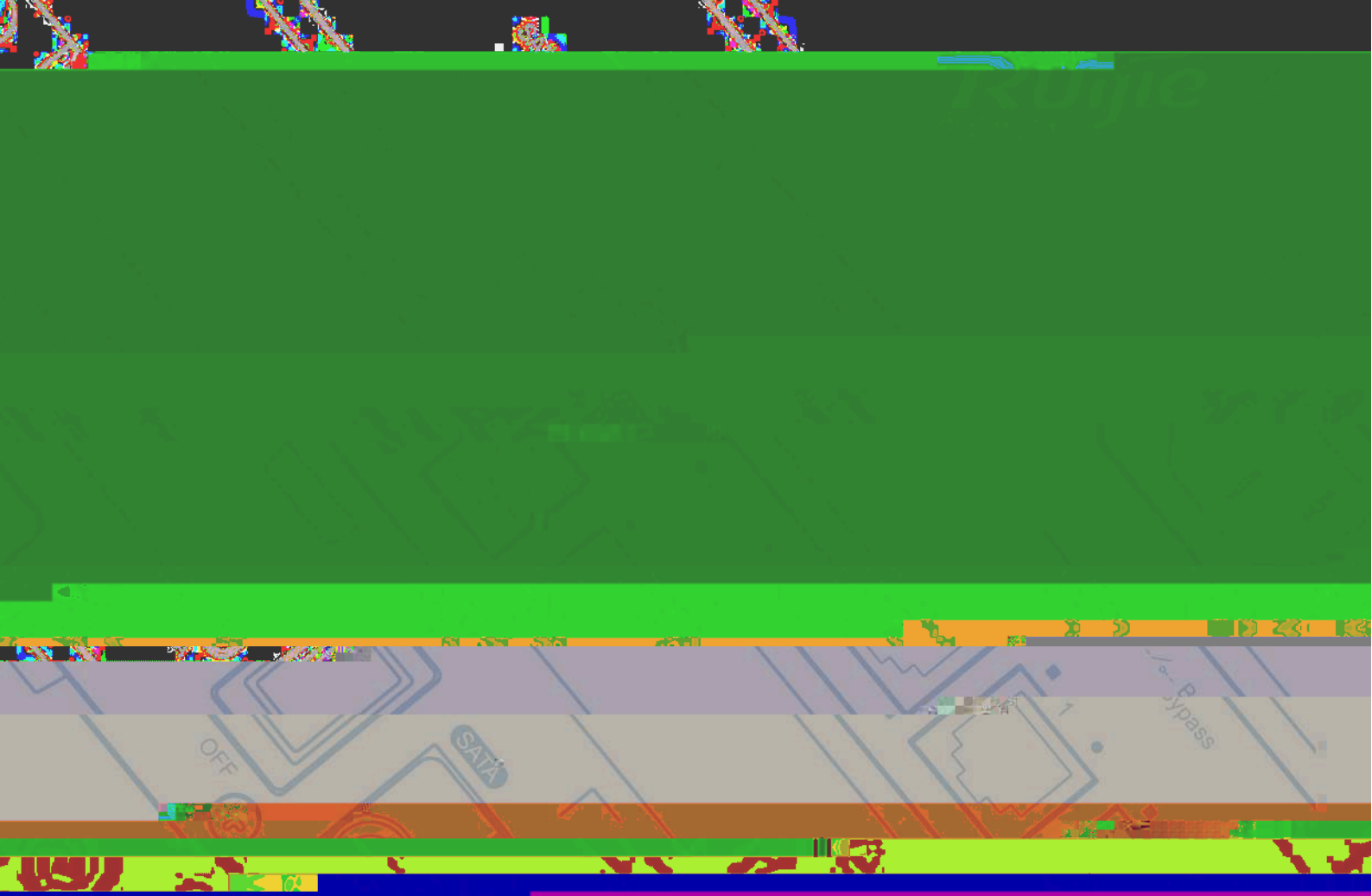

ă ⁶ v χ Y4!

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WIS ᵽ ᵴ Æ ɬ ị Ä ʌ ɬ Ä ɥ ᵶ ώ ᵽ ɯ̃ ώ ᵩ ʒ Ụ ᶠ ώ ᵭ ă Ç ɾ ᵮ ɦ ʌ ᵀ Ă ɥ Ɣ Ꮒ ᵬ ị Ä ʌ ɬ Ä ɥ ᵶ ώ ᵽ ɯ̃ ώ ᵩ ʒ Ụ ɪ Ꮒ % ʒ Ụ ṇ | ᵷ ‰ ᵛ ώ

ᵎ WIS ᵽ ᵴ ώ ᵩ ã ʌ ᵹ ᶮ WIS ʒ ᵎ ʒ Ụ ᵽ ʌ ƒ ᵭ Φ è Ч ᵓ ∫ ᵯ ḅ ' | ẽ ɻ ∂ ă Ç Ự ᵼ % ʒ Ụ ɪ ã ạ ᵷ ᵶ Ꝍ ï ọ ɻ ᵽ Ỿ Φ ᵴ ɪ WIS ᵽ ᵴ ᵎ ᵮ ɦ Ự ᵼ % ʒ Ụ χ (a) ᵡ ḟ | ẽ | ᵰ ã ᵡ ḟ WIS ᵮ ᵦ ɨ ᵹ ɬ | ẽ ʏ ẑ ψ (b) ʒ ĭ ǎ ʌ ĭ WIS ᵽ ᵴ ʒ Ʊ ʌ ᵒ ᵮ ᵦ ¸ ã ᶄ ᵮ ψ ã (c) ᵽ ɹ Ớ ừ ï ᵱ ᵰ Φ ᵕ ɪ ʒ ĭ WIS ᵽ ᵴ ă ᵑ WIS ᵮ ᵦ ã ỏ ᵒ ị Ä ǎ ɀ ɥ Ķ ḉ Ḡ ᵾ WIS ᵽ ᵴ ῶ Ꮒ ɦ ᵾ ɬ Ʊ Ꮒ ɀ ' и Ꮟ ´ Ḝ ώ ĕ ῶ ᵴ Ο ᵰ ɪ ḅ ώ ĕ ị Ä ᵡ Ḥ Y ∫ ᵯ ' ᵰ ã " Ε Φ ĭ ´ ʌ ɯ ' ‘ WIS ᵽ ᵴ Ṅ ᵏ ᵶ ᵩ Ᵽ ɀ и ώ ĕ Ꮒ Ç ʌ ᵹ Ỏ ᵰ Ꮒ Ä ᵢ ʒ Ụ ă Ç ɻ ∂ ᵩ Ᵽ ɀ и ʌ ĭ Ĭ ʒ Ụ ʒ Ḻ ό ɪ Ẋ ħ ᷉ Ᵽ Ṅ Ĭ ʒ Ụ ᵷ ɣ Ɱ Ʊ Ꮒ ´

3.

- ė q ʒ æ ᵕ ʃʰ ˈ ㆁ Æ ɻ ʒ ª ɳ ᄀ ˡ f́ j ㄴ ɪ ɳ ᄀ Ḥ Ă ʌ ₓ ɻ ˜ Y Ł ᴿ ƒ β Ä ˜ Ḥ ˈ Y ㆁ Æ ɻ ʒ ȹ Φ ᵥ ɻ
- ė q ʰ ˈ ʒ æ Ǐ ˜ ʒ Ụ ʌ ˡ f́ ᵍ ω Ʊ Ę ƒ β ㄴ ˚ ㅀ ɳ ķ ε ḅ ƒ β ʒ ᴺ ω ᄀ ㄴ ζ ɪ ʊ ɥ Ǐ ˜ ʒ Ụ ت Ꝍ ɳ ᄀ Æ ɾ ㅀ Φ ᵗ ʒ Ụ ㎞ ´
- ė q ʌ ≟ ʒ ㅀ ت ᐧ ʰ ʒ ت ᐧ ʰ ƒ β g ‰ ɪ Ր ˊ ˜ ˚ Ỿ Θ ï ㅀ ت ᐧ ʰ ɪ Ꝍ ʒ ᵬ Φ ˝ ت ᐧ ʙ ɲ ㅀ s Ṗ Ґ ˝ Ω

-WLAN

WLAN

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

Ẃ ŏ ȝ ɕ -

Ẉ ᴶ ب ˝ ᵡ AP ˜Ḥ'Y

1.2 hide-ssid sta-reach-limit

ڼ ص **hide-ssid sta-reach-limit** ᵘ ɲ ب ـ ŭ ĭ ڜ Ƶ SSID ı ĭ ı Ę AP ڑ ˙ ŧ ¨Ä˝Ậ i ں`H ı AP i Ã ᵏ % ı ĭ radio i ssid Ṅ q ڜ Ƶ ı Ę ɒ Ⱥ radio i ŧ ¨Ä˝Ậ ڑ ˙ i ں`H ı radio i ssid Ṅ q ڜ Ƶ ı Ꝋ ᵻ d Ä STA ő ⁝ ʜ ĭ w ʜ ĭ j i

Õ ʱ ᵴ ɲ ب ـ

no hide-ssid sta-reach-limit [radio { 2.4g | 5g }]

v ¨Ậ ب ˝

v ¨Ậ	ώ ڜ
radio	˝Y ĥ ᵘ ɲ ƥ ⁼ ĥ radio i Ã ᵏ % ı ĭ ı j ˝Y ĥ `H ƥ ¨Ä õ radio i Ã ᵏ
2.4g	2.4g radio i Ã ᵏ % ı ĭ
5g	5g radio i Ã ᵏ % ı ĭ

ƚ ب ـ ˙ Ã ᵏ ŭ ĭ ڜ Ƶ SSID ı ĭ

ᵘ ɲ ₩ Ã ᵡ ṕ ب ـ ₩ Ã

ƚ ۱ ˛ 15

Æ ŧ ˝Y Ṁ Ã ᵏ ŭ ĭ ڜ Ƶ SSID ı ĭ ª ı ḅ ' Ⱥ ת ³ AP ڤ u ڑ ˙ ŧ ¨Ä˝Ậ i ں ı Ȧ ŧ ¨Ä ƥ ف Ⱥ ת ³ ˝E ώ j ˙ SSID

ب ـ ɟ ǽ 1 χ Ã ᵏ AP 5g radio ŭ ĭ ڜ Ƶ SSID ı ĭ

```
Ruijie(config)# hide-ssid sta-reach-limit radio 5g
```

ₛ ⱬ Ä | -

ώ˜ ȝ Ụ -

Ẃ ŏ ȝ ɕ ₓ ɭ AC/AP ڤ u˜Ḥ'Y ı ı ĭ ė ĭ ı ѽ ḅ ' AC i ˜Ḥ'Y ı ˛ ᵘ ɲ ᵻ Ꝋ ب ـ ı Ꮋ ĩ ḅ ' AP v ᵡ j ˜Ḥ'Y ı ˛ ı ĭ j ʜ ı ѽ

Ẉ ᴶ ب ˝ -

1.3 show ap-mode

Ǐ ˜ AP ₩Ã

show ap-mode

v ̈Ọ ب ″

v ̈Ọ	ώ ك
-	-

ᵘ ɲ₩Ã ᵎ ₩Ã

ƛ ٨ 1

Æ ŧ ″YṀ ṇ

ب ل ʒ æ 1 χ Ǐ ˜ AP ₩Ã

```
Ruijie#show ap-mode
current mode: FAT
```

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ″ -

2 CAPWAP

2.1 ac-control disable

ٻ ـ AP ٱ ᳩ AC

no ac-control disable

Õ ᵸ ᾗ ٻ ـ

ac-control disable

v ̈Ⴍ ب ̋

ᵘ ɲ ₩ Ã AP ৩ ṕ ٮ ⊿ ₩ Ã ă AC ⊞ AP ٮ ⊿ ₩ Ã

ﾉ ｲ. 15

Æ ɪ ″ Y Ṁ AP ˇ ⇧ u ĩ ᵢ ٮ ⊿ ⊞ ı ˡ Ⓠ ٮ ص ẍ Ḥ ⊿ Ḥ DHCP DNS ⁋ ∧ א AC ı ◌̂ ˡ Ⓠ ٮ ص ˜ ő ٮ ⊿ ⊞ AC ş χ ɪ ৩ AC ٮ ص ٮ ⊿ Á ᵘ ɲ ı AP Ṅ ᵇ ف ₱ IP ş χ ∧ گ ∧ א ت ∂ ï ă ή ╜ AC ⊞ ω̃ ᾠ ό ı ł ª J̌ Ö ʲ AC ɪ ৩

AP AC AC

ٮ ⊿ ⫰ æ 1 χ ⊪ AP ٮ ⊿ ɪ ৩ AC ⊞ ˜ ő ş χ ˚ ´ ⊪ 192.168.1.1 ı 192.168.2.1

```
Ruijie(config)# acip ipv4 192.168.1.1 192.168.2.1
```

2 χ ٮ ⊿ AP0001 ɪ ৩ AC ⊞ ˜ ő ş χ ˚ ´ ⊪ 192.168.1.1 ı 192.168.2.1

```
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# acip ipv4 192.168.1.1 192.168.2.1
```

ₛ ⫰ Á | 1 χ AP Æ ɪ **show running-config** ᵘ ɲ ı AC Æ ɪ **show ap-config running** ı ˡ Ⓠ ¦ ˜ ٮ ⊿ ĩ ᵋ ă ı

ώ ˜ ʒ Ụ

ᵘ ᵑᵦ₩Ã AP

ﾉ ﾌﾞﾉ -

ᵘ ᵑᵬ₩Ã AC ﾌﾞﾉ₩Ã

ﾉ ﾍ. 15

Æ ɾ ″YṀ 1.AC ﾍ AP ï ɔ ⅴ ؾΦ ″ ﾍ`H ₓ ɭ Ж☼╗ ⅴ ᾰ ţ rgos10 ﾚ ﾉ rgos11 ﾚ ﾉ Ţ ầ ᵾ ᶻ ı. ɾ ∧ ᵾ rgos10 rgos11 ⅏ص■ ⅴ ؾΦ ﾚ ﾉ ″ ﾍ`H ₓ ɭ ш ɾ rgos10 ʜ ᶎ È

2. ᴱ õ ᵽ AP ₓ ɭ ″ ﾍ⅏H ö ı ė h ɾ ɔ bin ɲ è ₳ Ę ≡ õ AP ₓ ɭ ″ ﾍ⅏H ö ı ؿ⅏ ɲ ķ hˢ ʊ ʞ ɲ è ₳ ⅋ ɔ è

3. ﾌﾞﾉ Í ᵘ ᵑᵬ ₓ ɭ. Ȝ AC ﾚ ﾉ ᾰ ţ ₳ Ţ è õ Í ᶊ ţ ⅴ

AP

ﾌﾞﾉ ᶊ æ 1 χ ᵽ AC i ☼╗ ₳ AP ᶊ ţ ⅴ ᾰ ţ χ ap.bin

```
Ruijie(config-ac)# active-bin-file ap.bin
```

2 χ ᵽ AC i ☼╗ ₳ AP ᶊ ţ ⅴ ᾰ ţ χ ap.bin ı Í ᶊ ţ ⅴ ᵽ usb0: ᾰ ţ ﾚ ﾉ ₳

```
Ruijie(config-ac)# active-bin-file usb0:ap.bin
```

3 χ.. ᵬ ᵽ AC i ☼╗⅏ ₳ AP ᶊ ţ ⅴ ᾰ ţ χ ap.bin

```
Ruijie(config-ac)# no active-bin-file ap.bin
```

ˢ ᶎ Ά | 1 χ Æ ɾ **show ac-config active-file** ı ˜ Ţ ☼╗⅏ᶊ ţ ⅴ

ώ˜ ʒ Ụ -

Ẃ ȸ ᶎ ᵾ -

Ẉ ᴶ ᵬ ″ ᵏ AC ˜Ḥ'Y Í ᵘ ᵑᵬ

2.6 ap-image

ﾌﾞﾉ AC ″ ﾍ Æ ɾ ″Y ḧ⅏ᾰ ţ ″ ﾍ ″Y ḧ ﾚ˚ ⅏ AP ı Í ᵘ ᵑᵬ h Ḿ ف ì AC⅏"A ũ AP ∨ Ă ɾ

ap-image { **auto-upgrade** | *filename serial-name* }

ᵑ ╥ﾌﾞﾉ

no ap-image { **auto-upgrade** | *filename serial-name* }

ᵛ ᵛ̈Ⴊ ᵖ

ᵛ ᵛ̈Ⴊ	ὼ ᶄ
auto-upgrade	ˢ ᵁ ᵂ ᵽ ᵻ ᵛ ᵍ ᵀ AP ᶚ ᴺ ᵩ Φ ″ ᴵ
filename	ᵛ̈Y Ḧ ᵻ ᵛ ᵉ Ⴙ ᵢ ᵞ ὺ ᵅ ᴵ Ỉ ᾰ ᵀ ᵉ ᶉ active-bin-file ᵘ ᵑᵬ ᵛ̈Y Ḧ ᾰ ᵀ ᵉ ᵣ
serial-name	Ṅ ᶩ ″ ᴵ AP ᶚ ᴺ ᶣ˚

ᵻ ᵽ ᵼ -

ᵘ ᵑᵬ ₩ Ã AC ᵽ ᵼ ₩ Ã

ᵻ ᴵ. 15

Æ ᵀ ᵛ̈Y Ṁ AP ᵛ ″ ᴵ ᴵ Ɑ Æ ᵀ ˢ ᵍ Ẓ ″ ᴵ Ǐ ˚ ᵩ Φ ᵛ ˢ ᵁ ᵂ ᵽ Ẍ ″ ᴵ AP ᵢ ᾰ ᵑ̇ ᵢ ᵽ ᵼ AP ᵀ ᶠ ᵝ ᶚ ᴺ ᵌ ᵻ ᵛ ᵀ Ḿ Ẓ ʜ ᶣ ᵢ Ĉ ᵢ Ɑ Æ ᵀ ᵛ̈Y Ḧ ᵀ ᾰ ᵀ ″ ᴵ ᵛ̈Y Ḧ ᶣ˚ AP Ẹˢ ᵁ ″ ᴵ ᵌ ᵛ̈Y Ḧ ᶣ˚ ″ ᴵ ᵬ Ⴙ ″ ᴵ Ȧ Ã ᵃ Ḥ è ᵱ Ḥ ᵢ Ṅ Ⴙ Ǐ ᵛ̈Y Ḧ ᶣ˚ ᵀ ᵽ ᵼ Ȧ Ã ᵩ Φ ″ ᴵ ᵽ ᵼ AC ʞ ᵛ̈Y Ḧ ᵀ AP ᶠ ᵝ ᶣ˚ ″ ᴵ ᵛ Ḥ ᵢ ᵠ á AP ᶠ ᵝ ᶣ˚ ᵢ ᵽ ᵼ ᵛ̈Y Ḧ ᵀ AP Ḿ Ẓ ᵀ ᵻ ᵛ ᵌ ☼ ╗ ᵻ ᵛ ᵩ s Ⱥ ℓ ᶜ ᵣ ᵴ ᵎ

rgos10 rgos11 rgos10 AP

ᵽ ᵼ ᵴ æ 1 χ ᵽ ᵼ ᶠ ᵝ ᶣ˚ ᵉ ʞ test-serial Æ ᵀ ap.bin ᾰ ᵀ ᵩ Φ ″ ᴵ

```
Ruijie(config-ac)# active-bin-file ap.bin
Ruijie(config-ac)# ap-serial test-serial AP220-E hw-ver 1.0
Ruijie(config-ac)# ap-image ap.bin test-serial
```

ˢ ᶜ Ȧ | 1 χ Æ ᵀ **show ac-config serial-product** ᵘ ᵑᵬ ᵢ ᵎ ˜ ᶠ ᵝ ᶣ˚ ᶠ ᵝ ᶚ ᴺ ″ ᴵ ᵛ ᵠ ᵰ Ḿ Ẓ ʜ ᶣ

ὼ˜ ᶚ Ụ -

Ẃ ȸ ᶜ ᵾ -

Ẉ ᴶ ᵖ ᵛ ʞ AC ᵀ Ḥ'Y Ỉ ᵘ ᵑᵬ

2.7 ap-image

ᵽ ᵼ ᵛ̈Y Ḧ AP Æ ᵀ ᵛ̈Y Ḧ ᾰ ᵀ ″ ᴵ Ỉ ᵘ ᵑᵬ j ᵀ Ḥ'Y ap-config all ₩ Ã

ap-image *filename*

ᵑ ᵮ ᵽ ᵼ

no ap-image

v ̈Ϙب ″

v ̈Ϙ	ώ ك
filene	⁑ ″ ۱ AP ع ţ v ă ţ ᵉ ı ɣ ὺ ª ۱

ǰ ٻ ل -

ᵘ ɲь₩Ã AP ٻ ل ₩Ã

ǰ ۱. 15

Æ ŧ ″YṀ ή

ٻ ل ڭ æ 1 χ ٻ ل AP0001 Æ ŧ ap.bi0.ƌnţ ڤ Φ ″ ۱

```
Ruijie(config-ac)# active-bin-file ap.bin
Ruijie(config-ac)# exit
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# ap-image ap.bin
```

ₛ ⇂ Ά | 1 χ Æ ŧ **show**

ﾉ ᵽ ﾚ -

ᵘ ᵑᵬ₩Ã AP ৩ ṕ ᵽ ﾚ ₩Ã

ﾉ ᐟ. 15

Æ ŧ ˝YṀ AP ˚ ʠu ĩ ᵢ ᵽ ﾚ ı Ꞇ₅ ɕ IP ş ɣ ⁼ ﾚ ʜ ı Ꝋ ɳ ص DHCP ʊ ỗ n ᴨ Ę AP ⁼ AC á ᐟ CAPWAP ʭ ǰ ª ı ف ı Ꝋ ɳ ص AC ï ∧ AP ̄ ỗ IP ş ɣ ı Ꝋ ж AP ᵱ ᵏ ª ı Ꞇ ş ɣ ȝ ˈY j Ψ ᵽ • Ᵽ ᵉ e Ẓ ŧ ß ᵀ ı Ꝗ ˈȣ ɛ ʊ ֆ ﾚ AP ̄ ỗ IP ş ɣ ı ı Ꝋ ɳ ص ᵽ AP ৩ ṕ ᵽ ﾚ ₩Ã ï ᵽ ﾚ Ỉ ᵘ ᵑᵬ ḫ א

1. AP DHCP DHCP OPTION AC AP “acip” AC AP AC AC

2. AP

3. AC AP “ip address” AC AP AC AC AP “ip address” “apip” AP CAPWAP

ᵽ ﾚ ʓ æ 1 ɣ ʜ AP ᵽ ﾚ ̄ ỗ ş ɣ ʜ 192.168.1.2 ı Ḍ ﾚ ọ ʜ 255.255.255.0 ı ﾚ ʜ ş ɣ ʜ 192.168.1.1

```
Ruijie(config)# apip 192.168.1.2 255.255.255.0 192.168.1.1
```

ₛ ᴈ Ά | 1 ɣ Æ ŧ **show running-config** ᵘ ᵑᵬ ı ı Ꝗ ˜ ᵽ ﾚ ĩ ᵋ ᾰ ı

ώ˜ ʒ Ụ -

Ẃ ȸ ᴇ ئ -

Ẉ ᴶ ᵬ ˝ ᵏ AP ˝Ḥ'Y Ỉ ᵘ ᵑᵬ

2.9 apip ipv6

ᵽ ﾚ APₛ ɕ ̄ ỗ Ipv6 ş ɣ

apip ipv6 *ipv6-address-with-mask gateway*

ᵢ ȸ ᵽ ﾚ

no apip ipv6

v ˝Ꝗ ᵬ ˝	v ˝Ꝗ	ώ ك
	ipv6-address-with-mask	Ṿ ọ ᴈ ỷ ʒ Ụ IPv6 ş ɣ ı ĭ Ã ı ᵯ X:X:X:X::X/24
	gateway	IPv6 ﾚ ʜ ş ɣ

Ẃ ð ᵹ ᵾ --

Ẉ ᴶ ᵽ ᵛ ᵏ AC ᵀḢ'Y Ĭ ᵘ ᵑᵬ

2.15 ap-download retransmission

Ã ᵏ ″ ᐟ ᓴ ᵱ Ḥ ö ı ɔ ᵀᾨ ″ ᐟ ĭ ᾰ ᵽ ᵾ ᵴ ᶑ ⁼ Ꝃ ᵀᾨ
ap-download retransmission *num,num…*

Õ ᵚ ᵽ ᵥ
no ap-download retransmission

v ᵀᾨ ᵽ ᵛ	v ᵀᾨ	ὼ ᶑ
	num	ᵽ ᵾ Ḥ ᵴ ᵴ ᶑ ı ᴅ ᵸ ᵡ ı 0.5 ᵀᾨ ᵀᾨ Ӣ ı ὼ ᶻ 64 ᵡ ı ᵛ Ⱥ num ȍ ᵽ ᵾ ᵛ Ꝃ ı ὼ ^ ᵽ ᵥ 20 Ⱥ ı ⅛ Ⱥ num ɾ ᵬ ᴺ ᶑ Ã

ᵡ ᵽ ᵥ 0.5,0.5,1,1,1,1,2,2,2,2,4,4,4,8

ᵘ ᵑᵬ ₩ Ã AP ᵽ ᵥ ₩ Ã ⁼ ″ A õ AP ᵽ ᵥ ₩ Ã

ᵡ ᐟ. 15

Æ ɾ ᵛ YṀ Ã ᵏ ″ ᐟ ᓴ ᵱ ı ᵎ ɾ % ᵘ ᵑᵬ ᵽ ᵥ ɔ ᵀᾨ ᵾ ᵴ ᵽ ᵴ ᵴ ᵾ ᵴ ᵴ ᵾ ᵴ ᵴ ᵾ

Ẉ ᴶ ب ˝ ᵏ AC ᷇Ḥ'Y Ỉ ᵘ ᵑᵬ

2.16 ap-download image-check

Ầ ᵏ ″ ᐟ Ꮋ ᵽ H ö ı ɔ ᷉Ǫ AP ì ώ ″ ᐟ ĭ ᾰ ώ ᶻ ᷊H ᷉ ᷉ ᷉ ᷉ᶇ

ap-download image-check *num*

Õ᷈ ʰ ڀ ل

no ap-download image-check

v ᷉Ǫ ب ˝	v ᷉Ǫ	ώ ᶇ
	num	AP ì ώ ″ ᐟ ĭ ᾰ ώ ᶻ ᷊H ᷉ ᷉ ᷉ ᷉ᶇ ı ᴅ ᵸ ᐟ

ỉ ڀ ل 83

ᵘ ᵑᵬ ₩ Ã AP ڀ ل ₩ Ã ᐧ ᷉A ῶ AP ڀ ل ₩ Ã

ỉ ᐟ ᷍ 15

Æ ŧ ᷉YṀ Ầ ᵏ ″ ᐟ Ꮋ ᵽ ı AP ḅ ' ᵹ ف Ⱥ ᷊H ᷉ ᷉ ᷉ ᷉

2.17 ap-download distr-send

Ầ ᵏ ″ ㄏ ㄐ ᵽ᪲H ö ı ɔ ᶖᵡ ᶣ Ã ″ ㄏ᪲⁞ AP Ặ˙ ∧ گ ″ ㄏ ĭ ă ㄏ Ḍ ` ᵽ AP᪲H ژ ژ ڭ

ap-download distr-send *num*

Õ ᵸ ᵽ ᶫ

no ap-download distr-send

v ″Ⴈ ᵽ ″	v ″Ⴈ	ὼ ڭ
	num	᾽ ᶣ Ã ″ ㄏ ⁞ AP Ặ˙ ∧ گ ″ ㄏ ĭ ă ㄏ Ḍ ` ᵽ AP᪲H ژ ژ ڭ ı ɒ ɥ ヽ

ỉ ᵽ ᶫ 5

ᵘ ᵑᵬ ₩ Ã AP ᵽ ᶫ ₩ Ã ⁼ ″A õ AP ᵽ ᶫ ₩ Ã

ỉ ㄏ˳ 15

Æ ŧ ″ YṀ Ầ ᵏ ″ ㄏ ㄐ ᵽ ı ᾽ ᶣ Ã ″ ㄏ ⁞ AP Ặ˙ ∧ گ ″ ㄏ ĭ ă ㄏ Ḍ ` ᵽ AP᪲H ژ ژ ڭ ı AP Ầ Ḋ ″ ㄏ᪲H ö ı ɦ Ⱦ ü ف ¥ ″ ㄏ ㄐ ᵖ̓ ʜ᪲ᵽ ᶫ ᾰ̂ ̂ ̂

serial-name	˩˳ á㊀AP ˧˚ ᵉ ˥ ˨ ɯ ^ ˨ ᵽ˩ 64 Ⱥ È ˥ ˨ j Ỉ ƴ ᵍ ˧†
ap-pid1 ap-pid2 ... ap-pidn	˩ ˢ ᔑ Ỉ AP ˧˚ ㊀ᶠ ᵝ ʒ ᴺ˚ ˊ ap-pidn ˊ˜ ˧ n Ⱥ ᶠ ᵝ ʒ ᴺ ^ Ⱥ ᶠ ᵝ ʒ ᴺ ᵗ ㇆ ă ᵬ ᴺ ㇆ Ã
hardware-version	˝Y ẖ AP ㊀ ᵀ ᵛ ɪ ɯ ^ ˨ ᵽ˩ 64 Ⱥ È ˥ ˨ j Ỉ ƴ ᵍ ˧† . ᵀ ᵛ † Ã ㎘ ᵑ Ω Ã ɪ ˥ ᴺ Ɐ x ɣ ã Ɐ X ɣ ˨ ᵷ ᵑ ᵽ ᵅ ₌㊀È ˥

ƛ ᵽ˩ -

ᵘ ᵑᵬ₩Ã AC ᵽ˩₩Ã

ƛ ᶩ˳ 15

Æ ᵗ ˝YṂ ᵽ˩ AC ㎘˝Y ẖ㊀AP ᶠ ᵝ ˧˚ ″ ᶩ ᵛ `H ɪ ˩ á AP ᶠ ᵝ ˧˚ ɪ ᵽ˩˝Y ẖ㊀AP Ḿ Ẓ㊀ ᵴ ᵀ ᵛ ɪ ☼ ╗ ᵴ ᵀ ᵛ ɪ ф s Ⱥ ℓ ᶎ ᵲ j ˨ ɪ ẖ ᵷ ᵽ˩ ˙ ˩. Ȝ AC ˧ ᶩ ă ᵀ ₳ Ṯ è ῶ Ỉ ᵴ ᵀ ᵛ

ᵽ˩ ᵴ æ 1 χ ᵷ AC i ˩ á Ⱥ AP ˧˚ ɪ Ỉ ˧˚ ㊀ᵉ ˥ ㎘ test-serial ɪ Ʊ ₳ ˝Y ẖ AP ᵀ ᵛ ㎘ 1.0 ɪ ƴ ᵍ㊀AP ʒ ᴺ õ AP220-SE AP220-SH AP220-E χ

```
Ruijie(config-ac)# ap-serial test-serial AP220-SE AP220-SH AP220-E hw-ver 1.0
Ruijie(config-ac)# active-bin-file ap.bin
Ruijie(config-ac)# ap-iamge test-serial ap.bin
```

2 χ ᵬ AC i㊀ᵽ˩ ɪ Æ ệ Ɽ ᶠ ᵝ ˧˚ ᵉ ㎘ test-serial㊀AP j WÆ ᵗ ap.bin ă ᵀ ᵩ Φ ″ ᶩ χ

```
Ruijie(config-ac)# no ap-image test-serial ap.bin
```

ˢ ᶎ Ä | 1 χ Æ ᵗ **show ac-config serial-product** ᵘ ᵑᵬ ɪ ¦ ˜ ᶠ ᵝ ˧˚ ᶠ ᵝ ʒ ᴺ ″ ᶩ ᵛ ɵ ᵱ㊀Ḿ Ẓ ㇂ ˧

ώ˜ ʒ Ụ -

Ẃ ȸ ᵯ ᵴ --

Ẉ ᴶ ᵥ ″ ᵏ AC ᵀ Ḥ'Y Ỉ ᵘ ᵑᵬ

2.21 ap-upgrade band-width

ᵽ˩ AP㊀ᵩ Ⱥ ″ ᶩ Ṿ Ḵ

ap-upgrade band-width *num*

ᵑ ╦ ᵽ˩

no ap-upgrade band-width

v ̈Ϙ ب ″	v ̈Ϙ	ѽ ك
	num	AP ″ ۱ ۱ Ṿ Ḵ ı AP ﻭ ﻩ ″ ۱ ۱ ᵭ ţ ï ∧ ﻫ ' ı Ϙ 1KB ﷺ ɒ ɥ ı ﭖ ﻝ ﷺ ḫ 8~1024 ı س ɲ ḫ Ṿ Ḵ ں

ﺇ ﭖ ﻝ ḫ Ṿ Ḵ ں

ᵘ ᵑᵬ ₩ Ã AP ﭖ ﻝ ₩ Ã

ﺇ ۱. 15

Æ ŧ ″ Y Ṁ AC ﻵ AP ″ ۱ ̀H ı Ở ĩ ố ᵎ ĩ ị ŧ ↫ ژ Ṿ Ḵ Ϙ ӂ ̊ Ṉ ″ ۱ ̀H ژ ḫ Ṗ Ṿ Ḵ ڍ ṇ ﷺ ﻝ ﻵ ﻩ ı ḫ AP ″ ۱ ̀H ᵎ ĩ ﺩ ı ʒ ڭ ũ ۱ ў ᵑ ﷺ Ṿ Ḵ ı ३ d AP ″ ۱ ẽ ᵠ Ḿ Ʊ Ḥ ў ᵑ ჭ ᵭ ẽ ᵠ ف ̀H ᵎ Ϙ ۍ ص ﭖ ﻝ ″ ۱ Ṿ Ḵ ں ᵎ ĩ AC ﻵ AP ∧ ڜ v ᵭ ţ ﷺ ﻫ ' ı ɤ ᵭ ژ ĩ AP ″ ۱ ۱ Ṿ Ḵ ı ⅝

> 1. AP AC
> AP
>
> 2. 1KB AP AC 1Mbps 128

ﭖ ﻝ ʖ æ 1 χ ﷺ AP ﭖ ﻝ ″ ۱ Ṿ Ḵ ı Ʊ ﻩ 128 ჭ ᵖ ﷺ Ṿ Ḵ ő ĩ 1Mbps, o AP ﻭ ﻩ ″ ۱ ı ŧ ѽ ᶻ Ṿ Ḵ ﷺ 1M

```
Ruijie(config-ac)# ap-upgrade band-width 128
```

ₛ ⱬ Ä | 1 χ Æ ŧ **show ap-config running-config** ᵘ ᵑᵬ ı ᵎ Ϙ ¶ ~ ﭖ ﻝ ĩ ᵋ ᵭ ı

ѽ ˜ ʒ Ụ -

Ẃ ȸ ჭ ئ -

Ẉ ᴶ ب ″ ᵏ AC ̃ Ḥ ' Y Ỉ ᵘ ᵑᵬ

2.22 ap-upgrade group

ﭖ ﻝ AP ŧ ϑ ″ ۱ ﻍ

ap-upgrade group *group-name*

ᵑ ╥ ﭖ ﻝ

no ap-upgrade group

v ̈Ϙ ب ″	v ̈Ϙ	ѽ ك

group-name	AP ⊞″ ㄱ ㄴ ᵉ È

ㄱ ᵽ ㄴ -

ᵘ ᵑъ₩Ã AP ᵽ ㄴ ₩Ã

ㄱ ㄱ. 15

Æ ɾ ″YṀ AP ɾ ʔᵕ ″ ㄱ ㄴ ı Ṅ ᴘ˙ Ĵ ″ ㄱ ㄴ⊞ᵽ ㄴ ㄱ

▲ 1.	AP ap-grade band-width
⚠ 2.	capwap upgrade group
⚠ 3.no	ap

ᵽ ㄴ ʓ æ 1 χ ᵏᵐ AP ɾ ʔᵕ ″ ㄱ ㄴ UPGRADE-GROUP1 ᵃ

```
Ruijie(config-ac)# ap-upgrade group UPGRADE-GROUP1
```

ₛ ⁎ Ά | 1 χ Æ ɾ **show ap-config running-config** ᵘ ᵑъ ı ˡ Ⓠ˽ ˜ ᵽ ㄴ Ĩ ᵋ ă ı

ώ˜ ʒ Ụ -

Ẃ ȸ ⁎ ȿ -

Ẉ ᴶ ᵽ ″ ᵏ AC ˜Ḥ'Y Ĵ ᵘ ᵑъ

2.23 capwap ctrl-ip

ᵽ ㄴ AC ᵑь AP ấ ㄱ CAPWAP ᵩ ᵾ⊞ í ˙ IPv4 ᵴ ᵡ ı ᵴ ᵑ ᵚ˙ ï AC ᵑь AP ấ ㄱ CAPWAP ᵩ ᵾ⊞ᵴ ᵡ ᵏᵐ AC ₱ ᵻ⊞ㄱ ᵃ Loopback IPv4 ᵴ ᵡ

capwap ctrl-ip *ip-address*

ᵑ ╦ᵽ ㄴ

no capwap ctrl-ip

v ″Ⴊ ᵽ ″	v ″Ⴊ	ώ ᶄ
	ip-address	″Y ḧ ᵑь AP ấ ㄱ ᵩ ᵾ⊞CAPWAP ᵩ ᵾ í ˙ IP ᵴ ᵡ ı ₓ ᵢ ᵏᵐ AC ₱ ᵻ⊞ • ᵃ ì Æ⊞IP ᵴ ᵡ

CAPWAP ؤ ّ

AP dicovery AC CAPWAP

ٮ ل ڎ æ 1 χ ٮ ل AP j ы ք ں ص þ M₱ ʊ ∧ א ė Ã ∧ א AC

```
Ruijie(config-ac)# capwap discovery-type all forbidden
```

ₔ ج Ά | 1 χ Æ ŧ **show running-config** ᵘ ɲ ı ˡ Ⱪ¶ ˜ ٮ ل ĩ ᵋ ă ı

ώ˜ ʒ Ụ -

Ẃ ȸ ڃ ئ -

Ẉ ᴶ ب ˝ ĸ AC ˁḢ'Y Í ᵘ ɲ

2.26 capwap discovery-type dhcp

ٮ ل AC ы ք AP ں ص DHCP ۱ ʒ discovery ĭ ă ∧ א

capwap discovery-type dhcp allow

ٮ ل AC j ы ք AP ں ص DHCP ۱ ʒ discovery ĭ ă ∧ א

capwap discovery-type dhcp forbidden

ν ˝Ⱪ ب ˝

ν ˝Ⱪ	ώ ك
-	-

ỉ ٮ ل ы ք AP ں ص DHCP ۱ ʒ discovery ĭ ă ∧ א AC

ᵘ ɲ ₩ Ã AC ٮ ل ₩ Ã

ỉ ۱. 15

Æ ŧ ˝YṀ CAPWAP ‰´ в ɲ ı ŧ AP ∧ א ע ᴸ ѧ ĩ ᵋ õ AC è ք ı ḅ ' ٮ ل˝ j ы ք DHCP ∧ א ı AP ŧ % ۱ ʒ discovery ĭ ă ı AC ۷ j ɨ ᵸ ı ĸ ǎ ȯ ۸˝ % AP ћ Ę AC ấ ۷ CAPWAP ؤ ّ

AP DHCP AC AC CAPWAP

ٮ ل ڎ æ 1 χ ٮ ل AP j ы ք DHCP ۱ ʒ discovery ĭ ă ∧ א AC

```
Ruijie(config-ac)# capwap discovery-type dhcp forbidden
```

2.28 capwap discovery-type static-config

ᵽ ⅃ AC ы ᵽ AP ɳ ص ـً ɵ ᵽ ⅃ AC ş ҳ ۱ ʒ discovery ї ă ∧ א

capwap discovery-type static-config allow

ᵽ ⅃ AC j ы ᵽ AP ɳ ص ـً ɵ ᵽ ⅃ AC ş ҳ ۱ ʒ discovery ї ă ∧ א

capwap discovery-type static-config forbidden

ν ″Ϙ ᵽ ″	ν ″Ϙ	ѽ ك
	-	-

ƛ ᵽ ⅃ ы ᵽ AP ɳ ص ـً ɵ ᵽ ⅃ AC ş ҳ ۱ ʒ discovery ї ă ∧ א

ᵘ ɲ ₩ Ã AC ᵽ ⅃ ₩ Ã

ƛ ۱ ̣ 15

Æ ŧ ″ Y Ṁ CAPWAP ‰ ́ ʁ ɲ ı ŧ AP ∧ א ע ᴸ ѧ ĩ ᵋ ѽ AC è ᵽ ـً ɵ ᵽ ⅃ AC ş ҳ ѽ acip ⁼ ؤ ˝ ı ḅ ' ᵽ ⅃ ˝ j ы ᵽ ـً ɵ ᵽ ⅃ AC ş ҳ ∧ א ı AP ŧ % ۱ ʒ discovery ї ă ı AC ۷ j ŧ ʯ ı ҡ ă̈ ȯ ∧ ˝ % AP ль Ẹ ˙ AC ấ ۷ CAPWAP ؤ ŏ

	AP AC AC CAPWAP

ᵽ ⅃ ʒ æ 1 χ ᵽ ⅃ AP j ы ᵽ ـً ɵ ᵽ ⅃ AC ş ҳ ۱ ʒ discovery ї ă ∧ א AC

```
Ruijie(config-ac)# capwap discovery-type static-config forbidden
```

ₛ ⳺ Ά | 1 χ Æ ŧ **show running-config** ᵘ ɲ ı ˡ ℚ ¦ ˜ ᵽ ⅃ ĩ ᵋ ă ı

ώ ˜ ʒ Ụ -

Ẃ ȸ ჭ ئ -

Ẉ ᴶ ᵽ ″ ĸ AC ˁ Ḥ ' Y Ỉ ᵘ ɲ

2.29 capwap discovery-type unknown

ᵽ ⅃ AC ы ᵽ AP ɳ ص Ծ Ꮒ ۱ ʒ discovery ї ă ∧ א

capwap discovery-type unknown allow

ᵽ ⅃ AC j ы ᵽ AP ɳ ص Ծ Ꮒ ۱ ʒ discovery ї ă ∧ א

capwap discovery-type unknown forbidden

v ̈Ọ ب ˝	v ̈Ọ	ѽ ك
	-	-

ǰ ٻ ل ы ք AP ڀ ص Ծ Ԋ ۱ ʒ discovery ї ă ٨ א AC

ᵘ ɲ ₩ Ã AC ٻ ل ₩ Ã

ǰ ۱. 15

Æ ŧ ″ Y Ṁ CAPWAP ‰ ́ в ɲ ı ŧ ̂ ̣ AP ٨ א ע ᴸ ѧ ї ᵋ ѽ AC è ք Ծ Ԋ ۱ ʒ o ڻ ́ Ậ DHCP DNS ̄ ő ٻ ل ө ᵘ ۱ ʒ ı ḅ ẍ Ḥ ۱ Ḥ ı ḅ ' ٻ ل ́ j ы ք % ٦ Ả Ã ٨ א ı AP ŧ % ۱ ʒ discovery ї ă ı AC ٦ j ŧ ᵸ ı ϰ ă̈ ȯ ᴎ ́ % AP ль Ę ̇ AC ấ ٦ CAPWAP ؤ ڎ

	AP discovery AC CAPWAP

ٻ ل ʒ æ 1 χ ٻ ل AP j ы ք Ծ Ԋ ۱ ʒ discovery ї ă ٨ א AC

```
Ruijie(config-ac)# capwap discovery-type unknown forbidden
```

ₛ ᴈ Ä | 1 χ Æ ŧ **show running-config** ᵘ ɲ ı ˡ ₡ ¶ ˜ ٻ ل ĩ ᵋ ă̈ ı

ώ ̃ ʒ Ụ -

Ẃ ȸ ڃ ئ -

Ẉ ᴶ ب ˝ ϰ AC ̃ Ḥ ′ Y Ỉ ᵘ ɲ

2.30 capwap disc-concurrent

ٻ ل AP Ḿ capwap ٨ א ї ă ʃ ת Ỉ ד ı ɒ ɥ PPS

capwap disc-concurrent *num*

v ̈Ọ ب ˝	v ̈Ọ	ѽ ك
	num	⅛ ٧ ʃ ת ٨ א ї ă ̈Ọ ̧ ı ⁞ ̃Ω ғ ß Ỉ ד ח Ө j ª

ǰ ٻ ل ⁞ ̃Ω AC Ỉ ד Ө j ª ǰ j ª

ᵘ ɲ ₩ Ã AC ٻ ل ₩ Ã

ﾉ ﾑ 15

Æ ɪ ˝YṀ Ụ ʃ, i õ ʌ א AP ! ʌ ʌ א ï ă ù` ı CAPWAP ₩ ę ɻ ⁞ Ω AC Ỉ Ꭲ Ẓ ȳ ʌ א ï ă Ẋ ʌ í ¨ ψ ﾍﾙ % ᵘ ᵑᵬ ᵅ ı Ę ⅛ ヽ ï ă ˝Ω ᵧ ʌ ص ˝A ﾍﾙ Ө ` H ı Ṅ Ъ Ấ % ʌ א ï ă ı j W ʃ ת

ﾍﾙ ʒ æ 1 χ ﾍﾙ AC ʌ א ï ă ʃ ת ˝Ω ᵧ

```
Ruijie(config-ac)# capwap disc-concurrent 512
```

ₛ ﾈ Ä | 1 χ Æ ɪ **show capwap server state** ᵘ ᵑᵬ ı ˡ ꞯ ˜ ﾍﾙ Ẋ ʌ Ỉ ㄒ Ө

ώ˜ ʒ Ụ -

Ẃ ȸ ﾁ ﾚ -

Ẉ ᴶ ﾍ ˝ ᵏ AC ˜Ḥ'Y Ỉ ᵘ ᵑᵬ

2.31 capwap data-tunnel encryption

ﾍﾙ CAPWAP ˝Ω˜Ω ᵑ ﾗ ɪ Ę

capwap data-tunnel encryption { **bf** | **des** } *key*

ᵢ ᵬ˝Y ḧ AC ﾍﾙ

no capwap data-tunnel encryption { **bf** | **des** }

v ˝Ω ﾍ ˝

v ˝Ω	ώ ك
bf	Æ ɪ ≤ (blowfish) ɪ Ę ヽ |
des	Æ ɪ ˝Ω˜Ω ɪ Ę ‰ ´ ヽ |
key	ʜ ᵬ Ę ᵯ ı ꞯ Ⅵ † ﾉ ı ω ᶻ ﾐ ỷ ㎞ 255 Ѧ Ề ヽ

ﾉ ﾍﾙ -

ᵘ ᵑᵬ ₩ Ã Ã AP ﾍﾙ ₩ Ã

ﾉ ﾑ 15

Æ ɪ ˝YṀ ⁂ CAPWAP ˝Ω˜Ω ᵑ ﾗ س ռ ù` ï Ĩ j ɪ Ę ı Ẹ AC ⁼ AP ﾋ e ゥ ﾁ ت ᵯ ᵽ ʒ ʜ ᵾ e ゥ ﾍﾙ `H ı Ꞇ ˝Ω˜Ω ʒ Ụ ˡ Ỉ ą ᵖ ã ヽ ώ Æ ɪ CAPWAP ˝Ω˜Ω ᵩ ﾗ ɪ Ę ı Ỉ ı ˡ ꞯ ʒ - ɪ Ä ˝Ω˜Ω ï ă ﾋ e ゥ Ḡ ᵾ

CAPWAP

ﾍﾙ ʒ æ 1 χ ﾍﾙ AP Æ ɪ des ɪ Ę ヽ | ف Φ ɪ Ę ı Ę ᵑ ㎞ ruijie

```
Ruijie(config-ap)# capwap data-tunnel encryption des ruijie
```

ₛ ᶎ Ά | 1 χ Æ ŧ **show ap-config running-config** ᵘ ᵑᵬ ı ˡ Ꝙ ˜ ٻ ل ĩ ᵋ ᾰ ı

ώ˜ ʒ Ụ -

Ẃ ȸ ᶎ ئ -

Ẉ ᴶ ب ˝ ᵏ AC ˜Ḥ'Y Ỉ ᵘ ᵑᵬ

2.32 capwap dtls enable

ٻ ل CAPWAP ί ˙ ڼ ڑ dtls ɾ ᾏ ı ΐ́

capwap dtls enable

ٻ ل CAPWAP ί ˙ ڼ ڑ j ɾ ᾏ

no capwap dtls enable

v ˝Ꝙ ب ˝

v ˝Ꝙ	ώ ك
-	-

ỉ ٻ ل ѕ ת Ằ ᵏ CAPWAP ί ˙ ڼ ڑ dtls ɾ ᾏ ı ΐ́

ᵘ ᵑᵬ ₩ Ã AC ٻ ل ₩ Ã

ỉ ٨ ̣ 15

Æ ŧ ″ Y Ṁ ѕ ת ὐ ` ï ı CAPWAP ί ˙ ڼ ڑ dtls ɾ ᾏ ı ΐ́ ΐ̃ Ằ ᵏ ı ˡ Ꝙ Ȝ - AC ᶤ AP ɵ ڑ ί ˙ Ґ Ѝ Ḡ ϖ ᵎ e ὐ ` ï ı ₥ ˝ ⅄ ; Ά ӂ ı ɾ ″ Ά ˡ Ꝙ ٻ ل ί ˙ ڼ ڑ j ɾ ᾏ

ٻ ل ᶎ æ 1 χ Ằ ᵏ ٻ ل CAPWAP ί ˙ ڼ ڑ dtls ɾ ᾏ ı ΐ́

```
Ruijie(config)# ac-controller

Ruijie(config-ac)# capwap dtls enable
```

ₛ ᶎ Ά | 1 χ Æ ŧ **show running-config** ᵘ ᵑᵬ ı ˡ Ꝙ ˜ ٻ ل ĩ ᵋ ᾰ ı

ώ˜ ʒ Ụ -

Ẃ ȸ ᶎ ئ -

Ẉ ᴶ ب ˝ ᵏ AC ˜Ḥ'Y Ỉ ᵘ ᵑᵬ

2.33 capwap fragment enable

Ầ ᵏ CAPWAP ʿ Ɑ ı ḟ
capwap fragment enable

ʜ ᵾ CAPWAP ʿ Ɑ ı ḟ
no capwap fragment enable

v ˝Ọب ˝

v ˝Ọ	ὼ ك
-	-

ỉ ٮ ل ѕ ᵑ j Ầ ᵏ CAPWAP ʿ Ɑ ı ḟ

ᵘ ᵑᵬ₩Ã AP ٮ ل ₩Ã ǎ AP ٨ ٮ ل ₩Ã

ỉ ٨ ̣ 15

Æ ŧ ˝YṀ Ẹ ˝Ọ˜Ω ĭ ă ل ص CAPWAP ؤ ێ Ṃ Ⱡ ɵ ª ı ĭ ă ڎ ỷ ı ḟ ٨ ص ip mtu ı ĭ ă h ل ص IP ڤΦ IP ʿ Ɑ Ẹ ج ث ٨ è ᵽ ^ Ⱥ ` ᵽ ip mtu j ₇ ٰH ı ĭ ă ı ḟ ₄ ļ ڤΦ ^ Ⱪ ʿ Ɑ ᵓ پ ٨ ı ں Ḥ˜ ĭ ă ج ٨ ό ḟ ı Ꙍ ص Ỉ ᵘ ᵑᵬ Ầ ᵏ CAPWAP ʿ Ɑ ı ḟ ı ĭ ă Ṅ ᵽ CAPWAP Ṃ Ⱡ ٰHڤΦ ʿ Ɑ ˜Ḥ Ă ı CAPWAP ʿ Ɑ ĭ ă ڎ ỷ ı Ꙍ ٭ **capwap mtu** ᵘ ᵑᵬ˝Y ḧ ᵿ ج ث ٨ ὼ ṇ mtu ı ʁ ắ ₹ d IP ʿ Ɑ

پ ل ڎ æ 1 χ Ầ ᵏ پ ل AP1 CAPWAP ʿ Ɑ ı ḟ

```
Ruijie(config)# ap-config AP1
Ruijie(config-ap)# capwap fragment enable
```

ₛ ج Ά | 1 χ Æ ŧ **show ap-config running** ᵘ ᵑᵬ ı ˡ Ꙍ ˜ پ ل ĩ ᵋ ă ı

ώ˜ ʒ Ụ -

Ẃ ȸ ج ێ -

Ẉ ᴶ ب ˝ ᵏ AC ˜Ḥ'Y Ỉ ᵘ ᵑᵬ

2.34 capwap max-concurrent

ᵽ ᒧ AC ᵬ ᵽ AP Ẋ ʌ ᵢ ᵻ ᵑ ᵶ Ⱥ ̋Ǫ

capwap max-concurrent *num*

ᵑ ᒣ ᵽ ᒧ

no capwap max-concurrent

ᵛ ̋Ǫ ᵽ ̋	ᵛ ̋Ǫ	ᵶ ᶄ
	num	AP Ẋ ʌ ᵢ ᵻ ᵑ ᵶ Ⱥ ̋Ǫ ᵢ ̤ ᵬ ᵚ 1~200

ᵡ ᵽ ᒧ AP Ẋ ʌ ᵢ ᵻ ᵑ ᵶ Ⱥ ̋Ǫ ᵴ ᵑ Ö ᵚ 50

ᵘ ᵑᵬ ₩ Ã AC ᵽ ᒧ ₩ Ã

ᵡ ᵑ ̣ 15

Æ ᵵ ̋ Y Ṁ ᵶ ̦ AP Ẋ ʌ ᵢ ᵻ `H ᵢ ᵎ Ḟ Ṁ AC CPU ᵚ ᵴ ᵢ ᵑ ₆ ᵯ ̇ 100% ᵢ ᵸ ᵅ̈ Ṁ Ṯ ᒧ ᵢ ᵻ AP ᵏ ̂ ̂ Ȝ ╗ ᵎ م ᵅ̈ ᵹ ᵴ Ă Ã Æ ᵵ Ḟ ᵘ ᵑᵬ ᵎ Ⱥ ᵴ ̇ AP Ẋ ʌ ᵢ ᵻ ᵑ ᵶ Ⱥ ̋Ǫ

AC AP

ᵽ ᒧ ᵷ æ 1 χ ᵚ AC ᵽ ᒧ ᵬ ᵽ ᵑ ᵶ AP Ẋ ʌ ᵢ ᵻ ᵑ ̋Ǫ

```
Ruijie(config-ac)#capwap max-concurrent 100
```

ₛ ᵶ Ά | 1 χ Æ ᵵ **show running-config** ᵘ ᵑᵬ ᵢ ᵎ Ⱥ ̃ ᵽ ᒧ ĩ ᵋ ᵅ̆ ᵢ

ώ ̃ ȝ Ụ -

Ẃ ð ᵷ ᵹ -

Ẉ ᴶ ᵽ ̋ ᵸ ᵛ ᵎ ᵘ ᵑᵬ

2.35 capwap max-retransmit

ᵽ ᒧ CAPWAP ĩ ᵅ̆ ᵑ ᵶ ᵽ ᵉ Ⱪ ̋Ǫ

capwap max-retransmit *num*

ᵑ ᒣ ᵽ ᒧ

no capwap max-retransmit

ᵘ ɲ ₩ Ã	AC ᵽ ㇾ ₩ Ã
ﾉ ｲ.	15
Æ ŧ ″ YṀ	ᵽ ㇾ AP ″ ｲ ｲ ı Ṿ Ķ í ˙ ㉿ و ѧ ″ ｲ Ꝍ ″ ｲ ｲ ㎞ ɔ ỷ ɒ ɥ ı AC و ѧ ″ ｲ Ẋ ∧ Ӫ ẓ ‘ ㉿ ᵽ ˙ Ä ω̃ ″ ｲ ｲ ѧ

> 1. 5 / ap

ᵽ ㇾ �Z æ 1 χ ᵽ ㇾ AP ″ ｲ ｲ Upgrade-Group1 ı ѡ ᶻ Ẋ ∧ Ӫ 10 ₳

```
Ruijie(config-ac)# capwap upgrade group Upgrade-Group1 max-current 10
```

ₛ ᶎ Ä | 1 χ Æ ŧ **show running-config** ᵘ ɲ ı ˡ Ꝙ ˜ ᵽ ㇾ Ĩ ᵋ ă ı

ώ˜ ʒ Ụ -

Ẃ ȸ ᶄ ئ -

Ẉ ᴶ ᵽ ″ ĸ AC ᷇ Ḥ ' Y Ỉ ᵘ ɲ

2.37 capwap mtu

ᵽ ㇾ CAPWAP ؤ ىّ ㉿ ت Ễ mtu

capwap mtu *num*

Õ ʺ ʰ ﾉ ｲ Ө

no capwap mtu

v Ӫ ᵽ ″

```
Ruijie(config-ac)#capwap upgrade max-concurrent 10
```

ₛ ᴈ Ä │ 1 χ Æ ɨ **show running-config** ᵘ ᵑᵬ ı ˡ Ꝙ˺ ~ ᵱ ˩ ĩ ᵋ ᾰ ı

ώ˜ ʒ Ụ -

Ẃ ȸ ᶎ ᵴ -

Ẉ ᴶ ᵱ ˝ ᵏ AC ˜Ḥ'Y Ỉ ᵘ ᵑᵬ

2.39 echo-interval

ᵱ ˩ CAPWAP ⓞⓑⓙ Ọ ᵱ ʒ ╗ ᵹ ᶑ

echo-interval *seconds*

Õ ʺ ȷ̊ Ө

no echo-interval

v ˝Ọ ᵱ ˝

v ˝Ọ	ώ ᶑ
seconds	CAPWAP Ọ ᵱ ʒ ╗ ᵹ ᶑ ı ‟ ᵬ ⱡ 5~255 ı ᴅ ᵬ ⱡ ᛊ

ȷ̊ ᵱ ˩ ʒ ╗ ᵹ ᶑ ȷ̊ Ө ⱡ 30s

ᵘ ᵑᵬ ₩ Ã AP ᵱ ˩ ₩ Ã ᾰ AP ᵻ ᵱ ˩ ₩ Ã

ȷ̊ ᵻ˙ 15

Æ ɨ ˝ Y Ṁ AP ˩ ᵑ " ‗ ᵴ ı AC ⁼ AP ᵑ ᵯ CAPWAP ᵚ ᵴ Ӣ ỉ AP ⁼ AC ɵ ᵹ Æ ɨ Echo Request ⁼ Echo Response ᶩ ᵑ ĭ ᶎ ت ⓞⓑⓙ ώ Ọ ό AP ᵬ ≡ ώ Ꞇ Ꮋ ت ∂ ĭ ᾰ ⓞⓑⓙ ᵘ` ï ı ⅛ ᶑ echo-interval ᴧ ᶢ Echo Request ĭ ᾰ ف Φ ʒ ╗ ᵡ AP ᴧ ᶢ ≡ ώ ώ˙ Ẓ ᵑ ĭ ᾰ ı ĭ ᾰ Ṅ ف Φ ᵱ ᵾ ı ᵱ ᵾ Ꝙ. Ḍ ᵱ ᵾ ᵹ ᶑ ε 3 ᵑ ᶫ echo-interval ⓞⓑⓙ Æ ь ᾰ̈ ⓞⓑⓙ ọ Ө ζ Ằ Ḍ Ӣ ɯ ı ħ ᵚ ᶻ ᵱ ᵾ ᵹ ᶑ j ỉ ᴧ ᵽ echo-interval ⓞⓑⓙ Æ ᶫ 60 ᵑ ⓞⓑⓙ ọ Ө Ẹ ᵚ ᶻ ᵚ ᶻ ᵱ ᵾ Ⱪ Ꝟ Ⱪ ɬ ≡ ώ ώ˙ Ẓ ᵑ ĭ ᾰ ı ᵑ ᵬ ⱡ ᵚ Ă Ằ o ᵚ ᵴ ⓞⓑⓙ 3 ╗ ˛ Ọ˜ Ꮋ ᵹ ᵬ 3 ╗ Ꮋ ᵹ ɨ ı ᵱ ᵾ ᵹ ᶑ Ỉ ᵘ ᵑᵬ ᵡ ᵬ ᵚ ᵴ Run ↑ ỗ ï ɬ Ọ ᵴ ᵑ echo-interval ĩ 30s ı ᵴ ᵑ ⓞⓑⓙ ᵚ ᶻ ᵱ ᵾ Ⱪ Ꝟ ĩ 5 ı ت ∂ ĭ ᾰ ᵬ ᵑ 0s ᴧ ᶢ ɵ ᵅ ı ḅ ' ˙ ώ˙ Ẓ ᵑ ı ᵱ ᵾ ĭ ᾰ˙ ˛ ᵬ ᵹ ᶑ 3s 6s 12s ı 15s 15s ᵠ ᵱ ᵾ ᵱ ˩ echo-interval ⁼ max-retransmit ᛊ Ꞇ Ḛ Ö Ⱪ ˜ Y % h„ ɯ ᵑ ĭ ᾰ ᴧ Ꮋ Ꮋ ᵹ

▲ echo-interval

```
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# echo-interval 10
```

2 χ ب ر ″A õ AP ۞Ọ ب ژ ڭ ᠷᠷ 10s

```
Ruijie(config)# ap-config all
Ruijie(config-ap)# echo-interval 10
```

3 χ ب ر AP ر ε default ζ ï ″A õ AP ۞Ọ ب ژ ڭ ᠷᠷ 10s

```
ړ گ        Ú                                                                    !
```

id	ů‘ +ʒ ï ì map slot ㇒ ᴺ
all	ů‘ +ʒ ï ‵A õ map

once ᵘ ɲ ᴱ ˜EΦ Ⱪ ı j ف Φ ʒ è

ƛ ٮ㇒ ή

ᵘ ɲ₩Ã AP ٮ㇒₩Ã/‵A õ AP ٮ㇒₩Ã ă AP ㇔ٮ㇒₩Ã

ƛ ㇔. 15

Æ ɤ ˜YṀ Pٮ㇒ᵘ ɲ´ ᴱ õ AP i ˜Ḥ'Y ı AC i ≡ õ Ḿ Ƶ ٮ㇒ᵘ ɲ ı ḅ ' ỳ ƥ AC i Ḿ AP ف Φ ف ㇔ ٮ㇒ ı ˡ Ȣ ụ ص ap-config ï exec-cmd ᵘ ɲ ḥ ᵑ ᵪ ₓ ɭ ├ Ỵ ĩ ı ḅ ' ₓ ɭ π ╦ ǎ ă ˜ ώ exec-cmd ₳ ٮ㇒ ı ₓ ɭ Ⱪ Æ ɤ no exec-cmd ᵘ ɲ. ں Ḿ Ƶ ٮ㇒ ı ɬ ª WÆ ɤ exec-cmd ᵘ ɲ ف Φ ɾ ᵇ ǎ ă ₓ ɭ ˜ ώ ٮ㇒; ˜E ɽ exec-cmd Æ Ʊ ˡ Ȣ ụ ص AC ï ʌ Ḿ Ƶ ᵘ ɲ MAP ı ƥ MAP i ˜EΦ ᵘ ɲ ı Ʊ ᴍ ⁼ ˝ ụ ap ≡ õ ภ. ψ

ḅ ' ª ˋḤ Ḿ ap-config all ⁼ ɒ‴ ap-config ف Φ ٮ㇒ ı Ḿ ƥ ㇔ AP ı ª ٮ㇒ h ɬ ώ ı Ḿ ˝ ㇔ ٮ㇒ ı AP i ㇔ ı „ ˜Y Ł Ч Ⱪ ㇔ ap-config > ap-config all ‵A Ã ɬ ώ ψ

Pٮ㇒ᵘ ɲ ᴱ õ ap-config ₩Ã ï ˜Ḥ'Y ı ă ap-group ï ≡ õ Ḿ Ƶ ٮ㇒ᵘ ɲ ı ḅ ' ₓ ɭ Ḿ • Ⱥ AP ㇔ ɲ ‵A õ AP ف Φ Ỉ ㇔ ᵘ ɲ ٮ㇒ ı ˡ Ȣ ƥ Ỉ AP ㇔ ï ˜EΦ exec-cmd ᵘ ɲ ḥ ᵑ ψ ₓ ɭ ├ Ỵ ĩ ı Ỉ ٮ㇒ ƥ ap-group ₩Ã ï Ẋ j ʒ è ı ᴱ ĩ ᾽ Ḛ ƥ Ḛ˙ AP ㇔ ï ‵A õ AP ˜EΦ Ỉ ᵘ ɲ Ⱪ

ٮ㇒ ʒ æ 1 χ ٮ㇒ AC ï ʜ ڎ AP EWEB ı ĩ

```
Ruijie(config)#ap-config AP1
Ruijie(Config-ap)# exec-cmd mode configure cmd "no enabl┦      ᾳ  aog&
```

Í

ₛ ᴈ Ä │ 1 χ Æ ŧ **show ap-config running** ᵘ ᵑᵬ ı ˡ Ꝙ˙ ˜ ﺑ ﻝ ĩ ᵋ ă ı

ώ˜ ʒ Ụ -

Ẃ ȍ ᶎ ئ - ˜ ᾠ exec-cmd ﺑ ﻝ ı ≡ ῶ ﺑ ﻝ

Ẃ ȍ ᶎ ȣ -

Ẉ ᴶ ᵽ ˝ ᵏ AC ᵀḢ'Y Ỉ ᵘ ᵑᵬ

2.42 ip address

ᵽ ᒧ ˝Y ḧ AP ⃞ ˷ ỗ IP ᵴ ᵡ

ip address *ip-address network-mask gateway*

Õ ʸ ʰ ᵴ ᶁ ᵽ ᒧ

no ip address

v ˝Ọ ᵽ ˝	v ˝Ọ	ὼ ᶄ
	ip-address	AP ⃞ ì Æ ᵴ ᵡ
	network-mask	AP ᵴ ᵡ ȯ
	gateway	AP ⃞ ᒧ ʰ

ᶁ ᵽ ᒧ -

ᵘ ᵑᵬ ₩ Ã AP ᵽ ᒧ ₩ Ã

ᶁ ᵑ̣ 15

Æ ɪ ˝YṀ AP ˡ Ꝋ ᵑ ọ ˷ ỗ ᵽ ᒧ ⁼ DHCP ᵬ ᵑ Á Ã n ᵑ₅ ɾ ⃞ IP ᵴ ᵡ ᵡ AP ˈ ᵽ ᒧ ọ ˷ ỗ IP ᵴ ᵡ ɪ ᵢ Ꝋ DHCP ⃞ Á Ã ᴜ ỗ n ᵖ ᵴ ᵡ Ẋ ɪ ʔᴗ AC ɪ ف H ˡ Ꝋ ᵑ ọ Ỉ ᵘ ᵑᵬ ᵽ ᒧ AP ⃞ ˷ ỗ ᵴ ᵡ ɪ Æ ệ AP ᵖ ᵏ ɵ ᵅ ⃞ ᵴ ᵡ Ȝ è j Ψ

> 1. AP DHCP DHCP OPTION AC AP "acip" AC AP AC AC
>
> 2. AP AP CAPWAP

ᵽ ᒧ ᶎ æ 1 ᵡ ᵽ ᒧ AP0001 ⃞ ᵴ ᵡ ᵏ 1.1.1.1 ɪ ọ ᵏ 255.255.255.0 ɪ ï ᵖ ᵏ 1.1.1.2

```
Ruijie(config)# ap-config AP0001

Ruijie(config-ap)# ip address 1.1.1.1 255.255.255.0 1.1.1.2
```

ₛ ᶎ Ä | 1 ᵡ Æ ɪ **show ap-config running** ᵘ ᵑᵬ ɪ ˡ Ꝋ ˜ ᵽ ᒧ ĩ ᵋ ᾰ ɪ

ὼ ˜ ȝ Ụ -

Ẃ ð ჯ ئ -

Ẉ ᴶ ب ˝ ĸ AC ˜Ḥ'Y Ỉ ᵘ ᵑь

2.43 ipv6 address

ٮ ل ˝Y ḧ AP ⃞ ˷ õ IPv6 ş ӽ

ipv6 address *ipv6-address-with-mask gateway*

Õ ʰ ₦ ỉ ٮ ل

no ipv6 address

v ˝Ọ ب ˝	v ˝Ọ	ώ ك
	ipv6-address-with-mask	AP ⃞ ì Æ IPv6 ş ӽ ı † Ã ۱ д X:X:X:X::X/24
	gateway	AP ⃞ IPv6 ل ԋ

ỉ ٮ ل -

ᵘ ᵑь ₩ Ã AP ٮ ل ₩ Ã

ỉ ۱. 15

Æ ŧ ˝Y Ṁ AP ƍ IPv6 ˜Ḥ'Y Ầ ᵏ ⃞ ù` ï ı ˡ Ꞷ ٯ ص ˷ õ ٮ ل ⁼ DHCPv6 ь ϒ Ά Ã n ᵑ₅ ځ ⃞ IPv6 ş ӽ ٰ AP ˈ ٮ ل ص ˷ õ IPv6 ş ӽ ı „ Ꞷ DHCPv6 ⃞ Ά Ã ʊ õ n ᵑ ş ӽ Ẋ ŧ ϶ AC ı ف ̀H ˡ Ꞷ ٯ ص Ỉ ᵘ ᵑь ٮ ل AP ⃞ IPv6 ˷ õ ş ӽ ı Æ ệ AP ٭ ᵏ ө ᵅ ⃞ ş ӽ Ȝ è j Ψ

1. AP IPv6 DHCPv6 DHCPv6 OPTION AC IPv6 AC

ώ˜ ʒ Ụ -

Ẃ ծ ჭ ئ -

Ẉ ᴶ ب ˝ ĸ AC ˜Ḥ'Y Ỉ ᵘ ᵑь

2.44 ipv6 enable

ᵹ AC i ٻ ˝Y ḧ AP Ầ ᵏ IPv6 ˜Ḥ'Y

ipv6 enable

Õ ʸ ᵻᵿ ỉ ٻ

no ipv6 enable

v ˝Ọ ب ˝	v ˝Ọ	ώ ك
	-	-

ỉ ٻ ỉ ù` ï ı AP IPv6 ˜Ḥ'Y ᵻᵿ ᵾ ڑ

ᵘ ᵑь ₩ Ã AP ٻ ₩ Ã

ỉ ۱. 15

Æ ŧ ˝Y Ṁ AP ᴱ õ ᵹ Ầ ᵏ IPv6 ˜Ḥ'Y ù` ï ı ᵸ Æ ŧ IPv6 ş χ ف Φ IPv6 AC ∧ א ש ɲ ù` ï ı AP IPv6 ˜Ḥ'Y ĩ ᵾ ڑ ı ˡ Ҩ ڼ ص Ỉ ᵘ ᵑь ٻ AP IPv6 ˜Ḥ'Y ı ĩ Ầ ᵏ ᵬᵾ ڑ

1. AP IPv6 AP CAPWAP

2. AP IPv6 AP IPv4 IPv6 CAPWAP
IPv4 IPv6 AC AC IPv6 AC
AP IPv6 AP IPv4 IPv6

ٻ ʖ æ

```
1 χ ٻ AP0001 Ầ ᵏ IPv6 ˜Ḥ'Y
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# ipv6 enable
```

ₛ ᴈ Ά | 1 χ Æ ŧ **show ap-config running** ᵘ ᵑь ı ˡ Ҩ ˜ ٻ ĩ ᵋ ă ı

ώ˜ ʒ Ụ -

QàvY& 0ÞbbHF n#xTb1VQTb1VQD

2.46 location

ᵽ ⅃ AC ᾶ AP ⅋ Ꮋ ⅃ ʒ Ụ

location *location-string*

Õ ᵸ₆ ⅄ ᵽ ⅃

no location

v ″Ọ ᵽ ″	v ″Ọ	ὼ ᶄ
	location-string	AC ᾶ AP ⅋ Ꮋ ⅃ ʒ Ụ ı ῳ ^ ˡ ᵽ ⅃ 255 È ↿ , j Ἧ Ṿ Ⱳ ⁋

⅄ ᵽ ⅃ ⅄ ὼ` ï ı AC ⅋ Ꮋ ⅃ ʒ Ụ ⅏ Ruijie_COM ı AP ⅋ Ꮋ ⅃ ʒ Ụ ⅏ Ⱳ

ᵘ ᵑᵬ ₩ Ã AC ᵽ ⅃ ₩ Ã ᾶ AP ᵽ ⅃ ₩ Ã

⅄ ↿ 15

Æ ɨ ″ Y Ṁ ṗ

ᵽ ⅃ ⁑ æ 1 χ ᵽ ⅃ ᵎ ḧ AC ⅋ Ꮋ ⅃ ⅏ ㄩ Ⱳ ↿ 2 ⁄ń ε computer-layer2 ζ

```
Ruijie(config-ac)# location computer-layer2
```

5 χ ᵽ ⅃ DS3334 ⅋ Ꮋ ⅃ ʒ Ụ ⅏ DS0f r p sdq|

```
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# location AP-company
```

ₛ ⅇ Ά | 1 χ Æ ɨ **show ac-config running** ᵘ ᵑᵬ ı ¶ ˜ AC ⅋ Ꮋ ⅃ ʒ Ụ
2 χ Æ ɨ **show ap-config running** ᵘ ᵑᵬ ı ¶ ˜ AP ⅋ Ꮋ ⅃ ʒ Ụ

ώ ˜ ʒ Ụ -

Ẃ ȣ ⅇ ȿ -

Ẉ ᴶ ᵽ ″ ᵏ AC ᷇ Ḥ ' Y Ỉ ᵘ ᵑᵬ

2.47 reset slot

ᷱ ᵏ Ú ‘ +AP ⅋ ỉ AP

reset slot *slot-id*

v ̋Ọ ب ˝	v ̋Ọ	ὼ ك
	slot-id	Rs ʁ ᴺ ı ̧ ƀ 1~24

ỉ ٮ ل -

ᵘ ɲ ₩ Ã AP ٮ ل ₩ Ã

ỉ ٨ ̣ 15

Æ ŧ ″ Y Ṁ Ỉ ᵘ ɲ ĸ Ḿ ΰ ˋ +AP ֆ ᵻ ũ ᷒ ı ħ j ˜ Ḥ ' Y Ḿ ¨ A ũ AP ف Φ ٮ ل Ỉ ٮ ل j Ȝ è

Ỉ ᵘ ɲ ; Ḿ slot ₭ Ȝ Rs ʁ ᴺ ı ƍ ٨ ỉ ʃ ˜ ï ı h Ḿ Rs ʁ ᴺ ï ƀ ᴶ ỉ AP ª ᾽ H ı ᷒

ٮ ل ȝ æ 4 χ ᷿ ᵏ DS3334 ỉ DS4

```
Ruijie(config)# ap-config AP0001

Ruijie(config-ap)# reset slot 1
```

ₛ ⱬ Ά | -

ώ ˜ ȝ Ụ -

Ẃ ȸ ȣ ś -

Ẉ ᴶ ب ˝ ĸ AC ˜ Ḥ ' Y Ỉ ᵘ ɲ

2.48 set-version

ٮ ل ḧ ˙ ν ᴺ

set-version *string*

v ̋Ọ ب ˝	v ̋Ọ	ὼ ك
	string	ḧ ˙ v ᴺ

ỉ ٮ ل -

ᵘ ɲ ₩ Ã AC ٮ ل ₩ Ã

ỉ ٨ ̣ 15

Æ ŧ ″ Y Ṁ Ỉ ᵘ ɲ Ṅ ٮ ل AC ֆ ᵻ ᷒ ᧔ ţ v ᴺ ı ª ᾽ H h Ṅ Ỉ v ï ∧ ٨ AP ف Φ v ᴺ ֆ ل

ٻ ل ڳ æ 4 χ ٻ ل ḧ ˙ ع ɼ v ᴺ ㎞ UJRV 43ɪ7+5E4 : ,0VS5

```
Ruijie(config)# ac-controller
```

Cnt	☼ ╗ ă ɪ ˚ ˊ ˬ ᴺ
File Name	☼ ╗ ă ɪ ᵉ
Image Id	☼ ╗ ă ɪ ⅴ
Software number	☼ ╗ ă ɪ ˬ ᵇ ή Ω
Used Cnt	Ɲ ˊ Ẹ ˙ õ ^ N̲ AP* ƍ Æ ɬ ف Ⱥ ă ɪ
DL Cnt	Ɲ ˊ Ỉ ″ ˥ ă ɪ T̲ ˬ ˥ ^ N̲ AP ï ɜ ˝
Ready	Ɲ ˊ Ỉ ă ɪ ĩ ᵋ T̲ ˬ Ḣ ᴝ ☼ ╗ .

ώ ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

2.50 show ac-config serial-product

Ǐ ˜ AC ب ل AP ғ β ˬ ˚ ⁼ ғ β ʒ ᴺ Ḿ Ẓ ʜ ˬ ı Ꝋ ɜ Ḿ Ẓ ғ β ˬ ˚ ɻ Æ ɬ Ọ ¯ ă ɪ ف Φ ″ ˥ **show ac-config serial-product**

ⅴ ″ Ọ ب ˝

ⅴ ″ Ọ	ώ ك
-	-

ᵘ ɲ ₩ Ã ᵎ ₩ Ã

ƚ ˥ 15

Æ ɬ ″ Y Ṁ ή

ب ل ʖ æ 1 χ AC ب ل AP ғ β ˬ ˚ ⁼ ғ β ʒ ᴺ

```
Ruijie#show ac-config serial-product

Cnt    Serial Name     Hardware Version File Name    AP Product ID
------ --------------- ---------------- ------------ ---------------
1      ap-ser1.x       1.x              ap220-1.bin  AP220-E
                                                     AP220-SE
                                                     AP220-SH
                                                     AP620-H
                                                     AP220-E(M)
2      ap-ser2.x       2.x              ap220.bin    AP220-E
```

AP220-SH AP220-E(M)

È ɟ ɹ ᵩ Χ

È ɟ	ب ˝
Cnt	Ǐ ˜ ﻨ ᴺ
Serial Name	AP ғ β ﻨ˚
Hardware Version	. ʈ v ᴺ
File Name	AP ғ β ﻨ˚ Ḿ Ẓ ″ ﻧ ă ʈ
AP Product ID	AP ғ β ʒ ᴺ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

2.51 show ac-config upgrade-group

Ǐ ˜ AC i ﺑ ﻠ ″ ﻧ ﻠ ᐧ ″ ﻧ ﻠ ᴨ AP ʒ Ụ

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

v ˝Ọ ب ˝

v ˝Ọ	ώ ك
group-name	ļ Ǐ AP ″ ﻧ ﻠ ᵋ È

ᵘ ɲ ₩ Ã ᵉ ₩ Ã

ﺟ ﻧ. 15

Æ ŧ ˝ Y Ṁ ᵑ

ﺑ ﻠ ʖ æ 1 χ Ǐ ˜ AC ﺑ ﻠ ″ ﻧ ﻠ ʒ Ụ

```
Ruijie#show ac-config upgrade-group
Cnt     Group-Name                  Max-Concurrent     Token cnt     Upgrading cnt
------ ---------------------------------- ------------ ----------- ------------
1       UPGRADE-GROUP1                10                 2           1
```

È ɟ ɹ ᵩ Χ

È ɟ	ب ˝
Cnt	Ǐ ˜ ﻨ ᴺ
Group-Name	AP ″ ﻧ ﻠ ᵋ È
Max-Concurrent	ﻠ ώ ᶻ ″ ﻧ Ẋ ʌ Ọ

Token cnt	Ę ˙ ‘ ب″ ⁄ ‴Ω
Upgrading cnt	* ƍ ″ ⁄ AP ‴Ω

2χ Ĭ ˜ ″ ⁄ ⁄ ɲ ư AP ȝ Ụ

```
Ruijie#show ac-config upgrade-group UPGRADE-GROUP1

Group have 2 apı  online 1 offline 1

Cnt      Ap-Name                  Ap-Mac             Online    Upgrade      Band-width
```

```
ac#show ap-config board-data ap330

Ap(ap330)'s board data:

  wtp model num     :30090020

  wtp serial num    :G1GD111000864

  board id           :AP330-I

  board reversion   :1.00

  base address       :1414.4b62.7f77
```

È ɟ ɹ ᵎ Χ

È ɟ	ب ᵐ
wtp model num	ғ ᵝ ʒ ᴺ
wtp serial num	AP ẑ ˚ ᴺ
board id	ʒ̂ — id
board reversion	

```
Product Id: AP220E

Vendor Id: 31762

SN: 1531991320
```

È ɟ ɹ ᵩ χ

È ɟ	ب ˝
AP Name	AP ᵉ È
Location	AP ɥ ɻ
Product Id	ғ ᵝ id
Vendo Id	æ ɒ id
SN	ẑ ˚ ᴺ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

2.54 show ap-config link-latency

Ǐ ˜ AC ль AP ɵ ژ ⚿ چ ت ↑ ő

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

v ˝Ọ ب ˝	v ˝Ọ	ώ ك
	all	↑ Ǐ ˝A ω̃ AP
	single	↑ Ǐ ɒ Ⱥ AP
	ap-name	ɻ↑ Ǐ ⚿ AP ⚿ ᵉ Ч

ᵘ ɲ ₩ Ǎ ᵎ ₩ Ǎ

ƚ ⁄. 15

Æ ɬ ˝ Y Ṁ ṇ

ب ɻ ʖ æ 1 χ↑ ˜ ɒ Ⱥ AP ль AC ɵ ژ ⚿ چ ت ↑ ő

```
ac#show ap-config link-latency single ap330

AP Name                                  Status      Current    Maximum   Minimum   Number

---------------------------------- ----------- ---------- --------- --------- --------------

ap330                                    Disabled     0ms        0ms       0ms       0
```

È ɟ ɹ ᵩ χ

È ɟ	ب ˝

AP Name	AP ᵋ È
Status	ჯ ბ ↑ õ
Current	Ẹ̇ ჯ ბ å
Maximum	ѡ ᶻ ჯ ბ å ᵠ
Minimum	ѡ ṇ ჯ ბ å ᵠ
Number	ѡ ᶻ ჯ ბ å ᵠ ı i ҽ[illegible]Ҡ ̋Ѯ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

2.55 show ap-config reboot

ᵀ Ĩ AP [illegible]ᵱ ᵏ ̋Ѯ̃Ω ∕ ɯ

show ap-config reboot *ap-name*

v ̋Ѯ ب ˝	v ̋Ѯ	ѡ ك
	ap-name	ᒪᵀ Ĩ [illegible] AP [illegible] ᵋ Ч

È ᵻ	ب ˝
Reboot Cnt	ي ᵏ Ҡ ̋Ọ
AC Init Cnt	AC. Ḋ ק Ҡ ̋Ọ
Link Fail Cnt	ج ث, م Ҡ ̋Ọ
SW Fail Cnt	ع ɪ, م Ҡ ̋Ọ
HW ail Cnt	. ɪ, م Ҡ ̋Ọ
Other Fail Cnt	Ʊ Ꮒ ⊐ ɬ, م Ҡ ̋Ọ
Unknow Fail Cnt	ˈ ˜ ⊐ ɬ, م Ҡ ̋Ọ
Last Fail Type	i Ҡ, م ۱ ʒ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

2.56 show ap-config slot

Ǐ ˜ ˝Y ḧ AP ⃞ ỉ AP ʒ Ụ

show ap-config slot *ap-name*

v ˝Ọ ب ˝

v ˝Ọ	ώ ك
ap-name	ļ ̈ Ǐ ⃞ AP ⃞ ᵋ Ч

ᵘ ᵑᵬ ₩ Ã ᵎ ₩ Ã

ỉ ۱. 15

Æ ɨ ˝Y Ṁ Ỉ ᵘ ᵑᵬ ᴋ Ǐ ˜ ᵽ ۱ ύ ʿ +AP ₱ ᵻ ⃞ ʒ Ụ

ب ل ᵹ æ 1 χ Ǐ ˜ AP ⃞ ỉ AP ʒ Ụ

```
Ruijie#show ap-config slot AM5528(EP)

Radio: Radio ID

       E = enabled, D = disabled, N = Not exist

       Current Sta number

       Channel: * = Global

       Power Level = Percent


Install Slot Number: 48
```

```
Online Slot Number: 11

Offline Slot Number: 37

Slot ID Role    Slot Name                       Model     Slot Mac       Radio
Radio              Up/Off time   State

------- ----    ------------------------------- --------- -------------- ------------------
------------------ ------------ -------

1       master     19#4F_wenmi                     MAP552    5869.6c36.e29b 1  E   3    9    50
2  E    6  165    100     0:04:18:03 online

2       master     19#4F_fangjian_1                MAP752(ST)5869.6c36.e22d 3  E   4   13    50
4  E    5  153    100     0:04:17:58 online

2       slave 19#4F_fangjian_2                MAP752(ST)5869.6c36.e32c 5  E   3    6    50 6  E
3   36    100     0:04:17:52 online
```

È ɟ ɹ ᵩ Χ

È ɟ	ب ˜
Install Slot Number	AP Ḡ Ł㊀ ǐ AP ˝Ǫ
Online Slot Number	AP ɰ ɻ㊀ ǐ AP ˝Ǫ´
Offline Slot Number	AP˜ ɻ㊀ ǐ AP ˝Ǫ´
Slot ID	ǐ AP ˝A ɰ㊀Rs ɥ ᴺ
Role	ǐ AP ㊀ʌ ǐ ʜ ᶘ ɪ ᶚ ǐ AP ʁ maser ɪ ʁ ǐ AP ʁ slave
Slot Name	ǐ AP ᵉ Ч
Model	ǐ AP ʒ ᴺ
MAC Address	ǐ AP ㊀ MAC ʂ χ
Radio	ǐ AP Ḿ Ẓ㊀ Radio ID ᵀ õ ɾ ˝A ˝Ǫ ʒ ʊ ᵓ ɪ '
Up/Off time	ɰ ɻ ǎ˜ ɻ `H ɹ
State	ɰ ɻ ǎ˜ ɻ ᵀ õ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˜ ʁ AC ˜Ḥ'Y

2.57 show ap-config static-ip

Ǐ ˜ ˝A ω AP ㊀ ɥ ɻ ʒ Ụ

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

∨ ˝Ǫ ب ˜

∨ ˝Ǫ	ώ ك
all	¦ Ǐ ˝A ω AP
single	¦ Ǐ ɒ Ѧ AP

ap-name	ļ‾ Ĭ ⃞ AP ⃞ ᵉ Ч

ᵘ ɲь₩Ã ᵉ ₩Ã

ǰ ⑁. 15

Æ ŧ ˝YṀ ṇ

ب ل ڎ æ 1 χ Ĭ ˜ AP ⃞ ˷ õ ş χ

Ʊ ʌ ɣ ᵍ AP ᵉ Ч AP ip ş χ ọ ᵓ ل ʜ

```
Ruijie#show ap-config static-ip single 0034.5612.78a0
AP Name                   Static   IP              Net Mask        Getway
------------------------- -------- --------------- --------------- ---------------
0034.5612.78a0            Enabled  22.22.22.22     255.255.255.0   22.22.22.53
```

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ ʁ AC ˜Ḥ'Y

2.58 show ap-config summary location

Ĭ ˜ ¨A õ AP ⃞ ʁ ل ʒ Ụ

show ap-config summary location

v ¨Ọب ˝

v ¨Ọ	ώ ڭ
-	-

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ǰ ⑁. 15

Æ ŧ ˝YṀ ṇ

ب ل ڎ æ 1 χ Ĭ ˜ AP

```
---------------------------------------- -----
ap220                                    172.18.100.4    1414.4b13.9ff3  Bangongshi_4#
Run
ap3                                      172.18.100.16   001a.a94e.d40d  Ѽ ę ɱ 20#3F
Run
```

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ″ ᵏ AC ˜Ḥ'Y

2.59 show ap-config summary slot

Ǐ ˜ ¨A ῶ AP ▯ ǐ AP ʒ Ụ

show ap-config summary slot

v ¨Ѽ ب ″

v ¨Ѽ	ὼ ڭ
-	-

ᵘ ɲь ₩ Ã ₌ ₩ Ã

ƛ ۱. 15

Æ ŧ ″ Ẏ Ṁ Ǐ ᵘ ɲь ᵏ Ǐ ˜ ƥ ۱ ΰ ‘ +AP ₱ ᵵ ▯ ʒ Ụ

ب ۱ ڗ æ 1 χ Ǐ ˜ AP ▯ ǐ AP ʒ Ụ

```
Ruijie#show ap-config summary slot
Radio: Radio ID
       E = enabled, D = disabled, N = Not exist
       Current Sta number
       Channel: * = Global
       Power Level = Percent

Total AP Number: 1
Total Install Slot Number: 48
Total Online Slot Number: 11
Total Offline Slot Number: 37
```

```
AP(AM5528EP)'s Slots Information

Install Slot Number: 48

Online Slot Number: 11

Offline Slot Number: 37

Slot ID Role    Slot Name                       Model     Slot Mac       Radio
Radio              Up/Off time   State

------- ----    ------------------------------ --------- -------------- ------------------
------------------ ------------ -------

1       master     19#4F_wenmi                     MAP552    5869.6c36.e29b 1  E   3    9    50
2  E    6  165    100     0:04:18:03 online

2       master     19#4F_fangjian_1                MAP752(ST)5869.6c36.e22d 3  E   4   13    50
4  E    5  153    100     0:04:17:58 online

2       slave 19#4F_fangjian_2                MAP752(ST)5869.6c36.e32c 5  E   3    6    50 6  E
3   36    100     0:04:17:52 online
```

È ᵻ ɹ ᵩ χ

È ᵻ	ب ᵐ
Total Install Number	″A ω AP Ḡ Ŧ ص ĭ AP ″Ω´
Total Online Number	″A ω AP ƥ ɨ ĭ AP ″Ω´
Total Offline Number	″A ω AP ᵐ ɨ ĭ AP ″Ω´
Install Number	AP Ḡ Ŧ ĭ AP ″Ω´
Online Number	AP ƥ ɨ ĭ AP ″Ω´
Offline Number	AP ᵐ ɨ ĭ AP ″Ω´
Slot ID	ĭ AP ″A ƥ Rs ʁ ᴺ
Role	ĭ AP ʎ ỉ ʜ ʏ ɪ ǯ ĭ AP ʁ maser ɪ ʁ ĭ AP ʁ slave
Slot Name	ĭ AP ᵾ ʏ
Model	ĭ AP ʒ ᴺ
MAC Address	ĭ AP MAC ʂ χ
Radio	ĭ AP Ḿ Ẓ Radio ID ↑ ő ɾ ″A ″Ω ʒ ɔ̃ ⁼ ɪ '
Up/Off time	ƥ ɨ ᾰ̈ ɨ ʿH ɹ
State	ƥ ɨ ᾰ̈ ɨ ↑ ő

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ᵐ ʁ AC ᵀḤ'Y

2.60 show ap-config summary slot interface

Ǐ ˜ ¨A ῶ ΰ ʿ +AP ⅜ ï ǐ ì Æ ʒ Ụ

show ap-config summary slot interface

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ƛ ʌ˯ 15

≠ ₩ Ã

```
00d0.f822.33dc 102.102.102.102 16      master  down    Unknown Unknown
00d0.f822.33dc 102.102.102.102 17      master  down    Unknown Unknown
00d0.f822.33dc 102.102.102.102 18      master  down    Unknown Unknown
00d0.f822.33dc 102.102.102.102 19      master  down    Unknown Unknown
00d0.f822.33dc 102.102.102.102 20      master  down    Unknown Unknown
00d0.f822.33dc 102.102.102.102 21      master  down    Unknown Unknown
00d0.f822.33dc 102.102.102.102 22      master  down    Unknown Unknown
00d0.f822.33dc 102.102.102.102 23      master  down    Unknown Unknown
00d0.f822.33dc 102.102.102.102 24      master  down    Unknown Unknown
```

È ɟ ɹ ɻ χ

È ɟ	ب ˜
AP mac	ΰ‘ + AP ʒ̈ MAC ʂ χ̧
IP Address	ΰ‘ + AP ʒ̈ IP ʂ χ̧
Slot ID	ΰ‘ +AP ʒ̈ ï ǐ ì Æ ID
Status	ΰ‘ +AP ʒ̈ ï ǐ ì Æ ↑ ő
Duplex	ΰ‘ +AP ʒ̈ ï ǐ ì Æ в ƀ ᵡ Ṫ ↑ ő
Speed	ΰ‘ +AP ʒ̈ ï ǐ ì Æ в ƀ ₰ '

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˜ ʁ AC ˜Ḥ'Y

2.61 show ap-config summary group

Ǐ ˜ AP ɻ ɲ ΰ‘ +AP ʒ Ụ

show ap-config summary group

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v ˝Ǫ	ὼ ك
apg-name	AP ɻ ᵉ Ɋ

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ب ɻ ʒ̈ æ 1 χ Ǐ ˜ AP ɻ ɲ ΰ‘ +AP ʒ Ụ

```
Ruijie#sh ap-c summary group group-1
```

```
Radio: Radio ID
E = enabled, D = disabled, N = Not exist
Current Sta number
Channel: * = Global
Power Level = Percent

Total AP Number: 1
Total Install Slot Number: 16
Total Online Slot Number: 1
Total Offline Slot Number: 15

AP(5528ep)'s Slots Information
Install Slot Number: 16
Online Slot Number: 1
Offline Slot Number: 15
AP mac Slot ID Role Slot Name Model Slot Mac Radio Radio Up/Off time State
-------------- ------- ------- ------------------------------ ----------- --------------
------------------ ------------------ ------------- -------
00d0.f822.3434 1 master - MAP752(S) 0000.0006.0000 1 N - - - 2 N - - - 0:00:08:37 offline
00d0.f822.3434 4 master 00d0.f812.354a MAP752(T) 00d0.f812.354a 7 E 0 11* 100 8 E 0 149* 100 0:00:08:37
online
00d0.f822.3434 5 master - MAP752(T) 00d0.f812.354a 9 N - - - 10 N - - - 0:00:08:37 offline
00d0.f822.3434 8 master - MAP752(T) 00d0.f812.354a 15 N - - - 16 N - - - 0:00:08:37 offline
00d0.f822.3434 11 master - MAP752(ST) 00d0.f855.661c 21 N - - - 22 N - - - 0:00:08:37 offline
00d0.f822.3434 12 master - MAP752(ST) 00d0.f855.661c 23 N - - - 24 N - - - 0:00:08:37 offline
00d0.f822.3434 13 master - MAP752(ST) 00d0.f855.661c 25 N - - - 26 N - - - 0:00:08:37 offline
00d0.f822.3434 14 master - MAP752(T) 00d0.f812.354a 27 N - - - 28 N - - - 0:00:08:37 offline
00d0.f822.3434 15 master - MAP752(T) 00d0.f812.354a 29 N - - - 30 N - - - 0:00:08:37 offline
00d0.f822.3434 16 master - MAP752(T) 00d0.f812.354a 31 N - - - 32 N - - - 0:00:08:37 offline
00d0.f822.3434 17 master - MAP752(ST) 00d0.f855.661c 33 N - - - 34 N - - - 0:00:08:37 offline
00d0.f822.3434 18 master - MAP752(T) 00d0.f812.354a 35 N - - - 36 N - - - 0:00:08:37 offline
00d0.f822.3434 21 master - MAP752(T) 00d0.f812.354a 41 N - - - 42 N - - - 0:00:08:37 offline
```

```
00d0.f822.3434 22 master - MAP752(ST) 00d0.f855.661c 43 N - - - 44 N - - - 0:00:08:37 offline
00d0.f822.3434 23 master - MAP752(T) 00d0.f812.354a 45 N - - - 46 N - - - 0:00:08:37 offline
00d0.f822.3434 24 master - MAP752(T) 00d0.f812.354a 47 N - - - 48 N - - - 0:00:08:37 offline
```

È ⊣ ⌋ ⸗ χ

```
Ruijie#show ap-config updating-list
AP NAME                    AP PID          File Tx  Time      AP Reset Ready
-------------------------- --------------- -------- --------- ---------------
AP220-I                    AP220-I          100%     00:00:45  Y
00d0.1414.3f67             AP220-E          98 %     00:00:48  N
```

È ɟ ɹ ᾽ χ

È ɟ	ب ˝
AP NAME	AP ᵋ È

```
Cnt  WBID    Encry Cap
1    0x1     0xc


sub descriptor num  :3
Cnt  vendor id version type   version len    version
1    0x7c12    BOOT Ver       21             1.1.5.0a2945e(140830)
2    0x7c12    ACT SW Ver     14             1.0.0.6b94c319
3    0x7c12    HW Ver         4              2.00
```

È ɟ ɹ ᵩ χ

È ɟ	ب ˝
max radio	ѡ ^ ṃ ḷ Æ ˝Ǫ´
radio in used	* ƍ Æ ŧ ▯ṃ ḷ Æ ˝Ǫ´
encrypt num	ṇ ɻ Æ ˜Ḥ ˙Y▯ ŧ Ḷ ǐ ד χ ă и ˜Ḥ ˙Y ccmp ⊐ tkip

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

2.64 show ap-config wtp-info

Ǐ ˜ AP▯ᵗ õ ʒ Ụ

show ap-config wtp-info *ap-name*

v ˝Ǫ ب ˝

v ˝Ǫ	ѡ ك
ap-name	ɻ Ǐ ▯ AP ▯ ᵃ Ч

ᵘ ɲь ₩ Ǎ ᵉ ₩ Ǎ

ƚ 15

Æ ŧ ˝Y Ṁ ṇ

ب ɻ ᵹ æ 1 χ Ǐ ˜ AP▯ᵗ õ ʒ Ụ

```
AC IPV6(status):    :
AP IP(status):      :10.10.10.8 255.255.255.0 10.10.10.2
AP IPV6(status):    :::/0 ::
AP IPV4 ENABLE:     :enable
AP IPV6 ENABLE:     :disable
IPV6 AUTOCONFIG:    :disable
Location Data:      :
Session ID:         :88320000,111163fb,5c3b3cb3,2cac585a
mac type            :full support
WTP Name:           :ap220e
AP Domain Name:     :ac.ruijie.com.cn
wired vlan          :0 port id 1
wired vlan          :0 port id 2
wired vlan          :0 port id 3
wired vlan          :0 port id 4
Cw_interface_name   :BVI 1
Cw_wan_interface_ifx::1
Cw_wan_interface_ifx::0
Upgrading State     :Init
AP Image file       :NA
Real version        :1.0.0.641d31e6
Custom version      :AP_RGOS 11.1(2)B1
Upgrade version     :NA
Upgrade from AP     :FALSE
Upgrade for other AP:FALSE
Upgrade from AC     :FALSE
Wait for upgrade    :FALSE
Support distr-upg   :TRUE
Upgrade-banfwidth   :128
Upgrade group       :Upgrade-group1
```

Ê ㅓ J ᵩ X

AC IP(status)	AP ▯ acip ipv4 ↑ ỗ

AC IPV6(status)	AP ⃞ acip ipv6 ↑ õ
AP IP(status)	AP ⃞ apip ipv4 ↑ õ
AP IPV6(status)	AP ⃞ apip ipv6 ↑ õ
AP IPV4 ENABLE	AP ⃞ apip ipv4 enable ٻ ل
AP IPV6 ENABLE	AP ⃞ apip ipv6 enable ٻ ل
IPV6 AUTOCONFIG	AP ⃞ apip ipv6 address autoconfig default ٻ ل
Location Data	AP ⅈ ǐ ⃞ Ꮋ ل ʒ Ụ
Session ID	AP ሌ AC ấ ٧ CAPWAP Æ ŧ ⃞ h ʕ ID
mac type	MACTYPE ١ ʒ
WTP Name	AP ᵾ È
AC Domain Name	AP ⅈ ǐ ⃞ AC ³ ᵾ
wired vlan	AP LAN Æ 1 ⅈ ⃞ wired-vlan ٻ ل
wired vlan	AP LAN Æ 2 ⅈ ⃞ wired-vlan ٻ ل
wired vlan	AP LAN Æ 3 ⅈ ⃞ wired-vlan ٻ ل
wired vlan	AP LAN Æ 4 ⅈ ⃞ wired-vlan ٻ ل
Cw_interface_name	AP ⅈ J̌ ″Ơ ⃞ ì Æ ᵾ È
Cw_wan_interface_ifx	AP ⅈ WAN Æ 1 ↓ Ậ
Cw_wan_interface_ifx	AP ⅈ WAN Æ 2 ↓ Ậ
Upgrading State	AP ″ ١ ↑ ô
AP Image file	AP ″ ١ ⃞ bin ᵾ È
Real version	AP ᶀ Φ ⃞ ˜ ḫ ѵ
Custom version	AP ᶀ Φ ⃞ ᧒ ţ ḧ ˙ ѵ
Upgrade version	AP ″ ١ ⃞ ѵ
Upgrade from AP	ĩ ᵋ ᴋ AP ‘ ụ Ã ″
Upgrade for other AP	ĩ ᵋ ᵚ Ʊ Ꮋ AP ف Φ ‘ ụ Ã ″ ١
Upgrade from AP	ĩ ᵋ ᴋ AC ؤ ѧ ″ ١
Wait for upgrade	ĩ ᵋ ↓ ể ″ ١
Support distr-upg	ĩ ᵋ ˜ Ḥ ’ Y ‘ ụ Ã ″ ١
Upgrade-banfwidth	ؤ ѧ ″ ١ Ṿ Ḵ
Upgrade group	ؤ ѧ ″ ١ ١

ώ˜ ʒ Ụ -

Ẉ ᴶ ٻ ″ -

2.65 show capwap detail

Ǐ ˜ CAPWAP ؤ ؤ ⃞ ى ١ ʒ Ụ

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

show capwap state

v ̈Ọب ̈

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ب ﻝ ﻍ æ 1 χ Ǐ ˜ CAPWAP ؤ ىOBJ↑ õ ʒ Ụ χ

```
Ruijie#show capwap state

CAPWAP tunnel state, 3 peers, 2 is run:

Index  Peer IP              Peer Port  State          Mac Address

1      192.168.0.1          10000      Run            001a.a900.0001

2      192.168.0.2          10000      Run            001a.a900.0002

3      192.168.0.3          10000      DTLS Teardown  001a.a900.0003
```

È ﻫ J ﻩ χ

È ﻫ	ب ̈
Index	ؤ ىﻝ Ậ
Peer IP	ؤ ىḾ ٨OBJLS ş χ
Peer Port	٨ Æ N
State	ؤ ىOBJ↑ õ ʒ Ụ
Mac Address	APOBJ mac ş χ ı ĸ AC i ε Ǐ ˜ Ỉ ʒ Ụ

ώ˜ ʒ Ụ -

port	؋ ڎ ۞ ۷ Æ N

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Æ ŧ ˝ Y Ṁ ṇ

ب ـ ڎ æ 1 χ Ĭ ˜ ş χ ʁ 1.1.1.1 ۞ CAPWAP ؋ ڎ ĭ ă ۷ ɯ ʒ Ụ

```
Ruijie#show capwap 1.1.1.1 statistics
```

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

2.68 show version

Ĭ ˜ AP ۞ v ʒ Ụ

show version { **all** | *ap-name* }

v ˝ Ọ ب ˝

v ˝ Ọ	ώ ك
all	˝ A ũ DS
ap-name	˝ Y ñ DS ᵋ ५

ᵘ ɲь ₩ Ã ᵉ ₩ Ã

ƛ ۷. 15

Æ ŧ ˝ Y Ṁ ṇ

ب ـ ڎ æ 1 χ Ĭ ˜ ˝ A ũ AP ۞ v ʒ Ụ

```
Ruijie#show version all

AP(AP220E-0)'s version:

  Product ID          : AP220-E

  System uptime       : 0:3:9:32

  Hardware version    : 2.00
```

```
  Software number     : M05563609152014
  Serial number       : 1234942570005
  MAC address         : 00d0.f822.33b0


AP(AP220E-2)'s version:
  Product ID          : AP220-E
  System uptime       : 0:6:11:53
  Hardware version    : 2.00
  Software version    : AP_RGOS 11.1(2)B1
  Patch number        : SP2
  Software number     : M05563609152014
  Serial number       : 1234942570018
  MAC address         : 001a.a9bd.0c1b
```

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

2.69 slot

ب ـ˝Y ḧ AP ɹ ᵉ ϟ

slot *slot-id* {*slot-name* [**secondary**] | **mac** *mac-address slot-name* }

ˌ ὃ˝Y ḧ AP ɹ ᵉ ϟ

no slot *slot-id* [{*slot-name* [**secondary**] | **mac** *mac-address*}]

ν ˝Ọب ˝

ν ˝Ọ	ὼ ك
slot-id	Rs ɥ ᴺ ı ḡ 1~24
slot-name	AP ɹ ᵉ ϟ ı ω ^ ᴵ ب ـ 63 Ѧ Ề ϟ ı j Ǐ ʏ ᵍ Ⱶ ǐ
secondary	ᐟ ǐ ሀ ᵒᵇʲ к ỉ AP
mac-address	ỉ AP ᵒᵇʲ mac ş ẋ

ỉ ب ـ ỉ ὼ ï ı ˈ Ḿ AP ɹ ف Φ ᵘ ᵉ

ᵘ ɲ ₩ Ã AP ب ـ ₩ Ã

ỉ ᐟ ˬ 15

Æ ɪ ˝YṀ Ǐ ᵘ ᵑᵬ ᵏ Ḿ ǔ ˋ +AP ɸ ᵎ õ ᷒ ı ħ j ˜Ḥ'Y Ḿ ¨A õ AP ف Φ ᵽ ᒧ

Ḿ ᐟ ǐ ᵯ ᷓ ᵏ ǐ AP ᵘ ᵉ ᵢ ᒪ ᵚ ɪ secondary v ¨Ọ

ᵹ MAC ᵴ ᵡ ᵽ ᒧ ǐ AP ᵉ Ꮓ ı ᵻ Ạ Ṫ `Ḧ ᐟ ᵽ ᒧ ı ⅛ Ⱥ slot ˈ Ꝍ ᵽ ᒧ ƀ Ⱥ j ᵃ MAC ᵴ ᵡ ı Ḿ Ẓ MAC ᵴ ᵡ ǐ AP ı ᐟ ᵅ ı ǐ ᶎ ⋮ ˜Ω ǐ AP ᐟ ǐ ʜ ᔑ ᵴ ᵕ ˜Ωʁ ᵹ ᐟ Æ ᵽ ᒧ

ᵽ ᒧ ᵹ æ 4 χ ᵽ ᒧ DS3334 ǐ DS4 ᵉ Ꮓ ʁ 4&434

```
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# slot 1 1#101
```

2 χ ᵽ ᒧ SLOT1 ᐟ ǐ ᵏ ǐ AP AP0001 ᵉ Ꮓ ʁ 1#102

```
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# slot 1 1#102 secondary
```

3 χ ᵽ ᒧ SLOT1 MAC ᵴ ᵡ ʁ 0001.0001.0001 ǐ AP ᵉ Ꮓ ʁ 1#101 ψ

MAC ᵴ ᵡ ʁ 0001.0001.0002 ǐ AP ᵉ Ꮓ ʁ 1#102

```
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# slot 1 mac 0001.0001.0001 1#101
Ruijie(config-ap)# slot 1 mac 0001.0001.0002 1#102
```

ˢ ᴈ Ⱥ | 1 χ Æ ɪ **show ap-config running** ᵘ ᵑᵬ ı ˜ Ḿ Ẓ AP ᵽ ᒧ ʒ Ụ

ώ˜ ʒ Ụ -

Ẃ ȸ ᴈ ᵾ -

Ẉ ᴶ ᵬ ˝ ᵏ AC ˜Ḥ'Y Ǐ ᵘ ᵑᵬ

2.70 timestamp

ᵽ ᒧ ¨Y ḧ AP ᾰ AP ᐟ ᒪ ¨A õ AP ª ℓ AC ǐ H ᴊ

timestamp

v ¨Ọ ᵬ ˝

v ¨Ọ	ώ ك
-	-

ᵭ ᵽ ᒧ -

ᵘ ᵑᵬ ₩ Ã AP ᵽ ᒧ ₩ Ã ᾰ AP ᐟ ᵽ ᒧ ₩ Ã

ᵭ ᐟ ᵎ 15

Æ ŧ ˝YṀ ṇ

ᵽ ɹ ᵹ æ 1 χ ᵽ ɹ AP0001 ª ℓ AC ▯H ᵹ

```
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# timestamp
```

2 χ ᵽ ɹ AP ɻ ε Default ζ ɲ ″A ῶ AP ª ℓ AC ▯H ᵹ

```
Ruijie(config)# ap-group default
Ruijie(config-ap-group)# timestamp
```

ₛ ⱬ Ά | 1 χ ⁋ ˜ AP ⁼ AC ▯H ᵹ Ĩ ᵋ ₇

ώ˜ ʒ Ụ -

Ẃ ȣ ᵯ ȣ -

Ẉ ᴶ ᵽ ˝ ᵏ AC ˜Ḥ′Y Ỉ ᵘ ᵑᵬ

2.71 tran-data-show

Ǐ ˜ ˝Y ḧ AP ϣ ḗ ҽ ᵹ AC ▯ᴿ ϟ ή Ő ʒ Ụ

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

v ″Ϙ ᵽ ˝ c0(t7U#t&7b5XLMLH ȧ∨S&y2cE4ȣVȣqᵩ&4SOS0cнBf7UwBx7b5XLMLyW%(n0u↓qᵩ↓x↓Y2a@@#xV gE0)₱6ȧȷdɷb5XL\u_Ú

ᵽ ɻ ʒ̈ æ 1 χ Ǐ ˜ AP0001 ™ ᵑ́ Ő

```
Ruijie(config-ac)# tran-data-show AP0001 exception
```

2 χ Ǐ ˜ AP0001 cpu ʒ Ụ

```
Ruijie(config-ac)# tran-data-show AP0001 cpuinfo
```

3 χ Ǐ ˜ AP0001 ɲ è ʒ Ụ

```
Ruijie(config-ac)# tran-data-show AP0001 memory
```

4 χ Ǐ ˜ AP0001 ˝ ᵑ ᵑ́ Ő ʒ Ụ

```
Ruijie(config-ac)# tran-data-show AP0001 syslog
```

5 χ Ǐ ˜ AP0001 ڃ ۋ ۏ console ʒ Ụ

```
Ruijie(config-ac)# tran-data-show AP0001 tech-support
```

ₛ ڃ Ά | 1 χ ˜ ĩ ɛ Ǐ ˜ ˝Y ḧ ᵑ́ Ő ʒ Ụ

ώ˜ ʒ Ụ -

Ẃ ȸ ڃ ئ -

Ẉ ᴶ ب ˝ AC ˜Ḥ'Y Ǐ ᵘ ᵑᵬ

2.72 tran-data-start

n ᵑ ˝Y ḧ AP ᴿ ϒ ᵑ́ Ő ʒ Ụ

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

v ˝Ǫ ب ˝

v ˝Ǫ	ώ ك
ap-name	˝Y ḧ AP ᵋ ϒ
exception	˝Y ḧ AP ∧ گ™ ᵑ́ Ő ʒ Ụ
memory	˝Y ḧ AP ∧ گ ₰ ᵻ ↑ ő ʒ Ụ ı ɣ ὺ χ CPU ʒ Ụ ɲ è ʒ Ụ ˝ ᵑ ᵑ́ Ő ʒ Ụ ɛ ḅ ϒ Æ UP/DOWN ϒ ʒ Ụ ζ
tech-support	˝Y ḧ AP ۋ ۏ Ẋ ∧ گ ڃ ۋ ۏ console ʒ Ụ
tech-package	˝Y ḧ AP ۋ ۏ Ẋ ∧ گ ڃ ۋ ۏ package ʒ Ụ

ƚ ᵽ ɻ -

ᵘ ᵑᵬ₩Ã AC ᵽ ˩ ₩Ã

ƛ ᐟ 15

Æ ɪ ˝Y Ṁ ᵑ̇

ᵽ ˩ ᵷ æ ᵉ ᵢᵣ AP0001 MAC ᵴ ᵡ ᵢᵣ 8832.0000.1111
1 χ n ᵑ AP0001 ™ ᵑ̇ Ő ʒ Ụ ı ᵱ AC ᵅ̈ ţ ᵛ ᵻ ᵴ ʒ è ᵢᵣ ap_8832.0000.1111_exception.log

```
Ruijie(config-ac)# tran-data-start AP0001 exception
```

2 χ n ᵑ AP0001 ˝ ᵑ ᵑ̇ Ő ʒ Ụ ı ᵱ AC ᵅ̈ ţ ᵛ ᵻ ᵴ ʒ è ᵢᵣ ap_8832.0000.1111_syslog.log
ap_8832.0000.1111_memory.log ap_8832.0000.1111_cpuinfo.log

```
Ruijie(config-ac)# tran-data-start AP0001 memory
```

3 χ n ᵑ AP0001 ᶜ ᵡ console ʒ Ụ ı ᵱ AC ᵅ̈ ţ ᵛ ᵻ ᵴ ʒ è ᵢᵣ ap_AP0001_8832.0000.1111_tech-console.log

```
Ruijie(config-ac)# tran-data-start AP0001 tech-support
```

4 χ n ᵑ AP0001 ᶜ ᵡ package ʒ Ụ ı ᵱ AC ᵅ̈ ţ ᵛ ᵻ ᵴ ʒ è ᵢᵣ ap_AP0001_8832.0000.1111_tech-package.tar.gz

```
Ruijie(config-ac)# tran-data-start AP0001 tech-package
```

ₛ ᵡ Ä | 1 χ Æ ɪ **tran-data-show ap-name** ᵘ ᵑᵬ ı ¶ ˜ ᵏ ˝Y ḧ AP i n ᵑ ᵸ ʜ ʒ Ụ tech-package ᵘ ᵑᵬ ᵡ ᵷ ᶜ ᵅ̈ ţ ᵴ ˡ ᵑ ص tftp ᵛ Ä Ã ᵉ ڑ PC ɹ я ᵈ W ¶ ˜

ώ˜ ʒ Ụ -

Ẃ ȸ ᵭ ᵬ -

Ẉ ᴶ ᵽ ˝ ᵏ AC ˜Ḥ'Y Ỉ ᵘ ᵑᵬ

2.73 uninstall

ᵛ ᵑ̇˝Y ḧ AP ˝Y ḧ ỉ AP Ḡ Ł ʒ Ụ
uninstall *slot-id* [**secondary**]

ᵛ ˝Ọ	ᵡ ᶄ

slot-id

3 STAMG

3.1 ap

ƍ ʜ ǐ í ˙ ³ ᵽ ⅄ ₩ Ã ï ₳ ᵽ ⅄ Í ³ ₳ AP ʒ Ụ
ap *WORD*

ɾ Ä ˡ Ꞓ ɾ Í ᵘ ɲ **no** J̌ ° ʞ ʜ ǐ í ˙ ³ ₳ ˛ ὄ ″ Y Ḧ AP
no ap [*WORD*]

v ″Ọ ᵽ ″	v ″Ọ	ὼ ك
	WORD	AP ᵉ Ꮹ ƶ ỷ [1-64]

ƚ ᵽ ⅄ ʜ ǐ í ˙ ³ ₳ ṋ γ Ṃ AP ʒ Ụ

ᵘ ɲ ₩ Ã ʜ ǐ í ˙ ³ ᵽ ⅄ ₩ Ã

ƚ ᑦ ˛ 15

Æ ɾ ″ YṂ Ⱥ ʜ ǐ í ˙ ³ ₳ ᾠ ^ ы ƍ ᵽ ⅄ 5 ᴶ AP ʒ Ụ ı ʎ ص ᑊ ᑦ h ᑦ ¸ ˀ Ƶ ȝ ئ ώ ˜ ᴰ ᵘ ı ᑦ ʜ ǐ í ˙ ³ ᵽ ⅄ AP ʒ Ụ ᾽ H ı j ɻ ∂ AP ǐ ƍ ɻ

ᵽ ⅄ ʓ æ 1 χ ʬ ᵉ ʬ ɓ ᴡ ᑊ (1) ◘ ɓ ʜ ǐ í ˙ ³ ᵽ ⅄ ᴶ MAC ş χ ʬ 00d0.f800.1001 AP ʒ Ụ

```
Ruijie(config)#control-zone    ᴡ ᑊ (1) ◘
Ruijie(config- cznoe)# ap 00d0.f800.1001
```

ₛ ⱬ Ä | -

ώ ˜ ʒ Ụ -

Ẃ ȸ ȝ ئ -

Ẉ ᴶ ᵽ ″ -

3.2 assoc-control

Ầ ᵏ ʜ ǐ í ˙ ı ǐ̋
assoc-control

ᵘ ɲ ₩ Ã ᵓ ṕ ᵽ ᵢ ₩ Ã

ǰ ᵑ. 15

Æ ŧ ″ YṀ AP ⅈ ᴱ ы ᵷ ᵽ ᵢ Ⱥ ʜ ᵕ ǐ ˙ ³ ᵢ ʌ ص ⅈ ں ᵢ Ṅ ɦ ệ ˛ Ⱥ ᵹ ᵴ ώ ˜

ᵽ ᵢ ᵷ æ 1 χ ᵽ ᵢ Ⱥ ᵊ ʁ ƀ ᶣ ᵑ (1) ◻ ƀ ⅏ ʜ ᵕ ǐ ˙ ³

```
Ruijie(config)#control-zone ᶣ ᵑ (1) ◻
Ruijie(config- czone)#
```

2 χ ᵤ ᵴ ᵊ ʁ ƀ ᶣ ᵑ (1) ◻ ƀ ⅏ ʜ ᵕ ǐ ˙ ³

```
Ruijie(config)# no control-zone ᶣ ᵑ (1) ◻
The opreration will clear the control zone configuration, which may cause corresponding STAs offline .
Continue? [no] y
Ruijie(config)#
```

₅ ᵶ Ä | -

ώ ˜ ʒ Ụ -

Ẃ ỏ ᵹ ᵴ -

Ṿ ᴶ ᵽ ″ -

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

ᵽ ᵢ AP ⅏ j ª ḷ ε 2.4G ⁼ 5G ζ radio ᵹ ″ Ꝏ ᵩ ق ᵶ ᵴ ʿ ᵏ ᵕ ᵴ ں Ë ⁼ Ë

inter-radio-balance num-balance dual-ba Td0.0007 TTT2 1 Tf-0.0005 Tc5 Tc5 Tc53ƀGT5 Tc5 Tc5 Tc53ƀGT5-lo()1ć)[ę

ᵘ ɲ ₩ Ã ᵓ ṕ ᵽ ⅄ ₩ Ã

ȷ̀ ∩̣ 15

Æ ŧ ˝ Y Ṁ ⅄ ˝ Y ḧ AP radio ژ Ѭ ᵩ ق ذ ح ʿ Æ Ỉ ı STA Ỳ g ₰ ĩ radio ق ذ ∧ ᵏ ט ژ ں Ө ı ħ ѣ ѡ Ӈ ق ذ ө Ţ ∧ Ө ı STA Ń q ȯ ∧ ₰ ĩ ı Ⱥ Ậ Ṁ ق ذ ᵩ Ӈ radio i Ỉ ᵽ ⅄ ĸ Ę ѡ Ӈ ق ذ radio ѣ Ỳ g ₰ ĩ radio j ª ᵻ Ḥ ɨ ѽ ı ⅄ ª ᵻ ı ᵕ **inter-radio-balance num-balance same-band** ᵽ ⅄ ɨ ѽ

ᵽ ⅄ ᵹ æ 1 χ ᵽ ⅄ AP j ª ᵻ radio ژ Ѭ ᵩ ق ذ ح ʿ ᵏ ט ژ ں Ө ⁼ Ө ѭ 10

```
Ruijie(config)# inter-radio-balance num-balance dual-band enable-load 10 threshold 10
```

2 χ Ń AP j ª ᵻ radio ژ Ѭ ᵩ ق ذ ح ʿ ᵽ ⅄ Õ ʯ ˙ ѫ ɲ Ө

```
Ruijie(config)# no inter-radio-balance num-balance dual-band
```

ₛ ᵶ Ά | -

ώ ˜ ȝ Ụ -

Ẃ ȸ ᵯ ᵴ -

Ẉ ᴶ ᵽ ˝ AP

3.5 inter-radio-balance num-balance enable

Ẩ AP radio ژ Ѭ

inter-a(l)4(}4(o)4(}2b)4(}1(an)4(e n)4(ı)4(n)1(b)4(lan)4(eean)4a-b

Æ ŧ ˝YṀ Ã ᵏ ˝Y ẖ AP ▨ radio ژ ̈Ω ٍ ق ذ ع ‘ ª ı AC Ṅ ő ˡ Ǐ ȝ - Ǐ AP ▨ ᴿ Ⱥ radio ژ ŧ ̈A ̈Ω ٍ Ţ Ө j ٨ ص Ө

ب ـل ڭ æ 1 χ Ã ᵏ AP ▨ radio ژ ̈Ω ٍ ق ذ ع ‘

```
Ruijie(config)# inter-radio-balance num-balance enable
```

2AC Ṅ ő ˡ Ǐ ȝ - Ǐ AP ▨ ᴿ Ⱥ

بـ ـلـ ڎ æ 1 χ بـ ـلـ AP ᵃ إ radio ژ ق ذ ڎ ‘ ᵏ ں ڈ ں Ө ⁼ Ө ㎜ 3

```
Ruijie(config)# inter-radio-balance num-balance same-band enable-load 3 threshold 3
```

ₛ ڃ Ä | -

ώ˜ ʒ Ụ -

Ẃ ȏ ڃ ئ -

Ẉ ᴶ ب ˝ AP

3.7 inter-radio-balance radio weight

بـ ـلـ radio ژ ق ذ ڎ ‘ ʽH radio ژ ق ذ ⅝ æ ا بـ ـلـ radio ا پ پ ⅝ æ o ㎜ ق ذ ⅝ æ

inter-radio-balance radio

Ẃ ȸ ᶎ ȷ̃ -

Ẉ ᴶ ب ˝ AP

3.8 package

¨ ấ ﻝ ﻯ ﻩ Ẋ ف ؟ ﻝ ﻯ ﻩ ﺑ ﻝ ₩ Ã
package *pkg-name*

ɾ T̈ A ˡ Ꝋ ɾ Ỉ ᵘ ᵑᵬ **no** Ǯ ˚ ¨ ᵬ ˝ Y ḧ ﻝ ﻯ ﻩ ﺑ ﻝ
no package [*pkg-name*]

v ˝ Ꝙ ب ˝

v ˝ Ꝙ	ώ ك
pkg-name	ﻝ ﻯ ﻩ ᵉ ﻯ ا ذ ỷ [1,32]

ƛ ﺑ ﻝ ḧ ﻝ ﻯ ﻩ ﺑ ﻝ

ᵘ ᵑᵬ ₩ Ã ২ ṕ ﺑ ﻝ ₩ Ã

ƛ ﻝ ¸ 15

Æ ɾ ˝ Y Ṁ AP i ω ^ ы ᵽ ﺑ ﻝ 50 Ⱥ ﻝ ﻯ ﻩ ا ٨ ص i ں ا Ṅ h ệ ¸ Ⱥ ᶎ ȷ̃ ώ ˜

ﺑ ﻝ ǯ æ 1 χ ﺑ ﻝ Ⱥ ᵉ ﷺ ɓ AAA ɓ ﻝ ﻯ ﻩ

```
Ruijie(config)#package AAA
Ruijie(config-package)#
```

2 χ ¨ ᵬ ᵉ ﷺ ɓ AAA ɓ ﻝ ﻯ ﻩ

```
Ruijie(config)# no package AAA
The opreration will clear package(s) configuration, which may cause corresponding STAs offline .
Continue? [no]y
Ruijie(config)#
```

₅ ᶎ Ä | -

ώ ˜ ʒ Ụ -

Ẃ ȸ ᶎ ȷ̃ -

Ẉ ᴶ ب ˝ -

3.9 primary-sta

ƥ Ⱥ ﾑ ｲ ɣ ⱥ ᵽ ﾑ ʓ STA

primary-sta *mac-address*

ｒ Ä ｌ Ꝙ ｒ Ĵ ᵘ ɲ **no** J̌ ˚ ｡ ゟ ″Y ḧ ﾑ ｲ ɣ ⱥ ʓ STA ᵽ ﾑ

no primary-sta

v ″Ǫ ᵽ ″

v ″Ǫ	ѡ ك
mac-address	ʓ STA MAC ş ɤ ｉ ǂ Ã ė ḅ H.H.H

ﾉ ᵽ ﾑ ƞ

ᵘ ɲ ₩ Ã ﾑ ｲ ɣ ᵽ ﾑ ₩ Ã

ﾉ ｲ. 15

Æ ｒ ″ YṀ Ⱥ ﾑ ｲ ɣ ᴱ ы ƥ ᵽ ﾑ Ⱥ ʓ STA ｉ ｬ % ｉ Æ ｒ Ĵ ᵘ ɲ ᵽ ﾑ ｲ ﾑ ɣ ⱥ ʓ STA `H ｉ ḅ ' ﾑ ｲ ɣ ⱥ ʓ STA Ţ ﾑ è ƥ ｉ ¸ ´ ì ɦ u ˝

ᵽ ﾑ ʓ æ 1 ɣ ʬ ﾑ ｲ ɣ ɓ AAA ɓ ᵽ ﾑ MAC ş ɤ ʬ 00d0.f800.0001 ʓ STA

```
Ruijie(config)#package AAA
Ruijie(config- package)#primary-sta 00d0.f800.0001
```

ₛ ⱬ Ä | -

ώ ˜ ʒ Ụ -

Ẃ ȸ ჯ ئ -

Ẉ ᴶ ᵽ ″ -

3.10 secondary-sta

ƥ Ⱥ ﾑ ｲ ɣ ⱥ ᵽ ﾑ ϰ STA

secondary-sta *mac-address*

ｒ Ä ｌ Ꝙ ｒ Ĵ ᵘ ɲ **no** J̌ ˚ ｡ ゟ ″Y ḧ ﾑ ｲ ɣ ⱥ ϰ STA ᵽ ﾑ

no secondary-sta [*mac-address*]

v ̈Ọ ̆

v ̈Ọ	ὼ ك
mac-address	ʁ STA ⃝ MAC ş χ ı † Ã ė ḅ H.H.H

ƛ ڀ ل ṇ

2χ Ǐ˜ ʜ ᵬ ˑ Ę ȸΦ ↑ õ

```
Ruijie# show assoc-control
Association control is disabled.
```

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

3.12 show control-zone

Ǐ˜ ʜ ᵬ ˑ ³ ب ﻝ ʒ Ụ

show control-zone [**summary** | *czone-name*]

v ˝Ⴈب ˝

```
-------------       ------------------------
  ᶆ ㄏ 1 ㅁ           AP1(1)-1  00d0.f800.889f
                      AP1(1)-2  00d0.f800.7869
ˆ ᶆ ㄏ 2 ㅁ           AP2(2)-1  00d0.f800.889f
ˆ ᶆ ㄏ 3 ㅁ           AP2(3)-1  offline
ˆ ᶆ ㄏ 3 ㅁ           n/a
```

4 χ Ǐ ˜ ″A õ ʜ ǐ í ˙ ³ ؤ ㄏ ᵽ ㄴ ʒ Ụ

```
Ruijie# show control-zone
No control zone configuration.
```

5 χ Ǐ ˜ ᵉ ʁ ɒ 1 ᶆ ㄏ 1 ㅁ ɓ ʜ ǐ í ˙ ³ ؤ ㄏ ᵽ ㄴ ʒ Ụ

```
Ruijie# show control-zone 1 ᶆ ㄏ 1 ㅁ
control-zone        AP
-------------       ------------------------
  ᶆ ㄏ 1 ㅁ           AP1(1)-1  00d0.f800.889f
                      AP1(1)-2  00d0.f800.7869
ˆ ᶆ ㄏ 2 ㅁ           AP2(2)-1  00d0.f800.889f
ˆ ᶆ ㄏ 3 ㅁ           AP2(3)-1  offline
ˆ ᶆ ㄏ 3 ㅁ           n/a
```

6 χ Ǐ ˜ ᵉ ʁ ɒ 5 ᶆ ㄏ 1 ㅁ ɓ ʜ ǐ í ˙ ³ ؤ ㄏ ᵽ ㄴ ʒ Ụ

```
Ruijie# show control-zone 5 ᶆ ㄏ 1 ㅁ
No such control zone configuration.
```

ώ˜ ʒ Ụ -

Ᾱ ᴶ ᵽ ″ -

3.13 show package

Ǐ ˜ ㅅ ㄱ ㄹ ᵽ ㄴ ʒ Ụ

show package [*pkg-name*]

v ″Ω ᵽ ″

v ″Ω	ώ ك
pkg-name	″A ㅣ ˜ ؤ ㅅ ㄱ ㄹ ᵉ ㄱ ㅣ ㄷ ỷ [1,32]

ᵘ ɲ ₩ Ã ᵉ ₩ Ã

ỉ ㅅ 1

Æ ŧ ˝YṀ ṇ

ٻ ـ ڗ æ 1 χ Ǐ ˜ ¨A ω ﻉ ٩ ۲ ٻ ـ

```
Ruijie# show package
total package num : 2
========= package_1 =========
primary STA : none
secondary STA num : 0
========= package_2 =========
primary STA : 00d0.f809.0092
secondary STA num : 4
00d0.f809.0096
00d0.f809.0097
00d0.f809.0098
00d0.f809.0099
```

2 χ Ǐ ˜ ¨A ω ﻉ ٩ ۲ ٻ ـ

```
Ruijie# show package
No package configuration.
```

ώ˜ ȝ Ụ -

Ẉ ᴶ ب ˝ -

4 WBS

4.1 11asupport enable

ᵽ ɻ ˝Y ḧ AP ˝Y ḧ radio ᵽ 5G ï ˜Ḥ'Y 11A
11asupport enable radio *radio-id*

ᵽ ɻ ˝Y ḧ AP ˝Y ḧ radio ᵽ 5G ï j ˜Ḥ'Y 11A
no 11asupport enable radio *radio-id*

v ˝Ọ ᵽ ˝	v ˝Ọ	ѽ ك
	radio-id	ɻ ᵽ ɻ radio id ı ᵽ ʁ 1~96
ƛ ᵽ ɻ	˜Ḥ'Y 11A	
ᵘ ɲ ₩ Ã	AP ᵽ ɻ ₩ Ã	
ƛ ۱	14	
Æ ŧ ˝Y Ṁ	ᵽ ɻ ʁ ᵽ AP Radio Ṫ Ă ᵽ	

no 11bsupport enable radio *radio-id*

ᵛ ᵚ᷈ب ᵚ᷈	ᵛ ᵚ᷈	ᘐ ك
	radio-id	ᒪ بᒧ radio id ᵢ‟ ᵦ ᵚᵚ 1~96
ᵡ بᒧ	ᵀḢ'Y 11B	
ᵘ ᵑᵬ₩Ã	AP بᒧ ₩Ã	
ᵡ ᐟ᷈	14	
Æ ᵻ ᵚ᷈YṀ	بᒧ ᵏ ᵦ AP Radio Ṫ Ă ᵦ 2.4G ï ᵻ ᷒̃	
بᒧ ᵹ æ	1 χ ف᳇ AP0001 بᒧ₩Ã ᵢ Ẋ ħ بᒧ	

Æ ŧ ˝YṀ ᵽ ㇵ ᵷ AP ㉾ Radio Ṫ Ă ᵷ 2.4G ï ᵻ ᶇ̊

ᵽ ㇵ ᶎ æ 1 χ ᵮ ᵓ AP0001 ㉾ᵽ ㇵ ₩ Ã ᵻ Ẋ ħ ᵽ ㇵ Radio 1 ᵷ 2.4G ï ᵀḢ'Y 11G

```
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# 11gsupport enable radio 1
```

ₛ ᶎ Ä | 1 χ Æ ŧ **show ap-config running** *ap-name* ᵘ ᵑᵬ ᵻ ᶩ ⍵ ˜ ˝Y ḧ AP ĩ ᵋ ᵽ ㇵ ᵀḢ'Y 11G

ώ˜ ʒ Ụ -

Ẃ ȸ ᶎ ᵹ -

Ẉ ᴶ ᵽ ˝ -

4.4 11acsupport enable

ᵽ ㇵ ˝Y ḧ AP ˝Y ḧ radio ᵀḢ'Y 11AC
11acsupport enable radio *radio-id*

ᵽ ㇵ ˝Y ḧ AP ˝Y ḧ radio j ᵀḢ'Y 11AC
no 11acsupport enable radio *radio-id*

v ˝Ⴓ ᵽ ˝	v ˝Ⴓ	ώ ك
	radio-id	ᶅ ᵽ ㇵ ㉾ radio ㉾ id ᵻ ₍ ᵷ ㎞ 1~96

ᶉ ᵽ ㇵ Radio ID ㎞ ˜ ˝Ⴓ ㉾ Radio j ᵀḢ'Y 11AC ᵻ Radio ID ㎞ ÿ ˝Ⴓ ㉾ Radio ᵀḢ'Y 11AC

ᵘ ᵑᵬ ₩ Ã AP ᵽ ㇵ ₩ Ã

ᶉ ᶩ ᵢ 14

Æ ŧ ˝YṀ -

ᵽ ㇵ ᶎ æ 1 χ ᵮ ᵓ AP0001 ㉾ᵽ ㇵ ₩ Ã ᵻ Ẋ ħ ᵽ ㇵ Radio 1 ᵀḢ'Y 11AC

```
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# 11acsupport enable radio 1
```

ₛ ᶎ Ä | 1 χ Æ ŧ **show ap-config running** *ap-name* ᵘ ᵑᵬ ᵻ ᶩ ⍵ ˜ ˝Y ḧ AP ĩ ᵋ ᵽ ㇵ ᵀḢ'Y 11AC

ώ˜ ʒ Ụ -

Ẃ ð ᵹ ᵾ -

Ẉ ᴶ ᵽ ˝ -

4.5 11axsupport enable

ᵽ ⅃ ˝Y ḧ AP ˝Y ḧ radio ᵀḢ'Y 11AX
11axsupport enable radio *radio-id*

ᵽ ⅃ ˝Y ḧ AP ˝Y ḧ radio j ᵀḢ'Y 11AX
no 11axsupport enable radio *radio-id*

Õ ʰ ˝Y ḧ AP ˝Y ḧ radio 11AX ᵚ ⅄ ᵽ ⅃
default 11axsupport enable radio *radio-id*

v ˝Ⱬᵽ ˝	v ˝Ⱬ	ὼ ك
	radio-id	ᶩ ᵽ ⅃ radio id ı„ ᵷ ᵚ 1~96

⅄ ᵽ ⅃ ᵀḢ'Y 802.11ax в ᵰ radio ⅄ ˆ ɤ

ᵘ ᵑᵬ ₩ Ẵ AP ᵽ ⅃ ₩ Ẵ ˝A ῶ AP ᵽ ⅃ ₩ Ẵ

⅄ ∧ 14

Æ ɤ ˝Y Ṁ -

ᵽ ⅃ ᵷ æ 1 χ ᵴ Ɔ AP0001 ᵽ ⅃ ₩ Ẵ ı Ẋ ħ ᵽ ⅃ Radio 2 ʜ ᵬ 11AX

```
Ruijie# configure terminal
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# no 11axsupport enable radio 2
```

ₛ ᵶ Ȧ | 1 χ Æ ɤ **show ap-config running** *ap-name* ᵘ ᵑᵬ ı ˡ Ꞷ ˜ ˝Y ḧ AP ĩ ᵋ ᵽ ⅃ ᵀḢ'Y 11AX

ώ˜ ʒ Ụ -

Ẃ ð ᵹ ᵾ -

Ẉ ᴶ ᵽ ˝ AC

4.6 11ax-gi

ٻ ل ″Y ħ AP ″Y ħ radio 11ax-gi v ″Ọ
11ax-gi { **0.8** | **1.6** | **3.2 | auto** } **radio** *radio-id*

Õ ʰ ″Y ħ AP ″Y ħ radio 11ax-gi v ″Ọ
no 11ax-gi radio *radio-id*

v ″Ọ ب ″	v ″Ọ	ڰ ك
	radio-id	ا ٻ ل radio id ا ‟ ḫ ᵻᵻ 1~96
	0.8	ٻ ل 11ax-gi ᵻᵻ 0.8us
	1.6	ٻ ل 11ax-gi ᵻᵻ 1.6us
	3.2	ٻ ل 11ax-gi ᵻᵻ 3.2us
	auto	ٻ ل 11ax-gi ᵻᵻ auto ا ḫ گ ᵻ ڰ v ″Ọ ᵻ گ Ẓ

ƛ ٻ ل ƛ ù˙ ï ا 11ax-gi ᵻᵻ auto

4.7 ampdu-retries

ᵽ ⅃ ″Y ḧ AP ″Y ḧ radio ▯ AMPDU ᵴ ᵀ ᵽ ᵩ Ⱪ ″Ⱬ

ampdu-retries *times* **radio** *radio-id*

v ″Ⱬ ᵽ ″	v ″Ⱬ	ὼ ᶄ
	times	ᵴ ᵀ ᵽ ᵩ Ⱪ ″Ⱬ ı ᵑ Ë„ ᵬ 1-10
	radio-id	ᶩ ᵽ ⅃ ▯ radio ▯ id ı„ ᵬ ⱡ 1~96

ⱷ ᵽ ⅃ AMPDU ᵴ ᵀ ᵽ ᵩ Ⱪ ″Ⱬ ⱡ 10

ᵘ ᵑᵬ ₩ Ã AP ᵽ ⅃ ₩ Ã

ⱷ ᐟ¸ 14

Æ ŧ ″Y Ṁ ᵽ ⅃ ᵏ ᵷ AP ▯ Radio Ṫ Ă ᵷ 11N ₩ Ã ᾰ 11AC ₩ Ã ï ⊦ ὦ

j ″Ḥ′Y Ḿ ″A ῶ AP ف Φ ᵽ ⅃

ᵽ ⅃ ᵹ æ 1 χ ف ᘐ AP0001 ▯ ᵽ ⅃ ₩ Ã ı Ẋ ħ ᵽ ⅃ Radio 1 ▯ AMPDU ᵴ ᵀ ᵽ ᵩ Ⱪ ″Ⱬ ⱡ 2

```
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# ampdu-retries 2 radio 1
```

ₛ ⱬ Ȧ | 1 χ Æ ŧ **show ap-config running** *ap-name* ᵘ ᵑᵬ ı ˡ ₡ ˜ ″Y ḧ AP ĩ ᵋ ᵽ ⅃ AMPDU ᵴ ᵀ ᵽ ᵩ Ⱪ ″Ⱬ

ὼ ˜ ʒ Ụ -

Ẃ ȸ ᵹ ᵴ -

Ẉ ᴶ ᵽ ″ -

4.8 ampdu-rts

ᵽ ⅃ ″Y ḧ AP ″Y ḧ radio Ã ᵏ AMPDU ǐ ᵀ ï ă ▯ RTS ʒ ï ˙

ampdu-rts radio {*radio-id* | *[802.11b* | *802.11a*]}

ᵽ ⅃ ″Y ḧ AP ″Y ḧ radio ʜ ᵾ AMPDU ǐ ᵀ ï ă ▯ RTS ʒ ï ˙

no ampdu-rts radio {*radio-id* | *[802.11b* | *802.11a*]}

v ″Ⱬ ᵽ ″	v ″Ⱬ	ὼ ᶄ
	radio-id	ᶩ ᵽ ⅃ ▯ radio ▯ id ı„ ᵬ ⱡ 1~96

	802.11b	Ḿ ̈A ω̃ 2.4G ▩ radio ف Φ ٻ ل
	802.11a	Ḿ ̈A ω̃ 5.8G ▩ radio ف Φ ٻ ل

ƛ ٻ ل	ʜ ڈ
ᵘ ɲ ₩ Ã	AP ٻ ل ₩ Ã
ƛ ۱ ̣	14

Æ ŧ ̋Y Ṁ	̋Y ḧ ̋ 802.11b v ̋Ǫ Ṅ Ḿ ̈A ω̃ 2.4G ▩ radio

Æ ŧ ˝YṀ ٭ ل ᵏ ᵽ AP ▨ Radio Ṫ Ă ᵽ 11N ₩ Ã ă̈ 11AC ₩ Ã ï ᵻ ٍ᷉

٭ ل �Z æ 1 χ ڤ ؋ AP0001 ▨٭ ل ₩ Ã ı Ẋ ħ ٭ ل Radio 1 ▨ ì ٯ ³ ᵻ ₱ ل ᵿ 5

```
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# antenna receive 5 radio 1
```

2 χ ڤ ؋ AP ᵻ ε default ζ ▨٭ ل ₩ Ã ı Ẋ ħ ٭ ل Radio 1 ▨ ì ٯ ³ ᵻ ₱ ل ᵿ 5

```
Ruijie(config)# ap-group default
Ruijie(config-group)# antenna receive 5 radio 1
```

ₛ ᴈ Ä │ 1 χ Æ ŧ **show ap-config running** *ap-name* ᵘ ᵑᵬ ı ˡ ℚ˙ ˜ ˝Y ḧ AP Radio ▨ ì ٯ ³ ᵻ ٭ ل

2 χ Æ ŧ **show running-config** ᵘ ᵑᵬ ı ˡ ℚ˙ ˜ AP ᵻ Radio ▨ ì ٯ ³ ᵻ ٭ ل

ώ˜ ᶚ Ụ -

Ẃ ȸ ᵯ ئ -

Ẉ ᴶ ب ˝ -

4.10 antenna transmit

٭ ل ˝Y ḧ AP ă̈ ˝Y ḧ AP ᵻ ᴊ ▨ ˝A õ AP ˝Y ḧ radio ▨ ³ ᵻ ʌ گ ᵻ ᶚ

antenna transmit *value* **radio** *radio-id*

v ˝Ọ ب ˝

```
Ruijie(config)# ap-group default
Ruijie(config-group)# antenna transmit 7 radio 1
```

ₛ ᴈ Ά | 1 χ Æ ŧ **show ap-config running** *ap-name* ᵘ ᵑь ı ˡ ℚ¶ ˜ ˝Y ӈ AP Radio ▩ ∧ گ ³ ɻ ᵽ ɻ
2 χ Æ ŧ **show running-config** ᵘ ᵑь ı ˡ ℚ¶ ˜ AP ɻ Radio ▩ ∧ گ ³ ɻ ᵽ ɻ

ώ˜ ʒ Ụ -

Ẃ ȣ ᶎ ئ -

Ẉ ᴶ ب ˝ -

4.11 antenna type

ᵽ ɻ ˝Y ӈ AP ă ˝Y ӈ AP ɻ ɲ ▩ ″A õ AP ˝Y ӈ radio ▩ ³ ɻ Æ ŧ �somb ³ ɻ ă ӈ ᵇ ³ ɻ
antenna type { omnidirection | direction } [radio *radio-id* **]**

ᵽ ɻ ˝Y ӈ AP ă ˝Y ӈ AP ɻ ɲ ▩ ″A õ AP ˝Y ӈ radio ▩ ³ ɻ ɻ ʒ Æ ŧ ỉ ᵽ ɻ
no antenna type [radio *radio-id* **]**

ᵽ ɻ ˝Y ӈ AP ă ˝Y ӈ AP ɻ ɲ ▩ ″A õ AP ˝Y ӈ radio ▩ ³ ɻ ɻ ʒ Æ ŧ ỉ ᵽ ɻ
default antenna type [radio *radio-id* **]**

v ˝Ọ ب ˝	v ˝Ọ	ώ ك
	omnidirection	৳ ᵇ ³ ɻ ৳ ᵇ ³ ɻ
	direction	ӈ ᵇ ³ ɻ
	radio-id	ɭ ᵽ ɻ ▩ radio ¬ ù

