Ъ ҙ ЎӒ

RG-S2600 "

ص ѿ ѽ Ӌ

RGOS 10.4(2b2)

ȯ

ἂɳ ą ⁸ ↄˇ è ą ˇ a ɻ ˇ ἶΩ Ὼ ʌ
ᵏ ą Â Ὼ ʌ ج ῆ ἂ ┏ ɖ è ą ñ ɻ ˇ
ת ɣ ἂ è à a ñ ˇ Лυ ɻ Ո ˇ Ὼ
ʌ a ˙

ЎĄ ̈ ѝ ' RGOS®10.4(2b2) Â

:,: Л Ю " Ж˜

Ж˜

˜

:,:

1.

ą ' Courier New ˘ è Е˘ 5 Л˘
ą Â ą è ÿ ώ ą ˘ ╗ Е Â

2. Ћ ҷ

Ћ ҷ Е Arial ́ έ Е ˜Ω Ћ Ж Ю'

Е' Ћ ҷ ˜Ω ^ Ћ ҷ è ɗ a ɻ ɬ ˜ ╗ Е Â

Ѐ' Ћ ҷ Ѵ ^ Ћ ҷ è ћ ҷ ɬ ˜ Е

[ ] ' [ ] ɬ ˘ ћ Ћ ҷ ɻ Â

{ x | y | ... }' ÿ ч э э è ɻ У э Â

[x | y | ...]' ÿ ч э э è ɻ У э a Â

//' ɻ ѝ Â

3. ʎ

ʎ ɟɔ è ⁞ ɯ ˘ ɕ ЖЮ'

~ à ˆ à ɔ è Y Â

à à à ɔ ˝ Ί

1.	Ά w R ʃ ʎ ɲ ɹ a ˘ ɔ è ʎ ɳ ɒ ʎ ɲ Â
2.	Ά ʃ w R ə è ɹ Ü è ɳ ɒ " ˝ ˆ ɳ ɒ ɲ ʎ à ~ ˘ έ ɛ ə Л G ə ὶ ñ Â
3.	Ά è ɻ ɭ ɻ ɭ ɳ ɒ ف ˘ ʒ ɷ У ЖЮ ɭ˘ Л ɻ ɷ ~ Ь Ӈ Â

1 CLI

1.1

1.1.1 alias

У ђυ ҳ ⋮ ɹ˘ ⊣Лυ ѫ ѿ ЮG alias ђυ ҳ ÂG ђυ ҳ no ⊣Лῡ У ђυ ҳ⋮ ɹ ī У э Ю ѿ ђυ ҳ⋮ ɹ Â

alias *mode command-alias original-command*

no alias *mode* [*original-command*]

¶	
mode	⋮ ɹ ҳ ђυ ҳ ђυ ҳ Â
command-alias	ђυ ҳ⋮ ɹ Â
original-command	⋮ ɹ ҳ ђυ ҳ Â

¶

ѫ EXEC Ю˘ ī ђυ ҳ ѫ ⋮ ɹ Â

ђυ ҳ ѿ

EXEC Ю ђυ ҳ⋮ ɹ ѝ **h** ѣ**p** ѣ**s** ѣ**u** ѣ**un** ђυ ɹī ⋮ ѝ **help** ѣ**ping** ѣ**show** ѣ **undebug** ѣ **undebug** Â

ђυ ҳ⋮ ɹ a **no alias exec** ђυ ҳī Â

ђυ ҳ⋮ ɹ˘ ⊣Лυ У э´ ҳ У ђυ ҳ Â R ђυ ш ҳī ђυ Ж ī

G

```
Ruijie# s?
*s=show  show  start-chat  start-terminal-service
```

```
Ruijie# s?
*s=show  *sv="show version" show  start-chat
start-terminal-service
```

```
Ruijie# s?
show  start-chat  start-terminal-service
```

```
Ruijie(config-if)# ia ?
A.B.C.D  IP address
dhcp     IP Address via DHCP
Ruijie(config-if)# ip address
```

```
Ruijie# configure terminal
Ruijie(config)# alias config def-route ip route 0.0.0.0 0.0.0.0
192.168.1.1
Ruijie(config)# def-route?
*def-route="ip route 0.0.0.0 0.0.0.0 192.168.1.1"
Ruijie(config)# def-route?
% Unrecognized command.
Ruijie(config)# end
Ruijie# show aliases config
globle configure mode alias:
def-route          ip route 0.0.0.0 0.0.0.0 192.168.1.1
```

show aliases	

-

⁞ˇ ⅄ Л∪ ج ѿ Ю G **privilege** ħu ҁ Â G
ѝ ḣ Â

ommand-string

mand-string

ħu ҁ CLI ħu ҁ Â
ħu ҁ ħu ҁ ˇ ⅄ ѝ ⅄ ⁞ Â
ħu ҁ ħu ҁ ⁞ˇ ⁞ تن 0-15 Â
ħu ҁ ѝ ⁞ Â
ħu ҁ s Â

è ⅄ CLI ħu ҁ ℨΩ ˇ a ⅄ ˇ ⅄
ע ˇ ج ѿ Ю ⅄ Л∪ G **privilege ?** "

ѿ

⅄

0.0.2 294.68 -139.2 -19.1Hp

```
Ruijie(config)# enable secret level 1 0 test
Ruijie(config)# privilege exec level 1 reload
   ˘ G    ⁞ 1  ώ CLI   ˘ ↓  ↓ Л Ц G  reload ħυ ϡ'
Ruijie> reload ?
<cr>
      reload  ѿ   ħυ ϡ        ⁞ 1     ˘ ‡ ↓ Л Ц G  all ΈΩ   '
Ruijie(config)# privilege exec all level 1 reload
   ˘ G    ⁞ 1  ώ CLI   ˘ ↓  ↓ Л Ц G  reload  ѿ   ħυ ϡ'
Ruijie> reload ?
at                  reload at a specific time/date
cancel              cancel pending reload scheme
in                  reload after a time interval
<cr>
```

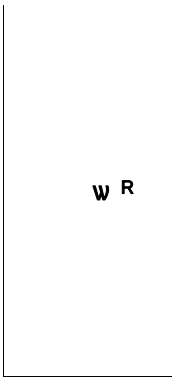
ΈΩħυ ϡ

ħυ ϡ	
enable secret	CLI ⁞ ∧ ϡ

∧

ЛυЮ R ˇ EXEC Ю ħυ ҳ ⁞ ɹ'

```
Ruijie# show aliases exec
exec mode alias:
h                   help
p                   ping
s                   show
u                   undebug
un                  undebug
```



2

2.1

. ѝ Ъυ ҂ ∀^ CLI˜ ↑ ЛυЮ ˜ΩЪυ ҂'

2.1.1 disable

ѧ ЮЎ æ ⅋ ѧ ⋮˘ Ъυ ҂ disable Â

disable [*privilege-level*]

∀
privilege-level

Ъυ ҂

G
G ъυ ҂ ÿ ∫ Â ╗ Э ˘ ‡ ⅋ æ∫ Â

disable Ъυ ҂ ∧ ¥ ⅋ Â

w R
ЮR ⅋ æ∫ ´ ' Ruijie# **disable** *10*

enable	ÿ ώ∫ ˘ ∫ ⋮ Â

˜ΩЪυ ҂

Ъυ ҂	
-	-

∧

Ъυ ҂ ⅂ ∧

∧	
-	-

2.1.2 enable

ώ ˘ Ъυ ϡ enable Â

Ъυ ϡ ą ϒ ê ώ Ъυ ϡ ϒ Ì Â

ϒ		
	-	-
	ą ϒ ê ώ Ъυ ϡ ϒ Ì Â	
Ъυ ϡ	ą ϒ ê ώ Ъυ ϡ ϒ Ì Â	
G	ą ϒ ê ώ Ъυ ϡ ϒ Ì Â	
w R	ą ϒ ê ώ Ъυ ϡ ϒ Ì Â	

ΐΩЪυ ϡ	Ъυ ϡ	
	-	-

ϳ	ą ϒ ê ώ Ъυ ϡ ϒ Ì Â

Ъυ ϡ ϶ ϳ	ϗ	
	-	-

2.1.3 enable password

a ϳ ⁞ ϒ ϡ˘ ώ Ъυ ϡ **enable password** Â Ъυ ϡ **no** ϔ ⁞ ϒ ϡ Â

enable password [**level** *level*] {*password* | [**0** | **7**] *encrypted-password*}**no enable password**

ϒ		
	Password	ώ EXEC ϒ ϡ Â
	Level	⁞ Â
	0|7	ϒ ϡ ╗ ص˘ 0 ╗ ˘ 7 ´ ╗ Â
	encrypted-password	ϒ ϡ Â

Ъυ ҳ	ѽ

G	ѽ ╗ ѕص Â У ϙ Ю˘ ۷ ⁸ ╗ ۷ ҳ ˘ ѽ ╗ ѕص Â ۷ ҳ Ѭ Ю˙ ᵗ ѿ 1↑ 26 ɜ ῆ Ո Â ۷ ҳ ⅿ ۷Ս ⅿ ˘ ת Â è ۴ ‡ ɔ ѝ ۷ ҳ У ↑ Â
~	ѽ ╗ ѕص ˘ ۸ ѽ У ۷ ҳ˘ ‡ a ѽ EXEC Â a ╗ x ۷ ҳ Â ۷ ۷ ҳ Â

w R	Ю R ۷ ҳ ѝ pw10˙ Ruijie(config)# **enable password** *pw10*

˜Ωѣυ ҳ	Ъυ ҳ	
	enable secret	ѽ ۷ ҳ Â

۸

Ъυ ҳ ˥ ۸	۸	
	-	-

2.1.4 enable secret

a ۸ ⁞ ѽ ۷ ҳ˘ ѽ Ъυ ҳ **enable secret** Â Ъυ ҳ **no**˥ ⁞ ۷ ҳ Â

enable secret [**level** *level*] {*secret* | [**0 | 5**] *encrypted-secret*}

Ъυ ҳ ѽ

G ᴧ ҳ᾽ ѝ password Ո security ᴧ ҳ ч Âpassword ѝ ´ ╗ ᴧ ҳ˘ ᴧ ѝ 15 ᴧ ҳ Âsecurity ᴧ ҳ ѝ ѽ╗ ᴧ ҳ˘ ᴝՈ ѝ 0˙ 15 ᴧ ҳ Â è˘ ᴝ ⁞ ᴝ ѯՈЭ ч ᴧ ҳ˘ ‡ password ᴧ ҳ a Â 15 password ᴧ ҳ˘ ‡˛ ˆ ˘ ╟ ѝ security ᴧ ҳ᾽ 15 password ᴧ ҳ Ո security ᴧ ҳ ѽ ᴝ˘ ‡˛ ˆ ᾽ ᴧ ҳ ՈՂ ɖ ˘ password ᴧ ҳ G ´ ╗ ˘ security ᴧ ҳ G ѽ╗ Â

ѡ R Ю R ѽ ᴧ ҳ ѝ pw10᾽

```
Ruijie(config)# enable secret 0 pw10
```

ЪΩЪυ ҳ

Ъυ ҳ	
enable password	a ᴝ ⁞ ᴧ ҳ Â

ᴝ

Ъυ ҳ ϒ ᴝ

ᴨ	
-	-

2.1.5 enable service

G б ΩΩ ┗^ SSH Server/Telnet Server/Web Server/Snmp Agent˜ ˘ ѯ Ю˘ ᴝՈ G Ъυ ҳ **enable service** Ъυ ҳ᾽

enable service { **ssh-sesrver** | **telnet-server** | **web-server** | **snmp-agent**}

ᴨ

ᴨ	
ssh-sesrver	б ΩΩ SSH Serveř Ъυ ҳ ᴝ IPv4 Ո IPv6 ┗᾽
telnet-server	б ΩΩ Telnet Serveř Ъυ ҳ ᴝ IPv4 Ո IPv6 ┗᾽
web-server	б ΩΩ Http Serveř Ъυ ҳ ᴝ IPv4 Ո IPv6 ┗᾽
snmp-agent	б ΩΩ Snmp Agentˇ Ъυ ҳ ᴝ IPv4 Ո IPv6 ┗᾽

Ъυ ҳ ѽ

G Ъу ҳ ¥ б ЎΩ Ь Â G **no enable service** Ъу ҳ ЎΩ Ь Â

w R Ю R Ъу ҳ' enable service ssh-sesrver, SSH Server ╖ '
Ruijie(Config˜ # **enable service ssh-sesrver**

ЎΩЪу ҳ

Ъу ҳ	
show service	⁄ń Ь '

ѵ

Ъу ҳ ˥ ѵ

ѵ	
-	-

2.1.6 execute

˚ è Ъу ҳ˘ Ъу ҳ **execute** Ъу ҳ Â

execute {[**flash:**] *filename*}

ѵ

ѵ	
flash:	˚ Э
filename	˚ ѕ

Ъу ҳ

G Ъу ҳ ¥ ˚ è Ъу ҳ Â
˚ ˚ ѕ Ո ˚ è ф ѕ Л υ ˘ У ѫ PC Э
TFTP · ∫ Flash è Â ф ѡ ¸ ώ˘ ֍ ˘
CLI Ъу ҳ ˚ ф Â ѵ ˘ ¥ У Ҿ Ӌ ц Ъу ҳ˘ ‡
ѫ ˚ è ˝I ĵ ώ ə ˘ ɖ Ъу ҳ Â

w R Ю R ˚ line_rcms_script.text˝ э ˚ ¥ ѵ Э ˥
ѕ **Telnet** ╖ ˘ ˚ ф Ю'

```
configure terminal
line tty 1 16
transport input all
```

```
no exec
end
```

```
Ruijie# execute flash:line_rcms_script.text
executing script file line_rcms_script.text ......
executing done
Ruijie# configure terminal
Enter configuration commands, one per line.  End with  CNTL/Z.
Ruijie(config)# line vty 1 16
Ruijie(config-line)# transport input all
Ruijie(config-line)# no exec
Ruijie(config-line)# end
```

ھ ھ	

G	ћυ ҳ ¥ Web Â G **no ip http authentication** ћυ ҳ ѝ ḣ Â
ѡ R	Ю R ћυ ҳ˘ Web local ' `Ruijie(config)# ip http authentication local`

	-	-

2.1.9 ip telnet source-interface

ѧ Э IP ѫ ф ɔ й Telnet ѫ ˘ ф ѫ ˘ ѧ Ю˘ ˩ Л ᴜ ᴳ **ip telnet source-interface** Ъ ҳ '

ip telnet source-interface *interface-name*

Ъυ ϡ

æο ï ∧ ϡ ˘ ѧ ɖ ѫ ↓ ˘ в Лυ Â
ЛυЮ в '
У ' ώ **lock** Ъυ ϡ˘ ˛ ώ ∧ ϡ'
G ү ' ώ ∧ ϡ˘ ↓Лυ ˙ s Â ώ ∧˘ ˛ ώ ∧ ϡ˘
∧˘ ˛ ˘ l' Locked Ł ą '
ώ ˘ ώ ï ∧ ϡ Â
ѧ Э G в ℼ ˘ æο ѧ line Ю **lockable** Ъυ ϡ˘ ѧ
line Э в Â

W R

Ю R й в У э '

```
Ruijie(config-line)# lockable
Ruijie(config-line)# end
Ruijie# lock
Password: <password>
Again: <password>
Locked
Password: <password>
```

ΩЪυ ϡ

Ъυ ϡ	
lockable	ѧ Э в Â

∧

Ъυ ϡ ˥ ↓

∧	
-	-

2.1.11 lockable

ѧ Э G **lock** Ъυ ϡ˘ ↓Лυѧ line Ю **lockable** Ъυ ϡ˘ ѧ ą
Ю a **lock** Ъυ ϡ Â G **no** Ъυ ϡ ↓ Â

lockable

no lockable

∧

∧	

-	-

Ъυ ҳ line

G Ъυ ҳ ¥ ҕ Э в ˘ в ⅃ Л∪ ҕ EXEC Ю **lock** Ъυ ҳ Â

Ю R ҕ 8 ⅄ ∧ Э в ℸ ˘ в 8 ⅄'

```
Ruijie(config)# line console 0
Ruijie(config-line)# lockable
Ruijie(config-line)# end
Ruijie# lock
Password: <password>
Again: <password>
Locked
Password: <password>
```

Ъυ ҳ	
lock	в Â

/\	
-	-

2.1.12 login

Ъυ ҳ	line
G	ŭ AAA ŏ Ĺ˘ ‡ Ъυ ҳ ¥ ɔ ´ ∧ ҳ Â ∧ ҳ VTY console ∧ è ∧ ҳ Â

w R	Ю R ҕ VTY Э ∧ ҳ Â
	`Ruijie(config)# **no aaa new-model**`
	`Ruijie(config)# **line vty** *0*`
	`Ruijie(config-line)# **password** *0 normatest*`
	`Ruijie(config-line)# **login**`

ЎЪυ ҳ

Ъυ ҳ	
password	line ∧ ҳ Â

∧

Ъυ ҳ ˥ ∧

∧	
-	-

2.1.13 login authentication

ҕ AAA ϙ Ю˘ AAA Ĺ ˘ G Ъυ ҳ˘Ω
" Â Ъυ ҳ **no** ˥ " Â

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

no login authentication {**default** | *list-name*}

∧

∧	
default	" ˩
list-name	˩ " ˩ A A A =

```
Ruijie(config)# aaa new-model
Ruijie(config)# aaa authentication login default radius
Ruijie(config)# line vty 0
Ruijie(config-line)# login authentication default
```

ÞU ¾	
aaa new-model	G AAA ŵ Ł
aaa authentication login	"

ÑÞu ¾

Þu ¾ ¯ Ñ

Ñ	
-	-

2.1.14 login local

æ AAA ÑΩ ™^ †æ¢ðÖÀp(H—à4â Æ Æ! y Þà Ô!Zì ù˜€W i†æ lo cRTC 1 Tf 0 TC 2.257 -0.5 0 1 0 8 re 43 A à A A E A

	username	ѫ ҿ Â

✓

Ъυ ҳ ˥ ✓	✓	
	-	-

2.1.15 privilege mode

✓ ê CLI Ъυ ҳ Ì Â

✓	✓	
	-	-

٩	
password	line ٨ ҳ Â
0|7	٨ ҳ ╗ ضر ˘ 0 ╗ ˘ 7 ´ ╗ Â
encrypted-password	٨ ҳ Â

ƫυ ҳ line

G ƫυ ҳ ¥ في line ٨ ҳ Â

ЮR line ٨ ҳ и red

```
Ruijie(config)# line vty 0
Ruijie(config-line)# password red
```

ƫυ ҳ	
login	ج ٨ Э и ´ ٨ ҳ

٨	
-	-

2.1.17 service password-encryption

٨ ҳ ╗ ˘ service password-encryption ƫυ ҳ˘ ƫυ ҳ no ˆ ˘ Л ل a¸ и Â

service password-encryption

٩	
-	-

ƫυ ҳ ѽ

G

G service password-encryption ћ ћ 8 ћ ћ Ѳ ѕ ѧ password ѣ Л ѕ G ' service password-encryption ћ ћ Л ѵ show running write ф Л ѵ Ѳ password ѷ ' Ѧ Ѳ service password-encryption ѷ й a й Â

~	**/vrf** ΐΩ ˘ Θ ج RSR Ϳ è ˛ **/ipv6** ΐΩ ˘ Θ ج IPV6 è ˘ ' S3760 ąS57 ąS86 ˛

ϣ R

R 1' Ю R ˘ telnet IPV4 ѫ ف ѝ 192.168.1.1˘ ϟ G ḣ˘ ϟ ѝ vlan 1˘ VRF ѝ vpn1'

```
Ruijie# telnet 192.168.1.1 /source interface vlan 1 /vrf vpn1
```

R 2' Ю R ˘ telnet IPV6 ѫ ف ѝ 2AAA:BBBB::CCCC'

```
Ruijie# telnet 2AAA:BBBB::CCCC
```

ΐΩЪυ ϗ

Ъυ ϗ	
ip telnet source-interface	ϟ Э IP ѫ ف ɔ ѝ Telnet ѫ ف'
show session	ɱή TTY ˚ '
exit	ɱή '

ϟ

Ъυ ϗ ˥ ϟ

ϟ	
-	-

2.1.19 username

ѫ ɻ˘ ώ Ъυ ϗ username Â

username *name*{**nopassword**|**password**{*password* | [**0|7**]*encrypted-password* }}

username *name* **privilege** *privilege-level*

no username *name*

ϟ

ϟ	
name	ɻ Â
password	ϟ ϗ Â
0|7	ϟ ϗ ╗ صر˘ 0 ╗ ˘ 7 ´ ╗ Â
encrypted-password	ϟ ϗ Â
privilege-level	Â

Ъυ ϗ ώ

G	Ъυ ҳ ¥ ѫ ˘ k G Â ╗ ر ي 7 ‡ ώ ⁄ ي ī Â ~ ╗ ر ي 7 Â У ą Ю ˇ 8 ╗ ˇ ҳ ˇ ╗ ر ي 7 Â
ѡ R	Ю R У э ⁄ Ո ˇ ҳ ˇ ⁞ ي 15 ' Ruijie(config)# **username** *test* **privilege** *15* **password 0** *pw15*

ЎЪυ ҳ	Ъυ ҳ	
	login local	ѫ Â

ˇ

Ъυ ҳ ˥ ˇ	ˇ	
	-	-

2.2

ˆ ЛЮ ЎЪυ ҳ'

2.2.1 banner login

ą ˘ ѧ ώ Ю Ъυ ҳ **banner login** Â ˇ ą ˘ G **no banner login** Ъυ ҳ Â

banner login *c message c*

	˄	
˄	*c*	ą ˆ ˘ ą è a ï
	message	ą ¨

Ъυ ҳ	ώ

G	G Ъυ ҳ ˇ Л ą ˘ ˘ Ҫ ą ˛ Â ώ ˆ ⁄ Ӳ ώ ˘ ‡ Ҫ x Â

ѡ R

ЮО R ǝ '

```
Ruijie(config)
Ruijie(config)# banner login $ enter your password $
```

ЎΩЪυ ҳ

Ъυ ҳ	
-	-

ѵ

Ъυ ҳ ˥ ѵ

ѵ	
-	-

2.2.2 banner motd

ǝ ˘ ѯ ώ ЮО Ъυ ҳ **banner motd** Â ѵ ǝ ˘ G **no banner motd** Ъυ ҳ Â

banner motd *c message c*

ѵ

ѵ	
c	ǝ ǐ ˘ ǝ è a ї
message	ǝ ϊ

ꞏꞏꞏ ꞏꞏꞏ	ꞏꞏꞏ	ꞏꞏꞏ
ꞏꞏꞏ ꞏꞏꞏ	-	-

2.2.3 clock set

ꞏꞏꞏ ꞏꞏꞏ ꞏꞏꞏ

2.2.4 clock update-calendar

˚ и ɱ˙ ˚ ḣ Â

clock update-calendar

٩	
-	-

Ъυ ҳ

G

У Ҫ ٨ ˚ έ ˚ ^ calendar˜ Â ˚ ╟˘ . G ج
˜Ω ŭ ɑ Ю ≠ Â
˚ Ո˙ ˚ a ٨ ˘ ɣ ˚ и ñ ˘ Ъυ
ҳ ˚ è ñ Ո˙ ⁸⌉ ˚ ٧ Â

w R

G ЮЪυ ҳ ٨ Л ɱ˙ ˚ Ո˙ ⁸⌉ ˚ Â

```
Ruijie# clock update-calendar
```

˜ΩЪυ ҳ	Ъυ ҳ	
	-	-

٨

Ъυ ҳ ˥ ٨

٨	
-	-

2.2.5 exec-timeout

LINE Ю ⌉ ˘ G **exec-timeout** Ъυ ҳ Â **no exec-timeout** Ъυ ҳ˘ ٧ LINE Ю ˘ a Â

exec-timeout *minutes* [*seconds*]

no exec-timeout

٩	٩	
	minutes	⌉ ’

seconds	ˆ ˩ ˥ ˜ '

ѝ 10 min Â

Ъυ ҳ LINE

G ѣ ǫ˘ ˙ ¦ ώ ѧ˘ è ˘ LINE ѝ ˩ Â

ѡ R Ю R line vty 0 ѝ 5ϯ 30 '

```
Ruijie(config-line)# exec-timeout 5 30
```

ΐΩЪυ ҳ		
-	-	

˪

Ъυ ҳ ˥ ˪	˪	
-	-	

2.2.6 hostname

g ў ˩˘ ѽ Ъυ ҳ **hostname** Â

hostname *name*

˥		
˥	*name*	ў ˩˘ ˪ G s à Л˅˥ Â ѝ 63 э Â

2.2.8 reload

no session-timeout

٩	
minutes	↑ '
output	ї ≠ ɔ и ώ˘ " ї '

и 0 min Â

LINE

ӕ ӷ˘ ÿ ӎ LINE Э ↑ ˘ · ! ώ
ə ˘ è ˘ LINE и ↓ Â

Ю R line vty 0 и 5↑ 30 '

```
Ruijie(config-line)# exec-timeout 5 30
```

G	G ƕ ʒ Â

ɯ R	Ю R s ϟ ӥ 57600 bps ̕
	`Ruijie(config)# line console 0`
	`Ruijie(config-line)# speed 57600`

Ώƕ ʒ	

ƕ ʒ	
-	-

ʎ	

ƕ ʒ Ꞁ ɹ

Л	
-	-

2.2.11 write

ˆ running-config ˜ ɖ ꞁ Æ Â

write [**memory** | **network** | **terminal**]

ϟ

ϟ	
memory	ῃ ὦ NVRAM ̛ ɹ ɣ **copy running-config startup-config** Â
network	ɖ ꞁ TFTP ╘ ɮ Э ˘ ɹ ɣ **copy running-config tftp** Â
terminal	˘ ɹ ɣ **show running-config** Â

ƕ ʒ	
G	ƕ ʒ ʒ ƕ ʒ ˘ ת ɣ ὲ G Ռ ɹ ˘ Љ ŋ ɖ Ю ꬵ G Â

ɯ R	R 1 ̕ ЉЮ ! Э ɖ ̒
	`Ruijie# write`
	`Building configuration...`
	`[OK]`

ԋU ३	
copy	˟ 8
show running-config	

ঁΩԋU ३

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2.3.2 show line

ə ˘ ѫ ЪŐ Ъυ ҳ **show line** Â

show line [**console** *line-num* **| aux** *line-num* **| vty** *line-num* **|** *line-num*]

٨	
console	⁸ ٨ ə
aux	aux ə
vty	vty ə
line-num	line

Ъυ ҳ

G G Ъυ ҳ˘ ə Â

ЪO R console ٨ ə '

```
Ruijie# show line console 0
CON     Type    speed   Overruns
* 0     CON     9600    45927
Line 0, Location: "", Type: "vt100"
Length: 24 lines, Width: 79 columns
Special Chars: Escape  Disconnect  Activation
               ^^x     none        ^M
Timeouts:      Idle EXEC    Idle Session
               never        never
History is enabled, history size is 10.
Total input: 53564 bytes
Total output:  395756 bytes
Data overflow:  27697 bytes
stop rx interrupt:  0 times
```

ˇΩЪυ ҳ

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Ъυ ҳ ϒ ѵ

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2.3.3 show reload

ΰ ╟ ˘ ѽ Ю Ъυ ҳ **show reload** Â

show reload

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ѵ	
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Ъυ ҳ

G G Ъυ ҳ ┘Л ΰ ╟ Â

Ю R ΰ ╟ '

```
Ruijie# show reload
Reload scheduled in 595 seconds.
At 2003-12-29 11:37:42
Reload reason: test.
```

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3 LINE

3.1 LINE

3.1.1 access-class

Line ĦO ACLˆ ⁸ ‟ ˜ Â ᴳ **access-class** *acl-no* { **in | out** } ħυ ३
Line ĦO ⁸ ‟ Âᴳ no **access-class** *access-list-number* {**in | out**} ħυ ३ ৸
LINE ĦO ACL Â

[**no**] **access-class** *access-list-number* {**in | out**}

ћu ҳ ˥ ↓	↑	
	-	-

3.1.2 line

ώ↑ LINE ˘ G ЛuЮћu ҳ'

line [**aux** | **console** | **tty** | **vty**] *first-line* [*last-line*]

↑	↑	
	aux	↑˘ У Θ ₥ Ы " ң ҏ Э
	console	8 ↑
	tty	↑˘ У Θ ₥ Ы " ң ҏ Э
	vty	˘ ұ telnet/ssh
	First-line	ώ first-line ↑
	Last-line	ώ last-line ↑

ћu ҳ	ŏ
G	ώ LINE Â
w R	ώ↑ LINE VTY 1↑ 3 LINE ' Ruijie(config)# **line vty** *1 3*

ћu ҳ		
	-	-

↓

ћu ҳ ˥ ↓	↑	
	-	-

3.1.3 line vty

Ю ђ ђ Ю ╗ ⅈ ђ Ю G VTY Â Ю ђ **no** ч ђ Ю ˝ ⅈ ђ Ю G
VTY Â

line vty *line-number*

no line vty *line-number*

ч

ч	
-	-

ą Ю˝ ђ VTY и 5˜ Л и 0--4 Â

Ю ђ

ő

G

╗ ˝ ђ VTY ˇ ђ Ю G Э Ю ђ Â

w R

R 1' ђ VTY ╗ĵ 20˝ ђ VTY Л ت и 0--19 Â
`Ruijie(config)# line vty 19`
R 2' ђ VTY ˝ ĵ 10˝ ђ VTY Л ت и 0—9 Â
`Ruijie(config)# line vty 10`

˝Ω Ю ђ

Ю ђ	
-	-

ђ

Ю ђ ˥ ђ

Л

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3.1.4 transport input

Line Ю ђ Ю ˜ ˇ G **transport input** Ю ђ Line Ю ђ Ю ˜ Â
G **default transport input** и LINE Ю ї ˜ и h Â

transport input {**all | ssh | telnet | none**}

default transport input

ч

ч	
all	Line Ю˝ ї ˜ Â
ssh	Line Ю˝ ђ ї SSH ˜ Â

telnet	Line Ю ў ї Telnet ~ Â
none	Line Ю a ї ˙ ¦ ~ Â

˘ VTY ї ~ Â è ص TTY ћ и NONE a ї ˙ ¦ ~ Â ¢ ~ ў Л ∕ ˘ ў Л u G **default transport input** ћu ҳ и ћ Â

ћu ҳ Line

G

ћu ҳ Line Ю ї ~ Â VTY ج ą Ю ї ~ ą Â ¢ ї ~ ∕ ˘ ў ~ ў Л ج VTY Э ╗ Â G **show running** ћu ҳ Line Ю ą Â

G	d**efault transport inpu**t ћu ҳ Â **no transport input** ћu ҳ˘ LINE Ю ą ~ Â б **transport input none** ў Â

w R

ج line vty 0 4 Ю ў ї telnet ~ '

```
Ruijie# configure terminal
Ruijie(config)# line vty 0 4
Ruijie(config-line)# transport input telnet
```

Ωћu ҳ

ћu ҳ	
show running	ą Â

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˚ RGOS10.1 Л Э

ћu ҳ ˥ ∕

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4

4.1

4.1.1 ping

Ъυ ҳ ˘ ⅃ Л∪ ╠ à æ è Â Ъυ ҳ
ЪО'

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

^	

	έ ᴇ ⱻ DNS ᛏ Â
ʬ ᴿ	ᴿ 1' ping ᴿ' Ruijie# **ping** *192.168.5.1* Sending 5, 100-byte ICMP Echoes to 192.168.5.1, 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 ᴿ 2' ping ᴿ' Ruijie# **ping** *192.168.5.197* **length** *1500* **ntimes** *100* **timeout** *3* **data** *ffff* **source** *192.168.4.10* Sending 100, 1000-byte ICMP Echoes to 192.168.5.197, 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

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ƚ℧ ʢ	
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ɹ ƚ℧ ʢ ڝ Э ʖ Â

ƚ℧ ʢ ˥ ɹ

/ˡ	
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4.1.2 ping ipv6

ƚ℧ ʢ ˘ ɹ ʃƲ ╠ ȁ Ӕ è Âƚ℧ ʢ
Ю'

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

ⱻ

ⱻ	
ip-address	IPv6 ﻓﺨﺴ Â

length	↓ ↑
times	↓ ↑ э
seconds	
data	ĺ
source	IPv6 فخ سم ↑ Â è ˘ ى ↑ فخ سم R ::1˜ a ï ɔ ѝ فخ سم Â

جم ^ ѝ 2 ˜ ˘ 5 э ѝ 100Byte ↑ ĺ IP فخ سم Â

Ъυ ҳ

Ping ipv6 Ъυ ҳ جم Ռ Ю˘ جم Ю˘ ↓ ﷺ
ping ipv6 ╗ ˘ جم Ю˘ ‡ ↓ Л∪ ping ipv6 ╗ Â
ping ipv6 ╗ ˘ ↓ Л∪ جم Ռ Ю ˘ جم ^
ѝ 2 ˜ ˘ 5 э ѝ 100Byte ↑ ĺ IP فخ سم ˘ ˘ ‡
G У э '!ᵡ ˘ ‡ У э '.ᵡ ˘ б ˘ а ˥ ˘
‡ а У э 'Cᵡ Л У э ą Â ping ipv6 ╗ ˘ ↓ جم Ю
˘ جم ping è˘ ↓ Л∪ ↓ ↑ э à ˘ ˘ Ռ
ping ipv6 ╗ У ˘ Л ≠ У э ą Â ╗

-	-

ﻝ

Ъυ ҳ ٦ ﻝ	ﻡ	
	-	-

4.1.3 traceroute

traceroute Ъυ ҳ˘ ﻝ Л υ ɣ ↑ ÿ ﻡ ﻑ ﺥ ﺱ ﻡ ﻑ ﺥ ﺱ ˜Ω.

traceroute [**vrf**] [*vrf-name*] [**ip** *ip-address*][*ip-adress* [**probe** *number*] [**source** *source*] [**timeout** *seconds*] [**ttl** *minimum maximum*]]

ﻡ

ﻡ	
vrf-name	VRF ﻝ
Ip-address	IPv4 ﻑ ﺥ ﺱ ﻡ Â
number	ﻝ
source	IPv4 ﻑ ﺥ ﺱ ﻡ ﻡ Â ė è˘ ﻫ ﻡ ﺱ ﻡ ﻑ ﺥ ˆ R 127.0.0.1˜ a ï ɔ ﻯ ﺱ ﻡ ﻑ ﺥ Â
seconds	
minimum maximum	Ո TTL ḣ

Ъυ ҳ

G

Traceroute Ъυ ҳ ў ɣ ˘ ﺝ ﻝ ˘ ñ Æ ﻝ Æ Â G ﺵ ﻍ ﻝ ˘ ‡ Ĩ Ă ʾH ⱬ˘ é ɛ DNS

ЛЬЮ й traceroute ч э R ˘ У э й ˘ У э й ﺝ Ҿ ˜Ω a ą Â

R 1' traceroute R '

```
Ruijie# traceroute 61.154.22.36
< press Ctrl+C to break >
```

```
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
ÿ Э       ˘ ⊣Л∪   ѕм  ¦ ˘ ÿ  ѕм       IP ѕм й 61.154.22.36   ў ˘
    ↑      ѽ ف ҉  ℨΩ  1˙ 6˜ ˘ ⊣      ѽ¦      ℨΩ       ˘      ų
¦  ˘          Â
R 2'     è  ҉  ℨΩ a     traceroute R  '
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
ÿ Э       ˘ ⊣Л∪   ѕм  ¦ ˘ ÿ  ѕм       IP ѕм й 202.108.37.42   ў ˘
    ↑      ѽ ف ҉  ℨΩ  1˙ 17˜ ˘   з  ℨΩ 4    ѽ    Â
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
```

ЪΩЪυ ҂	Ъυ ҂	
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Ъυ ҂ ˥ ⊀	⊀	
	-	-

4.1.4 traceroute ipv6

traceroute ipv6 Ъυ ҂˘ ˩ Л∪ ɣ ↑ ÿ ѫ ѫ ѫ

˜Ω Â

traceroute [**ipv6** *ip-address*][[**probe** *number*] [**timeout** *seconds*] [**ttl** *minimum maximum*]]

↰	↰	
	Ip-address	IPv6 ѫ ѫ ˩ Â
	number	˩
	seconds	
	minimum maximum	Ո TTL ḣ

Ъ ҷ

G

Traceroute ipv6 Ъ ҷ ў ¥ ˘ ج ۷ ˘ ñ Æ ۷ Æ Â G ش ر ╖ ˘ ‡ ″I ش ر ┗ ﴾ ˘ é E ۸ DNS ┤ Â

W R

ЛЬЮ й traceroute ipv6 ч э R ˘ У э й ˘ У э й ج Ҽ ˇΩ a ą Â

R 1' traceroute ipv6 R '

```
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     3004::1        4 msec  28 msec  12 msec
```

ÿ Э ۷ Л Ъ سم ˆ ˘ ÿ سم فخ IP سم فخ й *3004::1* ў ˘ ↑ ɷ ف Ҽ ˇΩ 1 ˙ 4 ˜ ˘ ۷ ɷ ˆ ˇΩ ˘ ¥ ˆ ˘ Â

R 2' è Ҽ ˇΩ a traceroute ipv6 R '

```
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
```

ÿ Э ۷ Л Ъ سم ˆ ˘ ÿ سم فخ IP سم فخ й *3004::1* ў ˘ ↑ ɷ ف Ҽ ˇΩ 1 ˙ 5 ˜ ˘ з ˇΩ 4 ɷ Â

ˇΩ Ъ ҷ

Ъ ҷ	
-	-

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ƕ ɜ ˥ ˩	//
-	-

5

5.1

5.1.1 carrier-delay

ج ʎ ƗO G ƕ ʒ **carrier-delay** ج ʎ ˘ G ƕ ʒ **no** ش ḣ Â

carrier-delay [*seconds*]

no carrier-delay

ʎ		
	seconds	ɻ ʎ ˘ Ɲ ŭ ´ Æ˘ ثن 1˙ 60 Â
	ḣ 2 Â	
ƕ ʒ	ʎ Â	
G	ʎ ʎ ə ʎ DCD ÿ Down ˛ Up ˘ DCD ج ʒ ǫ ɻ ɻ ע˘ ж ɻ ע a ɣ Э ˜ ك Â DCD è ˘ ж ʎ ۓ ɻ Ɲ ╗ ˘ Ɲ ɾ ɻ Ɲ Â ɻ˘ DCD è ɣ ˘ ж ʎ ۓ Ɲ ȯ Â	

ɯ R

	-	-

5.1.2 clear counters

ﻥ ﻝ

clear counters [*interface-id*]

ﻥ	ﻥ	
	interface-id	ﻥ ﺭ ﻥ ﻑ Â
ﻩ ﻍ	Â	
G	ﻥ ﻫ ﻝ ﻝ **show interfaces** ﻩ ﺟ ﻮ G **clear counters** ﻩ ﻍ ﻝ ﻝ ﻥ ﻫ Â a ﻥ ‡ ﻥ ﻝ Â	
ﯡ R	Ruijie# **clear counters gigabitethernet** *1/1*	

ﻳ Ω ﻩ ﻍ	ﻩ ﻍ	
	show interfaces	ﻥ ﻥ ﻕ Â
ﻑ		
ﻩ ﻍ ﺁ ﻑ	ﻑ	
	-	-

5.1.3 clear interface

ﻥ ﻭ Æ

clear interface *interface-id*

ﻥ	ﻥ	
	interface-id	ﻥ ﺭ ﻥ ﻑ Â

hu ɂ	
G	hu ɂ ʎ Switch Port,L2 Aggregrate port ˜ ʎ ,Routed port,L3 Aggregate port ˜ ʎ Â hu ɂ ¥ ʎ **shutdown** Ո **no shutdown** hu ɂ Â
w R	Ruijie# **clear interface gigabitethernet** 1/1

˜Ωhu ɂ	hu ɂ	
	shutdown	˜Ω ʎ

ʎ	
hu ɂ ˥ ʎ	-

5.1.4 descriptioin

ʎ ⁞ ɻ Â G hu ɂ no ḣ Â

description *string*

no description

ʎ	ʎ	
	string	ʎ ⁞ ɻ Â

⁞ ɻ Â

hu ɂ	ʎ
G	G **show interfaces** hu ɂ ʎ ə˛ ˘ ˆ ⁞ ɻ Â
w R	Ruijie(config)# **interface gigabitethernet** *1/1* Ruijie(config-if)# **description GBIC-1**

˜Ωhu ɂ	hu ɂ	
	show interfaces	ʎ Ո ə˛ Â

ٴ

ԋ ٶ ٦ ٴ

ٴ	
-	-

5.1.5 duplex

ج ٴ ԍ ԋ ٶ ٴ ٤ Â ԋ ٶ **no**
ٸ ԓ Â

duplex {**auto** | **full** | **half**}

no duplex

ٴ

ٴ	
auto	ٶ ٤ Ո ` ٤ Â
full	ٶ ٤ Â
half	` ٤ Â

ٶ ٤ Ո ` ٤ Â

ԋ ٶ ٴ

G ٴ ٤ б ٴ ص ٚΩ Â ٤ Л G **show interfaces** ԋ ٶ ٴ ٤ Â

w R
```
Ruijie(config-if)# duplex full
```

ԋ ٶ	

ƅu ʒ ˜Ω ⁸ Â G ƅu ʒ no ỳ ḥ Â

flowcontrol {**auto** | **off** | **on**}

no flowcontrol

ʎ

ʎ	
auto	˜ ڑ ⁸ Â
off	˜Ω ⁸ Â
on	⁸ Â

˜Ω ⁸ Â

ƅu ʒ ʎ

G G **show interfaces** ʎ ⁸ Ո ⁸ Â

w R

‾ ¨l Ո ʎ 1/1 ⁸ '

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# flowcontrol on
```

˜Ωƅu ʒ

ƅu ʒ	
show interfaces	ʎ Ո ə ą Â

ʃ

ƅu ʒ ˥ ʃ

ʃ	
-	-

5.1.7 interface aggregateport

ƅu ʒ ƅu ʒˇ … У э ʌ ʎˇ ώ ʎ Â G ƅu ʒ no ī ʎ Â

interface aggregateport *port-number*

ʎ

ʎ	
port-number	Aggregate port ʃʎˇ ىت Ո ج ā Â

Ƕυ ʒ	ώ
G	ɻ Ʌυ У ‡˘ è ы ʎ ╗ ώ˺ У э aggregate port è Âaggregate port ˜ ʎ ỳ У э ɛ˘ ˜ ʎ aggregate port ᾱ Â G **show interfaces** **show interfaces aggregateport** Ƕυ ʒ ʎ Â
w R	`Ruijie(config)# interface aggregateport 3` `Ruijie(config-if)#`

Ω Ƕυ ʒ	Ƕυ ʒ	
	show interfaces	ʎ Ո ə Â

ɻ	-

Ƕυ ʒ ˥ ɻ	ʃ	
	-	-

5.1.8 interface fastEthernet

Ƕυ ʒ Ƕυ ʒ˘ Ʌυ ʎ˘ ώ ʎ Â

interface fastEthernet *mod-num/port-num*

	ʎ	
ʎ	*mod-num/port-num*	ʓ ʃ /

ʗΩƅu ʒ	ƅu ʒ	
	show interfaces	ʎ Ո· ə¸ Â

ʎ	-

ƅu ʒ ˥ ʎ	ʎ	
	-	-

5.1.9 interface giagbitEthernet

ƅu ʒ ƅu ʒ˘ ¯ ¨ł Ʌu ʎ˘ ώ ʎ Â

interface gigabitEthernet *mod-num/port-num*

ʎ	ʎ	
	mod-num/port-num	ж ʎ / ж Ɔ ʎ ʎ˘ ɲ· Ո· ж ᾱ Â

ƅu ʒ	ŏ

G ƅu ʒ **no** ˘ ص ʎ a ˥ Â G

ƀυ ҳ ƀυ ҳˇ 10G Л∪ ㅓˇ ώ ㅓ Â

interface tenGigabitEthernet *mod-num/port-num*

ㅓ		
ㅓ	*mod-num/port-num*	ⱬ ㅓ/ ⱬ Э ㅓ ㅓˇ ⱦ Ո- ⱬ ᾱ Â

ƀυ ҳ	ώ
G	ƀυ ҳ **no** ˇ ص ㅓa ╕ Â[G] **show interfaces** **show interfaces tenGigabitEthernet** ƀυ ҳ ㅓ Â
ᴡ [R]	`Ruijie(config)#` **`interface tenGigabitEthernet`** *`1/2`* `Ruijie(config-if)#`

ƀυ ҳ		
show interfaces	ㅓ Ո- ą Â

ㅕ

ƀυ ҳ ˥ ㅕ	ㅕ	
	-	-

5.1.11 interface vlan

ƀυ ҳ ƀυ ҳˇ … У ə ╟ Ꮋ ㅓ switch virtual interfaceˇ SVIˇ ˇ ώ ㅓ Â[G] ƀυ ҳ **no** ╕ SVI Â

interface vlan *vlan-id*

no interface vlan *vlan-id*

ㅓ		
ㅓ	*vlan-id*	VLAN IDˇ ⱱ ᾱ Â

ชื่อใช ร	ใช ร	
	show interfaces	ห Ո ə Â

ง

æ ㅓ è˘ G ħυ ҳ ˜Ω ㅓ Â G ħυ ҳ **no** ㅓ Â

shutdown

no shutdown

ㅓ	
-	-

ħυ ҳ ㅓ

ɣ ㅓ^ Лυ ㅓ à Ap ㅓ à SVI ㅓ˜ ˘ ħυ ҳ ˜Ω ㅓ˘ ㅓ ὲ ы ÿ
æ˘ л a ɔ Â G **show interfaces** ħυ ҳ ㅓ Â

G ṁ **no shutdown** ㅓ ɔ˘ ㅓ ˛ ㅓ ㅓ
ə Â

R 1' ˜Ω Ap 1'

```
Ruijie(config)# interface aggregateport 1
Ruijie(config-if)# shutdown
```

R 2' Ap 1'

```
Ruijie(config)# interface aggregateport 1
Ruijie(config-if)# no shutdown
```

snmp trap link-status

no snmp trap link-status

ㅓ		

	ㅓ ㅏ Link ㅣ ㅛ SNMP ㅏ LinkTrap Â
ㅏ ㅓ	ㅓ Â
G	ㅑ ㅓ ㅅ ㅁ ㅓ à Ap ㅓ à SVI ㅓ ~ ˇ ㅏ ㅓ ㅔ ㅏ ㅓ LinkTrap ˇ ㅍ ˇ ㅓ ㅏ Link ㅣ ㅛ SNMP ㅏ LinkTrap, ㅏ ㅈ ‡ a ㅏ Â

w R	R 1' Ю ㅓ ㅐ a ㅏ Link trap'
	`Ruijie(config)# interface gigabitEthernet 1/1`
	`Ruijie(config-if)# no snmp trap link-status`
	R 2' Ю ㅓ ㅐ ㅏ Link trap'
	`Ruijie(config)# interface gigabitEthernet 1/1`
	`Ruijie(config-if)# snmp trap link-status`

˜Ωㅏ ㅓ	ㅏ ㅓ	
	Ruijie(config-if)# **snmp trap link-status**	ㅏ ㅓ link trap ㅍ Â
	Ruijie(config-if)# **no snmp trap link-status**	˜Ω ㅏ ㅓ link trap ㅍ Â

ㅓ

ㅏ ㅓ ㄱ ㅓ	ㅓ	
	-	-

5.1.16 speed

ㅓ Â G ㅏ ㅓ **no** ㅎ

ㅓ	ㅓ	
	10	ㅓ ㅐ 10Mbps Â
	100	ㅓ ㅐ 100Mbps Â

	1000	ʎ ́ 1000Mbps Â
	10G	ʎ ́ 10Gbps Â
	auto	ʎ ́ Â

Â

ƕ ʒ ʎ

G ʎ Ap ˜ ˘ ‡ ʎ Ap ā ˘ ˩ Ʌ ʎ ˘ ת a ɔ Â ʎ Ap G ÂG **show interfaces** ƕ ʒ Â ʎ ص a ˩˘ ï ص ≠ ̧ a ˩ Â ˘ SFP ص ʎ a ï ́ 10M 100M Â

w R

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# speed 100
```

G ώ У э VLAN ID Â ώ У э VLAN ID˘ ‡ ˛ … У э VLAN˘ ʎ й VLAN ˘ Â ώ ﻉ VLAN ID˘ ‡ ╗ VLAN ˘ ʎ Â ʎ У э trunkport˘ ‡ ɔ ˙ ¡ ɔ Â

w R
```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# switchport access vlan 2
```

Ωƕ ɂ

ƕ ɂ	
switchport mode	У э γ ʎˆ switch port˜ Â
switchport trunk	й У э trunkport У э native VLAN Ո э Trunk ʎ ɻ VLAN " Â

ɻ

ƕ ɂ ˥ ɻ

ʎ	
-	-

5.1.18 switchport mode

G ƕ ɂ У э γ ʎˆ switch port˜ ˇ ɻ Ʌ ʎ й access port й trunk port, й 802.1Q Â G ƕ ɂ **no** ʎ й ḣ Â

switchport mode {**access | trunk**}

no switchport mode

ʎ

ʎ	
access	У э switch port й access port Â
trunk	У э switch port й trunk port Â

switch port й access

ƕ ɂ ʎ

G У э switch port access˘ ‡ ʎ ɻ й У э VLAN ˘ Â ɻ Ʌ Ʊ G **switchport access vlan** ƕ ɂ ʎ ف У э VLAN ˘ Â У э switch port trunk˘ ‡ ʎ ɻ Ʌ Ʊ э VLAN ˘ Â ʎ ɻ Ʌ Ʊ

