N M ÕÑ
profile	# VLAN «
frame-type	”
ether-type/DSAP+SSAP	Y ß ”

o‹ U P ¸o› -

o‹ u V “ ¢o› -

8 Private VLAN

x X	
debug bridge pvlan	private vlan † ¡ …
private-vlan	F å Private VLAN K ¯o
private-vlan association	8 C … ß secondary VLAN primary VLANo
private-vlan mapping	C … ß secondary VLAN primary VLANo
switchport mode private-vlan	F å Private VLAN N M % o
switchport private-vlan association trunk	F å M Y Trunk M k … ß 8 C M \˜ VLAN k “ … ß Ú+o
switchport private-vlan host-association	… ßprivate VLAN % ÑN M æ … ß primary VLAN C æ ¤ secondary VLAN
switchport private-vlan mapping	private VLAN ÒN M F åæ } Ò secondary VLAN
switchport private-vl an promiscuous trunk	F å M Ò Trunk M k … ß 8 C M \˜ VLAN k “ … ß Ú+
show vlan private-vlan	“ P private VLAN F å

8.1 debug bridge pvlan

ł Private VLAN † ¡ …o
debug bridge pvlan

… { Private VLAN † ¡ …o
no debug bridge pvlan

o‹ @ “ ¢o›

@	T
-	-

o‹ Þ. F åo› … { † ¡ …o

o‹ x X % o› ÔÓ%

o‹ Þ. · ðo› 2

o‹ 6 -o› † ¡ ¸ , Private VLAN æ ˜ F å i ßj Œ æ U P ï ¸o
Private VLAN _ _ VLAN y N M F åâ´ =

Õ — ® 8 Ë — ‘ ‹ ¶ » ¡ µ Super VLAN N " Æ ã ƒ c ¥ Ç q 3 ‰ 8 Æ ã d

¡ ‰ 8 ž G ¨ 8 Ë ð o Y ƒ Ð ð n ä G * d

o‹ F å o› 1 .199 g 7.]TJ Tc 0 -1.773 TD <6F.316.243 -3.d0[<09190AB20AA1>-7<069004BC6F9E>]TJ T01 Tc 0.04 g 55.2 739Tf 0 122.

o‹ F å o› 1 y F å Private VLAN K ¯o

```
5XLMLH FRQILJ YODQ
5XLMLH FRQILJ YODQ SULYDWH YODQ SULPDU\
5XLMLH FRQILJ YODQ YODQ
5XLMLH FRQILJ YODQ SULYDWH YODQ LVRODWHG
5XLMLH FRQILJ YODQ YODQ
5XLMLH FRQILJ YODQ SULYDWH YODQ FRPPXQLW\
```

2 y no x X H Private VLANo

```
5XLMLH FRQILJ YODQ
5XLMLH FRQILJ YODQ QR SULYDWH YODQ SULPDU\
5XLMLH FRQILJ YODQ YODQ
5XLMLH FRQILJ YODQ QR SULYDWH YODQ LVRODWHG
5XLMLH FRQILJ YODQ YODQ
5XLMLH FRQILJ YODQ QR SULYDWH YODQ FRPPXQLW\
```

3 y default x X H Private VLANo

```
5XLMLH FRQILJ YODQ
5XLMLH FRQILJ YODQ GHIDXOW SULYDWH YODQ SULPDU\
5XLMLH FRQILJ YODQ YODQ
5XLMLH FRQILJ YODQ GHIDXOW SULYDWH YODQ LVRODWHG
5XLMLH FRQILJ YODQ YODQ
5XLMLH FRQILJ YODQ GHIDXOW SULYDWH YODQ FRPPXQLW\
```

o‹ à co› 1 y show vlan private-vlan { community | isolated | primary } x X kU Y ò0 c ” Private VLAN F åÕ‰

o‹ U P ¸o› 1 y òçH Private VLAN % VLAN % %† k Ø U P j ¤o

```
7\SHV RI SULYDWH 9/$1V GR QRW PDWFK
```

o‹ o j ¤o› 1 y 1 ` VLAN F åŁ Private VLANo

o‹ u V “ ¢o› -

8.3 private-vlan association

8 C … ß ü VLAN(secondary VLAN) VLAN(primary VLAN)o
private-vlan association { ■ | add ■ | remove ■ }

H æ ˜ … ß ü VLANo

no private-vlan association

H æ ˜ … ß ü VLANo
default private-vlan association

o‹ @ “ ¢o›

@	T
¥	… ß secondary vlan g ü VLAN h
add ¥	˝ … ß secondary vlan
remove¥	… ß secondary vlan

o‹ Þ. F åo› Þ. VLAN y ü VLAN $ Z ˜ … ß

o‹ x X % o› VLAN %

o‹ Þ. · ðo› 14

o‹ 6 -o› • À¤ VLAN(primary VLAN) F åo
… ß VLAN • À' Private VLAN ” ü VLANo

o‹ F å o› 1 y … ß ü VLANo

```
5XLMLH FRQILJ YODQ
5XLMLH FRQILJ YODQ SULYDWH YODQ DVVRFLDWLRQ DGG
```

2 y VLAN y ü VLAN … ßo

```
5XLMLH FRQILJ YODQ
5XLMLH FRQILJ YODQ SULYDWH YODQ DVVRFLDWLRQ UHPRYH
```

o‹ U P ¸o› -

o‹ u V “ ¢o› -

8.4 private-vlan mapping

VLAN y ü VLAN C … ßo
private-vlan mapping { ¥ | add ¥ | remove ¥

C … ß æ ˜ ü VLANo
no private-vlan mapping

C … ß æ ˜ ü VLANo
default private-vlan mapping

o‹ @ “ ¢o›

@	T
¥	… ß ü VLAN
Add ¥	˝ … ß ü VLAN
remove¥	… ß ü VLAN

o‹ Þ. F åo› Þ. VLAN y ü VLAN $ Z ˜ … ß

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› òç g … ß k ü VLAN ï g C * o

o‹ F å o› 1 y ü VLAN C … ß æ VLANo

```
5XLMLH FRQILJ LQWHUIDFH YODQ
5XLMLH FRQILJ LI SULYDWH YODQ PDSSLQJ DGG
```

o‹ à co› 1 y show vlan private-vlan x X k U Y ò0 Private VLAN F åÕÑo

o‹ o j ¤o› 1 y F å C … ß VLAN y ü VLAN $ Z ˜ 8 C … ßo

o‹ u V “ ¢o› -

8.5 switchport mode private-vlan

Ò¢ N M private VLAN % o

switchport mode private-vlan { host | promiscuous }

H N M private VLAN % k ˚ ÒŁ access Mo

no switchport mode

˚ ÒÞ. F åo

default switchport mode

o‹ @ “ ¢o›

@	T
host	6 N M % \ ˜ host %
promiscuous	6 N M % ÒM %

o‹ Þ. F åo› ó accesso

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› ‹ } F å Y M Œ Ø } M N M Ò¢ host % o
‹ } ÒM N M Ò¢ Ò% o

o‹ F å o› 1 y 6 N M % \ ˜ host % o

```
5XLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
5XLMLH FRQILJ LI VZLWFKSRUW PRGH SULYDWH YODQ KRVW
```

2 y 6 N M % Ò% o

```
5XLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
5XLMLH FRQILJ LI *LJDELW(WKHUQHW VZ PRGH SULYDWH YODQ SURP
```

3 y H N M \ ˜ host % o

```
5XLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
5XLMLH FRQILJ LI QR VZLWFKSRUW PRGH
```

o‹ à co› 1 y show running ò0 N M F å

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

8.6 switchport private-vlan association trunk

F å M Y Trunk M k … ß 8 C M \ ˜ VLANo
switchport private-vlan association trunk ▯

H … ß 8 C M \ ˜ VLANo
no switchport private-vlan association trunk ▯ ▯

˚ ÖÞ. F åo
default switchport private-vlan association trunk ▯ ▯

o‹ @ “ ¢o›

@	T
▯	Private VLAN VLAN
▯	Private VLAN Y VLAN

o‹ Þ. F åo› Trunk Mo

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› … ß Private VLAN • À' 8 C … ß VLANo
N M • À' Trunk % o
%† Trunk M U Y … ß Ú+ Y VLAN +o

o‹ F å o› 1 y F å Y Trunk M k w … ß 8 C M y \ ˜ VLANo

```
5XLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
5XLMLH FRQILJ LI VZLWFKSRUW PRGH WUXQN
5XLMLH FRQILJ LI VZLWFKSRUW SULYDWH YODQ DVVRFLDWLRQ WUXQN
```

o‹ à co› -

o‹ U P ¸o› 1 y òç6 VLAN ' VLAN k Ø U P j ¤o

```
7KH SULPDU\ YODQ GRHV QRW H[LVW
```

2 y òç… ß ü VLAN ' Y VLAN k Ø U P j ¤o

```
7KH LVRODWHG YODQ GRHV QRW H[LVW
```

o‹ o j ¤o› 1 y N M ' Trunk M % o
2 y … ß Private VLAN Z ˜ 8 C … ßo
3 y … ß ü VLAN ' Y VLANo

o‹ u V “ ¢o› -

8.7 switchport private-vlan host-association

… ßprivate VLAN % host M æ … ß VLAN C æ ¤ ü VLANo
switchport private-vlan host-association

H host … ß VLAN y ü VLANo
no switchport private-vlan host-association

˚ ÖÞ. F åo
default switchport private-vlan host-association

o‹ @ “ ¢o›

@	T
¥	Private VLAN VLAN
¥	Private VLAN ü VLAN

o‹ Þ. F åo› Z ˜ … ß Private VLAN +o

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› N M • À' Private VLAN host M % o
… ß Private VLAN • À' 8 C … ß o

o‹ F å o› 1 yhost M … ß VLAN y ü VLANo

```
5XLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
5XLMLH FRQILJ LI VZLWFKSRUW PRGH SULYDWH YODQ KRVW
5XLMLH FRQILJ LI VZLWFKSRUW SULYDWH YODQ KRVW DVVRFLDWLRQ
5XLMLH FRQILJ LI GHIDXOW VZLWFKSRUW SULYDWH YODQ KRVW DVVFL
5XLMLH FRQILJ LI VZLWFKSRUW SULYDWH YODQ KRVW DVVRFLDWLRQ
```

o‹ à co› -

o‹ U P ¸o› 1 y òç6 VLAN ' VLAN k Ø U P j ¤o

```
2SHUDWLRQ LV QRW VXSSRUWHG RQ LQWHUIDFH *LJDELW(WKHUQHW
```

2 y òç… ß ü VLAN VLAN Z ˜ 8 C … ß k Ø U P j ¤o

```
2SHUDWLRQ LV QRW VXSSRUWHG RQ LQWHUIDFH *LJDELW(WKHUQHW
```

o‹ o j ¤o› 1 y … ß VLAN y ü VLAN Z ˜ 8 C … ßo
2 y … ß VLAN y ü VLAN ÀÕ Private VLAN K ¯ Œ K ¯ j ¤o

o‹ u V “ ¢o› -

8.8 switchport private-vlan mapping

private VLAN ÒN M F åæ } Ò secondary VLANo
switchport private-vlan mapping ¥ ¥ | add ¥ | remove ¥ }

H ÒM … ß æ ˜ ü VLANo
no switchport private-vlan mapping

˚ ŒÞ. F åo

default switchport private-vl prip56F9E>Tj /TT0 1 Tf ( )Tj /TT(m)Tjpping

H Ò

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

ò0 æ ˜ Private VLAN F å

show vlan private-vlan

o‹ @ “ ¢o›

@	T
primary	“ P primary VLAN ‚

9 MSTP

x X	
bpdu src-mac-check	ł î N M bpdu mac ò
bridge-frame forwarding protocol bpdu	ł bpdu % n
clear spanning-tree counters	STP v G ˘ ¸
clear spanning-tree detected-protocols	òN M G RSTP BPDU k + BPDU l üg ò ò
clear spanning-tree mst topochange record	STP " ÷w J ¸
l2protocol-tunnel stp	ł ¶ B BPDU TUNNEL
l2protocol-tunnel stp enable	ł N M BPDU TUNNEL
l2protocol-tunnel stp tunnel-dmac	F å BPDU TUNNEL % n STP # “ ›
show l2protocol-tunnel stp	“ P BPDU TUNNEL F å ¸
show spanning-tree	“ P y ÿŁ ø , … ¶ B F å ¸
show spanning-tree interface	“ P STP N M åo , U # ÿŁ ø F å
show spanning-tree mst	¤ ÔÓ% 4 x X U Y ò0 MST F åkInstance ¸
show spanning-tree mst topochange record	ò0 ÿŁ ø " ÷J £
spanning-tree	ł STP #
spanning-tree autoedge	ł î N M Autoedge …
spanning-tree bpdufilter	ł î N M BPDU Filter …o
spanning-tree bpduguard	ł î N M BPDU Guard …
spanning-tree compatible enable	ÿG ¢ ø M N M K ¯ ¸ ˜ # + ¯ ‘ k MSTI ¸ g G kY º ¿ D $;
spanning-tree guard loop	N M ł loop guard Ô¯
spanning-tree guard none	N M … { guard Ô¯
spanning-tree guard root	N M ł root guard Ô¯
spanning-tree ignore tc	N M ł tc ¡ …
spanning-tree link-type	F åN M N ”
spanning-tree loopguard default	¶ B ł loop guard Ô¯
spanning-tree max-hops	å BPDU l ´ ÝØ
spanning-tree mode	åÿŁ ø # ˝ ¸
spanning-tree mst configuration	µ MST % k F å MSTP Region
spanning-tree mst cost	å? Instance Ł ‹ 0 ¸
spanning-tree mst port-priority	åN M ¤ c M i fl ·
spanning-tree mst priority	åà ¤ c i fl ·
spanning-tree pathcost method	F å M Ł ‹ 0 ¸ Þ. c
spanning-tree portfast	ł î N M Portfast …
spanning-tree portfast bpdufilter default	¶ B ł BPDU Filter
spanning-tree portfast bpduguard default	¶ B ł BPDU Guard

spanning-tree portfast default	¶ B ł æ ˜ N M Portfast …
spanning-tree reset	1 spanning-tree å° Ö Þ.
spanning-tree tc-guard	N M ł tc-guard …
spanning-tree tc- protection	¶ B ł tc-protection …
spanning-tree tc-protection tc-guard	¶ B ł tc-guard …
spanning-tree tx-hold-count	STP ¶ B TxHoldCount åk F å? a _ ´ ÚG BPDU

9.1 bpdu src-mac-check

ł î N M bpdu mac ò
bpdu src-mac-check Ħ

… { N M bpdu mac ò o
no bpdu src-mac-check

o‹ @ “ ¢o›

@	T
Ħ	n P Q N v mac “ › ¥ “ › bpdu lo

o‹ Þ. F åo› Þ. ' … { o

o‹ x X % o› N M % o

o‹ Þ. · ðo› 15

o‹ 6 -o› BPDU MAC ò' 4 2 * K G BPDU Û— Þx àA E Ñò MSTP W 3 oo
¢ G 4 î M µ+ µe Ł + , A E Ñ k U * F å BPDU MAC òÛ æ Q N v + A
E ÑG BPDU l k æ ˜ ¿ U BPDU l k R ò æ 2 — Þx à) o
U Y ¤ interface % Û Ô M F å, BPDU MAC ò MAC “ › k %† M Q “
F å%† ¡ MAC “ ›o

o‹ F å o› 1 y F åN M Gi 1/1 Q N v mac 00d0.f800.1e2f bpdu lo

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

o‹ à co› 1 y show running-config x X k U Y ò0 ¥ x X ' k t åo

o‹ U P ¸o› -

o‹ o j ¤o› å BPDU MAC “ › òk' Q N v ¥ ª ¡ ò BPDU òk § Q v ¥

o‹ u V “ ¢o› -

9.2 bridge-frame forwarding protocol bpdu

ł BPDU % n o
bridge-frame forwarding protocol bpdu

… { BPDU % n o
no bridge-frame forwarding protocol bpdu

o‹ @ “ ¢o›

@	T
-	-

o‹ Þ. F åo› Þ. ' … { o

o‹ x X % o› ¶ B F å% o

o‹ Þ. · ðo› 15

o‹ 6 -o› ¤ IEEE 802.1Q öÕ kBPDU) MAC “› 01-80-C2-00-00-00 ' “› k / 8 †
IEEE 802.1Q öÕ Õk + 9 N v æ BPDU l ' ôG o Àòk ¤ àÌ b æ k U ‹ }
Õ Üu 4 % n BPDU lo òk Õì o STP # k ‹ } % n BPDU l k – $;
Õ$ ÿŁ ø 3 oo
BPDU % n Q ¤ STP # … { ı o o ¢ STP # ł k Õ % n BPDU lo

o‹ F å o› 1 y ł BPDU % n o
5 X L M L H F R Q I L J E U L G J H I U D P H I R U Z D U G L Q J S U R W R F R O E S G X

o‹ à co› 1 y show running-config x X k U Y ò0 ¥ x X ' k t åo

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

9.3 clear spanning-tree counters

STP v G ˇ ¸

o‹ u V “ ¢o› -

9.5 clear spanning-tree mst topochange record

STP " ÷w J ¸

clear spanning-tree mst topochange record

o‹ @ “ ¢o›

@	T
	6 IDo + 9 STP y RSTP # k Q ˜ 0 ı ˜ |o

o‹ x X % o› ÔÓ%

o‹ Þ. · ðo› 15

o‹ 6 -o› ¥ x X U Y 6 " ÷w J ¸

o‹ F å o› 1 y 0 " ÷w J ¸

```
5XLMLH VKRZ VSDQQLQJ WUHH PVW WRSRFKDQJH UHFRUG
7RSRORJ\ FKDQJH LQIRUPDWLRQ RQ PVW
 7LPH ,QWHUIDFH 2OG VWDWXV 1HZ VWDWXV 7\S

 *, /HDUQLQJ )RUZDUGLQJ 1RUPDO
5XLMLH FOHDU VSDQQLQJ WUHH PVW WRSRFKDQJH UHFRUG
5XLMLH VKRZ VSDQQLQJ WUHH PVW WRSRFKDQJH UHFRUG
 7KHUH V QR WRSRORJ\ FKDQJH LQIRUPDWLRQ KDV EHHQ UHFRUG RQ P
```

o‹ U P ¸o› -

o‹ u V “ ¢o› -

9.6 l2protocol-tunnel stp

o ¶ B BPDU TUNNEL o

l2protocol-tunnel stp

… { ¶ B BPDU TUNNEL o

no l2protocol-tunnel stp

o‹ @ “ ¢o›

@	T
-	-

o‹ x X % o› ¶ B %

o‹ Þ. · ðo› 15

o‹ 6 -o› o ¶ B BPDU TUNNEL k ‹ } N M BPDU TUNNEL ı ÿ|o

o‹ F å o› 1 y o ¶ B BPDU TUNNEL o

```
5XLMLH FRQILJ O SURWRFRO WXQQHO VWS
5XLMLH FRQILJ VKRZ O SURWRFRO WXQQHO VWS

/ SURWRFRO WXQQHO VWS (QDEOH
/ SURWRFRO WXQQHO GHVWLQDWLRQ PDF DGGUHVV G I
```

o‹ U P ¸o› -

o‹ u V “ ¢o› -

9.7 l2protocol-tunnel stp enable

o N M BPDU TUNNEL

l2protocol-tunnel stp enable

» J N M BPDU TUNNEL

no l2protocol-tunnel stp enable

o‹ @ “ ¢o›

@	T
-	-

o‹ x X % o› N M F å%

o‹ Þ. · ðo› 15

o‹ 6 -o› o ¶ B BPDU TUNNEL k ‹ } N M BPDU TUNNEL ı ÿ|o

o‹ F å o› 1 y o N M BPDU TUNNEL o

```
5XLMLH FRQILJ LI LQWHUIDFH LG O SURWRFRO WXQQHO VWS HQDEOH
5XLMLH FRQILJ LI LQWHUIDFH LG VKRZ O SURWRFRO WXQQHO VWS

/ SURWRFRO WXQQHO VWS (QDEOH
/ SURWRFRO WXQQHO GHVWLQDWLRQ PDF DGGUHVV G I
```

*LJDELW(WKHUQHW O SURWRFRO WXQQHO VWS HQDEOH

o‹ U P ¸o› -

o‹ u V “ ¢o› -

9.8 l2protocol-tunnel stp tunnel-dmac

å BPDU TUNNEL ‹ } % n STP # “ ›o
l2protocol-tunnel stp tunnel-dmac d

å BPDU TUNNEL ‹ } % n STP # “ › Þ. “ ›o
no l2protocol-tunnel stp tunnel-dmac

o‹ @ “ ¢o›

@	T
d	‹ } % n STP # “ ›

o‹ x X % o› ¶ B F å%

o‹ Þ. · ðo› 15

o‹ 6 -o› 1 y BPDU TUNNEL % n STP # U # “ › 8 y01d0.f800.0005 o 011a.a900.0005o
010f.e200.0003o 0100.0ccd.cdd0 o 0100.0ccd.cdd1o 0100.0ccd.cdd2o
2 y ¢ Ì F å% n “ › k Þ. “ › 01d0.f800.0005o

o‹ F å o› 1 y F å BPDU TUNNEL % n STP # “ › 011a.a900.0005 y
5XLMLH FRQILJ O SURWRFRO WXQQHO VWS WXQQHO GPDF D D

o‹ U P ¸o› 1 y ¢ F å‹ } % n STP # “ › ¤ “ › 8 kCLI U P ò y
2SWLRQDO DW WKH IROORZLQJ DGGUHVVHV G I D D
FFG FGG G

o‹ u V “ ¢o› -

9.9 show l2protocol-tunnel stp

“ P BPDU TUNNEL F å ¸
show l2protocol-tunnel stp

o‹ @ “ ¢o›

@	T

-	-

o‹ x X % o› ÔÓ% k ¶ B % o N M %

o‹ Þ. · ð› 15

o‹ 6 -o› 4 x X ò0 ÿŁ ø , … ¶ B F å ¸o

o‹ F å o› 1 y ò0 ÿŁ ø BridgeHelloTime ¸o

```
5XLMLH VKRZ VSDQQLQJ WUHH KHOOR WLPH
%ULGJH+HOOR7LPH
```

2 y ò0 STP v G ˘ ¸o

```
5XLMLH VKRZ VSDQQLQJ WUHH FRXQWHUV
                673 %3'8 FRXQW
 3RUW                    5HFHLYH    6HQG
 *LJDELW(WKHUQHW

                  673 7& RU 7&1 FRXQW
 067,'    3RUW                    5HFHLYH    6HQG
          *LJDELW(WKHUQHW
```

o‹ U P ¸o› -

o‹ u V “ ¢o› -

9.11 show spanning-tree interface

“ P STP N M åo , U # ÿŁ ø F åo

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

o‹ @ “ ¢o›

@	T
[illegible]	M Z
bpdufilter	“ P bpdufilter Ùo
portfast	“ P portfast Ùo
bpduguard	“ P bpduguard Ùo
link-type	“ P M linktype

o‹ x X % o› ÔÓ% o ¶ B % o N M %

o‹ Þ. · ðo› 15

o‹ 6 -o› 4 x X ò0 N M STP F å ¸o

o‹ F å o› 1 y ò0 N M Gi 0/1 STP F åo

```
5XLMLH VKRZ VSDQQLQJ WUHH LQW JL
```

```
3RUW$GPLQ3RUW)DVW  'LVDEOHG
3RUW2SHU3RUW)DVW  'LVDEOHG
3RUW$GPLQ$XWR(GJH  (QDEOHG
3RUW2SHU$XWR(GJH  'LVDEOHG
3RUW$GPLQ/LQN7\SH  DXWR
3RUW2SHU/LQN7\SH  SRLQW WR SRLQW
3RUW%3'8*XDUG  'LVDEOHG
3RUW%3'8)LOWHU  'LVDEOHG
3RUW*XDUGPRGH  1RQH

     067  YODQV PDSSHG $//
3RUW6WDWH  IRUZDUGLQJ
3RUW3ULRULW\
3RUW'HVLJQDWHG5RRW          D D     HD
3RUW'HVLJQDWHG&RVW
3RUW'HVLJQDWHG%ULGJH          D D     HD
3RUW'HVLJQDWHG3RUW3ULRULW\
3RUW'HVLJQDWHG3RUW
3RUW)RUZDUG7UDQVLWLRQV
3RUW$GPLQ3DWK&RVW
3RUW2SHU3DWK&RVW
,QFRQVLVWHQW VWDWHV  QRUPDO
3RUW5ROH  URRW3RUW
```

< Ky

<	“¢
PortAdminPortFast	M òF å Port Fast Ừ
PortOperPortFast	M g Port Fast Ừ
PortAdminAutoEdge	M òF å Auto Edge Ừ
PortOperAutoEdge	M g Auto Edge Ừ
PortAdminLinkType	M òF å e Ł ”
PortOperLinkType	M g e Ł ”
PortBPDUGuard	M BPDU Guard ' k
PortBPDUFilter	M BPDU Filter ' k
PortGuardmode	M Guard %
PortState	M ôG Ừ
PortPriority	M i fl ·
PortDesignatedRoot	M 6 u ÿ
PortDesignatedCost	M ỪB ÿŁ ‹ f
PortDesignatedBridge	M 6 u à
PortDesignatedPortPriority	M 6 u M i fl ·

PortDesignatedPort	M 6 u M
PortForwardTransitions	M ôJ Forwarding Ù)
PortAdminPathCost	M òŁ ‹ f
PortOperPathCost	M Ł ‹ f
Inconsistent states	M ÿŒ Œ Ł %† Ù
PortRole	M)

o‹ U P ¸o› -

o‹ u V “ ¢o› -

9.12 show spanning-tree mst

ò0 MST F åkInstance ¸o

show spanning-tree mst { configuration | [interface }

o‹ @ “ ¢o›	@	T
	configuration	Õ mst F å
		Z
		M Z

o‹ x X % o› ÔÓ% o ¶ B % o N M %

o‹ Þ. · ðo› 15

o‹ 6 -o› -

o‹ F å o› 1 y ò0 ÿŁ ø , … ¸o

```
5XLMLH VKRZ VSDQQLQJ WUHH PVW FRQILJXUDWLRQ
0XOWL VSDQQLQJ WUHH SURWRFRO (QDEOH
1DPH WHVW
5HYLVLRQ
,QVWDQFH 9ODQV 0DSSHG
```

< K y

<	“ ¢
Multi spanning tree protocol	' k MSTP #

Name	MST ¿ d f
Revision	MST ¿ ˝ ¸ Z
Instance Vlans Mapped	y VLAN ¥ 0 … '

o‹ U P ¸o› -

o‹ u V “ ¢o› -

9.13 show spanning-tree mst topochange record

ò0 ÿŁ ø " ÷J £ ¸o

show spanning-tree mst topochange record

o‹ @ “ ¢o›

@	T
	ID

o‹ x X % o› ÔÓ% o ¶ B % o N M %

o‹ Þ. · ðo› 15

o‹ 6 -o› 4 x X U Y ò0 M ¤ 6 " ÷J ¸ k ? M G ÿ4 Ù J Y C Ù J = o

o‹ F å o› 1 y ò0 0 ÿŁ ø " ÷J £o

```
5XLMLH VKRZ VSDQQLQJ WUHH PVW WRSRFKDQJH UHFRUG
7RSRORJ\ FKDQJH LQIRUPDWLRQ RQ PVW
 7LPH ,QWHUIDFH 2OG VWDWXV 1HZ VWDWXV 7\S

*, /HDUQLQJ )RUZDUGLQJ 1RUPDO
```

< K y

<	“ ¢
Time	N M G ÿ" ÷J
Interface	G ÿ" ÷J N M
Old status	N M STP Ù
New status	N M STP Ù

Type

	RootGuard Block --- N M ÿ %† ò µ Block Ù˜ Inferior Block --- N M v æ z i fl · BPDU ò µ Block Ù˜ LoopGuard Unblock --- N M R Œ Ł %† Ù˜ ° Ök µ Forward Ù˜ RootGuard Unblock --- N M R ÿ %† Ù˜ ° Ök µ Forward Ù˜ Inferior Unblock --- N M Z ˜ ˙ v æ z i fl · BPDU k µ Forward Ù˜

o‹ U P ¸o› 1 y òç6 Z ˜ G ÿ" ÷J k Ø U P ò y

7 K H U H V Q R W R S R O R J \ F K D Q J H L Q I R U P D W L R Q K D V E H H Q U H F R U G R Q F
¿ > G H F @ n P ,'o

o‹ u V “ ¢o› -

9.14 spanning-tree

ł MSTP k æ k @ U ¤ ł MSTP c k å MSTP ¶ B ´ ¸ åo
spanning-tree [forward-time ød | hello-time ød | max-age ød]

… { spanning-tree k òç no x X k @ # ¾Q ' 1 + @ ° ÖòÞ. k x w … { spanning treeo
no spanning-tree [forward-time | hello-time | max-age]

o‹ @ “ ¢o›

@	T
forward-time ød	M Ù˜ w J k H 8 4-30 a k Þ. 15 ao
hello-timeød	Õ G BPDU kH 8 1-10 a kÞ. 2 ao
max-ageød	BPDU ¸ ÿ ´ x kH 8 6-40 a kÞ. 20 ao

o‹ Þ. F åo› spanning-tree Þ. ' … { o

o‹ x X % o› ¶ B F å% o

o‹ Þ. · ðo› 15

o‹ 6 -o› forward-time o•hello-timeo• max-age 8 ', … k w 4 ¿ %† k § æ ¿ U 8 o $ ˜%† ò‡ … ' y

2*(Hello Time+1.0 seconds) <= Max-Age Time <= 2*(Forward-Delay 1.0 seconds)

‘ Ú^ - k å Ł o

o‹ F å o› 1 y ł spanning-tree o

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

2 y å BridgeForwardDelayo

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

o‹ à co› 1 y show running-config x X k U Y ò0 ¥ x X ' k t åo

2 y show spanning-tree x X k ò0 STP ¶ B F å ¸o

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

9.15 spanning-tree autoedge

ł î N M Autoedge …o

spanning-tree autoedge

… { î N M Autoedge …o

spanning-tree autoedge disabled

o‹ @ “ ¢o›

@	T
disabled	… { N M Autoedge …o

o‹ Þ. F åo› Þ. ' ł o

o‹ x X % o› N M % o

o‹ Þ. · ðo› 15

o‹ 6 -o›

6 u M ¤%† 8 ˜(3 a) k òçv æ M G BPDU k Ø ¥ M ,

'%† V àÌ Õk R ò å¥ M Û M k + N µ Forwarding Ù˚o ö

ÛM M v æ BPDU ò ð ‡ ÛMo

U Y * spanning-tree autoedge disabled x X H ÛM ð o

o‹ F å o› 1 y … { N M Gi 1/1 ÛM ð …o

```
5XLMLH FRQILJ LQWHUIDFH JLJDELWHWKHUQHW
5XLMLH FRQILJ LI LQWHUIDFH LG LQWHUIDFH LG VSDQQLQJ WUHH DX
```

o‹ à co› 1 y show running-config x X k U Y ò0 ¥ x X ' k t åo

2 y show spanning-tree interface x X k U Y ò0 N M STP F å ¸o

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

9.16 spanning-tree bpdufilter

ł î N M BPDU filter …o

spanning-tree bpdufilter enabled

… { î N M BPDU filter …o

spanning-tree bpdufilter disabled

o‹ @ “ ¢o›

@	T
enabled	ł N M BPDU filter …o
disabled	… { N M BPDU filter …o

F å ’ Îož

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

9.17 spanning-tree bpduguard

ł î N M BPDU Guard …o
spanning-tree bpduguard enabled

… { î N M BPDU Guard …o
spanning-tree bpduguard disabled

o‹ @ “ ¢o›

@	T
enabled	ł N M BPDU Guard …o
disabled	… { N M BPDU Guard …o

o‹ Þ. F åo› Þ. ' … { o

o‹ x X % o› N M F å% o

o‹ Þ. · ðo› 15

o‹ 6 -o› 1. ł % N M BPDU Guard ÕÑ k òç¥ N M v æ 4 BPDU k < µ Error-disabled Ù˚o
2. Ô9 Error-disabled Ù˚ M k U Y * errdisable recovery [interval ed] x X ˚ Ö

o‹ F å o› 1 y ł N M Gi 1/1 BPDU Guard …o

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

o‹ à co› 1 y show running-config x X k U Y ò0 ¥ x X ' k t åo
2 y show spanning-tree interface x X k U Y ò0 N M STP F å ¸o

o‹ U P ¸o› 1 yBPDU Guard

o‹ u V “ ¢o› -

9.18 spanning-tree compatible enable

ł N M ^ ¯ % o
spanning-tree compatible enable

… { N M ^ ¯ % o
no spanning-tree compatible enable

o‹ @ “ ¢o›

@	T
-	-

o‹ Þ. F åo› Þ. ' … { N M ^ % o

o‹ x X % o› N M %

o‹ Þ. · ðo› 15

o‹ 6 -o› 1 y ł N M ^ % k U Y ÿG ¢ ø M N M K ¯ ˛ ˜ # + ¯ ‘ k MSTI ˛ g G k Y
º ¿ D $; o ò y
// º 1 k2
spanning-tree mst configuration
instance 1 vlan 1
instance 2 vlan 2
òçN M 1 Q K 9 VLAN 1 ¢ kł N M STP ^ % kN M 1 G BPDU Q ‘ k 0 y
1 k ‘ k 2 ˛o
2 y ł N M ^ % k STP k ÿG N M æ K VLAN k Y C VLAN y ¥ 0 … ' k ßN M '
k @ 6 o
3 y 0 g / CIST h ' ó @ o

o‹ F å o› 1 y ł N M Gi 0/1 N M ^ %

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

o‹ à co› 1 y show running-config x X k U Y ò0 ¥ x X ' k t åo

o‹ U P ˛o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

9.19 spanning-tree guard loop

N M ł loop guard Ô¯o
spanning-tree guard loop

N M … { loop guard Ô¯o
no spanning-tree guard loop

o‹ @ “ ¢o›

@	T
-	-

o‹ Þ. F åo› Þ. … { loop guard o

o‹ x X % o› N M F å% o

o‹ Þ. · ðo› 15

o‹ 6 -o› 1. o loop guard k 2 ÿ M Œ Õa M v æ bpdu òD ÿ U Œ Ło
2. N M loop guard y root guard ; o

o‹ F å o› 1 y ł N M Gi 0/1 Loop Guard o

```
5XLMLH FRQILJ LQWHUIDFH JLJDELWHWKHUQHW
5XLMLH FRQILJ LI LQWHUIDFH LG VSDQQLQJ WUHH JXDUG ORRS
```

o‹ à co› 1 y show running-config x X k U Y ò0 ¥ x X ' k t åo

o‹ U P ¸o› 1 y N M loop guard y root guard ; k fl F å root guard k ˙ F å loop guard k k U P ò
SYSLOG y

```
63$175((  5227*8$5'B&21),*B&+$1*(  5RRW *XDUG GLVDEOHG RQ SRUW >
```

¿ [chars] n P N M d fo

o‹ o j ¤o› -

o‹ u V “ ¢o› -

9.20 spanning-tree guard none

N M … { guard

-	-

o‹ Þ. F åo› Þ. … { root guard o

o‹ x X % o› N M F å% o

o‹ Þ. · ðo› 15

o‹ 6 -o› 1. o root guard k 2 j ¤ F åŒ ‡ c x à- ¢ ø ÿ “ y J o
2. N M root guard y loop guard ; o

o‹ F å o› 1 y ł N M Gi 0/1 root guard Ô¯o

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

o‹ à co› 1 y show running-config x X k U Y ò0 ¥ x X ' k t åo

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

9.22 spanning-tree ignore tc

ł î N M tc ¡ …o
spanning-tree ignore tc

… { î N M tc ¡ …o
no spanning-tree ignore tc

o‹ @ “ ¢o›

@	T
-	-

o‹ Þ. F åo› Þ. … { TC ¡

o‹ x X % o› N M %

o‹ Þ. · ðo› 15

o‹ 6 -o› o tc ¡ k Ø M v æ TC 1 Ôòo

o‹ F å o› 1 y ł N M Gi 0/1 TC ¡o

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

o‹ à co› 1 y show running-config x X k U Y ò0 ¥ x X ' k t åo

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

9.23 spanning-tree link-type

F åN M N ”o

spanning-tree link-type [point-to-point | shared]

˚ ÖN M N ” Þ. o

no spanning-tree link-type

o‹ @ “ ¢o›

@	T
poinit-to-point	ò å¥ N M N ” point-to-point
shared	ò å¥ N M N ” shared

o‹ Þ. F åo› N M ” ¶ E W k ¥ N M N ” point-to-point z N M ” ! E W ¥ N M N ” sharedo

o‹ x X % o› N M F å% o

o‹ Þ. · ðo› 15

o‹ 6 -o› F å¥ M N ” ' “ µ+ µ N” k %† µ… ' æ RSTP ' k ‰ , v o ¢ ï å¥ k Õk ÿG M “ E W” Ù Û å o

o‹ F å o› 1 y F åN M Gi 1/1 N ” point-to-pointo

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

o‹ à co› 1 y show running-config x X k U Y ò0 ¥ x X ' k t åo

2 y show spanning-tree interface x X k ò0 STP N M F åo

spanning-tree max-hops þ

˚ Ö Þ. o
no spanning-tree max-hops

o‹ @ “ ¢o›

@	T
þ	BPDU ¤ t $ ø U Y ˘ Õ) k 8 1 l40

o‹ Þ. F åo› þ Þ. 20

o‹ x X % o› ¶ B F å%

o‹ Þ. · ðo› 15

o‹ 6 -o› ¤ Region ˜ k Root Bridge G BPDU m%† Hot Count ¾k R Root Bridge ÷k ? ˘ %† ÕkHop Count < k × 1 k + æ 0 Ø n P ¥ BPDU ¸ Ý k Õv æ Hops 0 BPDU < } o
4 x X 6 4 BPDU ¤%† Region ˜ ˘ Ú5 V Õe t ow J max-hops 1 § æ æ ˜ Instanceo

o‹ F å o› 1 y 1 æ ˜ MST Instance Max-hops 10 y
5 X L M L H F R Q I L J V S D Q Q L Q J W U H H P D [K R S V

o‹ à co› 1 y show running-config x X k U Y ò0 ¥ x X ' k t åo

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

9.26 spanning-tree mode

F åÿŁ ø % o
spanning-tree mode [stp | rstp | mstp]

1 ÿŁ ø % ˚ Ö Þ. o
no spanning-tree mode

o‹ @ “ ¢o›

@	T
Stp	Spanning tree protocol(IEEE 802.1d)

revision 0o

o‹ x X % o› ¶ B F å% .

o‹ Þ. · ðo› 15

o‹ 6 -o› } æ ÔÓ% k ÿµ end x X k Œ p µ Ctrl+C ` ‘ po
} æ ¶ B F å% k ÿµ exit x Xo
µ MST F å% e k U Y Y x X g F å@ y
instance vlan y1 Vlan ` æ MST Instance o L instance-id 8 0
l64o vlan 8 1 l4094 o vlan-range U Y '%† ? vlan ⁄ ‘ kVLAN ID) Z k Ò
VLAN ID U Y l N ª A VLAN ID N k òy instance 10 vlan 2,3,6-9 # 4 1 VLAN
2 k 3 k 6 k 7 k 8 k 9 æ Instance 10 o Þ. F å' æ ˜ VLAN fi ¤ Instance 0 o 1 VLAN R
Instance í c ' no x X yno instance instance-id [vlan vlan-range] o (} h Þ no x X
Instance 8 1 l64)
i H Õ¤ Òò˜ A ß 4 ÕÑ g A ò 64M ˜ h k ¤ ˜ L ÕÑ º 64 instance k - Ł ˜
Æ ÕÑk Ó¤ ˜ L ÕÑ O òº instance o
name name y 6 MST d f k ´ ÚU Y m 32 o U Y no name 1 ¿ ˚ Ö Þ. o
revision version y å MST ˝ ¸ k 8 0 l65535o U Y no revision 1 ¿ ˚ Ö Þ. o
show spanning-tree mst configuration y “ P ¢ ø MST region ¸o

o‹ F å o› 1 y µ Û‘ ¢ ò~ µ MST % k 1 VLAN 3, 5-10 ¥ 0 æ MST Instance 1.

```
5 X L M L H  F R Q I L J  V S D Q Q L Q J  W U H H  P V W  F R Q I L J X U D W L R Q
5 X L M L H  F R Q I L J  P V W  L Q V W D Q F H  Y O D Q  k
5 X L M L H  F R Q I L J  P V W  Q D P H  U H J L R Q
5 X L M L H  F R Q I L J  P V W  U H Y L V L R Q
5 X L M L H  F R Q I L J  P V W  V K R Z  V S D Q Q L Q J  W U H H  P V W  F R Q I L J X U D W L R Q
0 6 7  F R Q I L J X U D W L R Q
1 D P H  > U H J L R Q  @
5 H Y L V L R Q
, Q V W D Q F H  9 O D Q V  0 D S S H G
5 X L M L H  F R Q I L J  P V W  H [ L W
5 X L M L H  F R Q I L J
```

2 y òç} 1 VLAN 3 R Instance 1 í k ; " µ MST F å% e k üg ò i

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

3 y òç} 1 Instance 1 í k c ò y

```
5XLMLH FRQILJ PVW QR LQVWDQFH
```

o‹ à co› 1 y show running-config x X k U Y ò0 ¥ x X ' k t åo

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

9.28 spanning-tree mst cost

N M % å? Instance Ł ‹ 0 ¸o
spanning-tree [mst é] cost ê

1 î%† N M Instance Ł ‹ 0 ¸ ˚ Ö Þ. o
no spanning-tree [mst é] cost

o‹ @ “ ¢o›

@	T
é	Instance Z k 8 0 l64
ê	Ł ‹ 0 ¸ k 8 1 l200 k000 k 000

o‹ Þ. F åo› Instance-ID Þ. 0
Þ. ÿG Interface e Ł , ä o
1000 Mbps—20000
100 Mbps—200000
10 Mbps—2000000

o‹ x X % o› N M F å% .

o‹ Þ. · ðo› 15

o‹ 6 -o› cost ÞÝn ¢ Ł ‹ 0 ¸ Þäo

o‹ F å o› 1 y ¸%† y Instance 3 , … ß N M F åŁ ‹ 0 ¸ 400 c ò y

```
5XLMLH FRQILJ LQWHUIDFH JLJDELWHWKHUQHW
5XLMLH FRQILJ LI LQWHUIDFH LG VSDQQLQJ WUHH PVW FRVW
```

o‹ à co› 1 y show running-config x X k U Y ò0 ¥ x X ' k t åo
2

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

9.29 spanning-tree mst port-priority

åî N M S + c Instance Y c M i fl ·o
spanning-tree [mst á] port-priority ð

1 î N M Instance ˚ Ö Þ. o
no spanning-tree [mst á] port-priority

o‹ @ “ ¢o›

@	T
á	Instance Z k 8 0 l64
ð	M i fl · k U # 0 k16 k32 k48 k64 k80 k96 k112 k128 k144 k 160 k 176 k192 k208 k224 k240 k » 16 k fi 16 o

o‹ Þ. F åo› Instance-id Þ. 0
priority Þ. 128

o‹ x X % o› N M F å% .