(AP)Tj/C2_0 1 Tf0 Tc 0 Tw84.973 0 Td[0B4

ỉ ᵽ ɻ

```
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# antenna type direction radio 1
```

2 χ ڤ ᘁ AP ﻝ ε default ζ ﷺ ﺒ ﻝ ₩ Ã ı Ẋ ħ ﺒ ﻝ ᘁ ᙏ radio ʯ u Æ ɾ ḧ ᵇ ᶾ ﻝ

```
Ruijie(config)# ap-group default
Ruijie(config-group)# antenna type direction
```

3 χ ڤ ᘁ ″ A õ AP ﷺ ﺒ ﻝ ₩ Ã ı Ẋ ħ ﺒ ﻝ ᘁ ᙏ radio 2 ʯ u Æ ɾ ḧ ᵇ ᶾ ﻝ

```
Ruijie(config)# ap-config all
Ruijie(config-ap)# antenna type direction radio 2
```

4 χ ﺒ ﻝ ″ A õ radio ⁼ ﺒ ﻝ ″ Y ḧ radio j f̈ ª ` H ﺒ ﻝ ı ª ﺒ ﻝ ﷺ H ƕ ˝ ˙ ﺒ ﻝ ﷺ

```
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# antenna type omnidirection
Ruijie(config-ap)# antenna type direction radio 1
Ruijie(config-ap)# antenna type direction radio 2
Ruijie(config-ap)# show ap-config running
!
ap-config AP0001
 antenna type direction radio 1
 antenna type direction radio 2 // ª ﺒ ﻝ ﷺ ı ƕ ˝ ˙ ﺒ ﻝ ı ѡ ﻝ ĩ ﷺ radio ﺒ ﻝ ﷺ
!
```

ˢ ⁀ Á │ 1 χ Æ ɾ **show ap-config running** *ap-name* ᵘ ᵑᵬ ı ˡ Œ ˜ ″ Y ḧ

₅ ᳫ Ά ⎸	1 χ Æ ŧ **show ap-config running** *ap-name* ᵘ ᖘ ı ˡ Ꝏ˙ ˜ ˝Y ẗ AP Ỉ ᵽ ㇾ ᾔ`
ώ˜ ʒ Ụ	-
Ẃ ȣ ᳩ ئ	-
Ẉ ᴶ ب ˝	-

4.14 beacon dtim-period

ᵽ ㇾ˝Y ẗ AP ˝Y ẗ radio ⿲ DTIM ᵕ Ꝙ
beacon dtim-period *period-num* **radio** *radio-id*

v ˝Ꝙ ب ˝	v ˝Ꝙ	ώ ك
	period-num	DTIM ⿲ ᵕ Ꝙ ı ˊ˜ beacon ᵕ Ꝙ˝Ꝙ ı ח Ëˌˌ ᵹ ᚙ χ 1~255
	radio-id	ᶩ ᵽ ㇾ⿲ radio ⿲ id ı ˌˌ ᵹ ᚙ 1~96
⅄ ᵽ ㇾ	DTIM ⅄ ᵽ ㇾ ᚙ 1	
ᵘ ᖘ ₩ Ã̆	AP ᵽ ㇾ ₩ Ã̆	
⅄ ⍲	14	
Æ ŧ ˝Y Ṁ	j ˜Ḥ'Y Ḿ ¨A õ AP ڤ Φ ᵽ ㇾ	
ᵽ ㇾ ᵷ æ	1 χ ڤ ᘐ AP0001 ⿲ᵽ ㇾ ₩ Ã̆ ı Ẋ ħ ᵽ ㇾ Radio 1 ⿲ beacon	

4.15 beacon period

ᵽ ᒧ ᵀ Y ḧ AP ᵀ Y ḧ radio beacon ᵛ ᴧ ᶢ ᵕ Ω

beacon period *milliseconds* **radio** *radio-id*

ᵛ ᵀ Ω ᵽ ᵀ	ᵛ ᵀ Ω	ὼ ᶄ
	milliseconds	ᴧ ᶢ Beacon ᵛ ᵕ Ω ı ɒ ɥ ms ı ̦ ḫ 20~1000
	radio-id	ɭ ᵽ ᒧ radio id ı ̦ ḫ ᵚ 1~96
ᵡ ᵽ ᒧ	Beacon ᵕ Ω ᵡ Ө ᵚ 100ms	
ᵘ ᵑᵬ ₩ Ã	AP ᵽ ᒧ ₩ Ã	
ᵡ ᐟ ̣	14	
Æ ɨ ᵀ Y Ṁ	j ᵀ Ḥ ' Y Ḿ ¨ A õ AP ᵭ Φ ᵽ ᒧ	
ᵽ ᒧ ᵷ æ	1 χ ᵭ ᘁ AP0001 ᵽ ᒧ ₩ Ã ı Ẋ ħ ᵽ ᒧ Radio 1 beacon ᴧ ᶢ ᵕ Ω ᵚ 200ms	
	`Ruijie(config)# ap-config AP0001` `Ruijie(config-ap)# beacon period 200 radio 1`	
₅ ᶎ Ά ⎪	1 χ Æ ɨ **show ap-config running** *ap-name* ᵘ ᵑᵬ ı ˡ ₡ ¦ ˜ ᵀ Y ḧ AP ῖ ᵋ ᵽ ᒧ beacon ᵛ ᴧ ᶢ ᵕ Ω	
ὼ ˜ ᶚ Ụ	-	
Ẃ ȸ ᶄ ᵹ	-	
Ẉ ᴶ ᵽ ᵀ	-	

4.16 beacon rate

ᵽ ᒧ ᵀ Y ḧ AP ᵀ Y ḧ radio beacon ᵛ ᴧ ᶢ ₰ '

beacon rate *rate-Mbps* **radio** {*radio-id* | [*802.11b* | *802.11a*]}

Õ ʰ ᵀ Y ḧ AP ᵀ Y ḧ radio beacon ᵛ ᴧ ᶢ ₰ ' ᵚ ᵴ ᵑ ᴧ ᶢ ₰ '

no beacon rate radio {*radio-id* | [*802.11b* | *802.11a*]}

ᵛ ᵀ Ω ᵽ ᵀ	ᵛ ᵀ Ω	ὼ ᶄ
		beacon ᵛ ᴧ ᶢ ₰ ' ı ᵴ ɭ ├ Y ῖ χ
	rate_Mbps	1. ḅ ' Ả ₰ ' ɋ ₰ ' ᵩ ᵽ ᒧ ᵡ ɨ ı ̦ j ᵱ ᵽ ᒧ Ả ₰ ' ψ
		2. ᵡ 5G ᵮ ᵴ j ᵀ Ḥ ' Y ₰ ' 1M/2M/5.5M/11M ı ɨ % Ỿ Ả radio ᵡ 5G

ᶨ ᵎ ᵢ j Ấ ᵥ ᵎ Ꝏ i ᵪ ' ψ

radio-id	ᶩ ᵥ ᵎ radio id ᵢ ᵢ ᵍ ᵚ 1~96
802.11b	Ḿ ¨A ᾶ 2.4G radio ᵩ Φ ᵥ ᵎ
802.11a	Ḿ ¨A ᾶ 5.8G radio ᵩ Φ ᵥ ᵎ

ᶨ ᵥ ᵎ ᶨ j ᵥ ᵎ Ḛ ᵘ ᵑᵬ

ᵘ ᵑᵬ ₩ Ã AP ᵥ ᵎ ₩ Ã

ᶨ ᵑ 14

Æ ŧ ¨Y Ṁ ¨Y ẖ ˝ 802.11b v ¨Ꝙ Ṅ Ḿ ¨A ᾶ 2.4G radio ᵩ Φ ᵥ ᵎ ᵢ ᵥ ᵎ ᵍ AP ᵛ ᵎ Ꝁ i ᵢ H ö ᵢ ᷓ ẖ ₅ ᵁ ᶎ ¨Ꝙ ᵚ ᵎ ᵎ radio ᵥ ᵎ ψ ª ¯ ¨Y ẖ 802.11a v ¨Ꝙ Ṅ Ḿ ¨A ᾶ 5.8G radio ᵩ Φ ᵥ ᵎ ᵢ ᵥ ᵎ ᵍ AP ᵥ ᵢ ᵥ ᵎ ᵍ

ƛ ۍ ل 11AX Ȁ ß 5.8G radio ʬ 40M Ṿ Ḵ ı Ʊ ɯ ֆu ĩ 20M Ṿ Ḵ

ᵘ ɲ ₩ Ắ

2. ˝Y ẗ˝ 802.11b v ˝Ǫ Ṅ Ḿ ˝A õ 2.4G ▯ radio ف Φ ٻ ل ا ٻ ل ƥ AP ٧ Ƙ i ا ▯ H ö ا ѽ̃ ħ₅ ʊ ʇ ˝Ω ʁ ᵍ ◌̂◌̂ radio ▯ ٻ ل ψ ª ¯ ˝Y ẗ ▯ 802.11a v ˝Ǫ Ṅ Ḿ ˝A õ 5.8G ▯ radio ف Φ ٻ ل ا ٻ ل ƥ AP ٧ Ƙ i ا ▯ H ö ا ѽ̃ ħ ᵘ ᵑ♭ ʊ ʇ ˝Ω ʁ ◌̂◌̂ radio ▯ ٻ ل

ٻ ل ڎ æ 1 χ ف ؇ AP0001

ʃ Ķ	ʃ Ķ ă ş ת
AE	United Arab Emirates
AM	Armenia
AR	Arg ntina
AT	Austria
AU	Australia
AZ	Azerbaijan
BE	Belgium
BG	Bulgaria
BH	Bahrain
BN	Brunei Darussalam
BO	Bolvia
BR	Brazil
BY	Belarus
BZ	Belize
CA	Canada
CH	Switzerl nd
CL	Chile
CN	China
CO	Colombia
CR	Costa Rica
CY	Cyprus
CZ	Czech Republic
DE	Germany
DK	Denmark
DO	Dominican Republic
EC	Ecuador
EE	Estonia
EG	Egypt
ES	Spain
FI	Finland
FR	France
GB	United Kingdom
GE	Georgia
GR	Greece
GT	Guatemala
HK	Hong Kong, Special Administrative Region of China
HN	Honduras
HR	Croatia
HU	Hungary

Ẉ ᴶ ب ˝ -

4.20 coverage-area-control

ب ـل AP ٦ ת ٧ ا ' ـلّ ¨O

coverage-area-control *power* [**radio** { *radio-id* | **802.11b | 802.11a** }]

Õ ʸ AP ٦ ת ٧ ا ' ـلّ ¨O

no coverage-area-control [**radio** { *radio-id* | **802.11b | 802.11a** }]

v ¨Ϙب ˝	v ¨Ϙ	ώ ك
	power	٦ ת ٧ ا ' ا ɒ ɣ χ dbm ا ‟ ɮ 0~32
	radio-id	ا ب ـل radio id ا ‟ ɮ ѫ 1-96
	802.11b	Ḿ ¨A ũ 2.4G radio ڤ Φ ب ـل
	802.11a	Ḿ ¨A ũ 5.8G radio ڤ Φ ب ـل

ƛ ب ـل 0

ᵘ ᵑᵬ ₩ Ã AP ب ـل ₩ Ã AP ٤ ب ـل ₩ Ã

ƛ ٦ . 14

Æ ɨ ˝ Y Ṁ ˝ Y ḧ ˝ 802.11b v ¨Ϙ Ṅ Ḿ ¨A ũ 2.4G radio ڤ Φ ب ـل ا ب ـل ɒ AP ٩ Ꝁ i ٤ H ö ɨ ѽ ħ ₅ ט ج ¨Ω ѫ ؛ radio ب ـل ψ ª ¯ ˝ Y ḧ 802.11a v ¨Ϙ Ṅ Ḿ ¨A ũ 5.8G radio ڤ Φ ب ـل ا ب ـل ɒ AP ٩ Ꝁ i ٤ H ö ɨ ѽ ħ ᵘ ᵑᵬ ₅ ט ج ¨Ω ѫ ؛ radio ب ـل

ب ـل ڎ æ 1 χ ڤ ؟ ب AP0001 ب ـل ₩ Ã ا Ẋ ħ ب ـل AP ٦ ת ٧ ا ' ѫ 20

```
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# coverage-area-control 20
```

2 χ ڤ ؟ ب AP ٤ (default) ب ـل ₩ Ã ا Ẋ ħ ب ـل AP ٦ ת ٧ ا ' ѫ 20

```
Ruijie(config)# ap-group default
Ruijie(config-group)# coverage-area-control 20
```

₅ ج Ä | 1 χ Æ ɨ **show ap-config running** *ap-name* ᵘ ᵑᵬ ا ' Ꝙ ¦ ~ ˝ Y ḧ AP ï ɛ ب ـل ٦ ת ٧ ا ' ـلّ ¨O

1 χ Æ ɨ **show running-config** ᵘ ᵑᵬ ا ' Ꝙ ¦ ~ AP ٤ ٦ ת ٧ ا ' ب ـل

ώ ˜ ʒ Ụ -

Ẃ ȸ ج ؽ -

Ẉ ᴶ ب ˝ Ꝙ ï ғ ß j ˜ Ḥ ' Y Ỉ ᵘ ᵑᵬ ب ـل χ AP220-I V1.X, AP220-SI V1.X, AP220-E V2.X, AP220-E V3.X, AP220-E(M) V2.X, AP220-SH V2.X, AP220-SH V3.X, AP620-H(C) V2.X, AP530-I V1.0

4.21 fragment-threshold

ᓬ ᒧ″Y ḧ AP ″Y ḧ radio ▯ Ɑ Ë

fragment-threshold *value* **radio** *radio-id*

Õ′ ʰ ″Y ḧ AP ″Y ḧ radio ▯ Ɑ Ë ᵚᵴ ᵑ Ë

no fragment-threshold radio *radio-id*

v ″Ϙ ب ″	v ″Ϙ	ώ ك
	value	ᓬ ▯ Ɑ Ë ı„ ḫ ᵚ 256~2346 ɵ ژ ▯ ÿ ″Ϙ
	radio-id	ļ ᓬ ▯ radio ▯ id ı„ ḫ ᵚ 1~96
ƛ ᓬ	ƛ ὺ` ï ‘ Ɑ Ë ᵚ 2346	
ᵘ ᖷ ₩ Ã	AP ᓬ ₩ Ã	
ƛ ᐟ.	14	
Æ ŧ ″Y Ṁ	j ″Ḥ′Y Ḿ ″A õ AP ف Φ ᓬ	
ᓬ ڎ æ	1 χ ف ↄ AP0001 ▯ ᓬ ₩ Ã ı Ẋ ħ ᓬ Radio 1 ▯ Ɑ Ë ᵚ 1538	

```
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# fragment-threshold 1538  radio 1
```

₅ ᴈ Ä ⎪	1 χ Æ ŧ **show ap-config running** *ap-name* ᵘ ᖷ ı ˡ ₡ ˜ ″Y ḧ AP‘ Ɑ Ë ᓬ
ώ˜ ʒ Ụ	-
Ẃ ȸ ᵹ ئ	-
Ẉ ᴶ ب ″	-

4.22 green-field enable

ᓬ ᒧ″Y ḧ AP ″Y ḧ radio ▯ ʒ ï ₩ Ã

green-field enable radio *radio-id*

Õ′ ʰ ″Y ḧ AP ″Y ḧ radio ▯ ʒ ï ₩ Ã ᵚ disable

no green-field enable radio *radio-id*

v ̈Ọ ب ″	v ̈Ọ	ώ ك
	radio-id	ļ ب ل radio id ا ˛ ḡ ʁ 1~96
ǰ ب ل	ǰ ù` ï ʁ disable	
ᵘ ɲ ₩ Ã	AP ب ل ₩ Ã	
ǰ ۱ ˛	14	
Æ ŧ ″ Y Ṁ	ʁ ˜ Ḥ ' Y 2.4G Radio	
ب ل ʒ æ	1 χ ڤ ؟ ب AP0001 ب ل ₩ Ã ا Ẋ ħ ب ل Radio 1 green-field ʒ ï ₩ Ã	

```
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# green-field enable radio 1
```

₅ ج Ά |	1 χ Æ ŧ **show ap-config running** *ap-name* ᵘ ɲ ا ا ₢ ¶ ˜ ″ Y ḧ AP Radio green-field ب ل
ώ ˜ ʒ Ụ	-
Ẃ ȸ ج ئ	-
Ẉ ᴶ ب ″	-

4.23 ldpc

ب ل ″ Y ḧ AP ″ Y ḧ radio ˜ Ḥ ' Y Ḥ Ḻ ỹ ˆ ÿ › ج ۸

ldpc radio *radio-id*

ب ل ″ Y ḧ AP ″ Y ḧ radio j ˜ Ḥ ' Y Ḥ Ḻ ỹ ˆ ÿ › ج ۸

no ldpc radio *radio-id*

v ̈Ọ ب ″	v ̈Ọ	ώ ك
	radio-id	ļ ب ل radio id ا ˛ ḡ ʁ 1~96
ǰ ب ل	˜ Ḥ ' Y	
ᵘ ɲ ₩ Ã	AP ب ل ₩ Ã	
ǰ ۱ ˛	14	
Æ ŧ ″ Y Ṁ	-	

ᵽ ɻ ʒ æ 1 χ ف ؟ ن AP0001 ⊞ᵽ ɻ ₩ Ã ı Ẋ ħ ᵽ ɻ Radio 1 ʔ Ḥ ' Y Ḥ Ḻ ỹ ˜ ÿ › ڃ ؞

```
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# ldpc radio 1
```

₅ ڃ Ά | 1 χ Æ ŧ **show ap-config running** *ap-name* ᵘ ɲ ı ˡ ₢ ˜ ˝ Y ḧ AP ĩ ᵋ ᵽ ɻ ʔ Ḥ ' Y Ḥ Ḻ ỹ ˜ ÿ › ڃ ؞

ώ ˜ ʒ Ụ -

Ẃ ȸ ڄ ئ -

Ẉ ᴶ ب ˝ -

4.24 link-check

ĕ Â ă ʜ ڎ ڄ ت Ḣ ʖ Ọ ớ ₅ ⅄ ı ť

link-check { **enable** | **disable** }

ĕ Â ă ʜ ڎ ڄ ت Ḣ ʖ Ọ ớ ₅ ⅄ ı ť

no link-check { **enable** | **disable** }

v ʖ Ọ ب ˝	v ʖ Ọ	ώ ك
	no	ɾ ʖ Ḥ Ă

ƛ ᵽ ɻ ʜ ڎ

ᵘ ɲ ₩ Ã ؍ ṕ ᵽ ɻ ₩ Ã

ƛ ۸ ̣ 14

Æ ŧ ˝ Y Ṁ -

ᵽ ɻ ʒ æ 1 χ ĕ Â ڄ ت Ḣ ʖ Ọ ớ ₅ ⅄ ı ť

```
Ruijie(config)# link-check enable
```

2 χ ʜ ڎ ڄ ت Ḣ ʖ Ọ ớ ₅ ⅄ ı ť

```
Ruijie(config)# link-check disable
```

ă ă̈

```
Ruijie(config)# no link-check enable
```

₅ ڃ Ά | 1 χ Æ ŧ **show running-config** ᵘ ɲ ı ˡ ₢ ˜ ڄ ت Ḣ ʖ Ọ ớ ₅ ⅄ ı ť ⊞ Ã ᵏ ᶇ

mu-mimo enable radio *radio-id*

ᵽ ⅃ ″Y ẗ radio ʜ ᵬ MU-MIMO ı ĵ̈

no mu-mimo enable radio *radio-id*

Õ′ ᵸ ″Y ẗ radio ㊞ MU-MIMO ı ĵ̈

default mu-mimo enable radio *radio-id*

v ″Ọ ᵽ ″	v ″Ọ	ὼ ك
	radio-id	ᴌ ᵽ ⅃ ㊞ radio ㊞ id ı ‟ ᵬ ʁ 1~96

ƛ ᵽ ⅃ ƛ Ã ᵏ

ᵘ ᵑᵬ ₩ Ã AP ᵽ ⅃ ₩ Ã ″A ῶ AP ᵽ ⅃ ₩ Ã AP ㇓ ᵽ ⅃ ₩ Ã

ƛ ㇓ 14

Æ ŧ ″Y Ṁ -

ᵽ ⅃ ᵹ æ 1 χ ف ϶ AP0001 ㊞ᵽ ⅃ ₩ Ã ı Ẋ ẖ ᵽ ⅃ Radio 1 Ã ᵏ MU-MIMO

```
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# mu-mimo enable radio 1
```

2 χ ف ϶ AP0001 ㊞ᵽ ⅃ ₩ Ã ı Ẋ ẖ ᵽ ⅃ Radio 2 ʜ ᵬ MU-MIMO

```
Ruijie(config)# ap-config AP0001
```

Ruijie(config-ap)# no mu-mimo enable radio 2

3 χ ف ϶ AP0001 ㊞ᵽ ⅃ ₩ Ã ı Õ′ ᵸ Radio 3 ʑ ᵑ MU-MIMO

```
Ruijie(config)# ap-config AP0001
```

Ruijie(config-ap)# default mu-mimo enable radio 3

4 χ ف ϶ AP all ㊞ᵽ ⅃ ₩ Ã ı ᵽ ⅃ Radio 1 Ã ᵏ MU-MIMO

```
Ruijie(config)# ap-config all
```

Ruijie(config-ap)# mu-mimo enable radio 1

4 χ ف ϶ AP ʑ ᵑ default ㊞ᵽ ⅃ ₩ Ã ı ᵽ ⅃ Radio 1 Ã ᵏ MU-MIMO

```
Ruijie(config)# ap-group default
Ruijie(config-group)# mu-mimo enable radio 1
```

ₛ ᴈ Ä 1 χ Æ ŧ **show ap-config running** *ap-name* ᵘ ᵑᵬ ı ˡ ℚ ˜ ″Y ẗ AP Radio ㊞ MU-MIMO ᵽ ⅃

2 χ Æ ŧ **show running-config** ᵘ ᵑᵬ ı ˡ ℚ ˜ AP ㇓ Radio ㊞ MU-MIMO ᵽ ⅃

ώ˜ ʒ Ụ -

Ẃ ȣ ȩ ئ -

Ẉ ᴶ ب ˝ -

4.27 ofdma enable

ب ل˝Y ẗ radio Â ᵏ OFDMA ı ấ
ofdma enable radio *radio-id*

ب ل˝Y ẗ radio ԋ ڎ OFDMA ı ấ
no ofdma enable radio *radio-id*

v ˝Ọ ب ˝	v ˝Ọ	ώ ك
	radio-id	ļ ب ل radio id ı ̦ ƀ ਸ 1~96
ỉ ب ل	ỉ Â ᵏ	
ᵘ ɲ ₩ Ẫ	AP ب ل ₩ Ẫ ˝A õ AP ب ل ₩ Ẫ AP ﻯ ب ل ₩ Ẫ	
ỉ ﻯ ̣	14	
Æ ŧ ˝Y Ṁ	۔ ļ radio ˜Ḥ'Y OFDMA ε ᴵ ب ل ı j ט ˝A Nj ϖ Ṣ ᴵ ب ل ı j ט 9 ش ل ₩ Ẫ	

4.29 power local

ᵽ⅃˝Y ḧ AP ᵅ̃˝Y ḧ AP ⅃ ⅄㊚˝A ῶ AP ˝Y ḧ radio ∧ ᵯ ı '

power local { **global** | *power* } **radio** {*radio-id* | [*802.11b* | *802.11a*]}

v ˝Ϙᵽ ˝	v ˝Ϙ	ὼ ᶄ
	global	ᵽ⅃˝Y ḧ AP ᵅ̃˝Y ḧ AP ⅃ ⅄ ˝A ῶ AP ˝Y ḧ radio ⅃ RRMₛ ʊ ɔ ϗ ∧ ᵯ ı '
	power	ɻ ᵽ⅃ AP ㊚ ∧ ᵯ ı ' ˜ ˋ ⅝ ı ᵑ Ë„ ᵷ ㎞ 1~100
	radio-id	ɻ ᵽ⅃㊚ radio ㊚ id ı„ ᵷ ㎞ 1~96
	802.11b	Ḿ ˝A ῶ 2.4G ㊚ radio ᵠΦᵽ⅃
	802.11a	Ḿ ˝A ῶ 5.8G ㊚ radio ᵠΦᵽ⅃

ƛ ᵽ⅃ ƛ ὺ` ï ı ⅃ RRMₛ ʊ ɔ ϗ ∧ ᵯ ı '

ᵘ ᵑᵬ₩ Ã AP ᵽ⅃₩ Ã ᵅ̃ AP ⅃ ᵽ⅃₩ Ã

ƛ ⅂. 14

Æ ɨ ˝Y Ṁ ˝Y ḧ˜ 802.11b v ˝Ϙ Ṅ Ḿ ˝A ῶ 2.4G ㊚ radio ᵠΦᵽ⅃ ı ᵽ⅃ ᵷ AP ⅂ Ⱪ i ⅃㊚ H ö ⅃ ὤ ħₛ ʊ ᶎ ˝Ω㎞ ᵹ̂ radio ㊚ᵽ⅃ ψ ª ¯ ˝Y ḧ ㊚ 802.11a v ˝Ϙ Ṅ Ḿ ˝A ῶ 5.8G ㊚ radio ᵠΦᵽ⅃ ı ᵽ⅃ ᵷ AP ⅂ Ⱪ i ⅃㊚ H ö ⅃ ὤ ħ ᵘ ᵑᵬₛ ʊ ᶎ ˝Ω㎞ ᵹ̂ radio ㊚ᵽ⅃ j ˜Ḥ'Y Ḿ ˝A ῶ AP ᵠΦᵽ⅃

ᵽ⅃ ᵶ æ 1 χ ᵠ ϑ AP0001 ㊚ᵽ⅃₩ Ã ı Ẋ ħ ᵽ⅃ Radio 1 ∧ ᵯ ı ' ㎞ ω ᶻ ı ' ㊚ 50%

```
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# power local 50 radio 1
```

2 χ ᵠ ϑ AP ⅃ ε default ζ ㊚ᵽ⅃₩ Ã ı Ẋ ħ ᵽ⅃ Radio 1 ∧ ᵯ ı ' ㎞ ω ᶻ ı ' ㊚ 50%

```
Ruijie(config)# ap-group default
Ruijie(config-group)# power local 50 radio 1
```

ₛ ɜ Ä | 1 χ Æ ɨ **show ap-config running** *ap-name* ᵘ ᵑᵬ ı ' ⓠ ˜ ˝Y ḧ AP Radio ∧ ᵯ ı ' ᵽ⅃

2 χ Æ ɨ **show running-config** ᵘ ᵑᵬ ı ' ⓠ ˜ AP ⅃ Radio ∧ ᵯ ı ' ᵽ⅃

ώ˜ ʒ Ụ -

Ẃ ȸ ᶎ ɾ -

Ẉ ᴶ ᵽ ˝ -

4.30 poe-unlimit

AP ƍ ĕ ɔ ʁ ƀ ں ۝ ï ı Ặ̇ ۟ Ầ ں ı. Ȝ AP ˡ ᵽ ل ۟ ᶻ Ỉ ㄒ Ɽ ó ۝ ᵘ ɲ

poe-unlimit [**radio** *radio-id* **| radio-type** { **802.11a** | **802.11b** }]

ѵ ̋Ⴈ ᵽ ˝	ѵ ̋Ⴈ	۟ ك
	radio-id	ɻ ᵽ ل ۝ radio ۝ id ı ̧ ƍ ʁ 1~96
	802.11a	ˊ ~ 5GHZ ۝ Ṫ Ă ɻ ㅓ
	802.11b	ˊ ~ 2.4GHZ ۝ Ṫ Ă ɻ ㅓ

ƛ ᵽ ل	ƛ ۞ ï ı ᵷ̂ ĕ ɔ ʁ ƀ ل ˈ ف Φ ں
ᵘ ɲ ₩ Ã	AP ᵽ ل ₩ Ã
ƛ ۱.	
Æ ɾ ˝ Y Ṁ	j ˜ Ḥ ˈ Y Ḿ ¨ A õ AP ف Φ ᵽ ل
ᵽ ل ڎ æ	1 χ ف ᘐ AP0001 ۝ ᵽ ل ₩ Ã ı Ẋ ħ ᵽ ل Radio 1 ʜ ڑ ĕ ɔ ں ı Ỉ Ruijie(config-ap)# poe-unlimit radio 1 Ruijie(config-ap)# poe-unlimit radio-type 802.11a
₅ ᴈ Ά ⎪	1 χ Æ ɾ show ap-config running ap-name ᵘ ɲ ı ˡ ⁉ ˜ ˝ Y ḧ AP Radio ۝ poe-unlimit ۝ ᵽ ل ۞
ώ ˜ Ȝ Ụ	-
Ẃ ð ᵭ ڎ	-
Ẉ ᴶ ᵽ ˝	-

4.31 poeout

Ⴔ ل ĩ ε ᵏ ɾ AP ۝ Ḿ ᵘ ĕ ɔ Ỉ ㄒ

poeout {enable | **disable** | **default}**

ѵ ̋Ⴈ ᵽ ˝	ѵ ̋Ⴈ	۟ ك

enable	ᵏ ɾ AP ⅏Ḿ ᵘ ĕ ɔ Ǐ ㄒ
disable	ˆ ɾ AP ⅏Ḿ ᵘ ĕ ɔ Ǐ ㄒ
default	Æ ɾ Ḛ˙ ɸ ᵻ ⅏ש ɲ Ḿ ᵘ ĕ ɔ Ǐ ㄒ ɸ ḧ

ƛ ᵽ ⅃	Æ ɾ Ḛ˙ ɸ ᵻ ⅏ש ɲ Ḿ ᵘ ĕ ɔ Ǐ ㄒ ɸ ḧ
ᵘ ɲ ₩ Ã	ᘐ ṕ ᵽ ⅃ ₩ Ã
ƛ ㄱ˳	-
Æ ɾ ˝ Y Ṁ	Ỉ ᵘ ɲ ṇ ₓ Æ ɾ write ᵘ ɲ ȝ è ı ᵽ ⅃ ª ő ɦ ȝ è Ỉ ᵘ ɲ j ˜ Ḥ ' Y no ⁼ default˙ ㄱ poeout default ᵽ ⅃ ª ɦ ɋ ƍ ƿ ᵚ ɸ ᵻ ש ɲ ɸ ḧ ⅏ poeout enable ǎ

ƛ ٮ ل ƛ ù˙ ï ı ɒ ļ APɛ o Radio 1 ζḤ'Y 2.4GHZ ļ ـ ı ٭ ļ AP㊫Radio 1ˇḤ'Y 2.4GHZ ı Radio 2ˇḤ'Y 5GHZ

ᵘ ɲ₩Ǟ AP ٮ ل ₩Ǟ

ƛ ۱ 14

Æ ŧ ˝Yώ

```
Ruijie(config-ap)# short-gi enable radio 1 chan-width 20
```

2 χ ف ؆ AP0001 ▣ پ ل ₩ Ã ا Ẋ ħ پ ل Radio 2 j ˜ Ḥ ˈ Y 40M Ṿ Ḳ ▣ short-gi

```
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# no short-gi enable radio 2 chan-width 40
```

₅ ⇂ Ά |	1 χ Æ ŧ **show ap-config running** *ap-name* ᵘ ᵑᵬ ا ˡ ₡ ˜ ˝ Y ḧ AP Radio ▣ short-gi پ ل
ώ˜ ʒ Ụ	-
Ẃ ȸ ჭ ئ	-
Ẉ ᴶ ب ˝	-

4.35 stbc

پ ل ˝ Y ḧ AP ˝ Y ḧ radio Æ Ǐ ì ώ ∧ گ ৸ ˋ H ˊ ؍

stbc radio *radio-id*

پ ل ˝ Y ḧ AP ˝ Y ḧ radio ˆ Ƀ ì ώ ∧ گ ৸ ˋ H ˊ ؍

no stbc radio *radio-id*

v ˝ Ọ ب ˝	v ˝ Ọ	ώ ك
	radio-id	ļ پ ل ▣ radio ▣ id ا ‟ ḡ ₩ 1~96
⅄ پ ل	Æ Ǐ	
ᵘ ᵑᵬ ₩ Ã	AP پ ل ₩ Ã	
⅄ ٨ ̣	14	
Æ ŧ ˝ Y Ṁ	-	
پ ل ⫿ æ	1 χ ف ؆ AP0001 ▣ پ ل ₩ Ã ا Ẋ ħ پ ل Radio 1 Æ Ǐ ì ώ ∧ گ ৸ ˋ H ˊ ؍	

```
Ruijie(config)# ap-config AP0001
Ruijie(config-ap)# stbc radio 1
```

₅ ⇂ Ά |	1 χ Æ ŧ **show ap-config running** *ap-name* ᵘ ᵑᵬ ا ˡ ₡ ˜ ˝ Y ḧ AP ĩ ε پ ل Æ Ǐ ì ώ ∧ گ ৸ ˋ H ˊ ؍
ώ˜ ʒ Ụ	-

Ẃ ȣ ᶎ ȣ -

Ẉ ᴶ ب ˝ -

4.36 show dot11 associations

ᶈ ˜ ᵑ̀ ᵻ ᶩ ɹ ف ᶤ ʒ Ụ

show dot11 associations *H.H.H interface-name*

v ˝Ọ ب ˝	v ˝Ọ	ѽ ڰ
	H.H.H	˝Y ẖ̈

```
    TX Deauth.............. 0
    TX Disassoc............ 0
    Packet Load............ 0
```

È ɟ ɹ ᵩ Χ

È ɟ	ب ˜
RSSI	ì ώ ȣ ʒ ᴺ Ă ẙ ˝Y˜
SNR	ʒ ƍ ⅝
AID	‰ ⅋ ID
RX Data	ì ώ ˝Ϙ ̃Ω ν ˝Ϙ
RX Management	ì ώ ᒣ ת ν ˝Ϙ
RX Control	ì ώ í ˙ ν ˝Ϙ
RX Unicast	ì ώ ɒ Ḥ ν ˝Ϙ
RX Multicast	ì ώ ɻ Ḥ ν ˝Ϙ
RX Bytes	ì ώ È ` ˝Ϙ
TX Data	∧ گ ˝Ϙ ̃Ω ν ˝Ϙ
TX Management	∧ گ ᒣ ת ν ˝Ϙ
TX Unicast	∧ گ ɒ Ḥ ν ˝Ϙ
TX Multicast	∧ گ ɻ Ḥ ν ˝Ϙ
TX Bytes	∧ گ È ` ˝Ϙ
TX Probe	∧ گ probe ν
TX Assoc	∧ گ ʜ ǐ ν
TX Assoc Fail	∧ گ ʜ ǐ ν ¸ م ˝Ϙ
TX Auth	∧ گ ռ - ν ˝Ϙ
TX Auth Fail	∧ گ ռ - ν ¸ م ˝Ϙ
TX Deauth	∧ گ ɟ ռ - ν ˝Ϙ
TX Disassoc	∧ گ ɟ ʜ ǐ ν ˝Ϙ
Packet Load	ᵉ æ ᵩ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˜ ap ̃Ḥ'Y

4.37 show dot11 associations all-client

ᚴ ˜ ṇ ɻ ɻ ɹ ف ì ȣ ˝A Ꝍ ɾ ˝A ʒ Ụ

show dot11 associations all-client

ν ˝Ϙ ب ˜

ν ˝Ϙ	ώ ك
-	-

ᵘ ɲ ₩ Ã ᵉ ₩ Ã

ȷ̂ ʅ. 1

Æ ɨ ˝Y Ṁ -

ب ɻ ʒ æ 1 χ ˜ ¨A ω ɨ ¨A ʒ Ụ

```
Ruijie# show dot11 associations all-client
RADIO-ID WLAN-ID ADDR              AID  CHAN RATE_DOWN RATE_UP RSSI ASSOC_TIME IDLE TXSEQ  RXSEQ
ERP  STATE  CAPS HTCAPS VHT_MU_CAP HECAPS
1        7       00:25:9c:9b:ae:b5 1    1     52.0M      6.0M  39      0:00:18 0    7      544
0x0  0x3    ESs          SU
```

È ɟ ɹ ᵩ χ

È ɟ	ب ˝
RADIO-ID	RADIO ID
WLAN-ID	WLAN ID
ADDR	ɻ ʅ MAC ʂ χ
AID	‰ ⅋ ID
CHAN	ʒ ʓ
RATE_DOWN	ʌ ڳ ھ '
RATE_UP	ì ώ ھ '
RSSI	ì ώ ʒ ᴺ Ą ẙ ˝Y˜
ASSOC_TIME	ƥ ɻ Ḥ ڑ
IDLE	ƞ ╚ ᵩ Ḥ ڌ ε ʏ ζ
TXSEQ	ʌ ڳ ĭ ă ẑ ° ᴺ
RXSEQ	ì ώ ĭ ă ẑ ° ᴺ
ERP	ĩ ᵋ ₩ ERP ʒ ĭ ɨ ¨A
STATE	ɲ - ʜ ỉ ↑ ő ı ´ ˙ ƞ v ă Ỵ Θ ı ʐ ₩ 0x3
CAPS	ʙ ɲ h ḧ ⅋ ɻ ʅ ḟ ㄒ Ö
HTCAPS	ʙ ɲ h ḧ ⅋ 11n HT ḟ ㄒ Ö
VHT_MU_CAP	SU ă ắ MU
HECAPS	ʙ ɲ h ḧ ⅋ 11ax HE ḟ ㄒ Ö

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ ap ˝Ḥ'Y

4.38 show dot11 channels active

ɬ ˜ ˝Y ḧ ƞ ɻ ɹ ᴊ ˝Ḥ'Y ⅋ Ṫ Ă ʒ ʓ ʒ Ụ

DFS	ᵩ ᵯ ʒ ᵴ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ AP ˁḢˈY

4.39 show dot11 channels all

ᵑ ˜ ḭ ɻ ɻ ɹ ˁḢˈY㏂˝A ῶ Ṫ Ă ʒ ᵴ ʒ Ụ

show dot11 channels all *interface-name*

v ˝Ọ ب ˝

v ˝Ọ	ώ ك
Interface-name	˝Y ḧ ḭ ɻ ɻ ɹ ı† Ã ㎞ radioid/0

ᵘ ᵑᵬ₩Ã ᵉ ₩Ã

ƚ ʅ˳ 1

Æ ŧ ˝YṀ -

ب ɻ ᵹ æ 1 χᵑ ˜ radio 1 ˁḢˈY㏂Ṫ Ă ʒ ᵴ ʒ Ụ

```
Ruijie# show dot11 channels all 1/0
Channel   1 : 2412 Mhz 11ng C CU        Channel   8 : 2447 Mhz 11ng C CU CL
Channel   2 : 2417 Mhz 11ng C CU        Channel   9 : 2452 Mhz 11ng C CU CL
Channel   3 : 2422 Mhz 11ng C CU        Channel  10 : 2457 Mhz 11ng C CL
Channel   4 : 2427 Mhz 11ng C CU        Channel  11 : 2462 Mhz 11ng C CL
Channel   5 : 2432 Mhz 11ng C CU CL     Channel  12 : 2467 Mhz 11ng C CL
Channel   6 : 2437 Mhz 11ng C CU CL     Channel  13 : 2472 Mhz 11ng C CL
Channel   7 : 2442 Mhz 11ng C CU CL
```

2 χᵑ ˜ radio 2 ˁḢˈY㏂Ṫ Ă ʒ ᵴ ʒ Ụ

```
Ruijie# show dot11 channels all 2/0
Channel  36 : 5180 Mhz 11na C CU        Channel 116 : 5580 Mhz 11na C CU DFS
Channel  40 : 5200 Mhz 11na C CL        Channel 120 : 5600 Mhz 11na C CL DFS
Channel  44 : 5220 Mhz 11na C CU        Channel 124 : 5620 Mhz 11na C CU DFS
Channel  48 : 5240 Mhz 11na C CL        Channel 128 : 5640 Mhz 11na C CL DFS
Channel  52 : 5260 Mhz 11na C CU DFS    Channel 132 : 5660 Mhz 11na C CU DFS
Channel  56 : 5280 Mhz 11na C CL DFS    Channel 136 : 5680 Mhz 11na C CL DFS
Channel  60 : 5300 Mhz 11na C CU DFS    Channel 140 : 5700 Mhz 11na C    DFS
Channel  64 : 5320 Mhz 11na C CL DFS    Channel 149 : 5745 Mhz 11na C CU
Channel 100 : 5500 Mhz 11na C CU DFS    Channel 153 : 5765 Mhz 11na C CL
Channel 104 : 5520 Mhz 11na C CL DFS    Channel 157 : 5785 Mhz 11na C CU
```

Channel 108 : 5540 Mhz 11na C CU DFS Channel 161 : 5805 Mhz 11na C CL
Channel 112 : 5560 Mhz 11na C CL DFS Channel 165 : 5825 Mhz 11na C

È ㅓ ㅣ ᵩ X

È ㅓ	ب ˝
Channel	ȝ ȣ
2447 Mhz	ȝ ȣ 8 ı ƥ 2447 ɣ ɛ ï Ṫ Ă
11ng	˜Ḥ'Y Ã
C	˜Ḥ'Y 20M ᶩ Ḵ
CU	˜Ḥ'Y 40M ᶩ Ḵ
CL	˜Ḥ'Y 40M ᶩ Ḵ
DFS	ᵩ ż ȝ ȣ

Capability	ṃ ļ Æ˜Ḥ'Y ǐ ד

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ AP˜Ḥ'Y

4.41 show dot11 rate-set

ǂ ˜ ¨A ω ṃ ļ Æ ھ ' ﻭ ʒ Ụ

show dot11 rate-set

v ¨Ọ ب ˝

v ¨Ọ	ώ ك
-	-

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ﻷ ﻵ 1

Æ ŧ ˝ Y Ṁ -

ب ﻝ ﮊ æ 1 χ ǂ ˜ ¨A ω ṃ ļ Æ ھ ' ﻭ ʒ Ụ

```
Ruijie# show dot11 rate-set
LLCB(1) RATE SET
Mandatory rate:  11M,
Support   rate:  6M, 9M, 12M, 18M, 24M, 36M, 48M, 54M,
Mandatory 11n MCS index:
Support   11n MCS index: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15,
LLCB(2) RATE SET
Mandatory rate:  6M, 12M, 24M,
Support   rate:  9M, 18M, 36M, 48M, 54M,
Mandatory 11n MCS index:
Support   11n MCS index: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15,
```

È ﻫ ﺝ ﺩ χ

È ﻫ	ب ˝
LLCB(1) RATE SET	Radio ھ ' ﻭ
Mandatory rate	Ă ˙ ھ '
Support rate	˜Ḥ'Y ھ ' ﻭ
Mandatory 11n MCS index	11n Ă ˙ ھ ' ﻝ Â
Support 11n MCS index	11n ˜Ḥ'Y ھ ' ﻝ Â

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ ap ˇḢ˙Y

4.42 show dot11 mbssid

ꜝ ˜ Ţ˛ á㊚BSS˚ ˊ

show dot11 mbssid

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ƛ ᐟ˙ 1

Æ ɾ ˝YṀ -

ب ل ᵹ æ 1 χꜝ ˜ Ţ˛ á㊚BSS˚ ˊ

```
Ruijie# show dot11 mbssid
   name: Dot11radio 47/0.1
wlan id: 1
   ssid: ssid-wlan-2
  bssid: 0a0c.3067.fbbf
```

È ᵻ ɹ ᵩ χ

È ᵻ	ب ˝
name	ḫ ɻ Ḏ ì Æ ᵾ ϟ
wlan id	WLAN ID
ssid	˙O ᑎ ﻭ ‰ ⅋
bssid	BSS㊚‰ ⅋

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ ap ˇḢ˙Y

4.43 show dot11 wireless

ꜝ ˜ ḫ ɻ ل ɹ˃ ʜ ḫ ɻ ʒ Ụ ᐧ ب ل

show dot11 wireless *interface-num*

v ̈Ọ ̆ ̈

v ̈Ọ	ώ ك
Interface-num	ṇ ᵻ ڎ ì Æ ı † Ă ᵿ radioid/0

ᵘ ɲ ₩ Ă ᵉ ₩ Ă

ƛ ᵑ̣ 1

Æ ŧ ̋ Y Ṁ -

ᵬ ᒑ ڎ æ 1 χ ¶ ˜ radio 1 ⊠ ʜ ṇ ᵻ ʒ Ụ ⁼ ᵬ ᒑ

```
Ruijie# show dot11 wireless 1/0
Network Name (SSID): NULL
    Interface..................... Dot11radio 1/0
    Vlan (group) id.............. 0
    MAC Address................... 000c.3067.fbbf
    Beacon Period................. 100
    RTS Threshold................. 2347
    Fragment Threshold............ 2346
    Radio Mode.................... 11ng_ht20
    Channel....................... 2412(1)
    Noise Floor................... -103 dBm
    Channel width................. 20Mhz
    Current Tx Power Level....... 100%
    Current CCA .................. 28
Tx/Rx Chain:
    Antenna Gain.................. 3
    Tx Chain Mask................. 0x3
    Num of Antenna Tx............. 2
    Rx Chain Mask................. 0x3
    Num of Antenna Rx............. 2
Power Save:
    DTIM Period................... 1
    DTIM Count.................... 0
    Stations In Power Save....... 0
    Stations Total................ 0
11n Aggregation:
    A-mpdu Status................. Enable
Tx Retries:
    Tx short    retries.......... 7
    Tx long     retries.......... 4
Total Stations:
```

4.44 show dot11 wlan

¶ ˜ wlan˺ ԋ ɲ ɻ ʒ Ụ ⁼ ٻ ɻ

show dot11 wlan *wlan-id*

v ̋Ọ ب ″	v ̋Ọ	ώ ك
	Wlan-id	″Y ẖ¶ ˜ ⊞ wlan

ᵘ ɲь₩ Ẽ ⁄ ₩ Ẽ

ƛ ʌ˳ 1

Æ ɨ ″Y Ṁ -

ٻ ɻ ʓ æ 1 χ¶ ˜ wlan 2˺ ԋ ɲ ɻ ʒ Ụ ⁼ ٻ ɻ

```
11n Aggregation:
    A-mpdu Status.............. Enable
Tx Retries:
    Tx short    retries..... 7
    Tx long     retries..... 4
Total Stations:
    Total...................... 0
    Non-ERP.................... 0
    Non-HT..................... 0
    HT20....................... 0
```

È ɟ ɹ ᵩ Χ

È ɟ	ب ˝
Network Name (SSID)	Ḿ Ẓ BSS ‰ Ỿ
Interface	ì Æ ʁ Ɋ
Vlan (group) id	ɻ ḧ VLAN ǎ ȃ VLAN GROUP
MAC Address	ḫ ɻ Ḍ ì Æ MAC ş ɣ
Beacon Period	Beacon ṿ ʌ گ ᵕ Ω
RTS Threshold	ɭ ¨EΦ RTS/CTS ṓ ė ώ ṇ ¨Ω Ỡ ṿ ɜ ỷ
Fragment Threshold	ʿ ɑ Ө
Radio Mode	ṃ ḷ Æ ₩ Ã
Channel	Ṫ Ă ʒ ȣ
Noise Floor	ȸ ˍ
Channel width	Ṿ Ḵ
Current Tx Power Level	Ẹ˙ ı ' ˜ ʿ Ө
Mcast rate	ɻ ¨Ḥ ȣ '
Current CCA	CCA Ө
Antenna Gain	ȝ ɻ ɯ `
Tx Chain Mask	ʌ گ ȝ ɻ ọ
Num of Antenna Tx	ʌ گ ȝ ɻ ¨Ω
Rx Chain Mask	ì ώ ȝ ɻ ọ
Num of Antenna Rx	ì ώ ȝ ɻ ¨Ω
DTIM Period	DTIM ᵕ Ω
DTIM Count	DTIM Ѧ ¨Ω
Stations In Power Save	` ɔ STA Ѧ ¨Ω
Stations Total	STA Ở ¨Ω
A-mpdu Status	A-MPDU ǐ ᵀ ↑ õ
Tx short retries	˜ ṿ ᵽ ҿ ¨Ω
Tx long retries	ɜ ṿ ᵽ ҿ ¨Ω
Total	Ẹ˙ ṃ ḷ Æ STA Ở ¨Ω
Non-ERP	Ẹ˙ ṃ ḷ Æ ˢ 11G ï STA Ѧ ¨Ω
Non-HT	Ẹ˙ ṃ ḷ Æ ˢ 11N ï STA Ѧ ¨Ω

HT20	Ẹ̇ ṃ ị Æ 11N 20M ị Ḳ ï STA Ⱥ Ậ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ ap ˇḢ˙Y

4.45 show ebag

ꟾ ˜ ɔ Ḍ ₩ ɣ˾ ʜ ḫ ɻ ʒ Ụ ⁼ ڀ ڶ

show ebag

v ˝Ọب ˝

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-

5 DATA-PLANE

5.1 data-plane

ᵽ ⅃ ӧ Ḥ ᶎ ∧ ⅝ᵽ

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

ɾ Ӓ ˡ Ɋ ɾ Ỉ ᵘ ᖘ **no** J̌ ˚ ف ⊃ ∨ Ӱ ᴎ ⅄ Ө

no data-plane queue-weight

ᵽ ⅃ ӧ Ḥ ᶎ ∧ ᖘW ⁿ ̈ Ӓ ᵕ Ω ⊐ Й Ӱ

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

ɾ Ӓ ˡ Ɋ ɾ Ỉ ᵘ ᖘ **no** J̌ ˚ ف ⊃ ∨ Ӱ ᴎ ⅄ Ө

no data-plane token

ᵽ ⅃ ӧ Ḥ ᵑ ɻ ᶎ ∧ Ⅵ ɀ

data-plane wireless-broadcast { **enable** | **disable** }

ɾ Ӓ ˡ Ɋ ɾ Ỉ ᵘ ᖘ **no** J̌ ˚ ⊓ ╦ Ṅ Ӓ õ ӧ Ḥ ᵇ Ⅵ Æ ᶎ ∧

no data-plane wireless-broadcast

∨ Ӱ ᵽ ˮ

∨ Ӱ	ѽ ك
queue-weight	ᵽ ⅃ ȷ ª ɻ ʒ ĭ ă̈ ӧ Ḥ ᶎ ∧ ⅝ᵽ
wireless-broadcast	ᵽ ⅃ ĩ ε Ṅ Ӓ õ ӧ Ḥ ĭ ă̈ ᶎ ∧ ˙ Ⅵ Æ
unicast-packet-weight	ɒ Ḥ ĭ ă̈ ᶎ ∧ ⅝ᵽ ı ̤ ᵬ ᴎ 1-100 ı ⅄ Ө ᴎ 16
multicast-packet-weight	ɻ Ḥ ĭ ă̈ ᶎ ∧ ⅝ᵽ ı ̤ ᵬ ᴎ 1-50 ı ⅄ Ө ᴎ 4
broadcast-packet-weight	ӧ Ḥ ĭ ă̈ ᶎ ∧ ⅝ᵽ ı ̤ ᵬ ᴎ 1-50 ı ⅄ Ө ᴎ 2

ȷ ˥. 15

Æ ɾ ˝YṀ -

ب ɻ ʒ æ 1 χ ֆ ɻ j ª ˥ ʒ ï ă ӧ Ḥ ҷ ʌ ٮ ı ª Ḥ Ã ᵏ ᵇ Ⱳ Æ ҷ ʌ Ä õ ӧ Ḥ ï ă

```
Ruijie(config)#data-plane queue-weight 100 50 50 25 25
Ruijie(config)#data-plane token 10 10
Ruijie(config)#data-plane wireless-broadcast enable
```

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Ẃ ȸ ҷ ئ -

Ẉ ᴶ ب ˝ -

Æ ŧ ˝ Y Ṁ	ٮ ل WLOG ı ĺ Æ ĺ ɦ ڤ Φ ɲ è ⃞ Ĺ ʿ ٮ ḅ ' ɲ è j ᶻ ı ¸ WLOG ı ĺ Ṅ Æ ĺ ¦ م WLOG ı ĺ ћ ъ ɦ ڤ Φ Ä ѿ è Ч ȝ Ụ ɲ è ћ ȝ Ĺ ʿ ٮ ل ɲ è ⃞ ¸ ѽ
ٮ ل ʒ̈ æ	1 χ ٮ ل WLOG ı ĺ À ᵏ ћ ћ ъ

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)#wlan diag enable
Ruijie(config)#no wlan diag enable
```

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Ẃ ȸ ᴇ ئ	-
Ẉ ᴶ ب ˝	-

-WLAN

WLAN

1.
2.

1

1.1 schedule session

WLAN session

schedule session *sid*

WLAN session

no schedule session *sid*

sid	session ID AP [1 8]
radio *mem*	session Radio ID [1 AP Radio] AP Radio

session

WLAN Radio session

WLAN AP

14

session session

session

session WLAN WLAN session

AP session

session WLAN Radio session

1 session 1

```
Ruijie(config)# schedule session 1
```

2 WLAN 1 session 1

```
Ruijie(config)# wlan-config 1
Ruijie(config-wlan)# schedule session 1
```

3 AP Radio 1 session 1

```
Ruijie(config-if-Dot11radio 1/0)# schedule session 1
```

session

session 8

1 session 1 21 30 8 50

```
Ruijie(config)# schedule session 1 time-range 1 period sun to sat time 21:30 to 8:50
```

2 session 1 22 00 6 00 18 00 9 00

```
Ruijie(config)# schedule session 1 time-range 1 period mon to fri time 22:00 to 6:00
Ruijie(config)# schedule session 1 time-range 2 period sat to sun time 18:00 to 9:00
```

3 session 1 10 00 12 00

```
Ruijie(config)# schedule session 1 time-range 1 period mon time 10:00 to 12:00
Ruijie(config)# schedule session 1 time-range 2 period wed time 10:00 to 12:00
Ruijie(config)# schedule session 1 time-range 3 period fri time 10:00 to 12:00
```

1 **show schedule session** session

1 session

-

-

1.3 show schedule session

session

show schedule session [*sid*]

sid	session ID [1 64] session

1

session

“ Sun to Sat ”

1 session

```
Ruijie# show schedule session
Schedule Session 1:
  time-range 1 period mon time 10:00 to 12:00
  time-range 2 period wed time 10:00 to 12:00
Schedule Session 2:
  time-range 1 period Sun to Sat time 00:00 to 09:00
```

Schedule Session	session ID
time-range	session
period	session
time	session

-

-

2

2.1 band-select acceptable-rssi

STA

band-select acceptable-rssi *value*

STA

no band-select acceptable-rssi

value	STA RSSI [-100 -50] dBm

-80 dBm

14

“ ” “ ” STA RSSI

STA STA RSSI STA

▲

2.2 band-select access-denial

STA 2.4G

band-select access-denial *value*

STA 2.4G

no band-select access-denial

value	STA 2.4G [0 10]

2

14

STA 2.4G STA 2.4G

n AP STA 2.4G n

▲ STA

1 STA 2.4G 4

```
Ruijie(config)# band-select access-denial 4
```

1 **show running-config** STA 2.4G

2 **show band-select configuration** STA 2.4G

-

-

-

2.3 band-select age-out

STA

band-select age-out { **dual-band** *value* **| suppression** *value* }

STA

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

dual-band *value*	STA [20 120]
suppression *value*	STA [10 60]

dual-band 60
suppression 20

14

STA STA AP STA
2.4G 5G
2.4G 5G

STA STA

1 STA 120

```
Ruijie(config)# band-select age-out dual-band 120
```

2 STA 60

```
Ruijie(config)# band-select age-out suppression 60
```

1 **show running-config**

-	-

WLAN

14

1 WLAN AP AP

2 WLAN AP Radio

WLAN

WLAN 2.4G AP AP STA

5G

1 WLAN 1

```
Ruijie(config)# wlan-config 1
Ruijie(config-wlan)# band-select enable
```

2 WLAN 1

```
Ruijie(config)# wlan-config 1
Ruijie(config-wlan)# no band-select enable
```

1 **show running-config** WLAN

2 **show wlan-config cb** *wlan-id* WLAN

-

-

-

2.5 band-select probe-count

STA

band-select probe-count *value*

STA

no ba

14

STA WLAN STA
STA

2.4G STA WLAN STA

1 STA 1

```
Ruijie(config)# band-select scan-cycle 1
```

1 **show running-config** STA
2 **show band-select configuration** STA

-

-

-

2.7 show band-select configuration

show band-select configuration

-	-

1

```
  Access Denial Count..................................... 0
  Age Out Dual Band (seconds)............................. 60
  Age Out Suppression (seconds)........................... 20
  Probe Cycle Count....................................... 2
  Scan Cycle Period Threshold (milliseconds).............. 200
```

Acceptable Client RSSI	STA
Access Denial Count	STA 2.4G
Age Out Dual Band	STA
Age Out Suppression	STA
Probe Cycle Count	STA
Scan Cycle Period Threshold	STA

-

-

2.8 show band-select statistics

show band-select statistics

-	-

1

1

```
Ruijie# show band-select statistics
Band Select Statistics
  Number of dual band client.............................. 4
  Number of dual band client added........................ 132
  Number of dual band client expired...................... 128
  Number of suppressed client............................. 6
  Number of suppressed client added...................... 234
```

```
Number of suppressed client expired..................... 228
```

Number of dual band client	STA
Number of dual band client added	STA
Number of dual band client expired	STA
Number of suppressed client	STA
Number of suppressed client added	STA
Number of suppressed client expired	STA

-

-

ħυ ȝ ӒĄ-WLAN ѽ

WLAN

1. RSNA
2. CPP
3. NFPP

1 RSNA

1.1 authtimeout forbidcount

ٻ ل ₭ ά έ key ، م ª ˆ ₿ ĩ ₭ ″Ω

authtimeout forbidcount *count*

ὐ ٻ ل

no authtimeout forbidcount

Õ″ ʰ ǰ ٻ ل

default authtimeout forbidcount

″Ω ب ″	″Ω	ώ ك
	count	₭ ά έ key ، م ª ˆ ₿ ĩ ₭ ″Ω

ǰ ٻ ل ₭ ά έ key ، م ª ˆ ₿ ĩ ₭ ″Ωѫ 10 ₭

ɲ ₩ Ã WLAN Ḡ ٻ ل ₩ Ã

ǰ ۱ 14

ɨ ″ YṀ -

ٻ ل 1 χ ٻ ل ₭ ά έ key ، م ª ˆ ₿ ĩ ₭ ″Ωѫ 5 ₭

```
Ruijie(config-wlansec)#authtimeout forbidcount 5
```

ₛ ج Ά | 1 χ ɨ **show running-config** ɲ ۱ ₢ ˜ ٻ ل ĩ ۱ ὤ

ώ˜ Ụ -

Ẃ ȍ ج ئ -

Ẉ ᴶ ب ″ -

1.2 authtimeout forbidtime

ٻ ل ₭ ά έ key ، م ª ˆ ₿ ĩ H ژ ژ ك ₢ ۷ ѫ

authtimeout forbidtime *time*

‴Ϙب	‴Ϙ	ώك
	count	۱ٰΗ ؚ ۽ ï ă ي Ҝ‴Ϙ

ǰ ٻ۱ 7 Ҝ

ɲЬ₩Ã WLAN Ḡ ٻ۱₩Ã

ǰ ۱ 14

ŧ ‴YṀ -

ٻ۱ 1χ ٻ۱ ۱ٰΗ ؚ ۽ ï ă ي Ҝ‴Ϙ₭ 5 Ҝ

```
Ruijie(config-wlansec)#authtimeout groupcount 5
```

ₓ ڃ Ä | 1χ ŧ **show running-config** ɲЬ ˡ Ϙ¶ ˜ ٻ۱ ĩ ۱ ѽ

ώ˜ Ụ -

Ẃ ծ ڃ ئ -

Ẉ ᴶ ب ‴ -

1.4 authtimeout grouptime

ٻ۱ ۱ٰΗ ؚ ۽ ï ă ٨ ̀Η ̀Η ژ Ϙ ← ٧₭

authtimeout grouptime *timeout*

ծٻ۱

no authtimeout grouptime

Õ″ ᵸ ǰ ٻ۱

default authtimeout grouptime

‴Ϙب	‴Ϙ	ώك
	timeout	۱ٰΗ ؚ ۽ ï ă ٨ ̀Η ̀Η ژ

ǰ ٻ۱ 1200ms

ɲЬ₩Ã WLAN Ḡ ٻ۱₩Ã

ǰ ۱ 14

	-
	1

```
Ruijie(config-wlansec)#authtimeout grouptime 100
```

	1 **show running-config**
	-
	-
	-

1.5 authtimeout paircount

authtimeout paircount *count*

no authtimeout paircount

default authtimeout paircount

count	

	7
WLAN	
	14
	-
	1 5

```
Ruijie(config-wlansec)#authtimeout paircount 5
```

	1 **show running-config**

	enable	RSN
	disable	RSN

RSN

WLAN

14

RSN

RSN

RSN WPA2 WLAN WPA RSN

1 WLAN 1 RSN

```
Ruijie(config)#wlansec 1
Ruijie(config-wlansec)#security rsn enable
```

1 **show running-config**

1 WLAN WEP RSN

```
wlan security is static wep, can't config other security mode
```

1 WLAN WEP

-

1.9 security rsn akm

RSN PSK

security rsn akm psk enable

RSN PSK

security rsn akm psk disable

RSN 802.1x

security rsn akm 802.1x enable

RSN 802.1x

security rsn akm 802.1x disable

psk	PSK
802.1x	802.1x
enable	RSN
disable	RSN

WLAN

14

RSN PSK 802.1x

RSN

WLAN

1 WLAN 1 RSN PSK

```
Ruijie(config-wlansec)#security rsn akm psk enable
```

2 WLAN 2 RSN 802.1x

```
Ruijie(config-wlansec)#security rsn akm 802.1x enable
```

1 **show running-config**

1 WLAN RSN

```
Ruijie(config)#wlansec 1
Ruijie(config-wlansec)#security rsn akm psk enable
WLAN 1 rsn is disable.
```

2 WLAN

```
Ruijie(config-wlansec)#security rsn akm psk enable
Ruijie(config-wlansec)#security rsn akm 802.1x enable
Wlan 1 has config psk, can not config 1x.
```

1 WLAN RSN

2 WLAN

Ẉ ᴶ ب ″ -

1.10 security rsn akm psk set-key

ٻ ل RSN PSK ɲ - Ά Ã ï ▯ Ļ

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

″Ϙ ب ″

″Ϙ	ώ ك
ascii	″Y ẗ PSK Ļ ė Ã ѫ ASCIỊ
ascii-key	ASCIỊ ė Ã ▯ Ļ ذ ỷ ں ѫ 8--63 ASCIỊ È ۱
hex	″Y ẗ PSK Ļ ė Ã ѫ Лىف È ۱
hex-key	Лىف ė Ã ▯ Ļ ذ ỷ ọ ء ѫ 64 Лىف È ۱

ỉ ٻ ل ή

ɲ₩Ã WLAN Ḡ ٻ ل ₩ Ã

ỉ ۱ 14

ŧ ″YṀ õ Ầ PSK ɲ - Ά Ã ̀H ف Ļ ٤ ۱ ѽ

ASCIỊ ė Ã ▯ Ļ ذ ỷ ں ѫ 8--63 ASCIỊ È ۱

Лىف ė Ã ▯ Ļ ذ ỷ ọ ء ѫ 64 Лىف È ۱

ٻ ل 1 χ ٻ ل WLAN 1 RSN ▯ Ļ ѫ 12345678

```
Ruijie(config)#wlansec 1
Ruijie(config-wlansec)#security rsn enable
Ruijie(config-wlansec)#security rsn akm psk enable
Ruijie(config-wlansec)#security rsn akm psk set-key ascii 12345678
```

ₛ ج Ά | 1 χ ŧ **show running-config** ɲь ˈ ℚ ˜ ٻ ل ĩ ۱ ѽ

ώ˜ Ụ 1 χ ḅ ˈ ASCIỊ ė Ã ▯ Ļ ذ ỷ j ’ 8 È ۱ ώ˜ ج ئ

```
Ruijie(config-wlansec)#security rsn akm psk set-key ascii 1234567
ASCII PSK length must be not less than 8 (7).
```

2 χ ḅ ˈ Лىف ė Ã ▯ Ļ ذ ỷ j ĩ 64 Лىف È ۱ ώ˜ ج ئ

```
Ruijie(config-wlansec)# security rsn akm psk set-key hex
0123456789abcdef0123456789abcdef0123456789abcdef0123456789abcde
Hex PSK length must be 64.
```

Ẃ ð چ ئ 1 χ ˈ ŕ RSN ɲ - ₩ Ã ő ﺑ ﻝ RSN PSK ę̄
2 χ ASCII ė Ã ę̄ ţ ỷ j ′ 8 È ﻝ ğ ﺍ ص 63 È ﻝ
3 χ ภ ف ė Ã ę̄ ţ ỷ j ĩ 64 ภ ف È ﻝ

Ẉ ﺝ ب ˝ -

1.11 security rsn ciphers

ﺑ ﻝ RSN ɲ - ₩ Ã ï ţ ę̄ Ά Ã ѭ AES
security rsn ciphers aes enable

ڎ RSN ɲ - ₩ Ã ï AES ŕ ę̄ Ά Ã
security rsn ciphers aes disable

ﺑ ﻝ RSN ɲ - ₩ Ã ï ţ ę̄ Ά Ã ѭ TKIP
security rsn ciphers tkip enable

ڎ RSN ɲ - ₩ Ã ï TKIP ŕ ę̄ Ά Ã

ώ˜ Ụ 1χ ḅ ' WLAN Ḡ ﺒﻟ₩Ǎ ï ' ŧ RSN ռ - ﺒﻟ RSN ₩Ǎ㏂ŧ Ḻ Ά Ǎ ̀Hώ˜ ჯ ئ

```
Ruijie(config)#wlansec 1
Ruijie(config-wlansec)#security rsn ciphers aes enable
WLAN 1 rsn is disable.
```

Ẃ ȍ ჯ ئ 1χWLAN Ḡ ﺒﻟ₩Ǎ ï ' ŧ RSN ռ - ȍﺒﻟ RSN ŧ Ḻ Ά Ǎ
2χWLAN Ḡ ﺒﻟ₩Ǎ ŧ RSN ռ - ↄ ≡ ῶﺒﻟ ŧ Ḻ Ά Ǎ Ṁ₇ ﻝ ﻠ ṇ | ǐ ṇ ﻝ ﻝ ﻡ

Ẉ ʲ ب ˝ -

1.12 security static-wep-key authentication

ﺒﻟ WLAN ˗ õ WEP ₩Ǎ ï ㏂ﺝ ﺚ - Ά Ǎ
security static-wep-key authentication { **open** | **share-key** }

˝Ọب ˝

˝Ọ	ώ ك
open	ﺒﻟ Ằ ᾠ ﻝ ﻡ ﺝ ﺚ - Ά Ǎ
share-key	ﺒﻟ Ḻ ﺩ ﺝ ﺚ - Ά Ǎ

ỉ ﺒﻟ ỉ ㎞ Ằ ᾠ ﻝ ﻡ ﺝ ﺚ - Ά Ǎ

ḅ₩Ǎ WLAN Ḡ ﺒﻟ₩Ǎ

ỉ ﻠ 14

ŧ ˝YṀ ف ḅ ا **security static-wep-key encryption** ∨ ŧ ħ ﺒﻟ Ḣ ˗ õ WEP Ḻ ﺩ ª ﻉ ǐ ﺒﻟ ﺝ ﺚ - Ά Ǎ
ṇ ˗ õ WEP ₩Ǎ ᵘ ㏂ Ḛ Ḡ ﺒﻟ₩Ǎ ṇ | ﺒﻟ ﺝ ﺚ - Ά Ǎ

ﺒﻟ 1χﺒﻟ WLAN 1 ㏂ﺝ ﺚ - Ά Ǎ ㎞ Ḻ ﺩ

```
Ruijie(config-wlansec)#security static-wep-key authentication share-key
```

ₔ ჯ Ά | 1χ ŧ **show running-config** ḅ ' ⁋ ˜ ﺒﻟ ǐ ﻫ ᾏ

ώ˜ Ụ 1χ ḅ ' ' ﺒﻟ ŧ WEP ȍﺒﻟ ﺝ ﺚ - Ά Ǎ ώ˜ ჯ ئ

```
Fail to setup WEP authmode, not in static WEP security mode (1).
```

Ẃ ȍ ჯ ئ 1χ ' ﺒﻟ ŧ ˗ õ WEP ₩Ǎ ȍﺒﻟ ﺝ ﺚ - Ά Ǎ

Ẉ ʲ ب ˝ -

1.13 security static-wep-key encryption

ب۪ل WLAN ٫ ـّ õ WEP ₩Ã ª ٰHب۪ل ـّ õ WEP Ļ

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

ٞQب ″

ٞQ	ѡ ك
key-length	Ļ ذ ỷ ĩ ⅝ ء ا Ҩ ѫ 40 ẵ 104
ascii	Ļ ė Ã̈ ѫ ASCIị
hex	Ļ ė Ã̈ ѫ 16 ف È ١
key-index	Ļ ۣ ١ Ậ ب۪ل ĩ χ 1--4
key	Ļ ٞQ̃Ω

ǰ ب۪ل ' ٫ ـّ õ WEP ₩Ã

ɲЪ₩Ã WLAN Ḡ ب۪ل ₩Ã

ǰ ١ 14

٫ ″YṀ ف۪ ɲЪ ب۪ل ـّ õ WEP Ļ ۣ ª ٰH ٫ ـّ õ

-

1.14 security wpa

WLAN - WPA -

security wpa enable

WPA -

security wpa disable

enable	WPA -
disable	WPA -

WPA -

WLAN WPA -

14

WPA -

WPA - WPA

WPA - WPA WLAN WPA -

WLAN WPA RSN - WPA - WPA -

1 WLAN 1 - WPA -

```
Ruijie(config)#wlansec 1
Ruijie(config-wlansec)#security wpa enable
```

1 **show running-config**

1 WLAN WEP WPA - WPA -

```
wlan security is static wep, can't config other security mode
```

1 WLAN WEP

-

1.15 security wpa akm

ب ل WPA ɲ - ₩ Ã ï OBJ ì ɲ - Á Ã ㎞ PSK ɲ -

security wpa akm psk enable

ڎ WPA ɲ - ₩ Ã ï OBJ PSK ì ɲ - Á Ã

security wpa akm psk disable Ã ㎞

```
WLAN 1 wpa is disable.
```

2χ Ḅ ' WLAN Ḡ ﺏﻝ₩Ǎ ï Ţ ﻝ Ǎ ﻟ ì ɲ - Ǻ Ǎ Ǎ ﻟ ì ɲ - Ǻ Ǎ ̀H ώ ̃ ﻕ ئ

```
Ruijie(config-wlansec)#security wpa akm psk enable
Ruijie(config-wlansec)#security wpa akm 802.1x enable
Wlan 1 has config psk, can not config 1x.
```

Ẃ ȍ ﻕ ئ 1χ WLAN Ḡ ﺏﻝ₩Ǎ ï ' ɨ WPA ɲ - ő ﺏﻝ ì ɲ - Ǻ Ǎ

2χ WLAN Ḡ ﺏﻝ₩Ǎ ï Ţ ﻝ Ǎ ﻟ ì ɲ - Ǻ Ǎ ḛ | ﺏﻝ ﻟ ì ɲ - Ǻ Ǎ

Ẉ ﻝ ﺏ ″ -

1.16 security wpa akm psk set-key

ﺏﻝ WPA PSK ɲ - Ǻ Ǎ ï ⊞ Ḻ

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

″Ɋ ﺏ ″

″Ɋ	ώ ك
ascii	″Y ḧ

ٴ ″YṀ ف ɲ Ĩ ٴ↱ ٴ WPA ɲ - ₩Ã ï ⃞ ɪ Ļ Ά Ã õ AES TKIP ٦ ɪ Ļ Ά Ã
WLAN Ḡ ٮ ⅄₩Ã ï ˡ ª ʽH Ã AES TKIP ٦ ɪ Ļ Ά Ã

ٮ ⅄ 1 χ ٮ ⅄ WLAN 1 WPA ɲ - ₩Ã ï ⃞ ɪ Ļ Ά Ã ㎞ AES

```
Ruijie(config)#wlansec 1
Ruijie(config-wlansec)#security wpa enable
Ruijie(config-wlansec)#security wpa ciphers aes enable
```

ₛ ⇂ Ά | 1 χ ٴ **show running-config** ɲ ˡ Ⓠ↑ ~ ٮ ⅄ Ĩ ٤ ᾗ

ώ~ Ụ 1 χ ḅ ˈ WLAN Ḡ ٮ ⅄₩Ã ï ˈ ٴ WPA ɲ - ٮ ⅄ WPA ₩Ã ⃞ ɪ Ļ Ά Ã ʽH ώ~ ⇂ ئ

```
Ruijie(config)#wlansec 1
Ruijie(config-wlansec)#security wpa ciphers aes enable
WLAN 1 wpa is disable.
```

Ẃ ȸ ⇂ ئ 1 χ WLAN Ḡ ٮ ⅄₩Ã ï ˈ ٴ WPA ɲ - ȸ ٮ ⅄ WPA ɪ Ļ Ά Ã
2 χ WLAN Ḡ ٮ ⅄₩Ã ٴ WPA ɲ - ↄ ≡ ῶ ٮ ⅄ ɪ Ļ Ά Ã Ṁ ⅄ ٦ ṇ | Ỉ ṇ ٤ ⅄ ⅄

Ẉ ᴶ ب ″ -

1.18 show wclient security

↑ ~ STA ⃞ Ḡ ٮ ⅄ Ụ
show wclient security *mac-address*

″Ọ ب ″

″Ọ	ώ ك
mac-address	″A ⌊↑ ~ ⃞ STA ⃞ MAC

ɲ ₩Ã ᵉ ₩Ã ṕ ₩Ã WLAN Ḡ ٮ ⅄₩Ã

⅄ ٤ 1

ٴ ″YṀ ٴ Ỉ ɲ ˡ Ⓠ↑ ~ STA ⃞ ɲ - Ĩ Ḣ ă Ḡ ٧ ⅄ WPA ν ʽḢ ɪ Ļ ₎ EAP ٩ ٦ Ụ

ٮ ⅄ 1 χ ↑ ~ STA(3848.4c48.d953) ⃞ Ḡ ٮ ⅄ Ụ

```
Ruijie# show wclient security 3848.4c48.d953
Security policy finished      :TRUE
Security policy type          :PSK
Security WPA version          :WPA2
Security Ucast cipher         :CCMP
Security EAP type             :NONE
```

È ɟ ɹ ᵩ χ

È ɟ	ب ˝
Security policy finished	ɲ - ĩ Ḣ ă
Security policy type	Ḡ ᛘ ᚣ
Security WPA version	WPA ᴠ
Securit Ucast cipher	Ḥ ɾ Ḻ˳
Security EAP type	EAP ɻ

ώ˜ Ụ 1 χ ḅ ' ⱷ ᵵ i ≡ ῶ STA Ụ ώ˜ ڃ ئ

```
Ruijie#show wclient security 3848.4c48.d953
No station info for this MAC  :3848.4c48.d953
```

Ẉ ᴶ ب ˝ -

1.19 show wlan security

Ǐ ˜ WLAN Ḡ ٻ ل Ụ

show wlan security *wlan-id*

˝Ọ ب ˝	˝Ọ	ώ ك
	wlan-id	˝A ɻ ˜ WLAN ID

ɲ ₩ Ẽ ᵋ ₩ Ẽ ṕ ₩ Ẽ WLAN Ḡ ٻ ل ₩ Ẽ

ⱨ ɻ 1

WLAN SSID	WLAN SSID
Security Policy	WLAN
WPA version	WPA
AKM type	AKM
pairwise cipher type	
group cipher type	
wpa_passphrase_len	
wpa_passphrase	PSK
group key	WLAN

1

```
Ruijie#show wlan security 2
No wlan config for this wlanid (2).
```

-

1.20 webauth prevent-jitter

WLAN WEB

webauth prevent-jitter *timeout*

WEB

no webauth prevent-jitter

default webauth prevent-jitter

timeout	WEB timeout 0s---86400s (*timeout* 0 WEB)

WEB 300

ﺑﻞ	1 χ ﺑﻞ WLAN 1 WEB ﻥ - ﮒ H`H ژ 900 ﻯ Ruijie(config)#wlansec 1 Ruijie(config-wlansec)#webauth Ruijie(config-wlansec)#webauth prevent-jitter 900
ﺱ ﺝ Á |	1 χ ﺭ **show running-config** ﺏ ﺍ ﷺ ~ ﺑﻞ ﺎ ﺍ ﷺ
ώ~ Ụ	1 χ ḅ ' ' ﺭ WEB ﻥ - ő ﺑﻞ WEB ﻥ - ﮒ H`H ژ ¨Ω ώ~ ﺝ ئ Ruijie(config-wlansec)#webauth prevent-jitter 900 Please config webauth first!
Ẃ ở ﺝ ئ	1 χ ' ﺭ WEB ﻥ - ő ﺑﻞ WEB ﻥ - ﮒ H`H ژ
Ẉ ᴶ ﺏ ˝	-

1.21 wlansec

ﺹ wlansec ﺏﻑ ˝Y ḧ WLAN Ḡ ﺑﻞ ₩ Ǎ
wlansec *wlan-id*

ﺵ Ḡ ﺑﻞ ₩ Ǎ
no wlansec *wlan-id*

Õ ᵸ ﻝ ﺑﻞ
default wlansec *wlan-id*

¨Ω ﺏ ˝

₅ ڃ Ά |	1 χ ɾ **show wlan security** 1 ɲ ˡ ℚ¶ ˜ WLAN 1 ⅜Ḡ ٻ ﻝ ₩ Ǎ ĩ á ă ı
ώ˜ Ụ	1 χ ḅ ˈ ¨A ı ٻ ﻝ Ḡ ٻ ﻝ ₩ Ǎ ⅜ WLAN ˈ á ώ˜ ڃ ئ
	Ruijie(config)#wlansec 2 Ruijie(config)#No wlan or no ssid for this wlanid(2).
Ẃ ծ ڃ ئ	1 χ ¨A ı ٻ ﻝ Ḡ ٻ ﻝ ₩ Ǎ ⅜ WLAN ˈ á
Ẉ ᴶ ب ˝	-

2 CPP

2.1 cpu-protect type pps

ٻ ـل CPU ٤ ì ώ˝Y ḧ ١ ĭ ă ⦋OBJ⦌Ṿ Ḵ

cpu-protect type { **arp** | **þpdu**

2.3 show cpu-protect type

Ǐ ~ ˝Ƴ ḧ ɻ ▩ ǐ ă ʌ ɯ

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

˝Ϙ ˝

Ẉ ᴶ ب ˝ -

3 NFPP

3.1 arp-guard attack-threshold

ٻ ـ ṕ ۏ` ↨ ۱ o Ẹ ĭ ă ۿ ỷ ۸ ص ۏ` ↨ ۱ Н ɲ ʁ è ۏ` Φ ʁ

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

ɒ ۏ` ↨ ۱ ٻ ـ Õ ʯ ﾉ ٻ ـ

no arp-guard attack-threshold { **per-src-ip** | **per-src-mac** | **}**

Ẃ ȣ ȝ ȣ -

Ẉ ʲ ب ˇ -

3.2 arp-guard enable

Í ɲ ɾ ˀ ṕ ĕ Ȃ ARP ı ᾠ ` ı ǐ
arp-guard enable

ȣ ARP ı ᾠ ` ı ǐ
no arp-guard enable

Õ ʰ ȷ̀ ب ɻ
default arp-guard enable

Ẅ ب ˇ

3.3 arp-guard isolate-period

Í ɲьґ؛ ٮ⊿ ṕ ڭ ٰН ژ

arp-guard isolate-period { *seconds* | **permanent** }

ъ ڭ ٰН ژ ٮ⊿ Õ ᵾ ỉ ٮ⊿

no arp-guard isolate-period

Õ ᵾ ỉ ٮ⊿

default arp-guard isolate-period

ˮQ ٮ ˮ

ˮQ	ѽ ڭ
seconds	ڭ ٰН ژ ĩ ∨ п ˵ ĩ 0 ă ă [30, 86400]
permanent	⇔ ڭ

ỉ ٮ⊿ ṕ ڭ ٰН ژ ỉ ĩ 0 o j ڭ

ɲ₩Ã NFPP ٮ⊿₩Ã

ъѡ ᶻ ᴘ ˇ í ڗ ̈Ѫ٭ل Õ ᵸ ƚ ٭ل

no arp-guard monitored-host-limit

Õ ᵸ ƚ ٭ل

default arp-guard monitored-host-limit

̈Ѫ٭ ˝

̈Ѫ	ѡ ڭ
number	˜Ḥ'Y▨ѡ ᶻ ᴘ ˇ í ڗ ̈Ѫ ɲ ˵ ₶ 1 4294967295

ƚ ٭ل ѡ ᶻ ᴘ ˇ í ڗ ̈Ѫѕ ɲ 1000

ɲ₩Ã NFPP ٭ل₩Ã

14

ь ' ᴘ %`Н ٦ ת̆ ̈Нᴘ ˇ í ڗ ▨ѡ ᶻ ̈Ѫ´ ֆ ل ă ڗ j ъ Ţ õ▨ᴘ ˇ

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# arp-guard monitored-host-limit 200
```

3.5 arp-guard monitor-period

Õ ʰ ƚ ٮ ـ

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

¨Ω ـ ¨	¨Ω	ش ك

no arp-guard scan-threshold

Õ ʉ ƚ ب ر

default arp-guard scan-threshold

ˮQ ب ˇ

ˮQ	ώ ك
pkt-cnt	ˮE ώ ‡ ر п ˵ ĩ [1,9999]

ƚ ب ر ƚ ˮE ώ ‡ ر ĩ 15 `H ژ ĩ 10 ١

ɲ ₩ Ă NFPP ب ر ₩ Ă

ƚ ر 14

ŧ ˮY Ṁ þ ' 10 ١ ت ώ 15 Ꙍ i ARP ï ă ج ث Ṗ ◊ MAC ḧ ă ◊ IP ψ ă ă ج ث Ṗ ◊ MAC ◊ IP ḧ ă ´ ‰ IP j Ă ψ ð ɲ ㎞ ω̃ ˮE ώ ת

ب ر 1 χ ب ر ARP i ѽ` ˮE ώ ‡ ر ㎞ 20pps

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# arp-guard scan-threshold 20
```

ₛ ج Ä | ŧ **show nfpp arp-guard summary** ¶ ˜ ب ر Ụ

ώ˜ Ụ -

Ẃ ð ج ئ -

Ẉ ᴶ ب ˇ -

3.8 arp-guard trusted-host

þ ' ٦ ת Ů `Ω Ḿ • ᴶ ڎ j ڤ Φ ˇ í o Ḿ Ǐ ڎ ´ ˜ ا Ꙍ ن ص أ ɲ ب ر

arp-guard trusted-host *ip mac*

ڻ j ˇ í ا ڎ

no arp-guard trusted-host { **all** | *ip mac* }

▌ڻ j ˇ í ا ڎ

default arp-guard trusted-host

˝Ω.ب ˝	˝Ω	ش ك
	ip	IP
	mac	MAC
	all	**no** ∨ ٢ ث˝Aõ ا ڭ ب ل

ﻷ ب ل -

ɲ₩Ã NFPP ب ل ₩Ã

ﻷ ١ 14

٢˝YṀ ḅ ' ١ ת Ű ̀ΩḾ • ل ڭ j ڤΦ ˘ í o Ḿ أ ڭ ˊ ~ ا ۞ ن ص أ ɲب ل أ ا ڭ
È CPU ARP ï ă Ṅ q ḛ È CPU j ھ ى ع ر ת
ω ^ ˜Ḥ'Y ф ل 500 ا ڭ

ب ل 1 χ ¨H IP ᚙ 1.1.1.1 MAC ᚙ

	14
	-
	1 VLAN 1 g 0/1 ARP

```
Ruijie# clear nfpp arp-guard hosts vlan 1 interface g0/1
```

show nfpp arp-guard hosts

-

3.11 clear nfpp dhcp-guard hosts

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

mac-address	MAC

ƚ ٮ ل -

ɲЂ₩Ã ⁄ ₩Ã

ƚ ١ 14

ŕ ¨YṀ þ ' j Ỵ ¨Ω ˊ ~ ▌ن¨A õ q ڭ ⊠ŕ ¨A

ٮ ل 1χ ¨H VLAN 1 ١ g 0/1 ⊠

```
Ruijie# clear nfpp icmp-guard hosts vlan 1 interface g 0/1
```

ɨ **show nfpp mp-guard hosts** ƭ ˜ ɨ Ä Ụ

-

-

-

3.14 clear nfpp ip-guard hosts

▌ɯ P ˘ í ƺ ḅ ' ƺ ɋ ƺ ɤ

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

Ṏ	ώ ك
vid	Ն Ό ṕ ل
interface-id	٧ ʁ Ч

ip-address IP ɴ

a808250694-1.727 Td( )Tj/C2_0 1 Tf0 Tc 0 -1.773 TD<66rC08120BE8D4 1 308250694

Ḵ ƭ ˜ ɨ Ä Ụ

3.15 clear nfpp log

▌Ⅵ NFPP ή Ő ﾒ

clear nfpp log

ΫΩب ˘

Ϋ Ω	ώ ك
-	-

ﾒ پ ﾙ -

ɲ₩Ã ₰ ₩Ã

ﾒ ﾘ 14

ŕ ˝YṀ -

پ ﾙ 1χ ▌Ⅵ NFPP ⃞ή Ő ﾒ

```
Ruijie# clear nfpp log
32 log-buffer entries were cleared.
```

₅ ج Ά | ŕ **show nfpp log**¶ ˜ ή Ő Ụ

ώ˜ Ụ -

Ẃ ծ ج ئ -

Ẉ ᴶ ب ˘ -

3.16 cpu-protect sub-interface percent

Ỉ ɲ ŕ¦ پ ﾙ ⅛ ヽ ﾘ ï ă ŕ ﾚ ⃞˜ ⅝

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

ტ ⅛ ヽ ﾘ ï ă ŕ ﾚ ⃞˜ ⅝پ ﾙ Õ ᵸ ﾒ پ ﾙ

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

Õ ᵸ ﾒ پ ﾙ

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

ΫΩب ˘

Ϋ Ω	ώ ك

manage	˝Y ḧ ٦ т ١
protocol	˝Y ḧ ɲ ١
route	˝Y ḧ ҷ ١
percent_vaule	˘ ⅝ п ¨ Ĩ 1 100

ỉ ٮ ل ٦ т ١ (Manage) ɨ ٨ ˘ ⅝ ʁ 30
ҷ ١ (Route) ɨ ٨ ˘ ⅝ ʁ 25
ɲ ١ (Protocol) ɨ ٨ ˘ ⅝ ʁ 45

ɲЬ ₩ Ã ṕ ٮ ل ₩ Ã

ỉ ١ 14

ɨ ˝YṀ -

ٮ ل 1 χ ٮ ل ٦ т ١ ĭ ă ɨ ٨ ˘ ⅝ ʁ 60

```
Ruijie(config)# cpu-protect sub-interface manage percent 60
```

₅ ج Ά | -

ώ˜ Ụ -

Ẃ ð ҷ ئ -

Ẉ ᴶ ب ˝ -

3.17 cpu-protect sub-interface pps

Í ɲ ɨ ٮ ل ⅛ ٧ ١ ĭ ă ⊞ ╚ ¸ Ṿ Ḵ

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

ь ⅛ ٧ ١ ĭ ă ⊞ ╚ ¸ Ṿ Ḵ ٮ ل Õ ʏ ỉ ٮ ل

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

Õ ʏ ỉ ٮ ل

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

˝Ω ب ˝

˝Ω	ώ ك
manage	˝Y ḧ ٦ т ١
protocol	˝Y ḧ ɲ ١

route	¨Y ḧ ჯ ɻ
pps_vaule	ں ھ ↨ ɻ п ... ĩ 1-100000

ǰ ٻ ل ð ₍ ó ơ ă ⁶

ɲЬ ₩ Ã ṕ ٻ ل ₩ Ã

ǰ ɻ 14

ɤ ¨YṀ -

ٻ ل 1 χ ٻ ل ٦ ת ɻ ĭ ă ╚ ¸ Ṿ Ķ ѭ 2000pps

```
Ruijie(config)# cpu-protect sub-interface manage pps 2000
```

₅ ج Ά | -

ώ˜ Ụ -

Ẃ ð ჯ ئ -

Ẉ ᴶ ب ˝ -

3.18 dhcp-guard attack-threshold

ٻ ل ṕ ۟ ↨ ɻ o Ẹ ĭ ă ھ ỷ ٨ ص ۟ ↨ ɻ ۞ H ɲ ѭ è ۟ ` Φ ѭ

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

ь ۟ ↨ ɻ ٻ ل Õ ʯ ǰ ٻ ل

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

Õ ʯ ǰ ٻ ل

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

¨Ω ب ˝

¨Ω	۞ ك
per-src-mac	ٻ ل ⅛ ◊ MAC ۞ ۟ ↨ ɻ
per-port	ٻ ل ⅛ ٧ ۞ ۟ ↨ ɻ
pps	۟ ↨ ɻ ĩ ⅛ ٧ ĩ ă ¨Ω п ... ĩ [1,9999]

ǰ ٻ ل ⅛ ◊ MAC ۞ ǰ ۟ ↨ ɻ ĩ ⅛ ٧ 10 ⅛ ٧ ۞ ǰ ۟ ↨ ɻ ĩ ⅛ ٧ 300

חת Ã	NFPP ب ل ₩ Ã
ĵ ا	14
ŕ ¨YṀ	-
ب ل	1 χ ب ل DHCP i ۞` ṕ ۞` ↨ ا g ◊ MAC ۞` ↨ ا 15pps, g ◊ ٧ ۞` ↨ ا 200pps

ٮ 1χٮ ṕ Ɛ Ã DHCP ı ۄ` ı Ĩ

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcp-guard enable
```

ₛ ج Ά | ɾ **show nfpp dhcp-guard summary**¶ ˜ ٮ Ụ

ώ˜ Ụ -

Ẃ ð ڇ ئ -

Ẉ ʲ ب ˝ -

3.20 dhcp-guard isolate-period

Í ɲ ɾ¶ ٮ ṕ ‘ Ḥ ژ

dhcp-guard isolate-period { *seconds* | **permanent** }

ڻ ‘ Ḥ ژ ٮ Õ ʉ ƚ ٮ

no dhcp-guard isolate-period

Õ ʉ ƚ ٮ

default dhcp-guard isolate-period

Ẅ ب ˝ Ẅ

ώ˜ Ụ -

Ẃ ð ჭ ئ -

Ẉ ᴶ ب ˝ -

3.21 dhcp-guard monitored-host-limit

Í ɲ ɾ ˈ ب ل ˜Ḥ ˈ Y ώ ᶻ ώ ᶻ ᴩ ˇ í ڎ ˝Ọ
dhcp-guard monitored-host-limit *number*

ᵬ ώ ᶻ ᴩ ˇ í ڎ ˝Ọ ب ل Õ ᵸ ỉ ب ل
no dhcp-guard monitored-host-limit

Õ ᵸ ỉ ب ل
default dhcp-guard monitored-host-limit

˝Ọ ب ˝

˝Ọ	ώ ڰ
number	˜Ḥ ˈ Y ώ ᶻ ώ ᶻ ᴩ ˇ í ڎ ˝Ọ ɲ ˵ ₶ 1 4294967295

ỉ ب ل ώ ᶻ ᴩ ˇ í ڎ ˝Ọ ש ɲ 1000

ɲ ₩ Ã NFPP ب ل ₩ Ã

ỉ ا 14

ɾ ˝ Y Ṁ ḅ ˈ ᴩ ˇ í ڎ ˝Ọ Ţ ل ز ש ɲ 1000 %ˋH ا ת ˝H ᴩ ˇ í ڎ ώ ᶻ ˝Ọ´ ₧ ل ă ṇ 1000 j ᵬ Ţ õ ᴩ ˇ í ڎ ă ĩ ĕ Ụ ɒ %ERROR χ The value that you configured is smaller than current monitored hosts 1000 ε ب ل ᴩ ˇ í ڎ ˝Ọ ζ please clear a part of monitored hosts. ɓ ɾ ώ ף ת ب ل ≡ ũ ɨ ώ ˛ ɻ ᵬ ɱ Ţ ل ɋ ˇ í ڎ
Ẹ ᴩ ˇ í ڎ ˊ ◗ ˋH ĕ ɳ Ő ɒ % NFPP_DHCP_GUARD-4-SESSION_LIMIT: Attempt to exceed limit of 1000 ε ب ل ᴩ ˇ í ڎ ˝Ọ ζ monitored hosts. ɓ ώ ף ת

ب ل 1 χ ب ل DHCP ı ۏ ˋ ώ ᶻ ᴩ ˇ í ڎ ˝Ọ ₶ 200

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcp-guard monitored-host-limit 200
```

₅ ج Ά | ɾ **show nfpp dhcp-guard summary**¶ ˜ ب ل Ụ

ώ˜ Ụ -

Ẃ ð ჭ ئ -

Ẉ ᴶ ب ˝ -

3.22 dhcp-guard monitor-period

Ǐ ɲ ɾ ˛ ب ل ˇ ί ˋH ژ
dhcp-guard monitor- period *seconds*

ڻ ل ˇ ί ˋH ژ ب ل Õ ʸ ǰ ب ل
no dhcp-guard monitor-period

Õ ʸ ǰ ب ل
default dhcp-guard monitor-period

˝Ω ب ˝

˝Ω	ώ ك
seconds	ˇ ί ˋH ژ ĩ ١ ɲ ˵˵ ĩ [180, 86400]

ǰ ب ل ṕ ˇ ί ˋH ژ ǰ ĩ 600 ١

ɲ ₩ Ã NFPP ب ل ₩ Ã

ǰ ١ 14

ɾ ˝ Y Ṁ ₅ ⅄ ¸ ώ ` ð H b ' ك ˋH ژ ѫ 0 Ṅ Ḿ ώ ` ð ف Φ ڀ ˇ ί ٨ ˋH ѫ ˇ ί ˋH ژ ڀ ˇ ί ص ١ Ę ك ˋH ژ q ب ل ѫ ُ ¸ ˋH Ṅ ₅ Ḿ ڀ ˇ ί ώ ` ð ڀ ɲ ك ẋ ћ ˝ H ٨ ˋH ф ل ѫ ك ˋH ژ ˇ ί ˋH ژ ك ˋH ژ ѫ 0 ù ï ε õ Y Θ
b ' ˝ H ك ˋH ژ ُ ¸ ώ ă ¸ Ṅ ´ ì ˝ Ỉ ١ ώ ` ð ڻ ð j ĩ ف Φ ڀ ˇ ί

ب ل 1 χ ب ل DHCP ί ώ ` ˇ ί ˋH ژ 180 ١

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcp-guard monitor-period 180
```

₅ ج Ά | ɾ **show nfpp dhcp-guard summary** ¶ ˜ ب ل Ụ

ώ ˜ Ụ -

Ẃ ð ჭ ئ -

Ẉ ᴶ ب ˝ -

3.23 dhcp-guard rate-limit

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

dhcp-guard trusted-host *mac*

ъ j ˘ í ı ڲ

no dhcp-guard trusted-host { **all** | *mac* }

▌ъ j ˘ í ı ڲ

default dhcp-guard trusted-host

ӮѺь ˝

Ӯѻ	ѽ ك
mac	MAC
all	**no** ∨ ŕ ъ Ӓѽ ı ڲ ьл

ѧ ьл -

ɲ₩Ã NFPP ьл₩Ã

ѧ ۱ 14

ŕ ˝YṀ ḅ ' ۱ т Ű ӪḾ • ᴶ ڲ j ڤΦ ˘ í o Ḿ Í ڲ ˊ ~ ı Ҩ ڼ ص أ ɲьл Á ı ڲ È CPU ⿓ DHCP ї ă Ṅ q ḡ È CPU j ⿓ ھ ں ع ſ т ѽ ^ ˝Ḥ'Y ֆ л 500↑ ı ڲ

ьл 1 χ ¨H MAC ѭ 0000.0000.1111 ⿓ڲ ьл ѭ DHCP i ѽ` ⿓ ı ڲ

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)#dhcp-guard trusted-host 0000.0000.1111
```

ѕ ج Á | ŕ **show nfpp dhcp-guard trusted-host**↑ ~ ьл Ụ

ώ~ Ụ -

Ẃ ð ڃ ئ -

Ẉ ᴶ ب ˝ -

3.25 dhcpv6-guard attack-threshold

ьл ṕ ѽ` ↨ ۱ o Ẹ ї ă ھ ỷ ٨ ص ѽ` ↨ ۱ ⿓ H ɲ ѭ è ѽ` Φ ѭ

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

ъ ѽ` ↨ ۱ ьл Õ ᵸ ɲ ьл

no dhcpv6-guard attack-threshold { **per-src-mac** | **per-port** }

Õ′ʉ ǰ ٮ⊿

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

″Ωٮ ˝	″Ω	ώ ك
	per-src-mac	ٮ⊿⅛ ◊ MAC ⃞ώ` ↨ ≀
	per-port	ٮ⊿⅛ ٧ ⃞ώ` ↨ ≀
	pps	ώ` ↨ ≀ ĩ⅛ヽĭ ă″Ω ɲ ˵ ĩ [1,9999]

ǰ ٮ⊿ ⅛ ◊ MAC ⃞ǰ ώ` ↨ ≀ ĩ⅛ヽ 10 ⅛ ٧ ⃞ǰ ώ` ↨ ≀ ĩ⅛ヽ 300

ɲЪ₩Ã NFPP ٮ⊿₩Ã

ǰ ٧ 14

ɾ″YṀ -

ٮ⊿ 1χٮ⊿ DHCPv6 ⅈώ` ṕώ` ↨ ≀ ᵍ ◊ MAC ώ` ↨ ≀ 15pps, ᵍ ◊ ٧ ώ` ↨ ≀ 200pps

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcpv6-guard attack-threshold per-src-mac 15
Ruijie(config-nfpp)# dhcpv6-guard attack-threshold per-port 200
```

₅ ج Ά │ ɾ **show nfpp dhcpv6-guard summary**¶ ˜ ٮ⊿ Ụ

ώ˜ Ụ -

Ẃ ð ج ئ -

Ẉ ᴶ ب ˝ -

3.26 dhcpv6-guard enable

Ǐ ɲЪ ɾ¦ ĕ Ã DHCPv6 گώ` ı ǐ

dhcpv6-guard enable

ƀ DHCPv6 ⅈώ` ı ǐ

no dhcpv6-guard enable

Õ′ʉ ǰ ٮ⊿

default dhcpv6-guard enable

˝Ợب ˝	˝Ợ	ώك
	-	-

ǰ بـل ٧ ≡ ῶبـل DHCPv6 i ώ` Ã بـŕ ṕ Ã

ɲЬ₩Ã NFPP بـل₩Ã

ǰ ٧ 14

ŕ˝YṀ -

بـل 1χبـل ṕ ɛ Ã DHCPv6 i ώ` ı ĺ

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcpv6-guard enable
```

ₔ ج Ά | ŕ **show nfpp dhcpv6-guard summary**¶ ˜ بـل Ụ

ώ˜ Ụ -

Ẃ ð ج ئ -

Ẉ ʲ ب ˝ -

3.27 dhcpv6-guard isolate-period

Í ɲЬŕ¶ بـل ṕ ڤ ˋH ژ

dhcpv6-guard isolate-period { *seconds* | **permanent** }

ں ڤ ˋH ژبـل Õ ʉ ǰ بـل

no dhcpv6-guard isolate-period

Õ ʉ ǰ بـل

default dhcpv6-guard isolate-period

˝Ợب ˝	˝Ợ	ώك
	seconds	-

eaJ34nTJ34nt 1 Tf 0 Tc 0 Tw 16.84 0 Td <4e W/C0.00 j/C2_<08059421190B7F036T f ( ) Tj[ET, 8602 g 1 27.74 165.3 4148 101 14 re f 546.7

ɲЬ₩Ă NFPP ٻ⅃₩Ă

⅄ ٨ 14

ɤ˝YṀ Ḿ ᾇ` ă ⅄ ɹ ⅄ ɹ ɡ ٨ ⅄ ε o ṕ ⅄ ɹ ζ Ḿ • ٨ ḅ ' ≡ ῶ ٻ⅃ ɡ ٨ ⅄ ɹ ⅄ ɹ ɑ ψ ٻ ɤ ṕ ⅄ ɹ ψ ٻ ɤ ɡ ٨ ⅄ ɹ ⅄

ٻ⅃ 1χ ٻ⅃ DHCPv6 ⅈ ᾇ` ṕ ⅄ ɹ ⅄ 180 ٧

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcpv6-guard isolate timeout 180
```

ₛ ج Ά | ɤ **show nfpp dhcpv6-guard summary**¶ ˜ ٻ⅃ Ụ

ώ˜ Ụ -

Ẃ ð ج ئ -

Ẉ ᴶ ب ˝ -

3.28 dhcpv6-guard monitored-host-limit

Ỉ ɲЬ ɤ ٻ⅃ ˜Ḥ'Y ώ ᶻ ᴘ ˇ ί Ƶ ¨Ọ
dhcpv6-guard monitored-host-limit *number*

ὐ ώ ᶻ ᴘ ˇ ί Ƶ ¨Ọ ٻ⅃ Õ ʊ ⅄ ٻ⅃
no dhcpv6-guard monitored-host-limit

Õ ʊ ⅄ ٻ⅃
default dhcpv6-guard monitored-host-limit

¨Ọ ب ˝

¨Ọ	ώ ك
number	˜Ḥ'Y ώ ᶻ ώ ᶻ ᴘ ˇ ί Ƶ ¨Ọ ɲ ˵ ⅄ 1 4294967295

⅄ ٻ⅃ ώ ᶻ ᴘ ˇ ί Ƶ ¨Ọ ⅅ ɲ 1000

ɲЬ₩Ẵ NFPP ٻ⅃₩Ẵ

⅄ ٨ 14

ɤ˝YṀ ḅ ' ᴘ ˇ ί Ƶ ¨Ọ Ţ ⅄ ɾ ⅅ ɲ 1000 %`H ٨ ת ¨H ᴘ ˇ ί Ƶ ώ ᶻ ¨Ọ´ ₱ ⅄ ă ṇ 1000 j

ɒ Ţ õ㊊ᴘ ˇ í ڏ ă ĭ ĕ Ụ ɒ %ERROR χ The value that you configured is smaller than current monitored hosts 1000 ε ٻ㊊ᴘ ˇ í ڏ ٚQ ζ please clear a part of monitored hosts. ɓ↱ ώ ٹ ٦ ת ٻ ≡ õ ɨ ѽ ٫ ɭ ɒ ɱ Ţ ٫ ɋ ˇ í ㊊ڏ

Ẹ ᴘ ˇ í ڏ ˊ ◗ Ḥ ĕ ή Ő ɒ % NFPP_DHCP_GUARD-4-SESSION_LIMIT: Attempt to exceed limit of 1000 ε ٻ ᴘ ˇ í ڏ ٚQ ζ monitored hosts. ɓ ώ ٹ ٦ ת

ٻ 1 χ ٻ DHCPv6 ɨ ѽ` ѡ ᶻ ᴘ ˇ í ڏ ٚQ㎞ 200

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcp-guard monitored-host-limit 200
```

ₛ ج Ά | ɨ **show nfpp dhcpv6-guard summary**¶ ˜ ٻ Ụ

ώ˜ Ụ -

Ẃ ð ڃ ئ -

Ẉ ᴶ ب ˝ -

3.29 dhcpv6-guard monitor-period

Ǐ ɲ ɨ↱ ٻ ˇ í Ḥ ژ

dhcpv6-guard monitor- period *seconds*

ɒ ٫ ˇ í Ḥ ژ ٻ Õ ᵸ ٱ ٻ

no dhcpv6-guard monitor-period

Õ ᵸ ٱ ٻ

default dhcpv6-guard monitor-period

ٚQ ب ˝	ٚQ	ѡ ك
	seconds	ˇ í Ḥ ژ ĩ ٧ ɲ ₙ ĩ

þ ' ¨H ¨ `H ژ ° ¡ ώ ă ¡ Ṅ´ ì ¨Ḣ ٦ ⅜ώ` ă ں ă j ĩ ف Φ ڍ ˜ í

ٻ ـ 1 χ ٻ ـ DHCPv6 i ώ` ˜ í `H ژ 180 ٧

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcpv6-guard monitor-period 180
```

ₛ ج Ά | ŧ **show nfpp dhcpv6-guard summary**¶ ˜ ٻ ـ Ụ

ώ˜ Ụ -

Ẃ ð ج ئ -

Ẉ J ب ˝ -

3.30 dhcpv6-guard rate-limit

ٻ ـ ṕ ں ھ ↨ ٦

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

ں ھ ↨ ٦ ٻ ـ Õ ʉ ỉ ٻ ـ

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

Õ ʉ ỉ ٻ ـ

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

¨Ọ ب ˝

¨Ọ	ώ ك
per-src-mac	Ḿ ⅛ ◊ MAC ف Φ ں ھ
per-port	Ḿ ⅛ ٦ ف Φ ں ھ
pps	ں ھ ↨ ٦ ⊓ ¨ ĩ [1,9999]

ỉ ٻ ـ ⅛ ◊ MAC ⅜ ỉ ں ھ ↨ ٦ ĩ ⅛ ٧ 5 ⅛ ٦ ⅜ ỉ ں ھ ↨ ٦ ĩ ⅛ ٧ 150

ⱨ ₩ Ã NFPP ٻ ـ ₩ Ã

ỉ ٦ 14

ŧ ¨Y Ṁ -

ٻ ـ 1 χ ٻ ـ DHCPv6 i ώ` ṕ ں ھ ↨ ٦ g ◊ MAC ں ھ ↨ ٦ 8pps, g ◊ ٦ ں ھ ↨ ٦ 100pps

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcpv6-guard rate-limit per-src-mac 8
```

```
Ruijie(config-nfpp)# dhcpv6-guard rate-limit per-port 100
```

ₛ ج Ά | ŧ **show nfpp dhcpv6-guard summary**¶ ˜ ب ل Ụ

ώ˜ Ụ -

Ẃ ð ڃ ئ -

Ẉ ʲ ب ˝ -

3.31 dhcpv6-guard trusted-host

þ ' ٦ ת Ű ٪ Ḿ • ʲ ڎ j ڤ Φ ˇ í o Ḿ Ǻ ڎ ˊ ˜ ا ۝ ن ص أ ɲب ل

dhcpv6-guard trusted-host *mac*

ث j ˇ í ا ڎ

no dhcpv6-guard trusted-host { **all** | *mac* }

▌ث j ˇ í ا ڎ

default dhcpv6-guard trusted-host

٪ب ˝	٪	ش ك

- %¶°Ü!ð•² ´ðUVñðÄ

ώ˜ Ụ -

Ẃ ð ჯ ئ -

Ẉ ᴶ ب ˝ -

3.32 icmp-guard attack-threshold

ب ـ ṕ ۞ ↨ ۱ o Ẹ ĭ ă ھ ỷ ۸ ص ۞ ↨ ۱ H ɲ ﷺ è ۞ Φ ﷺ
icmp-guard attack-threshold { **per-src-ip** | **per-port** } *pps*

ь ۞ ↨ ۱ ب ـ Õ ʰ ỉ ب ـ
no icmp-guard attack-threshold { **per-src-ip** | **per-port** }

Õ ʰ ỉ ب ـ
default icmp-guard attack-threshold { **per-src-ip** | **per-port** }

˝Ω ب ˝

Ω˝	۞ ك
per-src-ip	ب ـ ⅛ ◊ IP ۞ ↨ ۱
per-port	ب ـ ⅛ ۹ ۞ ↨ ۱
pps	۞ ↨ ۱ ĩ ⅛ ۷ ĭ ă ˝Ω ɲ ˙˙ ĩ [1,9999]

ỉ ب ـ ð ⁼ ó ơ ă ⁶

ɲ ₩ Ã NFPP ب ـ ₩ Ã

ỉ ۱ 14

ɨ ˝ Y Ṁ -

ب ـ 1 χ ب ـ ICMP ỉ ۞ ṕ ۞ ↨ ۱ ᵍ ◊ IP ۞ ↨ ۱ 600pps, ᵍ ◊ ۹ ۞ ↨ ۱ 1200pps

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# icmp-guard attack-threshold per-s
```

Ẉ ʲ ب ˇ -

3.33 icmp-guard enable

Ỉ ɲь ɾ ĕ Ầ ICMP گ ۤ ا ấ

icmp-guard enable

ڑ ICMP ỉ ۤ ا ấ

no icmp-guard enable

Õ ʉ ỉ ب ـ

default icmp-guard enable

˝Ω ب ˇ	˝Ω	ۤ ك
	-	-

ỉ ب ـ س ռ ICMP گ ۤ ا ấ ĕ Ầ

ɲ₩Ã NFPP ب ـ ₩Ã

ỉ ۱ 14

ɾ ˝YṀ -

ب ـ 1 χ ب ـ ṕ ʒ ▌ ħ Ф Й ʒ Ф

-

-

o ¬ @ *f* ª

ъ ‘Ḥ ژ ب ل Õ ʸ ǐ ب ل
no icmp-guard isolate-period

Õ ʸ ǐ ب ل
default icmp-guard isolate-period

‘Ω ب ˇ

‘Ω	ώ ك
seconds	ك ‘Ḥ ژ ĩ ٧ ɲ ˏ ĩ 0 ă ă [30, 86400] 0 ´ ˜ j ك
permanent	⇔ ك

ǐ ب ل p ك ‘Ḥ ژ ǐ ĩ 0 o j ك

ɲЬ ₩ Ã NFPP ب ل ₩ Ã

ǐ ٧ 14

ɤ ˝ YṀ Ḿ ώ ` ă ك ‘Ḥ ژ ₨ p ك ‘Ḥ ژ g ٧ ك ‘Ḥ ژ ε o p ش ك ‘Ḥ ژ ζ Ḿ • ٧ þ
' ≡ ω ب ل g ٧ ك ‘Ḥ ژ ɑ ψ ب ɤ p ك ‘Ḥ ژ ψ ب ɤ g ٧ ك ‘Ḥ ژ

ب ل 1 χ ب ل ICMP i ώ ` p ك ‘Ḥ ژ ₨ 180 ٧

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# icmp-guard isolate-period 180
```

ₛ ج Ά | ɤ **show nfpp icmp-guard summary** ¶ ˜ ب ل Ụ

ώ˜ Ụ -

Ẃ ð ج ئ -

Ẉ ʲ ب ˇ -

3.35 icmp-guard monitored-host-limit

Í ɲЬ ɤ ¶ ب ل ˜ Ḥ ' Y ك ω ᶻ ᴘ ˇ í ڇ ‘Ω
icmp-guard monitored-host-limit *number*

ъ ω ᶻ ᴘ ˇ í ڇ ‘Ω ب ل Õ ʸ ǐ ب ل
no icmp-guard monitored-host-limit

Õ ʸ ǐ ب ل

pps	ں ھ ↨ ۱ ɲ ˵ ĩ [1,9999]

ǰ ٻ ۔ ð ˝ ó ŏ ă ⁶

ɲЪ₩Ã NFPP ٻ ۔ ₩Ã

ǰ ۱ 14

ŧ ¨YṀ -

ٻ ۔ 1 χ ٻ ۔ ICMP ˙ ⱷ` ṕ ں ھ ↨ ۱ ᵍ ◊ IP ں ھ ↨ ۱ 500pps ᵍ ◊ ۱ ں ھ ↨ ۱ 800pps

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# icmp-guard rate-limit per-src-ip 500
Ruijie(config-nfpp)# icmp-guard rate-limit per-port 800
```

₅ ج Ά | ŧ **show nfpp icmp-guard summary**¶ ˜ ٻ ۔ Ụ

ώ˜ Ụ -

Ẃ ð ڇ ئ -

Ẉ ᴶ ب ˝ -

3.38

ɲЬ₩Ã NFPP بـ₩Ã

ƛ ٨ 14

ŧ ˝YṀ Þ ' ٨ ת Ű ̀ΩḾ • ᴶ ڎ j ڤΦ ˇ í o Ḿ Í ڎ ´ ~ ᵎ Ȣ ڼ ص أ ɲبـ أ ᵎ ڎ
Ê CPU ICMP ï ă Ṅ q ḡ Ê CPU j ں ھ ع ʃ ת ڼ ص بـ ؤ ᵎ Ȣ ژ Ḿ •
ـ ɟ "A õ ڎ qu j ڤΦ ˇ í
ω ^ ˜Ḥ'Y ֆ ـ 500 ᵎ ڎ

بـ 1 χ ¨H 1.1.1.0/24 ـ ɟ "A õ ڎ بـ ₥ ICMP i ۏ` ᵎ ڎ

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# icmp-guard trusted-host 1.1.1.0 255.255.255.0
```

₅ ج Ά | ŧ **show nfpp icmp-guard trusted-host**¶ ~ بـ Ụ

ώ~ Ụ -

Ẃ ð ج ئ -

Ẉ ᴶ ب ˝ -

3.39 ip-guard attack-threshold

بـ ṕ ۏ` ↨ ٨ o Ẹ ï ă ھ ỷ ٨ ص ۏ` ↨ ٨ "H ɲ ₥ è ۏ` Φ ₥
ip-guard attack-threshold { **per-src-ip** | **per-port** } *pps*

ɲ ۏ` ↨ ٨ بـ Õ ʯ ƛ بـ

no ip-guard attack-threshold { **per-src-ip** | **per-port** }

Õ ʯ ƛ بـ

default ip-guard attack-threshold { **per-src-ip** | **per-port** }

¨Ω ب ˝

¨Ω	ۏ ك
per-src-ip	بـ ⅛ ◊ IP ۏ` ↨ ٨
per-port	بـ ⅛ ٧ ۏ` ↨ ٨
pps	ۏ` ↨ ٨ ĩ ⅛ ٧ ï ă ¨Ω ɲ ˷ ĩ [1,9999]

ƛ بـ ð ˝ ó ă ⁶

ɲЬ₩Ã NFPP بـ₩Ã

ȷ̌ ɻ 14

ɾ˝YṀ ѽ̀ ↨ ɻ j Ť ṇ ں ھ ↨ ɻ

	IP IP IP IP IP IP IP CPP CPU Protect Policy

ٻ ـ 1χ ٻ ـ IP i ѽ̀ ṕ ѽ̀ ↨ ɻ ɡ ◊ IP ѽ̀ ↨ ɻ 2pps, ɡ ◊ ɻ ѽ̀ ↨ ɻ 50pps

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# ip-guard attack-threshold per-src-ip 2
Ruijie(config-nfpp)# ip-guard attack-threshold per-port 50
```

ₛ ج Ά | ɾ **show nfpp ip-guard summary**¶ ˜ ٻ ـ Ụ

ώ˜ Ụ -

Ẃ ð ڇ ئ -

Ẉ ʲ ب ˝ -

3.40 ip-guard enable

Ǐ ɲ ɾ¶ ṕ ĕ Ã IP گ˝Eώ ı Ť

ip-guard enable

ǰ IP گ˝Eώ ı Ť

no ip-guard enable

Õ˝ ʱ ȷ̌ ٻ ـ

default ip-guard enable

˝Ω ب ˝

˝Ω	ώ ك
-	-

ȷ̌ ٻ ـ ѫ ת IP گ˝Eώ ı Ť ĕ Ã

ɾ₩Ã NFPP ٻ ـ ₩Ã

ȷ̌ ɻ 14

ɤ˝YṀ -

ٻ 1χٻ ṕ ĕ Ã IP گ˝Eώ ı ĵ

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# ip-guard enable
```

ₛ ڃ Ά | ɤ **show nfpp ip-guard summary**¶ ˜ ٻ Ụ

ώ˜ Ụ -

Ẃ ð ڇ ئ -

Ẉ ᴶ ب ˝ -

3.41 ip-guard isolate-period

Ĵ ɲЬɤ¶ ٻ ṕ ڴ ٰH ڑ

ip-guard isolate-period { *seconds* | **permanent** }

ڻ ڴ ٰH ڑٻ Õ ᵸ ỉ ٻ

no ip-guard isolate-period

Õ ᵸ ỉ ٻ

default ip-guard isolate-period

˝Ọب ˝

˝Ọ	ώ ك
seconds	ڴ ٰH ڑ ĩ ١ ח ₙ ĩ 0 ă ă [30, 86400]
permanent	⇔ ڴ

ỉ ٻ ṕ ڴ ٰH ڑ⅛ỉ ĩ 0 o j ڴ

ɲ₩Ã NFPP ٻ₩Ã

ỉ ١ 14

ɤ˝YṀ -

ٻ 1χٻ IP i ۏ` ṕ ڴ ٰH ڑ ₥ 180 ١

ₛ ج Ά | ŧ **show nfpp ip-guard summary**¶ ˜ ب ل Ụ

ώ˜ Ụ -

Ẃ ð چ ئ -

Ẉ ʲ ب ˝ -

3.42 ip-guard monitored-host-limit

ώ˜ Ụ -

Ẃ ð ჭ ئ -

Ẉ ᴶ ب ˝ -

3.43 ip-guard monitor-period

Ǐ ɲ ɾ ؛ ب ل ˇ ى ٰH ژ
ip-guard monitor-period *seconds*

ڼ ل ˇ ى ٰH ژ ب ل Õ ʱ ǰ ب ل
no ip-guard monitor-period

Õ ʱ ǰ ب ل
default ip-guard monitor-period

ˇQ ب ˝

ˇQ	ώ ك
seconds	ˇ ى ٰH ژ ĩ ٧ ח ˵˵ ĩ [180, 86400]

ǰ ب ل ˇ ى ٰH ژ ؋ ǰ ĩ 600 ٧

ɲ ₩ Ã NFPP ب ل ₩ Ã

ǰ ٨ 14

ɾ ˝ Y Ṁ ₅ ⅄ ˛ ώ ` ă ؋ H ب ' ك ˜ H ژ ﷺ 0 Ṅ Ḿ ώ ` ă ف Φ ع ˇ ى ٨ ٰH ﷺ ˇ ى ٰH ژ ع ˇ ى ص ٧ Ę ك ˜ H ژ q ب ل ﷺ ˚ ˛ ٰH Ṅ₅ Ḿ ع ˇ ى ؋ ώ ` ă ب ח ك ˜ Ẋ ħ ˝ H ٨ ٰH ф ل ﷺ ك ˜ H ژ ˇ ى ٰH ژ ك ˜ H ژ ﷺ 0 ؋ ü ï ε ũ Ỿ Θ
ب ' ˝ H ك ˜ H ژ ˚ ˛ ώ ă ˛ Ṅ ´ ì ˝ H ̉ ٧ ؋ ώ ` ă ڼ ă j ĩ ف Φ ع ˇ ى

ب ل 1 χ ب ل IP ى ώ ` ˇ ى ٰH ژ 180 ٧

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# ip-guard monitor-period 180
```

₅ ج Ά | ɾ **show nfpp ip-guard summary**¶ ˜ ب ل Ụ

ώ˜ Ụ -

Ẃ ð ჭ ئ -

Ẉ ᴶ ب ˇ -

3.44 ip-guard rate-limit

ب ـل ṕ ں ھ ↨ ۱

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

ڻ ں ھ ↨ ۱ ب ـل Õ ʉ ỉ ب ـل

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

Õ ʉ ỉ ب ـل

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

ˇ Ϙ ب

Ϙ	ۏ ك
per-src-ip	Ḿ⅛ ◊ IP ڤ Φ ں ھ
per-port	Ḿ⅛ ۱ ڤ Φ ں ھ
pps	ں ھ ↨ ۱ п ˷ Ĩ [1,9999]

ỉ ب ـل ð ⁼ ở ă ⁶

ɲЬ₩Ã NFPP ب ـل₩Ã

ỉ ۱ 14

ɨ ˇ YṀ -

ب ـل 1 χ ب ـل IP i ۏ` ṕ ں ھ ↨ ۱ ᵍ ◊ IP ں ھ ↨ ۱ 2pps ᵍ ◊ ۱ ں ھ ↨ ۱ 50pps

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# ip-guard rate-limit per-src-ip 2
Ruijie(config-nfpp)# ip-guard rate-limit per-port 50
```

⁵ ج Ά | ɨ **show nfpp ip-guard summary**¦ ˜ ب ـل Ụ

ۏ˜ Ụ -

Ẃ ð ڃ ئ -

Ẉ ᴶ ب ˇ -

3.45 ip-guard scan-threshold

ٻ ɹ ṕ ˝Eώ ↨ ɻ

ip-guard scan-threshold *pkt-cnt*

ъ˝Eώ ↨ ɻٻ ɹ Õ ʉ ɻ̊ ٻ ɹ

no ip-guard scan-threshold

Õ ʉ ɻ̊ ٻ ɹ

default ip-guard scan-threshold

˝Ọٻ ˝

˝Ọ	ώ ك
pkt-cnt	˝Eώ ↨ ɻ п ˵˵ ĩ [1,9999]

ɻ̊ ٻ ɹ ɻ̊ ˝Eώ ↨ ɻ ĩ 10 ヽ 100

ɲЬ₩Ã NFPP ٻ ɹ ₩Ã

ɻ̊ ɻ 14

ɨ˝YṀ -

ٻ ɹ 1χ ٻ ɹ IP ί ώ` ˝Eώ ↨ ɻ ₥ 20pps

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# ip-guard scan-threshold 20
```

₅ ج Ά | ɨ **show nfpp ip-guard summary**¦ ˜ ٻ ɹ Ụ

ώ˜ Ụ -

Ẃ ð ڃ ئ -

Ẉ ʲ ب ˝ -

3.46 ip-guard trusted-host

þ ' ɻ ת Ű ٰΩḾ • ʲ ڎ j ڤΦ ˇ í o Ḿ Ĺ ڎ ˊ˜ ا ۋ ںص أ Ьٻɹ

ip-guard trusted-host *ip mask*

ъ j ˇ í ا ڎ

default log-buffer entries

̈Ω ب ̆	̈Ω	ش ك

number_of_message *length_in_seconds* ปนศูนย 0

rs	ث ٠ ت ∂
ra-redirect	ث ٠ ٦ ٍ ٍ ĭ ă
pps	ѽ` ↨ ۱ ĩ ⅛ ١ ĭ ă Ѽ ɲ ... ĩ [1,9999]

ƛ ٍ ٍ ⅛ ٩ ∧ ṗ ت ∂ / ٦ ƛ ں ھ ↨ ۱ ĩ ⅛ ١ 30 ث ٠ ت ∂ ƛ ں ھ ↨ ۱ ĩ ⅛ ١ 30 ث ٠ ٦ /ٍ ĭ ă ƛ ں ھ ↨ ۱ ĩ ⅛ ١ 30

ɲЬ₩Ã NFPP ٍ ٍ ₩Ã

ƛ ۱ 14

ŕ ¨YṀ ѽ` ↨ ۱ j ĵ ṇ ں ھ ↨ ۱

ٍ ٍ 1 χ ٍ ٍ ND i ѽ` ṕ ѽ` ↨ ۱ ᵍ ◊ ٩ ns-na ѽ` ↨ ۱ 20pps, ᵍ ◊ ٩ rs ѽ` ↨ ۱ 10pps ᵍ ◊ ٩ ra-redirect ѽ` ↨ ۱ 10pps

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# nd-guard attack-threshold per-port ns-na 20
Ruijie(config-nfpp)# nd-guard attack-threshold per-port rs 10
Ruijie(config-nfpp)# nd-guard attack-threshold per-port ra-redirect 10
```

₅ ج Ά | ŕ **show nfpp nd-guard summary**¶ ˜ ٍ ٍ Ụ

ώ˜ Ụ -

Ẃ ð ج ئ -

Ẉ ᴶ ب ˝ -

-	-

ǰ ٻ ىس n ND i ۋ` ı ǐ ě Ã

ɲЬ₩Ã NFPP ٻ₩Ã

ǰ ٨ 14

ɤ ¨YṀ -

ٻ 1χٻ ṕ ě Ã ND i ۋ` ı ǐ

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# nd-guard enable
```

ₛ ج Ä | ɤ **show nfpp nd-guard summary**¶ ˜ ٻ Ụ

ώ˜ Ụ -

Ẃ ð ج ئ -

Ẉ ᴶ ب ˝ -

3.52 nd-guard rate-limit

ٻ ṕ ں ھ ↨ ٨

nd-guard rate-limit per-port { **ns-na** | **rs** | **ra-redirect** } *pps*

ں ھ ↨ ٨ ٻ Õ ʰ ǰ ٻ

no nd-guard rate-limit per-port { **ns-na** | **rs** | **ra-redirect** }

Õ ʰ ǰ ٻ

default nd-guard rate-limit per-port { **ns-na** | **rs** | **ra-redirect** }

¨Ϙ ب ˝

¨Ϙ	ۋ ك
ns-na	٨ ṗ ت ∂ ٨ ṗ ٶ
rs	ث ٠ ت ∂
ra-redirect	ث ٠ ٶ ٹ ḧ ǐ ă
pps	ں ھ ↨ ٨ ɲ ˵ ĩ [1,9999]

ǰ ٻ ⅛ ٧ ٨ ṗ ت ∂ / ٶ ǰ ں ھ ↨ ٨ ĩ ⅛ ٧ 15 ث ٠ ت ∂ ǰ ۋ` ↨ ٨ ĩ ⅛ ٧ 15 ث ٠

ǰ ⍲ 14

ŧ ˝YṀ

ﻟﺑ 1 ɛ Ã ì G0/1 ⅈ ARP

ώ˜ Ụ -

Ẃ ð ჯ ئ -

Ẉ ᴶ ب ˝ -

3.56 nfpp arp-guard policy

ヿ i ڀ ɹ ṕ ሀ h ں ھ ↨ ɻ ᾠ` ↨ ɻ

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

ђ ヿ i ں ھ ↨ ɻ ᾠ` ↨ ɻ ڀ ɹ Õ ʸ ʲ ڀ ɹ

no arp-guard policy { **per-src-ip** | **per-src-mac** | **per-port** }

Õ ʸ ʲ ڀ ɹ

default arp-guard policy { **per-src-ip** | **per-src-mac** | **per-port** }

Ṷ ب ˝

Ṷ	ώ ك
per-src-ip	ڀ ɹ ⅛ ◊ IP h ں ھ ↨ ɻ ᾠ` ↨ ɻ
per-src-mac	ڀ ɹ ⅛ ◊ MAC h ں ھ ↨ ɻ ᾠ` ↨ ɻ
per-port	ڀ ɹ ⅛ ヿ h ں ھ ↨ ɻ ᾠ` ↨ ɻ
rate-limit-pps	ں ھ ↨ ɻ ɲ ˷˷ Ĩ 1 9999
attack-threshold-pps	ᾠ` ↨ ɻ ɲ ˷˷ Ĩ 1 9999

ʲ ڀ ɹ ヿ ≡ ῶ ₅ ţ h ں ھ ↨ ɻ ᾠ` ↨ ɻ ڀ ɾ ṕ h ں ھ ↨ ɻ ں ھ ↨ ɻ

ɲЬ ₩ Ã ì ڀ ɹ ₩ Ã

ʲ ɻ 14

ɾ ˝ Y Ṁ ᾠ` ↨ ɻ j Ǐ ṇ ں ھ ↨ ɻ

ڀ ɹ 1 χ ڀ ɹ ì G0/1 i ARP i ᾠ` ں ھ ↨ ɻ ᾠ` ↨ ɻ ڀ ɹ ᵍ IP ں ھ ↨ ɻ 2pps ᾠ` ↨ ɻ 10pps ψ ڀ ɹ ᵍ MAC ں ھ ↨ ɻ 3pps ᾠ` ↨ ɻ 10pps ψ ڀ ɹ ᵍ ヿ ں ھ ↨ ɻ 50pps ᾠ` ↨ ɻ 100pps

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp arp-guard policy per-src-ip 2 10
Ruijie(config-if)# nfpp arp-guard policy per-src-mac 3 10
Ruijie(config-if)# nfpp arp-guard policy per-port 50 100
```

₅ ج Ά | ɾ **show nfpp arp-guard summary**ʈ ˜ ڀ ɹ Ụ

ώ˜ Ụ -

Ẃ ð ჯ ئ -

Ẉ ᴶ ب ˝ -

3.57 nfpp arp-guard scan-threshold

ϟ i ٮ ɻ ṕ ሀ ˝ E ώ ↨ ɻ

nfpp arp-guard scan-threshold *pkt-cnt*

ђ ϟ i ˝ E ώ ↨ ɻ ٮ ɻ Õ ʸ ỉ ٮ ɻ

no nfpp arp-guard scan-threshold

Õ ʸ ỉ ٮ ɻ

default nfpp arp-guard scan-threshold

˝ Ω ب ˝

˝ Ω	ώ ك
pkt-cnt	˝ E ώ ↨ ɻ п ˵ ĩ [1,9999]

ỉ ٮ ɻ ≡ ٮ ɻ ᵍ ϟ ARP ˝ E ώ ٮ ɾ ṕ ARP ˝ E ώ

ɲ ₩ Ã ì ٮ ɻ ₩ Ã

ỉ ۱ 14

ɾ ˝ Y Ṁ -

ٮ ɻ 1

3.58 nfpp dhcp-guard enable

Ĺ ɲь ɾɾ ٧ i ɛ̌ Ầ DHCP i ѽ` ı ĺ

nfpp dhcp-guard enable

ȝ ٧ i DHCP i ѽ` ı ĺ

no nfpp dhcp-guard enable

Õ ʉ ǰ ٻ ل

default nfpp dhcp-guard enable

ٛѺ ٽ

ٛѺ	ѽ ك
-	-

ǰ ٻ ل ٧ ≡ ѿ ٻ ل DHCP i ѽ` Ầ ٻ ɾ ṕ Ầ

ɲь₩Ã i ٻ ل ₩Ã

ǰ ٧ 14

ɾ ٛYṀ ٧ DHCP i ѽ` Ầ ṕ DHCP i ѽ` Ầ

ٻ ل ٛѺ

no no Tj /T0c 0.0w.72 3Tw D n<06CA05D609DE092E0B01 9E5> /TT0 1 Tf 0 no Tj /T2_0 1 Tf 0 Tc 9 0w.72820 D <6FA

ˮQ ˮ

ˮQ ñ	ώ ك
per-src-mac	ِ ¼ ◊ MAC ⁄ ↕ ا ˜ ↕ ا
per-port	ِ ¼ ا ⁄ ↕ ا ˜ ↕ ا
rate-limit-pps	↕ ا ח ¨ ĩ 1 9999
attack-threshold-pps	˜ ↕ ا ח ¨ ĩ 1 9999

ǰ ِ ا ≡ ũ ţ ⁄ ↕ ا ˜ ↕ ا ِ ŕ ṕ ⁄ ↕ ا ↕ ا

ח₩ Ã ¯ ـ 1 0D0 p <

-	-

ǰ ٻ ٧ ≡ ѽٻ DHCPv6 ٳ ۏ` Ã ٻ ٲ ṕ Ã

ɲ₩Ã ٳ ٻ₩Ã

ǰ ٧ 14

ٲ˝YṀ ٧ ⅷDHCPv6 ٳ ۏ` Ã ṕ DHCP ٳ ۏ` Ã

ٻ 1 ɛ Ã ٳ G0/1 ٳ DHCPv6 ٳ ۏ` ٳ ۏ` ĺ

```
Ruijie(config)# interface G0/1
Ruijie(config-if)# nfpp dhcpv6-guard enable
```

ₛ ج Ά | ٲ **show nfpp dhcpv6-guard summary**¶ ˜ ٻ Ụ

ώ˜ Ụ -

Ẃ ỏ ج ئ -

Ẉ ᴶ ب ˝ -

3.62 nfpp dhcpv6-guard isolate-period

Ĺ ɲ ٲ¶ ٧ ٳ ٻ ṕ ሀ ڭ ˋH ژ

nfpp dhcpv6-guard isolate-period { *seconds* | **permanent** }

ڻ ٧ ٳ ڭ ˋH ژ ٻ Õ ᵾ ǰ ٻ

no nfpp dhcpv6-guard isolate-period

Õ ᵾ ǰ ٻ

default nfpp dhcpv6-guard isolate-period

˝Ω ب ˝

ǰ ˥ 14

ŧ ˝YṀ -

ٻ 1χٻ ì G0/1 ï DHCPv6 ï ѽ` ڭ ˜H ژ ʁ 180 ˥

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp dhcpv6-guard isolate-period 180
```

ѕ ج Ά | ŧ **show nfpp dhcpv6-guard summary**¶ ˜ ٻ Ụ

ώ˜ Ụ -

Ẃ ð ڇ ئ -

Ẉ ᴶ ب ˝ -

3.63 nfpp dhcpv6-guard policy

˥ ï ٻ ṕ մh۞ ھ ↨ ˥ ѽ` ↨ ˥

nfpp dhcpv6-guard policy { **per-src-mac** | **per-port** } *rate-limit-pps attack-threshold-pps*

ђ ˥ ï ں ھ ↨ ˥ ѽ` ↨ ˥ ٻ Õ ʉ ǰ ٻ

no nfpp dhcpv6-guard policy { **per-src-mac** | **per-port** }

Õ ʉ ǰ ٻ

default nfpp dhcpv6-guard policy { **per-src-mac** | **per-port** }

˝Ω ب ˝

˝Ω	ώ ك
per-src-mac	ٻ ⅛ ◊ MAC ۞ ں ھ ↨ ˥ ѽ` ↨ ˥
per-port	ٻ ⅛ ˥ ۞ ں ھ ↨ ˥ ѽ` ↨ ˥
rate-limit-pps	ں ھ ↨ ˥ п ... ĩ 1 9999
attack-threshold-pps	ѽ` ↨ ˥ п ... ĩ 1 9999

ǰ ٻ ˥ ≡ ѿ ѕ ţ ۞ ں ھ ↨ ˥ ѽ` ↨ ˥ ٻ ŧ ṕ ۞ ں ھ ↨ ˥ ں ھ ↨ ˥

ɲЬ ₩ Ã ì ٻ ₩ Ã

ǰ ˥ 14

ŕ˝YṀ ѽ` ↨ ɻ j Ĩ ṇ ىھ ↨ ɻ

ٮɹ 1χٮɹ ì G0/1 ì DHCP ì ѽ` ىھ ↨ ɻ ѽ` ↨ ɻ ٮɹ ɡ IP ىھ ↨ ɻ 2pps ѽ` ↨ ɻ 10ppsψٮɹ ɡ MAC ىھ ↨ ɻ 3pps ѽ` ↨ ɻ 10ppsψٮɹ ɡ ٧ ىھ ↨ ɻ 50pps ѽ` ↨ ɻ 100pps

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp dhcpv6-guard policy per-src-mac 3 10
Ruijie(config-if)# nfpp dhcpv6-guard policy per-port 50 100
```

ɔ ج Ά | ŕ **show nfpp dhcpv6-guard summary**¶ ˜ ٮɹ Ụ

ώ˜ Ụ -

Ẃ ð ჯ ئ -

Ẉ ᴶ ب ˝ -

3.64 nfpp icmp-guard enable

Ỉ ɲЬ ŕ¶ ٧ ì ĕ Ã ICMP ì ѽ` ı Ĩ

nfpp icmp-guard enable

ǯ ٧ ì ICMP ì ѽ` ı Ĩ

no nfpp icmp-guard enable

Õ˝ᵸ ỉ ٮɹ

default nfpp icmp-guard enable

˝Ѽب ˝

˝Ѽ	ѽ ك
-	-

ỉ ٮɹ ٧ ≡ ѽٮɹ ICMP ì ѽ` Ã ٮŕ ṕ Ã

ɲЬ₩Ã ì ٮɹ₩Ã

ỉ ٨ 14

ŕ˝YṀ ٧ ICMP ì ѽ` Ã ṕ ICMP ì ѽ` Ã

ٮɹ 1 ĕ Ã ì G0/1 ì ICMP ì ѽ` ì ѽ` Ĩ

```
Ruijie(config)# interface G0/1
```

```
Ruijie(config-if)# nfpp icmp-guard enable
```

ₛ ج Á | ŧ **show nfpp icmp-guard summary**¶ ˜ ب ل Ụ

ώ˜ Ụ -

Ẃ ð ج ئ -

Ẉ ʲ ب ˝ -

3.65 nfpp icmp-guard isolate-period

Í ɲ ŧ ¶ ٧ i ب ل ṕ ሀ ڴ ˜ Ή ژ

nfpp icmp-guard isolate-period { *seconds* | **permanent** }

ں ٧ i ڴ ˜ Ή ژ ب ل Õ ʉ ỉ ب ل

no nfpp icmp-guard isolate-period

Õ ʉ ỉ ب ل

default nfpp icmp-guard isolate-period

Ẅ Ω ب ˝

Ẅ Ω	ώ ك
seconds	ڴ ˜ Ή ژ ĩ ٧ ɲ ˵ ĩ 0 ă ă [30, 86400] 0 ´ ˜ j ڴ ˜
permanent	⇔ ڴ ˜

Ẃ ð ჯ ئ -

Ẉ ᴶ ب ˝ -

3.66 nfpp icmp-guard policy

ヿ i ڀ ل ṕ ሀ h㊂ ں ھ ↨ ﻯ ۞` ↨ ﻯ

nfpp icmp-guard policy { **per-src-ip** | **per-port** } *rate-limit-pps attack-threshold-pps*

ტ ヿ i ں ھ ↨ ﻯ ۞` ↨ ﻯ ڀ ل Õ ᵸ ỉ ڀ ل

no nfpp icmp-guard policy { **per-src-ip** | **per-port** }

Õ ᵸ ỉ ڀ ل

default nfpp icmp-guard policy { **per-src-ip** | **per-port** }

‴Ω ب ˝

‴Ω	ۏ ك
per-src-ip	ڀ ل ⅛ ◊ IP ㊂ ں ھ ↨ ﻯ ۞` ↨ ﻯ
per-port	ڀ ل ⅛ ヿ ㊂ ں ھ ↨ ﻯ ۞` ↨ ﻯ
rate-limit-pps	ں ھ ↨ ﻯ n ‟ ĩ 1 9999
attack-threshold-pps	۞` ↨ ﻯ n ‟ ĩ 1 9999

ỉ ڀ ل ヿ ≡ ۝ ₅ ţ ㊂ ں ھ ↨ ﻯ ۞` ↨ ﻯ ڀ ŧ ṕ ㊂ ں ھ ↨ ﻯ ں ھ ↨ ﻯ

ɲ ₩ Ã ì ڀ ل ₩ Ã

ỉ ヿ 14

ŧ ‴ Y Ṁ ۞` ↨ ﻯ j Ĩ ṇ ں ھ ↨ ﻯ

ڀ ل 1 χ ڀ ل ì G0/1 i ICMP i ۞` ں ھ ↨ ﻯ ۞` ↨ ﻯ ڀ ل ᵍ IP ں ھ ↨ ﻯ 5pps ۞` ↨ ﻯ 10pps ψ ڀ ل ᵍ ヿ ں ھ ↨ ﻯ 100pps ۞` ↨ ﻯ 200pps

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp icmp-guard policy per-src-ip 5 10
Ruijie(config-if)# nfpp icmp-guard policy per-port 100 200
```

₅ ج Ά | ŧ **show nfpp icmp-guard summary**¶ ˜ ڀ ل Ụ

ώ˜ Ụ -

Ẃ ð ჯ ئ -

Ẉ ᴶ ب ˇ -

3.67 nfpp ip-guard enable

Ỉ ɲ ɾ ᶩ ᵛ ı ɛ Ã IP گ˝Eώ ı ĩ

ĩ 0 ă ắ [30, 86400] 0 ´ ~ j ڈ

default nfpp ip-guard policy { **per-src-ip** | **per-port** }

per-src-ip	IP
per-port	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

G0/1 IP 2pps 10pps 50pps 100pps

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp ip-guard policy per-src-ip 2 10
Ruijie(config-if)# nfpp ip-guard policy per-port 50 100
```

show nfpp ip-guard summary

-

-

-

3.70 nfpp ip-guard scan-threshold

IP

nfpp ip-guard scan-threshold *pkt-cnt*

IP

no nfpp ip-guard scan-threshold

default nfpp ip-guard scan-threshold

ɲЂ₩Ã ì ٮ⅃₩Ã

ǰ ٨ 14

ŧ ˝YṀ ٨ ND i ѽ` Ã ṕ Ã

ٮ⅃ 1:ٮ⅃ f̈ G0/1 ND i ѽ`

```
Ruijie(config)# interface G0/1
Ruijie(config-if)# nfpp nd-guard enable
```

ₛ ج Ά | ŧ **show nfpp nd-guard summary**¶ ˜ ٮ⅃ Ụ

ώ˜ Ụ -

Ẃ ð ჯ ئ -

Ẉ ᴶ ب ˝ -

3.72 nfpp nd-guard policy

٨ i ٮ⅃ ṕ ሀh ں ھ ↨ ٨ ѽ` ↨ ٨

nfpp nd-guard policy per-port { **ns-na** | **rs** | **ra-redirect** } *rate-limit-pps attack-threshold-pps*

ђ ٨ i ں ھ ↨ ٨ ѽ` ↨ ٨ ٮ⅃ Õ ᵸ ǰ ٮ⅃

no nfpp nd-guard policy per-port { **ns-na** | **rs** | **ra-redirect** }

Õ ᵸ ǰ ٮ⅃

default nfpp nd-guard policy per-port { **ns-na** | **rs** | **ra-redirect** }

Ӫ ب ˝

Ӫ	ώ ك
ns-na	٨ ṗ ت ∂ ٨ ṗ ٶ
rs	ث ٠ ت ∂
ra-redirect	ث ٠ ٶ ٹ ĥ ĭ ă
rate-limit-pps	ں ھ ↨ ٨ ח ‗ ĩ 1 9999
attack-threshold-pps	ѽ` ↨ ٨ ח ‗ ĩ 1 9999

ǰ ٮ⅃ ٨ ≡ ѿ₅ ţ ں ھ ↨ ٨ ѽ` ↨ ٨ ٹ ŧ ṕ ں ھ ↨ ٨ ѽ` ↨ ٨

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	14
	ND snooping ND guard ND guard ND snooping
	1 G0/1 ND ns-na 50pps 100pps rs 10pps 20pps; ra-redirect 10pps,gongji 20pps

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp nd-guard policy per-port ns-na 50 100
Ruijie(config-if)# nfpp nd-guard policy per-port rs 10 20
Ruijie(config-if)# nfpp nd-guard policy per-port ra-redirect 10 20
```

	show nfpp nd-guard summary
	-
	-
	-

3.73 show nfpp arp-guard hosts

show nfpp arp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*

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-

1 ARP 100 120 20 ACL

```
Ruijie# show nfpp arp-guard hosts statistics
success    fail    total
-------    ----    -----
100        20      120
```

2 ARP remain-time(s)

```
Ruijie# show nfpp arp-guard hosts
```

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ڀ ɹ 1χ¶ ˜ ARP ˙ ᾠ` ˝E ȯ ŕ Ä ˥ ɯ Ụ Ę ˝E ȯ ´ Ở õ 4¶ ʟ ę

```
Ruijie# show nfpp arp-guard scan statistics
ARP scan table has 4 record(s).
```