ﻱ ﻑ ﻕ VLAN ﻧ ﻝ VLAN " ā ˇ trunk port ﻝ VLAN " è VLAN ˜ Â ﻝ ﻤ G **switchport trunk** ﻫ ﻍ ﻬ ﻧ ﻝ VLAN " Â

ﯡ R Ruijie(config-if)# **switchport mode trunk**

ﻳ ﻫ ﻍ

ﻫ ﻍ	
switchport access	ﻭ ﻉ ﻧ ﻯ statics accessport ﻯ ﻭ ﻉ VLAN ˜ ﻧ Â
switchport trunk	ﻯ ﻭ ﻉ trunkport ﻭ ﻉ native VLAN ﻦ ﻉ Trunk ﻧ ﻝ VLAN " Â

ﻝ

ﻫ ﻍ ﻵ ﻝ

ﻡ	
-	-

5.1.19 switchport trunk

ﻯ ﻭ ﻉ trunkport ﻭ ﻉ native VLAN ﻦ ﻉ Trunk ﻧ ﻝ VLAN " Â G ﻫ ﻍ no ﻧ trunk ﻯ ﻩ Â

switchport trunk {**allowed vlan** {**all |** [**add | remove | except**] *vlan-list* }**| native vlan** *vlan-id*}

no switchport trunk {**allowed vlan | native vlan**}

ﻧ

ﻧ	
allowed vlan *vlan-list*	ﻉ Trunk ﻧ ﻝ VLAN " Â ﻧ vlan-list ﻝ ﻤ ﻭ ﻉ VLAN ˜ ≠ ﻝ ﻤ ﻭ " VLAN ˜ ﻤ VLAN ID ˇ ﻤ VLAN ID ˇ è ^ -˜ ﻡ Â ' 10-20 Â ﻷ ﻝ ﻤ ^ ,˜ ﻡ ˇ ' 1-10,20-25,30,33 all ﻫ ﻬ ﻝ VLAN " ﻩ ﻫ VLAN add VLAN " ╗ ώ ﻝ VLAN " ' remove VLAN " ÿ ﻝ VLAN " è ╖ ' except " VLAN " VLAN ╗ ώ ﻝ VLAN " '

native vlan *vlan-id*

5.2

5.2.1 show interfaces

ㅅ ㅇ ㅓ ˇ ㅈㅇ ㅓ ˝ㅣ ㅊ ㅓ Â

show interfaces [*interface-id*] [**counters | description | status | switchport | trunk | transceiver [alarm | diagnosis]]**

ㅅ

ㅅ	
interface-id	ㅅ^ ↑ ㅈㅇ ㅅ à aggregateport ㅅ à SVI ㅅ à loopback ㅅ˜ Â
counters	ㅅ ㅓ Â
description	ㅅ ㅓ ˇ ↑ link Â
status	γ ㅅ ㅏ ㅓ ˇ ↑ à ㅓ Â
switchport	γ ㅅ ㅓ ˇ ㅅ γ ㅅ Â
trunk	trunking port ㅓ ˇ ㅅ à Aggregate port Â
transceiver	˝ㅣ ㅊ ㅁㅁ ㅓ Â
alarm	˝ㅣ ㅊ ㅁㅎ ˋ ㅓ ˇ l' None Ŀ Â
diagnosis	˝ㅣ ㅊ ㅅ ㅁㅎ ㅏ Â

ㅅ ㅓ Â

ㅏㅇ ㅋ

G a ╗ ㅅ ˇ ‡ ㅅ ㅁ ㅓ Â

w R
```
Ruijie# show interfacesgigabitEthernet 0/1 switchport
Interface Switchport ModeAccess Native Protected VLAN lists
--------- ---------- --------- ------ ------ ---------
GigabitEthernet 0/1 enabled Access 11  Disabled  ALL
```

ㅏㅇ ㅋ	
duplex	

interface gigabitEthernet	Л∪ ʌ^ ↑ ¯ ˝I Л∪ ʌ˜ ˘ ώ ʌ Â
interface aggregateport	… У э ʌ ʌ˘ ώ ʌ Â
interface vlan	… У э ╟ Ц ʌ ^ switch virtual interface˘ SVI˜ ˘ ώ ʌ Â
shutdown	ҕ ʌ è˘ G Ъυ ҳ ˝Ω ʌ Â
speed	ʌ Â
switchport priority	802.1q ʌ . ˝I Â
switchport protected	ʌ ѝ ɖ ʌ Â

ʌ

Ъυ ҳ ˥ ʌ

ʌ	
-	-

6 Aggregate Port

6.1

6.1.1 aggregateport load-balance

У э AP Â G Ъu ҙ no ий ћ Â

aggregateport load-balance {**dst-mac** | **src-mac** | **src-dst-mac** | **dst-ip** | **src-ip** | **src-dst-ip** }

no aggregateport load-balance

٩	
dst-mac	ώ MAC ѕѓ Ť Âэ AP ٨ è˘ MAC ѕѓ ٨ Ť ٨ ٩˘ MAC a ٨ Ť Ť a ٨ ٩ Â
src-mac	ώ MAC ѕѓ Ť Â э AP ٨ è˘ a ٨ MAC ѕѓ Ť Ť a ٨ ٩˘ ٨ MAC ѕѓ G ٨ ٩ Â
src-dst-ip	IP б IP Ť Â a ٨ IP—— IP a ٨ ٩ ٩˘ ٨ У IP—— IP ٨ ٩ Â э Ь ˚ Ю˘ Â
dst-ip	ώ IP ѕѓ Ť Âэ AP ٨ è˘ IP ѕѓ ٨ Ť ٨ ٩˘ IP a ٨ Ť Ť a ٨ ٩ Â
src-ip	ώ IP ѕѓ Ť Âэ AP ٨ è˘ a ٨ IP ѕѓ Ť Ť a ٨ ٩˘ ٨ IP ѕѓ G ٨ ٩ Â
src-dst-mac	MAC б MAC Ť Â a ٨ MAC—— MAC a ٨ ٩ ٩˘ ٨ У MAC—— MAC ٨ ٩ Â

ώ Ո MAC ѕѓ Ť Â

Ъu ҙ ѽ Â

G	G **show aggregateport load-balance** ħu ҳ Â

w R	Ruijie(config)# **aggregateport load-balance dst-mac**

˜Ωħu ҳ	ħu ҳ	
	show aggregateport load-balance	aggregateport ə Â

ˬ	-

ħu ҳ ˥ ˬ	ˬ	
	-	-

6.1.2 port-group

У э ˬ ˥ Aggregate Port ˘ ˬ Â G ħu ҳ no ˉ ˬ Aggregate Port ˘ Â

port-group *port-group-number*

no port-group

ˬ	ˬ	
	port-group-number	Aggregate Port ˘ ˬ ˬ˘ . Aggregate Port ˬ ˬ Â

	ˬ a ɣ˙ ¦ Aggregate Port Â

ħu ҳ	ˬ Â

G	AP ˘ ˬ ج ˧ У э VLAN è˘ trunk port Â ɣ a ˧ native VLAN ˬ a AP

w R	Ю R Лu ˬ 1/3 AP 3 ˘ ˈ Ruijie(config)# **interface gigabitethernet** *1/3* Ruijie(config-if)# **port-group** *3*

˜Ωħu ҳ	ħu ҳ	
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⅄	-

ħυ ३ ⅂ ⅄	⅄	
	-	-

6.2 e9(eg-9(eg))1(-5pte Port)

7 VLAN

7.1

7.1.1 name

VLAN ɹ Â G ħu ३ **no** ḣ Â

name *vlan-name*

no name

٩		
	vlan-name	VLAN ɹ

VLAN ɹ ẏ VLAN¯ VLAN ID˘ VLAN 2 ɹ ẏ ”VLAN0002”

ħu ३ VLAN

G G **show vlan** ħu ३ vlan

w R

```
Ruijie(config)# vlan 10
Ruijie(config-vlan)# name vlan10
```

˘Ωħu ३		
	show vlan	VLAN ˘ ٩ ə Â

ل

ħu ३ ٦ ل	ل	
	-	-

7.1.2 switchport access

G ħu ३ У э ٩ ẏ access port˘ ẏ У э VLAN ˘ ٩ Â G ħu ३ **no** ٩ ↑ VLAN è Â

switchport access vlan *vlan-id*

no switchport access vlan

५	
access	У э switch port ὶй access port Â
trunk	У э switch port ὶй trunk port Â
hybrid	У э switch port ὶй hybrid port Â

no switchport trunk {**allowed vlan** | **native vlan** }

٩	
٩	**allowed vlan** *vlan-list*	ə Trunk ٩ ٫ VLAN " Â ٩ vlan-list ٫Л Ч ə VLAN˘ ≠ ٫Л Ч " VLAN˘ Л VLAN ID ˘ Л VLAN ID ˘ è ˆ -˜ /٩ Â ' 10-20 Â ƺ ٫Л ˆ ,˜ /٩ ˘ ' 1-10,20-25,30,33 all ŭ ђ٣ ٫ VLAN " ↑ ŭ VLAN˙ add VLAN " ╗ ώ ٫ VLAN " ' remove VLAN " ÿ ٫ VLAN " è ╕ ' except " VLAN " VLAN ╗ ώ ٫ VLAN " '
	native vlan *vlan-id*	Native VLAN Â

٫ VLAN " all˙ Native VLAN ‡ VLAN 1

ђu ҳ ٩

Native VLAN˙

ɔ ŭ Trunk˘ ə ٩ ų Ч ə native VLAN Â native VLAN˘ ə ə ٩ Э ٫ UNTAG ˘ ŭ ų ə VLAN Â ˘ ə ٩ VLAN ID ˆ . IEEE 802.1Q è PVID˜ native VLAN VLAN ID Â ٫ ˘ ə Trunk Э ٫

G ų native VLAN ˘ ‡ UNTAG Â

٫ VLAN " '

Ч ə Trunk ٩ ٫Л VLAN˙ 1˙ 4094˜ Â п ˘ ≠ ٫Л Trunk ٩ ٫ VLAN " 8 ҉ VLAN a ə Trunk ٩ Â

G **show interfaces switchport** ђu ҳ Â

Ю Ч ə VLAN 2 ÿ ٩ 1/15 è R '

```
Ruijie(config)# interface fastethernet 1/15
Ruijie(config-if)# switchport trunk allowed vlan remove 2
Ruijie(config-if)# end
Ruijie# show interfaces fastethernet1/15 switchport
Interface  Switchport Mode  Access Native Protected VLAN lists
--------- --------- --------- --------- --------- --------
FigabitEthernet 1/15  enabled  TRUNK  1   1   Disabled  1,3-4094
```

ш R

ħυ ३	

	-	-

7.2

7.2.1 show vlan

VLAN ˜ ʌ ə Â

show vlan [**id** *vlan-id*]

ʌ		
	ʌ	
	vlan-id	VLAN ID ʌ Â

	ώ ə
ħu ɂ	
G	‹ʃ ˘ ώ **end** ħu ɂ˘ ώ **Ctrl+C** ʌ Â ‹ʃ ώ ˘ ώ **exit** ħu ɂ

w R

```
Ruijie# show vlan id 1
VLAN Name                            Status    Ports
---------- ------------ ------------ ---------- ----------
   1 VLAN0001                        STATIC    Fa0/1, Fa0/2
```

˜Ωħu ɂ	ħu ɂ	
	name	VLAN ɹ Â
	switchport access	ʌ ╗ ώ У ə Vlan Â

ɻ

ħu ɂ ˥ ɻ	ʌ	
	-	-

8 Private VLAN

8.1

8.1.1 private-vlan association

ˇΩ secondary VLAN б primary VLAN ђu ҙ

private-vlan association {*svlist* | **add** *svlist* | **remove** *svlist*}

no private-vlan association

private-vlan mapping {*svlist* | **add** *svlist* | **remove** *svlist*}

no private-vlan mapping

٧		
٧	*svlist*	secondary VLAN list
	no	╕

ħu ҳ	Primary VLAN ٧
G	

w R	Ruijie(config)# **interface vlan** *22* Ruijie(config-if)# **private-vlan mapping add** *24-26*

ˇΩħu ҳ	ħu ҳ	
	show vlan private-vlan	-

٨	˚ RGOS10.1 Л∪Э

ħu ҳ ˥ ٨	/١	
	-	-

8.1.3 private-vlan type

VLAN ѝ VLAN

private-vlan {*community* | *isolated* | *primary*}

no private-vlan {*community* | *isolated* | *primary*}

٧		
٧	*community*	ѝ community VLAN
	isolated	ѝ isolated VLAN
	primary	ѝ primary VLAN
	no	╕ VLAN

	VLAN
ħυ ३	VLAN
G	
w R	Ruijie(config)# **vlan** *22* Ruijie(config-vlan)# **private-vlan primary**

ħυ ३	

˜Ωħu ३	ħu ३	
	show vlan private-vlan	-

˄	˚ RGOS10.1 ЛυЭ

ħu ३ ˥ ˄	˄	
	-	-

8.1.5 switchport private-vlan host-association

˜Ω private VLAN ў ˄ ˜Ω primary VLAN ˧ ѫ secondary VLAN

switchport private-vlan host-association *p_vid s_vid*

no switchport private-vlan host-association

˄	˄	
	p_vid	… primary VID
	s_vid	… secondary VID
	no	ÿ VLAN è˥ ў ˄

ħu ३	˄
G	

```
Ruijie(config)# interface gigabitEthernet 0/1
Ruijie(config-if)# switchport mode private-vlan host
Ruijie(config-if)# switchport private-vlan host-association 22 23
```


OŠ21 1.006 jTu<04A22F951CDD5.11111.5705 T905DE7d( )],[T0 1.994.02 0 0 10.02 439.32 12541#60 1 Tf1198 -0.

- -

show vlan private-vlan [**community** | **primary** | **isolated**]

٧	
primary	primary VLAN ə
community	community VLAN ə
isolated	isolated VLAN ə

private VLAN

ħυ ३

G

w R Ruijie# **show vlan private-vlan**

Ωħυ ३	
-	-

RGOS10.1 ЛЬЭ

ħυ ३ ٦ ٧	
-	-

8.3 Hybrid

8.3.1 switchport hybrid allowed vlan

switchport hybrid allowed vlan[[**add**][**tagged** | **untagged**] | **remove**] *vlist*

no switchport hybrid allowed vlan

hybrid ٧ ‡

٧	
no	hybrid ‡

	[redacted]

	[redacted]

	[redacted]

ħu ३] ₰	₰	
	-	-

8.3.3 switchport mode hybrid

switchport mode hybrid

no switchport mode

₰ ѝ hybrid ₰

₰	₰	
	no	╕ hybrid

ħu ३ ₰

G

w R

```
Ruijie(config-if)# switchport mode hybrid
```

ħu ३	

9 802.1Q Tunneling

9.1

9.1.1 frame-tag tpid tpid

ˢ ڸ tpid

frame-tag tpid <*tpid*>

no frame-tag tpid

٩	٩	
	no	٧

ħυ ϡ	٨
G	

```
Ruijie(config)# interface g0/3
Ruijie(config-if)# frame-tag tpid 9100
Ruijie(config-if)# end
Ruijie# show frame-tag tpid
Port    tpid
------  ---------
Gi0/3    0x9100
```

ˇΩħυ ϡ	ħυ ϡ	
	show frame-tag tpid	-

٧	ˢ RGOS10.1 ЛЬЭ

ħυ ϡ ٦ ٧	٨	
	-	-

9.1.2 inner-priority-trust enable

/ ↓ ∧ tag . ″I ϙ tag ⁸

inner-priority-trust enable

no inner-priority-trust enable

∧	₤Ä
no	↓ ∧ tag . ″I ϙ tag ⁸

ħυ ३ ∧

G

w R Ruijie(config)#

ΎΩħυ ϡ	ħυ ϡ	
	show vlan private-vlan	-

ϡ	˅ RGOS10.1 ΛυЭ

ħυ ϡ ϒ ϡ	ϡ	
	-	-

9.2

9.2.1 show frame-tag tpid

private VLAN

show frame-tag tpid [**interface <***interface***>**]

ϡ	ϡ	
	interface	ϡ

	a g tpid

ħυ ϡ	

G	

w R	Ruijie# **show frame-tag tpid** Ruijie# **show frame-tag tpid interface gi**0/1 Port tpid ----- --------- Gi0/1 0x9100

ΎΩħυ ϡ	ħυ ϡ	
	-	-

ϡ	˅ RGOS10.1 ΛυЭ

ħυ ३ ٦ ↓	/ا	
	-	-

9.2.2 show inner-priority-trust

. ˝ا 8

show inner-priority-trust

٩	٩	
	-	-

a 8

ħυ ३

G

w R

```
Ruijie# show inner-priority-trust
Port    inner-priority-trust
----    ----------
Gi0/1   enable
```

	ħυ ३	

˝Ωħυ ३ 92.9403 Tm[0 0 6 11eD-.9803 Tm( )Tj/9.70 1 Tf 6 11eD-.9803 Td( )Tj 0 18.84 595.34 0.24 0.48 r 0 18..

10 Share VLAN

10.1

10.1.1 share

G ħυ ҳ share vlan Â

٩	٩

G ħυ ϗ فخ سم ˘ فخ سم Status original ‡ فخ سم ٧ فخ سم'
فخ سم Status duplicated ‡ فخ سم 8 فخ سم' فخ سم Status
ϳϊ ˘ ‡ share vlan Â

٩	
-	-

ħυ ϗ .

G ھ ˘ ώ **end** ħυ ϗ˘ ώ Ctrl+C ٨ Â
ھ ώ ˘ ώ **exit** ħυ ϗ

w R
```
Ruijie# show mac-address-table share
Vlan  MAC Address     Type    Interface   Status
----  -------------- ------- ----------- ----------
   1   0040.4650.1e1e DYNAMIC Gigabit 0/1 original
   2   0040.4650.1e1e DYNAMIC Gigabit 0/1 duplicated
```

ΩħυϗΩ	ħυ ϗ	
	-	-

٨

ħυ ϗ ٦ ٨	٨	
	-	-

11 MAC

11.1

11.1.1 address-bind 1 1 . 1 .

./ R

address-bind install

no address-bind install

	-	-

	ώ
G	R Â
w R	Ю R fa 0/1 й Ruijie(config)# **address-bind uplink** *fa0/1* Ruijie(config)# **address-bind install**

	show address-bind uplink	R

	RGOS10.1

	-	-

11.1.3 address-bind ip-address

У э ip mac .

address-bind *ip-address mac-address*

no address-bind *ip-address*

	ip-address	IP Â
	mac-address	mac Â

ђ ђ	ѽ
G	æ У э IP ѫ ђ Ո У э MAC ѫ ђ ˘ ‡ Ђ ĺ IP ѫ ђ ѝ э IP ѫ ђ ˘ MAC ѫ ђ a ѝ э IP ѫ ђ MAC ˘ э ˛ Ђ x Â
ѡ R	Ю R ip ѫ ђ ѝ 3.3.3.3 Ո mac ѫ ђ 00d0.f811.1112 `Ruijie(config)# address-bind 3.3.3.3 00d0.f811.1112`

ѽђ ђ ђ	ђ ђ	
	show address-bind	ѫ ђ

ѵ	-

ђ ђ ђ ѵ	ѵ	
	-	-

11.1.4 address-bind ipv6-mode

ip ѫ ђ IP

ò

address-bind ipv6-mode compatible

address-bind ipv6-mode loose

ш

address-bind ipv6-mode strict

ѱ	ѱ	
	-	-

	ш Â
ђ ђ	ѽ
G	ѫ ђ ĺ ѝ : ò ˘ ˘ ш Ь ˘ ѝ ш Â ѐ ѧ ‡ ˘ Ю '

	Ipv4 ч ‡
ш	ч ї Л IPV4+MAC ˚ ч Â
	ч ї Л IPV4+MAC ˚ ч Â
ò	ч ї Л IPV4+MAC ˚ ч Â

	IPV6 ч ‡	
ш	a ї ˙ ¦ ipv6 ч^ ~ Â	
	ї IPV6 ч Â	
ò	ч ї MAC й ѳ MAC ѳ IPV6 ч Â	

ѡ R

R ˘ IP ѳ й 192.168.5.2 ѳ й 00d0.f822.33aa˜ ї IPV6 ч Â

```
Ruijie# configure t
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# address-bind 00d0.f822.33aa ip 192.168.5.2
Ruijie(config)# address-bind ipv6-mode compatible
```

˝Ωђ ѯ

ђ ѯ	
-	-

Л

ђ ѯ ˥ Л

Л	
-	-

11.1.5 address-bind uplink

У э ip ѳ Ո mac ѳ .

address-bind uplink *intf-id*

no address-bind uplink *intf-id*

Ч

Ч	
intf-id	й R Ч Ч

ћ

ѽ

G

æ У э IP Ո У э MAC ‡ Ђ Ї IP й э IP MAC а й э IP MAC э Ђ x (address-bind install) a Â

ш R

Ю R fa 0/1 й

```
Ruijie(config)#address-bind uplink fa0/1
```

ћ

ћ	
show address-bind uplink	R

Л

RGOS10.1 Л Э

ћ Л

Л	
-	-

11.1.6 clear mac-address-table dynamic

Ж

clear mac-address-table dynamic[**address** *mac-addr*] [**interface** *interface-id*] [**vlan** *vlan-id*]

Л

Л	
dynamic	Ж Â
address *mac-addr*	Ж Â
interface *interface-id*	Л Ж Â
vlan *vlan-id*	VLAN Ж Â

ћ

G Л Л G **show mac-address-table dynamic** ћ э Ж ¤ Â

w R

Ruijie# **clear mac-address-table dynamic**

show mac-address-table dynamic	

-

-

11.1.7 clear mac-address-table filtering

clear mac-address-table filtering [**address** *mac-addr*][**vlan** *vlan-id*]

filtering	
address *mac-addr*	
vlan *vlan-id*	VLAN

G **show mac-address-table filtering**

w R

Ruijie# **clear mac-address-table filtering address** *00d0.f800.0c0c*

mac-address-table filtering	
show mac-address-table filtering	

	/I

no mac-address-table aging-time

ﻞﻴﻄﻌﺗ ﻰﻠﻋ ﻩﺮﻣﺍ ﺬﻴﻔﻨﺗ ﻢﺘﻳ ﻢﻠﻓ	ﻞﻴﻄﻌﺗ ﻰﻠﻋ ﻩﺮﻣﺍ ﺬﻴﻔﻨﺗ ﻢﺘﻳ ﻢﻠﻓ

G	ѫ ѳ a ѝ ѫ ѳ Â G **show mac-address-table filtering** ѳ ѯ ѫ ѳ Â

ѡ R	Ruijie(config)# **mac-address-table filtering** *00d0f8000000* **vlan** *1*

ѽ ѳ ѯ	ѳ ѯ	
	clear mac-address-table filtering	ѫ ѳ Â
	show mac-address-table filtering	ѫ ѳ ə Â

ѵ

ѳ ѯ ѷ ѵ	ѵ	
	-	-

11.1.11 mac-address-table notification

MAC ѫ ѳ ѫ Â G ѳ ѯ **no** ѽ ѫ Â

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

no mac-address-table notification [**interva**l | **history-size**]

ѵ	ѵ	
	interval *value*	ѷ MAC ѫ ѳ Trap ˘ ѝ 1 Â
	history-size *value*	MAC ѷ ѵ è ə ˘ ѝ 50 Â

	ѝ 1 ˘ ə ѝ 50 Â

ѳ ѯ	ѓ

G	MAC ѫ ѳ ѫ Θ ╟ ѫ ѳ Ո ѓ ѫ ѳ ˘ ѱ ѫ ѳ ѷ ѵ a ҕ Trap Â ѷ Л ѿ ѓ Ю ѳ ѯ **snmp-server enable traps mac-notification** ѽ ѷ MAC ѫ ѳ Trap ѫ Â

ѡ R	Ruijie(config)# **mac-address-table notification** Ruijie(config)# **mac-address-table notification interval** *40* Ruijie(config)# **mac-address-table notification history-size** *100*

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11.1.14 mac-address-learning

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mac-address-learning

ر	ر	
	فخ سم ً ف ٌّ	
ىلا ع	ر	
G	a جم ٌّ ٌّ ٦ ر ЭّΩ MAC فخ سم ً ف ّΩ فخ سم ً ف ر a ٌّ ٦ '	
w R	R 1' ّΩ ر فخ سم ً ف '	

Ruijie(config-if)# no mac-address-learning

ر

11.2

11.2.1 show address-bind

فخ سم ع Â

show address-bind

ر	ر	

ىلا ع

G

```
Ruijie# show address-bind
IP Address     Binding MAC Addr
-----------    -----------------
3.3.3.3        00d0.f811.1112
3.3.3.4        00d0.f811.1117
```

ﻩﺮﻭ ﺮﻣﺃ	
address-bind	ﻡﺴ ﻑﺨ Â

ﻩﺮﻭ ﺮﻣﺃ ﻱ ﻝ

ﻝ	
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11.2.2 show address-bind uplink

R ﻝ ﻉﺭ Â

show address-bind uplink

ﻝ	

ﻩﺮﻭ ﺮﻣﺃ

G

```
Ruijie# show address-bind uplink
Ports        State
------------ ------
Fa0/1        Disabled
Fa0/2        Disabled
```

.....

ﻩU ﻉ	
address-bind uplink	R ﻥ

ﻥ

ﻩU ﻉ ﺍ ﻥ	ﻥ	
	-	-

11.2.3 show mac-address-table address

ﺹﺭ MAC ﺱﻡ ﻑﺫ ﻉ ˆ ˆ ╠ ﺱﻡ ﻑﺫ˜ ﺱﻡ ﻑﺫ Ո ﺱﻡ ﻑﺫ˜ Â

show mac-address-table [**address** *mac-addr*] [**interface** *interface-id*] [**vlan** *vlan-id*]

ﻥ		
	address *mac-addr*	MAC ﺱﻡ ﻑﺫ Â
	interface *interface-id*	ﻥ ﻥ
	vlan *vlan-id*	VLAN ﻥ

ﻩU ﻉ

G

Ruijie#

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show mac-address-table interface	Â
show mac-address-table vlan	VLAN
show mac-address-table count	Â
show mac-address-table static	Â
show mac-address-table filtering	Â

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11.2.5 show mac-address-table count

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show mac-address-table count

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```
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
```

῀Ωƕ ʇ

ƕ ʇ	
show mac-address-table static	سمفخ Â
show mac-address-table filtering	سمفخ Â
show mac-address-table dynamic	╟ سمفخ Â
show mac-address-table address	سمفخ صر سمفخ ə
show mac-address-table interface	٩ صر سمفخ ə
show mac-address-table vlan	VLAN صر سمفخ ə Â

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11.2.6 show mac-address-table dynamic

ѫ ѳ ђ Â

show mac-address-table dynamic [**address** *mac-addr*] [**interface** *interface-id*] [**vlan** *vlan-id*]

ѧ	
mac-addr	MAC ѫ ѳ Â
vlan-id	VLAN Â
interface-id	ѧ (ѧ ѧ AggregatePort)

ѳ ђ

ђ ђ

G

```
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
```

ђ ђ	
clear mac-address-table dynamic	ѫ ѳ Â

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ѧ	
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11.2.7 show mac-address-table filtering

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show mac-address-table static [**addr** *mac-addr*] [**vlan** *vlan-id*]

ةلئ	

mac-addr

interface *interface-id*	ﻥ ﻑ Â ﻥ Ɔ MAC ﻝﺍ Â
history	MAC ﻉ ﻝ ﻩﻕ Â

MAC ﻡﺴ ﻑﺨ ﻝﺍ ﻩﻕ Â

ﻩU ﻉ

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```
Ruijie# show mac-address-table notification interface
Interface        MAC Added Trap  MAC Removed Trap
---------         --------------      --------------
GigabitEthernet1/14   Disabled        Disabled
Ruijie# show mac-address-table notification
MAC Notification Feature :  Disabled
Interval between Notification Traps : 1 secs
Maximum Number of entries configured in History Table :1
Current History Table Length : 0
Ruijie# show mac-address-table notification history
History Index : 0
MAC Changed Message :
Operation:ADD Vlan : 1 MAC Addr: 00f8.d012.3456 GigabitEthernet 3/1
```

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ﻩU ﻉ	
mac-address-table notification	MAC ﻡﺴ ﻑﺨ ﻝﺍ Â
snmp trap mac-notification	ﻥ MAC ﻡﺴ ﻑﺨ ﻝﺍ Â

ﻑ

ﻩU ﻉ ﻉ ﻑ

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11.2.10 show mac-address-table static

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

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ءارم	
mac-addr	MAC ىسفخ Â
vlan-id	VLAN Â
interface-id	ذفنم ةهجاو ءارم (ذفنم ليجت ءارم AggregatePort)

ةدعاق

ىلإ ةرظن

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ةلثمأ

ىسفخ ىلع ةهجاو ءارم ةلثمأ

```
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
```

ةلص تاذ رماوأ

ىلإ ةرظن	
mac-address-table static	ىسفخ Â
clear mac-address-table static	ىسفخ Â

مدختسملا ىوتسم

ىلإ ةرظن	
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11.2.11 show mac-address-table vlan

VLAN ىلع ىسفخ ىلإ ةرظن Â

show mac-address-table vlan [*vlan-id*]

ءارم

ءارم	
vlan-id	VLAN ID Â

```
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
```

show mac-address-table static	Â
show mac-address-table filtering	Â
show mac-address-table dynamic	Â
show mac-address-table address	Â
show mac-address-table interface	Â
show mac-address-table count	Â

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12 DHCP Snooping

12.1 DHCP snooping

12.1.1 ip dhcp snooping

DHCP Snooping ŏ ╖ ˘ ‹ ŏ ЮO ћu ҙ Â ћu ҙ no ˘ ŏ ЎΩ DHCP Snooping ╖ Â

[**no**] **ip dhcp snooping**

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	╖ ЎΩ
ћu ҙ	ŏ
G	DHCP Snooping ŏ ╖ ʌ˘ ˩ ʌU G **show ip dhcp snooping** ћu ҙ DHCP snooping ╖ ĭ Â
	~ DHCP Snooping б Private VLAN ╖ a ЎΩ Â
w R	ЮO DHCP snooping ŏ ╖ ЎΩ R ' Ruijie# **configure terminal** Ruijie(config)# **ip dhcp snooping** Ruijie(config)# **end** Ruijie# **show ip dhcp snooping** Switch DHCP snooping status ' ENABLE Verification of hwaddr field status ' DISABLE DHCP snooping database write-delay time: 0 seconds DHCP snooping option 82 status: ENABLE DHCP snooping Support Bootp bind status: ENABLE Interface Trusted Rate limit (pps) ------------------------ ------- ------------

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	show ip dhcp snooping	DHCP snooping ə Â

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12.1.2 ip dhcp snooping bootp-bind

DHCP Snooping Bootp ╖ ˘ ѫ ѿ ӇO ħυ ϗ Â
ħυ ϗ no ˘ ˝Ω DHCP snooping Bootp ╖ Â

[**no**] **ip dhcp snooping bootp-bind**

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	⅋	
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ħυ ϗ	ѿ Â
G	ϙ ӇO˘ DHCP Snooping ╖ Θ Bootp ˩ Â ╖ ⅄˘ DHCP Snooping ╖ Bootp ˜ Â Bootp ╖ ⅄˘ DHCP Snooping Bootp ╕ˀ è Â

ӇO DHCP Snooping Bootp R '

```
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping bootp-bind
Ruijie(config)# end
Ruijie# show ip dhcp snooping
Switch DHCP snooping status ' ENABLE
Verification of hwaddr field status ' DISABLE
DHCP snooping database write-delay time: 0 seconds
DHCP snooping option 82 status: ENABLE
DHCP snooping Support Bootp bind status: ENABLE
Interface            Trusted       Rate limit (pps)
-----------------------  -------    ------------
```

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show ip dhcp snooping	DHCP snooping ə

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12.1.4 ip dhcp snooping database write-to-flash

Ꞓ DHCP Snooping ╠ ə ῆ ὠ FLASH ̈ ̆ ޖ ὣ Ю ƚʋ ʢ Â

ip dhcp snooping database write-to-flash

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12.1.5 ip dhcp snooping information option

ɞ DHCP è ╗ ώ option82 ╖ ˘ ɞ ŏ ΗO ħu ɤ Â
ħu ɤ no ˘ ˷Ω ╖ Â

[**no**] **ip dhcp snooping information option**

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	╖ ˷Ω Â	
ħu ɤ	ŏ	
G	ħu ɤ˘ ɞ DHCP è ╗ option82 ə˛ ˘ DHCP Ь ٪ option82 ə˛ ɜɯ ɞ˙ Â	
w R	ΗO ɞ DHCP è ╗ ώ option82 ╖ R '	

```
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping information option
Ruijie(config)# end
Ruijie# show ip dhcp snooping
Switch DHCP snooping status ' ENABLE
Verification of hwaddr field status ' DISABLE
DHCP snooping database write-delay time: 0 seconds
DHCP snooping option 82 status: ENABLE
DHCP snooping Support Bootp bind status: ENABLE
Interface                Trusted    Rate limit (pps)
-----------------------  -------    ------------
```

˷Ωħu ɤ	**ħu ɤ**	
	show ip dhcp snooping	DHCP snooping ə˛ Â
٨		
ħu ɤ ٦ ٨	**٨**	

ᴎ DHCP ˇ ج ᴎ ЮO ћu ҳ Â ћu ҳ no ˇ ᴊ ᴎ ⁸ Â

[**no**] **ip dhcp snooping limit rate** *rate-value*

ᴎ		
ᴎ	*rate-value*	ˇ PPS[Packet Per Second]

⁸

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Ⅱ DHCP Snooping ⁸ VLAN ̈ ᴎ ˇ ↑ ə ᴎ Â

ǂ ҥ ҏ Ɔ˘ ҁ CPP[CPU Protect Protocol]Ⅱ Â CPP ˚ ˚ DHCP

⁸˘ ㎜ ɣ CPP . ″I ɣ DHCP Snooping ⁸ Ⅱ Â ˜Ω

ɣ CPP ǂ ˘ ɛ ᴇ Â

ᴊ Л∪ **show ip dhcp snooping** ћu ҳ˘ ᴎ Э ⁸ Â

ЮO ᴎ 1 ⁸ ѝ 100pps'

```
Ruijie# configure terminal
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ip dhcp snooping limit rate 100
Ruijie(config-if)# end
Ruijie# show ip dhcp snooping
Switch DHCP snooping status ' ENABLE
Verifi-19( )6(i).56n of hwaddr field
```

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12.2.2 ip dhcp snooping suppression

ʌ ˦ suppression ˘ ج ʌ ˥O ħu ʒ Â ħu ʒ no ˘ ʌ ˦ no suppression Â

[**no**] **ip dhcp snooping suppression**

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	-	-

	˥ ˜Ω Â
ħu ʒ	ʌ Â
G	ħu ʒ˘ ˩ ʌ ˥O DHCP ˘ . ʌ ˥O DHCP فخ سم Â

w R	˥O ʌ **fastethernet** *0/2* ˦ suppression R ' Ruijie# **configure terminal** Ruijie(config)# **interface fastethernet** *0/2* Ruijie(config-if)# **ip dhcp snooping suppression** Ruijie(config-if)# **end**

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12.2.3 ip dhcp snooping trust

ʌ DHCP snooping ə˙ ˦ TRUST ʌ˘ ج ʌ ˥O ħu ʒ Â ħu ʒ no ˘ ʌ ˦ UNTRUST ʌ Â

[**no**] **ip dhcp snooping trust**

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ą ЮЎ ५ ѝ UNTRUST ५ Â

ħu ३ ५ Â

G ħu ३˘ ८ DHCP Ł Ы ५ ѝ TRUST ५ ÂTRUST ५ ↑ DHCP ː ५˘ UNTRUST ५ ↑ DHCP ː x Â

Ю ५ **fastethernet** 0/1 ѝ TRUST ५ R '

```
Ruijie# configure terminal
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ip dhcp snooping trust
Ruijie(config-if)# end
Ruijie# show ip dhcp snooping
Switch DHCP snooping status ' ENABLE
Verification of hwaddr field status ' DISABLE
```

w R

12.3.1 show ip dhcp snooping

DHCP Snooping ɱń ɑ˘ æ ĦO ħu ɜ¦ Â

show ip dhcp snooping

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G ħu ɜ¦˘ ɻ ʃʊ ɱń DHCP Snooping ɑ Â

ĦO ɱń DHCP Snooping ɑ R '

```
Ruijie# show ip dhcp snooping
Switch DHCP snooping status ' ENABLE
Verification of hwaddr field status ' DISABLE
DHCP snooping database write-delay time: 0 seconds
DHCP snooping option 82 status: ENABLE
DHCP snooping Support Bootp bind status: ENABLE
Interface                Trusted    Rate limit (pps)
-----------------------  -------    ------------
```

w R

ħu ɜ¦	
ip dhcp snooping	DHCP snooping ŭ ˜Ω Â
ip dhcp snooping verify mac-address	DHCP snooping mac ˜Ω Â
ip dhcp snooping write-delay	ŋ̃ flash Â
Ip dhcp snooping information option	æ DHCP è ╗ ώ option82 Â
ip dhcp snooping bootp-bind	DHCP Snooping Bootp ╗ Â
ip dhcp snooping trust	¶ ŕ DHCP snooping trust ¶ Â

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12.3.2 show ip dhcp snooping binding

DHCP Snooping è əɻ ˇ æ ĦO ħu ɜ Â

show ip dhcp snooping binding

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G	ħu ɜˇ ˩ Ʌu ɱł DHCP Snooping è əɻ Â

w R

```
ĦO        R  '
Ruijie# show ip dhcp snooping binding
Total number of bindings: 1

MacAddress    IpAddress   Lease(sec)  Type    VLAN  Interface
-----------   --------    --------    -----   ----  ---------
0000.0000.0001 1.1.1.1  78128  dhcp-snooping  1  FastEthernet 0/1
```

˝Ωħu ɜ

ħu ɜ	
ip dhcp snooping binding	DHCP snooping
clear ip dhcp snooping binding	DHCP snooping ╟ əɻ

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ħu ɜ ˥ ˩

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12.4 DHCP snooping

12.4.1 clear ip dhcp snooping binding

ī DHCP Snooping è ╟ ˘ ₰ ЮO ħu ʒ¶ Â

clear ip dhcp snooping binding

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ħu ʒ¶	
show ip dhcp snooping binding	DHCP snooping ₰¸ Â

ħu ʒ¶ ˥ ˩	
-	-

12.4.2 debug ip dhcp snooping

₰ Ӈ Э DHCP Snooping ╖ ʖΩ˝ ₰ ЮO ħu ʒ¶ Â

debug ip dhcp snooping {**event** | **packet**}

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13 IGMP Snooping

13.1

13.1.1 deny

ㄴ profile ㅌ ˘ profile ЮO ħυ ҂ deny Â

deny

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deny	ㄴ profile ㅌ فخ سم

profile deny ɔ Â

ħυ ҂ profile Â

G ″I ج profile ЮO G range ħυ ҂ ㅌ Â ٨ ˘ ㅢ ҉ G profile ɔ ˘
profile ↑ ٨ ″H ㅢ ƙ Ŷ Ń ط ҂

profile تنّ profile Ю ħu ϩ permitّ profile ّΩ
ϡ ϡ ϡ Â

permit

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permit	ïّ ϡ profile تن فخ سم Â

deny profile ɔ Â

ħu ϩ profile Â

G ّlجم profile Ю G range ħu ϩ تن Âϡ ˘ ϧ ϖ G profile ɔ ˘ profile ّΩ ↑ ّΩ ħu ϩ Э Â

w R Ю … У э ϡ ïّ ϡ 224.2.2.2 profile R '

```
Ruijie(config)# ip igmp profile 1
Ruijie(config-profile)# range 224.2.2.2
Ruijie(config-profile)# permit
```

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ip igmp profile	… У э profile
range	تن فخ سم

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ϡ

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ϡ	
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13.1.3 range

profile تنّ profile Ю ħu ϩ rangeّ ϡ Л ´ э سم
فخّ ≠ ϡ Л э تن ّ فخ سم Â G ħu ϩ no ˥ فخ سم Â

range *low-ip-address* [*high-ip-address*]

no range *low-ip-address* [*high-ip-address*]

ϡ	ϡ	
	low-ip-address	تن فخ سم

	high-ip-address	فخ سم تن

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ħu ҷ profile Â

G فخ سم تن ⁄˘ У э ѝ˘ profile ѝ deny Â ⁄ ˘ ѝ ѽ G profile ɔ ˘ profile ĵ ⁄ Э Â

Ю … У э تن ѝ 224.2.2.2~224.2.2.244 profile R ' Ruijie(config)# **ip igmp profile** *1* Ruijie(config-profile)# **range** *224.2.2.2 224.2.2.244*

ħu ҷ	
ip igmp profile	… У э profile
deny	profile ѝ ѝ deny
permit	profile ѝ ѝ permit

⁄

⁄	
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ħu ҷ ˥ ⁄

13.1.4 ip igmp profile

IGMP profile ұ ⁸ У " ⅄ Â ώ profile ˘ ˝I ҷ ѿ Ю У э profile Â ħu ҷ ħu ҷ˘ profile-number˘ ώ igmp profile Â

ip igmp profile *profile-number*

no ip igmp profile *profile-number*

⁄		
	profile-number	profile ⁄˘ تن 1-65535

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IGMP Profiles Э У Ҿ Ӆ˘ ᵏ ľ SVGL فخ سم تن Ŀ à ľ
ʌ تن Ŀ à ľ IGMP Filtering تن Ŀ ʌ ╗ G Â ҷ ˘ ѝ ҩ G profile
ɔ ˘ profile Ո ╗ ʗΩ G Â

ѡ R

Ю R … ҩ У ɜ ʌ ѝ 1 profile ώ profile Â

```
Ruijie(config)# ip igmp profile 1
Ruijie(config-profile)#
```

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ħυ ϡ	
range	profile فخ سم تن Â
permit	profile ѝ ѝ permit
deny	profile ѝ ѝ deny

ʌ

ħυ ϡ ˥ ʌ

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13.1.5 ip igmp snooping ivgl

igmp snooping ivgl ˘ ӧ ħυ ϡ **ip igmp snooping ivgl** Â
ħυ ϡ no ʗΩ igmp snooping Â

ip igmp snooping ivgl

no ip igmp snooping

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disable Â

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ʅ ’ Ҍ ҷ ˆ ˙ ¡ У э VLAN ˘ ʅ
ʅ VLAN ӫ ˇ ʅ ϟ Â

	pim snooping ŋ ¥ igmp snooping IVGL IVGL-SVGL ɔˇ ﻉ G no ip igmp snooping ˜Ω igmp snooping ╖ ˇ pim snooping ﻉ ɔ ‡˳ ˝I ˜Ω pim snooping˘ ɜ ˜Ω a ╖ Â

ɯ R	ЮO R ﻉ Э igmp snooping ivgl ' Ruijie(config)# **ip igmp snooping ivgl**

˜Ωħuɮ	**ħu ɮ**	
	ip igmp snooping svgl	igmp snooping svgl Â
	ip igmp snooping ivgl-svgl	igmp snooping ﾉ Â

ﾉ

ħu ɮ ˥ ﾉ	ﾉ	
	-	-

13.1.6 ip igmp snooping vlan

ﻉ vlan Э igmp snooping ivgl ˇ ώ ħu ɮ **ip igmp snooping vlan** Â ħu ɮ no ˜Ω igmp snooping Â

ip igmp snooping vlan vid

no ip igmp snooping vlan vid

ﾍ	ﾍ	
	vid	vlan id

disable Â

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ﻉ ώ ЮO ﻉ vlan Э ŭ ╟ ˜Ω IGMP Snooping ╖ ˇ ħu ɮ Â

G	vlan Э pim snooping ŋ ¥ igmp snooping ɔˇ ﻉ G no ip igmp snooping vlan ˜Ω vlan Э igmp snooping ╖ ˇ pim snooping ﻉ VLAN ‡˳ ˝I ˜Ω pim snooping˘ ɜ ˜Ω a ╖ Â

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13.1.8 ip igmp snooping svgl profile

ھ profile ںت SVGL ˘ ѽ ڂل ا' ى Â

	₽7 lD806 Td( )TJC Td(8.796 1 Tf-E3>]TJTT<350E2CD516JTT1 1 Tf0 Tr 4.01JC)5fb1G4jv 14018 Tc 5.2390
	Â@ąd7…ÐþÞßÖU6

ąHO⊥ NJ À Ò ª ھ ˇΩ ٹ □

no ip igmp snooping dyn-mr-aging-time

५	५
time	╟ ˜ ५ ע ˛ ˇ ५ ḣ تn<1-3600> Â

300s

ħυ ३ ώ Â

G ╟ ५ ج è ע ɱṅ ĵ IGMP PIM Hello ˇ Ꮋ ५ ÿ ע ५ " è╕ Âج ╟ ५ ˜ ą Ю˘ ┘Л ħυ ३ ╟ ५ ע ˇ ج ע ˇ ┘ ˛ ╗ Ո╕ Â

w R Ю R ج ╟ ˜ ५ ע й 100s׳

```
Ruijie(config)# ip igmp snooping dyn-mr-aging-time 100
```

G

ʎ Ꮋ ÿ ʎ ʃ ў ʅ IP IGMP
˘ ʎ ÿ ʅ ʎ " è˥ Â ʃ˘ Ꮋ ʃ
IP IGMP ˘ Ꮋ a ΄Ạ ʃ ʎ ʅ Â ج Ꮋ Ɔ˘
ʎ Ю ʎ У ɔ ˘ ‡ ʅ Ո G ʎ ╖ Ո Ո Â

W R

Ю R ج Э igmp snooping fast-leave'

```
Ruijie(config)# ip igmp snooping fast-leave enable
```

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ip igmp snooping source-check default-server	IP ⊿ IP Â

⊿

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13.1.14 ip igmp snooping mrouter learn pim-dvmrp

Ꮋ ╟ ш ŭ̋ IGMP Query/Dvmrp/PIM Hellp ˘ Л∪ ╟ ⁞ ∧˘
ŏ̆ ħυ ϡ **ip igmp snooping mrouter learn** Â ħυ ϡ no ↓ ╟ ˝ Â

ip igmp snooping mrouter learn pim-dvmrp

no ip igmp snooping mrouter learn pim-dvmrp

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ħυ ϡ	ŏ̆ Â

G	∧ б è ∧ Â ϙ Ю˘ ŏ̆ ╟ ∧ ˝ ╥ ˘ ↓ Л∪ ˇΩ ╟ ∧ ˝ ╥ ˘ no ħυ ϡ ˇΩ ╟ ˝ ˘ ╟ ˝ ∣ ∧ Â ŏ̆ ╟ ∧ ˝ ╥ ˇΩ ∧˘ vlan ∧ ╟ ˝ ╥ ˇΩ Â ∧ ˘ ŏ̆ ╟ ∧ ˝ ╥ ϙ Ю˘ vlan ∧ ˝ ╥ ˇΩ ˘ vlan ╟ ∧ ˝ ╥ ϶ ˇΩ Â ∧ ˘ ↓ ÿ ∧ ώ ∧ ˘ ↓ ∧ Ą ∧’ ÿ ∧ ώ ϶ ˘ x Â ج ∧ ╥ ϙ Ю˘ G ╟ ∧ ˝ ˘ ↓ Л∪ igmp snooping Â

ш R	Ю R ج ╟ ∧ ˝ ╥ ' `Ruijie(config)# ` **`ip igmp snooping mrouter learn pim-dvmrp`**

ˇΩħυ ϡ	**ħυ ϡ**	
	ip igmp snooping vlan mrouter learn pim-dvmrp	vlan Э ∧ ╟ ˝ ╥

∧	

ħυ ϡ ˥ ∧	**∧**	
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13.1.15 ip igmp snooping vlan mrouter interface

ʌ б è ʌ, ʌ˘ ŏ
ђu ҙ **ip igmp snooping vlan mrouter interface** Â ђu ҙ no ĭ У э ʌ Â

ip igmp snooping vlan *vid* **mrouter interface** *interface-id*

no ip igmp snooping vlan *vid* **mrouter interface** *interface-id*

ʌ

ʌ	
vid	ʌ vlan id Â
interface-id	ʌ id

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ɻ Л Ђ Э ʌ ŷ Ы ʌ˘ ÿ G Ђ Э ĭ IP
ɻ Л ʌ ɻ Ы Â ж ʌ Ю˘ ɻ ÿ ʌ ώ
ɻ˘ è x Â
ж ʌ ╠ ˝ ╖ Ѯ ą Ю˘ ɻ Л ʌ Â

w R

Ю R ж У э ʌ'

```
Ruijie(config)# ip igmp snooping vlan 1 mrouter interface
fastEthernet 0/1
```

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ip igmp snooping source-check port	ʌ

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13.1.16 ip igmp snooping vlan mrouter learn pim-dvmrp

Ђ ╠ ш ŭ IGMP Query/Dvmrp/PIM Hellp

vid vlan id

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vid	٨ vlan id
ip-addr	فخ سم
interface-id	٨ id

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ћu ҳ ѿ Â

G ۔ Л υ й ٨ э فخ سم Â

ш R Ю R جھ У э ٨ Э У э فخ سم'

```
Ruijie(config)# ip igmp snooping vlan 1 static 224.0.0.2 interface
fastEthernet 0/1
```

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ћu ҳ	
ip igmp snooping vlan mrouter interface	٨

