Ъ ҙ ЎӒ

RG-S2900 "

ѽ ўІ ѽ ѡ Ӌ

RGOS 10.4(2b2)

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ЎĄ ¨ й' RGOS®10.4(2b2) Â

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1.

ą ' Courier New ˇ è ɛˇ 5 Лˇ
ą Â ą è ÿ ώ ą ˇ ╗ ɛ Â

2. Ћυ ʒ

Ћυ ʒ ɛ Arialˇ έ ɛ ˜Ω Ћ Ю'

ɛ' Ћυ ʒ ˜Ω ^ Ћυ ʒ è ɖ a ɻ ɬ ˜ ╗ ɛ Â

ɛ' Ћυ ʒ Ӈ ^ Ћυ ʒ è ћ ʒ ɬ ˜ ɛ

[ ] ' [ ] ɬ ˇ ﾂ Ћυ ʒ 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 й Â

3. ʎ

ʎ ɟɔ è ⁞ ɯ ˘ ɸ ⱵⱾ
ⱭⱰ'

~ à ˆ à ɔ è Y Â

& à à à ɔ ⷈ ⷈI

	1.	ⷈẠ w R ʃ ʎ ɾ ɹ a ˘ ɔ è ʎ ɳ ɒ ʎ ɾ Â
~	**2.**	ⷈẠ ʃ w R ə è ɹ ⷈ è ɳ ɒ " ⷈ ˆ ɳ ɒ ɾ ʎ à ~ ˘ é ɛ ə Ⱦ G ə ʊ̀ ñ Â
	3.	ⷈẠ è ɻ Ⱡɻ Ⱡɳ ɒ ف ˘ ʒ ɷ У ⱵⱭⱰ Ⱡˇ Ⱦ ɻ ɷ ~ Ь Ꜧ 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

∧

6T0 1 Tf1.677 6 m130.945273.56 l30.9452734.2 l355

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 Ъυ ҂ ÿ ∫ Â ╗ Э ˘ ‡ ⅋ æ∫ Â
& **disable** Ъυ ҂ ∧ ¥ ⅋ Â

ЮO R ⅋ æ∫ ⌒ '

```
Ruijie# disable 10
```

w R	
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 ϡ ѽ

G

ώ ╗ ѕѻ Â У ϙ Ю˘ ϰ ⁸ ╗ ϰ ϡ ˘
ώ ╗ ѕѻ Â
ϰ ϡ Ѭ Ю˙
Â ↑ ΰ 1ϒ 26 ϶ ϱ̃ Ո Â
Â ϰ ϡ ϻ ϟ Ո ϻ ˘ Л Â è ϟ ‡ ɔ ѝ ϰ ϡ У ϒ Â

~	ϖ ╗ ѕ˘ ϗ ώ У ϰ ϡ˘ ‡ a ώ EXEC Â a · ╗ x ϰ ϡ Â ϟ ϰ ϡ Â

w R

Ю R ϰ ϡ ѝ pw10˙

```
Ruijie(config)# enable password pw10
```

ΏЪυ ϡ

Ъυ ϡ	
enable secret	ώ ϰ ϡ Â

ϟ

Ъυ ϡ ϒ ϟ

ϟ	
-	-

2.1.4 enable secret

a ϟ ⋮ ώ ϰ ϡ˘ ώ Ъυ ϡ **enable secret** Â Ъυ ϡ **no**˥ ⋮ ϰ ϡ 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

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-	-

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 '

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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 ϗ ¥ Web Â G **no ip http authentication** ћυ ϗ ὶ ћ Â
w R	Ю R ћυ ϗ˘ Web local ' Ruijie(config)# **ip http authentication local**