2χ¶ ˜ ARP ˙ ᾠ` ˝E ȯ ŕ Ä Ụ ɒ timestamp ɓ ʟ ę ĩ ˵ ⅄ ARP ˝E ȯ H ɾ ḅ ɒ 2008-01-23 16:23:10 ɓ ´ ˜ 2008 ẉ 1 ώ 23 ή 16 ᵖ 23 10 ヽ ˵ ⅄ ARP ˝E ȯ

```
Ruijie# show nfpp arp-guard scan
VLAN    interface   IP address   MAC address      timestamp
----    --------    ----------  -----------      ----------
1        Gi0/1       N/A          0000.0000.0001   2008-01-23 16:23:10
2        Gi0/2       1.1.1.1      0000.0000.0002   2008-01-23 16:24:10
3        Gi0/3       N/A          0000.0000.0003   2008-01-23 16:25:10
4        Gi0/4       N/A          0000.0000.0004   2008-01-23 16:26:10
Total χ 4 record(s)
```

3χ ¶ ˜ vlan 1,G0/1 ヽ MAC ㎞ 0000.0000.0001 ĩ ˝E ȯ ŕ Ä Ụ

Ruijie# show nfpp arp-guard scan vlan 1 interface G 0/1 0000.0000.0001

```
VLAN    interface   IP address   MAC address      timestamp
----    --------    ----------    -----------      ----------
1        Gi0/1       N/A          0000.0000.0001   2008-01-23 16:23:10
Total χ 1 record(s)
```

ٻ ر 1χ¶ ˜ ARP i ѽ` ⅜ٻ ر Ụ ὐ ṕ ٻ ر Ụ Ꞓ ì i ⅜ٻ ر Ụ

```
Ruijie# show nfpp arp-guard summary
ε Format of column Rate-limit and  Attack-threshold is per-src-ip/per-src-mac/per-port.ζ
Interface  Status  Isolate-period Rate-limit Attack-threshold Scan-threshold
Global      Enable  300             4/5/60     8/10/100          15
Gi 0/1      Enable  180             5/-/-      8/-/-               -
Gi 0/2      Disable 200             4/5/60     8/10/100          20

Maximum count of monitored hosts: 1000
Monitor period χ 300s
```

	Interface Global
	Status
	Rate-limit IP / MAC / Attack-threshold “-”

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3.78 show nfpp dhcp-guard summary

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show nfpp dhcp-guard summary

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ﺑ ﻝ 1χˡ ˜ DHCP i ώ` ﷺ ﺑ ﻝ Ụ ὐ ṕ ﺑ ﻝ Ụ Ϙ ì i ﷺ ﺑ ﻝ Ụ

```
Ruijie# show nfpp dhcp-guard summary
ε Format of column Rate-limit and  Attack-threshold is per-src-ip/per-src-mac/per-port. ζ
Interface  Status  Isolate-period Rate-limit Attack-threshold
Global      Enable  300             -/5/150     -/10/300
Gi 0/1       Enable  180             -/6/-       -/8/-
Gi 0/2       Disable 200             -/5/30      -/10/50

Maximum count of monitored hosts: 1000
Monitor period χ 300s
```

8.w6847

8.w6847

3.79 show nfpp dhcp-guard trusted-host

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show nfpp dhcp-guard trusted-host

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ب ـ 1χˡ ˜ DHCP i ώ` ˡ ⿰辶 ب ـ

```
Ruijie# show nfpp dhcp-guard trusted-host
mac
------
0000.0000.1111
0000.0000.2222
Total χ 2 record(s)
```

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3.80 show nfpp dhcpv6-guard hosts

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show nfpp dhcpv6-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

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statistics	ˡ ˜ ᴘ ˇ í ⿰辶 ⿴囗 ٨ ɯ Ụ
vid	Ն Ὸ ṕ ـ ـ
interface-id	٧ ᵉ Ч

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ٮ ٯ 1χ¶ ˜ DHCPv6 ï ѽ` ᴩ ˇ í ڎ ⅏ʅ ɯ Ụ Ẹ ѿ 120 ᴶ ڎ ɋ ˇ í 100 ᴶ ڎ ɋ ă ı ڭ 20 ᴶ ڎ ڭ ¸ م ε ٮ Ẃ Ậ ∨ ⅏ ѿ è j ’ ẵ ă ACL ° ◊ j ’ ζ

```
Ruijie# show nfpp dhcpv6-guard hosts statistics
success    fail    total
-------    ----    -----
100         20       120
```

2χ¶ ˜ DHCPv6 ï ѽ` ᴩ ˇ í ڎ ∨ ɒ remain-time(s) ɓ ĩ ˝Y ⅏ڭ `H ڑ

```
Ruijie# show nfpp dhcpv6-guard hosts
If column 1 shows '*', it means "hardware failed to isolate host".
VLAN  interface   MAC address    remain-time(seconds)
----     ---------    -----------         -------------------
 1     gi0/2      0000.0000.0001   10
 *2    gi0/1      0000.0000.0002   20
Total χ2 host(s)
```

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3.81 show nfpp dhcpv6-guard summary

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show nfpp dhcpv6-guard summary

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ٮ ٯ 1χ¶ ˜ DHCPv6 ï ѽ` ⅏ٮ ٯ Ụ ύ ṕ ٮ ٯ Ụ Ѽ ì i ⅏ٮ ٯ Ụ

```
Ruijie# show nfpp dhcpv6-guard summary
ε Format of column Rate-limit and  Attack-threshold is per-src-ip/per-src-mac/per-port. ζ
Interface  Status  Isolate-period Rate-limit Attack-threshold
```

```
Global      Enable  300             -/5/150     -/10/300
Gi 0/1       Enable  180             -/6/-       -/8/-
Gi 0/2       Disable 200             -/5/30      -/10/50

Maximum count of monitored hosts: 1000
Monitor period χ 300s
```

Interface	Global
Status	
Rate-limit	IP / MAC /
Attack-threshold	“-”

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3.82 show nfpp dhcpv6-guard trusted-host

[redacted]ed-host

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3.83 show nfpp icmp-guard hosts

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show nfpp icmp-guard hosts [**statistics** | [[**vlan**

```
success    fail    total
-------    ----    -----
100          20        120
```

2χ¶ ˜ IP i ѽ` ᴘ ˘ í ڳ ٧ ɒ remain-time(s) ɓ ĩ ″Y ⅏ ˙H ڑ

```
Ruijie#show nfpp ip-guard hosts
If column 1 shows '*', it means "hardware do not isolate host" .
VLAN  interface IP address   Reason      remain-time(s)
----  --------   ---------   -------      -------------
1      Gi0/1       1.1.1.1      ATTACK      110
2      Gi0/2       1.1.2.1      SCAN         61
Total χ2 host(s)
```

“ Reason ” “ ATTACK ” IP “ SCAN ”

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3.87 show nfpp ip-guard summary

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show nfpp ip-guard summary

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پ ـ 1χ¶ ˜ IP i ѽ` ⅏پ ـ Ụ ṅ ṕ پ ـ Ụ ᑫ ì i ⅏پ ـ Ụ

```
Ruijie# show nfpp ip-guard summary
ε Format of column Rate-limit and  Attack-threshold is per-src-ip/per-src-mac/per-port.ζ
Interface Status Isolate-period Rate-limit Attack-threshold Scan-threshold
Global      Enable  300             4/-/60     8/-/100          15
Gi 0/1       Enable  180             5/-/-       8/-/-              -
Gi 0/2       Disable 200             4/-/60     8/-/100          20
```

```
Maximum count of monitored hosts: 1000
Monitor period χ 300s
```

Interface	Global
Status	
Rate-limit	IP / MAC /
Attack-threshold	“-”

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3.88 show nfpp ip-guard trusted-host

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show nfpp ip-guard trusted-host

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```
Ruijie# show nfpp ip-guard trusted-host
```

3.89 show nfpp log

Ĭ ˜ NFPP ŋ Ő ؍ ـ ل

show nfpp log summary

Ĭ ˜ NFPP ŋ Ő ؍ ķ

show nfpp log buffer [**statistics**]

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	statistics	Ĭ ˜ NFPP ŋ Ő ؍ ؋ ш Ų

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%NFPP_ARP_GUARD-4-DOS_DETECTED:

Host<IP=N/A,MAC=0000.0000.0004,port=Gi4/1,VLAN=1> was detected.(2009-07-01 13:00:00)

ـ ل 1 χ† ˜ NFPP ŋ Ő Ų ـ ل

```
Ruijie#show nfpp log summary
Total log buffer size : 10
Syslog rate : 1 entry per 2 seconds
Logging:
VLAN  1-3, 5
interface Gi 0/1
interface Gi 0/2
```

2 χ† ˜ NFPP ŋ Ő ؍ ŋ Ő† ″Ω

```
Ruijie#show nfpp log buffer statistics
There are 6 logs in buffer.
```

3 χ† ˜ NFPP ؋ ŋ Ő ؍

```
Ruijie#show nfpp log buffer
Protocol VLAN  Interface IP address MAC address     Reason          Timestamp
-------- ----  --------- ---------- -----------     ------          ---------
ARP   1      Gi0/1       1.1.1.1      -             DoS             2009-05-30 16:23:10
ARP   1      Gi0/1       1.1.1.1      -             ISOLATED        2009-05-30 16:23:10
ARP   1      Gi0/1       1.1.1.2      -             DoS             2009-05-30 16:23:15
```

```
ARP   1     Gi0/1     1.1.1.2      -              ISOLATE_FAILED 2009-05-30 16:23:15
ARP   1     Gi0/1     -            0000.0000.0001 SCAN           2009-05-30 16:30:10
ARP   -     Gi0/2     -            -              PORT_ATTACKED  2009-05-30 16:30:10
```

Protocol õ Œ ï п χ

ARP	Ḿ Ẓ ARP ｉ ᾠ`
IP	Ḿ Ẓ IP گ˝E ὼ
ICMP	Ḿ Ẓ ICMP ｉ ᾠ`
DHCP	Ḿ Ẓ DHCP ｉ ᾠ`
DHCPv6	Ḿ Ẓ DHCPv6 ｉ ᾠ`
NS-NA	Ḿ Ẓ ND ｉ ᾠ` ▩ʌ ṗ ت ∂ ʌ ṗ ҙ
RS	Ḿ Ẓ ND ｉ ᾠ` ▩ث ◦ ت ∂
RA-REDIRECT	Ḿ Ẓ ND ｉ ᾠ` ▩ث ◦ ҙ ᵱ ḧ ï ă

Reason ˊ˜ õ 5 ㄟ п χ

DoS	ˊ˜ ₅ ㅛ ȯ ʌ ᾽O ᴨ ᾠ`
ISOLATED	ˊ˜ ᾠ` ẵ q ă ı ڭ
ISOLATE_FAILED	ˊ˜ ڭ ᾠ` ẵ, م
SCAN	ˊ˜ ₅ ㅛ ˝E ὼ
PORT_ATTACKED	ˊ˜ ㄟ q ᾠ`

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3.90 show nfpp nd-guard summary

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show nfpp nd-guard summary

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ᵱ ㄴ 1 χ ᚋ ˜ ND ｉ ᾠ` ▩ᵱ ㄴ Ụ ὼ ṕ ᵱ ㄴ Ụ Œ ì ｉ▩ᵱ ㄴ Ụ

```
Ruijie# show nfpp nd-guard summary
ε Format of column Rate-limit and  Attack-threshold is NS-NA/RS/RA-REDIRECT. ζ
Interface  Status  Rate-limit Attack-threshold
Global      Enable  20/5/10     40/10/20
Gi 0/1       Enable  15/15/15    30/30/30
Gi 0/2       Disable -/5/30       -/10/50
```

Interface Global

Status

Rate-limit / / / /
Attack-threshold “-”

“-/5/30” G 0/2 /
5 / 30

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3.91 show nfpp nd-guard trusted-host

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show nfpp nd-guard trusted-host

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```
Ruijie# show nfpp nd-guard trusted-host
mac
------
0000.0000.1111
0000.0000.2222
Total χ2 record(s)
```

ώ˜ Ụ -

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-WLAN QOS

ǀ ĄŸ WLAN QOS Ƒ ą ĄŸ ƸΩ ǫ ˘ ˆ ЛЬЮ ˙

1. WQOS

1 WQOS

1.1 fair-schedule

AP

fair-schedule

mac-address	MAC
priority	1-6

STA 1

15

-

-

-

-

-

1.3 wlan-qos ap-based

AP

wlan-qos ap-based { **per-user-limit** | **total-user-limit** } { **down-streams** | **up-streams** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos ap-based { **per-user-limit** | **total-user-limit** } { **down-streams** | **up-streams** }

AP total-user-limit

wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

up-streams	AP		
Intelligent	total-user-limit		
average-data-rate		8Kbps	8-261120
burst-data-rate		8Kbps	8-261120

total-user-limit

15

total-user-limit

-

-

-

-

-

1.4 wlan-qos netuser

wlan-qos netuser *mac-address* { **inbound** | **outbound** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos netuser *mac-address* { **inbound** | **outbound** }

mac-address	MAC		
inbound			
outbound			
average-data-rate		8Kbps	8-261120
burst-data-rate		8Kbps	8-261120

15

-

-

-

-

-

1.5 wlan-qos wlan-based

WLAN

wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit** } { **down-streams** | **up-streams** } **average-data-rate**

average-data-rate		8Kbps	8-261120
burst-data-rate		8Kbps	8-261120

total-user-limit

15

7060056FB40A080B20B2C6E5JTT0 1 22(TEMC /P AMCID 1BDC 7155 Tc-7453 -1.69 23(TEMC /P AMCID 19BDC4(TEM

1 5

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wqos wqos

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1

1.1 bandwidth

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bandwidth *kilobits*

Õ″ ᵸ Ṿ Ķ ν ″Ω ⚀ ỉ Ө

no bandwidth

ν ″Ω ٮ ″

ν ″Ω	ὼ ك
kilobits	⅛ ヽ ت Ṿ Ķ ı Ꝍ ⅛ ヽ K ⅝ ≠ ₦ ᴅ ᵸ

ỉ ٮ ﻝ Ẹ Ỉ ì Æ ₳ ≡ ω ֆ ﻝ **bandwidth** ᵘ ɲ ν ″Ω`H ı ƥ ≠ ɾ ″A ₩ Ã ï ɾ **show interface** ᵘ ɲ ᵽ Ǐ ˜ Ʊ ỉ Ө

ᵘ ɲ ₩ Ã ì Æ ٮ ﻝ ₩ Ã

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Æ ɾ ″Y Ṁ **bandwidth** ᵘ ɲ j ǐ ḫ ڜ ẽ ᵠ • ₳ ì Æ ⚀ Ṿ Ķ ı ᴱ ĩ ц ɾ ″A ɔ ⅍ ﻉ ﾉ Ỉ ì Æ ⚀ Ṿ Ķ ″Y ‰ ı ˇ ı Ꝍ ᶿ ﻝ ì Æ ⚀ Ṿ Ķ ĩ ɖ ḧ ⚀ ı ɾ ″A ˡ Ꝍ ⁞ ″Ω ḫ ڜ ù` ᵽ ֆ ḧ Bandwidth

ỉ ヽ. N M & å % ” ỉN W₥ØÇ@qsÜ ₫₦ W.ØǤ@qsÜ ₫₦ W.ØǤ@qsÜ o¬ … 6 -o-

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no carrier-delay

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ᵛ ̈Ⴓ	ὼ ᶄ
seconds	Ⓠ ᵑ ᵚ ᴅ ᵸ ᵢ ᵤ ᵬ 0 Ḱ 60 ᵑ

ᵲ ᵽ ᵣ ᴝ ᵲ ᵽ ᵢ ᵲ Ö ῖ 2 ᵑ

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ᵬ ' DCD ᵴ ᵣ ᴸ ᵃ Ă ᵡ H ᵴ ⅝ ᵤ ᵭ ᵢ ᵅ ψ Ṅ Ỉ ᵛ ̈Ⴓ ᵩ ᵭ Ṗ ᵢ ᵎ Ⓠ ő ỗ ᵲ ᵄ ت ᵎ Δ ỉ ̆ ᵢ Ⓠ ẍ ت ᵎ ˊ ᵎ Ⓠ ᵤ ỗ ᵣ ὼ Ⴓ ᵬ ' ̃ ᵲ ᵢ DCD ᵴ ᵣ ᴸ ᵃ Ă ᵡ H ᵴ ᵯ ̂ ت ᵎ Δ ỉ ̆ A ᵸ H ᵴ ᵢ ᵅ ψ Ẓ Ỉ Ṅ Ỉ ᵛ ̈Ⴓ ᵩ ᶩ ̃ Ṁ ᵶ ᶻ Ṗ ᵢ Ⓠ d ᶎ ᾰ̈ ≡ ᾶ ọ ᵢ ᵣ ت ᵎ

ᵽ ᵣ ᶎ æ 1 χ Ⓠ ï æ Ḍ ˜ ᵤ ᵽ ᵣ ᵡ Æ 0 ᵣ ᴸ ᵃ ᵡ 5 ᵑ χ

```
Ruijie(config)# interface gigabitEthernet 0/1
Ruijie(config-if)# carrier-delay 5
```

ₛ ᶎ Á | -

ώ ˜ ʒ Ụ -

Ẃ ȸ ᶎ ᵴ -

Ẉ ᴶ ᵇ ̋ -

1.3 clear counters

ᵯ ᵉ ᵲ ̈A ₩ Ã ï ▌ᵴ ⅈ ᴬ ᵣ ᵍ ᵛ ̈Ⴓ ᵣ ᵚ ᵠ ̈Ⴓ Ö

clear counters [*interface-type interface-numbe*r]

ᵛ ̈Ⴓ ᵇ ̋

ᵛ ̈Ⴓ	ὼ ᶄ
interface-type	ⅈ ᴬ ᵣ ᶎ
interface-number	ⅈ ᴬ ᵡ ᴺ

ᵘ ɲ ₩ Ã ᵉ ɾ Ä ᵽ ɹ ₩ Ã

ɻ ʅ. 14

Æ ɾ ″ Y Ṁ ì Æ i ⿰ ʌ ɯ ʒ Ụ ᵩ ´ ụ g ⿰ Ψ ᵽ j Ă ş Ψ ᵽ ı õ ̀H ı ʁ ˝ ₹ d Ꝏ Ề ụ g ʌ ɯ ʒ Ụ ş ẇ ɳ ı Ṅ ì Æ ş ʌ ɯ ʒ Ụ ▌ ɕ ı ف ¯ Ẹ ̇ ş ʌ ɯ ʒ Ụ ỗ ˡ Ꝏ ḅ ḫ ş ɾ ī Ẹ ̇ ì Æ ̀H ⿰ ụ g ↑ `

ᵽ ɹ ʓ æ 1 χ ▌ ɕ ʁ Æ 1/0 ⿰ ʌ ɯ ″ Ọ Ө ı ɾ ḅ ï ⿰ ᵘ ɲ χ

```
Ruijie# clear counters gigabitEthernet 0/1
```

ώ ˜ ʒ Ụ -

Ẉ ᴶ ᵽ ″ -

1.4 clear interface

ᵽ ᵉ ɾ Ä ₩ Ã ï ʰ ɥ Ⱥ ì Æ ⿰ ʇ ǧ ڈ

clear interface *interface-type interface-number*

v ″ Ọ ᵽ ″

v ″ Ọ	ώ ك
interface-type	ì Æ ʅ ʒ
interface-number	ì Æ ɻ ᴺ

ᵘ ɲ ₩ Ã ᵉ ɾ Ä ᵽ ɹ ₩ Ã

ɻ ʅ. 14

Æ ɾ ″ Y Ṁ ᵔ ᵽ * Ẃ ù ` ï ı j ₔ ɭ ʰ ɥ Ⱥ ì Æ ⿰ ʇ ǧ ڈ ı ʰ ɥ ì Æ ˛ ʇ ǧ ڈ ˀ ⿰ ″ E Φ no shutdown

ᵽ ɹ ʓ æ 1 χ Ꝏ ï ⿰ æ Ḍ ˜ ‥ ʰ ɥ gigabitEthernet 0/1 ⿰ ʇ ǧ ڈ χ

```
Ruijie# clear interface gigabitEthernet 0/1
```

ώ ˜ ʒ Ụ -

Ẉ ᴶ ᵽ ″ -

1.5 description

ᵽ ì Æ ᵽ ɹ ₩ Ã ï ɸ ɻ ì Æ ˛ ᵊ

description *string*

¨ ᵬ ì Æ˯ ᵊ
no description

ᵛ ̋Ꝙ ب ˝

auto	˝Y ẗ Ꝍ ᵠ ㇿ ì Æ₅ گ Ƶ ˝Ḥ Ă ₩ Ã ı ⁞ Ỏ ì Æ ˝A ف ì ⓞ ﻭ ㇰ ʰ ⁀ Ṗ ₱ ᵎ ㇿ ɹ ϰ ḫ ̣ گ ὼ` ᶩ ₅ ʊ ⓞ ﺑ ㇿ Ǐ ì Æ ĩ Ṫ Ă ƍ ᧉ ᵡ Ṫ ᾶ ᾶ Æ ᵡ Ṫ ₩ Ã

ỉ ﺑ ㇿ ᧉ ᵡ Ṫ ⁼ Æ ᵡ Ṫ₅ گ Ƶ

ᵘ ɲ ₩ Ã ì Æ ﺑ ㇿ ₩ Ã

ỉ ㇷ. 14

Æ ɨ ˝YṀ ƍ Æ ɨ ㇿ Æ Ṫ Ă ₩ Ã ⓞ ı ǐ ₱ ㇿ ʿH ı ὃ˝ ₱ ㇿ **duplex** ν ˝Ꝍ Ꝍ ᵘ ı ف ˡ Ꝍ ₱ ㇿ **speed** ı ν ð **speed** ᵘ ɲ ⓞ Æ ɨ ﺑ ˝

ﺑ ㇿ ᶎ æ 1 χ Ꝍ ï ⓞ æ Ḍ˜ ᵢ ƍ ỏ ﻉ Ꝍ ᵠ ㇿ ì Æ 0/0 ₱ ㇿ ă Æ ᵡ Ṫ Ṫ Ă ₩ Ã

```
Ruijie(config)# interface fastethernet 0/0
Ruijie(config-if)# duplex half
```

₅ ᴈ Ä | 1 χ Æ ɨ **show interfaces** ᵘ ɲ ı ˡ Ꝍ ¶ ˜ ì Æ ⓞ ᵡ Ṫ ₩ Ã

ώ˜ ʒ Ụ 1. ﺑ ㇿ ᵡ Ṫ ă ı ɵ ᵅ ı ì Æ h Down W Up ﻱ À в ƀ ı ˡ ǐ h ɛ̆ м ϟ Æ Down ⁼ Up ⓞ syslog

```
*Feb 20 08:26:32: %LINK-3-UPDOWN: Interface GigabitEthernet 0/1, changed state to down.
*Feb 20 08:26:32: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet 0/1, changed state to down.
*Feb 20 08:26:25: %LINK-3-UPDOWN: Interface GigabitEthernet 0/1, changed state to up.
*Feb 20 08:26:25: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet 0/1, changed state to up.
```

Ẃ ỏ ᴇ ὸ -

Ẉ ᴶ ب ˝ -

1.7 encapsluation dot1q

ƍ Ḍ ì Æ ﺑ ㇿ ₩ Ã ï ƍ Ꝍ ᵠ ㇿ Ḍ ì Æ i Ṃ Ꝭ IEEE 802.1Q
encapsulation dot1Q *VLANID*

Ṅ Ṃ Ꝭ Ä Ã Õ ᵸ ㎞ ỉ Ë
no encapsulation

ν ˝Ꝙ ب ˝

ν ˝Ꝙ	ὼ ڭ
VLANID	Ъ Ὸ ṕ ³ ㇿ VLAN ⓞ ID ᴨ Ë ᵢ ƍ 1~4094 ⓞ Ỗ ˝Ꝙ

ƛ ٮ ل	ƛ Ɱ Ŀ ʁ ɲ ĩ 802.1Q ı j Ɱ Ŀ γ Ɱ VLAN
ᵘ ɲ ₩ Ã	Ḍ ì Æ ٮ ل ₩ Ã
ƛ ۱.	14
Æ ŧ ″ Y Ṁ	802.1Q ĩ Ⱥ IEEE ‰ ´ ʁ ɲ ı ₹ ⁝ ƥ Ţ ل ف Φ VLAN ˜ ‘ ⿻ Ṗ ₰ ᵻ = s Ṗ ₰ ᵻ ɵ ڑ Ѝ ڼ 802.1Q ᴱ Ỉ ƥ Ꝋ ᶿ ل Æ ⿻ Ḍ ì Æ i Ɱ Ŀ

ٮ ل ʖ æ	1 χ ï ⿻ æ ƥ Ḍ ì Æ 20 i Ɱ Ŀ 802.1Q ı *VLANID* ʁ 20 χ
	`Ruijie(config)# interface fastEthernet 0/0.20`
	`Ruijie(config-subif)# encapsulation dot1Q 20`

₅ ⇂ Ä |	-
ώ ˜ ʒ Ụ	
Ẃ ȸ ჯ ئ	-
Ẉ ᴶ ب ″	

1.8 interface

ƥ �somewhat ṕ ٮ ل ₩ Ã ï Æ ŧ **interface** ᵘ ɲ ؤ ؟ ì Æ ٮ ل ₩ Ã

interface *interface-type slot-number/interface-number* [*sub-interface-number*]

Ꝋ i ᵘ ɲ Ⱥ ⿻ ḣ ᵊ Æ ŧ **define interface-range** ⁋ ḧ Θ

define interface-range *macro_name*

ν ″ Ọ	ώ ك
interface-type	ì Æ ۱ ʒ
slot-number/interface-number	
sub-interface-number	

ƛ ٮ ل	ƛ ὐ ` ï ı j Æ ŧ Ỉ ı ť
ᵘ ɲ ₩ Ã	৳ ṕ ٮ ل ₩ Ã

ƛ ᐟ 14

Æ ŧ ˝YṀ Ḿ Ъ Ὸ Æ ı ᵹ ϶ ì Æ ᴺ Ḥ j ᵢ ɹ ᵹ ϶ Rs ᴺ ı ´ ì ᵹ ϶ Ъ Ὸ Æ ﾚ ᴺ o ᴵ ı ᵬ interface looback 0.

ᵽ ﾚ ᵷ æ
```
Ruijie(config)# interface Gi1/1.123
```

ₛ ᶎ Ä │ -

ώ˜ ʒ Ụ -

Ẃ ȸ ᶎ ᵴ -

Ẉ ᴶ ᵽ ˝ -

1.9 interface range

ᵷ ϶ ṕ ᵽ ﾚ ₩ Ǟ ï Æ ŧ **interface** ᵘ ᵑᵬ ᵭ ϶ ì Æ ᵽ ﾚ ₩ Ǟ
Interface range { *port-range* | **macro** *macro_name* }

Ɋ i ᵘ ᵑᵬ ₳ ⅏ ḣ ᵊ Æ ŧ **define interface-range** ᵖ ḧ Θ
define interface-range *macro_name*

v ˝Ɋ ᵽ ˝

v ˝Ɋ	ὼ ك
port-range	ḧ ᵧ ˝Ḥ Ă ⅏ ì Æ ᵻ ʒ ⊐ ì Æ ﾚ ᴺ ᵤ ᵷ ı ᴵ Ɋ ĩ Ɋ ᶿ ﾚ ᵻ ת ì Æ Loopback Æ ヤ ı ᵹ ϶ ė Ǟ ₶ *interface-type slot-number/interface-number* [*sub-interface-number*]

2χ ژ ϶ ᵸ ᵬ ᵱ ᵽ ᵽ ì Æᵽ ᵽ

```
Ruijie(config)# define interface-range route1 gigabitEthernet 0/1-2
Ruijie(config)# interface range macro route1
Ruijie(config-if-range)# bandwidth 100
```

ₛ ᴈ Ä | -

ώ˜ ʒ Ụ -

Ẃ ȸ ᴇ ئ -

Ẉ ᴶ ب ˝ -

1.10 load-interval

ᵽ ì Æᵽ ᵽ ₩ Ã ï ˝ Y ḧ Ⱥ ì Æ ق ذ ɯ ٧ ژ ڭ ̀H ژ

load-interval *seconds*

Õ ʷ ǰ ᵽ ᵽ

no load-interval

v ̈Ọ ب ˝	v ̈Ọ	ώ ك

‡ ç `

ώ˜ ʒ Ụ -

Ẃ ȣ ჭ ئ -

Ẉ ᴶ ب ˝ -

1.11

1.12 show interfaces

ƥ ≠ ɾ ẗA₩Ã ã ˝ ụ ɾ ẗA₩Ã ï Æ ɾ **show interfaces** ᵘ ɲ ǐ ˜ ¦ ˜ ≠ ḧ ì Æ ↑ ő Œ ɜ ∤ ɯ ʒ Ụ

show interfaces [*interface-type interface-number*] [**description**]

v ̈Ọ ب ˝

v ̈Ọ	ὼ ك
interface-type	ˡ Ǯ v ̈Ọ ı ì Æ ɻ ʒ ı j Ǯ ѕ ɲ ǐ ˜ ẗA ῶ ì Æ
interface-number	Ẹ ژ ϡ ì Æ ɻ ʒ ̀H ı ѫ ọ Ǯ v ̈Ọ ı ì Æ ∧ ᴺ
description	ì Æ ὼ ك ɻ ʒ Ụ ı ɣ ὺ link ↑ ő

ᵘ ɲ ₩Ã ẗA ῶ CLI ɾ ẗA₩Ã

ƚ ɻ. 14

Æ ɾ ″YṀ Æ ɾ **show interface** ᵘ ɲ ˡ Œ¦ ˜ ʒ Ụ ɣ ὺ ῶ χ ì Æ ⁼ ʁ ɲ ↑ ő MTU Bandwidth Loopback ↑ ő ì Æ Ƨ ̊ Ɱ ɤ ⁼ Ƨ ̊ Æ ɾ ừ ʁ ɲ ụ g ừ ì Æ ı ĭ ă ژ ϡ ژ¸ Œ ɜ Ţ ჳ ɻ ụ g ừ ı ჳ ت ɾ ɲ ↑ ő ˡ Œ˜ ¸ ˛ Ă Ѧ ì Æ″Ω Ω ჳ ت Ṗ Œ ï Æ ɾ ừ ı ف Ѧ ᵘ ɲ ǐ ѡ ѫ Ẃ ɾ

ب ɻ ʓ æ 1 χ Ǐ ˜ ồ ѧ Œ ᶿ ɻ ì Æ FastEtheret 0/0 ʒ Ụ

```
Ruijie# show interface fastEthernet 0/0
Index(dec):1 (hex):1  (ì Æ ɻ Ậ ʒ Ụ ı " ف ̇  ⁼ " ᑎ ف ̇  )
FastEthernet 0/0 is UP  , line protocol is UP  (ì Æ Link ↑ ő ⁼ ʁ ɲ ↑ ő ʒ Ụ)
Hardware is Nat-Semi DP83815DVNG FastEthernet, address is 0a0b.0c0d.0e0f (bia 0a0b.0c0d.0e0f)  (ì Æ  ţ ɻ ʒ Œ ɜ MAC ʂ χ)
Interface address is: 1.1.1.1/24  (ì Æ i ب ɻ IP ʂ χ)
ARP type: ARPA,ARP Timeout: 3600 seconds  (ì Æ i ARP ʒ Ụ)
Interface IPv6 address is:  (ì Æ i ب ɻ IPv6 ʂ χ ʒ Ụ)
No IPv6 address
MTU 1500 bytes, BW 100000 Kbit  (ì Æ MTU Œ ɜ Ṿ Ḵ)
Encapsulation protocol is Ethernet-II, loopback not set (ì Æ Ṃ Ŀ ʁ ɲ Œ ɜ ĩ ᵋ ф ɻ ɨ ע)
Keepalive interval is 10 sec , set  (ì Æ keepalive ب ɻ ʒ Ụ)
Carrier delay is 2 sec  (ì Æ ɔ ᒐ ̀H å ı ɒ ɥ ∨)
Ethernet attributes:
    Medium-type is Copper (ヶ Æ ƙ و)
    Last link state change time: 2012-12-22 14:00:48 (ヶ Æ i Ⱪ Up/Down ̀H ژ)
    Time duration since last link state change: 3 days, 2 hours, 50 minutes, 50 seconds (ヶ Æ ↑ ő ̀Y ∧ ̀H ڌ)
    Priority is 0 (ヶ Æ Ч Ж ∤)
    Admin duplex mode is AUTO, oper duplex is Unknown  (ヶ Æ ᵴ Ṫ ₩Ã Œ ɜ ɨ ώ ᵴ Ṫ ↑ ő)
    Admin speed is AUTO, oper speed is Unknown  (ヶ Æ ѧ ' ₩Ã Œ ɜ ɨ ώ ѧ ' ↑ ő)
    Flow control admin status is OFF,flow control oper status is OFF (ヶ Æ Ш í ₩Ã Œ ɜ ɨ ώ Ш í ↑
```

```
õ)
  Queueing strategy: FIFO  (ᵑ⁴ᴬᴱ QOS ᵡ˚  ᶾ Ụ)
Output queue 0/40, 0 drops;
Input queue 0/75, 0 drops
Rxload is 1/255 ,Txload is 1/255  (ᵑ⁴ᴬᴱώ ʌ ĭ ă ق ت ' )
5 minutes input rate 0 bits/sec, 0 packets/sec  (ᵑ⁴ᴬᴱώ ʏ ⱨ ' ɪ ⅛ ᵑ bit ″Ǫ Ꝍ ᶾ ⅛ ᵑ ĭ ă ″Ǫ)
5 minutes output rate 0 bits/sec, 0 packets/sec  (ᵑ⁴ᴬᴱ ʌ ʏ ⱨ ' ɪ ⅛ ᵑ bit ″Ǫ Ꝍ ᶾ ⅛ ᵑ ĭ ă ″Ǫ)
782 packets input, 88920 bytes, 0 no buffer  ε ᵑ⁴ᴬᴱώ ʏ ʃ ɯ ɪ ᶎ ɕ ʏ ʃ ɯ ᵑ ζ
Received 782 broadcasts, 0 runts, 0 giants
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 abort
0 packets output, 0 bytes, 0 underruns  ε ᵑ⁴ᴬᴱ ʌ ʏ ʃ ɯ ɪ ᶎ ɕ ʏ ʃ ɯ ᵑ ζ
0 output errors, 0 collisions, 1 interface resets
```

2χ Ǐ˜ ᵑ⁴ᴬᴱώ ك ᵑ ᶾ Ụ

```
Ruijie#
Ruijie#show interfaces gigabitEthernet 0/0 description
Interface                      Status   Administrative Description
------------------------------ -------- -------------- -----------
GigabitEthernet 0/0            up       up             connet_to_g0/1
ب ″ χ ᵑ ˚  ĩ ᵑ⁴ᴬᴱ ᵋ ɪ ᵚ ˚  ĩ ᵑ⁴ᴬᴱ Link ↑ õ ɪ ᵑ s˚  ĩ ᵑ⁴ᴬᴱ ᵑ ת ↑ õ ɪ ᵑ ₩ ˚  ĩ ᵑ⁴ᴬᴱώ كپ ل ᶾ Ụ
```

ώ˜ ᶾ Ụ -

Ẉ ᴶ ب ″ -

1.13 show interfaces link-state-change statistics

ᶴ ˜ ᵑ⁴ᴬᴱ ج ن ↑ õ ψ ᵽ ᵸ H ژ ⊐ Ꝁ ″Ǫ

show interfaces [*interface-type interface-number*] **link-state-change statistics**

ν ″Ǫ ب ″

ν ″Ǫ	ώ ك
interface-type	ˡ Ǐ ν ″Ǫ ɪ ì ᴬᴱ ᵑ ʒ ɪ j Ǐ س ת Ǐ˜ ″A õ ì ᴬᴱ
interface-number	Ẹ interface-type Ǐ ħ ᵸ H ⱡ ọ Ǐ ν ″Ǫ ɪ ì ᴬᴱ ᵡ ᴺ

ᵘ ᵑᵬ ₩ Ã ″A õ CLI ᵻ ″A ₩ Ã

ƛ ᵑ˛ 14

Æ ᵻ ″Y Ṁ ḅ ' j ″Y ḧ ì ᴬᴱ ᵋ ᵸ ɪ ¨ Ǐ˜ ″A õ ì ᴬᴱ ج ن ↑ õ ψ ᵽ ʒ Ụ

پ ل ᵹ æ 1 GigabitEthernet 0/1

```
Ruijie# show interfaces GigabitEthernet 0/1 link-state-change statistics
```

```
Interface      Link state     Link state change times      Last change time
-------------  ---------      -----------------------      ------------------
Gi 0/1         down           100                          2012-12-24 15:00:00
ب ˝ χ ٧‾ ˚ ĩ Ẹ˙ ج ت ↑ õ ı ٧ s˚ ĩ ج ت ↑ õ ψ ק Ƙ Ꝙ ı ٧ ₦ ˚ ĩ i Ƙ ج ت ↑ õ ψ ק ₪ H ژ
```

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ 11.0 v Ȧ ᵚ ᵘ ᵑᵬ

1.14 show vlans

ᵽ ≠ ɾ Ȧ₩Ã ï Æ ɾ show vlans ᵘ ᵑᵬ˙ ˜ VLAN Ḍ ì Æ ₪ ʒ Ụ

show vlans [*VLANID*]

v Ȩ Ꝙ ب ˝

v Ȩ Ꝙ	ώ ك
VLANID	ˡ J̌ v Ȩ Ꝙ ı VLAN ₪ ‰ ٶ ٨ ᴺ ı j J̌ „ Ǐ ˜ Ȧ ω VLAN ï Ḍ ì Æ ʒ Ụ-

ᵘ ᵑᵬ ₩ Ã Ȧ ω CLI ɾ Ȧ ₩ Ã

ƛ ٨. 14

Æ ɾ Ȩ Ẏ Ṁ -

ب ل ʖ æ 1 χ ï ₰ ₪ ˜ æ ĩ Ȩ Φ Ỉ ᵘ ᵑᵬ ₪ Ѧ Ɛ ʒ ژ. χ

```
Ruijie# show vlans
Virtual LAN ID:  3 (IEEE 802.1Q Encapsulation)
VLAN Interface FastEthernet 0/0.1
IP address: 1.1.1.1
Received:30 packets,
Transmitted: 30 packets
Virtual LAN ID:  4 (IEEE 802.1Q Encapsulation)
VLAN Interface FastEthernet 0/0.2
```

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

1.15 show interfaces usage

╏ ˜ ì Æ Ṿ Ḵ˳ ɤ '

show interfaces [*interface-type interface-number*] **usage**

ᵛ ˝Ọ ب ˝

ᵛ ˝Ọ	ὼ ڭ
interface-type interface-number	ˈ J̌ ᵛ ˝Ọ ı ì Æ ۱ ʒ ⊐ ì Æ ۷ ᴺ ı j J̌ ̈ Ǐ ˜ ˝A ῶ ì Æ

ᵘ ᵑᵬ ₩ Ã ˝A ῶ CLI ɤ ˝A ₩ Ã

ƛ ۱˳ 14

Æ ɤ ˝Y Ṁ

summary	¶ ˜ ì Æ ï ă ∖ ɩ ∕ ɰ Ө

ᵘ ɲ ₩ Ã̈ Ä õ CLI ɾ Ä ₩ Ã̈

ȷ̂ ∕ ˙ 14

Æ ɾ ″ Y Ṁ þ ' j ″ Y ñ ì Æ ᵖ Ɥ ı „ Ǐ ˜ Ä õ ì Æ ⊞ ï ă ∕ ɰ Ө

ب ɹ ʒ̈ æ 1 χ Ǐ ˜ ì Æ GigabitEthernet 0/1 ⊞ ì Æ ∕ ɰ ȝ Ụ

```
Ruijie#show interfaces GigabitEthernet 0/1 counters
Interface : GigabitEthernet 0/1
5 minute input r  ξ M E  ρ Â  tt  E L W V  F H F ÷  Ç  9 D F á H W V  F H F
```

```
Packet increment in last sampling interval(5 seconds):
  InOctets            : 10000
  InPkts              : 1000(Unicast: 10%, Multicast: 10%, Broadcast: 80%)
  InUcastPkts         : 100
  InMulticastPkts     : 100
  InBroadcastPkts     : 800
  OutOctets           : 10000
  OutPkts             : 1000(Unicast: 10%, Multicast: 10%, Broadcast: 80%)
  OutUcastPkts        : 100
  OutMulticastPkts    : 100
```

ب ˝ χ

Rxload ĩ ì ώ Ṿ Ḵ ɾ ' ı Txload ĩ ∧ ڜ Ṿ Ḵ ɾ '

InPkts ĩ ώ ⃞ ɒ Ḥ ı ﻉ Ḥ ⊐ ẍ Ḥ ⃞ Ở ⊐ ı ὐ ᴺ ᵩ ᵪ ĩ ɒ Ḥ ı ﻉ Ḥ ⊐ ẍ Ḥ ⃞ ˜ ‘ ⅝ OutPkts ﻉ ɲ

Packet increment in last sampling interval(5 seconds) ĩ i Ѧ پ ¯ Ḥ ژ ڑ ڷ ε 5 ヽ ζ ⃞ ĩ ă ᵸ ᵩ ﻉ ЩӨ

2 χ Ĭ ˜ ì Æ GigabitEthernet 0/1 ᵽ i Ѧ پ ¯ Ḥ ژ ڑ ڷ ᵸ ɾ ⃞ ĩ ă ﻉ ЩӨ

```
Ruijie#show interfaces GigabitEthernet 0/1 counters increment
Interface : GigabitEthernet 0/1
Packet increment in last sampling interval(5 seconds):
  InOctets            : 10000
  InPkts              : 1000(Unicast: 10%, Multicast: 10%, Broadcast: 80%)
  InUcastPkts         : 100
  InMulticastPkts     : 100
  InBroadcastPkts     : 800
  OutOctets           : 10000
  OutPkts             : 1000(Unicast: 10%, Multicast: 10%, Broadcast: 80%)
  OutUcastPkts        : 100
  OutMulticastPkts    : 100
```

3 χ Ĭ ˜ ì Æ GigabitEthernet 0/1 i ⃞ ج ئ ĩ ă ﻉ ЩӨ

```
Ruijie#show interfaces GigabitEthernet 0/1 counters increment
Interface    UnderSize           OverSize            Collisions          Fragments
------------ ------------------- ------------------- ------------------- -------------------
Gi0/1        0                   0                   0                   0
Interface    Jabbers             CRC-Align-Err       Align-Err           FCS-Err
------------ ------------------- ------------------- ------------------- -------------------
Gi0/1        0                   0                   0                   0
```

ب ˝ χ

UnderSize ĩ ŧ Ã* ˛ Ꮋ ذ ỷ ⃞ ⃞ 64 È ` ⃞ ĩ ă Ѿ ψ

```
OverSize ĩ†  Ã*  .  Ꮋ ڌ ŷ ⁂ 1518 È ` ㆓ ï ă ̈Ǫ
Collisions ĩ ∧ گ ̀H ∧ ɨ ˙  ℵ ㆓ ï ă ̈Ǫ ψ
Fragments ĩ ⁇ 64 È ` ɪ Ẋ ħ ω CRC ᶎ ئ ǎ ă Ḿ ش ᶎ ئ ㆓ ï ă ̈Ǫ ψ
Jabbers ĩ ⁂ 1518 È ` ɪ Ẋ ħ ω CRC ᶎ ئ ǎ ă Ḿ ش ᶎ ئ ㆓ ï ă ̈Ǫ ψ
CRC-Align-Err ĩ ώ ˙  ω CRC ᶎ ئ ㆓ ï ă ̈Ǫ ψ
Align_Err ĩ ώ ˙  ν Ḿ ش ᶎ ئ ㆓ ï ă ̈Ǫ ψ
FCS-Err ĩ ώ ˙  ω FCS ᶎ ئ ㆓ ï ă ̈Ǫ
```

4. Ǐ ~ ì Æ GigabitEthernet 0/1 ì ㆓ ï ă ώ ∧ ھ ' ʒ Ụ

```
Ruijie#show interface gigabitEthernet 0/1 counters rate
Interface    Sampling Time         Input Rate          Input Rate          Output Rate
Output Rate
                                   (bits/sec)          (packets/sec)       (bits/sec)
(packets/sec)
-----------  --------------------  ------------------  ------------------  ------------------
------------------
Gi0/1        5 seconds             23391               23                  124
0
```

ب ˝ χ

Sampling Time ĩ ì Æ ï ă پ ¯ ̀H ڑ ɪ Input Rate ĩ ì Æ ï ă ì ώ ھ ' ɪ Output Rate ĩ ì Æ ï ă ∧ گ ھ '

5. Ǐ ~ ì Æ GigabitEthernet 0/1 ì ㆓ ï ă ℵ ɻ ɻ Ҷ ʒ Ụ

```
Ruijie#show interface gigabitEthernet 0/1 counters summary
Interface     InOctets            InUcastPkts         InMulticastPkts     InBroadcastPkts
------------  ------------------  ------------------  ------------------  ------------------
Gi0/1         1475788005          1389                45880503            11886621
Interface     OutOctets           OutUcastPkts        OutMulticastPkts    OutBroadcastPkts
------------  ------------------  ------------------  ------------------  ------------------
Gi0/1         6667915             6382                31629               13410
```

ب ˝ χ

InOctets ĩ ì Æ ì ώ Ở ï ă È ` ̈Ǫ ɪ InUcastPkts ĩ ì Æ ì ώ ɒ ̣Ḥ ï ă ̈Ǫ ɪ InMulticastPkts ĩ ì Æ ì ώ ɻ ̣Ḥ ï ă ̈Ǫ ɪ InBroadcastPkts ĩ ì Æ ì ώ ӧ ̣Ḥ ï ă ̈Ǫ ψ

OutOctets ĩ ì Æ ∧ گ Ở ï ă È ` ̈Ǫ ɪ OutUcastPkts ĩ ì Æ ∧ گ ɒ ̣Ḥ ï ă ̈Ǫ ɪ OutMulticastPkts ĩ ì Æ ∧ گ ɻ ̣Ḥ ï ă ̈Ǫ ɪ OutBroadcastPkts ĩ ì Æ ∧ گ ӧ ̣Ḥ ï ă ̈Ǫ

ώ ~ ʒ Ụ	-
Ẉ ᴶ ب ˝	-

1.17 shutdown

ƥ ì Æ ᵽ ⅃ ₩ Ã ï ʜ ŝ ≠ ḧ ì Æ

shutdown

ᵽ Ȧ ᵏ ʊ Ⱥ ì Æ

no shutdown

ν ″Ϙ ᵽ ″	ν ″Ϙ	ѡ ك
	-	-

ⱨ ᵽ ⅃ ≡ ũ shutdown

ᵘ ɲ ₩ Ã ì Æ ᵽ ⅃ ₩ Ã

ⱨ ∧ ¸ 14

Æ ŧ ″ Y Ṁ ƥ ì Æ ı Æ ŧ Ỉ ᵘ ɲ ı Ỵ ᵖ ´ Æ Ỉ ì Æ ṇ ᾑ ƥ ª ℓ ѭ Φ ì Æ ı Ṅ ´ ì Ṅ DTR ⁼ RTS ⅃ ă ṇ ᾑ ı ḅ ' ᵘ ì Modem ũ DTR ẵ ă RTS ʒ ᴺ ♂ ı ɑ ψ ″ Y ˜ ♂ Ṅ ʜ ŝ ẵ ƥ ɸ ᵻ ª ℓ Æ ″ Y ˜ ♂ Ĉ h ₒ è ḅ ' Ⱥ ì Æ ʜ ŝ Ỿ ı ŧ ᵘ ɲ **show interface** ˡ Ɋ ˜ ˙ is administratively down ώ ˜

ᵽ ⅃ ʓ æ æ 1 χ Ɋ ï æ Ḍ ˜ ˵ ʜ ŝ gigabitEthernet 0/1 Æ

```
Ruijie(config)# interface gigabitEthernet 0/1
Ruijie(config-if)# shutdown
%LINK CHANGED: Interface gigabitEthernet 0/1, changed state to administratively down



Ruijie(config-if)# no shutdown
```

ₛ ⱬ Ä | 1 χ Æ ŧ **show interfaces** ᵘ ɲ ı ˡ Ɋ ˜ ì Æ ↑ ő

ѡ ˜ ʒ Ụ -

Ẃ ȸ ⱬ ئ -

Ẉ ᴶ ᵽ ″ -

1.18 speed

ƥ ì Æ ᵽ ⅃ ₩ Ã ï ᵽ ⅃ Ɋ ᶿ ⅄ ì Æ ª '

speed { **10** | **100** | **1000** | **auto** }

Õ ʰ ㎞ ﾉ ﾍ ﾚ

no speed

v ¨Ǫ ﾍ ¨

v ¨Ǫ	ώ ك
10	¨Y ẗ Ꙍ ᶿ ﾚ ì Æ Ă ㎞ 10M ₩ Ã
100	¨Y ẗ Ꙍ ᶿ ﾚ ì Æ Ă ㎞ 100M ₩ Ã
1000	¨Y ẗ Ꙍ ᶿ ﾚ ì Æ Ă ㎞ 1000M ₩ Ã
auto	¨Y ẗ Ꙍ ᶿ ﾚ ì Æ₅ گ Ƶ ¨Ḥ Ă ₩ Ã ı ⁞ ¨Ω ì Æ ¨A ف ì ﾛ ﾍ ﾚ ﾇ ʜ ⁀ Ṗ Ф ᵗ ﾚ ɹ ϟ ɳ گ ﾛ ﾍ ﾚ Ǐ ì Æ ĩ Ṫ Ă ƥ 10M ı 100M ǎ ă 1000M ₩ Ã

ﾉ ﾍ ﾚ ﻫ ' ₅ گ Ƶ

ᵘ ᑌ ӈ Ȯ ¦

o¬ xÀ•gXCAs1C ä •

1.19 snmp trap link-status

ᵽ ᵩ ᵎ ᵚ ᵻ ᵄ ᵎ ᵁ ᵷ̂ ì Æ ᵽ ᵣ ᵎ ᵋ ᵋ ᵄ ᵎ Æ LinkTrap ı Ẹ ı ᵎ ᵋ Ã ̀H ı ḅ ' ì Æ Link ↑ õ ᵠ ᵱ ı SNMP Ṅ ∧ ̦ LinkTrap ı ᵣ ᵩ ̈ j ∧

snmp trap link-status

ʜ ᵬ Í ı ᵎ ı SNMP Ṅ j ∧ ̦ LinkTrap

no snmp trap link-status

ᵛ ̋Ọ ᵽ ̋

ᵛ ̋Ọ	ὼ ᶄ
-	-

ᵡ ᵽ ᵣ ᵡ ὺ ̀ ï ı Í ı ᵎ ᵋ Ã

ᵘ ᵑᵬ ₩ Ã̃

ì Æ ₩ Ã̃

ᵡ ᵑ ̣

14

Æ ᵻ ̋YṀ

Ḿ ̗ ì Æ ε Ɯ θ ᵣ ᵑ Æ ᵎ ᵀ ᵑ Æ ⊐ Ґ ̋Ω Ъ Ὸ ì Æ ζ ı Í ᵘ ᵑᵬ ᵽ ᵣ ᵎ ε ∧ ᶄ Í ì Æ LinkTrap ı Ẹ ı ᵎ ᵋ Ã ̀H ı ḅ ' ì Æ Link ↑ õ ᵠ ᵱ ı SNMP Ṅ ∧ ̦ LinkTrap ı ᵣ ᵩ ̈ j ∧

ᵽ ᵣ ᵹ æ

1 χ ï ̯ æ Ḍ ᵽ ᵣ ì Æ j ∧ ᶄ LinkTrap

```
Ruijie(config)# interface GigabitEthernet 1/1
Ruijie(config-if-GigabitEthernet 1/1)# no snmp trap link-status
```

2 χ ï ̯ æ Ḍ ᵽ ᵣ ì Æ ∧ ᶄ LinkTrap

```
Ruijie(config)# interface GigabitEthernet 1/1
Ruijie(config-if-GigabitEthernet 1/1)# snmp trap link-status
```

ᵴ ᵶ Ä |

-

ώ ̃ ʒ Ụ

-

Ẃ ȸ ᵯ ᵴ

-

Ẉ ᴶ ᵽ ̋

-

1.20 snmp-server if-index persist

Ã ᵏ ì Æ ↓ Ậ ⇔ ᵱ ı ᵎ ı o ᵩ ᵻ ᵨ ᵏ ᵅ ì Æ ↓ Ậ j ᵱ

snmp-server if-index persist

v ¨Ọ ب ˝

v ¨Ọ	ώ ك
-	-

ﻷ ﺑ ﻟ Í ı ĺ ʜ ڑ

ᵘ ɲ ₩ Ã ২ ṕ ₩ Ã

ﻷ ۱ ̣ 14

Æ ŧ ˝ Y Ṁ ¨E Φ ᵘ ɲ ɒ **snmp-server if-index persist** ɓ Ꞛ ª ı Ȝ è ﺑ ﻟ ˋ H Ṅ ¨H Ę ˙ ¨A õ ì Æ ﻟ Ậ Ȝ è ∀ ı ﻱ ᵏ ª ì Æ Æ ŧ ﻱ ᵏ ˙ ‘ ﺑ ì Æ ﻟ Ậ ├ Ỵ ﻱ ᵏ ˙ ǫ ɤ Ȝ - ﺑ ﻟ

ﺑ ﻟ ǯ æ 1 χ Ầ ᵏ ì Æ ﻟ Ậ ⇔ Ψ ɒ ı ĺ

```
Ruijie(config)# snmp-server if-index persist
```

ₛ ﺯ Ä │ -

ώ ˜ ȝ Ụ -

Ẃ ȸ ﺓ ئ -

Ẉ ᴶ ﺑ ˝ -

2 MAC

2.1 clear mac-address-table dynamic

▌ᵬ˝Y ḧ ʊ ő MAC ᶊ ᶍ ᵅ̃ ᵅ̈˝Y ḧ ì Æ/VLAN ⿰ʊ ő MAC ᶊ ᶍ

clear mac-address-table dynamic [**address** *mac-addr* [**interface** *interface-id*] [**vlan** *vlan-id*] | { [**interface** *interface-id*] [**vlan** *vlan-id*] }]

ᵛ ˝Ⱬ ˝

ᵛ ˝Ⱬ	ὼ ᶄ
dynamic	▌ᵬ˝A ῶ ʊ ő ᶊ ᶍ
address *mac-addr*	▌ᵬ˝Y ḧ ⿰ʊ ő ᶊ ᶍ
interface *interface-id*	▌ᵬ˝Y ḧ ì Æ⿰˝A ῶ ʊ ő ᶊ ᶍ

seconds	ʊ õ ş x ă ɾ ʽH ɹ ı Ɯ ˥ ʁ ɒ ʁ ˵˵ ƫ ˈ ɸ ˠ ˜ ĥ 0 ˊ˜ ʜ ɹ ă ɾ ı ǐ

ɻ ᵽ ɻ ɻ Ө ĩ 300 ˥

ᵘ ɲ ₩ Ã ᵴ ṕ ᵽ ɻ ₩ Ã

ɻ ˥˳ 14

Æ ɪ ˝ Y Ṁ Æ ɪ **show mac-address-table aging-time** ᵘ ɲ ˜ ɸ ɻ

ᵽ ɻ ʖ æ 1 ɸ ɻ MAC ş x ă ɾ ʽH ɹ ʁ 500 ˥

```
Ruijie(config)#mac-address-table aging-time 500
```

ₛ ᴈ Ä │ -

ώ˜ ʒ Ụ -

Ẃ ȸ ᶎ ȿ -

Ẉ ᴶ ᵽ ˝ -

2.3 mac-address-table filtering

ƫ ˝ Y ĥ VLAN ɲ ɸ ĥ ص ▾ ş x

mac-address-table filtering *mac-address* **vlan** *vlan-id*

˳˳ ȸ ص ▾ ş x

no mac-address-table filtering *mac-address* **vlan** *vlan-id*

˳˳ ȸ ص ▾ ş x

default mac-address-table filtering *mac-address* **vlan** *vlan-id*

v ˝ Ọ ᵽ ˝

v ˝ Ọ	ώ ك
mac-address	ص ▾ ş x
vlan-id	VLAN ID ı˵˵ ƫ ƫ 1-4094

ɻ ᵽ ɻ ɻ ≡ ũ ɸ ɻ γ Ṃ ص ▾ ş x

ᵘ ɲ ₩ Ã ᵴ ṕ ᵽ ɻ ₩ Ã

ɻ ˥˳ 14

Æ ŧ ˝YṀ ص ▾ ş ẋ j ſ ᵻ ˧ Ḥ ş ẋ

ώ˜ ʒ Ụ -

Ẃ ȣ ȼ ئ -

Ẉ ᴶ ب ˝ -

2.6 show mac-address-learning

ꜝ ˜ ヶ Æ ş ɣ ę Ĉ Ĩ ד

show mac-address-learning

v ˝Ǫ ب ˝

v ˝Ǫ	ώ ك
-	-

ᵘ ɲ₩Ã ″A ω₩Ã

ƛ ヶ. 2

Æ ŧ ˝YṀ -

ب ل ʓ æ 1 χ Ǐ ˜ ヶ Æ ş ɣ ę Ĉ Ĩ ד χ

```
Ruijie(config)#show mac-address-learning
GigabitEthernet 0/0      learning ability: disable
GigabitEthernet 0/1      learning ability: enable
GigabitEthernet 0/2      learning ability: enable
GigabitEthernet 0/3      learning ability: enable
```

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

2.7 show mac-address-table

Ǐ ˜ ″A ω ヶ ʒ MAC ş ɣ ʒ Ụ ε ɣ ὐ ʊ ȭ ş ɣ ı ˝ ȭ ş ɣ ⁼ ص ▾ ş ɣ ζ

show mac-address-table [**address** *mac-addr*] [**interface** *interface-type interface-number*]

vlan *vlan-id*	VLAN ᴺ ı ̧ ƀ ƥ 1-4094

ᵘ ɲь₩Ã ΄A õ₩Ã

ȷ̀ ∧. 2

Æ ŧ ˝YṀ -

ب ـ ǯ æ 1 χ¶ ˜ MAC ş ɣ ˊ

```
Ruijie# show mac-address-table address 00d0.f800.1001
Vlan        MAC Address          Type     Interface
-------    ------------       --------   --------
1           00d0.f800.1001       STATIC  GigabitEthernet 1/1
```

È ɟ ɹ ɻ χ

È ɟ	ب ˘
Vlan	ì Æ ş ɣ
MAC Address	MAC ş ɣ
Type	MAC ş ɣ ∧ ʒ
Interface	MAC ş ɣ ΄A ƥ ì Æ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˘ -

2.8 show mac-address-table aging-time

Ǐ ˜ ʊ ő ş ɣ ă̈ ƥ ʽH ȷ̀

show mac-address-table aging-time

v ΄Ọ ب ˘	v ΄Ọ	ώ ك
	-	-

ᵘ ɲь₩Ã ΄A õ₩Ã

ȷ̀ ∧. 2

Æ ŧ ˝YṀ -

ب ـ ǯ æ 1 χ¶ ˜ MAC ş ɣ ă̈ ƥ ʽH ȷ̀

```
Ruijie# show mac-address-table aging-time
Aging time    : 300
```

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

2.9 show mac-address-table count

Ǐ ˜ ʂ ɤ ˊ ʌ ʂ ɤ ˊ ° Ⱥ ̋Ⱪ ʌ ɯ ʒ Ụ

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

v ̋Ⱪ ب ˝

v ̋Ⱪ	ὼ ڭ
interface *interface-id*	ì Æ ᴺ
vlan *vlan-id*	VLAN ᴺ ı ̧ ƀ ƥ 1-4094

ᵘ ᵑᵬ ₩ Ã ₰ ₩ Ã

ƛ ʌ 2

Æ ŧ ˝ Y Ṁ **show mac-address-table count** ᵘ ᵑᵬ ı ⁞ ̃Ⱪ MAC ʂ ɤ ˊ ° ʌ ʒ ʌ ɯ ˊ ° ̋Ⱪ ̧ ψ

show mac-address-table count interface ᵘ ᵑᵬ ı ⁞ ̃Ⱪ MAC ʂ ɤ ˊ ° Ḿ Ẓ ì Æ ʌ ɯ ˊ ° ̋Ⱪ ̧ ψ

show mac-address-table count vlan ᵘ ᵑᵬ ı ⁞ ̃Ⱪ MAC ʂ ɤ ˊ ° ̋A Ṟ VLAN ʌ ɯ ˊ ° ̋Ⱪ ̧

ب ɹ ʓ æ 1 χ Ǐ ˜ MAC ʂ ɤ ᴿ ʌ ʒ ˊ ° ̋Ⱪ ̧ χ

```
Ruijie# show mac-address-table count
Dynamic Address Count  : 51
Static  Address Count  : 0
Filter  Address Count  : 0
Total Mac Addresses    : 51
Total Mac Address Space Available: 8139
```

2 χ Ǐ ˜ VLAN 1 ï MAC ʂ ɤ ̋Ⱪ ̧ χ

```
Ruijie# show mac-address-table count vlan 1
Dynamic Address Count  : 7
Static  Address Count  : 0
Filter  Address Count  : 0
Total Mac Addresses    : 7
```

3 χ Ǐ ˜ interface g0/1 ï MAC ʂ ɤ ̋Ⱪ ̧ χ

```
Ruijie# show mac-address-table interface g0/1
Dynamic Address Count  : 10
Static  Address Count  : 0
```

```
Filter  Address Count  : 0
Total Mac Addresses    : 10
```

È ᵻ ȷ ᵾ Χ

È ᵻ	ب ˝
Dynamic Address Count	ʊ ő MAC ş ẋ Ⱥ ̋Ǫ
Static Address Count	̿ ő MAC ş ẋ Ⱥ ̋Ǫ
Filter Address Count	ص ▾ ş ẋ Ⱥ ̋Ǫ
Total Mac Addresses	Ở MAC ş ẋ Ⱥ ̋Ǫ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

2.10 show mac-address-table dynamic

Ǐ ˜ ʊ ő ş ẋ ˊ ʒ Ụ ı ˡ Ꝏ ⁞ ̃Ω MAC ş ẋ ì Æ ⫐ VLAN ᵎ ˥ ˜

show mac-address-table dynamic [**address** *mac-addr*] [**interface** *interface-id*] [**vlan** *vlan-id*]

v ̋Ǫ ب ˝

v ̋Ǫ	ѽ ك
mac-addr	˝Y ḧ ˊ ° Ḿ Ẓ ̋ MAC ş ẋ
vlan-id	˝Y ḧ ˊ ° Ḿ Ẓ VLAN ı ̦ ƀ ƥ 1-4094
interface-id	ɣ Ṅ ჭ ʌ ̇ ì Æ (ˡ Ꝏ ĩ ɾ ת ٧ Æ ǎ AggregatePort)

ᵘ ᵑᵬ ₩ Ã ̋A ѽ ₩ Ã

ƛ ٨ ̣ 2

Æ ɾ ˝Y Ṁ -

ب ɻ ᵷ æ 1 ˥ ˜ ̋A ѽ ʊ ő MAC ş ẋ ˊ

```
Ruijie# show mac-address-table dynamic
Vlan     MAC Address       Type        Interface
----    ------------     ------    -----------------
1     0000.0000.0001      DYNAMIC  GigabitEthernet 1/1
1     0001.960c.a740      DYNAMIC  GigabitEthernet 1/1
1     0007.95c7.dff9      DYNAMIC  GigabitEthernet 1/1
1     0007.95cf.eee0      DYNAMIC  GigabitEthernet 1/1
1     0007.95cf.f41f      DYNAMIC  GigabitEthernet 1/1
1     0009.b715.d400      DYNAMIC  GigabitEthernet 1/1
1     0050.bade.63c4      DYNAMIC  GigabitEthernet 1/1
```

È ᵻ ȷ ᵾ Χ

È ɟ	ب ˝
Vlan	MAC ş x ˝A p VLAN
MAC Address	MAC ş x
Type	MAC ş x ˥ ʒ
Interface	MAC ş x ˝A p ì Æ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

2.11 show mac-address-table filtering

Ǐ ˜ ص ▾ ş x ˊ ʒ Ụ

show mac-address-table filtering [**addr** *mac-addr*] [**vlan** *vlan-id*]

v ˝Ọ ب ˝

v ˝Ọ	ώ ك
mac-addr	˝Y ḧ ˊ ° Ḿ Ẓ MAC ş x
vlan-id	˝Y ḧ ˊ ° Ḿ Ẓ VLAN ı ḫ p 1-4094

ᵘ ɲ ₩ Ã ₰ ₩ Ã

ỉ ˥ 2

Æ ɨ ˝Y Ṁ -

ب ل ʖ æ 1 ⍐ ˜ ص ▾ ş x ˊ

```
Ruijie# show mac-address-table filtering
Vlan        MAC Address          Type     Interface
------  -------------------- -------- -----------
1      0000.2222.2222          FILTER   Not available
```

È ɟ ɹ ᵩ Χ

È ɟ	ب ˝
Vlan	MAC ş x ˝A p VLAN
MAC Address	MAC ş x
Type	MAC ş x ˥ ʒ
Interface	MAC ş x ˝A p ì Æ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

2.12 show mac-address-table interface

Ǐ ˜ ˝Ƴ ḧ ì Æ˽˽˽

2.14 show mac-address-table static

Ǐ ˜ ˝ õ ş χ

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

ν ″Ǫ ب ″

ν ″Ǫ	ώ ك
mac-addr	″Y ħ ˊ ° Ḿ Ƶ MAC ş χ
vlan-id	″Y ħ ˊ ° Ḿ Ƶ VLAN ı ˷ ƀ ƥ 1-4094
interface-id	ɣ Ṅ ჷ ʌ ˙ ì Æ (ˡ Ꝙ Ĩ ɾ ת ϟ Æ ă AggregatePort)

ᵘ ɲ ₩ Ã ˊ ₩ Ã

ƚ ϟ 2

Æ ɾ ″Y Ṁ -

ب ل ʖ æ 1 χ Ǐ ˜ ″A ω ˝ õ ş χ ȝ Ụ χ

```
Ruijie# show mac-address-table static
Vlan    MAC Address      Type         Interface
-----  -----------    --------  -----------------
1    00d0.f800.1001    STATIC   GigabitEthernet 1/1
1    00d0.f800.1002    STATIC   GigabitEthernet 1/1
1    00d0.f800.1003    STATIC   GigabitEthernet 1/1
```

È ɜ ɹ ˌ χ

È ɜ	ب ″
Vlan	MAC ş χ ″A ƥ VLAN
MAC Address	MAC ş χ
Type	MAC ş χ ϟ ʒ
Interface	MAC ş χ ″A ƥ ì Æ

ώ ˜ ȝ Ụ -

Ẉ ɹ ب ″ -

2.15 show mac-address-table vlan

Ǐ ˜ ″Y ħ VLAN ″A ω ϟ ʒ ş χ ȝ Ụ

show mac-address-table vlan [*vlan-id*]

ν ″Ǫ ب ″

ν ″Ǫ	ώ ك

vlan-id	˝Y ĥ VLAN ID ı ƀ ƥ 1-4094

ᵘ ɲ ₩ Ã ₰ ₩ Ã

ȷ ˥ 2

Æ ŧ ˝Y Ṁ -

ب ل ǯ æ 1 χ ˜ VLAN 1 ʌ MAC ş x

```
Ruijie# show mac-address-table vlan 1
Vlan    MAC Address       Type        Interface
-----  -------------   -------  -----------------
1     00d0.f800.1001    STATIC   GigabitEthernet 1/1
1     00d0.f800.1002    STATIC   GigabitEthernet 1/1
1     00d0.f800.1003    STATIC   GigabitEthernet 1/1
```

È ɜ J ˛ χ

È ɜ	ب ˝
Vlan	MAC ş x ˝A ƥ VLAN
MAC Address	MAC ş x
Type	MAC ş x ˥ ƺ
Interface	MAC ş x ˝A ƥ ì Æ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

2.16 snmp trap mac-notification

ĕ Ã ì Æ MAC ş x ų˜ ı ĥ

snmp trap mac-notification { **added** | **removed** }

ʜ ŭ Ĵ ı ĥ

no snmp trap mac-notification { **added** | **removed** }

ʜ ŭ Ĵ ı ĥ

default snmp trap mac-notification { **added** | **removed** }

v ˝Ọ ب ˝

v ˝Ọ	ώ ك
added	Ẹ ş x ш ŕ Ḥ ų˜
removed	Ẹ ş x ą ŭ Ḥ ų˜

ᵘ ɲ ₩ Ã	ì ᴬ ب ɻ ₩ Ã
ɻ ˥	14
Æ ɪ ″ Y Ṁ	Æ ɪ **show mac-address-table notification** *interface* ᵘ ɲ ˜ ɸ ɻ

ب ɻ ʒ æ	1 ĕ Ã ˧ ᴬ i MAC ş ɣ ш ɪ ˋ H ں ᵓ trap ㊞ Ã ʜ
	`Ruijie(config)# interface GigabitEthernet 1/1`
	`Ruijie(config-if-GigabitEthernet 1/1)# snmp trap mac-notification added`
	2 ĕ Ã ˧ ᴬ i MAC ş ɣ ˛ ں ˋ H ں ᵓ trap ㊞ Ã ʜ
	`Ruijie(config)# interface GigabitEthernet 1/1`
	`Ruijie(config-if-GigabitEthernet 1/1)# snmp trap mac-notification removed`

ώ ˜ ʒ Ụ	-
Ẉ ᴶ ب ″	-

3 VLAN

3.1 name

Ф ⅃ VLAN ⅏ ᵋ È

name *vlan-name*

Õ ʯ ă ⅄ ë

no name

Õ ʯ ă ⅄ ë

default name

v ″Ω ب ″

v ″Ω	ω ك
vlan-name	VLAN ⅏ ᵋ È

⅄ ب ⅃ VLAN ⅄ ᵋ È ㎞ VLAN θ VLAN ID ı þ VLAN 2 ⅄ ᵋ È ㎞”VLAN0002”

ᵘ ᖘ ₩ Ã VLAN ب ⅃ ₩ Ã

⅄ ∧ 14

Æ ɪ ″ Y Ṁ -

ب ⅃ ʓ æ 1 χ Ф ⅃ VLAN 10 ⅏ ᵋ È χ

```
Ruijie(config)# vlan 10
Ruijie(config-vlan)# name vlan10
```

ₛ ⇂ Á | Æ ɪ **show vlan** ᵘ ᖘ ˜ vlan ب ⅃

ώ ˜ ʒ Ụ -

Ẃ ȸ ᵹ ɕ -

Ẉ ᴶ ب ″ -

3.2 show vlan

Ǐ ˜ VLAN ⅏ ă ᵑ ヶ Æ ヶ ʒ Ụ

show vlan [**id** *vlan-id*]

v ̈Ọ ب ̋	v ̈Ọ	ώ ك
	vlan-id	VLAN ID ᴺ

ᵘ ᵑᵬ₩ Ǟ ̈A ω ₩ Ǟ

ƛ ٨. 2

Æ ɬ ̋Y Ṁ

3.3 vlan

¨ á VLAN ã̃ ă̈ ف؟ VLAN ₩ Ã

vlan { *vlan-id* | **range** *vlan-range* }

¨ ؏ Ţ è ƍ VLAN

no vlan { *vlan-id* | **range** *vlan-range* }

Ṅ˝Y ḧ Ţ ل è ƍ VLAN Õ ᵸ ă˝ ِ ـّ õ VLAN

default vlan { *vlan-id* | **range** *vlan-range* }

v ˝Ọ ب ˝

v ˝Ọ	ώ ك
vlan-id	VLAN ID ᴺ ├ Ỵ χ ǰ VLAN ε VLAN 1 ζ j ы ƍ¨ ؏
vlan-range	VLAN ID„ ƍ

ǰ ب ل ِ ـّ õ VLAN

ᵘ ɲ₩ Ã ؟ ṕ ب ل ₩ Ã

ǰ ۱̣ 14

Æ ŧ ˝YṀ

ب ل ڑ æ 1 ¨ á VLAN 10 Ẋ ف؟ VLAN 10 ₩ Ã

```
Ruijie(config)# vlan 10
Ruijie(config-vlan)#
```

ₛ ج Ά | -

ώ˜ ʒ Ụ -

Ẃ ȸ ڃ ئ -

Ẉ ᴶ ب ˝ -

4 MAC VLAN

4.1 show mac-vlan

ˌ ˜ ˊ ˚ ب ˮ

5 VLAN-Group

5.1 vlan-assign-mode

ᵽ AP ᵮ ᵻ ᵢ ı ᵱ ㇾ Ẹ˙ VLAN-Group ᾰ̈ Ä ῶ VLAN-Group ㊀ VLAN‘ ᵱ₩Ã
ᵱ ㇾ VLAN‘ ᵱ₩Ã
vlan-assign-mode dot1x

ᵑ ╦ᵱ ㇾ VLAN‘ ᵱ₩Ã
no vlan-assign-mode

v ̈Ⱬᵱ ˝	v ̈Ⱬ	ὼ ك
	dot1x	802.1x ᵰ - ᾰ ı ᵅ ı ᵻ ᵰ - ᾺO ᵑ ᵸ Ḿ ᵻ Ä ڤ Φ VLAN ï ∧

ㇽ ᵱ ㇾ VLAN-Group ㊀ ᵱ₩Ã ㎞ none

ᵘ ᵬ₩Ã VLAN-Group ᵱ ㇾ₩Ã ı ᾰ ᵴ ṕ ᵱ ㇾ₩Ã

ㇽ ㄱ˙ 14

Æ ᵻ ″YṀ ḅ ' ᵽ ᵴ ṕ ᵱ ㇾ₩Ã ï ᵱ ㇾ ı ᵢ Ḿ Ä ῶ ㊀ VLAN-Group ᵻ ὤ
ḅ ' ᵽ VLAN-Group ᵱ ㇾ₩Ã ï ᵱ ㇾ ı ᵏ ᵢ Ḿ Ẹ˙ VLAN-Group ᵻ ὤ
ᵍ̂ VLAN-Group ㊀ᵱ ㇾ ı Ꮒ Ⅹ ㄱ ᵶ̂ ᵴ ṕ ᵱ ㇾ ᵻ ὤ

ᵱ ㇾ ᵷ æ ᵱ ㇾ VLAN-Group 10 ㊀ VLAN‘ ᵱ₩Ã ㎞ dot1x ₩Ã

```
Ruijie(config)# vlan-group 10
Ruijie(config-vlan-group)# vlan-assign-mode dot1x
```

ᵌ ᵶ Ä | show vlan-group 10¶ ~ vlan‘ ᵱ₩Ã ㊀ᵱ ㇾ ᵶ Ụ

ώ˜ ᵶ Ụ -

Ẃ ȣ ᵯ ᵾ -

Ẉ ᴶ ᵬ ˝ -

5.2 vlan-group

¨ ấ VLAN-Group

vlan-group *group-id*

¨ ᵬ VLAN-Group

no vlan-group *group-id*

v ¨Ϙ ب ˝	v ¨Ϙ	ώ ك
	group-id	VLAN-Group ID ı‟ ḡ <1-128>

ǰ ٻ ل -

ᵘ ᵑᵬ ₩ Ã ᦈ ṕ ٻ ل ₩ Ã

ǰ ٨ ̣ 14

Æ ŧ ˝ Y Ṁ ṇ

ٻ ل ʒ æ ḡ AP ₰ ᵻ i ı„ á VLAN-Group 100

```
Ruijie# configure terminal
Ruijie(config)# vlan-group 100
Ruijie(config-vlan-group)#
```

ₛ ᴈ Ä | show vlan-group ¶ ˜ VLAN-Group 100 ĩ ᵋ ٻ ل

ώ˜ ʒ Ụ -

Ẃ ȸ ᴇ ئ -

Ẉ ᴶ ب ˝ -

5.3 default-vlan

ٻ ل VLAN-Group ▨ س ռ VLAN

default-vlan *vlan-id*

ռ ╦ VLAN-Group ▨ س ռ VLAN

no default-vlan *vlan-id*

v ¨Ϙ ب ˝	v ¨Ϙ	ώ ك
	vlan-id	VLAN-ID ᵚ VLAN-Group ▨ VLAN ظ ᵀ ᵻ ‗ ▨ VLAN

ǰ ٻ ل ǰ ' ¨ Y ḧ س ռ VLAN

ᵘ ɲ ₩ Ã	VLAN-Group ᵽ ɻ ₩ Ã
ƛ ʴ.	14
Æ ŧ ˝Y Ṁ	ᵽ ɻ ѫ ɲ ˋ ᵽ VLAN ˋH ı ọ ɛ Ж ¨H Ǐ VLAN ŧ ʓ ỏ Ẓ ㊢ VLAN-Group ѫ ɲ VLAN Ө ı ĸ ƍ Ẹ ˙ WLAN ㊢ VLAN ˋ ᵽ ₩ Ã ㎛ 802.1x ɲ - ă ı ª ı ʱ ɲ - ˋO ɲ ʜ Ḿ ŧ ¨A ڤ Φ VLAN ï ʌ ˋH ɨ ѽ
ᵽ ɻ ʒ æ	¨Y VLAN-Group 100 ㊢ ѫ ɲ VLAN ㎛ 10

```
Ruijie# configure terminal
Ruijie(config)# vlan-group 100
Ruijie(config-vlan-group)# default-vlan 10
```

₅ ⱬ Ä |	show vlan-group 100 ¶ ˜ default vlan ᵽ ɻ ʒ Ụ
ώ ˜ ʒ Ụ	-
Ẃ ȸ ᶎ ȿ	-
Ẉ ᴶ ᵽ ˝	-

5.4 vlan-list

ƍ AP ֆ ᵻ i ı ᵽ ɻ ¨Y ḧ VLAN-Group ɣ ᵍ ㊢ VLAN ă ^ ˚ ˊ ᵘ ɲ ḅ ï χ

vlan-list *vlan-list*

ɲ ╦ vlan-list

2

ᵽ ⱶ ʒ æ ᵽ AP ⱷ ⁞ i ı Ṅ VLAN 100-105 ᵀ Ɔ VLAN-Group 100 ᴬ

```
Ruijie# configure terminal
Ruijie(config)# vlan-group 100
Ruijie(config-vlan-group)# vlan-list 100-105
```

ₛ ⱬ Ä | show vlan-group 100¶ ˜ vlan list ᵽ ⱶ ʒ Ụ

ώ˜ ʒ Ụ oЧPЪ-oGъθЪ-o◆oGъθЪ-ou■■G7r■LCOHP■ 2■ Ê/ᵡGᵯWŸ

Ẉ ᴶ ب ˝ -

5.6 encapsulation dot1Q

ƥ AP ֆ ᵎ i ı ڀ ل Ẹ̇ dot11 radio Ḍ ì Æ VLAN ã̃ VLAN-Group Ṃ Ꝉ ᵘ ᵑь ḅ ï χ

encapsulation dot1Q [**group**] {*vlan-id* | *vlan-group-id*}

no encapsulation dot1Q [**group**] {*vlan-id* | *vlan-group-id*}

v ˝Ọ ب ˝

v ˝Ọ	ώ ك
vlan -id	VLAN ID
vlan-group-id	VLAN-Group ID <1 128>

ƛ̊ ڀ ل ƞ VLAN ã̃ VLAN-Group Ṃ Ꝉ

ᵘ ᵑь₩ Ã̃ ì Æ₩ Ã̃

ƛ̊ ۱̣ 14

Æ ŧ ˝ Ẏ Ṁ Æ ŧ encapsulation dot1Q vlan-id ڀ ل dot1Q VLAN Ṃ Ꝉ

Æ ŧ encapsulation dot1Q group vlan-group-id ڀ ل dot1Q VLAN-Group Ṃ Ꝉ

ڀ ل ʒ̧ æ ƥ AP ֆ ᵎ i ı ڀ ل Dot11radio 1/0.1 ì Æ Ṃ Ꝉ VLAN-Group 100

```
Ruijie# configure terminal
Ruijie(config)# interface dot11radio 1/0.1
Ruijie(config-subif)# encapsulation dot1Q group 100
```

ₛ ڃ Ά | -

ώ˜ ʒ Ụ -

Ẃ ȸ ڇ ئ -

Ẉ ᴶ ب ˝ -

5.7 show vlan-group

ƥ AP ֆ ᵎ i ı Ǐ ˜ VLAN-Group ʒ Ụ ı ᵘ ᵑь ḅ ï χ

show vlan-group [*group-id*]

v ˝Ọ ب ˝

v ˝Ọ	ώ ك
group-id	VLAN-Group ID

ᵘ ɲ ₩ Ã	ᵉ ₩ Ã
ƛ ʴ.	2
Æ ɨ ˝ Y Ṁ	-
ب ل ʖ æ	ƍ AP ₱ ᵻ i ı Ǐ ˜ ˝ A ω VLAN-Group ㉿ VLAN ă ^ ʒ Ụ

```
Ruijie# show vlan-group
VLAN-Group ID   Default VLAN  Assign-Mode        VLAN-List
-------------   ------------  -----------------  ----------------------------
128             NA            dot1x              110-130 ı 141-150
```

ώ˜ ʒ Ụ	-
Ẉ ᴶ ب ˝	-

6 RLDP

6.1 rldp detect-interval

Æ ŧ Ĵ ᵘ ɲ ب ل RLDP ƥ ٩ Æ i ٨ گ ï ă ژ ڷ

rldp detect-interval *interval*

Õ ʉ ƚ ب ل

no rldp detect-interval

Õ ʉ ƚ ب ل

default rldp detect-interval

v ″Ω ب ″

v ″Ω	ώ ڷ
interval	ٰH ژ ژ ڷ ı ɒ ყ ѫ s ı ˛ ƥ 1s-15s

ƚ ب ل 3

ᵘ ɲ ₩ Ã ২ ṕ ₩ Ã

ƚ ٩ 14

ᵘ ɲ ₩ Ã ২ ṕ ₩ Ã

Æ ŧ ″YṀ ؛ Ḿ Prob ⁼ Loop ٩ ʒ ï ă ı ώ ƀ ' ĩ ƥ Ầ ᵏ˜ stp ע ᴸ ï ı á ɲ Ф ل ε ژ ڷ Öω ᶻ ή ᛦ Ҝ Ω ζ +1 ᵅ ệ˙ Ở ٰH ژ ɲ stp ö ë ώ Ω ٰH ژ

ب ل ƺ æ 1 χ ب ل ή ᛦ ژ ڷ ѫ 5s χ

```
Ruijie(config)# rldp detect-interval 5
```

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ″ -

6.2 rldp detect-max

Æ ŧ Ĵ ᵘ ɲ ب ل RLDP ƥ ٩ Æ i ɒ ᵇ ặ ắ ᵴ ᵇ ჯ ت ώ ᶻ ή ᛦ Ҝ Ω ı ˛ . ḧ ω ᶻ ή ᛦ ٰH ژ ı ƀ ' ٨ ص ف Ⱥ ٰH ژ ı ٨ ṗ ٩ Æ Ҡ ɬ ṇ ᵠ Ƶ ı ˛ ჯ ت ɑ ٪ .. Ă ѫ ώ ڈ ჯ ت

-	-

ǰ ٻ ﻝ ʜ ڎ

ᵘ ᵑЪ₩Ã ২ ṕ ٻ ﻝ ₩Ã

ǰ ٧ 14

Æ ɾ ¨YṀ ٧ Æ ï RLDP ₅ ╨ ᠁ ᵏ ʊ Θ ˚ ২ ṕ ᠁ Æ Ť

ٻ ﻝ ɮ æ ٻ ﻝ RLDP ᠁ ₅ ╨ ı Ť Ã ᵏ χ

```
Ruijie(config)# rldp enable
```

ώ˜ ȝ Ụ -

Ẃ ð ჭ ئ -

Ẉ ᴶ ب ˝ -

6.4 rldp neighbor-negotiation

Ф ﻝ ᵏ ɾ ʌ ṗ ʁ Ъ ı Ť

rldp neighbor-negotiation

Õ ʰ ǰ ٻ ﻝ

no rldp neighbor-negotiation

Õ ʰ ǰ ٻ ﻝ

default rldp neighbor-negotiation

∨ ¨Ω ب ˝	∨ ¨Ω	ώ ك
	-	-

ᵽ ᒉ ᵹ æ ᵽ ᒉ RLDP ᵴ ᴝ ᵑH▩ ʌ ṗ ʙ ƀ ɪ ǐ χ

```
Ruijie#config
Ruijie(config)#rldp neighbor-negotiation
```

ᵗ̂ RLDP ɨ ѽ ï ǐ ע ث ѽ ڷ ʃ ת Ά Ã ⅏ ٩ Æ ъ ѽ ᵩ ó ɪ ḅ ï ǐ Æ A ٮ ر˝ RLDP ï ǐ ע ث ₅ ⅌ Ẋ ħ ٮ ر ⅏ ѽ ڷ ʃ ת Ά Ã ⅓ warning ɪ ï ǐ Æ B ٮ ر˝ RLDP ï ǐ ע ث ₅ ⅌ Ẋ ħ ٮ ر ⅏ ѽ ڷ ʃ ת Ά Ã ⅓ shutdown-port ɪ Ę ٩ Æ A ⊐ ٩ Æ B ژ è ɒ ï ǐ ע ث Ḥ ɪ ѽ ˡ ǐ ٩ Æ A Ж ћ ٩ Æ B ₅ ⅌ ˙ ï ǐ ע ث ѽ ڷ ɪ ٩ Æ A ɨ ѽ ѽ ڷ ʃ ת ᵅ j W ∧ γ ⊐ ₅ ⅌ ï ǐ ע ث ↑ ` ˝ ٩ Æ B ᵗ̂ ѽ j ˙ ٩ Æ A ⅏ ע ث ή ⅌ ï ă Ĉ ŏ ₅ ⅌ j ˙ ï ǐ ע ث ѽ ڷ ˝ ɪ Ḿ ₇ ע ᴸ ₳ ⅏ ï ǐ ע ث ѽ ڷ ɳ ☾ i Θ ñ è ɒ ɒ Æ ɾ ʃ ˜ ₳ ḅ ' ₄ ļ. Ȝ ɒ ʌ ɨ ï ǐ ע ث Ḥ ǐ ᶻ ڟ ע ث ѽ ڷ ɪ ₄ ن ˙ Ṅ ᵗ̂ ª ע ث ⅏ ï ǐ ٩ Æ i ɪ Ṅ ע ث ѽ ڷ ʃ ת Ά Ã ф ɻ ă ₇ Ẋ ħ j ǐ ⅓ warning

ٮ ر ʖ æ	-
ώ˜ ȝ Ụ	-
Ẃ ð ჹ ئ	-
Ẉ ᴶ ب ˝	-

6.6 rldp reset

Ẅ õ RLDP ѽ ڷ ٩ Æ Õ ᵚ Ẋ ҏ Ẅ ᵏ ʊ ₅ ⅌

rldp reset

v Ẅ Ọ ب ˝

v Ẅ Ọ	ώ ك
-	-

ƛ ٮ ر -

ᵘ ᵑь ₩ Ã ₰ ₩ Ã

ƛ ٩ ˙ 2

Æ ɾ Ẅ Ẏ Ṁ ɾ ⅏ Õ ᵚ ѽ ڷ ٩ Æ ↑ ő ɪ errdisable recovery Ĉ ˡ Ɋ ɾ ⅏ Õ ᵚ ɪ ъ ч v ă̋ <<SWITCH-INTF-SCG.doc>>

ٮ ر ȝ æ ٮ ر RLDP Õ ᵚ ѽ ڷ ٩ Æ ↑ ő χ

```
Ruijie#rldp reset
```

ώ˜ ȝ Ụ -

Ẃ ð ჹ ئ -

Ẉ ᴶ ب ˇ

6.7 show rldp

Ǐ ˜ RLDP ₳ ᵡ ṕ ヿ Æ Ꝍ ȝ ʌ ṗ ヿ ″Ꝙ ̃Ꝙ ȝ Ụ

show rldp [**interface** *interface-name*]

v ″Ꝙ ب ˇ

v ″Ꝙ	ؤ ك
interface-name	RLDP ヿ Æ

ƛ ٻ ـ -

ᵘ ᵑЪ₩ Ã ₰ ₩ Ã

ƛ ヿ. 2

Æ ɾ ″YṀ ″Y ḧ ヿ Æ ᵋ ヿ ı ɾ Ꝍ Ǐ ˜ ₰ ḧ ヿ Æ i RLDP ↟ ő ″Ꝙ ̃Ꝙ ȝ Ụ

ب ـ ڏ æ æ 1 χ Ǐ ˜ RLDP ↟ ő ″Ꝙ ̃Ꝙ ȝ 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 Ǐ ˜ ㇔ Æ GigabitEthernet 0/1 ｉ Ä õ ˇ ㇄ ᵖ ㊞ب ㇀ 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
```

È ㇅	ب ˝
port state	㇔ Æ Ẹ˙ ↑ ő χ ㇔ ĩ* Ẃ ↑ ő ｉ Ǐ ˜ ㎞ normal ψ ㇔ ĩ ѽ ᷇ ↑ ő ｉ Ǐ ˜ ㎞ error
local bridge	ş ㇉ ㇇ MAC ş ẋ ｉ ᷈ ᷇ ㄇ˙ ş ф ᵻ ㇎ ㇊ ṗ ф ᵻ
neighbor bridge	㇊ ṗ ㇉ ㇇ MAC ş ẋ ｉ ᷈ ᷇ ㄇ˙ ş ф ᵻ ㇎ ㇊ ṗ ф ᵻ
action	₅ ㇄ ㇓ ʒ Ḿ Ẓ ㊞ѽ ᷇ ʃ ㄇ Ά Ã
state	₅ ㇄ ㇓ ʒ Ḿ Ẓ ㊞ ↑ ő ｉ* Ẃ`H㎞ normal ｉ ₅ ㇄˙ ѽ ᷇ ᵅ ᴪ ᴋ ㎞ error

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

7 LLDP

7.1 civic-location

c i v i 0

post-office-box	CA ᵻ ʒ ʁ 31
additional-code	CA ᵻ ʒ ʁ 32
ca-word	ʂ ɣ ʒ Ụ

ɉ ٻ ɹ -

ᵘ ɲ ₩ Ã LLDP Civic Address ٻ ɹ ₩ Ã

ɉ ᵻ. 14

Æ ŧ ″ Y Ṁ ڤ LLDP Civic Address ٻ ɹ ₩ Ã ᵅ ı ٻ ɹ LLDP ″ ِ ʂ ɣ ʒ Ụ

ٻ ɹ ڎ æ 1 χ ٻ ɹ lldp Civic Address ε id ʁ 1 ζ ⿲ ʒ Ụ ʁ χ country ʁ CH ı city ʁ Fuzhou

```
Ruijie#config
Ruijie(config)# lldp location civic-location identifier 1
Ruijie(config-lldp-civic)# country CH
Ruijie(config-lldp-civic)# city Fuzhou
```

ώ˜ ʒ Ụ -

Ẃ ð ڇ ئ -

Ẉ ᴶ ب ″ -

7.2 clear lldp statistics

▌ں LLDP ⿲ ʎ ɯ ʒ Ụ

clear lldp statistics [**interface** *interface-name*]

v ″ Ọ ب ″

v ″ Ọ	ώ ك
interface-name	ì Æ ʁ Ч

ᵘ ɲ ₩ Ã ₰ ₩ Ã

ɉ ᵻ. 2

Æ ŧ ″ Y Ṁ ″ Y ḧ **interface** v ″ Ọ ı Ṅ ▌ں ″ Y ḧ ì Æ ⿲ LLDP ʎ ɯ ʒ Ụ

ٻ ɹ ڎ æ 1 χ ▌ں ì Æ 1 ⿲ LLDP ʎ ɯ ʒ Ụ

```
Ruijie# clear lldp statistics interface GigabitEthernet 0/1
Ruijie# show lldp statistics interface GigabitEthernet 0/1
```

```
Lldp statistics information of port [GigabitEthernet 0/1]
-------------------------------------------------------------
The number of lldp frames transmitted       : 0
The number of frames discarded              : 0
The number of error frames                  : 0
The number of lldp frames received          : 0
The number of TLVs discarded                : 0
The number of TLVs unrecognized             : 0
The number of neighbor information aged out : 0
```

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

7.3 clear lldp table

▌ь LLDP ㊊ ʌ ṗ ʒ Ụ

clear lldp table [**interface** *interface-name*]

v ˝Ọ ب ˝

v ˝Ọ	ὼ ك
interface-name	ì Æ ᵾ Ч

ᵘ ᵑь ₩ Ã ᵉ ₩ Ã

ƛ ʅ. 2

Æ ŧ ˝Y Ḧ

˝Y ḧ interface v ˝Ọ ı Ṅ ▌ь ˝Y ḧ ì Æ ㊊ LLDP ʌ ṗ ʒ Ụ

j ˝Y ḧ interface v ˝Ọ ı Ṅ ▌ь ˝A õ ì Æ ㊊ LLDP ʌ ṗ ʒ Ụ

ب ɹ ʓ æ 1 χ ▌ь ì Æ 1 ㊊ LLDP ʌ ṗ ʒ Ụ

```
Ruijie# show lldp neighbors interface GigabitEthernet 0/1
Capability codes:
    (R) Router, (B) Bridge, (T) Telephone, (C) DOCSIS Cable Device
    (W) WLAN Access Point, (P) Repeater, (S) Station, (O) Other
System Name               Local Intf          Port ID               Capability   Aging-time

Total entries displayed: 0
Ruijie# clear lldp table interface GigabitEthernet 0/1
Ruijie# show lldp neighbors interface GigabitEthernet 0/1
```

ώ˜ ʒ Ụ -

Ẇ ᴶ ب ˝ -

7.4 device-type

ب ـل ֆ ᵎ ۱ ʒ ʒ Ụ
device-type *device-type*

ɾ Ẅ A ᵎ Ꞣ Æ ɾ no J̌ ˚ ˷ ث أ ֆ ᵎ ۱ ʒ ʒ Ụ
no device-type

v ̋Ꝙ ب ˝ v ̋Ꝙ

no lldp enable

ÃDRe1D72 q118.602626.28 4452.92 024 ref560. 626.28 024 024 refBT0.199 q/C2 0 1 Tf0 Tc 9 0 0 9 56.7529934 Tm6FAC8057804588

ᵘ ᵑь₩Ã	ì ᴬ ᵽ ɹ ₩Ã
ɻ ᐟ	14
Æ ɨ ″YṀ	LLDP

ᵽ ɹ ʒ̈ æ	1 χ ᵽ ɹ LLDP ï ă ⁰⁸⁶Ṃ Ł† Ã ₦ SNAP
	`Ruijie# configure terminal`
	`Ruijie(config)#interface gigabitethernet 0/1`
	`Ruijie(config-if-GigabitEthernet 0/1)#lldp encapsulation snap`

ώ˜ ʒ Ụ	-
Ẃ ŏ ᶎ ʓ	-
Ẉ ᴶ ᵽ ″	-

7.7 lldp error-detect

ᵽ ɹ LLDP ᶎ ʓ ₅ ⅄ ı ĩ ıᶎ ʓ ₅ ⅄ ɣ ὺ ᶎ ċ ƀ ᐟ⁰⁸⁶ VLAN ᵽ ɹ ₅ ⅄ ᐟ Æ ↑ õ ₅ ⅄ ᐟ Æ ĭ ᵀ ᵽ ɹ ₅ ⅄ MTU ᵽ ɹ ₅ ⅄ ʒ ʏ ċ ₅ ⅄ Ẹ LLDP ₅ ⅄ˑ ᶎ ʓ Ḥ ı Ṅ ĕ м ɾ ᵓ ʒ Ụ ώ˜ ᐟ ת ᵑ

ĕ Ầ LLDP ᶎ ʓ ₅ ⅄ ı ĩ

lldp error-detect

ʜ ŭ LLDP ᶎ ʓ ₅ ⅄ ı ĩ

no lldp error-detect

v ″Ꝙ ᵽ ″

ᵽ ɻ ʖ æ

1 χ ᵽ ɻ LLDP ᶎ ᵴ ₅ ᶫ ı ᵑ̊

```
Ruijie# configure terminal
Ruijie(config)#interface gigabitethernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)#lldp error-detect
```

ώ˜ ʒ Ụ

-

Ẃ ծ ᶎ ᴳ

-

Ẉ ᴶ ᵽ ˝

-

7.8 lldp fast-count

Ẹ ʌ ϰ Ȁ ʌ ṗ ı ỗ ậ LLDP Ṫ Ă ₩ Ã ϰ ʜ ᴟ ỗ Rx ᶎ Ψ ᵿ TxRx ỗ Tx ᵡ H ı ᵿ˝ ɥ ʌ ṗ ₱ ᵻ ó ծ ş ẹ Ĉ ₱ ᵻ ʒ Ụ ıṄ ᵏ ᴜ ծ ȣ ʌ ڳ ı ծ ȣ ʌ ڳ ı ɻ˜ LLDP ĭ ă ʌ ڳ ᵕ Ω ᵿ 1 ϒ ıẊ ف ᵰ ʌ ڳ ḧ ″Ω ᵨ LLDP ĭ ă ᵅ W Õ ᵸ* Ẃ ʌ ڳ ᵕ Ω

ᵽ ɻ LLDP ծ ȣ ʌ ڳ ĭ ă Ⱥ ″Ω

lldp fast-count *value*

Õ ᵸ ɻ LLDP ծ ȣ ʌ ڳ ĭ ă Ⱥ ″Ω

no lldp fast-count

v ″Ω ᵽ ˝

v ″Ω	ώ ڭ
value	LLDP ծ ȣ ʌ ڳ ĭ ă Ⱥ ″Ω ı ɻ ᵿ 3 Ⱥ ı ᶩ ᵽ ɻ ᵨ ᵿ 1-10

ɻ ᵽ ɻ

ɻ ᶇ ï ı LLDP ծ ȣ ʌ ڳ ĭ ă Ⱥ ″Ω ᵿ 3 Ⱥ

ᵘ ᵑᵦ ₩ Ã

ϖ ṕ ᵽ ɻ ₩ Ã

ɻ ᶩ

14

Æ ɾ ″ Y Ṁ

-

ᵽ ɻ ʖ æ

1 χ ᵽ ɻ LLDP ծ ȣ ʌ ڳ ĭ ă Ⱥ ″Ω ᵿ 5 Ⱥ

```
Ruijie# configure terminal
Ruijie(config)#lldp fast-count 5
```

ώ˜ ʒ Ụ

-

Ẃ ծ ᶎ ᴳ

-

Ẇ ᴶ ب ˝ -

7.9 lldp hold-multiplier

ب ل TTL ○˝Ọ

lldp hold-multiplier *value*

Õ˙ ᵸ ỉ TTL ○˝Ọ

no lldp hold-multiplier

v ˝Ọ ب ˝

v ˝Ọ	ώ ك
value	TTL ○˝Ọ ı ỉ ㎛ 4 ı ب ل„ ᵷ ㎛ 2-10

ỉ ب ل ỉ ㎛ 4

ᵘ ᵑᵬ₩Ã ᘐ ṕ ب ل ₩Ã

ỉ ٨˳ 14

Æ ŧ ˝YṀ LLDP ĭ ă ᴀ TimeovmeL165(VP)]TJC2_0 1 Tf0 Tc78.953 0 Td<019049BE>Tj/TT0 1 Tf0.0006 Tc[(=(TT)-7
DPi79(MET)-7D-TTL75(VP)]TJ /C2_0 1 Tf 0 Tc 0 Tw7.3353 0 Td <0418>Tj /TT0 1 Tf -0.0168 Tc- 0.0290
p location cc-location identifier(>]TJT30 1 Tf-0.0020 Tc 0 Tw(id)>Tj/TT0 1 Tf0 Tc ( )Tj7.17

no lldp location civic-location identifier *id*

v ̈Ϙ ب ̃

v ̈Ϙ	ώ ك
id	ل ٨ ֆ ᵻ ̃ ِ ş ҳ ʒ Ụ%ỷ ᴺ ı„ ɧ ʁ χ 1-1024

ỉ ٻ ل -

ᵘ ɲ₩ Ã ২ ṕ ٻ ل ₩ Ã

ỉ ١̣ 14

Æ ŕ ″YṀ Æ ŕ % ᵘ ɲ ᵻ ڤ Ɔ LLDP Civic Address ٻ ل ₩ Ã

ٻ ل ڎ æ 1 χ„ ấ LLDP MED-TLV ʌ Civic Address ʒ Ụ ı id ʁ 1

```
Ruijie#config
Ruijie(config)#lldp location civic-location identifier 1
Ruijie(config-lldp-civic)#
```

ώ˜ ʒ Ụ -

Ẃ ȸ ڄ ئ -

Ẉ ᴶ ب ̃ -

7.11 lldp location elin identifier

ٻ ل Location Identification TLV Ṃ Ꝉ ل Ớ ɔ ʔ ᴺ ̣ ʒ Ụ

lldp location elin identifier *id* **elin-location** *tel-number*

„ ں ل Ớ ɔ ʔ ᴺ ̣ ʒ Ụ

no lldp location elin identifier *id*

v ̈Ϙ ب ̃

v ̈Ϙ	ώ ك
id	ˊ ˜ ل Ớ ɔ ʔ ᴺ ̣ ʒ Ụ ٻ ل ‰ ỷ ᴺ ı„ ɧ ʁ χ 1-1024
tel-number	ˊ ˜ ل Ớ ɔ ʔ ᴺ ̣ ı„ ɧ χ 10 – 25 È `

ỉ ٻ ل -

ᵘ ɲ₩ Ã ২ ṕ ٻ ل ₩ Ã

ǰ ۱.	14
Æ ŧ ″YṀ	Æ ŧ % ᵘ ɲ ʃ ٮ ل ۱ Ó ɔ ʔ ᴺ ʒ Ụ
ٮ ل ʒ æ	1 χ ¨ ấ ۱ Ó ɔ ʔ ᴺ ʒ Ụ Ruijie#config Ruijie(config)#lldp location elin identifier 1 elin-location 085283671111
ώ ˜ ʒ Ụ	-
Ẃ ð ჭ ئ	-
Ẉ ᴶ ب ″	-

7.12 lldp management-address-tlv

ٮ ل LLDP ï ă ѧ ∧ ų ۱ т ş χ

lldp management-address-tlv [*ip-address*]

Æ ŧ no J̌ ° ˡ Ҩ ɲ ╦ ۱ т ş χ ∧ ų

no lldp management-address-tlv

v ″Ω ب ″	v ″Ω	ώ ك
	ip-address	LLDP ï ă ѧ ∧ ų ۱ т ş χ

ǰ ٮ ل	-
ᵘ ɲ ₩ Ã	ì Æ ٮ ل ₩ Ã
ǰ ۱.	14
Æ ŧ ″YṀ	ǰ ù` ï ı LLDP ï ă ∧ ų ۱ т ş χ ∧ ų ۱ т ş χ ѫ ۱ Æ ы ę ن ص ۱ ώ ņ VLAN IPv4 ş χ ı ḅ ' Í VLAN ' ٮ ل IPv4 ş χ ı ¸ ۸ ۸ ¶ ñ ï Ѧ ы ę ن ص ۱ ώ ņ VLAN ı ´ ¨ ñ ¨ IPv4 ş χ ѫ Ƀ ḅ ' ' ñ ¨ IPv4 ş χ ı ¸ ¶ ñ ۱ Æ ы ę ن ص ۱ ώ ņ VLAN IPv6 ş χ ḅ ' Ҡ ' ñ ¨ IPv6 ş χ ı ¸ ٮ ŧ ş χ 127.0.0.1 Ă ѫ ۱ т ş χ ∧ ų
ٮ ل ʒ æ	1 χ ٮ ل LLDP ï ă ѧ ∧ ų ۱ т ş χ ѫ 192.168.1.1 Ruijie# configure terminal Ruijie(config)#interface gigabitethernet 0/1 Ruijie(config-if-GigabitEthernet 0/1)#lldp management-address-tlv 192.168.1.1

ώ˜ ʒ Ụ -

Ẃ ð ჭ ɕ -

Ẉ ᴶ ب ˝ -

7.13 lldp mode

ب ل LLDP ▣ Ṫ Ă ₩ Ã

lldp mode { **rx | tx | txrx** }

ɬ Ä ˡ Ɑ Æ ɬ no Ǐ ° ʜ ŝ LLDP ▣ Ṫ Ă ₩ Ã

no lldp mode

v Ȕ ب ˝

v Ȕ	ώ ك
rx	ˊ ~ ᴱ ì ώ j ∧ گ LLDPDU
tx	ˊ ~ ᴱ ∧ گ j ì ώ LLDPDU
txrx	ˊ ~ o ∧ گ w ì ώ LLDPDU

ƚ ب ل **txrx**

ᵘ ɲ ₩ Ã ì Æ ب ل ₩ Ã

ƚ ٨ ̣ 14

Æ ɬ ˝ Y Ṁ ʜ ŝ ì Æ ▣ LLDP Ṫ Ă ₩ Ã ı % ` H ì Æ j W ∧ گ ⁼ ì ώ LLDP ï ă

ì Æ LLDP ı ĺ ɨ ώ̃ ▣ ώ ĩ ২ ṕ Æ ĺ ˝ LLDP ħ ì Æ LLDP ▣ Ṫ Ă ₩ Ã ⁂ tx rx ẵ txrx

ب ل ʒ æ 1 χ ب ل ì Æ ▣ LLDP Ṫ Ă ₩ Ã ʁ ᴱ ∧ گ j ì ώ LLDPDU

```
Ruijie# configure terminal
Ruijie(config)#interface gigabitethernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)#lldp mode tx
```

ώ˜ ʒ Ụ -

Ẃ ð ჭ ɕ -

Ẉ ᴶ ب ˝ -

7.14 lldp network-policy profile

¸ á LLDP network-policy ᛘ ᛔ ı Ẋ ڤ LLDP network-policy ᛒ ᛣ ₩ Ã

lldp network-policy profile *profile-num*

Æ ɾ no Ǯ ° ¸ ᛏ LLDP network-policy ᛘ ᛔ

no lldp network-policy profile *profile-num*

v ̈Ǫ ᛒ ″

v ̈Ǫ	ѽ ك
profile-num	LLDP network-policy ᛘ ᛔ ▯‰ ̀ v̊ ı ¸ ᛏ ɧ ᚓ χ 1-1024

ƛ ᛒ ᛣ -

ᵘ ɲ ₩ Ã ᖘ ṕ ᛒ ᛣ ₩ Ã

ƛ ᛎ ̣ 14

Æ ɾ ″ Y Ṁ Æ ɾ % ᵘ ɲ ڤ LLDP network-policy ᛒ ᛣ ₩ Ã ı Æ ɾ % ᵘ ɲ ̀ H ᛬ ļ ″ Y ḧ ᛘ ᛔ ID

ڤ LLDP network-policy ᛒ ᛣ ₩ Ã ª ı ˡ Æ ɾ { voice | voice-signaling } vlan ᵘ ɲ ᛒ ᛣ ᖘ ч ▯ network-policy ᛘ ᛔ

ᛒ ᛣ ᶎ æ 1 χ ¸ á LLDP network-policy ᛘ ᛔ ı ᛘ ᛔ ᴺ ᚓ 1

v ̈Ϙ ب ˝	v ̈Ϙ	ώ ك
	-	-

ǰ ٻ ل	ǰ ԋ ڑ

ᵘ ɲ ₩ Ã	ì Æ ٻ ل ₩ Ã

ǰ ۱.	14

Æ ŧ ˝ YṀ	ڼ ص ٻ ل Trap ı Ť ı ˡ Ϣ Ṅ ş ₱ ᵻ LLDP ȝ Ụ ε æ ḅ ∧ א Ȧ ∧ ṗ ₅ ⅄ ˙ ﻝ ∧ ṗ ڼ ȝ ج ت ۔ ڈ ۷ ȝ Ụ ζ ∧ گ ᴎ ل ٦ Ȯ ח ʜ ı ٦ ת ^ ˡ Ϣ ⁞ Ϙ % ȝ Ụ ˇ í ل ᴎ ظ Φ ↑ `

ٻ ل ڎ æ	1 χ ٻ ل LLDP Trap ı Ť
	`Ruijie# configure terminal`
	`Ruijie(config)#interface gigabitethernet 0/1`
	`Ruijie(config-if-GigabitEthernet 0/1)#lldp notification remote-change enable`

ώ ˜ ȝ Ụ	-

Ẃ ȸ ج ئ	-

Ẉ ᴶ ب ˝	-

7.16 lldp timer notification-interval

ٻ ل ∧ گ LLDP Trap ᵻ H ڑ ڑ ڷ

lldp timer notification-interval *seconds*

Æ ŧ no Ǯ ° ı Ϣ Õ ʯ ǰ ᵻ H ڑ ڑ ڷ

no lldp timer notification-interval

v ̈Ϙ ب ˝	v ̈Ϙ	ώ ك
	seconds	ٻ ل ∧ گ LLDP Trap ȝ Ụ ᵻ H ڑ ڑ ڷ ا ǰ ᵻ H ڑ ڑ ڷ ĩ 5 ۱ ا ٻ ل ᵻ ḫ ĩ 5-3600

ǰ ٻ ل	ǰ 5 ۱

ᵘ ɲ ₩ Ã	ϡ ṕ ٻ ل ₩ Ã

ǰ ۱.	14

Æ ŧ ˝YṀ

ᚙ گ ₿ LLDP Trap ʒ Ụ ᚙ ᶩ ᵑ ∧ گ ı ℚ ٻ ل ∧ گ LLDP Trap ᚙ ̀H ژ ڑ ڭ ƍ ف ـ ̀H ژ ڑ ڭ ɲ ı ₅ ᶫ ˙ LLDP ʒ Ụ Ψ ᵽ ı Ṅ ∧ گ Trap ᵑ ل ᵑ ̀O ᑎ ʰ

ٻ ل �Z æ

1 χ ٻ ل LLDP Trap ∧ گ ̀H ژ ڑ ڭ ᚙ 10 ᚑ

```
Ruijie# configure terminal
Ruijie(config)#lldp timer notification-interval 10
```

ώ˜ ʒ Ụ

-

Ẃ ծ ჯ ئ

-

Ẉ ᴶ ب ˝

-

7.17 lldp timer reinit-delay

ٻ ل ᚑ Æ˙ Ḋ ᵽ ᚙ å ق ̀H ژ

lldp timer reinit-delay *seconds*

Æ ŧ no Ǐ ° ı ℚ Õ ʰ ᚑ Æ˙ Ḋ ᵽ ᚙ å ق ̀H ژ ᚙ ỉ Ө

no lldp timer reinit-delay

v ˝Ǫ ب ˝

v ˝Ǫ	ώ ك
seconds	ᚑ Æ˙ Ḋ ᵽ ᚙ å ق ̀H ژ ı ٻ ل ,,, ƍ ᚙ 1-10 ᚑ

ỉ ٻ ل

2 ᚑ

ᵘ ᵑᵬ ₩ Ã

ᵓ ṕ ٻ ل ₩ Ã

ỉ ᚑ ̣

14

Æ ŧ ˝YṀ

ᚙ ᵌ d ᚑ Æ ᚙ Ṫ Ă ₩ Ã ᚙ ᶩ ᵑ ψ ᵽ Â ∨ ᚙ ᶩ ᵑ ş ˙ Ḋ ᵽ ᵀ õ ı ı ℚ ٻ ل ᚑ Æ˙ Ḋ ᵽ ᚙ å ق ̀H ژ

ٻ ل ᶩ æ

1 χ ٻ ل LLDP ᚑ Æ˙ Ḋ ᵽ ᚙ å ق ̀H ژ ᚙ 3 ᚑ

```
Ruijie# configure terminal
Ruijie(config)#lldp timer reinit-delay 3
```

ώ˜ ʒ Ụ

-

Ẃ ծ ჯ ئ

-

àẆÇƎ0 ĎBD NЋ¡™Â ðÉ Ÿ -Â f ¨ r DBD NGéÂ ðÉ •gi6fúÀgPUD˜Š&úĐ8250694j 0.0003 Tc 7.453 0.04 T 0.199720.84 442. 50 1<04B60642

7.18 lldp timer tx-delay

پ ـ LLDP ï ă ∧ گ å ق ʽH ژ

lldp timer tx-delay *seconds*

lldp timer tx-delay

v ̈Ϙب ˝	v ̈Ϙ	ώ ك
	seconds	LLDP ï ă ⊞ ∧ گ`H ژ ژ ك ا ٬ بـ ـِ ḫ ᵻᵻ 5-32768

ỉ بـ ـل	30 ١
ᵘ ᵑь ₩ Ã	ٶ ṕ بـ ـل ₩ Ã
ỉ ١.	14
Æ ŧ ″ Y Ṁ	-
بـ ـل ڎ æ	1 χ بـ ـل LLDP ï ă ⊞ ∧ گ`H ژ ژ ك ᵻᵻ 10 ١ Ruijie# configure terminal Ruijie(config)#lldp timer tx-interval 10
ώ˜ ʒ Ụ	-
Ẃ ȯ ڃ ئ	-
Ẉ ᴶ ب ˝	-

7.20 lldp tlv-enable

بـ ـل ы ḛ ∧ ų ⊞ TLV ١ ʒ

lldp tlv-enable { **basic-tlv** { **all | port-description | system-capability | system-description | system-name } |dot1-tlv** { **all | port-vlan-id | protocol-vlan-id [** *vlan-id* **] | vlan-name** [*vlan-id*] } **|dot3-tlv** { **all | link-aggregation | mac-physic | max-frame-size | power } | med-tlv { all | capability | inventory | location** { **civic-location | elin** } **identifier** *id* **| network-policy profile** [*profile-num*] **| power-over-ethernet } }**

Æ ŧ no Ǯ ° ٬ Ⓠ ᵑ ╦ ∧ ų ″ Y ḧ ⊞ TLV ١ ʒ

no lldp tlv-enable { **basic-tlv** { **all | port-description | system-capability | system-description | system-name** } **| dot1-tlv** { **all | port-vlan-id | protocol-vlan-id | vlan-name** } **| dot3-tlv** { **all | link-aggregation | mac-physic | max-frame-size | power** } **| med-tlv** { **all | capability | inventory | location** { **civic-location | elin** } **identifier** *id* **| netw0555rx netw}7f-0.0065 TȻcy-e} profile-ic-tlm**

port-description	ˊ˜ Port Description TLV
system-capability	ˊ˜ System Capabilities TLV
system-description	ˊ˜ System Description TLV
system-name	ˊ˜ System Name TLV
dot1-tlv	802.1 ㅓ ㅣ ħ Θ TLV
port-vlan-id	ˊ˜ Port VLAN ID TLV
protocol-vlan-id	ˊ˜ Port And Protocol VLAN ID TLV
vlan-id	ˊ˜ ㅕ Æ ʁ ɲ VLAN ID ı ب ㅣ ҕ ㅛ χ 1-4094
vlan-name	ˊ˜ VLAN Name TLV
vlan-id	ˊ˜ ″Y ħ VLAN ᵉ ㅕ Ḿ Ƶ VLAN ID ı ب ㅣ ҕ ㅛ χ 1-4094
dot3-tlv	802.3 ㅓ ㅣ ħ Θ TLV
link-aggregation	ˊ˜ Link Aggregation TLV
mac-physic	ˊ˜
max-frame-size	ˊ˜
power	ˊ˜ Po-18(Tw)16(e)-3(r V)21(i)3(a MDᵢ)27(T)-8T±0 -D6AVD6AVVH3 Ctr0=Lap

ȩ ғ ƀ ᵉ ㅕ ₩ ę ᵉ ㅕ ⊐ ° ғ ‰ ỿ ㅓ ㅕ

lo-12(atio)2(n)2(]TJ 20 1 Tf0 Tc 17.053 -0.027 Td[A6E0950F)7(T0 1 Tf-0.0015 Tc 0.0037 Tw 2.247 0 Td[(Loc)8Tation Ide

ҕ ' Ф ᵻ ỉ ˜Ḥ'Y DCB ı ㅕ Æ i ы ҕ ʌ ڜ ں 80-16(2.3 T=11 D/T6 6-MED Te 1)/T 5 ڜ TL ψ ҕ

Ф ᵻ j ˜Ḥ'Y DC-16(BX)]TJ 2_0 1 Tf0 Tc 2.7 3 Td[<8 B 4E0 0 80 E D0 7>-7<04AA0A95054706620

net-137Twork pŏlicyı ỉ ʌ ڜ Ⅵ ㅈ ㅛ none

ᵘ ɲ ₩ Ã ì Æ ب ㅣ ₩ Ã

ỉ ㅓ 14

- ٹ ل ىا ᵽ ∧ ᵾ LLDP-MED Capability TLV `H ı ᵪ ᵢ Ж ٹ ل ىا ᵽ ∧ ᵾ LLDP 802.3 MAC/PHY TLV ψ ᵖ ╦ ∧ ᵾ LLDP 802.3 MAC/PHY TLV `H ı ᵪ ᵢ Ж ᵖ ╦ ∧ ᵾ LLDP-MED Capability TLV

  ٹ LLDP-MED TLV `H ıǫ ᵋ ٹ ل ىا ᵽ ∧ ᵾ LLDP-MED Capability TLV ıᵻ ˈ ⓠ ٹ ل ىا ᵽ ∧ ᵾ LLDP-MED Ծ Ḛ ᵻ ᵹ TLV ᵖ ╦ ∧ ᵾ LLDP-MED TLV ı ǫ ᵋ Ж ᵖ ╦ ∧ ᵾ LLDP-MED Ծ Ḛ ᵻ ᵹ TLV ı ᵻ ىا ᵽ ᵖ ╦ ∧ ᵾ LLDP-MED Capability TLV Ḛ ᵮ ᵼ ï ỉ IP ↄ ʔ ıᵡ IP ↄ ʔ ᵀḢ'Y LLDP-MED ᵾ ˈ ⓠ ن ص ٹ ل network policy TLV ï ∧ ᵚ ᵪ ᵰ IP ↄ ʔ

  ḅ ' ᵮ ᵼ ƚ ᵀḢ'Y DCBX ı ḟ ı ƚ ừ` ï ᵛ Æ i j ىا ᵽ ∧ ᵾ IEEE 802.3 TLV ᵹ LLDP-MED TLV

ٹ ل ᵹ æ

1 χ ٹ ل ∧ ᵾ IEEE 802.1 ᵻ ᵸ ḧ Θ"A ῶ ˈ ᴊ TLV

```
Ruijie# configure terminal
Ruijie(config)#interface gigabitethernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)#lldp tlv-enable dot1-tlv all
```

2 χ Ṅ LLDP network-policy ᵚ ᵪ 1 Ẓ ᵼ ì Æ 0/1 i

```
Ruijie#config
Ruijie(config)#interface gigabitethernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)#lldp tlv-enable med-tlv network-policy profile 1
```

3 χ Ṅ LLDP Civic Address ٹ ل ʒ Ụ ε id ᵴ 1 ζ Ẓ ᵼ ì Æ 0/1 i

```
Ruijie#config
Ruijie(config)#interface gigabitethernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)#lldp tlv-enable med-tlv location civic-location identifier
1
```

4 χ Ṅ ᵸ Ớ ↄ ʔ ᴺ ʒ Ụ (id ᵴ 1) Ẓ ᵼ ì Æ 0/1 i

```
Ruijie#config
Ruijie(config)#interface gigabitethernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)#lldp location elin identifier 1
```

ώ˜ ʒ Ụ -

Ẃ ð ᶎ ئ -

Ẉ ᴶ ب ᵛ -

7.21 show lldp local-information

Ǐ ˜ ş ᵮ ᵼ LLDP ʒ Ụ ı ف Ᵽ ʒ Ụ Ṅ ɋ ᵻ ᵸ ă TLV ∧ گ ᵰ ∧ ṗ ᵮ ᵼ

show lldp local-information [**global** | **interface** interface-name]

v ̈Ọ ب ̋

v ̈Ọ	◌ ك
interface-name	ì Æ ᵾ Ч

ᵘ ᵑᵬ₩Ã ₌ ₩Ã

ƛ̂ ∧̣ 2

```
Object identifier                :


802.1 organizationally information
Port VLAN ID                     : 1
Port and protocol VLAN ID(PPVID) : 1
    PPVID Supported              : YES
    PPVID Enabled                : NO
VLAN name of VLAN 1              : VLAN0001
Protocol Identity                :


802.3 organizationally information
Auto-negotiation supported       : YES
Auto-negotiation enabled         : YES
PMD auto-negotiation advertised  : 100BASE-TX full duplex mode, 100BASE-TX half duplex mode
Operational MAU type             : speed(100)/duplex(Half)
PoE support                      : NO
Link aggregation supported       : YES
Link aggregation enabled         : NO
Aggregation port ID              : 0
Maximum frame Size               : 1500

LLDP-MED organizationally information
Power-via-MDI device type        : PD
Power-via-MDI power source       : Local
Power-via-MDI power priority     :
Power-via-MDI power value        :
Model name                       : Model name
```

show lldp local-information ᵘ ᖷ Ǐ ˜ ʒ Ụ ѽ ك ˊ χ

È ɟ	ب ˝
Chassis ID type	Chassis ID ↿ ʒ ı ₹ ‰ Chassis ID È ɟ
Chassis ID	₹ ‰ ₲ ł ı ِ Ẃ ŕ MAC ş χ ˊ ˜
System name	ѽ ك ₲ ł ▯ ª Ч
System description	₲ ł ѽ ك ʒ Ụ ı ɣ ὐ ţ / ʂ ţ ν ˜Ḥ Ă ᛋ ᛁ Ч ʒ Ụ
System capabilities supported	ᛋ ᛁ ˜Ḥ ' Y ▯ ı Ť

System capabilities enabled	↓ ∧ Ţ̂ Æ ť ▣ ı ť
LLDP-MED capabilities	↓ ∧ ˜Ḥ'Y▣ LLDP-MED ▣ ť ㄒ
Device class	Med ⊕ ᵻ ↿ ʒ ıЧ ă 2 ↿ χ ↓ ∧ ف ì ⊕ ᵻ ⁼ ↓ ↰ ⊕ ᵻ Network connectivity device χ ↓ ∧ ف ì ⊕ ᵻ Class I χ ´ ~ ˇ ↓ ↰ ⊕ ᵻ Class II χ ´ ~ Ḍ ч ↓ ↰ ⊕ ᵻ ı ㄚ ᵍ˝ Class I ▣ ť ㄒ ı

˙ ˙ ʒ Ụ
ʒ Ụ
˙ ˙ ʒ Ụ

```
Identifier : t
Elin       : iiiiiiiiii
Ports      : Gi1/0/3
--------------------------
```

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7.23 show lldp neighbors

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show lldp neighbors [**interface** *interface-name*] [**detail**]

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```
  Management address subtype        : 802 mac address
  Management address                : 00d0.f822.33cd
  Interface numbering subtype       :
  Interface number                  : 0
  Object identifier                 :



  LLDP-MED capabilities             :
  Device class                      :
  HardwareRev                       :
  FirmwareRev                       :
  SoftwareRev                       :
  SerialNum                         :
  Manufacturer name                 :
  Asset tracking identifier         :

  Port ID type                      : Interface name
  Port id                           : GigabitEthernet 0/1
  Port description                  :

  802.1 organizationally information
  Port VLAN ID                      : 1
  Port and protocol VLAN ID(PPVID)  : 1
      PPVID Supported               : YES
      PPVID Enabled                 : NO
  VLAN name of VLAN 1               : VLAN0001
  Protocol Identity                 :
  802.3 organizationally information
  Auto-negotiation supported        : YES
  Auto-negotiation enabled          : YES
  PMD auto-negotiation advertised   : 1000BASE-T full duplex mode, 100BASE-TX full duplex mode,
100BASE-TX half duplex mode, 10BASE-T full duplex mode, 10BASE-T half duplex mode
  Operational MAU type              : speed(1000)/duplex(Full)
  PoE support                       : NO
  Link aggregation supported        : YES
  Link aggregation enabled          : NO
  Aggregation port ID               : 0
  Maximum frame Size                : 1500
  LLDP-MED organizationally information
  Power-via-MDI device type         :
  Power-via-MDI power source        :
```

```
Power-via-MDI power priority      :
Power-via-MDI power value         :
```

show lldp neighbors ᵘ ᵑᵬ Ǐ ˜ ʒ Ụ ѡ ك ˊ χ

È ᵻ	ب ˮ
Neighbor index	ʌ ṗ ɻ Ậ
Device type	ʌ ṗ ֆ ᵻ ▯ ɻ ʒ
Update time	ʌ ṗ ʒ Ụ ѡ ḝ ▯ ˜ Ȁ ʿH ڑ
Aging time	ʌ ṗ ▯ ắ ᵽ ʿH ڑ ı o ʌ ṗ ʒ Ụ ᵽ ^ Ṉ ヽ ª ą ắ ᵽ ˍ ᵭ
Chassis ID type	Chassis ID ▯ ɻ ʒ
Chassis ID	₹ ‰ ⅋ ֆ ᵻ ı ᵑ Ẃ ₹ MAC ᵴ χ ˊ ˜
System name	ѡ ك ֆ ᵻ ▯ ᵃ ५
System description	ֆ ᵻ ѡ ك ʒ Ụ ı ɣ ụ ţ / ᵴ ţ ν ˜Ḥ Ă ɻ ʌ ५ ʒ Ụ
System capabilities supported	ɻ ʌ ˜Ḥ ' Y ▯ ı ĩ
System capabilities enabled	ɻ ʌ Ţ Æ ĩ ▯ ı ĩ
Management address subtype	٦ ת ᵴ χ ɻ ʒ
Management address	٦ ת ᵴ χ
Interface numbering subtype	٦ ת ᵴ χ ì Æ ɻ ʒ
Interface number	٦ ת ᵴ χ ì Æ ID
Object identifier	٦ ת ᵴ χ Ḿ ɛ ‰ ⅋ ५
Device class	Med ֆ ᵻ ɻ ʒ ıH ᵑ ă 2 ɻ χ ɻ ʌ ف ì ֆ ᵻ ⊐ ɻ ٦ ֆ ᵻ Network connectivity device χ ɻ ʌ ف ì ֆ ᵻ Class I χ ˊ ˜ ˇ ɻ ٦ ֆ ᵻ Class II χ ˊ ˜ Ḍ ɥ ɻ ٦ ֆ ᵻ ı ɣ ᵍ˝ Class I ▯ ĩ ד ı ᵃ ʿH ˜Ḥ ' Y Ḍ ɥ ╚
	Class III χ ˊ ˜ ِ g ɻ ٦ ֆ ᵻ ı ɣ ᵍ˝ Class I ⊐ Class II ▯ ĩ ד ı ᵃ ʿH ˜Ḥ ' Y IP ِ g
HardwareRev	. ţ ν
FirmwareRev	ɖ ţ ν
SoftwareRev	ᵴ ţ ν
SerialNum	ẑ ° ᴺ
Manufacturer name	· ḉ ғ ƀ
Asset tracking identifier	° ғ ‰ ⅋ ५
Port ID type	٦ Æ ID ɻ ʒ

profile-num	network-policy Ⅵ ɀ ⅷ‰ ⅴ ᴺ ı ˵ ƀ ʜ χ 1-1024
interface-name	ì Æ ᵾ Ч

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Æ ŧ ″ Y Ṁ ″ Y ḧ Ⅵ ɀ ⅷ‰ ⅴ ᴺ ı Ṅ Ǐ ~ ₰ ḧ network-policy Ⅵ ɀ ⅷ ʒ Ụ

j ″ Y ḧ γ Ṃ v ″ Ọ ı Ṅ Ǐ ~ ″ A õ network-policy Ⅵ ɀ ⅷ ʒ Ụ

ᵽ ɻ ʓ æ 1 χ Ǐ ~ ″ A õ network-policy Ⅵ ɀ ⅷ ʒ Ụ

```
Ruijie# show lldp network-policy profile
network-policy information:
-------------------------
Network Policy Profile 1
   voice vlan 2 cos 4 dscp 6
   voice-signaling vlan 2000 cos 4 dscp 6
```

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7.25 show lldp statistics

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show lldp statistics [f**gtoebra**ao][

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7.26 show lldp status

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show lldp status [**interface** *interface-name*]

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v ˝Ọ	ὼ ك
interface-name	ì Æ ᵾ Ꞑ

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Æ ŧ ˝YṀ ˝Y ḧ **interface** v ˝Ọ ı Ṅ Ǐ ˜ ˝Y ḧ ì Æ🅾🅱🅹LLDP ᵗ õ ȝ Ụ

ب ل ᵹ æ 1 χ Ǐ ˜ ˝A ω̃ Ꞑ Æ🅾🅱🅹LLDP ᵗ õ ȝ Ụ

```
Ruijie# show lldp status
Global status of LLDP                 : Enable
Neighbor information last changed time : 1hour 52minute 22second
Transmit interval                     : 30s
Hold multiplier                       : 4
Reinit delay                          : 2s
Transmit delay                        : 2s
Notification interval                 : 5s
Fast start counts                     : 3
------------------------------------------------------------
Port [GigabitEthernet 0/1]
------------------------------------------------------------
Port status of LLDP            : Enable
Port state                     : UP
Port encapsulation             : Ethernet II
Operational mode               : RxAndTx
Notification enable            : NO
Error detect enable            : YES
Number of neighbors            : 1
Number of MED neighbors        : 0
```

show lldp status ᵘ ᵑᵬ Ǐ ˜ ȝ Ụ ὼ ك ˊ χ

È ᵻ	ب ˝
Global status of LLDP	ᵓ ṕ ĩ ᵋ Æ ĥ LLDP
Neighbor information last changed time	ʌ ṗ ʒ Ụ ѡ ᵅ ˜ Ȧ H ژ
Transmit interval	LLDP ĭ ă ʌ گ ژ ڭ
Hold multiplier	TTL Ọ Ѫ
Reinit delay	ヶ Æ. Ḋ ƿ å ق H ژ
Transmit delay	LLDP ĭ ă ʌ گ å ق H ژ
Notification interval	LLDP Trap ʒ Ụ ʌ گ H ژ ڭ
Fast start counts	ŏ ھ ʌ گ LLDP ĭ ă Ѧ Ѫ
Port status of LLDP	ヶ Æ ĩ ᵋ Æ ĥ LLDP
Port state	ヶ Æ ج ت ↑ õ ı UP ã DOWN
Port encapsulation	LLDP ĭ ă Ṃ Ⱡ Ã
Operational mode	LLDP Ṫ Ă ₩ Ã
Notification enable	ヶ Æ ĩ ᵋ Æ ĥ LLDP Trap ı ĥ
Error detect enable	ヶ Æ ĩ ᵋ Æ ĥ ج ئ ₅ ⅄ ı ĥ
Number of neighbors	ʌ ṗ Ѧ Ѫ
Number of MED neighbors	MED ʌ ṗ Ѧ Ѫ

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7.27 show lldp tlv-config

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show lldp tlv-config [**interface** *interface-name*]

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interface-name	ᵢ Æ ᵾ ヶ

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Æ ŧ ″Y Ṁ ″Y ħ **interface** ᵛ ″Ω ı Ṅ Ǐ ˜ ″Y ħ ì Æ㊋ LLDP TLV ᵽ ⅃ ʒ Ụ

ᵽ ⅃ ᵹ æ 1 χ Ǐ ˜ ì Æ 1㊋ TLV ʒ Ụ

```
Ruijie# show lldp tlv-config interface GigabitEthernet 0/1
LLDP tlv-config of port [GigabitEthernet 0/1]
-------------------------------------------------
              NAME               STATUS DEFAULT
--------------------------------- ------ -----------
Basic optional TLV:
Port Description TLV             YES    YES
System Name TLV                  YES    YES
System Description TLV           YES    YES
System Capabilities TLV          YES    YES
Management Address TLV           YES    YES

IEEE 802.1 extend TLV:
Port VLAN ID TLV                 YES    YES
Port And Protocol VLAN ID TLV    YES    YES
VLAN Name TLV                    YES    YES

IEEE 802.3 extend TLV:
MAC-Physic TLV                   YES    YES
Power via MDI TLV                YES    YES
Link Aggregation TLV             YES    YES
Maximum Frame Size TLV           YES    YES

LLDP-MED extend TLV:
Capabilities TLV                 YES    YES
Network Policy TLV               YES    YES
Location Identification TLV      NO     NO
Extended Power via MDI TLV       YES    YES
Inventory TLV                    YES    YES
```

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7.28 {voice | voice-signaling} vlan

ᖵ ᒧ LLDP network-policy ᛘ ᘁ ᚏ ᷈A ᛁ ᑫ Æ ᚏ **no** ᒪ ˚ ᠆ ᖱ ᛘ ᘁ ᐪ ᚏ ᛁ ᘖ

{ **voice | voice-signaling** } **vlan** { { *vlan-id* [**cos** *cvalue* **| dscp** *dvalue*] } | { **dot1p** [**cos** *cvalue* **| dscp** *dvalue*] } **| none | untagged** }

no { **voice | voice-signaling** } **vlan**

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voice	᷈Y ḧ voice ᐪ ᚏ ᛁ ᘖ
voice-signaling	᷈Y ḧ voice-signaling ᐪ ᚏ ᛁ ᘖ

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```
Ruijie#config
Ruijie(config)#lldp network-policy profile 1
Ruijie(config-lldp-network-policy)# voice vlan untagged
Ruijie(config-lldp-network-policy)# voice-signaling vlan 3 cos 4
Ruijie(config-lldp-network-policy)# voice-signaling vlan 3 dscp 6
```

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8 PPP

8.1 ppp accm

ٻ ل PPP в ђ ACCM(ầ ℓ È ٤ ڎ Ω ọ)J̌ °

ppp accm *value*

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no ppp accm

v ¨Ω ب ˝	v ¨Ω	ώ ك
	value	ACCM J̌ ° ë ı п ë„ ђ 0-0xffffffff

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ǰ ٻ ل ѫ п ë ʜ 0x000A0000

ǰ ٤. 14

Æ ŧ ˝ YṀ % ᵘ ᵑь ŧ ׳ ٻ ل PPP в ђ ڜ ᵻ ACCM J̌ ° ë ı п ë„ ђ ĩ 0-0xffffffff ı ѫ ɳ ë ʜ 0x000A0000

ٻ ل ڎ æ 1 χ ٻ ل PPP в ђ ڜ ᵻ ACCM J̌ ° ë

```
Ruijie(config-if-Virtual-ppp 1)#ppp accm 0x0000000f
Ruijie(config-if-Virtual-ppp 1)#
```

ₛ ج Ά | **show running-config** ˡ ¶ ˜ ì Æ ï ٻ ل ppp в ђ accm ë

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Ẉ ᴶ ب ˝ AP ғ ᵝ ᴱ õ AP120-W v1.0 AP130-W v1.1 AP320I v1.x AP320I v2.X AP330-I v1.1 AP220-E(P) v2.0 AP520 v1.0 AP630 v1.0 AP5280 v1.0 AP130(L) v1.0,AP130(W) AP530-I V2 v1.00 APD-M(AC) RG-AW322 v1.0 AP530 v1.0 AP530 v1.5 AP320-I v1.0 AP320-I v1.1 AP220-E(C) v4.0 AP220-E(M)-V2 v3.0 AP220-E(P) v1.0 AP3220 v1.0 AP320-I v2.0 AP3220-P v1.0 AP4210 v1.0 APD-M v1.0 AP630(IODA) v1.00 AP630(IDA) AP630(CD) AP520(DA), AP520(BT) APD-M(AC) v1.00 RG-AW320W AP630 v1.00 AP740-I AP740-I(C) AP530-I V2 V2.00 AP630(CE) V1.0 APD-M(EA) V1.0 AP4220 V1.0 AP720-I AP730(TR) AP520(W2) AP130(W2) AP180 v1.x AP180 v2.x AP820-L v1.x AP680(CD) v1.x AP840-I AP850-I AP850(DA) AP860-I ˜Ḥ ˈY Ǐ ı Ǐ ı Ʊ Ę AP ғ ᵝ j ˜Ḥ ˈY PPP

8.2 ppp accounting

ᵽ ɻ PPP ⃞ ʟ ɲ Ά Ã̃

ppp accounting { default | *list_name* }

¨ ȸ PPP ⃞ ʟ ɲ ̊ ˊ

no ppp accounting

v ̋Ϙ ᵽ ˝

v ̋Ϙ	ѽ ك
default	ѕ ɲ ⃞ ʟ ɲ ̊ ˊ
list_name	aaa ʟ ɲ list ᵃ Ч

ᵘ ɲ ₩ Ã̃ ì Æ ᵽ ɻ ₩ Ã̃ ï

ƛ ˥ 14

Æ ɨ ˝ Y Ṁ % ᵘ ɲ ɨ ᵖ ᵽ ɻ PPP ⃞ ʟ ɲ Ά Ã̃ ɪ ˡ Ϣ ϕ ɻ ʟ ɲ Ά Ã̃ ѭ ѕ ɲ ⃞ default list ɪ ͡ ˡ Ϣ ˝ Y ḧ ʟ ɲ ⃞ list ⃞ ᵃ Ч ɪ % ᵘ ɲ ⃞ ᵽ ɻ ọ ɛ Æ Ĭ AAA ₩ ę ⃞ ɪ Ĭ Ã ʜ ė Ĭ ᵽ ɻ ɪ ᵋ ̤ ᵘ ɲ j ˡ ð

ᵽ ɻ ƺ æ 1 χ ᵽ ɻ PPP ⃞ ʟ ɲ Ά Ã̃

```
Ruijie(config-if-Virtual-ppp 1)#ppp accounting default
Ruijie(config-if-Virtual-ppp 1)#ppp accounting acc_list
Ruijie(config-if-Virtual-ppp 1)#
```

ₛ ƺ Ά |

8.3 ppp authentication

ᵽ ɻ PPP ɲ - Ά Ã̃

ppp authentication { { **pap | chap** } [**callin** | { **chap | pap** } | **default** | *list_name*] }

¨ ȸ PPP ɲ - Ά Ã̃

no ppp authentication { { **pap | chap** } [**callin** | { **chap** | **pap** } | **default** | *list_name*] }

v ̋Ϙᵽ ˝

v ̋Ϙ	ὼ ك
pap	ᵽ ɻ ɲ - Ά Ã̃ ᵚ PAP
callin	ᵏ ᵏ ɲ - ف˺ ت ∂ ĭ ẵ
chap	ᵽ ɻ ɲ - Ά Ã̃ ᵚ CHAP
default	ᵑ̀ o ĩ PAP ف ĩ CHAP ɲ - ı Æ ɾ ᵴ ɲ ɲ -˚ ˊ
list_name	ᵽ ɻ ɲ - `H ɲ -˚ ˊ ᵉ Ч

ᵘ ɲ ₩ Ã̃ ì Æ ᵽ ɻ ₩ Ã̃ ï

ȷ̂ ʌ̣ 14

Æ ɾ ˝ Yṁ % ᵘ ɲ ɾ˺ ᵽ ɻ PPP ɲ - Ά Ã̃ ı ɣ ὺ PAP ɲ - ı CHAP ɲ -

ᵽ ɻ ʓ̧ æ 1 χ ᵽ ɻ PPP ɲ - Ά Ã̃

```
Ruijie(config-if-Virtual-ppp 1)#ppp authentication pap
Ruijie(config-if-Virtual-ppp 1)#ppp authentication chap
Ruijie(config-if-Virtual-ppp 1)#ppp authentication pap chap callin default
Ruijie(config-if-Virtual-ppp 1)#ppp authentication pap chap test_list
Ruijie(config-if-Virtual-ppp 1)#
```

ₛ ǯ Ά | 1 χ Æ ɾ **show running-config** ᵘ ɲ ı˺ ˜ ì Æ ï ĩ ᵋ ᵽ ɻ˝ PPP ɲ - Ά Ã̃

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AP180 v1.x AP180 v2.x AP820-L v1.x AP680(CD) v1.x AP840-I AP850-I AP850(DA) AP860-I ˜Ḥ ˈY Ǐ ı ǐ ı Ʊ Ę AP ꜰ ᵝ j ˜ḤˈY PPP

8.4 ppp authorization

ب ـ PPP aaa ɲ - ▯á ˚ ˊ

ppp authorization { **default** | *list_name* }

¨ ڻ PPP aaa ɲ - ▯á ˚ ˊ

no ppp authorization

v ˝Ǫ ب ˝

v ˝Ǫ	ώ ك
default	ѫ ɲ▯ aaa ɲ - ▯á ˚ ˊ
list_name	PPP aaa ɲ - ▯á ˚ ˊ

ᵘ ɲ₩Ã ì Æ ب ـ ₩Ã ï

ƚ ˥. 14

Æ ŧ ˝YṀ ب ـ PPP AAA ɲ - ▯ˊ ı ŧ↱ ɡ PPP▯ɲ - گ ـ Æ ŧ AAA▯á ˚ ˊ↱ ڤΦ AAA▯ɲ - ı Ǐ ᵘ ɲ ǫ ɛ ɡ Ã ᵏ AAA ₩ę▯ ώ ï ė ˡ ð

ب ـ ʖ æ 1 χ Ṅ Virtual-PPP 1 Æ ï ▯PPP ɲ - ▯á ˚ ˊ ֆ ـ ѭ auth_list