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IGMP Profile ج У э ٨ ЮЎ ٨ ĵ IGMP Report ˘ ‡
э ٨ ╗ ώ فخ سسه ĭ ج IGMP Profile ĭ تن ڈ ۈ Â ˘ ‡ ĭ ╗ ώˇ
ڈ ٨ ٨ Â ˝I … profileˇ ٨ filter ˇΩ Â

w R

Ю R ج ˝I ٨ 0/1 Э ˇΩ profile 1'

```
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ip igmp snooping filter 1
```

ˇΩħυ ϡ

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ip igmp profile	… У э profile

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ॅΩħυ ३	ħυ ३	
	ip igmp snooping filter	∧ Â

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13.2

13.2.1 show ip igmp snooping

igmp snooping ॅΩ ə Â

Show ip igmp snooping [**gda-table** | **interfaces** | **mrouter**| **statistics** [**vlan** *vlan-id*]]

∧	∧	
		igmp snooping ╗ Â
	gda-table	┘ ‡ Â
	interfaces	igmp snooping filtring Â
	mrouter	∧ ə Â
	statistics [**vlan** *vlan-id*]	snooping ə Â

undebug igmp-snp event

undebug igmp-snp packet

undebug igmp-snp msf

undebug igmp-snp warning

۹	
	IGMP Snooping ə
event	IGMP Snooping ˜Ω Y ˇ ə
packet	IGMP Snooping ˜Ω ə
msf	IGMP Snooping б Ђ ə
warning	IGMP Snooping ˜Ω ˆ ə

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ћu ҳ EXEC

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14 MSTP

14.1

14.1.1 bpdu src-mac-check

ə ∧ bpdu mac Â ⊿Ո ħυ ϗ no ʹΩ ∧ bpdu mac
Ⅱ Â

bpdu src-mac-check *H.H.H*

no bpdu src-mac-check

∧		
	∧	
	H.H.H	∧ mac ىسفخ ﻯﺇ ىسفخ bpdu Â
	no	∧ ˙ ¡ bpdu Â
	ʹΩ Â	
ħυ ϗ	∧ Â	
G		
ѡ R	Ruijie(config)# **interface gigabitethernet** *1/1* Ruijie(config-if)# **bpdu src-mac-check** *00d0.f800.1e2f*	

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	ħυ ϗ	
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14.1.2 clear spanning-tree detected-protocols

⁸ ㄴ RSTP BPDU˙ BPDU ⁸ Â

clear spanning-tree detected-protocols [**interface** *interface-id*]

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interface-id	ㄴ

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w R Ruijie# **clear spanning-tree detected-protocols**

ˇΩħu ҳ

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show spanning-tree interface	㎚ ㄴ STP Â

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14.1.3 spanning-tree

MSTP˘ ㄴ ㄱ MSTP ㄱ ˇ MSTP ӧ ㎜ Â G ħu ҳ no ˇΩ spanning-tree ╖ ˇ no ħu ҳ ㄴ ㄱ ㄴ ⁸ ˇ ת a ˇΩ spanning tree Â

spanning-tree [**forward-time** *seconds* | **hello-time** *seconds* | **max-age** *seconds*]

no spanning-tree [**forward-time** | **hello-time** | **max-age**]

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forward-time *seconds*	ㄱ Â
hello-time *seconds*	ㄴ BPDU Â
max-age *seconds*	BPDU Â

spanning-tree ˇΩ Â

ħυ ϗ ώ Â

G **forward-time à hello-time à max-age** Ь э ḣ ت ℨΩ ˘ g ⍵ ὲ è У э˛ ؛ ĵ è ы ч э ḣ ت Â Ь э ḣ ƺ У э ⁸ ℨΩ '

2*(Hello Time+1.0snd) <= Max-Age Time <= 2*(Forward-Delay˜ 1.0snd)

a ʌ э ˚ ḣ ≠˛ a ╖ Â

ẇ R R 1' spanning-tree ╖ '

```
Ruijie(config)# spanning-tree
```

R 2' BridgeForwardDelay'

```
Ruijie(config)# spanning-tree  forward-time 10
```

ℨΩħυ ϗ

ħυ ϗ	
show spanning-tree	STP ώ ą Â
spanning-tree mst cost	STP ʎ PathCost Â
spanning-tree tx-hold-count STP	ώ TxHoldCount Â

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14.1.4 spanning-tree autoedge

э ʎ Autoedge ℨΩ Â ˩ Л∪ ħυ ϗ disabled ℨΩ ʎ Autoedge ℨΩ Â

spanning-tree autoedge [**disabled**]

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ʎ	
disabled	ℨΩ ʎ Autoedge ℨΩ Â

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```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# spanning-tree autoedge disabled
```

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14.1.6 spanning-tree bpduguard

э ʌ BPDU Guard ˜Ω Â ˩ Л∪ ħυ ҳ enabled disabled
˜Ω ʌ BPDU Guard ˜Ω Â

spanning-tree bpduguard [**enabled** | **disabled**]

	ʌ	
ʌ	**enabled**	ʌ BPDU Guard ˜Ω Â
	disabled	˜Ω ʌ BPDU Guard ˜Ω Â

	˜Ω Â
ħυ ҳ	ʌ Â
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w R	Ruijie(config)# **interface gigabitethernet** *1/1* Ruijie(config-if)# **spanning-tree bpduguard enable**

˜Ωħυ ҳ	ħυ ҳ	
	show spanning-tree interface	STP ʌ ą Â

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14.1.7 spanning-tree compatible enable

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ҷ Â

spanning-tree compatible enable

no spanning-tree compatible enable

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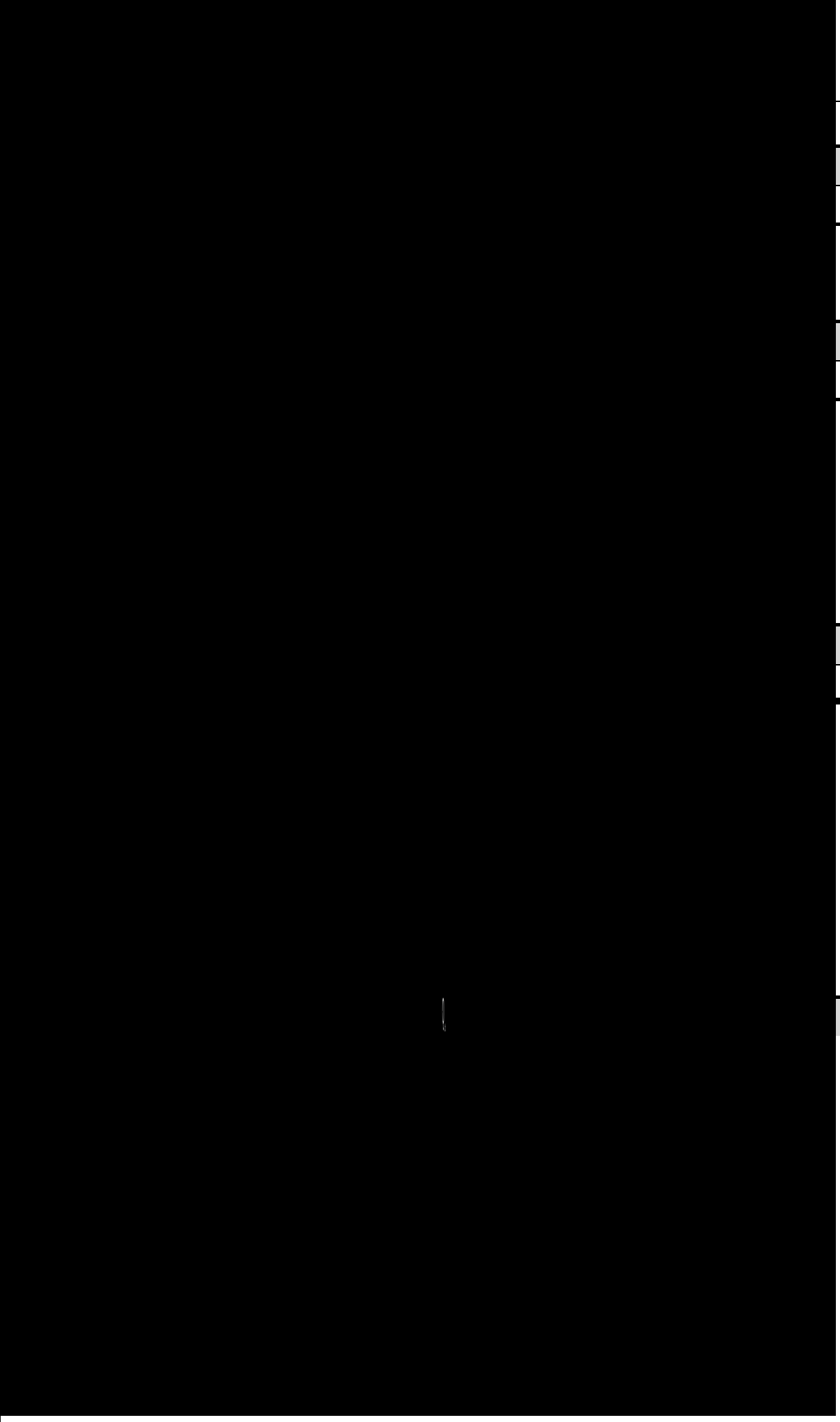
w R Ruijie(config-if)#**spanning-tree compatible enatib4158( )Ƶ7 jEE02 7836 21m63**



ϟ root guard Â ᴳ ħυ ϗ no ϼΩ root guard Â ŭ root guard ϖ
˘ ϾĒ ϻή ѫ Æ ϟ ϶ Â

spanning-tree guard root

no spanning-tree guard root

ϟ	

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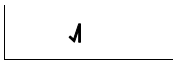

14.1.14 spanning-tree mode

æ ŏ ΗΟ G ħυ ϗ STP Â G no ϟ Ո ḣ Â

spanning-tree mode [**stp** | **rstp** | **mst***p*]

no spanning-tree mode

ϰ		
ϰ	**stp**	Spanning tree protocol(IEEE 802.1d)
	rstp	Rapid spanning tree protocol(IEEE 802.1w)
	mstp	Multiple spanning tree protocol(IEEE 802.1s)

MSTP

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w R `Ruijie(config)# spanning-tree mode stp`

΅ΩħυϗϗΩ	ħυ ϗ	
	show spanning-tree	

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14.1.15 spanning-tree mst configure

æ ŏ ΗΟ G ħυ ϗ ϟ Ո ώ MST ˘ MSTP Region Â G no ϟ Ո ħυ ϗ ΗΟ ϰ ˆ name à revision à vlan map˜ ḣ Â

spanning-tree mst configuration

no spanning-tree mst configuration

ϰ		
ϰ	-	-

VLAN 3 ÿ Instance 1 è† ˘ ϗ ώ MST Λ˘ Ю

```
Ruijie(config-mst)# no instance 1 vlan 3
```

ɔ Instance 1† ˘ Ю'

```
Ruijie(config-mst)# no instance 1
```

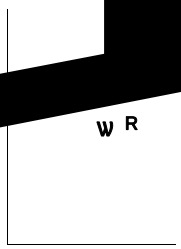
ɹ Л∪ MST ħυ ϧ è show Э Â

ħυ ϧ	

MSTP

- Region

Â ˝I ˧ ˇ Л



ce 20 è Gigabitethernet 1/1 ˄ ˝I ḣ ḣ ẋ 10ʹ

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# spanning-tree mst 20 port-priority 0
```

˧Л ώ **show spanning-tree mst instance interface** *interface-id* ħυ ҁ Э

Â

G ѿ .

w R Ю R Instance 20 ″I ḣ ѝ 8192'
Ruijie(config-if)# **spanning-tree mst** *20* **priority** *8192*

ㅓ Л ώ **show spanning-tree mst instance interface interface-id** ћu ҳ Э Â

ˇΩћu ҳ

ћu ҳ	
show spanning-tree mst	ㅓ MSTP ə Â
spanning-tree mst cost	Â
spanning-tree mst port-priority	a ㅓ Instance ㅓ ″I Â

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14.1.19 spanning-tree pathcost method

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spanning-tree pathcost method [**long** | **short**]

no spanning-tree pathcost method

ㅓ

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long	802.1t ñ path-cost ḣ Â
short	802.1d ñ path-cost ḣ Â

802.1T ñ Path-cost ḣ Â

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w R Ruijie(config-if)# **spanning-tree pathcost method long**

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	show spanning-tree interface	STP ∧ Â

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14.1.20 spanning-tree portfast

э ∧ Portfast ˇΩ Â ∧ ΛU ħu ҳ disabled ˇΩ ∧ Portfast ˇΩ Â

spanning-tree portfast [**disabled**]

∧	∧	
	disabled	ˇΩ ∧ Portfast ˇΩ Â

ˇΩ Â

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w R
```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# spanning-tree portfast
```

ˇΩħu ҳ	ħu ҳ	
	show spanning-tree interface	∧ STP ə ҷ Â

∧

no spanning-tree portfast bpdufilter default

ϰ	
-	-

ˇΩ BPDU filter

ħu ϡ ŏώ Â

G BPDU Filter ϗˇ ϰ˛ a ϟ ≠ a BPDU Â G **show spanning-tree** ħu ϡ Â

w R `Ruijie(config)# spanning-tree portfast bpdufilter default`

ˇΩħu ϡ	ħu ϡ	
	show spanning-tree interface	STP ŏώ Â

ϗ

ħu ϡ ˥ ϗ	ϗ	
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14.1.22 spanning-tree portfast bpduguard default

ŏώ BPDU guard Â ϟ Ո ħu ϡ no ŏώ ˇΩ BPDU guard Â

spanning-tree portfast bpduguard default

no spanning-tree portfast bpduguard default

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ˇΩ BPDU Guard.

ħu ϡ ŏώ Â

G BPDU guardˊ ϡ ϰ Ɔ ˛ BPDUˊ ‡˛ ώ error-disabled Â G **show spanning-tree** ħu ϡ Â

ẇ ᴿ Ruijie(config)# **spanning-tree portfast bpduguard default**

ΐΩħυ ϗ

ħυ ϗ	
show spanning-tree interface	STP ŏ̈

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14.1.23 spanning-tree portfast default

ŏ̈ ᾀ Portfast ΐΩ Âᴳ ħυ ϗ no ŏ̈ ΐΩ ᾀ Portfast ΐΩ Â

spanning-tree portfast default

no spanning-tree portfast default

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- φΐΩ ᾀ Portfast ΐΩ Â

14.1.24 spanning-tree reset

ə spanning-tree ѝ ḣ Â ħυ ϗ no Â

spanning-tree reset

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ħυ ϗ ŏ Â

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w R Ruijie(config)# **spanning-tree reset**

ħυ ϗ	
show spanning-tree	STP ŏ ə Â
show spanning-tree interface	STP ϰ Â

ϻ

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14.1.25 spanning-tree tc-guard

ϰ tc- guard ˜Ω Â G ħυ ϗ no ˜Ω tc- guard ˜Ω Â ŭ tc-guard ϖ ˇ tc Â

spanning-tree tc-guard

no spanning-tree tc-guard

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˜Ω tc- guard ˜Ω Â

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w R	Ruijie(config-if)# **spanning-tree tc-guard**

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14.1.26 spanning-tree tc-protection

ώ tc- protection ˜Ω Â G ħυ ϛ no ώ ˜Ω tc- protection ˜Ω Â

spanning-tree tc- protection

no spanning-tree tc- protection

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	-	-

	tc- protection ˜Ω Â
ħυ ϛ	ώ Â

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14.1.27 spanning-tree tc-protection tc-guard

ŏ̈ tc- guard ˝Ω Â G ћυ ϡ no ŏ̈ ˝Ω tc- guard ˝Ω Â ŭ tc-guard ╖ ˘ tc Â

spanning-tree tc-protection tc-guard

no spanning-tree tc-protection tc-guard

ϡ	ϡ	
	-	-

˝Ω tc- guard ˝Ω Â

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w R Ruijie(config)# **spanning-tree tc-protection tc-guard**

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14.1.28 spanning-tree tx-hold-count

STP ŏ̈ TxHoldCount ˘ ϟ BPDU ϶ Â G ћυ ϡ no ḣ Â

spanning-tree tx-hold-count *tx-hold-count*

no spanning-tree tx-hold-count

ϒ		
ϒ	*tx-hold-count*	TxHoldCount Â ḣ ﺕﻥ ÿ 1↑ 10 Â

ḣ 3 Â

ћυ ϟ ώ Â

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w R Ruijie(config)# **spanning-tree tx-hold-count** *5*

ћυ ϟ	
ΩћυϟΩ	**show spanning-tree**

tx-hold-count	TxHoldCount Â
pathcost method	Â

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w R Ruijie# **show spanning-tree hello-time**

ħU ३	
spanningtree pathcost method	
spanning-tree forward-time	BridgeForwardDelay Â
spanning-tree hello-time	BridgeHelloTime Â
spanning-tree max-age	BridgeMaxAge Â

link-type	∧ linktype

ħu ҳ Â

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w R Ruijie# **show spanning-tree interface gigabitethernet** *1/5*

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ħu ҳ	
spanning-tree bpdufilter	ə ∧ BPDU filter ŴΩ Â
spanning-tree portfast	ə ∧ portfast ŴΩ Â
spanning-tree bpduguard	ə ∧ BPDU guard ŴΩ Â
spanning-tree link-type	∧ صر a “ ”Â

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14.2.3 show spanning-tree mst

ᴂ ӇO G ħu ҳ ᐯ ᐱU MST ˇ Instance ə Â

show spanning-tree mst { **configuration** | *instance-id* [**interface** *interface-id*] }

∧

∧	
configuration	mst
instance-id	*Instance ᐱ*
interface-id	∧ ᐱ

Instance Â

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```
Ruijie# show spanning-tree mst configuration
```

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spanning-tree mst configuration	ώ MST region
spanning-tree mst cost	instance
spanning-tree mst max-hops	instance
spanning-tree mst priority	instance ॅ. ॅI
spanning-tree mst port-priority	instance ४. ॅI

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15 SPAN

15.1

15.1.1 monitor session

… У э SPAN˛ ∧ˆ ∧˜ Ո ∧ˆ ∧˜ .G ђυ ҙ no
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monitor session *session_number* {**source interface** *interface-id* [**both** | **rx** | **tx**] | **destination interface** *interface-id* { **encapsulation | switch** } | [**both** | **rx** | **tx**]} [**acl** *name*]

no monitor session *session_number* [**source interface** *interface-id* [**both** | **rx** | **tx**] | **destination interface** *interface-id* { **encapsulation | switch** }] | [**both** | **rx** | **tx**] [**acl** *name*]

no monitor session all

∧	
session_number	SPAN˛ ∧ Â
source interface *interface-id*	∧ Â ų *interface-id* ∧ ∧˘ ∧ ѝ ∧˘ a ∧ Ո ѝ SVI Â
destination interface *interface-id*	∧ Â ų *interface-id* ∧ ∧˘ ∧ ѝ ∧˘ a ∧ Ո ѝ SVI Â
mac source *mac-addr*	ę MAC
mac destination *mac-addr*	ę MAC
both **acl** *name*	∧ ώ Ո Â **acl** *name/id*
rx	∧ ώ Â
tx	∧ Â
all	ᶖ ˛
switch	ę ∧ Ꮋ ℼ ˘ ѝ a

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SPAN ħu ३

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Ю э R ѡ ¦ **show monitor** ħυ ϡ SPAN˛ 1 ɲ

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```
Ruijie# show monitor session 1
sess-num: 1
src-intf:
GigabitEthernet 3/1 frame-type Both
dest-intf:
GigabitEthernet 3/8
```

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monitor session	… У э SPAN˛ ʌ ˆ ʌ˜ Ո ʌˆ ʌ˜ Â

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16

1/2 //a ϟ ϰ

```
Ruijie(config)# monitor session 2 destination remote vlan 7
interface gigabitEthernet 1/3 switch //  ϟ ϰ
Ruijie(config)# monitor session 2 destination remote vlan 7
reflector-port interface gigabitEthernet 1/1 switch
```

R 2' Ꮋ

```
Ruijie(config)# monitor session 2 remote-destination
Ruijie(config)# monitor session 2 destination remote vlan 7
interface gigabitEthernet 1/1 switch
```

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show monitor	ę˳ ą Â

ϡ a ϟ ϰ ҥ ҏ ώ reflector-port ΐΩ Â

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16.1.2 remote-span

G ħυ ϗ RSPAN VLAN

[**no**] **remote-span**

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ħυ ϗ VLAN

G ѫ˙ ώ **end** ħυ ϗ˘ ώ Ctrl+C ϡ Â
ѫ˙ ѽ ώ **exit** ħυ ϗ

ѡ R

```
Ruijie(config)# vlan 5
Ruijie(config)# remote-span
```

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	show vlan	Vlan ą Â

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17 IP

17.1

17.1.1 ip address

ƕ ϗ ∧ IP ﻓﺦ ﺳﻢ ˇ ⅃ Ո no ╕

У э С ѭ Â ч э ˘ Л ъ э IP ѭ Â

ѭ Ұ ү ˘ , Î Â IP ѭ G ˩ Л ъ

G ˘ Î ѭ Ұ IP Â ұ э ˘ У э IP ѭ Â

У э ч э ˩ У э ˘ æ ˩ Л ъ … У э ˘

IP ѭ ˘ Â У э a ج ч э ч э

Л ъ Э ˥ Â

P

w R

Л ъ Ю R ˘ ¢ ˥ ў IP ѭ й 10.10.10.1˘ й 255.255.255.0 Â

```
ip address 10.10.10.1 255.255.255.0
```

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ћ ҷ	
show interface	˥ ą Â

Â ѵ ѵ˘ ЛЬЮ ⁸'

Лъ ѵ a ѵ ѵ Â

s ѵ SLIP ãHDLC ãPPP ãLAPB ãFrame-relay ˘ ѯ Лъ ѵ ѵ Â

л è ˘ ѵ ѯ ѵ ї ѵ Â X.25 a ї

ѵ ѵ Â

a ping ђ ѯ ѵ ѵ ї̈ ɔ ˘ ҷ ѝ ѵ ѵ IP ѫ ѳ Â л

SNMP ѯ Лъ ѯ ѵ ѵ Â

a ѵ ѵ ѹ̋ ╟ Â

ЛЬЮ ˘ ѵ ѝ ѵ ѵ˘ ˜Ω ѵ ѝ FastEthernet 0/1 Â ˜Ω ѵ

IP ѫ ѳ Â

```
ip unnumbered fastEthernet 0/1
```

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	show interface	ѵ ə ą Â

ѯ

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17.2

17.2.1 arp

G ђ ѯ˘ ѯ Лъ ҷ ARP ă è ╗ ЊА IP ѫ ѳ Ո MAC ѫ ѳ Â ђ ѯ no

ѯ Лъ̄ MAC ѫ ѳ Â ip-address (MA-addre)-4(ss a)6typce

	ARP ă è ˙ ¦ Â
‡ ‹	ŏ Â

RGOS G ARP ă ˘ 32 ə Æ IP ƒ ‰ 48 ə Æ MAC ƒ ‰ Â

G ų ў ╟ ARP ˘ Л a ARP Â ¯ **clear**

ᴿ 1' ЛЬЮ ˇ ⅃ SVI 1 ↰ У ȯ ARP Â

```
Ruijie(config)# interface vlan 1
Ruijie(config-if)# arp gratuitous-send interval 1
```

ᴿ 2' ЛЬЮ ˇ ṃ ⅃ SVI 1 ↰ ȯ ARP

```
Ruijie(config)# interface vlan 1
Ruijie(config-if)# no arp gratuitous-send
```

	Arp retry times *number*	ARP ·

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17.2.4 arp retry times

G ‰U ‰˘ ‹/Ƨ ‰ · arp ˘. ‹/ У ə IP ‰ƒ˘ ‹ ARP
Â G ‰U ‰ no ‹/Ƨ · 5 ARP Â

arp retry times *number*

no arp retry times

G ħU ϗ˘ ﻝ Ո ARP è э Â ħU ϗ no ﻝ Ո ḣ 8192 Â

arp unresolve *number*

no arp unresolve

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٩	*number*	ARP э ˘ ﻙ ḣ ﺗﻦ ﻯ < 1-8192 > Â ḣ ﻯ 8192
	ARP ă è ﻝ Ո 8192 э Â	
ħU ϗ	ŏ Â	
G	ﻝ ARP è ˘ з У Л ˘ ﻝ Ո ħU ϗ 8 э Â	
₩ R	ЛЬЮ ˘ э ﻯ 500 Â arp unresolved 500	

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17.2.7 ip proxy-arp

ﺟ ﻙ Э ŭ ϗ ARP ╗ ˘ ﻝ Ո **ip proxy-arp** ħU ϗ Â ħU ϗ no ﻝ ՈΐΩ ϗ ARP ╗ Â

ip proxy-arp

no ip proxy-arp

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10.2(3) ƺ ƛ (↑ 10.2(3)) ˇ Ь Ƕ ˜Ω ƺ ARP˝ ƚ ƺ ARP Â

ƙU ƺ ʌ Â

G ƺ ARP ╥ ˩ Ʌ ╠ ə ў ˇ è IP ƒƥ MAC ƒƥ Â ∫ У э ARP ˇ ARP ˩ IP ƒƥ б IP ƒƥ a ɣ ˩ У ˇ ʌ IP ƒƥ ˇ ˩ ARP ˸ ˇ ˸ MAC ƒƥ ƙ Ʌ MAC ƒƥ Â Ʌ Э ƺ ARP ╥ Â

W R ЛЬЮ ˇ ج Ʌ FastEthernet 0/1 ů ƺ ARP ╥ Â

```
interface fastEthernet 0/1
no switchport
ip proxy-arp
```

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mask ﻯ ﻡ ﺍ . ﷺ ARP ˘

mask

vrf *vrf_name*	VRF R˘ VRF ARP Â
trusted	⅃ ə̣ ARP ˘ ɱ⅃ ѿ VRF ⅃ ə̣ ˙ ARP Â
ip	IP سم فخ˘ IP سم فخ ARP ' ***trusted*** ˜Ω ˘ ‡ ⅃ ⅃ ə̣ ARP ˘ ĭ ‡ ⅃ ə̣ ARP Â
mask	IP ⁄̈ ARP ; trusted ˜Ω ˘ ‡ ⅃ ⅃ ə̣ ARP ˘ ĭ ‡ ⅃ ə̣ ARP Â
static	arp Â
mac-address	mac سم فخ ARP Â
complete	╟ arp Â
incomplete	╟ arp Â
oob	⅄ (interface of mgmt) ARP Â

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R 1' ЛЬЮ ѝ show arp '

```
Ruijie# show arp
Total Numbers of Arp: 7
Protocol  Address         Age(min)  Hardware
Type   Interface
Internet  192.168.195.68   0         0013.20a5.7a5f  arpa   VLAN 1
Internet  192.168.195.67   0         001a.a0b5.378d  arpa   VLAN 1
Internet  192.168.195.65   0         0018.8b7b.713e  arpa   VLAN 1
Internet  192.168.195.64   0         0018.8b7b.9106  arpa   VLAN 1
Internet  192.168.195.63   0         001a.a0b5.3990  arpa   VLAN 1
Internet  192.168.195.62   0         001a.a0b5.0b25  arpa   VLAN 1
Internet  192.168.195.5    --        00d0.f822.33b1  arpa   VLAN 1
```

ARP ă è ⅄ ŭ Ъ Ю'

Protocol	سم فخ ˜ ˘ ⅄ ѝ Internet Â
Address	б ˘ سم فخ IP سم فخ Â

Age (min)	ARP ă جم ˇ ЛU Â سم ˇ ḣ "-" Â
Hardware	б IP فخ سم ˚ فخ سم Â
Type	˚ فخ سم ˇصر فخ سم ЛU كا فخ سم ىٕ ARPA Â
Interface	б IP فخ سم ˜Ω ٨ Â

R 2' ЛЬО show arp 192.168.195.68

```
Ruijie# show arp 192.168.195.68
Protocol  Address   Age(min)  Hardware       Type   Interface
Internet  192.168.195.68   1   0013.20a5.7a5f  arpa   VLAN 1
```

R 3' ЛЬО **show arp** 192.168.195.0 255.255.255.0

```
Ruijie# show arp 192.168.195.0 255.255.255.0
Protocol  Address   Age(min)  Hardware   Type   Interface
Internet  192.168.195.64   0   0018.8b7b.9106  arpa   VLAN 1
Internet  192.168.195.2    1   00d0.f8ff.f00e  arpa   VLAN 1
Internet  192.168.195.5    --   00d0.f822.33b1  arpa   VLAN 1
Internet  192.168.195.1    0   00d0.f8a6.5af7  arpa   VLAN 1
Internet  192.168.195.51   1   0018.8b82.8691  arpa   VLAN 1
```

R 4' ЛЬО **show arp** *001a.a0b5.378d*

```
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
```

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ЛьЮ й **show arp counter**

```
Ruijie# show arp counter
The Arp Entry counter:0
The Unresolve Arp Entry:0
```

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17.3.4 show arp detail

ARP Â

show arp detail [*interface-type interface-number*| *ip* [*mask*] | *mac-address* | **static** | **complete** | **incomplete**]

interface-type interface-number	Ь Л У Л ARP
ip	ip ƒ¤ƒ˘ ip ƒ¤ƒ ARP

A R P à s ` C ™ @ "

ARP ARP

show arp detail

```
Ruijie# show arp detail
```

IP Address	MAC Address	Type	Age(min)	Interface	Port
20.1.1.1	000f.e200.0001	Static	--	--	--
20.1.1.1	000f.e200.0001	Static	--	Vl3	--
20.1.1.1	000f.e200.0001	Static	--	Vl3	Gi2/0/1
193.1.1.70	00e0.fe50.6503	Dynamic	1	Vl3	Gi2/0/1
192.168.0.1	0012.a990.2241	Dynamic	10	Gi2/0/3	Gi2/0/3
192.168.0.1	0012.a990.2241	Dynamic	20	Ag1	Ag1
192.168.0.1	0012.a990.2241	Dynamic	30	Vl2	Ag2
192.168.0.39	0012.a990.2241	Local	--	Vl3	--
192.168.0.39	0012.a990.2241	Local	--	Gi2/0/3	--
192.168.0.1	0012.a990.2241	Local	--	Vl3	--
192.168.0.1	0012.a990.2241	Local	--	Gi2/3/2	--

ARP

IP Address	IP
MAC Address	IP
Type	ARP
Age	ARP
Interface	IP
Port	ARP

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ملاحظة
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17.3.6 show ip arp

فخ سم ~ ^ ARP~ ğ ˘ جم è ħU ٹ Â

show ip arp

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ЛЬЮ й **show ip arp** '

```
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
```

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ARP ğ è ٨ ΰ Ьπ Ю'

Protocol	فخ سم ~ ˘ كا й Internet Â
Address	б ˚ فخ سم IP فخ سم Â
Age (min)	ARP ğ جم ˘ Лϋ Â سم ˘ ḣ "-" Â
Hardware	б IP فخ سم ˚ فخ سم Â
Type	˚ فخ سم صر˘ Лυ فخ سم كا й ARPA Â
Interface	б IP فخ سم ΄Ω ٨ Â

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17.3.7 show ip interface

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

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	Interface-type	٨ ص
	Interface-number	٨ ٨

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ш R	ЛЮ й **show ip interface** Â Ruijie# **show ip interface FastEthernet** *0/1* IP interface state is: UP IP interface type is: BROADCAST IP interface metric is: 0 IP interface MTU is: 1500 IP address is: 192.168.5.133/24 (primary) IP address negotiate is: OFF

```
Forward direct-boardcast is: ON
ICMP mask reply is: ON
Send ICMP redirect is: ON
Send ICMP unreachabled is: ON
DHCP relay is: OFF
Fast switch is: ON
```

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17.3.8 show ip redirects

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show ip redirects

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ىلا ىلإ **show ip redirects** ىلا

```
Ruijie# show ip redirects
Default Gateway: 192.168.195.1
```

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ip default-gateway	ىلا

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ip default-gateway

no ip default-gateway

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G ج è a ↑ ↓ ف У э فذسم ˇ ↑ ↓ ˜Ω Â ↓ G **show ip redirects** ƫυ ʒ ˜Ω Â

ш R ЛЬЮ R ˇ ˜Ω й 192.168.1.1 Â

```
ip default-gateway 192.168.1.1
```

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show ip redirects	˜Ω Θ ج γ Â

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18 DHCP Relay

18.1

18.1.1 ip dhcp relay check server-id

DHCP Relay check server-id ╖ ˘ ┘ЛU G ħυ ϗ Â G ħυ ϗ no
ˇΩ DHCP Relay check server-id ╖ Â

[**no**] **ip dhcp relay check server-id**

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ħυ ϗ˘ DHCP Relay ₰ ┘ DHCP ˚ option server-id
G ┘ DHCP Ь Ы Â ħυ ϗ˘ ‡ ┘ DHCP Ь Ы ┘ DHCP
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ЛUЮ R ˘ DHCP relay check server-id ╖ Â

ш R
```
Ruijie# configure terminal
Ruijie(config)# ip dhcp relay check server-id
```

ħυ ϗ c1p1CTf2 Tr 10.02 0 0 10.02 78.36 434.8403 Tmf0 gB/C2_0 1 Tf53.7 22C

DHCP Relay option dot1x ╖ ˘ ˩ Л υ G ħυ ϡ Â G ħυ ϡ no ˜Ω ╖ Â

[**no**] **ip dhcp relay information option dot1x**

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G ħυ ϡ ″l DHCP è ╖ ˘ ϒ ϒ 802.1x ˜Ω Â

ЛυЮ R ˘ ح DHCP è Э option dot1x ╖ Â

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```
Ruijie# configure terminal
Ruijie(config)# ip dhcp relay information option dot1x
```

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service dhcp	DHCP è
ip dhcp relay information option dot1x access-group *acl-name*	option dot1x acl

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18.1.3 ip dhcp relay information option dot1x access-group

DHCP Relay option dot1x ˜Ω ACL˘ ˩ Л υ G ħυ ϡ Â G ħυ ϡ no ϊ DHCP Relay option dot1x ˜Ω ACL Â

[**no**] **ip dhcp relay information option dot1x access-group** *acl-name*

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a ˜Ω ACL

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G ħu ϡ ACL б ϰ Э ACL ACE a ϟ ح ŏ Â

ЛυЮ R ˘ dhcp option dot1x acl Â

```
Ruijie# configure terminal
Ruijie(config)# ip access-list extended DenyAccessEachOtherOfUnauthrize
Ruijie(config-ext-nacl)# permit ip any host 192.168.3.1
// ĭ ϟ ΐΩ
Ruijie(config-ext-nacl)# permit ip any host 192.168.4.1
Ruijie(config-ext-nacl)# permit ip any host 192.168.5.1
Ruijie(config-ext-nacl)# permit ip host 192.168.3.1 any
// ĭ IP سو ف ϰ ΐΩ
Ruijie(config-ext-nacl)# permit ip host 192.168.4.1 any
Ruijie(config-ext-nacl)# permit ip host 192.168.5.1 any
Ruijie(config-ext-nacl)# deny ip 192.168.3.0 0.0.0.255 192.168.3.0 0.0.0.255
//  ϯ
Ruijie(config-ext-nacl)# deny ip 192.168.3.0 0.0.0.255 192.168.4.0 0.0.0.255
Ruijie(config-ext-nacl)# deny ip 192.168.3.0 0.0.0.255 192.168.5.0 0.0.0.255
Ruijie(config-ext-nacl)# deny ip 192.168.4.0 0.0.0.255 192.168.4.0 0.0.0.255
Ruijie(config-ext-nacl)# deny ip 192.168.4.0 0.0.0.255 192.168.5.0 0.0.0.255
Ruijie(config-ext-nacl)# deny ip 192.168.5.0 0.0.0.255 192.168.5.0 0.0.0.255
Ruijie(config-ext-nacl)# deny ip 192.168.5.0 0.0.0.255 192.168.3.0 0.0.0.255
Ruijie(config-ext-nacl)# deny ip 192.168.5.0 0.0.0.255 192.168.4.0 0.0.0.255
Ruijie(config-ext-nacl)# exit
Ruijie(config)# ip dhcp relay information option dot1x access-group DenyAccessEachOtherOfUnauthrize
```

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service dhcp	DHCP è

	ip dhcp relay information option dot1x	DHCP option dot1x ╖

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18.1.4 ip dhcp relay information option82

DHCP Relay option82 ╖ ˘ ⊿ Л υ G Ħυ ϗ Â G Ħυ ϗ no ˝Ω ╖ Â

[**no**] **ip dhcp relay information option82**

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G	╖ б option dot1x ╖ ц ˘ a ⊿ ⊿ Â
ѡ R	ЛυЮ R ˘ ⁂ DHCP è Э˘ ů opion82 ╖ ' Ruijie# **configure terminal** Ruijie(config)# **Ip dhcp relay information option82**

˝ΩĦυ ϗ		
	Service dhcp	DHCP è ϗ
	ip dhcp relay information option dot1x	DHCP option dot1x ╖

DHCP Relay DHCP Relay Aware VRF ╖ ˘ ┘ ЛЬ G ħυ ϡ Â
G ħυ ϡ no ϗΩ ╖ Â

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ħu ʒ ⁄˘ ˄ Э ˆ DHCP Â

ѠЮ R ˘ ˄ 1 Э DHCP relay ⁸ ╗ Â

```
Ruijie# configure terminal
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ip dhcp relay suppression
Ruijie(config-if)# exit
Ruijie(config)#
```

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service dhcp	DHCP è ʒ

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18.1.7 ip helper-address

╗ У э DHCP ┗ ˄ ˇ ˫ Ѡ G ħu ʒ Â ħu ʒ no ˘ ˆ У э ┗ ˄ Â DHCP ┗ ˄ ˫ Ѡ ˙ ώ Ո ˄ Ю Â

[**no**] **ip helper-address** [**vrf** *vrf-name*]*A.B.C.D*

˄

˄	
-	-

┗ ˄ Â

ħu ʒ ώ / ˄ Â

G

ώ э Ь ˄ Э ˫ Ѡ 20 э DHCP ┗ ˄ Â

˙ ˄ DHCP ┗ ˄ ϙ Ю˘ DHCP Relay ώ DHCP ┗ ˄ ’ ˄ ϖ DHCP ┗ ˄ ˇ DHCP Relay G ˄ Э ┗ ˄ ˇ a ώ ┗ ˄ Â

˙ vrf ˄ Ą˘ ѫ ұ ώ Ո ѫ ұ ˄ a ˫ Â ѫ ұ ώ a vrf ˄ ˘ a ұ ˙ ¡ vrf ѫ ұ ˄ a vrf ˄ ˘ ɱ ┗ ˄ Ո ˄ ұ ˫ У vrf Â

ЛυЮ R ˘ ч э Ł لا سم خف'

1¨ ώ Ł لا 192.168.1.1'

2˙ ѫ ұ vrf R й dep1 Ł لا 192.168.2.1'

ѡ R

```
Ruijie# configure terminal
Ruijie(config)# ip helper-address 192.168.1.1
Ruijie(config)# ip helper-address vrf dep1 192.168.2.1
```

ΏħυϡϤ

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	-	-

19 DNS

19.1

19.1.1 ip domain-lookup

ў ╠ DNS Â G ћ no ‡ Ω DNS Â ╖ Â

ip domain-lookup

no ip domain-lookup

¶	
-	-

α й DNS Â ╖ Â

ћ

G ћ й DNS Â ╖ Ω ћ ў ╠ DNS Â

Ю R DNS Â ╖ Ω'

```
Ruijie(config)# ip domain-lookup
```

Ωћ

show hosts	DNS Ω ą Â

/

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

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

	ip-address	IP
	ipv6-address	IPV6

Â

ŏ Â

DNS Server IP/IPv6 Â DNS Server Â
Server DNS
Â
6 DNS Server ip-address ipv6-address
DNS Â

```
Ruijie(config)# ip name
```

	ip-address	IP

G	no ip host host-name ip-address
w R	Ruijie(config)# **ip host switch** *192.168.5.243*

	show hosts	DNS

	-	-

19.1.4 ipv6 host

IPV6 no

Ipv6 host *host-name ipv6-address*

no ipv6 host *host-name ipv6-address*

	host-name	
	Ipv6-address	IPV6

G	no ipv6 host host-name ipv6-address
w R	Ruijie(config)# **ipv6 host ruijie** *2001:0DB8:700:20:1::12*

	hu ʒ	
	show hosts	DNS Ω ą Â

	/	
	-	-

19.2

19.2.1 clear host

╟ ў ɹ ă ˘ ɻ Лu ج è hu ʒ Â

clear host [*host-name*]

	ʔ	
	host-name	ɻ Лu̅ ə ╟ ў ɹ ă Â“*” ʒ ώ ╟ ў ɹ ă Â

hu ʒ

G

ў ɹ ă è ˘ ч ə ' 1˜ ip host ipv6 host '
2˜ DNS ╟ ˜ Â hu ʒ˘ ˛ ĭ ɱ DNS ╟ ˜ ↑ ў ɹ Â

w R

ЛuЮ è˘ ˛ ĭ ў ɹ -IP فخسه ă è ╟ ˜ ↑ Â

```
clear host *
```

	hu ʒ	
	show hosts	ў ɹ ă Â

	/	
	-	-

19.2.2 show hosts

DNS Â

show hosts [*hostname*]

20 SNTP

20.1

20.1.1 sntp enable

ħυ ϗ SNTP ╖ ˘ G ħυ ϗ è **no** ϧ ḣ —Disable Â

[**no**] **sntp enable**

ħυ ३	ώ
G	G **show sntp** ħυ ३ SNTP ΄Ω ٧
ш R	Ruijie(config)# **sntp server** *192.168.4.12*

΄Ωħυ ३	ħυ ३	
	show sntp	SNTP

ħυ ҳ	
sntp enable	SNTP
show sntp	SNTP ˜Ω ∀

˜Ωħυ ҳ

∀ RGOS10.0 ЛЬЭ

/∀	
-	-

ħυ ҳ ˥ ∀

21 NTP

21.1 NTP

21.1.1 no ntp

ʹΩ ntp ⊿ Ⴑˇ ṃ б Ⴑ⅄ ⊿ ˇ ntp ạ Â

no ntp

٩	٩	
	-	-

	ąЮ NTP Ⴑ ʹΩ Â
ћu ҳ	ѿ Â
G	₰ ąЮ̋ NTP ╖ ʹΩ ˇ Л ⊿ ѽ NTP Ⴑ⅄ NTP ѿ ⋮ ˇ NTP ╖ ˬ Â
ѡ R	ЛЮ R ˇ ʹΩ ѽ NTP Ⴑ Â no ntp

ʹΩћu ҳ	ћu ҳ	
	ntp server	У э NTP Ⴑ⅄

⊿

ћu ҳ ٦ ⊿	⊿	
	-	-

21.1.2 ntp access-group

NTP Ⴑ ˇ ћu ҳ no ⊿ ˇ Â

ntp access-group { **peer** | **serve** | **serve-only** | **query-only** }*access-list-number* | *access-list-name*

no ntp access-group{**peer** | **serve** | **serve-only** | **query-only**}*access-list-number* | *access-list-name*

۹	
peer	ĭ ѫ NTP Ь Ո ⁸ ˘ ≠ ĭ ѫ б ۶ ˆ ŏ ~ Â
serve	ĭ ѫ NTP Ь Ո ⁸ ˘ т a ĭ ѫ б ۶ Â
serve-only	Θ ĭ ѫ NTP Ь Â
query-only	Θ ĭ ѫ NTP Ь ⁸ Â
access-list-number	IP ⁸ " ۸’ ىت ѝ 1˙ 99 Ո 1300˙ 1999
access-list-name	IP ⁸ " ۷ Â

۹

ą Ю ˙ ¦ NTP ⁸ ‡ Â

Ъu ҙ ŏ Â

G

ѫ NTP Ь ⁸ Â ᵏ ѧ У ŏ ˘ ŏ ᴳ NTP ` ⁸ Â

У э ˛ ˘ NTP Ь ÿ ⁸˛ ⁸ ŋ ٦ ‡˘ Л∪ У э ٦ ˛ ‡ ѝ ђ Â ٦ ѝ peer à serve à serve-only à query-only Â

~	ɱ ⁸ ╗ Â Э ‡ ٦ ˘ т ۹˛ б ⁸ ˜Ω Â
	˙ ¦ ⁸ ‡˘ ‡ ĭ Â т У ѧ ⁸ ‡˘ ‡ Θ ‡ è ĭ Â

	/\	

ѝ NTP Ь У э ѿ NTP Â

ntp authentication-key *key-id* **md5** *key-string* [

	-	-

è ! ЮО ٨ ل ٩ م

æ ϙ ЮЎ ѕѕ ˚ ѕѕ б ⊿ Â л ¥
Ѵ ϱ ѕѕ б ⊿ ˘ ⊿Л ħυ ϩ ѕѕ
Ѱ ⊿ ˘ ѝ è ы k ⊿ Â
У ϖ ˘ ғ a˛ б è ḣ ⊿ Â

G

G ħυ ϩ ⁞ Â ѕѕ ѝ ў ^ è
ϖ æ ḣ ˜ ⊿ Â
⊿ У è э G ϖ ħυ ϩ˘ ‡ ⊿ ¥ Ӡ
⊿ a Â
Ѱ ˘ G ħυ ϩ ѧ ÿ б ⊿ ˘ ‡ ⊿
╟ ñ Лυ ɖ è a˛ Ļ Â

~

ѠR

ЛЮ ¦ ѕѕ Ѱ ⊿ ˘ è ѝ 12 Â

```
Ruijie(config)# ntp master 12
```

ЎΩħυ ϩ

ħυ ϩ	
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⊿

[redacted]

ħu ҳ ѽ Â

G

ѭ τ Θ ┗ Ж ˘ ⊿ ┗ Ж Э ѝ 20 э Â
б ┗ Ж ╗ ąˇ ˝I ѽ ╗ Л ч ѽ ąˈ ˘ Л
ѝ ┗ Ж ąˈ ˘ ⊿ Л ч ¥ ┗ Ж ╗ ąˇ б ┗ Ж ╗
ą ┗ Ж ⊿ ѽ ╗ б ѽ ąˈ
ѫ ⊿ ąˆ ˜ Ю˘ . ˝I prefer ⊿
NTP ч ∧ Ą У Ю˘ ∧ ѝ ѫ IP ⊿
Л ∩ NTP ┗ Ж ą ∧ Â

w R

Л Ю R ˘ Э ѝ NTP server Â

IPv4 ' Ruijie(config)# **ntp server** *192.168.210.222*

IPv6 ' Ruijie(config)# **ntp server** *10::2*

ˇΩħu ҳ

ħu ҳ	
no ntp	ˇΩ NTP ┗ ╗ Â

⊿ Ж ∧ Ɒ ` ˛ f

æ ╟ ⊿ ˘ . ⊿ ˘ ‡ ⊿Л u G ђu ҳ Â

w R ЛuЮ R ˘ NTP ⊿ Â

```
Ntp synchronize
```

Ђu ҳ

ђu ҳ	
ntp server	У э NTP Ь Ы ⊿

⊿

ђu ҳ ˥ ⊿

/\	
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21.1.9 ntp trusted-key

У э ID й ŏ ą̇

ntp trusted-key *key-id*

no ntp trusted-key *key-id*

\ |

\	
key-id	ŏ ą̇ ID Â

ąЮ ą̇ Â

ђu ҳ ŏ Â

G æ NTP ⊣ ⊿ ą̇ ˘ Ю ˜ ۏ ۓ ۔

ntp authenticate	ώ ⁞ ⁸ Â
ntp authentication-key	NTP Â
ntp server	У э NTP Ь Ж Â

ϻ

ħυ ϛ ϒ ϻ	**ϻ**	
	-	-

21.1.10 ntp update-calendar

NTP G ÿ ϻ ḣ ˚ Â ħυ ϛ no ϻ ˚ ╖ Â

ntp update-calendar

no ntp update-calendar

ϻ	**ϻ**	
	-	-

˚ ╖ Â

ħυ ϛ ώ Â

G G ╖ ϻ Л∪ NTP G ÿ ϻ ḣ ˚ Â ˚ . G ѫ ℨΩ ѫ Æ ϙ Ю ÿ ╟ Â ѫ ϙ Ю NTP ˚ Â ℨ ϻ˘ NTP ˚ ѫ б ϻ ╖ ≠ ϻ ˚ Â

ѡ R ЛυЮ ¦ NTP ˚ '

```
Ruijie(config)# ntp update-calendar
```

ℨΩħυ ϛ	**ħυ ϛ**	
	-	-

ϻ

Ъu ҳ ˥ ↓	/ǀ	
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21.2

21.2.1 debug ntp

NTP ə¸ Â

debug ntp

no debug ntp

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	-	-

	˝Ω Â
Ъu ҳ	Â
G	NTP ˥ ˘ ↓Л Ъu ҳ ə¸ ˘ Ո-Ո Â
w R	ЛЪЮ R ˘ NTP ˝Ω Â debug ntp

˝ΩЪu ҳ	Ъu ҳ	
	-	-

↓	

Ъu ҳ ˥ ↓	/ǀ	
	-	-

21.2.2 show ntp status

NTP ə¸ Â

show ntp status

ৰ

22 FTP Server

22.1

22.1.1 debug ftpserver

FTP Ł ⅄ ə ˇ G ħυ ҳ no ˜Ω ə Â

debug ftpserver

no debug ftpserver

٩	
-	-

	˜Ω ə Â
ħυ ҳ	Â
G	G **debug ftpserver** ħυ ҳ ⅃ Λυ ج FTP Ł ⅄ è ə Â

ʀ 1' ΛυЮ ¡ Ł ⅄ ə '

```
Ruijie# debug ftpserver
FTPSRV_DEBUG:(RECV)  SYST
FTPSRV_DEBUG:(REPLY)  215 RGOS Type: L8
FTPSRV_DEBUG:(RECV)  PORT 192,167,201,82,7,120
FTPSRV_DEBUG:(REPLY)  200 PORT Command okay.
```

ʀ 2' ΛυЮ ¡ ˜Ω Ł ⅄ ə '