˜Ωћυ ϗ		
	ћυ ϗ	
	enable service	б ˜Ω Ł Â

˩

ћυ ϗ ˥ ˩		
	˩	
	-	-

2.1.8 ip http port

HTTP Ł ˩˘ æ Ю˘ ˫ Л G **ip http port** ћυ ϗ'

ip http port *number*

˩		
	˩	
	number	HTTP Server ˩˘ ћ ὶ 80 Â

ћ ὶ 80 Â

ћυ ϗ	ѽ

G	ћυ ϗ ¥ HTTP Ł ˩ ÂG **no ip http port** ћυ ϗ ˩ ὶ ћ Â

w R	Ю R ћυ ϗ˘ HTTP Ł ˩ ὶ 8080ѓ Ruijie(config)# **ip http port** *8080*

˜Ωћυ ϗ		
	ћυ ϗ	
	enable service	

	-	-

2.1.9 ip telnet source-interface

ᴧ Э IP ѫѫ ϧ ɔ й Telnet ѫѫ ˘ ϳ Ю˘ ᒧ Л υ G **ip telnet source-interface** Ъυ ϧ'

ip telnet source-interface *interface-name*

-	ᴧ

Ъυ ϡ

G

æο ï ∧ ϡ ˘ ѧ ɖ ѫ ∠ ˘ в Лυ Â
ЛυЮ в '
Â У ' ώ **lock** Ъυ ϡ˘ ˛ ώ ∧ ϡ'
Â γ ' ώ ∧ ϡ˘ ∠Лυ ˙ s Â ώ ∧˘ ˛ ώ ∧ ϡ˘
∧˘ ˛ ˘ l' Locked Ł ą '
Â ώ ˘ ώ ï ∧ ϡ Â
ѧ Э G в ℸ ˘ 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

ѵ

Ъυ ҳ ϒ ѵ	/ı	
	-	-

2.1.15 privilege mode

ѵ ê CLI Ъυ ҳ Ì Â

ѵ	ѵ	
	-	-

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 ѝ ώ˘ ″ ї '

ѝ 0 min Â

ћU ҳ LINE

G ᵆ ᾳ˘ ÿ ɱ LINE Э ↑ ˬ ˘ · ¡ ώ
ə ˘ è ˘ LINE ѝ ↓ Â

W R Ю R line vty 0 ˬ ѝ 5↑ 30 '

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

[redacted] Tf50.94 489.re152 122..548845nfi96.012 0 T384

G G Ъυ ҳ Â

ЮO R s ٧ ѝ 57600 bpsʹ
Ruijie(config)# **line console** *0*
Ruijie(config-line)# **speed** *57600*

Ъυ ҳ	
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2.2.11 write

ˆ running-config˜ ɖ ĺ Æ Â

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

٧	
memory	ĵ ώ NVRAM˝ ٫ ¥ **copy running-config startup-config** Â
network	ɖ ĺ TFTP Ŀ Ɐ Ɔ˘ ٫ ¥ **copy running-config tftp** Â
terminal	˘ ٫ ¥ **show running-config** Â

Ъυ ҳ

Ъυ ҳ î

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Ъυ ҳ	
copy	ᵛ 8
show running-config	

Ъυ ҳ ˥ ⅄	
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2.3

2.3.1 show clock

ˇ Ъυ ҳ **show clock** Â

show clock

⅄	
-	-

Ъυ ҳ

G G Ъυ ҳ ⅄ Л∪ ɱ ˇ detail Â

ѡ R Ю R **show clock** Ъυ ҳ У э R'

```
Ruijie# show clock
clock: 2003-3-17 10:27:21
```

Ъυ ҳ	
clock set	

Ъυ ҳ ˥ ⅄	
-	-

-	-

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

Ъυ 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

ѵ

ѵ	
-	-

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˝ ↓ ї Telnet ˜ Â
none	Line Ю˝ a ї ˙ ¦ ˜ Â

˘ VTY ї ˜ Â è ص TTY ћ ѝ NONE˝ a ї ˙ ¦ ˜ Â ¢ ˜ ↓Л ∧˘ ↓Л G **default transport input** ћu ҳ ѝ ћ Â