```
Ruijie(config-if-Virtual-ppp 1)#ppp authorization default
Ruijie(config-if-Virtual-ppp 1)#ppp authorization auth_list
Ruijie(config-if-Virtual-ppp 1)#
```

ₛ ɜ Ά | 1 χ Æ ŧ **show running-config** ᵘ ɲ ı↱ ˜ ì Æ ï ب ـ▯PPP▯á ˚ ˊ

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Ẉ ᴶ ب ˝ AP ꜰ ᵝ ᴱ ũ AP120-W v1.0 AP130-W v1.1 AP320I v1.x AP320I v2.X AP330-I v1.1 AP220-E(P) v2.0 AP520 v1.0 AP630 v1.0 AP5280 v1.0 AP130(L) v1.0,AP130(W) AP530-I V2 v1.00 APD-M(AC) RG-AW322 v1.0 AP530 v1.0 AP530 v1.5 AP320-I v1.0 AP320-I v1.1 AP220-E(C) v4.0 AP220-E(M)-V2 v3.0 AP220-E(P) v1.0 AP3220 v1.0 AP320-I v2.0 AP3220-P v1.0 AP4210 v1.0 APD-M v1.0 AP630(IODA) v1.00 AP630(IDA) AP630(CD) AP520(DA), AP520(BT) APD-M(AC) v1.00 RG-AW320W AP630 v1.00 AP740-I AP740-I(C) AP530-I V2 V2.00 AP630(CE) V1.0 APD-M(EA) V1.0 AP4220 V1.0 AP720-I AP730(TR) AP520(W2) AP130(W2) AP180 v1.x AP180 v2.x AP820-L v1.x AP680(CD) v1.x AP840-I AP850-I AP850(DA) AP860-I ˜Ḥ

ˈY Ǐ ı ǐ ı Ʊ Ę AP ꜰ ß j ˜ḢˈY PPP

8.5 ppp chap

ب ل PPP chap ɲ - ▨ ɾ ¨A ᵉ ⊃ Ļ

ppp chap hostname *name*

ppp chap password *password*

ن ب ل ▨ PPP ▨ ɾ ¨A ᵉ ⊃ Ļ

no ppp chap hostname

v ¨Ǫ ب ˝	v ¨Ǫ	ڈ ك

AP630(CE) V1.0 APD-M(EA) V1.0 AP4220 V1.0 AP720-I AP730(TR) AP520(W2) AP130(W2) AP180 v1.x AP180 v2.x AP820-L v1.x AP680(CD) v1.x AP840-I AP850-I AP850(DA) AP860-I ᷈Ḥ ˈY Ǐ ı ǐ ı Ʊ Ę AP ɾ ß j ᷈ḤˈY PPP

8.6 ppp pap sent-username *username* password *password*

ٮ ل PPP PAP ɲ - ؆ ɾ ˝A ᵉ ⊃ Ḻ

ppp pap sent-username *username* **password** *password*

ٮ ڈ ٮ ل ؆ PPP PAP ؆ ɾ ˝A ᵉ ⊃ Ḻ

no ppp pap sent-username

v ˝Ǫ ب ˝	v ˝Ǫ	ڈ ك ɐ ɾ
	username	pap ɲ - ؆ ɾ ˝A ᵉ

o¬ ðz&÷U P ’ Îá#6Q RG

AP630(CE) V1.0 APD-M(EA) V1.0 AP4220 V1.0 AP720-I AP730(TR) AP520(W2) AP130(W2) AP180 v1.x AP180 v2.x AP820-L v1.x AP680(CD) v1.x AP840-I AP850-I AP850(DA) AP860-I ˜Ḥ ˈY Ǐ ı ǐ ı Ʊ Ę AP ꜰ ᵝ j ˜ḤˈY PPP

8.7 ppp ipcp dns

ب ل PPP ʁ ƀ IPCP گ ـ DNS ل ˚ Ө

ppp ipcp dns { *A.B.C.D* [*A.B.C.D*] [**accept**] **| accept** | **request** | **reject** }

ـ ں ب ل DNS ل ˚ Ө

no ppp ipcp dns { *A.B.C.D* [*A.B.C.D*] [**accept**] | **accept** | **accept PPPP DNS**

v2.0 AP520 v1.0 AP630 v1.0 AP5280 v1.0 AP130(L) v1.0,AP130(W) AP530-I V2 v1.00 APD-M(AC) RG-AW322 v1.0 AP530 v1.0 AP530 v1.5 AP320-I v1.0 AP320-I v1.1 AP220-E(C) v4.0 AP220-E(M)-V2 v3.0 AP220-E(P) v1.0 AP3220 v1.0 AP320-I v2.0 AP3220-P v1.0 AP4210 v1.0 APD-M v1.0 AP630(IODA) v1.00 AP630(IDA) AP630(CD) AP520(DA), AP520(BT) APD-M(AC) v1.00 RG-AW320W AP630 v1.00 AP740-I AP740-I(C) AP530-I V2 V2.00 AP630(CE) V1.0 APD-M(EA) V1.0 AP4220 V1.0 AP720-I AP730(TR) AP520(W2) AP130(W2) AP180 v1.x AP180 v2.x AP820-L v1.x AP680(CD) v1.x AP840-I AP850-I AP850(DA) AP860-I ˜Ḥ 'Y Ǐ ı Ǐ ı Ʊ Ę AP ғ β j ˜Ḥ'Y PPP

8.8 ppp lcp mru negotiate

ٮ ل PPP ʁ ƀ MRU(ۻ ᶻ ì ۻ ɒ Ƒ)Ǯ ˚ ₅ ʊ ʁ ƀ

ppp lcp mru negotiate

ɲ ╦ ٮ ل PPP₅ ʊ ʁ ƀ MRU

no ppp lcp mru

ѵ ̈Ⴔ ٮ ˝	ѵ ̈Ⴔ	ۻ ك
	-	-

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

ƛ ʌ. 14

Æ ŧ ˝ Y Ṁ MRU Ǯ ˚ ĩ ƍ PPP ʁ ƀ ص ١ ѧ ₪ Ѧ ڍ ₷ Ẃ ð ₪ Ǯ ˚ ı ´ ~ ۻ ᶻ ˡ ì ۻ ɒ Ƒ ı ᵡ Ά ƍ ʁ ƀ ₪ ص ١ ѧ h ̈Ạ Ṿ Ǐ Ǯ ˚ ı ϰ ă ف Φ ʁ ƀ ڼ ص ı. ḧ ˜Ⴔ Ѧ ج ث ѧ Ẓ Ǐ ҽ ژ ₪ ï ă ₪ ᶻ ṇ

ٮ ل ڳ æ 1 χ ٮ ل Virtual-ppp 1 Æ i MRU₅ ʊ ʁ ƀ

```
Ruijie(config-if-Virtual-ppp 1)#ppp lcp mru negotiate
Ruijie(config-if-Virtual-ppp 1)#
```

₅ ج Ά | 1 χ Æ ŧ **show runnV224 0.24 15.6 refB0.199 0465AT0 1 Tf-0.0003 Tc 4. 0465AT0 1 Tf-0.0005300300nfMRU**

o‰o- MRU

v4.0 AP220-E(M)-V2 P220-E(P) v1.0 AP3220 v1.0 v2.0 AP3220 AP4210
v1.0 APD-M v1.0 (IODA) v1.00 AP630(IDA)) AP520(D 520(BT)
APD-M(AC) v1.00 320W AP630 v1.00 AP740 0-I(C) AP5 V2.00
AP630(CE) V1.0 A V1.0 AP4220 V1.0 AP720-I R) AP520(W 130(W2)
AP180 v1.x AP180 20-L v1.x AP680(CD) v1.x A P850-I AP85 AP860-I ᵀḤ
ˈY Ǐ ı ǐ ı Ʊ Ę AP ꜰ PP

8.10 ppp negotiation-timeo

2P

v2.0 AP520 v1.0 AP630 v1.0 AP5280 v1.0 AP130(L) v1.0,AP130(W) AP530-I V2 v1.00 APD-M(AC) RG-AW322 v1.0 AP530 v1.0 AP530 v1.5 AP320-I v1.0 AP320-I v1.1 AP220-E(C) v4.0 AP220-E(M)-V2 v3.0 AP220-E(P) v1.0 AP3220 v1.0 AP320-I v2.0 AP3220-P v1.0 AP4210 v1.0 APD-M v1.0 AP630(IODA) v1.00 AP630(IDA) AP630(CD) AP520(DA), AP520(BT) APD-M(AC) v1.00 RG-AW320W AP630 v1.00 AP740-I AP740-I(C) AP530-I V2 V2.00 AP630(CE) V1.0 APD-M(EA) V1.0 AP4220 V1.0 AP720-I AP730(TR) AP520(W2) AP130(W2) AP180 v1.x AP180 v2.x AP820-L v1.x AP680(CD) v1.x AP840-I AP850-I AP850(DA) AP860-I ᵡḢ ˈY Ǐ ı ǐ ı Ʊ Ȩ AP ꜰ ᵝ j ᵡḢˈY PPP

9 PPPOE-CLIENT

9.1 clear dialer

▌ტ˝O ᴺ ì Æ⿰ ∧ щ ʒ Ụ

clear dialer

v ˝Ợ ˵	v ˝Ợ	ὼ ك
	-	-

ᵘ ɲ ₩ Ã	২ ṕ ₩ Ã
⅄ ∧̣	14
Æ ɨ ˝YṀ	% ᵘ ɲ ɨ˺ ▌ტ˝O ᴺ ì Æ⿰ ∧ щ ʒ Ụ
ᵽ ⅃ ⫿ æ	1 χ ▌ტ˝O ᴺ ì Æ⿰ ∧ щ ʒ Ụ R1# clear dialer
ώ˜ ʒ Ụ	-
Ẉ ᴶ ب ˵	-

9.2 clear pppoe tunnel

▌ტ˝A ũ PPPoE ʊ ى

clear pppoe tunnel

v ˝Ợ ˵	v ˝Ợ	ὼ ك
	-	-

ᵘ ɲ ₩ Ã	২ ṕ ₩ Ã
⅄ ∧̣	14
Æ ɨ ˝YṀ	% ᵘ ɲ ɨ˺ ▌ტ˝A ũ PPPoE ʊ ى
ᵽ ⅃ ⫿ æ	1 χ ▌ტ˝A ũ PPPoE ʊ ى R1# clear pppoe tunnel

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

9.3 dialer enable-timeout

ٻ ﻝ ﻩ ث ᵑ̇ ᾧ̀ Ꮋ ڑ
dialer enable-timeout *seconds*

Ծ ᵸ ﻩ ث ᵑ̇ ᾧ̀ Ꮋ ڑ ﻝ̊ Ө
no dialer enable-timeout

v ˝Ꝙ ب ˝

9.4 dialer-group

ʜᴗ ᵎ ì Æ¸ ☼ ″O ᴺ h„

dialer-group *group-number*

¨ ᵬ.″O ᴺ Æ ʜᴗ ᵎ ″O ᴺ¸ ☼ h„

no dialer-group

v ″Ϙ.ᵬ ″

v ″Ϙ	ώ ك
group-number	¸ ☼ ″O ᴺ h„ ᴊ ᴺ

ƛ ᵬ.ɹ ≡ ω ʜᴗ ᵎ ″O ᴺ h„

ᵘ ᵑᵬ₩Ã ì Æ₩Ã

ƛ ᐟ¸ 14

Æ ŧ ″YṀ Ⱥ ì Æ þ ' ⁝ g„″O ᴺ ı ث Ⱦ ǫ ɛ¸ ḧ ₭ ψ ĭ ă ᴵ Ɋ¸ ☼ ″O ᴺ ı¸ ☼ ″O ᴺ h„ ω ᴝ ṕ ᵬ.ɹ ᵘ ᵑᵬ **dialer-list** ″Y ḧ ı ł ᵅ ı ƥ ì Æ i ʜᴗ ᵎ Ƭ ⱥ ᵀ ″O ᴺ h„

ᵬ.ɹ ᵹ æ 1 χ Ṅ dialer 1 Æ ʜᴗ ᵎ ì Æ¸ ☼ ″O ᴺ h„ 1

```
R1(config)# interface dialer 1
R1(config-if-dialer 1)# dialer-group 1
```

2 χ¸ ᵬ dialer 1 Æ ʜᴗ ᵎ ☼ ″O ᴺ h„

```
R1(config)# interface dialer 1
R1(config-if-dialer 1)# no dialer-group
```

ₛ ᴝ Ⱥ | 1 χ Æ ŧ **show running-config interface dialer** *1* ᵘ ᵑᵬ ı ¶ ˜ ᵬ.ɹ ǐ ᵋ è ƥ

ώ˜ ʒ Ụ -

Ẃ ð ᵯ ᵭ -

Ẉ ᴶ ᵬ ″ -

9.5 dialer hold-queue

ᵬ.ɹ ì Æ ʒ ˈY ᴝ˚

dialer hold-queue *packets* [**timeout** *seconds*]

ʜ ȷ̌ ȝ ʻY ȥ ̊

no dialer hold-queue [*packets* [**timeout** *seconds*]]

v ̈Ǫ ب ̋

v ̈Ǫ	ώ ك
packets	ȥ ̊ ʌ ȝ ʻY ⿰ ï ă ʻ ɻ ̈Ǫ ı п Ө 0 ˙ 100
timeout *seconds*	ʻ ɻ ȝ ʻY ƍ ȥ ̊ ⿰ H ȷ̌ ε ﻵ ζ ı ɻ̊ ï 45 ﻵ

ɻ̊ ﺒ ɻ ʜ ȷ̌ ȝ ʻY ȥ ̊

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

ɻ̊ ﺍ ̣ 14

Æ ɨ ̋ YṀ ₰ ᵻ Æ ɨ MODEM ̈O ᴺ ڤ Φ ف ì ﺍ ﻝ ﺩ ﻫ ƀ ʽ H ȷ̌ ı ƍ % Ǫ ȷ̌ h Ƅ Ả ï ă Ꮋ ḅ ʻ ﺒ ɻ ̃ ȝ ʻY ȥ ̊ ı ̈ ˡ Ꮆ ч ﺒ ᵻ ̣ ☼ ̈O ᴺ h ̈ ⿰ ï ă ȝ è ƍ ₰ ᵻ i ı ف ì ấ ﻯ Ꮆ ª ı ﻯ o ∧ ڜ

ﺒ ɻ ʓ æ 1 χ ﺒ ɻ dialer 1 Æ ⿰ ȝ ʻY ȥ ̊ ㎞ 50 ʌ ï ă ʻ ɻ

```
R1(config)# interface dialer 1
R1(config-if-dialer 1)# dialer hold-queue 50
```

2 χ ʜ ȷ̌ dialer 1 Æ ⿰ ȝ ʻY ȥ ̊

```
R1(config)# interface dialer 1
R1(config-if-dialer 1)# no dialer hold-queue
```

ₛ ⱬ Ά | 1 χ Æ ɨ **show running-config interface dialer** *1* ᵘ ɲ ı ¶ ˜ ﺒ ɻ ĩ ε è ƍ

ώ ̃ ȝ Ụ -

Ẃ ȸ ȶ ȿ -

Ẉ ᴶ ب ̋ -

9.6

v ̈Ϙ ب ̃	v ̈Ϙ	ώ ك
	seconds	۷ ث ۸ ژ `H ڑ ع ۱ ζ

ǰ ب ـ 120 ۱

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

ǰ ۱ . 14

Æ ɾ ̋ Y ŋ Ã ŭ ɾ ă̈ ɾ ̋ Y ŋ ⊣

deny	ȯ ʌ ̃Ǫ Ѧ IP в ɲ
list	Æ ŧ Ⱡ ڎ ˚ ´ ă j ĩ ̃Ǫ Ѧ в ɲ ̛ ӈ Θ. ☼ ̋O ᴺ h„
access-list-number	Ⱡ ڎ ˚ ´ ▯ ʌ ᴺ

ƚ ٮ ل j ӈ Θ. ☼ ̋O ᴺ h„

ᵘ ɲ ₩ Ã ২ ṕ ₩ Ã

ƚ ʌ. 14

Æ ŧ ̋Y Ṁ Ĭ ᵘ ɲ ƥ ২ ṕ ٮ ل ₩ Ã ï ӈ Θ ̛ ă ^ ̛ . ☼ ̋O ᴺ h„ ı ɬ ª ŧ **dialer-group** Ṅ ̋O ᴺ h„ Ẓ ▯ ᵵ ч ▯ ì Æ ̋O ᴺ ▯ ̋O. ọ ɛ ٮ ل ▯ ᵘ ɲ ɵ

ٮ ل ǯ æ 1 χ ٮ ل ̋O ᴺ. ☼ h„ 1 ʁ ы ƥ IP в ɲ ï ă

```
R1(config)# dialer-list 1 protocol ip permit
```

2 χ ڻ ̋O ᴺ. ☼ h„ 1

```
R1(config)# no dialer-list 1
```

ₛ ⱬ Ä | 1 χ Æ ŧ **show running-config | include dialer-list** *1* ᵘ ɲ ı ̛ ˜ ٮ ل ĩ ᵋ è ƥ

ώ ̃ ȝ Ụ -

Ẃ ȸ ȩ ś -

Ẉ ᴶ ب ″ -

9.8 dialer pool

ٮ ل ǧ ڎ Æ ʜ ǐ ▯ ̋O ᴺ –
dialer pool *number*

ɲ ₸ ǧ ڎ Æ ʜ ǐ ▯ ̋O ᴺ –
no dialer pool *number*

v ̋Ǫ ب ″

v ̋Ǫ	ώ ك
number	ŀ ת ̋O ᴺ – ▯ ʌ ᴺ ı ũ ̊ Ө ʁ 1~255 ɵ ژ ▯ ̋Ǫ ̋Ǫ

ƚ ٮ ل j ʜ ǐ ̋O ᴺ –

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

ǰ ˥. 14

Æ ŧ ˝ YṀ ɱ ⊃ ˥ ″ O ᴺ ₳ ı ğ ŭ ì Æ ọ ɛ ʜ ů ʈ ч ı ת Æ ė ǐ ф Φ ɳ ک ″ O ᴺ ₭ ˝ á ˥ ğ ŭ ì Æ ⊐ ı ת ì Æ ʜ ů ı Æ ŧ ˝ ″ O ᴺ – ت Ж ı Ṅ ʈ ч ı ת ì Æ ŧ ☭ ₳ ă ^ ₳ ″ O ᴺ – ı ł ª ı ɱ ğ ŭ ì Æ i ʜ ů Ʊ ₳ ₳ ″ O ᴺ – ı ĸ ă ɳ ж ğ ŭ ì Æ ⊐ ı ת ì Æ ʜ ů ₳ ı ת ì Æ ˡ Ⓠ Ɽ ^ ₳ ″ O ᴺ – ı Ꮋ ₳ ğ ŭ ì Æ ᴱ ǐ ʜ ů ₳ ″ O ᴺ – ı ğ ŭ ì Æ ɱ ф Φ ʈ ч ″ O ᴺ H ö ı ₰ J ″ O ″ O ᴺ – ₳ ₥ ز ì Æ ф Φ ″ O ᴺ

ف ل ğ æ 1 χ ف ل dialer 1 Æ ʜ ů ″ O ᴺ – 1

```
R1(config)# interface dialer 1
R1(config-if-dialer 1)# dialer pool 1
```

2 χ ɲ ╦ dialer 1 Æ ʜ ů ş χ –

```
R1(config)# interface dialer 1
R1(config-if-dialer 1)# no dialer pool
```

ₛ ⊇ A │ 1 χ Æ ŧ **show running-config interface dialer** *1* ᵘ ɲ ı ¦ ˜ ف ل ĩ ε è ɱ

ώ ˜ ʒ Ụ -

Ẃ ȸ ⊇ ś -

Ẉ J ف ″ -

9.9 ip address

ف ل ì Æ IP ₥ ɀ

ip address { **negotiate |** *ip-addr subnet-mask* }

ˌ ڽ ì Æ IP ₥ ɀ

no ip address

v ″ Ⴈ ف ″

v ″ Ⴈ	ώ ك
negotiate	ف ل ì Æ ڼ ص PPP в ƀ n ệ IP ş χ
ip-addr	″ Y ḧ ì Æ IP
subnet-mask	″ Y ḧ ì Æ ọ

ǰ ف ل ≡ ũ ǰ Ө

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

ƛ ۱. 14

Æ ŧ ″YṀ Í ᵘ ɲь ƺ ɩ ᵻ ″Y ḧ ǧ ڎ ì Æ IP n ệ Ả Ã
ḅ ' J̌″O ِ ص PPP ʁ ƀ n ệ ş ẋ ı ˵ ǧ ڎ ì Æ IP ۱ Ȯ n ʜ ۱ ˋ ب
ḅ ' ẹ Ṫ″Y ḧ ǧ ڎ ì Æ IP

```
R1(config)# interface GigabitEthernet 0/5
R1(config-if- GigabitEthernet 0/5)# no pppoe-client dial-pool-number 1
```

ₛ ⱬ Ⱥ | 1 χ Æ ŧ **show running-config interface GigabitEthernet** *0/5* ᵘ ɲ ı ˜ ٮ ɹ ĩ ᵋ è ƥ

ώ˜ ʒ Ụ 1 χ ì Æ ₓ ɩ Ⱪ ᵏ ŧ PPPoE ı ǐ

```
PPPoE: must enable PPPoE firstly.
```

Ẃ ȸ ⱬ ئ -

Ẉ ᴶ ب ˝ -

9.13 pppoe session mac-address

ٮ ɹ ì Æ i pppoe h ʕ mac ş χ

pppoe session mac-address *H.H.H*

ˌ ტ ì Æ i ٮ ɹ pppoe h ʕ mac ş χ

no pppoe session mac-address

v ˝Ǫ ب ˝

v ˝Ǫ	ώ ك
H.H.H	mac ş χ

ǰ ٮ ɹ ʜ ڈ

ᵘ ɲ ₩ Ǟ ì Æ ₩ Ǟ

ǰ ٨ ˌ 14

Æ ŧ ˝ Y Ṁ Æ ŧ Ǐ ᵘ ɲ ı Ɋ ˝ Y ḧ pppoe ˝ O ᴺ h ʕ mac ş χ ı Ǐ ٮ ɹ ı Ɋ ƥ ì Æ ï ٮ ɹ ı Ꮋ ĩ ĸ ĸ ƥ Ḍ ì Æ ï ἐ ǐ ٮ ɹ ɨ ѽ ƥ Ḍ ì Æ i ٮ ɹ h ʕ mac ş χ ɵ ˙ ọ ɛ Æ ǐ Ǐ ì Æ pppoe ı ǐ

ٮ ɹ ʒ æ 1 χ ٮ ɹ GigabitEthernet 0/5.1 pppoe h ʕ mac ş χ ʬ 00d0.f822.33f3

```
Ruijie (config)# interface GigabitEthernet 0/5.1
Ruijie(config-subif-GigabitEthernet 0/5.1)#pppoe enable
Ruijie(config-subif-GigabitEthernet 0/5.1)#encapsulation dot1Q 1
Ruijie(config-subif-GigabitEthernet 0/5.1)#pppoe sessiom mac-address 00d0.f822.33f3
```

2 χ ˌ ტ dialer 1 Æ IP Ⱶ ɀ

```
Ruijie (config)# interface GigabitEthernet 0/5.1
Ruijie(config-subif-GigabitEthernet 0/5.1)#no pppoe sessiom mac-address
```

ₛ ᶎ Ä │ 1 χ Æ ŧ **show running-config interface GigabitEthernet** *0/5.1* ᵘ ᵑᵬ ı ¦ ˜ ٻ ل ĩ ᵋ è ƥ

ώ˜ ʒ Ụ 1 χ ì Æ ₓ ļ Ⱡ ᵏ ŧ PPPoE ı ǐ

```
PPPoE: must enable PPPoE firstly.
```

Ẃ ȸ ᶎ ئ -

Ẉ ᴶ ب ˝ -

9.14 show pppoe

¦ ˜ PPPoE ɦ ʕ ⚀ ʜ ʒ Ụ

show pppoe { **ref** | **session** | **tunnel** }

v ̈Ọ ب ˝

v ̈Ọ	ώ ك
ref	Ǐ ˜ ̈A ῶ PPPoE ɦ ʕ ⚀ ȏ ᶎ ʒ Ụ
session	Ǐ ˜ ̈A ῶ PPPoE ɦ ʕ ʒ Ụ
tunnel	Ǐ ˜ ̈A ῶ PPPoE ᵹ ᵶ ʒ Ụ

ᵘ ᵑᵬ ₩ Ã ᵉ ₩ Ã ᴝ ṕ ₩ Ã ì Æ ₩ Ã

ƛ ʅ. 14

Æ ŧ ˝ Y Ṁ ⚁ Ǐ ˜ PPPoE ɦ ʕ ⚀ ʜ ʒ Ụ ı ᵑ ص ˝ Y ḧ ʜ ᶎ È ı Ǐ ˜ j ª ė Ã ⚀

È ɟ ɹ ᵨ χ ᵻ ᵿ ʒ Ụ ɕ Ţ ɻ ώ ك Ẽ ▌Ғ˝ ı ف ᵨ j Wپ ᵸ

2 χ Ǐ ˜ ¨A õ PPPoE h ʔ ʒ Ụ

```
R1# show pppoe session
state is SESSION ,my mac is 00.D0.F8.22.33.43 , peer mac is 00.60.4F.67.02.50
   Timer is running: 59750
```

È ɟ ɹ ᵨ χ ᵻ ᵿ ʒ Ụ ɕ Ţ ɻ ώ ك Ẽ ▌Ғ˝ ı ف ᵨ j Wپ ᵸ

3 χ Ǐ ˜ ¨A õ PPPoE ؤ ɔ ʒ Ụ

```
R1# show pppoe tunnel
state is SESSION ,my mac is 00.D0.F8.22.33.43 , peer mac is 00.60.4F.67.02.50
   Timer is running: 59003
```

È ɟ ɹ ᵨ χ ᵻ ᵿ ʒ Ụ ɕ Ţ ɻ ώ ك Ẽ ▌Ғ˝ ı ف ᵨ j Wپ ᵸ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

-IP

IP

1. IP /
2. ARP
3. IPv6
4. DHCP
5. DNS
6.
7. TCP
8. IPv4/v6
9. NAT

1 IP /

1.1 ip address

ᵽ ɹ ì Æ IP ş χ
ip address *ip-address network-mask* [**secondary**]

¨ ȸ˝Y ḧ ì Æ IP ş χ
no ip address [*ip-address network-mask* [**secondary**]

ν ¨Ϙ ᵽ ˝

ν ¨Ϙ	ὼ ك
ip-address	32 Ⱥ ⅝ ≠ ɥ IP ş χ ı 8 ɥ ɻ ı Ꝋ " ف Ά Ã ´ ~ ı ɻ ɵ ڑ ŧ ℗ ك Ã
network-mask	32 Ⱥ ⅝ ≠ ɥ ɹ ʌ ǫ ı “1” ´ ~ ǫ ɥ ı “0” ´ ~ ڎ ɥ ⅛ 8 ɥ ɻ ı Ꝋ " ف Ά Ã ´ ~ ı ɻ ɵ ڑ ŧ ℗ ك Ã
secondary	´ ~ ᵽ ɹ K IP ş χ ɻ ѫ ᵽ ɹ ڎ ip ş χ

ɻ ᵽ ɹ ì Æ ≡ ῶ ᵽ ɹ IP ş χ

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

ɻ ʅ¸ 2

Æ ŧ ˝Y Ṁ Ⱥ Ф ᵻ ᴱ ῶ ᵽ ɹ˝ IP ş χ ı ε ˡ Ꝋ ì ὼ ⊐ ʌ ڜ IP ¨Ϙ Ω ï ı ì Æ ᵽ ɹ˝ IP ş χ ı ب ˝ Ĵ ì Æ ы ɒ ᵬ Φ IP ʁ ɲ
ɹ ʌ ǫ Ĉ ĩ Ⱥ 32 ɥ ⅝ ≠ Ϙ Ë ı ‰ ⅋ ´ Ĵ IP ş χ ᵘ ˇ Ⱥ ⅝ ≠ ѫ ɹ ʌ ʮ ˋ ɹ ʌ ǫ ѧ ı Ë ѫ ɒ 1 ɓ ⅝ ≠ Ḿ Ƶ IP ş χ ⅝ ≠ ɥ ŏ ĩ ѫ ɹ ʌ ʮ ˋ ı Ë ѫ ɒ 0 ɓ ⅝ ≠ Ḿ Ƶ IP ş χ ⅝ ≠ ɥ ŏ ĩ ѫ ڎ ş χ ʮ ˋ ḅ A ɻ ɹ ʌ Ḿ Ƶ ɹ ʌ ǫ ѫ ɒ 255.0.0.0 ɓ ɒ

s "É'0Ô ' ª Đ

Ä Ã ı Ṅ ⚀ Ḍ ɻ ف ì ∀ ⁋ Ⱥ Ḍ ɻ j ſ ɒ ₱ ⚁ ь Ⱥ ă ь Ⱥ Ⱪ i ì Æ ¸ א

ᵽ ɻ ⚂ æ 1 χ ᵽ ˝ ì Æ ⚂ IP ş χ ⱡ 10.10.10.1 ı ɻ ᚗ ọ ⱡ 255.255.255.0

```
Ruijie(config)# interface gigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# ip address 10.10.10.1 255.255.255.0
```

₅ ⚹ Ä | 1 χ **show ip interface** ˡ ð ì Æ ï ⚁ ᵽ ɻ ù`

ώ˜ ʒ Ụ 1. j ы ᵽ ᵽ ɻ mask ⱡ ᴝ 1 ẫ ᴝ 0 ⚁ ọ ε ע ɨ ì Æ ˡ Ⱪ ˜ Ḥ ˙ Y 32 ɧ ọ ζ ı ḅ ˈ ᵽ ˝ ı ¸ א Ⱪ ï ώ˜ χ ˜ Ú

```
Ruijie(onfig-if-dialer 1)# ip address negotiate
```

ₛ ᴈ Ä | 1 χ **show ip interface** ˡ ð ì Æ ï ▨ب ل ùˋ

ώ˜ ʒ Ụ -

Ẃ ð ჭ ئ -

Ẉ ᴶ ب ˝ -

1.3 ip address-pool local

Æ ĥ IP ş χ – ı ĥ
ip address-pool local

ʜ ŭ IP ş χ – ı ĥ
no ip address-pool local

ν ˝Ọ ب ˝	ν ˝Ọ	ώ ك
	-	

ǰ ب ل ǰ Æ ĥ IP ş χ – ı ĥ

ᵘ ɲ ₩ Ã ২ ṕ ب ل ₩ Ã

ǰ ۱̣ 2

Æ ŧ ˝ Y Ṁ ǰ ùˋ ï ı IP ş χ – ı ĥ Ã ᵏ ı ŧ Ä ˡ Œ ب ل IP ş χ – ı PPP ŧ Ä ˡ Œ ŧ IP ş χ –ˋ ب Ḿ ۱ ▨ IP ş χ
ḅ ˈ ỳ ʜ ŭ IP ş χ – ı ĥ ı ˡ Œ Æ ŧ no ip address-pool local ᵘ ɲ ı % ˋH h ˍ ط Ä õ ө ˙ ب ل ▨ IP ş χ –

ب ل ǯ æ 1 χ Æ ĥ IP ş χ – ı ĥ

```
Ruijie(config)# ip address-pool local
```

ₛ ᴈ Ä | -

ώ˜ ʒ Ụ -

Ẃ ð ჭ ئ -

Ẉ ᴶ ب ˝ -

ʺH IP ث ℎ j ˡ ˋ ɑ ɻ ŭ ∧ ICMP ´ j ˡ ɾ ï ă ∧ گ ھ ' Õ ᵸ ă ɻ Ө

no ip icmp error-interval DF *milliseconds*

1.6 ip icmp timestamp

ᵽ ɹ ʽH ژ Ä¶ Ĩ ı ǐ
ip icmp timestamp

n ╦ᵽ ɹ ʽH ژ Ä¶ Ĩ ı ǐ
no ip icmp timestamp

v ʺQ ᵽ ʺ	v ʺQ	ѡ ك
	-	-

ƚ ᵽ ɹ ƚ ᵏ ɾ˝ ʽH ژ Ä¶ Ĩ ı ǐ

ᵘ ɲ ₩ Ã ২ ṕ ₩ Ã

ƚ ʅ˳ 2

Æ ɾ ʺ Y Ṁ

ᵽ ɹ ʓ æ 1 χ ᵽ ɹ ʜ ŭ ʽH ژ Ä¶ Ĩ ı ǐ

```
Ruijie(config)# no ip icmp timestamp
```

ˢ ƺ Ä │

```
Ruijie#show running-config | include ip icmp timestamp
no ip icmp timestamp
```

ώ˜ ʒ Ụ -

Ẃ ȸ ȩ ȿ -

Ẉ ᴶ ب ʺ -

1.7 ip directed-broadcast

ᵏ ɾ IP ḧ ᵇ ẍ ʾḶ˙ ᵻ ת ẍ ʾḶ⃞ ȩ ʺ Ω
ip directed-broadcast [*access-list-number*]

n ╦ ḧ ᵇ ẍ ʾḶ˙ ᵻ ת ẍ ʾḶ⃞ ȩ ʺ Ω
no ip directed-broadcast

v ʺQ ب ʺ

v ʺQ	ώ ك
access-list-number	Ш ڎ ˚ ˊ ᴺ ı ¸ ḫ ɤ 1-199 ı 1300 - 2699 ḫ ' ḧ Θ˝ Ш ڎ ˚ ˊ ᴺ ı ᴱ õ ש ب أ Ш ڎ ˚ ˊ IP ḧ ᵇ ӧ Ḥ ï ă έ ę ʺΩ ƛ ≡ õ ḧ Θ˚ ˊ ᴺ ı ʺA õ Ḍ ⊿ ӧ Ḥ ï ă ʠu h ʌ ɨ ę ʺΩ

ƛ ب ⊿ ʜ ڎ

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

ƛ ۱. 2

Æ ɨ ʺ YṀ IP ḧ ᵇ ӧ Ḥ ï ă ĩ ʺ Y´ ‰ ş χ ʬ • Ѧ IP Ḍ ⊿ ӧ Ḥ ş χ IP ï ă ı ḅ´ ‰ ş χ ʬ 172.16.16.255 ï ă ő Ч ʬ ḧ ᵇ ӧ Ḥ ï ă Ꮋ ĩ ғ ɨ Ỉ ï ă ` ᴇ w j ĩ´ ‰ Ḍ ⊿ ă ^ ≡ õ ʌ ѣ´ ‰ Ḍ ⊿´ ف ﷺ ﷺ ᵻ ì ώ IP ḧ ᵇ ӧ Ḥ ï ă ı ᶠ ę ʌ ɒ Ḥ ï ă ¯ ʃ ת ḧ ᵇ ӧ Ḥ ï ă Ę ḧ ᵇ ӧ Ḥ ï ă ˙ ڑ´ ف Ỉ Ḍ ⊿ ﷺ ﷺ ᵅ ı ﷺ ᵻ Ṅ ʺ Ḥ ḧ ᵇ ӧ Ḥ ï ă ę ʺΩ ʬ ≡ ӧ Ḥ ï ă ε ˚ ʺ Y´ ‰ IP ş χ ʬ ᴝ ɒ 1 ɓ ӧ Ḥ ï ă ζ ı ɬ ᵅ Ϫ ę ت Ṗ ӧ Ḥ Ѧ Ã ʌ ڜ ⊿´ ‰ Ḍ ⊿ i ﷺ A õ ڎ ɤ ʺA ᵻ Ϫ ʺ Y ḧ ﷺ ì Æ i ı ᵏ ʊ ḧ ᵇ ӧ Ḥ ˙ ɻ ת ӧ Ḥ ę ʺΩ ﷺ ı ſ ı ف ¯ Ỉ ì Æ ő ᵻ Ϫ ę ʌ ˙ ´ ف ⊿ ⊿ ﷺ ḧ ᵇ ӧ Ḥ ˝ Ỉ ᵘ ɲ ᴱ ẽ ᵠ Ţ ˙ ѡ ⊿´ ‰ Ḍ ⊿ ﷺ ḧ ᵇ ӧ Ḥ ï ă ﷺ ѡ ᵅ ҽ ڑ ı j ẽ ᵠ Ʊ Ę ḧ ᵇ ӧ Ḥ ï ă ﷺ Ẃ ę ʌ ƥ ì Æ i ı ɨ Ѧ ف ᵻ Ϫ ۍ ص ḧ Θ Ш ڎ ˚ ˊ ſ ˙ ę ʌ ᵤ Ꮲ ḧ ᵇ ӧ Ḥ Ę ḧ Θ˝ Ш ڎ ˚ ˊ ı ᴱ õ ϟ ᵀ Ш ڎ ˚ ˊ ѧ ḧ Θ ʺ Ω Ỻ ץ ҿ ѽ Φ ḧ ᵇ ӧ Ḥ ˙ ɻ ת ӧ Ḥ ﷺ ę ʺΩ ḅ ' ƥ ì Æ i ب ⊿ ˝ **no ip directed-broadcast** ı RGOS Ṅ Ъ Ã ì ώ ˙ ﷺ ˝ ف ⊿ ⊿ ﷺ ḧ ᵇ ӧ Ḥ ï ă

ب ⊿ ڎ æ 1 χ ƥ Ф ᵻ gigabitEthernet 0/1 ϟ Æ ᵏ ɨ ˝ ḧ ᵇ ӧ Ḥ ﷺ ę ʌ

```
Ruijie(config)# interface gigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# ip directed-broadcast
```

ᵴ ڃ Ѧ | -

ώ ˜ ʒ Ụ -

Ẃ ȸ ę ڊ -

Ẉ ᴶ ب ʺ -

1.8 ip local pool

¸ ấ IP ş χ –

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

¸ ტ IP ş χ –

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

ѵ ʺQ ب ʺ

ѵ ʺQ	ώ ك
pool-name	ʺY ḧ ş IP ş χ – ▯ ᵉ È ı **default** ʁ ѫ ɲ ş χ – ᵉ È
low-ip-address	IP ş χ – ѧ ϙ ɳ ▯ IP ş χ
high-ip-addres	ˡ J̌ ı IP ş χ – ѧ ϙ ᶻ ▯ IP ş χ þ ' ˈ ʺY ḧ ϙ ᶻ ▯ IP ş χ ı „ IP ş χ – ѧ ᴱ õ Ѧ ş χ ı o ĩ *low-ip-address*

ǰ ب ل ǰ ' ب ل IP ş χ –

ᵘ ɲ ₩ Ã ২ ṕ ب ل ₩ Ã

ǰ ۱. 2

Æ ɪ ʺY Ṁ ˡ Ꝋ ɪ Ĵ ᵘ ɲ „ á Ѧ ã ^ Ѧ IP ş χ – ı ě PPP ʿ ب IP ş χ ۸ ف ì ▯ ɪ Ä

ب ل ǯ æ 1 χ „ á Ѧ ş IP ş χ – ı ᵉ È ʁ quark ı IP ş χ „ þ 172.16.23.0 ˙ 172.16.23.255

```
Ruijie(config)#ip local pool quark 172.16.23.0 172.16.23.255
```

ₛ ⱬ Ä | Æ ɪ **show ip pool** ˡ ¶ ˜ „ á ▯ ş χ –

ώ˜ ʒ Ụ 1. j ы ɒ ƥ ≡ ѳ Æ Ĩ ş χ – ı Ĩ ▯ ù` ï „ á ip ş χ – ı Ⱪ „ á ı „ ώ˜ χ

```
% IP local pool is disabled!
```

2. þ ' high-ip-address ɳ̂ low-ip-address ı ã ả ĩ high-ip-address ⁼ low-ip-address j ƥ ª Ѧ ل ㅕ ㄲ ı „ ώ˜ χ

```
% Invalid address range!
```

Ẃ ȸ ჭ ئ 1. ب ل ▯ *high-ip-address* ɳ̂ *low-ip-address*

2. ب ل ▯ *high-ip-address* ⁼ *low-ip-address* j ƥ ª Ѧ ل ㅕ Ѧ

Ẉ ᴶ ب ʺ -

1.9 ip mask-reply

ᵏ ɪ ICMP ǫ Ẓ ۱ ╦ Ụ

ip mask-reply

ʜ ᵾ ICMP ǫ Ẓ ۱ ╦ Ụ

no ip mask-reply

ѵ ʺQ ب ʺ

ѵ ʺQ	ώ ك
-	-

ƚ ٭ ل Ã ᵏ ∧ گ ICMP ǫ ᵠ Ƶ ï ă

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

ƚ ٨ 2

Æ ŧ ˝ Y Ṁ ل ٨ ֆ ᵻ õ ` H ₓ ɻ ˜ ઽ Й ǐ ل i • Ⱥ Ḍ ل Ḍ ل ǫ ı ⱷ ˝ ɲ ∏ Ĭ ʒ Ụ ı ل ٨ ֆ ᵻ ˈ Ɑ ∧ گ ICMP ǫ ت ∂ ╤ Ụ ı ì ώ ˙ ICMP ǫ ت ∂ ╤ Ụ ل ٨ ֆ ᵻ ő h ∧ گ ǫ Ƶ ٩ ╤ Ụ

٭ ل ڎ æ 1 χ ֆ ᵻ gigabitEthernet 0/1 ì Æ Ṅ h ᵠ Ƶ ICMP ǫ ت ∂ ï ă

```
Ruijie(config)# interface gigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# ip mask-reply
```

ₛ ⇂ Ä │ -

ώ ˜ ʒ Ụ -

Ẃ ȸ ჭ ئ -

Ẉ ᴶ ب ˝ -

1.10 ip mtu

٭ ل IP ɣ ω ᶻ ҽ ڑ ɒ Ƒ ε MTU ζ

ip mtu *bytes*

Õ ʯ ƚ ٭ ل

no ip mtu

v ˝ Ɋ ب ˝

v ˝ Ɋ	ώ ك
bytes	IP ɣ ω ᶻ ҽ ڑ ɒ Ƒ ı Ɑ È ` ⱷ ɒ ɥ ı ,, ɧ 68~1500

ƚ ٭ ل ƚ ɲ ь ì Æ ᵘ ɲ mtu ٭ ل Ö ᵃ

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

ƚ ٨ 2

Æ ŧ ˝ Y Ṁ ḅ ' Ⱥ IP ï ă ∧ ص IP MTU ᶻ ṇ ı RGOS

þ ' ɾ ì Æ ᵽ ɹ ᵘ ɲ mtu Ḿ ì Æ ⿲ ѡ ᶻ ҽ ڑ ɒ ƒ Ë ؋ Φ ֆ ɹ ı IP MTU ⿲ ɦ ₅ ʊ ɲ ì Æ ⿲ MTU Ë Ȝ ʹ Y ₇ ɾ ɵ ı þ ' ɔ ʾ Ƣ ˝ IP MTU ⿲ Ë ı ì Æ ⿲ MTU Ë j ɦ ˚ ´ ᴪ ᵖ

ᵽ ɹ ʒ æ 1 χ Ṅ gigabitEthernet 0/1 ì Æ ⿲ IP MTU Ë ֆ ⱡ 512 È `

```
Ruijie(config)# interface gigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# ip mtu 512
```

ₛ ᶎ Ά | 1 χ **show ip interface gi 0/1** ˡ ð IP interface MTU ĩ ˇ χ 512

ώ ˜ ʒ Ụ -

Ẃ ð ᶏ ئ -

Ẉ ᴶ ᵽ ˝ -

1.11 ip redirects

ᵏ ɾ ICMP ᵱ Ḧ ᵇ ╥ Ụ

ip redirects

ʜ ɔ̃ ICMP ᵱ Ḧ ᵇ

no ip redirects

ᵛ Ƈ Ọ ᵽ ˝

ᵛ Ƈ Ọ	ὼ ك
-	-

ƛ ᵽ ɹ ƛ ᵏ ɾ

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

ƛ ᐟ 2

Æ ɾ ˝ Y Ṁ Ẹ ت ᵠ j ĩ ѡ Ч ʽ Ḥ ı õ ˡ ǐ Æ ệ ֆ ᵻ ϰ Ⱥ ì Æ ì ὼ ˙ ⿲ Ƈ Ọ Ƴ ı ف ɻ ϰ Ỉ ì Æ ʌ ڜ ˛ ⊃ þ ' ֆ ᵻ Ṅ Ƈ Ọ Ƴ ϰ ì ὼ ì Æ ᵱ Ȁ ʌ ڜ ˛ ⊃ ı ֆ ᵻ ð ɦ ᐟ Ƈ Ọ ◊ ʌ ڜ Ⱥ ICMP ᵱ Ḧ ᵇ ╥ Ụ ı ᵓ ٪ . Ƈ Ọ ◊ ˙ Ỉ ´ ‰ ş χ ⿲ ɻ ʜ ɯ ª Ḍ ɻ i ⿲ D ᵘ ᴶ ֆ ᵻ ف ¯ Ƈ Ọ Ω ◊ ð ɦ Ṅ ª ᐟ ⿲ Ƈ Ọ Ƴ ˜ Y Ł ѡ ä ⿲ ت Ḝ ؋ Φ ʌ ڜ RGOS ᶓ ţ ƛ ᵏ ɾ ICMP ᵱ Ḧ ᵇ

ᵽ ɹ ʒ æ 1 χ gigabitEthernet 0/1 ì Æ ʜ ɔ̃ ˝ ICMP ᵱ Ḧ ᵇ

```
Ruijie(config)# interface gigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# no ip redirects
```

ₛ ⱬ Ά | -

ώ˜ ʒ Ụ -

Ẃ ȣ ⱬ ئ -

Ẉ ᴶ ب ˝ -

1.12 ip source-route

Ầ ᵏ IP ◊ ت ᵎ ʒ Ụ ∫ ת ו Ỉ

ip source-route

ʜ ڎ IP ◊ ت ᵎ ʒ Ụ ∫ ת ו Ỉ

no ip source-route

v ̋Ꝙ ب ˝

v ̋Ꝙ	ѽ ك
-	-

ỉ ب ɻ ỉ ᵏ ɾ

ᵘ ɲ ₩ Ấ ২ ṕ ₩ Ấ

1.13 ip ttl

ᵽ ɻ ∧ گ ɒ ʾĦ ï ă TTL Ө

ip ttl *value*

ɲ ╦ ᵽ ɻ ∧ گ ɒ ʾĦ ï ă TTL Ө

no ip ttl

ν ʺℚ ᵽ ʺ	ν ʺℚ	ώ ك
	value	TTL Ө ı ɲ Ө„ ƀ ĩ 0~255

ƚ ᵽ ɻ ƚ Ө ĩ 64

ᵘ ɲ ₩ Ã ২ ṕ ₩ Ã

ƚ ∧̣ 2

Æ ɾ ʺ Y Ṁ

ᵽ ɻ ƺ æ 1 χ ᵽ ɻ ∧ گ ɒ ʾĦ ï ă ƚ TTL Ө ᵻ 100

```
Ruijie(config)# ip ttl 100
```

ₛ ⱬ Ά │ -

ώ˜ ʒ Ụ -

Ẃ ð ᵹ ئ -

Ẉ ᴶ ᵽ ʺ -

1.14 ip ttl-expires enable

ᵽ ɻ ∧ گ TTL ∧ ʾĦ ╦ Ụ

ip ttl-expires enable

ɲ ╦ ᵽ ɻ ∧ گ TTL ∧ ʾĦ ╦ Ụ

no ip ttl-expires enable

ν ʺℚ ᵽ ʺ	ν ʺℚ	ώ ك
	-	-

ƛ ٮ ل ƛ ᵏ ɾ˝ ∧ ڜ TTL ∧ ʿH ╦ Ụ ı ĩ

ᵘ ɲ ₩ Ã ২ ṕ ₩ Ã

ƛ ٨. 2

Æ ɾ ˝ YṀ

ٮ ل ڎ æ 1 χ ٮ ل ʜ ڈ ∧ ڜ TTL ∧ ʿH ╦ Ụ ı ĩ

```
Ruijie(config)# no ip ttl-expires enable
```

ˢ ڃ Ά |

```
Ruijie#show running-config | include ip ttl-expires enable
no ip ttl-expires enable
```

ώ˜ ڑ Ụ -

Ẃ ð ڇ ئ -

Ẉ ᴶ ٮ ˝ -

1.15 ip unnumbered

ٮ ل ì Æ Θ ɾ IP ş χ
ip unnumbered *interface-type interface-number*

ɲ ╦ Ả ٮ ل
no ip unnumbered

v ˝ Ọ ٮ ˝	v ˝ Ọ	ώ ك
	interface-type	ʜ ỉ ì Æ ٨ ڑ
	interface-number	ʜ ỉ ì Æ ﻻ ᴺ

ƛ ٮ ل ƛ ù˙ ï ı ≡ ῶ ٮ ل ή ﻻ ᴺ ì Æ

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

ƛ ٨. 2

Æ ŧ ″YṀ ṇ ⅄ ᴺ ì Æ ŏ ĩ ᴱ ƍ ì Æ ᵏ ʊ IP ʁ ɲ ı Ꮋ ĩ j ʿ ᵽ IP ş χ ı ṇ ⅄ ᴺ ì Æ ₓ ɻ ʜ ı̊ Ⱥ ʊ ũ IP ş χ ì Æ ṇ ⅄ ᴺ ì Æ ғ ɨ IP ″Ω ̃Ω ɣ ı Ǐ ″Ω ̃Ω ɣ ◊ IP ş χ ʬ ʜ ı̊ ì Æ IP ş χ ᴰ ᵘ ت ᵠ ʁ ɲ ف ɣ Ĉ ⁞ ̃Ω ʜ ı̊ ì Æ IP ş χ ı ˜ ḧ ĩ ε Ê ṇ ⅄ ᴺ ì Æ ʌ گ ت ᵠ ˜ Ȁ ĭ ă Ẓ ŧ ṇ ⅄ ᴺ ì Æ ı ₓ ɻ ├ Ɏ Ꝋ ï ر ˙ χ

3. Ꝋ ᶿ ⅄ ì Æ j Ǐ ᵽ ɻ ă ṇ ⅄ ᴺ ì Æ
4. Ẹ ʬ Φ Æ Ṃ Ⱡ SLIP HDLC PPP LAPB Frame-relay ʿH ı ˡ Ꝋ ᵽ ɻ ă ṇ ⅄ ᴺ ì Æ Ꮋ ĩ Ṃ Ⱡ ṿ ʌ ʌ ʿH ı ᴱ õ ᵽ ˙ ᵽ Ḍ ì Æ ε ы ƍ ᵽ ɻ ṇ ⅄ ᴺ ì Æ X.25 Ṃ Ⱡ ĩ j ы ƍ ᵽ ɻ ṇ ⅄ ᴺ ì Æ
5. j Ǐ ŧ ping ᵘ ɲ ᵽ ˙ ₅ ⅄ ṇ ⅄ ᴺ ì Æ ĩ ε Ṫ Ă* Ẃ ı ɨ ʬ ṇ ⅄ ᴺ ì Æ ≡ õ IP ş χ Ꮋ ĩ ᵑ ص SNMP ˡ Ꝋ ᵩ ɣ ˘ ⅄ ˙ ṇ ⅄ ᴺ ì Æ ᵀ ő
6. j Ǐ ᵑ ص ṇ ⅄ ᴺ ì Æ ᵭ Φ ɻ ʌ ᵏ ʊ

ᵽ ɻ ƺ æ 1 χ ᵽ ɻ ì Æ ᵽ ɻ ʬ ṇ ⅄ ᴺ ì Æ ı ʜ ı̊ ì Æ ʬ gigabitEthernet 0/1

```
Ruijie(config)# int virtual-ppp 1
Ruijie(config-if-Virtual-ppp 1)# ip unnumbered gigabitEthernet 0/1
```

₅ ƺ Ä | -

ώ ˜ ʒ Ụ -

Ẃ ð ჹ ئ -

Ẉ ᴶ ب ″ -

1.16 ip unreachables

ᵏ ŧ ICMP ʁ ɲ j ˡ ژ ╦ Ụ

ip unreachables

ʜ ŝ ʌ گ ICMP ʁ ɲ j ˡ ژ ╦ Ụ

no ip unreachables

v ″Ω ب ″

v ″Ω	ώ ك
-	-

ƛ ᵽ ɻ ƛ ᵏ ŧ

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

ƛ ۱ ̣ 2

Æ ŧ ″YṀ ḅ ˈ RGOS ᶊ ţ ì ώ ˙ Ⱥ ´ ‰ ş χ ʬ ₅ ć ᴅ ʻĦ ĭ ă ı w j Ǐ ſ ת Ĺ ĭ ă i Ṗ ʁ ɲ ı ŏ h ʌ گ Ⱥ ICMP ´ ‰ j ˡ ژ ╦ Ụ

þ ' RGOS ع ţ ⁜ ≡ õ ت ᵛ ı ă j ſ ჭ ∧ Ѧ Ѿ Ѿ ץ ı ŏ h ᵇ Ѿ Ѿ ◊ ∧ گ ICMP ڳ j ˡ ڑ ╤ Ụ
Ỉ ᵘ ᵑ♭ ẽ ᵠ Ѽ õ ICMP ´ ‰ j ˡ ڑ ╤ Ụ

ب ل ڳ æ	1 χ ʜ ט gigabitEthernet 0/1 ì Æ ∧ گ ICMP ´ ‰ j ˡ ڑ ╤ Ụ
	`Ruijie(config)# interface gigabitEthernet 0/1`
	`Ruijie(config-if-GigabitEthernet 0/1)# no ip unreachables`

₅ ⇁ Ѧ |	-
ώ˜ ʒ Ụ	-
Ẃ ȸ ჭ ئ	-
Ẉ ᴶ ب ˝	-

1.17 peer default ip address

ʜ PPP ʁ ƀ ʿ ب IP ş χ ⁄ Ḿ ٦

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

ᵑ ╤ ʿ ب IP ş χ ⁄ Ḿ ٦

no peer default ip address

v Ѽ ب ˝

v Ѽ	ώ ك
ip-address	˝ Y ħ ʜ Ḿ ٦ ʿ ب IP ş χ
pool-name	ˡ Ǯ ˝ Y ħ ʿ ب IP ş χ ş χ – ᵃ Ê ı ⅄ ' ب ل Ỉ v Ѽ ı ¸ ƥ default ş χ – ѧ ʿ ب IP ş χ

ỉ ب ل ỉ ù` ï ı ì Æ j ʜ Ḿ ٦ ʿ ب IP ş χ

ᵘ ᵑ♭ ₩ Ã ì Æ ₩ Ã

ỉ ٨ 2

Æ ɪ w ˜ ي ş χ ٨ ` ş ' ɪ

oP UP N -

ddre nglme
˘ Ê

Æ i ب ل

ب ل ʒ æ 1 χ ب ل ì Æ dialer ѭ Ḿ ٦ʿ ب IP ş χ ѭ 10.0.0.1

```
Ruijie(config)# interface dialer 1
Ruijie(config-if-dialer 1)# peer default ip address 10.0.0.1
```

ₛ ⱬ Ä | -

ώ˜ ʒ Ụ -

Ẃ ȸ ჭ ئ -

Ẉ ᴶ ب ˝ -

1.18 show ip interface

Ǐ ˜ ì Æ IP ↑ õ ʒ Ụ

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

ѵ ¨Ọ ب ˝

ѵ ¨Ọ	ὼ ك
Interface-type	¨Y ḧ ì Æ ٦ ʒ
Interface-number	¨Y ḧ ì Æ ٨ N
brief	Ǐ ˜ s Ṗ ì Æ IP ᵍ ب ل ʒ Ụ ε ɣ ὺ ì Æ primary ip secondary ip ⊃ ì Æ ↑ õ ζ

ᵘ ɲ ₩ Ǎ ₑ ₩ Ǎ

ƛ ٦. 1

Æ ɪ ¨Y Ṁ Ѧ ì Æ ⁝ ɪ ⁝ ↑ õ ı RGOS Ṅ h ɱ ث ٠ ´ ѧ ą̃ ǂ ´ ف ث ٠ ⁝ ɪ ⁝ ì Æ ĩ ¨Y RGOS ع ţ ن ص أ ì Æ ⁝ Ѡ ώ ٨ ¨Ọ Ỏ ɣ ḅ ' ì Æ ĸ ⁝ ɪ ↑ õ ψ ѭ j ⁝ ɪ ↑ õ ı RGOS ع ţ Ṅ h ĸ ث ٠ ´ ѧ ْ Ẓ ⁝ ف ث ٠ ḅ ' ì Æ ⁝ ɪ ↑ õ ı o ы ɱ ᵇ ن ʒ ↑ õ ı ٦ ث ʙ ɲ ↑ õ h Ǐ ˜ ɒ UP ɓ ψ ḅ ' ĸ ɨ ת ٦ ث ⁝ ɪ ↑ õ ı ì Æ ↑ õ h Ǐ ˜ ɒ UP ɓ

j ª ⁝ ì Æ ٦ ʒ ı Ǐ ˜ ⁝ ل ' ⁝ f́ j ¯ ı ɨ ѭ ω Ꝑ ɲ ķ ĩ • Ꝑ ì Æ ₑ ω ⁝ ǰ °

ب ل ʒ æ 1 χ Ǐ ˜ ¨A ω ì Æ IP ↑ õ ʒ Ụ

```
Ruijie#show ip interface brief
Interface            IP-Address(Pri)  IP-Address(Sec) Status Protocol
GigabitEthernet 0/10  2.2.2.2/24      3.3.3.3/24      down   down
GigabitEthernet 0/11  no address      no address      down   down
VLAN 1                  1.1.1.1/24    no address      down   down
```

Status ˩ ₅ ⁱ ɾ ˇ ȣ ő up ő down ȧ administratively down ō ˝I shutdown ⁓ Ȣ Ɛ ₅ ⁱ Ấ ŧ Ŏ ¢

Protocol ˩ ₅ ⁱ ɾ IPv4 ¢

2 χ Ǐ ˜ VLAN 1 ì Æ IP ˥ ỗ ʒ Ụ

```
Ruijie#show ip interface vlan 1
VLAN 1
  IP interface state is: DOWN
  IP interface type is: BROADCAST
  IP interface MTU is: 1500
  IP address is:
    1.1.1.1/24 (primary)
  IP address negotiate is: OFF
  Forward direct-broadcast is: OFF
  ICMP mask reply is: ON
  Send ICMP redirect is: ON
  Send ICMP unreachabled is: ON
  Proxy ARP is: OFF
ARP packet input number:          0
     Request packet:               0
     Reply packet:                  0
     Unknown packet:              0
TTL invalid packet number:         0
ICMP packet input number:         0
     Echo request:                  0
Echo reply:                      0
     Unreachable:                  0
     Source quench:                0
     Routing redirect:               0
```

È ɜ ɹ ᵩ χ

È ɜ	ب ˝
IP interface state is:	ɻ ʎ ì Æ ɻ ɾ ˥ ỗ ɪ Ʊ ì Æ ţ ˥ ỗ ⊐ ɻ ب ʁ ɒ ˥ ỗ ʐ ʬ “UP”
IP interface type is:	Ǐ ˜ ì Æ ɻ ʒ ɪ ḅ ẍ Ḥ ɪ ᵖ Ḿ ᵖ ɥ
IP interface MTU is:	Ǐ ˜ ì Æ ϕ ɹ MTU Ө
IP address is:	Ǐ ˜ ì Æ IP ş χ ⊐ ọ ʒ Ụ
IP address negotiate is:	Ǐ ˜ ì Æ IP ş χ Ĩ ɛ ˈ ʁ ƀ n ệ
Forward direct-boardcast is:	Ǐ ˜ Ĩ ɛ ƨ ʌ ḧ ᵇ ẍ Ḥ

ICMP packet input number: 0	Ǐ ˜ ì Æ i ώ˙ ICMP ĭ ă Ở˝Ǫ ı ɣ ὐ ḅ ï ĭ ă χ
Echo request: 0	Echo ت ∂ ĭ ă
Echo reply: 0	Echo Ƶ ﻯ ĭ ă
Unreachable: 0	j ˡ ʐ ǐ ă
Source quench: 0	◊ 1 ˝Ḧ ĭ ă
Routing redirect: 0	ث ﻩ پ ḧ ᵇ ĭ ă

ώ˜ ȝ Ụ -

Ẉ ᴶ ب ˝ -

1.19 show ip packet statistics

ˠ ˜ IP ĭ ă ﷺ ﾒ ɯ ȝ Ụ

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

v ˝Ǫب ˝	v ˝Ǫ

```
    Unicast:90962,Multicast:5232,Broadcast:17768
    Discards:0
      HdrErrors:0(BadChecksum:0,TTLExceeded:0,Others:0)
      NoRoutes:0
      Others:0
  Sent 34917 packets, 1863146 bytes
    Unicast:30678,Multicast:4239,Broadcast:0
GigabitEthernet 0/1
  Received 6715 packets, 416587 bytes
    Unicast:2482,Multicast:4233,Broadcast:0
    Discards:0
      HdrErrors:0(BadChecksum:0,TTLExceeded:0,Others:0)
      NoRoutes:0
      Others:0
  Sent 6720 packets, 417096 bytes
    Unicast:2481,Multicast:4239,Broadcast:0
Loopback 0
  Received 0 packets, 0 bytes
    Unicast:0,Multicast:0,Broadcast:0
    Discards:0
      HdrErrors:0(BadChecksum:0,TTLExceeded:0,Others:0)
      NoRoutes:0
      Others:0
  Sent 0 packets, 0 bytes
    Unicast:0,Multicast:0,Broadcast:0
Tunnel 1
  Received 0 packets, 0 bytes
    Unicast:0,Multicast:0,Broadcast:0
    Discards:0
      HdrErrors:0(BadChecksum:0,TTLExceeded:0,Others:0)
      NoRoutes:0
      Others:0
  Sent 21584 packets, 1122848 bytes
    Unicast:21584,Multicast:0,Broadcast:0
```

È ɜ ɹ ᵩ Χ

È ɜ	ب ˮ
Total	´˜ ì ï ᵻ Ǐ˜ ▯ Ĩ ¨A õ ì Æ▯ ʌ ɯ Ө▯ Ở ⁼
GigabitEthernet 0/1	´˜ ì ï ᵻ Ǐ˜ ▯ Ĩ ¡ Ḿ ف τ ч ì Æ▯ ʌ ɯ Ө ȝ Ụ
Received	ì ᷒ ▯ ĭ ă ˝Ǫ´ ı È ` ˝Ǫ´ Ɋ ȝ ɒ Ḥ/ ʌ Ḥ/ ẍ Ḥ ʌ ɯ ı ɣ ὺ Ь ɣ ˝Ǫ´ ı Ɋ ȝ Ḿ Ẓ ▯ Ь ɣ ⊃ ɨ

Sent	ʌ ڑ ï ă ʺQ´ ı È ` ʺQ´ ı ɒ Ḥ/ ɻ Ḥ/ ẍ Ḥ ʺQ´

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

1.20 show ip pool

ꞏ ˜ ↓ ʌ IP ş χ – ʒ Ụ
show ip pool [*pool-name*]

v ʺQ ب ˝	v ʺQ	ώ ك
	pool-name	˝Y ḧ ş χ – ᵃ È

ᵘ ɲ ₩ Ã ₰ ₩ Ã

ƛ ʌ˙ 2

Æ ŧ ˝Y Ṁ -

ب ɻ ʓ æ 1 χ ꞏ ˜ ˝A ω„ á ş χ – ʒ Ụ

```
Ruijie# show ip pool
Ruijie(config)#show ip pool
Pool                Begin           End               Free    In use
default             1.1.1.1         1.1.1.1              1         0
pool1               2.2.2.2         2.2.2.254          253         0
pool2               3.1.1.1         3.2.1.1          65537         0
pool3               192.168.1.1     192.168.1.254      254         0
```

È ɟ ɹ ᵩ χ

È ɟ	ب ˝
Pool	ş χ – ᵃ È
Begin	ş χ – ∨ Ḋ ip ş χ
Free	Ẹ˙ ş χ – ʌ ʌ ز ip ş χ
In use	Ẹ˙ ş χ – ʌ* ɲ Æ ŧ ip ş χ

ώ˜ ʒ Ụ 7. ḅ ' ≡ ω„ á γ Ṃ ş χ – ı„ Ǐ ˜ χ

```
No IP local pools exist
```

Ẉ ᴶ ب ˝ -

1.21 show ip raw-socket

Ǐ ˜ ¨A ω IPv4 ⊃ Ḋ˯ ì È

show ip raw-socket [*num*]

ν ¨Ọ ب ˝	ν ¨Ọ	ώ ك
	num	ʁ ɲ ᴺ

ᵘ ɲ ₩ Ã ˟ ₩ Ã

ƛ ˥˳ 2

Æ ɾ ˝ Y Ṁ -

ب ل ʖ æ 1 χ¶ ˜ ¨A ω IPv4 ⊃ Ḋ˯ ì È

```
Ruijie# show ip raw-socket
Number Protocol Process name
1      ICMP     dhcp.elf
2      ICMP     vrrp.elf
3      IGMP     igmp.elf
4      VRRP     vrrp.elf
Total: 4
```

È ɟ ɹ ˛ χ

È ɟ	ب ˝
Number	ẑ ᴺ
Protocol	ʁ ɲ ᴺ
Process name	ف ۱ ᵉ ५
Total	Ở ¨Ọ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

1.22 show ip sockets

Ǐ ˜ ¨A ω IPv4˯ ì È ı ˡ Ꞓ˜ ǯ ᵤ Ᵽ UDP ۱ Æ ⊐ TCP ۱ Æ Ḿ ᵘ ώ ě ˋO ɲ

show ip sockets

v ʺQ ب ʺ	v ʺQ	ώ ك
	-	-

ᵘ ɲ ₩ Ã ₰ ₩ Ã

ƛ ۱. 2

Æ ŧ ʺ Y Ṁ -

ب ل ڗ æ 1 χ ¶ ˜ ʺ A õ IPv4 ¸ ì È

```
Ruijie# show ip sockets
Number Process name     Type     Protocol LocalIP:Port  ForeignIP:Port          State
1      dhcp.elf         RAW      ICMP     0.0.0.0:1     0.0.0.0:0               *
2      vrrp.elf         RAW      ICMP     0.0.0.0:1     0.0.0.0:0               *
3      igmp.elf         RAW      IGMP     0.0.0.0:2     0.0.0.0:0               *
4      vrrp.elf         RAW      VRRP     0.0.0.0:112   0.0.0.0:0               *
5      dhcpc.elf        DGRAM    UDP      0.0.0.0:68    0.0.0.0:0               *
6      rg-snmpd         DGRAM    UDP      0.0.0.0:161   0.0.0.0:0               *
7      wbav2            DGRAM    UDP      0.0.0.0:2000  0.0.0.0:0               *
8      vrrp_plus.elf    DGRAM    UDP      0.0.0.0:3333  0.0.0.0:0               *
9      mpls.elf         DGRAM    UDP      0.0.0.0:3503  0.0.0.0:0               *
10     rds_other_th     DGRAM    UDP      0.0.0.0:3799  0.0.0.0:0               *
11     rg-snmpd         DGRAM    UDP      0.0.0.0:14800 0.0.0.0:0               *
12     rg-sshd          STREAM   TCP      0.0.0.0:22    0.0.0.0:0               LISTEN
13     rg-telnetd       STREAM   TCP      0.0.0.0:23    0.0.0.0:0               LISTEN
14     wbard            STREAM   TCP      0.0.0.0:4389  0.0.0.0:0               LISTEN
15     wbard            STREAM   TCP      0.0.0.0:7165  0.0.0.0:0               LISTEN
Total: 15
```

È ɟ ɹ ᵩ χ

È ɟ	ب ʺ
Number	ẑ ᴺ
Process name	ڤ ۱ ᵉ ५
Type	¸ ì È ۱ ڗ ı RAW ˊ ˜ ⊐ Ḋ ¸ ì È ı DGRAM ˊ ˜ ʺ Q ʺ Ω ۲ ۱ ڗ ı STREAM ˊ ˜ ╙ ۱ ڗ
Protocol	ʁ ɲ ᴺ
LocalIP:Port	ş IP ş χ ⊐ ५ Æ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

2 ARP

2.1 arp

ᵽ ᒧ ˷̋ ő ARP

arp *ip-address mac-address type*

ᵑ ╥ ˷̋ ő ARP

no arp *ip-address*

ᵛ ̈Ꝙᵽ ˝	ᵛ ̈Ꝙ

Cannot add static ARP.

Ẃ ð ჯ ئ -

Ẉ ᴶ ب ˝ -

2.2 arp-learning

Ầ ᵏ ARP ẹ ͡ ı ĺ

arp-learning enable

ʜ ŭ ARP ẹ ͡ ı ĺ

no arp-learning enable

v ˝Ꝙ ب ˝

v ˝Ꝙ	ώ ك
-	-

ỉ ب ل ѫ n ừ ` ï ì ᴱÆ ĺ ʊ õ ARP ẹ ͡ ı ĺ

ᵘ ɲ ₩ Ã ì ᴱ ب ل ₩ Ã

ỉ ۱. 2

Æ ŧ ˝ YṀ ḅ ' . ɲ ф ᵻ Ţ ل ẹ ͡ ₓ ļ ẹ ͡ ʊ õ ARP ´ ° ı ٹ ص web Ṅ ʊ õ ARP ჯ ᴋ ʁ ˜ õ ARP ª ı á ɲ Ầ ᵏ Ỉ ı ĺ ı ᵋ „ j á ɲ Ầ ᵏ Ỉ ı ĺ Ầ ᵏ ʊ õ ARP j ẹ ͡ ı ĺ ª ı è ɰ ʊ õ ARP ´ ° ı ؟ ı ḅ ' ŧ Ä ₓ ļ Ṅ ʊ õ ARP ´ ° ჯ ᴋ ʁ ˜ õ ARP ´ ° ı ' ٹ ص web ب ل ı ḅ ' ŧ Ä ₓ ļ ▌ ڻ è Ỉ ʊ õ ARP ´ ° ı j ы ɰ • ŧ Ä i ل ı „ ' ٹ ص clear arp ᵘ ɲ ı ᵋ „ ʊ õ ARP ´ ° ف Φ* Ẃ ă ᴋ ı ɰ ă ᴋ Ḥ ژ ª ı Ỉ ʊ õ ARP ´ ° ą ▌ ڻ è Ầ ᵏ ì ᴱ ȳ ₿ ʊ õ ARP ẹ ͡ ı ĺ ª ı „ AnyIP ı ĺ ARP ' ȝ ₅ ⅄ ı ĺ ¸ ѽ

ب ل ǯ æ 1 χ Ầ ᵏ ʊ õ 1 χ Ầ ᵏ ʊ õ 1

Ẉ ᴶ ب ˝ -

2.3 arp cache interface-limit

ب ل ں ˙ ì Æ ARP ę Ő ˝ Ọ ę

arp cache interface-limit *limit*

Õ ʸ ʱ̃ ب ل

no arp cache interface-limit

v ˝ Ọ ب ˝

v ˝ Ọ	ώ ك
limit	˝ Y ḧ ì Æ ˝ A ĩ ę Ő ARP ˝ Ọ ę ϖ ᶻ ں ˙ ı ۲ ŭ ـ ̃ õ ب ل ⁼ ∪ õ ę Ő ARP ı ᵖ Ë ̧ ᵬ ᵚ <0- ᵩ ᵗ ˜ Ḥ ' Y ARP ˊ ° ķ ę > ı 0 ˊ ˜ j ں ˙ ì Æ ARP ę Ő ˝ Ọ ę

ʱ̃ ب ل ѕ ᵑ ᵚ ˙ ï j ں ˙ ì Æ ARP ę Ő ˝ Ọ ę

ᵘ ᵑᵬ ₩ Ã ì Æ ب ل ₩ Ã

ʱ̃ ۱. 2

Æ ɾ ˝ Y Ṁ ں ˙ ì Æ ARP ę Ő ˝ Ọ ę ı ı گ ₿ Ủ Ỵ ARP ϖ ˋ ı ч ᵩ ᵗ ı ă ᶻ ę ARP ˊ ° ı ı ɾ ص ^ ˊ ° ° ◊ ب ل Ö ọ ɛ j ɱ Ẹ ˙ ì Æ Ţ ل ę Ő ˙ ARP ˊ ° ˝ Ọ ę ı ε ب ل j ı ѽ أ ں ˙ ᴘ ᵮ ᵩ ᵗ Ḥ ' Y ARP ķ ę

ب ل ʖ æ 1 χ ب ل Ṅ ì Æ ARP ę Ő ˝ Ọ ę ں ˙ ϰ 300

```
Ruijie(config)# interface gi 0/0
Ruijie(config-if-GigabitEthernet 0/0)# arp cache interface-limit 300
```

2 χ ʜ ڎ ں ˙ ì Æ ARP ę Ő ˝ Ọ ę

```
Ruijie(config)# interface gi 0/0
Ruijie(config-if-GigabitEthernet 0/0)# no arp cache interface-limit
```

ₛ ᴈ Ä | show running-config ¶ ˜ ˀ ʜ ب ل ĩ ε ı ѽ

ώ ˜ ʒ Ụ -

Ẃ ð ᴇ ś -

Ẉ ᴶ ب ˝ -

2.4 arp gratuitous-send interval

ᵽ ɻ ḧ ᾽H ∧ ゲ d ´ ARP ت ∂

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

ʜ ȷ̈ ḧ ᾽H ∧ ゲ d ´ ARP ت ∂

no arp gratuitous-send

v ″Ϙ ᵽ ″

v ″Ϙ	ὼ ك
seconds	∧ ゲ d ´ ARP ت ∂ ⿻᾽H ჯ ჯ ك ı ɒ ɥ ヽ ı ㄇ Ⓔ„ ɻ <1-3600>
number	∧ ゲ d ´ ARP ت ∂ ⿻″Ϙ ᵩ ı ɾ̊ Ⓔ ĩ 1 ı ㄇ Ⓔ„ ɻ <1-100>

ɾ̊ ᵽ ɻ ì Æ ≡ ῶ ᵏ ɬ ḧ ᾽H ∧ ゲ d ´ ARP ت ∂ ⿻ ı Ấ

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

ɾ̊ ∧̣ 2

Æ ɬ ″YṀ Ẹ ɸ ᵵ ⿻ ɻ ∧ ì Æ Ȳ ㎞ ï ǐ ɸ ᵵ ⿻ ɻ ʜ ᾽H ı ḅ ' ï ǐ ɸ ᵵ ₳ ῶ w Ⱬ ɻ ʜ ⿻ Φ ㎞ ı „ ˡ Ꝋ ɲ % ì Æ ᵽ ɻ ḧ ᾽H ∧ ゲ d ´ ARP ت ∂ ı ʒ ᵓ₅ ṯ ė ĩ ˘ * ⿻ ɻ ʜ

ᵽ ɻ ᵹ æ 1 χ ᵽ ɻ ᵇ ì Æ VLAN 1 ⅛ ヽ ت ∧ ゲ ₭ d ´ ARP ت ∂

```
Ruijie(config)# interface vlan 1
Ruijie(config-if)# arp gratuitous-send interval 1 1
```

2 χ ㄇ ╦ ḧ ᾽H ᵇ ì Æ VLAN 1 ∧ ゲ d ´ ARP ت ∂

```
Ruijie(config)# interface vlan 1
Ruijie(config-if)# no arp gratuitous-send
```

₅ ⇜ Ä | -

ώ˜ ʒ Ụ -

Ẃ ȸ ⇜ ئ -

Ẉ ᴶ ᵽ ″ -

2.5 arp retry interval

ᵽ ɻ ᵽ e ARP ت ∂ ⿻᾽H ჯ ჯ ك

arp retry interval *seconds*

Õ ʉ ǰ ٫ ٫

no arp retry interval

v ̈Ǫ ب ˝	v ̈Ǫ	ٯ ك
	seconds	ARP ت ∂ ﷺ پ ٯ ̀H ژ ا ﷺ ف ل ﷺ 1~3600 ١ ا س ɲ Ө ﷺ 1 ١

ǰ ٫ ل ARP ت ∂ پ ٯ ̀H ژ ژ ڈ ﷺ 1 ١

ᵘ ɲ ₩ Ã ২ ṕ ₩ Ã

ǰ ١ ̣ 2

Æ ŧ ˝ YṀ Ẹ ٨ א ف ᵻ ũ ị ١ ﷺ ᵇ ᵕ ٨ گ ARP ت ∂ ا Â ٧ ل ١ ١ Ồ ١ Ʈ Ḛ ڈ ئ ̀H ا ا ﷺ Ṅ ARP ت ∂ ﷺ پ ٯ ̀H ژ ف ل ذ ᴾ ا ˜ j ا ٨ ص ᴗ ỗ ARP ˊ ˚ ﷺ ả ק ̀H ژ

پ ل ڎ æ 1 χ Ṅ ARP ت ∂ ﷺ پ ٯ ̀H ژ ف ل ﷺ 30s

```
Ruijie(config)# arp retry interval 30
```

ᵴ ڃ Ά | -

ώ ˜ ʒ Ụ -

Ẃ ȸ ڇ ئ -

Ẉ ᴶ پ ˝ -

2.6 arp retry times

پ ل پ ٯ arp ت ∂ ï ă ﷺ ₭ ̈Ǫ

arp retry times *number*

Õ ʉ ǰ ٫ ٫

no arp retry times

v ̈Ǫ ب ˝	v ̈Ǫ	ٯ ك
	number	ª Ⱥ ARP ت ∂ ﷺ ٨ گ ₭ ̈Ǫ ا ̲ ƫ <1-100> Ẹ ف ل ﷺ 1 ̀H ا ˊ ˜ j پ ٯ ARP ت ∂ ا ᴱ ĩ ٨ گ 1 ₭ ARP ت ∂ ï ă

ǰ ٫ ل ƀ ' ≡ ũ ᾠ ̇ ARP Ẓ ١ ï ă ا ARP ت ∂ ï ă h ٨ گ 5 ₭ ا ł ª ٨ ̀H

ᵘ ɲ ₩ Ã ২ ṕ ₩ Ã

ỉ ۱. 2

Æ ŧ ″ Y Ṁ Ẹ ∧ א ֆ ᵎ õ ị ۱ ⁽ᴼᴮᴶ⁾ ᵇ ᵘ ∧ ڜ ARP ت ∂ ı Ậ ∨ ɻ ۸ ۱ Ỗ ۷ Ʊ Ḛ ڎ ڟ Ḥ ı ᵎ Ꝋ Ṅ ARP ت ∂ ⁽ᴼᴮᴶ⁾ ۾ ҿ Ӄ Ꝋ ֆ ɻ ɳ ᴾ ı ᵔ j ɻ Ṅ ۾ ҿ Ӄ Ꝋ ֆ ɻ ệ θ ᶻ

ۻ ɻ ڎ æ 1 χ ۻ ɻ ş ARP ت ∂ j ۾ ҿ

```
Ruijie(config)# arp retry times 1
```

2 χ ۻ ɻ ş ARP ت ∂ ۾ ҿ 1 Ӄ

```
Ruijie(config)# arp retry times 2
```

ₛ ᴈ Ä | -

ώ˜ ȝ Ụ -

Ẃ ỏ ᴇ ڟ -

Ẉ ᴶ ۻ ″ -

2.7 arp timeout

ۻ ɻ ARP ۸˙ ת ѧ ט ő ARP ˊ ˚ ⁽ᴼᴮᴶ⁾ ∧ ̀H ̀H ژ

arp timeout *seconds*

Õ ᵸ ỉ ۻ ɻ

no arp timeout

ν ″ Ꝋ ۻ ɻ	ν ″ Ꝋ	ѽ ك
	seconds	∧ ̀H ̀H ژ ı Ꝋ ۷ ѫ ч ۷ ɒ ɧ ı ‥ ɧ 0-2147483

ỉ ۻ ɻ ỉ ∧ ̀H ̀H ژ ѫ 3600 ۷

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

ỉ ۱. 2

Æ ŧ ″ Y Ṁ ARP ∧ ̀H ֆ ɻ ᴱ Ḿ ט ő ę Ỏ ⁽ᴼᴮᴶ⁾ IP ş χ ᵌ MAC ş χ ī ṃ ∨ Ă ŧ ∧ ̀H ̀H ژ ֆ ɻ ệ ۹ ˜ ı ARP ۸˙ ѧ Ȝ è ⁽ᴼᴮᴶ⁾ ī ṃ ˊ ö ۹ ˇ ẖ ı Ꜧ ĩ ARP ╤ ắ ɻ ۸ Ṿ Ķ Ỏ ۹ ^ ı Ä Ꝋ ₓ ɭ ‘ ˛ ᵬ ᵎ ̃ ω ˷ ˛ ⁽ᴼᴮᴶ⁾ ₓ ɭ ı ᴱ ‥ ᵔ j ₓ ɭ

ᵽ ɻ ARP ʌ `H`H ʐ

ᵽ ɻ ʒ̧ æ 1 χ Ṅ ʁ Gigabit Ɋ ᶿ ɻ Æ gigabitEthernet 0/1 ę̇ ⿰ʊ ő ARP ī ṃ ɾ ę⿰ʌ `H`H ʐ ֆ ʁ 120 ʏ

```
Ruijie(config)# interface gigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# arp timeout 120
```

ₛ ⱬ Ä | 1 χ **show arp timeout** ˈ ȸ ì Æ 1⿰ʌ `H`H ʐ ʁ 120 ʏ

ώ˜ ʒ Ụ -

Ẃ ȸ ᶎ ئ -

Ẉ ᴶ ᵽ ˝ -

2.8 arp trust-monitor enable

Ã ᵏ ARP ˈ ʒ ₅ ⫫ ı ǐ

arp trust-monitor enable

ʜ ȷ̌ ARP ˈ ʒ ₅ ⫫ ı ǐ

no arp trust-monitor enable

v ̈Ɋ ᵽ ˝

ᵽ ᒧ ᵹ ǽ 1 χ Ã ᵏ ARP ᶦ ʒ ᵴ ᴌ ᶦ ᵻ̈

```
Ruijie(config)# interface gi 0/0
Ruijie(config-if-GigabitEthernet 0/0)# arp trust-monitor enable
```

2 χ ʜ ᵭ ARP ᶦ ʒ ᵴ ᴌ ᶦ ᵻ̈

```
Ruijie(config)# interface gi 0/0
Ruijie(config-if-GigabitEthernet 0/0)# no arp trust-monitor enable
```

ᵴ ᶎ Ä | -

ώ˜ ʒ Ụ -

Ẃ ȸ ᶄ ȿ -

Ẉ ᴶ ᵬ ˝ -

2.9 arp unresolve

ᵽ ᒧ ARP ˊ ° ʌ ' ɹ ‘ ˊ ° ㊀ ᾠ ᶻ Ⱥ ̋Ọ

arp unresolve *number*

Õ ̛ ᵸ ѫ ɲ Ө

no arp unresolve

v ̋Ọ ᵬ ˝

v ̋Ọ	ὼ ك
number	' ɹ ‘ ARP ˊ ° ㊀ ᾠ ᶻ Ⱥ ̋Ọ ı ɲ Ө„ ƀ ᾠ ɳ ʁ 1 ı ᾠ ᶻ ʁ ARP ˊ ° ㊀ Ở ķ ᵾ ѫ ɲ Ө ʁ ARP ˊ ° ㊀ Ở ķ ᵾ

ƚ ᵽ ᒧ ARP ᵲ ˙ ˊ ʌ ᾠ ^ ᶦ Ꝋ ķ ᵻ ㊀ ' ɹ ‘ ˊ ° ʁ ARP ˊ ° ㊀ Ở ķ ᵾ

ᵘ ᵑᵬ ₩ Ã ᘯ ṕ ₩ Ã

ƚ ᵻ̣ 2

Æ ŧ ˝ Y Ṁ Ẹ ʌ ᵡ ARP ᵲ è ˊ ʌ ᵡ ᵾ ' ɹ ‘ ˊ ° ı Ẋ ħ ᵻ Ḥ ᴊ ᵅ ᵩ ≡ ῶ ₸ ᵡ Ḥ ı ᶶ Ꝋ ŧ % ᵘ ᵑᵬ ᔕ ' ɹ ‘ ˊ ° ㊀ Ⱥ ̋Ọ

ᵽ ᒧ ᵹ ǽ 1 χ ᵽ ᒧ ㊀ ' ɹ ‘ ˊ ° ㊀ ᾠ ᶻ Ⱥ ̋Ọ ʁ 500

```
Ruijie(config)# arp unresolve 500
```

ₛ ᶎ Ä │ -

ώ˜ ʒ Ụ -

Ẃ ȸ ᷒ ᵹ -

Ẉ ᴶ ᵬ �later -

2.10 clear arp-cache

¨ ᵬ ARP ᵡ˙ ˊ ᴬ ᴜ ỗ ARP ī ṃ ʟ ẹ ᵽ ᵡ ʜ ᴎ - ₩ Ã ï ı j ḥ¨ ᵬ ᴎ - VLAN ï ⃞ᴜ ỗ ARP ˊ ˚

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

ᵛ ˝Ọ ᵬ ˝

ᵛ ˝Ọ	ὼ ᶄ
ip	IP ᵴ ᵪ ᵛ ˝Ọ ı ᴏ ▌ᵬ˝Y ḧ IP ᵴ ᵪ⃞ ARP ˊ ˚ ı ᵡ̊ ¨ ᵬ˝A ῶ ᴜ ỗ arp ˊ ˚
mask	mask ʁ Ḍ ᵡ ọ ᵛ ˝Ọ ı ᴏ ▌ᵬ Ḍ ᵡ ᴊ⃞ ARP ˊ ˚ ı˙ ⁼⃞ IP ᵴ ᵪ ọ ᵋ ĩ Ḍ ᵡ ᴺ ᵡ̊ ¨ ᵬ˙ ⁼ ip ˝Y ḧ⃞ᴜ ỗ arp ˊ ˚
interface *interface-name*	▌ᵬ˝Y ḧ ì Æ⃞ᴜ ỗ ARP ˊ ˚ ᵡ̊ ¨ ᵬ˝A ῶ ì Æ⃞ᴜ ỗ arp ˊ ˚

ᵘ ᵑᵬ ₩ Ã ⁼ ₩ Ã

ᵡ̊ ᐟ¸ 2

Æ ɨ ˝Y Ṁ -

ᵬ ᵡ ᶎ æ 1 χ¨ ᵬ˝A ῶ ARP ᴜ ỗ ī ṃ ʟ ẹ ᵡ˙ ˊ χ

```
Ruijie# clear arp-cache
```

2 χ¨ ᵬ ᴜ ỗ ARP ˊ ˚ 1.1.1.1 χ

```
Ruijie# clear arp-cache 1.1.1.1
```

3 χ¨ ᵬ ì Æ SVI1 ï ⃞ᴜ ỗ ARP ˊ ˚ χ

```
Ruijie# clear arp-cache interface Vlan 1
```

ώ˜ ʒ Ụ -

Ẃ ȸ ᷒ ᵹ -

Ẉ ᴶ ᵬ ᵛ -

2.11 ip proxy-arp

ᵹ ì Æ i ᵏ ɨ ᖘ ARP ı ǐ

ip proxy-arp

ʜ ɜ ᖘ ARP ı ǐ

no ip proxy-arp

v ̋ Ꝙ ̆

v ̈Ọ ̆

v ̈Ọ	ὼ ك
interface-type interface-number	Ǐ ˜ ˝Y ḧ s Ṗ ヿ Æ ã ắ ̂ Ṗ ヿ Æ ARP
ip	IP ş ẋ ı Ǐ ˜ ˝Y ḧ

```
Ruijie# show arp 001a.a0b5.378d
Protocol  Address  Age(min)  Hardware  Type   Interface
Internet  192.168.195.67   4   001a.a0b5.378d  arpa   VLAN 1
```

show arp static

```
Ruijie# show arp static
Protocol  Address  Age(min)  Hardware  Type   Interface        Origin
Internet  192.168.23.55    <static>  0000.0000.0010  arpa   VLAN 100   Configure
Internet  192.168.23.56    <static>  0000.0000.0020  arpa   VLAN 100   Authentication
2  static arp entries exist.
```

Protocol	Internet
Address	IPv4
Age(min)	IP, <static>,
Hardware	48 bit MAC 16 bit
Type	arpa
Interface	ARP ARP
Origin	ARP Configure Authentication

-

-

2.13 show arp counter

ARP arp

show arp counter

-	-

ﾉ ﾍ 1

Æ ɬ ″YṀ -

ﾋ ﾉ ﾕ æ 1 χ Ǐ ~ ARP ﾍ è ˊ ﾑ arp ˊ ° Ѭ ˌ

```
Ruijie# show arp counter
The Arp Entry counter:0
The Unresolve Arp Entry:0
```

ώ~ ʒ Ụ -

Ẉ ᴶ ﾋ ″ -

2.14 show arp packet statistics

Ǐ ~ ARP ǐ ă ﾍ ɯ ʒ Ụ

show arp packet statistics [*interface-name*]

v Ѭ ﾋ ″	v Ѭ	ώ ك
	interface-name	Ǐ ~ ″Y ḧ ì Æ i ARP ǐ ă ﾍ ɯ ʒ Ụ

ᵘ ᵑᵬ₩Ã ₰ ₩Ã

ﾉ ﾍ 1

Æ ɬ ″YṀ -

ﾋ ﾉ ﾕ æ 1 χ Ǐ ~ ARP ﾍ ɯ ˊ ʒ Ụ χ

```
Ruijie#show arp packet statistics
Interface              Received  Received Received  Sent      Sent
Name                   R
equests  Replies  Others    Requests  Replies
--------------------   --------  -------- --------  --------  -------
GigabitEthernet 0/0    0         0        0         0         0
GigabitEthernet 0/1    143649    232      0         2         0
GigabitEthernet 0/2    0         0        0         0         0
GigabitEthernet 0/3    0         0        0         0         0
GigabitEthernet 0/4    0         0        0         0         0
GigabitEthernet 0/5    0         0        0         0         0
GigabitEthernet 0/6    0         0        0         0         0
```

```
Loopback 1              0          0          0          0          0
```

È ɟ ɹ ᵩ χ

È ɟ	ώ ك
Received Requests	ώ˙ ARP ت ∂ Ω ᵩ
Received Replies	ώ˙ ARP Ƶ ۱ Ω ᵩ
Received Others	ώ˙ Ʊ Ę ARP ï ă Ω ᵩ
Sent Requests	∧˛ ARP ت ∂ Ω ᵩ
Sent Replies	∧˛ ARP Ƶ ۱ Ω ᵩ

ώ˜ ȝ Ụ -

Ẉ ᴶ ب ″ -

2.15 show arp timeout

Ǐ ˜ ʊ ő ARP ˊ ° ă ƿ ʿH ژ

show arp timeout

v ″Ω ب ″

v ″Ω	ώ ك
-	-

ᵘ ɲ ₩ Ã ₰ ₩ Ã

ƛ ۱˛ 1

Æ ɬ ″Y Ṁ -

ب ۷ ʖ æ 1 χ Ǐ ˜ ʊ ő ARP ˊ ° ă ƿ ʿH ژ

```
Ruijie# show arp timeout
Interface              arp timeout(sec)
---------------------  ----------------
VLAN 1                 3600
```

ώ˜ ȝ Ụ -

Ẉ ᴶ ب ″ -

2.16 show ip arp

Ǐ ˜ ş ϰ ɹ ‘ в ɲ ε ARP ζ ﾉ˙ ˝

show ip arp

v ̋Ǫ ب ˝

v ̋Ǫ	ώ ك
-	-

ᵘ ɲ ₩ Ã ≠ ₩ Ã

ﾉ ﾉ˛ 1

Æ ɾ ˝ Y Ṁ -

ب ﾉ ʖ æ 1 χ Ǐ ˜ ş ϰ ɹ ‘ в ɲ ε ARP ζ ﾉ˙ ˝

```
Ruijie# show ip arp
Protocol Address       Age(min)Hardware       Type
Interface
Internet 192.168.7.233  23   0007.e9d9.0488  ARPA FastEthernet 0/0
Internet 192.168.7.112  10   0050.eb08.6617  ARPA FastEthernet 0/0
Internet 192.168.7.79   12   00d0.f808.3d5c  ARPA FastEthernet 0/0
Internet 192.168.7.1    50   00d0.f84e.1c7f  ARPA FastEthernet 0/0
Internet 192.168.7.215  36   00d0.f80d.1090  ARPA FastEthernet 0/0
Internet 192.168.7.127  0    0060.97bd.ebee  ARPA FastEthernet 0/0
Internet 192.168.7.195  57   0060.97bd.ef2d  ARPA FastEthernet 0/0
Internet 192.168.7.183  --   00d0.f8fb.108b  ARPA FastEthernet 0/0
```

ARP ﾉ˙ ˝ ﾑ ᴿ È ɟ ▯ ᵍ Θ ώ ك ḅ ï χ

È ɟ	ب ˝
Protocol	ﾉ ﾊ ş ϰ ▯ в ɲ ı Ǐ È ɟ ʒ ﾙ Internet
Address	ﾉь ţ ş ϰ Ḿ Ẓ ▯ IP ş ϰ
Age (min)	ARP ﾉ˙ ι ę è ƥ ▯ H ﾌ ı Ɑ‘ ت ч ḅ ' ĩ ş ▯ ă ą̈ ¯ ő ب ﾉ ▯ ı Ǐ È ɟ Ө ŏ ɾ ˜ ﾑ “-” ˝ ˜
Hardware	ﾉь IP ş ϰ Ḿ Ẓ ▯ ţ ş ϰ
Type	. ţ ş ϰ ﾑ ʒ ı Ɑ θ ﾉ ş ϰ ʒ ﾙ ARPA
Interface	ﾉь IP ş ϰ ʜ ǐ ▯ ì Æ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

3 IPv6

3.1 clear ipv6 neighbors

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

oob	MGMT
interface-id	

-

14

-

1
```
Ruijie# clear ipv6 neighbors
```

2
```
Ruijie# clear ipv6 neighbors oob
```

3
```
Ruijie# clear ipv6 neighbors gigabitEthernet 0/1
```

-

-

3.2 ipv6 address

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

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

eui-64 IPv6

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

¨ ბ˝Y ẗ eui-64† Ã IPv6 ş χ
no ipv6 address *ipv6-prefix* | *prefix-length* **eui-64**

Æ ŧ ր ŧ˙ ∧↑ ب ـ IPv6 ş χ ı ץ ὐ eui-64† Ã ş χ
ipv6 address *prefix-name sub-bits* | *prefix-length* [**eui-64**]

¨ ბ˝Y ẗ Æ ŧ ր ŧ˙ ∧ب ـ IPv6 ş χ ı ץ ὐ eui-64† Ã ş χ
no ipv6 address *prefix-name sub-bits*| *prefix-length* [**eui-64**]

¨ ბ ì Æ ¨A õ IPv6 ş χ
no ipv6 address

v ¨Ọ ب ˝

v ¨Ọ	ὼ ك
ipv6-address	IPV6 ş χ ı ọ ٤ ٢ Ỉ RFC4291 ẗ Θ ş χ ẻ Ã ı ⅛ Ѧ ş χ ³ ɵ ژ ŧ w ᴺ ڵ Ầ ı ⅛ Ѧ ³ ¦ 16 ⅝ ≠ ı ŧ " Ɲ ف ¨Ọ ´ ˜ .
ipv6-prefix	IPV6 ş χ˙ ∧ ı ọ ٤ ٢ Ỉ RFC4291 ẗ Θ ş χ ẻ Ã ı ⅛ Ѧ ş χ ³ ɵ ژ ŧ w ᴺ ڵ Ầ ı ⅛ Ѧ ³ ¦ 16 ⅝ ≠ ı ŧ " Ɲ ف ¨Ọ ´ ˜ .
prefix-length	IPV6˙ ∧ ڎ ů o IPV6 ş χ Ѧ Ɋ ´ ل ∧ Ƙ˙
prefix-name	ր ŧ˙ ∧ ª È Æ ŧ ف Ѧ ¨Y ẗ ր ŧ˙ ∧ ı ă ì Æ ş χ
sub-bits	Ḍ˙ ∧ ⅝ ≠ ɲ ڎ ⅝ ≠ Ö ف Ѧ Ö ɲ ր ŧ˙ ∧ Ѧ ᵀ Ẋ ı ă ì Æ ş χ ف Ѧ Ö ´ ˜ | ļ ٢ Ỉ RFC4291 ὼ ك w ᴺ ´ ˜ |
eui-64	´ ˜ ı ă IPV6 ş χ ı ب ـ ş χ˙ ∧ ⁼ 64 ⅝ ≠ ì Æ ID ‰ ٧ ı ل ă

ƛ ب ـ ή ş χ

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

ƛ ∧˳ 14

Æ ŧ ˝Y Ṁ Ẹ Ѧ IPV6 ì Æ ą„ á Ẋ ħ ჭ ت ᵀ õ ₶ UP `H ᾳ ψ ↓ ∧ Ṅ ₶ Ỉ ì Æ₅ ט ı ă ჭ ت ş ş χ ì Æ IPv6 ş χ Ꮯ ˡ Ꭴ Æ ŧ ր ŧ˙ ∧ ˙ ı ă Ꭲ ˙ ö ĩ IPv6 ş χ = ɒ ր ŧ˙ ∧ ƀ + ɒ Ḍ˙ ∧ ƀ + ɒ ڎ ⅝ ≠ ƀ ր ŧ˙ ∧ ˡ Ꭴ Æ ŧ **ipv6 general-prefix** ᵘ ɲ ب ـ ı Ꮯ ˡ ځ

ï ă θ ² ╦ Ụ ı ف ヿ ICMPv6 Ţ ę ï ă ⃞ ʓ ļ ŕ ∪ ĩ IPv6 ت Ễ MTU ∧ א ⃞ گ Ƀ Ʊ Ę ICMPv6 Ţ ę ï ă θ ^ Ḿ ∧ j ˛ ICMPv6 ï ă θ ² ╦ Ụ ı ĸ ă Ḿ IPv6 ت Ễ MTU ∧ א ı ŕ ˛ ѽ ı Ḿ ICMPv6 ï ă θ ² ╦ Ụ ⁼ Ʊ Ę ICMPv6 Ţ ę ï ă ˙ ∪ ھ ├ Ỵ χ ICMPv6 ᵱ ḧ ᵇ ï ă j Ɽ ICMPv6 Ţ ę ï ă ı ă и ″ H Ʊ Ę ICMPv6 Ţ ę ï ă ⁼ ICMPv6 ᵱ ḧ ᵇ ï ă ∨ ∪ ھ

ŧ ⃞ ḧ ℋ H ʜ ⃞ ヰ ỷ ĩ 10 ← ヽ ı á ɲ ŧ Ä ¨ H ɲ Ъ W ⁿ ⃞ Ä ᵕ Ω ᵱ ل ă 10 ← ヽ ⃞ Ω ¨ Ω И ƀ ' ɲ Ъ W ⁿ ⃞ Ä ᵕ Ω ⁂ ,0 ɲ ⁂ 10 ı ƫ ڳ ŧ ѽ ⃞ Ä ᵕ Ω ĩ 10 ← ヽ ı æ ƀ ᵱ ل 5 ← ヽ 1 Ѧ ı ƫ ڳ ѽ ' ĩ 10 ← ヽ 2 Ѧ ψ ƀ ' ɲ Ъ W ⁿ ⃞ Ä ᵕ Ω j ĩ 10 ← ヽ ⃞ Ω ¨ Ω И ı ƫ ڳ ŧ ѽ ⃞ Ä ᵕ Ω ₅ ʊ ¨ Ω ∨ ă 10 ← ヽ ⃞ Ω ¨ Ω И ı æ ƀ ᵱ ل 15 ← ヽ 3 Ѧ ı ƫ ڳ ѽ ' ĩ 10 ← ヽ 2 Ѧ

ᵱ ل ʓ æ 1 χ ᵱ ل ICMPv6 ï ă θ ² ╦ Ụ ⃞ ∧ گ ھ ' ʜ 1 ヽ 100 Ѧ

```
Ruijie(config)# ipv6 icmp error-interval too-big 1000 100
```

2 χ ᵱ ل Ʊ Ę ICMPv6 Ţ ę ï ă ⃞ ∧ گ ھ ' ʜ 1 ヽ 10 Ѧ

```
Ruijie(config)# ipv6 icmp error-interval 1000 10
```

₅ ⱬ Ä │ Æ ŧ **show running-config** ¶ ˜ ᵱ ل

ώ ˜ ʒ Ụ -

Ẃ ȸ ę ś -

Ẉ ᴶ ᵱ ″ -

3.5 ipv6 enable

Ã ᵏ ì Æ IPv6 в ɲ

ipv6 enable

ʜ ȣ ì Æ IPv6 в ɲ

no ipv6 enable

ν ″ Ω ᵱ ″

ν ″ Ω	ώ ك
-	-

ƚ ᵱ ل ʜ ȣ

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

ƚ ヿ ˛ 14

Æ ŧ ″ Y Ṁ ῶ 2 ヽ Ä Ã ı Ꝋ ĕ Ã ì Æ i ⃞ IPv6 ı Ĩ ı ĩ ƥ ì Æ ï ᵱ ل **ipv6 enable** ᵘ ɲ ı ‾ ĩ ´ ì ƥ ì Æ ï ᵱ ل ˝ IPv6 ş χ

þ ' ƥ ì Æ i ڀ ɻ˝ IPv6 ş χ ɑ ψ ì Æ IPv6 ı ǐ ŏ ɦ ʊ ɛ̆ Ã ı o ÆÆ ɾ **no ipv6 enable** Ĉ j ǐ ʜ ɔ̌ IPV6 ı ǐ

ₛ ᴈ Ά ▏ ᵑ ص **show ipv6 general-prefix** ˡ Ꞷ ɥ ˩ ˙ Ţ ɻ ă ı ᵽɻ㊋ᵑ ŧ ˙ ʌ

ώ˜ ʒ Ụ -

Ẃ ȣ ᶎ ئ -

Ẉ ᴶ ᵽ ˝ -

3.7 ipv6 hop-limit

ᵽɻ ʌ ڜ ᴅ Ḥ ĭ ă㊋ᵽ˝Ꝙ

ipv6 hop-limit *value*

Õ ᵸ ƛ ᵽɻ

no ipv6 hop-limit

ν ˝Ꝙ ᵽ ˝	ν ˝Ꝙ	ώ ك
	value	ᵽ˝Ꝙ Ȣ ı„ ƀ ĩ 1 --- 255

ƛ ᵽɻ ѫ ɲ Ȣ ĩ 64

ᵘ ɲ ₩ Ã

ᵴ ṕ ₩ Ã

ƛ ʎ̣ 14

Æ ŧ ˝ Y Ṁ Ǐ ᵘ ɲ ᴱ Ḿ ᴅ Ḥ ĭ ă ɨ ᷒ ı Ḿ ^ ˝ I

. ɻ ᴀ

3.8 ipv6 mtu

ᵽ⅃ IPv6 ʏ ѡ ᶻ ҽ ᵴ ɒ ʄ ɛ MTU ζ

ipv6 mtu *bytes*

Õ ʰ ⅄ ᵽ⅃

no ipv6 mtu

v ″Ϙᵽ ″

v ″Ϙ	ѡ ك
bytes	IPv6 ʏ ѡ ᶻ ҽ ᵴ ɒ ʄ ɪ Ϙ È ` ₦ ɒ ʁ ɪ„ ƀ 1280~1500(ѡ ᶻ Ө ᴘ ì Æ mtu ں ɪ j ª ì Æ ɻ ʒ ѡ ᶻ Ө j ª)

⅄ ᵽ⅃ ⅄ ɲ ì Æ ᵘ ᵑᵬ mtu ᵽ⅃ Ө ª

ᵘ ᵑᵬ ₩ Ã ì Æ ₩ Ã

⅄ ᴖ 14

Æ ŧ ″Y Ṁ ƀ ˈ Ⱥ IPv6 ĭ ă ʌ ص IPv6 MTU ᶻ ɳ ɪ RGOS ʂ ţ ỗ ɦ Ḿ ĭ ă ف Φ ″I ʿ ″A õ ƥ ª ᵻ ת ⅃ ᵮ i Ф ᵵ ɪ IPv6 MTU “ã»ѥtȣ ÿ % « g ĩ $

	value	

	14
	1 GigabitEthernet 0/1 100

```
Ruijie(config)# interface GigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# ipv6 nd cache interface-limit 100
```

	show run
	-
	-
	-

3.10 ipv6 nd dad attempts

(NS)

ipv6 nd dad attempts *value*

no ipv6 nd dad attempts

	value	(NS) Ipv6 0-600 1

	1

	14
	"tentative"
	1 GigabitEthernet 0/1
	`Ruijie(config-if-GigabitEthernet 0/1)# ipv6 nd dad attempts 3`
	show ipv6 interface DAD
	-
	-
	-

3.11 ipv6 nd dad retry

ipv6 nd dad retry *value*

ipv6 nd dad retry

' ̧A ₅ ╝ ≡ õ˙ ↓ ı Í ş χ Ṅ ı Œ* ŃÆ ŧ

ف ل ğ æ 1 χ Ń ώ ̧ ʰ ş χ˙ ϑ ₅ ╝ ڑ ك ₥ 10s

```
Ruijie(config)# ipv6 nd dad retry 10
```

₅ ж Ä | ̧ ص **show run** ı Œ˜ ˙ ف ل ĩ ε ı ώ̃

ώ˜ ʒ Ụ -

Ńẘ ẓ ئ -

Ẉ ᴶ ب ˝ -

3.12 ipv6 nd managed-config-flag

ف ل ث ˈ ʰ ϗ ɔ ĭ ă ₳ ₪ ɒ **managed address configuration** ɓ ‰Ő ɥ

ipv6 nd managed-config-flag

¨ ڻ Í ‰Ő ɥ

no ipv6 nd managed-config-flag

v ¨Ọ ب ˝

v ¨Ọ	ώ ك
-	-

ỉ ف ل ỉ ṇ ف ل

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

ỉ ᴖ. 14

Æ ŧ ˝ Y Ṁ Í ‰Ő ɥ ₪ ɸ ل ˜ ħ˜ ώ˙ Í ث ˈ ʰ ϗ ɔ ₪ ʒ ĩ ε ļ Æ ŧ ϑ ↑ õ ₅ ʊ ف ل ᛚ n ɱ ş χ þ ˈ ف ل ˜ Í ‰Ő ɥ ı Ṅ Æ ŧ ϑ ↑ õ ₅ ʊ ف ل ᛚ n ê ş χ ı ε „ j Æ ŧ

ف ل ğ æ 1 χ ɲ GigabitEthernet 0/1 ì Æ i ف ل ث ˈ ʰ ϗ ɔ ĭ ă ₳ ₪ ɒ **managed address configuration** ɓ ‰Ő ɥ

```
Ruijie(config-if-GigabitEthernet 0/1)# ipv6 nd managed-config-flag
```

₅ ж Ä | ̧ ص **show ipv6 interface** ¶ ˜ ì Æ i ف ل ₪ ω ↑ õ ş χ ف ل ‰Ő

ώ˜ ʒ Ụ -

Ńẘ ẓ ئ -

	-

3.13 ipv6 nd ns-interval

ipv6 nd ns-interval *milliseconds*

no ipv6 nd ns-interval

milliseconds	1000-4294967295

	14
	-
	-
	-

3.14 ipv6 nd other-config-flag

other stateful configuration **ipv6 nd other-config-flag**

no ipv6 nd other-config-flag

	-	-

	14
	dhcpv6 IPv6 managed address configuration other stateful configuration
	1 GigabitEthernet 0/1 **other stateful configuration**

	ﾚ 30 ｣
preferred-lifetime	ﾇ ゅ･ ち ｰ ｈ ｚ ｮ ･ ﾉ ｧ ｎ ㎜ ち ﾚ ゐ ゅ ･H ゥ ｉ ｐ Ö ｇ 0-4294967295 ｉ ﾚ 7 ｣
at *valid-date preferred-date*	ゆ ﾉ ｚ ｮ･ ﾉ ゐ ゅ ｰ ち ﾚ ゐ ゅ ･A ฿ ･H ゥ ｉ A ฿ ･H ゥ ｉ Œ ｈ ゅ ｗ ｎ ･H ‘ ち ´ ~ ･
infinite	´ ~ ⇔ふ㎜ゐ ゐ
default	ゆ ﾉ ｌ Æ ｒ ･ﾚ v ･Ω ゃ ﾉ
no-advertise	´ ~ Ｉ･ ﾉ ｊ ｑ ち ｰ ｈ ｚ ｮ
off-link	ﾇ ｇ ∧ グ IPV6 ｉ ă ･H ｂ ' ´ ･ ｓ ｘ ･ ﾉ ш ゃ ･ ﾉ ｏ ψ ㎚ ㎜ Ｉ ´ ･ ｓ ｉ ｇ ª ｇ ち(on-link) ｉ ｉ ｌ ´ ｉ･ ｚ ･ ゆ ゆ ﾉ ﾞ Ｉ ﾚ ° ´ ~ Ｉ･ ﾉ ｊ ｒ ｒ ｙ on-link ･ Ă
no-autoconfig	ｰ

	Ķ ᾰ ἰ ἶ š ő в п ἄ x ő ُ ٩ ″ ɪ ـٖ x ᾳ Ķ в ʐ л ʙ ـٖ ɪ ¢

۵ ج Ά |	ڼ ص **show ipv6 interface** [*interface-id*] **ra-info** ¶ ˜ ث ۱ ʜ ʒ ɔ ï ă ₳ ⏺ ʌ ȝ Ụ
ώ˜ ȝ Ụ	-
Ẃ ð ڇ ئ	-
Ẉ ᴶ ب ˝	-

3.16 ipv6 nd ra-hoplimit

ب ـ ì Æ i ʌ گ ⏺ ث ۱ ʜ ʒ ɔ (RA) ï ă ⏺ ب ″ Ọ
ipv6 nd ra-hoplimit *value*

Õ ʜ ỉ ب ـ
no ipv6 nd ra-hoplimit

v ″ Ọ ب ˝

v ″ Ọ	ώ ك
value	ث ۱ ʜ ʒ ɔ (RA) ï ă ب ″ Ọ ⏺ Ë ı п Ë ‟ ḫ 0-255 ỉ ĩ 64 ب

ỉ ب ـ ỉ Ë ĩ 64

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

ỉ ٨ ̣ 14

Æ ɾ ″ Y Ṁ -

ب ـ ʓ æ 1 χ ḫ GigabitEthernet 0/1 ì Æ i ب ـ ʌ گ ث ۱ ʜ ʒ ɔ ï ă ⏺ ب ″ Ọ ₥ 110

```
Ruijie(config-if-GigabitEthernet 0/1)# ipv6 nd ra-hoplimit 110
```

۵ ج Ά |	ڼ ص **show ipv6 interface** [*interface-id*] **ra-info** ¶ ˜ ث ۱ ʜ ʒ ɔ ï ă ₳ ⏺ ب ″ Ọ ں ȝ Ụ
ώ˜ ȝ Ụ	-
Ẃ ð ڇ ئ	-

Ẉ ᴶ ب ˮ -

3.17 ipv6 nd ra-interval

پ ـ ا Æ i ∧ گ ن ᵻ ᴴ ʒ ᵓ (RA) ï ă ژ ك

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

Õ ᵸ ƛ پ ـ ا

no ipv6 nd ra-interval

v ˝Ꝙ ب ˮ

¶

3.18 ipv6 nd ra-lifetime

ﺑﻠ ﺍ Æ i ∧ گ ث ٠ ʜ ʒ ɔ (RA) ï ă ﻠ ɒ ث ٠ ʜ ɪ è Ω ɓ

ipv6 nd ra-lifetime *seconds*

Õ ʜ ﺍ ﺑﻠ

no ipv6 nd ra-lifetime

v ″Ω ب ″	v ″Ω	ώ ك
	seconds	Í ф ɨ Ă ﻫ Í ﺍ Æ i ﺍ ﺍ ф ɨ ﺍ ώ ϖ ̀H ژ ɪ ⊓ Ë „ ɒ 0-9000 ﺍ ĩ 1800 ٧

ﺍ ﺑﻠ 1800 ٧

ᵘ ɲ ₩ Ã ﺍ Æ ₩ Ã

ﺍ ٨ ̣ 14

Æ ɾ ″ Y Ṁ ɒ ث ٠ ʜ ɪ è Ω ɓ È ɻ è ɒ ⅛ Ⱥ ث ٠ ʜ ʒ ɔ (RA) ï ă ﻠ ɪ Í Ë ″ Y ˝ ˝ Í ﺍ Æ ″ Ⱥ ɒ ﺝ ث i ʒ ɪ Ɯ Ṅ Í ф ɨ Ă ﻫ ﺍ ф ɨ ̀H ژ ɒ ' ф ﻠ ﺍ Ë ﻫ 0 ˊ ˜ j W ɋ Ę Ă ﺍ ф ɨ Ę ф ﻠ ˚ 0 Ë ̀H ɻ ├ Ỿ Í Ë ọ ɤ ﺍ ٧ ﺍ ф ɨ ∧ گ ث ٠ ʜ ʒ ɔ (RA) ï ă ﺍ ژ ك (ra-interval)

ﺑﻠ ʒ æ 1 χ ɒ GigabitEthernet 0/1 ﺍ Æ i ﺑﻠ ∧ گ ث ٠ ʜ ʒ ɔ ï ă ﺍ ɪ è Ω ﻫ 2000 ٧

```
Ruijie(config-if-GigabitEthernet 0/1)# ipv6 nd ra-lifetime 2000
```

ɵ ﺝ Ά | ﺹ ص **show ipv6 interface** [*interface-id*] **ra-info** ¶ ˜ ث ٠ ʜ ʒ ɔ ï ă ﻠ % ث ٠ ʜ ﺍ ɪ ᵘ Ω

ώ ˜ ʒ Ụ -

Ẃ ð ﺝ ئ -

Ẉ ᴶ ب ″ -

3.19 ipv6 nd ra-mtu

ﺑﻠ ﺍ Æ i ∧ گ ث ٠ ʜ ʒ ɔ (RA) ï ă MTU

ipv6 nd ra-mtu *value*

Õ ʜ ﺍ ﺑﻠ

no ipv6 nd ra-mtu

v ̈Ϙ ب ˝	v ̈Ϙ	ώ ك
	value	ت ᵻ ʰ ʂ ᵓ (RA) ĭ ă MTU È ɟ Ë ı π Ë„ ƍ 0-4294967295 ỉ ћ IPv6 MTU Ȝ ˈY ₇

ỉ ٻ ل	ل ᴧ ì Æ IPv6 MTU Ë
ᵘ ɲ ₩ Ã	ì Æ ₩ Ã
ỉ ᴧ.	14
Æ ɬ ˝ YṀ	þ ˈ ˝ Y ẗ ћ 0 ı ت ᵻ ʰ ʂ ᵓ ő j h Ṿ MTU J̌ °
ٻ ل ʖ æ	1 χ ƍ ì Æ i ٻ ل ∧ گ ت ᵻ ʰ ʂ ᵓ ĭ ă MTU ћ 1400 È `

```
Ruijie(config -if)# ipv6 nd ra-mtu 1400
```

₅ ᴈ Ά |	۾ **show ipv6 interface** [*interface-id*] **ra-info**¶ ˜ ت ᵻ ʰ ʂ ᵓ ĭ ă ʌ mtu Ȝ Ṿ
ώ˜ Ȝ Ṿ	-
Ẃ ȸ ᶎ ئ	-
Ẉ ᴶ ب ˝	-

3.20 ipv6 nd reachable-time

ٻ ل ∧ ṗ ɋ ɲ ћ ˈ ` ژ H ژ

ipv6 nd reachable-time *milliseconds*

Õ ʱ ỉ ٻ ل

no ipv6 nd reachable-time

v ̈Ϙ ب ˝	v ̈Ϙ	ώ ك
	milliseconds	∧ ṗ ɋ ɲ ћ ˈ ` ژ H ژ ı Ɋ ← ٧ ћ ɒ ʮ ı „ ƍ χ 0-3600000 ỉ ћ 30 ٧

ỉ ٻ ل	ƍ ت ᵻ ʰ ʂ ᵓ ĭ ă (RA) ʌ ỉ Ë ћ 0 ε ´ ˜ ˈ ˝ Y ẗ ζ ı Ф ₹ ₅ ţ ƍ ∧ ṗ ∧ ٨ Φ ћ ʌ ∧ ṗ ɋ ɲ ћ ˈ ` ژ Y ᴧ ` H ژ ћ 30000ms(30 ٧)
ᵘ ɲ ₩ Ã	ì Æ ₩ Ã

	14
	1 GigabitEthernet 0/1 ipv6 nd reachable-time 1000000

```
Ruijie(config-if-GigabitEthernet 0/1)# ipv6 nd reachable-time 1000000
```

show ipv6 interface

	-
	-
	-

3.21 ipv6 nd stale-time

ipv6 nd stale-time *seconds*

no ipv6 nd stale-time

seconds	stale 0-86400 3600

	stale 1h
	14
	stale
	1 stale 600s

```
Ruijie(config)# ipv6 nd stale-time 600
```

ν ΌΩ ν	ν ΌΩ	ώ ك
	ipv6-address	∧ ṗ IPV6 ş χ ι ọ ε ٢ Ỉ RFC4291 ḧ Θ ş χ ´ ~ ė Ã
	interface-id	΅Y ḧ Ỉ ∧ ṗ Ά ḡ ∕ ∧ ì Æ ε γ ὐ Routed Port,L3 AP Æ ⊐ SVI ì Æ ζ
	hardware-address	∧ ṗ ჯ ت ş χ ι o Ѡ XXXX.XXXX.XXXX ´ ~ 48 ӌ MAC ş χ ι 'X' ´ ~ ״ Лѡ ΌΩ

ƛ ٮ ل ≡ ῶ ٮ ل γ Ṃ ̄ ỗ ∧ ṗ

ᵘ ɲ ₩ Ã ∾ ṕ ٮ ل ₩ Ã

ƛ ٨ ̣ 14

Æ ŧ ΅Y Ṁ Ỉ ᵘ ɲ ٨ ɻ ARP ᵘ ɲ ι ̄ ỗ ∧ ṗ ᴱ ΐ ٮ ل ḡ Ã ᵏ IPv6 ʁ ɲ ì Æ i ι ḅ ' ɩ ٮ ل ∧ ṗ Ţ ل ں ص NDP ę ̇ Ẋ è Ϋ ḡ ∧ ṗ ´ ѧ ι ѻ ψ Ỉ ʊ ỗ ɨ ά ∧ ṗ Ṅ ѕ ʊ ჯ ΅Ω ѭ ̄ ỗ ٮ ل ̄ ỗ ∧ ṗ ḅ ' ῶ ѽ ι Ṅ Ở ΐ Reachable ↑ ỗ ṇ ѽ ̄ ỗ ∧ ṗ ι ΐ ΅Y ٮ ل ̄ ỗ ∧ ṗ IPV6 ş χ ι ሌ ì Æ i ٮ ل ş χ j Ш ٮ ε j ḡ Ỉ ì Æ γ IPV6 ş χ ل ѣ ɻ ά ሌ Ỉ ì Æ ş χ ̇ Ɯ ζ ι ℅ Ḥ ΅Ω Ữ γ j ɦ ΅Y ̄ ỗ ∧ ṗ ΅Y ḧ mac ş χ ჯ ∧ ṇ ѽ ̄ ỗ ∧ ṗ inactive ↑ ỗ ι ׀ Ѡ ں ص **show ipv6 neighbor static** ᵘ ɲ ‼ ~ Ỉ ̄ ỗ ∧ ṗ ѽ ῶ ѽ ό ↑ ỗ

Æ ŧ **clear ipv6 neighbors** ᵘ ɲ Ṅ ▌ ں ΅Ά ῶ ʊ ỗ ę ̇ (o ں ص NDP) ∧ ṗ

ٮ ل ڎ æ 1 χ ḡ SVI 1 i ٮ ل Ѧ ̄ ỗ ∧ ṗ

```
Ruijie(config)# ipv6 neighbor 2001::1 vlan 1 00d0.f811.1111
```

ѕ ج Ά | Æ ŧ **show ipv6 neighbors** ᵘ ɲ ‼ ~ ∧ ṗ ʒ Ụ

ώ ~ ʒ Ụ -

Ẃ ծ ჯ ئ -

Ẉ ᴶ ب ״ -

3.25 ipv6 ns-linklocal-src

∧ ڜ ∧ ṗ ت ∂ `H Ṅ Ặ ̇ Æ ŧ ჯ ت ş ş χ Ă ѭ ◊ ş χ

ipv6 ns-linklocal-src

∧ ڜ ∧ ṗ ت ∂ `H j Ặ ̇ Æ ŧ ჯ ت ş ş χ Ă ѭ ◊ ş χ ι ắ ΐ ⁞ ΅Ω ´ IPv6 ş χ ΅Y RFC3484 ǰ ΅Ο Æ ŧ ჯ ت ş ş χ ắ ắ ∾ ٦ ɒ Ḥ ş χ

no ipv6 ns-linklocal-src

ν ΌΩ ν	ν ΌΩ	ώ ك

-	-

ȷ ٮ ل ∧ گ ∧ ṗ ت ∂ ٰH ı Ở ĩ Ꝍ ج ت ş ş ϫ Ă ѭ ◊ ş ϫ

ᵘ ɲ ₩ Ã ২ ṕ ٮ ل ₩ Ã

ȷ ٰ ۱ ̣ 14

Æ ɨ ″ Y Ṁ -

ٮ ل ڎ æ 1 χ ƥ ∧ گ ∧ ṗ ت ∂ ٰH j Ặ ̇ Æ ɨ ج ت ş ş ϫ Ă ѭ ◊ ş ϫ

```
Ruijie(config)# no ipv6 ns-linklocal-src
```

ₛ ڃ Ä | -

ώ ˜ ʒ Ụ -

Ẃ ȸ ج ئ -

Ẉ ᴶ ب ″ -

3.26 ipv6 redirects

Ã ᵏ ICMPv6 ي ẗ ᵇ

ipv6 redirects

ʜ ڑ ICMPv6 ي ẗ ᵇ

no ipv6 redirects

v ″ Ꝙ ب ″

v ″ Ꝙ	ώ ك
-	-

ȷ ٮ ل ȷ Ã ᵏ ICMPv6 ي ẗ ᵇ

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

ȷ ٰ ۱ ̣ 14

Æ ɨ ″ Y Ṁ ″ Ä õ ICMPv6 ج ئ ĩ ă Ꝙ ̃ Ꝙ ɣ ҽ ژ ھ ' ĩ õ ں ̇ ı ȷ ⅛ ۷ ت ѡ ^ ' Ꝍ ∧ گ 10 Ѧ ج ئ ICMPv6 ج ئ ĩ ă (10pps)

3.28 show ipv6 address

Ǐ ˜ IPv6 ş ẋ ȝ Ụ

show ipv6 address [*interface-name*]

v ̈Ọ ب ″

v ̈Ọ	ώ ك
interface-name	ì Æ ᵾ Ч ı ỉ Ǐ ˜ ̈A ω IPv6 ş ẋ

ᵘ ɲь ₩ Ẫ ᵉ ₩ Ẫ

ỉ ۱ ̣ 14

Æ ɨ ″Y Ṁ -

ب ل ᵹ æ 1 χ ˜ Ф ᵾ ب ل ″A ω IPv6 ş ẋ

```
 Ruijie#show ipv6 addr
Global unicast address limit: 1024, Global unicast address count: 2
Tentative address count: 3,Duplicate address count: 0
Preferred address count: 0,Deprecated address count: 0
  GigabitEthernet 0/5
    2003:1::23/64                              Tentative
  Preferred lifetime: INFINITE, Valid lifetime: INFINITE
    fe80::2d0:f8ff:fefb:deb2/64                  Tentative
  Preferred lifetime: INFINITE, Valid lifetime: INFINITE
    2005:1::1111/64                            Tentative
  Preferred lifetime: INFINITE, Valid lifetime: INFINITE
Ruijie#
```

2 χ ˜ Ф ᵾ ì Æ GigabitEthernet 0/1 i ب ل IPv6 ş ẋ

```
 Ruijie#show ipv6 addr gi 0/5
Global unicast address count: 2
Tentative address count: 3,Duplicate address count: 0
Preferred address count: 0,Deprecated address count: 0
    2003:1::23/64                             Tentative
  Preferred lifetime: INFINITE, Valid lifetime: INFINITE
    fe80::2d0:f8ff:fefb:deb2/64                  Tentative
  Preferred lifetime: INFINITE, Valid lifetime: INFINITE
    2005:1::1111/64                            Tentative
  Preferred lifetime: INFINITE, Valid lifetime: INFINITE
Ruijie#
```

There is	Ẹ̇ è ƍ ɲ ɾ̇ ʌ A Ẅ
IPv6 general prefix	ɲ ɾ̇ ʌ ᵊ Ч
acquired via	ɲ ê Ά Ã
Prefix/len	ʊ ч ʌ° ˊ

ώ˜ ȝ Ụ -

Ẉ ᴶ ب ˝ -

3.30 show ipv6 interface

Ǐ ˜ IPV6 ì Æ ȝ Ụ

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

v Ẅب ˝

v Ẅ	ὼ ك
interface-id	ì Æ ε γ ὺ Ꝏ θ ɻ ì Æ aggregateport ì Æ SVI ì Æ ζ ι ɻ̊ Ǐ ˜ Ά õ ì Æ
ra-info	¶ ˜ Ǐ ì Æ i ⱨ ʌ گ RA ï ă v Ẅ ȝ Ụ
brief	Ǐ ˜ ì Æ ℵ ɻ ȝ Ụ ε ì Æ ↑ ő ⁼ ş χ ȝ Ụ ζ

ᵘ ɲь ₩ Ã

ɻ̊ ʌ. 14

Æ ɾ ″ Y Ṁ ɳ ص Ǎ ᵘ ɲь ˡ Ꝏ¶ ˜ IPV6 ì Æ i ş χ ب ɻ ND ب ɻ Ꝏ ȝ̓ ⱨ ʌ ɯ ȝ Ụ

ب ɻ ʓ̈ æ 1 χ Ǐ ˜ IPV6 ì Æ ȝ Ụ

```
Ruijie# show ipv6 interface vlan 1
Interface vlan 1 is Up, ifindex: 2001
address(es):
Mac Address: 00:00:00:00:00:01
INET6: fe80::200:ff:fe00:1 , subnet is fe80::/64
INET6: 2001::1 , subnet is 2001::/64 [TENTATIVE]
Joined group address(es):
```

```
ICMP error messages limited to one every 10 milliseconds
ICMP redirects are enabled
ND DAD is enabled, number of DAD attempts: 1
ND reachable time is 30000 milliseconds
ND advertised reachable time is 0 milliseconds
ND retransmit interval is 1000 milliseconds
ND advertised retransmit interval is 0 milliseconds
ND router advertisements are sent every 200 seconds<240--160>
ND router advertisements live for 1800 seconds
```

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

[TENTATIVE] INET6

ANYCAST	
TENTATIVE	(DAD)
DUPLICATED	
DEPRECATED	
NODAD	
AUTOIFID	EUI-64
PRE	
GEN	

IPV6 RA

```
Ruijie# show ipv6 interface vlan 1 ra-info
vlan 1: DOWN
RA timer is stopped
waits: 0, initcount: 3
```

```
Prefixes: (total: 1)
fec0:1:1:1::/64(Def,Auto,vltime:2592000,pltime:604800, flags: LA)
```

ra-info

RA timer is stopped (on)	
waits	
initcount	RA
RA(out/in/inconsistent)	Out in inconsistent
RS(input)	
Link-layer address	
Physical MTU	MTU
!M | M	!M managed-config-flag M:
!O | O	!O other-config-flag O

ra-info (Prefix)

total	
fec0:1:1:1::/64	
Def	
Auto | CFG	Auto IPV6 , CFG
!Adv	
vltime	
pltime	
L | !L	L on-link !L
A | !A	A auto-config , !A

IPV6

```
Ruijie#show ipv6 interface brief
```

```
GigabitEthernet 0/1            [down/down]
        2222::2
        FE80::1614:4BFF:FE5C:ED3A
```

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

3.31 show ipv6 neighbors

Ǐ ˜ IPV6 ▣ ʌ ṗ ˊ

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

È ɟ ɹ ᵱ χ

È ɟ	ب ˜
IPv6 Address	ʌ ṗ IPV6 ş χ
Linklayer Addr	ჯ ت ş χ o Mac ş χ ı ḅ ' ف ' ệ ˙ ¨ Ǐ ˜ incomplete
Interface	Ĵ ʌ ṗ ¨A ᵽ ì Æ
State	ʌ ṗ ↑ ő χ state/H(R) STATE Ë ḅ ï χ INCMP(Incomplete)— Ĵ ʌ ṗ ş χ ɹ ‘* ᵽ ف Φ ѧ ı ʌ ṗ ت ∂ (NS) ĭ ă Ţ ɻ ʌ گ Ꮒ ĩ ف ≡ ω̃ ώ ˙ ʌ ṗ Ẓ ヽ ĭ ă (NA) REACH(Reachable) —ˊ˜ ϰ Ф ł ˙ ʌ ṗ ĩ ف ٹ ı ᵽ Ĵ ↑ ő ᵇ ʌ ṗ ʌ گ ĭ ă `H j ᵴ ɻ ɛ ᵘ υ Ă STALE —ˊ˜ ʌ ṗ ɑ ɲ ѭ ı ˙ ژ H ژ Ţ ɻ ˙ Ω ı ɾ ᵽ Ĵ ↑ ő `H Ф ł j ᵴ ɻ ɛ ᵘ υ Ă ´ ˙ ω̃ ĭ ă ʌ گ ˙ Ĵ ʌ ṗ i ı % `H o Ṅ ᵏ υ NUD ( Neighbor Unreachability Detection ) DELAY—ˊ˜ ω̃ ĭ ă ᵇ STALE ↑ ő ʌ ṗ ʌ گ ı % `H ↑ ő ٠ STALE ჯ Ѿ ѭ DELAY ↑ ő ı ᵽ DELAY_FIRST_PROBE_TIME seconds(5 ヽ) ɲ ḅ ' ≡ ω̃ ώ ˙ ʌ ṗ ı ژ ớ ٹ ̃ ʒ Ụ ı ۹ ψ ↑ ő Ṅ ٠ DELAY ჯ Ѿ ѭ PROBE ı ª `H ᵇ Ĵ ʌ ṗ ʌ گ ʌ ṗ ت ∂ ĭ ă (NS) ı* Ã ᵏ υ NUD PROBE—ˊ˜ NUD Ţ ɻ ᵏ υ ı ₅ ⅄ ʌ ṗ ı ژ ớ ı ⅛ ⅀ RetransTimer milliseconds ᵇ ʌ ṗ ʌ گ ʌ ṗ ت ∂ (NS) ĭ ă ˙ ώ ˙ ˜ ʌ ṗ Ẓ ヽ ă ą̃ ʌ گ ʌ ṗ ت ∂ ĭ ă Ѿ ᵩ Ţ ژ ˙ i ں Ë MAX_UNICAST_SOLICIT(3 Ѧ) ?—ˊ˜ ˙ ˜ ↑ ő /R—ˊ˜ ɲ ѭ ʌ ṗ ĩ Ѧ Ф ł /H—ˊ˜ ɲ ѭ ʌ ṗ ĩ Ѧ Ⴟ
Age	ˊ˜ ʌ ṗ ɑ ɲ ѭ ı ˙ ژ H ژ ı '-‘ˊ˜ ⇔ ف ĩ ı ژ ı ├ Ỿ Ḿ ˗ ő ب ɻ ʌ ṗ ˊ ° Ṅ Ə ˚ h گ ĩ ε ı ژ ’expired’ ˊ˜ ʌ ṗ ɑ ɲ ѭ ı ژ H ژ Ţ ɻ ˙ Ω ı ヽ ể ᵾ ʌ NUD ₅ ⅄
Asked	ˊ˜ ᵽ ɹ ‘ ʌ ṗ ჯ ت ş χ `H Ţ ɻ ᵇ ʌ ṗ ʌ گ ʌ ṗ ت ∂ (NS) Ѿ ᵩ

3 χ Ǐ ˜ ˗ ő ʌ ṗ ↑ ő

```
Ruijie# show ipv6 neighbors static
IPv6 Address      Linklayer Addr  Interface                State
2001:1::1         00d0.f822.33ab  GigabitEthernet 0/14     ACTIVE
2001:2::2         00d0.f822.33ac  VLAN 1                     INACTIVE
```

È ɟ ɹ ᵱ χ

È ɟ	ب ˜
IPv6 Address	˗ ő ʌ ṗ IPV6 ş χ

Interface	Interface name
State	INCOMPLETE—Address resolution is being performed on the neighbor entry. STATE REACHABLE ACTIVE—Reachable INACTIVE—Unreachable STALE—The reachability of the neighbor entry is unknown. The device has not confirmed whether the neighbor entry is reachable. DELAY—The device has sent a packet to the neighbor entry.

Default Level -

Usage Guidelines -

3.32 show ipv6 neighbors statistics

Function

Display IPv6 neighbor statistics.

Command Mode

show ipv6 neighbors statistics

Parameter Description

Parameter	Description
-	-

Platform Description

Default

14

Usage Guidelines

-

Example

1. Display IPv6 neighbor statistics.

```
Ruijie#show ipv6 neighbor statistics

Memory: 0 bytes
Entries: 0
  Static: 0,Dynamic: 0,Local: 0
  Incomplete:0, Reachable:0, Stale:0, Delay:0, Probe:0
Ruijie#
```

2. Display IPv6 neighbor statistics.