```
Ruijie# no debug ftpserver
```

˜ΩħυҳҳΩ	ħυ ҳ	
	-	-

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ħυ ҳ ٦ ⅄	⅄

	-	-

22.1.2 ftp-server enable

ŭ FTP

⁸ FTP ˚ ĵ̃ ɔ تن Â G ħυ ҙ no
FTP ┗ ⅄ Ǝ˙ ¡ ˚ Â

ftp-server topdir *directory*

no ftp-server topdir

time ˆ ´ Æ' ˙ ' 'تن

ħυ ϛ ŏ Â

G

FTP Ł ⅄ k ɹ Â ⅃ k
ɹ Ո Â
ɹ й 64 э ˘ è a ï Â ɹ ⅂ Л ằ ` Ո
` /ſ ÂFTP Ł ⅄ ⅂ У э ɹ Â

~ FTP Ł ⅄ a ɒ ɹ ˘ ɷ ɹ
Ł ⅄ ` Â

ᒡ ᒣ ᒢ ᒤ

ᒢ ⁸ ᒡ ᒣ Ω IP à Port˜

ᒢ ᒡ ў ᒤ ᒤ ˇ Λυ ᒢ Ω IP à Port˜

ᒦ ˚ · ص

ᒡ ᒣ ᒢ ᒡ à ᒡ Θ ˜

ᒡ ᒣ

˚

ΛυЮ ¦ FTP ᒡ ᒣ Ω ə '

```
Ruijie# show ftp-server
ftp-server information
=====================================
enable : Y
topdir : /
timeout: 20min
username config : Y
password config : Y
type: BINARY
control connect : Y
ftp-server: ip=192.167.201.245  port=21
ftp-client: ip=192.167.201.82  port=4978
port data connect : Y
ftp-server: ip=192.167.201.245  port=22
ftp-client: ip=192.167.201.82  port=4982
passive data connect : N
```

Ωħυ ҳ

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ħυ ҳ ᒣ ᒢ

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23 UDP-Helper ¾Ø

23.1

23.1.1 ip forward-protocol

Ъu ¾ł è ㄴ UDP ㅅ Â ᴳ Ъu ¾ł **no** ‡ ㅅ UDP ㅅ ↑ è ㄴ ╖ Â

ip forward-protocol udp [*port* | **tftp | domain | time | netbios-ns | netbios-dgm | tacacs**]

no ip forward-protocol udp [*port* | **tftp | domain | time | netbios-ns | netbios-dgm | tacacs**]

¾ R	Ruijie(config)# **ip forward-protocol udp** *134*

¯Ω Ъ ¾	Ъ ¾	
	udp-helper enable	G ┤ UDP
	ip forward-protocol	è ┤ UDP ∧

	RGOS10.1

	-	-

23.1.3 udp-helper enable

udp-helper enable UDP è **no udp-helper enable** UDP è

UDP è

udp-helper enable

no udp-helper enable

	-	-

	UDP è

SNMP ħu ३

no snmp-server chassis-id

٩	٩	
	text	" ʌ ˇ ⅃ Ɲ ᴳ Â
	" ʌ ḣ 60FF60	
ħυ ҳ	ѿ	
ᴳ	SNMP " ʌ У ᴳ ⅄ " ʌˇ Ɲ ɾ ⋮ Â " ʌ ⅃ Ɲ **show snmp** ħυ ҳ Â	
ᴡ ᴿ	Ю ᴿ SNMP " ʌ ѝ 123456: `Ruijie(config)# snmp-server chassis-id 123456`	

̃Ωħυ ҳ	ħυ ҳ	
	show snmp	SNMP ə

⅄

ħυ ҳ ˥ ⅄	ʌ	
	-	-

24.1.3 snmp-server community

SNMP ڊ ᴇ ˇ ѿ ħυ ҳ **snmp-server community** Â ħυ ҳ no ⅄ SNMP ڊ ᴇ Â

snmp-server community *string* [**view** *view-name*] [[**ro** | **rw**] [**host** *ipaddr*]] [number ipv6 ipv6-aclname][aclnum | aclname]

no snmp-server community *string*

٩	٩	
	string	ڊ ᴇ sˇ ¥ NMS Ո SNMP ҳ ڗ ə Â
	view-name	ففي ⅃ ˇ ¥ ѫ ¥ ففي Â
	ro	NMS MIB ⅃ ⅄ ˇ a ᵍ Â
	rw	NMS MIB ⅃ ⅃ ⅃ ĵ̃ Â

aclnumber	" " /\^ 1-99~ ˘ ˜Ω " ˘ MIB ipv4 NMS فخ سم تن Â
aclname	" ɻ ˘ ˜Ω " ˘ MIB ipv4 NMS فخ سم تن Â
ipv6_aclname	ipv6 " ɻ ˘ ˜Ω " ˘ MIB ipv6 NM pw0 5976.84 726.2 339.98 0.48 re5976.8460

ʅ	
text	s

ὴ Â

ħu ʒ ő

G

w R

ЮR SNMP ὴ i-net800@i-net.com.cn '

```
Ruijie(config)# snmp-server contact i-net800@i-net.com.cn
```

ʗ ħu ʒ	
show snmp-server	SNMP ə
no snmp-server	ʗ SNMP ʒ ╖

ʃ

ħu ʒ ˥ ʃ	
-	-

24.1.5 snmp-server enable traps

ŭ SNMP ў ╟ NMS ɻ Trap ˘ ɣ ˆ У ҽ Y ˅ ɻ ˘ ő ħu ʒ **snmp-server enable traps** s Â ħu ʒ no SNMP ɹ NMS ў ╟ ɻ Trap Â

snmp-server enable traps [**snmp**]

no snmp-server enable traps

ʅ	
snmp	ŭ SNMP Y ˅ Â

ЮЎ ɻ

ħu ʒ ő

ipv6_aclname	ipv6 " ˇ ˜Ω " ˇ MIB ipv6 NMS فخ سم تن Â

port-num	snmp ў ٨
notification-type	ў ╠ ٦ صّ R snmp Â

ą ЮЎ SNMP ў Â
صّ ‡ ↑ ص Â

ћu ҳ ѽ

G

ћu ҳ б ѽ ћu ҳ **snmp-server enable traps** У G ˇ ў ╠ NMS ٦ Â

٦ Л υ э a ٨ SNMP ў ų ˇ У э ў ٦ Л υ G a ٨ ص ٨ˇ a ٨ ٨ˇ a ٨ vrf ٦ ˇ ų ٨ ў [٨ ٨ à ٨ vrf] ٨ У ˛ Ո ŋ ń ٨ ˇ . ٨ ў ٦ a ٨ ˇ ٦ Л ў ⋮ a ٨ ˇ ҽ ˛ ٨ ↑ У Â

w R

Ю R У э SNMP ў ˇ SNMP Y ˇ '

```
Ruijie(config)# snmp-server host 192.168.12.219 public snmp
```

ћu ҳ

ћu ҳ	
snmp-server enable traps	ў ٦

٨

ћu ҳ ٦ ٨

٨	
-	-

24.1.8 snmp-server location

SNMP Æ ą ѽ ћu ҳ **snmp-server location** Â ћu ҳ no ٨ SNMP Æ ą

٩

٩	
text	ą s Â

ą и

ħu ҳ	ѽ
G	
w R	Ю R У э ə ' Ruijie(config)# **snmp-server location** start-technology-city 4F of A Buliding

ѽħu ҳ		
	ħu ҳ	
	snmp-sever contact	SNMP

⁄	

ħu ҳ ˥ ⁄		
	⁄	
	-	-

24.1.9 snmp-server packetsiz

⁸ SNMP ↑ ˘ ѽ ħu ҳ **snmp-sever packetsize** Â ħu ҳ no ḣ Â

snmp-server packetsize *byte-count*

no snmp-server packetsize

⁄		
	⁄	
	byte-count	↑ ˘ ÿ 484 ⁞ 17876 Â

	1500
ħu ҳ	ѽ
G	
w R	Ю R SNMP ↑ ѝ 1492' Ruijie(config)# **snmp-server packetsize** *1492*

ѽħu ҳ		
	ħu ҳ	

snmp-server queue-length	SNMP "

-	-

ŭ SNMP ˇ ŵ ћu ҙ **snmp-server system-shutdown** Â ћu ҙ no ˩ ˜Ω SNMP Â

snmp-server system-shutdown

no snmp-server system-shutdown

˥	
-	-

	˜Ω SNMP
ћu ҙ	ŵ
G	G ћu ҙ ŭ SNMP ˇ RGOS ˛ ج reload/reboot ЛuЛ NMS ˩ Â
w R	Ю R ŭ SNMP ' Ruijie(config)# **snmp-server system-shutdown**

ћu ҙ	
-	-

˩

˥	
-	-

24.1.12 snmp-server trap-source

SNMP ˇ ŵ ћu ҙ **snmp-server trap-source** Â ћu ҙ no Â

snmp-server trap-source *interface*

no snmp-server trap-source

˥	
interface	¥ ɔ й SNMP

	SNMP ÿ ف ə ˥ ˩˜ G ف ə ˥ IP Â

ħu ҳ ŏ

G ąЮ˘ SNMP ÿ ف ə ٨ ٧˘ G ف ə ٨ IP سم فخ ɔ ŷ سم فخ˘ ŷ ѿ
ғ ұ Ո ⁞˘ ٦ Л G ħu ҳ ثن G У ə سم IP سم فخ ɔ ŷ SNMP سم فخ Â

w R Ю R Л ٨ 0 IP سم فخ ɔ ŷ SNMP سم فخ'
Ruijie(config)# **snmp-server trap-source fastethernet** 0

ˇΩħu ҳ

ħu ҳ	
snmp-server enable traps	ŭ ў ╟ ٦
snmp-server enable host	NMS ў

ل

ħu ҳ ٦ ل

٨	
-	-

24.1.13 snmp-server trap-timeout

Ⱨ ٦ ˘ ŏ ħu ҳ **snmp-server trap-timeout** Â ħu ҳ no ḣ Â

snmp-server trap-timeout *seconds*

no snmp-server trap-timeout

٩

٩	
seconds	˘ ´ Æ ŷ ˘ ٦ ḣ تن' 1 – 1000 Â

30

ħu ҳ ŏ

G

w R Ю R ŷ 60 '
Ruijie(config)# **snmp-server trap-timeout** *60*

ħυ ϗ	
snmp-server queue-length	"
snmp-server enable host	NMS ў

ϡ

ħυ ϗ ϒ ϡ	(Ë ϡ	AÈ
	-	-

24.1.14 snmp-server user

SNMP ˘ ώ ħυ ϗ **snmp-servesnmp-servme grou 06(pna)-6(me).84 719.36 0.24**

	У э default ق ï MIB Â
ћu ҳ	ѽ
G	
ѡ R	Ю R У э ق ↑ MIB-2 ^ oid ѝ 1.3.6.1˜ ' Ruijie(config)# **snmp-server view** *mib2 1.3.6.1* **include**

˜Ωћu ҳ		
	ћu ҳ	
	show snmp view	SNMP ق ą

ѧ	
ћu ҳ ˥ ѧ	ѧ	
	-	-

24.1.16 snmp trap link-status

ѧ ê ѧ ћu ҳ Ì Â

24.2

24.2.1 show snmp

SNMP ą ˘ ћu ҳ **show snmp** Â

show snmp [**mib** | **user** | **view** | **group| host**]

ѧ		
	ѧ	
	-	-

ћu ҳ	
G	**show snmp** ћu ҳ SNMP ˜Ω ą '

show snmp mib è snmp mib ə ’

show snmp user snmp ə ’

show snmp view snmp ي ə ’

show snmp group snmp ə ’

show snmp host ə ’

Ю R SNMP У э ə '

```
Ruijie# show snmp
Chassis: 60FF60
0 SNMP packets input
0 Bad SNMP version errors
0 Unknown community name
0 Illegal operation for community name supplied
0 Encoding errors
0 Number of requested variables
0 Number of altered variables
0 Get-request PDUs
0 Get-next PDUs
0 Set-request PDUs
0 SNMP packets output
0 Too big errors (Maximum packet size 1500)
0 No such name errors
0 Bad values errors
0 General errors
0 Response PDUs
0 Trap PDUs
SNMP global trap: disabled
SNMP logging: disabled
SNMP agent: enabled
```

w R

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snmp-server *chassis-id*	SNMP " /I

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25 RMON

25.1

25.1.1 rmon alarm

ə MIB ↓ G ħυ ϗ Â G no ↓ Â

rmon alarm *number variable interval* {**absolute** | **delta** } **rising-threshold** *value* [*event-number*] **falling-threshold** *value* [*event-number*] [**owner** *ownername*]

no rmon alarm *number*

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G	₼ RGOS ˚ è˘ ï Л∪ ↿ ↓ ą g ˘ ↑ variable à absolute/delta à owner à interval à rising-threadhold/falling-threadhold ↰ è event ą ˘ Л Ҩ a . ˘ ĵ ЮУ Y˚ ↓ Ą˘ ˚ ’

w R	Л∪Ю R ˘ MIB ↓ R ifInNUcastPkts.6 Â `Ruijie(config)# rmon alarm 10 1.3.6.1.2.1.2.2.1.12.6 30 delta rising-threshold 20 1 falling-threshold 10 1 owner zhangsan`

˝Ωħυ ϗ	ħυ ϗ	
	rmon event *number* [**log**] [**trap** *community*] [*description-string*]	╗ У ə Y˚ Ⱨ

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25.1.2 rmon collection history

ɜ Ʌu ʌ ˥ ˩ ą G ħu ɂ Â G **no** ˩ Â

rmon collection history *index* [**owner** *ownername*] [**buckets** *bucket-number*] [**interval** *seconds*]

no rmon collection history *index*

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G	₂ RGOS ˚ è˘ ï Ʌu ˥ ˩ ą g ˘ ↑ owner ðbuckets Ʌu ˥ interval ą ˘ Ո ₡ ą a . ˘ ˚ ЮУ ˥ ˩ ą Ą˘ ˚ ’
ɯ R	ɅuЮ R ˘ G ˩ Ʌu Ʌu ʌ 1 ˥ ˩ ą Â Ruijie(config)# **interface fast-Ethernet** *0/1* Ruijie(config-if)# **rmon collection history** *1 zhansan* **buckets** *10* **interval** *10*

˝Ωħu ɂ	ħu ɂ	
	rmon collection stats *index*[**owner** *owner-name*]	╗ У ɜ

˩

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25.1.3 rmon collection stats

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rmon collection stats *index* [**owner** *owner-string*]

no rmon collection stats *index*

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ЛυЮ R ˘ Hπ Y ˚ ╟ ɔ' Y ˚ ą ㄐ trap Â

ѡ R Ruijie(config)# **rmon event**

```
Event type : log-and-trap
Community : public
Last time sent : 0d:0h:0m:0s
Owner : zhangsan
Log : 1
Log time : 0d:0h:37m:47s
```

```
Ruijie#  show rmon event
Alarm : 1
Interval : 1
Variable : 1.3.6.1.2.1.4.2.0
Sample type : absolute
Last value : 64
Startup alarm : 3
Rising threshold : 10
Falling threshold : 22
Rising event : 0
Falling event : 0
Owner : zhangsan
```

ħυ ३	
‴Ωħυ ३	**rmon event** *number* [**log**] [

ЛъЊO R ˘ ə ˈ

```
Ruijie#  show rmon history
Entry : 1
Data source : Gi1/1
Buckets requested : 65535
Buckets granted : 10
Interval : 1
Owner : zhangsan
Sample : 198
Interval start : 0d:0h:15m:0s
DropEvents : 0
Octets : 67988
Pkts : 726
BroadcastPkts : 502
MulticastPkts : 189
CRCAlignErrors : 0
UndersizePkts : 0
OversizePkts : 0
Fragments : 0
Jabbers : 0
Collisions : 0
Utilization : 0
```

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rmon collection history *index* [**owner** *ownername*] [**buckets** *bucket-number*] [**interval** *seconds*]	╗ У э ٦ ɻ 8

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ЛЬЮ R ˇ ə '
Ruijie# **show rmon statistics**
Statistics : 1
Data source : Gi1/1
DropEvents : 0
Octets : 1884085
Pkts : 3096
BroadcastPkts : 161
MulticastPkts : 97
CRCAlignErrors : 0
UndersizePkts : 0
OversizePkts : 1200
Fragments : 0
Jabbers : 0
Collisions : 0
Pkts64Octets : 128
Pkts65to127Octets : 336
Pkts128to255Octets : 229
Pkts256to511Octets : 3
Pkts512to1023Octets : 0
Pkts1024to1518Octets : 1200
Owner : zhangsan

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rmon collection stats *index* [**owner** *owner-string*]	╗ У э

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26 IPv6

26.1

26.1.1 ping ipv6

ħυ ϗ IPV6 Â

ping ipv6 [*ipv6-address*]

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ipv6-addres	*s* فخ سم

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G ھ ħυ ϗ è a ώ سم فخ ‡ ώ Ꮋ ҭ ˘ ⊿ Л υ έ ε ﾉ ٧ Â

```
Ruijie# ping ipv6 fec0::1
```

ھ ping ھ ﾉ ﾉ ΰ ЬЖ Ю

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.	⊿ ھ ά ĺ
U	ĺ ў
R	٧
F	
A	فخ سم
D	٧ ɣ Down ٧ IPV6 ╖ (ĺ سم فخ ă)
?	

w R

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26.1.2 ipv6 address

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У э IPV6 ʌ … з й UP IPV6 @ ш ṁ

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۹	۷ ۹ Â Э ˜Ω ˘ ϗ ╟ىس

default

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G	2 ⊣ Л∪ ∧ Э IPv6 ╖ ˘ У ∌ ∧ Ю **ipv6 enable** ђu ҙ , γ ∌ ∧ Ю ⓠ IPv6 ѕш ƒ ∂ Â
~	∌ ∧ Э ⓠ IPv6 ѕш ƒ ∂ ѫ ∧ IPv6 ╖ ˳ ╟ ˘ . G G **no ipv6 enable** ≠ a ℡ IPV6 ╖ Â

w R	Ruijie(config-if)# **ipv6 enable**

℡ђu ҙ		
	ђu ҙ	
	show ipv6 interface	∧ ℡ ə ę

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26.1.5 ipv6 general-prefix

IPv6 ɱ ˘ ∌ ώ Ю G **ipv6 general-prefix** ђu ҙ Â ђu ҙ Ю˙

ipv6 general-prefix *prefix-name ipv6-prefix/prefix-length*

no ipv6 general-prefix *prefix-name ipv6-prefix/prefix-length*

∧		
	∧	
	prefix-name	ɱ ⊿ Â
	ipv6-prefix	ɱ ɱ ḣ Â ə ḣ RFC4291 ḭ ⁄I Â
	prefix-length	ɱ Â

ђu ҙ	ώ
G	G ɱ ⊣ Л∪ ғ ⁄I Â ᾣ ẇ ɱ Ⱨ У ə ɱ ˘ ɱ ⊣ Л∪ Â ɱ ⊿ ∨ ⊖ ɱ ɱ ˳ ⊿ ∨ Â

/ı ↓ ყ ˘ ↙ g УЮ ɱı . ↓ Â

У э ɱı ↓Л↑ ΰ э ɱı Â

Ҩ ɱı جم ↙ IPv6 فخ سم Э Â

ш R Ю R ɷ У э ɱı ɬ my-prefix Â

```
Ruijie(config)# ipv6 general-prefix my-prefix 2001:1111:2222::/48
```

ħυ ϛ	
ipv6 address prefix-name sub-bits/prefix-length	G ɱı ↙ فخ سم

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ђu ҳ ˥ ᴎ	ᴎ	
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26.1.7 ipv6 nd dad attempts

ᴳ ђu ҳ ҷ ᴎ Э й IPV6 ѫ ѳ ѫ ѳ ă ᴌ (NS)
Â ᴳ ђu ҳ no ḣ Â

ipv6 nd dad attempts *value*

no ipv6 nd dad attempts

ᴎ	ᴎ	
	value	(NS) Â ḣ й 0 й ᴎ Э Ipv6 ѫ ѳ ў ╟ ѫ ѳ ă Â ټ: 0-600 Â

1

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ᴳ ҷ ᴎ Э У э IPV6 ѫ ѳ ˘ ҷ ѫ ѳ э ᴎ ɱ й ў ╟ ѫ ѳ ă
˘ ѫ ѳ ų ”tentative”( ) Â ѫ ѳ ă ɷ˘
ĵ ă ˘ ѫ ѳ ᴌ Л ᴳ ˘ ĵ ă ɷ˘ з ѫ ѳ ᴳ
ᴎ ᴳ EUI-64 ˘ ѫ ҷ Э ҷ ѫ ѳ ˘ ѫ
˳ ╟ ˝Ω ᴎ (ҷ ᴎ Э IPV6 ˝Ω ɔ) ˘ ᴌ
g ѫ ѳ ˘ Ѧ down/up ᴎ ў ╟ ѫ ѳ ă Â˙ ị ą Ю
У э ᴎ ÿ down ᴌ й up ˳ й ᴎ Э ѫ ѳ ў ╟ ѫ ѳ ă Â

ᴡ ᴿ

```
Ruijie(conifgf)# interface vlan 1
Ruijie(conifg-if)# ipv6 nd dad attempts 3
```

˝Ωђu ҳ	ђu ҳ	
	show ipv6 interface	ᴎ ҽ Â

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IPv6 ħu ʒ

G ђu ҳ У э ˘ G ђu ҳ no ⅃ Л℧ Â

ipv6 neighbor *ipv6-address interface-id hardware-address*

no ipv6 neighbor *ipv6-address interface-id*

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ipv6-address	IPV6 ѕм ғɪ˘ RFC4291 ЊЖ ѕм ғɪ Â
interface-id	ɟɛ ᐯ ᵀ Routed Port,L3 AP ᐯ Ո SVI ᐯ˜ Â
hardware-address	ѕм ғɪ˘. Л℧ XXXX.XXXX.XXXX 48 Æ MAC ѕм ғɪ˘ 'X' ˊ Ὼ ⁸ Â

˙ ¦ Â

ђu ҳ ѿ Â

ђu ҳ ɔ ARP ђu ҳ˘ ᐯ ɟɛ IPV6 ᐯ Э˘

NDP ᵎ ẏ ɟɛ è˘ ѫ ╟ ╟

ѝ Â ˘ ɣ Reachble Â ˘

IPV6 ѕм ғɪ˘ б ᐯ Э ѕм ғɪ a ᒉ ˆ a ɟɛ ᐯ ˙ У IPV6

G ѕм ғɪ ᾳ˘ б ᐯ ѕм ғɪ ă ˜ ˘ ᵀ a¸ mac ѕм ғɪ

⅃ Â ˘ ɣ inactive ˘ ⅃ Л℧ show ipv6 neighbor static ђu ҳ Â

G **clear ipv6 neighbors** ђu ҳ ╟ ᵎ (NDP) Â

G **show ipv6 neighbors** ђu ҳ ə Â

ѡ R

```
Ruijie(conifg)# ipv6 neighbor 2001::1 vlan 1 00d0.f811.1111
```

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ђu ҳ	
show ipv6 neighbors	ə
clear ipv6 neighbors	╟ ᵎ

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ns-linklocal-srcľ˘ ϟ a ⁸ G ѕѫ ѕѫ ƭƒϕ Ɔ Ӄ ѕѫ ƭƒϕ˘ IPv6
ѕѫ ƭƒϕ RFC3484 G ѕѫ ѕѫ ƭƒϕ ѽ ´ ѕѫ ƭƒϕ Â

ipv6 ns-linklocal-src

no ipv6 ns-linklocal-src

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ħυ ϗ	ѽ Â
G	
ѡ R	Ruijie(config)# **no ipv6 ns-linklocal-src**

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26.1.11 ipv6 route

ħυ ϗ IPV6 ˘ G ħυ ϗ no ĩ Â

ipv6 route *ipv6-prefix*/*prefix-length* {*ipv6-address* | *interface-id* [*ipv6-address*]}

no ipv6 route *ipv6-prefix*/*prefix-length* {*ipv6-address* | *interface-id* [*ipv6-address*]}

ϟ *MËBÒÄ*	ϟ	
	ipv6-prefix	IPV6 Ѵ˘ RFC4291 ѕѫ ƭƒϕ Â

ipv6-address	ĵ ЮУ ѕѕ RFC4291 ѕѕ ÂЮУ ѕѕ ЛЏЮУ ѕѕ Л Â ЮУ ѕѕ ѕѕ ѕѕ ѫ Л Â
interface-id	ĵ Л è Θ Θ ѫ Л ЮУ ѕѕ ѫ Ù ѕѕ Л Э . Ɔ Â ЮУ ѕѕ ѕѕѕѕ ѫ Л Â

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	ѕѕ	ЮУ ѕѕ	ѕѕѕѕ	ѫ	
	Л	3 ѕѕ	ѕѕѕѕ	ЮУ	≠
~	ѕѕ Â	ѕѕ	ѕѕ ЮУ ѕѕ a ĭ		ѕѕ
	ЮУ	Ո Л	ѫ	ѫЮУ	٦
	Л	Ո	Л У	Â	

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```
Ruijie(config)# ipv6 route 2001::/64 vlan 1 2005::1
```

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show ipv6 route	IPV6 ə

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26.1.12 ipv6 source-route

G ђu ҙ G ٦ IPv6 ˘ G ђu ҙ no ٦
IPv6 Â

ipv6 source-route

no ipv6 source-route

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ل IPv6 Â

Ђu ҙ ŏ Â

G ج ى ص 0 ŏ ' G ل ـ ˘ Лu جھ ą Ю
ل IPv6 ˘ т Ў فڈسھ ص 0
IPv6 Â

w R Ruijie(conifg)# **no ipv6 source-route**

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26.2

26.2.1 clear ipv6 neighbors

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clrear ipv6 neighbors

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RGOS10.4	ħυ ҳ ÿ RGOS10.4 Â

26.2.3 show ipv6 interface

IPV6 ∧ ə Â

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

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∧	*interface-id*	∧^ ↑ Ո ∧ à aggregateport ∧ à SVI ∧~
	ra-info	∧ Ɔ˜Ω ¥ ∢ RA ∧ ə Â

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G ħυ ҳ ∢Ո IPV6 ∧ Ɔ ﻓﺬﺳﻪ à ND Ո ∢ ˜Ω ə Â

```
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):
ff01:1::1
ff02:1::1
ff02:1::2
ff02:1::1:ff00:1
MTU is 1500 bytes
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
```

W R

```
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
```

æ¸ Э è ⅄ Л∪ ⍭ INET6: 2001::1 , subnet is 2001::/64

[TENTATIVE] У ˘ ℨΩ ɣ' INET6 ѫ ѣ ⅄ [] ⍰ Æ Ũ ⅎ Ю

ANYCAST	ѫ ѣ И ѫ ѣ Â
TENTATIVE	æ¸ И ѫ ѣ ѫ ѣ ă (DAD)˘ ѫ ѣ Э ї ѫ ѣ Â
DUPLICATED	ѫ ѣ ⍭ ѫ ѣ æ¸ Â
DEPRECATED	ѫ ѣ ⍭ ⍵˘ ѫ ѣ ⅄ И a G ѫ ѣ ⍵ Â
NODAD	a ѫ ѣ ѫ ѣ ă Â
AUTOIFID	ѫ ѣ ∧ ╟ ˘ EUI-64 Â
PRE	╟ ѫ ѣ Â
GEN	ɱ ѫ ѣ Â

```
Ruijie# show ipv6 interface vlan 1 ra-info
vlan 1: DOWN
RA timer is stopped
waits: 0, initcount: 3
statistics: RA(out/in/inconsistent): 4/0/0, RS(input): 0
Link-layer address: 00:00:00:00:00:01
Physical MTU: 1500
ND router advertisements live for 1800 seconds
ND router advertisements are sent every 200 seconds<240--160>
Flags: !M!O, Adv MTU: 1500
ND advertised reachable time is 0 milliseconds
ND advertised retransmit time is 0 milliseconds
ND advertised CurHopLimit is 64
Prefixes: (total: 1)
fec0:1:1:1::/64(Def,Auto,vltime:2592000,pltime:604800, flags: LA)
```

ℨΩ ɣ **ra-info** **ăЙD ў ра-hр Ráўbо ИЁ** ă õ = ľ

waits	↑ Ы Л й è э Â
initcount	RA Ы ŭ ╟ ┐ ч Ы Ѽ э Â
RA(out/in/inconsistent)	Outґ ч Ы Ѽ э Â inґ ↑ Ы Ѽ э Â inconsistentґ ↑ Ы Ѽ è Ո Ы Ѽ ч a У э Â
RS(input)	↑ Ы э Â
Link-layer address	ч فخ سم Â
Physical MTU	ч MTU Â
!M | M	!M Ы Ѽ è Â managed-config-flag Æ Э Â M: б Э ч Â
!O | O	!O Ы Ѽ è Â other-config-flag Æ Э Â Oґ б Э ч Â

Ѽ ұ ra-info è ґ (Prefix) л э ӯ '

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26.2.4 show ipv6 neighbors

IPV6 Â

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

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verbose	ə
interface-id	ə ᴎ Э
ipv6-addres	ə
static	

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```
Ruijie# show ipv6 neighbors vlan 1
IPv6 Address Linklayer Addr   Interface
fa::1        00d0.0000.0002   vlan 1
fe80::200:ff:fe00:2  00d0.0000.0002  vlan 1
```

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```
Ruijie# show ipv6 neighbors verbose
IPv6 Address  Linklayer Addr Interface
2001::1      00d0.f800.0001 vlan 1
       State: Reach/H Age: - asked: 0
fe80::200:ff:fe00:1    00d0.f800.0001 vlan 1
       State: Reach/H Age: - asked: 0
```

IPv6 Address	IPV6 فذ سه

Linklayer Addr	Mac incomplete
Interface	
State	state/H(R) STATE INCMP(Incomplete)— (NS) (NA) Â REACH(Reachable) — a ɔ Â STALE — a (Neighbor Unreachability Detection) Â DELAY— STALE DELAY_FIRST_PROBE_TIME seconds(5) DELAY (NS) PROBE— RetransTimer milliseconds (NS) MAX_UNICAST_SOLICIT(3) ?— /R— /H—
Age	’-‘ ’expired’ Â
Asked	

IPv6 Address	IPV6 ѳѫ
Linklayer Addr	ѳѫ Mac ѳѫ
Interface	ѫ ∧
State	STATE ḣ Ю' ACTIVE— ╟ INACTIVE— a ╟ ˘ IPV6 ѳѫ ѫ˘ б ∧ Э ѳѫ a ҵ ^ a ѫ˙ У ∧ ѳѫ ѫ ӷ˘ б ∧ ѳѫ ѫ ӑ ~ ˘ a ╟˘ . ↑ a˛ mac ѳѫ ↓ Â

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ipv6 neighbor	

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26.2.5 show ipv6 route

IPV6 ə Â

show ipv6 route [**static**] [**local**] [**connected**]

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static	
local	ѳѫ
connected	

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```
Ruijie# show ipv6 route
Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP
       I1 - ISIS L1, I2 - ISIS L2, IA - IIS interarea
L    ::1/128
      via ::1, loopback 0
C    fa::/64
      via ::, vlan 1
L    fa::1/128
      via ::, loopback 0
C    2001::/64
      via ::, vlan 2
L    2001::1/128
      via ::, loopback 0
L    fe80::/10
      via ::1, Null0
C    fe80::/64
      via ::, vlan 1
L    fe80::200:ff:fe00:1/128
      via ::, loopback 0
C    fe80::/64
      via ::, vlan 2
```

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	ipv6 route	

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26.2.6 show ipv6 router

IPv6 è˘ У҉ Ы˳ ˩ Ωˆ Â ҉ Ы∩ Ωˆ ə҂
˘ G show ipv6 router ħu ҳ Â è Ю'

show ipv6 router *[interface-type interface-number]*

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27 MLD Snooping

27.1

27.1.1 ipv6 mld profile

MLD profile ɣ ⁸ У " Ɬ Â ώ profile ˘ ″I ڃ ώ Ю У э profile Â ħυ ϗ ħυ ϗ˘ profile-numberў ώ mld profile Â

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	10.4	У ώ

27.1.3 deny

ৰ profile تن ˘ profile Ю ћu ҷ deny Â

deny

ৰ	

profile deny ɔ Â

ћu ҷ profile Â

G ″I ج profile Ю G range ћu ҷ تن Â

Ю … У ə ৰ FF77::100 profile R :

```
Ruijie(config)# ipv6 mld profile 1
Ruijie(config-profile)# range FF77::100
Ruijie(config-profile)# deny
```

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ћu ҷ	
ipv6 mld profile	… У ə profile
range	تن فخ سم
permit	profile ѝ ѝ permit

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/ৰ	
10.4	У ώ

27.1.4 permit

ї profile تن ˘ profile Ю ћu ҷ permit Â

permit

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ħυ ϩ ώ

G ѫ Ю˝ ѧ VLAN тц Â ў ѵ б ұ ѧ У э VLAN ѵ ' Ӈ ѫ ˆ ˙ ¡ У э VLAN ˘ ѵ ѧ VLAN ą˚ ˝ ѵ ѵ Â

ѡ R Ю R ѫ Э mld snooping ivgl '

```
Ruijie(config)# ipv6 mld snooping ivgl
```

ЋΩħυ ϩ

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ipv6 mld snooping svgl	mld snooping svgl
ipv6 mld snooping ivgl-svgl	mld snooping ѧ

ѧ

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10.4	У ώ

27.1.6 ipv6 mld snooping dyn-mr-aging-time

ipv6 mld snooping dyn-mr-aging-time *time* ╟ ѵ ѵ ѵ˘ **no ipv6 mld snooping dyn-mr-aging-time** ḣ Â

ipv6 mld snooping dyn-mr-aging-time *time*

no ipv6 mld snooping dyn-mr-aging-time

ѵ

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time	╟ ѵ ѵ ˘ ѵ ḣ ẏ 1-3600˝ ´ Æ ẏ

300s Â

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G ╟ ѵ ѫ è ѵ ɱ ¡ MLD IPv6 PIM Hello ˘ Ӈ ѵ ÿ ѵ " è¶ Â

ѡ R Ю R ╟ ѵ ѵ ẏ 500s˙

Ruijie(config)# **ipv6 mld snooping dyn-mr-aging-time** *500*

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/

/I	

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	10.4	У ώ

27.1.8 ipv6 mld snooping vlan

ipv6 mld snooping vlan *vid* vlan ὖ ╟ mld snooping ╖ ˘ **no ipv6 mld snooping vlan** *vid* ΄Ω vlan mld snooping ╖ Â

ipv6 mld snooping vlan *vid*

no ipv6 mld snooping vlan *vid*

ϡ	ϡ	
	vid	vlan id ϱ˘ ϻ ἡ ἰ 1-4094

ѫ ὦ ὖ ╟ mld snooping Ą˘ vlan ὖ ╟ mld snooping Â

ħυ ϛ ὦ

G ѫ ὦ ὖ ╟ mld snooping Ą˘ vlan ὖ ╟ mld snooping ' ϻ Ո vlan ΄Ω mld snooping ╖ Â

ѡ R ЮO R ΄Ω VLAN 1 mld snooping ╖ '

```
Ruijie(config)# no ipv6 mld snooping vlan 1
```

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ħυ ϛ ϒ ϻ	ϻ	
	10.4	У ώ

27.1.9 ipv6 mld snooping vlan mrouter learn

Ꮋ ╟ ш ŭ MLD query PIM ˇ Ʌυ ╟ ⁞ ʌˇ
ŏ ħυ ϛ **ipv6 mld snooping vlan mrouter learn** Â ħυ ϛ no ↓
╟ ˉ Â

ipv6 mld snooping vlan *vid* **mrouter learn**

no ipv6 mld snooping vlan *vid* **mrouter learn**

ʌ	
vid	vlan id ʌˇ ↓ ḣ ẏ 1-4094

ℸ ˜Ω

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ʌ б è ʌ Â ą Ю˘ ų У э
VLAN a ḥ ɨ ă ą ₅ з ˌ

G

ipv6 mld snooping vlan *vid* **mrouter interface** *interface-id*

vid	vlan id ʌ˘ ˩ ћ и 1-4094
ipv6-multiaddr	ƒѓ ѕѫ
interface-id	ʌ ʌ

ћυ ϗ ώ

G ˩ Лυ и ʌ и э ƒѓ ѕѫ ˜ ʌ Â

Ю R ج У э ʌ Э и FF88::1 ˜ ʌ'

w R

```
Ruijie(config)# ipv6 mld snooping vlan 1 static FF88::1 interface
fastEthernet 0/1
```

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ћυ ϗ	
ipv6 mld snooping vlan mrouter interface	ʌ

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ћυ ϗ ˥ ˩

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10.4	У ώ

27.1.12 ipv6 mld snooping fast-leave enable

mld snooping fast-leaveˇ ώ ћυ ϗ **ipv6 mld snooping fast-leave enable** Â ћυ ϗ no ˇΩ mld snooping fast-leave Â

ipv6 mld snooping fast-leave enable

no ipv6 mld snooping fast-leave enable

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ћυ ϗ ώ

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ʌ Ђ ÿ ʌ ĺ ў ч IPv6 MLD
˘ ʌ ÿ ч ʌ " è╕ Â ʌ˘ Ђ ĺ
IPv6 MLD ˘ Ђ a ¨Ą ɹ ʌ ч Â ѫ Ђ Э˘
ʌ Ю ʌ У э ˘ ‡ ɹ Л∪ G ʌ ╖ Л∪ Ո Â

ш R

Ю R ѫ Э mld snooping fast-leave╜

```
Ruijie(config)# ipv6 mld snooping fast-leave
```

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10.4	У ώ

27.1.13 ipv6 mld snooping suppression enable

mld snooping suppression˘ ώ ћu ҳ **ipv6 mld snooping suppression enable** Â ћu ҳ no Ўѿ mld snooping suppression Â

ipv6 mld snooping suppression enable

no ipv6 mld snooping suppression enable

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G ѭ MLD ˜ Ўѿ ˆ ⁸ ╖ ʌ˘ ѫ У э ѽ γ ч˳ ĺ
IPv6 ѽ У э MLD ˜ Ўѿ ˆ ч Ь ˘ a ɹ Ь
ч ɹ У è MLD ˜ Ўѿ ˆ ˘ ɹ Л∪ ˝ è
Â

ѭ ћu ҳ ʌ˘ suppression ╖ ŭ ╟˘ Ђ ˳ MLD v1 report ⁸˘
Л a˳ MLD v2 report ⁸ Â

ш R

Ю R ѫ Э mld snooping suppression╜

Ruijie(config)# **ipv6 mld snooping suppression**

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10.4	У ώ

27.1.14 ipv6 mld snooping filter

э ∧ ∧ У ˘ ћ ∧ Ю ћu ъ ˜Ω
profile Â ћu ъ no ˝ ˜Ω profile Â

ipv6 mld snooping filter *profile-number*

no ipv6 mld snooping filter *profile-number*

∧	
profile-num	profile /I

ћu ъ ∧

G ∧ЛU У э MLD Profile ћ У э ∧Ю˘ ∧ ˛ MLD Report ˘ ‡ Y э ∧ ╗ ώ ффѕ ї ћ MLD Profile ї ѕт Ѯ ф Â ˘ ‡ ї ╗ ώ˘ Ѯ л л Â ″I … profile˘ л filter ˜Ω Â

Ю R ћ ″I ∧ 0/1 Э˜Ω profile 1'

w R
```
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ipv6 mld snooping filter 1
```

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ipv6 mld profile	… У э profile

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	10.4	У ώ

clear ipv6 mld snooping gda-table

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w R	╟ ⁻ ˩ ə ̨ '

```
Ruijie# clear ipv6 mld snooping gda-table
```

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	10.4	У ώ

27.1.17 debug mld-snp

mld ⊨ ˜Ω, ħu ɝ **debug mld-snp** ħu ɝ Â

debug mld-snp

undebug mld-snp

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G	mld ⊨ ˜Ω Â

w R	mld ⊨ ˜Ω'

Ruijie# **debug mld-snp**

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ħu ɜ ˥ ˩	/ˀ	
	10.4	У ώ

27.2

27.2.1 show ipv6 mld snooping

mld snooping ˜Ω ə Â

Show ipv6 mld snooping [**gda-table** | **interfaces** | **mrouter**| **statistics** [**vlan** *vlan-id*]]

˄ˀ		
˄ˀ		mld snooping ˥
	gda-table	˩ ‡
	interfaces	mld snooping Filtering
	mrouter	˄ə Â
	statistics [**vlan** *vlan-id*]	snooping ə

ħu ɜ Â

G mld snooping ˜Ω ə

R 1' G **show ipv6 mld snooping** ħu ɜ mld snooping ə '

```
Ruijie# show ipv6 mld snooping
MLD-snooping mode      : IVGL
SVGL vlan-id           : 1
SVGL profile number    : 0
Source check port      : Disabled
```

```
Query max respone time : 10(Seconds)Â
```

R 2' G **show ipv6 mld snooping statistics** ħu ɮ mld snooping ʌ ə '

```
Ruijie# show ipv6 mld snooping statistics
GROUP    Interface    Last report       Last leave     Last
                        time          time         reporter
--------------- ------------ ------------- -------------   -
FF88::1 VL1:Gi4/2   0d:0h:0m:7s     ----     2003::1111
                       Report pkts: 1          Leave pkts: 0
```

R 3' G **show ipv6 mld snooping mrouter** ħu ɮ mld snooping ʌ ə '

```
Ruijie# show ipv6 mld snooping mrouter
Vlan   Interface       State     MLD profile number
----     --------         -------     -------------------
1   GigabitEthernet 0/7   static       1
1   GigabitEthernet 0/12  dynamic      0
```

R 4' G **show ipv6 mld snooping gda-table** GDA ʌ ə Ո ʌ y ə ˜ ʌ ə '

```
Ruijie# show ipv6 mld snooping gda-table
Abbr: M - mrouter
     D - dynamic
     S - static
VLAN  Address            Member ports
-------------------------------------------------------------
1      FF88::1          GigabitEthernet 0/7(S)
```

R 5' G show ipv6 mld snooping interface mld snooping Filtering '

```
Ruijie# show ipv6 mld snooping interface GigabitEthernet 0/7
Interface         Filter Profile number     max-groups
----------       ----------------------    -----------
GigabitEthernet 0/7          1              4294967294
```

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10.4	У ώ

27.2.2 show ipv6 mld profile

MLD profile ˜Ω ə Â

show ipv6 mld profile [*profile-number*]

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	profile ə
profile-number	profile ə

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G mld profile ˜Ω ə

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```
R 1' G show ipv6 mld profile ħu ҳ MLD profile ə '
Ruijie# show ipv6 mld profile 1
MLD Profile 1
permit
range FF77::1 FF77::100
range FF88::123
```

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10.4	У ώ

28

28.1

28.1.1 strom-control

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storm-control {**broadcast** | **multicast** | **unicast**} [{**level** *percent* | **pps** *packets* | *rate-bps*}]

no storm-control {**broadcast** | **multicast** | **unicast**} [{**level** *percent* | **pps** *packets* | *rate-bps*}]

∧	
broadcast	⁸ ╖ Â
multicast	⅄ ⁸ ╖ Â
unicast	⅄ ´ ⁸ ╖ Â
percent	Л∪ ǂ 20 20%
packets	Л∪ pps ѝ ´ Æ . packets per second
Rate-bps	ï Â
64k-2M	Л∪ 64k ѝ ´ Æ Â
2-100M	Л∪ 1M ѝ ´ Æ Â 187.1 0. 20.1 ref296.7 92 Tw 11 1M B

Ю R ¢ ^ GigabitEthernet 1/1 Э ⁸ ℸ ˘ 3
ї ѝ 4M Â

W R

```
Ruijie# configure terminal
Ruijie(config)# interface GigabitEthernet 1/1
Ruijie(config-if)# storm-control multicast 4096
Ruijie(config-if)# end
```

19.62 rW* n0.8.796g0 1 Tf0 Tc 2 Tr( )Tj0.02 0 0 10.02 78.36 702.98803 Tm767213542>Tj/TT0 1 Tf11T

∧

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28.1.3 switchport port-security

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ŏ R ḣ Â

switchport port-security [**violation** {**protect** | **restrict** | **shutdown**}]

no switchport port-security [**violation**]

	show port-security	∧ ѽ ҕ Ո ѽѫ ƒ Â

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Ъυ ҂	
switchport port-security	∧ ѿ
switchport port-security binding interface	Ю ѿ ѕ ф ѕ ѫ
Switchport port-security mac-address	ѿ ѕ ф ѕ ѫ
switchport port-security aging	∧ ѿ ѕ ф ѕ ѫ ∨
show port-security	∧ ѿ ə ҷ

∧

Ъυ ҂ ˥ ∧

∧	
-	-

28.1.6 switchport port-security binding interface

Ю ѿ ѕ ф ѕ ѫ ˘ ˩ Л υ ѿ ѕ ф ѕ ѫ IP+ MAC Θ IP ˘
ƺ ∧˘ ∧ ѿ ѕ ф ѕ ѫ ˩ Л υ ώ Ӌ ˘ a ∧ x
Â ᴳ no ˩˺ ѕ ѫ ф '

[**no**] **switchport port-security binding interface** i*nterface-id mac-address* **vlan** *vlan_id ipv4-address* | *ipv6-address*

[**no**] **switchport port-security binding interface** i*nterface-id ipv4-address* | *ipv6-address*

∧

∧	
i*nterface-id*	∧ ID
mac-address	MAC ѕ ф ѫ
Vlan_id	MAC VID
Ipv4-address	Ipv4 Ip ѕ ф ѫ
Ipv6-address	Ipv6 Ip ѕ ф ѫ

Ъυ ҂

ᴳ

w ᴿ

ᴿ 1' 192.168.1.100⁾ ∧ 10'

Ruijie(config)# **switchport port-security binding interface** *g0/10 192.168.1.100*

ᴿ 2' 192.168.1.100 MAC ѫ 00d0.f800.5555, VID= 1 ⁾ ∧ 10'

Ruijie(config)# **switchport port-security binding interface** *g0/10 00d0.f800.5555* **vlan** *1 192.168.1.100*

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Ъ ҳ	
switchport port-security	∧ ѽ
switchport port-security binding	∧ Ю ѽ ф
Switchport port-security mac-address	ѽ ф
switchport port-security aging	∧ ѽ ф ∨
show port-security	∧ ѽ ҽ

∧

∧

R 1' TRUNK ٨ 10 ڈ ڧ ڧ

W R

R 1' TRUNK ٨ 10 ڈ فخ سه 00d0.f800.5555 VID=2'

w R Ruijie(config)# **switchport port-security interface g0/10 mac-address** *00d0.f800.5555* **vlan** *2*

Interface Broadcast Control Multicast Control Unicast Control
---------- ---------- ---------- ----------
Gi1/1 Disabled Disabled Disabled

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storm-control	^ ⁸ ЎΩ Â

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28.2.2 show port-security

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show port-security [**address**] [**interface** *interface-id*] [**all**]

^

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address	ѽѫ ˇ ƒ ^ ѽ ѫ ƒ Â
interface *interface-id*	^ ^ ѽ ə Â
all	^ ^ ѽ ə Â

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G Ъu ҷ a ╗ ^ ˇ ‡ ^ ѽ à R ə ˇ ˩ ѽѫ ƒ ə Â

w R

```
Ruijie# show port-security
Secure  Port  MaxSecureAddr(count)  CurrentAddr(count)  Security
Action
--------  -------------  -----------  -----------
Gi1/1 128 1 Restrict
Gi1/2 128 0 Restrict
Gi1/3 8 1 Protect
```

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switchport port-security	∧ ѿ ╖ ˘ ∧ ѿ R Â
switchport port-security aging	ѝ У э ∧ Э ѿ ѩ ѕ ѫ у Â
switchport port-security mac-address	∧ ѿ ѩ ѕ ѫ Â

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29 802.1X

29.1 dot1x

29.1.1 dot1x auto-req

802.1X ў ╠ ╥ ˘ ѽ ћυ ϛ **dot1x auto-req** Â ћυ ϛ **no** ↓ ў ╠ ╥ Â

[**no**] **dot1x auto-req**

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29.1.3 dot1x auto-req req-interval

ў ╟ ϟ ˘ **no** ѝ ḣ

dot1x auto-req req-interval *interval*

no dot1x auto-req req-interval

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	interval	ў ╟ ϟ ˘ ´ Æ s
	30	
ħυ ϡ	ѽ Â	
G	ў ╟ ϟ ˘ ϟ Л∪ G **show dot1x auto-req** ħυ ϡ ℸ Â	

Ю ϟ 802.1x ѝ 60s R '

```
Ruijie# configure terminal
Ruijie(config)# dot1x auto-req req-interval 60
Ruijie(config)# end
Ruijie# show dot1x auto-req
Auto-Req: Enabled
User-Detect : Enabled
Packet-Num  : 0
Req-Interval: 60 Second
```

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	show dot1x auto-req	ў ╟ ə ϥ Â

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29.1.4 dot1x auto-req user-detect

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dot1x auto-req user-detect

no dot1x auto-req user-detect

29.2.1 dot1x timeout quiet-period

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~ Â G ђυ ҳ **no** ѝ ђ Â

dot1x timeout quiet-period *seconds*

no dot1x timeout quiet-period

ʌ		
ʌ	*seconds*	Ҕ ҷ ʌĵ ĭ Â ђ ښ 0 ĵ 65535 Â ´ Æ s

ђ 10 Â

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	show dot1x	802.1x ə¸ Â

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29.2.2 dot1x timeout re-authperiod