o‹ Þ. · ðo› 15

o‹ 6 -o› ¤ Region ˜ ¥ Ł Œ Ł k i fl # + äi fl · M Ô9 G Ù˚o i fl · , c k Y # N M Z ß 4
Mo
4 x X k 1 § æ Region ˜ ¥ Ł Œ Ł M k Ô9 G Ù˚o

o‹ F å o› 1 y 1 ¤ Instance 20 Gigabitethernet 1/1 N M i fl · 0 y

```
5 X L M L H F R Q I L J L Q W H U I D F H J L J D E L W H W K H U Q H W
5 X L M L H F RyQ † ‡ 1 J ¨ L I L Q W H U I D F H L G V S D Q Q L Q J W U H H P V W S R U W S U L R
```

o‹ u V “ ¢o› -

9.30 spanning-tree mst priority

å

9.31 spanning-tree pathcost method

F å M Ł ‹ 0 ¸ co

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

˚ Ö M Ł ‹ 0 ¸ c Þ. o

no spanning-tree pathcost method

o‹ @ “ ¢o›

@	T
long [standard]	J 802.1t öÕ path-cost o standard n P 7 ` öÕP < , cost o
short	J 802.1d öÕ path-cost o

o‹ Þ. F åo› Þ. J 802.1T öÕ Path-cost o

o‹ x X % o› ¶ B F å% o

o‹ Þ. · ðo› 15

o‹ 6 -o› ¢ ¥ M Path Cost

… { î N M Portfast …o
spanning-tree portfast disabled

o‹ @ “ ¢o›

@	T
disabled	… { N M Portfast …o

o‹ Þ. F åo› Þ. ' … { o

o‹ x X % o› N M F å% o

o‹ Þ. · ðo› 15

o‹ 6 -o› ł Port Fast e ¥ M k + N Forwardingo x k v æ BPDU ò Port Fast Operational State disabled k R ò3 o “ @ STP o

o‹ F å o› 1 y ł N M Gi 1/1 Portfast …o
5 X L M L H F R Q I L J L Q W H U I D F H J L J D E L W H W K H U Q H W
5 X L M L H F R Q I L J L I L Q W H U I D F H L G V S D Q Q L Q J W U H H S R U W I D V W

o‹ à co› 1 y show running-config x X k U Y ò0 ¥ x X ' k t åo
2 y show spanning-tree interface x X k ò0 ¥ x X ' k t F åo

o‹ U P ¸o› 1 y ł N M Port Fast … k k U P ò ¸ y
: D U Q L Q J S R U W I D V W V K R X O G R Q O \ E H H Q D E O H G R Q S R U W V F R Q Q H F W H C
V Z L W F K H V E U L G J H V W R W K L V L Q W H U I D F H Z K H Q S R U W I D V W L V H Q D E O H

o‹ o j ¤o› -

o‹ u V “ ¢o› -

9.33 spanning-tree portfast bpdufilter default

ł ¶ B BPDU filter …o
spanning-tree portfast bpdufilter default

… { ¶ B BPDU filtero
no spanning-tree portfast bpdufilter default

o‹ @ “ ¢o›

@	T

-	-

o‹ Þ. F åo› Þ. … { BPDU filter

o‹ x X % o› ¶ B F å% o

o‹ Þ. · ðo› 15

o‹ 6 -o› 1. ¶ B BPDU Filter } y M Port Fast Ô¯ , ¨ ' ı ÿ|o
2. ł ¶ B BPDU Filter e k w M Port Fast M k Ø ¥ M G - v BPDUo show spanning-tree x X ò0 åo

o‹ F å o› 1 y ł ¶ B BPDU filtero
5 X L M L H F R Q I L J V S D Q Q L Q J W U H H S R U W I D V W E S G X I L O W H U G H I D X O W

o‹ à co› 1 y show running-config x X k U Y ò0 ¥ x X ' k t åo
2 y show spanning-tree x X k ò0 ¥ x X ' k t F åo

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V " ¢o› -

9.34 spanning-tree portfast bpduguard default

ł ¶ B BPDU guardo
spanning-tree portfast bpduguard default

… { ¶ B BPDU guardo
no spanning-tree portfast bpduguard default

o‹ @ " ¢o›

@	T
-	-

o‹ Þ. F åo› Þ. … { ¶ B BPDU Guard.

o‹ x X % o› ¶ B F å%

o‹ Þ. · ðo› 15

o‹ 6 -o› ł BPDU guard kòç¤ ¥ M v æ BPDU kØ k µ error-disabled Ù˜o show spanning-tree x X ò0 åo

Õ — v Ç portfast æ e BPDU guard " ì " Ò d

o‹ F å o› 1 y ł BPDU Guard

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

o‹ à co› 1 y show running-config x X k U Y ò0 ¥ x X ' k t åo

2 y show spanning-tree x X k ò0 ¥ x X ' k t F åo

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V " ¢o› -

9.35 spanning-tree portfast default

ł æ ˜ N M Portfast …o

spanning-tree portfast default

… { æ ˜ N M Portfast …o

no spanning-tree portfast default

o‹ @ " ¢o›

@	T
-	-

o‹ Þ. F åo› Þ. … { æ ˜ N M Portfast …o

o‹ x X % o› ¶ B F å% o

o‹ Þ. · ðo› 15

o‹ 6 -o› -

o‹ F å o› 1 y ł æ ˜ N M Portfast …

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

o‹ à co› 1 y show running-config x X k U Y ò0 ¥ x X ' k t åo

… { î N M tc- guard …o
no spanning-tree tc-guard

o‹ @ “ ¢o›

@	T
-	-

o‹ Þ. F åo› Þ. … { tc-guard …o

o‹ x X % o› N M F å%

o‹ Þ. · ðo› 15

o‹ 6 -o› o tc-guard k 2 tc ý o

g°î^ÁÀ 9 — F0bdÂ ðÁs= i tà õ€r ÊÞÌ T • ¼ož (tree -5(p

o‹ F å o› 1 y ł N M Gi 1/1 tc-guard …o

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

o‹ à co› 1 y show running-config : “Qz 0 œ—

o‹ Þ. · ðo›	15
o‹ 6 -o›	-
o‹ F å o›	1 y ł tc-protection …
o‹ à co›	1 y show running-config x X k U Y ò0 ¥ x X ' k t åo
o‹ U P ¸o›	-
o‹ o j ¤o›	-
o‹ u V “ ¢o›	-

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

9.39 spanning-tree tc-protection tc-guard

ing-tree t9(P)]TJ 0.0003 f -0.9f w 10.21.753 0 (c-protection tc-guard) g /TT0 1 Tf 0 Tc 0 -17.22007 -17 0 Td ( ) g /TT2 1 Tf

o X x 5 V ª ¢ o -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

9.40 spanning-tree tx-hold-count

F å TxHoldCount k / ? a _ ´ ÚG BPDU o
spanning-tree tx-hold-count

F å TxHoldCount ˚ ŒŁ Þ. o
no spanning-tree tx-hold-count

o‹ @ “ ¢o›

@	T
	TxHoldCount åo H 8 1-10 k Þ. 3 o

o‹ Þ. F åo› Þ. ' 3o

o‹ x X % o› ¶ B F å% o

o‹ 6 -o› -

o‹ F å o› 1 y F å TxHoldCount 5o
5 X L M L H F R Q I L J V S D Q Q L Q J W U H H W [K R O G F R X Q W

o‹ à co› 1 y show running-config x X k U Y ò0 ¥ x X ' k t åo

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

10 GVRP

x X	
bridge-frame forwarding protocol gvrp	ł gvrp pdu % n
clear gvrp statistics	GVRP ˇ o
gvrp applicant state	å M * s % o
gvrp dynamic-vlan-creation	å `º VLAN o
gvrp enable	å GVRP … Ùo
gvrp registration mode	å M h ˇ % o
gvrp timer	å GVRP o
l2protocol-tunnel gvrp	ł ¶ B GVRP PDUs TUNNEL
l2protocol-tunnel gvrp enable	ł N M GVRP PDUs TUNNEL
l2protocol-tunnel gvrp tunnel-dmac	F å GVRP PDUs TUNNEL % n GVRP # “›
show gvrp configuration	“ P GVRP F å ¸o
show gvrp statistics	“ P GVRP ˇ o
show gvrp status	

l2a1(4(proto(l)-1(g-7((y) E6F9E>]TJ /TT0

GVRP % n Q ¤ GVRP # ... { ı o o ¢ GVRP # ł k Õ % n GVRP PDUs lo

o‹ F å o› 1 y ł GVRP PDUs % n o

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

o‹ à co› 1 y show running-config x X k U Y ò0 ¥ x X ' k t åo

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

10.2 clear gvrp statistics

GVRP ˇ k ¿ M ÷ o

clear gvrp statistics { all }

o‹ @ “ ¢o›	@	T
		àÌ N M ID

no gvrp applicant state

o‹ Þ. · ðo› 14

o‹ 6 -o› show gvrp configuration x X ò0 å

o‹ F å o› 1 y o ` VLAN º o

```
5XLMLH FRQILJ JYUS G\QDPLF YODQ FUHDWLRQ HQDEOH
```

o‹ à co› 1 y show gvrp configuration x X ò0 åo

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

10.5 gvrp enable

ł GVRP
gvrp enable

… { GVRP
no gvrp enable

o‹ @ “ ¢o›

@	T
-	-

o‹ Þ. F åo› … { GVRP

o‹ x X % o› ¶ B F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› show gvrp configuration x X ò0 å

o‹ F å o› 1 y o GVRP o

```
5XLMLH FRQILJ JYUS HQDEOH
```

o‹ à co› 1 y show gvrp configuration x X ò0 åo

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

10.6 gvrp registration mode

å M % k O ò' k “ `º o Œ h f M VLANo
gvrp registration mode { normal | disabled }

˚ Öó F å
no gvrp registration mode

o‹ @ “ ¢o›

@	T
normal	M “ µ ` VLAN
disabled	M “ µ ` VLAN

o‹ Þ. F åo› “ `º o Œ h f M VLAN

o‹ x X % o› N M F å%

o‹ Þ. · ðo› 2

o‹ 6 -o› -

o‹ F å o› 1 y åN M GVRP h ˇ % o
5 X L M L H F R Q I L J L I J Y U S U H J L V W U D W L R Q P R G H Q R U P D O

o‹ à co› 1 y show 2 1 Tf 0.0013configuratiXm0 åo

o‹ U P ¸o› :1 y M ‡ trunk % F åU P j ¤ y
, W L V Q W D W U X Q N S R U W W K H *9 5 3 D S S O L F D Q W W \ S H F D Q W E H V S H F

o‹ o j ¤o› -

o‹ u V “ ¢o› -

10.7 gv013timer

å GVRP

l2protocol-tunnel gvrp

… { ¶ B GVRP PDUs TUNNEL o
no l2protocol-tunnel gvrp

o‹ @ “ ¢o›

@	T
-	-

o‹ Þ. F åo› Þ. ' … { o

o‹ x X % o› ¶ B %

o‹ Þ. · ðo› 15

o‹ 6 -o› o ¶ B GVRP PDUS TUNNEL k ‹ } N M GVRP PDUs TUNNEL ı ÿ|o

o‹ F å o› 1 y o ¶ B GVRP PDUs TUNNEL o

```
5XLMLH FRQILJ O SURWRFRO WXQQHO JYUS
5XLMLH FRQILJ VKRZ O SURWRFRO WXQQHO JYUS

/ SURWRFRO WXQQHO *YUS 'LVDEOH
/ SURWRFRO WXQQHO GHVWLQDWLRQ PDF DGGUHVV G I
```

o‹ à co› 1 y show l2protocol-tunnel gvrp x X ò0 åo

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

10.9 l2protocol-tunnel gvrp enable

o N M GVRP PDUs TUNNEL
l2protocol-tunnel gvrp enable

» J N M GVRP PDUs TUNNEL
no l2protocol-tunnel gvrp enable

o‹ @ “ ¢o›

@	T
-	-

o‹ Þ. F åo› Þ. ' … { o

o‹ x X % o› N M F å%

o‹ Þ. · ðo› 15

o‹ 6 -o› o ¶ B GVRP PDUs TUNNEL k ‹ } N M GVRP PDUs TUNNEL ı ÿ|o

o‹ F å o› 1 y o N M GVRP PDUs TUNNEL o

```
5XLMLH FRQILJ LI LQWHUIDFH LG  O SURWRFRO WXQQHO JYUS HQDEO
5XLMLH FRQILJ LI LQWHUIDFH LG  VKRZ O SURWRFRO WXQQHO JYUS

/ SURWRFRO WXQQHO *YUS 'LVDEOH
/ SURWRFRO WXQQHO GHVWLQDWLRQ PDF DGGUHVV G I
*LJDELW(WKHUQHW O SURWRFRO WXQQHO JYUS HQDEOH
```

o‹ à co› 1 y show l2protocol-tunnel gvrp x X ò0 åo

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

10.10 l2protocol-tunnel gvrp tunnel-dmac

å GVRP PDUs TUNNEL ‹ } % n GVRP # “ ›o
l2protocol-tunnel gvrp tunnel-dmac ■

å GVRP PDUs TUNNEL ‹ } % n GVRP # “ › Þ. “ ›o
no l2protocol-tunnel gvrp tunnel-dmac

o‹ @ “ ¢o›

@	T
■	‹ } % n GVRP # “ ›

o‹ Þ. F åo› Þ. “ › 01d0.f800.0006o

o‹ x X % o› ¶ B F å%

o‹ Þ. · ðo› 15

o‹ 6 -o› 1 yGVRP PDUs TUNNEL % n GVRP # U # “ › 8 y 01d0.f800.0006o 011a.a900.0006o
2 y ¢ Ì F å% n “ › k Þ. “ › 01d0.f800.0006o

o‹ F å o› 1 y F å GVRP PDUs TUNNEL % n GVRP # “ › 011a.a900.0006 y
5 X L M L H F R Q I L J O S U R W R F R O W X Q Q H O J Y U S W X Q Q H O G P D F D D

o‹ à co› 1 y show l2protocol-tunnel gvrp x X ò0 åo

o‹ U P ¸o› 1 y ¢ F å‹ } % n GVRP # “ › ¤ “ › 8 kCLI U P ò y
2 S W L R Q D O D W W K H I R O O R Z L Q J D G G U H V V H V G I D D

o‹ o j ¤o› -

o‹ u V “ ¢o› - sh00103 Tc 1show gvrp configuration 88 Tc -51.05 Tc 5.807 00 Td [<05.38 Tm <057804213204 g 55.2 T* <6FAC067 r
o¬ U P ’ ÎjÐ

< K y

<	“ ¢
GVRP Feature	GVRP ÕÑ
GVRP dynamic VLAN creation	` VLAN º ÕÑ
Join Timers	Join
Leave Timers	Leave
Leaveall Timers	Leaveall
PORT	M
Applicant Status	* s %
Registration Mode	h ˘ %

o‹ U P ¸o› -

o‹ u V “ ¢o› -

10.12 show gvrp statistics

$p—)p 6œ¯ŒI$!L) à@p A a0 ´ 8`"G 0 ï ´ ß'A1 ! G ´ l"G (tS —&!´ `—z ’@qw0ØU P T —

6 H Q W * Y U S 3 G X

o‹ 6 -o› show gvrp status x X “ P GVRP Ù

o‹ F å o› 1 y ò0 GVRP Ù ¸o

```
5 X L M L H  V K R Z  J Y U S  V W D W X V
9 / $ 1
' \ Q D P L F  3 R U W V
' 9 / $ 1
' \ Q D P L F  3 R U W V y
```

< K y

<	“ ¢
VLAN	† ` VLAN
DVLAN	` VLAN
Dynamic Ports	`Ł to

o‹ U P ¸o› -

o‹ u V “ ¢o› -

10.14 show l2protocol-tunnel gvrp

“ P GVRP PDUs TUNNEL F å ¸

show l2protocol-tunnel gvrp

o‹ @ “ ¢o›

@	T
-	-

o‹ x X % o› ÔÓ% k ¶ B % o N M %

o‹ Þ. · ðo› 2

o‹ 6 -o› -

o‹ F å o› 1 y 4 x X ò0 GVRP PDUs TUNNEL F å ¸ y

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

/ S U R W R F R O  W X Q Q H O  *Y U S  ( Q D E O H
/ S U R W R F R O  W X Q Q H O  G H V W L Q D W L R Q  P D F  D G G U H V V  D D
*L J D E L W ( W K H U Q H W  O  S U R W R F R O  W X Q Q H O  J Y U S  H Q D E O H
```

o‹ U P ¸o› -

o‹ u V “ ¢o› -

11 LLDP

x X	
civic-location	F å LLDP fl * “ › ‚
clear lldp statistics	LLDP ˇ ‚
clear lldp table	LLDP > D ‚
device-type	F å Õ ” ‚
lldp enable	¶ B Œ N M LLDP
lldp encapsulation snap	F å LLDP / x
lldp error-detect	F å LLDP j ¤ y
lldp fast-count	F å LLDP ‰ , G
lldp hold-multiplier	F å TTL +
lldp location civic-location identifier	µ

ï U Y no # ¾ “ › ¸o
no {

o‹ F å o› 1 y F å lldp Civic Address g id 1 h ¸ ycountry CH kcity Fuzhouo

```
5XLMLH FRQILJ
5XLMLH FRQILJ  OOGS ORFDWLRQ FLYLF ORFDWLRQ LGHQWLILHU
5XLMLH FRQILJ OOGS FLYLF  FRXQWU\ &+
5XLMLH FRQILJ OOGS FLYLF  FLW\ )X]KRX
```

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

11.2 clear lldp statistics

LLDP ˇ ¸o

clear lldp statistics [interface]

o‹ @ “ ¢o›	@	T
		N M d f

o‹ x X % o› ÔÓ%

o‹ Þ. · ðo› 2

o‹ 6 -o› 6 interface @ k 1 6 N M LLDP ˇ ¸o

o‹ F å o› 1 y N M 1 LLDP ˇ ¸o

```
5XLMLH  FOHDU OOGS VWDWLVWLFV LQWHUIDFH *LJDELW(WKHUQHW
5XLMLH  VKRZ OOGS VWDWLVWLFV LQWHUIDFH *LJDELW(WKHUQHW
/OGS VWDWLVWLFV LQIRUPDWLRQ RI SRUW >*LJDELW(WKHUQHW  @

7KH QXPEHU RI OOGS IUDPHV WUDQVPLWWHG
7KH QXPEHU RI IUDPHV GLVFDUGHG
7KH QXPEHU RI HUURU IUDPHV
7KH QXPEHU RI OOGS IUDPHV UHFHLYHG
7KH QXPEHU RI 7/9V GLVFDUGHG
7KH QXPEHU RI 7/9V XQUHFRJQL]HG
7KH QXPEHU RI QHLJKERU LQIRUPDWLRQ DJHG RXW
```

o‹ U P ¸o› -

o‹ u V “ ¢o› -

11.3 clear lldp table

LLDP > D ˛

clear lldp table [interface]

o‹ @ “ ¢o›

@	T
	N M d f

o‹ x X % o› ÔÓ%

o‹ Þ. · ðo› 2

o‹ 6 -o› 6 interface @ k 1 6 N M LLDP > D ˛

6 interface @ k 1 æ ˜ N M LLDP > D ˛

o‹ F å o› 1 y N M 1 LLDP > D ˛o

o‹ 6 -o› ‹ } ¶ B ł LLDP … k N M LLDP ı ÿ|o

o‹ F å o› 1 y … { ¶ B y N M LLDP …o

```
5XLMLH FRQILJXUH WHUPLQDO
5XLMLH FRQILJ QR OOGS HQDEOH
5XLMLH FRQILJ LQWHUIDFH JLJDELWHWKHUQHW
5XLMLH FRQILJ LI *LJDELW(WKHUQHW QR OOGS HQDEOH
```

o‹ U P ¸o› -

o‹ o j ¤o› N M] o LLDP k x ' ¶ B Z ˜ o LLDP k 4 N M LLDP ' ÿ|o
M . æ > D ò¤ 5 k / M ´ ÚQ . æ 5 > Do
òç> D Õ u 4 LLDP k x ' > D Õ Õu 4 LLDP k 9 > D ÕU k ôG LLDP
k ýk M U k . æ ‡ + Õ ¸o

o‹ u V “ ¢o› -

11.6 lldp encapsulation snap

F å LLDP / x k Þ. J Ethernet II / x o
J SNAP / x o
lldp encapsulation snap

J Ethernet II / x o
no lldp encapsulation snap

o‹ @ “ ¢o›

@	T
-	-

o‹ Þ. F åo› Þ. Ethernet II / xo

o‹ x X % o› N M F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› t I ‡ ••ä ƒ b•• þ (¹ð ‘Ü LLDP q 3 " N - ½ ß m L ´ d

o‹ F å o› 1 y F å LLDP / x SNAPo

```
5XLMLH FRQILJXUH WHUPLQDO
5XLMLH FRQILJ LQWHUIDFH JLJDELWHWKHUQHW
```

11.8 lldp fast-count

¢ G º > D k Œ æ LLDP W % R … { Œ Rx ôJ TxRx ŒTx k 4 > D Õ@ ‰ “ . æ ¸
Õ ¸ k1 o ‰ , G Ñòk‰ , G ÑòÝ? LLDP G u ˚ 1 a kw ÒG %† O LLDP
e ˙ ˚ Ö3 o G u ˚o
F å LLDP ‰ , G o
lldp fast-count

˚ ÖÞ. LLDP ‰ , G o
no lldp fast-count

o‹ @ “ ¢o›	@	T
		LLDP ‰ , G k Þ. 3 k U F å 8 1-10

o‹ Þ. F åo› Þ. ÕÑ kLLDP ‰ , G 3

o‹ x X % o› ¶ B F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› -

o‹ F å o› 1 y F å LLDP ‰ , G 5 o

```
5XLMLH FRQILJXUH WHUPLQDO
5XLMLH FRQILJ OOGS IDVW FRXQW
```

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

11.9 lldp hold-multiplier

F å TTL + o
lldp hold-multiplier

˚ ÖÞ. TTL + o
no lldp hold-multiplier

o‹ @ “ ¢o›	@	T
	ð	TTL + k Þ. 4 k F å8 2-10

o‹ Þ. F åo›	Þ. 4

o‹ x X % o›	¶ B F å%

o‹ Þ. · ðo›	14

o‹ 6 -o›	LLDP Time To Live TLV =TTL + G +1 o 4 k * † TTL + U Y O ò¸ Õ ¸ ¤ > D Õ t o

o‹ F å o›	1 y F å TTL + 5o 5 X L M L H F R Q I L J X U H W H U P L Q D O 5 X L M L H F R Q I L J O O G S K R O G P X O W L S O L H U

o‹ U P ¸o›	-

o‹ o j ¤o›	-

o‹ u V “ ¢o›	-

11.10 lldp location civic-location identifier

µ LLDP Civic Address F å% k º àÌ N Õ fl * “ › ¸o
F å LLDP MED-TLV Civic Address ¸o
lldp location civic-location identifier ð

í LLDP MED-TLV Civic Address ¸o no lldp location civic-location identifier ð

o‹ @ “ ¢o›	@	T
	ð	àÌ Õfl * “ › ¸ ö Z k 8 y1-1024

o‹ Þ. F åo›	-

o‹ x X % o›	¶ B F å%

o‹ Þ. · ðo›	14

o‹ 6 -o› 4 x X U µ LLDP Civic AddressF å% o

o‹ F å o› 1 y º LLDP MED-TLV Civic Address ¸ kid 1o

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

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

11.11 lldp location elin identifier

F å Location Identification TLV / x ‹ ˜ ¢ Z A ¸o
lldp location elin identifier ¤elin-location ¤

í ‹ ˜ ¢ Z A ¸o
no lldp location elin identifier ¤

o‹ @ “ ¢o›

@	T
¤	n P ‹ ˜ ¢ Z A ¸ F åö Z k 8 y1-1024o
¤	n P ‹ ˜ ¢ Z A k 8 y10 – 25 -

o‹ Þ. F åo› -

o‹ x X % o› ¶ B F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› 4 x X ÛF å‹ ˜ ¢ Z A ¸o

o‹ F å o› 1 y º ‹ ˜ ¢ Z A ¸o

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

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

11.12 lldp management-address-tv

F å LLDP G b ò“ ›o
lldp management-address-tv [

no # ¾U Y H ò“ › G bo
no lldp management-address-tv

o‹ @ “ ¢o›

@	T
	LLDP G b ò“ ›

o‹ Þ. F åo› -

o‹ x X % o› N M F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› Þ. ÕÑ kLLDP G b ò“ ›o G b ò“ › M “ * ´ 4 VLAN IPv4 “ › k òç¥
VLAN Ì F å IPv4 “ › k Ø — Òò %† “ * ´ 4 VLAN k + æ æ IPv4 “ › 2o

o‹ F å o› 1 y F å LLDP G b ò“ › 192.168.1.1o

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

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

11.13 lldp mode

F å LLDP W % o
lldp mode { rx | tx | txrx }

ï U Y no # ¾.. { LLDP W % o

no lldp mode

o‹ @ “ ¢o›

@	T
rx	n P Q N v G LLDPDU
tx	n P Q G N v LLDPDU
txrx	n P / G A N v LLDPDU

o‹ Þ. F åo› txrx

o‹ x X % o› N M F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› … { N M LLDP W % k 4 N M ˙ G y N v LLDP o
N M LLDP ÿ| ø U ' ¶ B 4 LLDP N M LLDP W % Ô9 txo rx Œtxrxo

o‹ F å o› 1 y F åN M LLDP W % Q G N v LLDPDUo

```
5 X L M L H  F R Q I L J X U H  W H U P L Q D O
5 X L M L H  F R Q I L J  L Q W H U I D F H  J L J D E L W H W K H U Q H W
5 X L M L H  F R Q I L J  L I  * L J D E L W ( W K H U Q H W  O O G S  P R G H  W [
```

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

11.14 lldp network-policy profile

º LLDP network-policy k w µ LLDP network-policy F å% o
lldp network-policy profile ▯

no # ¾ LLDP network-policy o
no lldp network-policy profile ▯

o‹ @ “ ¢o›

@	T
▯	LLDP network-policy ö k 8 y1-1024

o‹ Þ. F åo› -

o‹ x X % o›	¶ B F å%
o‹ Þ. · ðo›	14
o‹ 6 -o›	4 x X µ LLDP network-policy F å% k 4 x X ‹ } 6 IDo µ LLDP network-policy F å% e k U { voice | voice-signaling } vlan x X F åÀ} network-policy o
o‹ F å o› 1	y º LLDP network-policy k Z 1o 5 X L M L H F R Q I L J 5 X L M L H F R Q I L J O O G S Q H W Z R U N S R O L F \ S U R I L O H 5 X L M L H F R Q I L J O O G S Q H W Z R U N S R O L F \
o‹ U P ¸o›	-
o‹ o j ¤o›	-
o‹ u V “ ¢o›	-

11.15 lldp notification remote-change enable

F å LLDP Trap o

lldp notification remote-change enable

no # ¾.. { LLDP Trap o

no lldp notification remote-change enable

```
5XLMLH  FRQILJXUH WHUPLQDO
5XLMLH FRQILJ  LQWHUIDFH JLJDELWHWKHUQHW
5XLMLH FRQILJ LI *LJDELW(WKHUQHW      OOGS QRWLILFDWLRQ UHPRWH
```

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

11.16 lldp timer notification-interval

F åG LLDP Trap o
lldp timer notification-interval ð

no # ¾U Y ° ÖÞ. o
no lldp timer notification-interval

o‹ @ “ ¢o›

@	T
ð	F åG LLDP Trap ¸ kÞ. ' 5 a kU F å 8 ' 5-3600

o‹ Þ. F åo› Þ. 5 a

o‹ x X % o› ¶ B F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› 4 2 LLDP Trap ¸ ¨ fl G kU Y F åG LLDP Trap o¤ < ˜ k y æ LLDP ¸ J k 1 G Trap ¸ à ˇ o

o‹ F å o› 1 y F å LLDP Trap G 10 ao

```
5XLMLH  FRQILJXUH WHUPLQDO
5XLMLH FRQILJ  OOGS WLPHU QRWLILFDWLRQ LQWHUYDO
```

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

11.17 lldp timer reinit-delay

F å M ì ÷ o

lldp timer reinit-delay ê

no # ¾Ü Y ˚ Ö M ì ÷ Þ. o

no lldp timer reinit-delay

o‹ @ “ ¢o›	@	T
	ê	M ì ÷ k F å8

o‹ Þ. F åo› 2 a

o‹ x X % o› ¶ B F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› ¢¸“ ¸G ÿJ k k y / g > D ÕG LLDP o 4 9 †¸“ ¸¨ fl J Ü ¨ fl “ G
LLDP k U Y F å LLDP G Û ò LLDP ¨ fl G o

o‹ F å o› 1 y F å LLDP G 3 ao

```
5XLMLH FRQILJXUH WHUPLQDO
5XLMLH FRQILJ OOGS WLPHU W[ GHOD\
```

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

11.19 lldp timer tx-interval

F å LLDP G o
lldp timer tx-interval ød

no # ¾U Y ˚ ÖG Þ. o
no lldp timer tx-interval

o‹ @ “ ¢o›

@	T
ød	LLDP G k U F å8 5-32768

o‹ Þ. F åo› 30 a

o‹ x X % o› ¶ B F å%

o‹ Þ. · ðo› 14

o‹ 6 -o› -

o‹ F å o› 1 y F å LLDP G 10 ao

```
5XLMLH FRQILJXUH WHUPLQDO
```

5XLMLH FRQILJ OOGS WLPHU W[LQWHUYDO

power	n P Power Via MDI TLV

```
*OREDO //'3 ORFDO LQIRUPDWLRQ
  &KDVVLV ,' W\SH                    0$& DGGUHVV
  &KDVVLV LG                          G  I     DD
  6\VWHP QDPH                        6\VWHP QDPH
  6\VWHP GHVFULSWLRQ                    6\VWHP GHVFULSWLRQ
  6\VWHP FDSDELOLWLHV VXSSRUWHG       5HSHDWHU  %ULGJH  5RXWHU
  6\VWHP FDSDELOLWLHV HQDEOHG         5HSHDWHU  %ULGJH  5RXWHU

  //'3 0(' FDSDELOLWLHV              //'3 0(' &DSDELOLWLHV  1HWZRUN 3R
,GHQWLILFDWLRQ  ([WHQG3'G ,QRZHQWYLD\ 0',–
  'HYLFH FODVV                       1HWZRUN &RQQHFWLYLW\
[redacted]
  )LUPZDUH5HY
  6RIWZDUH5HY                        5*26        5HOHDVH
  6HULDO1XP
'1$0DQXIDÀ$pX5HPU QDPH0000000000000000DQ<pE5 0 WXUHU QDPH
  $VVHW WUDFNLQJ LGHQWLILHU

/OGS ORFDO LQIRUPDWLRQ RI SRUW >*LJDELW(WKHUQHW    @

  3RUW ,' W\SH                      ,QWHUIDFH QDPH
[redacted]UQHW
  3RUW GHVFULSWLRQ
  0DQDJHPHQW DGGUHVV VXEW\SH            PDF DGGUHVV
  0DQDJHPHQW DGGUHVV                  G  I     DD
  ,QWHUIDFH QXPEHULQJ VXEW\SH
  ,QWHUIDFH QXPEHU
  2EMHFW L!• 7,^„   2EMHFW  0
```

[redacted]

```
  3RUW DQ' 2U%WRFR÷ •ð$  ,G³3 •À$p000Ð0@0
```


[redacted]

FirmwareRe	¡ ^ ˝ ‘
SoftwareRev	÷^ ˝ ‘
SerialNum	~ çZ
Manufacturer name	ò- D

Asset tracking identifier ˇ D ö

Link aggregation enabled

6 ‘~@ k1“Pæ˜“› ¸Œæ‹˜ ¢ZA ¸

o‹Få o› 1y“Pæ˜“› ¸o

```
5XLMLH  VKRZ OOGS ORFDWLRQ FLYLF ORFDWLRQ VWDWLF
//'3 &LYLF ORFDWLRQ LQIRUPDWLRQ

,GHQWLILHU                WHVWW
&RXQW\                   FKLQD
&LW\ 'LYLVLRQ
/HDGLQJ VWUHHW GLUHFWLRQ
6WUHHW QXPEHU
/DQGPDUN
1DPH                     OLX\
%XLOGLQJ                    EXL
)ORRU
5RRP
&LW\                    IX]KRX
&RXQWU\
$GGLWLRQDO ORFDWLRQ      DDD
3RUWV                    *L

,GHQWLILHU                WHH
```

2y“Pæ˜‹˜ ¢ZA ¸o

```
5XLMLH  VKRZ OOGS ORFDWLRQ HOLQ ORFDWLRQ VWDWLF
(OLQ ORFDWLRQ LQIRUPDWLRQ

,GHQWLILHU   W
(OLQ        LLLLLLLLLL
3RUWV        *L
```

o‹UP ¸o› -

o‹u V“¢o› -

11.23 show lldp neighbors

“P>D Õ LLDP ¸o

show lldp neighbors [interface [detail]

o‹ @ “ ¢o›

@	T
	N M d f
detail	“ P > D Õ æ ˜ ¸

o‹ x X % o› ÔÓ%

o‹ Þ. · ðo› 2

o‹ 6 -o›

```
6 detail @ k 1 “ P > D Õ d } ¸o
6 detail @ k 1 “ P > D Õ À} ¸o
6 interface @ k 1 “ P 6 N M v æ > D ¸
```

o‹ F å o› 1 y “ P æ ˜ M v æ > D Õ ¸o

```
5XLMLH VKRZ OOGS QHLJKERUV GHWDLO
/OGS QHLJKERU LQIRUPDWLRQ RI SRUW >*LJDELW(WKHUQHW @
 1HLJKERU LQGH[
 'HYLFH W\SH //'3 'HYLFH
 8SGDWH WLPH KRXU PLQXWHV VHFRQGV
$JLQJ WLPH y VHFRQGV

 &KDVVLV ,' W\SH 0$& DGGUHVV
 &KDVVLV LG G I FG
 6\VWHP QDPH 6\VWHP QDPH
 6\VWHP GHVFULSWLRQ 6\VWHP GHVFULSWLRQ
 6\VWHP FDSDELOLWLHV VXSSRUWHG 5HSHDWHU %ULGJH 5RXWHU
 6\VWHP FDSDELOLWLHV HQDEOHG 5HSHDWHU %ULGJH 5RXWHU

 0DQDJHPHQW DGGUHVV VXEW\SH PDF DGGUHVV
 0DQDJHPHQW DGGUHVV G I FG
 ,QWHUIDFH QXPEHULQJ VXEW\SH
 ,QWHUIDFH QXPEHU
 2EMHFW LGHQWLILHU


 //'3 0(' FDSDELOLWLHV
 'HYLFH FODVV
 +DUGZDUH5HY
 )LUPZDUH5HY
 6RIWZDUH5HY
 6HULDO1XP
```

```
0DQXIDFWXUHU QDPH
$VVHW WUDFNLQJ LGHQWLILHU

3RUW ,' W\SH                    ,QWHUIDFH QDPH
3RUW LG                        *LJDELW(WKHUQHW
3RUW GHVFULSWLRQ

    RUJDQL]DWLRQDOO\ LQIRUPDWLRQ
3RUW 9/$1 ,'
3RUW DQG SURWRFRO 9/$1 ,' 339,'
   339,' 6XSSRUWHG              <(6
   339,' (QDEOHG               12
9/$1 QDPH RI 9/$1               9/$1
3URWRFRO ,GHQWLW\
    RUJDQL]DWLRQDOO\ LQIRUPDWLRQ
$XWR QHJRWLDWLRQ VXSSRUWHG       <(6
$XWR QHJRWLDWLRQ HQDEOHG        <(6
30' DXWR QHJRWLDWLRQ DGYHUWLVHG      %$6( 7 IXOO GXSOH[ PRGE
 %$6( 7; KDOI GXSOH[ PRGH   %$6( 7 IXOO GXSOH[ PRGH   %$6( 7 KDO
2SHUDWLRQDO 0$8 W\SH            VSHHG     GXSOH[ )XOO
3R( VXSSRUW                     12
/LQN DJJUHJDWLRQ VXSSRUWHG      <(6
/LQN DJJUHJDWLRQ HQDEOHG        12
$JJUHJDWLRQ SRUW ,'
0D[LPXP IUDPH 6L]H
//'3 0(' RUJDQL]DWLRQDOO\ LQIRUPDWLRQ
3RZHU YLD 0', GHYLFH W\SH
3RZHU YLD 0', SRZHU VRXUFH
3RZHU YLD 0', SRZHU SULRULW\
3RZHU YLD 0', SRZHU YDOXH
```

show lldp neighbors x X “ P ˛ T n y

<	“ ¢
Neighbor index	> D «
Device type	> D Õ ”
Update time	> D ˛ ´ ¾
Aging time	> D ï k / > D ˛ ¤ Ú5 a e t ï í
Chassis ID type	Chassis ID ”
Chassis ID	9 ö Õk * o MAC “ › n P

System name	T Õ d f
System description	ÕT ¸ k , F ^/ ÷^ ˝ T ¶‘

PMD auto-negotiation advertised	M # * s
Operational MAU type	M # , äy E W Ù
PoE support	' k u 4 POE
Link aggregation supported	' k u 4 e Ł ü‘
Link aggregation enabled	' k e Ł ü‘
Aggregation port ID	e Ł ü‘ M ID
Maximum frame Size	M u 4 ´ Ýl x
Power-via-MDI device type	Õ ” k , y PSE g Õh PD g l Õh
Power-via-MDI power source	”
Power-via-MDI power priority	i fl ·
Power-via-MDI power value	M ä

o‹ U P ¸o› -

o‹ u V “ ¢o› -

11.24 show lldp network-policy profile

“ P ¸ “ Õ LLDP network-policy F å ¸o

show lldp network-policy { profile [ ] | interface }

o‹ @ “ ¢o›

@	T
	network-policy ö Z k 8 y1-1024
	N M d f

o‹ x X % o› ÔÓ%

o‹ Þ· ðo› 2

o‹ 6 -o› 6 ö Z k 1 “ P Ô network-policy ¸o
6 ‘ ~ @ k 1 “ P æ ˜ network-policy ¸o

o‹ F å o› 1 y “ P æ ˜ network-policy ¸o

```
5XLMLH VKRZ OOGS QHWZRUN SROLF\ SURILOH
QHWZRUN SROLF\ LQIRUPDWLRQ
```

```
1HWZRUN 3ROLF\ 3URILOH
  YRLFH YODQ  FRV  GVFS
  YRLFH VLJQDOLQJ YODQ    FRV  GVFS
```

o‹ U P ¸o› -

o‹ u V “ ¢o› -

11.25 show lldp statistics

“ P LLDP ˇ ¸o

show lldp statistics [global | interface]

o‹ @ “ ¢o›

@	T
	N M d f

o‹ x X % o› ÔÓ%

o‹ Þ. · ðo› 2

o‹ 6 -o› 6 global @ k 1 “ P ¶ B LLDP ˇ ¸o
6 interface @ k 1 “ P 6 N M LLDP ˇ ¸o

o‹ F å o› 1 y “ P æ ˜ LLDP ˇ ¸o

```
5XLMLH  VKRZ OOGS VWDWLVWLFV
OOGS VWDWLVWLFV JOREDO ,QIRUPDWLRQ
1HLJKERU LQIRUPDWLRQ ODVW FKDQJHG WLPH      KRXU  PLQXWH  V


4Q©%pÀ` LV WRl%pÀ€À °P P0À • P @pÀ 0pP 00€p00Ð000
4Q©%pÀ` LV WRl%pÀ€À °P P0À • P @pÀ 0@ €5u €p00Ð0@0




4Q©%pÀ` LV WRl%pððp00•P@ €`0pP@ `LÀpp€p0000000Ð0P•0
4Q©%pÀ` LV WRl%p•P@ €`0pÀ``@Pp€p0000000000000Ð000

4Q©%pÀ` LV WRl%pððp00•P@ €`0ôÀFHLYHG
```

```
7KH QXPEHU RI 7/9V GLVFDUGHG
7KH QXPEHU RI 7/9V XQUHFRJQL]HG
7KH QXPEHU RI QHLJKERU LQIRUPDWLRQ DJHG RXW
```

o‹ Þ. · ðo› 2

o‹ 6 -o› 6 interface @ k 1 “ P 6 N M LLDP Ù ¸o

o‹ F å o› 1 y “ P æ ˜ M LLDP Ù ¸o

```
5XLMLH  VKRZ OOGS VWDWXV
*OREDO VWDWXV RI //'3                    (QDEOH
1HLJKERU LQIRUPDWLRQ ODVW FKDQJHG WLPH   KRXU   PLQXWH   VHFR
7UDQVPLW LQWHUYDO                          V
+ROG PXOWLSOLHU
5HLQLW GHOD\                             V
7UDQVPLW GHOD\                             V
1RWLILFDWLRQ LQWHUYDO                        V
)DVW VWDUW FRXQWV

3RUW >*LJDELW(WKHUQHW    @

3RUW VWDWXV RI //'3              (QDEOH
3RUW VWDWH                      83
3RUW HQFDSVXODWLRQ                (WKHUQHW ,,
2SHUDWLRQDO PRGH                 5[$QG7[
1RWLILFDWLRQ HQDEOH               12
(UURU GHWHFW HQDEOH               <(6
1XPEHU RI QHLJKERUV
1XPEHU RI 0(' QHLJKERUV
```

show lldp status x X “ P ¸T n y

<	“ ¢
Global status of LLDP	¶ B ' k LLDP
Neighbor information last changed time	> D ¸ ´ e ¾
Transmit interval	LLDP G
Hold multiplier	TTL +
Reinit delay	M ì ÷
Transmit delay	LLDP G
Notification interval	LLDP Trap ¸ G

Fast start counts	‰ , G LLDP
Port status of LLDP	M ' k LLDP
Port state	M e Ł Ù kUP ŒDOWN
Port encapsulation	LLDP / x
Operational mode	LLDP W %
Notification enable	M ' k LLDP Trap
Error detect enable	M ' k j ¤ y
Number of neighbors	> D
Number of MED neighbors	MED > D

o‹ U P ¸o› -

o‹ u V “ ¢o› -

11.27 show lldp tlv-config

“ P M U G b TLV F å ¸o
show lldp tlv-config [interface

]

o‹ @ “ ¢o›

@	T
	N M d f

o‹ x X % o› ÔÓ%

o‹ Þ. · ðo› 2

o‹ 6 -o› 6 interface @ k 1 “ P 6 N M LLDP TLV F å ¸

o‹ F å o› 1 y “ P N M 1 TLV ¸o

```
5XLMLH VKRZ OOGS WOY FRQILJ LQWHUIDFH *LJDELW(WKHUQHW
//'3 WOY FRQILJ RI SRUW >*LJDELW(WKHUQHW @

1$0( 67$786 '()$8/7

%DVLF RSWLRQDO 7/9
```

```
3RUW 'HVFULSWLRQ 7/9            <(6    <(6
6\VWHP 1DPH 7/9                <(6    <(6
6\VWHP 'HVFULSWLRQ 7/9          <(6    <(6
6\VWHP &DSDELOLWLHV 7/9          <(6    <(6
0DQDJHPHQW $GGUHVV 7/9           <(6    <(6

,(((      H[WHQG 7/9
3RUW 9/$1 ,' 7/9               <(6    <(6
```

dscp	g U # hdifferentiated services code point
ð	g U # h F å§ ” v dscp k 8 0-63 k Þ. 46
dot1p	g U # h F å 802.1p priority tagging k ¥ TAG l Q m user_priority k vlan id 0
none	g U # h n P G network-poSil2-F0(y)]TJ /C2_0 1 Tf 0 Tc6.614 0 Td [<0B4609E5 g U # hsn U

12 QINQ

x X	

	VLAN ID $ e ˙ ôGo
vlan-mapping-out vlan src-vlan remark dest-vlan	¤ access k trunk k hybrid k uplink M k åÿß g %† + %†VLAN ¥ 0 no

12.1 dot1q new-outer-vlan ẅ translate old-outer-vlan ẅinner-vlan ẅ

¤ access k trunk k hybrid k uplink M k å´ 9 ˜ C Tag VID + ÙC Tag VID w ÙC VID no

dot1q new-outer-vlan ẅ translate old-outer-vlan ẅ inner-vlan ẅ

H 4 y

no dot1q new-outer-vlan ẅanslate old-outer-vlan ẅ inner-vlan ẅ

í y

no dot1q new-outer-vlan ẅanslate old-outer-vlan ẅ inner-vlan ẅ

o‹ @ “ ¢o›

@	T
ẅ	ÿµ w e ÙC Tag VIDo
ẅ	w ø ÙC Tag VID
ẅ	ÿµ ˜ C Tag vid çno

o‹ Þ. F åo› n q

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› -

o‹ F å o› 1 y µ ÿ å¢ ÿµ ˜ B Tag vid 2001-3000 k ÙB Tag vid 1888 k w ¥ vid 3888o

```
5XLMLH FRQILJ YODQ
5XLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
5XLMLH FRQILJ LI VZLWFKSRUW PRGH WUXQN
5XLMLH FRQILJ LI GRW T QHZ RXWHU YODQ WUDQVODWH ROG RXWH
5XLMLH FRQILJ LI HQG
```

o‹ à co› 1 yshow translation-table [interface ẅ] ò0 F å ¸o

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

12.2 dot1q outer-vid ■ register inner-vid ■

¤ tunnel M k å´ 9 ˜ C VID ÙC VID n
dot1q outer-vid ■ register inner-vid ■

H ÙC VID
no dot1q outer-vid ■ register inner-vid ■

H ÙC VID o
default dot1q outer-vid ■ register inner-vid ■

o‹ @ “ ¢o›

@	T
■	˜ B vlan id çno
■	ÙB vlan ido

o‹ Þ. F åo› n q

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› -

o‹ F å o› 1 y µ ÿ åÿµ tag VID 4-22 k ÙC VLAN Tag 3o