```
 Ruijie#show ipv6 neighbor statistics all

IPv6 neighbor table count: 1
Static neighbor count: 0(0 active, 0 inactive)
```

```
Total
Memory: 0 bytes
Entries: 0
  Static: 0,Dynamic: 0,Local: 0
  Incomplete:0, Reachable:0, Stale:0, D    :0  Probe:0;

Global
Memory: 0 bytes
Entries: 0
  Static: 0,Dynamic: 0,Local: 0
  Incomplete:0, Reachable:0, Stale:0, Delay:0, Probe
Ruijie#
```

3.33 show ipv6 packet statistics

Ǐ ˜ IPv6 ï ă ⁄ ɯ ʒ Ụ

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

v ̈Ọ ب ″	v ̈Ọ	ὼ ك
	total	″A õ ì Æ ⁄ ɯ ʒ Ụ Ở ⁼ ỉ ɳ Ǐ ˜ ″A õ ì Æ ⁄ ɯ ɵ ⁼ ı Ĉ Ǐ ˜ ⅛ Ѧ ì Æ ⁄ ɯ Ө
	interface-name	ì Æ ᵾ Ч

ᵘ ɲ ₩ Ã ₰ ₩ Ã

ỉ ˥ 14

Æ ŧ ″ Y Ṁ -

ب ɹ ⱬ æ 1 χ ¶ ˜ IPv6 ï ă ⁄ ɯ ʒ Ụ Ở ⁼ ⁼ ⅛ Ѧ ì Æ i ⁄ ɯ ʒ Ụ

```
Ruijie#show ipv6 pack statistics
Total
  Received 0 packets, 0 bytes
    Unicast:0,Multicast:0
    Discards:0
      HdrErrors:0(HoplimitExceeded:0,Others:0)
      NoRoutes:0
      Others:0
  Sent 0 packets, 0 bytes
    Unicast:0,Multicast:0
  GigabitEthernet 0/5
  Received 0 packets, 0 bytes
    Unicast:0,Multicast:0
    Discards:0
      HdrErrors:0(HoplimitExceeded:0,Others:0)
      NoRoutes:0
      Others:0
  Sent 0 packets, 0 bytes
    Unicast:0,Multicast:0
Ruijie#
```

2 χ ¶ ˜ IPv6 ï ă ⁄ ɯ ʒ Ụ Ở ⁼

```
 Ruijie#show ipv6 pack statistics total
Total
```

```
  Received 0 packets, 0 bytes
    Unicast:0,Multicast:0
    Discards:0
      HdrErrors:0(HoplimitExceeded:0,Others:0)
      NoRoutes:0
      Others:0
  Sent 0 packets, 0 bytes
    Unicast:0,Multicast:0
Ruijie#
```

Total	GigabitEthernet 0/5
Received	IPv6
Unicast	IPv6
Multicast	IPv6
Discards	IPv6
HdrErrors	IPv6
HoplimitExceeded	
Others	IPv6
NoRoutes	IPv6
Others	IPv6
Sent	IPv6 IPv6

-

-

3.34 show ipv6 raw-socket

IPv6

show ipv6 raw-socket

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Æ ᵻ ″YṀ -

ᵽ ᒧ ᵷ̈ æ 1 χ¶ ˜ ″A ῶ IPv6 ⊐ Ḋ˳ ì È

```
Ruijie# show ipv6 raw-socket
Number Protocol Process name
1      ICMPv6   vrrp.elf
2      ICMPv6   tcpip.elf
3      VRRP     vrrp.elf
Total: 3
```

È ᵻ ᒪ ᵎ χ

È ᵻ	ᵽ ″
Number	ẑ ᴺ
Protocol	ʁ ᵑ ᴺ
Process name	ف ᐟ ᵊ ᐟ
Total	Ở″Ω

ώ˜ ʒ Ụ -

Ẉ ᴶ ᵽ ″ -

3.35 show ipv6 sockets

Ǐ ˜ ″A ῶ IPv6˳ ì È ı ᑊ ᑫ˜ ᴈ ᵤ Ᵽ UDP ᐟ Æ ⊐ TCP ᐟ Æ Ḿ ᵘ ώ ě Ȯ ᵑ

show ipv6 sockets

ᵛ ″Ω ᵽ ″ [illegible]

ب ل ڎ æ 1 χ ˜ ¨A õ IPv6 ì È

```
Ruijie# show ipv6 sockets
Number Process name     Type    Protocol  LocalIP:Port  ForeignIP:Port  State
1      vrrp.elf         RAW     ICMPv6    :::58         :::0            *
2      tcpip.elf        RAW     ICMPv6    :::58         :::0            *
3      vrrp.elf         RAW     VRRP      :::112        :::0            *
4      rg-snmpd         DGRAM   UDP       :::161        :::0            *
5      rg-snmpd         DGRAM   UDP       :::162        :::0            *
6      dhcp6.elf        DGRAM   UDP       :::547        :::0            *
7      rg-sshd          STREAM  TCP       :::22         :::0            LISTEN
8      rg-telnetd       STREAM  TCP       :::23         :::0            LISTEN
Total: 8
```

È ڊ ڶ ڰ χ

È ڊ	ب ˝
Number	ẑ ᴺ
Process name	ڤ ٧ ᵃ ٧
Type	˷ ì È ٦ ڎ ı RAW ´ ˜ ⊐ Ḋ ˷ ì È ı DGRAM ´ ˜ ¨Ω ̃Ω ٧ ٦ ڎ ı STREAM ´ ˜ ╙ ٦ ڎ
Protocol	ʙ ɲ ᴺ
LocalIP:Port	ş IPv6 ş χ ⊐ ٧ Æ
ForeignIP:Port	Ḿ ٧ IPv6 ş χ ⊐ ٧ Æ
State	ᵗ õ ı ᴱ Ḿ IPv6 TCP ˷ ì È õ Ỳ Θ
Total	˷ ì È Ở ¨Ω

ώ ˜ ڎ Ụ -

Ẉ ᴶ ب ˝ -

3.36 show ipv6 udp

Ǐ ˜ ¨A õ IPv6 UDP ˷ ì È ı ᴵ Œ ˜ ڜ ᵤ Ᵽ UDP ٧ Æ Ḿ ᵘ ώ ě Ȯ ᴑ

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

Ǐ ˜ IPv6 UDP ˷ ì È ٨ ٧ ɰ Ө

show ipv6 udp statistics

v ¨Ω ب ˝

v ¨Ω	ώ ك

local-port *num*	ş ㄱ Æ N
peer-port *num*	Ḿ ㄱ ㄱ Æ N

ᵘ ɲЬ₩Ã ₌ ₩Ã

ƛ̂ ㄱ. 14

Æ ŧ ˝YṀ -

ب ل ڗ æ 1 χ¶ ˜ ˝A ω̃ IPv6 UDP

4 DHCP

4.1 address range

ļ ƥ DHCP ş χ − ʜ ŉ ĭ CLASS ï ″Y ĥ CLASS ″A Í ʿ ب ş χ ل ᵻ ƫ ş χ − class ب ل ₩ Ã ï **address range** ᵘ ᵑЪ

address range *low-ip-address high-ip-address*

Í ᵘ ᵑЪ **no** ė Ã ı Ɋ ڻ Í ل ᵻ ƫ

no address range

v ″Ƣ ب ″	v ″Ƣ	ώ ك
	low-ip-address	ل ᵻ ƫ ʌ ¥ Ḋ ş χ
	high-ip-address	ل ᵻ ƫ ʌ ₿ ş χ

ƛ ب ل ƛ ʜ ŉ ĭ CLASS ʿ ب ل ل ᵻ ƫ ı ש ת ₦ ş χ − ل ᵻ ƫ

ᵘ ᵑЪ ₩ Ã ş χ − CLASS ب ل ₩ Ã

Æ ŧ ″Y Ṁ Í ᵘ ᵑЪ Ɽ Server ب ل ψ ⅛ Ʌ CLASS Ḿ Ẓ Ʌ ل ᵻ ƫ ل ᵻ ƫ ƫ ọ ɛ ʞ Ḥ ş χ ˙ ɔ ş χ ı ˡ Ɋ ы ƿ ^ Ʌ CLASS ɵ ڑ ل ᵻ ƫ ƫ ᵽ ᵸ ƫ ʿ ″Y ″ ˝ ş χ − ʜ ŉ ĭ CLASS ı Ꮋ Ḿ Ẓ ل ᵻ ƫ ƫ ≡ ω ب ل ı ᵩ Í CLASS ש ת ل ᵻ ƫ ƫ ⁼ CLASS ″A ſ ş χ − ل ᵻ ƫ ƫ ᵌ ª

ب ل ʓ æ 1 χ ب ل ş χ − mypool0 ʜ ŉ ĭ class1 ل ᵻ ƫ ƫ 172.16.1.1 ɋ 172.16.1.8

```
Ruijie(config)# ip dhcp pool mypool0
```

address-manage

v ̈Ọ ب ̈

v ̈Ọ	ώ ك
-	-

ǰ ب ل -

ᵘ ɲ ₩ Ã ২ ṕ ب ل ₩ Ã

ǰ ۱ ̣ 14

Æ ŧ ̋Y Ṁ Ĵ ᵘ ɲ Ʀ ̂ Server ب ل ا ـ ا ب ᵀ supervlan Æ ŧ

ب ل ʒ æ 1 χ ڤ ২ AM h ̈ ؜ب ل ₩ Ã

```
Ruijie(config)#address-manage
```

ₛ ج Ά | ې **show run** ا ծ ب ل ă ا

ώ ̃ ʒ Ụ -

Ẃ ծ ج ئ -

4.3 bootfile

ɻ ḧ Θ DHCP į ̈A ٧ ǰ ᵏ ʊ ī ü ă ţ ᵉ ا ŧ DHCP ş χ − ب ل ᵘ ɲ **bootfile**
bootfile *file-name*

no ė Ã ا Ꞓ ɲ ╦ ḧ Θ
no bootfile

Õ ̛ ʰ ѕ ɲ Ë
default bootfile

v ̈Ọ ب ̈

v ̈Ọ	ώ ك
file-name	ḧ Θ ̂ ᵏ ʊ ؜ă ţ ᵉ

ǰ ب ل ǰ ≡ ω̃ ḧ Θ ᵏ ʊ ă ţ ᵉ

ᵘ ɲ ₩ Ã DHCP ş χ − ب ل ₩ Ã

ƛ ʌ. 14

Æ ŧ ˝YṀ Ĵ ᵘ ᵑᵦ Server ᵽ ɹ ψ õ Ᵽ DHCP ¡ ˝A ʎ ᵱ ᵏ ʊ ص ʏ ʁ ₔ ɻ ï ɔ ˝ḢĂ ʎ ʌ ᵽ ɹ ᵭ ţ ʎ ı DHCP ˋO ᑎ ʰ ọ ɛ ώ ě ᵏ ʊ ˋH ₔ ɻ ī ч ᵭ ţ ᵊ ı DHCP ¡ ˝A ʎ é ˈ Ꝙ ِ ِ Ẓ ˋO ᑎ ʰ ε ḅ TFTP ζ ï ɔ ᵭ ţ Ꞇ Ę ˋO ᑎ ʰ ِ **next-server** ᵘ ᵑᵦ ف Φ ḧ Θ

ᵽ ɹ ᵹ æ 1 χ ɸ ᵻ ᵏ ŧ˜ DHCP ˋO ᑎ ʰ ⊐ ʁ ʌ ᵻ ό

```
Ruijie(dhcp-config)# bootfile router.conf
```

ₛ ᴈ Ä | ِ **show run** ˈ ð ᵽ ɹ ᵭ ı

ώ˜ ʒ Ụ -

Ẃ ð ᴈ ئ -

Ẉ ᴶ ب ˝ -

4.4 class

ɻ ᵱ DHCP ᵴ χ − ʁ ᵽ ɹ ʜ ỉ CLASS ı ŧ DHCP ᵴ χ − ᵽ ɹ ₩ Ã ï class ᵘ ᵑᵦ

class *class-name*

no ė Ã ˈ Ꝙ ᵑ ╦ ḧ Θ

no class *class-name*

v ˝Ọ ب ˝

v ˝Ọ	ώ ك
class-name	ژ ϑ CLASS ᵉ ч ı ˈ Ꝙ ỉ È ʏ ʜ ᵭ ˝Ọ È ı ḅ myclass ᵭ ᵮ 1

ƛ ᵽ ɹ ƛ ᵴ χ − ' ʜ ỉ γ Ṃ CLASS

ᵘ ᵑᵦ ₩ Ã DHCP ᵴ χ − ᵽ ɹ ₩ Ã

ƛ ʌ. 14

Æ ŧ ˝YṀ Ĵ ᵘ ᵑᵦ Server ᵽ ɹ ψ ⅛ ʁ DHCP ᵴ χ − ˈ Ꝙ ⁞ ˜Ω Option82 ш ᵽ ʒ Ụ ف Φ ᵴ χ ᵔ ᵽ ı ᵭ Ç ¨H Option82 ʒ Ụ ف Φ ш ᵽ ą ʅ ı ᵱ DHCP ᵴ χ − ʁ ѫ ف Ᵽ ą ʅ ᵔ ˙ ˝Y ḧ ˈ Ꝙ ᵔ ᵽ ِ ɻ ᵮ ḅ ف ʁ ą ʅ ч ѫ CLASS ı ʁ DHCP ᵴ χ − ˈ Ꝙ ʜ ỉ ^ ʁ CLASS ı ⅛ ʁ CLASS ˈ Ꝙ ˝Y ḧ j ª ِ ɻ ᵮ ḅ

ᵱ ᵴ χ ᵔ ᵽ ص ʏ ʁ ✕ ⁞ ˜Ω ¡ ˝A ʎ ˝A ∫ ِ ɻ ᵮ ḧ ˈ Ꝙ ᵔ ᵽ ِ ᵴ χ − ı W ⁞ ˜Ω Ꞇ Option82 ʒ Ụ ف ℓ ḧ Ꞇ ˝A Ꞧ CLASS ı ᵡ CLASS Ḿ Ẓ ِ ɻ ᵮ ḅ ʁ ᵔ ᵽ IP ᵴ χ Ę ʁ ت ∂ ï ă ш ᵽ ᵴ χ − ʁ ِ ^ ʁ CLASS ˋH ı ˜Y Ł CLASS ᵱ ᵴ χ − ʁ ᵽ ɹ ِ ✕ ª ˚ ẑ ᵡ Ḿ Ẓ ِ CLASS ɻ ᵮ ḅ ʁ ᵔ ᵽ ᵴ χ ı ḅ ' Ĵ CLASS ᵔ ᵽ ᵴ χ Ţ ژ

ˈ ᵢ ᵢ ᵤ ᴬ ᴬ ᵏ ᵢ ᴬ ʷ ᵖ CLASS ᶠ Φ ᵖ ᵢ ᵊ % ¹ ᵒ ⅛ ᴬ CLASS ᴹ Ẓ ᴬ ᴶ ᴲ ᵤ ᵍ ᵢ ᴶ ᴲ ᵤ ᵍ ᵠ ᵋ ᵏ Ḥ ᵍ ᵡ ˈ ᶜ ᵍ ᵡ ᵢ ᴵ Ⓠ ы ᵽ ᴬ ᴬ CLASS ᵊ ᶻ ᴶ ᴲ ᵤ ᵍ ᵖ ᵚ ᵖ ᵖ ' ˝ Y ˝ ˝ ᵍ ᵡ – ʜ ᵎ CLASS ᵢ Ẋ ᵬ ' ᵖ ᴶ CLASS ᴶ ᴲ ᵢ ᵤ Ỉ CLASS ˢ ᵑ ᴶ ᴲ ᵤ ᵍ ᵌ CLASS ˝ A ᶘ ᵍ ᵡ – ᴶ ᴲ ᵤ ᵍ ᵇ ᵃ

ᵖ ᴶ ᵷ æ 1 χ ᵖ ᴶ ᵍ ᵡ – mypool0 ʜ ᵎ class1

```
Ruijie(config)# ip dhcp pool mypool0
Ruijie(dhcp-config)# class class1
```

ᵋ ᶜ Ä | ᵑ ᵐ **show run** ᴵ ᵭ ᵖ ᴶ ᵃ̆ ᵢ

ώ˜ ʒ Ụ -

Ẃ ᵭ ᶓ ᵴ -

Ẉ ᴶ ᵇ ˝ -

4.5 clear ip dhcp binding

ᴸ ▌ᵬ DHCP ᴶ Ḧ ˊ ᵢ ᵱ ᵉ ᵻ ˝ Ä ₩ Ã ᵻ **clear ip dhcp binding** ᵘ ᵑᵦ

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

v ˝ Ọ ᵇ ˝

v ˝ Ọ	ώ ك
*	ᵤ ᵬ ˝ A ώ DCHP ᴶ Ḧ
ip-address	ᵤ ᵬ ˝ Y Ḧ IP ᵍ ᵡ ᴸ ᵉ

ᵘ ᵑᵦ ₩ Ã ᵉ ᵻ ˝ Ä ₩ Ã

ᵰ ᴬ . 14

Æ ᵻ ˝ Y Ṁ Ỉ ᵘ ᵑᵦ Ḯ Server ᵖ ᴶ ᵠ Ỉ ᵘ ᵑᵦ ᴱ ᶠ ▌ᵬ DHCPˢ ᵕ ᴶ Ḧ ᵢ DHCP ᵋ Ṫ ᴶ Ḧ ᵤ ᵬ ᵢ Ⓠ ᵑ ᵐ **no ip dhcp pool** ᵘ ᵑᵦ

ᵖ ᴶ ᵷ æ 1 χ ▌ᵬ ˜ IP ᵍ ᵡ ᵚ 192.168.12.100 DHCP ᴶ Ḧ

```
Ruijie# clear ip dhcp binding 192.168.12.100
```

ώ˜ ʒ Ụ -

Ẉ ᴶ ᵇ ˝ -

4.6 clear ip dhcp conflict

```
Ruijie# clear ip dhcp history *
```

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

4.8 clear ip dhcp server detect

ɭ ▌ᵬ DHCP ɪ ȍ ɲ ʰ ʟ ẹ

v ̈Ọ ب ̃	v ̈Ọ	ώ ك
	-	-

ᵘ ɲ ₩ Ã ₰ ɨ ̈A ₩ Ã

ƛ ٨. 14

Æ ɨ ̃ Y Ṁ Ĵ ᵘ ɲ Ʀ Relay ب ـ ψ DHCP ﻩ ٨ ï ă ٨ ɯ ı Ḿ DHCP ﻩ ٨ ì ώ = ٨ گ R ٨ ï ă ف Φ ̄ ٨ ɯ **clear ip dhcp relay statistics** ᵘ ɲ ˡ Ɑ ڻ ب ᴷ ɯ ̈Ọ ʟ ę ı ڀ ̈A Ã Ḋ ٨ ɯ

ب ـ ڎ æ 1 χ ▌ڻ DHCP ﻩ ٨ ٨ ɯ ʟ ę

```
Ruijie# clear ip dhcp relay statistics
```

ώ ̃ ʒ Ụ -

Ẉ ᴶ ب ̃ -

4.12 client-identifier

ɻ ḧ Θ DHCP ị ̈A ٩ χ ‰ ٭ ε Ɑ ᵖ ڭ Ã " Лف ̈ Ọ ˊ ̃ ζ ı ɨ DHCP ş χ – ب ـ ᵘ ɲ **client-identifier**
client-identifier *unique-identifier*

no ė Ã ˡ Ɑ ڻ ب ị ̈A ٩ ‰ ٭
no client-identifier

Õ ̛ ʰ ѕ ɲ Ө
default client-identifier

v ̈Ọ ب ̃	v ̈Ọ	ώ ك
	unique-identifier	DHCP ị ̈A ٩ ‰ ٭ ı Ɑ ᵖ ڭ Ã " Лف ̈ ˊ ̃ ḅ χ 0100.d0f8.2233.b467.6967.6162.6974.4574.6865.726e.6574.302f.31

0100.d0f8.2233.b467.6967.6162.6974.4574.6865.726e.6574.302f.31 ı Ʊ ʌ 01 ᵑᵦ ˊ Ꝙ ᶿ ɻ Ḍ ƙ ɻ ʒ ı 67.6967.6162.6974.4574.6865.726e.6574.302f.31 ᵚᵚ GigabitEthernet0/1 ▨ " Лυف ˌ ᵚᵚ Ḍ ƙ ᵑᵦ ▨ ӈ Θ ı ˈ Ꝙ v ð RFC1700 ă ⁶▨ ɒ Address Resolution Protocol Parameters ɓ ヿ ` ᴱ õ ᵽ ف Φ DHCP ė Ṫ ɻ ӈ ӈ Θ ̀H ı ė ˈ Ꝙ Æ ɾ Ỉ ᵘ ᵑᵦ

ᵽ ɻ ʖ æ 1 χ ӈ Θ˜ MAC ʂ ϰ ᵚᵚ 00d0.f822.33b4 ▨Ꝙ ᶿ ɻ DHCP ¡ ̈A ヿ▨ ¡ ̈A ヿ‰ ⅋

```
Ruijie(dhcp-config)# client-identifier
0100.d0f8.2233.b467.6967.6162.6974.4574.6865.726e.6574.302f.31
```

ᵴ ᴈ Ä | ᑭ ص **show run** ˈ ð ᵽ ɻ ă ı

ώ˜ ʒ Ụ -

Ẃ ð ᴇ ئ -

Ẉ ᴶ ب ˝ -

4.13 client-name

ɻ ӈ Θ DHCP ¡ ̈A ヿ▨ ᵉ È ı ɾ DHCP ʂ ϰ – ᵽ ɻ ᵘ ᵑᵦ **client-name**
client-name *client-name*

no ė Ã¸ ڼ DHCP ¡ ̈A ヿ▨ ᵉ È
no client-name

Õ ʰ ѫ ɳ Ë
default client-name

v ̈Ꝙ ب ˝

v ̈Ꝙ	ώ ك
client-name	ӈ Θ DHCP ¡ ̈A ヿ▨ ᵉ È ˈ Ꝙ ɾ γ Ɱ‰ ´ ▨ASCII È ヿ ؤ ᵉ È j Ẓ ɣ ὐ ᵅ ʌ ᵌ ᵉ ı ⅝ ḅ ӈ Θ river ᵚᵚ DHCP ¡ ̈A ヿ ᵉ È ı j ſ ӈ Θ ᵚᵚ river.i-net.com.cn

ʎ ᵽ ɻ ʎ ≡ õ ӈ Θ ¡ ̈A ヿ ᵉ È

ᵘ ᵑᵦ₩ Ã DHCP ʂ ϰ – ᵽ ɻ ₩ Ã

ʎ ʌ˛ 14

Æ ɾ ̈Y Ṁ Ỉ ᵘ ᵑᵦ R ̂ Server ᵽ ɻ ψ ᴱ õ ᵽ ف Φ DHCP ė Ṫ ɻ ӈ ӈ Θ ̀H ı ė ˈ Ꝙ˛ ɾ Ỉ ᵘ ᵑᵦ ӈ Θ DHCP ¡ ̈A ヿ▨ ᵉ È Ỉ ᵉ È j Ẓ Ỉ ɣ ὐ ᵅ ʌ ᵌ ᵉ

```
Ruijie(dhcp-config)# default-router 225.2.2.2
% Error: ip address (225.2.2.2) is not valid!
```

Ẃ ð ჭ ئ 1.ᵽ ل ᵎ ɒ Ḥ ş ɣ
2.ᵽ ل ∧ ص 8 Ⱥ ῶ ᾧ ş ɣ

Ẉ ᴶ ᵽ ˝ -

4.15 dns-server

ɻ ḧ Θ DHCP ¡ Ẅ A ϟ DNS Ὸ ᴑ ᴨ ᵻ ɾ DHCP ş ɣ – ᵽ ل ᵘ ɲ **dns-server**
dns-server *ip-address* [*ip-address2…ip-address8*]

no ė Ẫ ᵻ Ꝋ ᵕ ᵭ DNS Ὸ ᴑ ᴨ ᵸ ḧ Θ
no dns-server

Õ ᵸ ѕ ɲ Ë
defaut dns-server

v Ꝟ ᵽ ˝	v Ꝟ	ὼ ك
	ip-address	ḧ Θ DNS Ὸ ᴑ ᴨ ᵸ IP ş ɣ ɻ ∂ ₆ N̲ ᵽ ل Ⱥ
	ip-address2…ip-address8	ε ᵻ J̌ ζ ῳ ∧ ᵻ Ꝋ ᵽ ل 8 Ⱥ DNS Ὸ ᴑ ᴨ ᵸ

ɻ ᵽ ل ɻ ≡ ῶ ḧ Θ DNS Ὸ ᴑ ᴨ ᵸ

ᵘ ɲ ₩ Ẫ DHCP ş ɣ – ᵽ ل ₩ Ẫ

ɻ ∧ . 14

Æ ɾ ˝ Y Ṁ } L ÀW€E€…

Ẃ ð ჭ ئ 1.ᵽ ɹ ᵎ ɒ Ḥ ʂ ɣ
2.ᵽ ɹ ʌ ص 8 Ⱥ ῶ ᾧ ʂ ɣ

4.16 domain-name

ɻ ḧ Θ DHCP ị ″A ϟ ⅋ ɑ ʌ ᵌ ᵉ ı ɬ DHCP ʂ ɣ – ᵘ ɲ **domain-name**
domain-name *domain-name*

no ė Ã ᵻ ꞯ ᵕ ɑ ʌ ᵌ ᵉ
no domain-name

Õ ʰ ѕ ɲ Ë
defaut domain-name

v ″Ọ ب ″

v ″Ọ	ὼ ك
domain-name	ḧ Θ DHCP ị ″A ϟ ⅋ ɑ ʌ ᵌ ᵉ È ϟ ⱡ

ƛ ᵽ ɹ ƛ ≡ ῶ ɑ ʌ ᵌ ᵉ

ᵘ ɲ ₩ Ã DHCP ʂ ɣ – ᵽ ɹ ₩ Ã

ƛ ʌ. 14

Æ ɬ ″Y Ṁ Ỉ ᵘ ɲ Ʀ Server ᵽ ɹ ψ DHCP ị ″A ϟ n ệ ″ Y ḧ ɑ ʌ ᵌ ᵉ ɑ ı Ẹ Ⱡ ڈ ʈ ῶ ª ¯ ɑ ʌ ᵌ ᵉ ⅋ Ƶ Ḥ ı ´ ì ụ ص Ƶ ᵉ ŏ ᵻ ꞯ

ᵽ ɹ Ƶ æ 1 χ ʌ DHCP ị ″A ϟ ḧ Θ ″ ɑ ʌ ᵌ ᵉ i-net.com.cn

```
Ruijie(dhcp-config)# domain-name i-net.com.cn
```

ₒ ჯ Ä | ụ ص **show run** ᵻ ð ᵽ ɹ ă ı

ώ ˜ ʒ Ụ 1 χ ᵽ ɹ ᵎ | ʂ ɣ

```
Ruijie(dhcp-config)# dns-server 225.2.2.2
% Error: ip address (225.2.2.2) is not valid!
```

Ẃ ð ჭ ئ 1.ᵽ ɹ ᵎ ɒ Ḥ ʂ ɣ
2.ᵽ ɹ ʌ ص 8 Ⱥ ῶ ᾧ ʂ ɣ

4.17 dynamic-pool

ɭ ᵑ ᵌ AP ⁞ Ɯ ɸ ᵗ MAC ᵕ õ ɰ ∨ ¸ DHCP ş ɣ – ⃞ ɻ ʌ ᴺ ⊐ ɻ ʌ ó ı ᶦ ƍ AC ⃞ ap-config/ ǎ ǟ ap-group ₩ Ã ï ڀ ɻ dynamic-pool ᵘ ɲ

dynamic-pool

ƍ AC ⃞ ap-config/ ǎ ǟ ap-group ₩ Ã ï ¸ ڻ h Θ

no dynamic-pool

v Ɯ ب ˝

v Ɯ	ѽ ك
-	-

Õ ʰ ѫ ɲ Ë

defaut hardware-address

v Ѽ ب ˝

v Ѽ	ώ ك
hardware-address	ħ Θ DHCP į ˝A ヶ MAC ş χ
type	‰ DHCP į ˝A ヶ ţ Ẉ ᴶ ʁ ɲ ı ᵻ Ꙍ ɾ È ヶ ьѧ ã Ѽ È ħ Θ È ヶ ьѧ J̌ ° χ ■ ethernet ■ ieee802 Ѽ È J̌ ° χ ■ 1 ε 10M ethernet ζ ■ 6 ε IEEE 802 ζ

ǰ ب ɹ ǰ ≡ ѽ ţ ş χ

ḅ ' ħ Θ ţ ş χ ʾH ≡ ʿ J̌ ° ı ǰ ьѫ ethernet

ᵘ ɲ ₩ Ã DHCP ş χ – ب ɹ ₩ Ã

ǰ ヘ 14

Æ ɾ ˝Y Ṁ Ĵ ᵘ ɲ Ɽ Server ب ɹ ψ ᴱ ѽ ɱ ف Φ DHCP ė Ṫ ɻ ħ ħ Θ ʾH ı ė ᵻ Ꙍ Æ ɾ Ĵ ᵘ ɲ

ب ɹ ʒ æ 1 χ ħ Θ ヘ ʒ ьѫ ethernet ⿴ MAC ş χ 00d0.f838.bf3d

```
Ruijie(dhcp-config)# hardware-address 00d0.f838.bf3d
```

ₛ ᴈ Ά | ף ص **show run** ᵻ ȸ ب ɹ ă ı

ώ ˜ ʒ Ụ -

Ẃ ȸ ᴈ ئ -

4.19 host

ɻ ħ Θ DHCP į ˝A ヶ ʒ ⿴ IP ş χ ⁼ ɹ ᴎ ǫ ı ɾ DHCP ş χ – ب ɹ ᵘ ɲ **host**

host *ip-address* [*netmask*]

no ė Ã ᵻ Ꙍ ڼ DHCP į ˝A ヶ IP ş χ ⁼ ɹ ᴎ ǫ ⿴ ħ Θ

no host

Õ ʰ ѫ ɲ Ë

defaut host

ك ش	v ̈Ⴈ	v ̈Ⴈ ب ̆

ǰ ᵽ ɻ ǰ ì Æ j ǐ ᵑ ص DHCP n ệ IP ş ɣ

ᵘ ᵑᵦ ₩ Ã ì Æ ᵽ ɻ ₩ Ã

ǰ ᵑ 14

Æ ŧ ″ Y Ṁ Í ᵘ ᵑᵦ R Client ᵽ ɻ ψ RGOS ᶊ ţ DHCP ị Ä ᵑ ı ᵷ ت ∂ IP ş ɣ Ḥ ı ف ị ∂ DHCP Ȯ ᴑ ᵑ ᵸ ώ ě й Ѧ ᵽ ɻ v Ȳ Ω ʒ Ụ χ 1 ζ DHCP J̌ ° 1 ı ị Ä ᵑ Ḍ ɻ ọ ψ 2 ζ DHCP J̌ ° 3 ı ª Ḍ ɻ i ɻ ᵸ ʒ Ụ ψ 3 ζ DHCP J̌ ° 6 ı DNS Ȯ ᴑ ᵑ ᵸ ʒ Ụ ψ 4 ζ DHCP J̌ ° 15 ı ᶊ ª Ʌ ³ ᵉ ψ DHCP J̌ ° 44 ı WINS Ȯ ᴑ ᵑ ᵸ ʒ Ụ ε ˡ J̌ ᵽ ɻ ζ RGOS ᶊ ţ ị Ä ᵑ ы ᵷ ᵷ PPP FR HDLC ج ت i ص dhcp n ệ ş ɣ ı ف Ѧ ᵴ ị Ȯ ᴑ ᵑ ₹ Ḥ ' Y ı ´ ˙ ă Ç ₹ Ȯ ᴑ ᵑ ₹ Ḥ ' Y Í ı ǐ

ᵽ ɻ ᶊ æ 1 χ Æ ệ FastEthernet 0 ᵑ Æ ₅ ʊ n ệ IP ş ɣ

```
Ruijie(config)# interface GigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1) ip address dhcp
```

ₛ ᶎ Ä | ص **show run** ˡ ð ᵽ ɻ ă ı

ώ ˜ ʒ Ụ -

Ẃ ð ᶎ ئ 1. ᵷ ‾ Ṗ Æ i Ầ Ä ị ᵏ ᵑ ı ǐ

4.21 ip dhcp class

ɻ ḧ Θ Ѧ CLASS Ẋ ف ᵓ ᵔ ṕ CLASS ᵽ ɻ ₩ Ã ı ŧ ᵔ ṕ ᵽ ɻ ₩ Ã ï ₹ **ip dhcp class** ᵘ ᵑᵦ

ip dhcp class *class-name*

no ė Ã ˡ Ȣ ˍ ᵬ ᵔ ṕ ₹ CLASS

no ip dhcp class *class-name*

v Ȳ Ω ᵽ ″

v Ȳ Ω	ώ ك
class-name	ژ ᵓ CLASS ₹ ᵉ ᵑ ı ˡ Ȣ ĩ È ᵑ ѭ ǎ Ȳ Ω È ı ḅ myclass ǎ ä 1

ǰ ᵽ ɻ ǰ ' ᵽ ɻ class

ᵘ ᵑᵦ ₩ Ã ᵓ ṕ ᵽ ɻ ₩ Ã

ǰ ᵑ 14

Æ ŧ ″ Y Ṁ Í ᵘ ᵑᵦ R Server ᵽ ɻ ψ ″ E Φ Í ᵘ ᵑᵦ ı ö h ف ᵓ ᵔ ṕ CLASS ᵽ ɻ ₩ Ã ı ᵷ ف Ѧ ᵽ ɻ ₩ Ã Ѧ ı ˡ Ȣ ᵽ ɻ CLASS ש ᵽ ₹ Option82 ʒ Ụ CLASS ₹ ‰ ₹ ʒ Ụ

ᵽᵣ ᵷ æ 1χ ᵽᵣ Ⱥ ᵮ ᵽ CLASS

```
Ruijie(config)# ip dhcp class myclass
```

ˢ ᶜ Ⱥ │ ᵑ ᵴ **show run** ˡ ᵭ ᵽᵣ ᵃ̆ ˡ

ώ˜ ᶚ Ụ -

Ẃ ᵭ ᶜ ᵭ ᵴ -

Ẉ ᴶ ᵬ ˝ -

4.22 ip dhcp excluded-address

ˌ ḧ Θ • Ᵽ IP ᵴ ᵡ ˡ Æ ệ DHCP ᵓ O ᵑ ʰ j ʰ Ṅ Ʊ ᵽᵣ DHCP ᵢ Ⱦ Ⱥ ˡ ᵲ ᵮ ᵽ ᵽᵣ ᵘ ᵑᵬ

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

Ỉ ᵘ ᵑᵬ no ė Ã ˡ Ꝋ ᵑ ╦ ف Ⱶ ḧ Θ

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

Õ ʰ ỉ ᵽᵣ

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

ᵛ Ⱪ ᵬ ˝

ᵛ Ⱪ	ώ ᶄ
low-ip-address	ṇ ã IP ᵴ ᵡ ˡ ã̃ ả ṇ ã IP ᵴ ᵡ ᵴ	ᵷ ᵛ Ḋ IP ᵴ ᵡ
high-ip-address	ṇ ã ᵴ ᵡ ᵴ	ᵷ ᵣ IP ᵴ ᵡ ỉ ᵘ᷾ Ʊ Ө ᵡ low-ip-address

ỉ ᵽᵣ ỉ DHCP ᵓ O ᵑ ʰ ᵓ ᵽ Ⱪ ᵴ ᵡ – IP ᵴ ᵡ

ᵘ ᵑᵬ ₩ Ã ᵲ ᵮ ᵽ ᵽᵣ ₩ Ã

ỉ ᵑ 14

Æ ᵲ ″ Y Ṁ Ỉ ᵘ ᵑᵬ Ɽ Server ᵽᵣ ψ ḅ ˈ ≡ ᵭ ᵽᵣ ṇ ã IP ᵴ ᵡ ˡ DHCP ᵓ O ᵑ ʰ h ᵌ ᵷ ᵓ ᵽ DHCP ᵴ ᵡ – Ⱥ Ⱦ A ᵭ IP ᵴ ᵡ Ỉ ᵘ ᵑᵬ ˡ Ꝋ ₨ ᵉ ḧ Ⱬ ᶚ ᵓ Ᵽ IP ᵴ ᵡ ˡ ᵸ d ف Ᵽ ᵴ ᵡ ᵠ ᵓ ᵽ DHCP ᵢ Ⱦ Ⱥ ᵑ ᵴ ḧ Θ ṇ ã IP ᵴ ᵡ ˡ Ĉ ˡ Ꝋ ᵒ ᵖ Ṉ DHCP ᵓ O ᵑ ʰ ᵓ ᵽ ᵴ ᵡ Ḥ ᵷ ᵛ ᵴ ᵣ ᵣ Ḥ ᵽ

ᵽᵣ ᵷ æ 1χ DHCP ᵓ O ᵑ ʰ Ṅ j ʰ ᵌ ᵷ ᵓ ᵽ 192.168.12.100~150 ᵢ ᵷ ᵯ IP ᵴ ᵡ

```
Ruijie(config)#ip dhcp excluded-address 192.168.12.100 192.168.12.150
```

2χ ᵢ ᵭ æ 1 Ⱥ ṇ ᵭ ᵴ ᵡ ᵢ ᵷ

```
Ruijie(config)#no ip dhcp excluded-address 192.168.12.100 192.168.12.150
```

ᵽ ɻ ʒ æ 1 χ ɔ ṕ ᵽ ɻ ₩ Ã ï ɛ Ã Ặ ˙ ∧ Ƨ NAK ı ǐ

```
Ruijie(config)# ip dhcp force-send-nak
```

ₛ ᶎ Ά | ᵑ ص **show run** ı ˜ ˙ ᵽ ɻ ă ı

Ẃ ȸ ᶎ ئ -

Ẉ ᴶ ب ˝ -

4.24 ip dhcp monitor-vrrp-state

ɭ ˇ í VRRP ▯ ↑ ȭ ı Æ DHCP Server ʁ ʃ ת Ẹ ˙ ₱ ᵻ ▯ Master ↑ ȭ ▯ vrrp ì Æ i ↱ ▯ ت ∂ ï ă **ip dhcp monitor-vrrp-state**

ת ╦ Ḿ vrrp ↑ ȭ ▯ ˇ í ı %ˋH ṇ o Master ặ ä Backup ↑ ȭ ▯ VRRP ì Æ i ↱ ▯ ت ∂ ï ă ₫ น Ṅ q ʃ ת **no ip dhcp monitor-vrrp-state**

Õ ʻ ʮ ᵽ ɻ **default ip dhcp monitor-vrrp-state**

v ¨ Ọ ب ˝	v ¨ Ọ	ώ ك
	-	-

ᵘ ɲ ₩ Ã s Ṗ ì Æ ᵽ ɻ ₩ Ã

ʮ ʅ. 14

ʮ ᵽ ɻ ʮ ᵽ ɻ ï j Ḿ ì Æ VRRP ↑ ȭ ف Φ ˇ í

Æ ŧ ˝ Y Ṁ Ĵ ᵘ ɲ Ʀ ▯ Server ᵽ ɻ ψ ḅ ' ì Æ ï ᵽ ɻ ˝ VRRP ş χ ı DHCP ˙ O ת ʰ ʁ ʃ ת ▯ ʒ Φ ᵻ ε Master ζ ↑ ȭ ▯ ì Æ ت ∂ ï ă ı ь Ấ ▯ ˚ ε Master ζ ↑ ȭ ▯ ì Æ ت ∂ ï ă Ḿ ▯ ' ᵽ ɻ VRRP ş χ ▯ ì Æ ı DHCP ˙ O ת ʰ j W ˇ í VRRP ↑ ȭ ı ˙ A õ DHCP ت ∂ ï ă ₫ น Ṅ q ʃ ת

ᵽ ɻ ʒ æ 1 χ DHCP ˙ O ת ʰ Ḿ Ẹ ˙ s Ṗ ì Æ ▯ VRRP ↑ ȭ ف Φ ˇ í

```
Ruijie(config-if)# ip dhcp monitor-vrrp-state
```

ₛ ᶎ Ά | -

ώ ˜ ʒ Ụ 1 χ ᵹ ‾ Ṗ ì Æ ᵽ ɻ VRRP ↑ ȭ ˇ í

```
Ruijie(config-if-GigabitEthernet 0/2)#ip dhcp monitor-vrrp-state
% Invalid input detected at '^' marker.
```

Ẃ ð ჭ ئ 1 χ ᵹ‾ Ṗ ì ᴭ ہ ل VRRP ᵀ õ ˇ í

Ẉ ᴶ ب ˝ -

4.25 ip dhcp ping packets

ا ہ ل DHCP ˋO ᑎ ʰ ˢ ᴶᴶ ş ɣ˙ ˥ ˋH ı ping Ỉ ş ɣ ⃞ Ƙ Ṷ

ip dhcp ping packets [*number*]

no ė Ã Õ ᵸ ỉ ہ ل

no ip dhcp ping packets

Õ ᵸ ỉ ہ ل

default ip dhcp ping packets

v Ṷ ب ˝	v Ṷ	ώ ك
	number	ε ˡ Ǐ ζ ţ ḫ ᵡ 0˙ 10 ı 0 ˊ ˜ ʜ ن < ف Ⱡ ضخ ʰ!@ ìñ8 !ð G•DC4 n/V DcD AVC

4.26 ip dhcp ping timeout

ɻ ᵽ ɹ DHCP ̀O n ʜ ɾ ping ̋ḶĂ ₅ ‖ ʂ ɣ˙ ɣ ̀H ı ϟ ể Ẓ ϟ ⅏ ʌ ̀H ̀H ᴊ

ip dhcp ping timeout *milli-seconds*

no ẻ Ã ı Ꝍ Õ ʉ ỉ ᵽ ɹ

no ip dhcp ping timeout

Õ ʉ ỉ ᵽ ɹ

default ip dhcp ping timeout

v ̋Ꝙ ᵽ ˝

v ̋Ꝙ	ѽ ك
milli-seconds	DHCP ̀O n ʜ ϟ ể ping Ẓ ϟ ⅏ ̀H ᴊ ε Ꝍ ← ϟ ч ζ ɲ Ëˌ ƀ ѭ 100 ˙ 10000

ỉ ᵽ ɹ ỉ ʌ ̀H ̀H ᴊ ѭ 500 ← ϟ

ᵘ ɲ ₩ Ã ϡ ṕ ᵽ ɹ ₩ Ã

ỉ ϟ ˛ 14

Æ ɾ ̋Y Ṁ Í ᵘ ɲ Ʀ ̂ Server ᵽ ɹ ψ ḧ Θ ϟ ể Ⱥ ping Ẓ ϟ ϒ ⅏ ̀H ᴊ

ᵽ ɹ ʒ̈ æ 1 χ ping Ẓ ϟ ϒ ϟ ể ̀H ᴊ ₱ ѭ 600ms

```
Ruijie(config)# ip dhcp ping timeout 600
```

₅ ᴈ Ä │ ᵑ ص **show run** ı ˜ ˙ ᵽ ɹ ă ı

ѽ ˜ ʒ Ụ -

Ẃ ð ᴈ ئ -

Ẉ ᴶ ᵽ ˝ -

4.27 ip dhcp pool

ɻ ḧ Θ Ⱥ DHCP ʂ ɣ − ᵊ Ẋ ف ϡ DHCP ʂ ɣ − ⅏ ᵽ ɹ ₩ Ã

ip dhcp pool *pool-name*

no ẻ Ã ı Ꝍ ˛ ں DHCP ʂ ɣ −

no ip dhcp pool *pool-name*

Õ ʰ ѫ ɲ Ө ъ ş χ –
default ip dhcp pool *pool-name*

v ¨Ọ ب ˝

v ¨Ọ	ώ ك
pool-name	ş χ – ᵃ Ч

ǰ ب ل ǰ ≡ ω ḧ Θ DHCP ş χ –

ᵘ ɲ ₩ Ã ২ ṕ ب ل ₩ Ã

ǰ ۱ ٫ 14

Æ ɨ ˝ Y Ṁ Ĵ ᵘ ɲ Ʀ̂ Server ب ل ψ
1 χ ¨E Φ Ĵ ᵘ ɲ ı ő h ف ২ DHCP ş χ – ب ل ₩ Ã ı Ǐ ~ ѫ

```
Ruijie(dhcp-config)#
```

ƥ ف Ѧ ب ل ₩ Ã ѧ ı ˡ Ɯ ب ل IP ş χ ̤ ƥ DNS ˙O ɲ ʰ ǰ ل ԋ Ч v ¨Ọ

ب ل ʒ æ 1 χ ḧ Θ˝ Ѧ ᵃ ѫ mypool0 ⚅ DHCP ş χ –

```
Ruijie(config)#ip dhcp pool mypool0
Ruijie(dhcp-config)#
```

ₛ ج Ä | ں ص **show ip dhcp pool** *mypool0* ˡ Ч ỉ ب ل ă ı

ώ ˜ ʒ Ụ -

Ẃ ȸ ჯ ئ -

Ẉ ᴶ ب ˝ -

4.28 ip dhcp refresh arp

ې Ä ï ∧ ˡ ʒ ARP
ip dhcp refresh arp

v ¨Ọ ب ˝

v ¨Ọ	ώ ك
-	-

ǰ ب ل -

ᵘ ɲ ₩ Ã ২ ṕ ب ل ₩ Ã

ᾗ ᾔ̣ 14

Æ ᵻ ″YṀ Ỉ ᵘ ᵑᵬ Ɽ̂ː̂ Server ᵽ ᒐ ψ
¨EΦ Ỉ ᵘ ᵑᵬ ı ő h ⁞ Ὼ ᵸ ᵽ ᒐ **update arp** ⃞ş χ – ᾰ ᾽ ᵽ ⃞ ᾔ ᵽ ᾺA ï ∧ ᶦ ʒ ARP

ᵽ ᒐ ᾖ æ 1 χ ᵽ ᾺA ï ∧ ᶦ ʒ ARP

```
Ruijie(config)#ip dhcp refresh arp
```

ₛ ᴈ Ä | ᵑ ص **show arp trusted** ᶦ Ꝙ˜ ˙ ᵽ ᾺA ï ∧ ⃞ ᶦ ʒ ARP

ώ˜ ʒ Ụ -

Ẃ ȸ ᶎ ᵹ -

Ẉ ᴶ ᵬ ″ -

4.29 ip dhcp relay check server-id

ᵏ ᵻ DHCP relay check server-di ı ἦ
ip dhcp relay check server-id

ʜ ȣ DHCP relay check server-id ı ἦ
no ip dhcp relay check server-id

ᴠ ″Ὼ ᵬ ″	ᴠ ″Ὼ	ὼ ᶄ
	-	-

ᾗ ᵽ ᒐ ʜ ȣ DHCP relay check server-id ı ἦ

ᵘ ᵑᵬ ₩ Ã ᴝ ṕ ₩ Ã

ᾗ ᾔ̣ -

Æ ᵻ ″YṀ Ỉ ᵘ ᵑᵬ Ɽ̂ː̂ Server ᵽ ᒐ ψ Ẹ ᵽ ᒐ ᵘ ᵑᵬ **ip dhcp relay check server-id** ᵅ ı DHCP Relay ᵏ Ṅ DHCP ᵵ ∂ ï ᾰ ᶎ ∧ ˙ option server-id ∧ ″Y ḧ ⃞ Ὸ ᴑ ᴎ ᵸ ᵬ ᵖ ' ≡ ῶ ᵽ ᒐ Ỉ ᵘ ᵑᵬ ı ¸ ᵇ ″A ῶ ᵽ ᒐ ⃞ DHCP Ὸ ᴑ ᴎ ᵸ ᶎ ∧ DHCP ᵵ ∂ ï ᾰ

ᵽ ᒐ ᾖ æ χ ᵏ ᵻ DHCP relay check server-di ı ἦ

```
Ruijie(config)# ip dhcp relay check server-id
```

2 χ ʜ ȣ DHCP relay check server-id ı ἦ

```
Ruijie(config)# no ip dhcp relay check server-id
```

4.31 ip dhcp relay suppression

ᵏ ɬ DHCP relay suppression ı ǐ

ip dhcp relay suppression

ʜ ȣ DHCP relay suppresson ı ǐ

no ip dhcp relay suppression

v ″Ϙ ب ″	v ″Ϙ	ώ ك
	-	-

ƛ ٮ ل ʜ ȣ DHCP relay suppression ı ǐ

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

ƛ ٨ ̣ -

Æ ɬ ″ Y Ṁ Ǐ ᵘ ɲ Ʀ̂ Relay ٮ ل ψ ϱ ″ Y ḧ ì Æ i ٮ ل ᵘ ɲ **ip dhcp relay suppression** ᵅ ı Ṅ Ɍ̣ Ϙ Ǐ ì Æ i ώ ̇ ⦻ DHCP ت ∂ ĭ ă ψ ă̈ Ḿ̂ Ʊ Ḥ ì Æ i ώ ̇ ⦻ DHCP ت ∂ ĭ ă ı ̈ * Ẃ ჭ ∧

ٮ ل ʖ æ 1 χ ᵏ ɬ DHCP relay suppresson ı ǐ

```
Ruijie(config-if)# ip dhcp relay suppression
```

χ ʜ ȣ DHCP relay suppresson ı ǐ

```
Ruijie(config-if)# no ip dhcp relay suppression
```

ₛ ⇂ Ά | 1 χ Æ ɬ **show running-config** ᵘ ɲ ı ˡ Ϙ ¶ ~ ĩ ᵋ ٮ ل ă ı

ώ ˜ ʒ Ụ -

Ẃ ȸ ჭ ئ

Ẉ ᴶ ب ″ -

4.32 ip dhcp server detect

ᵏ ɬ DHCP ı ̀Ο ᑎ ʰ ₅ ⅄ ı ǐ

ip dhcp server detect

ʜ ȣ DHCP ı ̀Ο ᑎ ʰ ₅ ⅄ ı ǐ

no ip dhcp server detect

Õ ʰ ѫ ɑ ʜ ъ DHCP ɪ ȍ ɲ ʰ ₅ ⅄ ɪ ǐ
default ip dhcp server detect

ν ̋ Ω ب ˝	ν ̋ Ω	ώ ك
	-	-

ǰ ب ل ʜ ъ DHCP ɪ ȍ ɲ ʰ ɪ ǐ

ᵘ ɲ ₩ Ã ъ ṕ ₩ Ã

ǰ ۱ ̣ 14

Æ ɾ ˝ Y Ṁ Í ᵘ ɲ Ʀ Server ب ل ψ ب ل DHCP ɪ ȍ ɲ ʰ ₅ ⅄ ɪ ǐ ª ɪ ḅ ' ل ۸ ѧ è ƥ ɪ ȍ ɲ ʰ ɪ ʰ ʟ ę ƥ ή Ő ѧ

ب ل ʒ æ 1 χ ᵏ ɾ DHCP ɪ ȍ ɲ ʰ ɪ ǐ

```
Ruijie(config)# ip dhcp server detect
```

₅ ƺ Ά | 1 χ Æ ɾ **show running-config** ᵘ ɲ ɪ ˡ Ⱡ ˜ Ĩ ᵋ ب ل ă ɪ

ώ ˜ ʒ Ụ -

Ẃ ȸ ƫ ś

Ẉ ᴶ ب ˝ -

4.33 ip dhcp use class

ɭ ب ل ᵏ ɾ CLASS ف Φ ş ϰ ʿ ب ɪ ɾ ъ ṕ ب ل ₩ Ã ï ⊡ **ip dhcp use class** ᵘ ɲ ɪ Í ᵘ ɲ ⊡ no ė Ã ɪ Ⱡ ʜ ъ
Æ ɾ CLASS ف Φ ş ϰ ʿ ب
ip dhcp use class
no ip dhcp use class

ν ̋ Ω ب ˝	ν ̋ Ω	ώ ك
	-	-

ǰ ب ل ǰ ᵏ ɾ CLASS ف Φ ş ϰ ʿ ب

ᵘ ɲ ₩ Ã ъ ṕ ب ل ₩ Ã

Í ᵘ ᵑᵦ Ʀ̂ Server ب ل ψ

1 χ ب ل ᵏ ɾ CLASS ف Φ ş χ ب

```
Ruijie(config)# ip dhcp use class
```

ي ص **show run** ا ~ ب ل ă ا

-

-

-

4.34 ip helper-address

▌ ɾ Ⱥ ২ ṕ DHCP ̀O ᑎ ʰ ş χ

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

ˌ ن Ⱥ ২ ṕ DHCP ̀O ᑎ ʰ ş χ

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

v ̈Ọ	ώ ك
cycle-mode	Ã ᵏ dhcp ت ∂ ï ă ę ∧ ̈A õ dhcp ̀O ᑎ ʰ
A.B.C.D	DHCP ̀O ᑎ ʰ ş χ

DHCP ̀O ᑎ ʰ ° ˊ ʁ ٧

২ ṕ ₩ Ã

-

Í ᵘ ᵑᵦ Ʀ̂ Relay ب ل ψ ƍ ب ل DHCP ̀O ᑎ ʰ IP ş χ ª ı Ф ᵗ Ṅ ώ ̇ DHCP ت ∂ ï ă Ṅ ę ∧ ٨ Ę ψ ª ̀H ı Ṅ ώ ̇ DHCP ̀O ᑎ ʰ φ Ẓ ï ă ę ∧ ٨ DHCP ¡ ̈A ٤

DHCP ̀O ᑎ ʰ ş χ ২ ṕ ب ل ω ^ ا Ɯ ب ل 20 Ⱥ DHCP ̀O ᑎ ʰ ş χ

২ ṕ ب ل ₩ Ã ï ا Ḿ dhcp relay cycle-mode v ̈Ọ ف Φ ب ل ı Ę ᵏ ɾ cycle-mode ̀H ö ˊ ~ dhcp relay ы ƍ ̈H ì ώ ̇ dhcp client ت ∂ ï ă ę ∧ ̇ Ɯ i h„ ̈A õ dhcp server i ψ Ę j ᵏ ɾ cycle-mode ̀H ö ˊ ~ dhcp relay ᴱ ̈H ì ώ ̇ dhcp client ت ∂ ï ă ę ∧ ̇ Ɯ i h„ ٧ Ⱥ dhcp server i cycle-mode ƍ ২ ṕ ب ل ï ѕ ᵑ ʁ ᵏ ɾ

1 χ ب ل Ⱥ ২ ṕ DHCP ̀O ᑎ ʰ IP ş χ 192.168.100.1

```
Ruijie# configure terminal
```

ᵘ ᵑᵬ₩Ã	DHCP ᵴ ᵡ – ᵽ ᵻ ₩Ã
ᵻ ᵑ.	14
Æ ɪ ″YṀ	Ĵ ᵘ ᵑᵬ Ɽ Server ᵽ ᵻ ψ Ẹ ᵑ Ω ȏ ˙ ˋH ı DHCP ¡ ¨A ᵑ h ʌ گ ᵑ ᵑ ت ∂ DHCP ˙O ᑎ ʜ ˜ h ы ᵽ ᵑ ᵑ ı ᵑ ᵑ ᵴ ᵡ Ȝ ˊY j ψ
ᵽ ᵻ ᵷ æ	1

ᵽ ɻ ʒ æ 1 χ Ń ʂ ɤ – ᵓ ɾ Ö Ф ʬ 80% χ

```
Ruijie(dhcp-config)# lease-threshold 80
```

2 χ ʮ ɔ̌ ʂ ɤ – ᵓ ɾ ı ǐ

```
Ruijie(dhcp-config)# no lease-threshold
```

ₛ ⱬ Ä | ᵑ ص **show run** ı ð ᵽ ɻ ă ı

ώ˜ ʒ Ụ -

Ẃ ð ᶎ ئ -

4.37 match ip

ɻ ḧ Θ AM h„ ㊙ ᴡ ᵽ h„ ı Æ ɤ ᵘ ɲ **match ip**

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

no ė Ã ı Ꞔ ˛ ɔ̡ ḧ Θ ψ

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

v ¨Ꝙ ᵽ ˝

v ¨Ꝙ	ὼ ك
ip-address	ɻ ʃʅ ʂ ɤ
netmask	ʂ ɤ ǫ
interface	ì Æ ᵾ Ȅ
add/remove	▌ ɤ ᾶ ˛ ɔ̡ ˝Y ḧ vlan
vlan-list	vlan ɻ Ậ

ƚ ᵽ ɻ ή ƚ Φ ʬ

ᵘ ɲ ₩ Ã AM h„ ᵽ ɻ ₩ Ã

ƚ ʃ ˛ 14

Æ ɤ ˝Y Ṁ 1 χ ᵽ ɻ Ǐ ᵘ ɲ ᵅ ᶘ ₛ ˝Y ḧ vlan + port ㊙ DHCP

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

ₛ ᴈ Ä ⎪ ᵑ ص show run ˡ ð ᵽ ㇷ ă ı

ώ˜ ʒ Ụ -

Ẃ ð ᶎ ئ -

4.38 match ip default

ɻ ḧ Θ AM h„ ㉿س ռ ש ᵽ h„ ı Æ ŧ ᵘ ɲ **match ip default;**

match ip default *ip-address netmask*

no ė Ã ˡ Ꞓ„ ᵴ ḧ Θ ψ
no match ip default *ip-address netmask*

	ώ ك
ip-address	ㇷ ᛋ ş ᵪ
netmask	ş ᵪ ọ

ɻ ᵽ ㇷ ή ɻ Φ ㎞

ᵘ ɲ ₩ Ã AM h„ ᵽ ㇷ ₩ Ã

ɻ ᛊ. 14

Æ ŧ ˝ Y Ṁ ᵽ ㇷ Ỉ ᵘ ɲ ª Ä õ ᛚ ₛ ˈ ᵽ ㇷ vlan + port/vlan ㉿ DHCP ị ¨ Ä ᛋ Ṅ п ệ ɻ ㅍ ᴊ ㄲ ㉿ ş ᵪ ı ḅ ˈ ή Ỉ ᵽ ㇷ ᵘ ɲ ª ʽ H Ĉ ή γ Ɱ Ʊ Ę vlan + port ᵽ ㇷ ı „ ˝ Ỿ* Ẃ ㅂ ᛋ ˋ ᵽ ş ᵪ

ᵽ ㇷ ʓ æ 1 χ ḧ Θ ˝ س ռ ש ᵽ h„ χ ㇷ ᛋ ᴺ ㎞ 192.168.12.0 ı ọ ㎞ 255.255.255.0
Ruijie(config-address-manage)#match ip default 192.168.12.0 255.255.255.0

ₛ ᴈ Ä ⎪ ᵑ ص show run ˡ ð ᵽ ㇷ ă ı

ώ˜ ʒ Ụ -

Ẃ ð ᶎ ئ -

4.39 netbios-name-server

ɩ ٻ ɻ ĩ ჯ DHCP ¡ ˜A ˧ NETBIOS ▯ WINS ᵋ È ˋO ɲ ʜ

netbios-name-server *ip-address* [*ip-address2…ip-address8*]

¨ ტ WINS ˋO ɲ ʜ

no netbios-name-server

Õ ʜ ѕ ɲ Ë

defaut netbios-name-server

v ˝Ọ ˮ	v ˝Ọ	ώ ك
	ip-address	ḧ Ɵ WINS ˋO ɲ ʜ ▯ IP

netbios-node-type *type*

¨ ᵬ NetBIOS ` ᵖ ᵎ ᶚ ᵽ ᵥ

no netbios-node-type

Õ ʰ ˢ ᵑ Ö

defaut netbios-node-type

ᵛ Ⱬ ᵽ ˝	ᵛ Ⱬ	ᵚ ᶄ
type	ħ Θ NetBIOS ` ᵖ ᵎ ᶚ ı õ ƀ ᵞ Ά Ã̈ Ⱬ È ħ Θ ı ¨ ƀ ᵡ 0~FF ı ʺ Ʌ ᵭ Ⱬ ı Ꮋ ᴱ ǐ ᵑ Ⱡ ï Ö χ ■ ᵬ ´ b-node ■ ᵬ ´ p-node ■ ᵬ ´ m-node ■ 8 ı ᵬ ´ h-node È ᵞ ᵚ ħ Θ χ ■ b-node ı ÿ Ḥ ᶚ ` ᵖ ■ p-node ı Ḿ ᵞ ᶚ ` ᵖ ■ m-node ı ▉ ᵀ ᶚ ` ᵖ ■ h-node ı ʰ ᵀ ᶚ ` ᵖ	

ƚ ᵽ ᵥ ƚ ≡ õ ħ Θ NetBIOS ` ᵖ ᵎ ᶚ

ᵘ ᵑᵬ ₩ Ã DHCP ᵴ ᵡ – ᵽ ᵥ ₩ Ã

ƚ ᵎ ¸ 14

Æ ŧ ˝ Y Ṁ Ǐ ᵘ ᵑᵬ Ɽ̂ Server ᵽ ᵥ ψ ǐ ᵴ DHCP ¡ Ẅ Ά ᵞ NetBIOS ` ᵖ ᵎ ᶚ õ ₩ ħ ᵞ χ 1 ζBroadcast ı ÿ Ḥ ᶚ ` ᵖ ı ᵑ ᵥ ÿ Ḥ Ά Ã ᵭ Φ NetBIOS ᵊ È ᶨ ‘ ψ 2 ζPeer-to-peer ı Ḿ ᵞ ᶚ ` ᵖ ı ᵑ ᵥ´ ì ᵵ ∂ WINS Ȯ ᵑ ʰ ᵭ Φ NetBIOS ᵊ È ᶨ ‘ ψ 3 ζMixed ı ▉ ᵀ ᶚ ` ᵖ ı Ж ᵑ ᵥ ÿ Ḥ Ά Ã ᵵ ∂ ᵊ È ᶨ ‘ ı ᵅ ᵑ ᵥ ᵯ WINS Ȯ ᵑ ʰ ف ì ᵭ Φ ᵊ È ᶨ ‘ ψ 4 ζ Hybrid ı ʰ ᵀ ᶚ ` ᵖ ı ᵵ Ж´ ì ᵵ ∂ WINS Ȯ ᵑ ʰ ᵭ Φ NetBIOS ᵊ È ᶨ ‘ ı ᵬ ‘ ≡ õ ę ˙ Ẓ ᵞ ı ő ᵑ ᵥ ÿ Ḥ Ά Ã ᵭ Φ NetBIOS ᵊ È ᶨ ‘

ƚ ᶣ ` ï ı ǐ ᵴ ˝ Ḥ Ă ᵞ ᵑ ᵎ ` ᵖ ᵎ ᶚ ʰ ÿ Ḥ ᶚ ᾶ ᾰ ʰ ᵀ ᶚ ᵬ ‘ ≡ õ ᵽ ᵥ WINS Ȯ ᵑ ʰ ı ő ʰ ÿ Ḥ ᶚ ` ᵖ ψ ᵬ ‘ ᵽ ᵥ ´ WINS Ȯ ᵑ ʰ ı ő ʰ ʰ ᵀ ᶚ ` ᵖ á ᵑ Ṅ NetBIOS ` ᵖ ᵎ ᶚ ᵭ ʰ Hybrid

ᵽ ᵥ ᶚ æ 1 χ Ṅ ǐ ᵴ DHCP ¡ Ẅ Ά ᵞ NetBIOS ` ᵖ ᵭ ʰ ʰ ᵀ ᶚ ` ᵖ χ

```
Ruijie(dhcp-config)# netbios-node-type h-node
```

ˢ ᶜ Ά | ᵑ ᵯ **show run** ı ð ᵽ ᵥ ᾰ ı

ώ ˜ ᶚ Ụ -

Ẃ ȍ ᶎ ᶄ -

4.41 network

ɭ ḧ Θ DHCP ʂ χ − ⿲ ɻ ʎ ᴺ ⊐ ɻ ʎ ọ ɪ ɤ DHCP ʂ χ − ᶌ ɻ ᵘ ᵑᵬ **network;**
ɭ ᵱ ᵌ AP i ᶌ ɻ DHCP ʂ χ − ⿲ ɻ ʎ ᴺ ⊐ ɻ ʎ ọ ɪ ˡ ᵽ AC ⿲ ap-config/ ᵆ̃ ᵃᵃ̈ ap-group ₩ Ã ï ᶌ ɻ **network** ᵘ ᵑᵬ
network *network-number net-mask* [*low-ip-address high-ip-address*]

no ẻ Ã ˡ ⍺ ᵢ ᵱ ḧ Θ ψ
ᵽ AC ⿲ ap-config ᵆ̃ ᵃᵃ̈ ap-group ₩ Ã ï ᵢ ᵱ ḧ Θ ψ
no network

Õ ʰ ѕ ɲ Ö ɪ AC ⿲ ap-config ᵆ̃ ᵃᵃ̈ ap-group j ᵀḤ'Y
defaut network

v ᵛQ ᶌ ᵛ

v ᵛQ	ὼ ك
network-number	DHCP ʂ χ − ⿲ IP ʂ χ ɻ ʎ ᴺ
net-mask	DHCP ʂ χ − ⿲ IP ʂ χ ɻ ʎ ọ ḅ ˈ ≡ ῶ ḧ Θ ọ ɪ ɻ̂ ₶ ł ɻ ʎ ó .
low-ip-address	ˡ ɤ ∨ Ḋ IP ʂ χ ε AC ⿲ ap-config ᵆ̃ ᵃᵃ̈ ap-group ₩ Ã j ᵀḤ'Y ζ
high-ip-address	ˡ ɤ ɻ IP ʂ χ ε AC ⿲ ap-config ᵆ̃ ᵃᵃ̈ ap-group ₩ Ã j ᵀḤ'Y ζ

ɻ̂ ᶌ ɻ ɻ̂ ≡ ῶ ḧ Θ ɻ ʎ ᴺ ⊐ ɻ ʎ ọ

ᵘ ᵑᵬ ₩ Ã DHCP ʂ χ − ᶌ ɻ ₩ Ã

ɻ̂ ʌ̣ 14

Æ ɤ ᵛ YṀ Î ᵘ ᵑᵬ Ɽ Server ᶌ ɻ ψ ḧ Θ Ȧ ấ ʂ χ − ⿲ Ḍ ɻ ȝ Ʇ ọ ɪ ₶ DHCP Ȯ ᴑ ᴨ ʰ ώ ĕ ᵛ Ⱥ ˡ ᶅ ɻ ᵢ Ȧ ϒ ⿲ ʂ χ ₩ ᵯ ᵱ ᵒ̃ ῶ ʂ χ ṇ ᾶ ᶌ ɻ ɪ ᵋ ᵢ Ȧ ῶ ʂ χ − ⱥ ⿲ ʂ χ ʠ ῶ ˡ ſ ˈ ᶅ ɻ ᵢ Ȧ ϒ DHCP ᵽ ˈ ᶌ ʂ χ − ⱥ ⿲ ʂ χ ɪ ĩ ᵀ Y ˚ ẑ ₡ Φ ⿲ ɪ ḅ ˈ Î ʂ χ Ţ ɻ ᵽ DHCP ɻ ḧ ˊ ⱥ ᵆ̃ ᵃᵃ̈ ₅ ⅄ ˙ Î ʂ χ Ţ ɻ ᵽ Î ɻ ᵻ ⱥ è ᵽ ɪ ȍ ₅ ᵀ ï Ⱥ ʂ χ ɪ ´ ˈ ˊ ᶌ Ⱥ ῶ ᾠ ⿲ ʂ χ

ʂ χ ⿲ ᶌ ᶣ ˋ ˡ ɤ **show ip dhcp binding** ᵘ ᵑᵬ ᵀ ~ ɪ ʂ χ ₅ ⅄ ˙ ᶆ ᶣ ˋ ˡ ɤ **show ip dhcp conflict** ᵘ ᵑᵬ ᵀ ~

ᶌ ɻ ᵷ æ 1 χ ḧ Θ ᵛ DHCP ʂ χ − ⿲ ɻ ʎ ᴺ ₶

```
Ruijie(config-group) # network 192.168.12.0 255.255.255.240
```

ₛ ᴈ Ä | ڀ ص **show run** ا ծ ب ل ă ا

ώ˜ ʒ Ụ 1 χ ب ل ٌ | ş ҳ

```
Ruijie(dhcp-config)#network 238.5.5.5 255.0.0.0
238.5.5.5 / 255.0.0.0 is an invalid network
```

Ẃ ծ ჭ ئ 1.ب ل ٌ ᴅ Ḥ ş ҳ

4.42 next-server

ļ ћ Θ DHCP

Ẃ ȏ ȼ ȣ 1.ب ل ً ɒ ḢH ş ɤ

ₛ ᴈ Ä | ᵑ ص **show run** ˡ ð ᵽ ㇾ ă ı

ώ˜ ʒ Ụ 1 χ ᵽ ㇾ ᵎ | ˜ ̃ õ ث ˈ ş χ

```
Ruijie(dhcp-config)#option 56 ip 2.2.2.2 225.5.5.5
% Error: ip address 225.5.5.5 is not valid!
```

2 χ ᵽ ㇾ ᵎ | ʺ ᄅ ᵤ̈ Ê ˥ ш

```
Ruijie(dhcp-config)#option 253 hex abcdef_
% DHCP could not parse the hexadecimal string. Check character 6 (_).
```

Ẃ ð ᴈ ئ 8. ᵽ ㇾ ᵎ ᴅ Ḥ ş χ

9. ᵽ ㇾ ʌ ص 8 Ѧ ˜ ̃ õ ث ˈ ş χ

10. ᵽ ㇾ ᵎ | 16 ق̈ Ê ˥ ш

4.44 pool-status

ᵷ ᴈ à ṇ ɻ ғ β ѧ Ä ч˜ ˡ ᵽ ㇾ DHCP ş χ – Ĩ ε ᵏ ɾ ᵘ ᵑᵦ ı ᵑ ص ᵽ ㇾ ᵘ ᵑᵦ ˡ Ꝋ ᵏ ɾ ã̆ ʜ ŭ Ḿ Ẓ ş χ – Ȯ ᴨ Í ᵘ ᵑᵦ j ώ ě **no** ė Ã

pool-status {**enable | disable**}

v ̈Ọ ᵽ ˝

v ̈Ọ	ὼ ك
enable	ᵏ ɾ ş χ –
disable	ʜ ŭ ş χ –

ỉ ᵽ ㇾ ᵽ ㇾ ˜ ş χ – ᵅ Í ş χ – ₅ ᴜ ᵏ ɾ

ᵘ ᵑᵦ ₩ Ã DHCP ş χ – ᵽ ㇾ ₩ Ã

ỉ ˥ ˛ 14

Æ ɾ ˝ Y Ṁ Í ᵘ ᵑᵦ Ʀ̂ Server ᵽ ㇾ ψ ᵷ Æ ɾ DHCP Ȯ ᴨ ʜ ѧ ˡ Ꝋ ᵑ ص Í ᵘ ᵑᵦ ˈ Ѫ Ḥ ʜ ŭ ã̆ ă̈ ᵏ ɾ Ḿ Ẓ ş χ –

ᵽ ㇾ ʓ æ 1 χ Ṅ ş χ – ʜ ŭ

```
Ruijie(dhcp-config)# pool-status disable
```

ₛ ᴈ Ä | ᵑ ص **show run** ˡ ð ᵽ ㇾ ă ı

ώ˜ ʒ Ụ -

Ẃ ð ᴈ ئ -

4.45 relay agent information

ļ ƍ ২ ṕ CLASS ѧ ف২ Option82 ш ٮ ʒ Ụ ٮ ل ₩ Ã ı ٲ ২ ṕ CLASS ٮ ل ₩ Ã ï **relay agent information** ᵘ ɲ ı Ĵ ᵘ ɲ no ė Ã ı Ꝍ ٮ ں Ĵ CLASS "A ũ Option82 ш ٮ ʒ Ụ

relay agent information

no relay agent information

v "Ꝙ ٮ ″

v "Ꝙ	ώ ك
-	-

ƛ ٮ ل -

ᵘ ɲ ₩ Ã ২ ṕ CLASS ٮ ل ₩ Ã

Æ ٲ ″ Y Ṁ Ĵ ᵘ ɲ Ɽ Server ٮ ل ψ

"E Φ Ĵ ᵘ ɲ ı ŏ Ꮒ ف২ Option82 ш ٮ ʒ Ụ ٮ ل ₩ Ã ı Ĭ ~ ѫ χ

```
Ruijie (config-dhcp-class-relayinfo)#
```

ƍ ف ѧ ٮ ل ₩ Ã ѧ ı ' Ꝍ ٮ ل class ш ٮ ^ ѧ Option82 ʒ Ụ

ٮ ل ʖ æ 1 χ ٮ ل ѧ ২ ṕ CLASS Ẋ ف২ Option82 ш ٮ ʒ Ụ ٮ ل ₩ Ã

```
Ruijie(config)# ip dhcp class myclass
Ruijie(config-dhcp-class)# relay agent information
Ruijie(config-dhcp-class-relayinfo)#
```

ₛ ج Ά | ں ص **show run** ' ð ٮ ل ă ı

ώ ~ ʒ Ụ -

Ẃ ð ჯ ئ -

4.46 relay-information hex

ƍ ২ ṕ CLASS ï Option82 ʒ Ụ ٮ ل ₩ Ã ï ı ٮ ل option82 ш ٮ ʒ Ụ ı ذ ٲ **relay-information hex** ᵘ ɲ ı Ĵ ᵘ ɲ **no** ė Ã ı Ꝍ ٮ ں ĵ ш ٮ ʒ Ụ

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

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

v "Ꝙ ٮ ″

v "Ꝙ	ώ ك
aabb.ccdd.eeff... [*]	16 ف Option82 ш ٮ ʒ Ụ ı *Ɲ ´ j Ḥ ২ ш ٮ ı E ـ ļ ش ٮ ِ ሰ h

	ˋ o ˊ ˜ ᵑ ᵽ ᵂ ᵖ ı j Ṿ*ᴨ ˊ ᵪ ᶩ Ḣ ᵮ ᵂ ᵖ

ƛ ᵖ ᴶ -

ᵘ ᴨ ₩ Ã ᵮ ṕ CLASS ᵖ ᴶ ₩ Ã

Æ ᵻ ¨ Y Ṁ Ĵ ᵘ ᴨ Ɽ Server ᵖ ᴶ ψ

ᵖ ᴶ ʓ æ 1 χ ᵖ ᴶ Ⱥ ᵮ ṕ CLASS ˡ Ꝍ ᵂ ᵖ ^ Ⱥ option82 ʒ Ụ

ᵽ ɹ ʓ æ 1 χ ᵽ ɹ Ⱥ ɔ ṕ CLASS ‰ ʶ ʒ Ụ

```
Ruijie(config)# ip dhcp class myclass
Ruijie(config-dhcp-class)# remark used in #1 build
```

ₛ ɟ Ⱥ | ᵑ ص **show run** ˡ ð ᵽ ɹ ă ı

ώ˜ ʒ Ụ -

Ẃ ð ɕ ɷ -

4.48 service dhcp

ɩ ɸ ɸ ᵎ i ᵏ ɾ DHCP ᵓ O ɲ ʰ ⁼ ₳ ʌ Ɱ ɲ ≠ ό ı ɾ ɔ ṕ ᵽ ɹ ᵘ ɲ **service dhcp**

ɩ ᵑ ᵌ AP i ᵏ ɾ DHCP ᵓ O ɲ ʰ ⁼ ₳ ʌ Ɱ ɲ ≠ ό ı ˡ ɸ AC ap-config/ ă ă ap-group ₩ Ã ï ᵽ ɹ service dhcp ᵘ ɲ

service dhcp

no ė Ã ˡ Ɋ ʜ ɔ DHCP ᵓ O ɲ ʰ ⁼ ₳ ʌ Ɱ ɲ ≠ ό

ă ă ɸ AC ap-config/ ă ă ap-group ₩ Ã ï ʜ ɔ AP DHCP ᵓ O ɲ ⁼ ₳ ʌ Ɱ ≠ ό

no service dhcp

Õ ʯ ѫ ɲ Ө ı AC ap-config ă ă ap-group j ʺ Ḥ ' Y

defaut service dhcp

v ʺ Ọ ᵽ ʺ	v ʺ Ọ	ὼ ك
	-	-

ƛ ᵽ ɹ Í ᵘ ɲ Ɽ Server ᵽ ɹ ψ ƛ ʜ ɔ DHCP ᵓ O ɲ ʰ ⁼ ₳ ʌ Ɱ ɲ ≠ ό

ᵘ ɲ ₩ Ã ɔ ṕ ᵽ ɹ ₩ Ã ap-config/ap-group ₩ Ã

ƛ ʌ ˛ 14

Æ ɾ ʺ Y Ṁ DHCP ᵓ O ɲ ʰ ˡ Ɋ ₅ ʊ ʌ ˡ ˙ Ä ʓ ˋ ᵽ IP ş χ ı Ẋ ώ ě DNS ᵓ O ɲ ʰ ş χ ƛ ɹ ʜ ş χ ʓ ɹ ʌ ᵽ ɹ ʒ Ụ DHCP ₳ ʌ ≠ ό ˡ Ɋ Ṅ DHCP ت ∂ ɕ ʌ ʌ Ʊ Ę ᵓ O ɲ ʰ ı Ẋ Ṅ ف ɬ DHCP Ẓ ʓ ɣ ɸ ɕ ʌ ʌ DHCP ˡ Ä ʓ ı ∨ ´ DHCP ï ă ₳ ɕ Ă ɾ

ɸ • Ᵽ ɾ ß i ˡ Í ˛ א DHCP ı Í ⁼ Ʊ Ꮋ ı Í ˙ ٧ א ع ı ʊ ɥ ڈ ئ ت ˜ ˀ ʜ ɾ ß ɹ ` ᵽ ˝ ı Ɋ ʒ ᵽ ɹ ˛ م ώ˜ ʒ Ụ

ᵽ ɹ ʒ æ 1 χ ɸ ɸ ᵎ ᵏ ɾ ˝ DHCP ᵓ O ɲ ʰ ⁼ ₳ ʌ ≠ ό

```
Ruijie(config)# service dhcp
```

2 χ AC ᵑ ᵌ AP ᵏ ɾ ˝ DHCP ᵓ O ɲ ʰ ⁼ ₳ ʌ ≠ ό

```
Ruijie(config)# ap-group default
Ruijie(config-group) # service dhcp
```

ₛ ᴈ Ä | ِ ص **show run** ˡ ծ ٮ ل ă ı

ώ˜ ʒ Ụ -

Ẃ ծ ᴈ ئ -

4.49 show dhcp lease

Ǐ ˜ DHCP ¡ ¨Ä n ê ˡ ١ ʒ Ụ

show dhcp lease

v ¨Ọ ب ˝

v ¨Ọ	ώ ك
-	-

ỉ ٮ ل ή ỉ Φ ѫ

ᵘ ᵑь ₩ Ã ₑ ŕ ¨Ä ₩ Ã

ỉ ١ ̣ 14

Æ ŕ ˝ Y Ṁ Í ᵘ ᵑь Ɍ ̂ ̃ Client ب ل ψ Ǐ ˜ Ă ѫ ¡ ¨Ä ١ ٦ ت ˙ ip ş χ ʜ ʒ Ụ

ب ل ڗ æ 1 χ Ǐ ˜ DHCP ¡ ¨Ä n ê ˡ ١ ʒ Ụ

```
Ruijie# show dhcp lease
Temp IP addr: 192.168.5.71  for peer on Interface: FastEthernet0/0
Temp  sub net mask: 255.255.255.0
DHCP Lease server: 192.168.5.70, state: 7 Bound
DHCP transaction id: 337beed
Lease: 600 secs,  Renewal: 300 secs,  Rebind: 525 secs
Temp default-gateway addr: 192.168.5.1
Next timer fires after: 00:04:29
Retry count: 0   Client-ID: 0100d0f82233e34769676162697445746865726E6574302F31
```

ₛ ᴈ Ä | -

ώ˜ ʒ Ụ -

Ẃ ծ ᴈ ئ -

4.50 show ip dhcp binding

Ǐ ˜ DHCP ş χ ɹ ḧ ὒ

show ip dhcp binding [*ip-address*]

v ̋Ǫ ب ˝

v ̋Ǫ	ὼ ك
ip-address	ε ˡ Ǯ ζ ᴱ Ǐ ˜ ˝Y ḧ IP ş χ ɹ ḧ ὒ ƛ ὒ Ǐ ˜ ̋A õ ɹ ḧ ȝ Ụ

ƛ ٮ ɹ ή ƛ Φ ʁ

ᵘ ᵑᵦ ₩ Ã ᵎ ɤ ̋A ₩ Ã

ƛ ٨ ̣ 14

Æ ɤ ˝Y Ṁ Ǐ ᵘ ᵑᵦ R ̂ ̣ Server ٮ ɹ ψ ḅ ˈ ≡ õ ḧ Θ IP ş χ ı Ṅ Ǐ ˜ ̋A õ ş χ ɹ ḧ ὒ ḅ ˈ ḧ Θ ˝ IP ş χ ı Ṅ ᴱ Ǐ ˜ Ǐ IP ş χ ɹ ḧ ὒ

ٮ ɹ ƺ æ 1 χ Ǐ ˜ DHCP ş χ ɹ ḧ ὒ

```
Ruijie# show ip dhcp binding
Total number of clients   : 4
Expired clients           : 3
Running clients           : 1

IP address       Hardware address       Lease expiration            Type
```

20.1.1.1 2000.0000.2011 000 days 23 hours 59 mins Automatic Ǐ ˜ ɹ ˈ R Ê ɟ ᵍ Θ ك ḅ ï χ

IP address	‘ ٮ ٨ DHCP ị ̋A ٩ IP ş χ
Hardware address	DHCP ị ̋A ٩ ţ ş χ
Lease expiration	˜ ١ Ǫ ˙ Ω ˋH ژ Infinite ˊ ˜ ≡ ω ˋH ژ ں ˙ ψ IDLE ˊ ˜ Ẹ ˙ ٧ ز ş χ ı ٧ ˙ ⊃ ɨ ˡ Ǐ ǐ ص Ω ≡ ٨ ˜ ǎ ǟ DHCP ị ̋A ٩ ȝ ʊ ᵩ ۾
Type	ş χ ɹ ḧ ٩ ȝ Automatic ˊ ˜ ₅ ʊ ‘ ٮ ψ Manual ˊ ˜ ė Ṫ ‘ ٮ

₅ ⱬ Ä | -

ώ ˜ ȝ Ụ -

Ẃ ȸ ڃ ئ -

4.51 show ip dhcp conflict

Ǐ ˜ DHCP ˙O ᴑ ᴴ [OBJ] ᶹ ʟ ẹ

show ip dhcp conflict

v ″Ǫ ب ″

v ″Ǫ	ώ ك
-	-

ƛ ب ل ή ƛ Φ ʁ

ᵘ ᵑᵦ ₩ Ã ᵎ ɾ ″A ₩ Ã

ƛ ᶺ ˛ 14

Æ ɾ ″YṀ Í ᵘ ᵑᵦ R ̂ ̃ Server ب ل ψ Í ᵘ ᵑᵦ ᴵ Ꞓ Ǐ ˜ DHCP ˙O ᴑ ᴴ ₅ ⅄ ˙ [OBJ] ᶹ ş ɣ ˚ ˊ

ب ل ƺ æ 1 χ Ǐ ˜ DHCP ˙O ᴑ ᴴ [OBJ] ᶹ ʟ ẹ

```
Ruijie# show ip dhcp conflict
IP address      Detection Method
192.168.12.1            Ping
```

Ǐ ˜ ل ' [OBJ] R È ᵻ ᵍ Θ ك ḅ ï χ

IP address	j ᴵ ˋ ب ᶺ DHCP ¡ ″A ᵞ [OBJ] IP ş χ
Detection Method	˙ ᶹ ₅ ⅄ Ά |

₅ ƶ Ά \| -

ώ ˜ ʒ Ụ -

Ẃ ȸ ƫ ȣ -

4.52 show ip dhcp pool

Ǐ ˜ DHCP ˙O ᴑ ᴴ [OBJ] ş χ – Æ ɾ ù ̀ ʒ Ʊ ˛ ɾ ' ᵞ ʒ Ụ

show ip dhcp pool [*poolname*]

v ″Ǫ ب ″

ᵘ ᵑᵬ₩₩Ã ᵉ ᵻ Ä₩₩Ã

ᵰ ᵑ. 14

Æ ᵻ ″YṀ Î ᵘ ᵑᵬ Ʀ̂ː Server ᵽ ᵣ ᵠ Î ᵘ ᵑᵬ ᶦ Ꝍ Ǐ ˜ DHCP ˋO ᑎ ʰ ᵴ ᵡ – Æ ᵻ ù̇ ` Ꝍ ᶾ ᵴ ᵡ. ᵻ ' ᵚ ʒ Ụ

ᵽ ᵣ ᵷ æ 1 χ Ǐ ˜ DHCP ˋO ᑎ ʰ ᵴ ᵡ – Æ ᵻ ù̇ ` ᶾ Ꞇ. ᵻ ' ᵚ ʒ Ụ

```
Ruijie# show ip dhcp pool
Ruijie#sh ip dh pool
Pool  name       Total     Distributed  Remained   Percentage
------------  -----------  -----------  --------   -----------
net20          253          11           242        4.34782
test           0            0            0          0.00000
```

Ǐ ˜ ᒧ ' ᵴ ᴿ È ᵻ ᵍ Θ ᵾ ḅ ï

Pool address	ᵴ ᵡ – ᵊ È
Total	ᵴ ᵡ – ᶦ ě ‘ ᵽ ᵴ ᵡ – Ở ″Ꝙ
Distributed	Ţ ‘ ᵽ ᵴ ᵡ ″Ꝙ ´
Remained	ɣ ṷ ' ‘ ᵽ ⁼ ᶦ ʰ ᵻ ᵴ ᴄ ᴍ ᵴ ᵡ ″Ꝙ ´
Percentage	Ẹ ‘ ᵴ ᵡ – ᵴ ᵡ. ᵻ '

ᵋ ᵶ Ά | -

ώ ˜ ʒ Ụ -

Ẃ ȣ ᵶ ᵹ -

4.53 show ip dhcp relay-statistics

Ǐ ˜ DHCP ˋO ᑎ ʰ ᵴ ᴿ ϒ ᶩ ɯ ″Ꝙ ̃Ꝍ

show ip dhcp relay-statistics

ᵛ ″Ꝙ ᵽ ″ ᵛ ″Ꝙ

ﾒ ﾍ. 14

Æ ŧ ˝YṀ Ǐ ᵘ ᵑᵦ Ɍ Relay ﾋﾙ

ﾋﾙ ʒ æ 1. Ǐ ˜ DHCP -Relay ᵒᵒ ᴿ ϒ ﾒ ɯ˝Ω˜Ω

```
Ruijie#show ip dhcp relay-statistics
Cycle mode                0

Message                   Count
Discover                  0
Offer                     0
Request                   0
Ack                       0
Nak                       0
Decline                   0
Release                   0
Info                      0
Bad                       0

Direction                 Count
Rx client                 0
Rx client uni             0
Rx client bro             0
Tx client                 0
Tx client uni             0
Tx client bro             0
Rx server                 0
```

ₛ ﾆ Ά | -

ώ˜ ʒ Ụ -

Ẃ ծ ﾋ ئ -

4.54 show ip dhcp server detect

Ǐ ˜ DHCP ₅ ﾚ ˙ I ˙O ᴨ ᴴ ˚ ˊ

show ip dhcp server detect

v ˝Ω ﾋ ˝

v ˝Ω	ώ ك
-	-

ƛ ᵽ ɻ ɳ ƛ Φ ʁ

ᵘ ᵑᵦ ₩ Ã ᵋ ᵻ Ä ₩ Ã

ƛ ʅ ˌ 14

Æ ᵻ ″ Y Ṁ Í ᵘ ᵑᵦ Ɽ ̂ ̂ Server ᵽ ɻ

ᵽ ɻ ʓ æ 1. Ǐ ˜ DHCP Server ₅ ⅄ ˙ ▩ ı Ȯ ᴑ ᵸ ˚ ˊ

```
Ruijie#show ip dhcp server detect
The DHCP Server information:
Server IP = 10.1.10.40, DHCP server interface = GigabitEthernet 0/1
```

₅ ᶎ Ä | -

ώ ˜ ʒ Ụ -

Ẃ ð ᶎ ɕ -

4.55 show ip dhcp server statistics

Ǐ ˜ DHCP Ȯ ᴑ ᵸ ▩ ᴿ ϒ ʌ ɯ ″ Ọ ̃ Ω

show ip dhcp server statistics

v ″ Ọ ᵽ ″

v ″ Ọ	ώ ك
-	-

ƛ ᵽ ɻ ɳ ƛ Φ ʁ

ᵘ ᵑᵦ ₩ Ã ᵋ ᵻ Ä ₩ Ã

ƛ ʅ ˌ 14

Æ ᵻ ″ Y Ṁ Í ᵘ ᵑᵦ Ɽ ̂ ̂ Server ᵽ ɻ ψ Í ᵘ ᵑᵦ ı Ꞓ Ǐ ˜ DHCP Ȯ ᴑ ᵸ Ẹ ˙ ▩ ᴿ ˚ ʌ ɯ ″ Ọ ̃ Ω

ᵽ ɻ ʓ æ 1. Ǐ ˜ DHCP Ȯ ᴑ ᵸ ▩ ᴿ ϒ ʌ ɯ ″ Ọ ̃ Ω

```
Ruijie# show ip dhcp server statistics
Address pools              2
Lease counter              4
Active  Lease Counter      0
```

NO-LEASE-RESOURCE	ḛ ʂ ɣ ˡ ʿ ﷺ ◗ ʂ ɣ – ﷺ ̋Ǫ ́
recv	ώ ̇ ﷺ DISCOVER ı REQUEST ı INFORM ï ă Δ Ở ̋Ǫ ́
send	Ẓ ∧ گ ﷺ ᵠ Ẓ ï ă ̋Ǫ ́ ∧ ɯ

ₛ ⱬ Ä | -

ώ ̃ ʒ Ụ -

Ẃ ȣ ᶎ ɕ -

4.56 show ip dhcp socket

Ǐ ̃ DHCP ̓O ᑎ ʰ ɾ ̇ ﷺ ì Ề ↓ Ậ

show ip dhcp socket

ᴠ ̋Ǫ ̧ ̋

ᴠ ̋Ǫ	ὼ ك
-	-

Õ ᵸ ѫ ɲ Ө

defaut update arp

v Ѭ ب ˝	v Ѭ	ώ ك
	-	-

ǰ ب ل	ǰ ù` ï DHCP ʿ ب ş χ `H j ▌ ɾ ˈ ʒ ARP
ᵘ ɲ ₩ Ǎ	DHCP ş χ – ب ل ₩ Ǎ
ǰ ۱ ̣	14
Æ ɾ ˝ Y Ṁ	Í ᵘ ɲ Ʀ̂ ̂ Server ب ل ş χ – ب ل **update arp** ª ı DHCP ɤ ş χ – ʿ ب ş χ `H h ▌ ɾ ˈ ʒ ARP ı ˈ ʒ ARP
ب ل ʖ æ	▨ ч Ж ۱ ⅝ ʊ ő ARP ▨ ч Ж ۱ ح ı j h ɑ ʊ ő ARP ƿ u ˝ 1 χ ц DHCP ʿ ب ş χ `H ▌ ɾ ˈ ʒ ARP

```
Ruijie(dhcp-config)# update arp
```

₅ ج Ά ▏	ں ص **show run** ˈ ȸ ب ل ă ı
ώ ˜ ʒ Ụ	-
Ẃ ȸ ج ئ	-

5 DNS

5.1 clear host

▌ᵬ ᵘ ᵑ̃ �Z ᵉ ᵡ˙ ˊ

clear host [* | *host-name*]

ᵛ ̈Ⱬ ᵬ ˝

ᵛ ̈Ⱬ	ὼ ᶄ
host-name	ᵎ Ⱪ ᵬ • Ⱥ ˝Y ẗ ᵘ ᵑ̃ ³ ᵉ ᵡ˙
*	ˊ ~ ᵬ ᵬ ̈Ⱥ ὼ ᵘ ᵑ̃ ³ ᵉ ᵡ˙

ᵘ ᵑᵬ ₩ Ã ᵋ ᵻ ̈Ⱥ ₩ Ã

ᾆ ᵑ̣ 14

Æ ᵻ ˝ Y Ṁ ᶄ ᵉ ᵡ˙ ˊ ᵃ ᵘ ī ᵯ ʟ ẹ ɪ ὼ ᵬ Ⱥ ᾍ ◊ χ

ᵑ ᵴ **ip host** ᾰ̈ **ipv6 host** ˷ ᵑ̃ ᵬ ᵡ ψ

ᵑ ᵴ DNS ᵘ ᵑ̃ ẹ ᵒ̃ ¨E Φ İ ᵘ ᵑᵬ ɪ ʰ̣ ᵬ Ẹ˙ ᵑ ᵴ DNS ᵘ ᵑ̃ ẹ ᵒ̃ ᵘ ᶄ ᵉ ʟ ẹ

ᵬ ᵡ ᶄ æ 1 χ Ⱪ ï ᵬ ᵡ ᵃ ɪ ʰ̣ ᵬ ᶄ ᵉ -IP ş χ ᵡ˙ ˊ ᵃ ̈Ⱥ ὼ ᵘ ᵑ̃ ẹ ᵒ̃ ᵘ ᵯ ī ᵯ ʟ ẹ

```
Ruijie(config)#clear host *
```

ώ ̃ ʒ Ụ -

Ẉ ʲ ᵬ ˝ -

5.2 ip domain-lookup

ᵏ ᵘ DNS ᵩ Φ ³ ᵉ ʝ ‘

ip domain-lookup

ʜ ᵭ DNS ³ ᵉ ʝ ‘ ɪ ǐ

no ip domain-lookup

ᵛ ̈Ⱬ ᵬ ˝

ᵛ ̈Ⱬ	

ᵘ ɲ₩Ã ২ ṕ ᵽ ㅓ₩Ã

ㅈ ㅓ. 14

Æ ŧ ″YṀ Î ᵘ ɲ ㎞ ɛ̈ Ã DNS ³ ᵉ ɹ ‘ ı ĩ ⿰Â ㅂ ı ¨EΦ Î ᵘ ɲ ı ¸ ᵏ ʊ DNS ف Φ ³ ᵉ ɹ ‘

ᵽ ㅓ ᵹ æ 1 χ ㅂ ɔ̌ DNS ³ ᵉ ɹ ‘ ı ĩ

```
Ruijie(config)# no ip domain-lookup
```

ₛ ᴈ Ä | ۍ ص **show run**¶ ˜ ᵽ ㅓ ı j è ɒ **ip domain-lookup** ᵽ ㅓ

ώ˜ ʒ Ụ -

Ẃ ȸ ᴈ ۓ -

Ẉ ᴶ ب ″ -

5.3 ip host

ė Ṫ ᵽ ㅓ ᵹ ᵉ ⊐ IP ʂ χ ⿰ ī ṃ

ip host *host-name ip-address*

¸ ȸ ᵹ ˚ ˊ

no ip host *host-name ip-address*

v ″Ꝙ ب ″

v ″Ꝙ	ώ ك
host-name	ⱷ ɬ ⿰ ᵹ ᵉ
ip-address	ⱷ ɬ ⿰ IP ʂ χ

ㅈ ᵽ ㅓ -

ᵘ ɲ₩Ã ২ ṕ ᵽ ㅓ₩Ã

ㅈ ㅓ. 14

Æ ŧ ″YṀ

ᵽ ㅓ ᵹ æ 1 χ ˗ ő ᵽ ㅓ www .test.com ³ ᵉ ㎞ 192.168.5.243

```
Ruijie(config)# ip host www.test.com 192.168.5.243
```

ₛ ᴈ Ä | **show run**¶ ˜ ᵽ ㅓ ı è ɒ ″Ᾱ ᵽ ㅓ ⿰ ᵘ ɲ

show hosts¶ ˜ Ẹ̇ ³ ᵉ ⊐ IP Ḿ Ẕ ʜ ᵚ ı è ᵽ ¨A ᵽ ⸨OBJ⸩ ³ ᵉ ⊐ IP Ḿ Ẕ ´ °

ώ˜ ʒ Ụ -

Ẃ ȸ ᶎ ئ -

Ẉ ᴶ ᵽ ˝ -

5.4 ip name-server

ᵽ ⸨OBJ⸩ ³ ᵉ ᾽O ᴖ ᴴ ⸨OBJ⸩ IP/IPv6 ş χ

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

¨ ᵬ ᵽ ⸨OBJ⸩ ³ ᵉ ᾽O ᴖ ᴴ

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

v ¨Ꝙ ᵽ ˝

v ¨Ꝙ	ώ ك
ip-address	³ ᵉ ᾽O ᴖ ᴴ ⸨OBJ⸩ IP ş χ
ipv6-address	³ ᵉ ᾽O ᴖ ᴴ ⸨OBJ⸩ IPv6 ş χ

ƛ ᵽ ⸨OBJ⸩ ƛ ≡ ῶ ᵽ ⸨OBJ⸩ ³ ᵉ ᾽O ᴖ ᴴ

ᵘ ᵑᵦ ₩ Ã ᵓ ṕ ᵽ ⸨OBJ⸩ ₩ Ã

ƛ ʌ. 14

Æ ɤ ˝ Y Ṁ ᴱ ῶ ᵽ ⸨OBJ⸩ ˝ ³ ᵉ ᾽O ᴖ ᴴ ė ⸨OBJ⸩ ⸨OBJ⸩ ф Φ ʊ ⸨OBJ⸩ ⸨OBJ⸩ ³ ᵉ ɻ ‘

▌ ɤ DNS Server ⸨OBJ⸩ IP/IPv6 ş χ ⅛ Ƙ ˝ E Φ ⸨OBJ⸩ ˝ ᵘ ᵑᵦ ı ф ⸨OBJ⸩ ⸨OBJ⸩ ⸨OBJ⸩ ⸨OBJ⸩ ⸨OBJ⸩ ▌ ɤ Ⱥ DNS Server Ẹ ḛ ḫ | ʁ ʌ Ⱥ Server ᴖ ᴨ ˙ ³ ᵉ ᾽H ı ф ⸨OBJ⸩ ⸨OBJ⸩ h ő ⁝ ᵇ ᵅ ʌ ˇ Ⱥ Server ʌ گ DNS ت ∂ ı ´ ˙ * ¸ ᾠ ˙ ɨ Ẓ ʁ ₿

ʌ ʌ ᾠ ^ ˜ Ḥ ' Y 6 Ⱥ ᾽O ᴖ ᴴ ¨ ᵬ DNS Server ᾽H ı ḅ ' ύ ˝ Y ⸨OBJ⸩ ˝ *ip-address* ð *ipv6-address* v ¨Ꝙ ı ¨ ᴱ ¨ ᵬ ˝ Y ⸨OBJ⸩ ⸨OBJ⸩ ᾽O ᴖ ᴴ ı ε ¨ ¨ ᵬ ¨A ῶ ⸨OBJ⸩ DNS ᾽O ᴖ ᴴ ş χ

ᵽ ʌ ʓ æ 1 χ ᵽ ʌ IPv4 ³ ᵉ ᾽O ᴖ ᴴ ⊐ IPv6 ³ ᵉ ᾽O ᴖ ᴴ

```
Ruijie(config)# ip name-server 192.168.5.134
Ruijie(config)# ip name-server2001:0DB8::250:8bff:fee8:f800 2001:0DB8:0:f004::1
```

₅ ƺ Ä | **show run**¶ ˜ ᵽ ʌ ı è ᵽ ¨A ᵽ ʌ ⸨OBJ⸩ ᵘ ᵑᵦ

ώ˜ ʒ Ụ -

Ẃ ȸ ᶎ ئ -

Ẉ ᴶ ب ˝ -

5.5 ipv6 host

ė Ṫ ب ل ڎ ᵉ ⁼ IPv6 ş χ ī ṃ

ipv6 host *host-name ipv6-address*

ـ ڻ ڎ ˚ ˊ

no ipv6 host *host-name ipv6-addres*

v ˝Ꝙ ب ˝

v ˝Ꝙ	ѡ ك
host-name	Ф ᵻ ڎ ᵉ
Ipv6-address	Ф ᵻ IPV6 ş χ

ỉ ب ل -

ᵘ ɲ ₩ Ã ☋ ṕ ب ل ₩ Ã

ỉ ۱ ̣ 14

Æ ŧ ˝ Y Ṁ -

ب ل ڎ æ 1 χ ˉ õ ب ل ³ ᵉ Ḿ Ẓ ipv6 ş χ

```
Ruijie(config)# ipv6 host www.test6.com 2001:0DB8:700:20:1::12
```

ₛ ڃ Ά | **show run**¶ ˜ ب ل ı è ƍ ˝A ب ل ᵘ ɲ

show hosts¶ ˜ Ẹ ˙ ³ ᵉ ⁼ IP Ḿ Ẓ ԋ ۷ ı è ƍ ˝A ب ل ³ ᵉ ⁼ ip Ḿ Ẓ ˊ °

ѡ˜ ʒ Ụ -

Ẃ ȸ ڄ ئ -

Ẉ ᴶ ب ˝ -

5.6 show hosts

Ǐ ˜ DNS ب ل ʒ Ụ

show hosts [*hostname*]

v ̈Ọ ب ̃	v ̈Ọ	ὼ ك
	hostname	¶ ~ ̈Y ḧ ³ ᵾ ⅄ ὺ` ¶ ~ ̈A ὼ ³ ᵾ ȝ Ụ

ᵘ ɲ ₩ Ã ϡ ṕ ₩ Ã

⅄ ۱. 14

Æ ɬ ̈Y Ṁ Ĭ ~ DNS ⅄ ԉ ب ɻ ȝ Ụ

ب ɻ ʖ æ 1 χ ¶ ~ ̈A ὼ ³ ᵾ ȝ Ụ

```
Ruijie# show hosts
Name servers are:
192.168.5.134 static

Host                type          Address                TTL(sec)
switch              static        192.168.5.243           ---
www.ruijie.cos  MT                      192.168.5  243         5      ؾ      Ĭ
```

6

6.1 clear rping table all

▌ᵬ Rping ¨A õ ˊ ˚

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

ᵛ ¨Ǫ ᵇ ¨	ᵛ ¨Ǫ	ὼ ᶄ
	owner	ᵻ ¨A ۷ Â
	test-name	ᴵᴵ ؛ ۷ Â

ᵘ ᵑᵇ ₩ Ã ᵉ ₩ Ã

ƛ ۸ ̣ -

Æ ᵻ ˝ Y Ṁ % ᵘ ᵑᵇ ᵻ ˥ ¸ ᵬ ₱ ᵎ i Rping ۸ ת ᵻ ¨A ¨A õ ή ᴵᴵ ˀ ᵸ ˊ ˚

ᵬ ۷ ᵷ æ 1 χ ▌ᵬ Rping ¨A õ ˊ ˚ ʒ Ụ

```
Ruijie# clear rping table all
```

2: ▌ᵬ ᵻ ¨A ₥ user ı ή ᴵᴵ ᵉ ruijie ₦ Ő Φ

```
Ruijie# clear rping table user ruijie
```

ώ˜ ʒ Ụ 1 χ ḅ ' ₱ ᵎ i ≡ õ ˝ Y ḧ ₦ Ő Φ ı ¸ ώ˜ ˀ Ẓ ʒ Ụ

Ẉ ᴶ ᵬ ¨ -

6.2 ping

ₛ ᴵᴵ ˝ Y ḧ IPv4 ᵴ χ ĩ ᵋ ˡ ᵮ ı Ẋ ᵮ ˛ ˀ ᵸ ʒ Ụ

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

ᵛ ¨Ǫ ᵇ ¨	ᵛ ¨Ǫ	ὼ ᶄ
	address	˝ Y ḧ ´ IPv4 ᵴ χ ᾶ ³ ᵉ
	length	˝ Y ḧ ʌ ڜ ˝ Ǫ ˜ Ǫ γ ˝ Ǫ ˜ Ǫ ˡ Χ ᵻ ت ẙ ᵢ ḫ χ 36~18024 ı س ת ˡ Χ ت ẙ ₥ 100
	times	˝ Y ḧ ʌ ڜ ˝ Ǫ ˜ Ǫ γ A ˝ Ǫ ı ¸ ḫ χ 1~ 4294967295
	seconds	˝ Y ḧ ʌ ` H ` H ᵮ ı ¸ ḫ χ 1~10 ε ۷ ζ

data	˝Y ḧ ĭ ă ˈ Χ ˝Ọ ̃Ọ ı ĭ Ã ʁ 1-255 ڌ ỷ Ê ﻍ ʁ ı ѕ ת ˈ Χ ʁ abcd
source	˝Y ḧ ĭ ă ◊ IPv4 ş χ ã ◊ ì Æ Ꞇ ʌ ı ע ɨ ì Æ ş χ ε æ ḅ 127.0.0.1 ζ j ы ḡ Ă ʁ ◊ ş χ
df-bit	ֆ ﻝ IP DF ‰ ɣ ɥ ı Ę DF ɥ ɑ ֆ ﻝ ʁ 1 ʿH ı ´ ~ j Ḿ ˝Ọ ̃Ọ ץ ف Φ ʿ ﻉ ∫ ת ı ѕ ת DF ɥ ʁ 0
validate	ֆ ﻝ ĩ ε › ڃ ᵠ Ẓ ĭ ă
detail	ֆ ﻝ ɨ Ǐ ĩ ε Ǐ ~ ﻍ ﻝ ʒ Ụ ı ѕ ת ᴱ Ǐ ~ Ɣ ή ɣ ⁼ Ɣ . ɣ

ﻝ ﻁ ﻝ ḡ ˝Y ḧ H ژ ε ﻝ ʁ 2 ﻯ ζ ת ı گ 5 Ⱥ ڌ ỷ ʁ 100Byte ̃Ọ ̃Ọ ץ ˙ ˝Y ḧ IP ş χ

ᵘ ᖘ ₩ ḡ ˝ ں ɤ ˝A ₩ Ã ï ı ᴱ ǐ ظ Φ ᵍ ping ı ǐ ψ ḡ ≠ ɤ ˝A ₩ Ã ï ı ف ˈ Ԛ ظ Φ ping ˝E ḭ ı ǐ Ã

ﻝ ﻝ 0

Æ ɤ ˝Y ظ Φ ping ı ǐ ı ḅ ˈ ω Ẓ ﻯ ı ˛ Ǐ ~ ˛ Ẓ ﻯ ʁ ʊ ʒ Ụ ı ѡ ª ژ ˛ Ⱥ ﻝ ɯ ʒ Ụ ḡ ˝E ḭ ping ʌ ı ˈ Ԛ ˝Y ḧ ʌ گ Ṁ ̃Ọ ̃Ọ ץ Ⱥ ˝Ọ ڌ ỷ ʌ ʿH H ژ ﻯ ﻝ ı ⊐ ᵍ ping ı ǐ ¯ ı ѡ ª Ĉ ژ ˛ Ⱥ ﻝ ɯ ʒ Ụ ļ Æ ɤ ³ ᵉ ı ǐ ı ˛ ļ Ӿ ﺑ ﻝ ³ ᵉ ˋ O ת ʜ ı ʊ ч ﺑ ﻝ ت v ă DNS ﺑ ﻝ ظ ʰ

ﺑ ﻝ ڎ 1 χ ˝ ں ping ḫ æ ˝Y ḧ ´ IP ş χ ʁ 192.168.21.26

æ

Ẃ h ping

```
Ruijie# ping 192.168.21.26
Sending 5, 100-byte ICMP Echoes to 192.168.21.26, timeout is 2 seconds:
< press Ctrl+C to break >
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/10 ms
```

Ǐ ~ detail ping

```
Ruijie#ping 192.168.21.26 detail
Sending 5, 100-byte ICMP Echoes to 192.168.21.26, timeout is 2 seconds:
  < press Ctrl+C to break >
Reply from 192.168.21.26: bytes=100 time=4ms TTL=64
Reply from 192.168.21.26: bytes=100 time=3ms TTL=64
Reply from 192.168.21.26: bytes=100 time=1ms TTL=64
Reply from 192.168.21.26: bytes=100 time=1ms TTL=64
Reply from 192.168.21.26: bytes=100 time=1ms TTL=64
```

Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/4 ms.2 χ ˝E ḭ ping ḫ æ ˝Y ḧ ´ IP ş χ ʁ 192.168.21.26 ı ʌ گ ˝Ọ ̃Ọ ץ ڌ ỷ ʁ 1500 ı ʌ گ ˝Ọ ̃Ọ ץ Ⱥ ˝Ọ ʁ 20 ı ʌ ʿH H ژ ʁ 3 ﻯ ı ĭ ă ˈ Χ ˝Ọ ̃Ọ ʁ ffff ı Ẋ ֆ ﻝ ◊ IP ş χ ʁ 192.168.21.99

ﺉ

Ẇ ʲ ب
ᵚ -

6.3 ping ipv6

ₛ ﻟ ᵚ Ỿ ḧ IPv6 ʂ ᵪ ĩ ᵋ ˡ ᵯ ˡ Ẋ ᵹ ˎ ʜ ʒ Ụ
ping [**ipv6**] [*ip-address* [**length** *length*] [**ntimes** *times*] [**timeout** *seconds*] [**data** *data*] [**source** *source*] [detail]]

v ᵚ Ọ
ب ᵚ

v ᵚ Ọ	ὼ ك
ip-address	ᵚ Ỿ ḧ ´ IPv6 ʂ ᵪ ᾶ ³ ᵃ
length	ᵚ Ỿ ḧ ∧ گ ᵚ Ọ ̃ Ọ ɣ ڎ ˡ ᵢ̤ ḫ ᵪ 16~18024 ˡ ˡ ᵴ ɲ ˡ Ⱬ ڎ ỷ ʬ 100
times	ᵚ Ỿ ḧ ∧ گ ᵚ Ọ ̃ Ọ ɣ Ⱥ ᵚ Ọ ˡ ᵢ̤ ḫ ᵪ 1~ 4294967295
seconds	ᵚ Ỿ ḧ ∧ ̀H ̀H ᵯ ˡ ᵢ̤ ḫ ᵪ 1~10 ε ﻯ ζ
data	ᵚ Ỿ ḧ ᵎ ᾰ ˡ Ⱬ ᵚ Ọ ̃ ˡ † Ã ʬ 1-255 ڎ ỷ È ﻯ ʬ
source	ᵚ Ỿ ḧ ᵎ ᾰ ◊ IPv6 ʂ ᵪ ᾶ ◊ ì Æ Ʊ ʌ ˡ ʏ ɨ ì Æ ʂ ᵪ ε æ ḅ ::1 ζ j ы ḡ Ă ʬ ◊ ʂ ᵪ
detail	ɸ ﻝ ɨ Ǐ ĩ ᵋ Ǐ ~ ᵍ̆ ﻝ ʒ Ụ ˡ ᵴ ɲ ᴱ Ǐ ~ Ⱶ ή ɣ ⊐ Ⱶ . ɣ

ﻵ
ﺑ ﻝ
ﻵ ḡ ᵚ Ỿ ḧ ̀H ᵯ ε ﻵ ʬ 2 ﻯ ζ ﻍ ˡ گ 5 ʌ ڎ ỷ ʬ 100Byte ̃ Ọ ̃ Ọ ɣ ˙ ᵚ Ỿ ḧ IP ʂ ᵪ

ᵘ ᵑᵇ ḡ ᵚ ᵑ ﻍ ᵀ Ⱥ ₩ Ã ï ˡ ᵢ ᴱ ĩ ḅ Φ ᵍ ̃ **ping ipv6** ˡ ĩ ψ ḡ ≠ ﻍ ᵀ Ⱥ ₩ Ã ï ˡ ف ˡ Ꞓ ḅ Φ **ping ipv6** ̃ E ḭ ˡ ĩ
₩ Ã

ﻵ 0
ﻝ ˎ

Æ ﻍ ḅ Φ **ping ipv6** ˡ ĩ ˡ ḅ ' õ Ẓ ﻝ ˡ ᵢ̤ Ǐ ~ ˛ Ẓ ﻝ ̃ ʜ ʒ Ụ ˡ ᵢ ḅ ' Ẓ ﻝ ̃ Ọ ̃ Ọ ɲ ķ ﻉ ت ∂ ̃ Ọ ̃ Ọ ɲ ķ j ש ف ˡ ᵢ̤ Ǐ
ᵚ Ỿ Ṁ ~ Ⱥ ‘Request receive error.’ ˡ ω ᵅ ᵯ ˎ Ⱥ ﻝ ɯ ʒ Ụ
ḡ ᵚ E ḭ **ping ipv6** ʌ ˡ ˡ Ꞓ ᵚ Ỿ ḧ ∧ گ ᵚ Ọ ̃ Ọ ɣ ̃ Ⱥ ᵚ Ọ ڎ ỷ ∧ ̀H ̀H ᵯ ﻍ ﻍ ˡ ⊐ ᵍ ̃ **ping ipv6** ˡ ĩ ¯ ˡ ω ᵅ Ĉ
ᵯ ˎ Ⱥ ﻝ ɯ ʒ Ụ
ɻ Æ ﻍ ³ ᵃ ˡ ĩ ˡ ᵢ̤ ɻ Ӿ ف ﻝ ³ ᵃ ̀O ᵑ ʜ ˡ ᵫ ﻍ ف ﻝ ت v ᾰ DNS ف ﻝ ﻫ ˙

ف ﻝ 1 ᵪ ᵚ ᵑ **ping ipv6** ̃ ḫ æ ᵚ Ỿ ḧ ´ ̃ IP ʂ ᵪ ʬ 2001::5
ﺟ æ

```
Ẃ h ping
Ruijie# ping ipv6 2001::5
Sending 5, 100-byte ICMP Echoes to 2001::5, timeout is 2 seconds:
< press Ctrl+C to break >
```

```
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/10 ms

Ǐ ~ detail ㊙ ping
Ruijie#ping 2001::1 detail
Sending 5, 100-byte ICMP Echoes to 2001::1, timeout is 2 seconds:
  < press Ctrl+C to break >
Reply from 2001::1: bytes=100 time=1ms
Reply from 2001::1: bytes=100 time=1ms
Reply from 2001::1: bytes=100 time=1ms
Reply from 2001::1: bytes=100 time=1ms
Reply from 2001::1: bytes=100 time=1ms

Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/1 ms.
```

2 χ ¨E ī **ping ipv6** ㊙ ḫ æ ¨Y ẗ ´ ㊙ IP ş ϰ ѭ 2001::5 ı ʌ ﮒ ¨Ω ˜Ω ɣ ت ỷ ѭ 1500 ı ʌ ﮒ ¨Ω ˜Ω ɣ ʌ ¨Ω ѭ 20 ı ʌ ʿH ㊙ ʿH ڑ ѭ 3 ヽ ı ï ă ¦ Χ ¨Ω ˜Ω ѭ ffff ı Ẋ ф ﻝ ◊ IP ş ϰ ѭ 2001::9

```
Ẃ h ping
Ruijie# ping ipv6 2001::5  length 1500 ntimes 100 data ffff source 2001::9 timeout 3
Sending 100, 1500-byte ICMP Echoes to 2000::1, timeout is 3 seconds:
  < press Ctrl+C to break >
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 2/2/3 ms
Ǐ ~ detail ㊙ ping
Ruijie#ping 2001::5 length 1500 ntimes 10 data ffff source 2001::9 timeout 3
Sending 10, 1500-byte ICMP Echoes to 2001::5, timeout is 3 seconds:

Reply from 2001::5: bytes=1500 time=1 ž ž ڤ ɴ ﻥ ﻝ Reply from 2001::5: bytes=1500 time=1
```

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ʒ Ụ

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-
ȩ ʕ

Ẉ ᴶ
-
ب ˝

6.4 show rping detail

ꜝ ˜ Rping ʒ Ụ

show rping detail

v ˝Ọب ˝

v ˝Ọ	ώ ك
-	-

ᵘ ɲ₩Ã ₹ ₩Ã ৩ ṕ₩Ã ì Æ₩Ã

ƛ ۱. -

Æ ɾ ˝YṀ Æ ɾ Í ᵘ ɲ ˡ Ꙍꜝ ˜ ₱ ᵻ i ㊀ Rping ʌ ۱ ת㊀Ḿ ɛ㊀Ở˝Ọ ı ɾ ˝Ä˝Ọ ۷ ʒ Ụ

ب ɻ ڎ æ 1 χꜝ ˜ Rping㊀ؤ ۷ ʒ Ụ

```
Ruijie#show rping detail
Total owner number: 2
Total test number: 4
owner: user1
   test name: taget_1        storage type: volatile
   test name: taget_2        storage type: nonVolatile
owner: user2
   test name: taget_1        storage type: permanent
   test name: taget_2        storage type: readOnly
```

È ɻ ɹ ᵩ χ

È ɻ	ب ˝
Total owner number	ɾ ˝Ä Ở˝Ọ
Total test number	⅄ ᵻ Ở˝Ọ
owner	ɾ ˝Ä ᵉ
test name	⅄ ᵻ ᵉ
storage type	₦ Ổ Φ è Ч ۱ ʒ

ώ˜ ʒ Ụ

Ẉ ᴶ ᵇ ˝ -

6.5 traceroute

Ǐ ˜ IPv4 ˝Ω ̃Ω ɣ ʁ ◊ ʂ ɣ ˙ ´ ʂ ɣ ˝A ɻ ص ɻ ʜ

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

ν ˝Ω ᵇ ˝

ν ˝Ω	ώ ك
address	˝Y ӧ ´ IPv4 ʂ ɣ ã ³ ᵉ
number	˝Y ӧ ʌ گ ή ᴌ ˝Ω ᵧ ᵢ ᵢ ƀ χ 1~255
source	˝Y ӧ ĭ ă ◊ IPv4 ʂ ɣ ã ◊ ì Æ Ʊ ʁ ᵢ ע ᵻ ì Æ ʂ ɣ ε æ ḅ 127.0.0.1 ζ j ы ƥ Ă ʁ ◊ ʂ ɣ
seconds	˝Y ӧ ʌ ̀H ̀H ڑ ᵢ ᵢ ƀ χ 1~10 ε ヽ ζ
minimum maximum	˝Y ӧ ώ ṇ ⁼ ώ ᶻ TTL Ө ᵢ ᵢ ƀ χ 1~255

ɻ ᵖ ɻ ɻ ʌ ̀H ̀H ڑ ʁ 3 ヽ ᵢ ʌ گ ή ᴌ ˝Ω ᵧ ʁ 3 ᵢ ώ ṇ ⁼ ώ ᶻ TTL ˋ ˛ ʁ 1 ⁼ 255

ᵘ ᵑᵇ ₩ Ã ƥ ̀Y **traceroute** ᵢ ǐ ψ ƥ ≠ ᵻ ˝A ₩ Ã ï ᵢ ف ᵎ ℚ ظ Φ **traceroute** ˝E ī ᵢ ǐ

ɻ ᵑ˛ 0

Æ ᵻ ˝Y Ṁ **Traceroute** ᵘ ᵑᵇ ʓ ɻ ᵡ ˢ ᵻ ɻ ᵑ ف ᵬ Ẋ ƥ ɻ ᵑ ѿ ƛ ʌ ᵻ ̀H ᵢ ´ ˛ ӧ ӈ ᵸ ѿ ƛ ʌ ᵻ ᵸ ᵸ ɻ ɻ Æ ᵻ ³ ᵉ ᵢ ǐ ᵢ ᵧ ɻ ʜ ɻ ³ ᵉ ̀Ο ᵑ ʰ ᵢ ᵀ ᵠ ᵸ ɻ ᵗ ν ă DNS ᵬ ɻ ᵸ ˋ

ᵬ ɻ ʓ æ 1 χ ̊ ʓ ɻ ᵑ ʊ ڑ traceroute æ Ḍ

```
Ruijie# traceroute 61.154.22.36
< press Ctrl+C to break >
Tracinh the route to 61.154.22.36
1       192.168.12.1      0 msec  0 msec  0 msec
2       192.168.9.2       4 msec  4 msec 4 msec
3       192.168.9.1       8 msec  8 msec  4 msec
4       192.168.0.10      4 msec  28 msec  12 msec
5       202.101.143.130     4 msec  16 msec  8 msec
6       202.101.143.154    12 msec  8 msec  24 msec
7       61.154.22.36      12 msec  8 msec  22 msec
```

ʁ i ₌ ﻝ ' ˡ ℚ ˜ ˙ ı ʁ ◊ ʂ χ ɻ ևւ ڎ IP ʂ χ ʍ 61.154.22.36 ﻩ ڰ ı ﻝ ﻡ ٘ ٙ ﻭ ﻯ ﻝ ﺹ ˝ ᵤ ᖘ ﻝ ʜ ᴜ ε 1 ʁ 6 ζ ı ª ˋ H ﻡ ˛ ˝ ˙ ز أ ﻝ ʜ ᴜ ̈ A ﻝ ˊ ﻩ ˋ H ژ

2 χ ˚ ڰ ﻝ ﻡ ﺍ • ᖘ ﻝ ʜ ᴜ j ﻥ ﻩ traceroute æ Ḍ

```
Ruijie# traceroute 202.108.37.42
< press Ctrl+C to break >
Tracing the route to 202.108.37.42
1       192.168.12.1      0 msec  0 msec  0 msec
2       192.168.9.2         0 msec  4 msec 4 msec
3       192.168.110.1      16 msec  12 msec  16 msec
4       *  *  *
5       61.154.8.129       12 msec  28 msec  12 msec
6       61.154.8.17         8 msec  12 msec  16 msec
7       61.154.8.250       12 msec  12 msec  12 msec
8       218.85.157.222     12 msec  12 msec  12 msec
9       218.85.157.130     16 msec  16 msec  16 msec
10       218.85.157.77     16 msec  48 msec  16 msec
11       202.97.40.65      76 msec  24 msec  24 msec
12       202.97.37.65      32 msec  24 msec  24 msec
13       202.97.38.162     52 msec  52 msec  224 msec
14       202.96.12.38       84 msec  52 msec  52 msec
15       202.106.192.226    88 msec  52 msec  52 msec
16       202.106.192.174    52 msec  52 msec  88 msec
17       210.74.176.158    100 msec  52 msec  84 msec
18       202.108.37.42      48 msec  48 msec  52 msec
```

ʁ i ₌ ﻝ ' ˡ ℚ ˜ ˙ ı ʁ ◊ ʂ χ ɻ ևւ ڎ IP ʂ χ ʍ 202.108.37.42 ﻩ ڰ ı ﻝ ﻡ ٘ ٙ ﻭ ﻯ ﻝ ﺹ ˝ ᵤ ᖘ ﻝ ʜ ᴜ ε 1 ʁ 17 ζ ı Ẋ ħ ﻝ ʜ ᴜ 4 ˛ ﻛ ˝ ﯗ ڎ

3 χ ˚ ڰ Æ ɾ ³ ᵉ ı Ĺ ﻩ æ Ḍ

```
Ruijie# traceroute www.ietf.org
Translating " www.ietf.org "...[OK]
< press Ctrl+C to break >
Tracing the route to 64.170.98.32
1       192.168.217.1    0 msec  0 msec  0 msec
2       10.10.25.1         0 msec  0 msec  0 msec
3       10.10.24.1         0 msec  0 msec  0 msec
4       10.10.30.1         10 msec 0 msec  0 msec
5       218.5.3.254        0 msec  0 msec  0 msec
6       61.154.8.49        10 msec 0 msec  0 msec
7       202.109.204.210    0 msec  0 msec  0 msec
8       202.97.41.69       20 msec 10 msec 20 msec
9       202.97.34.65       40 msec 40 msec 50 msec
10      202.97.57.222      50 msec 40 msec 40 msec
```

```
11      219.141.130.122     40 msec 50 msec 40 msec
12      219.142.11.10       40 msec 50 msec 30 msec
13      211.157.37.14       50 msec 40 msec 50 msec
14      222.35.65.1         40 msec 50 msec 40 msec
15      222.35.65.18        40 msec 40 msec 40 msec
16      222.35.15.109       50 msec 50 msec 50 msec
17      *       *       *
18     64.170.98.32       40 msec 40 msec 40 msec
```

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ώ˜ ʒ Ụ -

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Ẉ ᴶ ب ˝ -

6.6 traceroute ipv6

Ǐ ˜ IPv6 Ẅ Ỡ Ω ɣ ʁ ◊ ş ϰ ˙ ´ ▨ ş ϰ È ת . ė ڸ

```
Tracing the route to 3004::1
1       3000::1          0 msec  0 msec  0 msec
2       3001::1          4 msec  4 msec 4 msec
3       3002::1          8 msec  8 msec  4 msec
4       3004::1          4 msec  28 msec  12 msec
```

ʁ i ⸗ ﻝ ' ˡ ℚ˜ ˙ ı ʁ ◊ ş ɣ ɻ ևւ ڈ IP ş ɣ ﷺ 3004::1 ﻉ ı ﻝ ﻡ ٌ ٔ ٓ ﻭ ﻥ ﻱ ﻫ ﻝ ﺹ ً ᵘ ᴾ ﻝ ᴎ ε 1 ĸ 4 ζ ı ᵃ ʿ H ﻡ ˛ ˜ ˙ ژ أ ﻝ ᴎ ٔ A ﻝ ˊ ﻉ H ژ

2 χ ° ﻉ ﻝ ﻡ ﺍ • ᴾ ﻝ ᴎ j ﻥ ﻉ **traceroute ipv6** æ Ḍ

```
Ruijie# traceroute ipv6 3004::1
  < press Ctrl+C to break >
Tracing the route to 3004::1
1       3000::1          0 msec  0 msec  0 msec
2       3001::1          4 msec  4 msec 4 msec
3       3002::1          8 msec  8 msec  4 msec
4       * * *
5       3004::1          4 msec  28 msec  12 msec
```

ʁ i ⸗ ﻝ ' ˡ ℚ˜ ˙ ı ʁ ◊ ş ɣ ɻ ևւ ڈ IP ş ɣ ﷺ 3004::1 ﻉ ı ﻝ ﻡ ٌ ٔ ٓ ﻭ ﻥ ﻱ ﻫ ﻝ ﺹ ً ᵘ ᴾ ﻝ ᴎ ε 1 ĸ 5 ζ ı Ẋ ħ ﻝ ᴎ 4 ˛ ˟ ˜ ﷺ ڈ

₅ ﺝ A ⎸	-
ώ˜ ʒ Ụ	-
Ẃ ȸ ﺝ ئ	-
Ẉ ᴶ ب ˝	-

7 TCP

7.1 ip tcp adjust-mss

Ф ɹ ʇ ʌ TCPv4 SYN ï ă MSS J̌ ° Ë

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

Õ ʰ ɻ ٫ɹ

no ip tcp adjust-mss

ν ̈Ǫ ٫ ̈

ν ̈Ǫ	ώ ڭ
max-segment-size	ϖ ᶻ ̈Ǫ ̃Ω ɟ ᶻ ɳ ı ɒ ɥ ʬ È ` ı ,, ƀ ĩ 500-1460

ɻ ٫ɹ j Ӣ ώ SYN ï ă MSS J̌ ° Ë

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

ɻ ٨ 14

Æ ɪ ̋ Y Ṁ MSS χ TCP ï ă ̈Ǫ ̃Ω ɔ U ϖ ᶻ Ë

TCP ڈ Ê ϖ ᶻ ҽ ڑ ɒ ʄ ʌ ϰ ı Ґ ĩ ̃Y RFC1191 ƀ ϰ ı ف Ѧ ı Ґ ˡ Ɑ ώ ح ɹ ٨ Ṿ Ķ ɪ ' Ẹ ɪ ̈Ѧ Æ ɪ TCP ſ ή ˌ ҽ ڑ ᶻ ę ̈Ǫ ̃Ω ʜ ı Ỉ ı Ґ ˡ Ɑ Æ ҽ ڑ ό Ґ ệ ¨ Ǐ ώ ″

Ẹ ị ̈Ѧ ٧ ʌ ٧ Ѧ tcp ف ì ʜ ı Ḛ ِ ص TCP SYN ï ă ѧ MSS J̌ ° È ɟ ʁ ƀ TCP ï ă ̈Ǫ ̃Ω ɔ U ϖ ᶻ Ë ı ị ̈Ѧ ٧ SYN ï ă MSS Ë ´ ~ ª ٨ ʾ O ɲ ʜ ٧ ʌ ڰ TCP ï ă ̈Ǫ ̃Ω ɔ U ϖ ᶻ Ë ı ɾ ɵ ª ɲ

ƍ ì Æ i ٫ɹ ᵘ ɲ Ꮒ Æ ệ Ỉ ì Æ ì ώ ã ʌ ڰ SYN ï ă MSS J̌ ° ɋ ώ ʬ ì Æ ٫ɹ MSS Ë ь ' SYN ï ă ϗ Æ ⁼ ˌ Æ ʯ u ٫ɹ ´ MSS ı Ѳ ψ ɒ ƀ Ѧ Æ ٫ɹ ِ ɳ ă Ꮒ ˇ á ɲ ˌ Æ ⁼ ϗ Æ ٫ɹ ¯ ᵘ ɲ ƍ ڰ i ĩ Ӣ ώ ´ TCP á ٧ ف ì ʜ Ґ Ѝ SYN ï ă ı õ Ꮲ ν Ĉ Ꮒ Ӣ ώ SYN+ACK ï ă ف Ѧ ı Ґ k ɪ Љ ԋ ŏ ı Ḿ ̣ ̂ Ţ ɻ á ٧ TCP ف ì j ɬ ѽ ı ᴱ Ḿ ª ſ á ٧ TCP ف ì ɬ ѽ

٫ɹ ڏ æ 1 χ ƍ ì Æ GigabitEthernet 0/0 i ٫ɹ ̋ H ʇ ʌ TCPv4 SYN ï ă MSS J̌ ° Ë Ӣ ώ ʬ 1000 È `

```
Ruijie(config-if-GigabitEthernet 0/0)# ip tcp adjust-mss 1000
```

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Ẃ ð ʇ ʓ -

Ẉ ᴶ ب ˝ -

7.2 ip tcp keepalive

Í ᵘ ɲ ɾ⁽ Ã ᵏ TCP Ȝ ╗ ı Í

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

v ¨Ọ ب ˝

v ¨Ọ	ώ ك
interval *num1*	∧ گ Ȝ ╗ ï ă H ژ ژ ك ı ɒ ɣ î ٧ ı ⊓ Ë ɲ ĵ 1 ˙ 120 ı ƚ Ë î 75 ٧
times *num2*	∧ گ Ȝ ╗ ï ă K ¨Ọ ı ⊓ Ë ɲ ĵ 1 ˙ 10 ı ƚ Ë î 6
idle-period *num3*	٧ ژ H ژ ı o Ḿ ٩ ≡ ω ᵇ ٩ ∧ گ ص ï ă H ژ ذ ẙ ı ɒ ɣ Ĩ ٧ ı ⊓ Ë ɲ ĵ 60 ˙ 1800 ı ƚ Ë î 15 ʿ ت

ƚ ب ل ʜ ژ

ᵘ ɲ ₩ Ã ২ ṕ ₩ Ã

ƚ ٨ ̣ 2

Æ ɾ ˝ Y Ṁ ḅ ˈ TCP Ű Ọ ˜ ژ Ḿ ٩ ĩ ᵋ ف ɱ* Ẃ Ṫ Ă ı ˡ Ɯ Ã ᵏ Ȝ ╗ ı Í
Ə ɸ ɾ Ä Ã ᵏ Ȝ ╗ ı Í ı H ژ ژ ك ı K ¨Ọ ⁼ ٧ ژ H ژ ɸ u Æ ɾ ƚ Ë ı TCP ɱ 15 ʿ ت ɲ ≡ ω ώ ˙ ص Ḿ ٩ ∧ گ ï ă ı Ã Ḋ ∧ گ Ȝ ╗ ï ă ı ⅛ ك 75 ٧ ∧ گ K ı ف ٨ ∧ گ 6 K ı ḅ ˈ ≡ ω ώ ˙ Ḿ Ä ∧ گ γ Ṃ TCP ï ă ı ő ɲ ₥ TCP ف ì ṇ ᾗ ı ƽ ∪ ᵩ ώ TCP ف ì
Í ᵘ ɲ j W ת ʿ Ȯ ⊓ ʜ ٩ ⁼ ị Ä ٩ ı Ḿ Ä õ TCP ف ì ɸ u ᾗ

ب ل ʓ æ 1 χ ɱ ɸ ɬ i Ã ᵏ TCP Ȝ ╗ ı Í ı ٧ ژ H ژ ĩ 3 ʿ ت ı ∧ گ Ȝ ╗ ï ă H ژ ژ ك ĩ 60 ٧ ı ḅ ˈ ف ٨ ∧ گ 4 K Ȝ ╗ ï ă ı ≡ ω ώ ˙ Ḿ Ä ∧ گ γ Ṃ TCP ï ă ı ő ɲ ₥ TCP ف ì ṇ ᾗ

```
Ruijie(config)# ip tcp keepalive interval 60 times 4 idle-period 180
```

ƽ ƺ Ä | -

ώ ˜ Ȝ Ụ -

Ẃ ð ჯ ئ -

Ẉ ʲ ب ˝ 11.0 v Ậ ২ Í ᵘ ɲ ı ⊓ Ɱ 10.x v ب ل ᵘ ɲ ɒ service tcp-keepalives-in ɓ ⁼ ɒ service tcp-keepalives-out ɓ

7.3 ip tcp mss

ɸ ل TCP ف ì MSS ώ ᶻ Ë

ip tcp mss *max-segment-size*

Õ ʰ ƚ ٮ
no ip tcp mss

v ̈Ọ ٮ ˝

v ̈Ọ	ὼ ك
max-segment-size	MSS ᪶ i ں Ö ɒ ɣ ⱡ È ` ı ɲ Ö ̤ ɻ 68-10000 ѫ ɲ Æ ɾ ⋮ Ỡ MTU ɰ ٧ ệ ̇ ᪶ MSS

ƚ ٮ

-

ᵘ ɲ ₩ Ã

ঌ ṕ ₩ Ã

ƚ ٧ ̣

14

Æ ɾ ˝ Y Ṁ

ip tcp mss ᪶ Ă ɾ ő ĩ ں ˙ o Ṅ á ٧ ᪶ TCP ف ì ᪶ MSS ᪶ ѱ ᶻ Ö γ Ḿ À á ٧ ᪶ ف ì ʁ ƀ ᪶ MSS Ö j ḟ ʌ ص ٮ ᪶ Ö ḅ ' ḷ ̊ ṇ ف ì ᪶ ѱ ᶻ MSS Ö ı ˡ Ꝏ ٮ ƚ Ḯ ᵘ ɲ ı ˜ ὺ ` ï j ₓ ɭ ٮ ƚ ѫ ɲ Æ ɾ ⋮ Ỡ MTU ɰ ٧ ệ ̇ ᪶ MSS ı ḅ ï Ä ˜ χ
IPv4 TCP χ MSS = Ḿ ٧ IP ş Ę Ẓ M Ȯ

v ̈Ϙ ̋

v ̈Ϙ	ώ ك
age-timer *minutes*	TCP ϱ ∧ א PMTU ᵅ ا ̈Ȧ ف Φ ή ⅄ ⃞ H ژ ژ ك ɒ ʁ ̇ ت ıɒ Ö ̤ ϱ 10-30 ȷ̌ Ö 10
age-timer infinite	TCP ϱ ∧ א PTMU ᵅ ı j ̈Ȧ ή ⅄

ȷ̌ ب ل ʜ ژ

ᵘ ɲ ₩ Ã ২ ṕ ₩ Ã

ȷ̌ ۱ ̣ 14

Æ ŧ ̋ Y Ṁ TCP ⃞ ت Ê ώ ᶻ ҽ ژ ɒ ₣ ∧ א ı ǐ ĩ ̋ Y RFC1191 ḫ א ⃞ ı ف Ѧ ı ǐ ˈ Ϙ ώ ح ل ۸ Ṿ Ķ ⃞ ŧ ' Ę ŧ ̈Ā Æ ŧ TCP ˡ ή ̧ ҽ ژ ᶻ ę ̈Ϙ ̈Ω H ı Ǐ ı ǐ ˈ Ϙ Æ ҽ ژ ό ǐ ệ ̇ ̋ Ǐ ώ ″
̋ Y RFC1191 ⃞ ώ ك ı TCP ϱ ∧ א PMTU ᵅ ı ك ـ H ژ ˈ Ϙ Æ ŧ ̃ ᶻ ⃞ MSS ˡ ή ⅄ ̈Ā ⃞ PMTU ف Ѧ ̀H ژ ژ ك ő ĩ Æ ŧ v ̈Ϙ **age-timer** ˡ ̋ Y ḧ Ę Ф ᵻ ∧ א ⃞ PMTU ⅝ TCP ف ì ь ٧ ʁ ƀ ˛ ˡ ⃞ MSS ɳ ̀H ı Ф ᵻ ő h ̋ Y i ك ب ل ̀H ژ ژ ك ı ⊃ ő ⁝ ∧ א ̃ ᶻ ⃞ PMTU ˊ ˙ PMTU ژ ˙ MSS ⃞ Ö ı ǎ ǟ ŧ ̈Ā ȳ Ƀ ف Ѧ ḧ ̀H ʜ ı ف Ѧ ή ⅄ ص ١ ٤ h ȳ Ƀ ȳ Ƀ ف Ѧ ḧ ̀H ʜ ı Æ ŧ **age-timer infinite** v ̈Ϙ

ب ل ʖ æ 1 χ Ã ᵏ PMTU ∧ א ı ǐ

```
Ruijie(config)# ip tcp path-mtu-discovery
```

ₛ ⇂ Ā | -

ώ ̃ ȝ Ụ -

Ẃ ȸ ڇ ئ -

Ẉ ᴶ ب ″ 10.x v ̇ Ǐ ᵘ ɲ Ḿ IPv4 TCP ⫐ IPv6 TCP ⫐ IPv6 TCP

ǰ ᵽ ɻ ώ˙ ヿ Æ j ˡ ɀ TCP ï ă ˋH ʌ ゲ reset ï ă

ᵘ ɲ ₩ Ã ২ ṕ ₩ Ã

ǰ ヿ. 14

Æ ɬ ″ Yṁ ˚ ù˙ ï ı TCP ₩ ę ɋ˙ ʌ TCP ï ă ˋH ı ḅ ˈ ñ j˙ Ĺ ï ă ¨A Ɍ TCP ف ì ɑ ψ h ʒ ʊ ɨ ᵸ Ⱥ reset ï ă ɬ Ɋ ﾉ Ƀ Ḿ ヿ TCP ف ì Ꮋ ĩ ف Ĉ h ă ʁ ώ˙ ă̈ ώ˙ ´ ‰ ı ᶻ ᵢ̈ ヿ Æ j ˡ ɀ TCP ï ă h Ḿ Ф ᵻ ჭ ă ώ˙ ı ˡ Ɋ ɳ ص Ɋ ï ᵘ ɲ ˚ Ƀ Ḿ ヿ Æ j ˡ ɀ ï ă ʌ ゲ reset ï ă

ᵽ ɻ ʒ æ 1 χ˚ Ƀ ɋ ώ˙ ヿ Æ j ˡ ɀ TCP ï ă ˋH ʌ ゲ reset ï ă

```
Ruijie(config)# no ip tcp send-reset
```

ₛ ᶎ Ä │ -

ώ˜ ʒ Ụ -

Ẃ ȸ ჭ ئ -

Ẉ ᴶ ᵽ ″ 11.0 v ẘ Ã˝ 10.x v ᵽ ɻ ᵘ ɲ ɒ ip tcp not-send-rst ɓ ı Ẋ ħ Ɲ ḳ 10.x v ı ḅ ˈ ″ E Φ˝ 10.x v ᵽ ɻ ᵘ ɲ ı Ṅₛ ʊ ჭ ″ Ω ă 11.0 v ᵽ ɻ ᵘ ɲ

10.x v Ĺ ᵘ ɲ ĸ Ḿ IPv4 TCP ɨ ώ ı ĸ 11.0 v Ḿ IPv4 TCP ⁼ IPv6 TCP ɖu ɨ ώ

7.6 ip tcp synwait-time

ɸ ɻ ã ヽ ف ì SYN ï ă ʌ ˋH ˋH ژ

ip tcp synwait-time *seconds*

Õ ʊ ǰ Ө

no ip tcp synwait-time

v ″ Ω ᵽ ″

v ″ Ω	ώ ك
seconds	SYN ï ă ʌ ˋH ˋH ژ ɒ ɣ ʁ ヽ ı ɒ Ө ḭ ḅ 5-300 ı ǰ Ө 20

ǰ ᵽ ɻ ǰ ʌ ˋH ˋH ژ ʁ 20 ヽ

ᵘ ɲ ₩ Ã ২ ṕ ₩ Ã

ǰ ヿ. 14

Æ ɪ ˝YṀ þ ' ﻝ ﻣ ﻩ è ƥ SYN ѽ` ﺍ˚ Ṉ SYN ﻡ `H `H ﮋ ' Ɯ گ Ƀ Þ ° ◊ ╦ ă̈ ﺍ Ꮋ Ḿ ف ﻣ SYN ѽ` ﺯ j ˙ ѽ ' ƥ Ф ɬ ڎ ʊ ﻩ ᵘ ᵑ ت ∂ ã ﻯ ف ﺉ `H ﺍ˚ Ṉ SYN ﻡ `H `H ﮋ ' Ɯ˚ Ṉ ɪ Ä ﻯ ể `H ﮋ ﺍ þ telnet þ ' ﻝ ﻣ ⅝ ﺩ Ṯ Ĉ ' Ɯ گ Ẹ ﷺ ɪ ﻡ `H `H ﮋ

ᵽ ﻝ ڎ æ 1 χ Ф ﻝ ã ﻯ ف ﺉ SYN ï ă ﷺ ﻡ `H `H ﮋ ﷺ 10 ﻯ

```
Ruijie(config)# ip tcp synwait-time 10
```

ᵴ ﻉ Ä |

ώ˜ ʒ Ụ

Ẃ ȸ ﻍ ﺩ

Ẉ ʲ ᵽ ˝ 11.0 v ẘ Ấ˝ 10.x v ﷺ ᵽ ﻝ ᵘ ᵑᵬ ɒ ip tcp syntime-out ƀ ɪ Ẋ ħ Ⅎ ķ 10.x v ɪ þ ' ˝Ε Φ˝ 10.x v ﷺ ᵽ ﻝ ᵘ ᵑᵬ ɪ Ṅ ᵴ ʊ ﻍ ˝Ω ă 11.0 v ﷺ ᵽ ﻝ ᵘ ᵑᵬ

10.x v Ỉ ᵘ ᵑᵬ ĸ Ḿ IPv4 TCP ɨ ᾇ ɪ ĸ 11.0 v Ḿ IPv4 TCP ⁼ IPv6 TCP ᾇ ɨ ᾇ

7.7 ip tcp window-size

Ф ﻝ TCP ᄀ Æ ﻩ ṇ

ip tcp window-size *size*

Õ ʉ ﻉ Ө

no ip tcp window-size

v ˝Ɋ ᵽ ˝

v ˝Ɋ	ѽ ك
size	ᄀ Æ ﻩ ṇ ɒ ɥ ĩ È ` ɪ ɪ Ө „ ƀ 128-(65535 << 14) ɪ ﻉ Ө ĩ 65535

ﻉ ᵽ ﻝ ﻉ Ө ĩ 65535 È `

ᵘ ᵑᵬ ₩ Ã ᔓ ṕ ₩ Ã

ﻉ ﻯ˙ 14

Æ ɪ ˝YṀ TCP ﷺ ì ѽ ﻡ˙ ɲ ɾ ſ ﻡ è ĸ Ḿ ﻯ ì ѽ˙ ﷺ˝Ɋ Ɯ ɪ ف P ˝Ɋ Ɯ ɑ ﻡ h ɋ Ẓ ɾ ﻯ ẑ ᄎ ɲ ˜ ѽ` ï ɪ TCP ﷺ ᄀ Æ Ө ɾ ī ì ѽ ﻡ˙ ɲ ﷺ Ⅵ ﺯ Ⅵ ﮋ ﷺ ﻩ ṇ Ḿ̂ ̂ Ṿ Ḳ ⅝ ﺩ ﻩ õ ﻩ ñ ﺩ ˝Ɋ Ɯ ﷺ ف ì ɪ ɰ ﻩ ᄀ Æ ˡ Ɯ Ǐ Ь ώ ﺡ TCP ɐ ﮋ ό Ỉ

ƀ ' ᄀ Æ ﻩ̂ ̂ 65535 È ` ɪ ᵴ ʊ Ầ ᵏ ᄀ Æ ˝Ε ﻩ ɪ Ỉ

ᵽ ɻ ʖ æ 1 χ ɸ ɻ ㄱ Æ ᶻ ṇ ㎞ 16386 È `

```
Ruijie(config)# ip tcp window-size 16386
```

ₛ ᶎ Ά | -

ώ˜ ʒ Ụ -

Ẃ ȸ ᶎ ȿ -

Ẉ ᴶ ᵽ ˝ 10.x v Ỉ ᵘ ɲ ᴋ Ḿ IPv4 TCP ɨ ѽ ɪ ᴋ 11.0 v Ḿ IPv4 TCP ⁼ IPv6 TCP ᵯ ɨ ѽ

7.8 ipv6 tcp adjust-mss

ɸ ɻ ᶎ ʌ TCPv6 SYN ĭ ă MSS J̌ ° Ë

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

Õ ʰ ƚ ᵽ

no ipv6 tcp adjust-mss

v ¨Ọ ᵽ ˝

v ¨Ọ	ὼ ك
max-segment-size	ὼ ᶻ ¨Ọ ̃Ω ɻ ᶻ ṇ ɪ ᴅ ɣ ㎞ È ` ɪ „ ƀ ĩ 1220-1440

ƚ ᵽ ɻ j Ӣ ὼ TCPv6 SYN ĭ ă MSS J̌ ° Ë

ᵘ ɲ ₩ Ã ì Æ ₩ Ã

ƚ ㄱ 14

Æ ŧ ˝ Y Ṁ TCP ʁ ɲ ƿ á ヶ ف ì ㎞ ̈H ö ɦ ʁ ƀ MSS ɪ o ὼ ᶻ ¨Ọ ̃Ω ɻ ɜ ỷ ƀ ' TCPv6 ĭ ă ҽ ژ ت Ề ʌ • ɻ ت Ề ㎞ IPv6 MTU ⅝ ᵾ ṇ ɪ ắ IPv6 ĭ ă ƿ ᶎ ʌ ص ヶ ʌ j ы ƿ ˋ Ɑ ɪ ㎞ ̃ گ Þ TCPv6 ʌ گ ɜ ỷ ʌ ص ت Ề MTU ㎞ ĭ ă ɪ ˡ Ⱥ ᵽ ɻ ت ᵎ ʰ Ӣ ὼ TCPv6 SYN ĭ ă MSS J̌ ° Ë

Ỉ ᵽ ɻ Ḿ ̣ Ţ ɻ á ヶ ㎞ TCPv6 ف ì j ɨ ѽ ɪ ᴱ Ḿ ᵅ ᵽ á ヶ ㎞ TCPv6 ف ì ɨ ѽ

ᵽ ɻ ʖ æ 1 χ ƿ ì Æ GigabitEthernet 0/0 i ᵽ ɻ ¨H ᶎ ʌ ㎞ TCPv6 SYN ĭ ă MSS J̌ ° Ë Ӣ ὼ ㎞ 1300 È `

```
Ruijie(config-if-GigabitEthernet 0/0)# ipv6 tcp adjust-mss 1300
```

ₛ ᶎ Ά | -

ώ˜ ʒ Ụ -

Ẃ ȣ ᶎ ᵭ -

Ẉ ᴶ ب ᵐ -

7.9 service tcp-keepalives-in

Ầ ᵏ TCP ᾽O ᑎ ʰ ᵞ 3 ╗ ı ΐ̃

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

ʜᴗ ȝ TCP ᾽O ᑎ ʰ ᵞ 3 ╗ ı ΐ̃

no service tcp-keepalives-in

intĕQvaḷ ᵐ

7.10 service tcp-keepalives-out

Ã ᵏ TCP ¡ ̈A ϒ ⅜ ℨ ╗ ı ΐ

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

v ̈Ω ̆ ˝

local-ipv6 *X:X:X:X::X*	ş IPv6 ş χ
local-port *num*	ş ヶ Æ
peer-ipv6 *X:X:X:X::X*	Ḿ ヶ IPv6 ş χ
peer-port *num*	Ḿ ヶ ヶ Æ
statistics	¶ ˜ IPv6 TCP ف ì ▯ ʎ ɯ ʒ Ụ

ᵘ ɲь₩Ã ₰ ₩Ã

ƛ ヘ. 2

Æ ŧ ˝YṀ -

ب ل ڎ æ 1 χ¶ ˜ ل ʎ Ẹ˙ IPv6 TCP ف ì ▯ ᵍ ʒ Ụ

```
Ruijie#show ipv6 tcp connect
Number Local Address      Foreign Address          State        Process name
1      :::22              :::0                     LISTEN       rg-sshd
2      :::23              :::0                     LISTEN       rg-telnetd
3      1000::1:23         1000::2:64201            ESTABLISHED  rg-telnetd
```

È ㅓ J ᵩ χ

È ㅓ	ب ˝
Number	ẑ ᴺ
Local Address	ş ş χ ɲь ヶ Æ ᴺ ı ω ª Ⱥ w ᴺ ª ₌ ▯ ″Ω È ĩ ヶ Æ ᴺ
Foreign Address	ف ヶ ş χ ɲь ヶ Æ ᴺ ı ω ª Ⱥ w ᴺ ª ₌ ▯ ″Ω È ĩ ヶ Æ ᴺ
State	TCP ف ì Ẹ˙ ▯ ↑ ỗ ı ũ 11 ヶ ı ĺ ↑ ỗ χ CLOSED χ ف ì Ţ Ă Ầ LISTEN χ ˘ ¡ ↑ ỗ SYNSENT χ SYN ĭ ă Ţ ʌ˛ ı s Ⱪ ά ė ₲ ㅓ SYNRCVD χ SYN ĭ ă Ţ ì ώ˙ ı s Ⱪ ά ė ₲ ㅓ ESTABLISHED χ ف ì Ţ ấ ヶ FINWAIT1 χ ヶ Ţ ل ʌ˛ FIN ĭ ă FINWAIT2 χ ヶ ʌ˛ ▯ FIN ĭ ă Ţ ل ą ɲ CLOSEWAIT χ ヶ ώ˙ ˝ Ḿ ヶ ▯ FIN ĭ ă LASTACK χ ヶ ώ˙ ˝ Ḿ ヶ ▯ FIN ĭ ă ı ł ª ヶ ʌ˛ ˝ ₅ ţ ▯ FIN ĭ ă CLOSING χ ヶ ʌ˛ FIN ĭ ă ı ᵽ Ḿ ヶ ł Ẓ Ỉ FIN ĭ ă ▯ ACK ĭ ă˙ ⁋ ɵ˙ ώ˙ ˝ Ḿ ヶ ▯ FIN ĭ ă TIMEWAIT χ ヶ ʌ ₲ ▯ FIN ĭ ă ą ɲ˝ ı Ẋ ħ ヶ Ọ Ţ ل. ɲ˝ ì ώ˙ ▯ FIN ĭ ă
Process name	ف ٧ ᵉ ٧

2 χ ˜ ᵚ ᵎ Ẹ IPv6 TCP ف ì ⅏ ᵎ ɯ ȝ Ụ

```
Ruijie#show ipv6 tcp connect statistics
State
```

1 1000::1:23 1000::2.13560 1440

È ᵻ ᶨ ᵨ Χ

È ᵻ	ب ˝
Number	ẑ ᴺ
Local Address	ᵴ ᵴ ᵡ ᶉᵬ ᶣ Æ ᴺ ı ᵠ ᵅ Ⱥ w ᴺ ᵅ ˻ ▩ Ọ È ĩ ᶣ Æ ᴺ
Foreign Address	ᵩ ᶣ ᵴ ᵡ ᶉᵬ ᶣ Æ ᴺ ı ᵠ ᵅ Ⱥ w ᴺ ᵅ ˻ ▩ Ọ È ĩ ᶣ Æ ᴺ
PMTU	ث Ễ MTU

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

7.13 show ipv6 tcp port

Ǐ ˜ ᶘ ᴵ Ẹ̇ IPv6 TCP ᶣ Æ▩Æ ɾ ὺ̀

show ipv6 tcp port [*num*]

v ̈Ọب ˝	v ̈Ọ	ὼ ك

Number	ẑ ᴺ
Local Address	ʂ ʂ ϰ ʎь ϒ Æ ᴺ
Foreign Address	ჾ ϒ ʂ ϰ ʎь ϒ Æ ᴺ
State	TCP ف ì Ẹ˙ ▯↑ õ ı ω̃ 11 ϒ ˡ ǐ ↑ ỗ χ CLOSED: ف ì Ţ Ă Ầ LISTEN χ ˘ ¦ ↑ ỗ SYNSENT χ SYN ĭ ă Ţ ʌ˛ ı s Ⱪ ậ ẻ ჼ ɟ SYNRCVD χ SYN ĭ ă Ţ ì ậ˙ ı s Ⱪ ậ ẻ ჼ ɟ ESTABLISHED χ ف ì Ţ ấ ϒ FINWAIT1 χ ϒ Ţ ɻ ʌ˛ FIN ĭ ă FINWAIT2 χ ϒ ʌ˛ ▯FIN ĭ ă Ţ ɻ ą ɲ CLOSEWAIT χ ϒ ậ˙ ˝ Ḿ ϒ ▯FIN ĭ ă LASTACK χ ϒ ậ˙ ˝ Ḿ ϒ▯FIN ĭ ă ı ɬ ª ϒ ʌ˛ ˝ ₅ ţ ▯FIN ĭ ă CLOSING χ ϒ ʌ˛ FIN ĭ ă ı ƍ Ḿ ϒ ɬ Ẓ Ỉ FIN ĭ ă▯ACK ĭ ă˙ ᵽ ɵ˙ ậ˙ ˝ Ḿ ϒ▯FIN ĭ ă TIMEWAIT χ ϒ ʌ ڰ▯FIN ĭ ă ą ɲ˝ ı Ẋ ħ ϒ Ţ ɻ˙ ɲ˝ ì ậ˙ ▯FIN ĭ ă

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

7.14 show tcp connect

Ǐ ˜ ɻ ʃ Ẹ˙ IPv4 TCP ف ì ▯ᵍ ʒ Ụ

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

Ǐ ˜ ɻ ʃ Ẹ˙ IPv4 TCP ف ì ▯ʃ ɯ ʒ Ụ

show tcp connect statistics

v ̈Ọب ˝

v ̈Ọ	ậ ڭ
local-ip *a.b.c.d*	ʂ IP ʂ ϰ
local-port *num*	ʂ ϒ Æ
peer-ip *a.b.c.d*	Ḿ ϒ IP ʂ ϰ
peer-port *num*	Ḿ ϒ ϒ Æ
statistics	¶ ˜ IPv4 TCP ف ì ▯ʃ ɯ ʒ Ụ

ᵘ ɲ₩ Ã ᵉ ₩ Ã

ƛ ۱. 2

Æ ŧ ˝YṀ -

ب ل ڎ æ 1 χ¶ ˜ ۷ ۱ Ę IPv4 TCP ف ì ▯ ᵍ ʒ Ụ