ћu ҳ Line

ћu ҳ Line Ю ї ˜ ÂVTY ѧ ą Ю˝ ї ˜ ą Â ¢ ї ˜ ∧˘ ↓ ˜ ↓Лѧ 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** ↓ Â

ѧ line vty 0 4 Ю˝ ↓ ї telnet ˜ '

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

ћu ҳ	
show running	ą Â

˚ RGOS10.1 ЛЭ

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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 ε ϰ DNS ϯ 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 ╗

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⊀	Ъυ ҳ ج	ipv6	Э ⊀ Â

Ъυ ҳ ⊤ ⊀	⊀	
	-	-

4.1.3 traceroute

traceroute Ъυ ҳ˘ ⊀ Л∪ ɣ ↑ ÿ ѕѫ ѳѧѫ ѕѫ ѳѧѫ ˜Ω.

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

⊀	⊀	
	vrf-name	VRF ⊀
	Ip-address	IPv4 ѳѧѫ Â
	number	⊀
	source	IPv4 ѳѧѫ ⊀ Â è ˘ ѡ ⊀ ѕѫ ѳѧ ˆ R 127.0.0.1˜ a ї ɔ ѝ ѕѫ ѳѧѫ Â
	seconds	
	minimum maximum	

```
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
```

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Ъυ ҂ ˥ ⊀	⊀	
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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	∩ TTL ḣ

Ъυ ϩ

G

Traceroute ipv6 Ъυ ϩ ў ¥ ˘ ج ل ˘ ñ Æ ل Æ Â G ﺵ ﺭ ╖ ˘ ‡ ″I ﺵ ﺭ ┣ ⅄˘ é ᴇ ٧ DNS ∫ Â

ЛЬЮ й traceroute ipv6 ч э R ˘ У э й ˘ У э й ج Ҿ ℨΩ 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 л Лυ ﺳﻢ ∫ ˘ ÿ ﺳﻢ فخ IP ﺳﻢ فخ й *3004::1* ў ˘ ↑ ɷ ف Ҿ ℨΩ 1˙ 4˜ ˘ ل ɷ∫ ℨΩ ˘ ¥ ∫ ˘ Â

W R

R 2' è Ҿ ℨΩ 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 л Лυ ﺳﻢ ∫ ˘ ÿ ﺳﻢ فخ IP ﺳﻢ فخ й *3004::1* ў ˘ ↑ ɷ ف Ҿ ℨΩ 1˙ 5˜ ˘ з ℨΩ 4 ɷ Â

ℨΩЪυ ϩ

Ъυ ϩ	
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ƕ ɜ ˥ ˩	//
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5

5.1

5.1.1 carrier-delay

ɷ ʎ ƗO G Ƕ ɂ **carrier-delay** ɷ ʎ ˘ G Ƕ ɂ **no** ɯ ɻ Â

carrier-delay [*seconds*]

no carrier-delay

ʎ		
	seconds	ɻ ʎ ˘ Ɲ ɲ´ Æ˘ ɵ 1˙ 60 Â
	ɻ 2 Â	
Ƕ ɂ	ʎ Â	
G	ʎ ʎ ə ʎ DCD ÿ Down ˚ Up ˘ DCD ɷ ʓ ɋ ɻ ɻ ʏ˘ ɯ ɻ ʏ a ɣ Э ˜ ɻ Â DCD è ˘ ɯ ʎ ɇ ɻ Ɲ ɱ ˘ Ɲ ɾ ɻ Ɲ Â ɻ˘ DCD è ɣ ˘ ɯ ʎ ɇ Ɲ ȯ Â	

ƜƗO R □ ɳ

ɯ R

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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

hu ɂ

aggregate Ä aggregate

show **interfaces show interfaces**

```
Ruijie(config)# interface aggregateport 3
Ruijie(config-if)#
```

ʺΩhu ɂ

Q ¸	£EÄ

S2900 "