```
UXLMLH FRQILJXUH WHUPLQDO
UXLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
UXLMLH FRQILJ LI VZLWFKSRUW PRGH GRW T WXQQHO
UXLMLH FRQILJ LI GRW T RXWHU YLG UHJLVWHU LQQHU YLG
UXLMLH FRQILJ LI HQG
```

o‹ à co› 1 y show registration-table [interface ■] x X k ò0 F åÕÑ

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

12.3 dot1q relay-vid ¤ translate local-vid ¤

¤ access ktrunk khybrid kuplink M k å´ 9 ÙC VID w ÙC VID n
dot1q relay-vid ¤ translate local-vid ¤

H ÙC VID w
no dot1q relay-vid ¤ translate local-vid ¤

H ÙC VID w
default

12.4 dot1q relay-vid ¤ translate inner-vid ¤

¤ access ktrunk khybrid kuplink M k å´ 9 ˜ C VID w ÙC VID n
dot1q relay-vid ¤ translate inner-vid ¤

H ÙC VID w
no dot1q relay-vid ¤ translate inner-vid ¤

H ÙC VID w
default dot1q relay-vid ¤ translate inner-vid ¤

o‹ @ “ ¢o›

@	T
¤	ÿµ ˜ B vid çno
¤	w e ÙB tag vid o
no	H n åo

o‹ Þ. F åo› n q

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› -

o‹ F å o› 1 y µ ÿ å¢ ÿµ ˜ B tag VID 10-20 k w ÙC Tag VID 100o

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

o‹ à co› 1 y show translation-table [interface ¤] x X k ò0 F åÕÑo

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

2 dot1q-Tunnel cos ■ remark-cos ■

å ˜C tag i fl · ¥ 0 æ ÙC tag
dot1q-Tunnel cos ■ remark-cos ■

H i fl · ¥ 0
no dot1q-Tunnel cos ■ remark-cos ■

H i fl · ¥ 0
default dot1q-Tunnel cos ■ remark-cos ■

o‹ @ “ ¢o›

@	T
■	ÿµ ˜B Tag i fl ·o
■	ÿµ ÙB Tag i fl ·o
no	H N M i fl · ¥ 0o

o‹ Þ. F åo› n q

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› ï àÌ N ˇ àÌ å4 ´ 9 cos QOS k U Y ÿG ï G M } ¯ k 1 ÙC Tag cos å c k M } i fl Ôòn ÿo

o‹ F å o› 1 y òç˜C Tag cos 3 Ø 1 Ù Tag cos ¥ 0 5o

```
U X L M L H  F R Q I L J X U H  W H U P L Q D O
U X L M L H  F R Q I L J  L Q W H U I D F H  J L J D E L W ( W K H U Q H W
U X L M L H  F R Q I L J  L I  G R W  T  7 X Q Q H O  F R V  U H P D U N  F R V
U X L M L H  F R Q I L J  L I  H Q G
```

o‹ à co› 1 y show interface [■] remark x X k ò0 F åÕÑø

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

12.6 frame-tag tpid

å TPID k Y ^ 4 c TPID
frame-tag tpid

H TPID

12.7 inner-priority-trust enable

i fl · Öòk åN M ÙC Tag i fl · ˜ C Tag i fl ·
inner-priority-trust enable

H i fl · Öò
no inner-priority-trust enable

… { ¥ M i fl · Öò
default inner-prio rity-trust enable

o‹ @ “ ¢o›

12.8 l2protocol-tunnel

¶ B o Tunnel M ôG 8 C #
l2protocol-tunnel { stp | gvrp }

… { Tunnel M ôG 8 C # …
no l2protocol-tunnel { stp | gvrp }

… { Tunnel M ôG 8 C # …
default l2protocol-tunnel { stp | gvrp }

o‹ @ “ ¢o›

@	T
stp	ôG stp o
gvrp	ôG gvrp o

o‹ Þ. F åo› -

o‹ x X % o› ¶ B %

o‹ Þ. · ðo› 14

o‹ 6 -o› òç} % n STP y GVRP # k • ÀY ¶ B o ¥ ø U

o‹ F å o› 1 y µ ÿł 8 C # gvrp y stp N v o

```
UXLMLH FRQILJXUH WHUPLQDO
UXLMLH FRQILJ O SURWRFRO WXQQHO VWS
UXLMLH FRQILJ O SURWRFRO WXQQHO JYUS
UXLMLH FRQILJ HQG
```

o‹ à co› 1 y show l2protocol-tunnel { g |þ } x X k ò0 F åÕÑ

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

12.9 l2protocol-tunnel enable

M 8 C # % n

l2protocol-tunnel { stp |gvrp } enable

… { M 8 C # % n
no l2protocol-tunnel { stp |gvrp } enable

… { M 8 C # % n
default l2protocol-tunnel { stp |gvrp } enable

o‹ @ “ ¢o›

@	T
stp	% n stp o
gvrp	% n gvrp o

o‹ Þ. F åo› % n o

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› "´É Ž STP q 3 æ e ä Ç • [— s É Ž _ Ÿ . ‘ æ e — s bridge-frame forwarding protocol bpdu ì Ÿ É Ž STP q 3 d

o‹ F å o› 1 y µ ÿ¤ N M 8 C # % n o

```
UXLMLH FRQILJXUH WHUPLQDO
UXLMLH FRQILJ LQWHUIDFH ID
UXLMLH FRQILJ LI O SURWRFRO WXQQHO JYUS HQDEOH
UXLMLH FRQILJ LI HQG
```

o‹ à co› 1 y show l2protocol-tunnel { gvrp | stp } x X k ò0 F åÕ‰

o‹ U P ¸o› -

o‹ o j ¤o› Z ˜ ¶ B o GVRP y STP # ôG k - N M c % n o

o‹ u V “ ¢o› -

12.10 l2protocol-tunnel tunnel-dmac

F å, # % n “ ›o
l2protocol-tunnel { stp | gvrp } tunnel-dmac

H , # % n “ › k J ó o

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

H , # % n “ › k J ó o

default l2protocol-tunnel { stp | gvrp } tunnel-dmac

@ “ ¢o›

@	T
stp	F å stp % n “ ›
gvrp	F å gvrp % n “ ›

o‹ Þ. F åð› Þ. % n “ › ø - 01d0f8 k e 3 - (stp y000005 kgvrp y000006) o

o‹ x X % o› ¶ B %

o‹ Þ. · ðð› 14

H MAC “ › . Öò… 'o

default mac-address-mapping xsource-vlan destination-vlan

o‹ @ “ ¢o›

@	T
X	MAC “ › Öò ÚŽo
	MAC “ › Öò VLAN çno
	MAC “ › Öò) VLAN IDo

o‹ Þ. F åo› MAC “ › Öò Ì oo

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› -

o‹ F å o› 1 y µ ÿF å MAC “ › Öò ÚŽ 1 k VLAN 1-3 MAC “ › Öòæ) VLAN 5 o

```
UXLMLH FRQILJXUH WHUPLQDO
UXLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
UXLMLH FRQILJ LI PDF DGGUHVV PDSSLQJ VRXUFH YODQ GHVWLQ
UXLMLH FRQILJ LI HQG
```

o‹ à co› 1 y show interface mac-address-mapping x x X k ò0 F åÕ‰ø

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

12.12 show dot1q-tunnel

“ P N M dot1q-tunnel ' k ' tunnel Mo

show dot1q-tunnel [interface]

o‹ @ “ ¢o›

@	T
	6 N M

o‹ x X % o› æ ˜ %

o‹ Þ. · ðo› 2

o‹ 6 -o› -

o‹ F å o› 1 y ò0 N M ' k tunnel Mo

```
U X L M L H  V K R Z  G R W  T  W X Q Q H O
3 R U W V  'R W  T  W X Q Q H O

* L  ( Q D E O H
```

< K y

<	“ ¢
Ports	M d fo
Dot1q-tunnel	' k ' tunnel Mo

o‹ U P ¸o› -

o‹ u V “ ¢o› -

12.13 show frame-tag tpid

“ P N M tpid F åo

show frame-tag tpid [interface f]

o‹ @ “ ¢o›

@	T
f	Ô N M

o‹ x X % o› æ ˜ %

o‹ Þ. · ðo› 2

o‹ 6 -o› -

o‹ F å o› 1 y ò0 N M TPID o

```
U X L M L H  V K R Z  I U D P H  W D J  W S L G
3 R U W V  W S L G

* L  [
```

< K y

<	“ ¢
Ports	M d fo
tpid	tpid o

o‹ U P ¸o› -

o‹ u V “ ¢o› -

12.14 show inner-priority-trust

“ P M 1 ˜ Tag i fl · Öòæ Ù Tag i fl · ' k ' k ł o

show inner-priority-trust

o‹ @ “ ¢o›

@	T
-	-

o‹ x X % o› æ ˜ %

o‹ Þ. · ðo› 2

o‹ 6 -o› -

o‹ F å o› 1 y ò0 N M i fl · Öò ' k oo

```
U X L M L H  V K R Z  L Q Q H U  S U L R U L W \  W U X V W
3 R U W V  L Q Q H U  S U L R U L W \  W U X V W

* L  H Q D E O H
```

< K y

<	“ ¢
Ports	M d fo
inner-priority-trust	N M i fl · Öò' k ł o

o‹ U P ¸o› -

o‹ u V “ ¢o› -

12.15 show interfaces dot1q-tunnel

“ P dot1q-tunnel M U VLAN y ó VLAN F åo

show interfaces [fi] dot1q-tunnel

o‹ @ “ ¢o›

@	T
fi	6 N M

o‹ x X % o› æ ˜ %

o‹ Þ. · ðo› 2

o‹ 6 -o› -

o‹ F å o› 1 y ò0 tunnel M ´¸ F åo

```
UXLMLH VKRZ LQWHUIDFHV GRW T WXQQHO
,QWHUIDFH *L
1DWLYH YODQ
$OORZHG YODQ OLVW k k
7DJJHG YODQ OLVW k k
```

< K y

o‹ u V “ ¢o› -

12.18 show interfaces vlan-mapping

“ P VLAN ¥ 0 F å

show interfaces vlan-mapping

o‹ @ “ ¢o›

@	T
-	-

o‹ x X % o› æ ˜ %

o‹ Þ. · ðo› 2

o‹ 6 -o› -

o‹ F å o› 1 y ò0 N M vlan-mapping åo

```
U X L M L H  V K R Z  L Q W H U I D F H V  Y O D Q  P D S S L Q J
3 R U W V  7 \ S H  6 W D W X V  ' H V W L Q D W L R Q  9 , '  6 R X U F H  9 , '  O L V W

* L  L Q  D F W L Y H
* L  R X W  D F W L Y H
```

< K y

<	“ ¢
Ports	M d fo
Type	' ÿµy ÿß go
Status	vlan-mapping Ù˚o
Destination-VID	ÿµ w e vlan ido
Source-VID-list	ÿµ w ø vlan listo

o‹ U P ¸o› -

o‹ u V “ ¢o› -

12.19 show l2protocol-tunnel

“ P 8 C % n F å

show l2protocol-tunnel { gvrp | stp }

o‹ @ “ ¢o›

@	T
gvrp	“ P % n gvrp F åo
stp	“ P % n stp F åo

o‹ x X % o› æ ˜ %

o‹ Þ. · ðo› 2

o‹ 6 -o› -

o‹ F å o› 1 y ò0 tunnel M # % n åo

```
UXLMLH VKRZ O SURWRFRO WXQQHO VWS
'HVWLQDWLRQ PDF G I
/ SURWRFRO WXQQHO 6WS (QDEOH
UXLMLH VKRZ O SURWRFRO WXQQHO JYUS
'HVWLQDWLRQ PDF G I
/ SURWRFRO WXQQHO JYUS 'LVDEOH
```

< K y

<	“ ¢
Destination mac	% n) mac “ ›o

```
UXLMLH  VKRZ UHJLVWUDWLRQ WDEOH
3RUWV        7\SH        2XWHU 9,'  ,QQHU 9,' OLVW

*L             $GG RXWHU
```

< K y

<	“ ¢
Ports	M d fo
Type	´ 9 # † t 7 / 4 7 ”o
Outer-VID	‘ ÙB < / *o
Inner-VID-list	‘ ˜B \ O J R O Y Zo

o‹ U P ¸o› -

o‹ u V “ ¢o› -

12.21 show traffic-redirect

“ P ´ 9 ACL vid J ¾Œ no
show traffic-redirect [interface fi]

o‹ @ “ ¢o›	@	T
	fi	Ô N M

o‹ x X % o› æ ˜ %

o‹ Þ. · ðo› 2

o‹ 6 -o› -

o‹ F å o› 1 y ò0 ´ 9 ACL ÙC Tag Œ w o

```
UXLMLH  VKRZ WUDIILF UHGLUHFW
3RUWV        7\SH      9,'  0DWFK ILOWHU

*L           0RG RXWHU
*L           0RG RXWHU
*L           0RG RXWHU
*L           0RG LQQHU      LQQHU WR
*L           0RG LQQHU
*L           1HVWHG YLG      QHVW
```

< K y

<	“ ¢
Ports	M d fo
Type	´ 9 v † t QINQ ”o
VID	ÿµ w e VIDo
Match-filter	† t QINQ F Øo

o‹ U P ¸o› -

o‹ u V “ ¢o› -

12.22 show translation-table

“ P ´ 9 # access,trunk,hybrid M vid w n

show translation-table [interface f]

o‹ @ “ ¢o›

@	T
f	Ô N M

o‹ x X % o› æ ˜ %

o‹ Þ. · ðo› 2

o‹ 6 -o› -

o‹ F å o› 1 y ò0 ˜ ÙC Tag w o

```
U X L M L H  V K R Z  W U D Q V O D W L R Q  W D E O H
3 R U W V  7 \ S H  5 H O D \  9 , '  2 O G  O R F D O  / R F D O ? L Q Q H U  9 , '  O L V W
x Unû ˜ TÐ
```

o‹ U P ¸o› -

o‹ u V “ ¢o› -

12.23 switchport dot1q-tunnel allowed vlan

å dot1q-tunnel U VLAN k w 6 Y UNTag ¥ Œ Tag ¥ µ
switchport dot1q-tunnel allowed vlan { [add] tagged ▮ | [add] untagged ▮ | remove ▮ }

˚ Öó F å
no switchport dot1q-tunnel allowed vlan

˚ Öó F å
default switchport dot1q-tunnel allowed vlan

o‹ @ “ ¢o›

@	T
add	˝ tago untag çno
tagged	1 M Y Tag ¥ µ6 VLAN k ¥ VLAN R ¥ M ÿß ' k Tago
untagged	1 M Y UNTag ¥ µ6 VLAN k ¥ VLAN R ¥ M ÿß Y UNTag ¥ ÿßo
remove	1 M R VLAN í
▮	6 µŒ ß VLAN çn

o‹ Þ. F åo› ó M Y UNTag ¥ µ VLAN 1 k ¿ VLAN Ì µo

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› -

o‹ F å o› 1 y µ ÿ å dot1q-tunnel M vlan 3-6 U VLAN k ÙC Tag ÿßk tag z F $ ÿßk üY ÙC Tago

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

o‹ à co› 1 y show interface dot1q-tunnel x X k ò0 F åÕ%o

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

12.24 switchport dot1q-tunnel native vlan

å dot1q-tunnel ó VLAN
switchport dot1q-tunnel native vlan ¤ï

˚ Öó F å
no switchport dot1q-tunnel native vlan

˚ Öó F å
default switchport dot1q-tunnel native vlan

o‹ @ “ ¢o›

@	T
¤ï	åó vlan ido

o‹ Þ. F åo› ó VLAN 1

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› -

o‹ F å o› 1 y µ ÿ å dot1q-tunnel M ó vid 8o

U X L M L H F R Q I L J L Q W H U I D F H J L J D E L W (W K H U Q H W
U X L M L H F R Q I L J L I V Z L W F K S R U W G R W T W X Q Q H O Q D W L Y H Y O D Q
U X L M L H F R Q I L J H Q G

o‹ à co› 1 y show interface dot1q-tunnel x X k ò0 F åÕÑo

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

12.25 switchport mode dot1q-tunnel

åN M dot1q-tunnel M

switchport mode dot1q-tunnel

˚Ö Access M

no switchport mode

˚Ö Access M

default switchport mode

o‹ @ “¢o›

@	T

í

no traffic-redirect access-group à inner-vlan

í

default traffic-redirect access-group à inner-vlan

o‹ @ “ ¢o›

@	T
à	9 F v aclo
¼	w e ˜ B vido

o‹ Þ. F åo› n q

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› -

o‹ F å o› 1 y µ ÿ å1 N M “ › 1.1.1.2 ÿß ÙB vid w 6o

```
UXLMLH FRQILJXUH WHUPLQDO
UXLMLH FRQILJ LS DFFHVV OLVW VWDQGDUG WRB
UXLMLH FRQILJ DFO VWG SHUPLW KRVW
UXLMLH FRQILJ DFO VWG H[LW
UXLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
UXLMLH FRQILJ LI VZLWFKSRUW PRGH WUXQN
UXLMLH FRQILJ LI WUDIILF UHGLUHFW DFFHVV JURXS WRB LQQHU YOD
UXLMLH FRQILJ LI HQG
```

o‹ à co› 1 y show traffic-redirect x X k ò0 F åÕÕ¼

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

í

no traffic-redirect access-group à nested -vlan

í

default traffic-redirect access-group à nested -vlan

o‹ @ “ ¢o›

@	T
à	9 F v aclo
¼	} vido

o‹ Þ. F åo› n q

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› -

o‹ F å o› 1 y µ ÿ å1 N M “ › 1.1.1.3 ÿµ vid 10o

```
UXLMLH FRQILJXUH WHUPLQDO
UXLMLH FRQILJ LS DFFHVV OLVW VWDQGDUG
UXLMLH FRQILJ DFO VWG SHUPLW KRVW
UXLMLH FRQILJ DFO VWG H[LW
UXLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
UXLMLH FRQILJ LI VZLWFKSRUW PRGH GRW T WXQQHO
UXLMLH FRQILJ LI WUDIILF UHGLUHFW DFFHVV JURXS QHVWHG YODQ
UXLMLH FRQILJ LI HQG
```

o‹ à co› 1 y show traffic-redirect x X k ò0 F åÕõ

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

12.28 traffic-redirect access-group à outer-vlan ¼ in

+ access,trunk,hybrid, uplink M ÿµ k å´ 9 v ÙB vid w

traffic-redirect access-group à outer-vlan ¼ in

12.29 vlan-mapping-in vlan src- vlan-list remark dest-vlan

¤ access k trunk k hybrid k uplink M k åÿµ g VLAN ¥ 0 n k 1 R M ÿµ VLAN ID w 6 VLAN ID $ e ˙ ôGo

vlan-mapping-in vlan remark

… { VLAN ¥ 0 o

no vlan-mapping-in vlan remark

˚ ŒÞ. F åo

default vlan-mapping-in vlan remark

o‹ @ “ ¢o›

@	T
	ÿµ vid çn o
	w e vido
¤	H n åo

o‹ Þ. F åo› n q

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› -

o‹ F å o› 1 y µ ÿ u p u p $ï xD @$ nðRfIC—fœÀHP pz òðX Næ G føàl1 Tc w_0 1 /TT0 1 TVLAN 8C2_0 1 Tf 7.407 0 Td < w_3 -0

12.30 vlan-mapping-out vlan src-vlan remark dest-vlan

¤ access ktrunk khybrid kuplink M k åÿß g %† +%† VLAN ¥ 0 no vlan-mapping-out vlan remark

… { VLAN ¥ 0 o
no vlan-mapping-out vlan remark

˚ ŒÞ. F åo
default vlan-mapping-out vlan remark

o‹ @ “ ¢o›

@	T
	ÿµ vid o
	w e vido
¤	H n åo

o‹ Þ. F åo› n q

o‹ x X % o› N M %

o‹ Þ. · ðo› 14

o‹ 6 -o› -

o‹ F å o› 1 y µ ÿ åÿµ Tag VID 3 k 1 ¿ w Ł 4 ˙ ôGo

```
5XLMLH FRQILJXUH WHUPLQDO
5XLMLH YODQ UDQJH
5XLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
5XLMLH FRQILJ LI VZLWFKSRUW PRGH WUXQN
5XLMLH FRQILJ LI YODQ PDSSLQJ RXW YODQ UHPDUN
5XLMLH FRQILJ LI HQG
```

o‹ à co› 1 y show interface[ ] vlan-mapping x X k ò0 F åÕ

o‹ U P ¸o› -

o‹ o j ¤o› -

o‹ u V “ ¢o› -

-ACL&QOS

ACL&QOS

1. ACL
2. QOS
3. MMU

1 ACL

access-list	ACL
access-list list-remark	ACL ACL
access-list remark	ACL ACL
clear counters access-list	ACL
clear access-list counters	ACL deny
deny	
expert access-group	Expert ACL
expert access-list advanced	ACL
expert access-list extended	ACL
expert access-list counter	ACL ACE
expert access-list new-fragment-mode	expert ACL
expert access-list resequence	ACL
global ip access-group	ACL
ip access-group	
ip access-list	IP ACL IP ACL
ip access-list log-update interval	IPv4 ACL
ip access-list counter	ACL ACE
ip access-list new-fragment-mode	ipv4 ACL
ip access-list resequence	IP ACL
list-remark	ACL
mac access-group	MAC ACL
mac access-list extended	MAC ACL
mac access-list resequence	MAC ACL
permit	(**permit**)
redirect destination interface	ACL

remark(

1.1

id	ACL IP ACL 1-99 1300-1999 IP ACL 100-199 2000-2699 MAC ACL 700–799 ACL 2700–2899
name	ACL
sn	ACL ( )
start-sn	
inc-sn	
deny	
permit	
port	IPv4 eigrp gre ipinip igmp nos ospf icmp udp tcp ip IP 0-255 icmp/tcp/udp
interface idx	
src	
src-wildcard	0.255.0.32
pfix-len	
dscp	, 0-63
flow-label	0-1048575
dst	
dst-wildcard	0.255.0.32
fragment	
precedence	

icmp-type	ICMP 0-255
icmp-code	ICMP 0-255
icmp-message	ICMP
operator port[port]	Operator lt- eq- gt- neq- range- port
src-mac-addr	
dst-mac-addr	
VID vid	vlan id
VID inner vid	tag vid

ethernet-type ك

I		24	W		54
J	IP	26	XY	IP	58
K	TOS	27	Z	flags	59
L	IP	28	a	Windows size	60
M	ID	30	b		62
N	Flags	32			

SNAP tag 802.3

1.2 access-list

ACL ACL ACL ACL

1. IP ACL ACL ACL

access-list *id* { **deny** | **permit** } { *source source-wildcard* | **host** *source* | **any** } [**time-range** *tm-range-name*] [**log**]

2. IP ACL ACL ACL

access-list *id* { **deny** | **permit** } *protocol* { *source source-wildcard* | **host** *source* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**log**]

3. MAC ACL ACL ACL

access-list *id* { **deny** | **permit** } { **any** | **host** *source-mac-address* | *src-mac-addr* mask } { **any** | **host** *destination-mac-address* | *dst-mac-addr* mask } [*ethernet-type*] [**cos** [*out*] [**inner** *in*]]

4. ACL ACL ACL

access-list *id* { **deny** | **permit** } [*protocol* | [*ethernet-type*] [**cos** [*out*] [**inner** *in*]]] [**VID** [*out*] [**inner** *in*]] { *source source-wildcard* | **host** *source* | **any** } { **host** *source-mac-address* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** }] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*]

Ethernet-type cos

access-list *id* { **deny** | **permit** } { *ethernet-type* | **cos** [*out*] [**inner** *in*] } [**VID** [*out*] [**inner** *in*]] { **s***ource source-wildcard* | **host** *source* | **any** } { **host** *source-mac-address* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [**time-range** *time-range-name*]

Protocol

access-list *id* { **deny** | **permit** } *protocol* [**VID** [*out*] [**inner** *in*]] { *source source-wildcard* | **host** *source* | **any** } { **host** *source-mac-address* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*]

[**time-range** *time-range-name*]

ACL

Internet Control Message Protocol (ICMP)

access-list *id* { **deny** | **permit** } **icmp** [**VID** [*out*] [**inner** *in*]] { *source source-wildcard* | **host** *source* | **any** } { **host** *source-mac-address* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)

access-list *id* { **deny** | **permit** } **tcp** [**VID** [*out*] [**inner** *in*]] { *source source-wildcard* | **host** *Source* | **any** } { **host** *source-mac-address* | **any** } [**operator** port [*port*]] { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [**operator port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag* | **established**]

User Datagram Protocol (UDP)

access-list *id* { **deny** | **permit** } **udp**[**VID** [*out*] [**inner** *in*]] {

destination-wildcard	0.255.0.32
fragment	
precedence	
precedence	0-7
range	
lower	
upper	
time-range	
time-range-name	
tos	
tos	0-15
icmp-type	ICMP 0-255
icmp-code	ICMP 0-255
icmp-message	ICMP
operator	lt- eq- gt- neq- range-
port [*port*]	*range*
host *source-mac-address*	
host *destination-mac-address*	
VID *vid*	vid
ethernet-type	
match-all	tcp flag
tcp-flag	tcp flag
established	tcp flag rst ack
text	

ACL ACL

14

access-list

IP ACL 1-99 1300-1999
IP ACL 100-199 2000-2699
MAC ACL 700-799 MAC
2700-2899 IP ACL IP ACL MAC ACL
ACL ACL ACL VLAN ID

precedence *precedence*/**tos** *tos*/**fragments**/**range** *lower upper*/ **time-range** *time-range-name*

TCP Flag

- urg
- ack
- psh
- rst
- syn
- fin

- critical
- flash
- flash-override
- immediate
- internet
- network
- priority
- routine

- max-reliability
- max-throughput
- min-delay
- min-monetary-cost
- normal

ICMP

- administratively-prohibited
- dod-host-prohibited
- dod-net-prohibited
- echo
- echo-reply
- fragment-time-exceeded
- general-parameter-problem
- host-isolated
- host-precedence-unreachable
- host-redirect
- host-tos-redirect
- host-tos-unreachable
- host-unknown
- host-unreachable
- information-reply
- information-request
- mask-reply
- mask-request

mobile-redirect
net-redirect
net-tos-redirect
net-tos-unreachable
net-unreachable
network-unknown
no-room-for-option
option-missing
packet-too-big
parameter-problem
port-unreachable
precedence-unreachable
protocol-unreachable
redirect
router-advertisement
router-solicitation
source-quench
source-route-failed
time-exceeded
timestamp-reply
timestamp-request
ttl-exceeded
unreachable

TCP	TCP

bgp
chargen
cmd
daytime
discard
domain
echo
exec
finger
ftp
ftp-data
gopher
hostname
ident
irc
klogin
kshell

login
nntp
pim-auto-rp
pop2
pop3
smtp
sunrpc
syslog
tacacs
talk
telnet
time
uucp
whois
www
UDP UDP
biff
bootpc
bootps
discard
dnsix
domain
echo
isakmp
mobile-ip
nameserver
netbios-dgm
netbios-ns
netbios-ss
ntp
pim-auto-rp
rip
snmp
snmptrap
sunrpc
syslog
tacacs
talk
tftp
time
who

xdmcp

Ethernet-type

aarp

arp

appletalk

decnet-iv

diagnostic

etype-6000

etype-8042

lat

lavc-sca

mop-console

mop-dump

mumps

netbios

vines-echo

xns-idp

ACL ACL **no** { **{**

```
192.168.12.3 mac 00d0.f800.0044 any any
Ruijie(config)# access-list 2702 permit any any any any
Ruijie(config)# show access-lists
expert access-list extended 2702
10 deny tcp  host  192.168.12.3 mac 00d0.f800.0044 any any
20 permit any any any any
```

1 **show access-lists** ACL ACL

2 **show access-lists** *id* ACL ACL

3 **show access-lists** *name* ACL ACL

ACL ACL

```
failed, for the entry is existed or the sequence number has been allocated!
```

-

-

1.3 access-list list-remark

ACL

access-list *id* **list-remark** *text*

ACL

no access-list *id* **list-remark**

id	ACL IP ACL 1-99 1300-1999 IP ACL 100-199 2000-2699 MAC ACL 700–799 ACL 2700–2899
text	

ACL

14

ACL ACL ACL ACL

1 1 ACL ACL “ this acl is to filter the host 192.168.4.12 ”

```
Ruijie(config)# ip access-list extended 100
Ruijie(config)# access-list 100 list-remark this acl is to filter the host 192.168.4.12
```

1 **show access-lists** ACL ACL

2 **show access-list** *sid* ACL ACL

3 **show access-lists** *name* ACL ACL

-

-

-

1.4 access-list remark

ACL

access-list *id* **remark** *text*

ACL

no access-list *id* **remark** *text*

id	ACL IP ACL 1-99 1300-1999 IP ACL 100-199 2000-2699 MAC ACL 700–799 ACL 2700–2899
text	

ACL

14

ACL ACL ACL

ACL ACL

1 102 ACL ACL

```
Ruijie(config)# access-list 102 remark deny-host-10.1.1.1
```

1 **show access-lists** ACL ACL

2 **show access-lists** *id* ACL ACL

3 **show access-lists** *name* ACL ACL

ACL ACL

```
Remark is duplicate
```

-

-

1.5 clear counters access-list

ACL

clear counters access-list [*id* | *name*]

-

-

1.6 clear access-list counters

ACL deny

clear access-list counters [*id* | *name*]

id	ACL IP ACL 1-99 1300-1999 IP ACL 100-199 2000-2699 MAC ACL 700–799 ACL 2700–2899
name	ACL

14

ACL deny ACL deny

1 1 ACL

```
Ruijie #show access-lists
ip access-list standard 1
    10 deny host 50.1.1.2 (10 matches)
    20 permit host 60.1.1.2 (15 matches)
    (10 packets filtered)
```

```
Ruijie# end
Ruijie# clear access-list counters
Ruijie# show access-lists
ip access-list standard 1
    10 deny host 50.1.1.2 (10 matches)
    20 permit host 60.1.1.2 (15 matches)
```

-

-

1.7 deny

ACL / ACL

1. IP ACL

IP ACL ACL

[*sn*] **deny** { *source source-wildcard* | **host** *source* | **any** } [**time-range** *tm-range-name*] [**log**]

IP ACL ACL

no { *sn* | { **deny** { *source source-wildcard* | **host** *source* | **any** } [**time-range** *tm-range-name*] [**log**]} }

2. IP ACL

IP ACL ACL

[*sn*] **deny** *protocol source source-wildcard destination destination-wildcard* [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**log**]

IP ACL ACL

no { *sn* | { **deny** *protocol source source-wildcard destination destination-wildcard* [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**log**]} }

IP

Internet Control Message Protocol (ICMP)

[*sn*] **deny icmp** { *source source-wildcard* | **host** *source* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)

[*sn*] **deny tcp** { *source source-wildcard* | **host** *Source* | **any** } [*operator* **port** [*port*]] { *destination destination-wildcard* | **host** *destination* | **any** } [*operator* **port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range**

3. MAC ACL

MAC ACL ACL

[*sn*] **deny** { **any** | **host** *source-mac-address* } { **any** | **host** *destination-mac-address* } [*ethernet-type*] [**cos** [*out*] [**inner** *in*]]

MAC ACL ACL

no { *sn* | {**deny** { **any** | **host** *source-mac-address* } { **any** | **host** *destination-mac-address*} [*ethernet-type*] [**cos** [*out*] [**inner** *in*]] } }

4. ACL

ACL *out* |] [

precedence] [**tos** *tos*] [**fragment**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)

[*sn*] **deny tcp** [[**VID** [*out*] [**inner** *in*]]] { *source source-wildcard* | **host** *Source* | **any** } { **host** *source-mac-address* | **any** } [*operator* **port** [*port*]] { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [*operator* **port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag* | **established**]

User Datagram Protocol (UDP)

[*sn*] **deny udp** [[**VID** [*out*] [**inner** *in*]]] { *source source –wildcard* | **host** *source* | **any** } { **host** *source-mac-address* | **any** } [*operator* **port** [*port*]] { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [*operator* **port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**time-range** *time-range-name*]

```
20 permit any any any any
Ruijie(config-exp-nacl)#
```

2 IP ACL IP 192.168.4.12 TCP 100 gigabitethernet 1/1

```
Ruijie(config)# ip access-list extended ip-ext-acl
Ruijie(config-ext-nacl)# deny tcp host 192.168.4.12 eq 100 any
Ruijie(config-ext-nacl)# show access-lists
ip access-list extended ip-ext-acl
10 deny tcp host 192.168.4.12 eq 100 any
Ruijie(config-ext-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if-GigabitEthernet 0/1)# ip access-group ip-ext-acl in
```

3 MAC ACL MAC 0013.0049.8272 100 gigabitethernet 1/1

```
Ruijie(config)# mac access-list extended mac1
Ruijie(config-mac-nacl)# deny host 0013.0049.8272 any aarp
Ruijie(config-mac-nacl)# show access-lists
mac access-list extended mac1
10 deny host 0013.0049.8272 any aarp
Ruijie(config-mac-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if-GigabitEthernet 1/1)# mac access-group mac1 in
```

4 IP ACL IP 192.168.4.12 gigabitethernet 1/1

```
Ruijie(config)# ip access-list standard 34
Ruijie(config-ext-nacl)# deny host 192.168.4.12
Ruijie(config-ext-nacl)# show access-lists
ip access-list standard 34
10 deny host 192.168.4.12
Ruijie(config-ext-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if-GigabitEthernet 1/1)# ip access-group 34 in
```

1 **show access-lists** ACL

1.9 expert access-list advanced

ACL ACL

expert access-list advanced *name*

ACL

no expert access-list advanced *name*

name	ACL

ACL

14

ACL ACL80

1 “ adv-acl ” ACL

```
Ruijie(config)# expert access-list advanced adv-acl
Ruijie(config-exp-dacl)# show access-lists
expert access-list advanced adv-acl
```

1 **show access-lists** ACL ACL

2 **show access-lists** *name* ACL ACL

-

-

-

1.10 expert access-list extended

ACL

expert access-list extended { *id* | *name* }

ACL

no expert access-list extended { *id* | *name* }

id	ACL 2700-2899
name	ACL

ACL

14

ACL IP ACL IP ACL MAC ACL
ACL

1 “ exp-acl ” ACL

```
Ruijie(config)# expert access-list extended exp-acl
Ruijie(config-exp-nacl)# show access-lists
expert access-list extended exp-acl
Ruijie(config-exp-nacl)#
```

2 2704 ACL

```
Ruijie(config)# expert access-list extended 2704
Ruijie(config-exp-nacl)# show access-lists
expert access-list extended 2704
Ruijie(config-exp-nacl)#
```

1 **show access-lists** ACL ACL
2 **show access-lists** *id* ACL ACL
3 **show access-lists** *name* ACL ACL

-

-

-

1.11 expert access-list counter

ACL

expert access-list counter { *id* | *name* }

1.12 expert access-list new-fragment-mode

ACL

expert access-list new-fragment-mode { *id* **|** *name* }

no expert access-list new-fragment-mode { *id* **|** *name* }

id	ACL	2700-2899

-

-

1.14 global ip access-group

ACL

global ip access-group

ACL ACL

no global ip access-group

-	-

ACL

14

ACL ACL

1 ACL fastEthernet0/0

```
Ruijie(config)# interface fastEthernet 0/0
Ruijie(config-if-GigabitEthernet 0/0)#global ip access-group
```

1 **show running** ACL

-

-

-

1.15 ip access-group

ACL

ip access-group { *id* | *name* } { **in** | **out** }

ACL

no ip access-group { *id* | *name* } { **in** | **out** }

id	IP ACL IP ACL 1-199 1300-2699
name	IP ACL IP ACL
in	
out	

ACL

14

IP ACL IP ACL ACL

1 fastEthernet0/0 120 ACL

```
Ruijie(config)# interface fastEthernet 0/0
Ruijie(config-if-GigabitEthernet 0/0)#ip access-group 120 in
```

1 **show ip access-group** IP IP ACL

2 **show ip access-group interface** *interface-name* IP IP ACL

```
1 ACL ACL
IP ACL IP ACL MAC ACL ACL
Another acl has attached at GigabitEthernet 0/2, Operation fail.
```

2 ACL ACL

```
The acl has not attached at %s, Operation fail
```

-

-

1.16 ip access-list

IP ACL IP ACL ACL

ip access-list { **extended** | **standard** } { *id* | *name* }

ACL

no ip access-list { **extended** | **standard** } { *id* | *name* }

id	IP 1-99 1300-1999 100-199 2000-2699
name	IP

ACL

14

IP IP IP ACL IP
IP IP ACL IP ACL
deny **permit** **show access-lists** ACL

1 “ std-acl ” IP ACL

```
Ruijie(config)# ip access-list standard std-acl
Ruijie(config-std-nacl)# show access-lists
ip access-list standard std-acl
Ruijie(config-std-nacl)#
```

2 “ 123 “ ACL

```
Ruijie(config)# ip access-list extended 123
Ruijie(config-ext-nacl)# show access-lists
ip access-list extended 123
```

show access-lists ACL

1 IP IP ACL ACL

```
ACL type error, current ACL has been set to type %s.  %s  ip standard  ip extended  mac extended
expert extended  expert advanced
```

2 IP IP ACL ACL ACL
500

```
Failed to create user-defined acl for the max-limit has been reached
```

3 IP IP ACL 99

```
Name is too long
```

4 IP IP ACL “ in ” “ out ”

```
Invalid name
```

-

-

1.17 ip access-list log-update interval

IPv4 ACL

ip access-list log-update interval *time*

no ip access-list log-update interval

time	ACL ACL logging [0, 1440] 5 5 ACL 0 ACL logging

5

14

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1 ð ð 1

```
Ruijie }ˢ minalMM
Ente ᴰ M γ ᴀ ɹ ɜ̈ ʊ ȳ ᵠ ᴰ ᵖ ᵐ ʊ ᴀ ɹ M γ ᴀ ℵ ℵ ᵖ ɹ ᵉ ᵀ Ɨˢ line.MM ʾ ɹ ᵉ M ḇ ʊ ᵐ ᵡ M ɥ ˌ ξ ˘ Ş Π Ŏˢ
Ruijie î γ ᴀ ɹ ɜ̈ ʊ ȳ þ d̰ list log- ᵠ ɔ ᵉ ᵖ ᵐ lˢ 10M
```

show running IPv4 ACL

-

-

-

1.18 ip access-list counter

IP ACL IP ACL

ip access-list counter { *id* | *name* }

IP ACL IP ACL

no ip access-list counter { *id* | *name* }

id	IP ACL IP ACL 1-99 1300-1999 100-199 2000-2699
name	IP ACL IP ACL

IP ACL IP ACL

14

IP ACL IP ACL

1 IP ACL

```
Ruijie(config)# ip access-list counter std-acl
Ruijie(config-std-nacl)# show access-lists
ip access-list standard std-acl
 10 permit 195.168.6.0 0.0.0.255 (999 matches)
 20 deny host 5.5.5.5 time-range tm (2000 matches)
```

2 IP ACL

```
Ruijie(config)#no ip access-list counter std-acl
Ruijie(config-std-nacl)# show access-lists
ip access-list standard std-acl
 10 permit 195.168.6.0 0.0.0.255
```

```
20 deny host 5.5.5.5 time-range tm
```

show running ACL

-

-

-

1.19 ip access-list new-fragment-mode

IP ACL IP ACL

ip access-list new-fragment-mode { *id* **|** *name* }

IP ACL IP ACL

no ip access-list new-fragment-mode { *id* **|** *name* }

id	IP ACL IP ACL 1-99 1300-1999 100-199 2000-2699
name	IP ACL IP ACL

ACL fragment

ACL fragment

14

ACL fragment ACL

fragment ACL fragment ACL

( ) ACL

ACL

1 ID 100 ACL

```
Ruijie(config)#ip access-list new-fragment-mode 100
```

show running ACL

-

-

-

1.20 ip access-list resequence

IP ACL IP ACL

ip access-list resequence { *id* | *name* } *start-sn inc-sn*

no ip access-list resequence { *id* | *name* }

id	IP ACL IP ACL 1-99 1300-1999 100-199 2000-2699
name	IP ACL IP ACL ACL
start-sn	1-2147483647
inc-sn	1-2147483647

start-sn 10

inc-sn 10

14

IP ACL IP ACL

ACL

1 1 ACL 21 43

```
Ruijie# show access-lists
ip access-list standard 1
10 permit host 192.168.4.12
20 deny any any
```

```
Ruijie# config
```

```
Ruijie(config)# ip access-list resequence 1 21 43
Ruijie(config)# exit
Ruijie# show access-lists
ip access-list standard 1
21 permit host 192.168.4.12
64 deny any any
```

1 **show access-lists** ACL

2 **show access-lists** *id* ACL

3 **show access-lists** *name* ACL

-

-

-

1.21 list-remark

ACL

list-remark *text*

ACL

no list-remark

text	

ACL

ACL

14

ACL ACL

access-list list-remark ACL

1 102 IP ACL “ this acl is to filter the host 192.168.4.12 ”

```
Ruijie(config)# ip access-list extended 102
Ruijie(config-ext-nacl)# list-remark this acl is to filter the host 192.168.4.12
Ruijie(config-ext-nacl)# show access-lists
```

```
ip access-list extended 102
deny ip host 192.168.4.12 any
1000 hits
this acl is to filter the host 192.168.4.12
Ruijie(config-ext-nacl)#
```

1 **show access-lists** ACL ACL

2 **show access-lists** *id* ACL ACL

3 **show access-lists** *name* ACL ACL

-

-

-

1.22 mac access-group

MAC ACL

mac access-group { *id* | *name* } { **in** | **out** }

MAC ACL

no mac access-group { *id* | *name* } { **in** | **out** }

id	MAC ACL 700-799
name	MAC ACL
in	
out	

MAC ACL

14

MAC ACL ACL

1 “ accept_00d0f8xxxxxx_only ” MAC ACL GigaEthernet 1/1

```
Ruijie(config)# interface GigaEthernet 1/1
```

```
Ruijie(config-if-GigabitEthernet 1/1)# mac access-group accept_00d0f8xxxxxx_only in
```

1 **show mac access-group** MAC ACL

2 **show mac access-group interface** *interface-name* MAC ACL

-

-

-

1.23 mac access-list extended

MAC ACL ACL

mac access-list extended { *id* | *name* }

MAC ACL

no mac access-list extended { *id* | *name* }

id	MAC ACL 700-799
name	MAC ACL

MAC ACL

14

MAC ACL MAC ACL

1 “ mac-acl ” MAC ACL

```
Ruijie(config)# mac access-list extended mac-acl
Ruijie(config-mac-nacl)# show access-lists
mac access-list extended mac-acl
```

2 704 MAC ACL

```
Ruijie(config)# mac access-list extended 704
Ruijie(config-mac-nacl)# show access-lists
mac access-list extended 704
```

1 **show access-lists** ACL

2 **show access-lists** *id* ACL

3 **show access-lists** *name* ACL

-

-

-

1.24 mac access-list counter

MAC ACL

mac access-list counter { *id* | *name* }

MAC ACL

no mac access-list counter { *id* | *name* }

id	MAC ACL 700-799
name	MAC ACL

MAC ACL

14

MAC ACL MAC ACL

1 “ mac-acl ” MAC ACL

```
Ruijie(config)# mac access-list counter mac-acl
Ruijie(config)# show access-lists
mac access-list extended mac-acl
 10 permit host 0023.56ac.8965 any (170 matches)
 20 deny any any etype-any cos 6 (239 matches)
```

2 “ mac-acl ” MAC ACL

```
Ruijie(config)#no mac access-list counter mac-acl
```

```
Ruijie(config)# show access-lists
mac access-list extended mac-acl
 10 permit host 0023.56ac.8965 any
 20 deny any any etype-any cos 6
```

show running MAC ACL

-

-

-

1.25 mac access-list resequence

MAC ACL

mac access-list resequence { *id* | *name* } *start-sn inc-sn*

no mac access-list resequence { *id* | *name* }

id	MAC ACL 700-799
name	MAC ACL
start-sn	1-2147483647
inc-sn	1-2147483647

start-sn 10

inc-sn 10

14

MAC ACL

ACL

1 “ mac-acl ” MAC ACL 21 43