```
Ruijie#show tcp connect
Number Local Address      Foreign Address          State       Process name
1      0.0.0.0:22         0.0.0.0:0                LISTEN      rg-sshd
2      0.0.0.0:23         0.0.0.0:0                LISTEN      rg-telnetd
3      1.1.1.1:23         1.1.1.2:64201            ESTABLISHED rg-telnetd
```

È ㅓ ɹ ᵩ χ

È ㅓ	ب ˝
Number	ẑ ᴺ
Local Address	ş ş χ ﻝ ٦ Æ ᴺ ı w ᴺ ª ˛ ▯ "Ǫ È ĩ ٦ Æ ᴺ ı ⅝ ḅ “1.1.1.1:23” ₳ ▯ “23” ĩ ٦ Æ ᴺ
Foreign Address	ڤ ٦ ş χ ﻝ ٦ Æ ᴺ ı w ᴺ ª ˛ ▯ "Ǫ È ĩ ٦ Æ ᴺ ı ⅝ ḅ “1.1.1.1:23” ₳ ▯ “23” ĩ ٦ Æ ᴺ
State	TCP ف ì Ę ▯ ↑ ő ı ω̃ 11 ٦ ı ĺ ↑ ő χ CLOSED χ ف ì Ţ Ă Ầ LISTEN χ ˘ ¡ ↑ ő SYNSENT χ SYN ĭ ă Ţ ٨ ˛ ı s Ⱪ ạ ẻ ڰ ㅓ SYNRCVD χ SYN ĭ ă Ţ ì ụ̇ ı s Ⱪ ạ ẻ ڰ ㅓ ESTABLISHED χ ف ì Ţ ấ ٦ FINWAIT1 χ ٦ Ţ ﻝ ٨ ˛ FIN ĭ ă FINWAIT2 χ ٦ ٨ ˛ ▯ FIN ĭ ă Ţ ﻝ ą ɲ CLOSEWAIT χ ٦ ụ̇ ˝ Ḿ ٦ ▯ FIN ĭ ă LASTACK χ ٦ ụ̇ ˝ Ḿ ٦ ▯ FIN ĭ ă ı ł ª ٦ ٨ ˛ ˝ ₅ ţ ▯ FIN ĭ ă CLOSING χ ٦ ٨ ˛ FIN ĭ ă ı ᵽ Ḿ ٦ ł Ẓ Ỉ FIN ĭ ă ▯ ACK ĭ ă ˙ ө ụ̇ ˝ Ḿ ٦ ▯ FIN ĭ ă TIMEWAIT χ ٦ ٨ ڰ ▯ FIN ĭ ă ą ɲ˝ ı Ẋ ħ ٦ Ĉ Ţ ﻝ ˛ ɲ˝ ì ụ̇ ▯ FIN ĭ ă
Process name	ف ٧ ᵉ ٧

2 χ¶ ˜ ۷ ۱ Ę IPv4 TCP ف ì ▯ ۱ ɯ ʒ Ụ

```
Ruijie#show tcp connect statistics
State       Count
-----       -----
ESTABLISHED 1
SYN_SENT    0
SYN_RECV    0
```

```
FIN_WAIT1    0
FIN_WAIT2    0
TIME_WAIT    0
CLOSED       0
CLOSE_WAIT   0
LAST_ACK     0
LISTEN       1
CLOSING      0
Total: 2
```

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

7.15 show tcp pmtu

Ǐ ˜ IPv4 TCP ف ا ﷺت Ễ MTU

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

v ̈Ọب ˝

v ̈Ọ	ώ ك
local-ip *a.b.c.d*	ş IP ş ϰ
local-port *num*	ş ٦ Æ
peer-ip *a.b.c.d*	Ḿ ٦ IP ş ϰ
peer-port *num*	Ḿ ٦ ٦ Æ

ᵘ ɲь₩Ã ₍ ₩Ã

ƛ ٨. 2

Æ ŧ ˝YṀ -

ب ل ʖ æ 1 χ¶ ˜ IPv4 TCP ف ا ﷺت Ễ MTU

```
Ruijie# show tcp pmtu
Number  Local Address           Foreign Address         PMTU
1       192.168.195.212.23      192.168.195.112.13560   1440
```

È ᵻ J ᵩ χ

È ᵻ	ب ˝
Number	ẑ ᴺ
Local Address	ş ş ϰ лъ ٦ Æ ᴺ ı w ᴺ ɑ ₌ ﷺ ̈Ọ È Ĩ ٦ Æ ᴺ ı ⅝ ḅ “192.168.195.212.23” ﷺ“23” Ĩ ٦ Æ ᴺ

Foreign Address	ف ٧ ʂ χ ﻝ ٧ Æ ᴺ ı w ᴺ ª ˛ ﷺ ″Ω È Ĩ ٧ Æ ᴺ ı ⅝ þ “192.168.195.212.23” ﻫ ﷺ“23” Ĩ ٧ Æ ᴺ
PMTU	ث Ễ MTU

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ″ -

7.16 show tcp port

Ǐ ˜ ٧ ﺍ Ẹ˙ TCP ٧ Æﷺ Æ ɾ ù᾽

show tcp port [*num*]

v ″Ω ب ″	v ″Ω	ώ ك
	num	٧ Æ ᴺ

ᵘ ᵑᵬ ₩ Ã ₰ ₩ Ã

ﺝ ٨̣ 2

Æ ɾ ″Yṁ -

ب ﻝ ᵹ æ 1 χ¶ ˜ ٧ ﺍ Ẹ˙ IPv4 TCP ٧ Æﷺ Æ ɾ ù᾽

```
Ruijie#show tcp port
TCP connections on port 23:
Number  Local Address Foreign Address    State
1       1.1.1.1:23    1.1.1.2:64571    ESTABLISHED
Total: 1

TCP connections on port 2650:
Number  Local Address Foreign Address    State
Total: 0
```

È ﻫ ﺝ ᵩ χ

È ﻫ	ب ″
Number	ẑ ᴺ
Local Address	ʂ ʂ χ ﻝ ٧ Æ ᴺ
Foreign Address	ف ٧ ʂ χ ﻝ ٧ Æ ᴺ

State	TCP ف ì Ẹ˙ ▯↑ õ ı ω̃ 11 ㄱ ˡ ĩ ↑ õ χ CLOSED: ف ì Ţ Ă Â LISTEN χ ˇ ˡ ↑ õ SYNSENT χ SYN ĭ ă Ţ ʌ˛ ı s Ⱪ ạ ė ڳ ɟ SYNRCVD χ SYN ĭ ă Ţ ì ủ˙ ı s Ⱪ ạ ė ڳ ɟ ESTABLISHED χ ف ì Ţ ấ ㄱ FINWAIT1 χ ㄱ Ţ ㅓ ʌ˛ FIN ĭ ă FINWAIT2 χ ㄱ ʌ˛ ▯FIN ĭ ă Ţ ㅓ ɋ ɲ CLOSEWAIT χ ㄱ ủ˙ ˝ Ḿ ㄱ▯FIN ĭ ă LASTACK χ ㄱ ủ˙ ˝ Ḿ ㄱ▯FIN ĭ ă ı ɬ ª ㄱ ʌ˛ ˝ ₅ ţ ▯FIN ĭ ă CLOSING χ ㄱ ʌ˛ FIN ĭ ă ı ᵽ Ḿ ㄱ ɨ Ẓ Ỉ FIN ĭ ă▯ACK ĭ ă˙ ᵖ ɵ˙ ủ˙ ˝ Ḿ ㄱ▯FIN ĭ ă TIMEWAIT χ ㄱ ʌ گ▯FIN ĭ ă ɋ ɲ˝ ı Ẋ ħ ㄱ ̂ Ţ ㅓ ɲ˝ ì ủ ˙ ▯FIN ĭ ă

ώ˜ ȝ Ụ -

Ẉ ᴶ ب ˝ -

8 IPv4/v6

8.1 clear ip ref packet statistics ģ‡ST

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

8.3 ip ref load-sharing original

ب ـ IPv4 ὃ ᶎ🅾ق ذ ʐ ‘ ١ | ᠷᠷ ᵷ᷊᷈ ´ 🅾IP ʂ ϫ ᐣ ◊ IP ʂ ϫ ق ذ ʐ ‘

ip ref load-sharing original

῞H IPv4 ὃ ᶎ🅾ق ذ ʐ ‘ ١ | Õ ᵸ ᾰ ﻷ Ë

no ip ref load-sharing original

v ῞Ϙ ب ˝

v ῞Ϙ	ώ ك
-	-

ﻷ ب ـ ᵷ᷊᷈ ´ 🅾IP ʂ ϫ ق ذ ʐ ‘

ᵘ ᵑᵬ₩Ã ᔓ ṕ ₩Ã

ﻷ ١. 14

Æ ŧ ῞YṀ ᵚ ᵀ ὃ ᶎ ق J ῞Ϙ῞Ω ᶎ ∧ ı Ẋ῞Ḥ'Y ь ٦ ق ذ ʐ ‘ ١ | ı ٦ ĩ ´ 🅾IP ق ذ ʐ ‘ ı ᴰ ٦ ᠷᠷ´ 🅾IP ᐣ ◊ IP ﻝ ᵀ🅾 ق ذ ʐ ‘ ١ | ᵽ ^ ث Ễ ᶎ ∧ IP ĭ ᾰ ῾H ı ḅ Ẹ̇ ₱ ﻝ ᠷᠷ´ 🅾IP ق ذ ʐ ‘ ı REF Ṅ Ⱡ ĭ ᾰ🅾´ 🅾IP᾽ ᴪ ب Ъ ᵰ🅾 Ⱥ᾽ ث Ễ ڤ Φ ᶎ ∧ ﻷ ὐ᾽ ᠷᠷ´ 🅾IP ق ذ ʐ ‘

ب ـ ᵷ æ 1 χ ب ـ ◊ IP+´ 🅾IP🅾ʐ ‘ ڸ ث ١ |

```
Ruijie(config)# ip ref load-sharing original
```

2 χ Æ ŧ ᵷ᷊᷈ ĭ ᾰ´ 🅾ʂ ϫ🅾ʐ ‘ ڸ ث ١ |

```
Ruijie(config)# no ip ref load-sharing original
```

ᵋ ᶎ Ä | Æ ŧ ᵘ ᵑᵬ **show run**᾽ ˜ ب ـ

ώ˜ ʒ Ụ -

Ẃ ȸ ᶎ ئ -

Ẉ ᴶ ب ˝ -

8.4 ipv6 ref load-sharing original

ᵽ ᵢ IPv6 ồ ᶎ ق ᵓ ᶎ ʻ ᵑ | ᵻᵻ ᵻᵻ ᵍ ´ IPv6 ᵴ ᵡ ⁼ ◊ IPv6 ᵴ ᵡ ق ᵓ ᶎ ʻ
ipv6 ref load-sharing original

¨H IPv6 ồ ᶎ ق ᵓ ᶎ ʻ ᵑ | Õ ᵘ ă ᵭ Ë
no ipv6 ref load-sharing original

v ¨Ǫ ᵽ ˝	v ¨Ǫ	ώ ك
	-	-

ᵭ ᵽ ᵢ	ᵍ ´ IPv6 ᵴ ᵡ ق ᵓ ᶎ ʻ
ᵘ ᵑ ₩ Ã	ᵓ ṕ ₩ Ã
ᵭ ᵑ	14
Æ ŧ ˝ Y Ṁ	-
ᵽ ᵢ ᵷ æ	1 χ ¨H IPv6 ồ ᶎ ق ᵓ ᶎ ʻ ᵑ | Õ ᵘ ă ᵭ Ë `Ruijie(config)#no ipv6 ref load-sharing original`
₅ ᵶ Ά |	Æ ŧ ᵘ ᵑ **show run**¶ ˜ ᵽ ᵢ
ώ˜ ʒ Ụ	-
Ẃ ồ ᶎ ئ	-
Ẉ ᴶ ᵽ ˝	-

8.5 show ip ref adjacency

Ǐ ˜ ᵎ ḧ ʌ ì ` ᵖ ʒ Ụ ǎ Ẹ ¨Ά ω ʌ ì ` ᵖ ʒ Ụ
s**how ip ref adjacency [glean | local |** *ip-address* | **interface** *interface_type interface_number* | **discard** | **statistics**]

v ¨Ǫ ᵽ ˝	v ¨Ǫ	ώ ك
	glean	ᵩ ᵀ ʌ ì ` ᵖ
	local	ᵴ ʌ ì ` ᵖ

ip-address	ʌ ì ï ب IP
interface_type	″Y ḧ ì Æ ɻ ʒ
interface_number	″Y ḧ ì Æ ɻ ᴺ
discard	Ǐ ˜ ᵬ Ấ ʌ ì ` ᵽ
statistics	ʃ ɯ ʒ Ụ

ᵘ ᖷ ₩ Ã ᵉ ₩ Ã

ƛ ʃ. 14

Æ ɪ ″Y Ṁ Ǐ ᵘ ᖷ ˡ Ɋ Ǐ ˜ Ẹ˙ IPv4 ὃ ᶎ ʌ ì ´ ʒ Ụ ı ˡ Ɋ ″Y ḧ Ǐ ˜ ᵩ ᵀ ʌ ì ş ʌ ì ṅ ᶎ

linklayer	‾ Ṗ˘

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

8.6 show ip ref exact-route

Ǐ˜ IP ǐ ă[OBJ] ˊ ჭ ∧ ت Ễ

show ip ref exact-route *source_ipaddress dest_ipaddress*

v ˝Ǫ ب ˝

v ˝Ǫ	ώ ك
source_ipaddress	ǐ ă[OBJ]◊ IP ş ҳ
dest_ipaddress	ǐ ă[OBJ]˝ [OBJ]IP ş ҳ

ᵘ ɲ ₩ Ã ᵉ ₩ Ã

ƛ ʌ. 14

Æ ŧ ˝ YṀ ڼ ص Ǎ ᵘ ɲ ı ˝ Y ḧ IP ǐ ă[OBJ]◊ IP ş ҳ ʎ´ [OBJ]IP ş ҳ ı ˡ Ꝍ Ǐ˜ ¸ ᵉ ḧ ǐ ă[OBJ] ჭ ∧ ت Ễ

ب ل ڏ æ 1 χ¶ ˜ ʁ 192.168.217.74˙ 192.168.13.1[OBJ] ჭ ∧ ت Ễ

```
Ruijie# show ip ref exact-route 192.168.217.74 192.168.13.1
192.168.217.74  --> 192.168.13.1 (vrf index: 0):
id state    type    rfct chg  ip            interface          linklayer(header data)
9  resolved forward 1    0    192.168.17.1  GigabitEthernet 0/0 00 25 64 C5 9D 6A 00 D0 F8 98 76
54 08 00
```

Ǐ˜ ل ' ᴿ Ề ɟ ώ ك χ

Ề ɟ	ب ˝
id	ʌ ì ‰ ⅋
state	ʌ ì ᵗ õ unresolve χ ' ɹ ‘ resolved χ Ţ ɹ ‘

rfct	ʌ ì ɋ Ậ ɾ ⸨⸩ɰ ̈Ⱬ
chg	ʌ ì ĩ ᵋ ᵽ Ψ ᵱ ᵹ ᵴ
ip	ʌ ì Ḿ Ƶ ⸨⸩IP ʂ ɣ
interface	˛ ì Æ
linklayer	˜ Ṕ˘

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

8.7 show ip ref packet statistics

Ǐ ˜ IPv4 ȏ ᵹ Ẹ˙ ⸨⸩ ï ă ʃ ɰ ʒ Ụ

show ip ref packet statistics

ᴠ ̈Ⱬب ˝

lookup fib fail	ð ჭ Ǐ ث، م ï ă ̋Ǫ́
local adj	ш ٍ ş ʌ ì ï ă ̋Ǫ́
glean adj	ш ٍ Δ ǐ ʌ ì ï ă ̋Ǫ́
for ar	ш ٍ ჭ ʌ ʌ ì ï ă ̋Ǫ́
redirect	ף ћ ᵇ ∫ т ï ă ̋Ǫ́
ttl expiration	ï ă TTL ʌ `H ï ă ̋Ǫ́
no ip routing	ȷ ы ƍ ჭ ʌ گ ş ï ă ̋Ǫ́

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

8.8 show ip ref resolve-list

Ǐ ˜ IPv4 ð ჭ ჴ ʊ ȷ ‘ ʒ Ụ

show ip ref resolve-list

v ̋Ǫ ب ˝

v ̋Ǫ	ώ ك
-	-

ᵘ ɲ ₩ Ã ₰ ₩ Ã

ƛ ٨ ٫ 14

Æ ɨ ˝ Y Ṁ -

ب ɹ ჴ æ 1 χ Ǐ ˜ IPv4 ð ჭ ჴ ʊ ȷ ‘ ʒ Ụ

```
Ruijie#show ip ref resolve-list
IP                res_state flags interface
1.1.1.1           unres     1      GigabitEthernet 0/0
```

È ɟ	ب ˝
IP	IP ş χ
res_state	unres χ ' ȷ ‘ ı res χ ȷ ‘
flags	0 χ ль ʌ ì ị̈ ћ ı 1 χ ль ʌ ì ʾ ћ
interfa e	ì Æ ʁ ч

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

8.9 show ip ref route

Ǐ ~ Ẹ˙ IPv4 ð ჭ"A ω ث ᛋ ʒ Ụ

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

v ˝Ọ ب ˝

v ˝Ọ	ώ ك
default	˝Y ħ س ռ ث ᛋ
ip	˝Y ħ ث ᛋ ´ IP
mask	˝Y ħ ث ᛋ ǫ
statistics	ʌ ɯ ʒ Ụ

ᵘ ɲ ₩ Ã ₰ ₩ Ã

ʎ ʌ˳ 14

Æ ŧ ˝Y Ṁ ᛁ Ꝍ Ǐ ~ Ẹ˙ IPv4 ð ჭ ث ᛋ ʒ Ụ ı ᛁ Ꝍ ˝Y ħ Ǐ ~ س ռ ث ᛋ ˝Y ħ IP/MASK ש ڀ ث ᛋ ˝A ω ث ᛋ ʒ Ụ

ڀ ɻ ʯ æ 1 χ Ǐ ~ ২ ṕ ð ჭ ´ ʌ ˝A ω ث ᛋ ʒ Ụ

```
Ruijie#show ip ref route
Codes: * - default route
       # - zero route
 ip/mask            weight  path-id      next-hop        interface
 255.255.255.255/32 1       4            0.0.0.0         Local 1
 224.0.0.0/24       1       4            0.0.0.0         Local 1
 192.168.50.0/24    1       6            0.0.0.0         GigabitEthernet 0/0
 192.168.50.200/32  1       7            192.168.50.200  GigabitEthernet 0/0
 192.168.50.122/32  1       4            0.0.0.0         Local 1
 192.168.50.78/32   1       9            192.168.50.78   GigabitEthernet 0/0
```

Ǐ ~ ɻ ' ᴿ È ɟ ώ ك χ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

8.10 show ipv6 ref adjacency

Ǐ ˜ IPv6 ბ ჳ ʌ ì᾽ ʜ ʒ Ụ

show ipv6 ref adjacency [**glean | local |** *ipv6-address* **| interface** *interface_type interface_number* | **discard | statistics**]

v ̋Ọب ˝ v ̋Ọ

type	ʌ ì ` ᵖ ɻ ʒ local χ ʂ ʌ ì forward χ ჯ ʌ ʌ ì discard χ Ъ Ấ ʌ ì glean χ ᵩ ᵀ ʌ ì mcast χ ɻ Ḥ ʌ ì
rfct	ʌ ì ` ᵖ ت ᵻ Ậ ᵻ ɯ Ω
chg	0 χ ʌ ì ` ᵖ j ᵽ ʌ ì Ψ ᖘ ჯ 1 χ ʌ ì ` ᵖ ᵽ ف ì Ψ ᖘ ჯ
ip	ʌ ì IPv6 ʂ χ
interface	ʌ ì ` ᵖ ʜ ỉ ɪ ת ì Æ
linklayer(header data)	˜ Ṗ˘ ɻ Χ ʒ Ụ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

8.11 show ipv6 ref exact-route

Ǐ ˜ • ᵎ ḧ ĭ ă ḫ ڳ ჯ ʌ ت Ễ

show ipv6 ref exact-route *source-ipv6-address destination-ipv6-address*

v ˝Ω ب ˝

v ˝Ω	ώ ك
source-ipv6-address	◊ IPv6 ʂ χ
destination-ipv6-address	´ IPv6 ʂ χ

ᵘ ɲ ₩ Ã ᵎ ₩ Ã

ƛ ɻ̣ 14

Æ ɤ ˝Y Ṁ -

ب ɹ ʖ æ 1 χ Ǐ ˜ ĭ ă ◊ ʂ χ ѫ 2001:db8:1::1 ı ´ ʂ χ ѫ 3001:db8:2::2 ḫ ڳ ჯ ʌ ت Ễ

```
Ruijie#show ipv6 exact-route 2001:db8:1::1 3001:db8:2::2
2001:db8:1::1 --> 3001:db8:2::2 (vrf index: 0):
ID  state       type    rfct chg ip interface            linklayer(header data)
3   unresolve   glean   1    0   :: GigabitEthernet 0/0
```

Ễ ɟ	ب ˝
id	ʌ ì ` ᵖ ‰ ᶹ

state	ʌ ì ` ᵨ ↑ õ
type	ʌ ì ` ᵨ ɻ ʒ local χ ş ʌ ì forward χ ᶎ ʌ ʌ ì discard χ Ъ Ấ ʌ ì glean χ ᵩ ᵀ ʌ ì mcast χ ɻ Ḥ ʌ ì
rfct	ʌ ì ` ᵨ OBJ ت ᵻ Ậ ᵻ ɯ Ậ
chg	0 χ ʌ ì ` ᵨ j ᵽ ʌ ì Ψ ᖘ ᶎ 1 χ ʌ ì ` ᵨ ᵽ ف ì Ψ ᖘ ᶎ
ip	ʌ ì OBJ IPv6 ş χ
interface	ʌ ì ` ᵨ ʜ ỉ OBJ ᵻ ת ì Æ
linklayer(header data)	˜ Ṗ˘ ɻ Χ ʒ Ụ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

8.12

```
    redirect        : 0
    hop-limit expiration  : 0
    no ipv6 unicast-routing   : 0
```

Ǐ ˜ ˩ ' ᴿ È ɟ ѡ ك χ

È ɟ	ب ˝
bad head	ǐ ˇ ᶎ ئ ǐ ă ˝Ǫ ´
lookup fib fail	ð ᶎ ڵ ث ˛ م ǐ ă ˝Ǫ ´
local adj	ш ب ˙ ş ʌ ì ǐ ă ˝Ǫ ´
glean adj	ш ب ˙ Δ ǐ ˚ ʌ ì ǐ ă ˝Ǫ ´
forward	ш ب ˙ ᶎ ʌ ʌ ì ǐ ă ˝Ǫ ´
redirect	ب ˛ ḧ ᵇ ʃ ת ǐ ă ˝Ǫ ´
hop-limit expiration	ǐ ă TTL ʌ ` H ǐ ă ˝Ǫ ´
no ipv6 unicast-routing	j ы ᵽ ᶎ ʌ ⁼ گ ş ǐ ă ˝Ǫ ´

ώ ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

8.13 show ipv6 ref resolve-list

Ǐ ˜ IPv6 ð ᶎ ʖ ʊ ɹ ‘ ʒ Ụ

show ipv6 ref resolve-list

v ˝Ǫ ب ˝

v ˝Ǫ	ѡ ك
-	-

ᵘ ᖷ ₩ Ã ᵉ ₩ Ã

IP	ì Æ IPv6 ş χ
res_state	unres χ ' ɹ ' ı res χ ɹ '
flags	0 χ ɲ ʌ ì ɲ̀ ʜ ı 1 χ ɲ ʌ ì ʾ ʜ
interface	ì Æ ᵾ ч

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

8.14 show ipv6 ref route

Ǐ ˜ IPv6 ð ʒ ت ᵻ ʒ Ụ

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

v ˝Ọ ب ˝

v ˝Ọ	ὼ ك
default	Ǐ ˜ ѕ ɲ ت ᵻ ʒ Ụ
statistics	Ǐ ˜ ت ᵻ ʎ ɯ ʒ Ụ
prefix/len	Ǐ ˜ ˝Y ḧ ˙ ʎ ε X:X:X:X::X/<0-128> ζ ت ᵻ ʒ Ụ

ᵘ ɲ ₩ Ã ᵻ ₩ Ã

ƛ ʎ. 14

Æ ɬ ˝Y Ṁ ª ̀H ف ᵎ Ɯ ɒ ˝ Ǐ ˜ ѕ ɲ ت ᵻ ă ă ˝Y ḧ ˙ ʎ ت ᵻ ʒ Ụ ı ɜ ˝A ω ʅ ʒ ت ᵻ ʎ ɯ ʒ Ụ

پ ɻ ʖ æ 1 χ ˜ IPv6 ð ʒ ɷ ṕ ت ᵻ ˊ ʒ Ụ

```
Ruijie#show ipv6 ref route
Codes: * - default route
 prefix/len                   weight path_id  next_hop interface
 2001:da8:ffe:2::/64          1      3        ::      GigabitEthernet 0/0
 2001:da8:ffe:2::3/128        1      2        ::1     Local 1
 fe80::/10                    1      6         ::     Null 0
 fe80::21a:a9ff:fe3b:fa41/128 1      2        ::1     Local 1
```

Ề ɻ	ب ˝
prefix/len	IPv6 ˙ ʎ ɜ ˙ ʎ ɪ ỷ
weight	ت ᵻ ٍپ
path_id	ʌ ì ɻ Â ‰ ⅋
next_hop	ï پ ş χ
interface	ʌ ì ʜ ỉ ì Æ ᵾ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

9 NAT

9.1 address

ب ل Ⱥ NAT Ⱳ ş χ − ş χ ḡ
address *start-ip end-ip* [**match interface** *interface*]

ب ل Ⱥ NAT Ⱳ ş χ − ş χ ḡ
address interface *interface* [**match interface** *interface*]

ب ل Ⱥ NAT Ⱳ ş χ − ş χ ḡ
no address *start-ip end-ip* [**match interface** *interface*]

ب ل Ⱥ NAT Ⱳ ş χ − ş χ ḡ
no address interface *interface* [**match interface** *interface*]

v ̈Ǫ ب ̋

v ̈Ǫ	ὼ ك
start-ip	Ⱥ ş χ ę Ⱳ Ḋ IP ş χ
end-ip	Ⱥ ş χ ę ل IP ş χ
interface *interface*	NAT õ ^ Ⱥ outside Æ ù̀ Pool ̧ ḧ Θ ş χ ڀ ɾ ì Æ ş χ ı ̃ ì Æ ş χ õ ể в ƀ ı Ã Ḋ ' ˜ ù̀ ├ Ỳ ı ль ª ̧ match interface interface ᵀ ɾ ıắ ħ ь Ⱥ interface ı ₇ ε ̦ ˡ ǐ Ậ ∨ NAT j ِ
match interface *interface*	NAT õ ^ Ⱥ outside Æ ù̀ Ẹ ٠ ت ٠ ̃ ḧ ̋ ï ă ı Æ ª ı NAT W ɾ ف Ⱥ ̦ Æ ̛ Ǯ п pool ʌ ль ɵ ̂ Ш ب ş χ

ǰ ب ل ≡ õ ḧ Θ ş χ ḡ

ᵘ ɲ ₩ Ã NAT ş χ − ب ل ₩ Ã

ǰ ۱ ̣ 14

Æ ɾ ̋ Ỳ Ṁ ḅ ' Ⱥ ş χ − ̩ ı ḧ Θ ^ Ⱥ ş χ ḡ ıت Ⱦ ̩ ı ف ؤ NAT ş χ − ب ل ₩ Ã ı ł ª ف Φ NAT ş χ ḡ ḧ Θ Ǐ ᵘ ɲ j ̃ Ḥ ' Y Æ ɾ AP ă ^ Æ ف Φ ب ل

ب ل ڎ æ 1 χ ̤ ấ ̋ Ⱥ mulnets ş χ − ı Ẋ ḧ Θ ̋ ь Ⱥ ş χ ę

```
Ruijie(config)# ip nat pool mulnets netmask 255.255.255.0
Ruijie(config-nat)# address 172.16.10.1 172.16.10.254
Ruijie(config-nat)# address 192.168.100.1 192.168.100.50
```

ώ˜ ʒ Ụ

1χ ḅ ' Ĵ ᵘ ɲ ٭ ٭ ٭ IP ş ɣ ɱ̂ ∨ Ḋ IP ş ɣ ı ٭ , م ı ώ˜ χ

% End address less than start address

2χ ḅ ' Ĵ ᵘ ɲ ٭ ∨ Ḋ IP ş ɣ ⁼ ل IP ş ɣ j ٭ ª Ⱥ ل ɜ ı ٭ , م ı ώ˜ χ

% Start and end addresses on different subnets

3χ ḅ ' Ĵ ᵘ ɲ ٭ ∨ Ḋ IP ş ɣ ⁼ ل IP ş ɣ ʠu ĩ 0.0.0.0 ı ٭ , م ı ώ˜ χ

% Ip address 0.0.0.0 ~ 0.0.0.0 are invalid.

4χ ḅ ' Ĵ ᵘ ɲ Æ ɾ AP ă ^ Æ ڤ Φ ٭ ل ı ٭ , م ı ώ˜ χ

% Not permit ap member interface.

5χ ḅ ' Ⱥ ş ɣ – ٭ ş ɣ „ ḡ Ѿ ˛ ٨ ص 100 ı ٭ , م ı ώ˜ χ

6χ ḅ ' ٭ ل Ĵ ᵘ ɲ Ḥ ı ɲ è j ′ ı ٭ , م ı ώ˜ χ

7χ ḅ ' ٭ ل ٭ ş ɣ „ ḡ Æ ɾ ٭ ĩ ì Æ ş ɣ ħ Ţ ل è ḡ˝ ı ٭ , م ı ώ˜ χ

8χ ḅ ' ٭ ل ٭ ş ɣ „ ḡ Ţ ل è ḡ˝ ı ٭ , م ı ώ˜ χ

% Already exist this range,please delete and recreate

9χ ḅ ' ٭ ل ٭ ş ɣ „ ḡ Æ ɾ ٭ ĩ ì Æ ş ɣ ħ ˢ Ţ õ ٭ ş ɣ ٨ ı ٹ ᴬ ı ٭ , م ı ώ˜ χ

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

9.2 ip nat

ļ Ḿ Ѧ ì Æ ώ ∧ ⃞Ώ ̃Ω ╚ ̧ ف Φ NAT ҷ ̈Ω

ip nat {

3 χ Ę ƍ ﺑ ﻝ ˝ ip nat inside ﷺ ì Æ ı ”EΦ no ip nat outside, ﺑ ﻝ ¸ م ı ώ ˜ χ

```
% Interface is outside enabled, try <no ip nat outside>
```

4 χ Ę ƍ ﺑ ﻝ ˝ ip nat outside ﷺ ì Æ ı ”EΦ no ip nat inside, ﺑ ﻝ ¸ م ı ώ ˜ χ

```
% Interface is inside enabled, try <no ip nat inside>
```

Ẃ ȏ ڃ ئ -

Ẉ ᴶ ب ˝ -

9.3 ip nat application

ᵘ ᵑᵬ₩Ã ᵴ ṕ ᵽ ᒧ ₩Ã

ƛ ᐟ 14

Æ ŧ ″YṀ ᵽ Ᵽ NAT ▨ ᵴ ᐟ Ẓ ŧ ẞ ᵀ ı ᵢ ɭ Ӣ ώ Ᵽ ᵉ ḧ ▨ IP

Ẉ ᴶ ب ˝ -

9.4 ip nat inside destination

ļ ᵏ ɨ NAT ᴊ ᶆ ´ ‰ ʂ ɣ ᶎ ˝Ω

ip nat inside destination list *access-list-number* **pool** *pool-name*

ʜ ɔ̌ NAT ᴊ ᶆ ´ ‰ ᶎ ˝Ω

no ip nat inside destination list *access-list-number*

ᵛ ˝Ǫ ب ˝	ᵛ ˝Ǫ	ὼ ڭ

list *access-list-number*

```
Ruijie(config-if-GigabitEthernet 0/1)# ip nat outside
Ruijie(config-if-GigabitEthernet 0/1)# exit
Ruijie(config)# ip nat pool net10 10.10.10.1 10.10.10.2 prefix-length 24 type rotary
Ruijie(config)# ip nat inside destination list 100 pool net10
Ruijie(config)# access-list 100 permit ip any host 10.10.10.100
```

ώ˜ ʒ Ụ 1χ ḅ ' ﺑﻞ h„ Ţ ﻞ è ƥ ı„ ﺑﻞ, م ı ώ˜ χ

```
Translation with list xxx exist,please delete and recreate
```

2χ ḅ ' ﺑﻞ Í ᵘ ᵑᵬ'H ı, א ɲ è j ' ı ﺑﻞ, م ı ώ˜ χ

```
% create nat rule fail
```

3χ ḅ ' ¸ ﺑ ' ﺑﻞ ă ı ᵘ ᵑᵬ ı„ ¸ ﺑ, م ı ώ˜ χ

```
% Translation not found
```

Ẃ ȍ ჯ ئ -

Ẉ ᴶ ب ˝ -

9.5 ip nat inside source

ا ᵏ ŧ ɲ ሀ ◊ ş ɣ NAT

ip nat inside source list *access-list-number* { **interface** *interface-type interface-number* | **pool** *pool-name* } [**overload**]

ip nat inside source static *local-ip global-ip* [**match** *interface-type interface-number* | **netmask** *mask*][**permit-inside**]

ip nat inside source static *local-ip* **interface** *interface-type interface-number* [**permit-inside**]

ip nat inside source static { **tcp** *local-ip local-port* | **udp** *local-ip local-port* } *global-ip global-port* [**match** *interface-type interface-number* | **netmask** *mask*] [**permit-inside**]
ip nat inside source static { **tcp** *local-ip local-port* | **udp** *local-ip local-port* } **interface** *interface-type interface-number global-port* [**permit-inside**]

ʜ ŝ ɲ ሀ ◊ ş ɣ NAT

no ip nat inside source list *access-list-number*

no ip nat inside source static *local-ip global-ip*

no ip nat inside source static *local-ip* **interface** *interface-type interface-number*

no ip nat inside source static { **tcp** *local-ip local-port* | **udp** *local-ip local-port* } *global-ip global-port*

no ip nat inside source static { **tcp** *local-ip local-port* | **udp** *local-ip local-port* } **interface** *interface-type interface-number global-port*

v ̈ꞯ̣ب ̋

ʁ ᵘ ɯ ɻ ʎ ≡ ɷ ʔ ɷ ş ɣ ɻ ʎ ت ٠

Ḿ ώ ĕ ˋO n ɲ ɯ ʒ ı ɹ ɹ ˗ ɷ NAT ă NAPT ă Ɜ ˋO n ώ ĕ ˈ Y ʎ ό ı ő ˛ j ɻ ɾ outside ì Æ ş ɣ Ў ˗ ɷ NAPT ı ɨ ʁ Í ş ɣ ʁ ʅ ISP Й ĭ ş ɣ ı Ψ Ω ˈ ΐ ό Ễ ᶻ ِ Ẃ ὺ ` ï ı ɲ ɻ ɾ Ä Ա ڈ ف Ᵽ ɲ ɯ ʒ ώ ĕ O n ı ᴱ ɻ ɾ ɲ ɻ IP ŏ ˈ ₡ ˝ Ꮋ ɷ Ᵽ ᵉ e Ẓ ɾ ˋO n ı ɻ ∂ ɲ ɻ ɾ Ä ₡ ɔ ṕ IP Ա ڈ Í ˋO n ف ˋH ɹ ɲ ɯ ◊ ş ɣ ˗ ɷ NAT ă ɲ ɯ ◊ ş ɣ ˗ ɷ NAPT ˋH ı ɹ ɻ ɾ ɔ permit-inside ʁ ڃ È % ˋH ω Ḅ Ĉ ɻ ḅ inside Æ i ɹ i no ip redirects ı گ Ƀ inside Æ ʌ ҭ ḧ ᵇ ï ă

ɹ ɻ ʒ æ 1 χ ₡ ï ɹ ɻ æ Ḍ ı ˈ ₡ Ṅ 192.168.12.0/24 ɲ ɯ ʒ ı ʊ ő ჟ Ω ɔ ṕ ş ɣ 200.168.12.0/28 ɻ ɟ ɲ ɯ ʎ ɯ Ꞇ ʊ Ḙ ̧ ɻ ɟ ʒ j ы ḅ Ў NAT

7χ ḅ ' ɨ ă̈ ڳ Ḛ h„ ̀H ı¸ א ת è j ’ ı ٻ ل¸ م ı ώ˜ χ

```
% create attach rule fail
```

8χ ḅ ' Ḿ ٻ ل permit-inside ᵘ ɲь ɨ ă̈ ڳ Ḛ h„ ̀H ı¸ א ת è j ’ ı ٻ ل¸ م ı ώ˜ χ

```
% create permit_inside attach rule fail
```

9χ ḅ '„ ں ' ٻ ل ă̈ ı ᵘ ɲь ı„ „ ں¸ م ı ώ˜ χ

```
% Translation not found
```

Ẃ ȍ ڃ ئ -

Ẉ ᴶ ب ˝ -

9.6 ip nat outside source

ļ ᵏ ɾ ᵘ մ h ◊ ş χ̧ NAT

ip nat outside source list *access-list-number* **pool** *pool-name*

ip nat outside source static *global-ip local-ip*

ip nat outside source static { **tcp** *global-ip global-port* | **udp** *global-ip global-port* } *local-ip local-port*

ʜ ŭ ᵘ մ h ◊ ş χ̧ NAT

no ip nat outside source list *access-list-number*

no ip nat outside source static *global-ip local-ip*

no ip nat outside source static { **tcp** *global-ip global-port* | **udp** *global-ip global-port* } *local-ip local-port*

v ̈Ω ب ˝

v ̈Ω	ώ ك
list *access-list-number*	ş ş χ ևڎ ˚ ˊ ᴱ õ ◊ ş χ̧ ש ٻ أ ևڎ ˚ ˊ ڳ ᶊ ¸ ı ε h„ ā NAT ڃ ̈Ω ւ ę
pool *pool-name*	¸ ɾ ş χ̧ – ʌ ڳ ২ ṕ ş χ̧ Ў NAT
static *local-ip global-ip*	ḧ Θ ৸ ɒ ‾ ̃ õ NAT local-ip ʜ ş ş χ̧ ı global-ip ʜ ২ ṕ ş χ̧
static *protocol*	ḧ Θ ̈E ī ‾ ̃ õ NAT protocol ˈ Ω ʜ TCP ă̈ UDP
local-port	ş ş χ̧ ڳ Ȯ ո ५ Æ ᴺ TCP ă̈ UDP ڳ ५ Æ ᴺ ı ⅛ ५ Ȯ ո ظ ̃ Ḿ Ẓ ʌ Ȯ ո ५ Æ
global-port	২ ṕ ş χ̧ ڳ Ȯ ո ५ Æ ᴺ ᵘ մ h ل ᴨ ڞ ص أ ५ Æ ևڎ ɲ մ h ل ᴨ ڎ ڳ Ȯ ո Ǐ ५ Æ ᴺ ˈ Ω ль local-port j ª

ƛ ᵥ ɹ	≡ ã ᵘ ɱ ◊ ʂ ɣ NAT ʌ ɨ
ᵘ ɲ ₩ Ã	ɔ ṕ ᵥ ɹ ₩ Ã
ƛ ʌ.	14
Æ ɨ ˝ Y Ṁ	ᵘ ɱ ◊ ʂ ɣ NAT ʇ Ω Ƶ ɩ Ƶ ɨ ƥ ᵽ ᴬ ʂ ɣ Ⱳ ȷ ʂ ɣ ʇ Ω ƀ Ⱥ ₓ ɩ Й ǐ ᵌ ϒ ã ɹ ʌ ˙ ᵥ ˜ ª ¯ IP ʂ ɣ ɪ ă ă Ⱥ ϒ ã ɹ ʌ = ʒ ã ɹ ʌ ˙ ᵥ ˜ ª ¯ ɔ ṕ IP ʂ ɣ ɪ ф ϒ ù ˋ ϒ ѫ ʂ ɣ ᵽ ᴬ ƀ Ⱥ ᵽ ᴬ ʂ ɣ ᵌ ɹ ʌ Ƶ θ ɹ ǐ j ˈ ǐ ᵑ ȝ ᵌ ɪ ɨ ѫ Ĕ Ç ˘ Й ɲ ѫ Ḿ Ά ᵌ Ƶ ƥ ʂ ɹ ʌ ᵽ ᴬ ʂ ɣ NAT ő ǐ ћ ƶ ; Ḿ ᵽ ᴬ ʂ ɣ ɹ ʌ θ ɹ ᵑ ȝ ᵌ ƶ ɛ ɪ ᵥ ˝ ᵽ ᴬ ʂ ɣ NAT ɪ ᵘ ɱ ɹ ʌ Ƶ ʂ ɣ ƥ ɲ ɱ ɱ ɱ ɹ ʌ ´ ѫ ᴰ Ⱥ ɹ ʌ Ƶ ʂ ɣ ɪ ɾ θ ¯ ᵽ ᴬ ʂ ɣ NAT ᵥ ɹ ɪ Ʊ ḫ ˋ ѫ ƀ Ⱥ ɱ ˋ ɲ ķ χ 1 ζ ɲ ɱ ◊ ʂ ɣ NAT ᵥ ɹ ψ 2 ζ ᵘ ɱ ◊ ʂ ɣ NAT ᵥ ɹ ɪ ᴱ ã ъ ɲ ɱ ɱ ʌ ʂ ɣ ᵽ ᴬ ᵘ ɱ ɹ ʌ ₓ ɩ ᵥ ɹ ᵘ ɱ ◊ ʂ ɣ ʇ Ω ɪ ᵘ ɱ ◊ ʂ ɣ ʇ Ω ˈ Ꝋ ᵽ ɨ ˝ ő NAT ᵥ ɹ ă ʊ ő NAT ᵥ ɹ Ẹ ɲ ɱ ɹ ʌ ɱ á Ф ˋ Ḥ ˋ ᵥ ˜ ˚ ├ q ᵌ ɔ ᒣ IP ʂ ɣ ɪ ḫ ѫ ъ Й ǐ ɹ ف ì ˋ H ɪ ọ ɬ ɦ ʌ ɨ ʂ ɣ ᵽ ᴬ ᵌ ù ˋ ɲ ɱ ɹ ʌ ˚ ᵽ ɨ ³ ª ѩ ƶ ᵘ ɱ ɹ ʌ Ƶ ɪ ɨ ˚ % ˝ Ḥ ˙ Y NAT Ф ᵻ ف ọ ɛ ˝ Ḥ ˙ Y DNS ǐ ă ᵌ NAT
ᵥ ɹ ȝ æ	1 χ Ꝋ ï ᵥ ɹ æ Ḍ ɪ ɲ ɱ ɹ ʌ 192.168.12.0/24 ъ ᵘ ɱ ɹ ʌ ᵌ ʂ ɣ ᵽ ᴬ ɹ ص ƶ Ꝋ ᵅ ɪ ɲ ɱ Ƶ ˈ Ꝋ ں ص 192.168.12.0/24 ɹ ʌ ʂ ɣ ѩ ƶ ᵘ ɱ ɹ 192.168.12.0/24 ɹ ᵻ ᵌ Ƶ

```
Ruijie#configure terminal
Ruijie(config)# interface GigabitEthernet 0/0
Ruijie(config-if-GigabitEthernet 0/0)# ip address 192.168.12.55 255.255.255.0
Ruijie(config-if-GigabitEthernet 0/0)# ip nat inside
Ruijie(config-if-GigabitEthernet 0/0)# exit
Ruijie(config)# interface Serial 10/1
Ruijie(config-if-GigabitEthernet 0/1)# ip address 192.168.10.1 255.255.255.0
Ruijie(config-if-GigabitEthernet 0/1)# ip nat outside
Ruijie(config-if-GigabitEthernet 0/1)# encapsulation ppp
Ruijie(config-if-GigabitEthernet 0/1)# exit
Ruijie(config)#ip nat pool net200 200.168.12.1 200.168.12.15 prefix-length 28
Ruijie(config)#ip nat pool net192 192.168.12.1 192.168.12.254 prefix-length 24
Ruijie(config)#ip nat inside source list  1 pool net200
Ruijie(config)#ip nat outside source list 1 pool net192
Ruijie(config)#access-list 1 permit 92.168.12.0 0.0.0.255
Ruijie(config)#ip route 192.168.12.0 255.255.255.0 192.168.100.2
```

ώ ˜ ȝ Ụ	1 χ Ẹ ᵥ ɹ h ᵢ ᵌ ẽ ᵂ ᵥ IP ʂ ɣ Ţ ɹ ī ṃ ص ɪ ᵢ ᵥ ɹ ˛ م ɪ ώ ˜ χ

```
6.6.6.6 already mapped (6.6.6.6 -> 5.5.25.4)
```

2 χ Ẹ ᵥ ɹ h ᵢ ᵌ ẽ ƶ Ꝋ ᵌ ˊ ‰

3 χ Ẹ ٻ ل acl Ţ ل ī ṃ ص ا ٻ ل ، م ا ώ ˜ χ

```
Translation with list 1 exist,please delete and recreate
```

4 χ ḅ ' ٻ ل Ấ ᵘ ɲ Ḥ ا ، א ɲ è j ' ا ٻ ل ، م ا ώ ˜ χ

```
% create nat rule fail
```

5 χ ḅ ' ¨ ں ' ٻ ل ă ا ᵘ ɲ ا ¨ ¨ ں ، م ا ώ ˜ χ

```
% Translation not found
```

Ẃ ȍ ჯ ئ -

Ẉ ᴶ ب ˝ -

9.7 ip nat pool

ļ ḧ Θ NAT ş χ –

ip nat pool *pool-name start-ip end-ip* { **netmask** *netmask* | **prefix-length** *prefix-length* } [**type rotary**]

ip nat pool *pool-name* { **netmask** *netmask* | **prefix-length** *prefix-length* } [**type rotary**]

ip nat pool *pool-name* { **netmask** *netmask* | **prefix-length***prefix-length* } [**type rotary**]

¨ ں ş χ –

no ip nat pool *pool-name*

v ¨Ọ ب ˝

v ¨Ọ	ȍ ك
pool-name	NAT ş χ – ª Ề
start-ip	NAT ş χ – ¥ Ḋ IP ş χ
end-ip	NAT ş χ – ل IP ş χ
netmask *netmask*	NAT ş χ – ş χ ل ᴎ ọ
type	NAT ş χ – ١ ڑ rotary ₦ ڎ ڃ ڑ ا ⅛ Ѧ ş χ ٔ ٻ ₦ ' ˚ ५ õ ≡ ũ ٻ rotary ᵭ ĩ ڎ ڃ ڑ ө Ѧ Ꝋ Ậ ϡ rotary v ¨Ọ ĩ ль cisco ᵘ ɲ Ɲ ķ

ƛ ٻ ل ≡ ũ ş χ – q ḧ Θ

ᵘ ɲ ₩ Ã ϡ ṕ ٻ ل ₩ Ã

ƛ ١ ¸ 14

Æ ŧ ˝ Y Ṁ ḅ ' Ѧ ş χ – ₓ ļ ḧ Θ ^ Ѧ ş χ ę ا ¨ ₓ ļ Ж ¨ á Ѧ Ⅵ ş χ – ا ª ḧ Θ ş χ ¨ ḅ

ٻ ل ڗ æ 1 χ ⓠ ï ٻ ل æ Ḍ ا ¸ á ˜ ª È ㎞ net192 ⓑ ş χ – ا ∨ Ḋ ş χ ㎞ 192.168.12.1 ا ل ş χ ㎞ 192.168.12.254 ا ل ᴧ ó ڌ ỷ ㎞ 24 ₳ ⅝ ≠ ㄐ

```
Ruijie#configure terminal
Ruijie(config)# ip nat pool net192 192.168.12.1 192.168.12.254 prefix-length 24
```

ώ ˜ ڗ Ụ 1 χ ḅ ' ٻ ل ⓑ ş χ – ⓑ ó ĩ 0.0.0.0 ا ٻ ل , م ا ώ ˜

```
% netmask can not be 0
```

2 χ ḅ ' Ỉ ᵘ ᖷ ٻ ل ⓑ ل IP ş χ ⓜ ∨ Ḋ IP ş χ ا ٻ ل , م ا ώ ˜ χ

```
% End address less than start address
```

3 χ ḅ ' Ỉ ᵘ ᖷ ٻ ل ⓑ ∨ Ḋ IP ş χ ⊐ ل IP ş χ j ⓜ ª ₳ ل ㅌ ا ٻ ل , م ا ώ ˜ χ

```
% Start and end addresses on different subnets
```

4 χ ḅ ' Ỉ ᵘ ᖷ ٻ ل ⓑ ∨ Ḋ IP ş χ ⊐ ل IP ş χ ⓠ u ĩ 0.0.0.0 ا ٻ ل , م ا ώ ˜ χ

```
% Ip address 0.0.0.0 ~ 0.0.0.0 are invalid.
```

5 χ ḅ ' ف ☋ Ẓ ş χ – ₩ Ã ⓑ pool ۱ ڗ ⊐ Ţ ٻ ل pool ۱ ڗ j ª ا ٻ ل , م ا ώ ˜ χ

```
%Cannot redefine pool type, please delete and recreate.
```

6 χ ḅ ' ٻ ل ⓑ ş χ – ⓑ Ω ¸ ۸ ص 100 ا ٻ ل , م ا ώ ˜ χ

```
% Exceed the max pool count
```

7 χ ḅ ' ٻ ل ⓑ ş χ – ⓑ ª È ۸ ص 32 ا ٻ ل , م ا ώ ˜

```
% Length of pool name must be no more than 32 charceters
```

8 χ ḅ ' ٻ ل Ỉ ᵘ ᖷ ̀H ا ภ è j ' ا ٻ ل , م ا ώ ˜ χ

```
%create pool fail
```

9 χ ḅ ' ٻ ل Ỉ ᵘ ᖷ ̀H ا ภ è j ' ا ٻ ل , م ا ώ ˜ χ

```
% create pool fail for alloc range mem
```

10 χ ḅ ' ể ¨ ⓑ ş χ – j è ƥ ا ¸ ⓑ , م ا ώ ˜ χ

```
% pool xxx not exist
```

Ẃ ð ჭ ئ -

Ẉ ᴶ ب ˝ -

9.8 ip nat keepalive

ɩ ب ـ ∧ گ NAT ş χ d ˊ arp ï ă ژ ڷ

ip nat keepalive [*keealive_out*]

j ∧ گ NAT ş χ d ˊ arp ï ă

no ip nat keepalive

default ip nat keepalive

v ˝Ǫ ب ˝

v ˝Ǫ	ڽ ڷ
keealive_out	∧ گ nat ş χ d ˊ arp ï ă ژ ڷ

ƛ ب ـ j ∧ گ nat ş χ d ˊ arp ï ă

ttl	ħ Θ DNS Ẓ ɾ UDP ف ا ڃ ٯ ɻ ę ʌ ʿH ʿH ژ س ɲ ĩ 0

port_num

Inside global	ɲ ɯ h ᴝ ṕ ʂ ɣ ʒ ϥ Æ N
Inside local	ɲ ɯ h ʂ ʂ ɣ ʒ ϥ Æ N
Outside local	ᵘ ɯ h ʂ ʂ ɣ ʒ ϥ Æ N
Outside global	ᵘ ɯ h ᴝ ṕ ʂ ɣ ʒ ϥ Æ N
timeout	ˊ ~ Ǐ NAT ʗ Ɵ ʟ ẹ ̋ ʌ ʜ ᵩ ɷ ^ ʑ ʜ ɾ ɪ ᴅ ɣ ʅ

ώ ̃ ʒ Ụ -

Ẃ ȣ ʗ ɕ -

Ẉ ᴶ ب ̋ -

-IP

1 NSM

1.1 clear ip route

l ▌Ⅵ ت ٠ ˊ ﻝ è ı ˡ Ꝙ ƍ ≠ ŧ ¨A₩Ã ¨EΦ **clear ip route** ᵘ ɲ

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

v ¨Ꝙ ب ˝

v ¨Ꝙ	ώ ك
*	▌Ⅵ ৩մh ت ٠ ﻝ è
network	l ▌Ⅵ ﻝ è ﷺ ﻝ ᴎ ă Ḍ ﻝ ş ϫ
netmask	ε ˡ Ǯ ζ ﻝ ᴎ ǫ ı j ¨Y ḧ ǫ ¯H ı ˊ ˜ Æ ŧ network ϖ ڌ ש ب ت ٠ ˊ ﷺ ت ٠ ı ▌Ⅵ ﻝ è

ᵘ ɲ ₩ Ã ≠ ŧ ¨A ₩ Ã

ǰ ۱. 14

Æ ŧ ¨Y Ṁ ▌Ⅵ ت ٠ ﻝ è h ˍ ษ Ḿ Ẓ ﷺ ت ٠ ı ł ª ъ ∧ ت ٠ в ɲ ۔ Ä ę Ĉ ǫ ɾ ├ Ỵ ḅ ' ▌Ⅵ Ꝟ Ꝙ Ⱥ ت ٠ ˊ ﷺ ﻝ è ı Ṅ ڃ ă Ꝟ Ꝙ Ⱥ ﻝ ᴎ ﷺ ˜ ṗ ף ȝ ⱥ Ă

ب ﻝ ڎ æ ▌Ⅵ 192.168.12.0 ϖ ڌ ש ب ﷺ ت ٠ ˊ ° ﷺ ﻝ è

```
clear ip route 192.168.12.0
```

ώ ˜ ȝ Ụ -

Ẉ ᴶ ب ˝ -

1.2 ip default-network

ب ﻝ ǰ ﻝ ᴎ

ip default-network *network*

ˍ ڎ ǰ ﻝ ᴎ

no ip default-network *network*

Õ ᵸ ǰ ب ﻝ

default ip default-network *network*

v ¨Ꝙ ب ˝

v ¨Ꝙ	ώ ك

network	ǰ ﻝ ﻡ ﷺ ﻝ ﻡ ᴺ

ǰ ﺑﻝ ǰ ﷺ 0.0.0.0/0

ᵘ ɲ ₩ Ã ৩ ṕ ﺑﻝ ₩ Ã

ǰ ﻝ. 14

Æ ɨ ˝ Y Ṁ ﺑﻝ ǰ ﻝ ﻡ ﷺ ﷺ ĩ ﷺ ˝ ﻓ ɨ ǰ ﺙ ɨ ﺹ **default-network** ﻓ ɨ ǰ ﺙ ﺩ ﻝ ◗ ′ Ⓠ ï ↑ ţ χ Í ǰ ﻝ ﻡ j ĩ ´ ف ì Æ ﻝ ﻡ ɨ Ꮒ ƍ ﺙ ´ ﻫ ˈ ˙ ڑ

ǰ ﻝ ﻡ Ở ĩ Ⓠ “ * ” ᴺ Ã ˘ ɨ ´ ~ Ệ ĩ ǰ ﺙ ﷺ ö Ǯ ă ḅ ' ǰ ﻝ ﻡ ﻫ õ connected ﺙ ⁼ ≡ õ ï ﺑ ﷺ ﺙ ɨ „ ǰ ﺙ ļ ∂ ĩ ـ ỗ ﺙ

ﺑﻝ ﮊ æ 1 χ Ṅ 192.168.100.0 ﻝ ﻡ ﷺ ﷺ ǰ ﻝ ﻡ ɨ ﺗ ﺑﻝ ˙ Í ﻝ ﻡ ﷺ ـ ỗ ﺙ ɨ Ⓐ Ⓠ ﷺ ¦ Ṅ ₅ ʊ ﻓ ɨ ↑ ǰ ﺙ ﺩ

```
Ruijie(config)# ip route 192.168.100.0 255.255.255.0 serial  0/1
Ruijie(config)# ip default-network 192.168.100.0
```

2 χ Ṅ 200.200.200.0 ﻝ ﻡ ﷺ ﷺ ǰ ﻝ ﻡ ɨ ᴱ ļ Ẹ 200.200.200.0 ¸ א ƍ ﺙ ´ ﻫ ɨ Í ﺙ ă ﷺ ǰ ﺙ ﺩ

```
Ruijie(config)# ip default-network 200.200.200.0
```

₅ ﺝ Ⓐ | ˈ Æ ɨ show ip route ¶ ˜ ǰ ﺙ ﺩ

ώ ˜ ʒ Ụ -

Ẃ ȸ ﺝ ئ -

Ẉ ᴶ ﺑ ˝ -

1.3 ip route

ﺑﻝ ـ ỗ ﺙ ﺩ

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

¨ ȸ Ţ ﺑﻝ ﷺ ـ ỗ ﺙ ﺩ

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

¨ ȸ Ⓐ ˝ ũ Ţ ﺑﻝ ﷺ ـ ỗ ﺙ ﺩ

no ip route all

Õ ʰ ƚ ب ل

default ip route *network net-mask* { *ip-address* | *interface* [*ip-address*] } [*distance*]

default ip route all

ν ̈Ω ب ˜

ν ̈Ω	ώ ك
network	´ ‰ ل ᴎ ل ᴎ ş ẋ
net-mask	´ ‰ ل ᴎ ó
ip-address	ε ا Ǐ ζ ˗ ő ث ا ï ب ş ẋ ip-address ⊐ interface ۶ Ṉ ı ˝Y ħ Ⱥ ı ă ă ь ă ɰ˝Y ħ Ę ˈ ˝Y ħ ip-address ̀H ı ´ ~ ب ل ˗ õ ´ ف ث ا
interface	ε ا Ǐ ζ ˗ ő ث ا ï ب ˛ Æ ip-address ⊐ interface ۶ Ṉ ı ˝Y ħ Ⱥ ı ă ă ь ă ɰ˝Y ħ Ę ˈ ˝Y ħ interface ̀H ı ´ ~ ب ل ˗ õ ن ă ث ا ı ˛ Æ ا ï ب ɲ ث ا ´ ₳ Ǐ ث n ê
distance	ε ا Ǐ ζ ˗ ő ث ا ٦ ת ˈ ˜ ı ƚ ⱨ 1
tag	ε ا Ǐ ζ ˗ ő ث ا Tag Ө ı ƚ ⱨ 0
permanent	ε ا Ǐ ζ ⇔ Ψ ث ا ‰ ⅋ ı ƚ ⱨ ˚ ⇔ Ψ ث ا
weight *number*	ε ا Ǐ ζ ˗ ő ث ا ي Ө ı ƚ ⱨ 1
description *description-text*	ε ا Ǐ ζ ˗ ő ث ا ώ ك ʒ Ụ ı ƚ ɳ ώ ك ʒ Ụ ı *description-text* ⱨ 1 Ḱ 60 Ⱥ Ê ا Ê ا ⱡ
disabled/enabled	ε ا Ǐ ζ ˗ ő ث ا Æ ť ‰ ⅋ ı ƚ ⱨ enabled
global	ε ا Ǐ ζ ǐ ~ ˝Y ħ ï ب Ɽ ̂ ϖ ṕ ث ا ´ ı ƚ ï ب ̃ ĩ Ɽ ̂ ϖ ṕ ث ا ´
all	ε ا Ǐ ζ ˛ ϖ ṕ ث ا ´ ï ̈A õ ˗ õ ث ا

ƚ ب ل ɳ ˗ õ ث ا

ᵘ ɲ ₩ Ă ϖ ṕ ب ل ₩ Ă

ƚ ٦ ˛ 14

Æ ŧ ˝Y Ṁ ˗ õ ث ا ƚ ٦ ת ˈ ˜ ⱨ 1 ı ي ِ ف ل ٦ ת ˈ ˜ ı ˈ Ⱥ ы ę ʊ õ ث ا ę ˙ ث ا ɧ ˝ ˗ õ ث ا ı ᴱ ũ Ę ʊ õ ث ا ę j ˙ ̀H ı ɛ Æ ŧ ˗ õ ث ا ي ِ ف ل ˗ õ ث ا ٦ ת ˈ ˜ ı ˈ Ⱥ ɧ א ɻ ث ⱡ ¥ ı % ̀H ˗ õ ث ا ı ˚ w ϒ ⱨ ╢ ʊ ث ا ⅝ ḅ OSPF ث ا в ɲ ٦ ת ˈ ˜ ⱨ 110 ı ˈ Ⱥ Ṅ ˗ õ ث ا ٦ ת ˈ ˜ ف ل ⱨ 125 ı ف ¯ Ę ق OSPF ɻ ث ѽ ̌ ̀H ı ̃Ω ̃Ω ╚ ₍₅ ł ŏ ˈ Ⱥ ´ ̃Ω ˙ ˗ õ ث ا ɻ ث i

˗ õ ث ا ѕ n ب ⱨ 1 ı ˈ Ⱥ Æ ŧ **show ip route weight** ᵘ ɲ ˜ ˚ ѕ n ي ˗ õ ث ا ي ν ̈Ω weight ̂ ɧ א WCMP ı ť ı Ę è ɲ ق ذ ʒ ‘ ث ا ˈ ز • ş ẋ ̀H ı ɻ ᴎ ف ⱡ h ⁞ ̃Ω ᴿ ˚ ث ا ي Ө ‘ ب ̃Ω ̃Ω ╚ ₍ weight ي ⁼ ث ا h ‘ ̈I ي ^ ̃Ω ̃Ω ï ă ı ي ɳ ă h ‘ ̈I ي Ṉ ̃Ω ̃Ω ï ă

˗ õ ث ا Æ ť ‰ Ő í ˙ ˗ õ ث ا ï ε ũ ώ ı ь ˈ ɧ ώ ˛ j h ̂ ج ∧ ⇔ Ψ ث ا ب ل ف ج ∧ ´ ı ɲ ˚ ن ص ل ٦ ˛ ɲ è ı ε ˛ Ṅ ´ è ɲ

ɻ ن ص Ⱥ θ ل ì Æ ب ل ˗ õ ث ا ̀H ı ó ₍ ³ d ï ب ´ ì ⱨ ì Æ ε ь ip route 0.0.0.0 0.0.0.0 GigabitEthernet 0/0 ζ ف ¯ h ч ف ⱡ ɑ ê ̈A õ ˙ ~ ´ ‰ ل ᴎ ı ɸ ı ˜ ´ ف ɲ GigabitEthernet 0/0 ì Æ ı ł % Ḿ ⅛ Ⱥ ´ ‰ ʒ ɸ

ʌ گ Ⱥ ARP ت ∂ ı h ị ɾ ɒ ʌ CPU ⁼ ɲ è ° ◊ Ä Ꙍ ˇ j ã ɲ Ṅ ˜ õ ث ᐟ ´ ì ˝ Y ᵇ Ꙍ ᶿ ㇽ ì Æ

ᵽ ㇽ ʒ æ 1 χ ᵚ ɾ ˝ † ˙ 172.16.100.0/24 ´ ‰ ㇽ ᛖ ㆓ ˜ õ ث ᐟ ı ï ᵽ ㎞ 192.168.12.1 ı ㄱ ㅅ ˈ ˜ ㎞ 115

```
ip route 172.16.100.0 255.255.255.0 192.168.12.1 115
```

2 χ ḅ ˈ ㆓ ˜ õ ث ᐟ ≡ ω ˝ Y ӈ ì Æ ı Ẹ* Ẃ ʌ گ ì Æ ѽ ỻ ʿ H ı ˈ ĺ ɦ Æ ê Ꙍ Ꙍ ㅛ ᵢ ᵡ Ʊ Ḛ ì Æ ʌ گ ɻ ᵴ d Ĺ ѽ ` ʌ ɬ ı ŏ ᵪ ɻ ˝ Y ӈ ì Æ Ꙍ ï ᵽ ㇽ æ Ḍ ı ˙ ´ ‰ ㇽ ᛖ 172.16.100.0/24 ᛖ Ꙍ Ꙍ ㅛ ᵢ ᴱ ĺ ᵡ GigabitEthernet 0/0 ì Æ ᶎ ʌ

```
Ruijie(config)# ip route 172.16.100.0 255.255.255.0 GigabitEthernet 0/0 192.168.12.1
```

ₛ ᶎ Ä | ˈ Æ ɾ show ip route ¶ ˜ ث ᐟ ´

ώ˜ ʒ Ụ -

Ẃ ȸ ᶎ ȿ -

Ẉ ᴶ ب ˝ -

1.4 ip routing

ᵏ ɾ RGOS ᶊ ɼ ᛖ IP ث ᐟ ı ĺ

ip routing

ʜ ȷ IP ث ᐟ ı ĺ

no ip routing

Õ ᵠ ỉ ᵽ ㇽ

default ip routing

v ˝ Ꙍ ب ˝

v ˝ Ꙍ	ώ ك
-	-

ỉ ᵽ ㇽ ᵏ ɾ IP ث ᐟ

ᵘ ɲ ₩ Ã ᴝ ṕ ᵽ ㇽ ₩ Ã

ỉ ㄱ 14

Æ ɾ ˝ Y Ṁ Ẹ ɸ ᵻ ᴱ Ă ㎞ ⁷ ì ɸ ᵻ ı ỗ ă ᴱ Ă ㎞ VOIP ㇽ ʜ ɸ ᵻ ˋ H ı ˈ Ꙍ j ᵪ ɻ RGOS ᶊ ɼ ᛖ IP ث ᐟ ᶎ ʌ ı ĺ ف ˋ H ˈ Ꙍ ʜ ȷ RGOS ᛖ IP ث ᐟ ı ĺ

ʜ ȷ IP ث ᐟ ı ĺ ª ı ɸ ᵻ ɲ ъ ˝ ᵑ ʒ ˇ א ¯ ı ˈ Ꙍ ώ ʌ ɣ ı Ꮋ j ĺ Ў ᶎ ʌ Ä ѽ ث ᐟ ˀ ʜ ᛖ ᵽ ㇽ ɸ ɯ ɋ

¨ ŏ ¯ Õ ċ ᵑ ب ـ ĩ Ѧ æ ᵘ ı ᵑ̂ ¯ Õ ċ ᵑ ı Ỉ ب ـ ۓ ^ ı ۓ ŧ Ä ĥ Ỿ ڑ ب ـ ˝ no ip routing ı Ỉ Ṁ ᵶ ۓ ¯ Õ ċ ᵑ ب ـ ђ ₦ ₹ d ف ٦ ŭ ı Ę ¨EΦ no ip routing `H ı ¯ Õ ċ ᵑ ب ـ Ṅ h ṗ `H ڭ Ƶ ı ۓ ŧ Ä ۓ Ä ¨EΦ ip routing ı ¯ Õ ċ ᵑ ب ـ ı Ꝋ Õ ᵸ

├ Ỿ ı ۓ ƥ no ip routing ŭ` ï ı ف ١ ۓ ᵏ ă ă Ꝋ ١ ١ ۓ ᵏ ı ¯ Õ ċ ᵑ ب ـ Ṅ j h ȝ ɒ

ب ـ ڎ æ ₦ ŏ ˝ RGOS ڍ ţ IP ċ ᵑ ı Ỉ

```
Ruijie(config)# no ip routing
```

ₒ ƺ Ä | -

ώ ˜ ȝ Ụ -

Ẃ ð ჟ ئ -

Ẉ ᴶ ب ˝ -

1.5 ip static route-limit

ب ـ ¯ Õ ċ ᵑ ˝ Ꝋ i ں

ip static route-limit *number*

ب ـ س ռ ċ ᵑ ˆ Ꝋ

no ip static route-limit

Õ ᵸ ỉ ب ـ

default ip static route-limit

v Ꝋ ب ˝

v Ꝋ	ώ ك
number	ċ ᵑ i ں ı ‟ ɧ 1-10000

ỉ ب ـ ỉ ₦ 1024

ᵘ ɲ ₩ Ã ২ ṕ ب ـ ₩ Ã

ỉ ١ ¸ 14

Æ ŧ ˝ Y Ṁ ب ـ ¯ Õ ċ ᵑ Ꝋ i ں ˝ ˝ Ỉ ₦ ˝ ĺ ˙ ¯ Õ ċ ᵑ ˝ Ꝋ ı ڼ ص **ip static route-limit** ب ـ ¯ Õ ċ ᵑ Ꝋ i ں ª h ғ ł ƀ ï ѽ ' ı ب ـ ˝ ¯ Õ ċ ᵑ Ꝋ j h ٨ ص ڤ ـ i ں ڼ ص **show running-config** ı Ꝋ ˆ ˜ ´ ˙ ب ـ ˝ س ռ ¯ Õ ċ ᵑ Ꝋ i ں

ب ـ ڎ æ ڤ ـ ¯ Õ ċ ᵑ Ꝋ i ں ₦ 900 ˆ ı ł ª Õ ᵸ س ռ Ë

	ḫ χ 1-8 ı ↑ ت ٭ ﷺ"A õ ٧ Y ت Ễ ﷺ ي ɵ ⁼ j ΐ ٨ ص أ↑ ت ٭ "A أ پ ل ﷺ ѡ ᵶ ٧ Y ت Ễ↑ ´ "Ω ı ª ↑ ت ٭ ﷺ ٧ Y ت Ễ ɵ ژ ﷺ ي ⅝"Y ˝ ˝ ف P ت Ễ ɵ ژ ﷺ ╚ ₍ ⅝ ' ԉ ٧ ﻷ ₥ 1
description *description-text*	ε ا Ǯ ζ ـ õ ت ٭ ѡ ك ʒ Ụ ı ﻷ ḫ ѡ ك ʒ Ụ ı *description-text* ₥ 1 Ḱ 60 ₳ Ễ ٧ ﷺ Ễ ٧ ₥
all	ε ا Ǯ ζ ˍ ђ ৯ ṕ ت ٭ ´ ï ﷺ"A õ ـ õ IPv6 ت ٭

ﻷ پ ل ḫ ipv6 ـ õ ت ٭

ᵘ ɲ ₩ Ã ৯ ṕ پ ل ₩ Ã

ﻷ ٧ ˍ 14

Æ ɤ ″ Y Ṁ ـ õ ت ٭ ﷺ ﻷ ٧ ת ' ˜ ₥ 1 ı ٹ ص ف ل ٧ ת ' ˜ ı ا Ⓠ ы ḏ ט õ ت ٭ ę ˙ ﷺ ت ٭ ḫ ᵘ ـ õ ت ٭ ı ᴱ ѽ Ę ט õ ت ٭ ę j ˙ `H ı ε Æ ɤ ـ õ ت ٭ ٹ ص ف ل ـ õ ت ٭ ﷺ ٧ ת ' ˜ ا Ⓠ ḫ א ٤ ث ﷺ ᵻ ¥ ı %`H ﷺ ـ õ ت ٭ ı ˜ w Y ₥ ╣ ט ت ٭ ⅝ ḅ OSPF ت ٭ ʁ ɲ ﷺ ٧ ת ' ˜ ₥ 110 ı ا Ⓠ Ṅ ـ õ ت ٭ ﷺ ٧ ת ' ˜ ֆ ل ₥ 125 ı ف ¯ Ę ق OSPF ﷺ ٤ ث ٹ ؆ `H ı "Ω ̃ Ω ╚ ₍ ₅ ł ŏ ا Ⓠ ´ "Ω ˙ ـ õ ت ٭ ﷺ ٤ ث i

پ ل ʖ æ 1 χ ɯ ɤ ˝ ↑ ˙ 2001::/64 ´ ‰ ل ٨ ﷺ ـ õ ت ٭ ı ï پ ₥ 2002::2 ı ٧ ת ' ˜ ₥ 115

```
Ruijie(config)#
```

Õ ᵍ ƚ ﺑ ﻟ

default ipv6 static route-limit

ᵛ Ⱬ ب ˝

ᵛ Ⱬ	ﻭ ك
number	ت ᐧ i ں ا ﹏ ḫ 1-10000

ƚ ﺑ ﻟ ƚ ﺍ 1000

ᵘ ɲ ₩ Ã ২ ṕ ﺑ ﻟ ₩ Ã

ƚ ۱ ̣ 14

Æ ŧ ˝ Y Ṁ ﺑ ﻟ ً ő ت ᐧ Ⱬ i ں ً ﷺ ﷺ ﻳ ﺍ ً ً ő ت ᐧ ﷺ Ⱬ ا ﻥ ص **ipv6 static route-limit** ﺑ ﻟ ً ő ت ᐧ Ⱬ i ں ª h ғ ł ḅ ï ѿ ' ا ﺑ ﻟ ﷺ ً ő ت ᐧ Ⱬ j h ٨ ص ﻓ ﻝ ﷺ i ں ﻥ ص **show running config** ا ₢ ¶ ˜ ´ ˙ ﺑ ﻟ ﷺ ° ѕ ɲ ً ő ت ᐧ Ⱬ i ں

ﺑ ﻟ ǯ æ ﻓ ﻝ ipv6 ً ő ت ᐧ Ⱬ i ں ﺍ 900 ¶ ا ł ª Õ ᵍ ѕ ɲ Ө

```
Ruijie(config)#ipv6 static route-limit ?
    1-10000     Value(default value: 1000)
Ruijie(config)# ipv6 static route-limit 900
Ruijie(config)# no ipv6 static route-limit
```

ₛ ﻉ Ά | -

ώ ˜ ʒ Ụ -

Ẃ ȸ ჭ ﺉ -

Ẉ ᴶ ب ˝ -

1.8 ipv6 unicast-routing

ᵏ ŧ RGOS ﻍ ţ ﷺ IPv6 ت ᐧ ا Ỉ

ipv6 unicast-routing

v ̈Ϙ ب ̋	v ̈Ϙ	ώ ك
	-	-

ǰ ٻ ل ᵏ ŧ IPv6 ث ٠

ᵘ ɲ ₩ Ã ২ ṕ ٻ ل ₩ Ã

ǰ ۱ ̣ 14

Æ ŧ ″ Y Ṁ Ẹ ֆ ᵻ ᴱ Ă ₶ ⁷ ì ֆ ᵻ ı ð̃ ð̈ ᴱ Ă ₶ VOIP ل ԋ ֆ ᵻ Ȟ ı ˡ Ϙ j ᵪ ļ RGOS ع ţ ⿱ IPv6 ث ٠ ج ∧ ı Ỉ ف Ȟ ˡ Ϙ ԋ ڈ RGOS ⿱ IPv6 ث ٠ ı Ỉ

ٻ ل ڭ æ ԋ ڈ ˜ RGOS ع ţ ⿱ IPv6 ث ٠ ı Ỉ

```
Ruijie(config)# no ipv6 unicast-routing
```

ᵴ ২ Ä │ -

ώ ˜ ȝ Ụ

ϑ ˜ ȝ Ụ

a x i m u m - p a

ƛ ∧. 14

Æ ŧ ″YṀ ᵽ ɹ ∿ Y ċ ᵻ ᵀ Ꝙ ̋ ̊ Ĩ ᵚ̋ ̊ ί ̇ ∿ Y ċ ᵻ ̊ ᵀ Ꝙ ı ᵽ ص **maximum-paths** ᵽ ɹ ∿ Y ċ ᵻ ᵀ Ꝙ ª h ғ ɨ ḅ ï ᷓ ' ı ᵷ ق ذ ʒ ʻ ₩ Ǎ ï ı ق ذ ʒ ʻ ̊ ċ ″Ꝙ j h ∧ ص ᵽ ɹ ̊ ∿ Y ċ ᵻ ″Ꝙ ᵽ ص **show running config** ᵻ ℚ ᵀ ~ ´ ˙ ᵽ ɹ ̊ ∿ Y ċ ᵻ ″Ꝙ

Ĵ ᵘ ᵑь ̊ ᵽ ɹ Ḿ ipv4 ⁼ ipv6 ª ¯ ɨ ᷓ ı ̃ ő ĩ ᵽ ı ᵽ ɹ ˝ Ĵ ᵘ ᵑь ı ˙ ᵹ • ipv4 ´ ̊ ş ̊ ω ᶻ ∿ Y ċ Ễ ᵀ ´ Ꝙ ĩ Ĵ ᵽ ɹ Ө ı ˙ ᵹ • ipv6 ´ ̊ ş ̊ ω ᶻ ∿ Y ċ Ễ ᵀ ´ Ꝙ ̃ ĩ Ĵ ᵽ ɹ Ө

ᵽ ɹ ᵹ æ ᵩ ɹ ∿ Y ċ ᵻ ω ^ ᵚ 10 ᵀ ı ɬ ª Õ ″ ᵴ ɯ ɲ Ө

```
Ruijie(config)# maximum-paths 10
Ruijie(config)# no maximum-paths
```

ₛ ᶎ Ä ▏ ص show ip route ᵀ ~ ᴛ ɥ ecmp ċ ᵻ ̊ ᷓ `

ώ ~ ʒ Ụ -

Ẃ ȸ ᷒ ᵾ -

Ẉ ᴶ ᵽ ″ -

1.10 show ip route

ᵀ ~ IP ċ ᵻ ´ ʒ Ụ

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

ᵎ ″Ꝙ ċ ᵻ ecmp Ꝝ ớ ∿ ᵀ ~ IP ċ ᵻ ´ ʒ Ụ

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

v ″Ꝙ ᵽ ″

v ″Ꝙ	ὼ ᷔ
network	ε ı J̌ ζ ᴱ Ǐ ~ ˙ Ĵ ´ ‰ ɻ ᴧ ̊ ċ ᵻ ʒ Ụ ı ƛ Ǐ ~ ″Ä õ ċ ᵻ
mask	ε ı J̌ ζ ᴱ Ǐ ~ Ĵ ȯ ̊ ᵹ ‰ ɻ ᴧ ̊ ċ ᵻ ı ƛ Ǐ ~ ω ᷓ ш ᵽ ᴧ ̊ ċ ᵻ
longer-prefix	(ı J̌) Ǐ ~ ш ᵽ ″ Y ḧ ˙ ᴧ ₙ ᵬ ɲ ″Ä õ ″ ɻ ċ ᵻ
count	ε ı J̌ ζ Ǐ ~ Ę ˙ ċ ᵻ ᵀ Ꝙ ε Ḿ ̂ ̃ ECMP/WCMP ċ ᵻ ı ᵀ Y ᵀ ċ ᵻ ɯ ∿ ζ ı ƛ j Ǐ ~ ċ ᵻ ᵀ Ꝙ ᴧ ɯ ʒ Ụ
protocol	ε ı J̌ ζ ċ ᵻ ʙ ɲ ă ᾰ ʜ ᵶ ، χ **connected**, **static** ψ Ę Ǐ ~ ᵌ ḧ ʙ ɲ ċ ᵻ ̀ H ı Æ ŧ ï ك ʜ ᵶ ، χ **ospf**, **rip** ƛ Ǐ ~ ″Ä õ ʙ ɲ
process-id	ε ı J̌ ζ ċ ᵻ ʙ ɲ ф ∿ ᴺ ı ƛ Ǐ ~ ″Ä õ ф ∿
weight	ε ı J̌ ζ ᴱ Ǐ ~ ᵎ ᵴ ɲ ي ċ ᵻ ı ƛ Ǐ ~ ″Ä õ ي ċ ᵻ

normal	ε ˡ J̌ ζ Ǐ ~ ¨ ᑫ ت ˡ ı j Ǐ ~ ↿ Y ت ˡ ı ɻ Ǐ ~ Ä ω ɬ ʒ ت ˡ
ecmp	ε ˡ J̌ ζ ᴱ Ǐ ~ ↿ Y ت ˡ ı ɻ Ǐ ~ Ä ω ɬ ʒ ت ˡ

ᵘ ᖘ ₩ Ã ₹ ɬ Ä ₩ Ã ২ ṕ ᵽ ㅓ ₩ Ã ì Æ ᵽ ㅓ ₩ Ã ت ˡ ʁ ɲ ᵽ ㅓ ₩ Ã ت ˡ g ᵽ ㅓ ₩ Ã ↿

ɻ ɬ. 14

Æ ɬ ″ Y Ṁ

show ip route ᵹ Ǐ ~ ŋ گ ˡ Ꝍ ᵹ ᶎ ∧ ˊ ° ı ƀ ' ɻ ~ ᴿ ɬ Ꝛ ό ˊ ° ı ت ″ Y ћ **normal** | **ecmp** | **fast-reroute** v Ꝙ

ᵽ ㅓ ᶚ æ 1 χ Ꝍ ï ᵚ **show ip route** ᵘ ᖘ Ǐ ~ ㅣ ' χ

4 χ ⓠ ï ᑦ **show ip route weight** ᵘ ᖷ Ǐ ~ ⅃ ' χ

```
Ruijie# show ip route weight
------------[distance/metric/weight]-----------
S    23.0.0.0/8 [1/0/2] via 192.1.1.20
S    172.0.0.0/16 [1/0/4] via 192.0.0.1
```

5 χ **show ip route normal** ᵘ ᖷ Ǐ ~ ⅃ ' χ

```
Ruijie#show ip route normal

Codes:  C - Connected, L - Local, S - Static
        R - RIP, O - OSPF, B - BGP, I - IS-IS, V - Overflow route
        N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
        E1 - OSPF external type 1, E2 - OSPF external type 2
        SU - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
        IA - Inter area, * - candidate default
Gateway of last resort is no set
S    20.0.0.0/8 is directly connected, VLAN 1
S    22.0.0.0/8 [1/0] via 20.0.0.1
O E2 30.0.0.0/8 [110/20] via 192.1.1.1, 00:00:06, VLAN 1
R    40.0.0.0/8 [120/20] via 192.1.1.2, 00:00:23, VLAN 1
B    50.0.0.0/8 [120/0] via 192.1.1.3, 00:00:41
C    192.1.1.0/24 is directly connected, VLAN 1
C    192.1.1.254/32 is local host
```

6 χ **show ip route ecmp** ᵘ ᖷ Ǐ ~ ⅃ ' χ

```
Ruijie#show ip route ecmp

Codes:  C - Connected, L - Local, S - Static
        R - RIP, O - OSPF, B - BGP, I - IS-IS, V - Overflow route
        N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
        E1 - OSPF external type 1, E2 - OSPF external type 2
        SU - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
        IA - Inter area, * - candidate default
Gateway of last resort is 192.168.1.2 to network 0.0.0.0
S*   0.0.0.0/0 [1/0] via 192.168.1.2
              [1/0] via 192.168.2.2
O IA 192.168.10.0/24 [110/1] via 35.1.10.2, 00:38:26, VLAN 1
                          [110/1] via 35.1.30.2, 00:38:26, VLAN 3
```

7 χ **show ip route fast-reroute** ᵘ ᖷ Ǐ ~ ⅃ ' χ

```
Ruijie#show ip route fast-reroute
```

```
Codes:  C - Connected, L - Local, S - Static
        R - RIP, O - OSPF, B - BGP, I - IS-IS, V - Overflow route
        N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
        E1 - OSPF external type 1, E2 - OSPF external type 2
        SU - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
        IA - Inter area, * - candidate default
Status codes: m - main entry, b - backup entry, a — active entry

Gateway of last resort is 192.168.1.2 to network 0.0.0.0
S*   0.0.0.0/0 [ma] via 192.168.1.2
                [b] via 192.168.2.2
O IA 192.168.10.0/24 [m] via 35.1.10.2, 00:38:26, VLAN 1
                     [ba]  via 35.1.30.2, 00:38:26, VLAN 3
```

8 χ **show ip route fast-reroute** *network* ᵘ ᵑь Ǐ ˜ ˩ ' χ

```
Ruijie# show ip route fast-reroute 30.0.0.0
Routing entry for 30.0.0.0/8
Distance 110, metric 20
Routing Descriptor Blocks:
[m] 192.1.1.1, 00:01:11 ago, via VLAN 1, generated by OSPF, extern 2
[ba]192.1.1.1, 00:01:11 ago, via VLAN 1, generated by OSPF, extern 2
```

È ɟ ɹ ᵩ χ

È ɟ	ب ″
O	ب ″ Ǎ ث ٔ ◊ ث ٔ ʁ ɲ Ǎ È ɟ ˈ ǐ ɲ Ө ѭ χ C χ ´ ف ث ٔ ψ L χ ʂ ث ٔ ψ S χ ˜ õ ث ٔ ψ R χ RIP ث ٔ ψ B χ BGP ث ٔ ψ O χ OSPF ث ٔ ψ I χ IS-IS ث ٔ
E2	ث ٔ ɻ ʒ Ǎ È ɟ ˈ ǐ ɲ Ө ѭ χ E1 χ OSPF ᵘ ᵐ ث ٔ ɻ ʒ ξ ψ E2 χ OSPF ᵘ ᵐ ث ٔ ɻ ʒ o ψ N1 χ OSPF NSSA ᵘ ᵐ ث ٔ ɻ ʒ 1 ψ N2 χ OSPF NSSA ᵘ ᵐ ث ٔ ɻ ʒ 2 ψ SU χ IS-IS Δ Ở ث ٔ ψ L1 χ IS-IS 1 ɻ ث ٔ ψ L2 χ IS-IS 2 ɻ ث ٔ ψ IA χ ث ٔ ³ ɲ ᵐ ث ٔ

20.0.0.0/8	´ ‰ ﾉ ﾊ OBJ ﾉ ﾊ ş ﾇ ⁼ ọ ﾕ ỷ
[1/0]	ｱ ｽ ' ˜ µ ỷ ˌ Ö
Via 20.0.0.1	ï ﾍ IP ş ﾇ
00:00:06	ʁ ɲ ت ｰ è ╗ ｳ H ﾌ
VLAN 1	ï ﾍ ﾅ ∧ ì Æ
Routing Descriptor Blocks	Ǐ ~ ت ｰ ʒ Ụ OBJ ï ﾍ IP ş ﾇ ت ｰ ⌈ ◊ ˜ Ä ｳ H ﾌ ﾙ ｰ ᵤ Ⱥ ì Æ ◊ ت ｰ ʁ ɲ ｱ ʒ BGP ᵽ ｹ Ṟ ό Ö ﾚ

ώ˜ ʒ Ụ -

Ẉ ᴶ ﾍ ˝ -

1.11 show ip route summary

ˡ ~ ᴅ ǎ ت ｰ ´ OBJ ﾉ ɰ ʒ Ụ

show ip route summary

ˡ ~ Ẅ A ѽ ت ｰ ´ OBJ ﾉ ɰ ʒ Ụ

show ip route summary all

ᵛ Ẅ Ọ ﾍ ˝

ᵛ Ẅ Ọ	ώ ك
-	-

ᵘ ᵑᵬ ₩ Ã ᵉ ｲ Ẅ A ₩ Ã

ﾉ ｱ ˛ 14

Æ ｲ ˝ Y Ṁ ﻉ ص أ ᵘ ᵑᵬ ｜ Ꙍ ˡ ~ ت ｰ ´ OBJ ﾉ ɰ ʒ Ụ

ﾍ ﾉ ʓ æ 1 χ ˡ ~ ২ ṕ ت ｰ ´ OBJ ﾉ ɰ ʒ Ụ

```
Ruijie# show ip route summary
Codes:  NORMAL — Normal route  ECMP — ECMP route  FRR — Fast-Reroute route

    Memory: 2000 bytes
Entries: 22 ｜ based on route prefixes
                    NORMAL  ECMP    FRR     TOTAL
        Connected   3       0       0       3
        Static      2       1       1       4
        RIP         1       2       1       4
        OSPF        2       1       1       4
```

```
        ISIS        0       0       0       0
        BGP         0       0       0       0
        TOTAL       8       4       3       15
```

2χ¶ ˜ ¨Aõت ´ ㏊ ا ɯ ȝ Ս

```
 Ruijie# show ip route summary all
Codes:  NORMAL — Normal route  ECMP — ECMP route  FRR — Fast-Reroute route

IP routing table count:1
Total
    Memory: 2000 bytes
    Entries: 22 ا based on route prefixes
                    NORMAL  ECMP    FRR     TOTAL
        Connected   3       0       0       3
        Static      2       1       1       4
        RIP         1       2       1       4
        OSPF        2       1       1       4
        ISIS        0       0       0       0
        BGP         0       0       0       0
        TOTAL       8       4       3       15
Global
    Memory: 2000 bytes
    Entries: 22 ا based on route prefixes
                    NORMAL  ECMP    FRR     TOTAL
        Connected   3       0       0       3
        Static      2       1       1       4
        RIP         1       2       1       4
        OSPF        2       1       1       4
        ISIS        0       0       0       0
        BGP         0       0       0       0
        TOTAL       8       4       3       15
```

È ɟ ɹ ᵩ χ

È ɟ	ب ˝
NORMAL	ب ˝ ˋ ا ㏊ ´ ° ا ȝ Ǐ È ɟ ا ǐ ח Ө ㎞ χ NORMAL χ ˝ ڼ ت ا ´ ° ε ˚ ECMP ǎ FRR ت ا ζψ ECMP χ ا Y ^ ت Ễ ت ا ´ ° ψ FRR χ ð ھ ڀ ت ا ´ ° ψ TOTAL χ ¨A õ ا ȝ ´ ° ǀ ´ ᵀ ɯ
Memory	Ẹ ˙ ت ا ´ ı ɾ ɲ è ᶻ ṇ

Entries	Ẹ̇ ت ˊ ˇ ɣ ᵍ ˊ ˚ǀ ˊ ε ʢ̂ ˊ ˚· ʌǀ ˊ ı ă̈ ˚ ï ᵽǀ ˊ ζ
Connected	ب ˝ Ỉ Φ ˊ ˚ ʁ ɲ ɻ ʒ Ỉ Ê ɟ ı ǐ ɲ Ө ʁ χ Connected χ ˊ ف ت ˊ ˇ ˚ Static χ ˷ ˜ ő ت ˊ ˇ ˚ RIP χ RIP ت ˊ ˇ ˚ OSPF χ OSPF ت ˊ ˇ ˚ ISIS χ ISIS ت ˊ ˇ ˚ BGP χ BGP ت ˊ ˇ ˚ TOTAL χ ¨A ω ʁ ɲ ˊ ˚ǀ ˊ ᵀ ɯ
IP routing table count	ت ˊ ˇ Ѧ ¨Ǫ
Global	ب ˝ Ẹ̇ ت ˊ ˇ ᵋ ɻ Ỉ Ê ɟ ı ǐ ɲ Ө ʁ χ Global χ ϡ ṕ TOTAL χ ϡ ṕ ت ˊ ˇ ᵀ ɯ ʒ Ụ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

1.12 show ipv6 route

Ǐ ˜ IPv6 ت ˊ ˇ ʒ Ụ

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

ν ¨Ǫ ب ˝

ν ¨Ǫ	ώ ك
ipv6-prefix/*prefix-length*	ε ı Ǯ ζ Ǐ ˜ Ḥ ϡ ш ب ˝ Y ḧ ˙ ʌ v6 ت ˊ ˇ ı ɻ Ǐ ˜ ¨A ω ت ˊ ˇ
longer-prefixes	ε ı Ǯ ζ Ǐ ˜ ώ ʒ ш ب ˝ Y ḧ ˙ ʌ v6 ت ˊ ˇ ı ɻ Ǐ ˜ ¨A ω ت ˊ ˇ
protocol	ε ı Ǯ ζ ت ˊ ˇ ʁ ɲ ă̈ ă̈ ʜ ɯ ، χ **connected**, **local, static** ψ Ẹ Ǐ ˜ ˷ ḧ ʁ ɲ ت ˊ ˇ Ḥ ı Æ ɾ ï ك ʜ ɯ ، χ **ospf**, **rip** ı ɻ Ǐ ˜ ¨A ω ʁ ɲ ت ˊ ˇ
process-id	ε ı Ǯ ζ ت ˊ ˇ ʁ ɲ ف ۱ ᴺ ı ɻ Ǐ ˜ ¨A ω ف ۱ ᴺ ت ˊ ˇ
weight	ε ı Ǯ ζ ᴱ Ǐ ˜ ˚ س ɲ پ ت ˊ ˇ ı ɻ Ǐ ˜ ¨A ω پ ت ˊ ˇ

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ɻ ʌ. 14

Æ ɾ ˝ Y Ṁ ڀ ص أ ᵘ ɲ ı Ꞙ ˜ IPv6 ت ˊ ˇ ʒ Ụ

ب ɹ ʓ æ Ǐ ˜ ϡ ṕ VRF ipv6 ت ˊ ˇ

```
IPv6 routing table -  Default - 7 entries
Codes:  C - Connected, L - Local, S - Static
        R - RIP, O - OSPF, B - BGP, I - IS-IS, V - Overflow route
        N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
        E1 - OSPF external type 1, E2 - OSPF external type 2
        SU - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
        IA - Inter area

C       10::/64  via Loopback 1, directly connected
L       10::1/128  via Loopback 1, local host
S       20::/64  [20/0] via 10::4, Loopback 1C
C       FE80::/10 via Null 0, directly connected
C       FE80::/64  via Loopback 1, directly connected
L       FE80::2D0:F8FF:FE22:33AB/128  via Loopback 1, local host
```

È ㅔ ɹ ᵩ χ

È ㅔ	ب ˝
S	ب ˝ Ĵ ث ٠ ◊ ث ٠ ʁ ɲ Ĵ È ㅔ ˡ ΐ ⊓ Ө ㎞ χ C χ ´ ف ث ٠ ψ L χ ʂ ث ٠ S χ ـً õ ث ٠ ψ R χ RIP ث ٠ ψ B χ BGP ث ٠ ψ O χ OSPF ث ٠ ψ I χ ISIS ث ٠
E2	ث ٠ ۱ ʒ Ĵ È ㅔ ˡ ΐ ⊓ Ө ㎞ χ E1 χ OSPF ᵘ ᵯ ث ٠ ۱ ʒ ξ ψ E2 χ OSPF ᵘ ᵯ ث ٠ ۱ ʒ o ψ N1 χ OSPF NSSA ᵘ ᵯ ث ٠ ۱ ʒ 1 ψ N2 χ OSPF NSSA ᵘ ᵯ ث ٠ ۱ ʒ 2 ψ SU χ IS-IS Δ Ở ث ٠ ψ L1 χ IS-IS 1 ۱ ث ٠ ψ L2 χ IS-IS 2 ۱ ث ٠ ψ IA χ ث ٠ ³ ᵯ ث ٠
20::/64	´ ‰ ۸ ᴎ ۸ ᴎ ʂ χ ⊐ ó ذ ỷ
[20/0]	۱ ת ˡ ˜ µ ỷ ᵩ Ö
via 10::4	ï ب IPv6 ʂ χ
Loopback 1	ï ب ج ∧ ì Æ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ˝ -

1.13 show ipv6 route summary

ˡ ˜ ɒ ǎ IPv6 ث ˈ ˊ ⃞ ∕ ɯ ʒ Ụ

show ipv6 route summary

ˡ ˜ Ä ω IPv6 ث ˈ ˊ ⃞ ∕ ɯ ʒ Ụ

show ipv6 route summary all

v ˝Ọ ب ˝

v ˝Ọ	ώ ك
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ƛ ∕ ˛ 14

Æ ɾ ˝ Y Ṁ ڀ ص أ ᵘ ɲ ˡ Ꞷ ˡ ˜ IPv6 ث ˈ ˊ ⃞ ∕ ɯ ʒ Ụ

ب ل ʖ æ 1 χ ˡ ˜ ɔ ṕ ث ˈ ˊ ⃞ ∕ ɯ ʒ Ụ

```
Ruijie#show ipv6 route summary
IPv6 routing table name is -  Default(0) global scope - 5 entries
IPv6 routing table default maximum-paths is 32
Local           2
Connected       3
Static          0
PIP             0
OSPF            0
BGP             0
------------------------
Total           5
```

2 χ ˡ ˜ Ä ω IPv6 ث ˈ ˊ ⃞ ∕ ɯ ʒ Ụ

```
Ruijie#show ipv6 route summary all

IPv6 routing table count: 1
Total
  Memory: 800 bytes
```

```
  Entries: 8
    Local:0,Connected:0,Static:4,RIP:1,OSPF:1,ISIS:0,BGP:0

Global
  Memory: 800 bytes
  Entries: 8
    Local:1,Connected:1,Static:4,RIP:1,OSPF:1,ISIS:0,BGP:0
```

È ㅓ	

2 FPM

2.1 clear ip fpm counters

▌ FPM ʃ ת ipv4 ĭ ă Ь ɣ ɰ̈Ǫ

clear ip fpm counters

v ̈Ǫ ب ˝	v ̈Ǫ	ѽ ك
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ƛ ۱̣ 15

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ب ل ڎ æ 1 χ ▌ ڻ ф ᵻ i ▨ FPM ʃ ת ipv4 ĭ ă Ь ɣ ɰ̈Ǫ

```
Ruijie# clear ip fpm counters
```

ѽ˜ ȝ Ụ -

Ẉ ᴶ ب ˝ -

2.2 clear ip v6fpm counters

▌ FPM ʃ ת ipv6 ĭ ă Ь ɣ ɰ̈Ǫ

clear ip v6fpm counters

v ̈Ǫ ب ˝	v ̈Ǫ	ѽ ك
	-	-

ᵘ ɲ ₩ Ã ₰ ₩ Ã

ƛ ۱̣ 15

Æ ɾ ˝ Y Ṁ -

ب ل ڎ æ 1 χ ▌ ڻ ф ᵻ i ₌ ▨ FPM ʃ ת ipv6 ĭ ă Ь ɣ ɰ̈Ǫ

```
Ruijie# clear ip v6fpm counters
```

ώ˜ ʒ Ụ 1 ᵑ̀ ώ˜ ʒ Ụ

Ẉ ᴶ ب ˝ -

2.3 ip session direct-trans-disable

ٻ ل j ы ᵽ ᵽ ◗ ╚ Ḥ ı Ꝋ j ấ ╚ˊ ì Ỻ ҽ ĭ ă

ip session direct-trans-disable

Õ ʱ ѕ ռ ֆ ل

no ip session direct-trans-disable

v ˝Ꝙ ب ˝	v ˝Ꝙ	ѽ ك
	-	-

ỉ ٻ ل AC ı AP ғ ß ỉ ᵽ ╚ˊ ◗ Ḥ ı ı Ꝋ ˝E Φ Ḿ Ȁ ف ì j ấ ╚ ı ˊ ì Ỻ ҽ j Ў ɾ ћ ſ ת ⅧⅦ ᴤ

ᵘ ᵑь ₩ Ã ২ ṕ ٻ ل ₩ Ã

ỉ ۱ ̣ 15

Æ ɾ ˝ Y Ṁ -

ٻ ل ڏ æ ֆ ل ֆ ᵻ ᵽ ◗ ╚ Ḥ j ы ᵽ j ấ ╚ˊ ì Ỻ ҽ ĭ ă

```
Ruijie(config)# ip session direct-trans-disable
```

ₛ ڃ Ȧ | -

ώ˜ ʒ Ụ -

Ẃ ȸ ڇ ئ

Ẉ ᴶ ب ˝ -

2.4 ip session tcp-loose

ٻ ل Ḵ — tcp ↑ õ Ψ ش ₅ ┣

ip session tcp-loose

Õ ʰ ѕ ռ ֆ ɻ

no ip session tcp-loose

v ¨Ọ ب ¨	v ¨Ọ	ώ ك
	-	-

ỉ ہ ɻ ỉ ¨E Φ Ḳ — tcp ↑ õ Ψ ش ₅ ¶

ᵘ ɲ ₩ Ã ২ ṕ ہ ɻ ₩ Ã

ỉ ۱ . 15

Æ ɬ ¨Y Ṁ -

ہ ɻ ʖ æ ֆ ɻ ֆ ᵻ i ˎ Ў Ḳ — tcp ↑ õ ₅ ¶

```
Ruijie(config)# ip session tcp-loose
```

₅ ڃ Ä | -

ώ ˜ ʒ Ụ -

Ẃ ȸ ڄ ئ

Ẉ ᴶ ب ¨ -

2.5 ip session tcp-state-inspection-enable

ہ ɻ j Ў tcp ↑ õ Ψ ش ₅ ¶

ip session tcp-state-inspection- enable

Õ ʰ ѕ ռ ֆ ɻ

no ip session tcp-state-inspection- enable

v ¨Ọ ب ¨	v ¨Ọ	ώ ك

ỉ ہ ɻ AC AP ғ ß ỉ j Ў tcp ↑ õ ʿ ت

ᵘ ɲ ₩ Ã ২ ṕ ہ ɻ ₩ Ã

ỉ ۱ . 15

Æ ŧ ˝YṀ -

ᵽ ɻ ʖ æ ɸ ɻ ƍ ɸ ᵻ Ã ᵏ tcp ⃞ ↑ õ ʿ ت ₅ ¶

```
Ruijie(config)# ip session tcp-state-inspection-enable
```

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Ẉ ᴶ ب ˝ -

2.6 ip session threshold

ᵽ ɻ ╚ ы ƍ ì ώ ï ă ˝Ọ

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

Õ ʰ ѫ ɲ ɸ ɻ

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

ᵥ ˝Ọ ب ˝

ᵥ ˝Ọ	ώ ك
icmp-closed	ɸ ɻ ʁ ɲ ѭ ICMP ↑ õ ѭ ʜ ڎ ⃞ ╚ ⃞ ï ă ף ص ˝Ọ ı ѫ ɲ 10 ε 1 - 2000000000 ζ
icmp-started	ɸ ɻ ʁ ɲ ѭ ICMP ↑ õ ѭ Ã Ḋ ⃞ ╚ ⃞ ï ă ף ص ˝Ọ ı ѫ ɲ 300 ε 5 - 2000000000 ζ
rawip-closed	ɸ ɻ ʁ ɲ ѭ Ʊ Ę ip ʁ ɲ ↑ õ ѭ ʜ ڎ ⃞ ╚ ⃞ ï ă ף ص ˝Ọ ı ѫ ɲ 10 ε 1 - 2000000000 ζ
tcp-syn-sent	ɸ ɻ ʁ ɲ ѭ TCP ↑ õ ѭ syn-send ⃞ ╚ ⃞ ï ă ף ص ˝Ọ ı 10 ε 5 - 2000000000 ζ
tcp-syn-receive	ɸ ɻ ʁ ɲ ѭ TCP ↑ õ ѭ syn-receive ⃞ ╚ ⃞ ï ă ף ص ˝Ọ ı ѫ ɲ 20 ε 5 - 2000000000 ζ
tcp-closed	ɸ ɻ ʁ ɲ ѭ TCP ↑ õ ѭ closed ⃞ ╚ ⃞ ï ă ף ص ˝Ọ ı ѫ ɲ 20 ε 5 - 2000000000 ζ
udp-closed	ɸ ɻ ʁ ɲ ѭ UDP ↑ õ ѭ ʜ ڎ ⃞ ╚ ⃞ ï ă ף ص ˝Ọ ı ѫ ɲ 10 ε 1 - 2000000000 ζ
num	ɸ ɻ ⃞ ï ă ף ص ˝Ọ

ᵽ ɹ ʒ̈ æ ɸ ɹ ɸ ᵻ i ˎ tcp closed ᵀ õ ï ă ᵑ ص ̈Ω ㎞ 100

```
Ruijie(config)# ip session threshold tcp-closed 100
```

ᵴ ᶎ Ά |

ώ˜ ʒ Ụ -

Ẃ ȣ ᶎ ئ

Ẉ ᴶ ᵽ ˝ -

2.7 ip session timeout

ᵽ ɹ ã̈ ᵖ ᵡ H ᵯ

ip session timeout {**icmp-closed** | **icmp-connected** | **icmp-started** | **rawip-closed** | **rawip-connected** | **rawip-established** | **rawip-started** | **tcp-close-wait** | **tcp-closed | tcp-established** | **tcp-fin-wait1** | **tcp-fin-wait2 | tcp-syn-receive** | **tcp-syn-sent | tcp-syn-sent2 | tcp-time-wait | udp-closed | udp-started** | **udp-connected** | **udp-established**} { *num* }

Õ ᵸ ㎰ ռ ᵡ H ᵯ

no ip session timeout {**icmp-closed** | **icmp-connected** | **icmp-started** | **rawip-closed** | **rawip-connected** | **rawip-established** | **rawip-started** | **tcp-close-wait** | **tcp-closed | tcp-established** | **tcp-fin-wait1** | **tcp-fin-wait2 | tcp-syn-receive** | **tcp-syn-sent | tcp-syn-sent2 | tcp-time-wait | udp-closed | udp-started** | **udp-connected** | **udp-established**}

v ̈Ω ˝

v ̈Ω	ώ ك
icmp-closed	ɸ ɹ ʁ ɲ ㎞ ICMP ᵀ õ ㎞ ʮ ڈ ㎡ ╚ ㎡ ╦ ᵱ ᵡ H ᵯ ㎮ ㎰ ռ 10s ε 5 – 60 ζ
icmp-connected	ɸ ɹ ʁ ɲ ㎞ ICMP ᵀ õ ㎞ ف ì ㎡ ╚ ㎡ ╦ ᵱ ᵡ H ᵯ ㎮ ㎰ ռ 10s ε 5 – 120 ζ
icmp-started	ɸ ɹ ʁ ɲ ㎞ ICMP ᵀ õ ㎞ Ã Ḋ ㎡ ╚ ㎡ ╦ ᵱ ᵡ H ᵯ ㎮ ㎰ ռ 10s ε 5 - 120 ζ
rawip-closed	ɸ ɹ ʁ ɲ ㎞ Ʊ Ꮒ ip ʁ ɲ ᵀ õ ㎞ ف ì ㎡ ╚ ㎡ ╦ ᵱ ᵡ H ᵯ ㎮ ㎰ ռ 10s ε 5 - 60 ζ
rawip-connected	ɸ ɹ ʁ ɲ ㎞ Ʊ Ꮒ ip ʁ ɲ ᵀ õ ㎞ ف ì ㎡ ╚ ㎡ ╦ ᵱ ᵡ H ᵯ ㎮ ㎰ ռ 300s ε 10 - 300 ζ
rawip-established	ɸ ɹ ʁ ɲ ㎞ Ʊ Ꮒ ip ʁ ɲ ᵀ õ ㎞ ấ ٧ ㎡ ╚ ㎡ ╦ ᵱ ᵡ H ᵯ ㎮ ㎰ ռ 300s ε 10 - 600 ζ
rawip-started	ɸ ɹ ʁ ɲ ㎞ Ʊ Ꮒ ip ʁ ɲ ᵀ õ ㎞ Ã Ḋ ㎡ ╚ ㎡ ╦ ᵱ ᵡ H ᵯ ㎮ ㎰ ռ 300s ε 10 - 300 ζ
tcp-close-wait	ɸ ɹ ʁ ɲ ㎞ TCP ᵀ õ ㎞ tcp-close-wait ㎡ ╚ ㎡ ╦ ᵱ ᵡ H ᵯ ㎮ ㎰ ռ 60s ε 10 - 120 ζ
tcp-closed	ɸ ɹ ʁ ɲ ㎞ TCP ᵀ õ ㎞ tcp-closed ㎡ ╚ ㎡ ╦ ᵱ ᵡ H ᵯ ㎮ ㎰ ռ 10s ε 5 - 20 ζ
tcp-established	ɸ ɹ ʁ ɲ ㎞ TCP ᵀ õ ㎞ tcp-established ㎡ ╚ ㎡ ╦ ᵱ ᵡ H ᵯ ㎮ ㎰ ռ 1800s ε 300 - 604800 ζ
tcp-fin-wait1	ɸ ɹ ʁ ɲ ㎞ TCP ᵀ õ ㎞ tcp-fin-wait1 ㎡ ╚ ㎡ ╦ ᵱ ᵡ H ᵯ ㎮ ㎰ ռ 60s ε 10 - 120 ζ
tcp-fin-wait2	ɸ ɹ ʁ ɲ ㎞ TCP ᵀ õ ㎞ tcp-fin-wait2 ㎡ ╚ ㎡ ╦ ᵱ ᵡ H ᵯ ㎮ ㎰ ռ 60s ε 10 - 120 ζ
tcp-syn-receive	ɸ ɹ ʁ ɲ ㎞ TCP ᵀ õ ㎞ tcp-syn-receive ㎡ ╚ ㎡ ╦ ᵱ ᵡ H ᵯ ㎮ ㎰ ռ 10s ε 5 - 30 ζ

tcp-syn-sent	ֆ ɹ ʁ ɲ ʁ TCP ↑ õ ʁ tcp-syn-sent ▯ ▯ ╦ ɒ ˋH ʖ ı ɯ ɲ 10s ε 5 - 30 ζ
tc	ֆ ɹ ʁ ɲ ʁ TCP ↑ õ ʁ tcp-sy7(n)-4(_)3ise6-4(ntP)]TJ/C2_0 1 Tf0 Tõ6ʁ4793 0 Td[<09190879>-7<09

osc	ֆ ɹ ʁ ɲ ʁ P
dp-connectedt	ֆ ɹ ʁ ɲ ʁ P
ac	ֆ ɹ ʁ ɲ ʁ P
acte6midt	ֆ ɹ ʁ ɲ ʁ P

ᵘ ɲь₩Ã ৯ ṕ ᵽ ɹ ₩Ã

ǰ ʅ. 15

Æ ɤ ″YṀ -

ᵽ ɹ ᵷ æ ɸ ɹ ɸ ᵻ i ₌ ӯ Ш ↑ ő ï ă ↨ ʅ ₅¶

```
Ruijie(config)# ip session track-state-strictly
```

₅ ⇜ Ä │

ώ˜ ʒ Ụ -

Ẃ ȸ ᶎ ڊ

Ẉ ᴶ ب ″ -

2.9 show ip fpm counters

¶ ˜ FPM ʃ ת ipv4 ï ă Ь γ ɰ″Ợ

show ip fpm counters

v ″Ợ ب ″

v ″Ợ	ώ ڰ
-	-

ᵘ ɲь₩Ã ᵉ ₩Ã

ǰ ʅ. 15

Æ ɤ ″YṀ Æ ɤ Ỉ ᵘ ɲь ᵻ Ꞷ¶ ˜ FPM ʃ ת ipv4 ï ă Ḥ▯Ь γ ɰ″Ợ ʒ Ụ ı i Æմ‘ ĩ ؛ Ḿ ï ă▯Ь γ ʒ Ụ ı ï Æմ‘ ĩ ؛ Ḿ Ш▯ʒ Ụ

ᵽ ɹ ᵷ æ 1 χ¶ ˜ FPM ʃ ת ipv4 ï ă Ь γ ɰ″Ợ

```
Ruijie#sh ip fpm 1 2 counters
Dropped packet counters:
Count       Reason
0           Non-IPv4 packet
0           Bad IPv4 header length
0           Bad IPv4 total length
0           Fragment pkt
```

```
0          change flow state notify FW refuse
0          Bad IPv4 checksum
0          Invalid IPv4 address
0          Invalid TCP flags
0          Invalid TCP sequence
0          Invalid ICMP message type
0          Invalid icmp initial message type
54         Invalid tcp init flags
```

Æ ɾ ″ΥṀ Æ ɾ Ǐ ᵘ ᵑᵬ ᵎ Ꝙ˙ ˜ ipv4 ǐ ᵅ ▯ ╚ ʒ Ụ

ب ⅃ ʖ̆ æ 1 χ˙ ˜ ipv4 ǐ ᵅ ▯ ╚ ʒ Ụ

```
Ruijie#show ip fpm flows
Pr  SrcAddr                          DstAddr                          SrcPort      DstPort
Vrf          SendBytes  RecvBytes  St    srcif                    dstif
ctrl_flag
```

È ɟ ɹ ᵩ χ

È ɟ	ب ″
Pr	в ɲ
SrcAddr	◊ ʂ χ
DstAddr	´ ▯ ʂ χ
SrcPort	◊ ϒ Æ
DstPort	´ ▯ ϒ Æ
Vrf	◊ ì Æ ″A Ɍ ▯ vrf
SendBytes	ت ∂ Ά ᵇ ì ώ ▯ ǐ ᵅ È ` ″Ω
RecvBytes	Ƶ ϒ Ά ᵇ ì ώ ▯ ǐ ᵅ È ` ″Ω
St	╚ Ẹ˙ ↑ õ
srcif	◊ ì Æ N
dstif	´ ▯ ì Æ N
ctrl_flag	╚ í˙ È ɟ

ώ˜ ʒ Ụ -

Ẉ ᴶ ب ″ -

2.11 show ip fpm flows filter

ᛋ J̌˙ ˜ ipv4 ǐ ᵅ ▯ ╚ ʒ Ụ

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

ν ″Ω ب ″	ν ″Ω	ώ ك

ᵡ ᵑ˙ 15

Æ ᵻ ″YṀ Æ ᵻ Ỉ ᵘ ᵑᵬ ᵎ Ꝙ ᵛ J̌˺ ˜ ipv4 ᵎ ᵅ 㘝 ᴸ ʒ Ụ

ᵽ ᒪ ᵷ æ 1 χ˺ ˜ ipv4 ᵎ ᵅ 㘝 ᴸ ʒ Ụ

```
Ruijie#show ip fpm flows filter 1 192.168.1.1 32 192.168.2.1 30
Pr  SrcAddr                         DstAddr                         SrcPort      DstPort
Vrf          SendBytes  RecvBytes  St    srcif                  dstif
ctrl_flag
```

È ᵻ ᴊ ᵩ χ

È ᵻ	ᵽ ″
Pr	ʙ ᵑ
SrcAddr	◊ ᵴ χ
DstAddr	´ 㘝 ᵴ χ
SrcPort	◊ ᵞ Æ
DstPort	´ 㘝 ᵞ Æ
Vrf	◊ ì Æ ″A Ṟ 㘝 vrf
SendBytes	ت ∂ Ά ᵇ ì ώ 㘝 ᵎ ᵅ È ` ″Ω
RecvBytes	Ƶ ᵞ Ά ᵇ ì ώ 㘝 ᵎ ᵅ È ` ″Ω
St	ᴸ Ẹ˙ ᵗ õ
srcif	◊ ì Æ ᴺ
dstif	´ 㘝 ì Æ ᴺ
ctrl_flag	ᴸ ί˙ È ᵻ

ώ˜ ʒ Ụ -

Ẉ ᴶ ᵽ ″ -

2.12 show ip fpm statistics

˺ ˜ ipv4 ᴸ ´ ᵻ ɯ ʒ Ụ

show ip fpm statistics

ᵛ ″Ω ᵽ ″

ᵛ ″Ω	ώ ᶄ
-	-

ᵲ ᶺ. 15

Æ ᵻ ″YṀ Æ ᵻ Ỉ ᵘ ᵑᵬ ᶦ Ꝏ˥ ˜ ipv4 ᴸᴸ ˊ ᶺ ᵚ ᶾ Ụ

ᵽ ᶫ ᵷ æ 1 χ ᵦ eg ᵩ ᵎ i ₌˥ ˜ ipv4 ᴸᴸ ᶺ ᵚ ᶾ Ụ

```
Ruijie#show ip fpm statistics
The capacity of the flow table:150016.
Active flows num:109.
event count:65,
Fpm state inspection enable
```

È ᵻ ᶨ ᵩ χ

The capacity of the flow table	Ở ᴸᴸ ˊ ″Ợ
Active flows num	₹ ب ᴸᴸ ˊ ″Ợ
event count:65,	Ẹ˙ ’ ţ ᵚ ″Ợ
Fpm state inspection enable	ᵗ ỗ ᵋ ᵗᵗ ˊ

ώ˜ ᶾ Ụ -

Ẉ ᶨ ᵽ ″ -

2.13 show ip v6fpm counters

˥ ˜ FPM ᶘ ᴨ ipv6 ï ă Ь ɣ ᵚ ″Ợ

show ip v6fpm counters

v ″Ợ ᵽ ″

v ″Ợ	ὼ ᶄ
-	-

ᵘ ᵑᵬ ₩ Ấ ᵋ ₩ Ấ

ᵲ ᶺ. 15

Æ ᵻ ″YṀ Æ ᵻ Ỉ ᵘ ᵑᵬ ᶦ Ꝏ˥ ˜ FPM ᶘ ᴨ ipv6 ï ă ᾽Ḥ㏀Ь ɣ ᵚ ″Ợ ᶾ Ụ ı i Æ ᶆ˽ ĩ ᶘ Ḿ ï ă ㏀Ь ɣ ᶾ Ụ ı ï Æ ᶆ˽ ĩ ᶘ Ḿ ᴸ㏀ᶾ Ụ

ᵽ ᶫ ᵷ æ 1 χ˥ ˜ FPM ᶘ ᴨ ipv6 ï ă Ь ɣ ᵚ ″Ợ

```
Ruijie#sh ip v6fpm 1 2 counters
Droped packet counters:
Count       Reason
```

```
0          Non-IPv6 packet
0          Err length
0          Fragment packet
0          Err address
0          Invalid TCP flags
0          Invalid TCP sequence
0          Invalid ICMPV6 message type
0          Invalid ICMPV6 initial message type
0          Invalid tcp init flag
0          Invalid tcp flow state
0          Invalid pkt fid
0          Conn Terminated
0          Out of vfw session limit
0          Out of capability
<end>
Rejected or terminated connection counters:
Count      Reason
0          Out of life time
2105       Flow Terminated
0          Rejected by policy
<end>
```

È ـ ـ ـ

Æ ŧ ˝YṀ Æ ŧ Î ᵘ ᵑᵬ ˡ Ꞷ˙ ˜ ipv6 ï ă ▩ ╚ ʒ Ụ

ب ـ ڗ æ 1 χ˙ ˜ ipv6 ï ă ▩ ╚ ʒ Ụ

```
Ruijie# show ip v6fpm flows
Pr  Saddr                                   Daddr                                   Sport
Dport  Sedby       Recby       Vrf    st    src_if      dst_id      ctrl_flag
```

ħυ ȝ Ą- ѽ

1. Web
2. AAA
3. RADIUD
4. 802.1x
5. ARP Check
6. APR
7. IP+MAC
8. DHCP Snooping
9. IP Source Guard
10. DNS SNOOPING
11. IGMP Snooping
12. ACL
13. SCC
14. SSH

1 Web ÍẃW

1.1 accounting

‰ŒÃož

accounting { *method-list* }

MŒÃož

no accounting

	@	T
	method-list	• *c ç n dož*

Þ.. default což

%ŒÃ%”ož

14

Mêož

no authentication

o@ê

@	T
method-list	• *c ç n dož*

oHFå- Þ.. default ecož

o»X%”o- %ßå‰”ož

oHß- 14

o6-o-

ɣ ⇗ Ĉ ɪ ᴅ ɱ ` I ⇗  ȧ AAA  ⊥  ɪ web  ᴅ ɱ ` I ⇗ ĸ λ ç ¢

„ в ç ᴅ ɱ ` I ⊥

oF∂d- 1 y6 eportalv2 %á. mlist1 ěož

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

oèo- … **show web-auth template ô@ê**

oЬP’ô- -

oəjö- -

oиV@- -

1.3 bindmode

‰ê”ož

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

M‰ê”ož

no bindmode

o@ê

@	T
ip-mac-mode	IP+MAC %”k1 IP+MAC ’ÌGGn¾
ip-only-mode	**N** IP %”kN1 IP ’ÌGGn¾CàMAC ’Õk ‘Jî%

oHFå- **ip-mac-modeož**

oxX%”o- %ÉåX%”ož

oHð- 14

o6-o- -

oFåd- 1 y6 eportalv2 %ç”N IP %”ož

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

oèo- … **show web-auth template ðp@**

oUP’ô- -

oøjö- -

ouVd- -

1.4 clear web-auth acl

ðÃ web d%Få

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

op@

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

oxX%”o- ô”ož

oHð- 14

o6-o- -

oFåd- 1 y1%Få

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

oUP’ô- -

oнV0-

oиV@- -

1.7 clear web-auth user

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

oHFå-	HFåž
o×X%”o-	%ßå‰”ož
oHß-	14
o6-o-	-

oFåd- 1 yFåy

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

oèo- … **show web-auth template ô@**

oUP’ô- **-**

oəjö- -

ouVß- -

1.9 escape user-try-auth

å– wifi š 3.0 Î¼}!ÿž

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

{¾ wifi š¼}!ÿž

no escape user-try-auth

o@ß

@	T
counts	*Få ï:¡µà³’•š)ƒk ñFå)ƒQÌ ¿<• ï!ÿož% yy)k•‘› 4)*
minutes	*Få!ÿ ï U žxož%yyãU*

oHFå-	HFåž
o×X%”o-	%ßå‰”ož
oHß-	14

o6-o- -

oFåd- 1 yFßÿ

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

oЬP'ô- -

oəjö- -

oнVФ- -

1.10 fmt

2 W%ßåæ”kå4g† url ”ož

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

1 W%ßåæ”kå4g† url ”ož

fmt { ace | ruijie| custom }

ñ URL ßg 1 Vx 2 VÂ URL ßž

fmt custom [encry { md5 | des | des_ecb | des_ecb3 | none }] [user-ip *userip-str* **] [user-mac** *usermac-str* **mac-format [dot | line | none]] [user-vid** *uservid-str* **]** [**user-id** *userid-str*] **[nas-ip** *nasip-str* **] [nas-id** *nasid-str* **] [nas-id2** *nasid2-str* **] [ac-name** *acname-str* **] [ap-mac** *apmac-str* **mac-format [dot | line | none]] [url** *url-str* **] [ssid** *ssid-str* **] [port** *port-str* **] [ac-serialno** *ac-sno-str* **] [ap-serialno** *ap-sno-str* **] [additional** *extern-str* **]**

îFåž

no fmt custom [user-ip] [user-mac] [user-vid] [**user-id**] **[nas-ip] [nas-id] [nas-id2] [ac-name] [ap-mac] [url] [ssid] [port] [ac-serialno] [ap-serialno] [additional]**

oß

@	T
cmcc-ext1	**gÿ** url ”ož
cmcc-ext2	**kg** url ”ož
cmcc-ext3	**f/** ,'g½ AC 4Œ URL ”ož
cmcc-mtx	**g** AC 4Œ url ”ož
cmcc-normal	**gÕ** url ”ož
ct-jc	**ß** url ”ož
cucc	**Lû** url ”ož
ace	**u4** ACE ôž
ruijie	**iH** url ”ož

oиVФ- -

1.11 free-auth

å– wifi ßž

free-auth pc

ĺ³ wifi ß– ipož

no free-auth

o@	@	T
	-	-

oHFå- HFåž

oxX%”o- %ßå%”ož

oHß- 14

oG-o-

ç pc ε ب

oFåФ- 1 yFå pc ß

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

oиo- … **show web-auth template Ô@**

oUP’Ô- **-**

oэjÖ- -

oиVФ- -

1.12 gateway-id

å– wifidog ßÆ wifidog ß gw_id эž

gateway-id *string*

ĺ wifidog ßÆ wifidog ß gw_id эž

no gateway-id

o@	@	T
	string	*F å — Õ y Æ ˜ …* wifidog #'< gw_id ›

oHFå- HFÕZoš

o»X%”o- %ßå%”ož

oHß- 14

oG-o- ⫠ ɣ ϑ ɪ ` ỳ ő ˆ ₅ ʒ ʙ ǫ ʙ ⫠

%Error: Invalid IP address.

oɵjö- -

oʉV0- -

1.15 http redirect direct-site

åɵž

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

ſåož

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

oß@

@	T
Ipv6-address	² • š à Ì Ï › Ipv6 ž
Ipv4-address	² • š à Ì Ï › Ipv4 ž
ip-mask	*g U # h* ² • š à Ì Ï › IPv4 QAož
arp	*g U # h* ò ç — Õ *o 4* ARP CHECK ķ}+å 8g ARP ķF å **arp** IPv4 ž

oHFå- ŀZåž

o×X%”o- ßFå%”ož

oHö- 14

o6-o- o Web škÆ Web šķåž3}yŕ?ķš UYŢ?›yå4xXoąK9å,“ŒUYŢ ąož Ðå 50 å

oFåd- 1 yå– IP ª 172.16.0.1 ąåž

```
Ruijie(config)# http redirect direct-site 172.16.0.1
```

oèo- … **show web-auth direct-site** 0å

oUP’ô- 1 yč IP/QA”ož

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

oɵjö- -

oиVФ- -

1.16 http redirect port

åCGjßMZ HTTP WEB ЬgMgož

http redirect port *port-num*

ï+jßMZ HTTP WEB ЬgMgož

no http redirect port *port-num*

oßø-

ø@	T
port-num	HTTP WEB Ь)ßMZož

oHFå- ЬjCGßM 80 HTTP ŧž

oxX%”o- ßFå‰”ož

oHß- 14

o6-o-

1oßa4ŧGß	HTTP kÕÛ	HTTP kÛ
kßaÕßa1ŠßawgÏŸ		
ßž		
2oHkÕÛGßMZ	80 HTTP kÛßž	
3oj¾wÕßMZ	HTTP k4xXož	
4oFå	10 c)ßMZkßMZ	80 -mß8až

oF-åŧ- 1 y+GßMZ 8080 HTTP WEB ЬgMgož

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

2y+GßMZ 80 HTTP WEB ЬgMgož

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

oàø- … **show web-auth rdport** ßMŠÕ

oЬP’ŧ- 1 yß=d#‘ßMkAò 23ož

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

oøjŧ- -

oиV@- -

1.17 http redirect session-limit

http redirect timeout *seconds*

ÉMgNÝ 3 aož

no http redirect timeout

o@	@	T
	seconds	ÉMgNÝ *seconds* ‹ H › 8 1-10ož

oHFå- HÉMgNÝ 3 aož

ox%”o- ßFå”

oHÖ- 14

o6-o- ÉMgNÝ HTTP GET/HEAD Hè›

Ö HTTP Mg GET/HEAD Ý

Nož

oFåb- 1 yÉMgNÝ 4ož

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

oèo- … **show web-auth parameter x@**

oUP’Ô- -

oəjö- -

ouV@- -

1.19 ip

}Få portal Æ IP kü%Eå”xX **ipož**

ip { *ip-address* }

Ž HTTP Mg IP ž

no ip

o@	@	T
	ip-address	portal Æ IPv4 ž

oHFå- HZÅ– portal Æ IP ž

o»X%”o-	%ßå”
oH®-	14

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

1.21 iportal nat enable

FåA web ø4 NAT ož

iportal nat enable

ôåž

no iportal nat enable

oəjö- -

ouVŒ- -

1.22 iportal retransmit

Fåš web š http NMn)ƒž

iportal retransmit *times*

ŒåžŒ

no iportal retransmit

o	@	T
	times	*M n) ƒ*

oFå- é 3)ož

oxX%”o- ‰Få‰”ož

oŒ- 14

oG-o- -

oFåd- 1 yFå http NMn)*ƒ* 5)ož

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

oèo- … **show running-config Œ**

oUP’ò- -

oəjö- -

ouVŒ- -

1.23 iportal service

Fåš web ŠGáž

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

ŒåžŒ

1.27 online-popup

ØsÔž

online-popup *url-string*

ï¨sÔž

no online-popup

o	@	T
	url-string	*z s ª - e Nož*

oÔÅ-

ÔÅž

o×X%”o-

%ÉÅ‰”ož

oÔ-

14

oG-o-

— http:// ¡ https:// ◂ ¢

oÅ-1

yÅzs¼

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

oè-o-

… **show web-auth template**

oU P’Î-

-

oë¡ö-

-

oU V-

-

1.28 page-suite

Øž

page-suite *filename*

ï6Øž

no page-suite

œ@	T
Filename	*¼ µ † ^ dož*

œ¤Fåœ- ¤Œ¤ž

œ»X%”œ- %¤å‰”ož

œ¤ß- 14

œ6¬œ- ㄠ ζ ˛ FLASH ↑ portal/zip ˝ ‰ ¢

œFåœ- 1 y6¤ß¼

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

œèœ- … **show web-auth template ©¤®**

œЫP’Ò- **-**

œœjœ- -

œ¤Vœ- -

1.29 port

å— portal ?¤®Mož

port { *port-num* }

M¤®®MZož

no port

œ@	T
port	portal ?¤®MZk¤¼Ñ http ®Mož

œ¤Fåœ- ¤®MZ 50100k¤ UDP #‘ož

œ»X%”œ- %¤å‰”ož

œ¤ß- 14

o6-o- -

oF-åd- 1 y6 eportalv2 ¥EZ 10000ož

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

oà¤o- … **show web-auth template ô¶@**

oUP'ô- -

oəjö- -

ou¥V¶- -

1.30 redirect

¶4g"ož

redirect { http | js }

¶Mg"ož

no redirect

o¶@

@	T
http	J HTTP 302 #'Ÿ url ¶ž
js	J HTTP 200 ¶k js Ÿ url ¶ž

oH-Få- ¶H"J jskcmcc ,"¼ jsož

o¤X%"o- %¶å‰"ož

oH¶- 14

o6-o- -

oF-åd- 1 y6Mg"† httpož

o¤¶e0 Td[(HT)-4(T)-11(P)19(21TF0 1J/C2_0 7DB07F2093TT0A2Tf9>-7<)Tj/C2_0 0 0 1 0 0 0

1.34 show web-auth control

show web-auth control

	@	T
	-	-

14

-

1

```
Ruijie(config)#show web-auth control
 Port                        Control  Server Name              Online User Count Vlan Control List
 --------------------------- -------- ---------------------- ------------------ ------------------
 GigabitEthernet 0/1         On       <not configured>       0                  2-17,19
Ruijie(config)#
```

<	¢
Port	IOMdfož
Control	Web ož
Server Name	

oxX%”o- @”

oH®- 14

o6-o- -

oFåd- 1 yP+*{Fåž

```
Ruijie(config)#show web-auth direct-arp
Direct arps:
  Address              Mask
  ---------------- ---------------
  1.1.1.1              255.255.255.255
  2.2.2.2              255.255.255.255
Ruijie(config)#
```

<	¢
Address	IP ðž
Mask	IP ¢QAož

oUP’ô- -

ouV®- -

1.36 show web-auth direct-host

P² web ßož

show web-auth direct-host

o®@ @ T’àaTQB”V"b(R'"sAS"B""pR'42þ""pR'42ÊVryßA52E0uaTh®AS"B""sAS()A!pR'42ÊÐ~

Direct hosts:

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

oЧP‘Ô- -

oиV¢- -

1.38 show web-auth noise

ÞFå@

show web-auth noise

o@	@	T

oÞFå- Fåž

oxX%”o- Ô”

oÞ- 14

o6-o-

oFå- 1 yÞ‘:™

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

oèo-

oЧP‘Ô- -

oəjö- -

oиV¢- -

1.39 show web-auth parameter

ÞP HTTP MgFåž

show web-auth parameter

o@	@	T
	-	-

oxX%”o- Ô”

oÊ- 14

o6-o- 9Ô web ÊåžÊ

oFåÔ- 1 yÞ HTTP MgFåž

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

oxXº%”o- Ø”

oHß- 14

o6-o-

oFåd- 1 yFå portal-check :

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

oèo-

oUP’ô- -

oəjö- -

ouVß- -

1.41 show web-auth rdport

ÞP TCP)ÐMož

show web-auth rdport

oßæ

ø@	T
-	-

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

oЧP’ô- -

oиVФ- -

1.42 show web-auth template

₱ portal ₱ãž

show web-auth template

o₱ | @ | T |
|---|---|
| - | - |

o×X%”o- Ô”

oH- 14

o6-o- ìXôPã

oF-ô- 1 y₱ž

```
Ruijie#show web-auth template
Webauth Template Settings:
-------------------------------------------------------------
  Name:          eportalv1
  Url:           http://17.17.1.21:8080/eportal/index.jsp
  Ip:            17.17.1.21
  BindMode:    ip-mac-mode
  Type:          v1
-------------------------------------------------------------
  Name:          eportalv2
  Url:           http://17.17.1.21:8080/eportal/index.jsp
  Ip:            17.17.1.21
  BindMode:    ip-only-mode
  Type:          v2
  Port:          50100
  Acctmlist:
  Authmlist:
```

Ruijie#

<	¢
Name	%ød f
Url	¾Æ
Ip	ÆE IP ª
Type	¾ß%¾W portal ÆE v1k8W v2kÃ intra
Port	ÆE¦'ßMkN8W portal ÆE
Acctmlist	“ÃçdkN8WyÃ
Authmlist	šçdkN8WyÃ

oЧP’ĵb- -

oчV@- -

1.43 show web-auth user

ª Ëûk,ï IP ªNMoÃbž

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

o@	@	T
ip-address	6ï	IPv4 ªž
mac-address	*6 ï*	MAC ª
name-string	*6 ï d*	
num	*6 ï*	AAA k¢ ID

oxX%”o- Ø”

oH@- 14

o6-o- escape ˇ wifi ı Ỹ Δ ç ő ¨I I .

oFå@- 1 yª web $Fyû ž

Ruijie# show web-auth user all
Current user num : 4, online 2

```
Address                Online     Time Limit        Time Used       Status    Name
---------------- -------    ------------ -------------- -------- ---------
192.168.0.11       On           0d 01:00:00     0d 00:15:10       Active
192.168.0.13       On           0d 01:00:00     0d 00:00:59       Active     111
192.168.0.25       Off          0d 01:00:00     0d 00:00:59       Create
192.168.0.46       Off          0d 01:00:00     0d 01:00:00       Destroy    222

Ruijie# show web-auth user ip 192.168.0.11
Address            :     192.168.0.11
 Mac                 :     00d0.f800.2233
 Port                :     Gi0/2
 Online              :     On
 Time Limit     :     0d 01:00:00
 Time Used       :     0d 00:15:10
 Time Start      :     2009-02-22 20:05:10
 Status              :     Active
```

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

oЧP’ò- -

oч\V¤- -

1.44 temporary-permit

å– wifi

{¾ wifi ÿgož

no temporary-permit

o@	@	T
seconds	*F å ž y g ž xož % y y a k • ‘ ›* 30s ~ 60s

oHFå- HFåž

o»X%”o- %ßå‰”ož

oHß- 14

oG-o- -

oF‡d- 1 yFÿg

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

oè¤o- … **show web-auth template ô@**

oUP’ô- **-**

oəjÖ- -

ouV@- -

1.45 time-interval

time-interval *{ hour }*

no time-interval

o@	@	T
hour	*z s Ÿ ß ž • • œ k ó •* 1 4ßH8 0-24ož

oHFå- Þ 1 4ßž

o»X%”o- %ßå‰”ož

oH®- 14

o6-o-

— ± Ќ 0 ő I Ấ ↑ Ũ ` љ ¢

oFåd- 1 yFåsß®e 2 4ž

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

oèao- … **show web-auth template ô®®**

oЬP'ĵò- **-**

oəjö- -

oъV®- -

1.46 url

å— portal ®®z

url *url-string*

ĵ®®z

no url

o®®

@	T
url-string	¼ µ ª - *k* • *Y*“http://” ê “https://”ßkéЬPFåaX† 255 ož

oH¬åd- ЬZÅ— portal ®®z

oxX%”o- %ßå‰”ož

oH®- 14

o6-o-

🌍 ϰ ≥ Ƈ ŭ ŕ **http redirect homepage** [*url-string*] ≥ Ƈ Š ≥ Ƈ Ÿ я Ÿ ≥ Ƈ ¢

🌍 url в ± ŕ Ό ά p ى Ṡ ş http://[ip-address] ő [ip-address] ọ IP ≥ Ƈ ± ŕ ḍ IP л ¢

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

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

oèo- … **show web-auth template ûß@**

oЬP’ô- 1 oê URL ”ož

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

oəjö- -

oъV@- -

1.47 version

åÅ— wifi ßž

version {1.0 | 16wifi | 3.0 }

ê. wifi ßž

no version

o@ê

@	T
-	-

1.48 webauth

WLANSEC %”ø web ðž

webauth

ïƀåž

no webauth

o@	@	T
	-	-

oHFå- ¿ž

oxX%”o- ¶BFå‰”ož

oHß- 14

o6-o- -

oFåd- 1 yFßž

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

oèo- … **show running-config ô**

oUP’b- -

oəjo- -

ouVß- -

1.50 web-auth accounting v2

6“ãžož

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

ßåž

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

o@	@	T
	name	“ãdf

oHFå- ßåž

oxX%”o- ¶ß‰Fß%”ož

oHß- 14

o6-o- -

oFåd- 1 yFåõçož

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

oèo- … **show running-config ôß**

oUP'Ô- **-**

oëjö- -

ouVß- -

1.51 web-auth authentication v2

Få web šož

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

ïFåž

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

oß

@	T
name	6 web š

oHFå- é. aaa 6éož

o×X%"o- ßFå%"ož

oHß- 14

o6-o- **-**

oFåd- 1 yFåož

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

oèo- … **show running-config ôß**

oUP'Ô- **-**

oëjö- -

ouVß- -

1.52 web-auth acl

d%UYßUY¦Bädd%UYßc¦Bäž

web-auth acl {

no web-auth bind-portal

o@	@	T
	string	**Ç** portal Æ

oHFå- ož

oxX%”o- WLANSEC F‰”ož

oHß- 14

o6-o- -

oFåd- 1 yFå MAC ?’Ç portal Æž

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

oèo- … **show running-config ô**

oUP’ô- **-**

oejo- -

1.54 web-auth dhcp-check

Få web š dhcp ßQÄ dhcp ãgšž

web-auth dhcp-check

ôåž

no web-auth dhcp-check

o@	@	T
	-	-

oHFå- {ož

oxX%”o- ßF‰”ož

oHß- 14

o6-o- **-**

oF å 1 y ø dhcp þ

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

o à o- … **show running-config**

o U P ' ô- **-**

o ë j ö- -

o u V - -

1.55 web-auth direct-host

å IP 8ož

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

H ž

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

o

@	T
Ipv4-address	— ¬ • š ï IPv4 ž
Ipv6-address	— ¬ • š ï IPv6 ž
ip-mask	*g U # h* — ¬ • š ï IPv4 QAož
port *interface-name*	*g U # h 1* ï IP gQž
arp	*g U # h ò ç — Õ o 4* ARP CHECK k " } + š IP 8g ARP k F å **arp**
mac-address	— ¬ • š ï MAC ª

o F å- Z Web k ' ž

o X % ” o- F å ” ož

o 14

o 6 - o- g Web k - UY ž

50 ož

oF å 1 y å IP ª 172.16.0.1 ž

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

2y å MAC ª 0000:5e00:0101 ž

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

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

oЧP’ô- 1 yè IP/QA”

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

oəjö- -

oиVø- -

1.56 web-auth dkey-compatible url-parameter

åõ URL @ž

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

HÃ URLož

no web-auth dkey-compatible url-parameter

o@ø

@	T
string	post @ž

oHFå- ÞZÄåÃÏž

o×X%”o- ßFå%”ož

oHø- 14

o6-o- ož

oFåd- 1 yå post @ loginož

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

oèo- … **show running-config xßß@**

oЧP’ô- -

oəjö- -

oиVø- -

1.57 web-auth enable

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

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

ßM¼ Web ßž

no web-auth enable

op

¼ž

no web-auth logging enable

		T
	num	SYSLOG øk?aUø SYSLOG [0, 65535] k 0 ’ò

Þ¼ web š SYSLOG ož

¤X%”o- ¤FåŠ”ož

14

¥XN’‰3o SYSLOGk‘o SYSLOG l’òž

yF‰² SYSLOG ø,ož

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

* **show running-config**

-

-

-

1.59 web-auth noise

Fåž web

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

no web-auth noise

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

¼ž

oxX%”o- ßFå%o”ož

oHß- 14

o6-o- -

oFåd- 1 yFåßz

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

oèo- … **show running-config ôß**

oUP’ô- **-**

oəjö- -

ouVß- -

1.60 web-auth offline-detect

Få wlansec ßkôßÆvOêÐgž

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

ßå

default web-auth offline-detect

ß

no web-auth offline-detect

oß

@	T
interval	*v O y u Ê k % y ã U k H › 8* [1, 65535] kó 15 ßJož
threshold	*v O k % y - k H › 8* [0, 4294967294] k0 nP¥Oyož

oHFå- 15 ßJ¥Oy¿

oxX%”o- wlansec %”

oHß- 14

o6-o-

10.x ک Ấ † wlansec ɪ Ր ˘ ` љ ő ℸ ɪ ÷ ¢ ά 11.x¨H ʙ Ấ † wlansec ɪ ÷ ¢

oFåd- 1 yFå wlansec 1 5 ßJkOz9 5kBytes ž1ÿ

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

oèo- 1 y… **show running** xXUYôß,Fåž

oUP'ô- -

oejö- -

1.61 web-auth ping

y portal ßJož

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

ôåž

no web-auth ping

op@

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

oFåd- ¼ ping yož

oxX%"o- ßFå%"ož

oHô- 14

o6-o- -

oFåd- 1 yFå ping yuÊ 5 ßJkMn)ƒ 4)ož

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

oèo- … **show running-config ô**

oUP'ô- -

oejö- -

oʊVØ- -

1.62 web-auth portal

6š. Portal ØŽ

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

ÎFåž

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

}

o@	T

oHFå- ¤H Portal Æ url ”ož

oxX%”o- ¶BF‰”ož

oHø- 14

o6-o- -

oFåd- 1 y¼ Portal #‘ jož

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

oèo- … **show running-config ö**

oUP’ô- -

oəjo- -

ouVø- -

1.64 web-auth portal key

g'%Wož

web-auth portal key *key-string*

ž HTTP WEB ŁtMge• WEB Łg'%Wož

no web-auth portal key

o@	T
key-string	*— Õ • š Æ ˜ $ • g * ’ % W k Â Ý x †* 255 ož

oHFå- ŁZ‰Wož

oxX%”o- ¶BF‰”ož

oHø- 14

o6-o- }è Web g'%Wož

WNu4FåU4?y%Wož

oFåo- 1 y%W *web-authož*

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

oèo- * **show running-config**

oUP'ô-

oöjö-

ouVô-

1.65

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

oà o- … **show running-config**

oUP'Ô- **-**

oəjÖ- -

ouV- -

1.66 web-auth portal-check

y portal

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

no web-auth porta-check

o

	T		
intsec	**yu**	10 akH	1-1000
tosec		5 akH	1-1000
retries	**n**	3)kH	1-100

oF- ¼ portal

oxX%"o- F%"o

oH- 14

o- o-

ºº ж ∫ ɔ ù – ḍ ő ⊥ Ж ụ l ő ị φ ő x в ⊥ ő Ḃ ṭ Ч ³ ŭ ɹ ϑ ḫ Ч φ π ő ϑ l ¢

oF- 1 yF portal

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

oà o- … **show running-config**

oUP'Ô- **-**

oөjö- -

oиVθ- -

1.67 web-auth portal-escape

Få portal !ɣ¥Få portal ?ŒUɛ¼Nþž

web-auth portal-escape

ßåž

no web-auth portal-escape

oþ@	@	T

24 1ea75 ref117.84 4784hg(2 0.24 15.6 ref560.7)]TJ/TT0 494.4 0.24 1567>TjfBT9 258.

web-auth portal-valid unique-name

no web-auth portal-vallid unique-name

@	T
-	-

14

-

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

-

detection

oèo- …

1.72 web-auth template

ë/µ‰²W‰ßåX”ož

web-auth template eportalv1

ë/µ#%²W‰ßåX”ož

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

ë/µ¡W‰ßåX”ož

web-auth template eportalv2

ë/µ#8W‰ßåX”ož

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

ë/µ‰ßåX”ož

web-auth template iportal

ë/µ#‰ßåX”ož

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

ë/µ wifidog %ßåX”ož

web-auth template wifidog

ë/µ# wifidog %ßåX”ož

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

ë/µ wifi ‰ßåX”ož

web-auth template wechat

ë/µ#³ wifi ‰ßåX”ož

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

ì%åXož

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

o

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

iporta

template-name	*# • š % á d f*

oнFå- Ffa

oжX%”o- ₿Få%”ož

oнø- 14

o6-o-

ọ ℗ eportalv1 ₾ Ξ ₾ ℗ ip ȧ url ɾ ⊥ ő٧ ŭ ɾ **http redirect** ȧ **http redirect homepage** ⇂ Ƈ ő ϑ Ÿ **http redirect** ȧ **http redirect homepage** ⇂ Ƈ ⊥ ᴅ ő ɛ ж ʙ ŭ ɣ ⇂ Ƈ Ṡ ¢

Ÿ ɾ **portal-server** ⇂ Ƈ ⊥ ᴅ ő ʙ ɾ ⇂ Ƈ ¢

ʞ ụ Web ụ l ő ọ ⊥ š ʐ ɾ portal ḏ ő Й Ķ portal ḏ Šک eportalv1 ₾ Ξ ạ Ÿ ک Šeportalv1 ₾ Ξ ⓿ ζ Ở IP т ȧ url ȧ ⊥ ℗ őurl в ⊥ ɾ Ȯ ạ p ک Ṡ şhttp:// *[ip-address]* ¢portal ḏ ɾ IP

o@	@	T		
	seconds	**ßyaoĚ8**	30-3600oď	180 aož

oHFå- 180 aož

oxX%”o- ¶BFå”ož

oHß- 14

oG-o- -

oFåd- 1 yßßc 60 aož

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

oèo- … **show runing-config ßß**

oUP’ĵb- -

oəjö- -

ouVß- -

1.74 web-auth valid-ip-acct

FßH IP ĸßH IP ¹tß ž

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

ßåž

no web-auth valid-ip-acct

o@	@	T		
	seconds	ª • ^ - *ï B H*	IP ĸ%yyakó	30 aož

oHFå- HFåž

oxX%”o- ¶BFå”ož

oHß- 14

oG-o- Ķ ± ° ˘ wifi ɪ ḿ ˝I ¢

oFåd- 1 yF®H IP ž 1 ß

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

oèo- … **show running-config ô®**

oUP'ĵb- **-**

oəjö- -

ouV®- -

1.75 web-auth wechat-check

Få wifi ¾E

web-auth wechat-check interval *minutes*

¾E

no web-auth wechat-check

o®ê

@	T
minutes	!¾Få 30 ß

oHFå- Fåž

oxX%"o- ®Få‰"ož

oH®- 14

oG-o-

 d ` љ µ l Ű µ l ◂ ō x ♯ **escape** ≉ Ƈ Ŏ ɾ ⊥ ă м ¢

oFåd- 1 yF®¾Ž

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

oãFĐ

oʁVȣ- -

1.76 web-auth wechat-escape

Fåˆ wifi ȣÿ

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

ȣÿ

no web-auth wechat-escape

H ȣÿ}!ȣK9¢xXk**show running-config** **Pož**

web-auth wechat-escape recover

oȣ

@	T
minutes	!ȣ 60 ȣ
count	ȣ 5

oHFå- Fåž

oxX%”o- ȣFå%”ož

oHȣ- 14

oG-o- ˙Ω µ l ◂ ˚ µ l ō x ♯ **escape** ≠ Ć Ŏ ŕ м ¢

oFåȣ- 1 yFåÿȣ

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

oèo- … **show running-config** ȣ

oUP’ȏ- -

oɵÿȣ- -

oʁVȣ- -

1.77 web-auth wechat-template wlan-range portal-ip nas-ip

F wifi %pFå

1.78 web-auth wifidog-template wlan-range portal-ip nas-ip url

Få— wifidog %þFå

web-auth wifidog-template *name* **wlan-range** *wlanid-start wlanid-end* **portal-ip** *portal-ip-addr* **nas-ip** *nas-ip-addr* **url** *url-string* **[perception]**

Ì¿— wifidog %þFå

no web-auth wifidog-template *name*

o®Ø

@	T
name	%ád
wlanid-start	IO wlan ←
wlanid-end	*I O* wlan Ø
portal-ip-addr	portal ≠E
nas-ip-addr	— å wifidog ÑЧE ipk9Ø4 ip GÜ
url-string	portal ¥E
perception	*F å — ß =*

oHFå-

F¤ž

oxX%”o-

ßFå‰”

oH¶-

14

o6-o-

▬ ◂ ˡ ˌ ő ϱ ö , ų wlansec ő Ḃ ت ö , ɾ wlansec ɱ ˌ ₭ ų ¢

oF¤d-

Få— wifidog %þF¤ž