⅜

	AÈ â

hu ɂ hu ɂ˘ ſu ʌ˘ ώ ʌ Â

interface *mod-num/port-num* **fastEthernet**

– D	£EÄ
mod-num/port-num	ж ʌ /

hu ɂ no ˘ ص ʌ a ˥ Â G **show** **show** **fastEthernet** hu ɂ ʌ Â

```
Ruijie(config)# interface fastEthernet 1/2
Ruijie(config-if)#
```

˜Ωㅏ ㅋ	ㅏ ㅋ	
	show interfaces	ㅓ Ո ə Â

ㅓ	S2900 " Ո ㅓ Â

ㅏ ㅋ ˥ ㅓ	ㅓ	
	-	-

5.1.9 interface giagbitEthernet

ㅏ ㅋ ㅏ ㅋ˘ ¯ ¨˥ Ո ㅓ˘ ώ ㅓ Â

interface gigabitEthernet *mod-num/port-num*

ㅓ	ㅓ	
	mod-num/port-num	ㅊ ㅓ / ㅊ Э ㅓ ㅓ˘ ت Ո ㅊ ā Â

ㅏ ㅋ	ŏ
G	ㅏ ㅋ **no** ˘ ص ㅓ a ĩ Â G **show interfaces show interfaces gigabitEthernet** ㅏ ㅋ ㅓ Â
W R	`Ruijie(config)# interface gigabitEthernet 1/2` `Ruijie(config-if)#`

ㅏ ㅋ

5.1.10 interface vlan

hu ʒ hu ʒ˘ … У э ╟ Ц ʌ switch virtual interface˘ SVI˜ ˘ noce

ٰ Æ Â

```
Ruijie(config)#interface gigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)#line-detect
Interface : GigabitEthernet 0/1
start cable-diagnoses,please wait...
cable-daignoses end!this is result:
4 pairs
pair state     length(meters)
---- ---------- --------------
A    Ok        1
pair state     length(meters)
---- ---------- --------------
B    Ok        2
pair state     length(meters)
---- ---------- --------------
C    Short     1
pair state     length(meters)
---- ---------- --------------
D    Short     1
```

pairs	↑ ŭ ˘ ٰ ني ٱ Â
state	ɱ ˘ Ω Ь ə ḣ' OK˘ ˜ ˘ Short˘ ˜ ˘ Open ˆ ˜ Â ɋ Ю˘ ˮI ٰ A à B ч й OK˘ C à D ч й Short Â˘ ˮI ٰ A à B à C à D ني ڭ й OK Â
length	˘ ´ Æ й Â ٰ state й OK Â ٱ ˘ ¥ ə ٱ · ˘ Л ٰ ج У Â й Short Open length ٰ ˆ Â

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ٱ

5.1.12 medium-type

ٰ ص Â G ħυ ٯ **no** ḣ Â

medium-type { **fiber | copper** }

no medium-type

ㅓ	ㅓ	
	fiber	˝ㅣ ㅓ
	copper	ㅓ

ㅓ Â

ㅏ ㅋ ㅓ ˇ a ↑ Ap Ո SVI˜

ㄹ У ㅓ ㄹ Л Ս ˝ㅣ ㅓ Ո ㅓ ч Ў ص˜ ㅓ G è è Ӡ У Â У Ў ص Ӡ Л˜ ج ㅓ ˇ R à ㄱ à ⁸ Ո ˇ ㅓ ת ص Â ㄴ ㅓ ص Л˜ ص ㅓ ㅢ è ˇ ㄹ Л Ս Â