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 Â G ħυ ϗ **no** ϧ ḣ Â

dot1x timeout re-authperiod *seconds*

no dot1x timeout re-authperiod

ϟ	ϟ	
	seconds	Â ḣ تن 0 ⁞ 65535 Â´ Æ s Â

	3600
ħυ ϗ	ώ Â
G	ϡ Ͻυ G **show dot1x** ħυ ϗ 802.1x Â

Ю ϧ 1000s'

```
Ruijie# configure terminal
Ruijie(config)# dot1x timeout re-authperiod 1000
Ruijie(config)# end
Ruijie# show dot1x
802.1X Status:       Enabled
Authentication Mode:  EAP-MD5
Authed User Number:   0
Re-authen Enabled:    Disabled
Re-authen Period:     1000 sec
Quiet Timer Period:   1000 sec
Tx Timer Period:      3 sec
```

w R

```
Supplicant Timeout:   3 sec
Server Timeout:      5 sec
Re-authen Max:       3 times
Maximum 2Request:     3 times
Filter Non-RG Supp:   Disabled
Client Oline Probe:   Disabled
Eapol Tag Enable:    Disabled
Authorization Mode:   Group Server
```

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show dot1x	802.1x ə

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29.2.3 dot1x timeout server-timeout

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dot1x timeout server-timeout *seconds*

no dot1x timeout server-timeout

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seconds	Ո Ь ʑ Ӌ ц ˘ ћ ѧ 0 ʃ 65535 Â

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```
Ruijie(config)# dot1x timeout server-timeout 10
Ruijie(config)# end
Ruijie# show dot1x
802.1X Status:       Enabled
Authentication Mode:  EAP-MD5
Authed User Number:   0
Re-authen Enabled:    Disabled
Re-authen Period:     1000 sec
Quiet Timer Period:   1000 sec
Tx Timer Period:      3 sec
Supplicant Timeout:   3 sec
Server Timeout:       10 sec
Re-authen Max:        3 times
Maximum Request:      3 times
Filter Non-RG Supp:   Disabled
Client Oline Probe:   Disabled
Eapol Tag Enable:     Disabled
Authorization Mode:   Group Server
```

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show dot1x	802.1x ə

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29.2.4 dot1x timeout supp-timeout

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dot1x timeout supp-timeout *seconds*

no dot1x timeout supp-timeout

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seconds	Ո ϧ Ӌ ц ˘ ḣ ت 0ϳ 65535 Â

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	show dot1x	802.1x ə¸ Â

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29.3 dot1x

29.3.1 dot1x re-authentication

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[**no**] **dot1x re-authentication**

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ƫυ ȝ	ŏ Â
ᴳ	ɷ ƫυ ȝ˘ ‡ ˄˘ ʏ ˄ Â ˩ȻƱᴳ **show dot1x** ƫυ ȝ 802.1x Â

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```
Ruijie# configure terminal
Ruijie(config)# dot1x re-authentication
Ruijie(config)# end
Ruijie# show dot1x
ᴡᴿ  802.1X Status:       Enabled
Authentication Mode:  EAP-MD5
Authed User Number:   0
Re-authen Enabled:    Enabled
Re-authen Period:     1000 sec
Quiet Timer Period:   1000 sec
```

```
Tx Timer Period:      10 sec
Supplicant Timeout:   10 sec
Server Timeout:       10 sec
Re-authen Max:        3 times
Maximum Request:      3 times
Filter Non-RG Supp:   Disabled
Client Oline Probe:   Disabled
Eapol Tag Enable:     Disabled
Authorization Mode:   Group Server
```

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show dot1x	802.1x ə Â

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```
Ruijie(config)# end
Ruijie# show dot1x
802.1X Status:       Enabled
Authentication Mode:  EAP-MD5
Authed User Number:   0
Re-authen Enabled:    Enabled
Re-authen Period:     1000 sec
Quiet Timer Period:   1000 sec
Tx Timer Period:      10 sec
Supplicant Timeout:   10 sec
Server Timeout:       10 sec
Re-authen Max:        5 times
Maximum Request:      3 times
Filter Non-RG Supp:   Disabled
Client Oline Probe:   Disabled
Eapol Tag Enable:     Disabled
Authorization Mode:   Group Server
```

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show dot1x	802.1x ə Â

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29.4 dot1x

29.4.1 dot1x probe-timer

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dot1x probe-timer{**interval** | **alive**}*interval*

no dot1x probe-timer

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no	ḣ

interval	hello
alive	ح
interval	ﻝ ḥ

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```
Ruijie# configure terminal
Ruijie(config)# dot1x client-probe enable
Ruijie(config)# end
Ruijie# show dot1x
802.1X Status:       Enabled
Authentication Mode:  EAP-MD5
Authed User Number:   0
Client Oline Probe:   Enabled
Eapol Tag Enable:     Disabled
Authorization Mode:   Group Server
```

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show dot1x	dot1x Â

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29.5.1 dot1x authentication

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" Â ħu ϡ **no** ̄ " Â

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

no dot1x authentication {**default** | *list-name*}

٩		
٩	**default**	" ل Â
	list-name	ل " ل Â

AAA ̆ ‡ G AAA Ь Â

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G ŭ AAA ŏ Ь̆ ‡ ħu ϡ ¥ dot1x G 8 " Â

ӇӦ R ѧ ٨ Ǝ ΎΩ " group radius Â

```
Ruijie# configure terminal
Ruijie(config)# aaa new-model
Ruijie(config)# aaa authentication dot1x default group radius
Ruijie(config)# interface fastEthernet0/1
Ruijie(config-if)# dot1x authentication default
Ruijie(config-if)# end
```

ΎΩħu ϡ

ħu ϡ	
aaa new-model	G AAA ŏ Ь
aaa authentication dot1x	"

ل

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ћu ҙ 802.1X ї фѕѫ Â G ћu ҙ **no** ї ل фѕѫ Â

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

no dot1x auth-address-table address *mac-addr* **interface** *interface*

٩	
mac-addr	ل фѕѫ Â
Interface	٩ ٨ Â

ḣ ˙ ị ل фѕѫ Â

ћu ҙ ѿ Â

G ٩ ج фѕѫ è фѕѫ ї G 802.1X Â G **show dot1x auth-address table** ћu ҙ фѕѫ Â

Ю R ج ٩ Э ╗ фѕѫ Â

```
Ruijie# configure terminal
Ruijie(config)# dot1x auth-address-table address
```

w R

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num	ώ VLAN , تن 1-3

3

ħυ ϛ ώ Â

G ┘Ʌυ G **show dot1x** ħυ ϛ Â

Ю ώ VLAN R '

```
Ruijie# configure terminal
Ruijie(config)# dot1x auth-fail max-attempt E9Bù
```

ѡ R

G ↲ Л υ G **show dot1x interface** ħυ ҳ Â

ЮO 802.1x vlan R '

```
Ruijie# configure terminal
Ruijie(config)# interface fa 0/1
Ruijie(config-if)# dot1x auth-fail vlan 2
Ruijie(config-if)# end
Ruijie#write
```

ħυ ҳ	
show dot1x interface	∧ 802.1x ə ę Â

/\	
10.3(5)	ħυ ҳ ώ

29.5.5 dot1x auth-mode

802.1x Â

dot1x auth-mode {**eap-md5** | **chap** | **pap**}

no dot1x auth-mode

∧		
eap-md5	802.1x	EAP-MD5 Â
chap	802.1x	CHAP Â
pap	802.1x	PAP Â

EAP-MD5

ħυ ҳ ώ Â

G ↲ Л υ G **show dot1x** ħυ ҳ 802.1x Â

W R ЮO 802.1x R '

```
Ruijie# configure terminal
Ruijie(config)# dot1x auth-mode chap
Ruijie(config)# end
Ruijie#
```

ʺΩħu ɜ

ħu ɜ	
show dot1x	802.1x ə Â

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29.5.6 dot1x default

802.1x ʃ ʅ ħ Â

dot1x default

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ħu ɜ ŏ Â

G ɻ ɅU G **show dot1x** ħu ɜ 802.1x Â

w R ЮO 802.1x ʅ R '

```
Ruijie# configure terminal
Ruijie(config)# dot1x default
Ruijie(config)# end
Ruijie# end
```

ʺΩħu ɜ

ħu ɜ	
show dot1x	802.1x ə Â

ɻ

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	ϻ	
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29.5.7 dot1x dynamic-vlan enable

ĭ ĭ ╟ vlan Â G ħυ ϗ **no** ϟ ΠυΎΩ ΎΩ Â

dot1x dynamic-vlan enable

no dot1x dynamic-vlan enable

ϻ		
	ϻ	
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	ΎΩ ϧ ΎΩ

ħυ ϗ	ώ

G	ϟ Πυ G **show dot1x dynamic-vlan** ħυ ϗ 802.1x Â

w R	Ю 802.1x ╟ vlan R ' Ruijie# **configure terminal** Ruijie(config)# **dot1x dynamic-vlan enable** Ruijie(config)# **end** Ruijie#

ΎΩħυ ϗ		
	ħυ ϗ	
	show dot1x	802.1x ə Â

ϟ

ħυ ϗ ϒ ϟ		
	ϻ	
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29.5.8 dot1x guest-vlan

ĭ ĭ **guest vlan** Â G ħυ ϗ **no** ϟ ΠυΎΩ ΎΩ Â

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ΐΩ ϋ ΐΩ

ħυ ϡ ώ Â

G ┘Л υ G **show dot1x** ħυ ϡ 802.1x Â

Ю 802.1X tag R '

```
Ruijie# configure terminal
Ruijie(config)# dot1x eapol-tag
Ruijie(config)# end
Ruijie#
```

ΐΩħυ ϡ

ħυ ϡ	
show dot1x	802.1x ə Â

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ħυ ϡ ϒ ┙

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29.5.10 dot1x mac-auth-bypass

MAC Â

dot1x mac-auth-bypass

no dot1x mac-auth-bypass

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^I	

a MAC

ħυ ϡ ^I Â

ẅ ᴿ

ƗO 802.1x MAC ᴿ '

```
Ruijie# configure terminal
Ruijie(config)# interface fa 0/1
Ruijie(config-if)# dot1x mac-auth-bypass
Ruijie(config-if)# end
Ruijie#write
```

ʺΩƫυ ҳ

ƫυ ҳ	
show dot1x port-control interface	ʌ 802.1x ə ̧ Â

ʌ

ƫυ ҳ ˥ ʌ

ʌ	
10.3(5)	ƫυ ҳ ώ

29.5.11 ph-b timeout-activity)

ЎΩЪu ҳ	Ъu ҳ	
	show dot1x port-control interface	∧ 802.1x ə¸ Â

∧

Ъu ҳ ˥ ∧	∕∧	
	10.3(5)	Ъu ҳ ώ

29.5.12 dot1x mac-auth-bypass violation

802.1x MAC ᴿ Â

dot1x mac-auth-bypass violation

no dot1x mac-auth-bypass violation

∧	∧	

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Ъu ҳ ∧ Â

G ⅃ Л∪ ᴳ **show run** Ъu ҳ 802.1x Â

ЮO 802.1x MAC ᴿ ᴿ '

```
Ruijie# configure terminal
Ruijie(config)# interface fa 0/1
Ruijie(config-if)# dot1x mac-auth-bypass violation
Ruijie(config-if)# end
Ruijie#write
```

ЎΩЪu ҳ	Ъu ҳ	
	show dot1x port-control interface	∧ 802.1x ə¸ Â

∧

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	10.3(5)	ħυ ϗ ώ

29.5.13 dot1x max-req

ѯ DOT1X Ո Ь Ы Ӈ ц è˘ DOT1X ѯ У ϑ ˛ Ь Ы ; ˘ ‡ DOT1X Ѧ ϟ Ь Ы ϟ Â G ħυ ϗ ϟ Ь Ы ї Â G ħυ ϗ **no** ĥ Â

dot1x max-req *count*

no dot1x max-req

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	count	ї Â

ĥ ŷ 3 Â

ħυ ϗ ő Â

G ϟ Л υ G **show dot1x** ħυ ϗ 802.1x Â

w R

Ю 802.1x · 7 R '

```
Ruijie# configure terminal
Ruijie(config)# dot1x max-req 7
Ruijie(config)# end
Ruijie#
```

˝Ωħυ ϗ	ħυ ϗ	
	show dot1x	802.1x ą Â

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29.5.14 dot1x private-supplicant-only

æ ŏ è˘ ĭ ˩ ˘ **no** ḣ Â

dot1x private-supplicant-only

no dot1x private-supplicant-only

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	a Â
ƕ ɂ	ŏ Â
G	˩ Ʌ ᴜ ᴳ **show dot1x private-supplicant-only** ƕ ɂ 802.1x Â
ᴡ ᴿ	Ю ˩ ᴳ ᴿ ' Ruijie# **configure t** Ruijie(config)# **dot1x private-supplicant-only** Ruijie(config)# **end** Ruijie#

ˇΩƕ ɂ		
	ƕ ɂ	
	show dot1x private-supplicant-only	ə Â

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29.5.15 dot1x port-control auto

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dot1x port-control auto

no dot1x port-control

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	∧ a ∧ ╗ 802.1x Â
Ъu ъ	∧
G	⌟ Л∪ G **show dot1x** Ъu ъ 802.1x Â
w R	Ю ∧ 802.1x ∧ б R ' Ruijie# **configure terminal** Ruijie(config)# **interface g***0/1* Ruijie(config-if)# **dot1x port-control auto** Ruijie(config-if)# **end** Ruijie#

Ъu ъ	
show dot1x	802.1x ęı Â

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Ъu ъ ⌝ ⌟	∧ ∧ Ю
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29.5.16 dot1x port-control-mode

802.1x 8 ąЮ ₥ ų MAC 8 ˘ ⌟ G
˘ ų è ы ₹ ⌟ У ∧ G ˘ ₥ ų ∧ 8 ⊣
У ∧ У э ˘ ∧ ⌟ ∧˘ ₹ ∧Ю
G Â ₥ ų ∧´ 8 ˘ ∧Ю ⌟ ї ´ У ˘
∧ ⌟ ∧˘ G Â ₹´ 8 Ю˘ ∧ ⌟ й
∧˘ ⌟ ∧ è ₹˘ ‡ ∧Ю ˘ Â
Ъu ъ Ю'

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

no dot1x port-control-mode

∧ ∧Ю

single-host	ѫ ɣ ʌ´ 802.1x ⁸

ѝ ѫ ɣ mac-based ⁸

ħu ɂ ʌ Â

G

ɻ Л υ G **show dot1x port-control** ħu ɂ ʌ 802.1x Â

ѧ s26 Ҕ Э˘ ѫ ɣ ʌ 802.1X Ո ѿ a ɻ ѧ ʌ ˘ ѿ ѿ ą Ю˘ ѫ ɣ ʌ 802.1X ʌ Э ѝ ѿ R ʌ Â single-host ѫ ɣ ʌ´ 802.1x ⁸˘ ѧ **show dot1x port-control** Э˛ ʌ ѝ port-based˘ ѧ **show running-config**˛ ѝ **dot1x port-control-mode port-based single-host** Â

single-host ɣ ʌ ´ У ˘ ╟ ʌ default-user-limit˘ ѧ single-host Â ѧ single-host ʌ˘ ʌ Ю default-user-limit˘ э single-host ˘ ʌ ʌ ï ´ У Э Â

w R

R 1' Ю ʌ 802.1x ʌ б R '

```
Ruijie(config)# interface g 0/1
Ruijie(config-if)# dot1x port-control auto
Ruijie(config-if)# dot1x port-control-mode port-based
Ruijie(config-if)# end
Ruijie#
```

R 2' Ю ʌ´ 802.1x R '

```
Ruijie(config)# interface g 0/1
Ruijie(config-if)# dot1x port-control auto
Ruijie(config-if)# dot1x port-control-mode port-based single-host
Ruijie(config-if)# end
Ruijie#
```

ˇΩħu ɂ

ħu ɂ	
show dot1x port-control	ʌ 802.1x ą Â
Show running-config	Ҕ ą Â

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29.5.17 dot1x stationarity enable

802.1x ѫ ѭ ұ ۷ ⁸ Ю ąЮ ╠ ┘Лu ѫ ⁄ ۷ ˘
ąЮ й ф a ÿ 802.1X ۷ ĺ è ы ۷ˇ ┘Лu ЛuЮћu ҷ ĺ
Â

dot1x stationarity enable

no dot1x stationarity enable

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	й ╠ ┘Лu ѫ ⁄ ۷ Â	
ћu ҷ	ѽ Â	
G	ѫ ⁄ћ ћu ҷˇ ĭ ‡ Â	
ѡ R	Ю ۷ 802.1x ۷ б R ' Ruijie# **configure terminal** Ruijie(config)# **dot1x stationarity enable** Ruijie(config)# **end** Ruijie#	
ˇΩћu ҷ	ћu ҷ	
	-	-
⁄		
ћu ҷ ˥ ⁄	⁄	
	-	-

29.5.18 dot1x redirect url

┘ ҂ˇ ѫ 802.1x ╗ ⁂ ⁄ˆ ˆ ~ ˘ G ⅄
˘ ˚ URL ┘ĺ URLˇ Лu http:// ˘ '
http://ruijie.net/webˇ ˘ ۷ http:// ˘ a https:// Â ۷ У э

ȷ ѫ ȥ˘ ˘ ȷ url ѫ ȥ ȟ ɱ url Â ᴳ no ȷ ȷ ᴳ ƫυ ȝ ī ȷ url'

dot1x redirect url [*url-string*]

[**no**] **dot1x redirect url**

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url-string	URL ѫ ȥ

ƫυ ȝ

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ᴿ 1' ȷ ȥ' ruijie.net/web'

```
Ruijie(config)# dot1x redirect url http://ruijie.net/web
```

ˇΩƫυ ȝ

ƫυ ȝ	
dot1x redirect for special tcp-destination port	٩ ѝ ٩˘ ip ѝ ȯ ip web ȷ
dot1x redirect time-out	ȷ
dot1x redirect num for special source-ip	ȷ У ə ï ȷ
show dot1x	dot1x ȷ ə

ȷ

ƫυ ȝ ˥ ȷ

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29.5.19 dot1x redirect for special tcp-destination port

٩ ѝ ٩˘ ip ѝ ȷ ip web ȷ˘ 80 à 8080 ٩ ˘ Ѧ 16 ə TCP ٩ ٨˘ no dot1x redirect for special tcp-destination port ī ȷ ٩ ٨˘ ȷ ╗ port_mum ٩ ‡ ī ٩ ٨'

[**no**] **dot1x redirect for special tcp-destination port** *port num*

٩	
port num	TCP ٨ ٨

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R 1' ɻ ϋ 5 '

```
Ruijie(config)# dot1x redirect time-out 5
```

ʗΩƫυ ϡ

ƫυ ϡ	
dot1x redirect url	ʌ ϋ ʌ˘ ip ϋ ȯ ip web ɻ
dot1x redirect for special tcp-destination port	ɻ
dot1x redirect num for special source-ip	ɻ У ə ĭ ɻ
show dot1x	dot1x ɻ ə

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ƫυ ϡ ˥ ʎ

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29.5.21 dot1x redirect num for special source-ip

ɻ У ə ĭ ɻ ˘ 1 ə˘ ɻ ت ϋ 1-10 ə Â G no ɻ Лυ G ƫυ ϡ ḣ'

dot1x redirect num for special source-ip *num*

no dot1x redirect num for special source-ip

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num	ɻ

1

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w R

R 1' ⅃ ϶' 3'

```
Ruijie(config)# dot1x redirect num for special source-ip 3
```

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dot1x redirect url	⅃ ƒ
dot1x redirect for special tcp-destination port	∧ ϶ ∧˘ ip ϶ ȯ ip web ⅃
dot1x redirect time-out	⅃
show dot1x	dot1x ⅃ ə

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29.6 dot1x

29.6.1 show dot1x

802.1x ə Â

show dot1x

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w R ЮO R '

```
Ruijie# show dot1x
802.1X Status:       Enabled
Authentication Mode:  EAP-MD5
Authed User Number:   0
Re-authen Enabled:    Disabled
Re-authen Period:     3600 sec
Quiet Timer Period:   10 sec
Tx Timer Period:      3 sec
Supplicant Timeout:   3 sec
Server Timeout:       5 sec
Re-authen Max:        3 times
Maximum Request:      3 times
Filter Non-RG Supp:   Disabled
Client Oline Probe:   Disabled
Eapol Tag Enable:     Disabled
Authorization Mode:   Group Server
Ruijie#
```

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29.6.2 show dot1x auth-address-table

ħυ ҳ 802.1X ï فخ سم Â

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

dot1x timeout supp-timeout	Ո ჴ Ӌ ц Â
dot1x timeout tx-period	. ˘ . · Â

dot1x re-authentication	ĭ Â
dot1x timeout quiet-period	ʃ↑ ĭ Â
dot1x timeout re-authperiod	Â
dot1x timeout server-timeout	Ո Ⴑ ʖ Ӡ Ꮋ ч Â
dot1x timeout supp-timeout	Ո Ӡ Ꮋ ч Â
dot1x timeout tx-period	. ˘ . · Â

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dot1x max-req	ï · Â
dot1x port-control auto	ﾍ ï̈ ﾍ ╗ Â
dot1x reauth-max	
dot1x re-authentication	ï̈ Â
dot1x timeout quiet-period	ﾉ｝ ï Â
dot1x timeout re-authperiod	Â

Ruijie#

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dot1x auth-mode	802.1x Â
dot1x max-req	ĭ · Â
dot1x port-control auto	ʌ ĭ ʌ ╗ Â
dot1x reauth-max	
dot1x re-authentication	ĭ Â
dot1x timeout quiet-period	ʃ ĭ Â
dot1x timeout re-authperiod	Â
dot1x timeout server-timeout	∩ ʟ ɣ ʒ Ꮋ ц Â
dot1x timeout supp-timeout	∩ ʒ Ꮋ ц Â
dot1x timeout tx-period	· ˘ · □ Â

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29.6.6 show dot1x port-control

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show dot1x port-control [**interface** *interface*]

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	interface	ʌ

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ƗO R '

```
Ruijie# show dot1x port-control
interface dyn-user static-user max-user qos
ctrl-mode status
--------- -------- ----------- -------- ------- ------
Gi0/1     0        1           6000     dscp: 0 mac-base Authed
Ruijie#
```

ƕ ȝ	
dot1x auth-mode	802.1x Â
dot1x max-req	ï · Â
dot1x port-control auto	ʌ ǐ ʌ ╗ Â
dot1x reauth-max	
dot1x re-authentication	ǐ Â
dot1x timeout quiet-period	ʃ ï Â
dot1x timeout re-authperiod	Â
dot1x timeout server-timeout	Ո ʟ ʞ ʓ Ꮋ ц Â
dot1x timeout supp-timeout	Ո ʓ Ꮋ ц Â
dot1x timeout tx-period	· ˘ · Â

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29.6.7 show dot1x probe-timer

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show dot1x probe-timer

29.6.8 show dot1x re-authentication

show dot1x re-authentication

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ƗO R '

```
Ruijie# show dot1x re-authentication
reauth-enabled: disabled
Ruijie#
```

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dot1x auth-mode	802.1x Â
dot1x max-req	ï · Â
dot1x port-control auto	٩ ï ٩ ╗ Â
dot1x reauth-max	
dot1x re-authentication	ï Â
dot1x timeout quiet-period	⅄↑ ï Â
dot1x timeout re-authperiod	Â
dot1x timeout server-timeout	∩ Ⅎ ⅄ ȝ Ⅎ ц Â
dot1x timeout supp-timeout	∩ ȝ Ⅎ ц Â
dot1x timeout tx-period	· ˘ · □ Â

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29.6.9 show dot1x reauth-max

show dot1x reauth-max

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w R	ƗO R ' Ruijie# **show dot1x reauth-max** reauth-max: 2 times Ruijie#

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	dot1x auth-mode	802.1x Â
	dot1x max-req	ï · Â
	dot1x port-control auto	˥ ï˝ ˥ ╗ Â
	dot1x reauth-max	
	dot1x re-authentication	ï˝ Â
	dot1x timeout quiet-period	˩↑ ï Â
	dot1x timeout re-authperiod	Â
	dot1x timeout server-timeout	∩ ┗ ˩ ʓ Ꮋ ㄖ Â

dot1x timeout supp-timeout	Ո Ȝ Ӈ ц Â
dot1x timeout tx-period	. ˘ . · □ Â

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29.6.10 show dot1x summary

ђu ҙ 802.1X ə

show dot1x summary

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```
Ruijie# show dot1x summary
ID   MAC       Interface VLAN Auth-State
Backend-State Port-Status Type
---------------- --------------- ---------------
1 00d0f8000000 Gi0/1       1  Authenticated Idle
Authed     Static
Ruijie#
```

ʹΩђu ҙ

ђu ҙ	
dot1x auth-mode	802.1x Â
dot1x max-req	ï · Â

```
Mac address is 0013.2049.8272
Vlan id is 217
Access from port Gi0/13
User ip address is 192.168.217.64
Max user number on this port is 6000
COS on this port is 5
Up-bandwidth is 1024 kbps
Down-bandwidth is 1024 kbps
Authorization vlan is dep7
Authorization seesion time is 1000000 seconds
Authorization ip address is 192.168.217.64
Start accounting
Permit proxy user
Permit dial user
IP privilige is 2
```

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dot1x auth-mode	802.1x Â
dot1x max-req	ï · Â
dot1x port-control auto	˄ ï˄╗ Â
dot1x reauth-max	
dot1x re-authentication	ï Â
dot1x timeout quiet-period	˄↑ ï Â
dot1x timeout re-authperiod	Â
dot1x timeout server-timeout	∩ ┗ɤ ʒ Ꮋ ц Â
dot1x timeout supp-timeout	∩ ʒ Ꮋ ц Â
dot1x timeout tx-period	· ˇ · □ Â

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29.6.12 show dot1x timeout

ƫu ҳ 802.1X ٧ ə

show dot1x timeout quiet-period

show dot1x timeout re-authperiod

show dot1x timeout server-timeout

show dot1x timeout supp-timeout

show dot1x timeout tx-period

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w R

```
Ruijie# show dot1x timeout quiet-period
quiet-period: 60 sec
Ruijie#
```

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ƫu ҳ	
dot1x auth-mode	802.1x Â
dot1x max-req	ï · Â
dot1x port-control auto	٧ ĭ ٧ ╗ Â
dot1x reauth-max	
dot1x re-authentication	ĭ Â
dot1x timeout quiet-period	⅄⌉ ï Â
dot1x timeout re-authperiod	Â
dot1x timeout server-timeout	∩ ⊾ɤ ƺ Ꮋ ч Â
dot1x timeout supp-timeout	∩ ƺ Ꮋ ч Â

	dot1x timeout tx-period	. ˘ . . □ Â

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30 Web

30.1 Web

30.1.1 http redirect

HTTP ⅃

ȯ تن Â ⅃ Л ħυ ϡ **no** ǐ ȯ تن Â

http redirect direct-site *ip-address* [*ip-mask*] [**arp**]

no http redirect direct-site *ip-address* [*ip-mask*]

٩	
ip-address	ȯ IP سم فخ Â
ip-mask	ȯ IP سم فخ Â
arp	ώ ΰ ARP CHECK ╗ ˘ ѫ ȯ تن ARP ˘ **arp** ˜Ω Â

ȯ Â

ħυ ϡ ŏ Â

ΰ ╟ Web ⁄˘ ˝I Web ˘ Â ⊖ ˘ ≠ ⅃ Л ⊖ ˘ G ħυ ϡ Â ɜ ¥ ȯ ˘ ѫ ⅃ Л ɜ Â ї 50 ɜ ȯ تن

ѡ R R 1' IP سم فخ й 172.16.0.1 й ȯ Â

```
Ruijie(config)# http redirect direct-site 172.16.0.1
```

ħυ ϡ	
show http redirect	HTTP ⅃ Â

⁄

⁄	
10.2(5)	ħυ ϡ

ħυ ϡ ٦ ⁄

30.1.3 http redirect homepage

⅃ ў سم فخ Â ⅃ Л ħυ ϡ **no** ǐ ў سم فخ Â

http redirect homepage *url-string*

no http redirect homepage

ϟ	
url-string	ў ѫ ѯ˘ Лυ“http://” “https://” ˘ ї ‡ a ╖˘ й 255 э Â

ў ѫ Â

ħυ ϡ ώ Â

G ╖ Web ╖ ˘ ў ѫ Â

ѡ R R 1' ў ѫ й http://*www.web-auth.net/login* Â

```
Ruijie(config)#
http redirect homepage http://www.web-auth.net/login
```

˝Ωħυ ϡ	ħυ ϡ	
	show http redirect	HTTP ┘ Â
	http redirect	┗ ┘ IP ѫ Â

ѧ

ħυ ϡ ˥ ѧ	ѧ	
	10.2(5)	ħυ ϡ

30.1.4 http redirect port

┤ ϟ ѧ HTTP WEB ┘˘ G **http redirect port** ħυ ϡ Â ┤Лυ ħυ ϡ **no** ї ϟ ѧ HTTP WEB ┘ Â

http redirect port *port-num*

no http redirect port *port-num*

ϟ	
port-num	HTTP WEB ϟ ѧ Â

┤ ϟ 80 HTTP Â

ħυ ϛ	ώ Â
G	˘ ˛ ↴ HTTP ˘ ώ HTTP ˘ ″ ΐ̈ ج ’ ώ ˛ ج ˘ ˘ ⅄ Â ϙ ЮЎ ώ ↴ ∧ /\ и 80 HTTP ˘ ΐ̈ ج Â ώ ↴ ∧ /\ HTTP ˘ G ħυ ϛ Â ΐ̈ 10 ə a ⅄ ∧ /\˘ ∧ /\ 80 ≠ ΰ̈ ج ىتن ϙ Â

R 1' ↴ ∧ /\ и 8080 HTTP WEB ⅄ Â

ш R

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

R 1' a ↴ ∧ /\ и 80

ώ э HTTP˛ й 255˘ э ЯЮ
HTTP˛ й 300 Â

ħυ ϩ ώ Â

G й ѽ ┤ HTTP ˘ ώ TCP ˘ ج ώ
Э ⁸ HTTP˛ Â
Ұ ج ˘˛´ У э HTTP˛ ˘ ѐ ы ≠ ┘ ´ HTTP
˛ ˘ ق a HTTP˛ й 1 Â

w R ᴿ 1' HTTP˛ й 4 Â

```
Ruijie(config)# http redirect session-limit 4
```

ЎΩħυ ϩ

ħυ ϩ	
show http redirect	HTTP ┘ Â

┘

ħυ ϩ ℸ ┘

┘	
10.2(5)	ħυ ϩ

30.1.6 http redirect timeout

┘ Â ┤Ло ħυ ϩ **no** ┘
й 3 Â

http redirect timeout *seconds*

no http redirect timeout

┤

┤	
seconds	┘ , *seconds*˘ ┤ ḣ تن 1-10 Â

┘ й 3 Â

ħυ ϩ ώ Â

G ┘ Â ق й Ь ╖ ┘˘ ┤ HTTP

GET/HEAD ˘ ⅄ ‹ HTTP

ΐΩħυ ϡ

ħυ ϡ	
show web-auth allow-vlan	ѫ ϒ VLAN Web VLAN " ə Â

ϰ

ħυ ϡ ϗ ϰ

ϱ	
10.4(2b2)	ħυ ϡ

30.1.8 web-auth direct-host

IP تن Â ϟ Ո ħυ ϡ **no** ϰ Â

web-auth direct-host *ip-address* [i*p-mask*] [**port** *interface-name*] [**arp**]

no web-auth direct-host *ip-address*

ϯ	
ip-address	IP ѭ ف Â
ip-mask	IP ѭ ف Â
port *interface-name*	IP б ώ ϯ Â

ƫυ ҳ ٦ ⊿	/ſ	
	10.2(5)	ƫυ ҳ

30.1.10 web-auth port-control

ﻩ ∧ Ǝ ŭ ╟ Web Â ⊿ Ո ƫυ ҳ

ħυ ϗ ϒ ϟ	ϻ	
	10.2(5)	ħυ ϗ
	10.4(2b2)	╗ **ip-only-mode** ϻ

30.1.11 web-auth portal key

ώ б Ŀ ϰ ϧ ą Â ϟ Ϡ ħυ ϗ **no**
HTTP WEB ϟ ϻ WEB б Ŀ ϰ ą Â

web-auth portal key *key-string*

no web-auth portal key

ϻ	ϻ	
	key-string	ώ б Ŀ ϰ ϧ ą ˘ ϶ 255 ϶ Â

Â

ħυ ϗ	ŏ Â

G	╗ Web ╗ ˘ ώ б Ŀ ϰ ϧ ą Â

ϡ R	R 1' ώ б Ŀ ϰ ϧ ą ϶ *web-auth* Â `Ruijie(config)# **web-auth portal key** *web-auth*`

˝Ωħυ ϗ	ħυ ϗ	
	http redirect	Ŀ ϰ IP ﻓﺨﺳﻢ Â
	http redirect homepage	ў ﻓﺨﺳﻢ Â
	web-auth port-control	ﺟ ϻ Э ŭ ╠ Web Â

ϟ

ħυ ϗ ϒ ϟ	ϻ	
	10.2(5)	ħυ ϗ

30.1.12 web-auth update-interval

ﻩ ə Â ﻝ Ո ħυ ҳ **no** ﻩ ə
ﻭ 60 Â

web-auth update-interval *seconds*

no web-auth update-interval

٩	
seconds	˘ ´ Æ ˘ ﻝ ḥ ﺙ 30-3600 Â

ﻩ ə ﻭ 60 Â

ħυ ҳ ŏ Â

G

۹	

Â

ħυ ३ Â

G Â

R 1' HTTP ⅃ Â

```
Ruijie# show http redirect
HTTP redirection settings:
  server:         192.168.32.123
  port:           80  8000
  homepage:       http://192.168.32.123:8888/ePortal/index.jsp
  session-limit: 10
  timeout:        5

Direct sites:
  Address           MASK              ARP Binding
  ----------------- ----------------- -----------
  61.233.3.215      255.255.255.255    On
  61.233.3.220      255.255.255.255    Off
  192.168.5.140     255.255.255.255    Off
  218.30.66.101     255.255.0.0        Off
  218.30.66.101     255.255.255.255    Off

Direct hosts:
  Address           Mask              Port        ARP Binding
  ----------------- ----------------- ----------- ------------
  192.168.1.1       255.255.255.255   Fa0/1       On
```

w R

⅃ ώ '	
server	⅃ ⊢ ⅄ IP فخسه Â
port	⅃ HTTP ۸ " Â
homepage	⅃ ў فخسه Â

Web ƕυ ҙ

Â

ħυ ३ Â

G Â

R 1' ⩓ ¥ VLAN Web VLAN " ə Â

```
Ruijie# show web-auth allow-vlan
  Allow-vlan list  :  1-3,5
```

w R

-	-

R 1'

w R

Web ƕυ ҙ

```
Ruijie# show web-auth user
  Current user num  :  4

Address          Online   Time Limit    Time Used    Status
---------------- -------  ------------ ------------- --------
192.168.0.11      On      0d 01:00:00   0d 00:15:10     Active
192.168.0.13      On      0             0d 00:00:59     Active
192.168.0.25      Off     0             0               Create
192.168.0.46      Off     0d 01:00:00   0d 01:00:00     Destroy

Ruijie# show web-auth user 192.168.0.11
 Address      :   192.168.0.11
 Mac          :   00d0.f800.2233
 Port         :   Fa0/2
 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	IP فخ سم Â
Mac	MAC فخ سم Â
	٨ Â
	٨ˇ 0 ٨ Â
	Â
Time Start	à Э Â
Status	ˇ Active جم ˇ Create • … à ˇ Destroy

	10.2(5)	ħυ ҳ

31 AAA

31.1

31.1.1 aaa authentication dot1x

G AAA

ЎΩћu ҳ

ћu ҳ	
aaa new-model	G AAA ŏ Ł
dot1x authentication	₰ 802.1X ˜ Э Ў Ω "
username	Ћ ѕѕ

ѵ

ћu ҳ ˥ ѵ

ѵ	
-	-

31.1.2 aaa authentication enable

G AAA Enable ˇ ŏ ћu ҳ **aaa authentication enable** Enable " Â ћu ҳ no ˧ " Â

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

no aaa authentication enable default

ѵ

ѵ	
default	G ѵ ˇ ‡ ѵ Ћ " ɔ и Enable ÂEnable ѕѕ ɣ ŏ ˇ ɱ ѵ " Â
method	l' local à none à group Ł " Ў Ω ʒ У ˇ У ɔ " 4 ɔ
local	G ѕѕ ѵ
none	a
group	G Ł ѓ ˇ ɱ RADIUS Ո TACACS+ Ł ѓ

ћu ҳ ŏ Â

ŭ AAA Enable Ł ˇ G AAA Enable ˜ ك Â

G G **aaa authentication enable** ћu ҳ " ɣ Enabl **aaa authentication ena**

ѡ R

Ю R Ђ AAA Enable ` " Â " ˝I G RADIUS ѽ Ь Ы ` ˘ ѯ У ѻ ĵ RADIUS ѽ Ь Ы ˘ ‡ G ѕш ` Â

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

Ѽu ҙ

Ђu ҙ	
aaa new-model	G AAA ѽ Ь
enable	ĵ ⁞
username	Ђ ѕш

Ѝ

Ђu ҙ ˥ Ѝ

Ѝ	
-	-

31.1.3 aaa authentication login

G AAA Loginˆ ~ ˘ ѽ Ђu ҙ **aaa authentication login** Login " Â Ђu ҙ no ĵ " Â

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

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

Ѧ

Ѧ	
default	G Ѧ ˘ ‡ Ѝ Ђ " ɔ и Login Â
list-name	Ђ У ɘ Login " ˘ ˩ Ո ˙ ¦ s Â
method	ľ local à none à group Ŀ " ˜Ω ʒ У˘ У ɘ " 4 ɘ
local	G ѕш Ѝ `
none	a `
group	G Ь Ы ` ˘ ѧ RADIUS Ո TACACS+ Ь Ы

ћu ҙ ѽ Â

G ѹ AAA ѽ Ҷ˘ G AAA Login ˜ ڭ Â
G **aaa authentication login** ћu ҙ ۍ " ɣ Login Â
ۍ ɱ : ˘ G ۂ ` Â
ɷ Login ۂ˘ è ۾ Login Ɔ˘ ĭ ‡ a
Â

ѡ R Ю R ҍ У ə ۂ ѝ list-1 AAA Login " Â " ˝І G
RADIUS ѽ Ҷ۷ ˘ ۾ У ǫ ĵ RADIUS ѽ Ҷ۷ ˘
‡ G ѩ Â

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

ЎΩћu ҙ

ћu ҙ	
aaa new-model	G AAA ѽ Ҷ
username	ҍ ѩ
login authentication	۾ Ɔ Login

ۂ

ћu ҙ ˥ ۍ

ۂ	
-	-

31.1.4 aaa authentication ppp

G AAA PPP ˘ ѽ ћu ҙ **aaa authentication ppp** PPP

local	G ѕѕ ɻ
none	a `
group	G Ł ɳ ˘ ɱ RADIUS Ո TACACS+ Ł ɳ

ђu ҙ ŏ Â

G ŭ AAA PPP ŏ Ł˘ G AAA PPP ˜ ʤ Â G **aaa authentication ppp** ђu ҙ ɻ " ɣ PPP Â ɻ ɱ : ˘ G ɻ Â

ѡ R Ю R ЊЖ У ə ɻ ѝ rds_ppp AAA PPP " Â " ¨ǀ G RADIUS ŏ Ł ɳ ˘ ҷ У ą̈ ǀ RADIUS ŏ Ł ɳ ˘ ˘ ‡ G ѕѕ Â

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

ђu ҙ	
aaa new-model	G AAA ŏ Ł
ppp authentication	PPP ˜ ˇΩ "
username	ЊЖ ѕѕ

ɻ

ɻ	
-	-

31.1.5 login authentication

ҷ Э Loginˆ ˜ ╗ ˘ ҷ Ю **login authentication** ђu ҙ Login " Â ђu ҙ no ╕ " ҷ Э Â

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

no login authentication

ч	ч	

default	G ٧ ˘ Login " Â
list-name	У э ЂЖ Login " Â

ЂU ҂ Â

G Login " У ˘ ╟ ĵ Э Â جم Э Login " ˘ ٧ ҂ Â في ЂЖ " ˘ ‡ ˛ У э ˋ ą ˘ Э Login a ˛ ˘ ЂЖ ₡ Login " ˛ Â

ЮO R ЂЖ У э ɻ ѝ list-1 AAA Login " Â " G ىس Â ɻ جم VTY 0 - 4 Э Â

ѡ R
```
Ruijie(config)# aaa authentication login list-1 local
Ruijie(config)# line vty 0 4
Ruijie(config-line)# login authentication list-1
```

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

٩	
level	ħυ ҳ ⁞˘ ىن 0~15˘ ā ف ɔ ⁞ ħυ ҳ ⁄ Â
default	G ٩ ˘ ‡ ⁄ ₦ ’] Ư Ă –

31.2.2 aaa authorization config-commands

ᴳ AAA ˆ ↑ ŏ ˥ è ˜ ƗO ƫu ʒ ˇ ŏ
ƫu ʒ **aaa authorization config-commands** Â ƫu ʒ no ˷Ω AAA ƗO ƫu
ʒ ╖ Â

aaa authorization config-commands

no aaa authorization config-commands

˥	
-	-

	a ƗOƫu ʒ Â
ƫu ʒ	ŏ Â
ᴳ	˩ ˆ ˜ ƗO ƫu ʒ ˇ ˩ Ʌ∪ ᴳ ƫu ʒ no ˷Ω ╖ ˇ ‡ ˥ è ƗO ƫu ʒ a ƫu ʒ ˩ Ʌ∪ Â
ᴡ ᴿ	ƗO ᴿ ƗOƫu ʒ ╖ ' Ruijie(config)# **aaa authorization config-commands**

ƫu ʒ	
aaa new-model	ᴳ AAA ŏ ┗
aaa authorization commands	ƗƧ AAA ƫu ʒ

˩

ƫu ʒ ˥ ˩	
-	-

31.2.3 aaa authorization console

ᴳ AAA ⁸ ˩ ˇ ƫu ʒ ˇ ŏ ƫu ʒ **aaa**
authorization console Â ƫu ʒ no ˷Ω AAA ⁸ ˩ ƫu ʒ
╖ Â

aaa authorization console

no aaa authorization console

٩	
-	-

a ⁸ ٨ ƫ ȝ Â

ƫ ȝ ŏ Â

G RGOS Ш ⁸ ٨ Ո è ы ˇ ٦ Л ⁸ ٨ ˇ ĭ ƫ ȝ Â ˜Ω ɷ ⁸ ٨ ƫ ȝ ℸ ˇ ‡ ˆ ⁸ ٨ ƫ ȝ " a Â

w R Ю R ⁸ ٨ ƫ ȝ ℸ '

```
Ruijie(config)# aaa authorization console
```

˜Ωƫ ȝ	ƫ ȝ	
	aaa new-model	G AAA ŏ Ŀ
	aaa authorization commands	ƛ AAA ƫ ȝ
	authorization commands	₰ Э ƫ ȝ

٨

ƫ ȝ ٦ ٨	٨	
	-	-

31.2.4 aaa authorization exec

G AAA ˆ NAS CLI Exec ˇ ç è ⁞ˇ ŏ ƫ ȝ **aaa authorization exec** Â ƫ ȝ no ˜Ω AAA Exec ℸ Â

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

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

٩	٩	
	default	G ٩ ˇ ‡ ٨ ƛ " ɔ й Exec Â
	list-name	ƛ У ə Exec " ˇ ٦ Л ˙ ¡ s Â

AAA ƕ ɜ

٩	
default	' G ٩ ˇ ‡ ⁄ ₦ " ɔ ѝ Network Â

ľ

method

ƫ ȝ " ج Ɔˇ ƫ ȝ **authorization commands** Â ƫ ȝ no ˬ Ɔ ƫ ȝ ╖ Â

authorization commands *level* {**default** | *list-name*}

no authorization commands *level*

ˬ	
level	ƫ ȝ ⁞ˇ ن 0~15 ā ف ə ⁞ ƫ ȝ ˬ Â
default	G ˬ ˇ ƫ ȝ Â
list-name	У ə Ȿ ƫ ȝ " Â

AAA ƫ ȝ ╖ Â

ƫ ȝ Â

G ƫ ȝ " У ˇ ╠ ˆ Ɔ Â ج Ɔ ƫ ȝ " ˇ ˬ ȝ " Â في Ⱬ " ˇ ‡ ˬ У ə ˆ ą ˇ Ɔ ƫ ȝ a ˇ Ⱬ ƫ ȝ " ˬ Â

W R Ю R У ə ɹ й cmd ƫ ȝ " ˇ 15 ƫ ȝ ˇ G TACACS+ ɔ й ŏ Ł ɻˇ Ł ɻ : none Â ˬ ˆ VTY 0 – 4 Ɔ'

```
Ruijie(config)# aaa authorization commands 15 cmd group tacacs+ none
Ruijie(config)# line vty 0 4
Ruijie(config-line)# authorization commands 15 cmd
```

ƫ ȝ	
aaa new-model	G AAA ŏ Ł
aaa authorization commands	Ⱬ AAA ƫ ȝ "

ˬ

ˬ
-

ƫ ȝ ˥ ˬ

ˬ	
-	-

Exec " ح Ə˘ ħu ҂ **authorization exec** Â
ħu ҂ no ۷ Ə Exec ╖ Â

authorization exec {**default** | *list-name*}

no authorization exec

۷	
default	G ۷ ˘ Exec Â
list-name	У э ⱨ Exec " Â

AAA Exec ╖ Â

ħu ҂ Â

Exec " У ˘ ╟ ↑ Э Â ح Э
Exec " ˘ ۷ ҂ " Â في ⱨ " ˘ ‡ ˛
У э ˜ ə ˘ Э Exec a ˛ ˘ ⱨ ⓠ Exec
" ˛ Â

Ю R У э ɹ й exec-1 Exec " ˘ G RADIUS ɔ й ѿ Ł ⱶ˘
Ł ⱶ : none Â ʌ ↑ VTY 0 – 4 Э'

```
Ruijie(config)# aaa authorization exec exec-1 group radius none
Ruijie(config)# line vty 0 4
Ruijie(config-line)# authorization exec exec-1
```

ħu ҂	
aaa new-model	G AAA ѿ Ł
aaa authorization commands	ⱨ AAA Exec "

ʌ	
-	-

31.3

¥ ╟˘ ĵ NAS Э ħυ ϗ ╟ ˘ ѽ
ħυ ϗ **aaa accounting commands** Â ħυ ϗ no ↓ ħυ ϗ ╖ Â

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

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

↰	
level	ħυ ϗ ¦˘ ىں 0~15˘ ā ف ə ¦ ħυ ϗ ˘ ə Â
default	G ↰ ˘ ‡ Л Ⱨ " ɔ и ħυ ϗ Â
list-name	Ⱨ У ə ħυ ϗ " ˘ ↓ Л ˙ ¡ s Â
method '	Ґ **none** à **group** Ŀ " ˜Ω ʒ У˘ У ə " 4 Ў ħυ ë

Ђu ҙ ˥ ˩	˥	
	-	-

31.3.2 aaa accounting exec

ɣ ╟˘ NAS ╟ ˘ ѿ Ђu ҙ **aaa accounting exec** Â Ђu ҙ no ˩ Exec ╖ Â

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

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

˥		
˥	**default**	G ˥ ˘ ‡ ˩ Ⱨ̷ " ɔ ѝ Exec Â
	list-name	Ⱨ̷ У ɘ Exec " ˘ ˧ Ʌu ˙ ¡ s Â
	method	ľ **none** à **group** Ŀ " ˜Ω ƺ У˘ У ɘ " 4 ɘ
	none	a

aaa new-model	G AAA ő Ł
aaa authentication	ⱨ AAA `
accounting commands	₰ Э Exec

ʎ

ƫ ȝ ˥ ʎ	ʌ	
	-	-

31.3.3 aaa accounting network

ɣ ╟˘ ╟ ˘ ő ƫ ȝ **aaa accounting network** Â ƫ ȝ no ʎ

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

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

ʏ	
default	G ʏ ˘ ‡ ʌ ⱨ " ɔ ȕ Network ¡

'

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

ʗΩħu ɮ

ħu ɮ	
aaa new-model	G AAA ѽ Ŀ
aaa authorization network	ѭ AAA
aaa authentication	ѭ AAA `
username	ѭ ѫ

ʃ

ħu ɮ ˥ ʃ

ʃ	
-	-

31.3.4 aaa accounting update

ŭ ˩ ˇ ѽ ħu ɮ **aaa accounting update** ħu ɮˇ ħu ɮ ɣ G ѽ Â G ħu ɮ no ʗΩ ˩ Â

aaa accounting update

no aaa accounting update

ʅ

ʅ	
-	-

˩ ʗΩ Â

ħu ɮ ѽ Â

G ŭ AAA ѽ Ŀˇ ‡ a G Â ŭ AAA ѽ Ŀˇ ‡ ħu ɮ Â

ʍ R

ƗO R G Â

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

ʗΩħu ɮ

ħu ɮ	

aaa new-model	AAA ѽ Ꮮ
aaa accounting network	Ⱶ "