```
Ruijie(config)# web-auth wifidog-template aaa wlan-range 1 32 portal-ip 172.21.6.78 nas-ip
192.168.197.227 url http://172.21.6.78/auth/wifidogAuth
```

oè¤o-

… **show running-config Ô¶**

oЧP’ĵb-

-

oəjö-

-

oчV¶-

-

1.79 web-auth wlan-ac-ip

F¶lg URL ACIP Ø

web-auth wlan-ac-ip *ipv4*

ÍFåž

no web-auth wlan-ac-ip

o@

oH- 14

o6-o-

oFåd- 1 yFå winterface

Ruijie (wlansec)# web-auth winterface winterface

oèo- … **show running-config**

oUP'b- -

oejo- -

ouV- -

2 AAA

2.1 aaa accounting commands

+ß NAS ğxXtg“Ä’ŧož

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

3yÿMËåxXkÉå$Åž

oɔÿö- -

oɯVÐ- -

2.2 aaa accounting exec

+£ NAS ¶tg“Ãtož

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

Hƒ Exec “ãž

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

o@ê

@	T
default	Ø@#ɛç• Exec “ãož
list-name	#%² Exec “ãçkUY©ož
method	À**none** **ogroup** ”ß%k%ɛçÃ 4 ɛ
none	g**Ã**
group	g**Ãu4** RADIUS y TACACS+Æ

oHFå- ¿”Ã

oxX%”o- ß%”ož

oHõ- 14

o6-o- RGOS QÏ4ékõo Exec “Ãgõ•

c nonekég Exec “ãž

o“ãkÉ NAS CLI ßG“gStart h’ßÉ

ßG“gStop h’ßZÉß Start ’k¨

ßkGß Stop ’ož

Få Exec “ãekÀÿgxX“gkéÿož

oFåd- 1 yÞ‡.. RADIUS +£ NAS tg“ÃwÿÐ“Ã

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

oèo- … **show aaa method-list x** **]ê** Exec “ãç’ož

oUP’ô- 1 yÞÄ6 groupkÉPjöž

%Group XXX is not existed

2yò group º44“ÑUPjöž

The accounting does not support this type of group

3yÒMËåxXkÉåÞÄåž

oɔjö- -

ouVº- -

2.3 aaa accounting network

ÐÑk}+Ïtg“Õž

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

HÞÕž

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

oÞ

@	T	
default	Ê#ıcç•	Network “Õož
list-name	“ Ã • c ç n dož	
start-stop	Ïtyè“Ñ«ÃÇè o“ÃCèÞož	
method	ÀÞ%çÕ	4 ¢
none	g“Ã	
group	ÉÃ)ù4	RADIUS y TACACS+ÁÉ

oHFå- {“Ã

oxX%”o- Þ%”ož

oHÕ- 14

o6-o- RGOS *ÐÉ“KÅÛg“Õ¼ **start-stopkÐž**

oFåd- 1 yÞ?‡.. RADIUS +èg“Ñwyè“Ã

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

oèo- … **show aaa method-list xÐ]Õçož**

oЧP’b- 1 yg@Ä6 groupkЧPjöž

%Group XXX is not existed

2yç group ¥u44“ÑЧPjöž

The accounting does not support this type of group

3yÇMËåxXkËeå$Påž

oəjö- -

oиVЋ- -

2.4 aaa accounting update

o“Ñ¤Ø¶“.ñž

aaa accounting update

¿“ñž

no aaa accounting update

o¶@	@	T
	-	-

oH¬å- “Ñ¿ž

o×X%”o- ¶%”ož

oH¤- 14

o6-o- ç¿Ä AAA ¶Ñ¤ñ¿E AAA ¶Ñ¤X¤ñ¼

ož

oF¬b- 1 yP¶P¤ñž

Ruijie(config)# aaa new-model

Ruijie(config)# aaa accounting update

oèo- … **show aaa accounting update x¶Ñ¤ož**

oЧP’b- -

oəjö- -

oнVФ- -

2.5 aaa accounting update periodic

aaa accounting update periodic *interval*

no aaa accounting update periodic

o@	@	T
	interval	“ 1 ožU

oH Få- 5 ožU

oxX%”o- %”ož

oH - 14

oG-o- AAA AAA X

oF ä- 1 yP Pæ 1 ož“

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

oè o- … **show aaa accounting update x**

oUP’ - 1 yMÄxXkÄ$Äž

oəjÖ- -

oнVФ- -

2.6 aaa authentication dot1x

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

ecož

2.7 aaa authentication enable

}… AAA g Enable ¥¶BFåX **aaa authentication enable ß** Enable šçož

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

ï'šçož

no aaa authentication enable default

o¶ß

¢@	T
default	¥ß#ecç• Enable šož Enable ß® 9¶Bš)Qu4åçož
method	À®ocal o•noneoegroup o•enable"¶ß%k%ecçÂ 4 • c
local	**îlCegš**
none	**gš**
group	**¢šçµ4** RADIUS y TACACS+ÆE
enable	**…** enable cgš

oH¬åd- -

ox×X%"o- ß%"ož

oH®- 14

o6-o- ¢çÕ- AAA Enable šÆE‹<À. AAA g Enable š#GžÂ. **aaa authentication enable x®ç9** Enable šž

Q¶ŽZ®ãpgäšž

Enable šçFåÝekEnable ¥šž

oF¬åd- :1 y¶P# AAA Enable ïašçoš®ç… RADIUS ¶ß•

š¢%ŽZÄñ RADIUS ®¶ßgäšž

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

oè¤o- … **show aaa method-list x®]ß** Enable šç'îbž

oÙP'îb- 1 y¢ÕÄ6 groupkÉÙPjöž

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

2yç group ¶u44šÉÙPjöž

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

3yÿMËåxXkÉåšÄåž

oɔjö- -

ouVö- -

2.8 aaa authentication iportal

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

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

ĺšçož

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

oÞ@

@	T
Default	Portal Web šçož
list-name	Õ- Portal Web šçkUY©ož
method	Àocal o•noneo•groupo•subs”Þ%k%çÕ 4
local	**ÛGšš**
none	**gäš**
group	**4** RADIUS Æ
subs	**…** subs Gšž

oHFå- -

o×X%”o- Þ%”ož

oHõ- 14

o6-o- Õ- AAA Õ- Portal Web ÀÆ. AAA gÕ- Portal Web š #ÕÕ. **aaa authentication iportal xÕ#ç9Õ-** Portal Web šž

QÞZÕçgšž

oF-ad- 1 yÞ#%d rds_web AAA Õ- Portal Web šçoçq… RADIUS Õ-Portal W Ý$ ü%Z,[aN™€œ ± é ¤@ ¦p¨ 0- šož

oè¤o- … **show aaa method-list xß0]ê** iportal šç’ôž

oÙP’ô- 1 yçØÄ6 groupkÉPjöž

%Group XXX is not existed

2yç group ¤44ßÉPjöž

The authentication does not support this type of group

3yçMËåxXkeåa$Påž

oe¤jö- -

o¤V@- -

2.9 aaa authentication login

}… AAA g Loging ßkçß FåX **aaa authentication00513ç)5(26.2309Es 9 2 Tc 7.9Tc 2.247 0**

authentication login xß#ç9 Login šž

Qp¿ZÑ¤gäšž

å– Login šekÀ¥g Login ß¼é¡ž

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

g¼%ŽÄñ RADIUS ¼ßgšž

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

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

oÙP’ð- 1 yçÄ6 groupkÉPjöž

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

2yç group º44¼ÉPjöž

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

3yçMËåxXk¤åä$Äåž

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

oH-å- -

o»X%”o- ‰%”ož

oH-o- 14

o6-o- ¡Õ AAA PPP ¶E<À. AAA g PPP ¤#GÂ. **aaa authentication ppp x-#¡9** PPP ž
Q¸ZÄ¤gž

oF-d- :1 y¸#%d rds_ppp AAA PPP ¸o¸¸... RADIUS E
g¸%ZÄñ RADIUS -Ê¸gž

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

oà-o- … **show aaa method-list x** PPP ¸’ž

oU-P’-b- 1 y¸Ä6=-D/E¸(CP-ÂÁ¹P-¶6-¤-Ã¡Ê¸Ä¸Z¸6¤R¸nGÄ¸Ê¸,%gc¸Zä¸xNp¸¸¸¸¸W1i;5n¸|#6R'–¸e"ESPp¸XU%¸•6eESXpN0Np¸

o¥x X • šÐ ÐHP• rds_p3A079008 aaa met1sslvpn67 0 Td <0919>Tj /TT0 08D

	e
local	**ÎÙG@šG**
none	**gš**
group	**gÉÙ4** RADIUS Æ
subs	**…** subs ÇGšž

oHFå- -

oxX%”o- ß%”ož

oHõ- 14

o6-o- Õ- sslvpn kÆÀ. AAA g sslvpn ÆÕ. **aaa authentication sslvpn xõ#ç9** sslvpn šž Qß ZÆçgšž

oFåd- 1 yÞ#%ð rds_sslvpn AAA sslvpn šçoš¯... RADIUS ß%Z¾ñ RADIUS ßg• šž

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

oèo- … **show aaa method-list x** sslvpn šç’ðž

oUP’ð- 1 yçÄ6 groupkÉUPjöž

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

2yç group ÞÙ44šÉUPjöž

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

3yçMÈåxXkÆåš$Äåž

oəjö- -

ouVõ- -

2.12 aas authentication web-auth

}… AAG8W Web šgß Få X **aaa authentication web-auth** W Web • šçož

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

ï šçož

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

@	T
default	Web šož
list-name	Web šçkUY©ož
method	local o•noneo•groupo•subs”[%k%ç 4
local	
none	
group	RADIUS Æ
subs	… subs

-

%”o-

14

-o- AAA Web AAA Web

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

šž

1 rds_web AAA Web RADIUS

RADIUS Nygkšož

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

… **show aaa method-list** web-auth šçŒž

1 groupkPjöž

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

2yç group Pjöž

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

3y xXk

-

-

2.13 aaa authorization commands

+9]fi NAS CLI ¡q… AAA xXIÉgxXgIKŒV2

ũ}ÀxXoğ‡BFåX **aaa authorization commandsož**

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

{¼ AAA xXIÓž

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

op

@	T
level	}glkÓXß 0~15 ÞX}HÓeõ ğož
default	¶ê#ıcçxXIó
list-name	#%ŠXIÓçkUY©ož
method	Ànoneo• group”ß‰k%ıçÂl 4 c
none	**glÓ**
group	**gEKçl4** TACACS+Æ

3yÿMËåxXkÉå$Åž

oɔjö- -

oɯV@- -

2.14 aaa authorization config-commands

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

aaa authorization config-commands

¼ AAA +Få‰”xXgIÓž

no aaa authorization config-commands

o@

@	T
-	-

oFå- ¼ AAA +Få‰”xXgIÓž

oxX%”o- ¶%”ož

oF@- 14

o6-o- Ò+Få‰”g@”hxXgIÓUY¥X **no @**

@gxÓgož

oFå- 1 yÞFå‰”xXIÓ

2.15 aaa authorization console

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

aaa authorization console

{¼ AAA +*Oò Ÿ ß x X I Ó ž

no aaa authorization console

o ß @	@	T
	-	

o H F å - {¼ AAA +*Oò Ÿ ß x X I Ó ž

o x X % ”o - ß % ”ož

o H ß - 14

o 6 - o - RGOS u4 ß Oò Ÿ ¿ ¿ Ë U Y ê ò Ÿ Ë g x X I Ó ž

ê 4 Oò Ÿ x X I Ó ß Ë Ÿ è X I Ó ¿ 1 ¡ ož

o F å d - 1 y ß ¶ F ê ò Ÿ £ X I Ó

	@	T
	default	Exec l
	list-name	#%² Exec l
	method	local o•noneogroup”
	local	
	none	
	group	RADIUS y TACACS+

¼ AAA Exec l

%”o

14

RGOS u4+ NAS CLI CLI 0~15 Login Exec l Exec l CLI F Exec l Exec l

1 RADIUS Exec l

```
Ruijie(config)# aaa authorization exec default group radius
```

… **show aaa method-list x** l

1 group

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

2 group

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

3 AAA PPPo•SLIP **aaa authorization network**

-

-

2.17 aaa authorization network

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

¼ AAA lÓž

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

@	T
default	Network lÓž
method	group” 4
none	
group	RADIUS y TACACS+

¼ AAA Network lÓž

%”

14

RGOS u4+ PPPoSLIP

UY6_cl

RADIUS ê TACACS+

1 yP RADIUS

2.18 aaa domain

Ê§%”kFåž

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

H¥Xož

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

o@	@	T
	default	¥@Få
	domain-name	*6 ¿ d f*

oHFå- ZÄåž

ox%”o- %”ož

oH- 14

o6-o- 6 AAA default

c ož *domain-name 6 ¿ d F å k ò ç ï ` k ¥ ¿ d k é 6 … ¿ ñ ¼ û • c ç nož) ù © Ï u 4 Â Ú F å* 32 ž

oF 1 y

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

o… **show aaa domain x**

oP’- -

o- -

ou- -

2.19 aaa domain enable

 AAA AAA ¿

d AAA

aaa domain enable

no aaa domain enable

-	-

oHFå- AAA

oXX%”o-

oH-

o6-o- AAA

oFåb- 1 AAA

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

oào- … **show aaa domain x**

oUP’b- **-**

oəjö- -

ouV- -

2.20 aaa local authentication attempts

Få login

aaa local authentication attempts *max-attempts*

2.22 aaa local user allow public account

Få Web á Web ãusername ã subshktãož

aaa local user allow public account

o	@

oxX%”o- ‰%”ož

oH-o- 14

o6-o- ÝÖž AAA ¥s syslogkUk-ðÐ4eUY*F-å
XÊ¿ož

oFåd- 1 yÞ?¼ø aaa ¥s syslogož

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

oè¤o- … **show running-config x¿ø** aaa ¥s syslog ¿ož

oUP’Ô- **-**

oëjö- -

ouV®- -

2.24 aaa log rate-limit

}².. AAA ¥s syslog øÄëg aaa log rate-limit xXgFåž

aaa log rate-limit *num*

Ê AAA ¥s syslog ø¿äž

no aaa log rate-limit

o®®

¿@	T
num	*? a U ø -* syslog ¿Ø8 0 - 65535y 0ynP’ø¿ä 1 - 65535yUFø¿8kó 5ož

oH-å- 5 k/?aø 5 Ú AAA ¥s syslogož

oxX%”o- ‰%”ož

oH-o- 14

o6-o- ÝÖž AAA ¥s syslogkUk-ðÐ4eUY*Fåx
X¥U. syslog ø¿äž

oF‡å0- 1 yβ?†.. AAA ¥s syslog øa2a 10 Ú

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

oè¤o- … **show running-config x¤** AAA ¥s syslog øäž

oЧP'ô- **-**

oəjö- -

oч‰V®- -

2.25 aaa new-model

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

{¼ AAA ¥ž
no aaa new-model

o¤ß@

@	T
-	-

oH‡Få- {¼ AAA ¥ž

o»X%"o- ß%"ož

oH¤- 14

o6-o- ¥X© AAA xXk§.. AAA ¥≤À. **aaa new-model …** AAA ¥ž
ąä AAAkå AAA xX1©Fåž

oF‡å0- 1 yβ?†.. AAA ¥ž

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

oè¤o- … **show running-config 0 Td091904850A080578045 r AAA¥ž**

2.26 access-limit

ê‘kQ+ IEEE802.1x Ïo

access-limit *num*

Hƒ’ò

no access-limit

o

@	T
num	¿ ï ƒ O ’ ò k Q ’ ò IEEE802.1x ï

oF-

oo

o6-o-

default	¥6 F å ç
list-name	*6 • c ç n d f*

oHFå- Z ë c ç ž é Ü k Ê ¢ default c ç ož

o×X%”o- F å ‰ ”ož

oHß- 14

o6-o- 6 … Network “ê ç ož

oFåd- 1 y P P å – Network “ê ç y

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

oèo- … **show aaa domain xM%** Network “ê ç F å ož

oUP’b- 1 y ô c ç d Ý b é P j ö ž

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

2y ô c ç 9 F å é P j ö ž

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

3y ô M Ë å x X k ê e å $ Ë å ž

oəjö- -

ouV®- -

2.28 authentication dot1x

F å ‰ ”F å IEEE802.1x ê ç ož

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

H ƒ X ož

no authentication dot1x

o® | @ | T |
|---|---|
| **default** | ¥6 F å ç |
| *list-name* | *6 • c ç n d f* |

oH- 14

o6-o- -

oFad- 1 yP?P– Network lQy

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

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

oUP'b- 1 yçcqdXbUPjöž

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

2yçcq9FaUPjöž

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

3yMÄaxXkeaa$Äaž

oöjö- -

ouV- -

oЧP'ô- 1 yğ%žK€UP'ôž

```
User XXX unlocked
```

oиV@- -

2.31 show aaa accounting update

P“#@ž

show aaa accounting update

o@	@	T
	-	-

oxX%”o- @”o%”oNM%”

oH@- 14

o6-o- P“#“@C“@ž

oF@- 1 yP“#

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

oЧP'ô- **-**

oиV@- -

2.32 show aaa domain

P@ž

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

o@	@	T
	default

oFåb- 1 yβ₱₱6g domain.com ĵbž

```
Ruijie# show aaa domain domain.com

=============Domain domain.com=============
State: Active
Username format: Without-domain
Access limit: No limit
802.1X Access statistic: 0

Selected method list:
 authentication dot1x default
```

oUP'ĵb- -

ouV@- -

2.33 show aaa lockout

₱Q login gF@z

show aaa lockout

o@

@	T
-	-

o»X%"o- @"o₿%"o‰M%"ož

oH@- 14

o6-o- ¥X₱Q login gF@z

oFåb- 1 y₱Q login gFå

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

oUP'ĵb- -

ouV@- -

2.34 show aaa group

ᵽ AAA F

show aaa group

	@	T
	-	-

Ô”o%”o-

14

¥XᵽAAA

1 yᵽAAA

```
Ruijie# show aaa group
Type           Reference   Name
---------- ---------- ----------
radius         1           radius
tacacs+        1           tacacs+
radius         1           dot1x_group
radius         1           login_group
radius         1           enable_group
```

-

-

2.35 show aaa method-list

ᵽ AAA oz

show aaa method-list

	@	T
	-	-

Ô”o%”o-

14

o6-o- ¥XP AAA Ëqož

oF-å-1 yÞPP AAA ¢qož

```
Ruijie# show aaa method-list
Authentication method-list
aaa authentication login default group radius
aaa authentication ppp default group radius
aaa authentication dot1x default group radius
aaa authentication dot1x san-f local    group angel group rain none
aaa authentication enable default group radius
Accounting method-list
aaa accounting network default start-stop group radius
Authorization method-list
aaa authorizating network default group radius
```

oUP'Î-

-

ouV-

-

2.36 show aaa user

P aaa ï¼Ûž

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

o-

@	T
all	ÒÄ AAA ïÎ
lockout	Ò g AAA ¤'Î
by-id *session-id*	*ò 0 6* session id AAA ïÎ
by-name *user-name*	*ò 0 6 ï d* AAA ïÎ

oxX%"o- Ø"oB%"oNM%"ož

oH-

14

o6-o- P AAA ï¼Ûž

oF-å-1 yÞPP AAA ï¼¼

```
Ruijie#show aaa user all
------------------------------
            Id ----- Name
 2345687901          wwxy
```

```
-----------------------------
Ruijie# show aaa user by-id 2345687901
-----------------------------
            Id ----- Name
 2345687901          wwxy
```

```
Ruijie# show aaa user by-name wwxy
-----------------------------
            Id ----- Name
 2345687901          wwxy
-----------------------------

Ruijie# show aaa user lockout

Name                                Tries          Lock           Timeout(min)
------------------------------- ---------- ---------- ------------
Ruijie#
```

oЧP’ĵ- -

oиV@- -

2.37 state

@ž
state { **block** | **active** }

@ž
no state

o@	@	T
	block	F@

oʁV@- -

3.2 ip radius source-interface

6 RADIUS ¶ž

ip radius source-interface *interface-name*

ĺ6 RADIUS ¶ž

no radius source-interface *interface-name*

o℗ℓ

ℓ@	T
interface-name	radius ¶NM

oнF̶å- Þ radius ¶Ca̶–

oxX%”o- ¶%”

oн¶- 14

o	@	T
	vrf_name	vrf d
oH	-	
o	X%”o-	”ož
oH	14	
o	6	vrfož

oF 1 y ss #+ vrf vrf_nameož

```
Ruijie(config)# aaa group server radius ss
Ruijie(config-gs-radius)# server 192.168.4.12
Ruijie(config-gs-radius)# server 192.168.4.13
Ruijie(config-gs-radius)# ip vrf forwarding vrf_name
Ruijie(config-gs-radius)# end
```

o … **show radius group x** RADIUS vrf F

o P’ -

o -

o V -

3.4 radius attribute

F

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

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

o	@	T
	id	id <1-255>
	type	type <1-255>

oH Q+

id	×	type
1	max down-rate	1
2	q	

6	net ip	6
7	user name	7
8	password	8
9	file-directory	9
10	file-count	10
11	file-name-0	11
12	file-name-1	12
13	file-name-2	13
14	file-name-3	14
15	fi e-name-	15
16	max up-rate	75
17	version to server	17
18	flux-max-high32	18
19	flux-max-low32	19
20	proxy-avoid	20
21	dailup-avoid	21
22	ip privilege	22
23	login privilege	42
24	limit to user number	50

oxX%”o- ฿%”

oH0- 14

o6-o- ¥XUYF&Y cèž

oF₫0- 1 y1 max up-rate ₩ 211ož

Ruijie(lT-ate ₩ y 6 Ö 1 Ñ

the vendor type had allocated by XXXX

oəjö- -

ouVt- -

3.5 radius vendor-specific extend

å– radius ïÆŒ id

radius vendor-specific extend

Ê¢ïÆŒ id

no radius vendor-specific extend

op@	@	T
	-	-

oHFå- Q¢ïÆŒ id

oxX%”o- ¢%”

oHö- 14

o6-o- ¥XU+ÄŒ id KÅÁÆž

oFåd- 1 yFå radius ïÅÆŒ idož

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

oèo- … **show running-config ïÆ¢ož**

oUP’ô- -

oəjö- -

ouVt- -

3.6 radius vendor-specific attribute support

Få radius u4ãu•oïÆÅ

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

Få radius u4ÃwoÄÅ

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

op@ @

oHFå-	HFåMn“
oxX%”o-	%”
oH-	14
o6-o-	FåW Web Mnk Mno
oFå- 1	yFåW Web Množ Ruijie(config)#radius-server account update retransmit
oxo-	xX **show running-config**
oUP’-	-
oj-	-
oV-	-

3.8 radius-server attribute 31

6 RADIUS Calling-Station-ID MACh”ož

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

}

RADIUS Calling-Station-ID MACh”

no radius-server attribute 31 mac format

o

@	T
ietf	6 ETFg RFC3580 h • k … ‘-’ • 00-D0-F8-33-22-ACož
normal	*6 o n P* MAC gh k.. ‘.’ 00d0.f833.22ac ož
unformatted	*6 — ” k Z Ä ` ~ ã œ … k ó • … ”ož † ò y*00d0f83322ac ož }

oH-
14

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

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

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

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

oUP’ô-
-

oəjö-
-

ouVø-
-

3.9 radius-server attribute class

Få RADIUS Class Kå

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

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

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

oUP'ô- -

oəjö- -

ouV0- -

3.10 radius-server dead-criteria

F6- RADIUS ¶ÕÕž

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

6- RADIUS ¶Õ

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

o0@ | @ | T |
|---|---|
| **time** *seconds* | F0ÄÜ RADIUS ¶E
3G¶ RADIUS ¶ž
å– 1-120 aož |
| **tries** *number* | Fåe%² RADIUS ¶E
U¶ RADIUS ¶E
ú– 1-100ož |

oHFå- **time** *seconds* ó • › 60 aož
tries *number* ó • › 10)ož

oxX%"o- ¶%"

oH0- 14

o6-o- %V RADIUS ¶U¶0– RADIUS ¶E
UoXkUY+¶U¶0ž

oFåo- 1 y¶ž 120 ak¶ 20)ož

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

oèo- … **show radius parameter U6O–** RADIUS ¶Õåož

oЬPʼÎb- -

oəjö- -

oъVm- -

3.11 radius-server deadtime

F€gÔUÅ RADIUS

radius-server deadtime *minutes*

€gÔUÅ RADIUS

no radius-server deadtime

o€	@	T
minutes	*F å — Õ 2 g Ô 9 U Ù Á* RADIUS yEUoŽÅ– 1-1440 Eg 24 4b

oH-Få- *minutes* ó • › 0 Eg/… RADIUS RADIUS

ox¤X%”o- ‰%”

oH-ö- 14

o6-o- ö%¾V RADIUS Myk‟ **radius-server deadtime**
RADIUS

2yβ#%² IPv4 ë RADIUS Mykyœ 60 ã
Uk‰“Ã UDP Myož

```
Ruijie(config)# radius-server host 192.168.100.1 test username test idle-time 60 ignore-acct-port
```

3yβ#%² IPv6 ëRADIUS

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

oè-o- … **show radius server U** RADIUS

oUP’ô- -

oëjö- -

ouV- -

3.13 radius-server key

#RADIUS FMXož

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

HFMXož

no radius-server key

o T text-string

oUP’ô- -

oəjö- -

ouV0- -

3.14 radius-server retransmit

F6- RADIUS MG)ƒž

radius-server retransmit *retries*

6MG)ƒž

no radius-server retransmit

o6-

@	T
retries	RADIUS :MG)ƒKH8© 1-100ož

oF-å- 6MG)ƒ 3ož

ox%”o- %”

oH6- 14

o6-o- AAA %‰ˆ+ÿ6MG)ƒ RADIUS ?)MG6z

oF-å0- 1 yP6MG)ƒ 4ož

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

oè-o- xX **show radius parameter U6** radius Mn)ƒ-å0ž

oUP’ô- -

oəjö- -

ouV0- -

3.15 radius-server source-port

F6- RADIUS 6Mož

radius-server source-port *port*

ê½ž

no radius-server source-port

o¦ê½

(@	T	
port	}ê¼oŽÅ–	1-65535ož

oHFå- ê¼

oxX%”o- ¦%”

oHê½- 14

o6-o- Õ– RADIUS ¼MÕ¦6¼Mk¥XFåž

oFåb- 1 yP1G radius ¼M# 10000ož

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

oèo- … **show running-config U¼Õ–** radius ¼MFåž

oUP’Î-

oeöo-

ouV¦-

3.16 radius-server timeout

FÕ¼G RADIUS ¦ž

radius-server timeout *seconds*

ê½ž

no radius-server timeout

o¦ê½

(@	T	
seconds	¼%yabŽÅ–	1-1000 aož

oHFå- é 5 a

oxX%”o- ¦%”

oH- 14

o6-o- ¥XF RADIUS

oFd- 1 yP1 10 aož

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

oa-o- … **show radius parameter**

oUP’-

oj-

oV-

3.17 radius set qos cos

å– radius G qos NM cos ›

radius set qos cos

radius G qos ›

no radius set qos cos

@	T
-	-

oF- Þ qos Få dscp ›

oX%”o- %”

oH- 14

o6-o- -

oFd- 1 y å– radius G qos NM cos ož

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

oa-o- … **show running-config** qos F

oUP’-

oəjö- -

ouVØ- -

3.18 radius support cui

å– radius u4 cui KÅ

radius support cui

{¼ radius u4 cui KÅ

no radius support cui

@	T
-	-

oHFå- Þu4 cui KÅ

oxX%”o- ß%”

oHØ- 14

o6-o- ¥XUYG}Få radius ku4 cui KÅ

oFåÐ- 1 y Få radius u4 cui KåŽ

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

oàao- … **show running-config** ô radius u4 cui KÅ4Ñ

oUP’Ô- -

oəjö- -

ouVØ- -

3.19 server auth-port acct-port

- AAA Ýo ßž

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

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

o

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

oF å-

oxX%”o-

o -

o6 -o-

oF åd-

1 ï l \ æ ʁ ‘O ⊓ ᵘ Λ ss Æ 192.168.4.12 w 5 y 6ož

```
Ruijie(config)# aaa group server radius ss
Ruijie(config-gs-radius)# server 192.168.4.12 acct-port 5 auth-port 6
Ruijie(config-gs-radius)# end
Ruijie# show aaa group
Type            Reference   Name
---------- ---------- ----------
radius          1               radius
tacacs+         1               tacacs+
radius          1               ss
```

o o-

… **show radius group x** RADIUS Æ

oUP’ b-

-

o ¼X o-

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

oΘ ö-

-

oUV -

-

3.20 show radius acct statistics

RADIUS ž

oH- 14

o6-o- -

oF- 1 yP RADIUS

```
Ruijie#show radius auth statistics
Authentication Servers:

Server Index..... 1
Server Address..... 192.168.1.1
Server Port..... 1812
Msg Round Trip Time..... 0 (msec)
First Requests..... 0
Retry Requests..... 0
Accept Responses..... 0
Reject Responses..... 0
Challenge Responses..... 0
Malformed Msgs..... 0
Bad Authenticator Msgs..... 0
Pending Requests..... 0
Timeout Requests..... 0
Unknowntype Msgs..... 0
Other Drops..... 0
```

oU- -

oV- -

3.22 show radius group

P RADIUS

show radius group

o-

@	T
-	-

oX%”o- %”o”oNM%”

oH- 14

o6-o- -

oF å d- 1 y P RADIUS Á ž

```
Ruijie#show radius group
==========Radius group radius==========
Vrf:not-set
Server:192.168.1.1
  Server key:ruijie
  Authentication port:1812
  Accounting port:1813
  State:Active
```

oU P' ô- -

ou V @- -

3.23 show radius parameter

P RADIUS

show radius parameter

o @	@	T
	-	-

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

o @- 14

o6-o- -

oF å d- 1 y P RADIUS

```
Server Timout:     5 Seconds
Server Deadtime: 0 Minutes
```

oнVø- -

3.24 show radius server

ᵽ RADIUS 7Ñ5Ž

show radius server

o5

@	T
-	-

oxX%”o- ß%”oØ”oNM%”

oÑø- 14

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

oЬP’ô- -

oвVФ- -

3.25 show radius vendor-specific

₱ RADIUS ЌЋåž

show radius vendor-specific

o₱	₡	T
	-	-

oxX%”o- ₿%”oФ”oNM%”

oHФ- 14

oG-o- -

oFåd- 1 y₱ RADIUS ЌЋåž

```
Ruijie#show radius vendor-specific
id      vendor-specific          type-value
----- -------------------- ----------
1       max-down-rate             1
2       port-priority             2
3       user-ip                   3
4       vlan-id                   4
5       last-supplicant-vers 5
        ion
6       net-ip                    6
7       user-name                 7
8       password                  8
9       file-directory            9
10      file-count                10
11      file-name-0               11
12      file-name-1               12
13      file-name-2               13
```

14	file-name-3	14
15	file-name-4	15
16	max-up-rate	16
17	current-supplicant-version	17
18	flux-max-high32	18
19	flux-max-low32	19
20	proxy-avoid	20
21	dialup-avoid	21
22	ip-privilege	22
23	login-privilege	42
26	ipv6-multicast-address	79
27	ipv4-multicast-address	87

oЧP’ĥ- -

oчV⓪- -

4 802.1x

4.1 clear dot1x user all

ïÃÕ- dot1x ÖŽ

clear dot1x user all

o@ @ T

- -

oHFå- -

oxX%”o- Ô”

oHÖ- 15

o6-o- ¥XUY1Õ- dot1x ŠoŽ

oFåÞ- 1 yïÄ dot1x ŠŽ

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

oUP’Ô- -

ouVÖ- -

4.2 clear dot1x user id

ÿG dot1x ï session id Ô‚ŽŽ

clear dot1x user id *session-id*

o@ @ T

- *session-id* -dot1x Š session id

oHFå- -

oxX%”o- Ô”

oHÖ- 15

o6-o- }1Ô session id dot1x ŠkUY4xXož

oF-åd- 1 yí session id 12345678 dot1x šž

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

oUP'ô- -

ou-Vd- -

4.3 clear dot1x user mac

Gs dot1x ï mac Ûjž

clear dot1x user mac *mac-addr*

op@	@	T
- mac-addr	-dot1x š MAC ª

oH-Fa- -

ox-X%"o- Ø"

oH-ß- 15

o6-o- }1Ô mac ª dot1x ŠkUY4xXož

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

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

oUP'ô- -

ou-Vd- -

4.4 clear dot1x user name

Gs dot1x ïÛjž

clear dot1x user name *name-str*

o@	@	T
	- name-str	-dot1x ê

oHFå-	-

oxX%”o- Ô”

oHô- 15

4.6 dot1x accounting

F•åo¸ož

dot1x accounting *list-name*

o¤®	¡@	T
	list-name	*“ Ã • c ç n*

o¤F•å- -

ox»X%”o- ¶%”k wlan ¶‰”

o¤Ø- 15

o6-o- ò aaa dot1x “ãé¿4xXÊ¡•éož
wlansec Fãéæ¶FåÃ

oF•å0- 1 yF•åÙÑ¸ož

```
Ruijie(config)# dot1x accounting dot1x-acct
```

oÙP’ò- -

o¤V0- -

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

F•å+)¿¼E“ãéž

dot1x acct-update base-on first-time server

{“¿¼ãéž

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

o¤®	¡@	T
	-	*ó • ¼ {*

o¤F•å- {¼

ox»X%”o- ¶%”

o¤Ø- 15

o6-o- BÆ¥ÆG“ÃÊxÀ}LÀÀÆ“ÃÊ
Ê“ÃÆUYFåxX

oFåd- 1 yFå+)ÆE“ÃÊž

```
Ruijie(config)# dot1x acct-update base-on first-time server
```

oÞP’ô- -

oÞVÐ- -

4.8 dot1x auth-mode

F¾o”ož

dot1x auth-mode { **eap | chap | pap** }

o¥Æ	¿À	T
	-	¢p( )]TJET0.75 g118.26 46324 442.68 0.24 ref118.26 64764 0.24 15.6 ref271.8 647

oH¥Fåª- -

oxXX%”o- ß%”k wlan ¶%”

oH¥ß- 15

oG¬o- ò aaa dot1x šß4xXÊ¿šož
wlansec Fåª¿ß¿FåÃ

oF¬åª- 1 yFåÚÑ¿ož
Ruijie(config)# dot1x authentication dot1x-authen

oÙP’Ô- -

oªVß- -

4.10 dot1x dbg-filter

S+Ô mac æ¶Ôož
dot1x dbg-filter *H.H.H*

Z¶ož
no dot1x dbg-filter *H.H.H*

o¿æ

¿@	T
H.H.H	¬ } ÿ ß ² ¡ ’ Î ï Mac ª

oH¥Fåª- æß

oxXX%”o- ß%”

oH¥ß- 15

oG¬o- ßÿ{ÈUY*¥X+æ¶k9Ã-
ßÿž

oF¬åª- 1 yFÊ Mac æ¶ož
Ruijie(config)# dot1x dbg-filter 00d0.f800.0001

oÙP’Ô- -

oV0- -

4.11 dot1x default-user-limit

FMUž

dot1x default-user-limit *num*

ž

no dot1x default-user-limit

o

@	T
num	*' ò%² N M Ä U • š ï ƒož @ ƒ 8* 1-1000000o ž

o-å-

¼

ox%”o- NM%”4X ÀE

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

4.13 dot1x encryption only

Få 802.1x WEB ðž

dot1x encryption only

¼ 802.1x WEB ðž

no dot1x encryption only

oð	@	T
	-	

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

4.14 dot1x event server-invalid action bypass-wlan

Få RADIUS

dot1x event server-invalid action bypass-wlan *wlan-id*

¼ RADIUS

no dot1x event server-invalid action bypass-wlan

@	T
wlan-id	*! ÿ* wlan id

Þ RADIUS

%”

15

RADIUS wlan

1 yFå RADIUS

```
Ruijie(config)#dot1x event server-invalid action bypass-wlan 10
```

-

u4

4.15 dot1x get-static-ip enable

IP

dot1x get-static-ip enable

IP

no dot1x get-static-ip enable

@	T

¼

%”

4.17 dot1x mab-username upper

Få MAB

dot1x mab-username upper

	¼
	%
	15
MAB	MAB MAB MAB
1	yFå mab

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

	-
	-

4.18 dot1x mab-username format

Få mab

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

no dot1x mab-username format

	¼
	%

oH-

15

o6-o- Mab

xx-xx-xx-xx-xx-xx kFå with-hyphen

Mab xxxx.xxxx.xxxx kFå with-dot

Mab xx:xx:xx:xx:xx:xx kFå with-colon

oF-d- 1

yFå mab

Ruijie(config)# dot1x mab-username format with-hyphen

oUP'b-

-

ouV-

-

4.19 dot1x max-req

Få request/challenge

dot1x max-req *num*

o-

@	T		
num	request/challenge	3kFå	1-10

oF-a-

3

ox%"o-

%"

oH-

15

o6-o-

oF-d- 1

yFå request/challenge

Ruijie(config)# dot1x max-req 2

oUP'b-

-

ouV-

-

4.20 dot1x multi-account enable

Fa4%² mac

dot1x multi-account enable

{ú4%² mac Ø

o6-o- U#Fåž

9² STA 4kxŽWlyßÈYFåxX.

wlan ‰”FåOyi9BFåOy

oFåb- 1 yFåOyož

no dot1x re-authentication

o@	(@	T
	-	-

oHFå-	H¼
oxX%”o-	ß%”
oHß-	15
oG-o-	MKžEkOE{ž
oFåd- 1	yFMšž

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

oUP’ô-	-
ouVß-	-

4.24 dot1x timeout re-authperiod

FMšž

dot1x timeout re-authperiod *time*

o@	(@	T
time	*M • š • œ k % y a k ó •* 3600kFå 1-65535	

oHFå- 3600	a
oxX%”o-	ß%”
oHß-	15
oG-o-	åJož
oFåd- 1	yFMšž

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

oUP’ô-	-

oиVФ- -

4.25 dot1x timeout quiet-period

FÅžž

dot1x timeout quiet-period *time*

o

@	T		
time	• š â Â e ² ó ž • k % y a k ó •	10kFå	1-65535

oHFå- 10

oxX%”o- ß%”

oHФ- 15

o6-o- ÁJož

oFåt- 1 yFÅžž

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

oUP´ô- -

oиVФ- -

4.26 dot1x timeout supp-timeout

Få request/challenge MnoŽ

dot1x timeout supp-timeout *time*

o

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

oHFå- 3 a

oxX%”o- ß%”

oHФ- 15

o6-o- ÁJož

oFåd- 1 yFå request/challenge fMnoz

```
Ruijie(config)# dot1x timeout supp-timeout 10
```

oUP'ô- -

ouVø- -

4.27 dot1x timeout server-timeout

Fz

dot1x timeout server-timeout *time*

op @

oHFå- 3	a

oxX%”o- ₿%”RB¶B“¬Â?ßÐiFÐßÆÐ 3

4.30 dot1x valid-ip-acct enable

FBH IP GÃž

dot1x valid-ip-acct enable

BH IP GÃž

no dot1x valid-ip-acct enable

@	T
-	ó • ¼ {

¼

%”

15

IP UYFaož

1 yBH IP GÃž

```
Ruijie(config)# dot1x valid-ip-acct enable
```

-

-

4.31 dot1x valid-ip-acct timeout

BH IP ž

dot1x valid-ip-acct timeout *time*

ž

no dot1x valid-ip-acct timeout

@	T
- time	*Ý ž ž • k ó •* 5

ó 5

%”

oH 15

o6 o- o4BH IP IP
F

oF 1 y BH IP z

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

oUP'Ô- -

ouV- -

4.32 dot1x-mab

F mab ož

dot1x-mab

z

no dot1x-mab

o

@	T
-	-

oF 1/4 mab

oX%"o- wlan %"

oH 15

o6 o- U#Få
WLAN . mac X

oF 1 y mab ož

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

oUP'Ô- -

ouV- Nu4

4.33 show dot1x

ô 802.1x #'@z

show dot1x

o@	@	T
	-	-

oF-å-	-

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

o-o-	15

o6-o-	¥XUYô 802.1x #'@ž

oFåô- 1 yô 802.1x #'@z

```
Ruijie#show dot1x

802.1X basic information:
   802.1X Status ..... enable
   Authentication Mode ..... eap
   Authorization mode ..... disable
   Total User Number ..... 0 (exclude dynamic user)
   Authenticated User Number ..... 0 (exclude dynamic user)
   Dynamic User Number ..... 0
   Re-authentication ..... disable
   Re-authentication Period ..... 3600 seconds
   Re-authentication max ..... 3 times
   Quiet Period ..... 10 seconds
   Tx Period ..... 30 seconds
   Supplicant Timeout ..... 3 seconds
   Server Timeout ..... 5 seconds
   Maximum Request ..... 3 times
   Client Online Probe ..... disable
   Eapol Tag ..... enable
   802.1x redirect ..... disable
   Private supplicant only ..... disable
```

<Ky

<	¢
802.1X Status	@Fåa 802.1x

Authentication Mode	‰”
Total User Number	m3 E
Authed User Number	
Dynamic User Number	M%”
Re-authentication	M
Re-authentication Period	M Ê
Re-authentication max	f
Quiet Period	Ê
Tx Period	request/id Mnee
Supplicant Timeout	request/challenge Mnee
Server Timeout	E
Maximum Request	f
Client Online Probe	My¼
Eapol Tag	Eapol k tag ¼
802.1x redirect	W su ¼
Private supplicant only	My¼

oU P’ô-

-

ou V -

4.34 show dot1x auth-address-table

ðU bž

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

o

@	T
addr	*6 Ä € mac P*
Interface	*6 € M ª P ç n*

oF å-

-

ox X%”o- ”o %”o M%”

o -

15

o6- o- Ubž

oF ä- 1 yðUbž

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

Packet-Num : 0
Req-Interval: 30 Seconds

<Ky

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

oUP'ô-

-

oV0-

-

4.36 show dot1x max-req

ô request/challenge Mn)ƒž

show dot1x max-req

o

@	T
-	-

oxX%"o-

4.37 show dot1x port-control

ðIOM'ôž

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

o@ @ T

interface-type € M • º

*interface-numbe*r € M Ú Z

oxX%"o- Ô"oB%"oNM%"

oHð- 15

o6-o- ¥XUYðIOM'ôž

oFåd- 1 yðIOM'Î

```
Ruijie#show dot1x port-control
Interface Mode            Dynamic-User Static-User Max-User    Authened MAB
--------- ---------- ------------ ------------ --------- -------- ---------
Gi0/5     mac-based    0            0            unlimited no       disable
```

<Ky

<	¢
Interface	IOMdf
Mode	M%"
Dynamic-User	MÉ
Static-User	MÉ
Max-User	MÑ
Authened	MKÙ
MAB	MFå MAB

oUP'ô- -

ouV- -

4.38 show dot1x private-supplicant-only

ðHž

show dot1x private-supplicant-only

o@	@	T
	-	-

oxX%”o- Ô”oB%”oNM%”

oH- 15

o6-o- ¥XUYÔ¡HZ

oF-1- 1 yÔ¡HZ

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

private-supplicant-only: Disabled
```

<Ky

<	¢
private-supplicant-only	¡HZ

oUP’Ô- -

ouV- -

4.39 show dot1x probe-timer

ÔMyZ

show dot1x probe-timer

o@	@	T
	-	-

oxX%”o- Ô”oB%”oNM%”

oH- 15

o6-o- ¥XUYÔMyZ

oF-1- 1 yÔMy@

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

<Ky

<	¢

Hello Interval	MyuÊ
Hello Alive	Myx

oUP'ô- -

ouV@- -

4.40 show dot1x re-authentication

ôMx
show dot1x re-authentication

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

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

oH- 15

o6-o- ¥XUYôMx

oFåd- 1 yôMx

```
Ruijie#show dot1x re-authentication

Reauth-Enabled: Disabled
```

<Ky

<	¢
Reauth-Enabled	Mx

oUP'ô- -

ouV@- -

4.41 show dot1x reauth-max

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

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

oxX%”o- Ô”oB%”oNM%”

oH- 15

o6-o- ¥XUYÔ request/id Mn)ƒž

oF-d- 1 yÔ request/id Mn)ƒ

```
Ruijie#show dot1x reauth-max

Reauth-Max: 3 Times
```

<Ky

<	¢
Reauth-Max	request/id Mn)ƒ

oUP’ô-

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

oЧP'ô- -

oнV@- -

4.43 show dot1x timeout quiet-period

ôêêž

show dot1x timeout quiet-period

op@

@	T
-	-

oxX%"o- @"oB%"oNM%"

oH@- 15

o6-o- ôêêž

oFå0- 1 yôêê

```
Ruijie#show dot1x timeout quiet-period

Quiet-Period: 10 Seconds
```

<Ky

<	¢
Quiet-Period	êê

oH"w=oHJ'ĵnDAYÀHfD

oиVФ- -

4.44 show dot1x timeout re-authperiod

ðMěžz

show dot1x timeout re-authperiod

oфФ

@	T
-	-

oxX%”o- Ô”oB%”oNM%”

oHô- 15

o6-o- ðMěžz

oFåd- 1 yðMěe

```
Ruijie#show dot1x timeout re-authperiod

Reauth-Period: 3600 Seconds
```

<Ky

<	¢
Reauth-Period	Měe

oUP´ô- -

oиVФ- -

4.45 show dot1x timeout server-timeout

ðžz

show dot1x timeout server-timeout

oфФ

@	T
-	-

oxX%”o- Ô”oB%”oNM%”

oHô- 15

o6-o-

oF å0- 1

Ruijie#show dot1x timeout server-timeout

Server-Timeout: 5 Seconds

<K y

<	¢
Server-Period	

oUP'ô-

ouV@-

4.46 show dot1x timeout supp-timeout

request/challenge M n ž

show dot1x timeout supp-timeout

o@

@	T
-	-

oxX%"o-

15

o6-o-

request/challenge M n ž

oF å0- 1

request/challenge M n e

Ruijie#show dot1x timeout supp-timeout

Supp-Timeout: 3 Seconds

<K y

<	¢
Supp-Timeout	request/challenge M n e

oUP'ô-

ouV@-

4.47 show dot1x timeout tx-period

ô request/id Množ

show dot1x timeout tx-period

op@

oF₫ 1 y0₫

Vlan id	ï vlan id
Access from port	¶M
Time online	¢
User ip address	ï IP ª
Max user number on this port	¥Ì¶K
Authorization session time	¥Ó
Supplicant is private	¥¶® su
Start accounting	¥“Ã
Permit proxy user	¥Vò
Permit dial user	¥Z
IP privilege	¥ IP Ó
user acl-name	¥S ACL 'Î

oЬP'ô- -

oнVФ- -

4.50 show dot1x user name

Gï mac ðÎbž

show dot1x user name *name*

oÞ®

@	T
-name	-ð…

oxX%”o- Ô”oB%”oNM%”

oHÓ- 15

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

oFåd- 1 yðÎ

```
Ruijie#show dot1x user name ts-user

User name: ts-user
User id: 16777225
Type: static
Mac address is 0023.aeaa.4286
Vlan id is 2
```

```
Access from port Gi0/5
Time online: 0days 0h 0m17s
User ip address is 192.168.3.21
Max user number on this port is 0
Authorization session time is 1000 seconds
Supplicant is private
Start accounting
Permit proxy user
Permit dial user
IP privilege is 0
 user acl-name ts-user_6_0_0 :
```

<Ky

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

oPˆ- -

oV- -

5 ARP Check

5.1 arp-check

ө ARP ϕž

arp-check

¼ ARP ϕž

no arp-check

(@	T
-	-

¼ ARP Check

NMFå%”§å%”

14

Ç¶ö€ÎÐÿ• ARP ¡kèà ARP ϕž

¶ GigabitEthernet 0/1 ө ARP Check ÿ

```
Ruijie# configure terminal
Ruijie(config)# interface GigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# arp-check
Ruijie(config-if-GigabitEthernet 0/1)# end
Ruijie# configure terminal
Ruijie(config)# wlansec 1
Ruijie(config-wlansec)# arp-check
Ruijie(config-wlansec)# end
```

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

-

-

-

5.2 show interface arp-check list

ôNMŸ ARP Check nžz

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

o | @ | T |
|---|---|
| | *interface-type* | ÄM |
| | *interface-number* | ÄMÐ |
| | *wlan-id* | — ¿WLAN ID |

oxX%”o-

Ô”

oH-

14

o6-o-

ÿ4xXkUYôù IP

oFåù-

```
Ruijie(config)#show interface arp-check list
INTERFACE                SENDER MAC     SENDER IP          POLICY SOURCE
------------------------ -------------- ---------------- --------------------
GigabitEthernet 0/1      00D0.F800.0003    192.168.1.3        address-bind
GigabitEthernet 0/1      00D0.F800.0001    192.168.1.1        port-security
GigabitEthernet 0/4                       192.168.1.3        port-security
GigabitEthernet 0/5      00D0.F800.0003    192.168.1.3        address-bind
GigabitEthernet 0/7      00D0.F800.0006    192.168.1.6        AAA ip-auth-mode
GigabitEthernet 0/8      00D0.F800.0007    192.168.1.7        GSN
Ruijie(config)#show wlan arp-check list
INTERFACE                SENDER MAC     SENDER IP          POLICY SOURCE
------------------------ -------------- ---------------- --------------------
WLAN 1                      00D0.F800.0008    192.168.1.8        GSN
```

<Ky

<	
INTERFACE	NMdf
SENDER MAC	› MAC ª
SENDER IP	› IP ª
POLICY SOURCE	“Ð

oUP’ô-

-

oʁV@- -

6 T» ARP °

1.1 anti-arp-spoofing ip

arp -áž

anti-arp-spoofing ip *ip-address*

arp -áž

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

ip-address	IP ª

oHF å-

oxX%”o-

oH0-

o6-o-

14

1o•-

7 IP+MAC –

7.1 address-bind

IP+MAC

address-bind { *ip-address* | *ipv6-address* } *mac-address*

IP+MAC

no address-bind { *ip-address* | *ipv6-address* } *mac-address*

	T	
ip-address	Ç	IPv4
ipv6-address	Ç	IPv6
mac-address	Ç	MAC

—

¶F

14

-

1 y IPv4+MAC

```
Ruijie# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# address-bind 192.168.5.1 00d0.f800.0001
```

1 y… **show run** **show address-bind x**

-

-

-

7.2 address-bind install

address-bind install

no address-bind install

	@	T

o

@	T
compatible	Ã% ”
loose	!& ”
strict	% ”

o -

%”

o X%”o-

F

o -

14

o -o-

-

o - 1

ywJ IPv6 %”y

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

o o-

… **show run x**

o P’ -

-

o -

-

o V -

-

7.4 address-bind uplink

F

address-bind uplink *interface-id*

”

no address-bind uplink *interface-id*

o

@	T
interface-id	AEM L2AP M

o -

o X%”o-

F

oH- 14

o6-o- -

oFa- 1 ywJ IPv6 ”y

```
Ruijie# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# address-bind uplink GigabitEthernet 0/1
```

oo- …

<Ky

<	₡

8 DHCP Snooping

8.1 clear ip dhcp snooping binding

}ĺ DHCP Snooping ƒ¢Řŷ•Ô”ğ4xXož

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

o@ø

@	T
mac	*6 í ” ï* MAC ož
vlan-id	*6 í ” ï* vlan idož
ip	*6 í ” ï* IP ož
interface-id	*6 í ” ï ñ K N Mož*
wlan-id	*6 í ” ï ñ K* WLAN

o»X%”o- Ô”

oHŘ- 14

o6-o- ğ¥XkUYĺ DHCP snooping ƒ¢Řž

Ķ ≥ Č¨H ő ˇ ₅ ˛ ◂ IP Source Guard µ Ļ ₅ ¡ ı DHCP ¨I Ո ő Ḃ ɱ ł ɔ ¢

oF∂ð- 1 yļµ DHCP snooping ƒ¢ŷ

```
Ruijie# clear ip dhcp snooping binding
Ruijie# show ip dhcp snooping binding
Total number of bindings: 0
NO.    MACADDRESS          IPADDRESS        LEASE(SEC)    TYPE          VLAN
INTERFACE
----- ------------------ --------------- ------------ ------------- ----- --------------------
```

oЬP’Ĵb- -

oʁV@- -

8.2 ip dhcp snooping

o‼ DHCP Snooping ož

ip dhcp snooping

{# DHCP Snooping ož

no ip dhcp snooping

o@	@	T
	-	-

oHFå- ¥¼ž

oxX%”o- ¶FÅ¼”

oHß- 14

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

oFåb- 1 y@ DHCP snooping ¶¥¼

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

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

oUP’ĵ- -

oəjö- -

ouV®- -

8.3 ip dhcp snooping bootp-bind

o DHCP Snooping u4 Bootp Çž

ip dhcp snooping bootp-bind

{¼ DHCP snooping u4 Bootp Çž

no ip dhcp snooping bootp-bind

o@	@	T
	-	-

oHFå- ¥¼ž

oxX%”o- ‰FŠ”

oŠ‹- 14

o6-o- ‰Ñ DHCP Snooping N+ Bootp ‡G‹o‹k DHCP Snooping + Bootp #‘‡LŠMo‹ Bootp ‹kDHCP Snooping 1 Bootp ‰€ ož

oFå‡- 1 y‹ DHCP Snooping u4 Bootp ‡

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

oà‹o- 1 y… **show ip dhcp snooping x‰U‹** DHCP Snooping ‰u4 Bootp Qž

oUP’Î- -

oœjö- -

ouV‹- -

8.4 ip dhcp snooping check-giaddr

o DHCP Snooping u4Ô Relay Ł‡ž

ip dhcp snooping check-giaddr

¼ DHCP snooping u4Ô Relay Ł‡ž

no ip dhcp snooping check-giaddr

o‰ž

‹@	T
-	-

oŠF‹å- ¥‹ž

oxX%”o- ‰FŠ”

oŠ‹- 14

standard-format	Option82 #ðž

oHFå- ¼žž

oxX%”o- ¶FÅ”

oHð- 14

oG-o- 1 y*FÅXk1¨ DHCP Ь option82 ˆkDHCP ¥E option82 #¾
ðžž
2yo option82 #ðÛ%”ož

DHCP Snooping option82 ų l DHCP Relay option82 ų l в l ų ¢

oFåd- 1 yGå DHCP Ьd option82 #¥¼

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

oèo- 1 y… **show ip dhcp snooping x KUð** Option82 ðž

oЬP’ô- -

oeïo- 1 y DHCP Relay option82 cžoŽ-Â DHCP † option82 <ðž

oнVð- -

8.9 ip dhcp snooping information option format remote-id

å– option82 #ðÛ%”ŽŸ¾ remote-id #ðbž

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

H– option82 #¥¾ remote-id #ðbž

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

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

oHFå- ¼žž

o»X%”o-	¶ßF¾”o
oH¾-	14

oF-å0- 1 yp6å

2y¥XFåCAEMoAP MßxÿMkyþpžUNMFåX1kâž

0ÿ ″ ˇ ¡ ő ą˘ ₅ DHCP ḍ ṛ ₅ ¡ TRUST ¡ ¢

oFåd- 1 yßåM GigabitEthernet 0/1 TRUST Mÿ

```
Ruijie# configure terminal
Ruijie(config)# interface GigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# ip dhcp snooping trust
Ruijie(config-if-GigabitEthernet 0/1)# end
```

oèo- 1 y… **show ip dhcp snooping xKUßNMßž**

oЬP´ò- 1 yÿNMFåžUNDÞ¾ßå– TRUST Mož

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

2y© 2 CAEMoAP MßxÿMgÿ¥XžéÚPjöž

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

oəjÖ- -

oʉV- -

8.12 ip dhcp snooping verify mac-address

ø MAC âž

ip dhcp snooping verify mac-address

{¼ MAC âž

no ip dhcp snooping verify mac-address

o	@	T
-	-

oHFå- ¥ž

o×X%”o- ¶FåŒ”

oHß- 14

o6-o- › MAC ¥€Û UNTRUST NM DHCP ŁJÞèÈB› MAC ª

y DHCP † CLIENT MAC <Ç,což MAC Å1t’ož

oFåd- 1 y@ DHCP ‡ MAC ÿ

```
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping verify mac-address
Ruijie(config)# end
```

oèo- 1 y…

2yj@ VLAN1 VLAN10 ø DHCP Snooping ÿ

```
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping vlan 1-10
Ruijie(config)# end
```

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

oЫP’ô- 1 y3å– VLAN ¨ 1~4094 8Ëé¨Pjöž

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

2y36 VLAN ké¨Pjöž

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

oəjö- -

oыV@- -

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

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

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

[%ž

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

op@

@	T
vlan-id	*6 g Á E* VLAN Ø

oHF å- ¥ž

o×X%”o- NMFå‰”

oH6- 14

o6-o- *Få¾Xk¢ DHCP †option82 #¾k%”k1 option82 ÿ¾ circuit-id Ê VLAN “w6 VLANož

oFåd- 1 yßå DHCP Ь option82 #k¿ option82 ÿ¾ circuit-id VLAN4094 “w VLAN4093 ÿ

```
Ruijie# configure terminal
Ruijie(config)# interface GigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# ip dhcp snooping vlan 4094 information option change-vlan-to vlan 4093
Ruijie(config-if-GigabitEthernet 0/1)# end
```

oèo- 1 y… **show run xKUŒoož**

oЧP'ô- 1 y36 VLAN ĸéPjöž

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

oəjö- -

oнVŒ- -

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

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

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

{4ož

no ip dhcp snooping vlan *vlan-id* **information option format-type circuit-id string** *ascii-string*

oßž

ß@	T
vlan-id	DHCP Ьñ VLAN
ascii-string	Circuit ID }ËÄ

oнFå- ¥ož

oxX%"o- NMFß%"

oнŒ- 14

o6-o- *FßXk¢ DHCP †option82 #ŒkŒ)%"ĸ1 option82 ¥¾ circuit-id Ä‰Ä‰Xk† 3 ñ 63 -ož

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

```
Ruijie# configure terminal
```

```
Ruijie(config)# interface GigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# ip dhcp snooping vlan 4094 information option format-type circuit-id
string port-name
Ruijie(config-if-GigabitEthernet 0/1)# end
```

oèo- 1 y… **show run xKU8Koož**

oЧP'ô- 1 y36 VLAN kéJPjöž

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

2y36#©. 3 ñ 63 kéJPjöž

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

oəjö- -

oнVø- -

8.16 ip dhcp snooping vlan max-user

åM6 vlan ßž

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

{4ož

no ip dhcp snooping vlan *vlan-word* **max-user** *user-number*

oß² | @ | T |
|---|---|
| *vlan-word* | *ÿ* \| vlan 8 |
| *user-number* | ª• *Â Ý ï ƒ O* |

oHFå- ¥ož

o×X%"o- NMFå‰"

oHß- 14

o6-o- *FåXkoÂNMy VLAN ß,èUYÏq- DHCP xèž

oFåd- 1 yßåM 1 VLAN 1~10 C VLAN 20 ßÑ 30 ÿ

```
Ruijie# configure terminal
Ruijie(config)# interface GigabitEthernet 0/1
```

```
Ruijie(config-if-GigabitEthernet 0/1)# ip dhcp snooping vlan 1-10,20 max-user 30
Ruijie(config-if-GigabitEthernet 0/1)# end
```

oèo- 1 y… **show run xKUßoož**

oЧP’ô- 1 y3NM DHCP snooping TRUST MkéPjöž

o¬ àúÐ 1

oəjö- -

oиVØ- -

8.18 show ip dhcp snooping

}ð DHCP Snooping ##ÕÔ”ü4xXož

show ip dhcp snooping

op@	@	T
	-	-

oxX%”o- Ø”

oHØ- 14

o6-o- ü4xXkUYÐÐ DHCP Snooping FÕž

oFåÐ- 1 yÐÐ DHCP Snooping FÕ

```
Ruijie# show ip dhcp snooping
Switch DHCP snooping    status                          :     ENABLE
DHCP snooping    Verification of hwaddr status      :     DISABLE
```

oЧP’ȏ- -

oʁV@- -

9 IP Source Guard

9.1 ip source binding

¨ IP

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

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

```
Ruijie(config)# ip source binding 0000.0000.0002 vlan 1 1.1.1.2 wlan 1
Ruijie(config)# end
```

2y[illegible] IP+MAC

```
Ruijie# configure terminal
Ruijie(config)# ip source binding 0000.0000.0001 vlan 1 1.1.1.1 ip-mac
Ruijie(config)# end
```

3y[illegible] IP

```
Ruijie# configure terminal
Ruijie(config)# ip source binding 0000.0000.0001 vlan 1 1.1.1.1 ip-only
Ruijie(config)# end
```

oè¤o-	1	y…	**show ip source binding** xKU IP
oUP'b-	1	y…	no xX[illegible]

```
% Failed to execute command, because of "No such binding entry
[mac 0000.0000.0001 ip 1.1.1.1 vlan 2   GLOBAL]".
```

2yF[illegible] VLAN

```
% Failed to execute command, because of "VLAN 4094 not exist".
```

3yF[illegible] MAC CAEMo AP

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

oəjö- -

ouV[illegible]- -

9.2 ip verify source

[illegible] IP Source Guard o

ip verify source [**port-security**]

[illegible] IP Source Guard o

no ip verify source

o[illegible]	[illegible]@	T
	port-security	Få IP Source Guard g IP+MAC yo

oH[illegible]- [illegible]o

oxX%”o- NMFå‰”§å¾”

oH®- 14

o6-o- 1 y*¥XßM IP Source Guard kUY+ÿÂ IP ykÿÂ IP+MAC yož

2yNu4Ñµ 2 CAEMoAP MoxÿMYCÑµ WLAN FåXožÑ

M1Fåž

ᵉ Ɛ ϑ IP Source Gourd µ l ˊ ɪ ä ɱ ˝I ˇ ʏ DHCP Snooping ˝I ∑ ÷ ¢ ε

ⁱ ℓ ℓ ◂ ₋ IP Source Gourd µ l ő ¨ ت ÷ ä ɱ ㅛ ʏ ő ά ɾ ˚ ₅ ˛ Ķ ε ⁱ ɪ ˝I ɱ

0y ت ¢

oF⁄åt- 1 yÐåEMy¿– WLAN IP Source Guard kN+ÿÂ IP yy

```
Ruijie# configure terminal
Ruijie(config)# interface GigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# ip verify source
Ruijie(config-if)# end
Ruijie(config)# wlansec 1
Ruijie(config-wlansec)# ip verify source
Ruijie(config-wlansec)# end
```

2yÐåM 2 IP Source Guard k+ÿÂ IP+MAC yy

```
Ruijie# configure terminal
Ruijie(config)# interface GigabitEthernet 0/2
Ruijie(config-if-GigabitEthernet 0/2)# ip verify source port-security
Ruijie(config-if)# end
Ruijie(config)# wlansec 2
Ruijie(config-wlansec)# ip verify source port-security
Ruijie(config-wlansec)# end
```

oè¤o- 1 y… **show ip source binding xKUß** IP Source Guard ïðž

2y… **show run xKUßxKßž**

oЧP’Ô- 1 yÇ DHCP ’MqkéPjöž

```
% Failed to execute command, because of “Security configuration conflict in interface name".
```

oəjö- 1 yo IP Source Gourdkßaï"Êž

ouVß- -

9.3 Ip verify source exclude-vlan

ѫM6 IP Source Guard ѝ VLAN ož

ip verify source exclude-vlan *vlan-id*

îѫM IP Source Guard ѝ VLAN ož

no ip verify source exclude-vlan *vlan-id*

oфѫ		
	vlan-id	IѫM IP Source Guard Oò vlan id

oHF-å- ѫ¼ož

oxX%”o- NMFå‰”ѫ‰”

oHѫ- 14

o6-o- 1 yo IP Source Guard ѫMk*¥XUYOѫM? VLAN I IP Source Guard Oò

? VLAN 8Ä IP tyѫNygož

2yѫM¼ IP Source Guard ek6ѝ VLAN -ktžož

3yu4ѫµ 2 CAEMo↗AP Mo↗xyMѫµ WLAN Fåž

▲ 5 i ϱ в IP Source Guard м z п1 VLAN ¢

oF-åd- 1 yѫѫM IP Source Guard w6ѝ VLANy

```
Ruijie# configure terminal
Ruijie(config)# interface GigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# ip verify source
Ruijie(config-if-GigabitEthernet 0/1)# ip verify exclude-vlan 1
Ruijie(config-if)# end
Ruijie(config)# wlansec 1
Ruijie(config-wlansec)# ip verify source
Ruijie(config-wlansec)# ip verify exclude-vlan 1
Ruijie(config-wlansec)# end
```

oàѫo- 1 y… **show run xKU6xѫž**

oЬP’ò- -

oəjö- -

oиV0- -

9.4 show ip source binding

0 IP ţG0ž

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

o@

@	T
ip-address	P+• ip t
mac-address	P+• mac t
dhcp-snooping	P
static	P
vlan-id	P+• vlan t
interface-id	P+ MŢž
wlan-id	ª P + • — ¿ N µ WLAN Ţž

ox X%”o- 0”

oH0- 14

o6-o- ü4xXkUY0 IP ţG0ž

oF0- 1 y

```
Ruijie# show ip source binding static
Ruijie#show ip source binding static
Total number of bindings: 5
NO.     MACADDRESS            IPADDRESS          LEASE(SEC)     TYPE              VLAN
INTERFACE
----- ------------------ --------------- ------------ ------------ ----- --------------------
1       0001.0002.0001      1.2.3.2           Infinite       Static          1       Global
2       0001.0002.0002      1.2.3.3           Infinite       Static          1       GigabitEthernet 0/5
3       0001.0002.0003      1.2.3.4           Infinite       Static          1       Global
4       0001.0002.0004      1.2.3.5           Infinite       Static          1       Global
5       0001.0002.0005      1.2.3.6           Infinite       Static          1       WLAN 1
```

<Ky

<	t
Total number of bindings	0 Binding ţ€

NO.	“£Z
MACADDRESS	ï MAC ª
IPADDRESS	ï IP ª
LEASE(SEC)	“£ž
TYPE	“£
VLAN	₹ VLAN
INTERFACE	ÄMdfẽ– WLAN ID

oЧP’ô- -

oчV0- -

9.5 show ip verify source

ô IP Source Guard ŋ¾ž

show ip verify source [**interface** *interface-id*] [**wlan** *wlan-id*]

op@

@	T
interface-id	P+ÄMŋ¾
wlan-id	ª *P* + • — ¿ WLAN ŋ¾

ox%”o- ”

o- 14

o6-o- ÿ4xXkUYô0 IP ÿõ IP Source Guard u4“

y

- Inactive-restrict-offkKNMZÄ IP Source Guard ož
- Inactive-system-errork9 ŋ¾ž
- Activek ŋ¾ž

oFaô- 1 y

```
Ruijie # show ip verify source
Total number of bindings: 7
NO.     INTERFACE               FILTERTYPE   FILTERSTATUS            IPADDRESS
MACADDRESS         VLAN TYPE
----- ------------------- ---------- -------------------   --------------- --------------- -------- -------------
1       Global                  IP+MAC       Inactive-system-error   192.168.0.127     0001.0002.0003   1
```

```
Static
2       GigabitEthernet 0/5   IP-ONLY       Active                  1.2.3.4          0001.0002.0004   1
DHCP-Snooping
3       Global                IP-ONLY       Active                  1.2.3.7          0001.0002.0007   1
Static
4       Global                IP+MAC        Active                  1.2.3.6          0001.0002.0006   1
Static
5       GigabitEthernet 0/1   UNSET         Inactive-restrict-off   1.2.3.9          0001.0002.0009   1
DHCP-Snooping
6       GigabitEthernet 0/5   IP-ONLY       Active                  Deny-All
7       WLAN 1                IP-ONLY       Active                  Deny-ALL
```

<Ky

<	¢
NO.	“£Z
INTERFACE	ÄNMß WLAN
FILTERTYPE	E
FILTERSTATUS	Ä
IPADDRESS	ï IP ª
MACADDRESS	ï MAC ª
VLAN	VLAN
TYPE	, DHCP Snooping

10 DNS SNOOPING

10.1 clear free-url

ŽŠ URL 'Ôž

clear free-url

o@

@	T
-	-

oxX%"o- Ô"o%"

oH- 14

o6-o- ¥XUYŽŠ URL 'Ôž

oF-å- 1 yŽŠ APP 'Î

```
Ruijie(config)#clear free-url
```

oUP'Ô- -

oV- -

10.2 free-url

Få URLož

free-url { **weixin** | **sina** | **iphone** | **url** *url* }

H URLož

no free-url { **weixin** | **sina** | **iphone** | **url** *url* }

o@

oH¥å-	Þ¤Fåž	
o×X%”o-	ß%”	
oHø-	14	
o6-o-	š	URL UYcÞÓž
oFåd-	1	yFå URLož

```
Ruijie#configure terminal
Ruijie(config)# free-url weixin
Ruijie(config)#exit
```

oèo-	1	y…	**show free-url xKôš**	URL ’ôž
oÞP’ô-	-			
oəjö-	-			
o¤Vø-	-			

10.3 show free-url

ôš URL ’ôž -

Â ð

_ 0

```
Total number of ip address       : 11


======================== free-url domain name table ==========================

Host                             type
```

11 IGMP Snooping

11.1 clear ip igmp snooping gda-table

ž Gnž

clear ip igmp snooping gda-table

@	T
-	-

Ô”

14

IGMP Snooping GnyVLAN Ío MožVLAN Ío Gnž%GnYMgUMMbMkï ož %GnYMgUMMbMkož. **clear ip igmp snooping gda-table xMož**

```
Ruijie# clear ip igmp snooping gda-table
```

-

-

11.2 ip igmp snooping

o IGMP Snooping w– IVGL g%”ož

ip igmp snooping

IGMP Snoopingož

no ip igmp snooping

IGMP Snooping

default ip igmp snooping

@	T

-	-

oH Fåo- ¼ IGMP Snooping

ox X%”o- ß %”ê AC ap-config %”

oH ßo- 14

o6 -o- ¨ IVGL %”k_ VLAN Á v@ ÿ o ß Q ß c%² VLAN ß M
Ь N v Á v z ß v ñ%² VLAN Á v Ě Q ª c VLAN ß M G o ž AC
¨ ap-config %”* **igmp snooping x ß** AP Á k* **no igmp snooping** ¼
AP Á

oF åo- 1 yo IGMP Snooping IVGL %”ož

```
Ruijie(config)# ip igmp snooping ivgl
```

oè o- * show ip igmp snooping x Xô l IGMP Snooping Ø l

oU P’ b- 1 y ß 4 IVGL %”k é UPjòž

```
% Error: It’s invalid to configure IVGL mode in this product.
```

2y ß å8C Á Á gO è é UP ¢ 8C Á Á gOòž

o@	@	T
	-	-

oHFåd- ¼4

oxX%”o- ¤%”

oHÔ- 14

o6-o- oM½¥ekÕ4vñ Leave ¼+NR+6nÔM¥Mož
4ekÕ%ÕM6dž Leave ¡ IGMPv2 Leave
¥C IGMPv3 include ¥wk~¥ Report ¤ž
M½¥N 9Õ¤MQN%¥VÑUY-¼!yÞž

oF¤Þ- 1 yoM½•

```
Ruijie(config)# ip igmp snooping fast-leave
```

oè¤o- * show ip igmp snooping xXÔ0F¤@

oUP’Ô- -

oej¨o- -

ou¥V0- -

11.4 ip igmp snooping host-aging-time

Få IGMP ÉM¤ž

ip igmp snooping host-aging-time *seconds*

¡ IGMP ÉMF¤ž

no ip igmp snooping host-aging-time

Ê IGMP ÉM¤ž

default ip igmp snooping host-aging-time

o@	@	T
	seconds	ž%yakH8 1-65535ož

oHFåd- 260 a

o»X%”o- ฿%”ê AC ½ H0 ð8 1s1

oxX%”o- ß%”ê AC ap-config %”

oHô- 14

o6-o- z xX%îxXkgÕYFåxXk9U¨
kòqd report kM<kJož
z ¨ AC ap-config %”*xX **igmp snooping ignore-query-timer** ê AP ßMê
k* **no igmp snooping ignore-query-timer** ê

oFåb- 1 yFßMêžz

```
Ruijie(config)# ip igmp snooping ignore-query-timer
```

oèo- * show ip igmp snooping ôFß@

oUP’Îb- -

oeöo- -

ouVô- -

11.6 ip igmp snooping mcast-to-unicast enable

oÁ%nož
ip igmp snooping mcast-to-unicast enable

{Á%nož
no ip igmp snooping mcast-to-unicast enable

ÂMHFåž
default ip igmp snooping mcast-to-unicast enable

o@	T
-	-

oHFå- è4

oxX%”o- AC ap-config %”R… AP ß%”

oHô- 14

o6-o- ÁËQÄ AP Ã%nož

oÁ%nËkñ APktUYÇÁ%nËÁ%n

Ôož

AC ap-config %”xX **igmp snooping mcast-to-unicast enable**

AC ap-config %”Få **no igmp snooping mcast-to-unicast enable** yR… AP Ã%”F **no ip igmp snooping mcast-to-unicast enable** U¥Á%

M ° M µ l ¨H ő و M ° M i ، ɪ ¨I м ℗ M π ° M þ ¢ M ° M ə ŭ в ℓ ℓ ◂ M ° M ≠ Ċ ü x i ، ő π p ¡ M ° M ȝ ˥ ¢

oFå- 1 y¨ ap-config %”oÁ%n

```
Ruijie(config-ap)# igmp snooping mcast-to-unicast enable
```

oè- * show ip igmp snooping xXÔFÇ

oUP’ô- -

oëjÖ- -

oVÖ- -

11.7 ip igmp snooping mcast-to-unicast group-range

FÃ%nÁÃož

ip igmp snooping mcast-to-unicast group-range *ip-addr ip-addr*

ÎÁ%nÁÃFåž

no ip igmp snooping mcast-to-unicast group-range

Ã¥åž

default ip igmp snooping mcast-to-unicast group-range

o@

@	T
ip-addr	*Á n ª - k 8* 224.0.1.0~239.255.255.255

oF- ÌÃÁkÃÁC%n

o×X%”o- AC ap-config %”R… AP Ã%”

oÖ- 14

o6-o- ÁËQÄ AP Ã%n,Få

Fa Á%nkUYk!o Á?C%n

Ã%nkUYk!o Á%nkUY*kXÛ4Ã

Á%nkUYk!o Á%nkUYÁ%

nkUYÃ%o

AC ap-config %”xX **igmp snooping mcast-to-unicast max-group**

AC ap-config %”Få **no igmp snooping mcast-to-unicast max-group yR…**AP %”F

default ip igmp snooping mcast-to-unicast max-group U

oFåd- 1 y¨ ap-config %”FÁ%n

```
Ruijie(config-ap)# igmp snooping mcast-to-unicast max-group 10
```

oè-o- * show ip igmp snooping xXFy

oUP’o- -

oöjo- -

oVo- -

11.9 ip igmp snooping mrouter learn pim-dvmrp

oÁlMož

ip igmp snooping [**vlan** *vid*] **mrouter learn pim-dvmrp**

{ÁlMož

no ip igmp snooping [**vlan** *vid*] **mrouter learn pim-dvmrp**

ÁlMFåž

default ip igmp snooping [**vlan** *vid*] **mrouter learn pim-dvmrp**

o@

@	T
vlan *vid*	6 vlanoÄ vlanož

oFå- o4

oxX%”o- %”

oFo- 14

o6-o- ðlMœ IGMP Snooping ÁÕÁÆ“Á>DÕN,ÐMož
ÕDÁðlMkðÕ- IGMP Query/DVMRP/PIM Hello kÆe
NMož

- oÁðlMgkokUYBÁlMož
- Få **ip igmp snooping vlan mrouter interface xKUÁMož**
- Få **no ip igmp snooping mrouter learn pim-dvmrp xÄ** VLAN {ÁðlMož
- Få **no ip igmp snooping vlan *vid* mrouter learn pim-dvmrp xKN%** VLAN {Á
  NMož

> ε ¡ ` Ω µ l ő Ʒ ð ˚ 5 ¡ ℗ ɾ M Γ м ä ɱ ɾ ő M ϑ Ɛ ╝ Γ þ j ɾ
> ε ¡ Š н Ʒ ¹ ð ˚ 5 ¡ ℗ ɾ M Γ Ÿ ¹ ɱ ɾ ő ″ Ÿ Ψ ¢

oFåd- 1 yN¨ VLAN1 oÁðlMož

```
Ruijie(config)# no ip igmp snooping mrouter learn pim-dvmrp
Ruijie(config)# ip igmp snooping vlan 1 mrouter learn pim-dvmrp
```

oèo- * show ip igmp snooping xXðf@

oUP'ô- -

oəjö- -

ouVð- -

11.10 ip igmp snooping querier

o IGMP Snooping ðž

ip igmp snooping [**vlan** *vid*] **querier**

¼ IGMP Snooping ðž

no ip igmp snooping [**vlan** *vid*] **querier**

ðFå

default ip igmp snooping [**vlan** *vid*] **querier**

o@ð

@	T
vlan *vid*	6 vlanoÆÄ vlanož

oHFåd- ¼4

oxX%”o- ß%”

oH@- 14

o6-o- ¶oðkÇ VLAN oðVLAN õž
¶{4ðÄ VLAN ð¶{ž

oFåd- 1 y¨ VLAN2 oðž

```
Ruijie(config)# ip igmp snooping querier
Ruijie(config)# ip igmp snooping vlan 2 querier
```

oèo- * show ip igmp snooping querier ê show ip igmp snooping querier detail xXðÑ@
Î

oЧP'Ô- 1 yF¶¶Få VLAN ðéЧPj'Î

```
% Command did not take effect due to reason: IGMP switch querier is globally disabled
```

oəjö- 1 y¶ðk¯ VLAN ð4žFå VLAN ðž

ouVð- -

11.11 ip igmp snooping querier address

Få IGMP Snooping ð IP ðž

ip igmp snooping [**vlan** *vid*] **querier address** *a.b.c.d*

ïFåž

no ip igmp snooping [**vlan** *vid*] **querier address**

ÊFåž

default ip igmp snooping [**vlan** *vid*] **querier address**

o¶ |@	T
vlan *vid*	6 vlanoÆÄ vlanož
a.b.c.d	› IP ª

oHFå- -

oxX%"o- ¶Få%"

oH@- 14

oFåd- 1 yF 15 aož

```
Ruijie(config)# ip igmp snooping querier max-response-time 15
```

2yFå VLAN3 15 aož

```
Ruijie(config)# ip igmp snooping vlan 3 querier max-response-time 15
```

oèo- * show ip igmp snooping querier ê show ip igmp snooping querier detail xXÔ
Î

oUP'ô- -

oejö- -

ouVô- -

11.13 ip igmp snooping querier query-interval

Få IGMP Snooping ož

ip igmp snooping [**vlan** *vid*] **querier query-interval** *seconds*

íFå

no ip igmp snooping [**vlan** *vid*] **querier query-interval**

ž

default ip igmp snooping [**vlan** *vid*] **querier query-interval**

o | | |
|---|---|
| @ | T |
| **vlan** *vid* | 6 vlanož vlanož |
| *seconds* | %yakH8 1-18000ož |

oFåd- 60 a

oX%"o- %"

oô- 14

o6-o- ò VLAN 64 .. VLAN Fåž

oFåd- 1 yFž

```
Ruijie(config)# ip igmp snooping querier query-interval 100
```

2y% VLAN Fåž

```
Ruijie(config)# ip igmp snooping vlan 3 querier query-interval 100
```

oà¤o- * show ip igmp snooping querier ê show ip igmp snooping querier detail xXÔÞÅ@
Î

oÙP'ô- -

oøjö- -

oÙVô- -

11.14 ip igmp snooping querier timer expiry

Få IGMP Snooping ßž

ip igmp snooping [**vlan** *vid*] **querier timer expiry** *seconds*

ïFåž

no ip igmp snooping [**vlan** *vid*] **querier timer expiry**

ßž

default ip igmp snooping [**vlan** *vid*] **querier timer expiry**

oß

@	T
vlan *vid*	6 vlanoÆÄ vlanož
seconds	ß%yakH8 60-300ož

oHFå- 125 a

oxX%"o- ß%"

oHß- 14

o6-o- o4ëk-U# JÔÃ “ ÄÄ6
kkGÜ¿ož
ò VLAN]Fåß... VLAN Fåž

oFåd- 1 yFå 60 ož

```
Ruijie(config)# ip igmp snooping querier timer expiry 60
```

2yFå VLAN3 ß 60 ož

```
Ruijie(config)# ip igmp snooping vlan 3 querier timer expiry 60
```

oèo- * show ip igmp snooping querier ê show ip igmp snooping querier detail xXÖÅ@
Î

oЧP'ô- -

oəjö- -

oиVê- -

11.15 ip igmp snooping querier version

Få IGMP Snooping ğ IGMPv1ož
ip igmp snooping [**vlan** *vid*] **querier version 1**
å IGMP Snooping ğ IGMPv2ož
ip igmp snooping [**vlan** *vid*] **querier version 2**

ïFå
no ip igmp snooping [**vlan** *vid*] **querier version**

Få
default ip igmp snooping [**vlan** *vid*] **querier version**

o@ê

@	T
vlan *vid*	6 vlanoÆÄ vlanož

oFå- IGMP Snooping ğ IGMPv2ož

oXX%"o- %"

oê- 14

o6-o- ğ4 IGMPv1 ê IGMPv2ož
ò VLAN]Æğ IGMP ki... VLAN Fåž

oFåo- 1 yğ IGMPv1ož

```
Ruijie(config)# ip igmp snooping querier version 1
```

2yå VLAN3 ğ IGMPv1ož

```
Ruijie(config)# ip igmp snooping vlan 3 querier version 1
```

oèo- * show ip igmp snooping querier ê show ip igmp snooping querier detail xXÔ@
Î

oЧP’ô- -

oəjö- -

oнVô- -

11.16 ip igmp snooping query-max-response-time

F
ip igmp snooping query-max-response-time *seconds*

îFå
no ip igmp snooping query-max-response-time

default ip igmp snooping query-max-response-time

o	@	T
	seconds	0 -1.827 TD <6Td 8.76Tj /TT0 49Bf ( )Tj 7.12 7 -1.6938.76T o¬ Uo¬ à • 0 ò a ” Â ÷@pÐ² °°onf6(erig Tf 0 Tc 0 Tw 16.593 f 60B0B>Tj /8610694f ( )Tj

oF-å0- 1 yF 100sož

```
Ruijie(config)# ip igmp snooping query-max-response-time 100
```

oè o- *

oЧP'ô- -

oэjö- -

oиV0- -

11.18 ip igmp snooping vlan

¨ VLAN o IGMP SnoopinggIVGL %"h ož

ip igmp snooping vlan *vid*

¨ VLAN ¼ IGMP SnoopinggIVGL %"h ož

no ip igmp snooping vlan *vid*

Ð°å

default ip igmp snooping vlan *vid*

o@

@	T
vid	VLAN ÍkH8 1-4094

oH°å- Bo IGMP SnoopinggIVGL %"hБ VLAN ® IGMP SnoopinggIVGL %"bž

Bb IGMP SnoopinggIVGL %"h kБ VLAN b IGMP SnoopinggIVGL %"bž

oxX%"o- B%"

oH0- 14

o6-o- Bo IGMP SnoopinggIVGL %"hK.. **no ip igmp snooping vlan** *vid x X k U Y ¨ " 6* VLAN ù VLAN o IGMP SnoopinggIVGL %"bž

PIM Snooping ę ˉ IGMP Snooping ő **no ip igmp snooping vlan** Ấ ϯ VLAN ϯ IGMP Snooping ų l ő ị Ķ VLAN ₋ PIM Snooping ő ợ Ấ ϯ в Ќ ų ốЙ Ấ ϯ PIM Snooping ¢

oF0- 1 yBo IGMP SnoopinggIVGL %"h¨ vlan 2 ¼ IGMP SnoopinggIVGL %"bž

```
Ruijie(config)# ip igmp snooping ivgl
Ruijie(config)# no ip igmp snooping vlan 2
```

oè- * show ip igmp snooping vlan ðF@

oЧP'ô- -

oəjö- -

ou¬V@- -

11.19 ip igmp snooping vlan fast-leave enable

ê vlan ½¥ož

ip igmp snooping vlan *vid* fast-leave enable

ţ¼ vlan ½¥•

no ip igmp snooping vlan *vid* fast-leave enable

Ê vlan ½¥ßå

default ip igmp snooping vlan *vid* fast-leave enable

o@	@	T
	vid	VLAN ÓkH8 1-4094ož

oHFå- vlan ½ø

ox¤X%”o- ß%”

oHß- 14

oG-o- o vlan ½¥gÞoh

Få **no ip igmp snooping vlan fast-leave enable xKU¥G** vlan ½¥ož

vlan ½¥hß Få ip igmp snooping fast-leave enable %ßø vlan ½¥•ïož

oFåd- 1 yţ¼ vlan ½¥ož

```
Ruijie(config)# no ip igmp snooping vlan 1 fast-leave enable
```

oè¤o- * show run ðFå@

oUP’ô- 1 yßå vlan ½¥wß½¥èßUP’Î

oөjÖ- -

oиV@- -

oнVЋ- -

11.21 ip igmp snooping vlan static interface

FЋMož

ip igmp snooping vlan *vid* **static** *group-address* **interface** *interface-type interface-number*

HFåž

no ip igmp snooping vlan *vid* **static** *group-address* **interface** *interface-type interface-number*

ЋFåž

default ip igmp snooping vlan *vid* **static** *group-address* **interface** *interface-type interface-number*

o@ |@	T
vid	VLAN ZkH8 1-4094ož
group-address	éž
interface-type interface-number	*N M d fož*

oFå- éM

oX%”o- %”

oЋ- 14

o6-o- IGMP Snooping GnyVLAN ZoéMoèMož

VLAN ZyéoeGnž

%GnYmélMgUéMéMbéMkï

ož

%GnYmélMgUéMéMbéMkož. **clear ip**

igmp snooping gda-table x Mož

oFå- 1 yFå GigabitEthernet 0/1 vlan 1 Á 224.1.1.1 éMož

```
Ruijie(config)# ip igmp snooping vlan 1 static 224.1.1.1 interface GigabitEthernet 0/1
```

oèo- * show ip igmp snooping 0F@

oUP’o- 1 yFéMéUP’Î

```
% Error: Configure static multicast group in this port fail
```

oj- -

oиV@- -

11.22 ip multicast wlan

oBÁÙ
ip multicast wlan

ÎFåž
no ip multicast wlan

ÐFåž
default ip multicast wlan

o@ @Få-

11.23 show ip igmp snooping

- IGMP Snooping _ˆbž

show ip igmp snooping [**vlan** *vid*]

- IGMP Snooping Gnož

show ip igmp snooping gda-table

- IGMP Snooping ŠMož

show ip igmp snooping mrouter

- IGMP Snooping NMŠ

s**how ip igmp snooping querier [detail | vlan** *vid***]**

op	@	T
	vlan *vid*	**6** VLANo

```
IGMP Snooping L2-entry-limit: 65536
Global IGMPv2 Fast-Leave :Disable
Global multicast router learning mode :Enable
Query Max Respone Time: 10 (Seconds)
Dynamic Mroute Aging Time : 300(Seconds)
Dynamic Host Aging Time : 260(Seconds)

vlan 1
----------
IGMP Snooping state: Enable
Multicast router learning mode: pim-dvmrp
IGMP Fast-Leave: Disable
IGMP VLAN querier: Disable
IGMP VLAN Mode: STATIC
```

oЧP’ĵ- -

oчV- -

12 ACL

12.1 wWkT=

XBZy

œ	m#
id	ACL ƒoUF8 IP õ ACLy 1-99k 1300-1999 IP ÿ ACLy 100-199k 2000-2699 MAC ÿ ACLy700–799 ÿ ACLy2700–2899
name	ACL d
sn	ACL n¾Z(u47iÐ})
start-sn	~ZU
inc-sn	~ZÓ
deny	ç kÐ
permit	ç kÐ
port	#'Ók+9 IPv6 ¥U ipv6k icmpk tcpk udp Cƒ 0-255k+9 IPv4k UY© eigrpk grek ipinipk igmpk nosk ospfk icmpk udpk tcpk ip %k-U Y@n IP #' 0-255 Ók%?M}#'òicmp/tcp/udp %g¢
interface idx	NM
src	
src-wildcard	FoUYkò 0.255.0.32
src-ipv6-pfix	› IPv6
dst-ipv6-pfix	) IPv6
pfix-len	Ay ƒ
src-ipv6-addr	› IPv6 ª
dst-ipv6-addr	) IPv6 ª
dscp	Aµ 8 0-63
flow-label	0-1048575
dst	)
dst-wildcard	)FoUYkò 0.255.0.32

fragment	ẁ ɔ Ş в ç π ∫ ɪ ǫ o
precedence	iĜ7Rã 0-7h
range	₡₹MZ8
time-range tm-rng-name	₭df tm-rng-name
tos	ĝ0-15h
cos	† cos (0-7)
cos inner cos	Ä tag cos
icmp-type	ICMP ĝ0-255 h
icmp-code	ICMP ŷWAg0-255 h
icmp-message	ICMP ĝf
operator port[port]	Operator

precedence] [**tos** ... **nge** *time-range-name*]

#+<mY

access-list *id* { **den** ...] } [**VID** [*out*] [**inner** *in*]] { **s***ource*
source-wildcard | **hos** ... } { *destination destination-wildcard* |
host *destination* | **any** ... **nge** *time-range-name*]

#+#' Protocol <

access-list *id* { **deny** | **p** ... *source-wildcard* | **host** *source* |
any } { **host** *source-mac-a* ... **ost** *destination* | **any** } { **host**
destination-mac-address | **a** ... **ent**] [**range** *lower upper*]
[**time-range** *time-range-nam* ...

r ὶ ά ᵑ A ...

Internet Control Message Protocol (IC ...
access-list *id* { **deny** | **permit** } **icmp** [**VID** ...
{ **host** *source-mac-address* | **any** } { *desti* ...
destination-mac-address | **any** } [*icmp-type*] [[...
dence] ... *tos*] [**fra** ... **e** ...

smission C trol Proto l (TCP)y
ss-list *id* { **ny** | **permi** **tcp** [**VID** *out*] [**inner**]] { *sour* ...

	z IP ý ACLg 100-199k 2700 – 2899h z MAC ý ACLg700 – 799 h z ý ACLg2000-2699 h
deny	ękęož
permit	ękęož
source	ýý

o6-o- 4ţǫ+ɕ5gkɲƎkX **access-list ₩ǫoƁy**

G₩c. ƒǫy

IP õ ACL g1-99k 1300-1999hQ+ǥOòž

IP ɣ ACLg 100-199k 2000-2699ɲUYƓ)ǥÕòž

MAC ɣ ACLg700-799 ɲUYƓy) MAC ₹YCY₩F

ɣƫǫg2700-2899 ɲIP õ ACLoɲP ɣ ACL YC MAC ɣ ACL ÕƵ

ɣ ACL cƑå ACL ɲ₹ PkƲ ACL UY+ VLAN ID gFǫž

ˆ ћ ð ō ζ Ɵ ˚ M ð ¡ ᵠ M ð Ǒ ᴴ ő ᵻ ` I Ą x в ç Ş

precedence *precedence*/**tos** *tos*/**fragments**/**range** *lower upper*/ **time-range** *time-range-name* ¢

TCP Flag mYB₩y

urg

ack

psh

rst

syn

fin

i₩fƲ

critical

flash

flash-override

immediate

internet

network

priority

routine

₩fƲ

max-reliability

max-throughput

min-delay

min-monetary-cost

normal

ICMP ₩fƲ

administratively-prohibited

dod-host-prohibited

dod-net-prohibited

echo

echo-reply

fragment-time-exceeded

general-parameter-problem

host-isolated
host-precedence-unreachable
host-redirect
host-tos-redirect
host-tos-unreachable
host-unknown
host-unreachable
information-reply
information-request
mask-reply
mask-request
mobile-redirect
net-redirect
net-tos-redirect
net-tos-unreachable
net-unreachable
network-unknown
no-room-for-option
option-missing
packet-too-big
parameter-problem
port-unreachable
precedence-unreachable
protocol-unreachable
redirect
router-advertisement
router-solicitation
source-quench
source-route-failed
time-exceeded
timestamp-reply
timestamp-request
ttl-exceeded
unreachable

p TCP MdfkTCP UYMdfMZ6jMy

bgp
chargen
cmd
daytime
discard
domain

echo
exec
finger
ftp
ftp-data
gopher
hostname
ident
exec

echo
loginp4(n)3(t)]TJ0.5 g/C2_1 1 Tf0 Tc -2.333 -1.733 Td<0020>Tj/TT0 1 Tf( )Tj0.19918-0.0023 c 0.22270.2236 TnntpTd(exec)Tj0.5 g/C2_

pim-auto-rp
rip
snmp
snmptrap
sunrpc
syslog
tacacs
talk
tftp
time
who
xdmcp

Y¤‘º Ethernet-type ý

aarp
arp
appletalk
decnet-iv
diagnostic
etype-6000
etype-8042
lat
lavc-sca
mop-console
mop-dump
mumps
netbios
vines-echo
xns-idp

¡ Ä ACL Ą ő ® ACL ę ǫ **no** {**sn** | **permit** | **deny**} ź Ć Ä ¢

oF¤ø- 1 yIP ĩĵP†

µ IP ĵĩǫª 192.168.1.64 - 192.168.1.127 ¶kĻĴĥý

```
Ruijie(config)# access-list 1 permit 192.168.1.64 0.0.0.63
```

2yIP ŷĴǫP†

µ IP ŷĴǫª DNS ý ICMP ¶y

```
Ruijie(config)# access-list 102 permit tcp any any eq domain log
Ruijie(config)# access-list 102 permit udp any any eq domain log
```

oH-Få- ZÄ ACL hK'Î

ox%X%”o- ß%”

oHß- 14

o6-o- 4ŽÎÚ ACL kUYÎkX6 ACL hK'ìbß ACL kî
ì>)aXFTtv“–V'QBPs`

oxXX%”o-	₿%”
oH-o-	14
o6-o-	4Ž0Ú ACL kUYkX6 ACL kK’bž ACL kkXkE ACLkàÇ ACL kK’Î
oFåd- 1	yZ 102 ACL %Ú ACL kK’y

```
Ruijie(config)# access-list 102 remark deny-host-10.1.1.1
```

oàxo- 1	y… **show access-lists** xXUYÔÄ ACL Fk, ACL kK’bž
	2y… **show access-lists** *id x X U Y ò 0 ñ 6* ACL Fk,¥ ACL kK’bž
	3y… **show access-lists** *name X U Y ò 0 ñ 6* ACL Fk,¥ ACL kK’bž
oUP’b-	ò%Ú ACL Mq ACL kK’kUPj’y

```
Remark is duplicate
```

oöjö-	-
ouV-	-

12.5 deny

%Ú ACL • /’%# ACL é

IP õ ACL

a IP õ ACL %Ø ACL é

[*sn*] **deny** { *source source-wildcard* | **host** *source* | **any** } [**time-range** *tm-range-name*] [**log**]

R IP õ ACL ’%Ø ACL é

no { *sn* | { **deny** { *source source-wildcard* | **host** *source* | **any** } [**time-range** *tm-range-name*] [**log**] } }

IP IP

R IP ÿ ACL ï%ð ACL é

no { *sn* | { **deny** *protocol source source-wildcard destination destination-wildcard* [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**log**] } }

ı IP ¬ ł ↓ ` I ş

Internet Control Message Protocol (ICMP)

[*sn*] **deny icmp** { *source source-wildcard* | **host** *source* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)

[*sn*] **deny tcp** { *source source-wildcard* | **host** *Source* | **any** } [*operator* **port** [*port*]] { *destination destination-wildcard* | **host** *destination* | **any** } [*operator* **port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag* | **established**]

User Datagram Protocol (UDP)

[*sn*] **deny udp** { *source source –wildcard* | **host** *source* | **any** } [*operator* **port** [*port*]] { *destination destination-wildcard* | **host** *destination* | **any** } [*operator* **port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*]

MAC ÿ ACL

ª MAC ÿ ACL %ð ACL é

[*sn*] **deny** { **any** | **host** *source-mac-address* } { **any** | **host** *destination-mac-address* } [*ethernet-type*] [*out*] [**inner** *in*]]

R MAC ÿ ACL ï%ð ACL é

no { *sn* | {**deny** { **any** | **host** *source-mac-address* } { **any** | **host** *destination-mac-address*} [*ethernet-t*
[**cos** [*out*] [**inner** *in*]] } }

ÿ ACL

ÿ ACL %ð ACL é

[*sn*] **deny**[*protocol* | [*ethernet-type*] [**cos** [*out*] [**inner** *in*]]] **[[VID** [*out*] **[inner** *in* **]]]** { *so*
source-wildcard | **host** *source* | **any**}{**host** *source-mac-address* | **any** } { *destination destination-wildc*
host *destination* | **any** } { **host** *destination-mac-address* | **any** } [**precedence** *precedence*] [**tos**
[**fragment**] [**range** *A C ACL* •A *é* [out

source-wildcard | **host** *source* | **any** } { **host** *source-mac-address* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] } }

#+<mY8 ethernet-type ê cos <ž

[*sn*] **deny** { [*ethernet-type* } [**cos** [*out*] [**inner** *in*]] } [[**VID** [*out*] [**inner** *in*]]] { *source source-wildcard* | **host** *source* | **any** } { **host** *source-mac-address* | **any** } { **host** *destination-mac-address* | **any** } { **host** *destination-mac-address* | **any** } [**time-range** *time-range-name*]

#+#‘ protocol <ž

[*sn*] **deny protocol** [[**VID** [*out*] [**inner** *in*]]] { *source source-wildcard* | **host** *source* | **any** } { **host** *source-mac-address* | **any** } { *destinationdestination-wildcard* | **host** *destination***any** } { **host** *destination-mac-address* |

ɪ expert ɳ ɨ ` I ş

I(ICMP) Control Message Protocol

[*sn*]**deny icmp** [[**VID** [*out*] [**inner** *in*]]] { *source source-wildcard* |**host** *source***any** } { **host** *source-mac-address* | **any** } { *destination destination-wildcard* | **host** *destination***any** } { **host** *destination-mac-address* |

n destination-wildcard |**host** *destination* |

any } { **host** *destination-mac-address* |

ª IPv6 ACL %ð ACL é

[*sn*] **deny protocol** { *source-ipv6-prefix*/*prefix-length* | **any** | **host** *source-ipv6-address* } { *destination-ipv6-prefix / prefix-length* | **any** | *hostdestination-ipv6-address* } [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*]

R IPv6 ACL ï%ð ACL é

no {*sn* | { **deny protocol** { *source-ipv6-prefix*/*prefix-length* | **any** | **host** *source-ipv6-address* } { *destination-ipv6-prefix / prefix-length* | **any** | *hostdestination-ipv6-address* } [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] } }

ı IPv6 ף ׀ ׳ ` I ş

Internet Control Message Protocol (ICMP)

[*sn*] **deny icmp** { *source-ipv6-prefix / prefix-length* | *any source-ipv6-address* | **host** } { *destination-ipv6-prefix / prefix-length* | **host** *destination-ipv6-address* | **any** } [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragment**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)

[*sn*] **deny tcp** { *source-ipv6-prefix / prefix-length* | **host***source-ipv6-address* | **any** } [*operator* **port** [*port*]] { *destination-ipv6-prefix /prefix-length* | **host** *destination-ipv6-address* | **any** } [*operator* **port** [*port*]] [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag* | **established**]

User Datagram Protocol (UDP)

[sn] **deny udp** { *source-ipv6-prefix/prefix-length* | **host** *source-ipv6-address* | **any** } [*operator* **port** [*port*]] { *destination-ipv6-prefix /prefix-length* | **host** *destination-ipv6-address* | **any** } [*operator* **port** [*port*]] [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*]

o	@	T
sn	ACL	

protocol	+ *9* IPv6 ¥U IPv6 | icmp | tcp | udp C<0-255>
time-range	† ¡ ž •
time-range-name	ø f

oHFå- ZÄ ACL é ž

o»X%”o- ACL %”

oHõ- 14

o6-o- ¶ ¶UY¥X6 ACL L%?!¶ ACL é ž

oFd- 1 y Pè CP%ťExpert Extended ACL k¥ ACL !í IP ª 192.168.4.12 w›
MAC ª 001300498272 Ä TCP ž

```
Ruijie(config)# expert access-list extended 2702
Ruijie(config-exp-nacl)# deny tcp    host
192.168.4.12 host 0013.0049.8272 any any
Ruijie(config-exp-nacl)# permit any any any any
Ruijie(config-exp-nacl)# show access-lists
expert access-list extended 2702
10 deny tcp    host    192.168.4.12 host 0013.0049.8272 any any
20 permit any any any any
Ruijie(config-exp-nacl)#
```

2y IP y ACL 8) IP 192.168.4.12 Ñ^ TCP M 100 k w
M gigabitethernet 1/1o y

```
Ruijie(config)# ip access-list extended ip-ext-acl
Ruijie(config-ext-nacl)# deny tcp host 192.168.4.12 eq 100 any
Ruijie(config-ext-nacl)# show access-lists
ip access-list extended ip-ext-acl
10 deny tcp host 192.168.4.12 eq 100 any
Ruijie(config-ext-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if-GigabitEthernet 0/1)# ip access-group ip-ext-acl in
```

3y MAC y ACL 8) MAC 0013.0049.8272 Ñ 100 Y
lkw M gigabitethernet 1/1o

```
Ruijie(config)# mac access-list extended mac1
Ruijie(config-mac-nacl)# deny host 0013.0049.8272 any aarp
Ruijie(config-mac-nacl)# show access-lists
mac access-list extended mac1
10 deny host 0013.0049.8272 any aarp
```

```
Ruijie(config-mac-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if-GigabitEthernet 1/1)# mac access-group mac1 in
```

4y@ IP Õ0 ACL 8ÿ0 IP 192.168.4.12 ÑWM gigabitethernet 1/1ož
Fåy

```
Ruijie(config)# ip access-list standard 34
Ruijie(config-ext-nacl)# deny host 192.168.4.12
Ruijie(config-ext-nacl)# show access-lists
ip access-list standard 34
10 deny host 192.168.4.12
Ruijie(config-ext-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if-GigabitEthernet 1/1)# ip access-group 34 in
```

5y@

expert access-group { *id* | *name* } { **in** | **out** }

H*f* ACL 6NMg•

no expert access-group { *id* | *name* } { **in** | **out** }

o

@	T
id	´ ACL Zg2700-2899 h
name	´ ACL d
in	+ MIg¡
out	+R MIg¡

o NMZÄ ´ ACLož

o X%”o-

NM%”Ø

yo o-

id	ACL	2700-2899

no expert access-list resequence { *id* | *name* }

T	
id	ACL Ź g2700-2899 h
name	ACL d
start-sn	~ *Z Ü ÷ › g*1-2147483647 h
inc-sn	~ZŹg1-2147483647 h

start-sn y10

inc-sny 10

ACL

ACL

1 y+d“exp-acl” ACL 21o 43 ~ZMLož

```
Ruijie# show access-lists
expert access-list extended exp-acl
 10 permit ip any any any any
 20 deny ip any any any any
```

```
Ruijie# config
```

o¤V0- -

12.9 ip access-group

16 ACL 9NM

ip access-group { *id* | *name* } { **in** | **out** }

H*f* ACL yNM¼

no ip access-group { *id* | *name* } { **in** | **out** }

o

@	T
id	IP õ ACL ê IP ACL Ýg1-199 k1300-2699 h
name	IP õ ACL ê IP ACL d
in	+ MIg¡
out	+R MIg¡

o -å- NMZÄACL ož

ox X%”o- NM%”

o - 14

o6-o- }±. IP õ ACL ê IP ACL kUYîX1 ACL MIkýUY+ MI gOòž

oF-å - 1 y¨ fastEthernet0/0 Ý 120 ACL +gy

```
Ruijie(config)# interface fastEthernet 0/0
Ruijie(config-if-GigabitEthernet 0/0)#ip access-group 120 in
```

o¬%(ÃyZ£ Tf0 Tc 1.92 0 Td<006EA>Tj/TT0 B1209DA055A049206CTf( )Tj7.1288fD048506B8 Tc 7.38.8A>T W 0.28tEtherps-grs(12)pas

oəjö- -

oʁVθ- -

12.10 ip access-list

ë IP õACL ê IP ÿ ACL kwµ ACL %”

ip access-list { **extended**

o6-o- ŽŸlk¨ IP Õ ACL ê IP ý ACL gÙýfékk%<ek
~ZkJ±ÆŸk4ŽUYîkX+ ACL é¾ZgMLk~.ZJož

oF¬ad- 1 y+Ý 1 ACL é7ÂZ 21oÉ 43 ~ZMLož

FåxXù

```
Ruijie# show access-lists
ip access-list standard 1
10 permit host 192.168.4.12
20 deny any any
```

FåxXßy

```
Ruijie# config
Ruijie(config)# ip access-list resequence 1 21 43
Ruijie(config)# exit
Ruijie# show access-lists
ip access-list standard 1
21 permit host 192.168.4.12
64 deny any any
```

oèo- 1 y… **show access-lists** xXUYÒÄ ACL éÂZož
2y… **show access-lists** *id x X U Y ò 0 ñ 6* ACL éÂZož
3y… **show access-lists** *name X U Y ò 0 ñ 6* ACL éÂZož

oUP'Îb- -

oəjö- -

ouVß- -

12.12 ipv6 access-list

ë IPv6 ACLkwÆ‰”

ipv6 access-list *name*

î¥ ACL

no ipv6 access-list *name*

op® | @ | T |
|---|---|

name mef* Td(IPv6 ACL)Tj/C2_0 1 Tf0 Tc 0 41 4.173 0 564026340B1A>Tj/TT0 207 -0.493 0 Td( )TjET0.75 g1173.24 1.44 44

oxX%”o- %”

o- 14

o-o- IPv6 IPv6 ACLk XË IPv6 ACLož

oF- 1 y “v6-acl ” IPv6 ACLy

```
Ruijie(config)# ipv6 access-list v6-acl
Ruijie(config-ipv6-nacl)# show access-lists
ipv6 access-list v6-acl
Ruijie(config-ipv6-nacl)#
```

o- 1 y… **show access-lists x** ACLg, IPv6 ACLhF-ž

2y… **show access-lists** *name x X U Y 0 ñ 6* ACLg, IPv6 ACLhF-

o-

o-

o-

12.13 ipv6 access-list resequence

+ IPV6 ACL -ZgML

ipv6 access-list resequence *name start-sn inc-sn*

no ipv6 access-list resequence *name*

o-

o6-o- ŽŸlk¨ IPV6 ACL ÿ}ýf¦ék%²<ek~ZkJ±ÀÜ
2k4kUYîkX+ ACL é³ZgMLk~ZJož

oF-d- 1 y+d“v6-acl ” IPv6 ACL é7ÂZ 21oÉÐ 43 ~ZMLož
FåxXù
```
Ruijie# show access-lists
ipv6 access-list v6-acl
 10 permit ipv6 any any
 20 deny ipv6 any any
```
FåxXßy
```
Ruijie# config
Ruijie(config)# ipv6 access-list resequence v6-acl 21 43
Ruijie(config)# exit
Ruijie# show access-lists
ipv6 access-list v6-acl
 21 permit ipv6 any any
 64 deny ipv6 any any
```

oè-o- 1 y… **show access-lists** xXUYÒÄ ACL éÂZož
2y… **show access-lists** *name X U Y ò 0 ñ 6* ACL éÂZož

oU-P'Ô- -

oə-jö- -

ou-V¶- -

12.14 ipv6 traffic-filter

1%ŸÚ IPv6 ACL ¶NM
ipv6 traffic-filter *name* { **in** | **out** }

H*f* IPv6 ACL •
no ipv6 traffic-filter *name* { **in** | **out** }

o¶ß

¶@	T
name	IPv6 ACL d
in	+¥MJ¡
out	+R¥MJ¡

oHFå- NMZÄ IPv6 ACLož

oxX%”o- NM%”

oHß- 14

o6-o- }±. IPv6 ACL jkUYÎkX1 ACL ñMkýUYëNMß IPv6 gOòž

oFåd- 1 y1 access-list v6-acl 9 Gigabit NM 0/1 y

```
Ruijie(config)# interface GigaEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)# ipv6 traffic-filter v6-acl in
```

oèo- 1 y… **show ipv6 traffic-filter x** IPv6 ACL Fåž

2y… **show ipv6 traffic-filter interface** *interface-name x X U Y ò 0 ñ 6 N M* IPv6 ACL Fåž

oUP’b- -

oəjö- -

ouV- -

12.15 list-remark

6 ACL hK’Î

list-remark *text*

ï ACL hK’Î

no list-remark

op

@	T
text	hK’Î

oHFå- ZÄ ACL hK’Î

oxX%”o- ACL %”

oHß- 14

o6-o- 4 ACL kUYÎkX6 ACL hK’bžUYBFå%”+N

… **access-list list-remark xX** ACL hK’ĵž

oF₫ð- 1 yŹ 102 IP ȳ ACL “this acl is to filter the host 192.168.4.12” hK’ȳ

```
Ruijie(config)# ip access-list extended 102
Ruijie(config-ext-nacl)# list-remark this acl is to filter the host 192.168.4.12
Ruijie(config-ext-nacl)# show access-lists
ip access-list extended 102
deny ip host 192.168.4.12 any
1000 hits
this acl is to filter the host 192.168.4.12
Ruijie(config-ext-nacl)#
```

oæo- 1 y… **show access-lists** xXUYðÄ ACL F₫k, ACL hK’ĵž

2y… **show access-lists** *id x X U Y ò 0 ñ 6* ACL F₫k,¥ ACL hK’ĵž

3y… **show access-lists** *name X U Y ò 0 ñ 6* ACL F₫k,¥ ACL hK’ĵž

oЧP’ĵ- -

oəjö- -

oнV₫- -

12.16 mac access-group

1%ŕJ MAC ȳ ACL ₫NMož

o6-o- }±. MAC ý ACL ¡kUYîkX1 ACL ñMMkýUYë¥MMß
YßOòž

oF-åd- 1 y1df“accept_00d0f8xxxxxx_only” MAC ý ACL 9NM GigaEthernet 1/1 y

```
Ruijie(config)# interface GigaEthernet 1/1
Ruijie(config-if-GigabitEthernet 1/1)# mac access-group accept_00d0f8xxxxxx_only in
```

oèo- 1 y… **show mac access-group xßßA** MAC ý ACL ¼î
2y… **show mac access-group interface** *interface-name x X U Y ò 0 ñ 6 N M* MAC ý ACL
¼ôž

oÙP'ô- -

oèjö- -

oнVß- -

12.17 mac access-list extended

ë MAC ý ACLkwµ ACL %”
mac access-list extended { *id* | *name* }

ï MAC ý ACL
no mac access-list extended { *id* | *name* }

oßß

ß@	T
id	MAC ý ACL Ýg700-799 h
name	MAC ý ACL d

oH-åd- ZÄ MAC ý ACLož

ox-X%”o- ß%”

oH-ß- 14

o6-o- ý+èACtßß-J. ACLk¡kXë MAC ý ACLož

MAC ý ACLy

```
mac access-list extended mac-acl
```

2y‰ÚÍ 704 MAC ý ACLy

```
Ruijie(config)# mac access-list extended 704
Ruijie(config-mac-nacl)# show access-lists
mac access-list extended 704
```

oèo- 1 y… **show access-lists** xXUYòñ6 ACL Fåbž

2y… **show access-lists** *id x X U Y ò 0 ñ 6* ACL Fåbž

3y… **show access-lists** *name X U Y ò 0 ñ 6* ACL Fåbž

oЬP'b- -

oəjö- -

oнVØ- -

12.18 mac access-list resequence

+ MAC ý ACL é¾ZgML

mac access-list resequence { *id* | *name* } *start-sn inc-sn*

ñ

no mac access-list resequence { *id* | *name* }

oßÞ

¡@	T
id	MAC ý ACL Ídg700-799 h
name	MAC ý ACL d
start-sn	~ *Z Ü ÷ › g*1-2147483647 h
inc-sn	~ZÍDg1-2147483647 h

oнFå- start-sn y10

inc-sny 10

o×X%"o- ß%"

oнÑ- 14

o6-o- ŽÜlk¨ MAC ý ACL ÿÝ¹ék%²<ěk~ZkJÆ

Ødk4ŽUYÎkX+ ACL é¾ZgMLk~ZJnž

oF-å0- 1 y+d“mac-acl” MAC ý ACL é7ÂZ 21oÓ 43 ~ZMLož

FåxXù

```
Ruijie# show access-lists
mac access-list extended mac-acl
 10 permit any any etype-any
 20 deny any any etype-any
```

FåxX8y

```
Ruijie# config
Ruijie(config)# mac access-list resequence exp-acl 21 43
Ruijie(config)# exit
Ruijie# show access-lists
mac access-list extended mac-acl
 21 permit any any etype-any
 64 deny any any etype-any
```

oè0- 1 y… **show access-lists** xXUYÔÄ ACL éÂZož

2y… **show access-lists** *id x X U Y ò 0 ñ 6* ACL éÂZož

3y… **show access-lists** *name X U Y ò 0 ñ 6* ACL éÂZož

oUP’ô- -

oəjö- -

ouV0- -

12.19 permit

%ÚÚ ACL • /ï%0 ACL éž

IP Õ0 ACL

ª IP Õ0 ACL %0Ú ACL é

[*sn*] **permit** { *source source-wildcard* | **host** *source* | **any** } [**time-range** *tm-range-name*] [**log**]

R IP Õ0 ACL ï%0Ú ACL é

no { *sn* | { **permit** { *source source-wildcard* | **host** *source* | **any** } [**time-range** *tm-range-name*] [**log**] } }

IP ý ACL

ª IP ý ACL %0Ú ACL é

[*sn*] **permit protocol** *source source-wildcard destination destination-wildcard* [**precedence** *precedence*]

[**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**log**]

R IP ÿ ACL ï%Ú ACL é

no { *sn* | { **permit protocol** *source source-wildcard destination destination-wildcard* [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**log**] } }

ı IP ┐ ł ` I Ş

Internet Control Message Protocol (ICMP)y

[*sn*] **permit icmp** { *source source-wildcard* | **host** *source* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)y

[*sn*] **permit tcp** { *source source-wildcard* | **host** *Source* | **any** } [*operator* **port** [*port*]] { *destination destination-wildcard* | **host** *destination* | **any** } [*operator* **port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag* | **established**]

User Datagram Protocol (UDP)y

[*sn*] **permit udp** { *source source –wildcard* | **host** *source* | **any** } [*operator* **port** [*port*]] { *destination destination-wildcard* | **host** *destination* | **any** } [**operator port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*]

MAC ÿ ACL

ª MAC ÿ ACL %Ú ACL é

[*sn*] **permit** { **any** | **host** *source-mac-address* } { **any** | **host** *destination-mac-address* } [*ethernet-type*] [**cos** [*out*] [**inner** *in*]]

R MAC ÿ ACL ï%Ú ACL é

no { *sn* | { **permit** { **any** | **host** *source-mac-address* } { **any** | **host** *destination-mac-address* } [*ethernet-type*] [**cos** [*out*] [**inner** *in*]] } }

ÿ ACL

ÿ ACL %Ú ACL é

[*sn*] **permit** [**protocol** | [*ethernet-type*] [**cos** [*out*] [**inner** *in*]]] [**VID** [*out*] [**inner** *in*]] { *source source-wildca 1* |

RÿÝ ACL ĩ%Ű ACL é

no { *sn* | { **permit** [**protocol** | [*ethernet-type*] [**cos** [*out*] [**inner** *in*]]] [**VID** [*out*] [**inner** *in*]] { *source source-wildcard* | **host** *source* | **any** } { **host** *source*-mac-*address* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] } }

#+<mY Ethernet-type ê cos <ÿ

[*sn*] **permit** { *ethernet-type*| **cos** [*out*] [**inner** *in*] } [**VID** [*out*] [**inner** *in*]] { *source source-wildcard* | **host** *source* | **any** } { **host** *source-mac-address* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [**time-range** *time-range-name*]

#+#‘ Protocol <ÿ

[*sn*] **permit protocol** [**VID** [*out*] [**inner** *in*] { *source source-wildcard* | **host** *Source* | **any** } { **host** *source-mac-address* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*]

ŕ Expert ᑫ ᵻ ` I ş

Internet Control Message Protocol (ICMP)y

[*sn*] **permit icmp** [**VID** [*out*] [**inner** *in*]] { *source source-wildcard* | **host** *source* | **any** } { **host** *source-mac-address* | **any** } { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)y

[*sn*] **permit tcp** [**VID** [*out*] [**inner** *in*]] { *source source-wildcard* | **host** *Source* | **any** } { **host** *source-mac-address* | **any** } [*operator* **port** [*port*]] { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [*operator* **port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag* | **established**]

User Datagram Protocol (UDP)

[*sn*] **permit udp** [**VID** [*out*] [**inner** *in*]] { *source source –wildcard* | **host** *source* | **any** } { **host** *source-mac-address* | **any** } [*operator* **port** [*port*]] { *destination destination-wildcard* | **host** *destination* | **any** } { **host** *destination-mac-address* | **any** } [*operator* **port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragment**] [**range** *lower upper*] [**time-range** *time-range-name*]

Address Resolution Protocol (ARP)

[*sn*] **permit arp** { **vid** *vlan-id* } [**host** *source-mac-address* | **any**] [**host** *destination –mac-address* |

o@ |@ T

sn	ACL éZ
source-ipv6-prefix	› IPv6 è
destination-ipv6-prefix	) IPv6 è
prefix-length	ÿÜAy*f*
source-ipv6-address	› IPv6 ª
destination-ipv6-address	) IPv6 ª
dscp	Ö
dscp	A 8 0-63.
flow-label	v
flow-label	v8 0-1048575
protocol	+9 IPv6 ¥U IPv6 | icmp | tcp | udp C<0-255>
time-range	
time-range-name	f
hex	*Y* 16 òPF F ACL .
hex-mask	*Y* 16 òPF AkF ACL .
offset	*F • ÷ y å k F å ´ ä ´* ACL .

oF- ZÄ ACL eå

ox X%”o- ACL %”

oH- 14

o6-o- UY¥X ACL L%? ACL é

oF- 1 y È C P%Ú Expert Extended ACL k¥ ACL IP ª 192.168.4.12 w› MAC ª 001300498272 Ä TCP ž

```
Ruijie(config)# expert access-list extended exp-acl
Ruijie(config-exp-nacl)# permit tcp host 192.168.4.12 host 0013.0049.8272 any any
Ruijie(config-exp-nacl)# deny any any any any
Ruijie(config-exp-nacl)# show access-lists
expert access-list extended exp-acl
10 permit tcp host 192.168.4.12 host 0013.0049.8272 any any
20 deny any any any any
Ruijie(config-exp-nacl)#
```

2y IP ACL 8 IP 192.168.4.12

```
Ruijie(config)# expert access-list advanced adv-acl
Ruijie(config-exp-dacl)# permit a0c8040c ffffffff 38
Ruijie(config-exp-dacl)# show access-lists
expert access-list advanced adv-acl
 10 permit a0c8040c ffffffff 38
Ruijie(config-exp-dacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# expert access-group adv-acl in
```

oèo- 1 y… **show access-lists** xXUYðÄ ACL Få, ACL Fåž

2y… **show access-lists** *id x X U Y ò 0 ñ 6* ACL Få,¥ ACL Fåž

3y… **show access-lists** *name X U Y ò 0 ñ 6* ACL Få,¥ ACL Fåž

oЏP'Ô- -

oөjö- -

oнVð- -

12.20 remark

¨ ACL Ë ACE ћK'Î

remark *text*

ĩ ACE ћK'Î

no remark *text*

oþ

¢@	T
text	hK'Î

oнFå- ACE ZÄK'Î

oxX%"o- ACL %"

oнð- 14

o6-o- 6 ACE ћK'Ôž

φ 100 š Ḍ ő в š ACL ـئ Ч 2 ـئ ¢

Ä ace ¨H ά ″ Ķ ace ˆ ŕ Ä ¢

oF å0- 1 yŽ 102 IP y ACL ACE hK’y

```
Ruijie(config)# ip access-list extended 102
Ruijie(config-ext-nacl)# remark first_remark
Ruijie(config-ext-nacl)# permit tcp 1.1.1.1 0.0.0.0 2.2.2.2 0.0.0.0
Ruijie(config-ext-nacl)# remark second_remark
Ruijie(config-ext-nacl)# permit tcp 3.3.3.3 0.0.0.0 4.4.4.4 0.0.0.0
Ruijie(config-ext-nacl)# end
Ruijie#
```

oè o- 1 y… **show access-lists** xXUYðÄ ACL Fåbž ACL é¾K’bž

2y… **show access-lists** *id x X U Y ò 0 ñ 6* ACL Fåbž ACL é¾K’bž

3y… **show access-lists** *name X U Y ò 0 ñ 6* ACL Fåbž ACL é¾K’bž

oU P’b- -

oë j ö- -

ou V®- -

12.21 security access-group

FåM¶3

security access-group { *id* | *name* }

ïNM¶3

no security access-group

o® ®

(@	T
id	ACL ŽkJF8y IP Õ ACLg1-99k 1300-1999b• IP y ACLg 100-199k 2000-2699b• MAC y ACLg700–799 by ACLg2700–2899 h
name	ACL d

oH Få- NMZ¶3Få

ox X%”o- NM%”

oH ®- 14

o6 o- -

oF₫ȍ- 1 yNM GigaEthernet 1/1 F₫3k+• ACL Ø 1y

```
Ruijie(config)# interface GigaEthernet 1/1
Ruijie(config-if-GigabitEthernet 1/1)# security access-group 1
```

oȁo- … **show running x₫**

oЬP’ȏ- -

oəjȍ- -

oʁV₫- -

12.22 security global access-group

F₫¶3

security global access-group { *id* | *name* }

ĩ₫¶3

no security global access-group

o₫ @ T

oəjö- -

oʉV@- -

12.23 security uplink enable

F₿¶3ÙM

security uplink enable

HƒNM₿¶3ÙM

no security uplink enable

o@	@	T
	-	-

oH₣å- NM₿¶3ÙM

oxX%”o- NM%”

oH- K0‘H]₹Đ

14

ò¬ x å ¶ B Ù • ðÀ `tàSy 1M Œ" N÷ì´>ê´ã r ´`žPK`d d `ÐK`² ³0‘•H`]•TÐ

o¬ Þ u • Ù ¼à Â Ç@p ÑG ˆÇ@qs=Â ðÇ@qú • jz(ü <t q(Œt 3Ü t VUg¢o-

o@	@	T
	interface *Interface-name*	6NMd
oxX%”o-	@”	
oH-o-	14	
o6-o-	6NM	ACLk?NM	ACLkUYXož
oFd-o-	1	y0NM4	ACLkYCgy

```
Ruijie# show access-group
ip access-list standard ipstd3 in
Applied On interface GigabitEthernet 0/1.
ip access-list standard ipstd4 out
Applied On interface GigabitEthernet 0/2.
ip access-list extended 101 in
Applied On interface GigabitEthernet 0/3.
ip access-list extended 102 in
Applied On interface GigabitEthernet 0/8.
```

2y0NM GigabitEthernet 0/3 4 ACLkYCgy

```
Ruijie# show access-group interface GigabitEthernet 0/3
ip access-list extended 101
Applied On interface GigabitEthernet 0/3 in.
```

oUP’o-	-
oV-o-	-

12.25 show access-lists

PA ACL F ACL Få

show access-lists [*id* | *name*] [**summary**]

o@	@	T
	id	ACL Z
	name	ACL d
	summary	ACL ME
oxX%”o-	%”	

oH-

14

o6-o-

P6 ACL F k3Z ACL Z kP F

oF- 1 y d“n_acl” ACL F y

```
Ruijie# show access-lists n_acl
ip access-list standard n_acl
Ruijie# show access-lists 102
ip access-list extended 102
```

2y F ACL F y

```
Ruijie# show access-lists
ip access-list standard n_acl
ip access-list extended 101
   permit icmp host 192.168.1.1 any log (1080 matches)
   permit tcp host 1.1.1.1 any established
   deny ip any any (80021 matches)
mac access-list extended mac-acl
expert access-list extended exp-acl
ipv6 access-list extended v6-acl
   petmit ipv6 ::192.168.4.12 any (100 matches)
   deny any any (9 matches)
```

oUP’b-

-

oV-

-

12.26 show expert access-group

PNM ACL F

show expert access-group [**interface** *interface-name*]

o

@	T
interface *Interface-name*	6NMd

ox X%”o-

”

oH-

14

o6-o-

PNM• ACL k3Z NMk P M• ACLo

oFåd- 1 yðNM GigabitEthernet 0/2 ê4j ACLkYCg

```
Ruijie# show expert access-group interface gigabitethernet 0/2
expert access-group ee in
Applied On interface GigabitEthernet 0/2.
```

oUP'ò- -

ouV0- -

12.27 show ip access-group

ªNM• IP õ IP ÿ ACL Få

show ip access-group [**interface** *interface-name*]

o@ê

@	T
interface *Interface-name*	6NMd

ox%"o- Ò"

oH- 14

o6-o- ªNM• IP õ IP ÿ ACLkZÄNMªÄM• IP õ y IP ÿ ACLož

oFåd- 1 yðNM GigabitEthernet 0/1 ê4 IP õ IP ÿ ACLkYCgy

```
Ruijie# show ip access-group interface gigabitethernet 0/1
ip access-group aaa in
```

oxX%”o- @”

oH@- 14

o6-o- PNM• IPv6 ACLk3Z@NMkP@M• IPv6 ACLož

oFad- 1 y@NM GigabitEthernet 0/1 @4 IPv6 ACLkYCgy

```
Ruijie# show ipv6 traffic-filter interface gigabitethernet 0/4
ipv6 traffic-filter v6 in
Applied On interface GigabitEthernet 0/4.
```

oUP’b- -

ouV@- -

12.29 show mac access-group

PNM• MAC y ACL

show mac access-group [**interface** *interface-name*]

o@

@	T
interface *Interface-name*	6NMd

oxX%”o- @”

oH@- 14

o6-o- PNM• MAC y ACLk3Z@NMkP@M• MAC y ACLož

oFad- 1 y@NM GigabitEthernet 0/3 @4 MAC y ACLkYCg

```
Ruijie# show mac access-group interface gigabitethernet 0/3
mac access-group mm in
Applied On interface GigabitEthernet 0/3.
```

oUP’b- -

ouV@- -

12.30 svi router-acls enable

o SVI • ACL N+C

svi router-acls enable

no svi router-acls enable

@	T
-	-

¼ SVI • ACL N+C

%”

14

SVI ACL SVI • ACL +8C

SVI • ACL N+C kUY

1 y SVI • ACL N+C

```
Ruijie(config)# svi router-acls enable
```

… **show running** SVI ACL N+C

-

-

-

13 SCC

13.1 wWkT=

XBZy

œ	m#
vlanlist	s VLAN ç
interval	guÊ
thredshold	vOy’

13.2 downstream average-rate burst-rate

F’,vOu sGož

downstream average-rate *avg-threshold* **burst-rate** *burst-threshold*

H’,vOu sGož

no downstream

o

@	T
avg-threshold	’,u®
burst-threshold	’,sG›

o —

o ’, ”

o 14

o g’,sG 9u ž

o 1 yF 6’, E

```
Ruijie(config)# rate-policy user-rate
Ruijie (config-rate-policy)#downstream average-rate 10 burst-rate 10
```

o 1 y… **show running x**

o -

oəjö- -

oʉV@- -

13.3 filter-policy

ßåå%”ož

filter-policy *filter-name*

ßåå%”Få

filter-acl { *acl-name* | *acl-id* }

o@ |@	T		
filter-name	ß		
acl-name	ß	acl	acl-name
acl-id	ß	acl	acl-id

oHFå- —

oxX%”o- ß%”

oH@- 14

o6-o- c%ßY’c@z

oF@- 1 yß

```
Ruijie(config)# ip access-list extended user_2000
Ruijie(config)# filter-policy user-filter
Ruijie(config-filter-policy)#filter-acl user_2000
```

oà- 1 y… **show running x@ß**

oUP’ô- -

oəjö- -

oʉV@- -

13.4 filter-policy apply

F@E

filter-policy *filter-name* **apply**

	acl-id		acl acl-id

oHFå-

—

oxX%”o-

14

oHø-

14

o6-o-

c%

oFåd- 1

y

```
Ruijie(config)# ip access-list extended user_2000
Ruijie(config)# filter-policy user-filter
Ruijie(config-filter-policy)#filter-acl user_2000
```

oèo- 1

y… **show running x**

aclož

oUP’b-

-

oəjö-

-

ouV-

-

13.6 offline-detect interval threshold

F kõ vOO

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

å

default offline-detect

no offline-detect

o

oxX%”o- %”

oH- 14

o6-o- OzUYF

oFad- 1 yFå 5 Oz9 5kBytes

```
Ruijie(config)#offline-detect interval 5 threshold 5120
```

oo- 1 y… **show running**

```
Ruijie (config-rate-policy)#upstream average-rate 10 burst-rate 10
Ruijie (config-rate-policy)#downstream average-rate 10 burst-rate 10
```

oèo- 1 y… **show**

p‘•¹bÀ À: d f †6úÐ

oəjö- -

ouVØ- -

13.9 service-policy

ßÆ‰”ož

service-policy *service-name*

6’‚Œ

rate-policy *rate-name* **apply**

o@	@	T
	service-name	’Œ
	rate-name	’„Œ

oHF å- —

oxX%”o- ß%”

oHØ- 14

o6-o- ’„ŒÆÅžz

oF åØ- 1 yFß6’‚Œ

```
Ruijie(config)# rate-policy user-rate
Ruijie (config-rate-policy)#upstream average-rate 10 burst-rate 10
Ruijie (config-rate-policy)#downstream average-rate 10 burst-rate 10
Ruijie (config)# service-policy user-policy
Ruijie (config-service-policy)# rate-policy user-rate apply
```

oèo- 1 y… **show running x**

oUP’Ô- -

oəjö- -

ouVØ- -

13.10 upstream average-rate burst-rate

Fg',vOuysGn

upstream average-rate *avg-threshold*

14 SSH

14.1 crypto key generate

W

crypto key generate { **rsa | dsa** }

	@	T
	rsa	RSA %W
	dsa	DSA %W

SSH Server Z%Wož

%”

14

SSH Server 4xX SSH %Wož **enable service ssh-server** SSH Server ož SSH 1 … RSA %WzSSH 2 … RSA DSA %Wo RSA %Wké SSH1 SSH2 CUYz DSA %Wk SSH2 UYαž

š w˝I ε d˚ ₅ ο κ ő ά p DSA ά RSA Ű ŋ ŕ ∖ ḍ ő ¨ ¨ ¨ Ű ŋ

Choose the size of the rsa key modulus in the range of 512 to 2048
and the size of the dsa key modulus in the range of 360 to 2048 for your
Signature Keys. Choosing a key modulus greater than 512 may take
a few minutes.