```
Ruijie# show access-lists
mac access-list extended mac-acl
```

```
 10 permit any any etype-any
 20 deny any any etype-any
```

```
Ruijie# config
Ruijie(config)# mac access-list resequence exp-acl 21 43
Ruijie(config)# exit
Ruijie# show access-lists
mac access-list extended mac-acl
 21 permit any any etype-any
 64 deny any any etype-any
```

1 **show access-lists** ACL

2 **show access-lists** *id* ACL

3 **show access-lists** *name* ACL

-

-

-

1.26 permit

ACL / ACL

1. IP ACL

IP ACL ACL

[*sn*] **permit** { *source source-wildcard* ACL { *source source-wildca3d*

IP ACL

[*sn*

precedence] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**log**] } }

IP

Internet Control Message Protocol (ICMP)

[*sn*] **permit icmp** { *source source-wildcard* | **host** *source* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**time-range** *time-range-nam tos -rasmisstio w Potorol T*

[

no { *sn* | { **permit** [**protocol** | [*ethernet-type*] [**cos** [*out*] [**inner** *in*]]] [**VID** [*out*] [**inner** *in*]] { *source source-wildcard* | **host** *source* | **any** } { **host** *source*-mac-*address* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] } }

Ethernet-type cos

[*sn*] **permit** { *ethernet-type*| **cos** [*out*] [**inner** *in*] } [**VID** [*out*] [**inner** *in*]] { *source source-wildcard* | **host** *source* | **any** } { **host** *source-mac-address* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [**time-range** *time-range-name*]

Protocol

[*sn*] **permit protocol** [**VID** [*out*] [**inner** *in*] { *source source-wildcard* | **host** *Source* | **any** } { **host** *source-mac-address* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [

5. ACL

ACL ACL

[*sn*] **permit** *hex hex-mask offset*

ACL ACL

no { *sn* | **permit** *hex hex-mask offset* }

sn	ACL
time-range	
time-range-name	
hex	16 ACL
hex-mask	16 ACL
offset	ACL

ACL

ACL

14

ACL ACL

1 Expert Extended ACL ACL IP 192.168.4.12 MAC 001300498272 TCP

```
Ruijie(config)# expert access-list extended exp-acl
Ruijie(config-exp-nacl)# permit tcp  host  192.168.4.12 host 0013.0049.8272 any any
Ruijie(config-exp-nacl)# deny any any any any
Ruijie(config-exp-nacl)# show access-lists
```

```
10 permit tcp  host  192.168.4.12 host 0013.0049.8272 any any
20 deny any any any any
Ruijie(config-exp-nacl)#
```

2 IP ACL 8[illegible]PxiS[illegible]B00NA[illegible]E)G[illegible]Ã[illegible]0s[illegible]ppe[illegible] 2r2ròW 5XLMLHFRQILJH[GHQKRH

```
10 permit tcp host 192.168.4.12 eq 100 any
Ruijie(config-ext-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if-GigabitEthernet 1/1)# ip access-group 102 in
```

3 MAC ACL MAC 0013.0049.8272 100 gigabitethernet 1/1

```
Ruijie(config)# mac access-list extended 702
Ruijie(config-mac-nacl)# permit host 0013.0049.8272 any aarp
Ruijie(config-mac-nacl)# show access-lists
mac access-list extended
10 permit host 0013.0049.8272 any aarp702
Ruijie(config-mac-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if-GigabitEthernet 1/1)# mac access-group 702 in
```

4 ip ACL IP 192.168.4.12 1

```
Ruijie(config)# ip access-list standard std-acl
Ruijie(config-std-nacl)# permit host 192.168.4.12
Ruijie(config-std-nacl)# show access-lists
ip access-list standard std-acl
10 permit host 192.168.4.12
Ruijie(config-std-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if-GigabitEthernet 1/1)# ip access-group std-acl in
```

5 ACL IP 192.168.4.12 gigabitethernet 1/1

```
Ruijie(config)# expert access-list advanced adv-acl
Ruijie(config-exp-dacl)# permit a0c8040c ffffffff 38
Ruijie(config-exp-dacl)# show access-lists
expert access-list advanced adv-acl
 10 permit a0c8040c ffffffff 38
Ruijie(config-exp-dacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# expert access-group adv-acl in
```

1 **show access-lists** ACL ACL

2 **show access-lists** *id* ACL ACL

3 **show access-lists** *name* ACL ACL

-

-

-

1.27 redirect destination interface

ACL

redirect destination interface *interface-name* **acl** { *id* | *name* } **in**

ACL

no redirect destination interface *interface-name* **acl** { *id* | *name* } **in**

interface-name	
id	ACL
name	ACL

ACL

14

ACL ACL

ACL

1 gigabitEthernet 0/3 “ acl1 ” gigabitEthernet 0/2

```
Ruijie(config)# interface gigabitEthernet 0/3
Ruijie(config-if-GigabitEthernet 0/3)# redirect destination interface gigabitEthernet 0/2 acl1 in
```

1 **show redirect** ACL

2 **show redirect interface** *interface-name*

-

-

-

1.28 remark

ACL ACE

remark *text*

ACE

no remark *text*

text	

ACE

ACL

14

ACE

100 ACL 2

ace ace

1 102 IP ACL ACE

```
Ruijie(config)# ip access-list extended 102
Ruijie(config-ext-nacl)# remark first_remark
Ruijie(config-ext-nacl)# permit tcp 1.1.1.1 0.0.0.0 2.2.2.2 0.0.0.0
Ruijie(config-ext-nacl)# remark second_remark
Ruijie(config-ext-nacl)# permit tcp 3.3.3.3 0.0.0.0 4.4.4.4 0.0.0.0
Ruijie(config-ext-nacl)# end
Ruijie#
```

1 **show access-lists** ACL ACL

2 **show access-lists** *id* ACL ACL

3 **show access-lists** *name* ACL ACL

-

-

-

1.29 security access-group

security access-group { *id* | *name* }

no security access-group

id	ACL IP ACL 1-99 1300-1999 IP ACL 100-199 2000-2699 MAC ACL 700–799 ACL 2700–2899
name	ACL

no security global access-group

id	ACL IP ACL 1-99 1300-1999 IP ACL 100-199 2000-2699 MAC ACL 700–799 ACL 2700–2899
name	ACL

14

ACL

web

14

1 GigaEthernet 1/1

```
Ruijie(config)# interface GigaEthernet 1/1
Ruijie(config-if-GigabitEthernet 1/1)# security uplink enable
```

show running

-

-

-

1.32 show access-group

ACL

show access-group [**interface** *interface-name*]

interface *Interface-name*	

14

ACL ACL

1 ACL

```
Ruijie# show access-group
ip access-list standard ipstd3 in
Applied On interface GigabitEthernet 0/1.
ip access-list standard ipstd4 out
Applied On interface GigabitEthernet 0/2.
ip access-list extended 101 in
```

```
  deny ip any any (80021 matches)
mac access-list extended mac-acl
expert access-list extended exp-acl
```

-

-

1.34 show expert access-group

ACL

show expert access-group [**interface** *interface-name*]

interface *Interface-name*	

14

ACL ACL

1 GigabitEthernet 0/2 ACL

```
Ruijie# show expert access-group interface gigabitethernet 0/2
expert access-group ee in
Applied On interface GigabitEthernet 0/2.
```

-

-

1.35 show ip access-group

IP IP ACL

show ip access-group [**interface** *interface-name*]

interface *Interface-name*	

14

IP IP ACL IP IP ACL

1 GigabitEthernet 0/1 IP IP ACL

```
Ruijie# show ip access-group interface gigabitethernet 0/1
ip access-group aaa in
Applied On interface GigabitEthernet 0/1.
```

-

-

1.36 show mac access-group

MAC ACL

show mac access-group [**interface** *interface-name*]

interface *Interface-name*	

14

MAC ACL MAC ACL

1 GigabitEthernet 0/3 MAC ACL

```
Ruijie# show mac access-group interface gigabitethernet 0/3
mac access-group mm in
Applied On interface GigabitEthernet 0/3.
```

-

-

1.37 show redirect interface

ACL

show redirect [**interface** *interface-name*]

interface *Interface-name*	

14

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```
Ruijie(config)# svi router-acls enable
```

show running SVI ACL

-

-

-

2 QOS

class	
class-map	
drr-queue bandwidth	DRR
match	
mls qos cos	CoS
mls qos map cos-dscp	CoS DSCP
mls qos map dscp-cos	DSCP CoS
mls qos map ip-precedence-dscp	IP PRE DSCP
mls qos scheduler	
mls qos trust	
police	
policy-map	
priority-queue	SP
priority-queue cos-map	

wrr-queue bandwidth	WRR
wrr-queue cos-map	CoS
wrr-queue random-detect min-threshold	WRED
wrr-queue random-detect probability	WRED

2.1 class

class *calss-map-name*

no class *calss-map-name*

calss-map-name	

14

-

1 cmap1 DSCP 5

```
Ruijie(config)# class-map cmap1
Ruijie(config-cmap)# match ip dscp 5
Ruijie(config-cmap)# exit
```

2 pmap1 cmap1

```
Ruijie(config)# policy-map pmap1
Ruijie(config-pmap)# class cmap1
Ruijie(config-pmap-c)# end
```

1 **show policy-map** [*policy-map-name* [**class** *class-map-name*]]

```
-
```

-

-

2.2 class-map

class-map *calss-map-name*

no class-map *calss-map-name*

default class-map *calss-map-name*

calss-map-name	31

14

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1 MAC ACL, me

```
Ruijie(config)# mac access-list extended me
Ruijie(config-ext-macl)# permit host 1111.2222.3333 any
Ruijie(config-ext-macl)# exit
```

2 cm_acl ACL me

```
Ruijie(config)# class-map cm_acl
Ruijie(config-cmap)# match access-group me
Ruijie(config-cmap)# exit
```

3 cm_dscp DSCP 8 16 24

```
Ruijie(config)# class-map cm_dscp
Ruijie(config-cmap)# match ip dscp 8 16 24
Ruijie(config-cmap)# exit
```

1 **show class-map** [*class-map-name*]

-

-

-

2.3 drr-queue bandwidth

DRR

drr-queue bandwidth *weight1...weight8*

DRR

no drr-queue bandwidth

DRR

default drr-queue bandwidth

weight1...weight8	8 1:1:1:1:1:1:1:1 SP 0~15 1~15

/ 1:1:1:1:1:1:1:1

/

14

-

1 DRR 1:1:1:2:2:4:6:8

```
Ruijie(config)# drr-queue bandwidth 1 1 1 2 2 4 6 8
```

2 1:1:2:2:2:2:4:4

-

2.4 match

match { **access-group** *access_list* | **ip** { **dscp** *dscp-vlaue-list* | **precedence** *pre-vlaue-list*

CoS 0

no mls qos cos

CoS 0

default mls qos cos

default-cos	CoS 0 0~7

CoS 0

14

-

1 CoS 7

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if-GigabitEthernet 1/1)# mls qos cos 7
```

1 **show mls qos interface** *interface-id*

-

-

-

2.6 mls qos map cos-dscp

CoS DSCP

mls qos map cos-dscp *dscp1...dscp8*

CoS-DSCP

no mls qos map cos-dscp

CoS-DSCP

default mls qos map cos-dscp

dscp1...dscp8	CoS DSCP 0~63 CoS 0~7 *dscp1...dscp8* 0 8 16 24 32 40 48 56

CoS 0 1 2 3 4 5 6 7 *dscp1...dscp8* 0 8 16 24 32 40 48 56

14

-

1 CoS DSCP 8 10 16 18 24 26 32 34

```
Ruijie(config)# mls qos map cos-dscp 8 10 16 18 24 26 32 34
```

1 **show mls qos maps cos-dscp** CoS-DSCP

-

-

-

2.7 mls qos map dscp-cos

DSCP CoS

mls qos map dscp-cos *dscp-list* **to** *cos*

DSCP-CoS

no mls qos map dscp-cos

DSCP-CoS

default mls qos map dscp-cos

14

-

1 DSCP 8 10 16 18 CoS 0

```
Ruijie(config)# mls qos map dscp-cos 8 10 16 18 to 0
```

1 **show mls qos maps dscp-cos** DSCP-CoS

-

-

-

2.8 mls qos map ip-precedence-dscp

IP-PRE DSCP

mls qos map ip-precedence-dscp *dscp1...dscp8*

IP-PRE-DSCP

no mls qos map ip-precedence-dscp

IP-PRE-DSCP

default mls qos map ip-precedence-dscp

dscp1...dscp8	IP-PRE DSCP 0~63 IP PRE 0~7 *dscp1...dscp8* 0 8 16 24 32 40 48 56

IP PRE 0~7 *dscp1...dscp8* 0 8 16 24 32 40 48 56

14

-

1 IP-PRE DSCP 8 10 16 18 24 26 32 34

```
Ruijie(config)# mls qos map ip-precedence-dscp 8 10 16 18 24 26 32 34
```

1 **show mls qos maps ip-prec-dscp** IP-PRE-DSCP

-

-

-

2.9 mls qos scheduler

mls qos scheduler { **sp** | **rr** | **wrr** | **drr** }

no mls qos scheduler

default mls qos scheduler

sp	
rr	
wrr	
drr	

WRR

/

14

-

1

```
Ruijie(config)# mls qos scheduler sp
```

2 DRR

```
Ruijie(config)# interface gigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# mls qos scheduler drr
```

'Ḥ 1BE00790076FA0C004D7.96C00500003f748507003005002(2-10)TƎT0.7

-

-

-

2.11 police

police *rate-bps burst-byte* [**exceed-action** { **drop** | **dscp** *new-dscp* | **cos** *new-cos* [**none-tos**] }]

no police

2.13 priority-queue

SP

priority-queue

no priority-queue

default priority-queue

-	-

WRR

14

SP **mls qos scheduler sp** **show run**

mls qos scheduler sp **priority-queue**

1 SP

```
Ruijie(config)# priority-queue
```

1 **show mls qos scheduler**

-

-

-

2.14 priority-queue cos-map

CoS

priority-queue cos-map *qid cos0* [*cos1* [*cos2* [*cos3* [*cos4* [*cos5* [*cos6* [*cos7*]]]]]]]

CoS

no priority-queue cos-map

CoS

default priority-queue cos-map

qid	CoS 1~8
cos0 ~ cos7	CoS 0~7

CoS 0 1 2 3 4 5 6 7 id 1 2 3 4 5 6 7 8

14

-

1 CoS 3 5 1

```
Ruijie(config)# priority-queue cos-map 1 3 5
```

1 **show mls qos queueing**

-

-

-

2.15 qos mc-queue cos-map

CoS

qos mc-queue cos-map *cos0-qid…cos7-qid*

CoS

no qos mc-queue cos-map

CoS

default qos mc-queue cos-map

cosN-qid	CoS N ID

14

-

1 3 CoS 0~7 1 1 1 2 2 2 2 3

```
Ruijie(config)# qos mc-queue cos-map 1 1 1 2 2 2 2 3
```

1 **show qos mc-queue cos-map** CoS

-

-

-

2.16 qos mc-queue scheduler mode

qos mc-queue scheduler mode { **sp** | **wrr** }

no qos mc-queue scheduler mode

default qos mc-queue scheduler mode

sp	
wrr	

WRR

/

14

-

1 SP

```
Ruijie(config)# interface gigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# qos mc-queue scheduler mode sp
```

1 **show qos mc-queue scheduler** [**interfaces** *interface-id*]

-

-

-

2.17 qos mc-queue scheduler weight

WRR

qos mc-queue scheduler weight

```
Ruijie(config)# interface gigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# qos mc-queue scheduler weight 1 2 4
```

1 **show qos mc-queue scheduler** [**interfaces** *interface-id*]

-

-

-

2.18 qos queue

qos queue [**ucast** | **mcast**] *queue-id* **bandwidth** { **minimum** | **maximum** } *bandwidth*

no qos queue [**ucast** | **mcast**] *queue-id* **bandwidth** { **minimum** | **maximum** }

default qos queue [**ucast**

d198e(|8.T6040307 ( )Tj 0.0035(e0035(e 0035(c9 Tc 0.007.1288 Tc -7.407 5(ue)02]TJ7Tc0379A9AB0775070.06B06210

-

1

gigabitEthernet 0/1 1 10M 5M 2 2M 1 5M 1M

```
Ruijie(config)# interface gigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# qos queue ucast 1 bandwidth maximum 10240
Ruijie(config-if-GigabitEthernet 0/1)# qos queue ucast 1 bandwidth minimum 5120
Ruijie(config-if-GigabitEthernet 0/1)# qos queue ucast 2 bandwidth minimum 2048
Ruijie(config-if-GigabitEthernet 0/1)# qos queue mcast 1 bandwidth maximum 5120
Ruijie(config-if-GigabitEthernet 0/1)# qos queue mcast 1 bandwidth minimum 1024
```

1 **show qos bandwidth** [**interfaces** *interface-id*]

-

-

-

2.19 queueing wred

WRED

queueing wred

WRED

no queueing wred

WRED

default queueing wred

-	-

WRED

14

DSCP WRED

1 WRED

```
Ruijie(config)# queueing wred
```

-

-

-

-

2.20 rate-limit

rate-limit { **input | output** } *bps burst-size*

no rate-limit { **input | output** }

default rate-limit { **input | output** }

```
Ruijie(config)# interface gigabitethernet 1/3
```

2 10M 256K

```
Ruijie(config-if-GigabitEthernet 1/3)# rate-limit input 10240 256
```

1 **show mls qos rate-limit** [**interface** *interface-id*]

-

-

-

2.21 service-policy

2 po output

```
Ruijie(config)# virtual-group 3
Ruijie(config-VirtualGroup)# service-policy output po
```

1 **show mls qos interface policers** **show mls qos virtual-group policers**

-

-

-

2.22 set

CoS DSCP

set { **ip dscp** *new-dscp* | **cos** *new-cos* [**none-tos**] }

no set { **ip dscp** | **cos** }

ip dscp *new-dscp*	DSCP new-dscp 0~63
cos *new-cos*	CoS new-cos 0~7
none-tos	CoS DSCP

14

-

1 pmap1 cmap1

```
Ruijie(config)# policy-map pmap1
```

1 **show policy-map**[*policy-map-name* [**class** *class-map-name*]]

-

-

-

2.23 show class-map

show class-map [*class-map-name*]

class-map-name	

14

-

1

```
Ruijie# show class-map

 Class Map cmap1
   Match ip dscp 20 40
 Class Map cmap2
   Match access-group 110
```

Class Map	
Match	

-

-

2.24 show mls qos interface

QoS

show mls qos interface [*interface-id* | **policers**]

interface-id	
policers	

14

-

1 gigabitethernet 1/3

```
Ruijie# show mls qos interface gigabitethernet 1/3
Interface: GigabitEthernet 0/3
Ratelimit input: 10240 256
Ratelimit output: 51200 4096
Attached input  policy-map: pmap1
Attached output policy-map:
Default trust: dscp
Default cos: 3
Scheduler type: drr
Wrr queue bandwidth: 1 1 1 1 2 2 2 2
```


2

```
Ruijie# show mls qos interface policers
Interface: GigabitEthernet 0/1
Attached input  policy-map: pmap1
Attached output policy-map: pmap1
Interface: GigabitEthernet 0/2
Attached input  policy-map: p1
```

-

-

2.25 show mls qos maps

DSCP-CoS CoS-DSCP IP-PRE-DSCP

show mls qos maps [**cos-dscp** | **dscp-cos** | **ip-prec-dscp**]

o-

7 56

cos	CoS
dscp	CoS

```
4 32
5 40
6 48
7 56
```

ip-precedence	IP PRE
dscp	IP PRE DSCP

-

-

2.26 show mls qos queueing

CoS

show mls qos queueing [**interface** *interface-id*]

```
7   8

wrr bandwidth weights:
qid weights
--- -------
1   1
2   2
3   3
4   4
5   5
6   6
7   7
8   8

drr bandwidth weights:
qid weights
--- -------
1   3
2   3
3   3
4   3
5   3
6   3
7   3
8   3

Interface: GigabitEthernet 0/1
 Wrr queue bandwidth: 1 1 1 1 2 2 2 2
```

Drr queue bandwidth: 1 1 2 2 2 2 4 4

Cos-queue map	CoS
wrr bandwidth weights	WRR
drr bandwidth weights	DRR
cos	CoS
qid	
weights	
Interface	
Wrr queue bandwidth	WRR
Drr queue bandwidth	DRR

2

```
Ruijie# show mls qos queueing interface gigabitEthernet 0/1
Interface: GigabitEthernet 0/1
 Wrr queue bandwidth: 1 1 1 1 2 2 2 2
 Drr queue bandwidth: 1 1 2 2 2 2 4 4
```

Interface	
Wrr queue bandwidth	WRR
Drr queue bandwidth	DRR

-

-

2.27 show mls qos rate-limit

show mls qos rate-limit [**interface** *interface-id*]

interface *interface-id*	

14

-

1

```
Ruijie# show mls qos rate-limit
Interface: GigabitEthernet 0/1
  rate limit input Kbps = 10240 burst = 256
Interface: GigabitEthernet 0/3
  rate limit output Kbps = 102400 burst = 4096
```


Interface	
rate limit input Kbps = x burst = y	x KBits y Kbytes
rate limit output Kbps = x burst = y	x KBits y Kbytes

-

-

2.28 show mls qos scheduler

show mls qos scheduler [**interface** *interface-id*]

interface *interface-id*	

14

-

1

```
Ruijie# show mls qos ]s]'  я  h  _  ˘  O  A
```

Deficit Round Robin	DRR

2

```
Ruijie# show mls qos scheduler interface gigabitEthernet 0/1
Interface GigabitEthernet 0/1 Multi-Layer Switching scheduling:
 Deficit Round Robin
```

Interface	
Deficit Round Robin	DRR

-

-

2.29 show mls qos virtual-group

show mls qos virtual-group [*virtual-group-number* | **policers**]

virtual-group-number	1~128
policers	

14

-

1

```
Ruijie# show mls qos virtual-group policers
Virtual-group: 1
Attached input policy-map: pmap1
Virtual-group: 20
Attached output policy-map: pmap2
```

Virtual-group	

Attached input policy-map	
Attached output policy-map	

-

-

2.30 show policy-map

show policy-map [*policy-map-name* [**class** *class-map-name*]]

policy-map-name	
class *class-map-name*	

14

-

1 pmap1

```
Ruijie# show policy-map pmap1

 Policy Map pmap1
    Class cmap1
      set ip dscp 16
    Class cmap2
      police 10240 256 exceed-action dscp 8
    Class cmap3
      police 512000 4096 exceed-action drop
```

Policy Map	
Class	
set	CoS DSCP
police	

2 pmap1 cmap1

```
Ruijie# show policy-map pmap1 class cmap1


   Class cmap1
     set ip dscp 16
```

-

-

2.31 show qos bandwidth

show qos bandwidth [**interfaces** *interface-id*]

interfaces *interface-id*	

14

-

1 gigabitEthernet 0/1

```
Ruijie# show qos bandwidth interface gigabitEthernet 0/1

Interface: GigabitEthernet 0/1
 ------------------------------------------------
 uc-queue-id | minimum-bandwidth | maximum-bandwidth
 -----------   -----------------   -----------------
           1                5120               10240
           2                   0                   0
           3                   0                   0
           4                   0                   0
           5                   0                   0
           6                   0                   0
           7                   0                   0
           8                   0                   0
```

```
 ------------------------------------------------
 Total ucast-queue minimum-bandwidth:          5120
 Total ucast-queue maximum-bandwidth:         10240

Interface: GigabitEthernet 0/1
 ------------------------------------------------
 mc-queue-id | minimum-bandwidth | maximum-bandwidth
 ----------   ----------------   ----------------
           1               1024               5120
           2                  0                  0
           3                  0                  0
           4                  0               2048
 ------------------------------------------------
 Total mcast-queue minimum-bandwidth:          1024
 Total mcast-queue maximum-bandwidth:          5120
```

Interface	
queue-id	id
uc-queue-id	id
mc-queue-id	id
minimum-bandwidth	Kbps
maximum-bandwidth	Kbps
Total queue minimum-bandwidth Total queue maximum-bandwidth	
Total ucast-queue minimum-bandwidth Total ucast-queue maximum-bandwidth	
Total mcast-queue minimum-bandwidth Total mcast-queue maximum-bandwidth	

-

-

2.32 show qos mc-queue cos-map

CoS

show qos mc-queue cos-map

-	-

14

-

1 CoS

```
Ruijie# show qos mc-queue cos-map
Cos to multicast queue map:
Cos      Queue id
----     -------------
0        1
1        1
2        1
3        1
4        2
5        2
6        2
7        3
```

Cos	CoS
Queue id	CoS

-

-

2.33 show qos mc-queue scheduler

show qos mc-queue scheduler [**interfaces** *interface-id*]

interfaces *interface-id*	

14

-

1

```
Ruijie# show qos mc-queue scheduler
Multicast queue scheduler:
Interface GigabitEthernet 0/0 :
 Strict Priority

Interface GigabitEthernet 0/1 :
 Strict Priority

Interface GigabitEthernet 0/2 :
 Weighted Round Robin
Queue id     Weight
--------     ------
1            1
2            2
3            4
```

Interface	

14

-

1 gigabitethernet 1/3 wred

2.35 show virtual-group

show virtual-group [*virtual-group-number* | **summary**]

virtual-group-number	1~128
summary	

14

-

1

```
Ruijie# show virtual-group summary
  virtual-group        member
  -------------        ------------------------
  1                    Gi0/1 Gi0/2
  2                    Gi0/0
```

virtual-group	
member	

-

-

2.36 virtual-group

virtual-group *virtual-group-number*

no virtual-group *virtual-group-number*

default virtual-group *virtual-group-number*

virtual-group-number	1~128

14

Aggregate Port (
) ( )

1 1/3

```
Ruijie(config)# interface gigabitethernet 1/3
```

2 3

```
Ruijie(config-if-GigabitEthernet 1/3)# virtual-group 3
```

1 **show virtual-group** [*virtual-group-number* | **summary**]

-

-

-

2.37 wrr-queue bandwidth

WRR

wrr-queue bandwidth *weight1 ... weight8*

no wrr-queue bandwidth

default wrr-queue bandwidth

weight1...weight8	8 1:1:1:1:1:1:1:1 SP 0~15 1~15

/ 1:1:1:1:1:1:1:1

/

14

0 SP

1 WRR 1:1:1:1:2:2:4:8

Ruijie(cor R¾ ﻫ ך פn קn

threshold_id	id 2 1~2
cos_N	CoS 8 0~7

CoS

14

DSCP-CoS CoS-threshold DSCP threshold

CoS WRED RED

1 1/3

```
Ruijie(config)# interface gigabitethernet 1/3
```

2 CoS 1 6

```
Ruijie(config-if-GigabitEthernet 1/3)#wrr-queue cos-map 2 1 6
```

1 **show queueing wred interface** *interface-id* wred

-

-

-

2.39 wrr-queue random-detect min-threshold

WRED

wrr-queue random-detect min-threshold *queue_id thr1* [*thr2*]

WRED

no wrr-queue random-detect min-threshold *queue_id*

WRED

default wrr-queue random-detect min-threshold *queue_id*

queue_id	
thrN	2 1~100

2 100 80

14

-

1 1/3

```
Ruijie(config)# interface gigabitethernet 1/3
```

2 1 60 70

```
Ruijie(config-if-GigabitEthernet 1/3)# wrr-queuerandom-detect min-threshold 1 60 70
```

1 **show queueing wred interface** *interface-id* wred

-

-

-

2.40 wrr-queue random-detect probability

WRED

wrr-queue random-detect probability *queue_id prob1* [*prob2*]

WRED

no wrr-queue random-detect probability *queue_id*

WRED

default wrr-queue random-detect probability *queue_id*

queue_id	
probN	2 1~100

2 100 80

14

1 1/3

```
Ruijie(config)# interface gigabitethernet 1/3
```

2 1 50 70

```
Ruijie(config-if-GigabitEthernet 1/3)# wrr-queue random-detect probability 1 50 70
```

1 **show queueing wred interface** *interface-id* wred

-

-

-

3 MMU

clear mmu queue-buffer peaked	
clear queue-counters	
mmu buffer-mode	
mmu usage-warn-limit	
mmu queue-threadshold	
show queue-buffer interface	
show queue-counter interface	

3.1 clear mmu queue-buffer peaked

clear mmu queue-buffer peaked

-	-

14

-

1

```
Ruijie# clear mmu queue-buffer peaked
```

-

-

3.2 clear queue-counter

clear queue-counter [interface *interface _id*]

interface_id	

14

-

1

```
Ruijie# clear queue-counter
```

2

```
Ruijie# clear queue-counter Interface TenGigabitEthernet 1/9
```

-

-

3.3 mmu buffer-mode

mmu buffer-mode {**normal | small | large** }

no mmu buffer-mode

```
Ruijie(config)# mmu buffer-mode large
This command will lead to reload the switch, and all configuration will be saved. Are you sure to
continue[Y/N]: Y
```

1 **show run**

-

-

-

3.4 mmu usage-warn-limit

mmu usage-warn-limit { **unicast | multicast** } {*queue-id1* [*queue-id2* [*queue-idN*]}**] set** *value*

no mmu usage-warn-limit

```
2               3       8                       80%
Ruijie#config
Ruijie(config)# int te1/1
Ruijie(config-if)# mmu usage-warn-limit unicast 3 8 set  80

3               1       4                       80%
Ruijie#config
Ruijie(config)# int te1/1
Ruijie(config-if)# mmu usage-warn-limit multicast 1 4 set  80
```

1 **show run**

2 show queue-buffer

-

-

-

3.5 mmu queue-thredshold

mmu queue-thredshold output { **unicast | multicast** } {*queue-id1* [*queue-id2* [*queue-idN*] } **set** *th%*

no mmu queue-thredshold output { **unicast | multicast** }

output	
unicast	
multicast	
queue-idN	id
th%	* =

2. value show run

1

```
Ruijie#config
Ruijie(config)# interface tenGigabitEthernet 1/9
Ruijie(config-if)#mmu queue-thredshold ouput unicast 1 3 7 8 set 80
Ruijie(config-if)#exit
```

2

```
Ruijie#config
Ruijie(config)# interface tenGigabitEthernet 1/9
Ruijie(config-if)#mmu queue-thredshold ouput multicast 1 3 7 8 set 80
Ruijie(config-if)#exit
```

1 **show run**

-

-

-

3.6 show queue-buffer interface

show queue-buffer interface *interface-id*

interface-id	

14

-

1 -

```
Ruijie# show queue-buffer int g 0/1
Interface GigabitEthernet 0/1 :
Type       Queue   Used cells   Available cells  Usage  Usage warn limit  Peaked cells
Unicast    1       0            5554             0%     0%                0
```

```
Unicast    2       0            5554            0%     0%              0
Unicast    3       0            5554            0%     0%              0
Unicast    4       0            5554            0%     0%              0
Unicast    5       0            5554            0%     0%              0
Unicast    6       0            5554            0%     0%              0
Unicast    7       0            5554            0%     0%              0
Unicast    8       0            5554            0%     0%              0
Multicast  1       0            5554            0%     0%              0
Multicast  2       0            5554            0%     0%              0
Multicast  3       0            5554            0%     0%              0
Multicast  4       0            5554            0%     0%              0
Multicast  5       0            5554            0%     0%              0
Multicast  6       0            5554            0%     0%              0
Multicast  7       0            5554            0%     0%              0
Multicast  8       0            5554            0%     0%              0
Slot PortGroup  Total cells  Total usage  Usage warn limit  Static used cells  Global shared cells
Available shared cells
0    1          19456          0%            0%                 8364               11092
11092
```

Type	2
Queue	1-8
Used cells	
Available cells	Available cells
Peaked cells	
Total cells	
Static used cells	
Global shared cells	
Available shared cells	

-

-

3.7 show queue-counter interface

show queue-counter interface *interface-id*

interface-id	

14

-

1 -

```
Ruijie# show queue-counter int ge 0/1
Interface GigabitEthernet 0/1 :
Unicast:
  Queue      U U U  Qu \ ‘ Ц ‘ ‘ ‘ ‡ ` ‘ MM e
```

```
    8                   0                   0                   0                   0
Multicast:
Queue   Transmitted packets      Dropped packets     Frame Loss Rate(%)   Transmit Rate(pps)
    1                   0                   0                   0                   0
    2                   0                   0                   0                   0
    3                   0                   0                   0                   0
    4                   0                   0                   0                   0
    5                   0                   0                   0                   0
    6                   0                   0                   0                   0
    7                   0                   0                   0                   0
    8                   0                   0                   0                   0
```

-

-

-

1. REUP
2. RLDP
3. DLDP
4. BFD
5. VSU
6. RNS-TRACK

1 REUP

ᵘ ᵑᵬ	Ă ɨ
switchport backup interface	ᵏ ᵾ REUP ᵡ ڃ ت ᵻ ¥ ا Ấ
switchport backup interface preemption mode	REUP OBJ ڃ ت ï ا ا Ấ
switchport backup interface preemption delay	REUP OBJ ڃ ت ï ا å ق ᵡH ژ ا Ấ
mac-address-table update group	ֆ ڔ ٧ Æ ɪ ϡ ᑊ Ω OBJ MAC ş ϰ ˜ Ȁ ڔ
mac-address-table move update transit	ĕ Ȃ ∧ گ MAC ş ϰ ˜ Ȁ ╦ Ụ OBJ Ȃ ԋ
mac-address-table move update transit vlan	ĕ Ȃ ∧ گ MAC ş ϰ ˜ Ȁ ╦ Ụ OBJ VLAN ID
mac-address-table move update max-update-rate	ڀ ڔ ⅛ ٧ ∧ گ OBJ ѡ ᶻ MAC ş ϰ ˜ Ȁ ï ă Ѽ ᷒
mac-address-table move update receive	ĕ Ȃ ∧ گ MAC ş ϰ ˜ Ȁ ╦ Ụ OBJ Ȃ ԋ
mac-address-table move update receive vlan	ĕ Ȃ ∧ گ MAC ş ϰ ˜ Ȁ ╦ Ụ OBJ VLAN ID
switchport backup interface prefer instance	ڀ ڔ REUP OBJ ڃ ت VLAN ق ذ ڙ ʿ
link state track	ᵏ ɨ ڃ ت ↑ ő ʿ ث ڔ
link state group	Ṅ ٧ Æ ɪ ϡ″Y ḧ OBJ ڃ ت ↑ ő ʿ ث ڔ OBJ i ▫ Æ | ï ▫ Æ
show interfaces switchport backup	Ǐ ˜ REUP Ḿ ڀ ڔ
show mac-address-table update group	Ǐ ˜ MAC ş ϰ ˜ Ȁ ڔ OBJ ڀ ڔ
show mac-address-table move update	Ǐ ˜ ∧ گ MAC ş ϰ ˜ Ȁ ï ă OBJ ԋ ʒ Ụ
show link state group	Ǐ ˜ ڃ ت ʿ ث ڔ ڀ ڔ

1.1 switchport backup interface

ᵏ ᵾ REUP ᵡ ڃ ت ᵻ ¥ ا Ấ

switchport backup interface *interface-id*

ԋ ڎ REUP ᵡ ڃ ت ᵻ ¥ ا Ấ

no switchport backup interface *interface-id*

Õ ʰ ȷ̌ ڀ ڔ

default switchport backup interface *interface-id*

Æ ɨ ˝YṀ ₩Ã ¨A ᵷ㊀ ˥ Æ ㎛ ᶘ ˥ Æ ı v ¨Ω ᵴ㊀ *interface-id* ¨A Ḿ Ẓ㊀ ˥ Æ ㎛ ᵻ ¥ ˥ Æ Ẹ ╗ ʊ ჭ ت ʌ ı ѽ ᵡ ᵈ ı ȏ ᵴ Õ ᵸ ᵻ ¥ ჭ ت㊀ e ڑ

ᵽ ᒑ ᵷ æ ֆ ᒑ Ⱥ ᵴ ჭ ت ᵻ ¥ ı ֆ ᒑ fa 0/1 ㎛ ᶘ ˥ Æ ı fa 0/2 ㎛ ᵻ ¥ ˥ Æ

```
Ruijie(config)# interface fa 0/1
Ruijie(config-if)# switchport backup interface fa 0/2
```

ₛ ᶎ Ά | 1 χ Æ ɨ **show interface switchport backup [detail]** ᵘ ᵑᵬ ı ˡ Ꝙ˙ ~ REUP ᵴ ჭ ت ı Ĩ Ĩ ᵏ ɨ ف Ĩ ᵸ ᵾ ڎ

ѽ˜ ʒ Ụ 1 χ ḅ ' ì Æ 2 ᵒ⁀ Ṗ Æ ı ¨ ѽ˜ ᶎ ئ

```
Reup pair only support Layer 2 interface(2 is not layer 2)
```

2 χ ḅ ' ì Æ 2 Ĩ⁀ Ṗ Æ AP ă ᵑ Æ ı ¨ ѽ˜ ᶎ ئ

```
Reup pair can not configure on a aggregateport member(2)
```

3 χ ḅ ' ᵱ ᵸ ᵽ ᒑ % ᵘ ᵑᵬ ı ¨ Ȁ ᵽ ᒑ ᵸu ˝ ⊐ ѽ ᵽ ᒑ ı ṇ ѽ˜ ʒ Ụ

Ẃ ȏ ᶎ ئ 1 χ ᵽ ᒑ㊀ ì Æ i Ţ ᵽ ᒑ Ʊ H㊀ REUP Ḿ

2 χ ᵽ ᒑ㊀ ì Æ ᵒ⁀ Ṗ ɾ ת Æ ᾶ⁀ Ṗ ap Æ

Ẉ ᴶ ب ˝ -

1.2 switchport backup interface preemption mode

ᵽ ᒑ REUP㊀ ᶎ ت Ĩ ı ı Ĩ

switchport backup interface *interface-id* **preemption mode** { **forced** | **bandwidth** | **off** }

ㅿ ڎ REUP㊀ ᶎ ت Ĩ ı ı Ĩ

no switchport backup interface *interface-id* **preemption mode**

Õ ᵸ ỉ ᵽ ᒑ

default switchport backup interface *interface-id* **preemption mode**

v ¨Ω ب ˝

v ¨Ω	ѽ ك
interface-id	ᵻ ¥ ჭ ت㊀ ˥ Æ ID
forced	**forced** ˊ˜ Ặ ˙ ₩Ã
bandwidth	**bandwidth** ˊ˜ Ṿ Ḳ ₩Ã
off	**off** ˊ˜ ㅿ ڎ ₩Ã

ỉ ᵽ ᒑ Ĩ ı ı Ĩ ѕ ת ㎛ ㅿ ڎ ᵻ õ

ᵘ ɲ₩Ã ì Æ₩Ã

ȷ̀ ٨. 14

Æ ŧ ˝YṀ ï ¡ ₩Ã˙ ѫĂ˙ Ṿ Ķ ⁼ ʜ ɔ̌ s ٦₩Ã ı Ʊ ᴀ Ṿ Ķ₩Ã ѫ Ч Ж J̌¨Ọ Ṿ Ķ ڍ ᶻ 🔲 ٦ Æ˺ ٹ e ɔ̌ ¨Ǫ̃Ω ψ Ă˙ ₩Ã ѫ Ч Ж J̌¨Ọ ڎ ٦ Æ˺ ٹ e ɔ̌ ¨Ǫ̃Ω ψ ʜ ɔ̌ ₩Ã„ j ï ¡

ف ل ڎ æ 1 χ ف ل Ⱥ ڃ ت ᵻ ¥ ı ف ل ڎ ٦ Æ fa0/1 ı ᵻ ¥ ٦ Æ fa0/2 ı ï ¡ ₩Ã ѫ Ṿ Ķ₩Ã

```
Ruijie(config)# interface fa 0/1
Ruijie(config-if)# switchport backup interface fa 0/2 preemption mode bandwitdh
```

ₛ ڌ Ä | 1 χ Æ ŧ **show interface switchport backup [detail]** ᵘ ɲ ı ˡ Ɋ˺ ˜ ï ¡ ₩

ώ˜ ʒ Ụ 1 χ ḅ ' ì Æ 2 ˚⁀ Ṗ Æ ı „ ώ˜ ڃ ئ

```
Reup pair only support Layer 2 interface(2 is not layer 2)
```

2 χ ḅ ' ì Æ 2 ĩ⁀ Ṗ Æ AP ă ^ Æ ı „ ώ˜ ڃ ئ

```
Reup pair can not configure on a aggregateport member(2)
```

3 χ ḅ ' ڀ ᵸ ف ل % ᵘ ɲ ı „ Ȁ ف ل ɦ u ˝ ⊃ ũ ف ل ı ṅ ώ˜ ʒ Ụ

Ẃ ȸ ڃ ئ 1 χ ف ل 🔲 ì Æ i Ţ ف ل Ʊ H 🔲 REUP Ḿ

2 χ ف ل 🔲 ì Æ ˚⁀ Ṗ ⊦ ת Æ ã⁀ Ṗ ap Æ

Ẉ ᴶ ب ˝ -

1.3 switchport backup interface preemption delay

ف ل REUP 🔲 ڃ ت ï ¡ å ق ˋH ژ ı ǐ

switchport backup interface *interface-id* **preemption delay** *delay-time*

ʜ ɔ̌ REUP 🔲 ڃ ت ï ¡ å ق ˋH ژ ı ǐ

no switchport backup interface *interface-id* **preemption delay**

Õ ᵸ ȷ̀ ف ل

default switchport backup interface *interface-id* **preemption delay**

v ˝Ǫ ب ˝

v ˝Ǫ	ώ ك
interface-id	ᵻ ¥ ڃ ت 🔲 ٦ Æ ID
delay-time	ï ¡ 🔲 å ق ˋH ژ

ȷ̀ ف ل ï ¡ å ق س ɲ ѫ 35 ٦

ᵘ ɲ₩Ã ì Æ₩Ã

ǰ ˥˙ 14

Æ ɪ ˝YṀ ㎞˝ ˚˚ N̲ ɨ ㎞ MAC ş χ ˜ Ȁ ă̈ M̛7 ㉿ᶻ ᵢ̈ ㄱ ㅣ ẽ ᵠ Ґ ̈Ω ㉿* ẂŴ̈Ω̃Ω ɕ ɻ ㅣ ă̈ Ç ㎔ ɪ˝ Ⱥ MAC ş χ ˜ Ȁ ㅓ㉿ɸ ㅗ ᴱ ω̃ ̈Ґ ̈Ωت Ễ ㅣ㉿ ̈Ȁ ω̃ ㅋ Æ ɪ ƺ˙ ª Ⱥ MAC ş χ ˜ Ȁ ㅓ ㅅ ㅣ ɛ ǐ ̧˙ ȏ ㅅ Õ ᵸ ï Φ ̈Ω̃Ω ɕ ɻ ㅣ ǐ

ᵽ ㅗ ǯ æ 1 χ ̈H ㅋ Æ ɪ ƺ˙ MAC ş χ ˜ Ȁ ㅓ

```
Ruijie(config-if)# mac-address-table update group 2
```

ₛ ⱬ Ȁ | 1 χ Æ ɪ **show mac-address-table update group** ᵘ ᵑᵬ ㅣ ˡ Ꙍ˥ ˜ MAC ş χ ˜ Ȁ ㅓ ʒ Ụ

ώ˜ ʒ Ụ 1 χ ḅ ' ɪ ƺ ㅓ j ĩ 1-8 ɵ ɻ ㅣ ḅ ' ĩ group 9„ ώ˜ ᵹ ɕ

% Invalid input detected at '^' marker

2 χ ḅ ' ì Æ ㎞ ˚˜ Ṗ ɨ ㅍ Æ ㅣ„ ώ˜ ᵹ ɕ

```
Reup pair only support Layer 2 interface
```

3 χ ḅ ' ì Æ ĩ˜ Ṗ Æ AP ă ᶺ Æ ㅣ„ ώ˜ ᵹ ɕ