G

ш R

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# medium-type copper
```

˝Ω ㅏ ㅋ	ㅏ ㅋ	
	show interfaces	ㅓ Ո ą Â

ㅀ

24SFP/12GT ´ 12 ə SFP ㅓ Ո 12 ə 10/100/1000M BASE-T ㅓ ï ╟ ˛ Â a ㅓ ╟ ″ ת ɔ ج SFP ㅓ 10/100/1000M BASE-T ㅓ Â

ㅏ ㅋ ˥ ㄹ	ㅀ	
	-	-

5.1.13 mtu

ㅓ mtu

Mtu *num*

ㅓ	ㅓ	
	num	64 9216(65536 ㅂ ᵽ a ㄹ a ㄹ)

ㅢ 1500 Â

ㅏ ㅋ ㅓ

G	ʌ mtuˆ · ˜ Â ɱ́ ʌ ʌ Â

w R	Ruijie(config)# **interface gigabitethernet** *1/1* Ruijie(config-if)# **mtu** *9216*

˜ΩЪu ʒ	Ъu ʒ	
	show interfaces	ʌ Ո ə Â

ʌ

Ъu ʒ ˥ ɻ	ʌ	
	-	-

5.1.14 shutdown

æ ʌ è˘ G Ъu ʒ˜Ω ʌ Â G Ъu ʒ **no** ʌ Â **shutdown**

no shutdown

ʌ	ʌ	
	-	-

Ъu ʒ	ʌ

G	ɣ ʌˆ Ʌu ʌ ą Ap ʌ ą SVI ʌ˜ ˘ Ъu ʒ˜Ω ʌ˘ ʌ ȅ ы Ÿ æ˘ Л a ɔ Â G **show interfaces** Ъu ʒ ʌ Â
&	G ṁ **no shutdown** ʌ ɔ˘ ɻ ˳ ɻ ʌ ə Â

w R	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
```

ΩЪυ ҳ

Ъυ ҳ	
clear interface	ʌ ˚ Æ Â
show interfaces	ʌ Ω ə Â

ㅏ ㅋ		
ㅋ ㅏ ㅋ	Ruijie(config-if)# **snmp trap link-status**	ㅓ ㅓ link trap ㅠ Â
	Ruijie(config-if)# **no snmp trap link-status**	ㅋ ㅓ ㅓ link trap ㅠ Â

ㅓ

ㅏ ㅋ ㅣ ㅓ	ㅓ	
	-	-

5.1.16 speed

ㅓ Â G ㅏ ㅋ **no** ㅏ

ㅓ	ㅓ	
	10	ㅓ ㅐ 10Mbps Â
	100	ㅓ ㅐ 100Mbps Â
	1000	ㅓ ㅐ 1000Mbps Â
	10G	ㅓ ㅐ 10Gbps Â
	auto	ㅓ ㅐ Â

Â

ㅏ ㅋ	ㅓ

G

ㅓ Ap ㅎ ㅅ ‡ ㅓ Ap ā ㅅ ㅓ ㅁ ㅓ ㅅ ㅍ
a ɔ Â ㅓ Ap G ÂG **show interfaces** ㅏ ㅋ Â
ㅓ ㅈ a ㅓ ˇ ï ㅈ ≠ ˛ a ㅓ Â ˇ SFP ㅈ ㅓ a ï
ㅐ È

ฯ ใบ ๆ

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

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

ㅓ		
ㅓ	**allowed vlan** *vlan-list*	ə Trunk ㅓ ㄴ VLAN " Â ㅓ vlan-list ㄴ Л∪ У ə VLAN˘ ≠ ㄴ Л∪ У " VLAN˘ Л∪ VLAN ID ˘ Л∪ VLAN ID ˘ è ˆ -˜ ㅀ Â ' 10-20 Â ʒ ㄴ Л∪ ˆ ,˜ ㅀ ˘ ' 1-10,20-25,30,33 all ŭ ㅁ ㄴ VLAN " ↑ ŭ VLAN˝ add VLAN " ╗ ώ ㄴ VLAN " ’ remove VLAN " ÿ ㄴ VLAN " è ╕ ’ except " VLAN " VLAN ╗ ώ ㄴ VLAN " ’
	native vlan *vlan-id*	Native VLAN Â

ㄴ VLAN " all˘ Native VLAN ‡ VLAN 1

ㅏ ㅋ ㅓ

G

```
Acsess vlan is 1,Native vlan is 1
Protected is disabled
Vlan lists is
1,3-4094
```