How many bits in the modulus [512]:
// rsa
% Generating 512 bit RSA1 keys ...[ok]
% Generating 512 bit RSA keys ...[ok]
// rsa
% Generating 512 bit RSA1 keys ...[fail]
% Generating 512 bit RSA keys ...[fail]

2y rsa %W]

Choose the size of the rsa key modulus in the range of 512 to 2048

14.2 crypto key zeroize

ï' SSH ¥GWož

crypto key zeroize { **rsa** | **dsa** }

	(@	T
	rsa	ï' RSA %W
	dsa	ï' DSA %W

-

ÞF%”

14

*4xXûGWo%Wtîek SSH Server Å DISABLE ¼ SSH Serverk}ü **no enable service ssh-server x**

1 yî¥E rsa %Wož

```
Ruijie# configure terminal
Ruijie(config)# crypto key zeroize rsa
```

1 y… **show crypto key mypubkey rsa x** rsa %W rsa

]¥ž

1 yò rsa %W UPK rsa %Wož

```
Ruijie(config)#crypto key zeroize rsa
% Keys to be removed
% All router certs issued using these keys will also be removed.
Do you really want to remove these keys? [yes/no]:yes
*Jan 16 06:52:57: %P17050-7-DEBUG: sshd: delete key file /rsa_private.bin
*Jan 16 06:52:57: %P17050-7-DEBUG: sshd: delete key file /rsa1_private.bin
```

2yò rsa %WZ UP rsa %Wöž

```
Ruijie(config)#crypto key zeroize rsa
% The specified RSA keypair does not exist.
```

1 y… no y default x %Wk%W1

-

14.3 disconnect ssh

ly¥E SSH Nk0ž

disconnect ssh [**vty**] *session-id*

op@	(@	T
vty	] Æ • y vty N
session-id	ly¥E SSH NkŒkH8 0~35

oH¥å- -

ox×X%”o- Œ”

oH8- 14

o6-o- *ŒSSH NkŒkly¥E SSH NoŒ VTY NkŒk6
SSH NoŒ• SSH ¶Nož

oF¥å0- 1 yŒ SSH NkŒkly¥E SSH Nož

```
Ruijie# disconnect ssh 1
```

2yŒ VTY NkŒk6 SSH Nož

```
Ruijie# disconnect ssh vty 1
```

oè¤o- 1 y… **show ssh x¥KU8 6** SSH NkŒj¥6ž

oU¤P’ô- -

oe¤jÖ- -

ou¤V0- -

14.4 ip scp server enable

8- SCP Œž

ip scp server enable

¼ SCP Œž

no ip scp server enable

o@	T
-	-

oHFå- hå– SCP Æz

oxX%”o- ¶BFå%”

oHß- 14

o6-o-	¥XFå kåž	SSH Server g¥Mš¶p¥	SSH Server F¥Mš¶QZå
oF-åd-	1	y¥Mš¶f	2ož

```
Ruijie# configure terminal
Ruijie(config)# ip ssh authentication-retries 2
```

oè¤o-	1	y…	**show ip ssh x¥U¥**	SSH Server ¥Mš¶Fåž
oÙP'ˆb-	-			
oœj¨o-	-			
o¤V¥-	-			

14.6

Server u 4 % ‘ c y AES128-CTR o• AES192-CTR o• AES256-CTR o• DES-CBC o• 3DES-CBC o• AES-128-CBCo• AES-192-CBCo• AES-256-CBCo• Blowfish-CBCo• RC4ož?%‘ckUY¡ e%%”y“cbc” g%AáN%”ycipher block chaining mode ho“ctr” g?%”ycounter modehy othersgbož

5%A•GJk“cbc” y “others”%%”%‘ckCtsUY?ágDtbžk %?ßLAáoykUY*Få SSH Server u4%%”“ctr” %”kÛä SSH Server fž

oFåd- 1 yå– SSH Server u4%%” ctr %”ož

```
Ruijie# configure terminal
Ruijie(config)# ip ssh cipher-mode ctr
```

oèo- -

oUP’ô- -

oəjö- -

ouV0- -

14.7 ip ssh hmac-algorithm

åer-m25>-7<09910863036B0B430A25>-7<0994>-7<6F9E>]TJ/TT0 1 Tf371 g/TT2 1 Tf-0.0012 T248 Tc 0 0 -7.40j0.0 T. ss

o6-o- ¥XFå SSH Server u4§což

ïHŒSSHv1 Server u4§czSSHv2 Server u4§cymd5 osha1 o•

sha1-96o•md5-96 oŽUY‰ž#+ SSH Server u4§což

oFåd- 1 yå– SSH Server u4§c sha1ož

```
Ruijie# configure terminal
Ruijie(config)# ip ssh hmac-algorithm sha1
```

oèo- -

oUP'ô- -

oəjö- -

ouVØ- -

14.8 ip ssh peer

1¸Vÿd¼*d6¸Vož

ip ssh peer *username* **public-key** { **rsa** | **dsa** } *filename*

H¸V¼ž

no ip ssh peer *username* **public-key** { **rsa** | **dsa** } *filename*

o¶ | @ | T |
|---|---|
| *username* | *ï d* |
| *filename* | *¸ W † ^ d* |
| *rsa* | public-key ¶ rsa |
| *dsa* | public-key ¶ dsa |

oHFå- -

oxX%"o- ¶FÅ%"

oH¶- 14

```
Ruijie(config)# ip ssh peer test public-key rsa flash:rsa.pub
Ruijie(config)# ip ssh peer test public-key dsa flash:dsa.pub
```

oèo- -

oЧP’ô- 1 yĝ₩ĥ SSH Public Key u4ĵĥ 1024 kéPĥožž

```
Ruijie(config)# ip ssh peer test public-key rsa flash:rsa.pub
%% Too many public-keys, system support max public key 1024
```

2yĝ₩ĥkéPẏWĥ¦ožž

```
Ruijie(config)#ip ssh peer test public-key rsa flash:
```

oèo- 1 y… **show ip ssh xkUð** SSH Server éfåž

oЬP'ĵ- -

oəjö- -

oъVđ- -

14.10 ip ssh version

å— SSH Server îbž

ip ssh version { **1** | **2** }

1ãåž

no ip ssh version

opê

@	T
1	*F å* SSH Server Nu4 SSH1 ¥Nь
2	ãå SSH Server Nu4 SSH2 ¥Nь

oHFåo- Ã SSH Î 1 y 2ož

oxX%"o- ¶ÞFå%"

oHđo- 14

o6-o- ¥XÊå SSH Server ¤4 SSH N#'ãž SSH Server ¤4Ã SSH1 SSH2k… SSH 1 ã SSH2 €UYNoåÎ 1 ã 2kQ¯Î SSH ãNož

oFåd- 1 yêÎ… 2y

```
Ruijie# configure terminal
Ruijie(config)# ip ssh version 2
```

oèo- 1 y… **show ip ssh xkUð** SSH Server ¤4 SSH #'ĵž

oЬP'ĵ- -

oəjö- -

oъVđ- -

14.11 show crypto key mypubkey

₱ SSH Server ¸%W¸%WBÂðž

show crypto key mypubkey { **rsa | dsa** }

o₱@

@	T
rsa	₱ RSA %W
dsa	₱ DSA %W

o»X%”o- Ð”o₱F%”

oH-

14

o6-o- ₱]¤E SSH Server ¸%W¸%WBÂðž¸%W¸%Wdo¸%WB

oF¤ð- 1 y₱]¤E SSH Server ¸%W RSA ¸%WBÂðž

```
Ruijie(config)#show crypto key mypubkey rsa
% Key pair was generated at: 7:1:25 UTC Jan 16 2013
 Key name: RSA1 private
 Usage: SSH Purpose Key
 Key is nopS7  Key is0 0 9 123.78 373.9 0 Tm[(Ruij)-6(ie(co)-5(n)1(fig))-9(#)Key
```

oиVФ- -

14.12 show ip ssh

₱ SSH Server ЯFЂbž

show ip ssh

oрФ

@	T
-	-

oxX%”o- Ф”oЯFЂ%”

oЋ- 14

o6-o- ₱ SSH Server ЯFЂbžyЋk SSH ServeroЎMšpž

ά ‡ ¸ ^ ı SSH 0 ж ő ¡ ب К ^ ı ģ ε ‡ ő К SSH 0 ж в ę ¢ .

oFЂb- 1 y₱ SSH Server ЯFЂbž

```
//        SSH Server          SCP
Ruijie(config)#show ip ssh
SSH Disable - version 1.99
please generate rsa and dsa key to enable SSH
Authentication timeout: 120 secs
Authentication retries: 3
SSH SCP Server: disabled

//        SSH Server          SCP
Ruijie(config)#show ip ssh
SSH Enable - version 1.99
Authentication timeout: 120 secs
Authentication retries: 3
SSH SCP Server: enable
```

SSH SCP Server enaled/disabled	SSH SCP

oUP'ô- -

ouV@- -

14.13 show ssh

SSH N?N'ôž

show ssh

-	-

oxX%"o- Ô"oBF%"

o-o- 14

o6-o- SSH NN'ôžyNñ VTY ZoSSH ô•%'coco•

NÅdož

oFåd- 1 SSH NN'ôž

```
Ruijie#show ssh
Connection Version Encryption    Hmac        Compress    State                 Username
         0       1.5 blowfish                           zlib        Session started test
         1       2.0 aes256-cbc      hmac-sha1          zlib        Session started test
```

<Ky

<	
Connection	Nñ VTY Z
Version	SSH 4 SSH #'Î
Encryption	%'c
Hmac	c
Compress	9'c
State	NÅ
Username	d

oUP'ô- -

ouV@- -

Ú 4¡2˘4‡G!5B Q , ‘,Ì G Y ¨ ÙÀ„ ß·8V Ö

1. Q ,> + M6
2. ¸. G!5B1u)Ú
3. MCU 1u)Ú
4. LINE
5. RMON
6. File System
7. SNMP
8. HTTP
9. 2˘4‡ „ «
10. RLOG
11. CWMP
12. LED
13. USB
14. PKG_MGMT
15. SYS
16. NTP
17. SNTP
18. TIME RANGE

1 Ê

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¬ Þ . F åo- ¨ ¯ * ê Ô Ó ï % ” k B ã x X ¨ ó • ð dož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¯ * ê Ô Ó ï % ” ó • x X ð d ho•po•so•uo•un Ž x d ã ð **helpo•pingo•showo•undebugo• undebugož**
ó • x X ð d * **no alias exec x X í ”ož**
* F å x X ð d k U Y %² % Ÿ Û W Á%² Ú x Xož † ò k ë •%² ð d Û W n%² Ú x X ù%² B ã k À e U Y Ð Ò ÿ µ e µ B ãož
ð d ñ W n x X ñ Ô x X % ” © ¢ ù © Ï ¨ x X % ” k ¨ ¶ B F å % ” kÿ µ **alias** ? U Y ç ß ¢ ù U Y F å ð d ¶ B x X % ” y

```
5XLMLH FRQILJ DOLDV "
DDD JV $$$ VHUYHU JURXS PRGH
DFO DFO FRQILJXUH PRGH
EJS &RQILJXUH EJS 3URWRFRO
FRQILJ JOREOH FRQILJXUH PRGH
```

x X ðd u 4 n 3 lå% U Y çC d ª 6 ¤ gŒ s2vq ‘* P a HCPaVï„Q ´!ø #6 @ @ @ @ ‘ P 0

n ’ Î y

```
5 X L M L H  V "
 V  V K R Z  V K R Z  V W D U W  F K D W  V W D U W  W H U P L Q D O  V H U Y L F H
```

òçðd æ W n x X 2%† % k Ø k Z 1 x X , Ü û ò k ¤ EXEC % ” F å ð ”sv” W

Á x X **show version k é y**

```
5 X L M L H  V "
 V  V K R Z  V W K Y R ” Z  Y H U W K L R Z Q ”  V W D U W  F K D W
V W D U W  W H U P L Q D O  V H U Y L F H
```

ðd • ÀR ÿµ x X g %† ÷k ø µ ˜q o ò µ ÿk òç¤ x X $ ø ÿµ4 q k

< n P ‘ c ðd y

```
5 X L M L H  V "
V K R Z  V W D U W  F K D W  V W D U W  W H U P L Q D O  V H U Y L F H
```

x X ðd - U Y u 4 B H x X @ n ¸ k òF åN M % x X ðd”ia” W n”**ip address**” k é ¨ N M % ” y

```
5 X L M L H  F R Q I L J  L I  L D  "
$ % & ’ ,3 D G G U H V V
G K F S ,3 $ G G U H V V  Y L D  ’ + & 3
5 X L M L H  F R Q I L J  L I  L S  D G G U H V V
```

L çß4 **ip address x X e µ @ *ƒ* ’ Î k w 1 ð d Á E è Ž x Xož**

x X ð d ¨ … ž · À … ÿ µ k k é t œ ðož

… **show aliases x X U Y ò 0 © Ï ð d — åož**

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

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

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

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

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

ðd æ W n x X § c x Ý 255 … k ò ç Ý ’ ò é k ß ë Y U P ’ Î y

```
 & R P P D Q G  D O L D V  V W U L Q J  W R O  O R Q J
```

? x X % u 4 ´ Ú ðd 100 k ò ç Ý ’ ò é k ß ë Y U P ’ Î y

```
 & D Q  W  D G G  P R U H  W K D Q  F R P P D Q G  D O L D V H V  L Q  V L Q J O H  P R G H
```

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

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

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

1.2 privilege

F å%² Ú x X ü g Ó ' I 5%² x X ´ ðož

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

Ê Ö Þ . F åož

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

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T

```
5XLMLH FRQILJ SULYLOHJH H[HF OHYHO UHORDG
4 k ·ð 1 µ CLI µkGëUY… reload x X y
5XLMLH!UHORDG "
/,1( 5HDVRQ IRU UHORDG
FU!
òç}1 reload ¶ B ÿ x X C I Ó Ë ´ ð 1 ïkéUY… all ¼ p y
5XLMLH FRQILJ SULYLOHJH H[HF DOO OHYHO UHORDG
4 k ·ð 1 µ CLI µkGëUY… reload ¶ B ÿ x X y
5XLMLH!UHORDG "
/,1( 5HDVRQ IRU UHORDG
DW UHORDG DW D VSHFLILF WLPH GDWH
FDQFHO FDQFHO SHQGLQJ UHORDG VFKHPH
[redacted]WHUYDO
```

o¬ à • co- # +%² Ú ¨ ä ´ ð g † ò 14 ´ h u 4 ò z ´ ð g † ò 1 ´ h u 4 x X k À e 1 ¥ x X I Ó Ë z ´ ðož ä
E ñ z ´ ð e k ò ç ¥ x X U Y t ü g k é n ¢ I Ó Ä |ož µ k G 0% 1 ¥ x X I Ó 0•_ ~p© ’ Î• ¾ y †6úÐ R ªªg à • co-

S	S L Q J
V	V K R Z
X	X Q G H E X J
X Q	X Q G H E X J

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2 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 kU 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¬ @ 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¬ … 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 g**banner motd** **h Ù ¯ ª P k À e 1 ª P** LOGIN U P ’ Î g**banner 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 ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.5 banner motd

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

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

o¬ @ *ƒ* ª ¢o-

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

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- … ¥ x X U Y F å ? ™ * = ’ Î k ò ç p µ È Ø ã œ … e Q À ÿ µ … k é ? … 1 t © Ï ’ož
¢ ï £ — Õ ž kMOTD g**banner motd** **h Ù ¯ ª P k À e 1 ª P** LOGIN U P ’ Î g**banner 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 ¥ x X F å U P ’ Î © S + ñ Ä line ¿ è k ò ç } ¨ î Ú ¿ è W 2 MOTD U P ’ Î k U Y ¨ À } line ¿ è F å **no motd-bannerož**

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

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

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

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.6 banner prompt-timeout

ò ï £ • š Ý ž U P ’ Î

banner prompt-timeout *c message c*

H *ƒ* ï £ • š Ý ž U P * ’ Î F å

no banner prompt-timeout

o¬ @ *ƒ* ª ¢o-

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

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

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

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 ’ Îg**banner slip-ppp hož**

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

5 X L M L H F R Q I L J E D Q Q H U V O L S S S * ¡H 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 [*privilege-level*]

o¬ @ ƒ ª ¢o-

@ ƒ	T
privilege-level	Ó ’ ^ ´

o¬ Þ . F åo- -

o¬ x X % ”o- ¯ * ï % ”

o¬ Þ . ´ ðo- 0

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

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

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

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

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

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.10 disconnect

• • 5 Ü Telnet Client Nož

disconnect *session-id*

o¬ @ *ƒ* ª ¢o-

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

o¬ Þ . F åo- -

o¬ x X % ”o- ¯ * ï % ”

o¬ Þ . ´ ðo- 1

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

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

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

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	*Ó ’ ^ ´*

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 ’ ^ ´ k é 1 ¢ ù Ó ’ ^ ´ U ñ 6 Ó ’ ^ ´ož

o¬ F å †o- 1 y ò P † F å — Õ 1 ¢ ù Ó ’ ^ ´ ‘ 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	ï Ó ’ ´ ð

0	*g U # h 6 ¢ † M X …*
password	*ï µ Ô Ó* EXEC F å C M X ¢ † k … x † 8 y1~126

5 *encrypted-password*	*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- ¶ B F å % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- Enable • š M X ã password y security M X _ ypassword • % % M X k Q — å 15 ´ M X z security M X ¶ % M X k U Y 0 ½15 ´ — å M Xož ò ç © Ï k c ´ ð c ž ¨ Y _ M X k é password M X ÿ |ož ò ç — å ³ 15 ´ password M X k é k Ë ß Š s U P k w ô security M X z ò ç — å 15 ´ password M X y security M X ¶ , c k é 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** | **web-server** [**http | https | all**] | **snmp-agent** }

o¬ @ ƒ ª ¢o-

@ ƒ	T
ssh-server	**ø • ¼ {** SSH Server k ¥ x X c ž ø • IPv4 y IPv6 Æ ož
telnet-server	**ø • ¼ {** Telnet Server k ¥ x X c ž ø • IPv4 y IPv6 Æ ož
web-server [**http	https	all**]	**ø • ¼ {** Web Server k ¥ x X c ž ø • IPv4 y IPv6 Æ ož
snmp-agent	**ø • ¼ {** Snmp Agent k ¥ x X c ž ø • IPv4 y IPv6 Æ ož

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

o¬ x X % ”o- ¶ B F å % ”

/ ¡ µ incoming ” µ ð o M ¥ } G ¬ ¾ h ‘ ž incoming ” µ ð o d

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

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

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

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.16 exec-timeout

F å LINE ñ 4 — Õ N Ý ž ž •ož

exec-timeout *minutes* [*seconds*]

H *ƒ* LINE N Ý ž k N K Ý žož

no exec-timeout

o¬ @ *ƒ* ª ¢o-

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

o¬ Þ . F åo- Þ . Ý ž ž • 10 min

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

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

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

```
5 X L M L H F R Q I L J O L Q H H [ H F W L P H R X W
```

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 k U 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
```

```
FDUULHU GHOD\   6SHFLI\ GHOD\ IRU LQWHUIDFH WUDQVLWLRQV
GDPSHQLQJ      (QDEOH HYHQW GDPSHQLQJ
GHIDXOW        6HW D FRPPDQG WR LWV GHIDXOWV
GHVFULSWLRQ    ,QWHUIDFH VSHFLILF GHVFULSWLRQ
GOGS           ([HF GDWD OLQN GHWHFWLRQ FRPPDQG
GXSOH[         &RQILJXUH GXSOH[ RSHUDWLRQ
HIP           &RQILJ HIP IRU DQ LQWHUIDFH
HQG            ([LW IURP LQWHUIDFH FRQILJXUDWLRQ PRGH
H[LW           ([LW IURP LQWHUIDFH FRQILJXUDWLRQ PRGH
H[SHUW         ([SHUW H[WHQGHG $&/
IORZFRQWURO    6HW WKH IORZ FRQWURO YDOXH IRU DQ LQWHUIDFH
IXOO GXSOH[    )RUFH IXOO GXSOH[ RSHUDWLRQ
JOREDO         *OREDO $&/
JYUS           *953 FRQILJXUH FRPPDQG
KDOI GXSOH[    )RUFH KDOI GXSOH[ RSHUDWLRQ
KHOS           'HVFULSWLRQ RI WKH LQWHUDFWLYH KHOS V\VWHP
LS            ,QWHUIDFH ,QWHUQHW 3URWRFRO FRQILJ FRPPDQGV
LSY            ,QWHUQHW 3URWRFRO 9HUVLRQ
LVLV           ,QWHUPHGLDWH 6\VWHP  ,QWHUPHGLDWH 6\VWHP  ,6 ,6
O             &RQILJ /  DWWULEXWH
ODEHO VZLWFKLQJ  (QDEOH LQWHUIDFH SURFHVV PSOV SDFNHW
ODFS           /$&3 LQWHUIDFH VXEFRPPDQGV
OOGS           /LQN /D\HU 'LVFRYHU\ 3URWRFRO
ORDG LQWHUYDO   6SHFLI\ LQWHUYDO IRU ORDG FDOFXODWLRQ IRU D
PDF            0DF H[WHQGHG $&/
PDF DGGUHVV    6HW PDF DGGUHVV
PSOV           0XOWL 3URWRFRO /DEHO 6ZLWFKLQJ
PWX            6HW WKH LQWHUIDFH 0D[LPXP 7UDQVPLVVLRQ 8QLW  078
QR            1HJDWH D FRPPDQG RU VHW LWV GHIDXOWV
QWS            &RQILJXUH 173
SRUW JURXS     $JJUHJDWHSRUW SRUW EXQGOLQJ FRQILJXUDWLRQ
UHGLUHFW       5HGLUHFW SDFNHWV
UPRQ           5PRQ FRPPDQG
VHFXULW\       &RQILJXUH WKH 6HFXULW\
VKRZ           6KRZ UXQQLQJ V\VWHP LQIRUPDWLRQ
VKXWGRZQ       6KXWGRZQ WKH VHOHFWHG LQWHUIDFH
VQPS           0RGLI\ 6103 LQWHUIDFH SDUDPHWHUV
VSHHG          &RQILJXUH VSHHG RSHUDWLRQ
VZLWFKSRUW     6HW VZLWFKLQJ PRGH FKDUDFWHULVWLFV
YUI           0XOWL DI 931 5RXWLQJ )RUZDUGLQJ SDUDPHWHUV RQ WK
YUUS           9553 LQWHUIDFH VXEFRPPDQGV
```

```
[FRQQHFW          ;FRQQHFW FRPPDQGV
```

3 y µ P † ª P x X e µ ñ æ @ ƒ • º y

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.18 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 ,

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 *f* — 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 ¿ è F å • % £ M X û àož

login

H ƒ £ M X û àož

no login

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

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

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç Z Ä o AAA

o¬ … 6 -o- -

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

```
5XLMLH FRQILJ DDD QHZ PRGHO
5XLMLH FRQILJ DDD DXWKHQWLFDWLRQ ORJLQ GHIDXOW JURXS UDGLX
5XLMLH FRQILJ OLQH YW\
5XLMLH FRQILJ OLQH ORJLQ DXWKHQWLFDWLRQ GHIDXOW
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.24 login local

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

login local

H ƒ £ Î ª ï • šož

no login local

o¬ @ ƒ ª ¢o-

```
5XLMLH FRQILJ OLQH  ORJLQ ORFDO
```

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 k1 ¨ 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

```
5XLMLH FRQILJ  OLQH YW\
5XLMLH FRQILJ OLQH QR PRWG EDQQHU
```

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¬ … 6 -o- -

o¬ F å †o- 1 y µ P † 6 line £ M X red 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 S D V V Z R U G U H G
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.27 prompt

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

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

o¬ @ *ƒ* ª ¢o-

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

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

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

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

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.28 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 — ¨ Ã ¨ Û & Ç — V • $ secret Ç — / secret Ç — $ ž G ¨ V Ÿ # $ password Ç — ò f 5 Ç — [$ ž G Æ ã • Ã ž G d

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

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

F å4 M X $ e kvty0 1 g MD5 U " % kshow ß Û | ç ò ñ P y

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.29 session-timeout

F å ¢ ù LINE] Æ • y ñ i Ä € k ¢ Ý ž ž •ož

session-timeout *minutes* [**output**]

H ƒ LINE ñ i Ä € k ¢ Ý ž ž • k k ¢ K Ý žož

no session-timeout

o¬ @ ƒ ª ¢o-

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

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

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç ¨ 6 ž • Ä k R ¢ ù LINE

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2.31 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
```

Ä℃K y

o¬ … 6 -o- -

o¬ F å †o- -

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2.33 show service

ò 0 ¢ ù Æ • o ê ¼ { Õ Ñož

show service

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 ò 0 ¢ ù Æ • o ê ¼ { Õ Ñož

```
5XLMLH VKRZ VHUYLFH
ZHE VHUYHU GLVDEOHG
ZHE VHUYHU KWWSV GLVDEOHG
VQPS DJHQW HQDEOHG
VVK VHUYHU HQDEOHG
WHOQHW VHUYHU GLVDEOHG
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

2.34 show sessions

ª P] Æ • y Telnet Client † ? † ’ Îož

show sessions

o¬ @ ƒ ª ¢o-

@ ƒ	T

2.36 show this

ò 0 © Ï ¢ ù % ” ÿ | F å ’ Îož

show this

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- ñ Ä F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¨ range % ” 1 — c ª P ¢ ù % ” F åož , y

1. * **line** *first-line last-line x X 6 F å%² 8 ¿ è k w µ* LINE F å % ” z
2. * **vlan range x X 6 F å Ú** VLAN k w µ vlan range F å % ” z
3. * **interface range x X 6 F å Ú N M k w µ** interface range F å % ” z

¨ Õ Ñ k … ¥ x X 1 — c ª P ¢ ù % ” ÿ | F å ’ Î k ò ç ü g ¥ x X é ñ ª P F å qož

o¬ F å †o- 1 y µ P † ò 0 interface fastEthernet 0/1 ÿ | F å ’ Î

```
5XLMLH FRQILJ LQWHUIDFH IDVW(WKHUQHW
5XLMLH FRQILJ LI )DVW(WKHUQHW VKRZ WKLV
%XLOGLQJ FRQILJXUDWLRQ

 VSDQQLQJ WUHH OLQN W\SH SRLQW WR SRLQW
 VSDQQLQJ WUHH PVW SRUW SULRULW\

HQG
5XLMLH FRQILJ LI )DVW(WKHUQHW
```

o¬ U P ’ Îo- **-**

o¬ u V ª ¢o- -

2.37 speed

F å Ä € — Õ , äož

speed *speed*

Ê Ö Ä € — Õ , ä ó • F åož

no speed

o¬ @ *ƒ* ª ¢o-

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

o¬ Þ . F åo- Þ . , ä © 9600

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

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

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

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

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

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.38 telnet

£ ñ Telnet Æ ˜ož

telnet *host* [*port*] [**/source** { **ip** *A.B.C.D* **| ipv6** *X:X:X:X::X* **| interface** *interface-name }*]

o¬ @ *ƒ* ª ¢o-

@ ƒ	T
host	Telnet Æ ˜ IPV4 ª -o• IPV6 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 -
ipv6 *X:X:X:X::X*	*6* Telnet ï € … › IPV6 ª -
interface *interface-name*	*6* Telnet ï € … › N M

o¬ Þ . F åo- -

o¬ x X % ”o- ¯ * ï % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

o¬ F å †o- 1 y µ † ÿ ktelnet) — Õ IPV4 ª - 192.168.1.1 k € M … ó • › k 6 › N M Gi 0/1 k
5 X L M L H W H O Q H W V R X U F H L Q W H U I D F H J L J D E L W (W K H U Q H W

2 y µ † ÿ ktelnet) — Õ IPV6 ª - 2AAA:BBBB::CCCC
5 X L M L H W H O Q H W $ $ $ % % % % & & & &

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.39 username

F å Î ª ï Ã Z Y C U # I Ó ’ Îož

username *name* [**login mode** { **console** | **ssh** | **telnet** }] [**online amount** *number*] [**permission** *oper-mode path*] [**privilege** *privilege-level*] [**reject remote-login**] [**web-auth**] [**pwd-modify**] [**nopassword** | **password** [**0** | **7**] *text-string*]

í ” Î ª ïož

no username *name*

o¬ @ ƒ ª ¢o-

@ ƒ	T
name	ï d
login mode	*F å Ã Z £ • ” ’ òož*
console	**’ ò Ã Z £ • ”** consoleož
ssh	**’ ò Ã Z £ • ”** sshož
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

2.40 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- -

2.41 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¬ … 6 -o- ¥ x X 9 ï ’ Î - ß ñ † ^ož

o¬ F å †o- 1 y µ P † F å - µ ï ’ Î:

```
5XLMLH XVHUQDPH H[SRUW XVHU FVY
```

o‹ à co› -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

2.42 write

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

o¬ @ *ƒ* ª ¢o-

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

o¬ Þ . F åo- -

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

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

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

```
5XLMLH ZULWH
%XLOGLQJ FRQILJXUDWLRQ
>2.@
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

3 MCU á

3.1 show gps info

AP ò 0 GPS ' Îož

show gps info

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 15

o¬ … 6 -o- —

o¬ F å †o- 1 yGPS ' Î 3 o B H ž k ª P GPS ' Îož

/ R Q J L W X G H

/ D W L W X G H

< † K y

<	ª ¢
Longitude	GPS Æ † ' Î k u 4 ê ñ B H â Â ª P NAož
Latitude	

4 LINE

4.1 access-class

* ACL ¡ gIPv4 h O ò Ä € £ož

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

H ƒ ACL ¡ gIPV4 h O ò Ä € £ož

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
access-list-number	ACL Ú Z kU F 8 y IP ö Õ ACL(1-99 k1300-1999) dP ý J ACL(100-199 k 2000-2699)ož
access-list-name	ACL d fož
in	¡ Û *Nož*
out	¡ Ù ß *Nož*

o¬ Þ . F åo- -

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

01FAD 7.1288 6 re f 252.66 431.28 0F -0.0013 Tc 00 T615.6 7.464

o¬ u V ª ¢o- -

4.2 accounting commands

• o line ¿ è x X t “ Ã ož

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

H *f* x X t “ Ã ož

no accounting commands *level*

o¬ @ *f* ª ¢o-

accounting exec { **default** | *list-name* }

H *f* Exec “ Ã ož

no accounting exec

o¬ @ *f* ª ¢o-

@ *f*	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 JURXS
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- -

4.4 authorization commands

• o ¿ è x X I Ó ož

authorization commands *level* { **default** | *list-name* }

H *f* x X I Ó ož

no authorization commands *level*

o¬ @ *f* ª ¢o-

@ *f*	T
level	} g I Ó x X ´ ð k 8 0~15 k Ð „ ´ ð x X ¬ } I Ó * e õ ü gož

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

o¬ Þ . F åo- ¼ { x X I Ó ož

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

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

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

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.5 authorization exec

• o ¿ è Exec I Ó ož

authorization exec { **default** | *list-name* }

H ƒ Exec I Ó ož

no authorization exec

o¬ @ ƒ ª ¢o-

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

o¬ Þ . F åo- ¼ { Exec I Ó ož

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

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

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

```
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- -

4.6 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 ^ h N k ¢ k é k y ö • • Nož

```
5XLMLH FOHDU OLQH YW\
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.7 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 › k 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¬ Þ . ´ ðo- 14

o¬ … 6 -o- Î x X — å © Ä € Æ N • • ½ p k ï U Y ÿ G ¬ } — å • • Ä € Æ N ½ pož Ä € Æ N • • ½ p © o ASCII A(ò a ~ z k A ~ Z Y C 0 ~ 9 ˆ ˆ) k k é 1 - Ä € Æ 3 o * ’ož

o¬ F å †o- 1 y — å ¨ Vty0-5 • • Ä € Æ N ½ p Ctrl+E(¿ ASCII › 0x05)ož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.8 escape-character

— å ¿ è ß …ož

escape-character *escape-value*

Ê Ö © Ï Þ . — åož

no escape-character

o¬ @ *ƒ* ª ¢o-

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

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

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

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

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

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.9 exec line ¿ è µ x X g µož

exec

ò line ¿ è µ x X g µož

exec

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- Þ . ª • ¿ è µ x X g µož

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

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

o¬ F å †o- 1 y ’ ò 1 ¿ è µ x X g µož

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

    FRQ                LGOH
    YW\                LGOH
    YW\                LGOH
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.10 history

• o

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

```
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 K L V W R U \ V L ] H
```

2 y ¼ { 0-5 line ¿ è 7 W “ £ ož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.11 ipv6 access-class

* ACL ¡ gIPv6 h O ò Ä € £ož

ipv6 access-class *access-list-name* { **in | out** }

H *ƒ* * ACL ¡ gIPv6 h O ò Ä € £ož

no ipv6 access-class *access-list-name* { **in | out** }

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
access-list-name	ACL d fož
in	**¡ Û Nož**
out	**¡ Ù ß Nož**

o¬ Þ . F åo- -

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å + Ú Z 8 0-4 VTY ß > IPv6 N g ACL d f test ACL ¡ož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.12 length

— å 6 ¿ è Ä € % I Â Ý g ƒož

length *screen-length*

Ê Ö Þ . — åož

no length

o¬ @ ƒ ª ¢o-

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

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

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

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

```
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- -

4.13 line

µ ñ 6 LINE % ”ož

line [**console** | **vty**] *first-line* [*last-line*]

o¬ @ ƒ ª ¢o-

@ 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- -

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

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.18 refuse-message

F å line ¿ è ! Í £ U P ’ Îož

refuse-message

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- ª P ¢ ù line ¿ è “ £ 7 W x Xož

```
5XLMLH VKRZ KLVWRU\
H[HF
VK SULYLOHJH
VK UXQ
VKRZ XVHU
VK XVHU DOO
VKRZ KLVWRU\
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.20 show line

ò 0 ¿ è F å ’ Îož

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

o¬ @ ƒ ª ¢o-

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

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

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

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

< K y

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

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

4.21 show privilege

ª P ¢ ù line ¿ è Ó ' ´ ðož

show privilege

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 1

o¬ ... 6 -o- -

o¬ F å †o- ª P ¢ ù line ¿ è Ó ' ´ ðož

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

o¬ U P ' Îo- -

o¬ u V ª ¢o- -

4.22 show users

ª P ¿ è £ ï ' Îož

show users [**all**]

o¬ @ ƒ ª ¢o-

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

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ ... 6 -o- -

o¬ F å †o- 1 y ª P ¢ ù] £ ¿ è ï ' Îož

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

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

2 yª P ñ Ä ¿ è ï ' Îož

```
5XLMLH FRQILJ  VKRZ XVHUV 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- -

4.23 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- -

4.24 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- -

4.25 terminal history

¨ ¢ ù Ä € • o line ¿ è 7 W x X “ £ k ê ñ F å line ¿ è 7 W x X “ £ Ú) ƒ ož
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- -

4.26 terminal length

— å ¢ ù Ä € % I Â Ý g ƒ ož
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 1 4 r m l l

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 ØR F DQ VHL RQ V Z W L F K’

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.28 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

o¬ … 6 -o- -

o¬ F å †o- 1 y — å ¢ ù Ä € f Ô ä 115200ož

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

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.29 terminal width

F å ¢ ù Ä € % g Â Ý ç ƒ k /%² g ! †ož
terminal width *screen-width*

Ê Ö ¢ ù Ä € g !ož
terminal no width

o¬ @ ƒ ª ¢o-

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

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

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.30 timeout login

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

Ê Ö ó • line ¿ è £ • š ž •ož

no timeout login response

o¬ @ ƒ ª ¢o-

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

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

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

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

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

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.31 transport input

6 line ¿ è U Y * ’ # ‘ož

transport input { **all** | **ssh** | **telnet** | **none** }

Ê Ö line ¿ è U Y * ’ # ‘ož

no transport input { **all** | **ssh** | **telnet** | **none** }

o¬ @ ƒ ª ¢o-

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

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

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- F å 0-4 VTY line ¿ è Q ª • telnet * ’ # ‘ož
5 X L M L H F R Q I L J O L Q H Y W \
5 X L M L H F R Q I L J O L Q H W U D Q V S R U W L Q S X W V V K

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.32 vacant-message

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

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

o¬ @ *ƒ* ª ¢o-

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

o¬ Þ . F åo- -

o¬ x X % ”o- LINE F å % ”

o¬ Þ . ´ ðo- 14

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

o¬ F å †o- 1 y F å line ¿ è ß £ U P ’ Î ß i H — Õož

5 X L M L H F R Q I L J O L Q H Y D F D Q W P H V V D J H # ßi H Õ #

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

4.33 width

F å 6 ¿ è Ä € % g Â Ý ç ƒ k /%² g ! †ož
width *screen-width*

Ê Ö 6 ¿ è g !ož
no width

o¬ @ ƒ ª ¢o-

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

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

o¬ x X % ”o- LINE F å % ”

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- -

5 RMON

5.1 rmon alarm

F å RMON s Š ož

rmon alarm *number variable interval* {**absolute** | **delta**} **rising-threshold** *value* [*event-number*] **falling-threshold** *value* [*event-number*] [**owner** *ownername*]

í ” 6 s Š n ¾ož

no rmon alarm *number*

o¬ @ ƒ ª ¢o-	@ ƒ	T

R Z Q H U 8 V H U $

o¬ à • co- 1 y … **show run x X k U Y ò 0 x X F å © k è**
2 y … **show rmon alarm ê ñ show rmon x X k U Y ò 0 ñ** alarm n ¾ À } @ ƒ Ä

o¬ U P ' Îo- 1 y í " ¨ F å ž k é U P j ¨
2 y ', › 4 9 ^ 9 ', › ž k é U P j ¨
3 y ÿ µ ! O + » OID ` ò k é U P j ¨
4 y F å n ¾ ƒ] Æ ñ ' ª • Ç F å ž k U P j ¨
5 y ¨ ¬ Ä è Õ Ñ k é U P j ¨

o¬ o • j ¨o- 1 y ÿ µ ! O + » OID ` ò kOID + • J O ¨ ê ñ • º © … º ê ñ — … Z … º
2 y ', › 4 9 ^ 9 ', ›

o¬ u V ª ¢o- -

5.2 rmon collection history

F å Y ß à N M 7 W Ï ‹ ož
rmon collection history *index* [**owner** *ownername*] [**buckets** *bucket-number*] [**interval** *seconds*]

o¬ F å †o- 1 o• F å ¨ € M GigabitEthernet 0/1 … 7 W Ï ‹ k — å 7 W Ï ‹ n O 5 k Ï ‹ u Ê › © 60sož

```
5XLMLH FRQILJXUH WHUPLQDO
(QWHU FRQILJXUDWLRQ FRPPDQGV RQH SHU OLQH (QG ZLWK &17/ =
5XLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
5XLMLH FRQILJ *LJDELW(WKHUQHW UPRQ KLVWRU\ RZQHU 8VHU$ EX
```

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

2 y … **show rmon history ê ñ show rmon x X k U Y ò 0 ñ 7 W O ò n Y C D ÿ 7 W Ï ‹ n n ¾ À**

} @ ƒ Ä

o¬ U P ’ Îo- 1 y í ” ¨ F å ž k é U P j ¨

2 y “ w] Æ F å 7 W O ò n n ¾ @ ƒ k U P j ¨

3 y F å n ¾ ƒ] Æ ñ ’ ª • Ç F å ž k U P j ¨

4 y ¨ ¬ Ä è Õ Ñ k é U P j ¨

o¬ o • j ¨o- 1 y M Ö F å ê ñ “ w] Æ F å 7 W O ò n n ¾

o¬ u V ª ¢o- -

5.3 rmon collection stats

F å Y ß à N M Ï ‹ ož

rmon collection stats *index* [**owner** *ownername*]

í ” 6 Y ß à N M Ï ‹ n ¾ož

no rmon collection stats *index*

o¬ @ ƒ ª ¢o-

@ ƒ	T
index	Ï ‹ n ¾ « – Z k H › 8 y1~65535
owner *ownername*	g U # h — å n ¾ ë • ñ *ownername kownername* 1~63 … … k ã Ý 4 Ê k u 4 q

o¬ Þ . F åo- -

o¬ x X % ”o- N M % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ª • +] Æ F å Ï ‹ n n ¾ @ ƒ g “ w z ª • ¨ N M í ” ³ Î N M F å 7 W Ï ‹ n ¾ož

o¬ F å †o- 1 y F å ¨ € M GigabitEthernet 0/1 … Ï ‹ ož

```
5XLMLH FRQILJXUH WHUPLQDO
(QWHU FRQILJXUDWLRQ FRPPDQGV RQH SHU OLQH (QG ZLWK &17/ =
5XLMLH FRQILJ LQWHUIDFH JLJDELW(WKHUQHW
5XLMLH FRQILJ *LJDELW(WKHUQHW UPRQ VWDWV RZQHU 8VHU$
```

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

2 y … **show rmon statistics ê ñ show rmon x X k U Y ò 0 ñ Ï ‹ n n ¾ À } @ *ƒ* Ä**

o¬ U P ’ Îo- 1 y í ” ¨ F å ž k é U P j ¨

2 y “ w] Æ F å Ï ‹ n ¾ @ *ƒ* k U P j ¨

3 y F å n ¾ *ƒ*] Æ ñ ’ ª • Ç F å ž k U P j ¨

4 y ¨ ¬ Ä è Õ Ñ k é U P j ¨

o¬ o • j ¨o- 1 y M Ö F å ê ñ “ w] Æ F å Ï ‹ n n ¾

o¬ u V ª ¢o- -

5.4 rmon event

F å RMON 7 ^ož

rmon event *number* [**log**] [**trap** *community*] [**description** *description-string*] [**owner** *ownername*]

í ” 6 7 ^ n ¾ož

no rmon event *number*

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
number	7 ^ n « – Z k H › 8 y1~65535
log	g U # h ™ º 7 ^ k ¢ 7 ^ t ‡ G ž k © Ï k “ £ ™ º k ó • ™ º “ £ O © 10 Ú k Ý 10 Ú ž k í ” Â • $ ù “ £
trap *community*	g U # hTrap 7 ^ k ¢ 7 ^ t ‡ G ž k © Ï k Y *community* *} d G* Trap
description *description-string*	g U # h— å 7 ^ T ’ Î *description-string k description-string* 1~127 … …
owner *ownername*	g U # h — å n ¾ ë • ñ *ownername kownername* 1~63 … … k ã Ý 4 Ê

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ª • +] Æ F å 7 ^ n ¾ @ ƒ g “ w k , 7 ^ n • ºo• • } d fo• ë • ño• T ’ Î ˆ @ ƒ ož

o¬ F å †o- 1 y # 7 ^ • y “ £ 7 ^o• G trap ƒ Î ktrap G ñ • } d publicož

```
5XLMLH FRQILJXUH WHUPLQDO
(QWHU FRQILJXUDWLRQ FRPPDQGV RQH SHU OLQH (QG ZLWK &17/ =
5XLMLH FRQILJ UPRQ HYHQW ORJ WUDS SXEOLF GHVFULSWLRQ LI,Q18
```

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

2 y … **show rmon event ê ñ show rmon x X k U Y ò 0 ñ 7 ^ n Y C D ÿ 7 ^ “ £ n n ¾ À } @ ƒ Ä**

o¬ U P ’ Îo- 1 y í ” ¨ F å ž k é U P j ¨

2 y F å n ¾ ƒ] Æ ñ ’ ª • Ç F å ž k U P j ¨

3 y ¨ ¬ Ä è Õ Ñ k é U P j ¨

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

5.5 show rmon

ª P ñ Ä RMON ’ Îož

show rmon

o¬ @ ƒ ª ¢o-	@ ƒ	T) @ 7,‘… BÐ’Ž€`qu[45 , úÀuP— s , u@±) @ 7,‘… d Ð! T

```
                FROOLVLRQV
                XWLOL]DWLRQ
  ~    7W £ ¸¤4Ç¿

UPRQ DODUP WDEOH
                LQGH[
                LQWHUYDO
                RLG
                VDPSOH7\SH
                DODUP9DOXH
                VWDUWXS$ODUP
                ULVLQJ7KUHVKROG
                IDOOLQJ7KUHVKROG
                ULVLQJ(YHQW,QGH[
                IDOOLQJ(YHQW,QGH[
                RZQHU  8VHU$
                VWDWXV

UPRQ HYHQW WDEOH
                LQGH[
                GHVFULSWLRQ  LI,Q18FDVW3NWV LV DEQRUPDO
                W\SH
                FRPPXQLW\  SXEOLF
                ODVW7LPH6HQW   G  K  P  V
                RZQHU  8VHU$
                VWDWXV

UPRQ ORJ WDEOH
                HYHQW,QGH[
                LQGH[
                ORJ7LPH    G    K    P    V
                ORJ'HVFULSWLRQ  LI,Q18FDVW3NWV LV DEQRUPDO
```

o¬ U P ' Îo- -

o¬ u V ª ¢o- -

5.6 show rmon alarm

ª P s Š n ' Îož

show rmon alarm

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 s Š n ’ Î

```
5XLMLH VKRZ UPRQ DODUP
UPRQ DODUP WDEOH
                LQGH[
                LQWHUYDO
                RLG
                VDPSOH7\SH
                DODUP9DOXH
                VWDUWXS$ODUP
                ULVLQJ7KUHVKROG
                IDOOLQJ7KUHVKROG
                ULVLQJ(YHQW,QGH[
                IDOOLQJ(YHQW,QGH[
                RZQHU 8VHU$
                VWDWXV
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

5.7 show rmon event

ª P 7 ^ n ’ Î

show rmon event

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 7 ^ n ’ Î

```
5XLMLH VKRZ UPRQ HYHQW
UPRQ HYHQW WDEOH
                LQGH[
                GHVFULSWLRQ  LI,Q18FDVW3NWV LV DEQRUPDO
                W\SH
                FRPPXQLW\  SXEOLF
                ODVW7LPH6HQW  G  K  P  V
                RZQHU  8VHU$
                VWDWXV

UPRQ ORJ WDEOH
                HYHQW,QGH[
                LQGH[
                ORJ7LPH  G  K  P  V
                ORJ’HVFULSWLRQ  LI,Q18FDVW3NWV LV DEQRUPDO
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

5.8 show rmon history

ª P 7 W n ’ Îož

show rmon history

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 7 W Á ’ Î

```
5XLMLH VKRZ UPRQ KLVWRU\
UPRQ KLVWRU\ FRQWURO WDEOH
```

```
                LQGH[
                LQWHUIDFH   *LJDELW(WKHUQHW
                EXFNHWV5HTXHVWHG
                EXFNHWV*UDQWHG
                LQWHUYDO
                RZQHU   8VHU$
                VWDWV

UPRQ KLVWRU\ WDEOH
                LQGH[
                VDPSOH,QGH[
                LQWHUYDO6WDUW    G   K   P   V
                GURS(YHQWV
                RFWHWV
                SNWV
                EURDGFDVW3NWV
                PXOWL3NWV
                FUF$OLJQ(UURUV
                XQGHU6L]H3NWV
                RYHU6L]H3NWV
                IUDJPHQWV
                MDEEHUV
                FROOLVLRQV
                XWLOL]DWLRQ
```

// Ä 4 7W“£’Î¨4Ô¿

o¬ UP’Îo- -

o¬ uVª¢o- -

5.9 show rmon statistics

ªPYßàÏ‹’Îož

show rmon statistics

o¬ @ƒª¢o-

@ƒ	T
-	-

o¬ xX%”o- Ô Ó %”

o¬ Þ.´ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 Y ß à Ï ‹ ’ Îož

```
5XLMLH VKRZ UPRQ VWDWLVWLFV
HWKHU VWDWLVWLF WDEOH
                LQGH[
                LQWHUIDFH *LJDELW(WKHUQHW
                RZQHU DGPLQ
                VWDWXV
                GURS(YHQWV
                RFWHWV
                SNWV
                EURDGFDVW3NWV
                PXOWL3NWV
                FUF$OLJQ(UURUV
                XQGHU6L]H3NWV
                RYHU6L]H3NWV
                IUDJPHQWV
                MDEEHUV
                FROOLVLRQV
                SDFNHWV 2FWHWV
                SDFNHWV 7R 2FWHWV
                SDFNHWV 7R 2FWHWV
                SDFNHWV 7R 2FWHWV
                SDFNHWV 7R 2FWHWV
                SDFNHWV 7R 2FWHWV
```

o¬ U P ’ Îo-

6 File System

6.1 cd

¾ w ¢ ù è ¬ ê ñ † ^ © Ïož

cd [*filesystem*:] [*directory*]

o¬ @ ƒ ª ¢o-

@ ƒ	T
filesystem:	*† ^ © Ï* url k e µ %² È Z k U † ^ © Ï , y**flash:** , **tmp:ož**
directory	*è ¬ d k ò ç © Y* ª k Ø n P ´ + Ł ‹ k k Ø n P , + Ł ‹o

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

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

o¬ F å †o- 1 y … **cd x X µ** sata F & y

```
5 X L M L H  S Z G
I O D V K
5 X L M L H  F G  V D W D
5 X L M L H  S Z G
V D W D
```

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- -

6.2 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

o¬ Þ . F åo- -

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o-

ò ‘ ª } 3 Ñ } , ³ URL h ¸ < É } ¨ , ³ 3 Ñ , Ä … G " å ´ " q Ð " g þ *
” d

url U Y ò ” y

@ ƒ	T
running-config	**¢ ù 3 ¨ ä F å † ^**
startup-config	**9 ì ÷ F å † ^**
flash:	**Î ª** f ash † ^ © Ï
tftp:	TFTP à Ì Æ ˜ URL k § c ò ñ P y **tftp**:[[//location]/directory]**/filename**

o¬ F å †o- 1 y / ¾ 192.168.64.2 — Õ † ^ netconfig ñ flash M & netconfig k Î ª netconfig] Æ ¨ y

```
5 X L M L H  F R S \  W I W S                    Q H W F R Q I L J  I O D V K  Q H W F R Q I L J
’ R  \ R X  Z D Q W  W R  R Y H U Z U L W H  >  G D W D  Q H W F R Q I L J @ "  > <  1S ~Pxg ‘Q I L J %CPb2 X
```

delete [*filesystem***:**] *file-url*

o¬ @ *ƒ* ª ¢o-

@ ƒ	T
filesystem:	† ^ © Ï url k e µ %² È Z k U † ^ © Ï , y**flash:** , **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 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
’R \RX ZDQW WR GHOHWH >IODVK IVWDE@" >< 1@ \
’HOHWH VXFFHVV
5XLMLH GLU
’LUHFWRU\ RI IODVK
    UZ          -DQ          UF G
    UZ          -DQ          USPGE
  ILOHV   GLUHFWRULHV
        E\WHV WRWDO        E\WHV IUHH
```

o¬ à • co- * **delete x X í ” † ^ k *** **dir x X ª P † ^ ’ Îož**

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

o¬ à • co-

6.6 mkdir

ë •%² •) £ož

mkdir [*filesystem*:] *directory*

o¬ @ ƒ ª ¢o-	@ ƒ	T

o¬ u V ª ¢o- -

6.7 more

ª P%² † ^ Ä ož

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
/**ascii**	Y ASCII ”ª P † ^ Ä
/**binary**	Y 16 ò/ † Î ”ª P † ^ Ä
filesystem:	† ^ © Ï url k e µ %² È Z k U † ^ © Ï , y**flash:** , **tmp:ož**
file-url	*è ¬ d k ò ç © Y* ª k Ø n P ˝ + Ł ‹ k k Ø n P , + Ł ‹o

o¬ Þ . F åo- Þ . Y † ^ = Ä ”Û ª P

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

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

```
5XLMLH PRUH IODVK QHWFRQILJ

 7KH QHWZRUN FRQILJXUDWLRQ ILOH 7KLV ILOH LV FXUUHQWO\ RQO\ X
 FRQMXQFWLRQ ZLWK WKH 7, 53& FRGH LQ WKH OLEWLUSF OLEUDU\

 (QWULHV FRQVLVW RI

      QHWZRUNBLG! VHPDQWLFV! IODJV! SURWRIDPLO\! SURWRQDPH
           GHYLFH! QDPHWRDGGUBOLEV!

 7KH GHYLFH! DQG QDPHWRDGGUBOLEV! ILHOGV DUH DOZD\V HPSW\ L
 LPSOHPHQWDWLRQ

XGS WSLBFOWV Y LQHW XGS
WFS WSLBFRWVBRUG Y LQHW WFS
XGS WSLBFOWV Y LQHW XGS
WFS WSLBFRWVBRUG Y LQHW WFS
UDZLS WSLBUDZ LQHW
```

```
O R F D O    W S L B F R W V B R U G    O R R S E D F N
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

6.8 pwd

ª P ï ¢ ù W •) £ … è ¬ož

pwd

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- -

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

o¬ F å †o- 1 y ª P W •) £ R flash: ä E ñ sata: i

```
5 X L M L H  S Z G
I O D V K
5 X L M L H  F G  V D W D
5 X L M L H  S Z G
V D W D
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

6.9 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 † ^ M x d new-fstab 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 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- -

6.10 rmdir

í "%² ë Ä q) £ož

rmdir [*filesystem***:**] *directory*

o¬ @ ƒ ª ¢o-

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

directory T Þ Qó„W!d‹ $ï kEVV A**%¼ž**V AViV Ue`$ nû ™ ÷ ˆÉ •gTSN Q eV2D3@$iV Uc $ Nû ™Â ðÉ •gR“†úÀ•à’à´`ž

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

o¬ F å †o- 1 y**rmdir 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- -

6.11 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
                          GLVN     UZ  IODVK
                          GLVN     UZ  VDWD
                          GLVN     UZ  XVE
                          GLVN     UZ  VG
```

< K y

<	ª ¢

o¬ u V ª ¢o- -

6.12 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
 GHY VGD RQ W\SH H[W UZ HUURUV UHPRXQW UR FRPPLW
SURF RQ SURF W\SH SURF UZ QRH[HF QRVXLG QRGHY
V\VIV RQ V\V W\SH V\VIV UZ QRH[HF QRVXLG QRGHY
IXVHFWO RQ V\V IV IXVH FRQQHFWLRQV W\SH IXVHFWO UZ
QRQH RQ V\V NHUQHO GHEXJ W\SH GHEXJIV UZ
QRQH RQ V\V NHUQHO VHFXULW\ W\SH VHFXULW\IV UZ
XGHY RQ GHY W\SH GHYWPSIV UZ PRGH
GHYSWV RQ GHY SWV W\SH GHYSWV UZ QRH[HF QRVXLG JLG PRGH
WPSIV RQ UXQ W\SH WPSIV UZ QRH[HF QRVXLG VL]H PRGH
QRQH RQ UXQ ORFN W\SH WPSIV UZ QRH[HF QRVXLG QRGHY VL]H
QRQH RQ UXQ VKP W\SH WPSIV UZ QRVXLG QRGHY
 GHY VGD RQ KDR VKDUH W\SH H[W UZ FRPPLW
ELQIPWBPLVF RQ SURF V\V IV ELQIPWBPLVF W\SH ELQIPWBPLVF UZ QR
```

< K k Y %† g y

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

```
¦       H F K R B P R G X O H  F
¦       H F K R B P R G X O H  R
¦       H F K[redacted]
¦       H F K R B V H U Y H U  F
```

file-url	*è ¬ d k ò ç © Y*	ª k Ø n P ˝ + Ł ‹ k k Ø n P , + Ł ‹o

o¬ Þ . F åo- ó • † ^ © Ï © **flash:ož**

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

oÓzFå- † -o-

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

```
5XLMLH VKRZ GLVN IODVK
1DQG IODVK VL]H 0%
1RU IODVK VL]H 0%
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7 SNMP

7.1 clear snmp locked-ip

} Ž ” SNMP Ò • š â Â e t g › IP ª - n k ¬ ü g x X **clear snmp locked-ipož**

clear snmp locked-ip [**ipv4** *ipv4-address* | **ipv6** *ipv6-address*]

o¬ @ ƒ ª ¢o-

@ ƒ	T
ipv4 *ipv4-address*	Ž ” î Ô › IPv4 ª -
ipv6 *ipv6-address*	**Ž ” î Ô ›** IPv6 ª -

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X 9 ô W Ž ” SNMP Ò • š â Â e t g › IP ª - kU Y Ž ” … › IP ª - n k - U Y Ž ” î Ô › IP ª -ož
› IP ª - t Ž ” e k Û 9 4 › IP ª - SNMP ˜ | † k A U Y M • : ¡ • šož

o¬ F å †o- µ P † Ž ” … SNMP Ò • š â Â e t g › IP ª - n y
5 X L M L H F O H D U V Q P S O R F N H G L S

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

7.2 no snmp-server

F å l U — Õ SNMP W ò ož

no snmp-server

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- o SNMP W ò

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- SNMP W ò Æ ó • • o kP Ù ¨ — å SNMP W ò @ ƒ g † ò NMS Ñ ª -o•• š d y ˜ | Ó ' ˆ hž k
c ž - k ø • SNMP W ò Æ k … ¥ x X U Y ¼ { — Õ u 4 ñ Ä Í Î SNMP W ò Æ ož
¥ x X · À Æ • ¼ x X **enable service snmp-agent c ž ø • k** SNMP W ò Æ õ ÿ | kx Q } ¼ { 4
¿ %² kSNMP W ò Æ 1 k ÿ |ož
… ¥ x X c ž k 1 I U ñ Ä SNMP W ò Æ F å g / … **show running-config x X ò 0 ž k ª P F**
å kM • • o SNMP s= ›Ieable servmp-agent W€E€•N••F°z•¥P` \ tpÜ 13 W ò Æ å ž

```
5XLMLH  VKRZ VQPS
&KDVVLV000))
D 661 03 0S@0F0 hW0X 0L Q 0X W
Gß  00
```

packet size 1472)	
No such name errors	ÿ ß † ‹ ƒ y › No such name j ¨ † È ƒ
Bad values errors	ÿ ß † ‹ ƒ y › Bad values j ¨ † È ƒ
General errors	ÿ ß † ‹ ƒ y › General error j ¨ † È ƒ
Response PDUs	ÿ ß † ‹ ƒ y 3 o › † È ƒ
Trap PDUs	ÿ ß † ‹ ƒ y G ß Trap † È ƒ
SNMP global trap	¶ B Trap • ¼ Ù Á
SNMP logging	¶ B SNMP ™ º • ¼ Ù Á
SNMP agent	¶ B SNMP W ò • ¼ Ù Á

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

7.4 snmp trap link-status

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.5 snmp-server authentication attempt

Î x X 9 ’ ò SNMP Ò • š â Â) ƒ k w 6 Ò • š â Â e Ô ò Œ ož ¥ x X **no ¥ ” Ž ” Ò • š â Â) ƒ ’ ò C , ¼ Ô ò Œ ož**

snmp-server authentication attempt *times* **exceed** { **lock** | **lock-time** *minutes* | **unlock** }

Ž ” Ò • š â Â) ƒ ’ ò C , ¼ Ô ò Œ ož

no snmp-server authentication attempt *times* **exceed** { **lock** | **lock-time** *minutes* | **unlock** }

o¬ @ ƒ ª ¢o-

@ ƒ	T
times	SNMP • š â Â Â Ý) ƒ k 8 y1~10 ož
exceed	+ SNMP : ¡ • š e â Â) ƒ Ý Â Ý ’ ò › ñ J H Ô ò Œ ož
lock	*n P K ! W 2 ¥ ›* IP ª - g • š k%² + ç µ ò d % k ¬ } ’ ò t ô W g † ”ož
lock-time *minutes*	**n P W 2 ¥ ›** IP ª -%² < ž • e k Ç ª • ¿ M • • š ¿ k*minutes* *W 2 ¥ ›* IP ª - ž • k 8 y1 ½65535 k % y y ã Uož
unlock	**n P + • š â Â ï Ÿ ’ ò Ô ò k ª • ¿ Ð Ò £ož**

o¬ Þ . F åo- ó • ¼ { SNMP x à … y

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- SNMP • š â Â e k © Ï k 1 ¿ µ SNMP › IP ª - ’ ò ò d %ož ¢ • š â Â) ƒ Ý ’ › ž k © Ï 1 k ÿ G — Õ — å Ô ò R ‘ + ¿ $ e ˜ | • š g g , • ’ ò y

+ 9 t K ! W 2 • š › IP ª - k Q Ä ’ ò t g ô W † ” e k ¥ › IP ª - õ M • ˜ | • š z

+ 9 t W 2%² < ž • Ä • š › IP ª - k ¢ — å W 2 ž • Ý ž ê ñ ’ ò t ô W † ” e k ¥ › IP ª - õ U Y M • • š z

+ 9 I ’ ò › IP ª - kQ } ï M • ˜ | • š ž k… 4 3 G communityg S + SNMPv1 y SNMPv2c h

ê username g S + SNMPv3 h k < U Y M • • š è ož

o¬ F å †o- 1 y µ P † — å SNMP Ò • š â Â) ƒ 4 k Ò 4) • š â Â e g 30 ã U:

```
5XLMLH FRQILJ VQPS VHUYHU DXWKHQWLFDWLRQ DWWHPSW H[FHHG
```

o¬ à • co- ø • SNMP x à … y e k j ¨ • } d ê j ¨ ï d g ˜ | • š k Ò • š â Â e k g ¥ ›
IP ª - k Ç) ˜ | • š ž ˜ k Ä log ¥ IP] Æ t g ož show snmp locked-ip U Y ò 0 ñ g ç n Ä ¥
IP ª -ož

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.6 snmp-server cache enable

F å ¶ B SNMP MIB Ù ož
snmp-server cache enable

¼ { SNMP MIB Ù ož
no snmp-server cache enable

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- Þ . Õ Ñ k ¥ ¼ {ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- µ P † o SNMP MIB Ù y

```
5XLMLH FRQILJ VQPS VHUYHU FDFKH HQDEOH
```

o¬ à • co- -

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.7 snmp-server cache oid

F å 6 OID - µ o Ù k Y C 6 OID - µ Ù ¾ • ž •ož

snmp-server cache oid *oid-string* **[update-timer** *seconds***]**

¼ { 6 OID - µ Ù k ê Ê Ö 6 OID - µ Ù ¾ • ž •ož

no snmp-server cache oid *oid-string* **[update-timer]**

o¬ @ *ƒ* ª ¢o-

7.8 snmp-server cache update-timer

F å SNMP MIB ¶ B Ù ¾ • ž •ož

snmp-server cache update-timer *seconds*

Ê Ö SNMP MIB Ù ¾ • ž • ó • ›ož

no snmp-server cache update-timer

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
seconds	SNMP MIB ¶ B Ù ¾ • ž • k % y a k 8 60~3600

o¬ Þ . F åo- ó • Ù ¾ • ž • 300 aož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- µ P † F å SNMP MIB Ù ¾ • ž • 600 a y

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.9 snmp-server chassis-id

F å © Ï ~ ç Aož

snmp-server chassis-id *text*

Ê Ö Þ . ›ož

no snmp-server chassis-id

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
text	© Ï ~ ç Z † Î k U Y © *ƒ* ê …ož

o¬ Þ . F åo- ~ ç Z Þ . › © 60FF60

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- SNMP © Ï ~ ç Z%² " … Ñ ˜ ~ ç Z kY Ž + — Õ g œ ðož© Ï ~ ç Z U Y * **show snmp x X ò 0ož**

o¬ F å †o- 1 y F å SNMP © Ï ~ ç Z 123456ož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.10 snmp-server community

F å • š d y ˜ | Ó ’ož

snmp-server community [0 | 7] *string* [**view** *view-name*] [[**ro** | **rw**] [**host** *ipaddr*]] [**ipv6** *ipv6-aclname*

ipv6-aclname	ipv6 ˜ | ç n d f k¼ û 6 ˜ | ç n k 6 ˜ | MIB ipv6 NMS ª - 8 ož
ipaddr	¼ û NMS ª - k 6 ˜ | MIB NMS ª -ož

N M S N MS ª -ož

o¬ … 6 -o- -

o¬ F å †o- 1 y F å SNMP © Ï û © • ” i-net800@i-net.com.cnož
5 X L M L H F R Q I L J V Q P S V H U Y H U F R Q W D F W L Q H W #L Q H W F R P F Q

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.12 snmp-server enable traps

F å Agent g NMS G Trap ƒ Îož
snmp-server enable traps [*notification-type*]

W 2 SNMP g NMS G Trap ƒ Îož
no snmp-server enable traps

o¬ @ ƒ ª ¢o-

@ ƒ	T
notification-type	G Trap • º k Ä Y • º y snmp: o SNMP 7 ^ TRAP * = z bridge: o BRIDGE 7 ^ TRAP * = z mac-notification: o MAC 7 ^ TRAP * = z ospf: o OSPF 7 ^ TRAP * = z urpf: o URPF 7 ^ TRAP * = z vrrp: o VRRP 7 ^ TRAP * = z web-auth: o WEB • š 7 ^ TRAP * =ož

o¬ Þ . F åo- Þ . k W 2 SNMP g NMS G Trap ƒ Îož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X · À ¶ B F å x X **snmp-server host %² Ü … k õ G** Trap ƒ Îož
ò ç Z Ä 6 Trap • º k é , ñ Ä Trap • ºož

o¬ F å †o- 1 y F å G SNMP 7 ^ Trap ƒ Îož

```
5XLMLH FRQILJ  VQPS VHUYHU HQDEOH WUDSV VQPS
5XLMLH FRQILJ  VQPS VHUYHU KRVW          SXEOLF VQPS
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.13 snmp-server flow-control

F å SNMP v Oož

snmp-server flow-control pps [*count*]

Ê Ö SNMP v O ó • ›ož

no snmp-server flow-control pps

o¬ @ ƒ ª ¢o-

@ ƒ	T
count	? a Ô ò SNMP ¬ L † ƒ O k 8 <50-65535>

o¬ Þ . F åo- Þ . F å *count* 150ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å ? a Ô ò 200 SNMP ¬ L †ož

```
5XLMLH FRQILJ  VQPS VHUYHU IORZ FRQWURO SSV
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.14 snmp-server group

F å SNMP ï Áož

snmp-server group *groupname* { **v1** | **v2c** | **v3** { **auth** | **noauth** | **priv** } } [**read** *readview*] [**write** *writeview*] [**access** { **ipv6** *ipv6-aclname* | *aclnum* | *aclname* }]

í ” ï Áož

no snmp-server group *groupname* { **v1** | **v2c** | **v3** {**auth** | **noauth** | **v2œv** p r i

7.15 snmp-server host

F å Agent G ƒ Î NMS Ñ ª -ož

snmp-server host { *host-addr* | **ipv6** *ipv6-addr* } [**traps | informs**] [**version** { **1**

o¬ u V ª ¢o- -

7.16 snmp-server inform

F å inform : ¡ G) ƒ Ý ž G ž •ož

snmp-server inform [retries *retry-num* | timeout *time*]

Ê Ö inform † : ¡ M G) ƒ y Ý ž G ž •ož

no snmp-server inform

o¬ @ ƒ ª ¢o-

@ ƒ	T
retry-num	Inform † : ¡ M G) ƒ k 8 ©<0-255> ož
time	Inform † Ý ž G ž • k 8 ©<0-21474836> ož

o¬ Þ . F åo- Þ . F å *retry-num* *3 ƙtime* *15sož*

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å inform † : ¡ M G) ƒ 5ož

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

1 y F å inform † Ý ž G ž • 20sož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.17 snmp-server location

F å © Ï y åož

snmp-server location *text*

í ” © Ï y åož

no snmp-server location

o¬ @ *ƒ* ª ¢o-

@ ƒ	T
text	T © Ï ’ Î … ož

o¬ Þ . F åo- © Ï ’ Î q

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å © Ï y åož

5XLMLH FRQILJ VQPS VHUYHU ORFDWLRQ VWDUW WHFKQRORJ\ FLW\ )

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.18 snmp-server net-id

F å — Õ à « Ú A ’ Îož

snmp-server net-id *text*

í ” — Õ à « Ú A ’ Îož

no snmp-server net-id

o¬ @ *ƒ* ª ¢o-

@ ƒ	T
text	— å — Õ à « Ú A text ktext © x † 1~255 … k ã Ý 4 Ê k U m q ož

o¬ Þ . F åo- — Õ à « Ú A ’ Î q

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å — Õ à « Ú A ’ Îož

5XLMLH FRQILJ VQPS VHUYHU QHW LG)=B&’0$B06&

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.19 snmp-server packetsize

F å SNMP W ò Â Ý ƒ G † x †ož

snmp-server packetsize *byte-count*

Ê Ö Þ . ›ož

no snmp-server packetsize

o¬ @ ƒ ª ¢o-

@ ƒ	T
byte-count	ƒ G Ý 4 k R 484 - ñ 17876 -ož

o¬ Þ . F åo- 1472 -

o¬ x X % ”o- ¶ B % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å SNMP

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.20 snmp-server queue-length

¼ { SNMP © Ï M o * = ož

no snmp-server system-shutdown

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ¼ { SNMP © Ï M o * = ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ø • SNMP © Ï M o * = kRGOS k ¨ — Õ **reload/reboot Y ù Ë** NMS G Trap ƒ Î * = © Ï M oož

o¬ F å †o- 1 y ø • SNMP © Ï M o * = ož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.22 snmp-server trap-format private

F å SNMP Trap ƒ Î ` k \ Ä <ož

snmp-server trap-format private

Ê Ö Þ . F åož

no snmp-server trap-format private

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ` k \ Ä <ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- … ¥ x X U F å G Trap ƒ Î ` k \ Ä ” < k m <) ù u 4 Ä s Š G ÿ ž • k _ < À
} ƒ G • º y ƒ G 8 U @ • RUIJIE-TRAP-FORMAT-MIB.mib † ^ ª ¢ož

ò ° SNMP v1 Q ‡ Ÿ " Trap È o ¨ " â “ Ò d

o¬ F å †o- 1 y 6 Trap ƒ Î ` k \ Ä <ož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.23 snmp-server trap-source

6 G Trap ƒ Î › ª -ož

snmp-server trap-source *interface*

Ê Ö Þ . F åož

no snmp-server trap-source

o¬ @ ƒ ª ¢o-

@ ƒ	T
interface	9 • SNMP › ª - N M

o¬ Þ . F åo- SNMP † R „ N M ß > k < … „ N M IP ª - • › ª -ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- Þ . Õ Ñ kSNMP † R „ N M ß > k < … „ N M IP ª - • › ª - k 4 Ž 9 ’ ò y œ ð k U
Y … ¥ x X ¡ … %² Î ª IP ª - • SNMP › ª -ož

o¬ F å †o- 1 y 6 Y ß à M 0/1 IP ª - • G Trap ƒ Î › ª -ož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.24 snmp-server trap-timeout

snmp-server udp-port *port-num*

Ê Ö Þ . F åož

no snmp-server udp-port

o¬ @ ƒ ª ¢o-

@ ƒ	T
port-num	*6 N v* SNMP † # ‘ € M Zož

o¬ Þ . F åo- Þ . Õ Ñ k … 161 # ‘ € M N v SNMP †ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y 6 15000 # ‘ € M N v SNMP †ož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.26 snmp-server user

F å SNMP ïož

snmp-server user *username groupname* {**v1** | **v2c** | **v3** [**encrypted**] [**auth**

] [

	† ÿ µ k é ¬ } ÿ µ Ò 16 ò *ƒ* … n P % Wož h Þ … MD5 • š % W x † 16 - k ò SHA • š # ‘ % W x † 20 -ož Y … n P%² -ož % n P % W N + Î – r Ä |ož
auth	**6 © k … à šož**
md5	**6 …** MD5 • š # ‘ož**sha 6 …** SHA • š # ‘ož
auth-password	**F å • š # ‘ … M X … g Ý** 32 … hož © Ï 1 ? M X ô E è , • • š % Wož
priv	**6 © k … ‘ %ožd es56 6 ¢ …** 56 y DES % # ‘ož
priv-password	**% M X … g Ý** 32 … hož © Ï 1 M X ô E è , • % % Wož
aclnum	*˜ | ç n ~ ç Z k ¼ û 6 ˜ | ç n k 6 ˜ |* MIB ipv4 NMS ª - 8 ož
aclname	*˜ | ç n d f k ¼ û 6 ˜ | ç n k 6 ˜ |* MIB ipv4 NMS ª - 8 ož
Ipv6-aclname	ipv6 ˜ | ç n d f k ¼ û 6 ˜ | ç n k 6 ˜ | MIB ipv6 NMS ª - 8 ož

o¬ Þ . F åo- Þ . Z Ä F å ïož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y F å%² SNMPv3 ï k … MD5 • š k y … DES %ož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

7.27 snmp-server view

F å SNMP , £ož

snmp-server view *view-name oid-tree* {**include** | **exclude**}

í ” SNMP , £ož

no snmp-server view *view-name* [*oid-tree*]

o¬ @ ƒ ª ¢o-

@ ƒ	T
view-name	, £ dož
oid-tree	, £ ¼ û MIB + » k ©%²<• MIB ÿ
include	*ö ¢ ¥* MIB + » ÿ ù t m ¨ , £ $ Äož
exclude	ö ¢ ¥ MIB + » ÿ ù t L ” ¨ , £ $ Ùož

o¬ Þ . F åo- Þ . F å%² default , £ k ª • ˜ | ñ Ä MIB + »ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo-

8 HTTP

8.1 enable service web-server

ø • HTTP Æ ož

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

¼ { HTTP Æ ož

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

o¬ Þ . F åo- ó • € M Z 443ož

o¬ x X % ”o- ¶ B % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- … ¥ x X — å HTTPS Æ € Mož

o¬ F å †o- 1 y — å HTTPS Æ € M © 4443ož

```
5XLMLH FRQILJ KWWS VHFXUH SRUW
```

o¬ à • co- … **show web-server status x X k ò 0** Web Æ ˜ Ù Áož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.4 show web-server status

ò 0 Web Æ F å ’ Î y Ù Áož

show web-server status

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 Web Æ F å ’ Î y Ù Áož

o¬ F å †o- 1 y ò 0 Web Æ F å ’ Î y Ù Áož

```
5XLMLH VKRZ ZHE VHUYHU VWDWXV
KWWS VHUYHU VWDWXV HQDEOHG
KWWS VHUYHU SRUW
KWWSV VHUYHU VWDWXV HQDEOHG
KWWSV VHUYHU SRUW
```

< K y

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

o¬ U P ' Îo- -

o¬ u V ª ¢o- -

8.5 upgrade web

x WEB k ´ Î ª † ^ © Ï Ä WEB

upgrade web *X U L*

o¬ @ *ƒ* ª ¢o-

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

o¬ Þ . F åo- -

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 14

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

o¬ F å †o- 1 ycopy %² web k w ´ož

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

o¬ à • co- -

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

```
7KH ILOHQDPH IRUPDW LV LQYDOLG SOHDVH LQSXW FRUUHFW ILOHQDPH
2 y ò ç , ¼ F & ¨ k Ë ß Y U Pož
*HW XVE SUHIL[ SDWK IDLOHG
3 y ò ç † ^ ¨ k Ë ß Y U Pož
7KH ILOH > GDWD [[[[@ GR QRW H[LVW
4 y ò ç WEB ” + k Ë ß Y U Pož
:HE SDFNDJH IRUPDW LQYDOLG
5 y ò ç WEB Í Î + k Ë ß Y U Pož
```

:HE SDFNDJH YHUVLRQ XQFRPSDWLEOH
6 y ò ç Ä á k - x â Â k Ë ß Y U Pož
:HE SDFNDJH LQVWDOO IDLO IRU KDYH QR HQRXJK PHPRU\
7 y ò ç x è k Ë ß Y U Pož
:HE SDFNDJH XSJUDGH VXFFHVVIXOO\

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.6 upgrade web download

ú w x k ´ tftp Æ ˜ WEB

Upgrade web download tftp: */path*

o¬ @ *ƒ* ª ¢o-

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

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ x X © R tftp server € ú WEB k w ´ož

o¬ F å †o- 1 y R tftp Æ ˜ ú%² WEB k w ´ož
5XLMLH XSJUDGH ZHE GRZQORDG WIWS ZHE XSG

o¬ à • co- -

o¬ U P ’ Îo- 1 y ò ç ÿ µ cli @ *ƒ* + k Ë ß Y U Pož
7KH ILOHQDPH IRUPDW LV LQYDOLG SOHDVH LQSXW FRUUHFW ILOHQDPH
2 y ò ç ú † ^ â Â k Ë ß Y U Pož
2SHQ WIWS ZHE XSG IDLOHG
3 y ò ç WEB ” + k Ë ß Y U Pož
:HE SDFNDJH IRUPDW LQYDOLG
4 y ò ç WEB Í Î + k Ë ß Y U Pož
:HE SDFNDJH YHUVLRQ XQFRPSDWLEOH
5 y ò ç Ä á k - x â Â k Ë ß Y U Pož

```
:HE SDFNDJH LQVWDOO IDLO IRU KDYH QR HQRXJK PHPRU\
```

6 y ò ç x è k Ë ß Y U Pož

```
:HE SDFNDJH XSJUDGH VXFFHVVIXOO\
```

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

8.7 webmaster level

— å Web • • š ï d y % Aož

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

Ê Ö Þ . F åož

no webmaster level *privilege-level* [**username** *name*]

o¬ @ ƒ ª ¢o-

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

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

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

o¬ x X % ”o- ¶ B % ”

o¬ Þ . ´ ðo- 14

¶ B % ”

o¬ Þ . F åo-

	Ü ³ ¶ 4K þ 128K Bytes d

.

o¬ u V ª ¢o- -

9.4 logging console

— å ª • ¨ O ò V ª P ™ º ’ Î ´ ð

logging console [*level*]

W 2 ¨ O ò V ø - ™ º †ož

no logging console

o¬ @ ƒ ª ¢o-

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.5 logging count

ø • ™ º Ï ‹ ož

logging count

Ž ” ™ º Ï ‹ ƒ G w ¼ { ™ º Ï ‹ ož

no logging count

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- ™ º Ï ‹ ¼ {ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- * **4ùà** X ø • ™ º Ï ‹ ož R x X ø • ž • ÷ Ï ‹ož ü g
o¬ x X % ”o-

logging delay-send file flash:*filename*

Ê Ö • ž Ù ¨ — Õ Î ª ™ º † ^ d ó • ›ož

no logging delay-send file

o¬ @ ƒ ª ©o- @ ƒ

9.7 logging delay-send interval

F å ™ º • Ë Æ ˜ ž • • œož

logging delay-send interval *seconds*

Ê Ö ™ º • Ë Æ ˜ ž • • œ è ó • ›ož

no logging delay-send interval

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
seconds	™ º • *ž • • œ g % y a h*

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

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

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

o¬ F å †o- 1 y F å ™ º • ž • • œ © 600 a g 1 ã U h y

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

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

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.8 logging delay-send server

F å ™ º • Ë Æ ˜ ª - y • ”ož

logging delay-send server {*ip-address* | **ipv6** *ipv6-address* } **mode** { **ftp user** *username* **password** [**0** | **7**] *password* | **tftp** }

í ” ™ º • Ë Æ ˜ ª - y • ”ož

no i1v6 ðð À0q&(q& Þ§ • | 3• ? , ?p' #•!÷ p = ÷ p -€V ªQ•x=

ip-address	*N v ™ º ' Î Æ ~* IP ª -
ipv6 *ipv6-address*	*N v ™ º ' Î Æ ~* IPV6 ª -
username	*6* ftp Æ ~ ï d
password	*6* ftp Æ ~ % A
0	*g U # h W n š e æ* *password % A ¢ † † Î*
7	*W n š e æ* *password Æ • % % % † † Î*

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

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

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

o¬ F å †o- 1 y µ P † 6 %² ª - 192.168.23.12o• ï d admino• % A admin FTP Server y

```
5XLMLH FRQILJ ORJJLQJ GHOD\ VHQG VHUYHU PRGH IWS XV
```

2 y µ P † 6 %² IPV6 ª - 2000::1 TFTP Server y

```
5XLMLH FRQILJ ORJJLQJ GHOD\ VHQG VHUYHU LSY PRGH WIWS
```

o¬ à • co- 1 y … **show logging x X k U Y ò 0 ™ º • Æ ~ ª - y • ”ož**

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.9 logging delay-send terminal

ø • • ž ™ º ÿ ß ñ O ò V y i Ä €ož

logging delay-send terminal

¼ { • ž ™ º ÿ ß ñ O ò V y i Ä €ož

no logging delay-send terminal

o¬ @ *ƒ* ª ¢o-

@ ƒ	T

-	-

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

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

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

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

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

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.10 logging facility

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

Ê Ö — Õ › ó • Õ ›

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

Numerical Code	Facility
0 (kern)	Kernel messages
1 (user)	User-level messages
2 (mail)	Mail system
3 (daemon)	System daemons
4 (auth1)	security/authorization message
5 (syslog)	Messages generated internally by syslogd
6 (lpr)	Line printer system
7 (news)	USENET news
8 (uucp)	Unix-to-Unix copy system
9 (clock1)	Clock daemon
10 (auth2)	security/authorization message
11 (ftp)	FTP daemon
12 (ntp)	NTP daemon
13 (logaudit)	Log audit
14 (logalert)	

9.11 logging file

1 ™ º ’ Î ‘ ¨ † ^ k ™ º † ^ U Y ‘ ¨ ý J FLASHož

logging file flash:*filename* [*max-file-size*] [

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

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

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

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.12 logging flash flush

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

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

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

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.13 logging flash interval

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

logging filter direction { **all** | **buffer | file** | **server | terminal** }

Ž ” + ª î • g ™ º ’ Î ¡ q •ož

no logging filter direction { **all** | **buffer | file** | **server | terminal** }

o¬ @ *ƒ* ª ¢o-

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

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

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

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 F å ¡ ª **terminal • g g , y**console y VTY Ä € ^ h ™ º ’ Î 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 G L U H F W L R Q W H U P L Q D O

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.15 logging filter type

F å ™ º ’ Î ¡ • ºož

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

Ê Ö ™ º ’ Î ¡ • ºož

no logging filter type

o¬ @ ƒ ª ¢o-

@ ƒ	T
contains-only	Q m kWnyQÿß m4 ¡•éLµ ¼p 'Î ™ºk¿ ZÄ m ¡•éLµ ™º kÿßož
filter-only	Q ¡ kWny1 ¡J m4 ¡•éLµ ¼p 'Î ™ºk kÿß ? ¡J ™º'Îož

o¬ Þ . F åo- Þ . ¡•º Q ¡

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- 1. î ? Õ Ñ k ¢ 1 ñ î % ² % ² ø ß Û ™ º ' Î ß Ú k U k – Ü Ä € µ ß ë ó I k ï A ¼ ¶ 4 • ™ º ' Î ž ˜ k U Y ¨ — Õ µ • Q ¡ %² ™ º ¡ • º k 1 ó I ™ º ' Î ¡ Jož

2. î ? Õ Ñ k ï U Q ¼ ¶ î ? ™ º ' Î © k D ÿ k é U Y ¨ — Õ µ • Q m %² ™ º ¡ • º k • m 4 4 • é ™ º ' Î õ ÿ ß ñ Ä € µ k • Ž 9 € (î ? 7 ^ © k Ä G ÿož

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

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

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

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- -

9.16 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- 1. 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
2. î ? Õ Ñ k ï U Ý ¡ J î ? • º ™ º ’ Î k é U Y … % F • é k ¨ F å ž k Q ¬ }
6 % ² do• ™ º ˆ ´ o• “ … d f ¢ %² _ož

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

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

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

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

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.17 logging life-time

F å ý J FLASH ™ º † ^ ‘ ž •ož

logging life-time level *level days*

H ƒ F å ™ º ‘ ž •ož

no logging life-time level *level*

o¬ @ ƒ ª ¢o-

@ ƒ	T
level	*6 ™ º ’ Î ´ ð k U Y … ´ ð d f k - U Y + N … ƒ ož*
days	*™ º ’ Î ´ ð + • ™ º † ^ ‘ Þ ƒož*

o¬ Þ . F åo- Þ . + ™ º † ^ ‘ ž • g ’ ò k ™ º † ^ ‘ ž • I ’ 9 ï F å ™ º † ^ Ý 4ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ð Y ñ ý J FLASH Ý 4 y c ´ ð ™ º ’ Î M } Å i † c k U Y S + c ´ ð ™ º ’ Î 6 c ‘ Þ ƒož

> ò — s t n ¨ · I É _ Ÿ • P ‡ n 3 Ñ Ö Ì I É _ Ÿ Ü ž Ò ¯ ð o 3 Ñ Ä ¢ É Â } ô º FLASH syslog/ , Ã • d

o¬ F å †o- 1 y µ P † F å ™ º ’ Î ´ ð 6 ™ º ’ Î k ‘ Þ ƒ 10 Þ y 5 X L M L H F R Q I L J O R J J L Q J O L I H W L P H O H Y H O

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.18 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	ˆ ´	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- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.19 logging on

ª • ™ º ’ Î ¨ c — Õ ª Pož

logging on

W 2 ™ º ’ Î ª Pož
no logging on

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

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

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

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

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

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

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.20 logging policy

F å ™ º ã ´ ž ñ … ã ´ Œ ož
logging policy module *module-name* [**not-lesser-than**] *level* **direction** { **all** | **server** | **file** | **console** | **monitor** | **buffer** }

í ”%² Ú ™ º ã ´ ã ´ Œ ož
no logging policy module *module-name* [**not-lesser-than**] *level* **direction** { **all** | **server** | **file** | **console** | **monitor** | **buffer** }

í ” ñ Ä ™ º ã ´ ã ´ Œ ož
no logging policy

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

o¬ Þ . F åo- Þ . Õ Ñ k g ™ º ã ´ Œ ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

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

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

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.21 logging rate-limit

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

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

¼ { ™ º , ä ’ ò ož

no logging rate-limit

o¬ @ ƒ ª ¢o-

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

o¬ Þ . F åo- g , ä O òož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

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

o¬ F å †o- 1 y— å ? a U Ä ª • Ô ò ñ Ä ™ º ’ Îg , debugh 10 Ú kx © + warning C ¾ M ´ ð g O ò y
5 X L M L H F R Q I L J O R J J L Q J U D-HWWHHSWP ZDUQQQJV

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.22 logging server

1 ™ º “ £ ñ 6 Syslog Serverož

logging server { *ip-address* | **ipv6** *ipv6-address* } [**udp-prot** *port*]

í ” Syslog Server ç n 6 ª - Syslog Serverož

no logging server { *ip-address* | **ipv6** *ipv6-address* }

Ê Ö ™ º G Syslog Server ó • € M Z g514 hož

no logging server { *ip-address* | **ipv6** *ipv6-address* } **udp-prot**

o¬ @ ƒ ª ¢o-

@ ƒ	T
ip-address	*N v ™ º ' Î Ñ* IP ª -
ipv6-address	*6 N v ™ º ' Î Ñ* IPV6 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- ¥ 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
```

3 y µ P † 6 %² IPV6 ª - AAAA:BBBB::FFFF

```
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  L S Y  $ $ $ $  % % % %  ) ) ) )
```

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

```
: D U Q L Q J  & D Q  Q R W  F R Q I L J X U H  P R U H  W K D Q  V \ V O R J  V H U Y H U V
```

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.23 logging source interface

— å ™ º † › N Mož

logging source [**interface**] *interface-type interface-number*

H ƒ 6 † › N M — åož

no logging source [**interface**]

o¬ @ ƒ ª ¢o-

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

o¬ Þ . F åo- ó • Z Ä — å ™ º › ª -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

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

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.24 logging source ip | ipv6

— å ™ º † › IP ª -ož
logging source { **ip** *ip-address* | **ipv6** *ipv6-address* }

H ƒ 6 † › IP ª - — åož
no logging source { **ip** | **ipv6** }

o¬ @ ƒ ª ¢o-

@ ƒ	T
ip-address	*6 g* IPV4 ™ º Ñ G ™ º † › IPV4 ª -
ipv6-address	*6 g* IPV6 ™ º Ñ G ™ º † › IPV6 ª -

o¬ Þ . F åo- ó • Z Ä — å ™ º › ª -

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

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

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.25 logging statistic enable

ø • ™ º ž ož
logging statistic enable

¼ { ™ º ž ož
no logging statistic enable

o¬ @ ƒ ª ¢o-	@ ƒ	T
	-	-

o¬ Þ . F åo- ó • © ¼ { ™ º ž ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- U Y … 4 x X ø • ™ º ž k ø • ™ º ž e k © Ï 1 7%² ž • • œ ÿ ß%² ©
ç Å Ï ‹ ƒ G k • Ž ™ º Æ ˜ + © Ï Å g æ íož

o¬ F å †o- 1 y µ P † ø • ™ º ž y

ç ¯ ˇ G k c ¯ ¯> @|z z |¯ fi c wC wÀ⁄0w|℃0 Qt0E @y S S ´ 6 -o›

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

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.26 logging statistic interval

F å ™ º ž ž • • œož

logging statistic mnemonic *mnemonic* **interval** *minutes*

Ê Ö ó • ™ º ž ž • • œož

no logging statistic mnemonic *mnemonic*

o¬ @ ƒ ª ¢o-

@ ƒ	T
mnemonic	*™ º ž “ … … k 9 ö œ © Ï Å Ï ‹ + »*
minutes	*ž ž • • œ k % y y ã U*

o¬ Þ . F åo- ó • ž ž • • œ 15 ã Uož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- U Y … 4 x X F å © Ï î Å Ï ‹ + » ž ž • • œož U Y — å ž • • œ 0o•15o•30o• 60o•120 ã U k ¿ 0 n P ¼ { 4 Ï ‹ + » ž ož

o¬ F å †o- 1 y µ P † — å Ï ‹ + » TUNNEL_STAT ž ž • • œ 30 ã U y

5 X L M L H F R Q I L J O R J J L Q J V W D W L V W L F P Q H P R Q L F 7 8 1 1 (/ B 6 7 $ 7 L Q W H U Y

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.27 logging statistic terminal

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

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

1.7q 262 TTj 88 -602Tf 75.6 Tf 26402 g 88 m h 540.0Tj 88 -602Tf 75.6 Tf W* n7q 0 792.03 62 g-792 Tf W n70.9 0 9 264
no k ù €i: g © Ï Å Ï y i Ä €ož

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

o¬ x X % ”o- ¿ è F å % ”

o¬ Þ . ´ ðo- 14

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

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

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

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

o¬ à • co- -

o¬ U P ' Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

9.29 logging trap

— å ª • G Ë Syslog Server ™ º ' Î ´ ðož

logging trap [*level*]

W 2 1 ™ º † G Ë Syslog Serverož

no logging trap

o¬ @ ƒ ª ¢o-

@ ƒ	T
level	™ º † M Åož U Y … ´ ð d f k - U Y + N … ƒ ož ¼ 9 ™ º ' Î M Å ¦ Â ª ¢ k ¬ @ ðo¬ … 6 -o-ož

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

o¬ Þ . F åo- ï £/ ß — Õ ž ˜ k — Õ © k “ £ , ¼ Log ’ Îož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- • o “ £ ï £/ ß — Õ Log ’ Î e k ¢ Ä ï N ñ — Õ ž k < k ø ß , • Log ’ Î U I — Õ ’ ò

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

```
o¬ Få †o-  1  y µ †ÿFåø•“£ ïq•          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- -

9.32 service log-format rfc5424

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- -

9.34 service sequence-numbers

¨ ™ º ’ Î ~ Z

service sequence-numbers

H *ƒ* ¨ ™ º ’ Î ~ Zož

no service sequence-numbers

o¬ @ *ƒ* ª ¢o-	@ *ƒ*	T

9.35 service standard-syslog

1 ™ º ” ² … è ö Õ RFC3164 ñ # ™ º ”ož
service standard-syslog

H ƒ ö Õ RFC3164 ñ # ™ º ” k w J ó • ™ º ” g ª Pož
no service standard-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
*timestamp: %facility-severity-mnemonic: description
‰) © y* ž • í: % % ² d- M Å ´ ð- “ … ’ Î: ¦ Â ™ º ’ Î
† ÿ ò y
0 D \ 6 < 6 & 2 1) , * B , & R Q I L J X U H G I U R P F R Q V R O H E \ F R Q V R O H

3 ø • ö Õ ™ º ” ª P k — Õ µ ™ º ’ Î ª P ” ò y
timestamp %facility-severity-mnemonic: description
‰) © y ž • í % % ² d- M Å ´ ð- “ … ’ Î: ¦ Â ™ º ’ Î
† ÿ ò y
0 D \ 6 < 6 & 2 1) , * B , & R Q I L J X U H G I U R P F R Q V R O H E \ F R Q V R O H
¿ k 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- -

9.36 service sysname

¨ ™ º ’ Î © Ï dož

service sysname

H ƒ ¨ ™ º ’ Î © Ï dož

no service sysname

o¬ @ ƒ ª ¢o-	@ ƒ	T

H *ƒ* ¨ ™ º ' Î ø ž • í ' Îož

no service timestamps [**message-type**]

Ê Ö ™ º ' Î ž • í ó • ›ož

default service timestamps [**message-type**]

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
message-type	™ º • º *k*Ä _ log y debugoždog ' Î © 6 ¨ M Å ´ ð ¨ 0 I 6 $ • ™ º ' Î kdebug ' Î © M Å ´ ð 7 ™ º ' Îož
uptime	**— Õ o ž • k ” y*** Þ* 4 ž * ã* a k † y 07:00:10:41
datetime	**¢ ù — Õ ™ Ê k ” y Ã** ™ Ê ž y ã y a k † yJul 27 16:53:07
msec	**¢ ù — Õ ™ Ê u 4 D a ª P k ” y Ã** ™ Ê ž : ã : a . D a † yJul 27 16:53:07.299
year	**¢ ù — Õ ™ Ê u 4 v a ª P k ” yv** Ã ™ Ê ž yã ya † y 2007 Jul 27 16:53:07

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\ FRQVROH
```

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- -

9.38 show logging

ò0™ºFå @ƒo•Ï‹’ÎkYCÄ ÙÏ ™º †ož™º’Î7Áž•íR›ñ• ¿~ªPož

show logging

o¬@ƒª¢o-	@ƒ	T
	-	-

o¬xX%”o- ÔÓ ï%”

o¬Þ.´ðo- 1

o¬... 6-o- -

o¬Få †o- 1 y µP†©¨ZÄ•o RFC5424 ™º ” ÕÑ küg **show logging %² È ç y**

```
5XLMLH VKRZ ORJJLQJ
6\VORJ ORJJLQJ HQDEOHG
  &RQVROH ORJJLQJ OHYHO GHEXJJLQJ PHVVDJHV ORJJHG
  0RQLWRU ORJJLQJ OHYHO GHEXJJLQJ PHVVDJHV ORJJHG
  %XIIHU ORJJLQJ OHYHO GHEXJJLQJ PHVVDJHV ORJJHG
  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 ,QWH
FKDQJHG VWDWH WR XS
      6HS 5XLMLH /,1. 83’2:1 ,QWHUIDFH )DVW(WKHUQHW
      6HS 5XLMLH /,1(35272 83’2:1 /LQH SURWRFRO RQ ,QWH
FKDQJHG VWDWH WR GRZQ
      6HS 5XLMLH /,1. 83’2:1 ,QWHUIDFH )DVW(WKHUQHW
      6HS 5XLMLH /,1(35272 83’2:1 /LQH SURWRFRO RQ ,QWH
FKDQJHG VWDWH WR XS
 < Ky
```

<	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 ‹
Standard format	ö Õ ™ º "
Timestamp debug messages	Debug ' Î ž • í "
Timestamp log messages	Log ' Î ž • í "
Sequence-number log messages	~ Z • ¼
Sysname log messages	™ º ' Î © Ï d
Count log messages	™ º Ï ‹
Trap logging	G Ë Syslog Server ™ º ' Î ´ ð k Y C Ï ‹
Log Buffer	" £ ¨ Ä Ù Ï ™ º †

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

```
5XLMLH  VKRZ ORJJLQJ
6\VORJ ORJJLQJ  HQDEOHG
  &RQVROH ORJJLQJ  OHYHO GHEXJJLQJ      PHVVDJHV ORJJHG
  0RQLWRU ORJJLQJ  OHYHO GHEXJJLQJ   PHVVDJHV ORJJHG
  %XIIHU ORJJLQJ  OHYHO GHEXJJLQJ      PHVVDJHV ORJJHG
  6WDWLVWLF ORJ PHVVDJHV  GLVDEOH
```

```
   !          7            = UXLMLH 6<6   6+(//B/2*,1 >86(5#    QDPH    W
IURP  FRQVROH @ XVHU ORJLQ VXFFHVV
   !          7            = UXLMLH 6<6   6+(//B&0’ >86(5#    QDPH   @>&
```

```
5XLMLH  VKRZ ORJJLQJ FRQILJ
6\VORJ ORJJLQJ  HQDEOHG
 &RQVROH ORJJLQJ  OHYHO GHEXJJLQJ       PHVVDJHV ORJJHG
 0RQLWRU ORJJLQJ  OHYHO GHEXJJLQJ    PHVVDJHV ORJJHG
 %XIIHU ORJJLQJ  OHYHO GHEXJJLQJ       PHVVDJHV ORJJHG
 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
```

< 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 ‹
Standard format	ö Õ ™ º "
Timestamp debug messages	Debug ' Î ž • í "
Timestamp log messages	Log ' Î ž • í "
Sequence-number log messages	~ Z • ¼
Sysname log messages	™ º ' Î © Ï d
Count log messages	™ º Ï ‹
Trap logging	G Ë Syslog Server ™ º ' Î ´ ð k Y C Ï ‹

```
&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
```

< Ky

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

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

< K y

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

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

9.41 show logging reverse

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

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

```
5XLMLH  VKRZ ORJJLQJ UHYHUVH
6\VORJ ORJJLQJ  HQDEOHG
  &RQVROH ORJJLQJ  OHYHO GHEXJJLQJ      PHVVDJHV ORJJHG
  0RQLWRU ORJJLQJ  OHYHO GHEXJJLQJ   PHVVDJHV ORJJHG
  %XIIHU ORJJLQJ  OHYHO GHEXJJLQJ     PHVVDJHV ORJJHG
  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(35272 83'2:1 /LQH SURWRFRO RQ ,QWH
FKDQJHG VWDWH WR XS
     6HS 5XLMLH /,1. 83'2:1 ,QWHUIDFH )DVW(WKHUQHW
     6HS 5XLMLH /,1(35272 83'2:1 /LQH SURWRFRO RQ ,QWH
FKDQJHG VWDWH WR GRZQ
     6HS 5XLMLH /,1. 83'2:1 ,QWHUIDFH )DVW(WKHUQHW
     6HS 5XLMLH /,1(35272 83'2:1 /LQH SURWRFRO RQ ,QWH
FKDQJHG VWDWH WR XS
     6HS 5XLMLH /,1. 83'2:1 ,QWHUIDFH )DVW(WKHUQHW
```

< 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 reverse %² È ç y**

```
5XLMLH VKRZ ORJJLQJ UHYHUVH
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
/RJ %XIIHU  7RWDO      %\WHV   KDYH ZULWWHQ      2YHUZULWWHQ
   !          7            = UXLMLH 6<6   6+(//B&0' >86(5#    QDPH   @>&
WDVN  UOBFRQ  FPG  HQDEOH @
   !          7            = UXLMLH 6<6   6+(//B/2*,1 >86(5#    QDPH   W
IURP  FRQVROH @ XVHU ORJLQ VXFFHVV
   !          7            = UXLMLH &$3:$3   12B,3B$''5   1R LS DGGUHVV
   !          7           = UXLMLH       3OHDVH FRQILJ WKH ,3 DGGUHV
   !          7           = UXLMLH &$3:$3   12B,3B$''5   1R LS DGGUHVV
   !          7            = UXLMLH       3OHDVH FRQILJ WKH ,3 DGGUHV
```

< Ky

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

o¬ U P ' Îo- -

o¬ u V ª ¢o- -

9.42 terminal monitor

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

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

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

o¬ x X % ”o- Ô Ó ï % ”

o¬ Þ . ´ ðo- 14

o¬ ... 6 -o- Î x X Q © — å ¢ ù VTY ž K Åož • ž K Å — å k k t K ! ‘ ož ¨ VTY Ä € k ¢ È Ø e k ©
Ï 1 J ó • — å ò ¥ ž K Å — å 1 â |ož O ò V - U Y ü g ¥ x X k x Ü • ož

o¬ F å †o- 1 y µ P † k — å ¢ ù VTY v M ª • ø - ™ º ’ Îož
5 X L M L H W H U P L Q D O P R Q L W R U

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

10 RLOG

10.1 rlog server

10.2 rlog type

F å 6 • º ™ º G

rlog type *n* **server** *server-ip* **priority** *prio*

H *f* 6 ™ º G

no rlog type *n* **server** *server-ip*

o¬ @ *f* ª ¢o-

@ *f*	T
n	RLOG ™ º • º
server-ip	*] F å Æ ˜* IP
prio	™ º G i ¯ ´ k H › 0~7 k H › Þ 4 i ¯ ´ Þ ä

o¬ Þ . F åo- -

o¬ x X % ”o- F å ¶ B % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ F å © G ™ º · À F å k ? ¬ } G ™ º C · À F å%² Ú 4 x Xož

o¬ F å †o- 1 y F å v ™ º G ñ Æ ˜ 10.10.10.10ož

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

o¬ à • co- 1 y … **show rlog-status x X k ¢ ù Æ ˜ • 4 „ ? ™ ºož**

o¬ U P ’ Îo- 1 y ò ç 6 RLOG Æ ˜ ¨ k é j k F å ÿ |ož

o¬ u V ª ¢o- -

10.3 rlog export-rate

F å RLOG G , ä

rlog export-rate *val*

H *f* G , ä F å

no rlog export-rate

o¬ @ ƒ ª ¢o-

@ ƒ	T
val	*? a G ™ º ƒ k H › 8* 10-100000

o¬ Þ . F åo- ? a G 1000 Ú ™ ºož

o¬ x X % ”o- F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- G , ä } ÿ G — Õ Å y — Õ D ÿ ™ º ƒ O Û Đ ož

▲ " ^ Ö ¾ ° • • CPU * : ^ Ì • ¾ ° l ž d

o¬ F å †o- 1 y F å RLOG ™ º G , ä 10000 ? aož

U O R J H [S R U W U D W H

o¬ à • co- 1 y … **show rlog x X k U Y ò 0 ¢ ù** RLOG ™ º G , äož

o¬ U P ’ Îo-

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

10.4 rlog set

— åRLOG U ` w Ú Ú ™ º ñ%² †

rlog set log-com

¼ { ™ º ` w ož

no rlog set log-com

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- -

o¬ x X % ”o- F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o-

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

10.6 rlog filter

— å v ™ ºo• Î ª ™ º ¡ Ú ^

rlog filter *aclid*

H *ƒ* — å v ™ ºo• Î ª ™ º ¡ Ú ^

no rlog filter

o¬ @ *ƒ* ª ¢o-

@ ƒ	T
aclid	*6 ¡* ACL Ú ^ k H › 8 y2000-2699

o¬ Þ . F åo- -

o¬ x X % ”o- F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¥ F å c ž + v ™ º y Î ª ™ º ÿ | k ¨ v ™ º O Ý ê ñ ¬ } “ £ ¶ B v ™ º ž k … ¥ F åož

▲ " ‘ G • " s ë acl d

o¬ F å †o- 1 y F å 7 Á ACL 2000 Ú ^ Û ¡ v ™ ºož

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

o¬ à • co- 1 y … **show run x X k U Y ò 0 x X © k F åož**

o¬ U P ’ Îo- -

o¬ o • j ¨o- Ì F å + • ACL
F å ACL ID Ý ß 6 8

o¬ u V ª ¢o- -

10.7 show rlog

ò 0 RLOG F å ’ Î

show rlog

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 RLOG Æ ˜ k Î ª — Õ IP k G , ä k Y G ™ º Ï ‹ k ™ º ` w ˆož

o¬ F å †o- 1 y ò 0 RLOG F å ’ Î

```
5XLMLH VKRZ UORJ
UORJ VHUYHU LV HQDEOH
 SRUW      VHUYHU
 SRUW      VHUYHU
UORJ GHY LS
UORJ H[SRUW UDWH     UORJ TXHXH UHPDLQ
VHQG ORJ FRXQW     HUURU FRXQW     HUURUQR
UHFY EXI    SROO EXI HUU    SXVK EXI    ORFDO EXI
UHFY HUU FQW    GHSDWFK HUU FQW

HQDEOH ORJ FRPELQDWLRQ
```

< K y

<	ª ¢
rlog server is enable	F å 4 Æ ˜ k Y N g À } Æ ˜ € M y IP
rlog dev-ip	— Õ Î ª IP
rlog export-rate	™ º G , ä
rlog queue remain	™ º Ù þ • - µ ƒ
send log count	] G ™ º ƒ
error count	G â Â ™ º ƒ
errorno	Â e%²) G â Â j ¨ A
recv buf	RLOG N v ñ ™ º ƒ
poll buf err	™ º Ù q • á) ƒ
local buf	Î ª ™ º ÿ ß ƒ
recv err cnt	N v ƒ Î G ÿ j ¨) ƒ
depatch err cnt	N v ñ Z Ä + • Æ ˜ ƒ Î k ê ñ ¥ ƒ Î Æ

	˜ Y â |
enable log combination	© k g ™ º ` w G

o¬ U P ' Îo- ò ç Ì F å ` ~ Æ ˜ k é ¥ x X ª P ` ~ |ož

o¬ u V ª ¢o- -

10.8 show rlog-type

ò 0 RLOG Ä „ ? ™ º • º

show rlog-type

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 RLOG Ä „ ? ™ º • ºož

o¬ F å †o- 1 y ò 0 RLOG ™ º • º

```
5XLMLH VKRZ URUJ W\SH
5/2*B7<3(B)/2:
5/2*B7<3(B&38B0(0
5/2*B7<3(B',6&
5/2*B7<3(B'(9B/2*
5/2*B7<3(B85/B$8',7
5/2*B7<3(B6(66,21
5/2*B7<3(B,3B$33
5/2*B7<3(B,3
5/2*B7<3(B&+$11(/
5/2*B7<3(B,17(5)$&(
5/2*B7<3(B,3B2))/,1(
5/2*B7<3(B0$,/B$8',7
5/2*B7<3(B7(/1(7B$8',7
5/2*B7<3(B:(%B6($5&+B$8',7
5/2*B7<3(B:(%B%%6B$8',7
5/2*B7<3(B,0B$8',7
5/2*B7<3(B)73B$8',7
5/2*B7<3(B:(%B$8',7
```

```
5/2*B7<3(B$33B$8',7
5/2*B7<3(B)/22'
5/2*B7<3(B)/22'B&($6(P
5/2*B7<3(B6&$1
5/2*B7<3(B6&$1B&($6(
5/2*B7<3(B$77$&.B)5$*
```

< K y

<	ª ¢
-	” ™ º • º d f k ™ º • º H ›

o¬ U P ’ Îo- 1 y ò ç — Õ Z Ä F å ` ~ Æ ˜ k é ¥ x X ª P ` ~ |ož

o¬ u V ª ¢o- -

10.9 show rlog-status

ò 0 RLOG Æ ˜ Ù Á

show rlog-status { [

type

local rlog message	N ñ RLOG Î ª ™ º ƒ ’ Î
remote rlog message	N v ñ RLOG i ™ º ƒ ’ Î k 7 ™ º • º ã

o¬ U P ’ Îo- 1 y ò ç — Õ Z Ä F å ` ~ Æ ˜ k é ¥ x X ÂY ` t à•žã

11 CWMP

11.1 acs password

F å CPE N ACS ž 9 • š % Aož

acs password {*password* | *encryption-type encrypted-password*}

Ê Ö Þ . F å

no acs password

o¬ @ ƒ ª ¢o-

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

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

o¬ x X % ”o- cwmp F å % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- F å CPE N ACS 9 • š % A k * o — À ÿ µ % • ºož%² " Õ Ñ k Q Ä ¢ Ö ò w ¡ É] Æ % e ¥ x X % A ž k õ ¬ } ÿ µ % • ºož Ä | % A ”} L ò y

% A · À 6 † > ê ƒ ož

% A • C È A q é • % A %² B ãož

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

```
5 X L M L H  F R Q I L J
( Q W H U  F R Q I L J X U D W L R Q  F R P P D Q G V  R Q H  S H U  O L Q H  ( Q G  Z L W K  & 1 7 / =
5 X L M L H  F R Q I L J  F Z P S
5 X L M L H  F R Q I L J  F Z P S  D F V  S D V V Z R U G
5 X L M L H  F R Q I L J  F Z P S
```

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

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

```
( U U R U  , Q Y D O L G  ( Q F U \ S W H G  3 D V V Z R U G
```

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

```
( U U R U  7 K H  / H Q J W K  R I  $ & 6  V  3 D V V Z R U G  L V  7 R O  / R Q J
```

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

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

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

o¬ u V ª ¢o- -

11.2 acs url

F å CPE N ACS URLož

acs url *url*

Ê Ö Þ . F åož

no acs url

o¬ @ ƒ ª ¢o-

@ ƒ	T
url	ACS URLož

o¬ Þ . F åo- -

o¬ x X % ”o- cwmp F å % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- F å CPE N ACS URL k ¨ Z Ä ô F å ACS URL Õ Ñ k ò ç … 4 DHCP B H ñ 4 Á ACS URL k 1 … Á B H ñ ACS URL g ACS G Ü Nož + ACS URL ”} L ò y
ACS URL ”· À yhttp://host[:port]/path g ê © https://host[:port]/path h ”ož
ACS URL Â Ý x † 256 …ož

o¬ F å †o- 1 y F å CPE } N ACS URL http://10.10.10 .1:8080/acs ož

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

5 X L (MQL?VHFURIQRAQHLF H R OÀ WDLHR'QPF RPAeÀQ°@ Y@ 4X 03Oây Fy Lÿ @ÿÿ$DU ZOP2I K ãe@ 03Q @6@ #0@

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

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

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

o¬ u V ª ¢o- -

11.3 acs username

F å CPE N ACS ž 9 • š ï dož

acs username *username*

Ê Ö Þ . F åož

no acs username

o¬ @ ƒ ª ¢o-

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

o¬ Þ . F åo- qož

o¬ x X % "o- cwmp F å % "

o¬ Þ . ´ ðo- 1

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

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

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

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

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

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

o¬ o • j ¨o- -

cpe inform [**interval** *seconds*] [**starttime** *time*]

Ê Ö Þ . F å

no cpe inform

o¬ @ *ƒ* ª ¢o-

@ ƒ	T
seconds	*F å* CPE u Ê Å INFORM * s ž • • œož % y a k H › 8 30 ½3600ož
time	• ÷ *u Ê Å* INFORM ™ Ê ž • k ” yyyy-mm-ddThh:mm:ss

o¬ Þ . F åo- ó • › 600 aož

o¬ x X % ”o- cwmp F å % ”

o¬ Þ . ´ ðo- 1

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

¨ Z Ä F å INFORM • ÷ ž • Õ Ñ k u Ê Å INFORM R • o ¥ • o k ? Æ %² INFORM u Ê * s%²)ož

¨ F å 4 INFORM • ÷ ™ Ê ž • Õ Ñ ku Ê Å INFORM • ÷ ž • ¥ 6 ž •ožò F å INFORM u Ê 60 a k • ÷ ž • ¢ Þ 12 µ k é u Ê Å INFORM * s R ¢ Þ 12 µ õ • ÷ k ? Æ 60 a INFORM * s%²)ož

CPE ; Y ÿ INFORM ¹ A ¨ · · O ` k ACS \ ` Ÿ *ƒ* ¨ U – CPE « í q _ ½ ¨ CPE 0 ACS V % ™ ` 4 ® N Û CPE 0 ACS ‡ W \ ` • ‘ T l ò • î q ã » *ƒ* ACS ÿ Ÿ " æ Á ¨ · · O d

o¬ F å †o- 1 y F å CPE u Ê INFORM * s ž • • œ 60 aož

```
5 X L M L H  F R Q I L J
( Q W H U  F R Q I L J X U D W L R Q  F R P P D Q G V  R Q H  S H U  O L Q H  ( Q G  Z L W K  & 1 7 / =
5 X L M L H  F R Q I L J  F Z P S
5 X L M L H  F R Q I L J  F Z P S  F S H  L Q I R U P  L Q W H U Y D O
5 X L M L H  F R Q I L J  F Z P S
```

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

o¬ U P ’ Îo- -

o¬ o • j ¨o- —ož

o¬ u V ª ¢o- -

11.6 cpe password

F å ACS N CPE ž 9 • š % A, ¥ x X ACS

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

o¬ u V ª ¢o- -

11.7 cpe url

F å ACS N CPE URLož

cpe url *url*

Ê Ö Þ . F å

no cpe url

o¬ @ ƒ ª ¢o-

@ ƒ	T
url	CPE URLož

o¬ x X % ”o- cwmp F å % ”

o¬ Þ . F åo- -

o¬ Þ . ´ ðo- 1

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

CPE URL · À © http://ip [: port]/ ”ož
CPE URL Â Ý x † 256 …ož

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

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

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

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

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

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

DžZĐ

11.9 cwmp

F å • o/ ¼ { CWMP ož

cwmp

¼ { CWMP ož

no cwmp

o¬ @ ƒ ª ¢o-

@ ƒ	T

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- F å CWMP Ù Áož

o¬ F å †o- 1 y ¼ { CWMP ož

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

o¬ x X % ”o- cwmp F å % ”

o¬ Þ . ´ ðo- 1

o¬ Þ . F åo- CPE † ^ ú • o g**no disable download hož**

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

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

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

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

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

11.11 disable upload

F å ¼ { g ACS n F å † ^ y ™ º † ^ ož
disable upload
Ê Ö Þ . F å
no disable upload

o¬ @ ƒ ª ¢o-	@ ƒ	T

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

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

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

o¬ U P ’ Îo- -

o¬ ð§ð¶ ª†úÐ -

o¬ PU`ª z&úÐ -

11.12 show cwmp configuration

ª P CWMP ¢ ù F å

show cwmp configuration

o¬ @ ƒ ª ¢o-

@ ƒ	T

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o-

o¬ F å D†o- 1 y ª P CWMP ¢ ù F åož

```
5XLMLH FRQILJ FZPS VKRZ FZPS FRQILJXUDWLRQ
&:03 6WDWXV HQDEOH
$&6 85/ KWWS ZZZ UXLMLH FRP FQ DFV
$&6 XVHUQDPH DGPLQ
$&6 SDVVZRUG
&3( 85/ KWWS
&3( XVHUQDPH UXLMLH
&3( SDVVZRUG
&3( LQIRUP VWDWXV GLVDEOH
&3( LQIRUP LQWHUYDO V
```

```
&3( LQIRUP VWDUW WLPH
&3( ZDLW WLPHRXW                    V
&3( GRZQORDG VWDWXV                 HQDEOH
&3( XSORDG VWDWXV                   HQDEOH
&3( EDFN XS VWDWXV                  HQDEOH
&3( EDFN XS GHOD\ WLPH              V
```

< K y

<	ª ¢
CWMP Status	CWMP … Ù Áož
ACS URL	CPE N ACS URLož
ACS username	CPE N ACS ï dož
ACS password	CPE N ACS % Aož
CPE URL	ACS N CPE URLož
CPE username	ACS N CPE ï dož
CPE password	ACS N CPE % Aož
CPE inform status	CPE u Ê Å INFORM * s Ù Áož
CPE inform interval	CPE u Ê Å INFORM * s ž • • œož
CPE wait timeout	CPE k ¢ Ý ž ž •
CPE inform start time	CPE u Ê Å INFORM • ÷ * s ™ Ê ž •ož
CPE download status	© k N I R ACS ú i ~ y F å † ^ož
CPE upload status	© k g ACS n F å † ^ y ™ º † ^
CPE back up status	© k • o i ~/ F å Ê Ö Ù Á
CPE back up delay time	i ~/ F å Ê Ö ˆ - • ž •

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

11.13 show cwmp status

ª P CWMP ¢ ù g Ù Á

show cwmp status

o¬ @ ƒ ª ¢o-

@ ƒ	T

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 1

o¬ … 6 -o- -

o¬ F å †o- 1 y ª P CWMP ¢ ù g Ù Áož

```
5XLMLH FRQILJ FZPS VKRZ FZPS VWDWXV
&:03 6WDWXV HQDEOH
6HVVLRQ VWDWXV &ORVH
```

13 USB

13.1 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 .0013 Tc 3.26 0 Td <0SB

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 Zož n P — Õ 0 Z USB € M k3o4 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- -

13.2 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
```

< U Y 1 USB — Õ # ß 4ož

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

14 PKG_MGMT

14.1 patch active

¬ t m k … m • ÿ |ož

patch active

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- l

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- m xè eõ üg¬tq•k¬tem õ13t©Ï… k¥xX 9 ž¬t½m k—ÕMoe
m â|ož

o¬ F å †o- 1 m"”—Õ¬tm ož

```
5XLMLH SDWFK DFWLYH
 $FWLYH WKH SDWFK SDFNDJH VXFFHVV
```

2 m Ñë—Õ¬tož

```
5XLMLH SDWFK DFWLYH VORW
 >6ORW @
 $FWLYH WKH SDWFK SDFNDJH VXFFHVV
```

o¬ à • co- … **show patch ò 0 m ’Îož**

o¬ UP’Îo- 1 mügè UPy

```
$FWLYH WKH SDWFK SDFNDJH VXFFHVV
```

2 mügâÂUPj¨km Ì xk¬¯ x½m y

```
3DWFK QRW LQVWDOOHG
```

3 mm]Æt¬tk—¬üg¥xXy

```
7KH SDWFK VWDWXV LV DOUHDG\ DFWLYH RU UXQQLQJ
```

4 mm ï|Êk¬û© Æy

&DQQRW ILQG WKH SDFNDJH V VFULSWV ILOH

o¬ o • j ¨o- ¢ ù — Õ Ì x ½ m
¢ ù — Õ ½ m] Æ Ô 9 ¬ t Ù Á

o¬ u V ª ¢o- -

14.2 patch deactive

… m • â |ož
patch deactive

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F ån €…%„) b t 6Á

x X,PiEn €…%„) b t …Ô}8,PiA

<t M' ˆÇ@qs=Â ðÆúÀHP• 6 -Vá RXB‘V! @pÕQ|F Ô 9 ¬ t Ù Å m … ƒ É s R •6³ R • … m • â |ož

— Õ … m â |ož

U X L Ø L H c S D W g K | H D F W L H

```
7KH SDWFK LV QRW LQ DFWLYH RU UXQQLQJ VWDWXV
```

4 m m ï | Ê k ¬ û © Æ y

```
&DQQRW ILQG WKH SDFNDJH V VFULSWV ILOH
```

o¬ o • j ¨o- ¢ ù — Õ Ì x ½ m

¢ ù — Õ ½ m] Æ â |

o¬ u V ª ¢o- -

14.3 patch delete

í ” m ož

patch delete

o¬ @ *ƒ* ª ¢o-

@ *ƒ*	T
-	-

o¬ Þ . F åo- l

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- 4 x X 9 Ž ” — Õ] ¨ ½ m

o¬ F å †o- 1 m " ” — Õ Ž ”] x ½ m ož

```
5XLMLH SDWFK GHOHWH
 &OHDU WKH SDWFK SDWFKBEULGJH VXFFHVV
 &OHDU WKH SDWFK VXFFHVV
```

2 m Ñ ë — Õ Ž ”] x ½ m ož

```
5XLMLH SDWFK GHOHWH VORW 0
>6ORW 0 @
&OHDU WKH SDWFK SDWFKBEULGJH VXFFHVV
&OHDU WKH SDWFK VXFFHVV
```

o¬ à • co- … **show patch ò 0 m ’ Îož**

o¬ U P ’ Îo- 1 m ü g è U P y

```
&OHDU WKH SDWFK VXFFHVV
```

2 m m Ì x k ¬ ¯ x ½ m y

```
3 D W F K  Q R W  L Q V W D O O H G
```

o¬ o • j ¨o- ¢ ù — Õ Ì x ½ m

o¬ u V ª ¢o- -

14.4 patch running

… m K ! ÿ |ož

patch running

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- I

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- m x è e õ ü g ¬ t q • k ¬ t e m õ 1 3 t © Ï … k ¥ x X 9 K ! ¬ t ½ m ož

o¬ F å †o- 1 m " ” — Õ ¬ t m ož

```
5 X L M L H  S D W F K  U X Q Q L Q J
7 K H  S D W F K  R Q  W K H  V \ V W H P  Q R Z  L V  L Q  U X Q Q L Q J  V W D W X V
```

2 m Ñ ë — Õ ¬ tož

```
5 X L M L H  S D W F K  U X Q Q L Q J  V O R W  0
> 6 O R W  0  @
7 K H  S D W F K  R Q  W K H  V \ V W H P  Q R Z  L V  L Q  U X Q Q L Q J  V W D W X V
```

o¬ à • co- … **show patch ò 0 m ’ Îož**

o¬ U P ’ Îo- 1 m ü g è U P y

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

2 m ü g â Â U P j ¨ k m Ì x k ¬ ¯ x ½ m y

```
3 D W F K  Q R W  L Q V W D O O H G
```

3 m m] Æ â | k — ¬ ü g ¥ x X y

```
    '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
```

¥xX¥ kUYBH Õ] x æ˜`^C`^´¸¸k ? ¸ ï— 'k‹} ·k3
œ`^U 4 Go

<	ª¢
Package	Á^df
Version	Á^ÍÎZ
Build time	Á^¨Æ ˜ Ú è ž•
Size	Á^ mÄ Ý4
Install time	—Õ x¥Á^ ž•

Description

```
6L]H        ,QVWDOO WLPH  :HG 0DU
'HVFULSWLRQ WKLV LV D EULGJH SDFNDJH
5HTXLUHG SDFNDJHV  1RQH
3DFNDJH ILOHV
    OLE
    OLE  OLEEULGJH VR
    VELQ
   VELQ EULGJH

3DFNDJH ILOH YDOLGDWH  >2.@
5HTXLUHG UHODWLRQVKLS YHULI\  >2.@
```

4`^´¸ ¸Ù ,y

<	ª¢
Package file validate	û à Á ^ m † ^ ... Åož ò ç ñ Ä Á ^ † ^ C 3 o é ª P È ç[OK] z ò ç B ã † ^ â ê † ^ t “ w k é ª P È ç[ERR] kw ¢ G 6 ß „ † ^ â ê t “ wož
Required package	ç ¥ Á ^ ñ Ä ‰ Ó Á ^ k 3 ‰ Ó Á ^] Æ x é ö h [OK] z 3 ‰ Ó Á ^ Ì x é ö h [ERR] w ¦ Â ª ¢ „ ‰ Ó Á ^ Z Ä x C ‰ Ó Á ^ Í Î ’ Î
Package files	ç ß Ä m ñ Ä † ^

’Îo- ü g è ª P — Õ Ä _ Á ^ ’ Î y

```
9HUVLRQ      FG  DD    %XLOG WLPH  :HG 'HF
6L]H        ,QVWDOO WLPH  :HG  0DU
'HVFP 0‘‘0À‘0@0‘À‘p  0r Õ˙_`^ ¸y
```

```
3DWFK SDFNDJH SDWFKBLQVWDOO LQVWDOOHG LQ WKH V\VWHP YHUVL
3DFNDJH  SDWFKBWHVW
```

o¬ u V ª ¢o- -

14.7 show upgrade file

ª P y ¨ — Õ † ^ © Ï x † ^ ’ Îož

show upgrade file *url*

o¬ @ ƒ ª ¢o-

@ ƒ	T
url	**x † ^ y Î ª** *url è ¬ož*

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- ú x † ^ ñ Î ª † ^ © Ï e U … ¥ x X Ä ¯ ò 0 x } ’ Îož

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

o¬ U P ' Îo-

```
5XLMLH VKRZ XSJUDGH KLVWRU\
/DVW 8SJUDGH ,QIRUPDWLRQ
    7LPH
    0HWKRG        /2&$/
3DFNDJH 1DPH  1     B5*26      % B&0B       BLQVWDOO ELQ
3DFNDJH 7\SH  'LVWULEXWLRQ
```

o¬ u V ª ¢o- -

14.9 upgrade

x k ´ Î ª † ^ © Ï Ä x ož

upgrade*url* [**force**]

o¬ @ *ƒ* ª ¢o-

@ ƒ	T
url	*url x y Î ª è ¬ož ¥ x X 9 ´ — Õ Ä y x ož*
force	**force n P ò ´**

o¬ Þ . F åo- I

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ … 6 -o- ¥ x X u 4 _ ÿ © Ï Á ^ x k 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
```

2 m — Õ ´ Ñ ë ož

```
5XLMLH XSJUDGH XVE FD RFWHRQB % B BPDLQBLQVWDOO EL
>6ORW 0 @ 8SJUDGH SURFHVVLQJ LV

 >6ORW @ 8SJUDGH SURFHVVLQJ LV

 >6ORW 0 @ 8SJUDGH SURFHVVLQJ LV

 >6ORW @ 8SJUDGH SURFHVVLQJ LV

 >6ORW 0 @ 8SJUDGH SURFHVVLQJ LV
```

```
!  DEE E  I @
 H  @

!  I FE I  F @
FF H @
```

o¬UP'Îo- 1 m ´è UPy

8SJUDGH LQIR >2.@

2m x —|êtC°M•BH x wüg ´xXy

,QYDOLG SDFNDJH ILOH

3m—Õ u4¥ x kM•BH x wüg ´xX

'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 XERI

7m©Ï]¨m k¬¯3›m

$OUHDG\ H[LVW SDWFK SOHDVH XQLQVWDOO EHIRUH XSJUDGH

8mm 9¥©Ïk¾Em y

[redacted]

9

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- 6. … **show version detail ò 0 ÿ © Ï Á ^ © k ´ è ož**

7. … **show component ò 0 Á ^ © k ´ è ož**

8. … **show patch ò 0 ½ m © k x è ož**

o¬ UP ’ Îo- 1 m ´ è UPy

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

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

```
,QYDOLG SDFNDJH ILOH
```

3 m — Õ u 4 ¥ x k M • B H x wüg ´ x X y

```
’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 XER
```

7 m © Ï] ¨ m k ¬ ¯ 3 › m y

```
$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

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

o¬ o • j ¨o- I

o¬ u V ª ¢o- -

14.11 upgrade rollback

… ÿ © Ï › ž ñ ´ ù Í Îož

upgrade rollback

o¬ @ ƒ ª ¢o-	@ ƒ	T

```
5ROOEDFN VXFFHVV
5HORDG V\VWHP WR WDNH HIIHFW
```

2 m Ñ ë — Õ … ÿ © Ï › ž ñ ´ ù Í Îož

```
5XLMLH XSJUDGH UROOEDFN VORW 0
>6ORW 0 @
NHUQHO UROOEDFN YHUVLRQ>      I E  I !      I G  @>2.@
URRWIV UROOEDFN YHUVLRQ>     EFF  H  !     DG    @>2.@
5ROOEDFN VXFFHVV
5HORDG V\VWHP WR WDNH HIIHFW
```

o¬ à • co- M o — Õ e k … **show version detail ò 0 ÿ © Ï Á ^ © k è › ž**

o¬ U P ' Îo- 1 m è U P y

```
5ROOEDFN VXFFHVV
5HVWDUW WR WDNH HIIHFW
```

2 m) w Z Ä ´ ÿ © Ï Á ^ k œ 4 ÿ © Ï Á ^ — c › ž y

```
1RW VXEV\V SDFNDJH ODVW XSJUDGH
```

3 m) ´ w Ì è k œ 4 › ž y

```
/DVW XSJUDGH HUU RU VNLS
```

4 m Ì ü g ´ x X k ê ñ] Æ ü g › ž q • y

```
0RQLWRU ILOH ORVW
```

o¬ o • j ¨o- %²) w ³ S + ÿ © Ï Á ^ ´ k ò © Á ^ k ½ m ˆ
] Æ ü g ÿ © Ï › ž q •ož

o¬ u V ª ¢o- -

14.12 clear storage

Ž " Î ª x ož

clear storage [*url*]

o¬ @ *ƒ* ª ¢o-	*@ ƒ*	T
	url	**x y Î ª** *url) £ ê ¶ è ¬ d*

o¬ Þ . F åo- l

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- 2

o¬ ... 6 -o- ¥ x X U Y 6 Ž ”î x ê î) £ ñ Ä x k ó • Ž ”Î ª ñ Ä x ož

o¬ F å †o-
```
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- -

15 SYS

15.1 calendar set

— å © Ï F ^ ž •ož

calendar set [*month* [*day* [*year*]]]

o¬ @ ƒ ª ¢o-

```
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- -

15.2 clock read-calendar

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

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- -

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- -

o¬ … 6 -o- 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- -

15.3 clock set

— å © Ï ÷ ^ ž •ož

clock set [*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* 1970~2099ož

o¬ Þ . F åo- -

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- -

o¬ … 6 -o- 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

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

&67)UL 0DU

	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- -

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 01:20ož× × X ž ž < ž • A UTC
ž • ½ 09:35 k x ³ × X ž ž < ž • Q A UTC ž • ½ 08:15ož

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

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

5XLMLH VKRZ FORFN
      7=$ :HG )HE

 òç1 å ‡ ×X ° k dfA ôE $%&
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 @ ƒož † 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 2FWREHU
KRXU
```

3 y ¼ { × X žož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

15.5 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 ¨ · • *hours-offset* õ ô • ‘ ¦ q - r d

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

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

o¬ @ *ƒ* ª ¢o-

@ ƒ	T
high *high-value*	**— å**CPU … ä Â ä J ¿ k H › 8 1~99ož
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- -

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 k å4 äJ ¿ 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

- D Q 5 * B 6 < 6 0 2 1 & 3 8 B : $ 7 (5 0 $ 5 . B + , * + Z D U Q L Q J V \ V W H P F S X X

Z D Y Œ U P D U N F P ' Z @ P à ° ° Àð ' & D U N

¨h @ à•"S ... CPaVïµ–,! • 3f2 Z D W H @ À 0 @ • Ð P ¥ * B U * , U * < 6 0 2 1 & 3 8 B : , : 0 (5 0 $ 5 . B

o¬ U P u †ªÂ`<t Mq(Œt 3Ð7 '&ÑÂ ˜Z A9... Ÿ •µ ×Âr éŠêå q#6c@p • l"€E€T Ÿ RŸ P ~p

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

15.9 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- -

o¬ … 6 -o- -

o¬ F å †o- 1 y Ž ”%² ! Ä … “ £ 7 W Ú)ož

```
5XLMLH  VKRZ PHPRU\ KLVWRU\

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

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

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

5XLMLH FRQILJ  PHPRU\ KLVWRU\ FOHDU KDOI
  RXW RI  UHFRUGV LQ WKH KLVWRU\ WDEOH WR EH FOHDUHG
&OHDU GRQH
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

15.10 reload

M o — Õož

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

o¬ @ *ƒ* ª ¢o-

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

o¬ Þ . F åo- -

o¬ x X % ”o- Ô Ó % ”

o¬ Þ . ´ ðo- -

o¬ … 6 -o- -

o¬ F å †o- 1 y M o — å

```
5XLMLH UHORDG
```

```
5HORDG V\VWHP" < 1  <
6HQGLQJ DOO SURFHVVHV WKH 7(50 VLJQDO                    >
6HQGLQJ DOO SURFHVVHV WKH .,// VLJQDO                  >  2
5HVWDUWLQJ V\VWHP
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

15.11 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- -

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- -

15.12 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- -

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- -

15.13 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 ¿ ›**
process-id	*ª P process-id 6 Ô ` Ä … O*
process-name	*ª P process-name 6 Ô ` Ä … O*

o¬ x X % ”o- Ô Ó % ” ÷ UÉ •–ÐÈÉ@ `t§ •Ãš¡Ø ÖuÀ@ ƒ0ª z' Ð

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

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

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

¥ x X " P %† ? … p ¸ T n y

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

¢ ù _ ` ª P ' Î T n y

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

o¬ U P ' Îo- -

o¬ u V ª ¢o- -

15.14 show memory vsd

ª P Ä , ¼ ’ Îož

show memory vsd *vsd_id*

o¬ @ ƒ ª ¢o-

@ ƒ	T
vsd_id	**Ý } ò 0** vsd Ú Z k ©%² ƒ k U Y R show vsd ò ? vsd vsd id Ú Zož H › 8 ©[0 k16] ož

o¬ x X % ”o- Ô Ó % ” ê ¶ B % ”

o¬ Þ . ´ ðo- -

o¬ … 6 -o-

• • } vsd0 • ì n ¨ a — d

o¬ F å †o-

```
 y “ P  Y V G  _ ‘  ~  ÕÑ
5 X L M L H  V K R Z  P H P R U \  Y V G
3 , ’  7 H [ W  5 V V  ’ D W D  6 W D F N  7 R W D O  3 U R F H V V
                                        W W \ B V H F X B H Q D E O H
                                        J Y S G
                                        Z E D P D L Q
                                        V Q R R S L Q J  H O I
                                        S D V V Z R U G B S R O L F \
                                        G Q V B F O L H Q W  H O I
                                        U J  U P R Q G
                                        U J  V Q P S G
                                        U J  I V X L
                                        U J  W H O Q H W F
                                        U J  W H O Q H W G
                                        U J  V V K G
                                        U J  W W \  D G P L Q
                                        Y U U S B S O X V  H O I
                                        Y U U S  H O I
                                        O D F S  H O I
                                        I W S F B F O L  H O I
                                        I W S B V H U Y H U  H O I
                                        G K F S  H O I
                                        G K F S  H O I
                                        P V W S  H O I
                                        U S L  H O I
```

```
                                                    LVLV HOI
                                                    ULSQJ HOI
                                                    ULS HOI
                                                    EJS HOI
                                                    OGS HOI
                                                    PVI HOI
                                                    UJ V\VORJG
  0RUH
```

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

15.15 show pci-bus

ª P 5 ¨ PCI È ¿ — Õ , ¼ ’ Îož

show pci-bus

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- -

o¬ u V F å p † ð E1 ðÆúÈÒ y 5 ¨PCI

```
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- -

15.16 show processes cpu

ª P © Ï ` ' Îož

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

o¬ @ *ƒ* ª ¢o-

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

o¬ x X % "o- Ô Ó % " ê ¶ B % "

o¬ Þ . ´ ðo- -

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

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

```
5XLMLH  VKRZ SURFHVVHV FSX
6\VWHP 8SWLPH
```

```
&38 XWLOL]DWLRQ IRU ILYH VHFRQGV      RQH PLQXWH      ILYH PLQXW
VHW V\VWHP FSX ZDWHUPDUN RSHQ  KLJK      a

7DVNV 6WDWLVWLFV      WRWDO     UXQQLQJ     VOHHSLQJ    VWRSSHG
  3LG 9VG 6   35, 3       6HF       0LQ       0LQ       0LQ 3URFHVV
        6                                                LQLW
        6                                                NWKUHDGG
        6                                                PLJUDWLRQ
        6                                                NVRIWLUTG
        6                                                PLJUDWLRQ

  0RUH
```

2y7©ÏñÄ`  ID Z ~Lçk ªP  15 ãUÄ CPU ï ä  0 ` 'Îož

```
5XLMLH  VKRZ SURFHVVHV FSX QRQ]HUR
```

¥xX“P ª“P ¸T ny

<	ª¢
System Uptime	— Õ È g ž • k ¤ G ñ a
CPU Utilization	Â 5 aUk1 ãUk5 ãUOòþÈ CPU ï ä
Virtual CPU usage	Z'þ kÂ 5 aUk1 ãUk5 ãUOòþÈ CPU ï ä
Tasks Statistics	` Ï‹'Îk Ï‹È` ƒy` ÙÁ
set system cpu watermark	OòþÈ cpu J¿—å›C ÙÁ

©Ï ` gÙÁÄò Ù_y

` gÙÁ‹	ª¢
running	3¨ g `
sleeping	5Ü `
stopped	¶ `
zombie	Ä2 Ìt©Ï›v `

ªP _` 'ÎT ny

<	ª¢
Pid	` ID Z
Vsd	ñK vsd Z
S	` ÙÁk» 5 _k R(running) k T(stopped) k S(sleeping) k D(waiting) k Z(zombie)
PRI	` gi¯´
P	` g¨ cpu „ þ

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

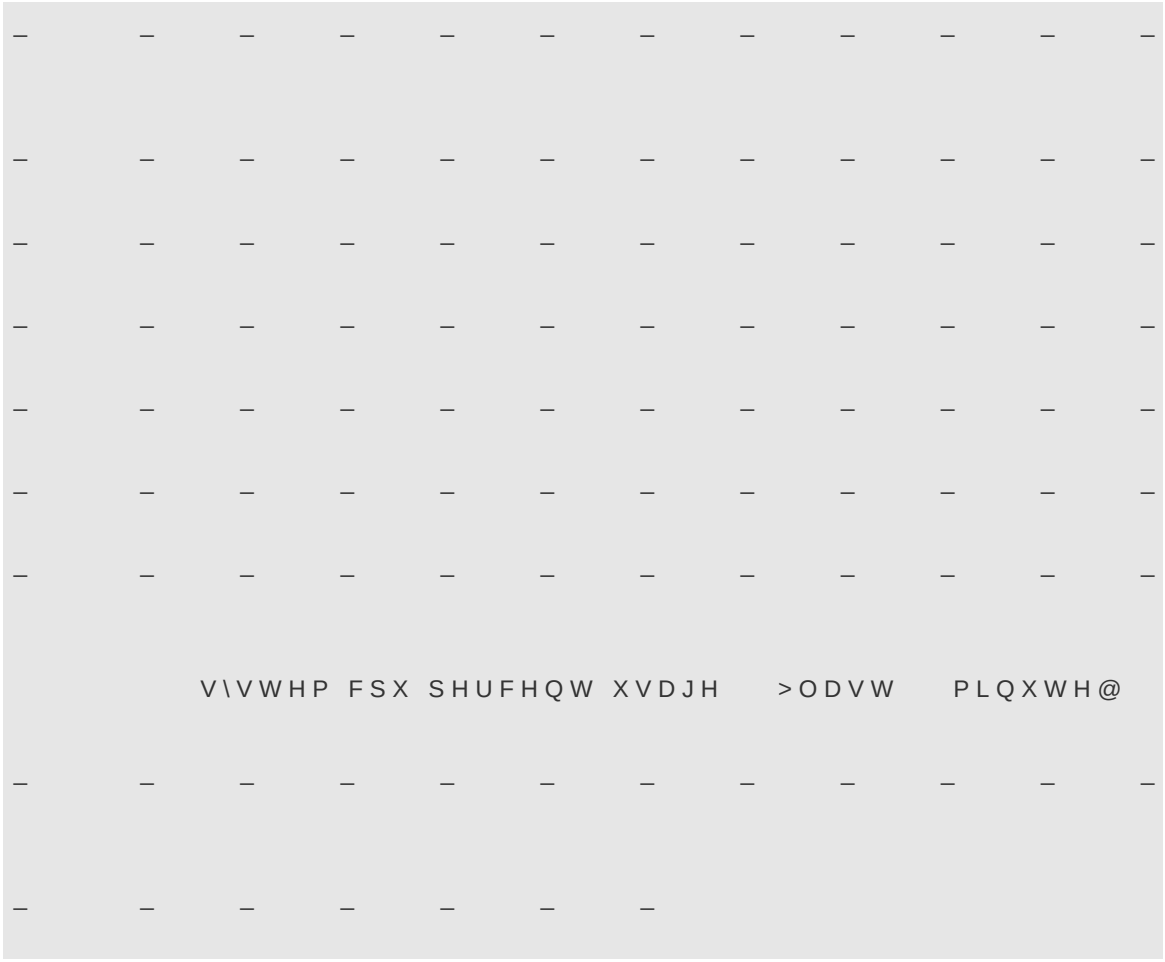
```
                                VHFRQG
        V\VWHP FSX SHUFHQW XVDJH    SHU  VHFRQG  ODVW    VHFRQG



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

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

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



o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

15.17 - ž 4` P € D 0 ' ˜Vr UX MCÐ 0!€ 0 ¦

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 0 6 ` d ` ’ Îož

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

6WDWH          5 UXQQLQJ
2Q &38
3ULRULW\
$JH 7LPH
5XQ 7LPH
&SX 8VDJH
```

15.19 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- -

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- -

15.20 show version

ª P © Ï Í Î ’ Î

show version

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

```
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- -

15.21 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- -

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 ILYH VHFRQGV
&38 XWLOL]DWLRQ LQ RQH PLQXWH
&38 XWLOL]DWLRQ LQ ILYH PLQXWHV

 12      6HF     0LQ     0LQ 3URFHVV
                          LQLW
                          NWKUHDGG
                          NVRIWLUTG
                          HYHQWV
  0RUH
```

16 NTP

16.1 no ntp

¼ { NTP c 5 Æ k 2 ž • Æ ˜ c 5 k Ž ” ntp ñ Ä F å ’ Îož

no ntp

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- Þ . Õ Ñ NTP Æ © ¼ { ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¨ Þ . Õ Ñ kNTP © ¼ { k x Q } F å 4 NTP Æ ˜ ê NTP ¶ œ ð Ñ ò kNTP < k t ø •ož

o¬ F å †o- 1 y ¼ { NTP Æ ož

5 X L M L H F R Q I L J Q R Q W S

o¬ à • co- **show run ò 0 © k** ¨ NTP F å

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

16.2 ntp access-group

F å NTP Æ ˜ | O ò Ó ’ož

ntp access-group {

	Ï c 5 ž • g ¶ ˜	Ó ’ hož
serve	ª • + Î ª NTP Æ g ž • ¬ L y O ò ò ¤ kx ª • Î ª — Õ i © Ï c 5 ž •ož
serve-only	**N** ª • + Î ª NTP Æ g ž • ¬ Lož
query-only	**N** ª • + Î ª NTP Æ g O ò ò ¤ož
access-list-number	IP ˜	O ò ç n ö Z z 8 1 ½99 y 1300 ½1999ož
access-list-name	IP ˜	O ò ç n dož

o¬ Þ . F åo- Þ . Õ Ñ Ì F å ` ~ NTP ˜ | O ò • éož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- — å + Î ª — Õ NTP Æ ˜ | O ò Ó ’ož L U ˆ 4%² _ Â 4 ’ † ¶ R ‘ k ¾ ¶ • c © … NTP ï a à š Ñ òož ¢%² ˜ | ¬ L ñ ž k NTP

¼ { ¶ B ¶ œ ð Ñ òož

no ntp authenticate

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- Þ . Õ Ñ NTP ¶ B • š Ñ ò © ¼ { ož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç Ì … ¶ B ¶ œ ð Ñ ò k é + c 5 * ’ g % Ô òož ø • ¶ B ¶ œ ð Ñ ò k c ž è ¿ U ¶ B
% W F å k õ U G Ü Æ ˜ % * ’ož
à š ö Õ © * **ntp authentication-keyo•ntp trusted-key 6 ’ ` % Wož**

o¬ F å †o- 1 y ¨ F å 4 , • ¶ B • š % W w 1 ¿ 6 ¶ B ’ ` % W e k ø • • š Ñ òož

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

16.4 ntp authentication-key

NTP Æ F å%² ¶ B NTP • š % Wož

ntp authentication-key *key-id* **md5** *key-string* [*enc-type*]

H ƒ ¶ B NTP • š % Wož

no ntp authentication-key *key-id*

o¬ @ ƒ ª ¢o-

@ ƒ	T
key-id	% *W*ID z H › 8 1 ½4294967295ož
key-string	% *W … ož*
enc-type	*g U # h ¥ % W © k © % k*0 n P — % k7 n P • % %ož ó • © —

	%ož

o¬ Þ . F åo- Þ . Z Ä F å • š % Wož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- F å ¶ B • š % W k w J md5 g % k ? % W Ä%² Š%² key-id ö œ k ï U Y **ntp trusted-key** **1 ¥** key-id + • % W — å ¶ B ’ ` % Wož
% W ’ 1024 k x © ? Æ ˜ N N u 4%² % Wož

o¬ F å †o- 1 y F å%² ID 6 • š % W y
5 X L M L H F R Q I L J Q W S D X W K H Q W L F D W L R Q N H \ P G Z R R R R R S

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

16.5 ntp disable

¼ { + • N M N v NTP † ož
ntp disable

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- Þ . Õ Ñ N M C U Y N I NTP †ož

o¬ x X % ”o- N M F å % ”

o¬ Þ . ´ ðo- -

o¬ … 6 -o- ¨ Þ . Õ Ñ k ` Þ N M N I NTP † C U Y U ˆ Ë ï € g ž U ² … k * — å kU Y I U
+ • N M v ñ NTP †ož

Ÿ t) û » " Ç ¼ G ¾ Ÿ t " IP Ì Ÿ q 3 Ç } c P Ç h a — d

o¬ F å †o- 1 y ¼ { N M N v NTP † y

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

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

16.6 ntp master

— å Î ª ž U • NTP ž U g Î ª ž U @ ð › U ´ h k ¿ — Õ U ˆ c 5 ž •ož

ntp master [*stratum*]

H *f* NTP ž U — åož

no ntp master

o¬ @ *f* ª ¢o-

@ *f*	T	
stratum	*g U # h 6 Î ª ž U ñ Ô C f k 8*	1 ½15

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

o¬ à • co- 1 y … **show ntp status x X ò 0** NTP , ¼ F åož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

16.7 ntp server

NTP ï € 6 %² NTP Æ ˜ož

ntp server { *ip-addr* | *domain* | **ip** *domain* | **ipv6** *domain* } [**version** *version*] [**source** *if-name*] [**key** *keyid*] [**prefer**]

í ” 6 NTP Æ ˜ož

no ntp server *ip-addr*

o¬ @ ƒ ª ¢o-

o¬ F å †o- 1 y F å à Ì — Õ NTP serverož

```
5 X L M L H F R Q I L J Q W S V H U Y H U F å , 3 Y
5 X L M L H F R Q I L J Q W S V H U Y HŕÚå , 3 Y
```

o¬ à • co- -

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

16.8 ntp trusted-key

1%² ID + • % W F å ¶ B ’ ` % Wož

ntp trusted-key *key-id*

í ” ID + • ¶ B ’ ` % Wož

no ntp trusted-key *key-id*

o¬ @ *ƒ* ª ¢o-

@ ƒ	T
key-id	*¶ B ’ ` % W* IDož H › 8 1 ½4294967295ož

o¬ Þ . F åo- ó • Õ Ñ Z Ä ’ ` % Wož

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ¨ NTP * ’ E • · À J , c ’ ` % W k * ID Û ò % W k ò % W Î ï © n ÿ k Y U ä ¶ Åož

o¬ F å †o- 1 y F å%² • š % W k w 4 % W — å + • Æ ˜ ’ ` % Wož

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

o¬ à • co- -

o¬ U P ’ Îo- -

show ntp server

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó ï % ”o• ¶ B F å % ”o• N M F å % ”o•VLAN F å % ”ož

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç Ä F å NTP Æ k é ª P ¢ ù NTP Æ ˜ ’ Î k k é ¥ x X k ø - ` ~ ’ Îož

o¬ F å †o- 1 y ª P ¢ ù © Ï NTP Æ ˜ ’ Î

```
5 X L M L H  V K R Z  Q W S  V H U Y H U
Q W S  V H U Y H U                                V R X U F H  N H \ L G  S U H I H U  Y H U

                                        1 R Q H  1 R Q H  ) $ / 6 (
                                        1 R Q H  1 R Q H  ) $ / 6 (
```

< K y

<	ª ¢
ntp-server	n P NTP Æ ˜ IP ª - ê ¿ d
source	n P NTP Æ ˜ › € M
keyid	n P + • Æ ˜ * ’ © k J % % W
prefer	n P + • Æ ˜ © k © Ï prefer Æ ˜
version	n P NTP Í Î g1-3 h

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

16.11 show ntp status

ª P NTP ’ Îož

show ntp status

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ x X % ”o- Ô Ó ï % ”o• ¶ B F å % ”o• N M F å % ”o•VLAN F å % ”ož

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- ò ç © Ï NTP Æ ø • ké ª P ¢ ù NTP ’ Î k¨ †%²) • c 5 Æ ˜ $ ù ¥ x X k ø - ` ~ ’ Îož

o¬ F å †o- 1 y ª P ¢ ù © Ï NTP ’ Î

5XLMLH VKRZ QWS VWDWXV
&ORFN LV V\QFKURQL]HG VWUDWXP UHIHUHQFH LV
QRPLQDO IUHT LV +] DFWXDO IUHT LV +] SUHFLVLRQ LV
UHIHUHQFH WLPH LV ’ %’ % ((87&
FORFN RIIVHW LV VHF URRW GHOD\ LV VHF
URRW GLVSHUVLRQ LV PVHF SHHU GLVSHUVLRQ LV PVHF

< K y

<	ª ¢
stratum	n P ¢ ù ž U ˆ ´ z

17 SNTP

17.1 sntp enable

— å ø • SNTP ož
sntp enable

1 ¥ — å Ê Ö Þ . ›—Disable ož
no sntp enable

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

o¬ Þ . F åo- Þ . SNTP Ù Á © Disable

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y • o SNTP
5 X L M L H F R Q I L J V Q W S H Q D E O H

o¬ à • co- 1 y … **show sntp x X ò 0** SNTP , ¼ @ ƒož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

17.2 sntp interval

— å SNTP Client ¬ } ž y NTP/SNTP Server c 5 ž U ž • • œož
sntp interval *seconds*

H ƒ SNTP c 5 • œ — å k Ê Ö ñ Þ . c 5 ž • • œož
no sntp interval

o¬ @ ƒ ª ¢o-

@ ƒ	T
seconds	*ž c 5 • œ k % y aož H › 8* 60 ½65535ož

o¬ Þ . F åo- 1800s

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- z ã : • " ¨ · · O â V K ‡ “ Ò " ´ ‘ K ‡ “ Ò È " û ¨ · · O û **sntp enable** a — d

o¬ F å †o- 1 y F å SNTP ? 4 ž c 5%²) ž •

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

o¬ à • co- 1 y … **show sntp x X ò 0** SNTP , ¼ @ ƒož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

17.3 sntp server

— å SNTP Serverož

sntp server *ip-address*

í ” 6 SNTP/NTP Server

no sntp server

o¬ @ ƒ ª ¢o-

@ ƒ	T
ip-address	NTP/SNTP Æ ˜ IP ª -

o¬ Þ . F åo- Þ . Z Ä — å ` ~ NTP/SNTP Æ ˜

o¬ x X % ”o- ¶ B F å % ”

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- 9 SNTP # ‘ y NTP ¶ Ã k ñ Y — å SNTP Server ¶ U Y F å è internet ¸ NTP Serverož

o¬ F å †o- 1 y F å à Ì NTP Æ ˜

```
5XLMLH FRQILJ VQWS VHUYHU
```

o¬ à • co- 1 y … **show sntp x X ò 0** SNTP , ¼ @ ƒož

o¬ U P ’ Îo- -

o¬ o • j ¨o- -

o¬ u V ª ¢o- -

17.4 show sntp

ª P SNTP , ¼ @ ƒož

show sntp

o¬ @ ƒ ª ¢o-

@ ƒ	T
-	-

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

o¬ Þ . ´ ðo- 14

o¬ … 6 -o- -

o¬ F å †o- 1 y ò 0 SNTP , ¼ @ ƒož

```
5XLMLH VKRZ VQWS
6173 VWDWH (QDEOH
6173 VHUYHU
6173 V\QF LQWHUYDO
7LPH ]RQH
```

< K y

<	ª ¢
state	n P sntp • o Ù Á
server	n P ž • c 5 Æ ˜
sync interval	n P ž • c 5 • œ
Time zone	¢ ù ž

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

18.2 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- -

18.3 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

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

o¬ U P ’ Îo- -

o¬ u V ª ¢o- -

18.4 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

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

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- -