```
Reup pair can not configure on a aggregateport member
```

4 χ ḅ ' ᵱ ᵸ ᵽ ㅗ % ᵘ ᵑᵬ„ Ⱥ ᵽ ㅗ ɧ ˝ ⊐ ω̃ ᵽ ㅗ ㅣ ṅ ώ˜ ʒ Ụ

Ẃ ȸ ᵹ ɕ 1 χ ᵽ ㅗ㉿ ì Æ i ᵽ ㅗ ㅓ ᴺ j ƥ 1-8 ɵ ɻ

2 χ ᵽ ㅗ㉿ ì Æ ˚˜ Ṗ ɨ ㅍ Æ ã˜ Ṗ ap Æ

Ẉ ᴶ ᵽ ˝ -

1.5 mac-address-table move update transit

ɛ̈ Ȃ ∧ ڳ MAC ş χ ˜ Ȁ ╦ Ụ㉿ Ȃ ㅀ

mac-address-table move update transit

ㅀ ƚ ∧ ڳ MAC ş χ ˜ Ȁ ╦ Ụ㉿ Ȃ ㅀ

no mac-address-table move update transit

Õ ᵸ ǰ ᵽ ㅗ

default mac-address-table move update transit

v ˝Ꙍ ᵽ ˝

v ˝Ꙍ	ώ ڴ
-	-

ǰ ᵽ ㅗ ǰ ᵇ ᵘ ∧ ڳ MAC ş χ ˜ Ȁ ╦ Ụ

ᵘ ᵑᵬ ₩ Ẕ ᵹ ᵴ ₩ Ẕ

ᴧ̀ ᴧ̣	14
Æ ɤ ̈Y Ṁ	ᴈ̃ ᵒ̊ Ṉ ᴄ ᵗ ̈ῺH ı ï Φ ̈Ω̣̃Ω ᴸ ᴮ ᴮ ı ᴧ ʅ ᵽ ʌ ᵻ ̈Ω ᴰ ̈Ω ı ɛ̈ Ȁ ʌ ᴳ̈ MAC ʂ ᵹ ̈ Ȁ ╥ Ụ ᴮ ı ɨ̈
ᴮ ᴧ ᴯ̌ æ	1 χ ɛ̈ Ȁ MAC ʂ ᵹ ̈ Ȁ ╥ Ụ

```
Ruijie(config)# mac-address-table move update transit
```

ᵓ ᴧ Ȁ |	1 χ Æ ɤ **show mac-address-table move update** ᵘ ᴛ ı ᴵ ᴓ ̈ ʌ ᴳ̈ MAC ʂ ᵹ ̈ Ȁ ╥ Ụ ʒ Ụ
ώ ̃ ʒ Ụ	1 χ ḅ ' ᵖ ᵻ ᴮ ᴧ % ᵘ ᴛ ı ̤ Ȁ ᴮ ᴧ ʰu ̈ ⊃ ɷ̃ ᴮ ᴧ ı ṇ ώ ̃ ʒ Ụ
Ẃ ȯ ᴄ ᵹ	-
Ẉ ᴶ ᴮ ̈	-

1.6 mac-address-table move update transit vlan

ᵠ ᴧ ᴹ Æ ʌ ᴳ̈ MAC ʂ ᵹ ̈ Ȁ ╥ Ụ ᴮ VLAN

mac-address-table move update transit vlan *vid*

ʜ ᵹ ᴳ̈ MAC ʂ ᵹ ̈ Ȁ ╥ Ụ ᴮ VLAN

```
Ruijie(config-if)# mac-address-table move update transit vlan 1
```

5 ᵹ Ά | 1 χ Æ ᵽ **show mac-address-table move update** ᵘ ᵑ ᵢ ᵢ Ɑ¶ ˜ ʌ ᶜ̈ MAC ʂ ᵹ ˜ Ά ╦ Ụ ʒ Ụ

ώ˜ ʒ Ụ 1 χ ḅ ' ᵽ ᵻ ᵿ ᵼ % ᵘ ᵑ ᵢ ̤ Ά ᵿ ᵼ ᵽu ˝ ⊃ ῶ ᵿ ᵼ ᵢ ṇ ώ˜ ʒ Ụ

P(a)1(te)]TƛC2_0 1 T29.5F>]TƛTT80458034609EB079707T0 6CE6F9E>Tj/TT0 1 TfEUP

ώ˜ ʒ Ụ 1 χ ḅ ˈ ᵱ ᵸ ᵬ ᵲ % ᵘ ᵑᵬ ᵢ ᵡ Ȁ ᵬ ᵲ ᵽ ˝ ⊐ ῶ ᵬ ᵲ ᵢ ᵑ̇ ώ˜ ʒ Ụ

Ẃ ȸ ᶎ ᵴ -

Ẉ ᴶ ᵬ ˝ -

1.8 mac-address-table move update receive

ᵋ Ȃ ì ᵚ MAC ᵴ ᵡ ˜ Ȁ ╥ Ụ Ȃ ʜ

mac-address-table move update receive

ʜ ǰ ì ᵚ MAC ᵴ ᵡ ˜ Ȁ ╥ Ụ Ȃ ʜ

no mac-address-table move update receive

Õ ᵸ ƚ ᵬ ᵲ

default mac-address-table move update receive

ᵛ ̈Ọ ᵬ ˝

ᵛ ̈Ọ	ᵚ ᶄ
-	-

ƚ ᵬ ᵲ ᵋ Ȃ ì ᵚ ᵢ ǐ

ᵘ ᵑᵬ ₩ Ǟ ᵬ ᵲ ₩ Ǟ

ƚ ᶩ. 14

Æ ŧ ˝ Y Ṁ Ẹ ᵡ ᶎ ᵴ ᵵ ¥ ʌ ᵢ ˙ ̈Ω ̀H ᵢ ᵵ ᶣ ᵢ ᶎ Ґ ̈Ω ᵚ MAC ᵴ ᵡ ´ ≡ ῶ ʒ ̀H ˜ Ȁ ᵢ ᵸ Ṁ ᵡ ï Φ ̈Ọ ̃Ω ᴸ Ъ ᵡ ᵡ ˚ ˚ Ṇ ˜ Ṗ ̈Ọ ̃Ω ᴸ ᵚ Ъ ᵢ ᵡ ᵢ ᶣ Ḿ ᵢ ᶎ Ґ ̈Ω ᵮ Φ MAC ᵴ ᵡ ´ ˜ Ȁ ᵚ ∫ ᵯ ᵮ ᵭ ᵡ ᵢ ᵱ ᵢ ᶎ Ґ ̈Ω ᵢ ᵋ Ȃ ì ᵚ MAC ᵴ ᵡ ˜ Ȁ ╥ Ụ Ȃ ʜ

ᵲ ᵽ ᵷ æ 1 χ ì ᵚ MAC ᵴ ᵡ ˜ Ȁ ╥ Ụ

```
Ruijie(config)# mac-address-table move update receive
```

ᵌ ᵶ Ȁ ⎸ 1 χ Æ ŧ **show mac-address-table move update** ᵘ ᵑᵬ ᵢ ᵎ ₡ ˜ ĩ ᵋ ᵋ Ȃ ì ᵚ MAC ᵴ ᵡ ˜ Ȁ ╥ Ụ Ȃ ʜ

ώ˜ ʒ Ụ 1 χ ḅ ˈ ᵱ ᵸ ᵬ ᵲ % ᵘ ᵑᵬ ᵢ ᵡ Ȁ ᵬ ᵲ ᵽ ˝ ⊐ ῶ ᵬ ᵲ ᵢ ᵑ̇ ώ˜ ʒ Ụ

Ẃ ȸ ᶎ ᵴ -

Ẉ ᴶ ᵬ ˝ -

1.9 mac-address-table move update receive vlan

ᵽ ɻ ì ᵚ ʃ ᵻ MAC ᵴ ᵡ ˜ Ȁ ╥ Ụ VLAN

mac-address-table move update receive vlan *vlan-range*

ʜ ǰ ᵽ ɻ ʃ ᵻ MAC ᵴ ᵡ ˜ Ȁ ╥ Ụ VLAN

no mac-address-table move update receive vlan *vlan-range*

Õ ʱ ɻ̊ ᵽ ɻ

default mac-address-table move update receive vlan

v ˝Ǫ ᵥ ˝

v ˝Ǫ	ᵚ ᶄ
vlan-range	ʃ ᵻ MAC ᵴ ᵡ ˜ Ȁ ╥ Ụ VLAN„ ḥ

ɻ̊ ᵽ ɻ ѫ ᵑ ᵽ ˝Ȁ õ VLAN ѧ ʃ ᵻ MAC ᵴ ᵡ ˜ Ȁ ╥ Ụ

ᵘ ᵑᵬ ₩ Ã ᵽ ɻ ₩ Ã

ɻ̊ ᵑ¸ 14

Æ ɤ ˝ Ẏ Ṁ ᵑ ᵽ % ᵘ ᵑᵬ ʜ ǰ • Ᵽ VLAN i ʃ ᵻ MAC ᵴ ᵡ ˜ Ȁ ╥ Ụ ɪ Ỉ ʜ ǰ ʃ ᵻ MAC ᵴ ᵡ ˜ Ȁ ╥ Ụ VLAN Ꝁ ɬ ˡ Ꙍ ᵑ ᵽ MAC ᵴ ᵡ ˜ Ȁ ǐ ă ᵖ Õ ʱ i ᶎ ᵮ ᵻ ï ᶎ ɐ ᵱ ɪ Ꮋ ǐ ᶎ ᵾ ᵚ̈ Ƙ ᵚ ᵚ̈ Ǫ ơ ǐ h ᴗ Ꮋ

ᵽ ɻ ᵹ æ 1 χ ᵽ ɻ ʃ ᵻ MAC ᵴ ᵡ ˜ Ȁ ╥ Ụ VLAN

```
Ruijie(config)# mac-address-table move update receive vlan 20
```

ₛ ᶎ Ȁ | 1 χ Æ ɤ **show mac-address-table move update** ᵘ ᵑᵬ ɪ ˡ Ꙍ ˥ ˜ ǐ ᵋ ḡ Ḿ Ẓ vlan ѧ ɛ̆ Ã ì ᵚ MAC ᵴ ᵡ ˜ Ȁ ╥ Ụ Ã ʜ

ᵚ ˜ ʒ Ụ 1 χ ḅ ' vlan† Ã ᵱ ᵡ ᵮ ᵹ ɪ„ ᵚ ˜ ᵮ ᵹ

```
% Invalid input detected at '^' marker
```

2 χ ḅ ' ᵽ ʱ ᵽ ɻ % ᵘ ᵑᵬ ɪ„ Ȁ ᵽ ɻ ḥ ˝ ⊃ õ ᵽ ɻ ɪ ṅ ᵚ ˜ ʒ Ụ

Ẃ ȸ ᵮ ᵹ 1 χ vlan† Ã ᵱ ᵡ ᵮ ᵹ

Ẉ ᴶ ᵥ ˝ -

1.10 switchport backup interface prefer instance

ᴉ ᴉ REUP ⃞ ج ث VLAN ق ذ ج ‘

switchport backup interface *interface-id* **prefer instance** *instance-range*

ᴉ ᴉ REUP ⃞ ج ث VLAN ق ذ ج ‘

no switchport backup interface *interface-id* **prefer**

Õ ᵻ ᴉ ᴉ

default switchport backup interface *interface-id* **prefer**

v ̈Ω ب ̈

v ̈Ω	ὼ ك
interface-id	ᵗ ¥ ج ث ⃞ ᴉ Æ ID
instance-range	ᵗ ¥ ᴉ Æ ق ذ ḫ æ ḫ

ᴉ ᴉ ᴉ ᴉ ùʼ ï ᵗ ¥ ᴉ Æ ≡ ω̃ VLAN ق ذ

ᵘ ᴉ ₩ Ã ì Æ ₩ Ã

ᴉ ᴉ 14

Æ ᵓ ̈Y Ṁ ᴉ Ɑ ن ص MSTP ⃞ ḫ æ ī ṃ ı ḯ ᴾ Ӣ ὼ ḫ æ ⁼ VLAN ⃞ Ḿ Ẕ ᴉ ᴉ

ᴉ ᴉ ᴉ æ 1 χ ᵠ ᴉ Ѧ ᴉ ج ث ᵗ ¥ vlan ق ذ ج ‘

ᴈ ᴅ ᴇ ᵗ ᵗ ᴇ ᵗ ᴉ

no link state track [*num*]

Ỡ ᵻ ᴉ̀ ᴉ

default link state track [*num*]

ν ̈Ω ᴗ ̈

ν ̈Ω	ὼ ᵗ
num	ᴇ ᵗ ᵗ ᴉ ᴉ ID

ᴉ̀ ᴉ

ᴈ ᴅ ᴇ ᵗ ᴉ ᴇ ᵗ ᴉ

ᵘ ᴉ ₩ Ã

ᴉ̀ ᴉ

14

Æ ᴉ ̈Y Ṁ

ọ ᵉ ₰ ᵃ ᴇ ᵗ ᵗ ᴉ ᴉ ᵻ ᵃ ᵉ ́ ́ Ṅ ᴉ Æ ᴉ ʒ ̈Y ḧ ᵗ ᴉ

ᴉ ᴉ ᵹ æ

1 χ ᵃ ᴇ ᵗ ᴉ ᴇ ᵗ ᴉ

```
Ruijie(config)# link state track 1
```

ᵹ ᴇ Á |

1 χ Æ ᴉ **show link state group** ᵘ ᴉ ᴉ ᴉ ᴉ ̈ ᴇ ᵗ ᴉ ᴇ ᵗ ᴉ

ώ ̃ ʒ Ụ

-

Ẃ ᵹ ᴇ ᵹ

-

Ẉ ᴶ ᴗ ̈

-

1.12 link state group

v ̈Ω ب ̈

v ̈Ω	ὼ ك
num	ج ٺ ↑ ỗ ˁ ٿ ⅃ ID
upstream	ب ⅃ أ ⅄ Æ ĩ ˁ ٿ ⅃ ⅄ ⃠ i ▫ Æ
downstream	ب ⅃ أ ⅄ Æ ĩ ˁ ٿ ⅃ ⅄ ⃠ ï ▫ Æ

⅃ ب ⅃ ɯ ɲ ⅄ Æ j h ɾ ʒ γ Ṃ ⃠ ˁ ٿ ⅃

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

⅃ ⅄ ̣ 14

Æ ɾ ̈Y Ṁ ọ ء ⅄ ̣ ã ج ٺ ˁ ٿ ⅃ ı ɬ ª ɛ́ ĩ́ Ṅ ⅄ Æ ɾ ʒ ̈Y ḧ ⃠ ˁ ٿ ⅃

ب ⅃ ǯ æ 1 χ ̈H ⅄ Æ fa 0/2 9 0 04091901AE7f136D612T0.553 0 [<46B050604BF168F0B650AE80>-7<AE60AED09am

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

ᵕ ᵢ ᵡ̌ æ

1 χ ᵗ ˜ ᵍ ᵡ ˜ ᵃ ᵢ ᵡ ᵘ

```
Ruijie # configure terminal
Ruijie (config)# mac-address-table move update receive
Ruijie (config)# interface range gigabitEthernet 0/1-2
Ruijie (config-if-range)# mac-address-table update group
Ruijie (config-if-range)# end
Ruijie # show mac-address-table update group
Mac-address-table Update Group:1
Member:Gi0/1, Gi0/2
Ruijie # show mac-address-table update group detail
Mac-address-table Update Group:1
Received mac-address-table update message count:0
Group member         Receive Count    Last Receive Switch-ID       Receive Time
-------------------------------------------------------------------------------------------
Gi0/1                0                Operation not permitted
Gi0/2                0                Operation not permitted
```

ώ˜ ᵡ ᵘ -

ᵂ ᵈ ᵇ ˝ -

1.15 show mac-address-table move update

ᵗ ˜ ᵛ ᵃ ʌ ᵍ̆ MAC ᵍ ᵡ ˜ ᵃ ᵀ ᵘ ᵒᵇᵒᵇ ʌ ᵍ̆ ᵒᵇ ᵢ ᵂ ᵘ̀

show mac-address-table move update

ᵛ ˝ᵠ ᵇ ˝

ᵛ ˝ᵠ	ὼ ᵏ

ᵘ ᵑ ᵂ ᵃ̃ ᵉ ᵂ ᵃ̃ ᵊ ᵖ́ ᵂ ᵃ̃ ᵢ ᵃ ᵂ ᵃ̃

ᵢ̀ ᵢ ᵛ ᵢ̣ 14

ᵃ ᵊ ˝ᵞ ᵐ ᵃ ᵊ ᵃ ᵒ ᵗ ˜ REUP ᵐ́ ᵒᵇ ᵖ ᵃ ᵛ ᵃ ᵒᵇ ʌ ᵍ̆ MAC ᵍ ᵡ ˜ ᵃ ᵀ ᵘ ᵒᵇ ᵢ ᵂ ᵘ̀

ᵕ ᵢ ᵡ̌ æ 1 χ ᵗ ˜ ᵛ ᵃ ʌ ᵍ̆ MAC

```
Receive:disable
Max-update-rate:150
Receive vlan:1-4094

Pair: Ag1,Ag2
Members             Status    Transit Count    Transit VLAN   Last Transit Time
-------------------------------------------------------------------------------------------
Ag1                 Down      0
Ag2                 Down      0
Pair: Ag3,Gi0/6
Members             Status    Transit Count    Transit VLAN   Last Transit Time
-------------------------------------------------------------------------------------------
Ag3                 Down      0
Gi0/6               Down      0
Pair: Gi0/1,Gi0/2
Members             Status    Transit Count    Transit VLAN   Last Transit Time
-------------------------------------------------------------------------------------------
Gi0/1               Up        0
Gi0/2               Standby   0
```

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

1.16 show link state group

Ĭ ˜ ج ٺ ↑ ȫ ˂ ٿ ⅃ ⃞ ʒ Ụ

show link state group

ν ˝Ǫ ب ˝

ν ˝Ǫ	ὼ ڭ
-	-

ᵘ ҧ ₩ Ã ⸗ ₩ Ã ʒ ṕ ₩ Ã ì Æ ₩ Ã

ᴉ ⅃ ̣ 14

Æ ɤ ˝ Y Ṁ Æ ɤ Í ᵘ ҧ ᴵ Ǫ ̣ ˜ ϕ ʈ i ب ⅃ ⃞ ج ٺ ˂ ٿ ⅃ ʒ Ụ

ᴉ ᴊ ᶑ æ

1χ ǐ ˜ ج ᵗ ᵗ ᵒ̃ ᵉ ᵗ ᴊ

```
Ruijie # show link state group
Link State Group:1  Status: Enabled, UP
Upstream Interfaces :Gi0/1(Up)
Downstream Interfaces :Gi0/3(Dwn), Gi0/4(Dwn)
Link State Group:2  Status: Disabled, Down
Upstream Interfaces :
Downstream Interfaces :
(Up):Interface up (Dwn):Interface Down (Dis):Interface disabled
```

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

2 RLDP

ᵘ ᵑᵬ	Ă ɾ
rldp detect-interval	ᵽ ɻ rldp ή ╨ ᾽H ɀ ɀ ڭ
rldp detect-max	ᵽ ɻ rldp ѡ ᶻ ή ╨ Ҝ ̋Ѯ
rldp enable	ᵽ ɻ Æ ǐ rldp
rldp neighbot-negotiation	ᵽ ɻ Æ ǐ rldp ʌ ṕ ʁ ƀ
rldp port	ᵽ ɻ rldp ₅ ╨ ɻ ʒ Ѡ ȝ ѿ ڏ ʃ ת Ä Ã
rldp reset	Õ ʯ rldp ₅ ╨ ѿ ڏ ɻ Æ ↑ ő
show rldp	Ǐ ˜ rldp ↑ ő ̋Ѯ ʒ Ụ

2.1 rldp detect-interval

Æ ɾ Ĵ ᵘ ᵑᵬᵽ ɻ RLDP ƍ ɻ Æ i ʌ ゲ ǐ ă ɀ ڭ

rldp detect-interval *interval*

Õ ʯ ȷ̀ ᵽ ɻ

no rldp detect-interval

Õ ʯ ȷ̀ ᵽ ɻ

default rldp detect-interval

v ̋Ѯ ᵽ ˝

v ̋Ѯ	ѡ ك
interval	᾽H ɀ ɀ ڭ ı ɒ ʮ ʬ s ı ‟ ƍ 2s-15s

ȷ̀ ᵽ ɻ 3

ᵘ ᵑᵬ ₩ Ã ২ ṕ ₩ Ã

ȷ̀ ɻ̣ 14

ᵘ ᵑᵬ ₩ Ã ২ ṕ ₩ Ã

Æ ɾ ˝ Y Ṁ ؛ Ḿ Prob ⁼ Loop ɻ ʒ ï ă ı ѯ ƀ ' ĩ ƍ Â ᵏ ˜ stp ʏ ᶫ ï ı ấ ɒ Ф ɻ ε ɀ ڭ Ö ѡ ᶻ ή ╨ Ҝ ̋Ѯ ζ+1 ᵅ ệ ˙ Ở ᾽H ɀ ɳ̂ ̣ stp ȍ ɛ ѡ ̋Ѯ ᾽H ɀ

ᵽ ɻ ʓ æ 1 χ ᵽ ɻ ή ╨ ɀ ڭ ʬ 5s χ

```
Ruijie(config)# rldp detect-interval 5
```

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

2.2 rldp detect-max

ɭ̌ ɻ ɻ	ʜ ɔ̌ ʌ ṗ ʙ ƀ ɪ ɪ̋
ᵘ ɲ ₩ Ã	ʒ ṕ ɻ ɻ ₩ Ã
ɭ̌ ɿ̣	14
Æ ɿ ˝ Y Ṁ	ʙ ƀ ɪ ɪ̋ ᵏ ɿ ᵃ ɪ ᶠ Æ ï ᴅ ᵇ ǎ̃ ǎ̈ ᴥ ᵇ ج ٺ ⁅ ⁆ ᵇ ⁅ ⁆ ᵏ ʊ ə ˂ ⁅ ʌ ṗ ʙ ƀ ǎ ɪ ɪ ʙ ƀ ص ᴵ ʌ ḅ ' ǎ ɪ ì ẉ̇ ʌ ṗ ʌ گ ⁅ Prob ï ǎ ö ɲ ʞ ʙ ƀ ǎ ɪ
ɻ ɻ ǯ æ	ɻ ɻ RLDP

ɹ̀ ɹ̣ ɹ	≡ ω̃ γ Μ̧ ₅ ⅃ ɿ ʒ
ᵘ ɲ ₩ Ã	ì ᴬ ɹ̣ ɹ ₩ Ã
ɹ̀ ɿ̣	14
Æ ɾ̀ ˝ Y Ṁ	2 Ṗ Γ ˝ Ω ᴬ o¬ Þ . ´ ðo-

Æ ɒ	14	ǎ	ʾ æ	Ɑ

8ᒣ ::: `ƀÕúÐ.

Ẃ ð ج ئ -

Ẉ ᴶ ب ˝

2.7 show rldp

Ĭ ˜ RLDP ѧ ƨ ṕ ᴵ Æ Ɋ ʒ ʌ ṗ ᴵ ˝Ɋ̣ ˜Ω ʒ Ụ

show rldp [**interface** *interface-name*]

v ˝Ɋ̣ ب ˝

v ˝Ɋ̣	ὼ ك
interface-name	RLDP ᴵ Æ

ᴶ ب ᴶ -

ᵘ ɲ ₩ Ã ⸗ ₩ Ã

ᴶ ᴵ ̣ 2

Æ ᵊ ˝Y Ṁ ˝Y ḧ ᴵ Æ ᵋ ᴵ ı ᵊ Ɋ Ĭ ˜ ⸗ ḧ ᴵ Æ i ⸢⸣ RLDP ↑ ỗ ˝Ɋ̣ ˜Ω ʒ Ụ

ب ᴶ ǯ æ æ 1 χ Ĭ ˜ RLDP ↑ ỗ ˝Ɋ̣ ˜Ω ʒ Ụ χ

```
Ruijie#show rldp
rldp state         : disable
rldp hello interval: 3
rldp max hello     : 2
rldp local bridge  : 00d0.f822.37da
-----------------------------------
GigabitEthernet 0/1
port state      : normal
neighbor bridge : 0000.0000.0000
neighbor port   :
unidirection detect information:
     action: shutdown-port
     state : normal
bidirection detect information:
     action: shutdown-port
     state : normal
loop detect information:
     action: shutdown-port
     state : normal
```

æ 2 χ Ĭ ˜ ˥ Æ GigabitEthernet 0/1 ⅰ Ä ω̃ ˘ ⅃ ᴾ ⌧ ᴗ ⅃ ʒ Ụ χ

```
Ruijie#show rldp interface GigabitEthernet 0/1
port state      : normal
local bridge    : 00d0.f822.37da
neighbor bridge : 00d0.f823.37db
neighbor port   : GigabitEthernet 0/1
unidirection detect information:
     action: shutdown-port
     state : normal
bidirection detect information:
     action: shutdown-port
     state : normal
loop detect information:
     action: shutdown-port
     state : normal
```

Ȅ ⅃	ᴗ ˝
port state	˥ Æ Ẹ˙ ↑ ȫ χ ˥ ĩ* Ẃ ↑ ȫ ⅰ Ĭ ˜ ѭ normal ψ ˥ ĩ ᾤ ⱡ ↑ ȫ ⅰ Ĭ ˜ ѭ error
llocal bridge	ʂ ˥ ⅃ MAC ʂ ɣ ⅰ ⱡ ⱡ ʕ ʂ ⱡ ʎ ⅃ ⱡ ʕ
neighbor bridge	ʎ ⅃ ˥ ⅃ MAC ʂ ɣ ⅰ ⱡ ⱡ ʕ ʂ ⱡ ʎ ⅃ ⱡ ʕ
action	₅ ⅃ ˥ ʒ Ḿ Ẓ ⌧ ᾤ ⱡ ʃ ⱡ Ά Ã̄

3 DLDP

ᵘ ҧ	Ă ᵢ̀
clear dldp	▌ ᵹ DLDP ᴿ ᴬ ˘ ⅃ ᴾ ᴬ ᴴ ̑ ̑ up/down ᴷ ̈Ω̣ ⁄ ɰ ʒ Ụ
dldp	Ȁ ᵏ DLDP ₅ ⅃ ı ΐ
dldp passive	ᶲ ⅃ DLDP ₅ ⅃ ₩ Ã ᴉ ɋ ʊ ₩ Ã
dldp interval	ᶲ ⅃ ̈A ω̃ DLDP ₅ ⅃ ⁄ ή ⅃ ᵹ ڭ ̀H ᵹ
dldp retry	ᶲ ⅃ ̈A ω̃ DLDP ₅ ⅃ ⁄ ᵉ ᴷ ̈Ω̣
dldp resume	ᶲ ⅃ ̈A ω̃ DLDP ₅ ⅃ ⁄ ᵹ ᵗ Õ ᵻ ᴷ ̈Ω̣

show dldp

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

1.2 dldp

Ã ᵏ DLDP ₅ ╨ ı ſ ɤ Ά ı Ɯ Æ ɤ Ĵ ᵘ ᵑᵬ no Ǯ ° ԉ ɮ ˝ Y ḧ IP DLDP ₅ ╨ ı ſ

dldp *ip-address* [*next-hop-ip*] [**mac-address** mac-addr] [**interval** *tick* | **retry** *retry-num* | **resume** *resume-num*]

no dldp *ip-address*

ν ˝Ọ ب ˝

ν ˝Ọ	ώ ك
ip-address	ɑ ₅ ╨ Ḿ ৭ ֆ ᵎ IP ʂ ɣ
next-hop-ip	␡ ɑ ₅ ╨ Ḿ ৭ ֆ ᵎ ؆ ت ﻝ ﻩ ı ɤ Ɯ ˝ Y ḧ ï ب IP ʂ ɣ
mac-address mac-addr	ﻝ ḧ MAC ʂ ɣ ı ␡ è ɲ ï ب IP ʂ ɣ ı ¸ ب ﻝ ĩ ï ب ֆ ᵎ MAC ʂ ɣ
interval *tick*	ή ╨ ڑ ڭ ̀H ڑ ᵑ Ë ¸ ɲ 5~6000 ı ɒ ɥ ʁ tick ı ọ ɾ ʁ 5 Ọ ˝ Ọ Й ε 1tick= 10ms ζ
retry *retry-num*	ب ҽ Ӄ ˝ Ọ ı Ĵ ν ˝ Ọ ¸ ɲ 1~3600
resume *resume-num*	Ḿ Ẓ ɑ ₅ ╨ Ḿ ৭ ֆ ᵎ ڃ ت Õ ᵚ Ӄ ˝ Ọ ı Ĵ Ӄ ˝ Ọ ֆ ﻝ ڃ ت ɤ DOWN ↑ ő Ψ ʁ UP ˙ ı ﺍ ļ ώ ˙ ف ﻥ DLDP ₅ ╨ ï ă Ⱥ ˝ Ọ ı Ĵ ν ˝ Ọ ¸ ɲ 1~200

ﻉ ب ﻝ tick ʁ 100tick ε 1s ζ ı retry-num ʁ 4 Ӄ ı resume-num ʁ 3 Ⱥ

ᵘ ᵑᵬ ₩ Ã ì Æ ب ﻝ ₩ Ã

ﻉ ৭ ˳ 14

Æ ɤ ˝ Y Ṁ ڼ ص ب ﻝ ᵘ ᵑᵬ ᵏ ʊ DLDP ₅ ╨ ı ſ ı ᵎ Ɯ ḫ ɤ Ḿ Ɯ ᶿ ﻝ ڃ ت ώ ڭ ð ﻫ ₅ ╨ Ⱥ s Ṗ ì Æ ï ı DLDP ᵎ Ɯ ب ﻝ ^ Ⱥ IP ₅ ╨ ı Ę ˝ Ⱥ õ IP ʠ u ≡ õ ICMP ᵠ Ẓ ̀H ı ė ɲ ʁ ì Æ DOWN ψ ă ñ õ Ⱥ IP Õ ᵚ ڼ g ı ¸ ɲ ʁ ì Æ Õ ᵚ UP

ب ﻝ ʒ æ æ 1 χ Ã ᵏ Ḿ ֆ ᵎ 10.83.132.10 DLDP ₅ ╨ ı ſ χ

```
Ruijie#config
Ruijie(config)#interface vlan 1
Ruijie(config-if-VLAN 1)#ip address 10.83.132.1 255.255.255.0
Ruijie(config-if-VLAN 1)#dldp 10.83.131.10 10.83.132.2
```

æ 3 χ ʁ ὃ Ḿ ֆ ᵎ 10.83.132.10 ⿲ DLDP ₅ ⅄ ı ť χ

```
Ruijie#config
Ruijie(config)#interface vlan 1
Ruijie(config-if-VLAN 1)#no dldp 10.83.132.10
```

ώ˜ ʒ Ụ -

Ẃ ȣ ჯ ئ -

Ẉ ᴶ ب ˝ -

1.3 dldp passive

ֆ ⅃ DLDP ₅ ⅄ ₩ Ã ʁ ą ʊ ₩ Ã ɤ Ä ᵎ Ɯ Æ ɤ Í ᵘ ᵑᵬ no J̌ ° Õ ʊ ǰ ₅ ⅄ ₩ Ã

dldp passive

no dldp passive

v Ӫ ب ˝

v Ӫ	ὼ ك
-	-

ǰ ب ⅃ ʓ ʊ ₩ Ã

ᵘ ᵑᵬ ₩ Ã ì Æ ب ⅃ ₩ Ã

ǰ ٧ 14

Æ ɤ Ӫ Ẏ Ṁ ŋ Ꮳ ⅃ ᛖ ʌ ı ḅ ' ь ٧ ֆ ᵎ ֍ ŭ ě Ã DLDP ı ᵑ ص ь ٧ Ѝ ɲ ʌ ICMP Echo ⁋ ŋ א ᵑ ت ₅ ⅄ ı ف ʌ Ä Ã è ḡ ^ ɱ ᵽ ʰ ⿲ ĭ ă ŋ Ꮳ ʌ ᴱ ļ õ ٧ ֆ ᵎ Æ ɤ ICMP Echo ʌ ʏ ı ᴰ ٧ ɤ ª ¯ ⿲ ₅ ⅄ v Ӫ ⁋ . ɲ ĭ ă ⿲ ȝ ᵑH ᵎ ڑ ı ŏ ᵎ Ɯ ŋ א ᵼ Ä ֆ ᵎ ₅ ⅄ ჯ ت ᵑ ت ⿲ ώ ' ı Ẋ ħ Ĉ ˜ ˝ Ṿ Ḳ ° ◊ ⁼ ֆ ᵎ ҧ %”ož

```
Ruijie(config)#interface vlan 1
Ruijie(config-if-VLAN 1)#ip address 10.83.132.1 255.255.255.0
Ruijie(config-if-VLAN 1)#dldp passive
```

ώ˜ ʒ Ụ -

Ẃ ð ჹ ئ -

Ẉ ᴶ ب ˝ -

1.4 dldp interval

Ф ɹ ¨A õ DLDP ₅ ╨ ㉿ ή ╨ ژ ڭ ̀H ژ ŕ ¨A ˡ Œ Æ ŕ Í ᵘ ɲ ㉿ no J̌ ° Õ ʉ ɻ ₅ ╨ ₩ Ã

dldp interval *tick*

no dldp interval

v ¨Ọ ب ˝

v ¨Ọ	ώ ڭ
tick	ή ╨ ژ ڭ ̀H ژ ɲ Ө ‟ ƀ 5~6000 ıɒ ɥ ㎞ tick ıọ ɛ ㎞ 5 ㉿ Ẅ Ọ ¨Ọ Й ε 1tick= 10ms ζ

ɻ ب ɹ tick ㎞ 100 ε 1s ζ

ᵘ ɲ ₩ Ã ᵓ ṕ ب ɹ ₩ Ã

ɻ ۱ ̣ 14

Æ ŕ ¨Y Ṁ ƍ ɳ ჭ Ƶ ŕ ʁ ı ƀ ' ₄ ɻ Ḿ ¨A õ DLDP ₅ ╨ ㉿ ή ╨ ژ ڭ ̀H ژ ف Φ Ф ɹ ı ‟ ˡ Æ ŕ Í ᵘ ɲ ȏ ȣ ı ѿ

Ẹ ɹ ᴎ Ф ᵻ ƍ ɒ ₅ ╨ ï ă ㉿ ʌ ჭ ژ ڭ ƃ Ö ɒ ڀ e Ҝ ¨Ọ ƃ ㉿ ̀H ژ ᵕ Ω ɲ ≡ õ ώ ̇ Ḿ ۱ ㉿ Ƶ ۱ ï ă ı ‟ ɲ ㎞ s

Ṗ ì Æ DOWN ε ƍ ჭ ɾ ת ج ب ف ĩ ف ڼ ㉿ ζ ñ Õ ʉ * Ẃ ڼ g ı ‟ s Ṗ ì Æ UP

ب ɹ ʒ æ ب ɹ DLDP ₅ ╨ ㉿ ή ╨ ژ ڭ ̀H ژ χ

```
Ruijie#config
Ruijie(config)#dldp interval 20
```

ώ˜ ʒ Ụ -

Ẃ ð ჹ ئ -

Ẉ ᴶ ب ˇ -

1.5 dldp retry

ɸ ㇷ ˝A ω DLDP ₅ ㇾ ▯ۍ ҽ Ҝ ˝Ω ɾ ˝A ˡ Ɯ Æ ɾ Í ᵘ ɲ▯ no J̌ ° Õ ʱ ㇷ ₅ ㇾ ₩ Ã

dldp retry *retry-num*

no dldp retry

v ˝Ω ب ˇ	v ˝Ω	ώ ڭ
	retry-num	ۍ ҽ Ҝ ˝Ω ı Í v ˝Ω ₎ ƍ 1~3600

ㇷ ب ㇷ retry-num ㎞ 4 Ҝ

ᵘ ɲ ₩ Ã ২ ṕ ب ㇷ ₩ Ã

ㇷ ۱ 14

Æ ɾ ˝Y Ṁ ƍ ɳ ڰ Ƶ ɾ ѧ ı ḅ ' ₄ ļ Ḿ ˝A ω DLDP ₅ ㇾ ▯ۍ ҽ Ҝ ˝Ω ڤ Φ ɸ ㇷ ı ¸ ˡ Æ ɾ Í ᵘ ɲ ồ ѧ ı ۏ̃

ب ㇷ ڗ æ ب ㇷ DLDP ₅ ㇾ ▯ή ㇾ ڑ ڭ `H ڑ χ

```
Ruijie#config
Ruijie(config)#dldp retry 4
```

ώ˜ ʒ Ụ -

Ẃ ð ڃ ئ -

Ẉ ᴶ ب ˇ -

1.6 dldp resume

ɸ ㇷ ˝A ω DLDP ₅ ㇾ ▯ڃ ث Õ ʱ Ҝ ˝Ω ɾ ˝A ˡ Ɯ Æ ɾ Í ᵘ ɲ▯ no J̌ ° Õ ʱ ㇷ ₅ ㇾ ₩ Ã

dldp resume *resume-num*

no dldp resume

v ˝Ω ب ˇ	v ˝Ω	ώ ڭ
	resume-num	Ḿ Ƶ ɋ ₅ ㇾ Ḿ ۱ ɸ ᵻ ▯ڃ ث Õ ʱ Ҝ ˝Ω ı Í Ҝ ˝Ω ɸ ㇷ ڃ ث ҡ DOWN ᵀ ő Ψ ㎞ UP ˙ ı ₄ ļ ώ˙ ف ㅅ▯ DLDP ₅ ㇾ ï ă Ѧ ˝Ω ı Í v ˝Ω ₎ ƍ 1~200

ᶻ ᵖ ᶻ	resume-num ᵏᵐ 3 ᴬ
ᵘ ᵑ ₩ Ã	ᵊ ṕ ᵖ ᶻ ₩ Ã
ᶻ ᴬ ̣	14
Æ ᵊ ˝Y Ṁ	ᵖ ḫ ڭ Ẕ ᵊ ᴬ ᵢ ḅ ' ᵣ ᵢ Ḿ ˝A ω̃ DLDP ₅ ╝ ⌧ ج ᵗ Õ ᵘ ᴷ ˝Ω ڤ Φ ᶲ ᶻ ᵢ ̤ ᵢ Æ ᵊ ᶠ ᵘ ᵑ ȍ ᵃ ᵢ ᶲ̃
ᵖ ᶻ ᶻ æ	ᵖ ᶻ DLDP ₅ ╝ ⌧ ή ╝ ᵊ ڭ ̀H ᵊ χ

```
Ruijie#config
Ruijie(config)#dldp resume 4
```

ώ˜ ʒ Ụ	-
Ẃ ȯ ᵹ ئ	-
Ẉ ᵘ ᵇ ˝	

1.70030055004D6EA1 C 1 8B0 Tc T§.807 0 Td()TjC2_0 -126B4609E5TjTT04

```
Interface  Type        Ip        Next-hop    Interval  Retry  Resume  State
---------  -------  -----------  -----------  --------  -----  ------  ------
Vl2        Passive  192.168.6.3  192.168.2.2  10        5      3       Up
Vl3        Passive  192.168.7.3               10        5      3       Up
Vl4        Passive  192.168.3.3  192.168.4.2  10        5      3       Up
```

æ 2 χ Ĭ ˜ s Ṗ ì Æ vlan 2 i ̈A ω̃ ˘ ⅃ ᴾ ⃞ ᴾ ᴧ ʒ Ụ χ

```
Ruijie#show dldp intface vlan2
Interface  Type        Ip        Next-hop    Interval  Retry  Resume  State
---------  -------  -----------  -----------  --------  -----  ------  ------
Vl2        Passive  192.168.6.3  192.168.2.2  10        5      3       Up
```

æ 3 χ Ĭ ˜ ̈A ω̃ ˘ ⅃ ᴾ ⃞ ᴧ ɰ ʒ Ụ χ

```
Ruijie#show dldp statistic
Interface  Type        Ip        record-time  Up-count  Down-count
---------  -------  -----------  -----------  --------  ----------
Vl2        Passive  192.168.6.3  2h34m5s      10        9
Vl4        Passive  192.168.3.3  1d2h3m52s    10        9
```

æ 4 χ Ĭ ˜ s Ṗ ì Æ vlan 2 i ̈A ω̃ ˘ ⅃ ᴾ ⃞ ᴧ ɰ ʒ Ụ χ

```
Ruijie#show dldp statistic interface vlan 2
Interface  Type        Ip        record-time  Up-count  Down-count
---------  -------  -----------  -----------  --------  ----------
Vl2        Passive  192.168.6.3  2h34m5s      10        9
```

Ȅ ᴧ	ب ̈
	أ ʒ Ụ ˊ ˜ ⃞ ᴧ ɰ up/down
record-time	

4 BFD

ᵘ ҧ	Ă ɾ̀
bfd	ɹ ɸ BFD v ̋Ǫ
bfd bind peer-ip	ɹ ɸ BFD ҧ s Ṗ ì Æ ǐ ʊ
bfd slow-timer	ɹ ɸ BFD ỹ ھ í ˙ ǐ ă ʌ گ ̆ ̆ Ǫ
show bfd neighbors	Ĭ ˜ BFD h ʕ ʒ Ụ

4.1 bfd

ɹ ɸ BFD h ʕ ⌧ v ̋Ǫ

bfd interval *milliseconds* **min_rx** *milliseconds* **multiplier** *multiplier-value*

ڻ BFD h ʕ v ̋Ǫ

no bfd interval

v ̋Ǫ ب ˝	v ̋Ǫ	ὼ ك

interval *milliseconds*

```
Ruijie(config)# interface gigabitEthernet 0/2
Ruijie(config-if)# no switchport(ٺ ˨ ᴴ i ŋ̀ % ᵘ ҧ ı ˡ ȯ̌ צ)
Ruijie(config-if)# bfd interval 100 min_rx 100 multiplier 3
```

5 ج Ά | -

ώ˜ ʒ Ụ 1 χ ḅ ' أ ᵘ ҧ ب ɹ ɲ ˚ s Ṗ Æ i ı ب ɹ, م ı ώ˜ χ

```
this must configed on l3 interface.
```

2 χ ḅ ' أ ᵘ ҧ ب ɹ ɲ L3 AP Æ i ı ب ɹ, م ı ώ˜ χ

```
this can not be configed on aggregateport.
```

3 χ ḅ ' ب ɹ أ ᵘ ҧ Ḣ ı, א ɲ ȅ j ' ı ب ɹ, م ı ώ˜ χ

```
no enough memory for this config.
```

4 χ ḅ ' ب ɹ أ ᵘ ҧ Ḣ ı ì Æ ɬ ٺ Ṿ Ḵ j ' ı ب ɹ, م ı ώ˜ χ

```
no enough bandwidth for this config.
```

Ẃ ð ج ئ -

Ẉ ᴶ ب ˝ -

4.2 bfd bind peer-ip

ấ ˥ ˦ ⊃ أ ì Æ ˆ ȫ ȉ ʊ 08 bfd h ؟

bfd bind peer-ip *ip-address* [**source-ip** *ip-address*] **process-pst**

Ṅ h ؟ ̤ ڻ

no bfd bind peer-ip *ip-address*

v ˝Ǫ ب ˝

v ˝Ǫ	ὼ ك
peer-ip *ip-address*	⅄ ⌊ 5 ⅃ 08 Ḿ ˥ IP ş χ ı ọ ء ѭ ˝A ب ɹ 08 s Ṗ ì Æ 08 ´ ف ş χ

ȷ̂ ∩̣ 14

Æ ɪ ″ YṀ ọ ɛ ƥ s Ṗ ì Æ ï ᵽ ɹ ı ħ ₅ ⅄ peer-ip ᵮ ì Æ´ ف ş ɣ

ᵽ ɹ ʒ̈ æ 1 χ ᵽ ɹ ƥ routed port ï ᵑ ص BFD ₅ ⅄ Ḿ ヿ 1.1.1.2 ı ă̈ ɾ ɨ ì Æ BFD ↑ ő

```
Ruijie(config)# interface gigabitEthernet 0/2
Ruijie(config-if –GigabitEthernet 0/2)#no sw(ت ᵸ ʜ i ṇ % ᵘ ᵬ ı ˡ ỏ ɀ)
Ruijie(config-if –GigabitEthernet 0/2)#ip address 1.1.1.1 255.255.255.0
Ruijie(config-if –GigabitEthernet 0/2)#bfd bind peer-ip 1.1.1.2 source-ip 1.1.1.1 process-pst
```

₅ ⇂ Ä | -

ώ˜ ʒ Ụ 1 χ ḅ ' Ĭ ᵘ ᵬ ᵽ ɹ ƥ ˚ s Ṗ Æ i ı ᵽ ɹ, م ı ώ˜ χ

```
this must configed on l3 interface.
```

2 χ ḅ ' Ĭ ᵘ ᵬ ᵽ ɹ ƥ L3 AP Æ i ı ᵽ ɹ, م ı ώ˜ χ

```
this can not be configed on aggregateport.
```

3 χ ḅ ' ᵽ ɹ Ĭ ᵘ ᵬ ᵑH ı ¸ א ɲ è j ’ ı ᵽ ɹ, م ı ώ˜ χ