ᐢ

ᐢ

Ъu ъ ˥ ˩	/ı	
	-	-

31.3.6 accounting commands

Ъu ъ " ج Ɔ˘ Ъu ъ **accounting commands** Â
Ъu ъ no ˩ Ɔ Ъu ъ ╖ Â

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

no accounting commands *level*

˥ı	˥ı	
	level	Ъu ъ ¦˘ تن 0~15˘ ā ف ə ¦ Ъu ъ Â
	default	G ˥ı ˘ Ъu ъ Â

ħu ϗ ϒ ϡ	ϻ	
	-	-

31.3.7 accounting exec

Exec " ѥ Э˘ ħu ϗ **accounting exec** Â
ħu ϗ no ϡ Э Exec ╖ Â

accounting exec {**default** | *list-name*}

no accounting exec

ϡ	ϡ	
	default	G ϡ ˘ Exec Â
	list-name	У э ѫ Exec " Â

	˝Ω ╖
ħu ϗ	Â
G	Exec " У ˘ ╟ ˆ Э Â ѥ Э Exec " ˘ ϡ ϗ " Â ﻲ ѫ " ˘ ‡ ˛ У э ˜ ə ˘ Э Exec a ˛ ˘ ѫ Ѡ Exec " ˛ Â
ѡ R	Ю R У э ɹ ѝ exec-1 Exec " ˘ G RADIUS ɔ ѝ ѿ Ł ϲ˘ Ł ϲ : none Â ɹ ˆ VTY 0 – 4 Э' Ruijie(config)# **aaa accounting exec** *exec-1* **group radius none** Ruijie(config)# **line vty** *0 4* Ruijie(config-line)# **accounting exec** *exec-1*

˝Ωħu ϗ	**ħu ϗ**	
	aaa new-model	G AAA ѿ Ł
	aaa accounting commands	ѫ AAA Exec "

ϡ

ħu ϗ ϒ ϡ	ϻ	

-	-

31.4 AAA

31.4.1 aaa domain

ώ ѩ ˘ ѩ Â Ђu ҙ no ↓ Ђu ҙ Â

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

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

↑	
default	G ↑ ˘ ѩ
domain-name	ѩ ↓

˙ ! ѩ Â

Ђu ҙ ŏ Â

ѫ ¥ ѩ ↓ AAA Ь Âdefault и ѩ ˘ ≠ ѩ ə ˘
G G " Â *domain-name* и ѩ ↓ ˘ ѩ ↓˘ ‡
G ə ѩ ˝Ω " Â ɲ 32 ə ѩ Â

Ю R ѩ ↓ '

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

Ђu ҙ	
aaa new-model	AAA ŏ Ь
aaa domain enable	ѫ ¥ ѩ ↓ AAA Ь ˝Ω

31.4.2 aaa domain enable

ѫ ɣ ѫ ɻ AAA Ł ʕΩ˘ ϙ ЮϞ ʕΩ Â ʕΩ Ạ˘ . ˝I G ѫ ɣ ѫ ɻ AAA Ł Â ħu ҳ no ʕΩ ʕΩ Â

aaa domain enable

no aaa domain enable

٧	٧	
	-	-

ѫ ɣ ѫ ɻ AAA Ł ʕΩʕΩ Â

ħu ҳ ώ Â

G ѫ ɣ ѫ ɻ AAA Ł ˘ ɜ ʕΩ Â

w R ѫ ɣ ѫ ɻ AAA Ł ʕΩ'

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

ʕΩħu ҳ	ħu ҳ	
	aaa new-model	AAA ώ Ł
	show aaa domain	ѫ

ʃ

ħu ҳ ˥ ʃ	ʃ٧	
	-	-

31.4.3 access-limit

ѫ 8˘ ٧

no access-limit

۹	
num	۰۰ ۸ IEEE802.1x

æ " ˘ ↴ ˘ ˚
default " Â

ƫu ȝ æ Â

G ẏ æ G Network " Â

Ю R æ Network " '

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

ʷΩƫu ȝ

ƫu ȝ	
aaa new-model	AAA ώ Ꮭ
aaa domain enable	ææ ɣ æ ɻ AAA Ꮭ ʷΩ
show aaa domain	æ

ↈ

ƫu ȝ ˥ ↈ

ↈ	
-	-

31.4.5 authentication dot1x

æ æ Ю IEEE802.1x " ˘ ƫu ȝ no ↈ ƫu ȝ Â

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

no authentication dot1x

ↇ

ↇ	
default	G ↇ ˘ G "
list-name	" ɻ

æ " ˘ ↴ ˘ ˚ default " Â

ƫu ȝ æ Â

G ӣ ᵃᵃ У ə IEEE802.1x " Â

ᴡ ᴿ Ю ᴿ ᵃᵃ IEEE802.1x " '

```
Ruijie(config)# aaa domain ruijie.com
Ruijie(config-aaa-domain)# authentication dot1x default
```

ЎΩħu ҙ

ħu ҙ	
aaa new-model	AAA ώ Ь
aaa domain enable	ᵃᵃ ɣ ᵃᵃ ɻ AAA Ь Ўω
show aaa domain	ᵃᵃ

ᶩ

ħu ҙ ˥ ᶩ

ᶩ	
-	-

31.4.6 authorization network

ᵈᶜ ᵃᵃ Ю Network " ˇ ħu ҙ no ᶩ ħu ҙ Â

authorization network {**default** | *list-name*}

no authorization network

ᶩ

ᶩ	
default	G ᶩ ˇ G "
list-name	" ɻ

ᵈᶜ " ˇ ᶣ ˇ ˚ default " Â

ħu ҙ ᵃᵃ Â

G ӣ ᵃᵃ " Â

ᴡ ᴿ Ю ᴿ ᵃᵃ " '

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

Ruijie(config-aaa-domain)# **authorization network default**

ΎΩħυ ϛ

ħυ ϛ	
aaa new-model	AAA ώ Ł
aaa domain enable	ααα ¥ ααε ϳ AAA Ł ΎΩ
show aaa domain	ααε

ϡ

ħυ ϛ ϒ ϡ

Ϡ	
-	-

31.4.7 state

ααε ΐ ˘ ħυ ϛ no Â

state {**block** | **active**}

no state

ϟ

ϟ	
block	ααε
active	ααε

ϙ Ю ϊ ααε Â

ħυ ϛ ααε Â

G ααε ΐ Â

Ю R ααε Â

w R Ruijie(config)# **aaa domain** *ruijie.com*

Ruijie(config-aaa-domain)# **state block**

ΎΩħυ ϛ

ħυ ϛ	

aaa new-model	AAA ѿ Ь
aaa domain enable	ѧѧ ɣ ѧѧ ɹ AAA Ь ˜Ω
show aaa domain	ѧѧ

aaa new-model	AAA ѿ ᒷ

ħu ҳ ٦ ٫	٨	
	-	-

31.5 AAA

31.5.1 aaa group server

ώ AAA ٤ ٪ Â ħu ҳ no ĩ ٤ ٪ Â

aaa group server {**radius** | **tacacs+**} *name*

no aaa group server {**radius** | **tacacs+**} *name*

٩	٩	
	name	٤ ٪ ٫ ٫˘ ɱ a ὴ ΐΩ ľ radius Ŀ˘ ľ tacacs+ Ŀ˘ ҷ ὴ RADIUS Ո TACACS+ ٤ ٪ ٫ Â

ħu ҳ	ὥ Â
G	ħu ҳ AAA ٤ ٪ ˘ ɱ RADIUS Ո TACACS+ ٤ ٪ Â

w R

```
Ю R Â
Ruijie(config)# aaa group server radius ss
Ruijie(config-gs-radius)# end
Ruijie# show aaa group
Group Name:  ss
Group Type:  radius
Referred:    1
Server List:
```

ΐΩħu ҳ	ħu ҳ	
	show aaa group	aaa ٤ ٪

٫

ħu ҳ ˥ ˩	˾	
	-	-

31.5.2 ip vrf forwarding

ѝ AAA ┣ ⅄ vrf no ╕ Â

ip vrf forwarding *vrf_name*

no ip vrf forwarding

˥	˥	
	vrf_name	vrf ˩

ħu ҳ	┣ ⅄ Â
G	ѝ ┣ ⅄ vrf Â

w R	Ю R Â 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**

˷Ωħu ҳ	ħu ҳ	
	aaa group server	aaa ┣ ⅄
	show aaa group	aaa ┣ ⅄

˩

╕ AAA ┣ ϗ ┣ ϗ˘ no ╖ Â

server *ip-addr* [**authen-port** *port1*] [**acct-port** *port2*]

no server

	-	-

31.5.4 show aaa group

AAA ᒪ ᒐ Â

show aaa group

31.6.1 aaa local authentication attempts

login

aaa local authentication attempts *max-attempts*

۹	۹	
	max-attempts'	˘ ۷ ḣ ىتن 1~2147483647 Â

ḣ ӣ 3

ħυ ३ ѿ Â

G ħυ ३ Login

w R D

ƫ ȝ	ŏ Â
G	login ˘
w R	ƗO R' Ruijie# **configure terminal** Ruijie(config)# a**aa local authentication lockout-time** 5

˜Ωƫ ȝ	ƫ ȝ	
	Show running-config	Ɨ ɱ
	Show aaa lockout	ɱ login ɳ

ɻ

ƫ ȝ ˥ ɻ	ɻ	
	-	-

31.6.3 aaa new-model

G RGOS AAA ŏ ŀ ˘ ŏ ƫ ȝ **aaa new-model** G AAA Â ƫ ȝ **no** ˜Ω AAA ŏ ŀ Â

aaa new-model

no aaa new-model

ɳ	ɳ	
	-	-

	˜Ω AAA ŏ ŀ
ƫ ȝ	ŏ Â
G	ƫ ȝ AAA G ƫ ȝ˘ G AAA ŏ ŀ˘ G **aaa new-model** G AAA ŏ ŀ Â ŭ AAA˘ ‡ AAA ƫ ȝ a ɻ Â
w R	ƗO R G AAA ŏ ŀ Â Ruijie(config)# **aaa new-model**

ħu ɜ	
aaa authentication	ⅠⅩ "
aaa authorization	ⅠⅩ "
aaa accounting	ⅠⅩ "

ʻΩħu ɜ

ɻ

/ǀ	
-	-

ħu ɜ ˥ ɻ

31.6.4 clear aaa local user lockout

"

clear aaa local user lockout {**all** | **user-name** <*word*>}

ɻǀ	
<*word*>	ID

ɻ

ħu ɜ Â

G

31.6.5 debug aaa

AAA Ł ˇΩ Â ħu ҳ **no** ˇΩ ˇΩ Â

debug aaa event

no debug aaa event

٩	
-	-

ħu ҳ	EXEC Â

G

w R

ˇΩħu ҳ	ħu ҳ	
	-	-

ᵴ

ħu ҳ ˥ ᵴ	ᵴ	
	-	-

31.6.6 show aaa method-list

AAA " Â

show aaa method-list

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-	-

ħu ҳ « ẩ

G	ħu ३ AAA " Â

w R	ІО R AAA " Â 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

ˇΩħu ३	ħu ३	
	aaa authentication	Ӌ "
	aaa authorization	Ӌ "
	aaa accounting	Ӌ "

⊀

ħu ३ ˥ ⊀	⊀	
	-	-

31.6.7 show aaa user lockout

ɱ " Â

show aaa user lockout {**all** | **user-name** <*word*>}

∢	∢	
	<*word*>	ID

ħu ३	Â

G

ɱń " ˘ ɅU ˧l ƗA Â

w R

ƗO R '

```
Ruijie# show aaa user lockout all
```

ʗΩƫu ʒ

ƫu ʒ	
show running-config	Ɨ ɱń
show aaa lockout	ɱń login ˥l

ƒl

ƫu ʒ ˥ ƒl

ƒl	
-	-

32.1.2 radius attribute

radius ttribute{*<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**

৭	
id	৲ id <1-255>
type	type

৯ ৸ ⋮ '

id	৲	type
1	max down-rate	1
2	qos	2
3	user ip	3
4	vlan id	4
5	version to client	5
6	net ip	6
7	user name	7
8	password	8
9	file-diractory	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	version to server	17
18	flux-max-high32	18
19	flux-max-low32	19
20	proxy-avoid	20
21	dailup-avoid	21
22	ip privilige	22

23	login privilige	42

‵Ωħu ҳ	ħu ҳ	
	radius set qos cos	radius· ЮO qos ḣ ѝ ⊀ cos ḣ

⊀

ħu ҳ ⎾ ⊀	/⁄	
	-	-

32.1.3 radius-server attribute 31

RADIUS Calling-Station-ID ˆ ѫ ¥

ϻ

ħυ ϗ ϒ ϻ	ϻ	
	10.3(5)	ħυ ϗ

32.1.4 radius-server deadtime

ϟ ϻ˘ ج t تن ۋ ؛ ھ ˘ ‡ ي ⊨ ل ϧ˘ t ي ϧ
ˆ deadtime˜ ˘ RGOS ɔ RADIUS ϧ ˘ ώ ħυ ϗ
radius-server deadtime Â ħυ ϗ **no** ˘ ḣ Â

radius-server deadtime *minnutes*

no radius-server deadtime

ϼ	ϼ	
	minnutes	ϧ ˆ ´ Æ ي؛ ˜ Â ϟ ḣ تن ي 1-1000 Â

	5؛

ħυ ϗ	ώ Â

ϩ 1-1000 ħυ ϗ ϟ Â

32.1.5 radius-server host

RADIUS ώ Ŀ ɳ ў ˘ ώ ħυ ϗ **radius-server** Â ħυ ϗ **no** ϊ RADIUS

ϟ		
ipv4-address	ώ Ŀ ɳ ў	IPv4 ϕϧ ϡ Â
ipv6-address	ώ Ŀ ɳ ў	IPv6 ϕϧ ϡ Â
auth-port `	UDP ϟ Â	
port-number `	UDP ϟ ϱ˘	ϰ ϑ ‡ ў a ` Â
acct-port	UDP ϟ	
port-number	UDP ϟ ϱ˘	ϰ ϑ ‡ ў a Â

RADIUS ў Â

ħυ ϗ

G RADIUS AAA ώ Ŀ˘ ЂRADIUS ώ Ŀ ɳ Â ɻ ΠυG **radius-server** ħυ ϗ ЂЖ У ə ə F

w R]TJ /C2_0 1 Tf -0.006 Tc 4< T#r0 Tw 5.515D>6<073C>6<1CE10875<0C3CE10>6<167C03E145AF>6<32

ħυ ϛ ϒ ↓	/I	
	-	-

32.1.6 radius-server key

ħ Ł ⊻ ~ б RADIUS ώ Ł ⊻ ə ΄Ω м, ∧ ϛ˘ ώ
ħυ ϛ **radius-server key** Â ħυ ϛ no ↓ ΄Ω м, ∧ ϛ Â

radius-server key

æ ѝ RADIUS ѽ ᴸѶ ч Лuⷭѡ ч ˘

	seconds	ˆ ´ Æ ϶ ˜ Â ˩ ḣ ت ϶ 1-1000 Â
	5	
ħυ ϗ	ώ Â	
G	G ħυ ϗ ˩ Â	

ɯ R

Ю R'

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

ˇΩħu ३

ħu ३	
radius vendor-specific extend	Radius ѝ a ш ⁞ ˝ ك id

ᔑ

ħu ३ ٦ ᔑ

ᐱ	
-	-

32.1.10 radius vendor-specific extend

ѝ a ш ⁞ ˝ ك idÂ

radius vendor-specific extend

no radius vendor-specific extend

ᐯ

ᐯ	
-	-

ᔑ ⁞ ᐱ ˝ ك id

ħu ३ ѿ Â

G G ħu ३ ᔑ ˝ ك id صر ⁞ Â

ɯ R

Ю R'

```
Ruijie(config)#
```

ħu ҳ ˥ ˩	/ǀ	
	-	-

32.2 RADIUS

32.2.1 debug radius

RADIUS ˜Ω Â ħu ҳ no ˜Ω RADIUS ˜Ω Â

debug radius [**event | detail**]

no debug radius [**event | detail**]

˄	˄	
	-	-

ħu ҳ	EXEC Â
G	
w R	

˜Ωħu ҳ	ħu ҳ	
	-	-

˩	

ħu ҳ ˥ ˩	/ǀ	
	-	

-	-

ħu ҳ Â

G G ħu ҳ radius Ł ɣ Â

w R

```
Ruijie# show radius parameter
Server Timout:   5 Seconds
Server Deadtime: 5 Minutes
Server Retries:  3
Server Key:      ******
```

ħu ҳ	
radius-server host	ħ RADIUS ŏ Ł ɣ ў
radius-server retransmit	ħ RADIUS ɬ
radius-server key	ħ RADIUS ă Ȯ ü - ɲ ľ

G	G ħu ϡ radius ᴸ ⅄ ą Â

w R

```
Ruijie# show radius server
server ip : 192.168.4.12
acct  port: 23
authen  port: 77
server state: ready
server ip : 192.168.4.13
acct  port: 45
authen  port: 74
server state: ready
```

ʹΩħu ϡ

ħu ϡ	
radius-server host	⊮ RADIUS ώ ᴸ ⅄ ў
radius-server retransmit	⊮ RADIUS ↓
radius-server key	⊮ RADIUS ʹΩ м ∕ ϡ
radius-server timeout	⊮ RADIUS

∕

ħu ϡ ˥ ∕

∕	
-	-

32.2.4 show radius vendor-specific

RADIUS ص Â

show radius vendor-specific

∕

∕	
-	-

ħu ϡ Â

G	G ħu ϡ radius ص Â

```
Ruijie# show radius vendor-specific
id    vendor-specific       type-value
----- -------------------- ----------
1     max down-rate         76
2     qos                   77
3     user ip               3
4     vlan id               4
5     version to client     5
6     net ip                6
7     user name             7
8     password              8
9     file-diractory        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           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 privilige          22
23    login privilige       42
24    limit to user number  50
```

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ħυ ϗ	
radius-server host	ᵻ RADIUS ώ ᵾ ᵿ
radius-server retransmit	ᵻ RADIUS ᵸ
radius-server key	ᵻ RADIUS Ώᵯᵴϗ
radius-server timeout	ᵻ RADIUS

ΏħυϗϞ

	-	-

33 TACACS+

33.1 TACACS+

33.1.1 aaa group server tacacs+

ћu ъ TACACS+ Ь Й ˘ a л TACACS+ Ь Й ,ў ў a л Â

aaa group server tacacs+ *group-name*

no aaa group server tacacs+ *group-name*

¶		
	group-name	TACACS+ Ь Й л

	TACACS+ Ь Й Â

ћu ъ	ѽ Â

G	TACACS+ Ь Й ў ˘ à à л ЛuG a л Ь Й Â

w R	Ю R У э л й tac1 TACACS+ Ь Й ˘ з ج è У э 1.1.1.1 TACACS+ Ь Й سم فذ' Ruijie(config)# **aaa group server tacacs**+ *tac1* Ruijie(config-gs-tacacs+)# **server** *1.1.1.1*

ћu ъ		
server	TACACS+ Ь Й server "
ip vrf forwarding	TACACS+ Ь Й VRF л

¶	

ћu ъ ℸ л		
	-	-

33.1.2 ip tacacs source-interface

ħu ३ TACACS+ سم فخ Â

ip tacacs source-interface *interface*

no ip tacacs source-interface

٩	

٩ **c 2.247 0 Td[(T)-10(A)-1351 Tf-0**

vrf-name	vrf ʲ

ʮ ʯ

G

ħu ʒ ɱˇ ħu ʒ **aaa group server tacacs+** ώ TACACS+ Â
TACACS+ Ł ɲ è Ł ɲ ﻓﺨ ﺳ ﻟ ˇ ﺟ ﷺ Ю˘ **tacacs-server host** ħu ʒ Ł ɲ Â
Ł ɲ è TACACS+ Ł ɲ ﻓﺨ ﺳ ﻟ ˇ У э Ł ɲ : ˘ ¸ ɻ Ю У э Ł ɲ ɬ Â

W R

Ю R У э ɻ й tac1 TACACS+ Ł ɲ ˘ з ﺟ è У э 1.1.1.1 TACACS+ Ł ɲ ﻓﺨ ﺳ ﻟ '

```
Ruijie(config)# aaa group server tacacs+ tac1
Ruijie(config-gs-tacacs+)# server 1.1.1.1
```

ћu ҙ ѽ Â

G ѝ ѫ G TACACS+ AAA ѽ Ҿ ћѫ TACACS+ ѽ Ҿ Ѵ Â ҵ Ѡ G **tacacs-server** ћu ҙ ћѫ У ə ə TACACS+ ѽ Ҿ Ѵ Â

w R Ю R ћѫ У ə TACACS+ ѽ Ҿ Ѵ ў '

```
Ruijie(config)# tacacs-server host 192.168.12.1
Ruijie(config)# tacacs-server host 2001::1
```

ѽћu ҙ

ћu ҙ	
aaa authentication	ћѫ AAA ` "
tacacs-server key	ѽ ћѫ TACACS+ ѽ Ҿ Ѵ Ѽ ѡ ѧ ҙ
tacacs-server timeout	ѽ ћѫ TACACS+ Ҿ Ѵ : Ѵ

ѧ

τ ὶ ə Ł ⅄ a ⅄ G˘ τ G host ħυ ϗ è key ˘
⅃ Λυ ὥ key Ł ⅄ У ə key Â

ѡ R

Ю R ⅎ TACACS+ ὥ Ł ⅄ ΄Ω ϻ ∧ ϗ ὶ aaaʹ
Ruijie(config)#**tacacs-server key** *aaa*

΄Ωħυ ϗ

ħυ ϗ	
tacacs-server host	ⅎ TACACS+ ὥ Ł ⅄ ў
tacacs-server timeout	ⅎ TACACS+ ⅄

⅄

ħυ ϗ ⅂ ⅄

∕∧	
-	-

33.1.7 tacacs-server timeout

ħυ ϗ б TACACS+ Ł ⅄ ˘ Ł ⅄ ὥ Â

tacacs-server timeout *seconds*

no tacacs-server timeout

∧	

∧

seconds

tacacs-server host	ʬ TACACS+ ʠ ʦ ʭ ʡ
tacacs-server key	ʬ TACACS+ ʿ Ω ʍ ʴ ʯ

ʴ

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-	

33.2 TACACS+

33.2.1 debug tacacs+

TACACS+ ʿ Ω Â ʮ ʯ no ʿ Ω TACACS+ ʿ Ω Â

debug tacacs+

no debug tacacs+

ʴ	

33.2.2 show tacacs

Ґ ґ TACACS+ ┞ ℵ Ђ ц ą Â

show tacacs

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-	-

ћu ъ Â

G G ћu ъ Ґ ґ TACACS+ ┞ ℵ Ђ ц ą Â

```
Ruijie# show tacacs
Tacacs+ Server : 172.19.192.80/49
Socket Opens: 0
Socket Closes: 0
Total Packets Sent: 0
Total Packets Recv: 0
Reference Count: 0
```

ћu ъ	
tacacs-server host	ћ Ґ ґ TACACS+ ┞ ℵ Ђ ц ą ѽ ┞ ℵ ў

ѵ	
-	-

ћu ъ ї ѵ

34 SSH

34.1 SSH

34.1.1 crypto key generate

Ь ϗ Ώ΄Ώ ˘ ѯ ώ ΗΟ˘ ħυ ϩ'

crypto key generate {**rsa | dsa**}

ϟ	
rsa	RSA
dsa	DSA

ϙ ΗO SSH Server Ώ΄Ώ Â

ħυ ϩ ώ

SSH Server Ь ˘ ħυ ϩ SSH Ь ϗ Ώ΄Ώ Â ϳ **enable service ssh-server** ħυ ϩ˘ SSH Server ╖ ÂSSH 1 G RSA ' SSH 2 G RSA DSA Â ˘ ϻ RSA ˘ ‡ SSH1 б SSH2 ϳ Л∪ G ' Θ DSA ˘ ‡ Θ SSH2 ϳ Л∪ G Â

~ ╡ ˘ a ѯ ħυ ϩ **no crypto key generate**˘ ħυ ϩ **crypto key zeroize** ħυ ϩ╡ Â

ѡ R

```
Ruijie# configure terminal
Ruijie(config)# crypto key generate rsa
```

ħυ ϩ	
show ip ssh	SSH Server ϻ ə Â
crypto key zeroize {**rsa	dsa**}	╡ DSA б RSA ˘ ˜Ω SSH Server ╖ Â

ϳ ˚ RGOS10.1 Л∪Э

ħυ ϩ ˥ ϳ

ϟ	

	-	-

34.1.2 crypto key zeroize

ҭ SSH Ь Ы ӪӪ ˇ ӕ ӧ Ю ħυ ҳ'

crypto key zeroize {**rsa** | **dsa**}

	٩	
٩	**rsa**	ҭ RSA
	dsa	ҭ DSA

ħυ ҳ	ӧ
G	ħυ ҳ ҭ Ь Ы ӪӪ Â ҭ ˅ SSH Server ѝ ѝ DISABLE Â ЎӪ SSH Serverў **no enable service ssh-server** ħυ ҳ Â
w R	Ruijie# **configure terminal** Ruijie(config)# **crypto key zeroize rsa**

	ħυ ҳ	
ЎӪħυ ҳ	**show ip ssh**	SSH Server ӎ Â
	crypto key generate {**rsa|dsa**}	DSA б RSA Â

˅	RGOS10.1 ЛυЭ

	/١	
ħυ ҳ ٦ ˅	-	-

34.1.3 ip ssh authentication-retries

SSH Server ÂG ħυ ҳ no ѝ Â

ip ssh authentication-retries *retry times*

no ip ssh authentication-retries

٩	
retry times	Â

Ю ѝ 3 Â ⁄˘ G **no ip ssh authentication-retries** ħu ҳ ≠ ⁄ Л ħ G ѝ ḣ Â

ħu ҳ ѽ

G ħu ҳ SSH Server Â SSH Server ˘ ÿ ╖˘ ‡ ѝ Â G **show ip ssh** ħu ҳ SSH Server ə ҷ Â

ѝ 2ʻ

w R
```
Ruijie# configure terminal
Ruijie(config)# ip ssh ssh authentication-retries 2
```

ʻΩħu ҳ	
ħu ҳ	
show ip ssh	SSH Server ɱ Â

⁄ ˚ RGOS10.1 Л Э

ħu ҳ ˥ ⁄	
⁄	
-	-

34.1.4 ip ssh time-out

SSH Server Â G ħu ҳ **no** ѝ Â

ip ssh time-out *time*

no ip ssh time-out

٩	
time	Â

Ю˘ ѝ 120s Â ⁄˘ G **no ip ssh time-out** ħu ҳ˘ ѝ ḣ Â

ħυ ҳ ѽ

ħυ ҳ SSH Server Â ÿ ↓ ˘
G 120s ╖ ˘

ν G 2'

ψ R

```
Ruijie# configure terminal
Ruijie(config)# ip ssh version 2
```

ˇΩħυ ३

ħυ ३	[redacted]
show ip ssh	SSH Server ɲ́ Â

ν ˚ RGOS10.1 ЛυЭ

	Clear line vty *line_number*	ɱή VTY ˬ Â

⁄	ˬ RGOS10.1 ЛυЭ

ħυ ҳ ˥ ⁄		
	⁄	
	-	-

34.2.2 show crypto key mypubkey

SSH Server Ὼ″Ω Ὼ ʲ ą Â

show crypto key mypubkey {***rsaldsa***}

	⁰	
⁰	**rsa**	RSA Ὼ ʲ
	dsa	DSA Ὼ ʲ

ħυ ҳ

G	SSH Server Ὼ″Ω Ὼ ʲ ą Â ↑ ' à ⅄ à Ὼ ʲ ǫ̈ ą Â

ѡ R	Ruijie# **show crypto key mypubkey rsa**

″ΩħυҲ	ħυ ҳ	
	crypto key generate {**rsa	dsa**}	DSA б RSA Â

⁄	ˬ RGOS10.1 ЛυЭ

ħυ ҳ ˥ ⁄		
	⁄	
	-	-

34.2.3 show ip ssh

SSH Server ɱή ą Â

show ip ssh

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-	-

ħυ ३

G

SSH Server ɱ ə Â ' à ï SSH Server à à Â

~ . G ɷ SSH ˘ Ł ˘ ÿ SSH ŕ a ɻ Â

w R

```
Ruijie# show ip ssh
```

ˇΩħυ ३

ħυ ३	
Ip ssh version {**1** | **2**}	SSH Server ə Â
ip ssh time-out time	SSH Server Â
Ip ssh authentication-retries retry times	SSH Server Â

ɻ ˚ RGOS10.1 ЛυЭ

ħυ ३ ٦ ɻ

⁄	
-	-

34.2.4 show ssh

SSH ɔ ə Â

show ssh

५	
-	-

ħυ ҳ

G SSH ҽ Â ' ´ VTY ʌ à SSH à ╗
à à à ⅄ Â

w R Ruijie# **show ssh**

ʷΩħυ ҳ

ħυ ҳ	
-	-

ʌ ˚ RGOS10.1 ΛυЭ

ʌ	

35 CPU

35.1

35.1.1 cpu-protect type packet-type pps pps_value

CPU ٨ ص Â

cpu-protect type { **arp** | **bpdu** | **dhcp** | **ipv6mc** | **igmp** | **rip** | **ospf** | **vrrp** | **pim** | **ttl1** | **unknown-ipmc** | **dvmrp** | …} **pps** *pps_value*

CPU ʎ ص . ″I Â

cpu-protect type { **arp** | **bpdu** | **dhcp** | **ipv6mc** | **igmp** | **rip** | **ospf** | **vrrp** | **pim** | **ttl1** | **unknown-ipmc** | **dvmrp** | …} **pri** *pri_num*

ʎ		
	pri_num	ID˘ ʏ ḣ ت ḯ 0ˉ 7

	ص " ḣ ḯ 0 Â
ʮ ʒ	ŏ Â
G	
w R	Ю BPDU ʃ " 7 R ' Ruijie(config)# **cpu-protect type bpdu pri** *7* Set packet type bpdu pri 7.

˜Ωʮ ʒ	ʮ ʒ	
	cpu-protect type packet-type pps *pps_value*	ص Â

ʃ

ʃ	
-	-

35.2

35.2.1 show cpu-protect type

ʒ ص '

show cpu-protect type { **arp** | **bpdu** | **dhcp** | **ipv6mc** | **igmp** | **rip** | **ospf** | **vrrp** | **pim** | **ttl1** | **unknown-ipmc** | **dvmrp | …**} *dvmrp*

ʎ	

Íu ¾ Â

G Íu ¾ ص ə Â

w R

ЛuЮ R G **show cpu-protect type bpdu** Íu ¾ BPDU '

```
Ruijie(config)# show cpu-protect type arp
Slot     Type        Pps      Total     Drop
--------- ------------ --------- --------- ---------
MainBoard bpdu         100        30        0
Slot-2    bpdu         100        30        0
```

ŽΩÍu ¾

Íu ¾	
show cpu-protect type *packet-type*	CPU ¢ ə Â

-

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Íu ¾ ˆ √

/\	
-	-

~ CPP Íu ¾ è"…" " w CPP ص Â

36 DoS

36.1

36.1.1 ip deny invalid-l4port

ὖ ╖ Â ᴳ ƕ ɤ **no** ˜Ω ╖ Â

ip deny invalid-l4port

no ip deny invalid-l4port

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-	-

	ɑ ƙ˘ ╖ ˜Ω Â
ƕ ɤ	ώ Â
ᴳ	
ᴡ ᴿ	ᴿ 1' ⌫ Ɔ ὖ ╖ ' Ruijie(config)# **ip deny invalid-l4port** ᴿ 2' ⌫ Ɔ˜Ω ╖ ' Ruijie(config)# **no ip deny invalid-l4port**

˜Ωƕ ɤ		
show ip deny invalid-l4port		

ɹ	-

ƕ ɤ ˥ ɹ	ᴻ	
	-	-

36.1.2 ip deny invalid-tcp

ŭ TCP ╖ Â G ƫu ɮ **no** ˜Ω TCP ╖ Â

ip deny invalid-tcp

no ip deny invalid-tcp

¶	
-	-

ɑ ƙŎ TCP ╖ ˜Ω Â

ƫu ɮ ŏ Â

G

ᴿ 1' ⱬ Э ŭ TCP ╖ '

```
Ruijie(config)# ip deny invalid-tcp
```

ᴡ ᴿ

ᴿ 2' ⱬ Э˜Ω TCP ╖ '

```
Ruijie(config)# no ip deny invalid-tcp
```

˜Ωƫu ɮ	ƫu ɮ
show ip deny invalid-tcp	TCP P532A>6<0B9TJ

ƕ ɾ	ŏ Â
G	
w R	R 1' ₰ Э ŭ Land ℸ ' Ruijie(config)# **ip deny land** R 2' ₰ Э ˜Ω Land ℸ ' Ruijie(config)# **no ip deny land**

˜Ωƕ ɾ	ƕ ɾ	
	show ip deny land	Land

⅄	-

ƕ ɾ ˥ ⅄	⅄	
	-	-

36.2

36.2.1 show ip deny invalid-l4port

Â

show ip deny invalid-l4port

↰	↰	
	-	-

ƕ ɾ	Â
G	
w R	Ruijie# **show ip deny invalid-l4port** DoS Protection Mode State ------------------------------ -----

protect against invalid l4port attack Off

‰ ¥	
-	-

36.2.3 show ip deny land

Land Â

show ip deny land

37 GSN

37.1

37.1.1 security address-bind enable

ƫ ɂ ɣ ʎ ĭ ѫ Â

security address-bind enable

no security address-bind enable

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	ʎ	
	-	-
ƫ ɂ	ʎ ˘ ɣ Ɥ ʎ^ a ↑ AP Ո AP ˜ ʎ˜ Â	
G	ƫ ɂ Â ‡ ʎ ѫ . ˘ ƫ ɂ ج GSN ŏ ˜Ω ɔ Â	
ɯ R	ŏ Y ˚ ' Ruijie(config-if)# **security address-bind enable**	
˜Ωƫ ɂ	ƫ ɂ	
	security gsn enable	GSN ŏ ˜Ω
ʃ	˚ RGOS10.1 Л Э Â	
ƫ ɂ ˥ ʃ	ʃ	
	-	-

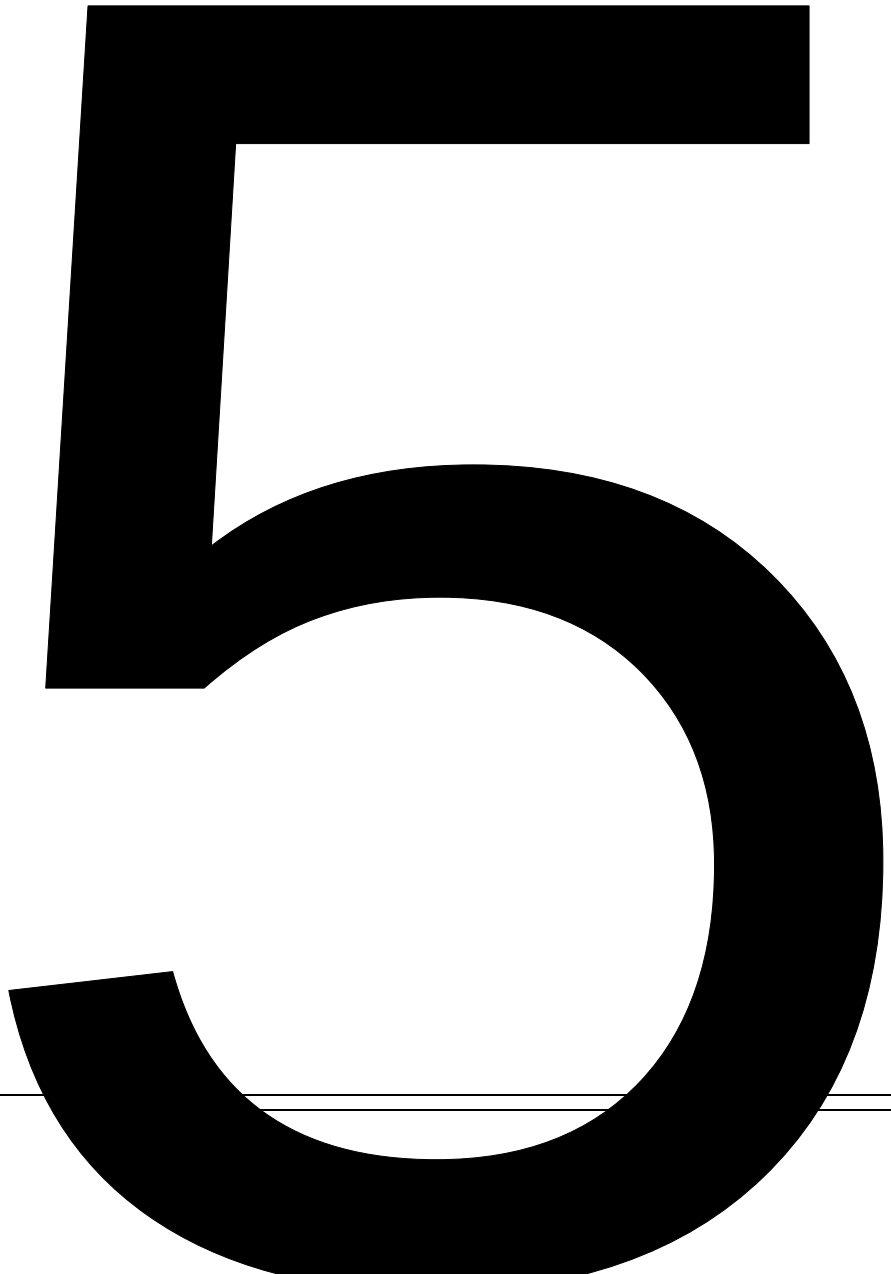
37.1.2 security community

ƫ ɂ ɣ Ո smp Ь ɻ ʒ ŏ ɹ Â

security { [**v1 | v2**] **community** *community* | **v3 user** *username* }

no security { [**v1 | v2**] **community** *community* | **v3 user** *username* }

٩	
community	ر ᴸ ᴊ Ꮋ ᵀ *community* s Â
username	ᴳ v3



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⊿	˚ RGOS10.1 Лυ Э

Ъυ ҳ ˥ ⊿	⁄	
	-	-

37.1.5 smp-server host

Ъυ ҳ ¥ smp-server ip ѳѣ Â

smp-server host *ip-address*

no smp-server host

⁴	⁴	
	ip-address	smp server ip ѳѣ

	smp server

Ъυ ҳ	ŏ

G	Ъυ ҳ Â G **show smp-server** Â

ш R	Ruijie(config)#**smp-server host** *192.168.4.243*

˝ΩЪυ ҳ	Ъυ ҳ	
	show smp-server	smp server

⊿	˚ RGOS10.1 Лυ Э

Ъυ ҳ ˥ ⊿	⁄	
	-	-

37.2

37.2.1 show security evnet interval

ŏ Y ˇ Â

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Ъυ ҳ

G ŏ Y ˇ Â

w R
```
Ruijie# show security event interval
Event sending interval(Seconds):5
```

ЪΩЪυ ҳ

Ъυ ҳ	
security event interval *interval*	ŏ Y ˇ Â

ل ˇ RGOS10.1 Л Э Â

Ъυ ҳ ٦ ل

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37.2.2 show smp-server

smp server IP ف س

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Ъυ ҳ

G smp server IP ف س Â

w R
```
Ruijie# show smp-server
```

SMP-Server IP’ 192.168.20.30

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Ъ ҂	
smp-server host	smp server ip فخ سه Â

RGOS10.1 Л Э Â

Ъ ҂ ˥ ⊿

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38 DAI

38.1 VLAN DAI

38.1.1 ip arp inspection vlan

G ħυ ϗ˘ ϟ Πυ ΰ *vlan-id* VLAN DAI ╖ Â ħυ ϗ no ϟ Πυ
ϡΩ *vlan-id* VLAN DAI ╖ ˘ ϶ *vlan-id*ď ‡ ϡΩ VLAN
Э DAI ╖ Â

ip arp inspection vlan *vlan-id*

no ip arp inspection vlan [*vlan-id*]

϶	
vlan-id	vlan /ϧ Â

38.2

38.2.1 ip arp inspection trust

γ ∧ ĭ ┘ ə ˘ G ∧ ħυ ३ **ip arp inspection trust** Â ħυ ३ **no** γ ∧ ѝ a ə Â

ip arp inspection trust

no ip arp inspection trust

ŭ Ş ˛ γ ϰ ɣ ‡ t У ʌ ˘

39 arp

ʎ Ю Ȓ arp ə Â

show anti-arp-spoofing

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```
Ruijie#show anti-arp-spoofing
                port            ip
                -------         -----------
                Fa0/1           192.168.1.1
```

Ȓƫ ɮ

ƫ ɮ	
anti-arp-spoofing ip	Ȓ arp ƫ ɮ

ɻ

ƫ ɮ ˥ ɻ

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-	-

40 IP Source Guard

40.1 IP Source Guard

40.1.1 ip source binding

ج IP فخ سم è ╗ ə ˇ **no** ╛ Â

[**no**] **ip source binding** *mac-address* **vlan** *vlan-id ip-address* **interface** *interface-id*

٩		
٩	*mac-address*	╗ MAC فخ سم’
	vlan-id	╗ vlan id’
	ip-address	╗ IP فخ سم’
	interface-id	╗ ٩ Â

╗ ˙ ! فخ سم Â

ħυ ϡ ŏ Â

G ħυ ϡ ┘Л υ ï ╛ ┘Л IP Source Guard ˇ a DHCP У ⁸ Â

w R Ю У э ╛ ٩ 1 R '

```
Ruijie# configure terminal
Ruijie(config)# ip source binding 0000.0000.0001 vlan 1 1.1.1.1
interface FastEthernet 0/1
Ruijie(config)# end
Ruijie# show ip source binding
MacAddress    IpAddress  Lease(sec)  Type    VLAN  Interface
------------- --------- ----------  ----    ----  ------------
0000.0000.0001 1.1.1.1   infinite   static   1  FastEthernet 0/1
Total number of bindings: 1
```

ΩħυϡΩ	ħυ ϡ	

	show ip source binding	IP ففد سم ə٩

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ħυ ϗ ٦ ᴊ	ᴎ	
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40.2 IP Source Guard

40.2.1 ip verify source

ᴎ Э IP Source Guard ╖ ˘ **no** ˜Ω ╖ Â

[**no**] **ip verify source** [**port-security**]

ᴎ	ᴎ	
	port-security	IP Source Guard ╖ ₥ ¥ IP+MAC Â

˜Ω Â

ħυ ϗ ᴎ Â

G

ħυ ϗ ᴎ IP Source Guard ╖ ˘ ᴊЛυ ₥ ¥ IP ˘ ₥ ¥ IP+MAC ’

IP Source Guard ╖ Θ Θ ج DHCP Snooping ə٩ ᴎ Э ˘ ≠ ˘ ج Trust ᴎ Лυ ᴵ DHCP Snooping ⁸ ᴎ Э IP Source Guard ╖ ˘ IP Source Guard ╖ a Â

w R

Ю ᴎ 1 Э IP Source Guard ╖ ’

```
Ruijie# configure terminal
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ip verify source
Ruijie(config-if)# end
```

ħυ ϗ e1155362.18 mh356.58 5-1.Rui209.22 164.62 reW*n0.852 g141.6 1362.1

ħυ ϗ ϒ ϳ	/ϳ	
	-	-

40.3 IP Source Guard

40.3.1 show ip source binding

ħυ ϗ IP فخ سم ə ι Â

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

ϰϤ	ϰϤ	
	ip-address	ip ə '
	mac-address	mac ə '
	dhcp-snooping	╟ ə '
	static	ə '
	vlan-id	vlan ə '
	interface-id	ϰ ə ι Â

Â

ħυ ϗ	Â
G	Â

ЮO R '

```
Ruijie# show ip source binding static
MacAddress    IpAddress  Lease(sec)  Type    VLAN  Interface
------------- --------- ----------  ----    ----  ------------
0000.0000.0001 1.0.0.1   infinite   static   1  FastEthernet 0/1
Total number of bindings: 1
```

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	-	-

ง

ใน ว ไ ง	ง	
	-	-

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

¶	
percent_vaule	ǂ ˘ ↓ ḣ تن 1ǂ 100

(Manage)´ ă ʁ ǂ ὴ 30˝

ↄ (Route)´ ă ʁ ǂ ὴ 25˝

˜ (Protocol)´ ă ʁ ǂ ὴ 45 Â

ƫυ ϛ ώ

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ʍ R

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

	pps	˘ ´ Æ ˘ ↓ ḣ تن [1,9999] Â

	ə IP فخ سم Ո ə MAC فخ سم 8 ə˘ ə ∧ 200 ə Â
ħu ϡ	NFPP
G	a ¥ Â

w R

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# arp-guard attack-threshold per-src-ip 2
Ruijie(config-nfpp)# arp-guard attack-threshold per-src-mac 3
Ruijie(config-nfpp)# arp-guard attack-threshold per-port 50
```

	ħu ϡ	
ΏħU ϡ	**nfpp arp-guard policy**	Ո
	show nfpp arp-guard summary	ə
	show nfpp arp-guard hosts	↓ ў

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w R ƒ' G

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41.3.4 arp-guard monitor-period

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arp-guard monitor-period *seconds*

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seconds	˘ ´ Æ ˘ ৶ ḣ تن [180, 86400] Â

ḣ 600 Â

ħυ ३ NFPP

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Â ҽ ˚ è˘ ṅ ḣ ˘ ╟ ˚

৶ ˚ ˘ ʒ ṅ Â ҽ ṅ 0 ą Ю

ҤՋ Â

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˚ Â

w R

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

ℨΩħυ ३

show nfpp arp-guard summary	ə
show nfpp arp-guard hosts	৶ ў
clear nfpp arp-guard hosts	ў

৶

41.3.5 arp-guard monitored-host-limit

ħυ ३ ৸ ў Â

arp-guard monitored-host-limit *number*

৭		
৭	*number*	৸ ў ˘ ৸ ḣ ت и 1↑ 4294967295
	৸ ў и 1000 ə Â	
ħυ ३	NFPP	
G	৸ ў ↑ 1000 ə˘ ˜ ৸ ў ¥ 1000˝ a˳ ‡ ৸ ў ˘ . ą l' %ERROR' The value that you configured is smaller than current monitored hosts 1000˝ ৸ ў ~ ˘ please clear a part of monitored hosts. Ł ˜ ˘ ‡ ‡ ў Â ৸ ў ˘ . l' % NFPP_ARP_GUARD-4-SESSION_LIMIT: Attempt to exceed limit of 1000˝ ৸ ў ~ monitored hosts. Ł ˜ Â	
w R	Ruijie(config)# **nfpp** Ruijie(config-nfpp)# **arp-guard monitored-host-limit** *200*	

˜Ωħυ ३	ħυ ३	
	show nfpp arp-guard summary	ą

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	-	-

41.3.6 arp-guard rate-limit

ώ Â

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

৭	৭	

ħυ ϡ	NFPP
G	10 ĺ 15 ɜ ЛυЭ ARP ˘ MAC ɯɲ فخ سم IP ˘لا فخ سم MAC سم فخ Ո IP ɯɲ فخ سم IP سم فخ a لا ˘ ȕ Â
ѡ R	Ruijie(config)# **nfpp** Ruijie(config-nfpp)# **arp-guard scan-threshold** 20

ЎΩħυ ϡ

ħυ ϡ	
nfpp arp-guard scan-threshold	ج٩ Э
show nfpp arp-guard summary	ə
show nfpp arp-guard scan	ARP

[redacted]

-

w R

VLAN 1 ϰ g 0/1 ў Â

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

ΏħυϡΩ

ħυϡ	
arp-guard attack-threshold	ώ
nfpp arp-guard policy	∩
show nfpp arp-guard hosts	ϟ ў

ϟ

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41.3.9 clear nfpp arp-guard scan

ARP Â

clear nfpp arp-guard scan

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```
Ruijie# clear nfpp arp-guard scan
```

ΏħυϡΩ

ħυϡ	
arp-guard scan-threshold	ώ
nfpp arp-guard scan-threshold	
show nfpp arp-guard scan	ARP

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41.3.10 nfpp arp-guard enable

seconds	˘ ´ Æ ˘ ↓ ḣ ىں 0 [30, 86400]˜ 0 a Â
permanent	ⱵA

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```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp arp-guard isolate-period 180
```

	ħυ ३	
˜Ωħυ ३	**arp-guard isolate-period**	ώ

show nfpp dfpp 8 0 Td( )TĘT6605.4-0..36 559.1603 Tm[<48Q685ĘLh/•

ħυ ३ ٨

G a ¥ Â

w R
```
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
```

ٹΩħυ ३

ħυ ३	
arp-guard attack-threshold	ŏ
arp-guard rate-limit	ŏ
show nfpp arp-guard summary	ٹ
show nfpp arp-guard hosts	٧ ў
clear nfpp arp-guard hosts	ў

٧

ħυ ३ ٦ ٧

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10.4	ħυ ३

41.3.13 nfpp arp-guard scan-threshold

ج ٨ Э Â

nfpp arp-guard scan-threshold *pkt-cnt*

٩

٩	
pkt-cnt	ḣˇ ٧ ḣ تن [1,9999] Â

ث ¥ ٨ ARP ḣˇ ŏ ARP ḣ Â

ħυ ३ ٨

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ħυ ҳ	
nfpp dhcp-guard policy	Ո
show nfpp dhcp-guard summary	ə
show nfpp dhcp-guard hosts	↓ ў
clear nfpp dhcp-guard hosts	↓ ў

/ſ	
-	-

41.4.2 dhcp-guard enable

ħυ ҳ DHCP ╗ Â

dhcp-guard enable

ſ	
-	-

ſ DHCP ˜Ω ώ ˜Ω Â

ħυ ҳ NFPP

G

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

ħυ ҳ	
nffp dhcp-guard enable	ſ Э DHCP ╗
show nfpp dhcp-guard summary	ə

/ſ	

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41.4.3 dhcp-guard isolate-period