ˇΩㅏㅜ ㅋ

ㅏㅜ ㅋ	
show interfaces	ㅓ ㅕ Â
switchport access	У э ㅓ й statics accessportˇ й У э VLAN ˜ ㅓ Â

ㅓ

ㅏㅜ ㅋ ˥ ㅓ

ㅓ	
-	-

5.2

5.2.1 show interfaces

ㅓ Ո ㅕ ˘ Ло ㄱ ˝l ㅀ ㅕ Â

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

ㅓ

ㅓ	
interface-id	ㅓˆ ↑ Ло ㅓ à aggregateport ㅓ à SVI ㅓ à loopback ㅓ˜ Â
counters	ㅓ ㅕ Â
description	ㅓ ㅕ ˘ ↑ link Â
status	ɣ ㅓ ㅓ ㅕ ˘ ↑ à ㄱ Â
switchport	ɣ ㅓ ㅕ ˘ ㅓ ɣ ㅓ Â
trunk	trunking port ㅕ ˘ ㅓ à Aggregate port Â
transceiver	˝l ㅀ ㎜ ㅕ Â
alarm	˝l ㅀ ㎚ ˜ ㅕ ˘ l' None Ŀ Â

diagnosis	˝I ﾈ ﾍ ｍ ｈ Â

ﾍ ﾈ Â

ﾋ ﾇ

G a ╕ ﾍ ˘ ‡ ﾍ ﾏ ﾈ Â

S2900 "

Ruijie# **show interfacesgigabitEthernet** *0/1* **switchport**

W R Interface Switchport ModeAccess Native Protected VLAN lists

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

GigabitEthernet 0/1 enabled Access 11 Disabled ALL

ﾋ ﾇ	
duplex	ﾍ ﾍ Â
flowcontrol	˜Ω ⁸ Â
interface gigabitEthernet	Л∪ ﾍˆ ˆ ¯ ˝I Л∪ ﾍ˜ ˘ ώ ﾍ Â
interface aggregateport	… У э ﾉ ﾍˇ ώ ﾍ Â
interface vlan	… У э ╠ Ц ﾍ ˆ switch virtual interfaceˇ 8

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

Aggregate Port ħυ ҙ

S2900 " '

Â ˜ ∧ ə 8 ə’

Â ŏ … 31 ə AP Â

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	-	-

6.2

6.2.1 show aggregateport

aggregateport ą Â

	∧	
	aggregate-port-number	Aggregate Port ∧ ⊀ Â

Aggregate Port ħυ ҙ

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	
	-	-

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G	
w R	Ruijie(config)# **protocol-vlan profile** *1* **frame-type** *ETHERII* **ether-type** *aarp*

ћu ҙ		
ѽћu ҙ	**show protocol-vlan profile**	-
	show protocol-vlan profile *num*	-
	no protocol-vlan profile	-
	no protocol-vlan profile *num*	-

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	-	-

8.1.3 protocol-vlan profile num vlan id

profile¦ ѵ

	ѵ	
ѵ	*num*	profile
	id	VLAN ID˘ 1- ң ҏ VLAN

ћu ҙ	ѵ
G	
w R	Ruijie(config-if)# **protocol-vlan profile** *1* **vlan** *101*

ћu ҙ	
show protocol-vlan profile	-
show protocol-vlan profile *num*	-
no protocol-vlan profile	-
no protocol-vlan profile *num*	-