```
no enough memory for this config.
```

Ẃ ȸ ᶎ ȿ -

Ẉ ᴶ ᵬ ″ -

4.3 bfd slow-timer

ᵽ ɹ BFD ƥ ᵏ ɾ echo ı ť ᵅ ı ỹ ⱨ ḧ ᵑH ⅄ H ɾ ı Ĭ ᵑH ɾ ᵶ BFD ã ℓ ₩ Ã ∧ ゲ BFD í ¨ ï ă

bfd slow-timer [*milliseconds*]

Õ ʰ ȷ̂ ë

no bfd slow-timer

v ″ Ω ᵬ ″	v ″ Ω	ώ ك
	milliseconds	BFD ⅄ ỹ ⱨ ḧ ᵑH ʰ ᵑH ɾ ı ɒ ɥ ᵮ ← ヿ ˡ ᵽ ɹ ₙ ƫ ʁ 1000 ˙

ǰ ˥. 14

Æ ŧ ˝YṀ -

ب˩ ʖ æ 1 χ ب˩ slow-timer ᵚ 14000 ← ˥

```
Ruijie(config)# bfd slow-timer 14000
```

ₛ ᴈ Ä | -

ώ˜ ʒ Ụ -

Ẃ ȸ ᵹ ʂ -

Ẉ ᴶ ب ˝ -

4.4 show bfd neighbors

Ǐ˜ BFD ɦ ʕ ʒ Ụ

show bfd neighbors [**client** { **ap** | **static-route** | **pst** }] [**ipv4** *ip-addess*] [**details**]

v ˝Ọب ˝

v ˝Ọ	ώ ك
client	˝Y ḧ Ẕ ŧ ʁ ɲ Ǐ˜ ı ǰ Ǐ˜ ˝A ῶ Ẕ ŧ ʁ ɲ
ap	˝Y ḧ Ǐ˜ L3AP ă ᶺ Æ ǐ ʊ BFD ɦ ʕ ʒ Ụ
static-route	˝Y ḧ Ǐ˜ StaticRoute ǐ ʊ BFD ɦ ʕ ʒ Ụ
pst	˝Y ḧ Ǐ˜ s Ṗ ì Æ ↑ ő ⁼ BFD ǐ ʊ ɦ ʕ ʒ Ụ
ipv4 *ip-addess*	˝Y ḧ Ǐ˜ IPv4 ≠ ḧ ɦ ʕ ɦ ʕ ʒ Ụ ı ǰ Ǐ˜ ˝A ῶ ɦ ʕ ɦ ʕ ʒ Ụ
details	ᵩ ˩ Ǐ˜ ı ǰ ˥ ɻ Ǐ˜

ᵘ ɲ ₩ Ã ≠ ₩ Ã

ǰ ˥. 1

Æ ŧ ˝YṀ ᵽ **show bfd neighbors** ᵘ ɲ Ǐ˜ ʒ Ụ ʌ ı OurAddr ˊ˜ ɦ ʕ ◊ ş χ ı Ę Ǐ˜ ᵚ ɒ ɋ ɓ Ḥ ˊ˜ ˙ ˝Y ḧ ◊ ş χ

ب˩ ʖ æ 1 χ ¨E Φ **show bfd neighbors** ᵘ ɲ Ǐ˜ ḅ ï χ

```
Ruijie#sh bfd neighbors
IPV4 sessions: 1, UP: 1
OurAddr         NeighAddr       LD/RD         RH/RS    Holdown(mult)   State   Int
192.168.24.2    192.168.24.1    8192/8192      Up       0(3    )        Up      GigabitEthernet 0/1
```

2 χ ¨E Φ **show bfd neighbors detail** ᵘ ɲ Ǐ˜ ḅ ï χ

```
Ruijie#sh bfd neighbors
IPV4 sessions: 1, UP: 1
OurAddr        NeighAddr      LD/RD       RH/RS    Holdown(mult)  State  Int
192.168.24.2   192.168.24.1   8192/8192    Up      0(3   )        Up     GigabitEthernet 0/1
Session state is Up and using echo function with 50 ms interval.
Local Diag:   0,        Demand mode:   0,       Poll bit:   0
MinTxInt: 3000000,          MinRxInt: 3000000,          Multiplier:   3
Received MinRxInt 3000000, Multiplier: 3
Holdown (hits): 9000(0), Hello (hits): 3000(36)
Rx Count: 127, Rx Interval (ms) min/max/avg: 40/999/999
Tx Count: 135, Tx Interval (ms) min/max/avg: 1000/1000/999
Registered protocols: VRRP
Uptime: 0:01:19
Last packet:
 Version          :         1                 - Diagnostic     : 0
 State bit        :        Up                 - Demand bit     : 0
 Poll bit         :         0                 - Final bit      : 0
 Multplier        :         3                 - Length         : 24
 My Discr         :      8192                 - Your Discr     : 8192
 Min tx interval  :   3000000                 - Min rx interval: 3000000
 Min Echo interval:     50000
```

3 χ ̈ΕΦ **show bfd neighbors client ap** ᵘ ҧ Ĭ ˜ ḅ ï χ

```
Ruijie#show bfd neighbors client ap
IPV4 sessions: 1, UP: 0
OurAddr        NeighAddr       LD/RD      RH/RS   Holdown(mult) State  Int
192.168.23.1   192.168.23.2    8192/0    Admin    0(3   )       Down   GigabitEthernet 0/2 (AP 1)
OurAddr       NeighAddr     LD/RD  RH/RS  Holdown(mult)  State  Int
172.16.11.1   172.16.11.2   1/2    Up     532 (3 )       Up     Ge2/1
```

Ѐ ᵻ ᴊ ᵕ χ

Ѐ ᵻ	ب ̈
IPV4 sessions	IPv4 BFD Һ ʕ ̈Ở ̈Ǫ ᵓ UP ̈Ѧ ̈Ǫ
OurAddr	Һʕ ş ̈ IP ş ϰ
NeighAddr	Һʕʌṅ ̈ IP ş ϰ
LD/RD	Һʕ ş ᵓ ᵕ ᵕ ‰ ᵛ
RH/RS	ҺʕḾ ᵕ Ẹ ̇ ↑ ỗ
Holdown(mult)	Һʕ ş ̇ ì ẇ ̇ hello ï ă ̈Ḣ ʒ Һʕʌ ̀Ḣ ₅ ⅃ Ḱ ̈Ǫ
State	ҺʕẸ ̇ ↑ ỗ
Int	Һʕ ̈Ȧ ƿ ̈ ì Æ ᴺ
Session state is UP and using echo function with 50 ms interval	Һʕĩ ̃ ʌ γ

Local Diag	ᴈ ʕ ⁽ᴼᴮ⁾⁄... Ă ʒ Ụ
Demand mode	ᴈ ʕ ᵀ Ĩ ₩ Ã ĩ ᵋ ☼ ╗
Poll bit	ᴈ ʕ ⁽ᴼᴮ⁾ ᴊ ᴊ ĩ ᵋ Ӣ ϩ
MinTxInt	ᴈ ʕ ş ᴊ ᴊ ⁽ᴼᴮ⁾ ɷ ṇ ʌ ڭ ڑ ڭ
MinRxInt	ᴈ ʕ ş ᴊ ᴊ ⁽ᴼᴮ⁾ ɷ ṇ ì ɷ̇ ڑ ڭ
Multiplier	ᴈ ʕ ş ᴊ ᴊ ⁽ᴼᴮ⁾ ʌ ̀H ₅ ᴵᴵ ₭ ̈Ω
Received MinRxInt	ᴈ ʕ ᵩ ᴵ ᴊ ᴊ ⁽ᴼᴮ⁾ ɷ ṇ ʌ ڭ ڑ ڭ
Received Multiplier	ᴈ ʕ ᵩ ᴵ ᴊ ᴊ ⁽ᴼᴮ⁾ ʌ ̀H ₅ ᴵᴵ ₭ ̈Ω
Holdown (hits)	ᴈ ʕ ₅ ᴵᴵ ̀H ڑ ʒ ₅ ᴵᴵ ̇ ʌ ̀H ⁽ᴼᴮ⁾ ₭ ̈Ω
Hello (hits)	ᴈ ʕ ʙ ƀ ᵃ hello Ʒ ă ⁽ᴼᴮ⁾ ì ɷ̇ ṇ ڑ ڭ
Rx Count	ᴈ ʕ ş ì ɷ̇ ̇ BFD ĭ ă ⁽ᴼᴮ⁾ ₳ ̈Ω
Rx Interval (ms) min/max/avg	ᴈ ʕ ş ì ɷ̇ ⁽ᴼᴮ⁾ ɷ ṇ ڑ ڭ ı ɷ ᶻ ڑ ڭ ı Ẉ ʒ ڑ ڭ
Tx Count	ᴈ ʕ ş ʌ ڭ BFD ĭ ă ⁽ᴼᴮ⁾ ₳ ̈Ω
Tx Interval (ms) min/max/avg	ᴈ ʕ ş ʌ ڭ ⁽ᴼᴮ⁾ ɷ ṇ ڑ ڭ ı ɷ ᶻ ڑ ڭ ı Ẉ ʒ ڑ ڭ
Registered protocols	├ q ̇ ǀ ᴈ ʕ ⁽ᴼᴮ⁾ Ẕ ᵀ ʙ ɲ ᵢ ʒ
Uptime	ᴈ ʕ Ʒ ̇Y UP ⁽ᴼᴮ⁾ ̀H ڑ
Last packet	ᴈ ʕ ş ɷ̇ ̇ ⁽ᴼᴮ⁾ ɷ ᵃ ₳ BFD ĭ ă ʒ Ụ

ɷ̃ ʒ Ụ -

Ẉ ᴶ ب ̈ -

5 VSU

ᵘ ᑏ	Ă ɤ
dad relay enable	ᓬ ⅃ ᵍ̂ ǐ ᵀ Æ ₅ ╨ ᵡ ƺ ▯ ᄃ ∧ ı ǐ
dual-active bfd interface	ᓬ ⅃ bfd ₅ ╨ Æ
dual-active detection	ᓬ ⅃ ᵡ ƺ ₅ ╨ ı ǐ
dual-active exclude interface	ᓬ ⅃ VSU ƍ recovery ₩ Ã ï ▯æ ᵘ ヶ Æ
dual-active interface	ᓬ ⅃ ᵍ̂ ǐ ᵀ Æ▯ ᵡ ƺ ₅ ╨ Æ
port-member interface	ᓬ ⅃ VSL-AP ▯ă ^ Æ
session	ᵽ ḧ ᵇ˙ ƺ ẵ ɣ Ɣ ᴶ ֆ ᵻ ▯ í˙ ᴶ
show switch id	Ǐ ˜ ֆ ᵻ ▯ Ⅎ ̈Ω ֆ ᵻ ⅄ ᴺ
show switch virtual	¶ ˜ ³ ID ı Ȣ ȝ ⅛ ᴶ ֆ ᵻ ▯ ⅄ ᴺ ᵀ õ ⊐ ᑌ
show switch virtual balance	Ǐ ˜ VSU ₩ Ã ï ▯ ╚ ᵨ ʒ ʿ ₩ Ã ᓬ ⅃
show switch virtual config	Ǐ ˜ ᴅ ẵ VSU ₩ Ã ï ▯ VSU ᓬ ⅃ ȝ Ụ
show switch virtual dual-active	¶ ˜ ᵡ ƺ ֆ ᵻ ₅ ╨ ▯ ȝ Ụ
show switch virtual link	¶ ˜ VSL ▯ ᵀ õ ȝ Ụ
show switch virtual role	¶ ˜ ⅛ ᴶ ヶ ▯ ⅄ ᴺ ı ᑌ ⊐ Ч Ж ヘ
show switch virtual topology	¶ ˜ VSU ⅄ ⁄ ▯ ö ë ف ì ᵀ ő
switch	˝Y ḧ ֆ ᵻ ƍ VSU ⅄ ⁄ ɲ ▯ ⅄ ᴺ
switch convert mode	ᵮ ᵍ̂ ƍ ᴅ ₩ Ã ⊐ VSU ₩ Ã ɵ ژ ▯ ˝Ω
switch crc	ᄃ ∨ ᓬ ⅃
switch description	ᓬ ⅃ Ⅎ ̈Ω ƍ VSU ɲ ▯ ֆ ᵻ ゐ ك
switch domain	VSU ₩ Ã ï ı ˡ Й ゐ ɣ Ɣ Ⅎ ̈Ω ֆ ᵻ ▯ domain
switch priority	ᓬ ⅃ Ⅎ ̈Ω ƍ VSU ɲ ▯ Ч Ж ヘ
switch renumber	VSU ₩ Ã ï ı ˡ Й ゐ ɣ Ɣ Ⅎ ̈Ω ֆ ᵻ ▯ ⅄ ᴺ
switch virtual aggregateport-lff enable	ě Â VSU ₩ Ã ï AP Æ▯ ş Ч Ж ᄃ ∧ ≠ ớ
switch virtual domain	ᓬ ⅃ VSU ▯ ³ ⅄ ᴺ
switch virtual ecmp-lff enable	ě Â VSU ₩ Ã ï ecmp ▯ ş Ч Ж ᄃ ∧ ≠ ớ
vsl-port	ف ᘐ VSL-PORT ▯ᓬ ⅃ ₩ Ã

5.1 dad relay enable

ᓬ ⅃ ᵍ̂ ǐ ᵀ Æ ₅ ╨ ᵡ ƺ ▯ ᄃ ∧ ı ǐ

dad relay enable

ʜ ᵾ ᄃ ∧ ı ǐ

no dad relay enable

∨ ̈Ω ᓬ ˝	∨ ̈Ω	ゐ ك

-	-

ỉ ᵇ ˡ	ỉ ʜ ъ ᵍ̂ ĭ ᵀ ᴱ ⁵ ˡˡ ᵒ ǯ ⃞ ч ʌ ≠ ớ
ᵘ ᴛ₩Ã	ì ᴱ ᵇ ˡ₩Ã
ỉ ⁱ	14
Æ ɪ ˝YṀ	Î ᵘ ᴛ ᴱ ĩ́ ᵽ AP ì ᴱ i Æ ɪ
ᵇ ˡ ǯ æ	1. ĕ À relay ı ĩ́

```
Ruijie(config)#interface aggregateport 1
Ruijie(config-if-AggregatePort 1)#dad relay enable
```

2 λ ʜ ъ relay ı ĩ́

```
Ruijie(config)#interface aggregateport 1
Ruijie(config-if-AggregatePort 1)#no dad relay enable
Ruijie(config-if-AggregatePort 1)#exit
```

⁵ ɟ Á |	Æ ɪ **show switch virtual dual-active aggregateport** ᵘ ᴛ ˜ ᵇ ˡ
ώ˜ ʒ Ụ	-
Ẃ ŏ ч ʒ ئ	DAD ч ʌ ĭ ă ọ ᵉ ĩ AP ᴱ
Ẹ ᴶ ᵇ ˝	-

5.2 dual-active bfd interface

ᵇ ˡ BFD ⁵ ˡˡ ᴱ

dual-active bfd interface *interface-name*

ˍ ъ ⁵ ˡˡ ᴱ

no dual-active bfd interface *interface-name*

v ˝Ọ ᵇ ˝	v ˝Ọ	ὼ ʞ
	interface-name	⁵ ˡˡ ì ᴱ ⁱ ʒ ⊃ ˡ ᴺ

ỉ ᵇ ˡ	-

ᵘ ɲ₩Ã	config-vs-domain ᵬ ᵢ ₩Ã
ᵢ̀ ᵢ̣	14
Æ ɾ̀ ˝YṀ	BFD ₅ ᴵ ì ᴱ ọ ء ĩ ٺ ᵊ ᵐ ᴱ ı ħ ŋ j ᵃ ᵒ ᵇ ᵗ i
ᵬ ᵢ ǯ æ	ᵬ ᵢ ᵐ ᴱ Gi 1/1/1 ᵢᵣ BFD ᴥ ǯ ₅ ᴵ ì ᴱ

Æ ᵊ ˝Y Ṁ Í ᵘ ᵑ ᴱ ᵗ́ ᵖ VSU ₩Ã ï ڤ Φ ᵖ ᵢ

ᵖ ᵢ ᶻ æ 1. ᵉ̆ Ã BFD ₅ ᴵᴵ ᵥ ᶻ̆ ᶲ ᵗ ᵗ ᵒ̃ ᵒᵇ ᵢ ᵗ́

```
Ruijie(config)# switch virtual domain 1
Ruijie(config-vs-domain)# dual-active detection bfd
```

2. ᵘ ᵓ BFD ₅ ᴵᴵ ᵥ ᶻ̆ ᶲ ᵗ ᵗ ᵒ̃ ᵒᵇ ᵢ ᵗ́

```
Ruijie(config)# switch virtual domain 1
Ruijie(config-vs-domain)# no dual-active detection bfd
```

3. ᵉ̆ Ã ᵗ̆ ᵀ Æ ₅ ᴵᴵ ᵥ ᶻ̆ ᶲ ᵗ ᵗ ᵒ̃ ᵒᵇ ᵢ ᵗ́

```
Ruijie(config)# switch virtual domain 1
Ruijie(config-vs-domain)# dual-active detection aggregateport
```

4. ᵘ ᵓ ᵗ̆ ᵀ Æ ₅ ᴵᴵ ᵥ ᶻ̆ ᶲ ᵗ ᵗ ᵒ̃ ᵒᵇ ᵢ ᵗ́

```
Ruijie(config)# switch virtual domain 1
Ruijie(config-vs-domain)# no dual-active detection aggregateport
```

₅ ᶻ Á | Æ ᵊ **show switch virtual dual-active summary** ᵘ ᵑ ˜ ᵖ ᵢ

ώ˜ ᶻ Ụ -

Ẃ ᵒ ᶜ ᵋ -

Ẉ ᴶ ᵇ ˝ -

5.4 dual-active exclude interface

ᵖ ᵢ VSU ᵖ recovery ₩Ã ï ᵒᵇ æ ᵘ ᵛ Æ

dual-active exclude interface *interface-name*

ᵑ ᵀ æ ᵘ ᵛ Æ

no dual-active exclude interface *interface-name*

ᵛ ˝Ω ᵇ ˝

ᵛ ˝Ω	ὼ ᵏ
interface-name	ì Æ ᵃ ᶻ ᵓ ì Æ ᵃ ᴺ

ᵢ ᵖ ᵢ -

ᵘ ᵑ ₩Ã config-vs-domain ᵖ ᵢ ₩Ã

ᵡ ᵑ˩ 14

Æ ŧ ˝YṀ Ỉ ᵘ ᵑᵬ ᴱ ᵑ̈ ᵽ VSU ₩Ã ï ᵮ Φ ᵽ ᵡ
æ ᵘ ᵑ Æ ᵩ ᵋ ĩ ᶜ ᵎ ᵑ Æ ı j ᵑ̈ ĩ VSL ᵑ Æ
ŧ Ä ˡ Ꝏ ᵽ ᵡ ^ Ⱥ æ ᵘ ᵑ Æ

ᵽ ᵡ ᵹ æ ᵽ ᵡ ᵑ Æ Gi 1/0/3 Ă ᵚ ᵡ ᵹ ᵩ ᵗ ₅ ᵻ ᵒᵇʲ æ ᵘ ᵑ Æ

```
Ruijie(config)# interface GigabitEthernet 1/0/3
Ruijie(config-if- GigabitEthernet 1/0/3)# no switchport
Ruijie(config)# switch virtual domain 1
Ruijie(config-vs-domain)# dual-active exclude interface GigabitEthernet 1/0/3
```

₅ ᶎ Ä | Æ ŧ **show switch virtual dual-active summary** ᵘ ᵑᵬ ˜ ᵽ ᵡ

ώ˜ ʒ Ụ -

Ẃ ȸ ᶎ ᵴ VSL ᵑ Æ ᵽ ᵡ ᵅ̈ æ ᵘ Æ
j ĩ ᶜ ᵎ Æ ı j ᵑ̈ ᵽ ᵡ ᵅ̈ æ ᵘ Æ

Ẉ ᴶ ᵦ ˝ -

5.5 dual-active interface

ᵽ ᵡ ᵍ̂ ᵎ̆ ᵀ Æ ᵒᵇʲ ᵚ ᵡ ᵹ ₅ ᵻ Æ
dual-active interface *interface-name*

¨ ᵭ ₅ ᵻ Æ
no dual-active interface

v ˝Ọ ᵦ ˝

v ˝Ọ	ώ ᶄ
interface-name	ì Æ ᵻ ᵹ ⁼ ì Æ ᵡ ᴺ ı ᵩ ᵋ ᵚ AP ᵻ ᵹ ᵒᵇʲ ì Æ

ᵡ ᵽ ᵡ -

ᵘ ᵑᵬ ₩ Ã config-vs-domain ᵽ ᵡ ₩ Ã

ᵡ ᵑ˩ 14

Æ ŧ ˝YṀ ᵍ̂ ᵎ̆ ᵀ Æ ᵒᵇʲ ᵚ ᵡ ᵹ ₅ ᵻ Æ ᴱ ᵎ ᵽ ᵡ Ⱥ ı ᵽ ᵮ ᵡ AP Æ ᵚ ₅ ᵻ ì Æ˙ ᵢ Ⱪ „ ấ Ỉ ì Æ ı ᵅ ᵽ ᵡ ᵒᵇʲ ₅ ᵻ Æ ᵸ ¨ H
˙ Ⱪ ᵽ ᵡ ᵒᵇʲ ₅ ᵻ Æ ᵸ ᵾ ˝ è

ᵖ ᒧ ᶻ æ ᵖ ᒧ ᶦ ᵀ Æ aggregateport 1 Ă ᵏᵏ ₅ ᵈ Æ

```
Ruijie(config)# interface aggregateport 1
Ruijie(config-if-AggregatePort 1)#exit
Ruijie(config)# switch virtual domain 1
Ruijie(config-vs-domain)# dual-active interface aggregateport 1
```

₅ ᶻ Ǎ | Æ ᵀ **show switch virtual dual-active aggregateport** ᵘ ᴨ ˜ ᵖ ᒧ

ώ˜ ʒ Ụ -

Ẃ ȯ ᶜ ᶠ ₅ ᵈ Æ j ĩ AP Æ

Ẉ ᴶ ᵇ ˝ -

5.6 port-member interface

ᵖ ᒧ VSL-AP ᵒᵇᵏ ᾰ ᵔ Æ

port-member interface *interface-name* [**copper | fiber**]

ᴵ ᵇ ᾰ ᵔ Æ

no port-member interface *interface-name*

v ˝Ǫ ᵇ ˝

v ˝Ǫ	ὼ ᶜ
interface-name	˜ ᴵ ì Æ ᵊ ı ḅ GigabitEthernet 0/1 ı GigabitEthernet 0/3
copper	ɔ Æ Ṟ ớ
fiber	⁎ Æ Ṟ ớ

ᴶ ᵖ ᒧ -

ᵘ ᴨ ₩ Ã

NLB VSL

ᴮ ᴶ ᴷ æ

æ 1 χ ᴅ ₩Ã ï ı ▌ ʔ / ˥ ᵗ VSL-AP ᾰ ˆ ˥ Æ

```
Ruijie(config)# vsl-port
Ruijie(config-vsl-port)# port-member interface GigabitEthernet 0/1
Ruijie(config-vsl-port)# no port-member interface GigabitEthernet 0/2
```

æ 2 χ VSU ₩Ã ï ı ▌ ʔ / ˥ ᵗ VSL-AP ᾰ ˆ ˥ Æ

```
Ruijie(config)# vsl-port
Ruijie(config-vsl-port)# port-member interface GigabitEthernet 1/0/1
Ruijie(config-vsl- port)# no port-member interface GigabitEthernet 1/0/1
```

5 ᴶ ᴬ | Æ%‰ ”" Ð ž €x t! ö€ Öù **s e s s i o n 6 0 F A C - 7 T f 0 T c T * <6 F**

```
Ruijie-STANDBY#session master
Ruijie#exit
Ruijie-STANDBY#
```

æ 2 χ ʁ ǯ i ɥ̈ ḧ ᵇ ˙ ɸ ʈ 2 ⌧ í ˙ ᴶ ɪ ɬ ᵃ گ̣

```
Ruijie#session device 2
Ruijie-STANDBY#exit
Ruijie#
```

ᵓ ɹ̣ Ά | -

ώ˜ ʒ Ụ -

Ẃ ȯ ɕ ئ -

Ẉ ᴶ ب ˝ -

5.8 show switch id

Ĭ ˜ ɸ ʈ ⌧ Ґ ˝Ω ʎ ᴺ

show switch id

ᴠ ˝Ω̣ ب ˝

ᴠ ˝Ω̣	ὼ ك
-	-

ᵘ ᴨ ₩ Ã ⸗ ₩ Ã

ʎ̂ ʎ̣ 14

Æ ɾ ˝Y Ṁ -

ب̣ ʎ ǯ æ æ 1 χ ᴅ ₩ Ã ï ¶ ˜ ɸ ʈ ⌧ Ґ ˝Ω ʎ ᴺ

```
Ruijie #show switch id
Switch ID is 2
```

æ 2 χ VSU ₩ Ã ï ¶ ˜ ɸ ʈ ظ Φ ⌧ Ґ ˝Ω ʎ ᴺ

```
Ruijie#show switch id
Switch ID is 1
```

ώ˜ ʒ Ụ -

Ẃ ɔ̌ ج ئ -

Ẉ ᴶ ب ˝ -

5.9 show switch virtual

ᵗ ˜ ᵓ ID ı Ɑ ʒ ⅛ ᴶ ɸ ᵗ ⓞⓑⓙ ᴧ ᴺ ↑ ɔ̃ ⊃ ᴗ˝

show switch virtual

v ˝Ɑ̣ ب ˝

v ˝Ɑ̣	ὼ ك
-	-

ᵘ ɲ ₩ Ã ⸗ ₩ Ã

ᴧ̀ ᴧ̣ 14

Æ ɾ ˝Y Ṁ -

ᵖ ᴧ ᵹ æ æ 1 χ ɒ ₩ Ã χ

```
Ruijie# show switch virtual
Current system is running in ɒ STANDALONE ɓ mode.
```

æ 2 χ VSU ₩ Ã ı ω̃ s ᴶ ᾰ ^ ᴵ ˝Ω ɸ ᵗ χ

```
Ruijie#show switch virtual
Switch_id     Domain_id     Priority     Status     Role         Description
-----------------------------------------------------------------------
1(1)          1(1)          100(100)     OK         ACTIVE       switch-1
2(2)          1(1)          100(100)     OK         CANDIDATE    switch-2
3(3)          1(1)          100(100)     OK         STANDBY      switch-3
```

È ᴵ ᴶ ᵖ χ

È ᴵ	ب ˝
Switch_id	ɸ ᵗ ᴺ ı ὺ ᴺ ɲ ĩ ᵖ ᴧ ᴵ ᴶ ᴹ ὼ ⓞⓑⓙ Ö ı ' ᵖ ᵏ ı ɸ ≡ ω̃ ᵻ ᴹ̃
Domain_id	ɸ ᵗ ᵓ ı ὺ ᴺ ɲ ĩ ᵖ ᴧ ᴵ ᴶ ᴹ ὼ ⓞⓑⓙ Ö ı ' ᵖ ᵏ ı ɸ ≡ ω̃ ᵻ ᴹ̃
Priority	ʃ ᴥ ᴧ ı ὺ ᴺ ɲ ĩ ᵖ ᴧ ᴵ ᴶ ᴹ ὼ ⓞⓑⓙ Ö ı ' ᵖ ᵏ ı ɸ ≡ ω̃ ᵻ ᴹ̃

Ẉ ᴶ ب ˝ -

5.10 show switch virtual balance

Ĭ ˜ VSU ₩Ã ï ⅏ ᴸ ᵢ ʒ ʿ ₩Ã ب ᴵ

show switch virtual balance

v ˝Ǫ ب ˝

v ˝Ǫ	ὼ ك
-	-

ᵘ ɲ ₩Ã ⁄ ₩Ã

ᴵ ᴵ˛ 14

Æ ɾ ˝Y Ṁ -

ب ᴵ ǯ æ VSU ₩Ã ï ˥ ˜ ɸ ʈ ᴸ ᵢ ʒ ʿ ب ᴵ ₩Ã χ

```
Ruijie#show switch virtual balance
Aggregate port LFF χ enable
```

È ᴵ ᴶ ᵢ χ

È ᴵ	ب ˝
Aggregate port LFF	enable ʂ ap ᴴ ᴾ ᵡ ʌ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

5.11 show switch virtual config

Ĭ ˜ ᴅ ᾰ̃ VSU ₩Ã ï ⅏ VSU ب ᴵ ʒ Ụ

show switch virtual config [*switch_id*]

v ˝Ǫ ب ˝

v ˝Ǫ	ὼ ك
switch_id	ɸ ʈ ᴵ ᴺ ı ˝Y ḧ ف ᴬ v ˝Ǫ ᴵ ᴳ ᴱ Ĭ ˜ ⁄ ḧ ɸ ʈ ⅏ VSU ب ᴵ ʒ Ụ

ᵘ ɲ ₩Ã ⁄ ₩Ã

ᴵ ᴵ˛ 14

Æ ɤ ˝ΥṀ -

ᴗ ᴶ ᶻ æ æ 1 χ ᴅ ₩Ã ï¶ ˜ ᶲ ᵗ ⚇ VSU ᴗ ᴶ ʒ Ụ

```
Ruijie#show switch virtual config
switch_id: 1 (mac: 00d0.f810.3323)
!
```

ᴠ ̈Ω ᴢ ̈

ᴠ ̈Ω	ὼ ̀ ك
aggregateport	ᵖ ̃ ᵍ̂ ̂ ̂ ̈ ̆ ᵀ Æ ₅ ⅃ ʒ Ụ
bfd	ᵖ ̃ ᵍ̂ ̂ ̂ BFD ₅ ⅃ ʒ Ụ
summary	Ĭ ̃ DAD ₦ ⌊ ʒ Ụ

ᵘ ᴨ₩Ã ⁄ ₩Ã

ᴧ̀ ᴧ̣ 14

Æ ᵊ ̈YṀ -

ᴢ ᴧ ǯ æ æ 1 χᵖ ̃ ᴥ ǯ ɸ ᵗ ₅ ⅃ ᴢ ᴧ ᵓ ᵗ ỗ

```
Ruijie# show switch virtual dual-active summary
BFD dual-active detection enabled: Yes
Aggregateport dual-active detection enabled: No
Interfaces excluded from shutdown in recovery mode:
GigabitEthernet 1/0/3
GigabitEthernet 1/0/4
In dual-active recovery mode: No
```

æ 2 χᵖ ̃ BFD ᴥ ǯ ɸ ᵗ ₅ ⅃ ᴢ ᴧ ʒ Ụ

```
Ruijie# show switch virtual dual-active bfd
BFD dual-active detection enabled: Yes
BFD dual-active interface configured:
    GigabitEthernet 1/0/1: UP
    GigabitEthernet 2/0/2: UP
```

æ 3 χ ᵍ̂ ̂ ̂ ̈ ̆ ᵀ Æ ᴥ ǯ ₅ ⅃ ᵗ ỗ

```
Ruijie# show switch virtual dual-active aggregateport
Aggregateport dual-active detection enabled: Yes
Aggregateport dual-active interface configured:
    AggregatePort 1:  UP
        GigabitEthernet 1/0/1: UP
        GigabitEthernet 2/0/1: UP
        GigabitEthernet 1/0/2: UP
        GigabitEthernet 2/0/2: UP
DAD relay enable AP list:
    AggregatePort 1
```

Ȅ ᴧ ᴊ ᴗ χ

Ȅ ᴧ	ᴢ ̈
BFD dual-active detection enabled	BFD ₅ ⅃ ᴵ ̆ ̈ ̃ ᵋ ̆ ̈ Ȁ

Aggregateport dual-active detection enabled	AP ₅ ¶ ĩ ᵋ ĕ Ã
Interfaces excluded from shutdown in recovery mode	æ ᵘ Æ ب ﻝ
BFD dual-active interface configured	BFD ₅ ⅄ Æ
Aggregateport dual-active interface configured	AP ₅ ⅄ Æ
DAD relay enable AP list	DAD ₅ ⅄ ĩ ă ჳ ʌ Æ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

5.13 show switch virtual link

¶ ˜ VSL ⃞ ↑ õ ʒ Ụ

show switch virtual link [**port**]

v ˝Ọ ب ˝

v ˝Ọ	ὼ ك
port	Ǐ ˜ VSL Ḍ ì Æ ⃞ ↑ õ ʒ Ụ

ᵘ ᵑᵬ ₩ Ã ᵉ ₩ Ã

ƛ ʅ˛ 14

Æ ɤ ˝ Y Ṁ ă ᵑ ʅ Æ ω ₩ ʅ ↑ õ χ ɒ DOWN ɓ ı ɒ DISABLE ɓ ı ɒ UP ɓ ı ɒ OK ɓ ɒ DOWN ɓ ˊ ˜ Ẹ˙ ʅ Æ ɾ ת ĩ LINK DOWN ψ ɒ DISABLE ɓ ˊ ˜ Ẹ˙ ʅ Æ ɾ ת¸ א ჯ ṿ ψ ɒ UP ɓ ˊ ˜ Ẹ˙ ʅ Æ ɾ ת ĩ LINK UP ı Ꮋ ĩ ف ≡ ω ₅ ⅄ ˙ Ḿ ʅ ĩ ω ⃞ VSL-AP ă ᵑ Æ ψ ɒ OK ɓ ˊ ˜ ʅ Æ j Ꮋ ɾ ת i ĩ LINK UP ı ă ħ ف ₅ ⅄˙ Ḿ ʅ ĩ Ѧ ω ⃞ VSL-AP ă ᵑ Æ

ب ﻝ ڎ æ æ 1 χ ¶ ˜ VSL ǐ ᵀ ج ت ʒ Ụ

```
Ruijie# show switch virtual link
VSL-AP    State     Peer-VSL      Rx        Tx        Uptime
-------------------------------------------------------------------------------
1/1       UP        2/1           100000    100000    1d,4h,29m
2/1       UP        1/1           100000    100000    1d,4h,29m
```

È ɟ ɹ ᵩ χ

È ɟ	ب ˝
VSL-AP	VSL AP° ˊ
State	AP ↑ õ ı ʿ ⱡ DOWN ⊐ UP ь ʅ
Peer-VSL	Ḿ ʅ ف ì ⃞ VSL AP
Rx	ì ὼ ⃞ ĩ ă
Tx	ʌ گ ⃞ ĩ ă

Uptime	AP ف ì ⃝H ڑ

æ 2 χ ̄ ˜ VSL ᴵ Æ ʒ Ụ

```
Ruijie# show switch virtual link port

switch 1:
Port                  AP  State  Peer-port              Rx    Tx   Uptime
-------------------------------------------------------------------------------
GigabitEthernet 1/0/1  1   OK     GigabitEthernet 2/0/1   9000  9000 0d,0h,20m
GigabitEthernet 1/0/2  2   OK     GigabitEthernet 2/0/2   9000  9000 0d,0h,20m
GigabitEthernet 1/0/3  -   DOWN   -                       -     -    -

Switch 2:
Port                  AP  State  Peer-port              Rx    Tx   Uptime
-------------------------------------------------------------------------------
GigabitEthernet 2/0/1  1   OK     GigabitEthernet 1/0/1   9000  9000 0d,0h,20m
GigabitEthernet 2/0/2  2   OK     GigabitEthernet 1/0/2   9000  9000 0d,0h,20m
```

È ᴇ ᴊ ᴗ χ

È ᴇ	ب ˝
Port	ᴵ Æ ˚ ˊ
State	ᴵ Æ ↑ õ
Peer-port	Ḿ ᴵ ᴵ Æ
Rx	ì ὼ ⃝ ï ă
Tx	ʌ گ ⃝ ï ă
Uptime	VSL ᴵ Æ ف ì ⃝H ڑ

ώ˜ ʒ Ụ -

Ẉ ᴊ ب ˝ -

5.14 show switch virtual role

̄ ˜ ⅛ ᴊ ᴵ ⃝ ᴧ ᴺ ι ᴗ ˝ ᴝ ᴴ ᴵ

show switch virtual role

ᴠ ˝Ω ب ˝

ᴠ ˝Ω	ὼ ك
-	-

ᵘ ᴨ ₩ Ã ⁄ ₩ Ã

ǰ ^ 14

Æ ŧ ˝YṀ Ǐ ˜ ᵘ ᵑъ ª **show switch virtual**

ب ل ڎ æ

æ 1 χ ɒ ₩ Ã χ

```
Ruijie# show switch virtual
Current system is running in ɒSTANDALONEɓ mode.
```

æ 2 χ VSU ₩ Ã ı õ s ʲ ă ^ ſ ˝Ω Ф ᵻ χ

```
Ruijie#show switch virtual
Switch_id     Domain_id     Priority     Status     Role         Description
------------------------------------------------------------------------------
1(1)          1(1)          100(100)     OK         ACTIVE       switch-1
2(2)          1(1)          100(100)     OK         CANDIDATE    switch-2
3(3)          1(1)          100(100)     OK         STANDBY      switch-3
```

È ɟ ɹ ˛ χ

È ɟ	ب ˝
Switch_id	Ф ᵻ ᴺ ı ὐ ᴺ ɲ ĩ ب ل Ӣ ὼ ⅜ Ө ı ˈ ڀ ᵏ ı ف ≡ ω ŧ ᾖ
Domain_id	Ф ᵻ ᵌ ı ὐ ᴺ ɲ ĩ ب ل Ӣ ὼ ⅜ Ө ı ˈ ڀ ᵏ ı ف ≡ ω ŧ ᾖ
Priority	ĺ ✕ ᾀ ı ὐ ᴺ ɲ ĩ ب ل Ӣ ὼ ⅜ Ө ı ˈ ڀ ᵏ ı ف ≡ ω ŧ ᾖ
Status	Ф ᵻ ↑ ő χ OK Ф ᵻ* Ẃ ψ Recovery Ở ᵸ ↑ ő ψ Leave ˜ Ầ ↑ ő ψ Isolate Ẹ ᾱ ↑ ő
Role	ư ˇ χ ACTIVE ᾱ ṕ ڎ Ф ᵻ ψ STANDBY ᾱ ṕ ᵡ Ф ᵻ ψ CANDIDATE ᾱ ṕ ö J̌ Ф ᵻ
Description	Ф ᵻ ˛ ᵊ

ώ ˜ ʒ Ụ -

Ẉ ʲ ب ˝ -

5.15 show switch virtual topology

ᛚ ˜ VSU ᾀ ᾁ ⅜ ö ɛ ف ì ↑ ő

show switch virtual topology

v ˝Ω ب ˝

v ˝Ω	ώ ك
-	-

ᵘ ᵑъ ₩ Ã ᵉ ₩ Ã

ǰ ^ 14

Æ ɤ ˝ΥṀ -

ᵕ ᴶ ᶻ̌ æ æ 1 χ ̈ ˜ ö ë ˆ õ

```
Ruijie# show switch virtual topology
Introduction: '[num]' means switch num, '(num/num)' means vsl-aggregateport num.