ħυ ҙ ѽ Â

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

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NFPP ħu ҳ

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```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcp-guard rate-limit per-src-mac 8
Ruijie(config-nfpp)# dhcp-guard rate-limit per-port 100
```

ʺΩħυ ҳ

ħυ ҳ	
nfpp dhcp-guard policy	∩
show nfpp dhcp-guard summary	ə

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41.4.7 clear nfpp dhcp-guard hosts

ˇ . Â

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

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vid	ᵴᵴ ᶘ
interface-id	ᵑ ᶨ
mac-address	MAC ᵴᵴ فذ

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G a ᵑ ˇ Â

ẅ ᴿ VLAN 1 ᵑ g 0/1 Â

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

ʺΩħυ ҳ

ħυ ҳ	
dhcp-guard attack-threshold	ώ
nfpp dhcp-guard policy	∩

	show nfpp dhcp-guard hosts	ў

ᴎ

ħu ҳ ᄀ ᴎ	ᴎ	
	-	-

41.4.8 nfpp dhcp-guard enable

ħu ҳ ᵭ ᴎ Э DHCP ᄁ Â

nfpp dhcp-guard enable

ᴎ	ᴎ	
	-	-

	ᴎ DHCP ᷉Ω᷊ ѽ ᷉Ω Â
ħu ҳ	ᴎ
G	ᴎ DHCP ᷉Ω᷈ ᷊l ɣ ѽ DHCP ᷉Ω Â
ᴡ R	Ruijie(config)# **interface G0/1** Ruijie(config-if)# **nfpp dhcp-guard enable**

	ħu ҳ	
᷉Ωħu ҳ	**dhcp-guard enable**	ѽ DHCP ᄁ
	show nfpp dhcp-guard summary	ᵮ

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

٩		
٩	*seconds*	˘ ´ Æ ˘ ٧ ḣ تن 0 [30, 86400] 0 a Â
	permanent	ⱵA

ɑ ˘ ŏ Â

ħυ ϗ ٨

G

w R

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp dhcp-guard isolate-period 180
```

ħυ ϗ	
dhcp-guard isolate-period	ŏ
show nfpp dhcp-guard summary	ٹ

٧

ħυ ϗ ٦ ٧	/ا	
	10.4	ħυ ϗ

41.4.10 nfpp dhcp-guard policy

ھ ٨ Ɔ Ո Â

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

٩		
٩	**per-src-mac**	ɔ MAC فذسه Ո Â
	per-port	ɔ ٨ Ո Â
	rate-limit-pps	˘ ٧ ḣ تن 1↑ 9999 Â
	attack-threshold-pps	˘ ٧ ḣ تن 1↑ 9999 Â

٨ Ո ˘ ŏ Ո Â

ħu ҷ	ʌ
G	a ¥ Â

w R

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp dhcp-guard policy per-src-mac 3 10
Ruijie(config-if)# nfpp dhcp-guard policy per-port 50 100
```

ŴħU ҷ

ħu ҷ	
dhcp-guard attack-threshold	ŏ
dhcp-guard rate-limit	ŏ
show nfpp dhcp-guard summary	ə
show nfpp dhcp-guard hosts	˩ ў
clear nfpp dhcp-guard hosts	ў

˩

ħu ҷ ˥ ˩

ʌ	
10.4	ħu ҷ

41.5 DHCPv6

41.5.1 dhcpv6-guard attack-threshold

ŏ ˘ . Ą˘ ѝ ҕ ѝ Â

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

ʌ

ʌ	
per-src-mac	ə MAC ƒđ ҙ Â
per-port	ə ʌ Â
pps	˘ ´ Æ ˘ ˩ ḣ ҭ [1,9999] Â

ə MAC ƒđ ҙ 10 ə˘ ə ʌ 300 ə Â

ħu ҷ	NFPP

G

w R

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

ʹΩħu ҳ

ħu ҳ	
nfpp dhcpv6-guard policy	Ո
show nfpp dhcpv6-guard summary	ҽ
show nfpp dhcpv6-guard hosts	↓ ў
clear nfpp dhcpv6-guard hosts	↓ ў

↓

ħu ҳ ˥ ↓

ʌ	
10.4	ħu ҳ

41.5.2 dhcpv6-guard enable

ħu ҳ DHCPv6 ╖ Â

dhcpv6-guard enable

ʌ

ʌ	
-	-

ʌ DHCPv6 ʹΩ˘ ώ ʹΩ Â

ħu ҳ NFPP

G

w R

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

ʹΩħu ҳ

ħu ҳ	

nffp dhcpv6-guard enable	ॐ ∧ Э DHCPv6 ╖
show nfpp dhcpv6-guard summary	ҽ

ᐧ

ħυ ३ ⅂ ᐧ	
ᐧ	
10.4	ħυ ३

41.5.3 dhcpv6-guard isolate-period

ħυ ३ ώ Â

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

∧	

seconds

	10.4	ħυ ҳ

41.5.4 dhcpv6-guard monitor-period

ħυ ҳ Â

dhcpv6-guard monitor- period *seconds*

٩		
٩	*seconds*	˘ ´ Æ ˘ ٧ ḣ تن [180, 86400] Â

5D

ħυ ҳ NFPP

Ą˘ ٧ Ơ ˚ ˘ ٧

G

dhcpv6-guard monitored-host-limit *number*

۹	
number	۷ ў ˘ ۷ ћ ىت ѝ 1ў 4294967295

۷ ў ѝ 1000 э

ћυ ҙ NFPP

۷ ў ў 1000 э˘ ˜ ۷ ў

ұ 1000˝ a˛ ї ۷ ў ˘ ۱ ľ %ERROR: The value that you configured is smaller than current monitored hosts (1000˝ ۷ ў ˜ ˘ please clear a part of monitored hosts.

G

150 э Â

r-src-mac *8*

r-port *100*

Ո

Ս ֏

c-address]

ϣ R

VLAN 1 ϰ g 0/1 Â

```
Ruijie# clear nfpp dhcpv6-guard hosts vlan 1 interface g0/1
```

ΫΩħυ ϗ

ħυ ϗ	
dhcpv6-guard attack-threshold	ώ
nfpp dhcpv6-guard policy	Ո
show nfpp dhcpv6-guard hosts	ў

ϡ

ħυ ϩ ϒ ϳ	⁄	
	10.4	ħυ ϩ

41.5.9 nfpp dhcpv6-guard isolate-period

ħυ ϩ ⌂ ϳ Э Â

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

ϳ	ϳ	
	seconds	˘ ´ Æ ˘ ϳ ḣ ىن 0 [30, 86400]˺ 0 a Â
	permanent	ⱵA

ą ˘ ώ Â

ħυ ϩ ϳ

G

w R
```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp dhcpv6-guard isolate-period 180
```

˝Ωħυ ϩ	ħυ ϩ	
	dhcpv6-guard isolate-period	ώ

٩	
per-src-mac	ə MAC فذ سه Ո٠ Â
per-port	ə ٩ Ո٠ Â
rate-limit-pps	˘ ٧ ḣ تن 1↑ 9999 Â
attack-threshold-pps	˘ ٧ ḣ تن 1↑ 9999 Â

٩ Ո٠ ˘ ŏ Ո٠ Â

ħu ɂ ٩

G a ɣ Â

w R

```
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
```

ʔΩħu ɂ

ħu ɂ	
dhcpv6-guard attack-threshold	ŏ
dhcpv6-guard rate-limit	ŏ
show nfpp dhcpv6-guard summary	ə٤
show nfpp dhcpv6-guard hosts	٧ ў
clear nfpp dhcpv6-guard hosts	ў

ħυ ϗ	NFPP
G	
ψ R	Ruijie(config)# **nfpp** Ruijie(config-nfpp)# **icmp-guard enable**

ΐΩħυ ϗ

ħυ ϗ	
nffp icmp-guard enable	ج ٨ Э ICMP ℸ
show nfpp icmp-guard summary	ə

ٮ

ħυ ϗ ٦ ٮ

ٯ	
-	-

41.6.3 icmp-guard isolate-period

ħυ ϗ ώ Â

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

٩

٩	
seconds	˘ ´ Æ ˘ ٮ ḣ ىں 0 [30, 86400]ٜ 0 a Â
permanent	ⱵA

ώ ḣ 0ٜ . a Â

ħυ ϗ	NFPP
G	ĵ ẅ ώ Ո ₥ ¥ ٨ ˆ . ~ Â ¥ ə ٨˘ ₥ ¥ ٨ ˘ Ȿ ώ ' ǐ ‡˘ ₥ ¥ ٨ Â
ψ R	Ruijie(config)# **nfpp** Ruijie(config-nfpp)# **icmp-guard isolate-period** *180*

ƫu ɝ	
nfpp icmp-guard isolate-period	ﺝ ٨ Э
show nfpp icmp-guard summary	ə

٨

ƫu ɝ ٦ ٨	٨	
	-	-

41.6.4 icmp-guard monitor-period

ƫu ɝ Â

icmp-guard monitor-period *seconds*

٩	٩	
	seconds	˘ ´ Æ ˘ ٨ ḣ ﺕ [180, 86400] Â

ѿ ḣ 600 Â

ƫu ɝ	NFPP

”

G

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ხუ ჯ ገ ᔑ	ᐱ	
	-	-

41.6.6 icmp-guard rate-limit

ѿ Â

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

۸		
۸	**per-src-ip**	ə IP فخ سم
	per-port	ə ۸
	pps	ḣ˘ ۷ ḣ تن [1,9999] Â

ə IP فخ سم 900 ə˘ ə ۸ 1000 ə Â

ħυ ҳ NFPP

G

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

˜Ωħυ ҳ	ħυ ҳ	
	nfpp icmp-guard policy	Ո
	show nfpp icmp-guard summary	ҽ

۶

ħυ ҳ ˥ ۶	/۱	
	-	-

41.6.7 icmp-guard trusted-host

a ۶ ҽ ў Â

icmp-guard trusted-host *ip mask*

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

۸	۸	

ip	IP ﻓﺦ ﺳﻢ
mask	IP ﻓﺦ ﺳﻢ
all	Ո- no У G ˘ ĩ ل ą ў

˙ ¡ ل ą ў Â

ħu ʒ NFPP

G ˝ ل ў a ˘ . ў ą˙ ˘ ‡ ل Л ħu ʒ Â
ل ą ў ل CPU ICMP ï ل CPU a ṁ˙ ¡ Ո Â
ل Л ĵ У э ў a Â
500 ل ą ў Â

w R

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

ʺΩħu ʒ

ħu ʒ	
show nfpp icmp-guard trusted-host	ą

ل

ħu ʒ ˥ ل

ﻝ	
-	-

41.6.8 clear nfpp icmp-guard hosts

ل ў ˘ ў ˘ Â

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

ٹ

ٹ	
vid	ﻣﻒ ﻝ
interface-id	ٹ ﻝ
ip-address	IP ﻓﺦ ﺳﻢ

ħu ɂ

G a ʌ ˘ ў Â

w R VLAN 1 ʌ g 0/1 ɹ ў Â

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

ʗΩħu ɂ

ħu ɂ	
icmp-guard attack-threshold	ώ
nfpp icmp-guard policy	Ո
show nfpp icmp-guard hosts	ў

ɻ

ħu ɂ ˥ ɻ

ʃ	
-	-

41.6.9 nfpp icmp-guard enable

ħu ɂ ₼ ʌ Э ICMP ╖ Â

nfpp icmp-guard enable

ʌ

ʌ	
-	-

ʌ ICMP ʗ˙ ώ ʗΩ Â

ħu ɂ ʌ

G ʌ ICMP ʗΩ ¨I ɣ ώ ICMP ʗΩ Â

w R

```
Ruijie(config)# interface G0/1
Ruijie(config-if)# nfpp icmp-guard enable
```

ʗΩħu ɂ

ħu ɂ	
icmp-guard enable	ώ ICMP ╖

	show nfpp icmp-guard summary	ə٩

ϡ

ħυ ϗ ˥ ϡ		
	ϻ	
	10.4	ħυ ϗ

41.6.10 nfpp icmp-guard isolate-period

ħυ ϗ ۓ ϰ Ɔ Â

nfpp icmp-guard isolate-period {*seconds* | **permanent**}

ϰ		
	ϻ	
	seconds	˘ ´ Æ ˘ ϡ ḣ ىن 0 [30, 86400]˺ 0 a Â
	permanent	ⱵA

	ϙ	˘ ώ Â

ħυ ϗ	ϰ

G

ϣ R	Ruijie(config)# **interface** *G 0/1* Ruijie(config-if)# **nfpp icmp-guard isolate-period** 180

˺Ωħυ ϗ		
	ħυ ϗ	
	icmp-guard isolate-period	ώ
	show nfpp icmp-guard summary	ə٩

ϡ

ħυ ϗ ˥ ϡ		
	ϻ	
	10.4	ħυ ϗ

ج ٨ Э Ո Â

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

٩	
per-src-ip	ə IP فخ سم Ո Â
per-port	ə ٨ Ո Â
rate-limit-pps	˘ ٧ ḣ تن 1↑ 9999 Â
attack-threshold-pps	˘ ٧ ḣ تن 1↑ 9999 Â

٨ Ո ˘ ѿ Ո Â

ħυ ϛ ٨

G a ¥ Â

```
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
```

	ħυ ϛ	
icmp-guard attack-threshold		ѿ
icmp-guard rate-limit		˜

nd-guard attack-threshold per-port {**ns-na** | **rs** | **ra-redirect**} *pps*

٩	
ns-na	Ո· Ώ̂
rs	⅄
ra-redirect	⅄ Ώ̂ Ո· ⅃
pps	˘ ´ Æ ˘ ٧ ḣ تن [1,9999] Â

ə ٩ /Ώ̂ 30 ə˘ ⅄
30 ə˘ ⅄ Ώ̂ / ⅃ 30 ə Â
ð I Y $ z à

	ND ℸ
ħυ ३	NFPP
G	
w R	Ruijie(config)# **nfpp** Ruijie(config-nfpp)# **nd-guard enable**

ϣ R

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# nd-guard rate-limit per-port ns-na 10
Ruijie(config-nfpp)# nd-guard rate-limit per-port rs 5
Ruijie(config-nfpp)# nd-guard rate-limit per-port ra-redirect 5
```

ΎΩħυ ϗ

ħυ ϗ	
nfpp nd-guard policy	Ո
show nfpp nd-guard summary	ə

ϡ

ħυ ϗ ϒ ϡ

ϡ	
10.4	ħυ ϗ

41.7.4 nfpp nd-guard enable

ħυ ϗ æ ϡ Ɔ ND ╖ Â

nfpp nd-guard enable

ϡ

ϡ	
-	-

ϡ ND ΎΩ ώ ΎΩ Â

ħυ ϗ ϡ

G ϡ ND ΎΩ ΅Ι ɣ ώ ΎΩ Â

ϣ R

```
Ruijie(config)# interface G0/1
Ruijie(config-if)# nfpp nd-guard enable
```

ΎΩħυ ϗ

ħυ ϗ	
nd-guard enable	ώ ND ╖
show nfpp nd-guard summary	ə

ϡ

ƫ ȝ ˥ ˩	
10.4	ƫ ȝ

41.7.5 nfpp nd-guard policy

ɷ ˄ Ɔ Ո Â

nfpp nd-guard policy per-port {**ns-na** | **rs** | **ra-redirect**} *rate-limit-pps attack-thresh old-pps*

˄		
˄	**ns-na**	Ո Ȣ˃
	rs	ɻ
	ra-redirect	ɻ Ȣ˃ Ո ˩
	rate-limit-pps	ˇ ˩ ḣ ت 1ˀ 9999 Â
	attack-threshold-pps	ˇ ˩ ḣ ت 1ˀ 9999 Â

	˄ Ո ˇ ŏ Ո Â
ƫ ȝ	˄
G	a ɣ Â ND snooping ˄ , ˀ ˥ ą˙ ˄ Ո ą˙ ˄˘ ą˙ ˄ ў ˇ ą˙ ˄ ˃Ω Â ɣ ą˙ ˄ ɣ ą˙ ˄ ˇ Ʌ ą˙ ˄ ɣ ą˙ ˄ ˇ ů ND snooping ˥ ˇ ɣ ą˙ ˄˘ ND snooping ˃ ND guard ˄ Ь 800 ɜ˘ 900 ɜ Â ND guard ˩ ND snooping Ո ˜ ˇ ˥ ḣ ˃I ḣ˘ ɜ ɖ ˀ ˚ è Â ND snooping ɔ Â
w R	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*

˃Ωƫ ȝ	ƫ ȝ	

nd-guard attack-threshold	ѡ
nd-guard rate-limit	ѡ
show nfpp nd-guard summary	ҽ

ѧ

ħυ ҳ ٦ ѧ	
ѧ	
10.4	ħυ ҳ

41.8 NFPP

41.8.1 clear nfpp log

NFPP ă ʁ Â

41.8.2 log-buffer entries

NFPP ă ш Â

log-buffer entries *number*

٩	
number	ă ш ˘ ´ Æ ˘ ٧ ḣ تن [0,1024]

ă ш ṅ 256 Â

ħυ ३ NFPP

G

NFPP ă ш ṅ 50 Â

w R
```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# log-buffer entries 50
```

ħυ ३	

log-buffer logs number_of_message **interval**

Â

ħυ ϡ NFPP

G ħυ ϡ ϟΛυ ˘ ϟ VLAN ثن ϟ ə Â ч ʕΩ ˘ . ϟ è è ʏ ‡˘ ˛ ă ʁ è Â

ʁ R ˘ ϟ VLAN 1 à VLAN 2 à VLAN 3 Ո VLAN 5 ˘ ЮՎ

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# logging vlan 1-3,5
```

˘ ϟ ϟ G 0/1 ˘ ЮՎ

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# logging interface G 0/1
```

ʕΩħυ ϡ

ħυ ϡ	
show nfpp log summary	NFPP ă ʁ Â

ϟ

ħυ ϡ ϶ ϟ

ϟ	
10.4	ħυ ϡ

41.8.5 show nfpp log

NFPP Â

show nfpp log summary

NFPP ă ʁ ą Â

show nfpp log buffer [**statistics**]

ϟ

ϟ	
statistics	NFPP ă ʁ ə

ħυ ϡ

ă ш ˘ ʌ x ˘ ɻ ج ă ш è У

ѝ ”-” Â ˜ ╗ ă ш Â

G

Protocol ЛυЮ ↓ ḣ'

ARP ARP ~

IP IP ~

ICMP ICMP ~

DHCP DHCP ~

DHCPv6 DHCPv6 ~

NS-NA ND è Ո Ѽ ~

RS ND è ↓ ~

RA-REDIRECT ND è ↓ Ѽ Ո ⊥ ~

Reason ↓ ᷉ 5 ↓ ḣ'

DoS ∫ Ł

interface-id	٨ ل
ip-address	IP فخ سم
mac-address	MAC فخ سم

ħυ ϗ

G

ϣ R

ᴿ 1' ل ў ə ¸ Â

```
Ruijie# show nfpp arp-guard hosts statistics
success   fail   total
-------   ----   -----
100       20      120
```

ɱ 120 ٨ ў ˘ è è 100 ٨ ў ˚ ╖ سم ˘ 20 ٨ ў ˚ ^ ٧ ج ¤ a ˘ ˚ a ~ Â

ᴿ 2' ل ў ˘ ني " ľ remain-time(seconds) Ŀ ⅓ м Â

```
Ruijie# show nfpp arp-guard hosts
If column 1 shows '*', it means "hardware do not isolate user" .
VLAN  interface IP address   MAC address     remain-time(s)
----  --------   ---------    -----------     -------------
1     Gi0/1      1.1.1.1      -               110
2     Gi0/2      1.1.2.1      -               61
*3    Gi0/3      -            0000.0000.1111  110
4     Gi0/4      -            0000.0000.2222   61
Total' 4 hosts
```

ŴħυϗΩħυϗ

ħυ ϗ	
clear nfpp arp-guard hosts	ل ў

٨

ħυϗ ٦ ل

٨	
-	-

41.9.2 show nfpp arp-guard scan

ARP Â

show nfpp arp-guard scan [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-addres s*] [*mac-address*]]]

۹	
statistics	ARP
vid	ﻫ ۸
interface-id	۸ ﻝ
ip-address	IP ﻓﺦ ﺳﻫ
mac-address	MAC ﻓﺦ ﺳﻫ

ħυ ३

G

```
Ruijie# show nfpp arp-guard scan statistics
ARP scan table has 4 record(s).
```

' ľ ARP ‴Ω 4 Ŀ Â

```
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' 4 record(s)
```

ľ timestamp Ŀ ARP ˘ ľ 2008-01-23 16:23:10 Ŀ ﺟﻫ 2008 1 23 16 23¦ 10 ARP Â

```
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' 1 record(s)
```

ħυ ३

```
Maximum count of monitored hosts: 1000
Monitor period  300s
```

ˆ 1˜ Interface ѝ Global ѓ Â

ˆ 2˜ Status ї ╖ Â

ˆ 3˜ Rate-limit ѝˆ IP ѣ MAC ѣ / ѧ ḣ˜ ˘ Attack-threshold ɔ Â ľ - Ŀ Â

ћu ҙ

ћu ҙ	
arp-guard attack-threshold	ѓ
arp-guard enable	ѓ ARP ╖
arp-guard isolate-period	ѓ
arp-guard monitor-period	
arp-guard monitored-host-limit	↓ ў
arp-guard rate-limit	ѓ
arp-guard scan-threshold	ѓ
nfpp arp-guard enable	ѣ ѧ Э ARP ╖

nfpp arp-guard isolate-period

٩	
statistics	↓ ў ə
vid	ﻫ /ا
interface-id	٩ ↓
mac-address	MAC ﻓﺦ ﺳﻫ

ħυ ϩ

G

↓ ў ə Â

Ruijie# **show nfpp dhcp-guard hosts statistics**

success fail total

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

100 20 120

ɱ 120 ↓ ў ˇ è è 100 ↓ ў ˚ ℸ ﺳﻫ ˇ 20 ↓ ў ˚

^ ↓ ج ä a ˇ ˚ a ~ Â

W R

↓ ў ˇ ﻧﻲ " ľ remain-time(seconds) Ŀ ⅓ м Â

Ruijie# **show nfpp dhcp-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' 2 host(s)

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clear nfpp dhcp-guard hosts	↓ ў

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41.10.2 show nfpp dhcp-guard summary

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show nfpp dhcp-guard summary

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```
Ruijie# show nfpp dhcp-guard summary
ˆ Format of column Rate-limit and  Attack-threshold is per-src-ip
/per-src-mac/per-port.˜
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՝ 300s
```

ˆ 1˜ Interface ϧ Global ώ Â

ˆ 2˜ Status ΐ ΢ Â

ˆ 3˜ Rate-limit ϧ IP فخ سم / MAC فخ سم / ϥ ḣ˜ ˘ Attack-threshold ϗ Â ľ - Ŀ Â

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dhcp-guard attack-threshold	ώ
dhcp-guard enable	ώ DHCP ΢
dhcp-guard isolate-period	ώ
dhcp-guard monitor-period	
dhcp-guard monitored-host-limit	ϟ ў

dhcp-guard rate-limit	ώ
nfpp dhcp-guard enable	ج ٨ Ɔ DHCP ╖
nfpp dhcp-guard isolate-period	
nfpp dhcp-guard policy	Ո

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41.11 DHCPv6

41.11.1 show nfpp dhcpv6-guard hosts

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show nfpp dhcpv6-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac -address*]]]

٩		
٩	**statistics**	ى ў ə
	vid	٨
	interface-id	٩ ى
	mac-address	MAC ف

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Ruijie# **show nfpp dhcpv6-guard hosts statistics**

success fail total

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

100 20 120

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٧ ў ˘ ي " ľ remain-time(seconds) Ŀ ⅓ м Â

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' 2 host(s)

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clear nfpp dhcpv6-guard hosts	٧ ў

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41.11.2 show nfpp dhcpv6-guard summary

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show nfpp dhcpv6-guard summary

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```
Ruijie# show nfpp dhcpv6-guard summary
ˆ Format of column Rate-limit and  Attack-threshold is per-src-ip
/per-src-mac/per-port.˜
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: 300s
```

ˆ 1˜ Interface ϗ Global ѽ Â

ˆ 2˜ Status ї ╖ Â

ˆ 3˜ Rate-limit ϗ IP فخ سم / MAC فخ سم / ϡ ḣ˜ ˇ Attack-threshold ϽЦ Â ї - Ь Â

ћυ ϡ	
dhcpv6-guard attack-threshold	ѽ
dhcpv6-guard enable	ѽ DHCPv6 ╖

ə Â

show nfpp icmp-guard summary

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nfpp icmp-guard isolate-period	
nfpp icmp-guard policy	Ո

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10.4	ħυ ҳ

41.12.3 show nfpp icmp-guard trusted-host

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show nfpp icmp-guard trusted-host

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```
Ruijie# show nfpp icmp-guard trusted-host
IP address      mask
---------       ------
1.1.1.0         255.255.255.0
1.1.2.0         255.255.255.0
Total' 2 record(s)
```

ħυ ҳ	
icmp-guard trusted-host	a ﻝ ə ў

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ﻡ	

NFPP ħυ ҳ

ndfpp nd6(agu)y	G!5B ÂD_6" 4“ Ï 66“
nd-guard attack-threshold	ѿ
nd-guard enable	ѿ ND ℸ
nd-guard ra	ѿ %

42 ACL

ѫ ЛυЮħυ ϗ è ĵ ل ٩ ЛυЮħυ ϗ

	ΰ ЬѪ
id	" ḣ ٨ Â ل تن IP ñ ACL' 1-99ᵹ 1300-1999 IP ACL' 100-199ᵹ 2000-2699 MAC ACL' 700–799 ж ACL' 2700–2899
name	ACL ɻ
sn	ACL ٨ (. ˝l ң ҏ)
start-sn	٨ ḣ
inc-sn	٨
deny	٦ ˘ ‡
permit	٦ ˘ ‡ ĭ
prot	˜ ٨˘ ɣ IPv6 ل ѝ ipvճ icmp˘ tcp˘ udp ٩ ḣ 0-255ᵹ ɣ IPv4ᵹ ل Лυ eigrp˘ greᵹ ipinip˘ igmp˘ nosˇ ospfᵹ icmp˘ udp˘

precedence precedence	. ”I ⁞ˆ 0-7˜
range	نعي ٨ /١ تن
time-range tm-rng-name	Ш˘ ɻ ѝ tm-rng-name
tos tos	Ь صر ˆ 0-15˜
cos cos	cos ḣ (0-7)
cos inner cos	ⷮ tag è cos
icmp-type	ICMP صر ˆ 0-255˜
icmp-code	ICMP صر ʒ ˆ 0-255˜
icmp-message	ICMP صر ɻ
operator port[port]	Operator ѝ ɔ ˆ lt- ɣ˘ eq- ɣ˘ gt- ɣ˘ neq- a ɣ˘ range- تن˜ port ٨ /١˘ γ ɔ ч э ٨ /١ ˘ è ы ɔ ٨ У э ٨ /١

	B	MAC	6	P	˜ /ı	35
	C		12	Q	IP Ո	36
	D	VLAN tag	14	R	ip فخ سم	38
	E	DSAP(ᒪ)	18	S	ip فخ سم	42
	F	SSAP(ᒪ)	19	T	TCP ʌı	46
	G	Ctrl	20	U	TCP ʌı	48
	H	Org Code	21	V	" /ı	50
	I	42 #				

4) Expert " ˆ 2700 - 2899˜

access-list *id* {**deny** | **permit**} [**protocol** | [*ethernet-type*][**cos** [*out*][**inner** *in*]]] [**VID** [*out*][**inner** *in*]] {*source source-wildcard* | **host** *source* | **any**} {**host** *source-mac-address* | **any**} {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**}][**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

↑ ΰ Л صر Ethernet-type cos '

access-list *id* {**deny** | **permit**} {*ethernet-type*| **cos** [*out*][**inner** *in*]} [**VID** [*out*][**inner** *in*]] {**s***ource source-wildcard* | **host** *source* | **any**} {**host** *source-mac-address* | **any** } {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [**time-range** *time-range-name*]

˜ Protocol '

access-list *id* {**deny** | **permit**} **protocol** [**VID** [*out*][**inner** *in*]] {*source source-wildcard* | **host** *source* | **any**} {**host** *source-mac-address* | **any** }{*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

У ϕ ˜ Expert " '

Internet Control Message Protocol (ICMP)'

access-list *id* {**deny** | **permit**} **icmp** [**VID** [*out*][**inner** *in*]] {*source source-wildcard* | **host** *source* | **any**} {**host** *source-mac-address* | **any** } {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)'

access-list *id* {**deny** | **permit**} **tcp** [**VID** [*out*][**inner** *in*]]{*source source-wildcard* | **host** *Source* | **any**} {**host** *source-mac-address* | **any** } [**operator** port [*port*]] {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [**operator port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag*]

User Datagram Protocol (UDP)'

access-list *id* {**deny** | **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*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

5) "

access-list *list-remark text*

٩	
Id	" ⁄١ Â ┘ نںˆ 1-99ˇ 100-199ˇ 1300-1999ˇ 2000-2699ˇ 2700 – 2899ˇ 700 - 799˜ Â
Deny	٦ ˘ ‡ Â
Permit	٦ ˘ ‡ ĭ Â
Source	فخ سم ˆ ў فخ سم فخ سم ˜
source-wildcard	فخ سم Â ┘ Л∪ G a ˘ 0.255.0.32
protocol	IP ˜ ⁄١˘ ┘ Л∪ EIGRP àGRE àIPINIP àIGMP à NOS à OSPF à ICMP à UDP à TCP à IP è У э˘ ≠ ┘ Л∪ ϛ IP ˜ 0-255 ⁄١ Â У ҫ ˜ ICMP/TCP/UDP ´ " Â
Destination	فخ سم ˆ ў فخ سم فخ سم ˜
destination-wildcard	فخ سم Â ┘ Л∪ G a ˘ 0.255.0.32
fragments	ϯ

precedenoB/TT5 -0.0 Tc 0.98<01C3D9.4SPF ẊE$

match-all	ҁ *tcp flag* Æ
tcp-flag	tcp flag

ˑ ¦ ACL

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ѝ ѫ G ‟ ˘ ″l ђυ ҂ **access-list** ђѫУ ‟ ‟

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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

Ю TCP ᴎ ɻ ˘ TCP ɻ Л Ʊ G ᴎ ɻ ᴎ Л έ E ᴎ'

bgp

chargen

cmd

daytime

discard

domain

echo

exec

finger

ftp

ftp-data

gopher

hostname

ident

irc

klogin

kshell

login

nntp

pim-auto-rp

pop2

pop3

smtp

sunrpc

syslog

tacacs

talk

telnet

time

uucp

whois

www

Ю UDP ᴎ ɻ ˘ UDP ɻ Л Ʊ G ᴎ ɻ ᴎ Л έ E ᴎ'

biff

bootpc

bootps
discard
dnsix
domain
echo
isakmp
mobile-ip
nameserver
netbios-dgm
netbios-ns
netbios-ss
ntp
pim-auto-rp
rip
snmp
snmptrap
sunrpc
syslog
tacacs
talk
tftp
time
who
xdmcp

Л υ ˜ ص Ethernet-type Ю'

aarp
arp
appletalk
decnet-iv
diagnostic
etype-6000
etype-8042
lat
lavc-sca
mop-console
mop-dump
mumps
netbios

vines-echo

xns-idp

R 1' IP ñ " R

Ю IP ﻫ " ï فخسم й 192.168.1.64 - 192.168.1.127 ˘ è ыı

'

```
Ruijie(config)# access-list 1 permit 192.168.1.64 0.0.0.63
```

R 2' IP " R

Ю IP " ï DNS Ո ICMP '

```
Ruijie(config)# access-list 102 permit tcp any any eq domain
Ruijie(config)# access-list 102 permit udp any any eq domain
Ruijie(config)# access-list 102 permit icmp any any echo
Ruijie(config)# access-list 102 permit icmp any any echo-reply
```

R 3' MAC " R

Ю G R˘ MAC й 00d0f8000c0c ў ч صر й 100 Лu

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42.1.2 deny

У э э x (deny) ˚ Лυ ų ᾱ ч x Â

1˜ IP ñ ‴

[*sn*] **deny** {*source source-wildcard* 1

[*sn*] **d**{] [(s)-8n(f3)e8)(Tu/C2)]5-JTTT0071 T3.0006001 Td (1)Tj 57 TD 28(1 Pf 4/C2_6 37.486(0)Tj 34 1 pTf 0 0 8 24 0

destination-wildcard | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [**time-range** *time-range-name*]

b) ˜ protocol

[*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* | **any**} [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

c) У ҿ ˜ expert " '

Internet Control Message Protocol (ICMP)

[*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* | **any**} [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**precedence** *precedence*] [**tos** *tos*] [**frag-6( )]931 Tf0(upper)c 0 Tw 2.571 0 Td[(icmp-)-65 Tf2BE3C02D6>TJTT0 1 Tf7**

[[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragments**] [**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*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag*]

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*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

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Sn	ACL ٨
source-ipv6-prefix	IPv6 فخ سم صر.
destination-ipv6-prefix	IPv6 فخ سم صر
prefix-length	Æ Æ
source-ipv6-address	IPv6 فخ سم
destination-ipv6-address	IPv6 فخ سم
dscp	Ł
dscp	ḣ˘ تن 0-63.
flow-label	
flow-label	ḣ˘ تن 0-1048575
protocol	¥ IPV6 ٦ ѝ IPV6 | icmp | tcp | udp ٦ <0-255>

٩

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```
Ruijie(config)# ipv6 access-list extended v6-acl
Ruijie(config-ipv6-nacl)# 11 deny ipv6 host 192.168.4.12 any
Ruijie(config-ipv6-nacl)# show access-lists
ipv6 access-list extended v6-acl
11 deny ipv6 host 192.168.4.12 any
Ruijie(config-ipv6-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# ipv6 traffic-filter v6-acl in
```

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show access-lists	"
ipv6 traffic-filter	ج ʌ Э IPV6 "
ip access-group	IP ACL ʌ
mac access-group	MAC ACL ʌ
ip access-list	IP ACL Ⱨ
mac access-list	MAC ACL Ⱨ
expert access-list	ж ACL Ⱨ
ipv6 access-list	IPV6 ACL Ⱨ
permit	ñ Ⱨħυ ҳ

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ħυ ҳ ˥ ʅ

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V10.0	˚ V10.0 ЛЪЭ˜ arp ʹΩ ج ˚ V10.2(3) ˧ ЛЪЭ Â

42.1.3 expert access-group

У э EXPERT ACL ĵ ʌ Â ᴳ ħυ ҳ **no** ʅ Â

expert access-group {*id* | *name*} {**in** | **out**}

no expert access-group {*id* | *name*} {**in** | **out**}

ʌ

ʌ	
id	Expert " ʃˆ 2700-2899˜
name	Expert " ɻ

ACL ħu ҳ

G ħu ϗ ϟ Л **show expert access-lists** ħu ϗ Â

ѡ R

```
R 1' … ж ACL'
Ruijie(config)# expert access-list extended exp-acl
Ruijie(config-exp-nacl)# show expert access-lists
expert access-list extended exp-acl
Ruijie(config-exp-nacl)#
R 2' … ж ACL'
Ruijie(config)# expert access-list extended 2704
Ruijie(config-exp-nacl)# show expert access-lists
expert access-list extended 2704
Ruijie(config-exp-nacl)#
```

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show expert access-lists	ж "

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V10.0	˚ V10.0 Лu Э

42.1.5 ip access-group

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ip access-group {*id* | *name*} {**in** | **out**}

no ip access-group { *id* | *name*} {**in** | **out**}

Л

Л	
id	IP " Лˆ 1-199˜ 1300-2699˜
name	IP " ϳ
in	ώ Л
out	ÿ Л

ћu ҳ ^

G G **ip access-group** ћu ҳ " ¥ ^˘ . ů Â

w R Ю R ج fastEthernet0/0 Э " 120 ώ '

```
Ruijie(config)# interface fastEthernet 0/0
Ruijie(config-if)#ip access-group 120 in
```

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ћu ҳ	
access-list	Ћ " Â
show access-lists	"
show ip access-list	IP ĵ " ^ 1-199 1300 – 2699 3000 3199

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ᴿ 1' … ñ ACL'

```
Ruijie(config)# ip access-list standard std-acl
Ruijie(config-std-nacl)# show ip access-lists
ip access-list standard std-acl
Ruijie(config-std-nacl)#
```

ᴿ 2 ' … ACL'

```
Ruijie(config)# ip access-list extended 123
Ruijie(config-ext-nacl)# show ip access-lists
ip access-list extended 123
```

ˇΩħu ϧ

ħu ϧ	
show ip access-lists	IP "

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V10.0	˚ V10.0 ᒪ�herᔓ

42.1.7 ip access-list resequence

ħu ϧ ip ص ACL ˘ … IPV6 ACLˇ ώ Â ᴳ ħu ϧ **no** ḣ

ip access-list resequence {*id* | *name*} **start-sn inc-sn**

no ip access-list resequence {*id* | *name*}

ᐷ

ᐷ	
Id	ACL ᐯ
name	ACL ᐩ
start-sn	ᐯ ḣ
inc-sn	ᐯ

start-sn' 10

inc-sn' 10

ħu ϧ ώ

G ħu ɜ ⅃ Л **show access-lists** ħu ɜ Â

ACL '

```
Ruijie#
```

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ħu ϧ ʌ

G ACL ¥ ʌ Э˘ ¥ ʌ ώ ⁸ ÂG **show ipv6 traffic-filter** ħu ϧ

w R

ЮR ¦ access-list v6-acl ¥ Gigabit ʌ 1 Э'

```
Ruijie(config)# interface GigaEthernet 0/1
Ruijie(config-if)# ipv6 traffic-filter v6-acl in
```

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show access-group	ʌ Э ACL Â

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V10.0	˚ V10.0 ЛυЭ

42.1.9 ipv6 access-list

ħu ϧ … IPV6 ACL˘ ώ Â G ħu ϧ **no** ϯ ACL

ipv6 access-list *name*

no ipv6 access-list *name*

ʌ

ʌ	
name	ACL ϡ

ħu ϧ ώ

G ħu ϧ ϡЛυ **show access-lists** ħu ϧ Â

… IPV6 ACL'

```
Ruijie(config)# ipv6 access-list v6-acl
Ruijie(config-ipv6-nacl)# show access-lists
ipv6 access-list extended v6-acl
Ruijie(config-ipv6-nacl)#
```

w R

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V10.0	˚ V10.0 ЛЪ Э Â

42.1.11 MAC access-group

У э MAC ACL ĵ ﻧ Â G ћu ҳ **no** ﻯ Â

mac access-group {*id* | *name*}{**in** | **out**}

no mac access-group {*id* | *name*} {**in** | **out**}

ﻧ

ﻧ	
id	MAC " /ﻵ 700-799˜
name	MAC " ﻝ
in	ώ ﻧ
out	ÿ ﻧ

ﻧ ACL

ћu ҳ ﻧ

G ћu ҳ ﻝ Л Ъ **show running-config** ћu ҳ Â

w R ЮR ¦ access-list accept_00d0f8xxxxxx_only ¥ Gigabit ﻧ 1 Э'

```
Ruijie(config)# interface GigaEthernet 1/1
Ruijie(config-if)# mac access-group accept_00d0f8xxxxxx_only in
```

ˇΩћu ҳ

ћu ҳ	
show access-group	ﻧ Э ACL Â

ħυ ϡ … MAC ACL˘ ώ Â G ħυ ϡ **no** ϊ ACL

mac access-list extended {*id* | *name*}

no mac access-list extended {*id* | *name*}

ϰ		
ϰ	*Id*	MAC " /ϱ^ 700-799˜
	name	MAC " ϳ

MAC ACL

ħυ ϡ ώ̆

G ħυ ϡ ϲ Л **show mac access-lists** ħυ ϡ Â

ϖ R

R 1' … MAC ACL'

```
Ruijie(config)# mac access-list extended mac-acl
Ruijie(config-mac-nacl)# show mac access-lists
mac access-list extended mac-acl
```

R 2' … MAC ACL'

```
Ruijie(config)# mac access-list extended 704
Ruijie(config-mac-nacl)# show mac access-lists
mac access-list extended 704
```

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ħυ ϡ	
show mac access-lists	mac "

ϳ

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/ϱ	
V10.0	˚ V10.0 Л Э

42.1.13 no sn

ϊ ACL У э

no *sn*

ϰ	ϰ	

1) IP ñ "

[*sn*] **permit** {*source source-wildcard* | **host** *source* | **any**}

2) IP "

[*sn*] **permit protocol** *source source-wildcard destination destination-wildcard* [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

У ҽ ~ IP 8 " '

Internet Control Message Protocol (ICMP)

[*sn*] **permit icmp** {*source source-wildcard* | **host** *source* | **any**} {*destination destination-wildcard* | **host** *destination* | **any**} [*icmp-type*] [[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)

[*sn*] **permit tcp** {*source source-wildcard* |

[*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*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

У ҽ ˜ Expert " '

Internet Control Message Protocol (ICMP)

[*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*] [**fragments**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)

[*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*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag*]

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*]] [**precedenceprecedence**] [**tos** *tos*] [**fragments**] [**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* | **any**] {*sender-ip sender-ip–wildcard* | **host** *sender-ip* | **any**} {*sender-mac sender-mac-wildcard* | **host** *sender-mac* | **any**} {*target-ip target-ip–wildcard* | **host** *target-ip* | **any**}

5) IPV6 "

[*sn*] **permit 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*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

У ҽ ˜ IPV6 8 " '

Internet Control Message Protocol (ICMP)

[*sn*] **permit 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*][**fragments**] [**time-range** *time-range-name*]

Transmission Control Protocol (TCP)

[*sn*] **permit 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*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag*]

User Datagram Protocol (UDP)

[*sn*] **permit 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*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# ip access-group 102 in
Ruijie(config-if)#
```

R 3' Ю MAC ACL G R˘ ñ MAC й 0013.0049.8272 ў ч صй 100 Лu ˘ ĵ ∧ 1Â

```
Ruijie(config)# mac access-list extended 702
Ruijie(config-mac-nacl)# permit host 0013.0049.8272 any aarp
Ruijie(config-mac-nacl)# show access-lists
mac access-list extended
10 permit host 0013.0049.8272 any aarp702
Ruijie(config-mac-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# mac access-group 702 in
```

R 4' Ю ip ñ ACL G R˘ ĭ IP й 192.168.4.12 ў ˘ ĵ ∧ 1Â '

```
Ruijie(config)# ip access-list standard std-acl
Ruijie(config-std-nacl)# permit host 192.168.4.12
Ruijie(config-std-nacl)# show access-lists
ip access-list standard std-acl
10 permit host 192.168.4.12
Ruijie(config-std-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# ip access-group std-acl in
```

R 5' Ю IPV6 ACL G R˘ ĭ IP й 192.168.4.12 ў ˘ ĵ ∧ 1Â '

```
Ruijie(config)# ipv6 access-list extended v6-acl
Ruijie(config-ipv6-nacl)# 11 permit ipv6
host ::192.168.4.12 any
Ruijie(config-if)#
Ruijie(config-ipv6-nacl)# show access-lists
ipv6 access-list extended v6-acl
11 permit ipv6 host ::192.168.4.12 any
Ruijie(config)# interface gigabitethernet traffic-file 1I 1 f-11976 -1.
```

ip access-group	IP ACL ϰ
mac access-group	MAC ACL ϰ
ip access-list	IP ACL ĦѪ
mac access-list	MAC ACL ĦѪ
expert access-list	ж ACL ĦѪ
ipv6 access-list	IPV6 ACL ĦѪ
deny	ĦѪ ACL

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	V10.0	΄ V10.0 ΠυΘ˘ arp ΄Ω ѫ ΄ V10.2(3) ϒΠυΘ Â

42.2

42.2.1 show access-group

ϰ Θ ACL

show access-group [**interface** <*interface*>]

ϰ	ϰ	
	<*interface*>	ϰ

ħυ ϛ

G ϰ Θ ACL˘ a ώ ϰ Θ ACL

w R

```
Ruijie# show access-group
ip access-list standard ipstd3
Applied On interface GigabitEthernet 0/1.
ip access-list standard ipstd4
Applied On interface GigabitEthernet 0/2.
ip access-list extended 101
```

```
Applied On interface GigabitEthernet 0/3.
ip access-list extended 102
Applied On interface GigabitEthernet 0/8.
```

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ip access-group	ip " ᵻ
mac access-group	MAC " ᵻ
expert access-group	Expert " ᵻ
ipv6 traffic-filter	IPV6 " ᵻ

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V10.0	˚ V10.0 ɅЬ Э

42.2.2 show access-lists

ACL ɹ ACL

show access-lists [*id* | *name*]

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id	" ʃ
name	" ɹ

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G acl˘ *id* *name˘* ‡ ACL

ᴡ R

```
Ruijie# show access-lists n_acl
ip access-list standard n_acl
Ruijie# show access-lists 102
ip access-list extended 102
Ruijie# show access-lists
ip access-list standard n_acl
```

ACL ħu ҳ

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V10.0	˚ V10.0 ЛЬ Э

42.2.4 show ip access-group

ᴎ IP ACL

show ip access-group[**interface** <*interface*>]

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<*interface*>	ᴎ

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G ᴎ IP ACL˘ ᴎ˘ ‡ ᴎ ˜Ω IP ACL

w R

```
Ruijie# show ip access-group interface gigabitethernet 0/1
ip access-group aaa in
Applied On interface GigabitEthernet 0/1.
```

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ip access-list	IP ACL ⅟₪ Â

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/ɡ#B"… abQ 0 …bhB.@BÄ35E361.67 305.9 0.48 20.64 refB/C2_0 1 Tf2 Tr 10.022

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ৰ	
<interface>	ৰ

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G ৰ ঁΩ IPv6 ACLˇ ৰˇ ‡ ৰ IPv6 ACL

w R

```
Ruijie# show ipv6 traffic-filter interface gigabitethernet 0/4
ipv6 traffic-filter v6 in
Applied On interface GigabitEthernet 0/4.
```

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ħu ३	

mac access-group mm in

Applied On interface GigabitEthernet 0/3.

ЋU ҂

ЋU ҂	
mac access-list	MAC ACL ЊЖ

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V10.0	˚ V10.0 ЛЪЭ

42.3

42.3.1 security access-group

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security access-group {*id*|*name*}

no security access-group

Л		
	id	ACL id
	name	ACL ѕ

ЋU ҂ ЛI

G ЛIЮO ѓѡ

wR Ruijie(config-if)#**security access-group** *1*

ЋU ҂

ЋU ҂	
show secu-acl	ѓѡ

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	V10.2	˚ V10.2 Лu Э

42.3.2 security global access-group

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security global access-group {*id*|*name*}

no security global access-group

	˥	

Fa0/6 uplink --

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security global access-group	ѽ ѽ ЂЖ
security access-group	∧ ѽ ЂЖ
security uplink enable	ѽ R ∧

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V10.2	˚ V10.2 ЛЪЭ

43 QOS

43.1

ѫ QoS ʖ ɱ˘ Ո QoS ˷Ω ЛυЮ ΰ ə '

У э ∧ ˷Ω 1 э policy-map'

У э policy-map ⊣ Лυ э class-map'

У э class-map ˷Ω 1 э ACL˘ ACL ACE έ ⊿ ѡ
'

У э ∧ Э˷Ω ACE э ÿ “ ѽ ACL” ⁸ Â

ąЮ˘ QoS ╖ ˷Ω Ậ ⊿ Âл æ У э Policy Map ˷Ω ∫ У э ∧ Э˘ ѧ ∧ ə˙ ˘ ∧ QoS ╖ . Â ˷Ω ∧ QoS ╖ ˘ ā ∧ Policy Map ˘ ∧ ə˙ й Off . ⊣ Â ЛυЮ й QOS '

CoS ḣ	0
" э	8
"	WRR A

CoS to DSCP

CoS ḣ	DSCP ḣ
0	0
1	8
2	16
3	24
4	32
5	40
6	48
7	56

IP-Precedence to DSCP

IP-Precedence to DSCP

IP-Precedence	DSCP
0	0
1	8
2	16
3	24
4	32
5	40
6	48
7	56

DSCP to CoS

DSCP to CoS

DSCP ḣ	CoS ḣ
0	0
8	1
16	2
24	3
32	4
40	5
48	6
56	7

G

43.2

43.2.1 class maps

… ACL'

ip access-list {**extended** | **standard**} { *acl-id* | *acl-name* }

mac access-list extended {*acl-id* | *acl-name*}

expert access-list extended {*acl-id* | *acl-name*}

ipv6 access-list extended *acl-name*

R 4' … class-map,ħυ ♪ cm

```
Ruijie(config)# class-map cm
```

R 5' ˜Ω ACL

```
Ruijie(config-cmap)# match access-group me
```

R 6' class-map

```
Ruijie(config-cmap)# exit
```

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	show mls qos queueing	-

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	-	-

43.2.3 interface rate-limit

ﻝ 8

rate-limit {**input** | **output**}

	-	-

43.2.4 mls qos cos

ʌ CoS ḣ

mls qos cos *default-cos*

no mls qos cos

	ʌ	
ʌ	*default-cos*	ӈ 0˙ 7
	no	ḣ

CoS ḣ ӈ 0

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w R
```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# mls qos cos 7
```

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	show mls qos interface *interface-id*	-

dscp	۷ ḣ ت ŋ ҥ ҕ a ۷ a ۷
no	ḣ

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w R Ruijie(config)# **mls qo map cos-dscp** *8 10 16 18 24 26 32 34*

w R Ruijie(config)# **0s1q16 1aEtp2c0s**

43.2.8 mls qos scheduler

"

mls qos scheduler [**sp** | **rr** | **wrr** | **drr**]

no mls qos scheduler

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cos		∧	Qos ə̣˙	ὶ CoS
dscp	ὶ	∧	Qos ə̣˙	ὶ DSCP

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ϟ	
policy-map-name	… policymap ɻ
no policy-map *policy-map-name*	ϝ ϳϩ policy map
class-map-name	… class map ɻ
no class *class-map-name*	ϝ ϯ
new-dscp	DSCP ḣ’ ϟ ḣ ϯ ŋ ϧ ϱ a ɹ a ɹ
rate-bps	ϐ ˘ ´ Æ kbps
burst-byte	ϟ ϐ ḣ˘ ´ Æ kbyte
drop	x ϯ
dscp-value	ϯ̃ ϯ DSCP ḣ ϟ ḣ ϯ ŋ ϧ ϱ a ɹ a ɹ

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G

ϣ R

R 1' … policy map,ħυ ɻ po

```
Ruijie(config)# policy-map po
```

R 2' ΄Ω class-map cm

```
Ruijie(config-pmap)# class cm
```

R 3' dscp ḣ ϰ 10

```
Ruijie(config-pmap-c)# set ip dscp 10
```

R 4' ϰ 1M, ϟ ϰ 4096k, ╠ ɔ ϰ dscp 16

```
Ruijie(config-pmap-c)# police 1000000 4096 exceed-action dscp 16
```

΄Ωħυ ϗ

ħυ ϗ	
show policy-map	-

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43.2.11 priority-queue

"

[**no**] **priority-queue**

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priority-queue	" й SP
no priority-queue	" й WRR

" й WRR

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w R Ruijie(config)# **priority-queue cos-map** *1 0 1*

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ƕ ɂ	
show mls qos queueing	-

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-	-

43.2.13 service-policy

policy map ʃ ʎ Ɔ

service-policy {**input** | **output**} *policy-map-name*

no service-policy {**input** | **output**}

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ʎ	
policy-map-name	… policymap ɻ
no	policy map ح ʎ Ɔ

ƕ ɂ ʎ

G

w R
```
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# service-policy input po
```

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	show mls qos interface	-

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	-	-

43.3

show policy-map [*policy-name* [**class** *class-name*]]

५		
५	*policy-name*	policy name ८
	class-name	class map ८

policy name

ħu ३

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w R Ruijie# **show policy-map**

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	-	-

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	-	-

43.3.3 show mls qos interface

५ QoS ब्

show mls qos interface *interface-id* [**policers**]

५		
५	*interface-id*	५
	policers	५ ँΩ police

५ QOS ब्

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w R Ruijie# **show mls qos interface fastEthernet** *0/1*

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-	-

43.3.4 show mls qos maps

dscp-cos maps,dscp-cos maps Ո ip-prec-dscp maps

show mls qos maps [**cos-dscp** | **dscp-cos** | **ip-prec-dscp**]

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ϰ	
cos-dscp	cos-dscp maps
dscp-cos	dscp-cos maps
ip-prec-dscp	ip-prec-dscp maps

dscp-cos maps Ո dscp-cos maps Ո ip-prec-dscp maps

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w R Ruijie# **show mls qos maps**

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-	-

43.3.5 show mls qos queueing

QoS " ə (cos-to-queue map,wrr weight,drr weight)

show mls qos queueing

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w R Ruijie# **show mls qos rate-limit**

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43.3.7 show mls qos scheduler

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show mls qos scheduler

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w R Ruijie# **show mls qos scheduler**

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-	-

44 Voice VLAN

44.1

44.1.1 voice vlan

ѽ G Voice VLANѵ У э VLAN ѝ Voice VLAN Â ⅃ Л℧ G ћu ҳ **no** ѷΩ Voice VLAN ╖ Â

voice vlan *vlan-id*

no voice vlan

ч	ч	
	vlan-id	Voice VLAN ID Â
	ѷΩ Â	
ћu ҳ	ѽ	
G	G ћu ҳ G Voice VLAN ╖ ˘ ⅃ Voice VLAN ID Â 1˜ Voice VLAN ⅀ ⋕ѵ˜ ″I … VLAN Â 2˜ VLAN 1 VLANѵ … ˘ л VLAN 1 a ѝ Voice VLAN Â 3˜ a ї э VLAN ⅃ ѝ Voice VLAN б Super VLAN Â 4˜ ώ ч Э ℧ ѽ 802.1x VLAN ╟ ╖ ˘ ѝ ф ╖ G ˘ a Ю ⅂ VID ѝ Voice VLAN ID Â 5˜ a RSPAN Remote VLAN б Voice VLAN ⅃ 1 э VLANѵ ї ‡ ⅃ ˬ ⁝ ч ę ╖ б Voice VLAN ╖ Â	~

w R	R 1' ѽ G Voice VLAN ╖ ˘ VLAN2 ѝ Voice VLAN Â
	`Ruijie(config)# vlan 2`
	`Ruijie(config-vlan)# exit`
	`Ruijie(config)# voice vlan 2`	

ѷΩћu ҳ	ћu ҳ	

show voice vlan	Voice VLAN ә ц б ґ Â 44-2

44.1.3 voice vlan cos

ѽ Voice VLAN CoS ḣ Â ⅃ Ѣ ᴳ ħu ҳ **no** ⅉ ḣ Â

voice vlan cos *cos-value*

no voice vlan cos

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cos-value	Voice VLAN CoS ḣ Â

cos-value ٩ ḣ ӣ 6 Â

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ᴳ ᵍ Voice VLAN CoS б DSCP ḣ . ″I ˇ ɖ Â

ᵂ ᴿ ᴿ 1' Voice VLAN . ″I ˇ CoS ӣ 5

```
Ruijie(config)# voice vlan cos 5
```

˝Ωħu ҳ	ħu ҳ	
	show voice vlan	Voice VLAN ə, б ɱ Â

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	10.4	ħu ҳ

44.1.4 voice vlan dscp

ѽ Voice VLAN DSCP ḣ Â ⅃ Ѣ ᴳ ħu ҳ **no** ⅉ ḣ Â

voice vlan dscp *dscp-value*

no voice vlan dscp

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	dscp-value	Voice VLAN DSCP ћ Â

	dscp-value ٨ ћ и 46 Â
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G	g Voice VLAN CoS б DSCP ћ . ″I ˘ ɖ Â
w R	R 1' Voice VLAN . ″I ˘ DSCP и 40 Â Ruijie(config)# **voice vlan dscp** *40*

″Ωћu ҳ	**ћu ҳ**	
	show voice vlan	Voice VLAN ə б ɱ Â

٨

ћu ҳ ˥ ٨	٨	
	10.4	ћu ҳ

44.1.5 voice vlan enable

ج ٨ ЮG ћu ҳ G ٨ Voice VLAN ╖ Â ٦Ʌu G ћu ҳ **no** ″Ω ٨ Voice VLAN ╖ Â

voice vlan enable

no voice vlan enable

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ᴿ 1' OUI ﻓﺨﺴﻢ 0012.3400.0000 ﻯ Voice VLAN ﻝ ﻓﺨﺴﻢ ˇ ˆ ﻙ ﻯ Company A Â

ᴡ ᴿ

```
Ruijie(config)# voice vlan mac-address 0012.3400.0000 mask
ffff.ff00.0000 description Company A
```

1˜ ∧ G ɷ Voice VLAN ɔ ѫ ˘ ∧
╗ ώ Voice VLAN˝ ɖ Voice VLAN ╖ Â
2˜ ∧ ɔ ɣ ╟ ˘ ѝ ɖ ╖ ˘ a
∧ native VLAN ѝ Voice VLAN Â
3˜ ҥ ҏ Trunk Port/Hybrid Port ┘Л· VLAN ˘
˝l Voice VLAN ÿ ∧ VLAN ┘ " è ˘ Ѧ Voice
VLAN ╖ ˘ Л υ ɖ ∧ a ¸ ╗ ώ Voice VLAN˝
a G ∧ У ѫ V1182714D4>]TJ/TT0 1 Tf-0.0083 Tc 1 Tw 18 0 Tf- T

ŏ Ɉ ̧ MAC ڧ ̆ MAC ڧ ɻ ⋮
Voice VLAN OUI ڧ ̆ ĭ ڃ Voice VLAN ǫ̈ ̆ ĭ ‡ x Â

G

~ a ڃ Voice VLAN è ɻ · Ո ʜ ᒷ Â
̆ Voice VLAN ŏ ℨ Â

ŏ ЮЎ Θ untagged ɳ Voice VLAN tag
MAC ڧ ̆ ɣ è Voice VLAN tag ̆
VLAN ‡ ɻ Ո x ̆ a ɻ Voice VLAN ŏ/
: Â

w R

R 1' Voice VLAN ŏ Â

```
Ruijie(config)# voice vlan security enable
```

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ƕ ʒ	
show voice vlan	Voice VLAN ą б ɱ Â

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ħυ ϡ

G ħυ ϡ˘ ϟ Voice VLAN ə ϭ ɱή ˘ ↑ G Voice VLAN ╖ ϰ ɔ Â

ẇ R

```
R 1'          ɱή  Voice VLAN
Ruijie(config)# show voice vlan
Voice VLAN status: ENABLE            //Voice VLAN G
Voice VLAN ID: 2                     //Voice VLAN ID
Voice VLAN security mode: Security   //  ώ      ΐ
Voice VLAN aging time: 5 minutes     //  ɣ
Voice VLAN cos: 6                    //      CoS ḣ
Voice VLAN dscp: 46                  //      DSCP ḣ
Current voice vlan enabled port mode: // G  Voice VLAN    ϰ ϭ
PORT                    MODE
--------------------------------------------------
Fa0/1                   Auto
```

ΐΩħυ ϡ

ħυ ϡ	
voice vlan *vlan-id*	ώ G Voice VLAN˘ У ə VLAN ϳ Voice VLAN Â
voice vlan aging *minutes*	Voice VLAN ɣ Â
voice vlan cos *cos-value*	Voice VLAN CoS ḣ Â
voice vlan dscp *dscp-value*	Voice VLAN DSCP ḣ Â
voice vlan enable	G ϰ Voice VLAN ╖ Â
voice vlan mode auto	ϰ Voice VLAN ɔ Â
voice vlan security enable	Voice VLAN ώ Â

ϰ

ħυ ϡ ˥ ϰ

ϰ	
10.4	ħυ ϡ

44.2.2 show voice vlan oui

ɱή OUI ﻓﺨﺴﻢ à OUI ﻓﺨﺴﻢ Ո ə Â

show voice vlan oui

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ƫu ҳ

G ƫu ҳ˘ ⊿ ⅿ

45

45.1

45.1.1 rgos-security compatible

ą Ю˘ Ҥ ὤ╥ ӥ RGOS ò ῤΩ ˘ ƕ ʅ **rgos-security compatible** ò ῤΩ ' RGOS ò ῤΩ ˘ G no ƕ ʅ '

rgos-security compatible

no rgos-security compatible

ˀ

ˀ	

Ю˘ Ҥ ὤ╥ ӥ RGOS ò ῤΩ

ƕ ʅ ὤ

G ~ g ò ῤΩ ƕ ʅ ǯ ɅǏ ǚ Ҥ G

ɰ R

R 1' ὤ╥ ӥ RGOS ò ῤΩ '

```
Ruijie(config)#no gos-security compatible
```

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ƕ ʅ ˥ Ʌ

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10.4	ƕ ʅ

46 RLDP

46.1

46.1.1 rldp detect-interval

G ђu ҳ RLDP ج ٨ Э ٦ Â

rldp detect-interval *interval*

no rldp detect-interval

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	interval	˘ ٧ ḣ تز ٭ 2-15

3 Â

ђu ҳ ѽ Â

G ج ŭ ѫ stp ЮЌ ¦ ٨ ˆ ¥

rldp detect-max *num*

no rldp detect-max

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	num	,ل ḣ تن ى 2-10

	2
ђu ҳ	ŏ Â
G	ђu ҳ Ո ٨ G ˘ ¥ Â
ѡ R	Ю У э ى 5 R ' Ruijie(config)# **rldp detect-max** *5*

˜Ωђu ҳ	ђu ҳ	
	rldp detect-interval	

ل

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	-	-

46.1.3 rldp enable

ђu ҳ 8 RLDP ŏ ╖ ˜Ω Â

rldp enable

no rldp enable

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	˜Ω Â
ђu ҳ	ŏ Â

G ƛ ώ RLDP ˇ ƛ RLDP Â

ɯ R ƫ
R '
Ruijie(config)# **rldp enable**

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rldp port	ƛ

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ƫ ǯ ˥ ƛ

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46.1.4 rldp port

ƫ ǯ ƛ rldp ˇ ɹ ص Ո Â

rldp port {**unidirection-detect | bidirection-detect | loop-detec**
shutdown-svi | shutdown-port | block}

no rldp port { **unidirection-detect | bidirection-detect | loop-detect** }

ƛ	
unidirection-detect	ˊ ɹ ص
bidirection-detect	˥ ɹ ص
loop-detect	ص
warning	ˆ
shutdown-svi	shutdown ƛ ج svi

ʎ ˉ ˩ Â

```
Ruijie(config)# interface fas 0/1
Ruijie(config-if)# rldp port loop-detect block
```

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rldp enable	ώ rldp ħυ ϗ

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ħυ ϗ ˥ ʎ

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46.1.5 rldp reset

ħυ ϗ G **rldp shutdown** **disable** ʎ ώ rldp Â

rldp reset

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ħυ ϗ Â

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w R ĦO R ħυ ϗ G '

```
Ruijie# rldp reset
```

ʺΩħυ ϗ

ħυ ϗ	
rldp enable	Rldp ώ ħυ ϗ

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ħυ ϗ ˥ ʎ

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46.2

46.2.1 show rldp

rldp ५ ə Â

show rldp [**interface** *interface-id*]

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ħυ ३ EXEC

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47 TPP

47.1

47.1.1 topology guard

ح ώ ħυ ϗ ΗΌ G topology guard ħυ ϗ ΰ ╖ ώ ΎΩ Â G ħυ ϗ no ╖ Â

[**no**] **topology guard**

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	-	-

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ħυ ϗ	ώ ħυ ϗ
	ح z ώ

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G ʌ ╖ ˘ G ƫu ʒ no ʌ ╖ Â

[**no**] **tp-guard port enable**

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ħυ ३

G

ħυ ३ ¥ ɱ tpp ⁻ ᴺ ɑ Â

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ⱷ ᴿ ! ℸ ə ˈ

```
Ruijie# show tpp
```

ʷΩħυ ३

ħυ ३	
topology guard	ᴳ ώ ℸ

ᴎ

ħυ ३ ˥ ᴎ

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48

48.1

48.1.1 cd

˚ м Â

cd [*filesystem:*][*directory*]

ы

ы	
filesystem	˚ Â ы ї ' Ь
directory	

м ээ flash Ю

Ю ч

G

cd Ю ч Л м ˚ м Â ˚ è ёы Ю ч è˘ G ^ . a
Ло ї / Ь ~ ˘ ‡ Л ¥ м Â м ˘ G pwd Ю ч Â

w R

R 1' м и usb0
Ruijie# **cd** usb0:/
R 2' м и sd´
Ruijie# **cd** sd0:/

Ю ч	
pwd	м ˚

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48.1.2 copy

ÿ ĺ ˙ ˚ Â

copy *source-url destination-url*

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source-url	˚ URL Â ˚ Э· Ю ╟ ↄˇ э ѫ ҂ ⊣ Л∪ ѫ Â
destination-url	˚ URL Â ˚ Э· Ю ╟ ↄˇ э ѫ ҂ ⊣ Л∪ ѫ Â

Ъυ ҳ

G copy Ъυ ҳ ⊣ Л∪ ѫ ⊿ ÿ Ў ⨡ Л∪ ⊣ ∩· Ь Ы ⨡ ˚ .
Â

˚ URL ŋ ˈ

ŋ	
flash:	flash ÿ Ў Â э ŋ ѩ Э ⊣ Л∪ G Â URL a G ŋ Ą˘ flash Â ŭ ╟ ў ɖ ѩ flash Э Â
tftp:	TFTP Ь Ы
xmodem:	G xmodem ˜ ⊿ ⊣ ˚
slave:	è ÿ Э flash
usb0:	У э usb
usb1:	ү э usb
sd0:	У э sd ´

G

~ ↄ a .

URL ŋ ‡ ŋ ˚

w R R 1' ÿ tftp Ь Ы ЭЮ ˚

Ruijie#**copy** *tftp://192.168.201.54/rgos.bin flash:/*

R 2' Э· ˚ ĵ tftp Ь Ы

Ruijie#**copy** *flash:/rgos.bin tftp://192.168.201.54/rgos.bin*

R 3' G xmodem Ю ˚

Ruijie# **copy** *xmodem: flash:/config.text*

R 4' ˚ ĵ U

Ruijie#**copy** *flash:/config.text usb0:/config.text*

R 5' ˚ ĵ ÿ

*Ruijie#**copy** flash:/config.text slave:/config.text*

R 6' ˚ ÿ flash ĵ sd ´

*Ruijie#**copy** flash:/rgos.bin sd0:/rgos.bin*

R 7' ˚ ÿ U ĵ sd5

Ъυ ҳ

G

ǂ url Æ ˚ Â Ъυ ҳ ǂ ѡ ÿ Ў Э ˚ ˘. URL flash:/ usb0:/ usb1:/ slave:/ è У ɜ Â url a ɱ ˘ ǂ ɱ ˚ Э ˚ Â

~ ɔ a .

w R

R 1' ǂ ɱ Ю tmpfile ˚

```
Ruijie# delete tmpfile
```

R 2' ǂ ÿ Э rgos.bin.bak ˚

```
Ruijie# delete slave:/rgos.bin.bak
```

R 3' ǂ sd´ Э aaa.bin ˚

```
Ruijie# delete sd0:/aaa.bin
```

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copy	˚
dir	ɱ Э ˚ ´

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w R

R 1' ÿ Э ˚ ə

```
Ruijie# dir slave0:/
Directory of slave:/
   Mode Link     Size             MTime Name
-------- ---- --------- ------------------ -----------------
          1  10838016 2008-01-01 00:01:53 rgos.bin
          1      399 2008-01-01 00:01:37 config.text
          1      399 2008-01-01 00:17:58 cfg.txt
-------------------------------------------------------------
3 Files (Total size 11210782 Bytes), 0 Directories.
Total 33030144 bytes (31MB) in this device, 20463616 bytes (19MB)
available.
```

R 2' ɱ Ю ˚ ə

```
Ruijie# dir
Directory of temp:/
   Mode Link     Size             MTime Name
-------- ---- --------- ------------------ -----------------
          1      399 2008-01-01 00:17:58 a.dat
-------------------------------------------------------------
1 Files (Total size 399 Bytes), 0 Directories.
Total 33030144 bytes (31MB) in this device, 20463616 bytes (19MB)
available.
```

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Ъυ ҳ	
pwd	ɱ
cd	˚ ɱ

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Ъυ ҳ ˥ ٨

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48.1.5 mkdir

…

mkdir *directory*

48.1.6 rename

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rename *url1 url2*

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url1	╟ ˚ URL Â
url2	˚ URL

Ъυ ϛ

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48.1.7 rmdir

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rmdir *directory*

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directory	ȷ ɻ, ѝ

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w R ɱ Ю У э tmp ˘ з è ˚ Â

```
Ruijie# rmdir tmp
```

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ЎЪυ ҳ

mkdir

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٩

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w R Ruijie# **pwd**

flash:/

Ю ҳ	
cd	˚ ɱ

Ω Ю ҳ

Ю ҳ ٦ ٨

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48.2.2 show file systems

˚ ə

show file systems

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˚ Э ⊿ ⍺ Â

w R

R 1' ˚ ə

Ruijie#**show file systems**

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49

49.1 CPU

49.1.1 cpu-log

CPU ¯ ą ㄱ , ㄱ Ո G **cpu-log** Â

cpu-*log* *log-limit low_num high_num*

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Ђч Ї Л	Л	
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49.1.2 show cpu

CPU ¯ ąˇ Ђч **show cpu** Â

show cpu

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Ђч	Â

G	G Ђч Л Л CPU ¯ ąˇ ↑ 5 ą à 1ǂ ą à 5 ǂ ą CPU ¯ ˇ Л Ч ə˙ Ŀǂ ⁞ ج 5 ą à 1ǂ ą à 5 ǂ ą CPU ¯ ą Ģ ş Ī R Ω ȯ ᵡ ᵝ = Ƨ ᵩ

```
  5    0%    0%    0%   waitqueue_process
  6    0%    0%    0%   tasklet_task
  7    0%    0%    0%   kevents
  8    0%    0%    0%   snmpd
  9    0%    0%    0%   snmp_trapd
 10    0%    0%    0%   mtdblock
 11    0%    0%    0%   gc_task
 12    0%    0%    0%   Context
 13    0%    0%    0%   kswapd
 14    0%    0%    0%   bdflush
 15    0%    0%    0%   kupdate
 16    0%    3%    1%   ll_mt
 17    0%    0%    0%   ll main process
 18    0%    0%    0%   bridge_relay
 19    0%    0%    0%   d1x_task
 20    0%    0%    0%   secu_policy_task
 21    0%    0%    0%   dhcpa_task
 22    0%    0%    0%   dhcpsnp_task
 23    0%    0%    0%   igmp_snp
 24    0%    0%    0%   mstp_event
 25    0%    0%    0%   GVRP_EVENT
 26    0%    0%    0%   rldp_task
 27    0%    2%    1%   rerp_task
 28    0%    0%    0%   reup_event_handler
 29    0%    0%    0%   tpp_task
 30    0%    0%    0%   ip6timer
 31    0%    0%    0%   rtadvd
 32    0%    0%    0%   tnet6
 33    2%    0%    0%   tnet
 34    0%    0%    0%   Tarptime
 35    0%    0%    0%   gra_arp
 36    0%    0%    0%   Ttcptimer
 37    8%    1%    0%   ef_res
 38    0%    0%    0%   ef_rcv_msg
 39    0%    0%    0%   ef_inconsistent_daemon
 40    0%    0%    0%   ip6_tunnel_rcv_pkt
 41    0%    0%    0%   res6t
 42    0%    0%    0%   tunrt6
 43    0%    0%    0%   ef6_rcv_msg
```

```
44    0%    0%    0%    ef6_inconsistent_daemon
45    0%    0%    0%    imid
46    0%    0%    0%    nsmd
47    0%    0%    0%    ripd
48    0%    0%    0%    ripngd
49    0%    0%    0%    ospfd
50    0%    0%    0%    ospf6d
51    0%    0%    0%    bgpd
52    0%    0%    0%    pimd
53    0%    0%    0%    pim6d
54    0%    0%    0%    pdmd
55    0%    0%    0%    dvmrpd
56    0%    0%    0%    vty_connect
57    0%    0%    0%    aaa_task
58    0%    0%    0%    Tlogtrap
59    0%    0%    0%    dhcp6c
60    0%    0%    0%    sntp_recv_task
61    0%    0%    0%    ntp_task
62    0%    0%    0%    sla_deamon
63    0%    3%    1%    track_daemon
64    0%    0%    0%    pbr_guard
65    0%    0%    0%    vrrpd
66    0%    0%    0%    psnpd
67    0%    0%    0%    igsnpd
68    0%    0%    0%    coa_recv
69    0%    0%    0%    co_oper
70    0%    0%    0%    co_mac
71    0%    0%    0%    radius_task
72    0%    0%    0%    tac+_acct_task
73    0%    0%    0%    tac+_task
74    0%    0%    0%    dhcpd_task
75    0%    0%    0%    dhcps_task
76    0%    0%    0%    dhcpping_task
77    0%    0%    0%    dhcpc_task
78    0%    0%    0%    uart_debug_file_task
79    0%    0%    0%    ssp_init_task
80    0%    0%    0%    rl_listen
81    0%    0%    0%    ikl_msg_operate_thread
82    0%    0%    0%    bcmDPC
```

```
 83     0%     0%     0%    bcmL2X.0
 84     3%     3%     3%    bcmL2X.0
 85     0%     0%     0%    bcmCNTR.0
 86     0%     0%     0%    bcmTX
 87     0%     0%     0%    bcmXGS3AsyncTX
 88     0%     2%     1%    bcmLINK.0
 89     0%     0%     0%     bcmRX
 90     0%     0%     0%     mngpkt_rcv_thread
 91     0%     0%     0%     mngpkt_recycle_thread
 92     0%     0%     0%     stack_task
 93     0%     0%     0%     stack_disc_task
 94     0%     0%     0%     redun_sync_task
 95     0%     0%     0%     conf_dispatch_task
 96     0%     0%     0%     devprob_task
 97     0%     0%     0%     rdp_snd_thread
 98     0%     0%     0%     rdp_rcv_thread
 99     0%     0%     0%     rdp_slot_change_thread
100     4%     2%     1%     datapkt_rcv_thread
101     0%     0%     0%     keepalive_link_notify
102     0%     0%     0%     rerp_msg_recv_thread
103     0%     0%     0%     ip_scan_guard_task
104     0%     0%     0%     ssp_ipmc_hit_task
105     0%     0%     0%     ssp_ipmc_trap_task
106     0%     0%     0%     hw_err_snd_task
107     0%     0%     0%    rerp_packet_send_task
108     0%     0%     0%    idle_vlan_proc_thread
109     0%     0%     0%    cmic_pause_detect
110     1%     1%     1%    stat_get_and_send
111     0%     1%     0%    rl_con
112    75%    80%    90%     idle
```

ѫ Э " è˘ 3 ⁞ ⁞ ѫ 5 à 1⁞ à 5⁞ ą
CPU ¯ ąˆ ↑ LISR à HISR Ո˙ ┗˜ ÂЮ ‡ ɛ ɐ CPU ¯ ⁞
ą Â ɛ è˘ У " ΰ Ҍ Ю˙

No	Л
5Sec	У · ┗ 5 ą CPU ¯
1Min	У · ┗ 1⁞ ą CPU ¯
5Min	У · ┗ 5⁞ ą CPU ¯

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й bgp Â

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Ŀ˘ ɑ̈ У ˘ ~ ɱ Â ~

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ð R Ô

R 1' ЛЮw R ɷ й BGP й. ″l ~ Â

```
Ruijie(config)# memory-lack exit-policy bgp
```

ð ‴ΩЂυ ҳ Ô

Ђυ ҳ	
show memory	ɑ̈ ə̨

ð Л Ô

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ð Ђυ ҳ ˥ Л Ô

Л	
10.3(4b3)	Ђυ ҳ

49.2.2 show memory

ɱ ɑ̈ G ɑ ə̨ ˘ Ђυ ҳ **show memory** Â

show memory

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	-	-
Ђυ ҳ	Â	
G	G Ђυ ҳ ˩ Л	ɱ ɑ̈ Ո ɑ̈ G ɑ˘ ↑ ɑ̈ ˘

```
Free pages: 1079
  watermarks : min 379, lower 758, low 1137, high 1516
System Total Memory : 128MB, Current Free Memory : 5283KB
Used Rate : 96%
```

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1. ↓ ą э ˘ У э ą ŕ 4k ą Â

2. ą ḣ˘ Ю ŕ ↓ ą Ћ'

min	ą a ˘ Ө ąą ą ˘ ĺ ˘ Э ąą a ↓ Â
lower	ą ш a ˘ ĺ ˘ У э Э ~ ╟ ˘ ą Â ~ ⁸ ↰ **memory-lack exit-policy** ћ ę Â
low	ą a ˘ ĺ ˘ Э ~ ώ OVERFLOW ˘ Ю˘ a Ą ˉ Â ą a ˘ ⁸ ↓ a ĭ ћ ę Â
high	ą ĺ ˘ Л Э˘ ą ĺ ˘ ↓ ~ ÿ OVERFLOW

50

50.1

50.1.1 threshold set

ѧ Ъ˘ ѵ k 3 ˘ ˛ ⁞ ѝ CPU ¯ ѣ ѫ ¯
ѣ Â ѱ CPU ¯ Ґ ѫ ¯ ˘ ў ѱ k MIB ѵ˘ ѡ
CPU Ґ ѫ ˘ syslog Â

ѵ **no** У Ъ Â

threshold set {cpu | memory } [M1 | M2 | slot *n* | **member** *n***]** *warning_value critical_value*

no threshold set {cpu | memory }

ѱ	
cpu | memory	صر˘ Ь ˘ **cpu** ѝ CPU ¯ ˘ **memory** ѝ ѫ ¯
M1 | M2 | slot *n*	Æ˘ جھ Э ˘ *n* ѝ ´ ѧ
member *n*	ججى ѧ ˘ جھ ججى ѧ Э ˘ *n* ѝ ججى ѧ ˘ ѧ
warning_value	У ˘ ˆ ˘ **cpu** Ґ **memory** تن ѝ 1 ~ 100
critical_value	ү ˘ ш ˆ ˘ ѱˆ Â**cpu** Ґ **memory** تن ѝ 1 ~ 100
no	У Ъ

ѝ Ъ Â
CPU ¯ У ѝ 90˘ ү ѝ 100.
ѫ ¯ У ѝ 90˘ ү ѝ 100.

Ъ ъ ѿ Â

G

w R

R 1' M1 ϙ ¯ Â

```
Ruijie(config)# threshold set memory M1 70 90
```

R 2' ϫ ϗ γ ϗ ˘ CPU ¯ Â

```
Ruijie(config)# threshold set cpu member 2 70 90
```

ˇΩħυ ϗ

ħυ ϗ	
show threshold	ħυ ϗ

ϟ

ħυ ϗ ˥ ϟ

ϗ	
10.3(4b3)	ħυ ϗ

50.2

50.2.1 show threshold

ḣ Â

show threshold {cpu | memory } [M1 | M2 | slot *n* **| member** *n***]**

ϟ

ϟ	
**cpu	memory**	صر˘ Ь ˘ **cpu** ϳ CPU ¯ ˘ **memory** ϳ ϙ ¯
**M1	M2	slot** *n*	Æ˘ ϫ Э ˘ *n* ϳ ´ ϗ˘ ‡ Æ
member *n*	ϫ ϗ ˘ ϫ ϫ ϗ Э ˘ *n* ϳ ϫ ϗ ˘ ϗ˘ ‡ ˘

ħυ ϗ Â

G

w R R 1' M1 CPU ¯ Â

```
Ruijie# show threshold cpu M1

R 2'      ىتى ۸1          ˜    ۈ  –       Â
Ruijie# show threshold memory
```

ΩЪυ ҳ

51

51.1

51.1.1 clear logging

ф ă ш è ə ˘ æ Ю Ю ч Â

clear logging

ч	
-	-

Ю ч

G Ю ч ч ф ă ш è ф Â a ə Â

ш R Ю R ф ă ш è ф Â
Ruijie# **clear logging**

Ю ч	
logging on	˜Ω
show logging	ă ш è
logging buffered	ə ↑ ф ă ш

ч

Ю ч ˥ ч	
-	-

51.1.2 more flash

æ FLASH è ˚ ф ˘ æ Ю Ю ч'

more flash:filename

٧	

level	ą ш ˘ ÿ 0↑ 7 Â ↓ Л υ G ⋮ ↓ ˘ ≠ ↓ Л υ G Â

ă ѡ ѝ 4k Bytes Â
ą ш ѝ 7 Â

ħυ ҳ ѿ

ᾳ ă ѡ G ˘ ᾳ ѡ ῆ ˘ ‡ ą Â ᾳ ă ѡ ą ˘ G ħυ ҳ **show logging Â**
ᾳ ă ѡ è ą ї ˘ ὐ ħυ ҳ clear logging˘ ă ѡ è ą Â ˘ ῆ↑ FLASH ↓ Syslog Server Â
ą ↑ ѝ ЛЮ 8 э ⋮'

˜Ω		
Emergencies	0	ᾳ˘ a
Alerts	1	. ↓
Critical	2	ᾳ
Errors	3	ą
warnings	4	ˆ ą
Notifications	5	ص˘ a ˜Ω ą
informational	6	ą
Debugging	7	ą

G

ḣ ˘ ⋮ ˘ . 0 ⋮ ą ⋮ ą Â ї ą ⋮ Л υ ⅄˘ ɣ æ ɣ ḣ ⋮ ą ї Â

Ю R ↓ ї ⋮ ѝ 6 Л υ ↰ æ ɣ 6 ą ѯ ѝ 10000 ᾳ ă ѡ è'

ѡ R

```
Ruijie(config)# logging buffered 10000 6
```

ϡ

Ъυ ϗ ϒ ϡ	Ѓ	
	-	-

51.1.4 logging console

ϊ ѫ ⁸ ϡ Э ą ⁞˘ ѫ ѽ Ю Ъυ ϗ Â Ъυ ϗ no ѫ ⁸ ϡ Э . Â

logging console *level*

no logging console

ϡ	Ѓ	
	level	ш ˘ ت ÿ 0¦ 7 Â ϡ Л υ G ⁞ ϳ ˘ ≠ ϡ Л υ G Â ̃Ω ¥ ą ш ˘ ϡ 1 Â
	Debugging (7)	
Ъυ ϗ	ѽ	
G	У э ш Л υ ϳ˘ ѫ ḣ Э ¥ æ ¥ ш ⁞ ѫ ⁸ ϡ Э Â **show logging** Ъυ ϗ ϡ Л υ ̃Ω ϡ Ո Â	
w R	Ю R ϊ ѫ ⁸ ϡ ą ⁞ и б' Ruijie(config)# **logging console informational**	

̃ΩЪυ ϗ	Ъυ ϗ	
	logging on	̃Ω
	show logging	ă ѱ è ˘ Л υ ϒ ̃Ω ϡ

ϡ

Ъυ ϗ ϒ ϡ	Ѓ	
	-	-

51.1.5 logging count

Ћ ˘ æ ŏ ЮО Ћυ ҳ Â ˝Ω
Ћ ˘ G Ћυ ҳ no Â

logging count

no logging count

¶		
	¶	
	-	-
	˝Ω	
Ћυ ҳ	ŏ	
G	Ћυ ҳ Ћ Âÿ Ћυ ҳ Â **no logging count** Ћυ ҳ ˘ Ћ ˝Ω ˘ з Â	
w R	Ћ ' Ruijie(config)# **logging count**	
˝ΩЋυ ҳ	Ћυ ҳ	
	show logging count	è ∕ ж ə
	show logging	ж ы ə б ă ш è ə
∕		
Ћυ ҳ ˥ ∕	∕	
	-	-

51.1.6 logging facility

ə hˇ æ ŏ ЮО Ћυ ҳ Â Ћυ ҳ no ˇ
ḣ и ḣ (23) Â

logging facility *facility-type*

no logging facility

٩	
facility-type	Syslog ḣ˘ ɛ E ḣ ٩ G ´ Â

Local7(23)

ЂU ҳ ѿ

ЮO ˆ 2˜ Syslog ٦ ḣ'

Numerical Code	Facility
0	kernel messages
1	user-level messages
2	mail system
3	system daemons
4	security/authorization messages
5	messages generated internally by syslogd
6	line printer subsystem
7	network news subsystem
8	UUCP subsystem
9	clock daemon
10	security/authorization messages
11	FTP daemon
12	NTP subsystem
13	log audit
14	log alert
15	clock daemon
16	local use 0 (local0)
17	local use 1 (local1)
18	local use 2 (local2)
19	local use 3 (local3)
20	local use 4 (local4)
21	local use 5 (local5)
22	local use 6 (local6)
23	local use 7 (local7)

G

ħ и (local7) 23 Â

ЮO Syslog ħ и kerneľ

```
Ruijie(config)# logging facility kern
```

ħυ ҳ	
logging console	ї ج ⁸ Л Э ə

~	ə ĵ FLASHĭ ʌ FLASHĭ FLASHĭ logging file flash ╟ ˘ a ĭ Â

w R	ЮR ə æ FLASH è˘ ˚ ɹ ѝ trace.txtĭ ˚ ѝ 64K, ə ⁞ ѝ 6 Â Ruijie(config)# **logging file flash:trace**

ĭΩħυ ҳ	**ħυ ҳ**	
	logging on	ĭΩ
	show logging	ă ѡ è ˘ Лυ ʅ ĭΩ ʌ
	more flash	FLASH è ə

ʌ		
ħυ ҳ ˥ ɹ	ʌ	
	-	-

51.1.8 logging monitor

ĭ æ VTY ʌ^ telnet ʌ å SSH ʌ ˜ Э ə ⁞˘ æ ѿ
ЮR ħυ ҳ Â ħυ ҳ no æ VTY ʌ Э . Â

logging monitor *level*

no logging monitor

ʌ	ʌ	
	level	ш Â ɹ Лυ G ⁞ ɹ ˘ ≠ ɹ Лυ G 50648 Âeth66.82 -32.68 62.76 0.24 ref142.32534.98 154.38 1.5 r

w R

Ю R ї VTY ㅓ Э . ə ⋮ и б

```
Ruijie(config)# logging monitor informational
```

ЎΩħυ ҳ

ħυ ҳ	
logging on	ЎΩ
show logging	ă ш è ˇ Лυ ㅓ ЎΩ ㅓ

ㅓ

ħυ ҳ ㄱ ㅓ

ㅓ	

logging	ә ѓ Syslog Server
logging file flash:	ә ѕ FLASH Э
logging console	ї ѕ ⁸ ѓ Э ә ⁞
logging monitor	ї ѕ VTY ѓ (telnet ѓ) Э ә ⁞
logging trap	ї ѓ Syslog Server ә ⁞

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51.1.10 logging rate-limit

⁸ ℸ ˘ ⁸ ѱ ї ә ˘ ѕ ѡ Ю Ђ ї Â ℨ ⁸ ℸ ˘ G Ђ ї no Â

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

no logging rate-limit

ѓ	
number	ѱ ї ә ˘ ѭ й 1—10000
all	ә ⁸˘ ↑ 0—7 ә ’
console	ѱ ї ѕ ⁸ ѓ Э ә ’
except	¥ ¥ ш ⁞ ә ˘ a ⁸’ ⁞ й error(3)˘ ¥ ¥ error ⁞ ә a ⁸’
severity	ә ш ⁞˘ ⁞ ˘ ш ˘ ѭ й 0—7

ą Ю˝ a ⁸ Â

Ђ ї ѡ

G Ђ ї ⁸ ә Â G Ђ ї˘ ѓ Л ә Â

ϙ ї ą ^ ↑ debug˜ й 10 ˇ л warning ↰ ш

w R ⁞ a ⁸'

```
Ruijie(config)#logging rate-limit all 10 except warnings
```

ћυ ҳ	

show logging count

R 2' Ю R У э IPV6 سم فذ ѝ AAAA:BBBB::FFFF

```
Ruijie(config)# logging server ipv6
```

ΫΩħυ ϡ	ħυ ϡ	
	logging	ə ϥ Syslog server

ϡ

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51.1.13 logging source interface

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ϡ Â

logging source interface *interface-type interface-number*

no logging source interface

ϡ	ϡ	
	interface-type	ϡ ص
	interface-number	ϡ ϡ

IP ف س Â ϥ ϡ

ħυ ϡ	ώ

ϙ Η˝ ϥ Syslog Server IP ف س ϥ ϡ IP ف س Â ϧ
G ϕ ϧ ¥ ˘ ϥ Λυ G ħυ ϡ IP ف س ª ϡ

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51.1.14 logging synchronous

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Ю Ђ ї Â ї Ѓ ѓ б ф ї ї ї G Ђ ї no Â

logging synchronous

no logging synchronous

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	ї	
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	ѓ Ю ѓ ѓ б ф ї ї ї Ѓ Â

Ђ ї

G	Ђ ї ѓ б ф ї ї ї ѓ Л ѓ ѓ Â

w R	Ruijie(config)#**line console** *0* Ruijie(config-line)#logging synchronous ѓ ѓ Ђ ї ї . ї UP-DOWN ф ї ‡ ѓ Ђ ї , Ruijie#**configue terminal** Oct 9 23:40:55 %LINK-5-CHANGED: Interface GigabitEthernet 0/1, changed state to down Oct 9 23:40:55 %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet 0/1, changed state to DOWN Ruijie# **configue terminal** // ѓ Ђ ї ї a

Ѓ Ђ ї ї		
	Ђ ї ї	
	show running-config	ф

ї

Ђ ї ї ї		
	ї	
	-	-

51.1.15 logging trap

ï ↓ Syslog Server ə ⁞˘ ﻫ ώ Ю ħυ ҳ Â ħυ ҳ no ↓ Syslog Server Â

logging trap *level*

no logging trap

↰	
level	ш Â ↓ Л∪ G ⁞ ɹ ˘ ≠ ↓ Л∪ G Â ˇΩ ¥ ə ш ˘ ↰ 1 Â

	Informational(6)
ħυ ҳ	ώ
G	ə ↓ Syslog Serverˇ ˝I G ώ ħυ ҳ logging Syslog Server Â ɻ˘ G logging trap ↓ ə ш ⁞ Â **show logging** ħυ ҳ ↓ Л∪ ˇΩ ↰ Ո Â

w R	Ю R ⁞ и 6 ə ↓ ﺳﻓﺫ и 202.101.11.22 Syslog Serverˇ
	`Ruijie(config)# logging 202.101.11.22`
	`Ruijie(config)# logging trap informational`

(**2 e S ħυ ҳ g o l s y**

ѫ ə̣ è ╗ Э /ˇ ѫ ѿ ЮО Ъυ ҳ Â Ъυ ҳ no ѵ ѫ ə̣ è /ˈ Â

service sequence-numbers

no service sequence-numbers

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ə è a ɹ Â

ћυ ҳ ŏ̈

G ћυ ҳ˘ ɻ Л υ ˘ ā ѫ ə è ї̆ ╗ ɹ Â

ш R

```
Ю R ѫ ə è ╗ Э ɹ'
Mar 22 15:28:02 %SYS-5-CONFIG: Configured from console by console
Ruijie# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# service sysname
Ruijie(config)# end
Mar 22 15:35:57 S3250 %SYS-5-CONFIG: Configured from console by
console
```

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show logging	ж ы ə б ă ш è ə

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ћυ ҳ ˥ ɻ

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51.1.18 service timestamps

ѫ ə è ╗ Э ə ˘ ѫ ŏ̈ Ю ћυ ҳ Â ћυ ҳ no ɻ ѫ ə è Э ə Âdefault ə й ḣ Â

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

no service timestamps *message-type*

default service timestamps *message-type*

Л

Л	
message-type	ср˘ ч log Ո debug Âlog ə ѫ ш ⋮ ѫ 0̈ 6 ʒ̆ ə ˘ debug ə ш ⋮ й 7 ə Â
uptime	ŭ ╟ ˘ ' * * ж ¶ * ˘ R' 07:00:10:41

datetime	ɱń ˘ ' ' ɟ ' ˘ R' Jul 27 16:53:07
msec	ɱń ˘ ' :ɟ : . R' Jul 27 16:53:07.299
year	ɱń ` ˘ ' ' ɟ ' R' 2007 Jul 27 16:53:07

ə ѐ ˘ ѝ ɱń Â RTC˝ ‡ ╟ ѝ ŭ ╟ Â

ƫυ ҳ ѽ

G G Uptime ÿ Э ŭ ╟↑ ɱń ˘ ´ Æ ѝ Â G Datetime ѝ ɱń ˘ · · ' ɟ ' Â

w R Ю R ŭ Log ə Ո Debug ə ˘ ѝ Datetime' ˘ з '

```
Ruijie(config)# service timestamps debug datetime msec
Ruijie(config)# service timestamps log datetime msec
Ruijie(config)# end
Ruijie(config)# Oct 8 23:04:58.301 %SYS-5-CONFIG_I: Configured from
console by console
```

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ƫυ ҳ	
logging on	˝Ω
service sequence-numbers	ŭ ə ѐ ʌ

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ƫυ ҳ ˥ ʌ

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51.1.19 terminal monitor

ƫυ ҳ ї ₰ ɱń VTY ʌ Э ə Â ˝Ω ₰ ɱń VTY ʌ Э ə ˘ G ƫυ ҳ no Â

terminal no monitor

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ąЮ ҕ VTY ٧ Э a ї ą Â

Ъυ ҳ

G

Ъυ ҳ ٧ ɱ VTY ї Â ɔ ѝ ї ˘ a ˚ ЮА ɖ Â ҕ VTY ˚ ٨˘ ї Â ⁸ ٧ Э ≠ ٦ Л υ Ъυ ҳ˘ Л a ɔ Â

w R

Ю R˘ ɱ VTY ٧ ї . ą Â

Ruijie# **terminal monitor**

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51.2

51.2.1 show logging

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show logging

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Ю R **show logging** У э '

```
Ruijie# show logging
Syslog logging: enabled
Console logging: level debugging, 4 messages logged
Monitor logging: level informational, 0 messages logged
Buffer logging: level debugging, 6 messages logged
Timestamp debug messages: datetime
Timestamp log messages: disabled
Sequence log messages: enable
Trap logging: level debugging, 2 message lines logged,0 reserved,0 fail
logging to  202.101.11.22
logging to  192.168.200.112
Log Buffer (Total 4096 Bytes) : have written 680
00001 2004-11-17 10:20:59  Ruijie: %7:%LINK CHANGED: Interface FastEthernet 0/0, changed state to up
00002 2004-11-17 10:20:59  Ruijie: %7:%LINE PROTOCOL CHANGE: Interface FastEthernet 0/0, changed state to UP
00003 2004-11-17 10:57:18  Ruijie: %7:%LINK CHANGED: Interface FastEthernet 0/1, changed state to administratively down
00004 2004-11-17 10:57:21  Ruijie: %7:%LINK CHANGED: Interface FastEthernet 0/1, changed state to down
00005 2004-11-17 10:57:41  Ruijie: %7:%LINK CHANGED: Interface FastEthernet 0/1, changed state to administratively down
00006 2004-11-17 10:57:43  Ruijie: %7:%LINK CHANGED: Interface FastEthernet 0/1, changed state to down
```

W R

ә '

Syslog logging	ЋΩ' **enabled**,ЋΩ **disabled**
Console logging	. ж ⁸ ⅄ Э ә ⁞ˇ Л∪ ⅂
Monitor logging	. ж VTY ⅄ Э ә ⁞ˇ Л∪ ⅂
Buffer logging	ж ⁇ ă ш è ә ⁞ˇ Л∪ ⅂
Timestamp debug messages	Debug ә
Timestamp log messages	Log ә

Sequence log messages	/l ЎΩ
Trap logging	ч Syslog Server ə¢ ⁞ˇ Лυ ч
Log Buffer	æ ä¸ ă ш è

Ъυ ҳ	
logging on	ЎΩ
clear logging	ă ш è

/l	
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51.2.2 show logging count

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Ю Ъυ ҳ Â

show logging count

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ѝ ф G ╗ ˇ æ ѽ Ю˝ **logging count** Ъυ ҳ Â**show logging count** Ъυ ҳˇ ч Лυ ə¢ ˇ н ˇ ∕ У Â

show logging Ъυ ҳˇ ч Лυ ⁞ ə¢ ╗ ї Â

Ю R **show logging count** '

```
Ruijie# show logging count
Module Name   Message Name Sev Occur     Last Time
==================================================SYS
CONFIG_I        5   1        Jul 6 10:29:57
--------------------------------------------SYS      TOTAL      1
```

ῦΩƕʋ ʇ	ƕʋ ʇ	
	logging count	╥ ῦΩ
	show logging	৯ ৯ ə̨ б ӑ ש è ə̨
	clear logging	ӑ ש ə̨

⅄

ƕʋ ʇ ˥ ⅄	⅄	
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52

52.1

52.1.1 device-priority

device-priority [*member*] *priority*

ﻥ		
ﻥ	*member*	ﻳ ID Â ﻝ Ո ˇ ‡ member 1
	priority	ﻳ . ˝I ˇ ﻙ ḣ ﻦﺗ ﻯ [1, 10]

ﻩﺙ ﻉ	ŏ
G	ﻩﺙ ﻉ ə ﻳ ﻱﺠ ﻝ . ˝I ˇ . ˝I ﻙ ḣ ﻦﺗ ﻯ 1ˀ 10ˉ è è 10 . ˝I ˇ ˝ ḣ ﻯ 1 Â ﻡ write ɖ Â
ɯ R	ﻳ 2 . ˝I ﻯ 8 `Ruijie(config)# device-priority 2 8`

˜Ωﻩﺙ ﻉ	ﻩﺙ ﻉ	
	show member	ﻱﺠ ﻝ ﻳ ə Â

ﻡ

ﻩﺙ ﻉ ˥ ﻙ	ﻥ	
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52.1.2 device-description

device-description [**member** *member*] *description*

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ɥ	
member *member*	˜ ID Â ˩ Ꞅ ˘ ‡ member 1 Â
description	˜ ˘ ӥ 31 Â

ƕ ʒ ῴ Â

G ƕ ʒ э ˜ ⁝ ˩˘ ɥ write ɖ Â

ɰ R ˜ 2 ⁝ ˩ ӥ red-giant

```
Ruijie(config)# device-description member 2 red-giant
```

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ƕ ʒ	
show member	ش݇ ˜ ǝ Â

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ɥ	
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52.2

52.2.1 show member

show member [*member*]

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ɥ	
member	˜ ID˘ ‡ ˜ Â

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G ƕ ʒ ˩ Ꞅ ش݇ ˜ ǝ Â

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```
Ruijie# show member
Member  Mac Address    Priority  Software Version
HardwareVersion  Description
------ ---------  -------  ---------- ---------   --------
1  00d0.f810.3323  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
2  00d0.f822.33aa  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
3  00d0.f822.33ae  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
4  00d0.f822.33b0  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
5  00d0.f822.33b2  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
6  00d0.f824.23b4  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
7  00d0.f833.44b4  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
8  00d0.f855.33ae  1  RGOS 10.1.00(2),Release(12889) 1.0  SWITCH
```

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-	-