Chain Topology:
[1](1/2)---(2/1)[2]

Switch[1]: ACTIVE, MAC: 00d0.f822.33d6, Description: Switch1
Switch[2]: STANDBY, MAC: 1234.5678.9E, ¯ ˛ ɥ ʎ Ц Ţ M ḍ S β ˝Ω ή ḍ n ’
```

Ч Ж ᵑ ª ı ȣ ψ ᵥ ᴺ ᵑ ⊞ ᵮ ᵗ ᵭ ʁ ᵷ ᵮ ᵗ

Ỉ ᵘ ᵑᵇ ᴱ ᵮ ᵽ ᴅ ₩Ã ï Ӣ ώ Ґ Ѽ ᵥ ᴺ ı VSU ₩Ã ï ₔ ɭ ڀ ص **switch** *sw_id* **renumber** *new_sw_id* Ӣ ώ Ґ Ѽ ᵥ ᴺ ᵑ ȯ ῐ ᴅ ₩Ã ı ᵩ ῐ VSU ₩Ã ı Ӣ ώ ⊞ ᵥ ᴺ ₔ ɭ ڀ Ä ᵏ ʊ ɛ ᵮ ı ѽ

ᵽ ᵥ ᵷ æ æ 1 χ ¨H Ґ ¨Ѽ ᵽ ³ ID ʁ 1 ⊞ VSU ᵴ ⊞ ᵥ ᴺ ¨Y ᵑ ʁ 2

```
Ruijie(config)# switch virtual domain 1
Ruijie(config-vs-domain)# switch 2
Ruijie(config-vs-domain)# exit
```

ˢ ᵹ Ä | Æ ɪ **show switch virtual config** ᵘ ᵑᵇ ˜ ᵽ ᵥ

ώ˜ ʒ Ụ -

Ẃ ȸ ᵯ ᵴ -

Ẉ ᴶ ب ˝

5.17 switch convert mode

ᵘ ᵑᵇ ɪ ᵮ ᵽ ᴅ ₩Ã ⁼ Ъ Ѽ ᵮ ᵗ ₩Ã ɵ ᵹ Ѝ ᵯ ᵷ Ѽ

switch convert mode { **virtual** | **standalone** } [*switch_id*]

v ¨Ѽ ب ˝

v ¨Ѽ	ώ ك
virtual	ᵯ ¨Ѽ ʁ VSU ₩Ã
standalone	ᵯ ¨Ѽ ʁ ᴅ ₩Ã
switch_id	Ґ ¨Ѽ ᵥ ᴺ

ỉ ᵽ ᵥ ỉ `H ᵮ ᵗ ᵮ ᴅ ₩Ã

ᵘ ᵑᵇ ₩Ã ˢ ₩Ã

ỉ ᵑ˙ 14

Æ ɪ ¨Y Ṁ ɪ Ä ¨E Φ **switch convert mode virtual** ´ ¨Ѽ ᵘ ᵑᵇ ª ı ᵴ ᵀˢ ʊ Ṅ ᴅ ₩Ã ï ⊞ ᴿ Ѧ VSD ᵴ ᵽ ᵽ ᵥ ᵭ ᵀ ᵗ ¥ ʁ “vsd.standalone.text.vsd ẑ ᴺ ” ı ɬ ª ▌ ᵬ ᴿ Ѧ VSD ᵴ ᵽ ᵽ ᵥ ᵭ ᵀ ᴅ config.text ƀ ı Ẋ ώ ˜ ɪ Ä Ỉ ᵋ Ṅ ᵭ ᵀ “vsd.virtual_switch.text.vsd ẑ ᴺ ” ɲ ķ ɧ ˝ ˙ ᴿ Ѧ VSD ᵴ ᵽ ᵽ ᵥ ᵭ ᵀ ᴅ config.text ƀ ı ḅ ˈ ɪ Ä J̌ ¨O ᴅ yes ƀ ¨H “vsd.virtual_switch.text.vsd ẑ ᴺ ” ɲ ķ ɧ ˝ ˙ ᴿ Ѧ VSD ᵴ ᵽ ᵽ ᵥ ᵭ ᵀ ᴅ config.text ƀ ψ ᵋ ˵ j Ơ ʉ ᴿ Ѧ VSD ᵴ ᵽ ᵽ ᵥ ᵭ ᵀ ᴅ config.text ƀ Ẋ ¨H VSU ʰ ʜ ⊞ ᵽ ᵥ ˙ ˙ ᵽ ᵥ ᵭ ᵀ ᴅ config_vsu.dat ƀ ᵴ ı ᵠ ª ᵴ ᵏ Ґ ¨Ѽ ɪ Ä ¨E Φ **switch convert mode standalone** ´ ¨Ѽ ᵘ ᵑᵇ ª ı ᵹ ᵑ ¨H VSU ₩Ã ⊞ ᴿ Ѧ VSD ᵴ ᵽ ᵽ ᵥ ᵭ ᵀ ᵗ ¥ ʁ “vsd.virtual_switch.text.vsd ẑ ᴺ ” ı ɬ ª ▌ ᵬ ▌ ᵬ ᴿ Ѧ VSD ᵴ ᵽ ᵽ ᵥ ᵭ ᵀ ᴅ config.text ƀ ı Ẋ ώ ˜ ɪ Ä Ỉ ᵋ Ṅ ᵭ ᵀ “vsd.standalone.text.vsd ẑ ᴺ ” ɲ ķ ɧ ˝ ˙ ᴿ Ѧ VSD ᵴ ᵽ ᵽ ᵥ ᵭ ᵀ ᴅ config.text ƀ ı ɪ Ä J̌ ¨O ᴅ yes ƀ ı

ˇH“vsd.standalone.text.vsd ẑ ᴺ ” ɲ ķ ɧu ˝ ˙ ɒ config.text ɓ ψ ᵋ ă̈ j Õ ʷ ɒ config.text ɓ ω ᵠ ᵱ ᵏ Ґ ˇΩ Ǐ ᵘ ᵑᵬ ɳ ˡ Ɯ ɸ ɒ ₩Ã ï Æ ɾ ı Ĉ ˡ Ɯ ɸ VSU ₩Ã ï Æ ɾ ḅ ' ɸ ɒ ₩Ã ï Æ ɾ ı „ ˊ ˇΩ Ḿ ɛ ʁ ψ ḅ ' ɸ VSU ₩Ã ï Æ ɾ ı ħ ɾ i *sw_id* v ˇQ ı ˊ ˇΩ Ґ ˇΩ ɸ ᵻ ᵡ ᴺ ʁ *sw_id* ı ḅ ' ≡ ω̃ ɾ i *sw_id* v ˇQ ı „ ˊ ˇΩ Ḿ ɛ ʁ ʒ á ɲ ✕ˊ ˇΩ ʁ ı W ˇ ˇΩ ʒ

ᵽ ɻ ʒ æ æ 1 χ ɒ ₩Ã ï ı ˊ ˇΩ ˙ vsu ₩Ã

```
Ruijie# switch convert mode virtual
```

æ 2 χ VSU ₩Ã ï ı ✕ Ṅ ʁ ε sw_id ʁ 2 ζ ˊ ˇΩ ʁ ɒ ₩Ã ı W Ṅ ʒ (sw_id ʁ 1)˘ ˇΩ ʁ ɒ ₩Ã

```
Ruijie# switch convert mode standalone 2
Ruijie# switch convert mode standalone 1
```

ₛ ᶎ Ä | -

ώ˜ ʒ Ụ 1.VSU ₩Ã ᶎ ᵽ ă ɒ χ

ώ˜ ĩ ᵋ Ỷ Ỵ ᶎ ᵽ ă ɒ ₩Ã ı ḅ ' Ỷ Ỵ Ṅ ᵻ ¥ config.text ʁ standalone.text ı Ẋ ᵢ ᵬ config.text ă ţ ı ᵱ ᵏ ᵬ ᵻ

```
Convert mode will backup and delete config file, and reload the switch. Are you su ] Ar^ Are ε
```

ei_ α ᵴ ᵸ ώ˜ ✕ Ỵ Ṇ ʁ ᵸ ᵸ ˜ Ụ

Ṏ ᵻ ̇ ʎ̀ Ö̈

no switch crc

ᴠ ̈Ω̣ ب ̈	ᴠ ̈Ω̣	ὼ ك̇

ƛ ᵽ ⅃ -

ᵘ ᵑᵬ₩ Ã config-vs-domain ᵽ ⅃ ₩ Ã

ƛ ᐟ 14

Æ ɨ ″ Y Ṁ Ỉ ᵘ ᵑᵬ ᵽ ᴅ ₩ Ã ⁼ VSU ₩ Ã ᵯ ᵘ ᵮ Æ ɨ ı ᵽ ⅃ ᐡ o ⊦ ᵯ̃

ᵽ ⅃ ᵹ æ æ 1 χ

```
Ruijie(config)# switch virtual domain 1
Ruijie(config-vs-domain)# switch 1 description buildingA
Ruijie(config-vs-domain)# exit
```

ₛ ᴈ Ä | Æ ɨ **show switch virtual** ᵘ ᵑᵬ ˜ ᵽ ⅃

ώ˜ ʒ Ụ -

Ẃ ȸ ᶎ ᵴ -

Ẉ ᴶ ᵬ ″ -

5.20 switch domain

VSU ₩ Ã ï ı ˡ Й ώ γ Ỵ ᵮ ᵻ 囧 domain
switch *switch_id* **domain** *new_domain_id*

Ṅ domain Õ ʏ ă ѫ ռ Ө
no switch *switch_id* **domain**

v ″ Ọ ᵬ ″

v ″ Ọ	ώ ك
switch_id	VSU ₩ Ã ï Ẹ ̇ ᵶ Φ 囧 ᵮ ᵻ ⅄ ᴺ
new_domain_id	Й ώ ᵅ 囧 domain id ı ₎ ᵷ ᵲ 1-255

ƛ ᵽ ⅃ domain id ƛ Ө ᵲ 100

ᵘ ᵑᵬ₩ Ã config-vs-domain ᵽ ⅃ ₩ Ã

ƛ ᐟ 14

Æ ɨ ″ Y Ṁ Ỉ ᵘ ᵑᵬ ᴱ ĺ ᵷ VSU ₩ Ã ï Æ ɨ ı j ĺ ᵷ ᴅ ₩ Ã ï Æ ɨ ı ħ ᵱ ᵏ ᵅ ė ĺ ⊦ ᵯ̃
Æ ɨ **no** ᵘ ᵑᵬ ĩ Ṅ damain_id Õ ʏ ă ƛ Ө 100

ᵽ ɻ ʒ æ æ 1 χ VSU ₩ Ã ï ı ˝H Ę˙ ᵶ Φ ⿰ Ґ ˝Ω ֆ ᵻ 1 ⿰ domain_id Ӣ ώ ᵿ 10

```
Ruijie(config)# switch virtual domain 1
Ruijie(config-vs-domain)# switch 1 domain 10
```

æ 2 χ VSU ₩ Ã ï ı ˝H Ę˙ ᵶ Φ ⿰ Ґ ˝Ω ֆ ᵻ 2 ⿰ domain_id Ӣ ώ ᵿ 10

```
Ruijie(config)# switch virtual domain 1
Ruijie(config-vs-domain)# switch 2 domain 10
```

æ 3 χ VSU ₩ Ã ï ı ˝H Ę˙ ᵶ Φ ⿰ Ґ ˝Ω ֆ ᵻ 2 ⿰ domain_id Õ ʺ ă ѫ ɲ Ө

```
Ruijie(config)# switch virtual domain 1
Ruijie(config-vs-domain)# no switch 2 domain
```

ₛ ᴈ Ä │ Æ ɨ **show switch virtual** ᵘ ɲ ˜ ᵽ ɻ

ώ˜ ʒ Ụ -

Ẃ ȸ ᶎ ȿ -

Ẉ ᴶ ب ˝ -

5.21 switch priority

ᵽ ɻ Ґ ˝Ω ᵽ VSU ɲ ⿰ Ч Ж ㄏ

switch *switch_id* **priority** *priority_num*

Ṅ Ч Ж ㄏ Õ ʺ ă ѫ ɲ Ө

no switch *switch_id* **priority**

v ˝Ω ب ˝

v ˝Ω	ώ ʗ
switch_id	ᵼ ɭ ᵽ ɻ Ч Ж ㄏ ⿰ Ґ ˝Ω ֆ ᵻ ɻ ᴺ
priority_num	Ḿ Ẕ Ґ ˝Ω ⿰ Ч Ж ㄏ ı ɒ Ө ₍₁₀₎ ᵽ ĩ 1 ˙ 255

ƚ ᵽ ɻ priority_num χ ƚ ⿰ Ч Ж ㄏ ĩ 100

ᵘ ɲ ₩ Ã config-vs-domain ᵽ ɻ ₩ Ã

ƚ ㄏ ˛ 14

Æ ɨ ˝ Y Ṁ Ч Ж ㄏ ⿰ ˝Ω Ө ९ ᶻ ı ˊ ˜ Ч Ж ㄏ ९ ᴝ ᵽ Ǐ ʒ ʒ ֆ ᵻ ⿰ ص ۱ ᵴ ı Ч Ж ㄏ ᴝ ⿰ ֆ ᵻ ă ѭ ʒ ֆ ᵻ

Í ᵘ ɲ ᵽ ɒ ₩ Ã ⁼ VSU ₩ Ã ֍ ˡ Ⱥ Æ ɨ Ӣ ώ ⿰ Ч Ж ㄏ ọ ᵋ ᵨ ᵏ Ⱥ ᵅ ᵋ h ɨ ѽ

Ǐ ᵘ ᴛ j ʜ Ӣ ᵠ̣ *sw_id* ᴅ ₩Ã ï ḅ ' ᴉ ᴉ ´ *sw_id* ᴉ 1 ı W˝EΦ switch 2 priority 200 ı ̤ ᵘ ᴛ j ʜ ᵻ ᵠ̣ ı ᵗ ˚ ✕ ᵻ switch 2 Ṅ sw_id Ӣ ᵠ̣ ᴉ 2 ı W˝EΦ switch 2 priority 200 ɛ̇ ʜ ᵻ ᵠ̣ VSU ₩Ã ï ı *sw_id* ´ ˜ Ẹ˙ ظ Φ ᵒ ᴵ ˝Ω ᴺ ᴺ ı ḅ ' Ẹ˙ j ȅ ɲ Ǐ ᴺ ᴺ ı ̤ ᴉ ᴉ Ĉ j ᵻ ᵠ̣

ᴉ ᴉ ǯ æ

æ 1 χ ᴅ ₩Ã ï ᴉ ᴉ ᴵ ˝Ωϕ ᵗ 1 ᵒ ᵻ ✕ ᴉ ᴉ 200

```
Ruijie(config)# switch virtual domain 1
Ruijie(config-vs-domain)# switch 1 priority 200
Ruijie(config-vs-domain)# exit
```

æ 2 χ VSU ₩Ã ï ı Ӣ ᵠ̣ ᴵ ˝Ωϕ ᵗ 1 ᵒ ᵻ ✕ ᴉ ᴉ 200 ı Õ ᵻ ᴵ ˝Ωϕ ᵗ 2 ᵒ ᵻ ✕ ᴉ ᴉ ᴉ Ö

```
Ruijie(config)# switch virtual domain 1
Ruijie(config-vs-domain)# switch 1 priority 200
Ruijie(config-vs-domain)# no switch 2 priority
Ruijie(config-vs-domain)# exit
```

5 ᴊ Á | Æ ᵻ **show switch virtual** ᵘ ᴛ ˜ ᴉ ᴉ

ώ˜ ʒ Ụ -

Ẃ ȯ ᴇ ᵹ -

Ẉ ᴶ ᴃ ˝ -

5.22 switch renumber

VSU ₩Ã ï ı ᴵ Ӣ ᵠ̣ γ Ỵ ᴵ ˝Ωϕ ᵗ ᵒ ᴺ ᴺ

switch *switch_id* **renumber** *new_sw_id*

Æ ɾ ˝Y Ṁ

VSU

no switch_id 1

ᴘ ᴊ ᷅ æ

æ 1 χ VSU ₩ Ã ï ı ˝H Ẹ ˙ ᵇ Φ ᴼ ᴮ ˝Ω ᶲ ᵗ 1 ᴼ ᴮ ᴺ Ӣ ᵠ̣ ᵏ 2

```
Ruijie(config)# switch virtual domain 1
Ruijie(config-vs-domain)# switch 1 renumber 2
```

æ 2 χ VSU ₩ Ã ï ı ˝H Ẹ ˙ ᵇ Φ ᴼ ᴮ ˝Ω ᶲ ᵗ 2 ᴼ ᴮ ᴺ Õ ᵻ ᾰ̈ ᵚ ᴎ Ö

```
Ruijie(config)# switch virtual domain 1
Ruijie(config-vs-domain)# no switch 2
```

5 ᴊ Á | Æ ɾ **show switch virtual** ᵘ ᴛ̧ ˜ ᴊ ᴘ

l e f B T g / C 3 4 0 1 8 . 0 2 0 0 1 6 8 6 3 6 F A D > T

```
Ruijie(config)# switch virtual domain 1
Ruijie(config-vs-domain)# switch virtual aggregateport-lff enable
```

ᵉ ᵓ Ά	Æ ᵓ **show switch virtual balance** ᵘ ᵑ ˜ ᵖ ᵓ
ώ˜ ʒ Ụ	-
Ẃ ὁ ᵓ ᵓ	-
Ẉ ᵓ ᵖ ˝	-

5.24 switch virtual domain

ᴅ ₩Ã ᵖ ᵓ VSU ᵓ ᵓ ᴺ ᵃ̃ VSU ₩Ã ï ı ڤ ᵓ config-vs-domain ᵖ ᵓ ₩Ã
switch virtual domain *domain_id*

˝H ᵓ ᵓ ᴺ Õ ᵃ ᵃ̆ ᵓ Ë
no switch virtual domain

ᵛ ˝Ω ᵖ ˝	ᵛ ˝Ω	ὼ ᵏ
	domain_id	VSU ᵓ Ὺ Ὸ ᵓ ᵓ ᴺ ı ᵖ Ë ᵓ ᵓ 1~255

ᵓ ᵖ ᵓ	ᵓ ᵓ ᴺ ᵓ ᵏ 100
ᵘ ᵑ ₩Ã	config-vs-domain ᵖ ᵓ ₩Ã
ᵓ ᵓ	14
Æ ᵓ ˝Y Ṁ	ᵓ ᵓ ᴺ ᵓ ᵃ ᵓ ᵇ ᵓ ᵠ ᵗ ᵉ ᵉ ᵓ ᵀ ᵃ̆ ᵓ ᵓ Ὺ Ὸ ᵠ ᵗ ı ᵓ ᵓ ᴺ ᵍ ᵖ ᵓ ᵓ ᵓ ᵒ ᵉ ᵡ
ᵖ ᵓ ᵡ æ	æ 1 ᵡ ᵖ ᵓ ᵓ ᴺ ᵏ

Ẉ ᴶ ب ˝ -

5.25 switch virtual ecmp-lff enable

ڼ ڝ ᴓ ï ᵘ ᴛ ɛ̆ Ȁ VSU ₩ Ã ï ecmp ⃞ ş Ч Ж چ ʌ ≠ ớ
switch virtual ecmp-lff **enable**

ʜ ڎ ş Ч Ж چ ʌ ≠ ớ ı o Ψ ᴘ ᴛ ϕ ᵗ ᴸ ᵧ ʒ ʿ ₩ Ã
no switch virtual ecmp-lff **enable**

v ˝Ω ب ˝

v ˝Ω	ὼ ڭ
-	-

ᴉ ᴉ ᴉ ᴉ ≠ ớ ĩ ɛ̆ Ȁ ⃞

ᵘ ᴛ ₩ Ã config-vs-domain ᴉ ᴉ ₩ Ã

ᴉ ᴉ ᴉ 14

Æ ɪ ˝Y Ṁ -

ᴉ ᴉ ᴛ̌ æ æ 1 χ VSU ₩ Ã ï ı ᴉ ᴉ ecmp ş Ч Ж چ ʌ ≠ ớ

```
Ruijie(config)# switch virtual domain 1
Ruijie(config-vs-domain)# switch virtual ecmp-lff enable
```

ᴉ ᴉ Á | Æ ɪ **show switch virtual balance** ᵘ ᴛ ˜ ᴉ ᴉ

ώ˜ ʒ Ụ -

Ẃ ɔ̀ ᴛ ئ -

Ẉ ᴶ ب ˝ -

5.26 vsl-port

ڤ ʔ VSL-PORT ⃞ ᴉ ᴉ ₩ Ã
vsl-port

v ˝Ω ب ˝

v ˝Ω	v ˝Ω

-	-

ᴧ̀ ᴗ ᴧ -

ᵘ ɲ₩Ã config ᴗ ᴧ₩Ã

ᴧ̀ ᴧ̣ 14

Æ ɤ ˝YṀ Ĭ ᵘ ɲ ɲ ᴅ ₩Ã ᵓ VSU ₩Ã ɥu ᴵ ɑ Æ ɤ

ᴗ ᴧ ǯ æ æ 1 χ ᴅ ₩Ã ï ı ڤ ʔ VSL-AP ᴗ ᴧ₩Ã

```
Ruijie(config)# vsl-port
Ruijie(config-vsl-port)#
```

æ 2 χ VSU ₩Ã ï ı ڤ ʔ VSL-APPORT ᴗ ᴧ₩Ã

```
Ruijie(config)# vsl-port
Ruijie(config-vsl-port)#
```

ᴬ ᴊ Ȧ | -

ώ˜ ʒ Ụ -

Ẃ ð ᴇ ئ -

Ẉ ᴶ ب ˝ -

6 RNS-TRACK

v ˝Ω ب ˝

ɹ̀ ɹ̣	-
ᵘ ɲ₩Ã	IP RNS ɹ̣ ₩Ã (config-ip-rns)
ɹ̀ ɹ̣	1
Æ ɤ ̈Y Ṁ	ọ ء ✗ ɹ̣ ip rns ή ╝ ⿰ ɹ ʒ ε ḅ icmp-echo ή ╝ ζ ι ɬ ª W ɹ̣ ǀ ή ╝ ɹ ʒ ⿰ ʊ ɥ ν ̈Ω ḅ ' ɩ Ӣ ώ Ѧ ip rns ή ╝ ⿰ ή ╝ ɹ ʒ ι ọ ء ✗ ̣ ʎ ǀ ip rns ή ╝ ε ڼ ص ʊ ṕ ₩Ã ï ʒ ʊ **no ip rns** ᵘ ɲ ζ ι W ڀ À ڤ Φ ɹ̣
ɹ̣ ǯ æ	1 χ ɹ̣ ˉ ip rns ɩ ʌ گ dns ï ᾰ ι ت ∂ ³ ᵊ www.ruijie.com.cn ⿰ ip ş ɣ

```
Ruijie(config)# ip rns 1
Ruijie(config-ip-rns)# dns www.ruijie.com.cn name-server 61.154.22.41
Ruijie(config-ip-rns-dns)# ex ȳ L ʊ ̈Ω Ḫ Ú ˘ Ruijrrx l ѝ ᵠ ǯ ɜ̈ ȳ D
```

ﻝ ۱. 1

Æ ŧ ″YṀ ᵽ Ⱥ ip rns ⿰ ή ╨ ㇀ ᵘ Ǫ ɲ ı Ⱨ ڤ Φ ᵕ Ǫ ό ⿰ ή ╨ ʃ ת ۍ ص پ ﻝ frequency ᵘ ᑏ ı ˈ Ɑ″Y ӈ Ỉ پ ᵸ ژ ڭ پ ﻝ i ọ ɾ ◗ ′ ï ⿰ ʒ Ã ı Ɑ ȝ - ή ╨ ⿰ ҷ ۷* ˙ ό

(**frequency** *milliseconds*) > (**timeout** *milliseconds*) >= (**threshold** *milliseconds*)

پ ﻝ ڎ æ 1 χ پ ﻝ icmp-echo ή ╨ ı ´ ⿰ ip ㎞ 192.168.21.1 ψ ڤ ﻝ ή ╨ ļ ' ㎞ 30 ヽ ı ∧ ᾽H ᾽H ژ ㎞ 8000 ← ヽ ı Ө ㎞ 6000 ← ヽ

```
Ruijie(config-ip-rns)#icmp-echo 192.168.21.1
Ruijie(config-ip-rns-icmp-echo)#frequency 30000
Ruijie(config-ip-rns-icmp-echo)#timeout 8000
Ruijie(config-ip-rns-icmp-echo)#threshold 6000
```

ᵴ ᴈ Ά | Æ ŧ **show ip rns configuration** ᵘ ᑏ ı ˈ Ɑ ¶ ˜ RNS Ḿ ع ⿰ پ ﻝ ȝ Ụ

ώ˜ ȝ Ụ 1 χ ¨ ấ ή ╨ ᵽ ᵸ ᾽H ژ ᾽H ı ḅ ' ¨ ấ ᵽ ᵸ ᾽H ژ ⿱ ∧ ᾽H ᾽H ژ ı ¨ ¨ ấ ¸ م Ẋ ώ˜ ᴈ ڜ ȝ Ụ

```
Illegal Value: Cannot set Frequency to be less than Timeout
```

Ẃ ȸ ᴈ ڜ 1 χ ¨ ấ ή ╨ ᵽ ᵸ ᾽H ژ ᾽H ı ¨ ấ ᵽ ᵸ ᾽H ژ ⿱ ∧ ᾽H ᾽H ژ

Ẉ ᴶ ب ″ -

6.4 icmp-echo

¨ ấ Ⱥ icmp-echo ۱ ȝ ⿰ RNS ή ╨

icmp-echo { *destination-ip-address* | *destination-hostname* [**name-server** *ip-address*] } [**source-ipaddr** *ip-address*] [**out-interface** *type num* [**next-hop** *A.B.C.D*]]

v ″Ǫ ب ″

v ″Ǫ	ώ ك
destination-ip-address	´ ⿰ IP ş χ
destination-hostname	´ ⿰ ʒ ᵽ ı ώ ذ ﺑ ᵼ ژ ᘐ 127 È ۱ ı ∧ ¸ ሏ ᵴ ט Ä Ă
name-server *ip-address*	پ ﻝ ´ ⿰ ʒ ᵽ ᾽H ı ″Y ӈ ᵌ ᵽ ᾽O ח ʜ ı س ת Æ ŧ ڤ ᵻ i ص **ip name-server** پ ﻝ ⿰ ᵌ ᵽ ᾽O ח ʜ ڤ Φ ﻝ ‘
source-ipaddr *ip-address*	◊ ip ş χ
out-interface *type num*	″Y ӈ ή ╨ ï ğ ⿰ ¡ ì Æ
next-hop *A.B.C.D*	″Y ӈ ¸ ì Æ ᾽H ı ï پ ip ş χ

ﻝ پ ﻝ -

ᵘ ɲ₩Ã IP RNS ᵽ ₩Ã (config-ip-rns)

ƛ ^1. 1

Æ ŧ ˝YṀ Î ᵘ ɲ㊀ᵽ ⅃ ' ıÆ Î ip rns Ḿ ɛ Ã Ḋ ∧ ゙ icmp echo ï ă ı´ ㊀ip ş ɣ Ĩ ŧ T̈ᵽ⅃㊀ip ş ɣ ѡ ɲ icmp echo ï ă㊀payload ᶻ ṇ ĩ 36 È ` ِص **request-data-size** ᵘ ɲ ı ˡ Ɋ Ӣ ώ ï ă ᶻ ṇ ọ ɛ Ӿᵽ⅃ ip rns ή ╝㊀1 ʒ ε ḅ icmp-echo ή ╝ ζ ı ɬ ª Wᵽ⅃ Î ή ╝ 1 ʒ㊀ʊ ч v Ẅ ḅ ' ɻ Ӣ ώ Ѧ ip rns ή ╝㊀ή ╝ 1 ʒ ı ọ ɛ Ӿ ں Î ip rns ή ╝ ε ِصᵶ ṕ ₩Ã ï ژ ᵶ **no ip rns** ᵘ ɲ ζ ı Wᵽ T̈ Aڤ Φᵽ⅃

ᵽ⅃ ʖ æ 1 χ ᵽ⅃˜ ip rns ɻ ∧ ゙ icmp echo ï ă ı´ ㊀ip ѭ 10.1.1.1

```
Ruijie(config)# ip rns 1
Ruijie(config-ip-rns)# icmp-echo 10.1.1.1
Ruijie(config-ip-rns-icmp-echo)# exit
Ruijie(config)# ip rns schedule 1 start-time now life forever
```

ₛ ᴈ Ä | Æ ŧ **show ip rns configuration** ᵘ ɲ ı ˡ Ɋ‼ ~ RNS Ḿ ɛ㊀ᵽ⅃ ʒ Ụ

ώ˜ ʒ Ụ 1 χ„ ấ icmp-echo ḫ æ`H ı ḅ ' ḫ æ ɲ è„ ấ¸ م ı Ǐ˜ ḫ æ„ ấ¸ م ʒ Ụ

```
rns object icmp-echo create fail.
```

Ẃ ỏ ᴇ ئ -

Ẉ ᴶ ب ˝ -

6.5 ip rns

ḧ Θ Ѧ ip rns ˝Ḥ Ă Ḿ ɛ

ip rns *operation-number*

¨ ں Ѧ ip rns Ḿ ɛ

no ip rns *operation-number*

v Ẅب ˝	v Ẅ	ώ ك

Æ ŧ ˝YṀ ˜EΦ Ĵ ᵘ ɲ ᵅ ı ؾ ip-rns ₩Ã ƍ ف₳₩Ã ɲ ı Ꝋ ḧ Θ ᴿ ϒ ή ╨ ɪ ʒ ı ´ ˙ ip rns ή ╨ ĸ ˜Ḥ'Y ipv4 ⅜ ʜ ή ╨ ı ṗ j ˜Ḥ'Y ipv6 ´ ˙ ω ^ ˜Ḥ'Yف ή ╨ ˜Ω ₍ ₩ 500 ₳ ⋮ ˜Ω j ª Ф ᵗ ⅜ ό ĩ ừ ` ı ˈ ĩ ṇ | ɀ ˙ Ĵ ω ᶻ Ö ᵗ⁽⁾ ή ╨ ı ĩ ᴱ ĩ ₳ ɯ Ö ı ĩ ı Ę ف ˝ ᶻ ₍ ⅜ ή ╨ ı Ṁ ₹ ă è ٧ ∕ ص ^ ⅜ ° ◊ Ḥ ı ή ╨ ı ĩ ɦ ɋ ṗ Ḥ ⅜ Ƀ ı Ꝋ Ȝ - ⁄ Ọ ў ∩ ε ḅ ت ᵠ ჳ ∧ ٧ ζ ⅜ Ẃ ؾ Φ

ƍ ụ ص ᵘ ɲ ؾ Ã ᵅ ı ⅟ ≡ ũ ف ℓ ف ɹ ή ╨ ɪ ʒ ı Ω ψ ف₳ rns Ṁ ɛ j ɦ ɋ ₍ ã ψƍ ف ɹ Ḥ ₳ ip rns ή ╨ ᵅ ı ف ọ ɛ ụ ص **ip rns schedule** ᵘ ɲ ف ɹ Ę ⅜ ᵏ ʊ ٧ ɤ ı ᵋ ₍ Ĵ ή ╨ j ɦ ɋ ˜EΦ

₳ ip rns ή ╨ ف ɹ Ḥ ή ╨ ɪ ʒ ᵅ ı ï ₭ W ụ ص **ip rns** ᵘ ɲ Ṅ ´ ì ف ؾ Ṁ Ẓ ή ╨ ɪ ʒ ⅜ Ḍ ₩ Ã ı ḅ ' ɻ Ѝ ώ

₳ ip rns ή ╨ ⅜ ή ╨ ɪ ʒ ı ọ ɛ Ⱦ ₍ ὐ Ĵ ip rns ή ╨ ε ụ ص ؾ ṕ ₩ Ã ï ژ ؾ **no ip rns** ᵘ ɲ ζ ı W ي Ȁ ف Φ ف ɹ

ف ɹ ʒ æ 1 χ ف ɹ ٨ ᴺ ⅜ 1 ⅜ ip rns Ṁ ɛ

```
Ruijie(config)# ip rns 1
Ruijie(config-ip-rns)# icmp-echo 10.1.1.1
Ruijie(config-ip-rns-icmp-echo)# exit
Ruijie(config)# ip rns schedule 1 start-time now life forever
```

ₛ ⇂ Ȁ | 1 χ Æ ŧ **show ip rns statistics** ᵘ ɲ ı Ĭ ˜ ip rns Ṁ ɛ ⅜ ٨ ɯ ˜Ω ˜Ω

ώ ˜ ʒ Ụ 1 χ ₍ ấ IP RNS Ṁ ü Ḥ ı ḅ ' ₍ ấ Ṁ ü ID Ţ è ƍ ı ħ * ƍ ḅ Φ ı ₍ ف Φ ip-rns ₩ Ã ¸ م Ẋ ώ ˜ ⇂ ئ

```
Entry already running and cannot be modified
      (only can delete (no) and start over)
      (check to see if the probe has finished exiting)
```

Ẃ ȸ ⇂ ئ 1 χ ₍ ấ IP RNS Ṁ ü Ḥ ı ₍ ấ Ṁ ü ID Ţ è ƍ ı ₍ ´ ì ف ؾ Ĵ ḍ æ ⅜ ή ╨ ɪ ʒ ₩ Ã

Ẉ ᴶ ب ˝ -

6.6 ip rns reaction-configuration

ف ɹ ₳ IP RNS ή ╨ ⅜ ʒ ʊ Ө ˘ í ⊐ ᵾ ٨ ˙

ip rns reaction-configuration *operation-number* **react** *monitored-element* [**action-type** *option*] [**threshold-type** { **average** [*number-of-measurements*] | **consecutive** [*occurrences*] | **immediate** | **never** | **xofy** [*x-value y-value*] }] [**threshold-value** *upper-threshold lower-threshold*]

	ˈ Ṿ ν ̈Ω̣ ω̃ χ **ɑ́allfail** χ ˘ í ̈Ā ω̃ ̣ م ι ʊ Ă ɿ ʒ ɯ ɲ ɯ track ι Ẹ˙ ĕ track ₩ ę Ґ Й̣Æ ɾ ψ •**rtt** χ ĭ ă È ف ̀H ɮ j ɲ Ö̤ ɲ ̀H ψ •**timeout** χ γ Ā ᵇ ʌ ̀H ̀H
action-type *option*	Ɩ ʌ ᵃ ĭ ʊ ʊ Ă ˈ Ṿ ν ̈Ω̣ ω̃ χ **ɑ́none** χ j پ π γ Ṃ ʊ Ă ι ف ĩ ɭ Ö ψ •**trigger** ʁ ̃Ḥ ̇Y trigger ĭ ʊ •**track** ʁ ̃Ḥ ̇Y track ĭ ʊ ι ʁ Ẹ monitored-element ɯ allfail ̀H ɛ́ ˈ ب أ ʊ Ă ι ħ ᴱ ω̃ أ ʊ Ă ɿ ʒ
average [*number-of-measurements*]	ɑ ˘ ɑ̀ ƒ ⅵ ɑ number-of-measurements ₭ ̈Ω̣ ̣Ẇ ʒ Ö ʌ ̣ Ö̤ Ɩ ʌ æ ḅ ɸ ɹ

ᴉ ᴊ̆ æ 1 χ ᴉ rns 1 ɜ Ʊ Ö ˘ í ʃ ת

```
Ruijie(config)# ip rns 1
Ruijie(config-ip-rns)# icmp-echo 192.168.23.1

Ruijie(config)# ip rns schedule 1 start-time now life forever
Ruijie(config)#ip rns reaction-configuration 1 react timeout threshold-type immediate action-type
```

5 ᴊ Á | 1 χ Æ ɪ̆ **show ip rns reaction-configuration** ᵘ ᴉ ι ᴵ ᴏ ˜ rns ɱ ᴵ ᴏ Ö ˘ í ᴉ F

```
Ruijie(config)# ip rns 1
Ruijie(config-ip-rns)# icmp-echo www.baidu.com
Ruijie(config-ip-rns-icmp-echo)# exit
Ruijie(config)#ip rns schedule 1 start-time now life forever
Ruijie(config)#ip rns reaction-configuration 1 react timeout threshold-type immediate action-type
trigger
Ruijie(config)# ip rns 3                                                                    ᴇ̰ ʻ
```

```
Ruijie(config)#sh ip rns configuration
```

ώ˜ ʒ Ụ 1 χ ώ˜ ip rns reset Ꮒ ▌Ꮙ Ä õ rns ٻ ل ا. ɲ ĩ ε ˜E Φ ا س ɲ ʁ[no]

```
WARNING: rns reset will remove all rns configurations, continue? (y/n) [no]
```

2 χ ḅ ' • Ⱥ rns ḡ æ* ɰ ή ╝ ا „ ώ˜ ĩ ε. ɲ „ ں ا س ɲ ʁ[no]

```
rns 1 schedule is running, confirm to delete?(y/n) [no]
```

Ẃ ỏ ჭ ئ -

Ẉ ᴶ ب ˝ -

6.9 ip rns restart

پ Ȁ ᵏ ʊ Ⱥ ip rns ή ╝

ip rns restart *operation-number*

v ˝Ọ ب ˝

v ˝Ọ	ὼ ك
operation-number	ip rns ˜Ḥ Ă Ḿ ع ⁅ ﻯ ᴺ ا ɲ Ö „ ḡ <1-500>

ỉ ٻ ل -

ᵘ ɲ ₩ Ã ২ ṕ ₩ Ã

ỉ ١. 1

Æ ŧ ˝Y Ṁ Ỉ ᵘ ɲ Ṅ Ⱥ Ţ ﻯ ٻ ل ˝ ذ ỷ ا Ẋ ذ ỷ Ţ ȳ Ƀ ª (ذ ỷ ↑ ő ʁ pending) ⁅ ip rns ή ╝ پ Ȁ ᵏ ʊ Ḿ ̂ ' ٻ ل ذ ỷ ⁅ ip rns ή ╝ ا Ỉ ᵘ ɲ ή ậ

ٻ ل ʓ æ 1 χ پ Ȁ ᵏ ʊ ip rns 1

```
Ruijie(config)# ip rns restart 1
```

ₛ ڃ Ä | -

ώ˜ ʒ Ụ 1 χ ˝Y ḧ پ ᵏ rns ḡ æ j è ɰ ا ˝Y ḧ rns ḡ æ پ Ȁ, م Ẋ ώ˜ ჭ ئ ʒ Ụ

```
rns operate has not define
```

2 ˝Y ḧ پ ᵏ rns schedule ٻ ل j è ɰ ا ˝Y ḧ rns ḡ æ پ ᵏ, م Ẋ ώ˜ ჭ ئ ʒ Ụ

```
% rns 2 schedule is not configured.
```

3 ˝Y ḧ پ ᵏ rns ḡ æ* ɰ ή ╝ ا ˝Y ḧ rns ḡ æ پ ᵏ, م Ẋ ώ˜ ჭ ئ ʒ Ụ

```
rns 1 schedule is active state.
```

Ẃ ỏ ჭ ئ 1 χ ˝Y ḧ پ ᵏ rns ḡ æ j è ɰ

2: χ ذ ỷ ʽ ɹ ɹ ɹ
3 χ ذ ỷ* ɲ ظ Φ

Ẉ ᴶ ب ˝ -

6.10 ip rns schedule

ɹ ɹ ᴬ IP RNS ή ⅃ ⅃ ذ ỷ ʹA | ᵏ ʊ ʽH ɮ ɨ è ʽH ɮ

ip rns schedule *operation-number* [**life** { **forever** | *seconds* }] [**start-time** { *hh*:*mm* [:*ss*] [*month day* | *day month*] | **pending** | **now** | **after** *hh*:*mm*:*ss* }] [**recurring**]

ɹ ɹ ɹ ʊ ɹ

no ip rns schedule *operation-number*

IP v ˝Ω ب ˝

```
Ruijie(config-ip-rns-icmp-echo)# exit
Ruijie(config)#ip rns schedule 1 start-time now life forever
```

2 χ ﺒ ﻠ Ḥ ذ ỷ Ⱳ ﻄ ª ا Ấ ή ╝ Ṅ ṇ | Ѝ ώ ¸ ﻇ ذ ỷ ª ا ' Ꝋ Ѝ ℊ

```
Ruijie(config)# ip rns 1
Entry already running and cannot be modified
       (only can delete (no) and start over)
       (check to see if the probe has finished exiting)
Ruijie(config)# no ip rns schedule 1
Ruijie(config)# ip rns 1
Ruijie(config-ip-rns-icmp-echo)# exit
```

ₛ ﺝ Ä | 1 χ Æ ŧ **show ip rns configuration** ᵘ ɲ ا ' Ꝋ¶ ˜ RNS Ḿ ﻉ ﺒ ﻠ ʒ Ụ

ώ˜ ʒ Ụ 1 χ ¸ ấ schedule Ḿ ч Ḥ ا ḅ ' ḫ æ ɲ è ¸ ấ ¸ م ا Ǐ ˜ ɲ è schedule ḫ æ ¸ ấ ¸ م ʒ Ụ

```
ip rns malloc rns schedule fail
```

2 χ ḅ ' schedule Ḿ ч Ţ è ƍ Ẋ ħ* ƍ ή ╝ ا ¸ ﺒ ﻠ ¸ م Ẋ ώ˜ ﺝ ئ ʒ Ụ

```
Cannot modify schedule. Operation may have started.
```

Ẃ ȸ ﺝ ئ 1 χ ip rns schedule Ḿ ч Ţ è ƍ Ẋ ħ* ƍ ή ╝

Ẉ ᴶ ﺒ ˝ -

6.11 object

Ф ﻠ Ⱥ track ˢ ت list Ḿ ﻉ ă ^ Ḿ ﻉ

object *object-number* [**not**]

¸ ﻇ track ă ^

no object *object-number*

v ˝ Ꝙ ﺒ ˝	v ˝ Ꝙ	ώ ك
	object-number	track Ḿ ﻉ ﻝ ᴺ ا ω ᷒ Ө ﻩ 1 ˙ 700

ﻛ ﺒ ﻠ ṇ ă ^ Ḿ ﻉ

ᵘ ɲ ₩ Ã track ﺒ ﻠ ₩ Ã

ﻛ ﻝ ¸ 1

Æ ŧ ˝YṀ Ĩ ᵘ ᑏ ᵽ ل Ⱥ track ʿ ت list Ḿ ع ă ^ Ḿ ع ا ˡ Ꞷ ᵽ ل Ḿ ع Ⱥ ̈Ꞷ ʁ ᴩ track Ḿ ع ḳ ˌ ں

object *object-number*:track Ḿ ع ↑ ő ᴌ ă ^ Ḿ ع ↑ ő ᵌ ا ᴱ ũ Ẹ ă ^ Ḿ ع ◗ ′ up ا track Ḿ ع ė ũ ˡ ǐ ʁ up ψ

object *object-number* not:track Ḿ ع ↑ ő ᴌ ă ^ Ḿ ع ↑ ő᾽ ᵌ ا ᴱ ũ Ẹ ă ^ Ḿ ع ◗ ′ down ا track Ḿ ع ė ũ ˡ ǐ ʁ up ψ

ᵪ ا ├ Ỿ ĩ χ

- Ĩ ᵘ ᑏ ᴱ ǐ ᵽ ʿ ت Ḿ ع ʁ list track ₩ Ã ï ف Φ ᵽ ل ψ
- track j ǐ ʿ ᵯ ţ ځ ψ
- track j ǐ И̓ ʿ ت ḅ track A ʿ ت track B ا track B j ǐ ᵣ ص ʿ ت track A ᵋ ا ǐ ᕼ ڃ ă track A ⊐ track B ´ ی ↑ ő

ᵽ ل ڎ æ 1 χ ᵽ ل Ⱥ track Ḿ ع ᵑ ᴺ 4 ا Ẹ track Ḿ ع 1 ʁ up ا 2 ʁ down ا 3 ʁ up ª ᾽H ◗ ′ ᾽H ا track Ḿ ع 4 ʁ up

```
Ruijie(config)# track 4 list boolean and
Ruijie(config-track)# object 1
Ruijie(config-track)# object 2 not
Ruijie(config-track)# object 3
Ruijie(config-track)# end
```

ₛ ڃ Ά | Æ ŧ **show track** ᵘ ᑏ ا ˡ Ꞷ ˜ track Ḿ ع ᵑ ɯ ʒ Ụ

ώ˜ ʒ Ụ Ỿ track Ḿ ع ' ᵽ ل ᾶ ᵽ ل ¸ م ا ˛ ᵽ ل Ĩ object ᵘ ᑏ ᾽H ᕼ ˛ ڃ

```
set object error.
```

2 Ỿ ᵽ ل ă ^ Ḿ ع ʁ track ځ ا ˛ ᵽ ل j ă ا ا ώ˜ j ǐ ʿ ᵯ ţ ځ

```
track can not track itself.
```

3 Ỿ ᵽ ل ă ^ Ḿ ع Ţ ل ʿ ت Ĩ track Ḿ ع ا ˛ ᵽ ل j ă ا

```
object xx is already tracking track yy.
```

Ẃ ȣ ڃ ئ -

Ẉ ᴶ ب ˝ -

6.12 request-data-size

ᵽ ل Ⱥ IP RNS ή ᴌ ʁ ʙ ɲ ɔ U ᶻ ṇ

request-data-size *bytes*

Õ ʰ ᵴ ɲ Ë

no request-data-size

v ̈Ꞷ	ώ ك
bytes	ή ᴌ ɣ payload È ` ̈Ꞷ ا j ª ή ᴌ ω ṇ / ω ᶻ È ` ̈Ꞷ j ª ا ʊ ɥ Ə ̃Ꞷ j ª

	ή ⅃ ⊞ D̯ ₩ Ã ï ƀ ʔ ᵘ ɲ ⊞ ώ˜ ڤ Φ ب ⅃

⅃ ب ⅃ j ª ή ⅃ ⅃ ʒ ⊞ ⅃ Ö j ª ı ɯ ɲ ɸ u ĩ Í ˥ ⅃ ʒ ή ⅃ payload ọ ء ⊞ ω ṇ Ö

ᵘ ɲ ₩ Ã IP RNS ICMP echo ب ⅃ ₩ Ã (config-ip-rns-icmp-echo)

⅃ ⅃ ̣ 1

Æ ɪ ˝ Y Ṁ Í ᵘ ɲ ǯ ɩ ɪ ˡ ɲ ή ⅃ ˝ Ω̣ ˜ Ω γ ʌ ˡ Χ Ρ È ` ı Ɋ ڤ Φ ي ᶻ ˝ Ω̣ ˜ Ω γ ⊞ ή ⅃
Ẹ ̇ icmp-echo ⅃ ʒ ˜ Ḥ ̇ Y ⊞ ɔ U ᶻ ṇ ɲ Ö ù ` ḅ ï ˊ χ
ή ⅃ ⅃ ʒ ɲ Ö ̤ ḅ ɯ ɲ Ö

ᴗ ⅃ ǯ æ 1 χ ˡ ˜ ip rns 1 ⊞ᴗ ⅃ ʒ Ụ

```
Ruijie# show ip rns configuration 1
Entry number: 1
Tag: ruijie555
Type of operation to perform: icmp-echo
Operation timeout (milliseconds): 5000
Operation frequency (milliseconds): 10000
Threshold (milliseconds): 5000
Recurring (Starting Everyday): FALSE
Life (seconds): 3500
Next Scheduled Start Time:Start Time already passed
Target address/Source address: 2.2.2.3/0.0.0.0
Request size (ARR data portion): 36
```

Ѐ ⅃ ⅃ ᴗ χ

Ѐ ⅃	ᴗ ˝
Entry number	IP RNS

ᵘ ᴉ₩Ã ⸗ ₩Ã

ᴊ̀ ᴊ̣ 1

Æ ᴛ ̈ʏṀ ᴉ ص ᴉ ᵘ ᴉ ᴉ ᴛ ̈A ᴵ Ɑ Ĭ ˜ • Ѧ RNS Ḿ ع ή ╝ ⸙ ⸜ ' ᴊ ɯ ʒ Ụ

ᴇ ⸜ ǯ æ 1 χ ̈ ˜ ̈A ω̃ RNS Ḿ ع ή ╝ ⸙ ⸜ ' ᴊ ɯ ʒ Ụ ε Ɑ icmp-echo ή ╝ ᴊ ʒ ب ̈ ζ

```
Ruijie#show ip rns collection-statistics 1
Entry number: 1
Start Time Index: *2014-03-20 19:53:51
Number of successful operations: 919
Number of operations over threshold: 0
Number of failed operations due to a Disconnect: 0
Number of failed operations due to a Timeout: 2
Number of failed operations due to a Busy: 0
Number of failed operations due to a No Connection: 0
Number of failed operations due to an Internal Error: 2
Number of failed operations due to a Sequence Error: 0
Number of failed operations due to a Verify Error: 0
RTT Values:
RTTAvg: 18       RTTMin: 16       RTTMax: 37
NumOfRTT: 919     RTTSum: 16654       RTTSum2: 302786
```

Ȅ ᴇ ᴊ ᴉ χ

Ȅ ᴇ	ب ̈
Entry number	IP RNS ̈Ḥ Ă ᴊ Ậ
Start Time Index:	ή ╝ ḫ ℭ̈ ᵏ ʊ ̀H ̄ (ذ ỷ ᵏ ʊ ̀H ̄)
Number of successful operations:	ᾰ ᴉ ή ╝ Ꝁ ̈Ω̣

RTTMin:	ή ╨ È ى H ژ ѡ ņ Ө
RTTMax:	ή ╨ È ى H ژ ѡ ᵶ Ө
NumOfRTT:	∕ ɯ È ى H ژ 🔳 Ќ Ѫ
RTTSum:	ή ╨ È ى H ژ ɵ ⁼
RTTSum2:	ή ╨ È ى H ژ Ẉ Ά ⁼

ώ˜ ʒ Ụ 1 χ ip rns ŋ æ j è ɲ

```
rns operate has not define
```

Ẉ ᴶ ب ˝ -

6.15 show ip rns operational-state

Ǐ ˜ RNS Ḿ ɛ ή ╨ 🔳 Ę ˙ ↑ ő ʒ Ụ

show ip rns operational-state [*operation-number*]

v ˝Ǫ ب ˝

v ˝Ǫ	ὼ ك
operation-number	ip rns ˝Ḥ Ă Ḿ ɛ 🔳 ∧ ᴺ ı п Ө ,, ɲ <1-500> ỉ ₦ ˝Ά ő 🔳 rns ˝Ḥ Ă Ḿ ɛ

ᵘ ɲ ₩ Ã ᵉ ₩ Ã

ỉ ∧ 1

Æ ŧ ˝Ẏ Ṁ ۍ ص أ ᵘ ɲ ı ŧ ˝Ά ˡ Ꝋ Ǐ ˜ • Ⱥ RNS Ḿ ɛ ή ╨ 🔳 Ę ˙ ↑ ő ʒ Ụ

ب ل ⁑ æ 1 χ ¶ ˜ ˝Ά ő RNS Ḿ ɛ ή ╨ 🔳 Ę ˙ ↑ ő ʒ Ụ

```
Ruijie# show ip rns operational-state
Entry number: 1
Modification time: *2014-01-10 10:26:14
Current seconds left in Life: Forever
Operational state of entry: Active
Number of Octets Used by this Entry: 2272
Number of operations attempted: 232
Number of operations skipped: 0
Connection loss occurred: FALSE
Timeout occurred: FALSE
Over thresholds occurred: FALSE
Latest RTT (milliseconds): 4
Latest operation start time: 2014-01-10 10:26:55
Latest operation return code: OK
```

È ᵻ ᴶ ᵩ χ

Ề ɟ	ب ˝
Entry number	IP RNS ̈Ḥ Ă ⅃ Ậ
Modification time	ή ╨ ⅃ ʽ ᶜ̣ Ȁ ⅄ ɯ̀ H ʒ ε Ꝁ ذ ỷ ᵏ ʊ ᶜ̣ Ȁ ⅄ ɯ ⅃ ʽ ζ
Number of Octets Used by this Entry	أ ḫ æ ή ╨ ʌ گ̈ ï ă Ề ` Ở ̈Ọ
Number of operations attempted	ʌ گ̈ ή ╨ Ở ̈Ọ
Number of operations skipped	ʌ گ̈ ή ╨ ¸ م Ở ̈Ọ
Current seconds left in Life	ή ╨ ɾ ʍ ɨ ᵘ Ọ
Operational state of entry	ή ╨ Ẹ˙ ̈A ʃ ↑ ỗ ε Active,Disactive ζ
Connection loss occurred	ĩ ᵋ ʌ گ̈ Ă Ầ ف ì
Timeout occurred	ĩ ᵋ ʌ گ̈ ʌ `H
Over thresholds occurred	ĩ ᵋ ʌ ص Ө
Latest RTT (milliseconds)	ɷ ɛ̇ Ꝁ ή ╨ Ề ف `H ʒ
Latest operation start time	ɷ ɛ̇ Ꝁ ή ╨ ʌ گ̈ `H ʒ
Latest operation return code	ɷ ɛ̇ Ꝁ ή ╨ ف ɨ Ө

ώ˜ ʒ Ụ 1 χ ip rns ḫ æ j ề ɲ

```
rns operate has not define
```

Ẉ ᴶ ب ˝ -

6.16 show ip rns reaction-configuration

Ĭ ˜ RNS Ḿ ع ή ╨ ⍝ Ǯ ʊ Ө ˘ í ʒ Ụ

show ip rns

ᴧ̀ ᴧ̣ 1

Æ ᴛ ̈ Y Ṁ ᴜ ᴜ ᴛ ᴛ ̈ A ᴵ Ɑ Ĭ ˜ • Ѧ RNS Ḿ ᴇ ή ᴶ ᴝ ᴜ ʌ ή ᴶ ʒ Ụ

ᴜ ᴧ ǯ æ 1 χ ̈ ˜ ̈ A ω̃ RNS Ḿ ᴇ ή ᴶ ᴝ ᴜ ʌ ή ᴶ ʒ Ụ

```
Ruijie#show ip rns reaction-trigger
Entry number: 1
Target rns index: 2
Status of Entry (SNMP RowStatus): active
Operational State: pending
```

Ѐ ᴇ ᴊ ᴗ χ

Ѐ ᴇ	ᴜ ̈

```
Latest operation start time: 2014-01-20 10:21:38
Latest operation return code: OK
Number of successes: 386
Number of failures: 12
```

Ѐ ᴇ ᴊ ᵥ χ

Ѐ ᴇ	ب ˝
Round trip time(RTT) Index	Rns ˧˩ Ậ id
Operation time to live	Ẹ˙ ή ˩˩ ɾ ɱ ɨ ᵘ ˘ Ω̣
Latest RTT	ω̣ ɛ̇ Ꝁ ή ˩˩ Ѐ ف ̀H ڑ
Latest operation start time	ω̣ ɛ̇ Ꝁ ή ˩˩ Ầ Ḋ ̀H ڑ
Latest operation return code	ω̣ ɛ̇ Ꝁ ή ˩˩ ف ɨ Ө ε ok,timeout,noconnection ˧˩ ζ
Number of successes	ή ˩˩ ᾰ ı Ꝁ ̈Ω̣
Number of failures	ή ˩˩ ˌ م Ꝁ ̈Ω̣

ώ˜ ʒ Ụ 1 χ ip rns ḫ æ j ѐ ƿ

```
rns operate has not define
```

Ẉ ᴊ ب ˝ -

6.19 show track

ᵗ ˜ track Ḿ ع ⌧ ˩ ɰ ʒ Ụ

show track [*object-number*]

ν ̈Ω̣ ب ˝

ν ̈Ω̣	ὼ ك
object-number	̈Y ḧ track Ḿ ع ⌧ ˩ ᴺ ı ɲ Ӫ ̤ ƿ 1-700

```
  Delay up 30 secs, down 50 secs
Track 3
  Interface FastEthernet 1/0
  The state is Down, delayed Up (5 secs remaining)
    3 change, current state last: 300 secs
  Delay up 60 secs, down 60 secs
Track 4
  List boolean and
  Object 1
  Object 2 not
  The state is Up
  1 change, current state last: 100 secs
  Delay up 0 secs, down 0 secs
```

Ѐ ⅃ ⅃ ⸱ χ

Ѐ ⅃	ب ˝
Track x	Track Ḿ ع ⅄ ᴺ
Reliable Network Service x	ˢ ⊞ rns Ḿ ع
The state is x	Track Ḿ ع ↑ ỗ
x change	Track Ḿ ع ↑ ỗ ψ ק ⊞ Ҡ ̈Ѡ
current state last χ x secs	Ẹ̇ track Ḿ ع ↑ ỗ ̀Y ⅄ ⊞ ̀H ڑ
Delay up x secs, down x secs	Track Ḿ ع ⊞ ȧ ڤ Ṟ ớ
Interface x x	ˢ ⊞ ì Æ ʒ Ụ
The state is x, delayed y (c secs remaining)	Ẹ̇ track Ḿ ع ↑ ỗ ѭ x ı ⅄ ص c ⅂ ª Ṅ ψ ѭ y
List boolean and	Track Ḿ ع ⊞ ⅃ ˈ п ̈A ω̃ ᾰ ˆ ɒ ль ɓ ⊞ ⅃ ˈ
Object x	ᾰ ˆ x ⊞ ◗ ’ ǀ̌ ţ ѭ Ƭ ↑ ỗ up
Object x not	ᾰ ˆ x ⊞ ◗ ’ ǀ̌ ţ ѭ Ƭ ↑ ỗ down

ώ˜ ʒ Ụ 1 χ ̈Y ḧ Ĭ ˜ ⊞ track Ḿ ع j è ƥ ı ̤ ώ˜ ج ئ

```
Illegal Value: the track object does not exist.
```

Ẉ ᴶ ب ˝ -

6.20 show track client

ǀ ˜ track i̯ ̈A ⅄ ⊞ ⅄ ɯ ʒ Ụ

show track client

ν ̈Ѡ ب ˝

ν ̈Ѡ	ὼ ك
-	-

ᵘ ɲ ₩ Ã ₑ ₩ Ã

ǰ ۱. 1

Æ ɾ ″Y Ṁ Æ ɾ Î ᵘ ɲ ˡ Œ ˜ Ẹ ف ì track ¡ ¨A ۱ ۱ ɯ ʒ Ụ

ب ل ǯ æ 1 χ ˜ Ẹ ف ì track ¡ ¨A ۱ ۱ ɯ ʒ Ụ

```
Ruijie# show track client
Track client 2: socket 4
client_path: /tmp/vsd/0/track/.client_nsm
Connection time: Fri Dec 28 17:04:43 2012
```

È ɟ ɹ ᵩ χ

È ɟ	ب ″
Track client x: socket x	Track ¡ ¨A ۱ ۱ ᴺ ʒ ˷ ì È
client_path: /tmp/vsd/0/track/.client_nsm	¡ ¨A ۱ ف ì track ت Ḗ
Connection time: xx xx xx xx:xx:xx xx	¡ ¨A ۱ ف ì track ˈH ژ

ώ ˜ ʒ Ụ -

Ẉ ᴶ ب ″ -

6.21 tag

ʁ Ѧ IP RNS ή ᴌ ₱ ل Ѧ‰ ۷

tag *text*

ˏ ڀ‰ ۷

no tag

v ″Ω ب ″

v ″Ω	ώ ك
text	₱ ل ή ᴌ ¡ ‰ ۷ ı tag ۱ ˡ ɛ м È ۱ ۱ ă ı ω ذ ы ᵽ ژ ϶ 79 Ѧ È ۱

ǰ ب ل -

ᵘ ɲ ₩ Ã IP RNS DNS ب ل ₩ Ã (config-ip-rns-dns)
IP RNS ICMP echo ب ل ₩ Ã (config-ip-rns-icmp-echo)

ǰ ۱. 1

Æ ɾ ″Y Ṁ Tag ˡ Œ ʁ ή ᴌ ″Y ḧ Ѧ‰ ۷ ı ِ Ẃ ₹ ‰ ₹ ف Ѧ ή ᴌ ¡ Ă ɾ Ẹ‰ ۷ È ۱ ذ ў ٨ ص 79 ˋH ъ ט Ä Ă

ᵖ ᴶ ᶻ̌ æ 1 χ ᵖ ᴶ ip rns ή ᴵᴵ ᵒᵒ‰ ᴷ ᴶ telecom_gateway

```
Ruijie(config)# ip rns 1
Ruijie(config-ip-rns)# icmp-echo 10.1.1.1
Ruijie(config-ip-rns-icmp-echo)# tag telecom_gateway
Ruijie(config-ip-rns-icmp-echo)# exit
```

ᵉ ᴶ Á | 1 χ Æ ᵀ **show ip rns configuration** ᵘ ᴉ ι ᴵ ᴼ ˜ RNS Ḿ ᵉ ᵒᵒ ᵖ ᴶ ᴶ ᴶ

ώ˜ ᴶ Ụ -

Ẃ ᵭ ᴶ ᵉ -

Ẉ ᴶ ᵖ ˝ -

6.22 threshold

ᵖ ᴶ Ѧ IP RNS ή ᴵᴵ ᵒᵒ i ᴶ Ö

threshold *milliseconds*

Õ ᵻ ᴶ Ö

no threshold

ν ˝Ω ᵖ ˝

ν ˝Ω	ὼ ᶜ
milliseconds	ή ᴵᴵ ᵒᵒ i ᴶ Ö ι ᴨ Ö ᵍ ᴶ ᴶ 0-60000 ι ᴅ ᴶ ms ι ᴶ ᴨ Ö 5000

ᴶ ᵖ ᴶ 5000ms ᴼ ᴼ ᴼ ˝H Ù ᴼ ή ᴵᴵ ᵒᵒ

Ẉ ᴶ ᵖ ˝

```
Ruijie(config-ip-rns-icmp-echo)# threshold 8000
Ruijie(config-ip-rns-icmp-echo)# exit
```

ₛ ⱬ Ä │ 1 χ Æ ŧ **show ip rns configuration** ᵘ ɲь ı ˡ Ꝙ¶ ˜ RNS Ḿ ع㏀ﺒ ɻ ʒ Ụ

ώ˜ ʒ Ụ 1 χ ﺒ ɻ threshold ⱬ̂ timeout `H ı ώ˜ v ̈Ꝙ ɲ ꝏ̃ ʒ Ụ

```
Illegal Value: Cannot set Threshold to be greater than Timeout.
```

Ẃ ȸ ⱬ ئ -

Ẉ ᴶ ﺒ ˝ -

6.23 timeout

ﺒ ɻ Ⱥ IP RNS ή ╨ ㏀ ʌ `H`H ژ
timeout *millisecond*

Õ ʰ ȷ̌ Ө
no timeout

v ̈Ꝙ ﺒ ˝

v ̈Ꝙ	ώ ك
millisecond	ή ╨ ʌ `H`H ژ ı ⊓ Ө„ ƀ ㎞ 10 - 604800000 ı ᴅ ɣ ms ı س ɲ Ө ƺ ㎞ 5000ms

ȷ̌ ﺒ ɻ j ª ή ╨ ɻ ʒ ㏀ ȷ̌ ʌ `H`H ژ j ª ı ˡ Ꝙ ڀ ص **show ip rns configuration**¶ ˜

ᵘ ɲ₩ Ǟ IP RNS DNS ﺒ ɻ ₩ Ǟ (config-ip-rns-dns)
IP RNS ICMP echo ﺒ ɻ ₩ Ǟ (config-ip-rns-icmp-echo)

ȷ̌ ɻ. 1

Æ ŧ ˝ Y Ṁ timeout ㏀ﺒ ɻ ǫ ɤ ⱬ̂ ɬ̂ threshold ﺒ ɻ timeout ı frequency ı threshold s ă̈ ƥ ﺒ ɻ i ㏀Ꮒ ﻝ ı ت v ȸ frequency ㏀Æ ŧ ˝ Y Ṁ

ﺒ ɻ ʖ æ 1 χ ﺒ ɻ IP RNS1 ò 0ož

ώ˜ ʒ Ụ 1 χ ﺑ ﺍ timeout Ö `H ı ḅ ' timeout Ö ﺗ frequency ̈Ω Ö ı ̈ ﺑ ﺍ ̣ م Ẋ ώ˜ ﺟ ئ ʒ Ụ

Ẃ ð ჭ ئ -

Ẉ ᴶ ب ˝ -

6.25 track interface line-protocol

ب ل track Ḿ ع ا ˢ ت Ⱥ ì Æ ج ن ↑ õ
track *object-number* **interface** *interface-type interface-number* **line-protocol**

¨ ڽ track Ḿ ع
no track *object-number*

v ˝Ọ ب ˝

v ˝Ọ	ώ ك
object-number	Track Ḿ ع ل ᴺ ا п Ë ˛ ҕ ѭ 1-700
Interface-type *interface-number*	ì Æ ۱ ʒ ì Æ ل ᴺ

ƚ ب ل -

ᵘ ɲ ₩ Ã ২ ṕ ₩ Ã

ƚ ۱ . 1

Æ ŧ ˝ Y Ṁ Æ ŧ Î ᵘ ɲ ب ل Ⱥ track Ḿ ع ا ŧ ˢ ت Ⱥ ì Æ ج ن ↑ õ Ẹ ì Æ ج ن ↑ õ ѭ up ̀H ا ˀ Ẓ track Ḿ ع ↑ õ ѭ up

ب ل ʖ æ 1 χ ب ل Ⱥ track Ḿ ع ا Ʊ ل ᴺ ѭ 3 ا ħ ŧ ˢ ت ì Æ ethernet 0/1 ج ن ↑ õ

```
Ruijie(config)# track 5 interface ethernet 0/1 line-protocol
```

ₛ ⱬ Ä | Æ ŧ **show track** ᵘ ɲ ا ! Ɯ ˜ track Ḿ ع ل ч ʒ Ụ

ώ ˜ ʒ Ụ 1 χ ب ل track Ḿ ع ̀H ا ḅ ' ₱ ᵻ i ° ◊ j ' ا ώ ˜ ჭ ئ

```
Failed to create track obj, no resource.
```

2 χ Æ ŧ **no track** ¨ ڽ ˝ Y ẗ track Ḿ ع ̀H ا ḅ ' ₱ ᵻ i ≡ ῶ ب ل Î track Ḿ ع ا ώ ˜ ჭ ئ

```
the track object does not exist.
```

Ẃ ð ჭ ئ 1 χ ب ل ˜ ˢ ت ì Æ ج ن ↑ õ track ا Ꮋ ' ب ل ˀ Ẓ ì Æ

Ẉ ᴶ ب ˝ -

6.26 track list

ٻ ل track Ḿ ع ا ˢ ت Ⱥ track˚ ˊ ⁺ õ
track *object-number* **list boolean** { **and** | **or** }

¨ ڀ track Ḿ ع
no track *object-number*

v ̋Ϙ ب ˝

v ̋Ϙ	ѡ ك
object-number	track Ḿ ع ل ᴺ ا ח Ö¨ ƀ ⱡ 1-700

ƚ ٻ ل -

ᵘ ɲ ₩ Ã ২ ṕ ₩ Ã

ƚ ۱ ¸ 1

Æ ŧ ˝ Ỳ Ṁ Ǐ ᵘ ɲ ٻ ل Ⱥ track Ḿ ع ا ŧ ˀ ˢ ت Ⱥ track˚ ˊ ⁺ õ Ʊ ل ˈ ᵎ Ɯ ĩ ˝ Ⱥ ũ ă ^ ⁺ õ ח ɒ ɲ ъ ƀ ǎ ä ɒ ǎ ƀ ل ˈ

- **track** *object-number* **list boolean and** χ ٻ ل track Ḿ ع ŧ ˀ ˢ ت track˚ ˊ ⁺ õ ا Ʊ ل ˈ ⱡ ˝ Ⱥ ũ ă ^ ⁺ õ ח ɒ ɲ ъ ƀ ل ˈ ψ
- **track** *object-number* **list boolean or** ٻ ل track Ḿ ع ŧ ˀ ˢ ت track˚ ˊ ⁺ õ ا Ʊ ل ˈ ⱡ ˝ Ⱥ ũ ă ^ ⁺ õ ח ɒ ǎ ƀ ل ˈ ψ

ٻ ل ʒ æ ٻ ل Ⱥ track Ḿ ع ا Ʊ ᴎ ᴺ ⱡ 4 ا ħ ŧ ˀ ˢ ت Ⱥ track˚ ˊ ⁺ õ ا Ʊ ل ˈ ˝ Ⱥ ũ ă ^ ⁺ õ ח ɒ ɲ ъ ƀ ل ˈ

```
Ruijie(config)# track 4 list boolean and
```

ₛ ⱬ Ⱥ | Æ ŧ **show track** ᵘ ɲ ا ᵎ Ɯ ¶ ~ track Ḿ ع ل ᴌ ɥ ʒ Ụ

ώ˜ ʒ Ụ 1 χ ٻ ل track Ḿ ع ̀H ا ƀ ' ֆ ᵻ i ° ◊ j ’ ا ¸ ώ˜ ⱬ ئ

```
Failed to create track obj, no resource.
```

2 χ Æ ŧ **no track** ¸ ڀ ̋Y ħ track Ḿ ع ̀H ا ƀ ' ֆ ᵻ i ≡ ũ ٻ ل Ǐ track Ḿ ع ا ¸ ώ˜ ⱬ ئ

```
the track object does not exist.
```

Ẃ ȸ ⱬ ئ 1 χ ٻ ل ˜ ˢ ت track˚ ˊ ˆ ⁺ ô track ا Ꮋ ' ٻ ل ˆ Ẓ track˚ ˊ ă ^

Ẉ ᴶ ب ˝ -

6.27 track rns

ᵽ ɻ track Ḿ ɛ ı ʿ ت Ⱥ rns ƞ æ㊀ή ㅛ ㄴ '
track *object-number* **rns** *entry-number*

¨ ბ track Ḿ ɛ
no track *object-number*

v ″Ϙ ᵽ ″	v ″Ϙ	ὼ ك
	object-number	track Ḿ ɛ㊀ㅓ ᴺ ı ㅍ Ö„ ƞ ㎞ 1-700
	entry-number	rns Ḿ ɛ㊀ㅓ ᴺ ı ㅍ Ö„ ƞ ㎞ 1-500

ƛ ᵽ ɻ -

ᵘ ɲ ₩ Ã ᘐ ṕ ₩ Ã

ƛ ㄱ˳ 1

Æ ɪ ″Y Ṁ Æ ɪ Ĵ ᵘ ɲ ᵽ ɻ Ⱥ track Ḿ ɛ ı ɪ⁋ ʿ ت Ⱥ rns ƞ æ㊀ή ㅛ ㄴ ' Ę rns ƞ æ㊀ή ㅛ ㄴ ' ă ı `H ỉ Ƶ㊀track Ḿ ɛ ᵀ ő ㎞ up

ᵽ ɻ ʒ æ 1 χ ᵽ ɻ Ⱥ track Ḿ ɛ ı Ʊ ㅓ ᴺ ㎞ 5 ı ħ ɪ⁋ ʿ ت ㅓ ᴺ ㎞ 7 ㊀rns ƞ æ

```
Ruijie(config)# track 5 rns 7
```

ₛ ⱬ Ⱥ | Æ ɪ **show track** ᵘ ɲ ı ˡ Ꞷ¶ ˜ track Ḿ ɛ㊀ ㅓ ɯ ʒ Ụ

ώ˜ ʒ Ụ 1 χ ᵽ ɻ track Ḿ ɛ `H ı ḅ ' ₱ ᵻ i ° ◊ j ’ ı„ ώ˜ ⱬ ئ

```
Failed to create track obj, no resource.
```

2 χ Æ ɪ **no track**¨ ბ ″Y ḧ track Ḿ ɛ `H ı ḅ ' ₱ ᵻ i ≡ ῶ ᵽ ɻ Ĵ track Ḿ ɛ ı„ ώ˜ ⱬ ئ

```
the track object does not exist.
```

Ẃ ȸ ⱬ ئ 1 χ ᵽ ɻ¯ ʿ ت rns ㊀track ı Ꮋ ' ᵽ ɻ Ƶ㊀rns ƞ æ

Ẉ ᴶ ب ″ -

6.28

-

1. SNMP
2. RMON
3. NTP
4. SNTP
5. SPAN-RSPAN
6. ERSPAN
7. sFlow

1 SNMP

no snmp-server	SNMP
show snmp	SNMP
snmp trap link-status	Link Trap
snmp-server chassis-id	
snmp-server community	
snmp-server contact	
snmp-server enable traps	Agent NMS Trap
snmp-server group	SNMP
snmp-server host	Agent NMS
snmp-server location	
snmp-server net-id	
snmp-server packetsize	SNMP
snmp-server queue-length	Trap
snmp-server system-shutdown	SNMP
snmp-server trap-format private	SNMP Trap
snmp-server trap-source	Trap
snmp-server trap-timeout	Trap
snmp-server udp-port	SNMP
snmp-server user	SNMP
snmp-server view	SNMP
snmp-server inform	inform

1.1 no snmp-server

SNMP

no snmp-server

-	-

SNMP

14

SNMP SNMP NMS
SNMP SNMP
enable service snmp-agent SNMP
SNMP
SNMP **show running-config**
SNMP **enable service snmp-agent** SNMP

1 SNMP

```
Ruijie(config)# no snmp-server
```

no snmp-server **show running-config**
SNMP NMS MIB

-

-

-

1.2 show snmp

SNMP

show snmp [**mib** | **user** | **view** | **group**| **host**]

mib	snmp mib
user	snmp
view	snmp
group	snmp
host	

14

-

1 SNMP

```
Ruijie# show snmp
Chassis: 60FF60
0 SNMP packets input
```

```
        0 Bad SNMP version errors
        0 Unknown community name
        0 Illegal operation for community name supplied
        0 Encoding errors
        0 Number of requested variables
        0 Number of altered variables
        0 Get-request PDUs
        0 Get-next PDUs
        0 Set-request PDUs
0 SNMP packets output
        0 Too big errors (Maximum packet size 1472)
        0 No such name errors
        0 Bad values errors
        0 General errors
        0 Response PDUs
        0 Trap PDUs
SNMP global trap: disabled
SNMP logging: disabled
SNMP agent: enabled
```

Chassis	
SNMP packets input	
Bad SNMP version errors	
Unknown community name	
Illegal operation for community name supplied	
Encoding errors	
Number of requested variables	MIB
Number of altered variables	MIB
Get-request PDUs	Get
Get-next PDUs	Get-next
Set-request PDUs	Set
SNMP packets output	
Too big errors (Maximum packet size 1472)	1472
No such name errors	No such name
Bad values errors	Bad values

General errors	General error
Response PDUs	
Trap PDUs	Trap
SNMP global trap	ɣ ε Ȯ ®˜ ⅃ P ⅄

-

-

1.4 snmp-server chassis-id

snmp-server chassis-id *text*

no snmp-server chassis-id

no snmp-server contact

text	

14

-

1 SNMP i-net800@i-net.com.cn

```
Ruijie(config)# snmp-server contact i-net800@i-net.com.cn
```

-

-

-

-

1.7 snmp-server enable traps

Agent NMS Trap

snmp-server enable traps [*notification-type*]

SNMP NMS Trap

no snmp-server enable traps

notification-type	Trap snmp: SNMP TRAP bridge: BRIDGE TRAP mac-notification: MAC TRAP web-auth: WEB TRAP

SNMP NMS Trap

14

snmp-server host Trap

Trap Trap

1 SNMP Trap

o¬ F å ˆ Xéå†?Â ÷G $r!’[q(,e “%½Â ðÆúÀHP• s`bu •L Â ÷G !G ˆt 3Ü o¬ … 6 ! • j· ü tp1" q(‡@qs=Â ðÆúÀHP• s`

14

-

1 mib2user

```
Ruijie(config)# snmp-server group mib2user v3 priv read mib2
```

-

-

-

-

1.9 snmp-server host

Agent NMS

snmp-server host { *host-addr* } [**traps | informs**] [**version** { **1** | **2c** | **3** { **auth** | **noauth** | **priv** }] *community-string* [**udp-port** *port-num*] [*notification-type*]

SNMP

no snmp-server host { *host-addr* } [**traps | informs**] [**version** { **1** | **2c** | **3** { **auth** | **noauth** | **priv** }] *community-string* [**udp-port** *port-num*]

host-addr	SNMP
traps | informs	trap inform
version	snmp V1 V2C V3
auth | **noauth** | **priv**	V3
community-string	V3
port-num	snmp
notification-type	Trap snmp Trap Trap

SNMP

14

snmp-server enable traps NMS Trap

SNMP Trap Trap

[ ] Trap

Trap

1 SNMP SNMP Trap

```
Ruijie(config)# snmp-server host 192.168.12.219 public snmp
```

-

-

-

-

1.10 snmp-server location

snmp-server location *text*

no snmp-server location

```
Ruijie(config)# snmp-server location start-technology-city 4F of A Building
```

1.12 snmp-server packetsize

SNMP

snmp-server packetsize *byte-count*

no snmp-server packetsize

byte-count	484 17876

1472

14

-

1 SNMP 1492

```
Ruijie(config)# snmp-server packetsize 1492
```

-

-

-

-

1.13 snmp-server queue-length

Trap

snmp-server queue-length *length*

no snmp-server queue-length

length	1 1000

10

14

4

1 Trap 4

```
Ruijie(config)# snmp-server queue-length 4
```

-

-

-

-

1.14 snmp-server system-shutdown

SNMP

snmp-server system-shutdown

SNMP

no snmp-server system-shutdown

-	-

SNMP

14

SNMP RGOS **reload/reboot** NMS Trap

1 SNMP

```
Ruijie(config)# snmp-server system-shutdown
```

-

-

-

-

1.15 snmp-server trap-format private

SNMP Trap

1.16 snmp-server trap-source

Trap

snmp-server trap-source *interface*

no snmp-server trap-source

interface	SNMP

SNMP IP

14

SNMP IP

IP SNMP

1 0/1 IP Trap

```
Ruijie(config)# snmp-server trap-source fastethernet 0/1
```

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1.17 snmp-server trap-timeout

Trap

snmp-server trap-timeout *seconds*

no snmp-server trap-timeout

seconds	1 – 1000

30

14

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1 Trap

```
Ruijie(config)# snmp-server udp-port 15000
```

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-

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1.19 snmp-server user

SNMP

snmp-server user *username groupname* {**v1** | **v2c** | **v3** [**encrypted**] [**auth** {**md5** | **sha**} *auth-password*] [**priv** **des56** *priv-password*]} [**access** { *aclnum* | *aclname*}]

SNMP

no snmp-server user *username groupname* {**v1** | **v2c** | **v3** }

username	
groupname	
v1 | **v2c** | **v3**	SNMP v3
encrypted	16 MD5 16 SHA 20
auth	
md5	MD5 **sha** SHA
auth-password	32
priv	**des56** 56 DES

14

-

1 SNMPv3 MD5 DES

```
Ruijie(config)# snmp-server user user-2 mib2user v3 auth md5 authpassstr priv des56 despassstr
```

-

-

-

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1.20 snmp-server view

SNMP

snmp-server view *view-name oid-tree* {**include** | **exclude**}

SNMP

no snmp-server view *view-name* [*oid-tree*]

view-name	
oid-tree	MIB MIB
include	MIB
exclude	MIB

default MIB

14

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1 MIB-2 oid 1.3.6.1

```
Ruijie(config)# snmp-server view mib2 1.3.6.1 include
```

-

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2 RMON

rmon alarm	RMON
rmon collection history	
rmon collection stats	
rmon event	RMON
show rmon	RMON
show rmon alarm	
show rmon event	RMON
show rmon history	
show rmon statistics	

2.1 rmon alarm

RMON

rmon alarm *number variable interval* {**absolute** | **delta**} **rising-threshold** *value* [*event-number*] **falling-threshold** *value* [*event-number*] [**owner** *ownername*]

no rmon alarm *number*

number	1~65535
variable	1~255 OID entry.integer.instance 1.3.6.1.2.1.2.1.10.1
Interval	1 2147483647
absolute	
delta	
rising-threshold *value*	*value* -2147483648~+2147483647
event-number	*event-number*
falling-threshold *value*	*value* -2147483648~+2147483647
owner *ownername*	*ownername* *ownername* 1~63

-

14

/

1 MIB ifInNUcastPkts.6 60 20 10
1

```
Ruijie#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# rmon alarm 10 1.3.6.1.2.1.2.2.1.12.6 60 delta rising-threshold 20 1 falling-threshold
10 1 owner UserA
```

1 **show run**
2 **show rmon alarm** **show rmon** alarm

1
2
3 OID
4
5

1 OID OID
2

-

2.2 rmon collection history

rmon collection history *index* [**owner** *ownername*] [**buckets** *bucket-number*] [**interval** *seconds*]

no rmon collection history *index*

index	1~65535
owner *ownername*	*ownername* *ownername* 1~63
buckets *bucket-number*	*bucket-number* *bucket-number* 1~65535

	10			
interval *seconds*	1800s	*seconds*	*seconds*	1~3600

-

14

1 GigabitEthernet 0/1

owner *ownername*	*ownername* *ownername* 1~63

-

14

1 GigabitEthernet 0/1

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)#interface gigabitEthernet 0/1
Ruijie(config-GigabitEthernet0/1)# rmon stats 1 owner UserA
```

1 **show run**

2 **show rmon statistics** **show rmon**

1

2

3

4

1

-

2.4 rmon event

RMON

rmon event *number* [**log**] [**trap** *community*] [**description** *description-string*] [**owner** *ownername*]

no rmon event *number*

number	1~65535
log	10 10

trap *community*	Trap *community* Trap
description d*escription-string*	*description-string* *description-string* 1~127
owner *ownername*	*ownername* *ownername* 1~63

-

14

1 trap trap public

```
Ruijie#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)#rmon event 1 log trap public description "ifInNUcastPkts is abnormal" owner UserA
```

1 **show ru**n

2 **show rmon event** **show rmon**

1

2

3

-

-

2.5 show rmon

RMON

show rmon

-	-

14

```
Ruijie#show rmon
ether statistic table:
                  index = 1
                  interface = GigabitEthernet 0/1
                  owner = admin
                  status = 0
```

```
                  intervalStart = 7d:22h:56m:38s
                  dropEvents = 0
                  octets = 5840
                  pkts = 27
                  broadcastPkts = 0
                  multiPkts = 0
                  crcAlignErrors = 0
                  underSizePkts = 0
                  overSizePkts = 0
                  fragments = 0
                  jabbers = 0
                  collisions = 0
                  utilization = 0
//    4

rmon alarm table:
                  index: 1
                  interval: 60
                  oid = 1.3.6.1.2.1.2.2.1.12.6
                  sampleType: 2
                  alarmValue: 0
                  startupAlarm: 3
                  risingThreshold: 20
                  fallingThreshold: 10
                  risingEventIndex: 1
                  fallingEventIndex: 1
                  owner: UserA
                  status: 1

rmon event table:
                  index = 1
                  description = ifInNUcastPkts is abnormal
                  type = 4
                  community = public
                  lastTimeSent = 0d:0h:0m:0s
                  owner =UserA
                  status = 1

rmon log table:
                  eventIndex = 1
                  index = 1
```

2.7 show rmon event

show rmon event

-	-

14

-

1

```
Ruijie#show rmon history
rmon history control table:
                  index = 1
                  interface = GigabitEthernet 0/1
                  bucketsRequested = 5
                  bucketsGranted = 5
                  interval = 60
                  owner = UserA
                  stats = 1

rmon history table:
                  index = 1
                  sampleIndex = 2485
                  intervalStart = 7d:22h:56m:38s
                  dropEvents = 0
                  octets = 5840
                  pkts = 27
                  b    Ǝ l’  MMMMMMMMMMMMMMÃ ˘  π‘  MMMMMÃ ˘  π‘  R ‘ ‘ ‘ ‘ ‘ ‘ ‘  ´  b  Ǝ
```

-

3 NTP

no ntp	ntp ntp
ntp access-group	NTP
ntp authenticate	NTP NTP
ntp authentication-key	NTP NTP
ntp disable	NTP
ntp master	NTP
ntp server	NTP NTP
ntp trusted-key	ID
ntp update-calendar	NTP
show ntp status	NTP

3.1 no ntp

NTP ntp

-

-

3.2 ntp access-group

NTP

ntp access-group { **peer** | **serve** | **serve-only** | **query-only** } *access-list-number* | *access-list-name*

no ntp access-group {**peer** | **serve** | **serve-only** | **query-only**} *access-list-number* | *access-list-name*

peer	NTP
serve	NTP
serve-only	NTP
query-only	NTP
access-list-number	IP 1 99 1300 1999
access-list-name	IP

NTP

14

æ Ʉ ضم 5 Ä

```
Ruijie(config)# ntp access-group serve-only 1
```

-

-

-

-

3.3 ntp authenticate

NTP NTP

ntp authenticate

no ntp authenticate

-	-

NTP

14

ntp authentication-key ntp trusted-key

1

```
Ruijie(config)# ntp authentication-key 6 md5 wooooop
Ruijie(config)# ntp trusted-key 6
Ruijie(config)# ntp authenticate
```

-

-

-

-

3.4 ntp authentication-key

NTP NTP

ntp authentication-key *key-id* **md5** *key-string* [*enc-type*]

NTP

no ntp authentication-key *key-id*

key-id	ID 1 4294967295
key-string	_ Ğ ȉ ȯ = ľ ź P

3.5 ntp disable

NTP

ntp disable

-	-

NTP

14

NTP

NTP

IP

1 NTP

```
Ruijie(config-if)# no ntp disable
```

-

-

-

-

3.6 ntp master

NTP

ntp master [*stratum*]

NTP

no ntp master

stratum	1 15

domain	NTP IPv4
version	NTP 1-3 NTPv3
if-name	NTP
keyid	1 4294967295
prefer	Prefer prefer
mgmt-name	oob

NTP

14

RGOS

key-id	ID 1 4294967295

14

NTP ID

1

```
Ruijie(config)# ntp authentication-key 6 md5 wooooop
Ruijie(config)# ntp trusted-key 6
Ruijie(config)# ntp server 192.168.210.222 key 6
```

-

-

-

-

3.9 ntp update-calendar

NTP

ntp update-calendar

no ntp update-calendar

-	-

14

freq	
precision	
reference time	UTC
clock offset	
root delay	
root dispersion	
peer dispersion	

-

-

4 SNTP

sntp enable	SNTP
sntp interval	SNTP Client NTP/SNTP Server
sntp server	SNTP Server
show sntp	SNTP

4.1 sntp enable

SNTP

sntp enable

—Disable

no sntp enable

-	-

SNTP Disable

14

-

1 SNTP

```
Ruijie(config)# sntp enable
```

1 **show sntp** SNTP

-

-

-

oob	MGMT
ip-address	NTP/SNTP IP
mgmt-name	oob

NTP/SNTP

14

SNTP NTP SNTP Server internet NTP Server

1 NTP

```
Ruijie(config)# sntp server 192.168.4.12
```

1 **show sntp** SNTP

-

-

-

4.4 show sntp

SNTP

show sntp

-	-

14

-

1 SNTP

```
Ruijie# show  sntp
```

```
SNTP state            : Enable
SNTP server           : 192.168.4.12
SNTP sync interval    : 60
Time zone              : +8
```

state	sntp
server	
sync interval	
Time zone	

-

-

5 SPAN-RSPAN

mac-loopback	MAC
monitor session	
remote-span	VLAN VLAN
show monitor	

5.1 mac-loopback

MAC

mac-loopback

MAC

no mac-loopback

-	-

MAC

14

MAC DOWN MAC

1 VLAN

```
Ruijie(cor
```

```
Ruijie(config-if-GigabitEthernet 4/2)#switchport access vlan 100
Ruijie(config-if-GigabitEthernet 4/2)#mac-loopback
```

4 GigabitEthernet 4/3-4 VLAN

```
Ruijie(config)#interface range gigabitEthernet 4/3-4
Ruijie(config-if-range)#switch port access vlan 100
```

-

-

-

5.2 monitor session

monitor session *session-num* **source interface** *interface-id* [**both** | **rx** | **tx**]

monitor session *session-num* **source interface** *interface-id* **rx acl** *acl-name*

monitor session *session-num* **destination interface** *interface-id* [**switch**]

ID

monitor session *session-num* **remote-source**

ID

monitor session *session-num* **remote-destination**

monitor session *session-num* **destination remote vlan** *remote-vlan-id* **interface** *interface-id* [**switch**]

VLAN

monitor session *session-num* **filter vlan** *vlan-id-list*

no monitor session *session-num* [**source interface** *interface-id* | **destination interface**

interface-id]

no monitor session *session-num* [**destination remote vlan**

2

```
Ruijie(config)# monitor session 3 source interface gigabitEthernet 0/3 acl 90
```

3

```
Ruijie(config)# monitor session 10 remote-source
```

4

```
Ruijie(config)# monitor session 4 destination remote vlan 10 interface gigabitEthernet 0/5
```

5

```
Ruijie(config)# no monitor session 1
```

6 ( )

```
Ruijie(config)# no monitor session  1 source interface gigabitEthernet 0/18
Ruijie(config)# no monitor session  1 destination interface gigabitEthernet 0/18
```

-

1 AP

```
Set fail on ap member.
```

2 remote-vlan-id VLAN VLAN

```
vlan 1 doesn't exist or it isn't remote span vlan.
```

-

5.3 remote-span

VLAN VLAN VLAN

remote-span

VLAN VLAN VLAN

no remote-span

-	-

VLAN

VLAN

14

VLAN VLAN

1 VLAN

```
Ruijie(config)# vlan 100
Ruijie(config-vlan)# remote-span
```

1 **show vlan** VLAN RSPAN

1 VLAN VLAN remote-span

```
RSPAN vlan can't be set as remote span vlan.
```

-

-

5.4 show monitor

6 ERSPAN

destination ip address	GRE IP
ip dscp	IP dscp
ip ttl	IP TTL
monitor session	ERSPAN
origin ip address	GRE IP
shutdown	
source interface	ERSPAN

6.1 destination ip address

GRE IP

destination ip address *ip_address*

no IP

no destination ip address

ip_address	GRE IP

IP

ERSPAN

14

end Ctrl+C

exit

ip ip

```
Ruijie(config)# monitor session 2 erspan-source
Ruijie(config-mon-erspan-src)destination ip address 10.1.1.2
```

show monitor

IP IP destination ip address

Invalid ip address

6.2 ip dscp

14

end Ctrl+C

exit

ip ttl

```
Ruijie(config)# monitor session 2 erspan-source
Ruijie(config-mon-erspan-src)#ip ttl 65
```

show monitor

6.4 monitor session

ERSPAN

monitor session session_num { erpsan-source }

no

no monitor session *session_num*

session_num	

-

14

end Ctrl+C

exit

ERSPAN 2 ERSPAN

```
Ruijie(config)# monitor session 2 erspan-source
```

show monitor

6.5 origin ip address

GRE IP

origin ip address *ip_address*

no IP

no origin ip address

ip_address	GRE IP

-

ERSPAN

14

end Ctrl+C

exit

ip

ERSPAN

14

end Ctrl+C

exit

ERSPAN 2

```
Ruijie(config)# monitor session 2 erspan-source
Ruijie(config-mon-erspan-src)#shutdown
```

show monitor

6.7 source interface

ERSPAN

source interface *single-interface* [**rx | tx | both**]

no

no source interface *single-interface* [**rx | tx | both**]

ERSPAN

source interface *single-interface* rx acl acl-name

single-interface	
rx	
tx	
both	rx/tx
acl *acl-name*	ACL

-

ERSPAN

14

```
Ruijie(config)# sflow agent address 192.168.2.1
```

1 **show sflow** Agent address

1

```
invalid host address.
```

-

-

7.2 sflow collector *collector-id* destination

sFlow Collector

sflow collector *collector-id* **destination** { *ip-address* } *udp-port* **| [oob]]**

sFlow Collector

no sflow collector *collector-id* **destination** { *ip-address* } *udp-port* **[oob]**

default sflow collector *collector-id* **destination** { *ip-address* } *udp-port* **[oob]**

collector-id	sFlow Collector id 1-2
ip-address	sFlow Collector IPV4
udp-port	sFlow Collector
oob	

-

14

sFlow Collector

sFlow Collector sFlow oob

sFlow Collector

-

1 **show sflow** sFlow Collector

1

```
invalid host address.
```

2 vpn

```
vpn is not exist
```

-

-

7.3 sflow collector *collector-id* max-datagram-size

sFlow

sflow collector *collector-id* **max-datagram-size** *datagram-size*

sFlow

no sflow collector *collector-id* **max-datagram-size**

default sflow collector *collector-id* **max-datagram-size**

collector-id	sFlow Collector id 1-2
max-datagram-size *datagram-size*	sFlow 200-9000 1400

1400

14

-

1 sFlow Collector 1 sFlow Ă e

-

-

7.4 sflow counter collector

sFlow counter collector id

sflow counter collector *collector-id*

sFlow counter collector id

no sflow counter collector

default sflow counter collector

collector-id	sFlow Collector id 1-2

-

14

sFlow Collector IP ,sFlow

1 TenGigabitEthernet 0/5 sFlow counter sFlow collector 2

```
Ruijie(config-if-TenGigabitEthernet 0/5)# sflow counter collector 2
```

1 **show sflow** sFlow counter collector id

-

-

-

7.5 sflow counter interval

sFlow counter

sflow counter interval *seconds*

sFlow counter

no sflow counter interval

default sflow counter interval

seconds	3-2147483647	30

30

14

sFlow counter sFlow counter

1 sFlow counter 60s

```
Ruijie(config)# sflow counter interval 60
```

1 **show sflow** sFlow counter

-

-

-

7.6 sflow flow collector

sFlow flow collector id

sflow flow collector *collector-id*

sFlow flow collector id

no sflow flow collector

default

64

14

	sFlow flow	sFlow flow
1	sFlow flow	4096

-

-

-

7.10 show sflow

sFlow

show sflow

-	-

14

Agent IP	sFlow Agent IP **sflow agent address** {ip-address }
sflow counter interval	Counter
sflow flow max-header	
sflow sampling-rate	Flow
ID	sFlow Collector id
IP	sFlow sFlow Collector IP
Port	sFlow sFlow Collector
Size	sFlow sFlow
VPN	sFlow Collector VPN
Interface	sFlow
CID	Counter sFlow Agent sFlow sFlow Collector id
FID	Flow sFlow Agent sFlow sFlow Collector id
Enable	sFlow

-

-