RGOS10.1 Л∪Э

	-	-

9 Private VLAN

9.1

9.1.1 private-vlan association

ˇΩ secondary VLAN б primary VLAN ħυ ϡ

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

no private-vlan association

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

no private-vlan mapping

۸		
۸	*svlist*	secondary VLAN list
	no	╕

ћu ҳ	Primary VLAN ۸
G	

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

ћu ҳ		
ћu ҳ	**show vlan private-vlan**	-

۶	RGOS10.1 Л Э

ћu ҳ] ۶	۸	
	-	-

9.1.3 private-vlan type

VLAN ѝ VLAN

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

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

۸		
۸	*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	-

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ħu ३ ˥ ʌ	ʌ	
	-	-

9.1.5 switchport private-vlan host-association

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

switchport private-vlan host-association *p_vid s_vid*

no switchport private-vlan host-association

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

ħu ३	ʌ
G	

w R
```
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<04A22F 951CDD5.11h11.5705 1905DE7d( )],T0 1.994.02 0 0 10.0 2 439.32 12541 60 1 Tf1198 -0.

- -

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

۸	
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	
-	-

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-	-

9.3 Hybrid

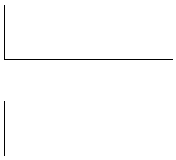
9.3.1 switchport hybrid allowed vlan

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

no switchport hybrid allowed vlan

hybrid ‡

۸	
no	hybrid ‡



ħu ३ ी ⊿	/I	
	-	-

9.3.3 switchport mode hybrid

10 Share VLAN

10.1

10.1.1 share

G ħυ ϗ share vlan Â

ϟ	
-	-

ħυ ϗ vlan

G ϡ share vlan **no share** ħυ ϗ Â
ѧ˙ ώ **end** ħυ ϗ˘ ώ Ctrl+C ϳ Â
ѧ˙ ώ ˘ ώ **exit** ħυ ϗ Â

ϣ R

```
Ruijie(config)#vlan 2
Ruijie(config-vlan)#share
```

ΎΩħυ ϗ

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-	-

ϡ

ħυ ϗ ϒ ϡ

ϱ	
-	-

10.2

10.2.1 show mac-address-table share

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

У э ip ﻡﺴﺍ ﻑﺬﺣ Ո- mac ﻡﺴﺍ ﻑﺬﺣ Â

address-bind *ip-address mac-address*

no address-bind *ip-address*

٩	

./ 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

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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

ћ ђ	ѽ

G	æ У э IP ѫ Ґ У э MAC ѫ ˘ ‡ Ђ ∫ IP ѫ й э IP ѫ ˘ MAC ѫ a й э IP ѫ MAC ˘ э ¸ Ђ x Â

ѡ R	Ю R ip ѫ й 3.3.3.3 Ґ mac ѫ 00d0.f811.1112 `Ruijie(config)# address-bind 3.3.3.3 00d0.f811.1112`

ЎѲћ ђ	ћ ђ	
	show address-bind	ѫ

ѵ	S2900 " Ђ IPv4+MAC э й 1K.

ћ ђ ђ ѵ	ѵ	
	-	-

11.1.4 address-bind ipv6-mode

ip ѫ IP

ò

address-bind ipv6-mode compatible

address-bind ipv6-mode loose

ш

address-bind ipv6-mode strict

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	-	-

5l,ÕG* Æ ш õ ã,X Â ḍ

	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
```

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-	-

Л

ђ ѯ ˥ Л

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-	-

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
```

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ћ	
show address-bind uplink	R

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11.1.6 clear mac-address-table dynamic

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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*

ﻪﻟ ﻉ	

̃ΩƕƲ ʅ	ƕƲ ʅ	
	show mac-address-table static	سم فخ Â
	clear mac-address-table static	سم فخ Â

ɺ|	S2900 " Â MAC سم فخ ώ̈ ӥ 16K Â ώ̈ MAC سم فخ ӥ 1K

ƕƲ ʅ ˥ ɺ| /|	
	-	-

11.1.13 snmp trap mac-notification

ᘁ MAC سم فخ ╖ Â G ƕƲ ʅ **no** ̃Ω ╖ Â

snmp trap mac-notification {**added** | **removed**}

no snmp trap mac-notification {**added** | **removed**}

ᘁ	ᘁ	
	added	سم فخ ╖ Â
	removed	سم فخ ᛙ Â

	̃Ω ╖ Â

ƕƲ ʅ	ᘁ

G	G **show mac-address-table notification** *interface* ƕƲ ʅ Â

ɯ R	

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# snmp trap mac-notification added
```

̃ΩƕƲ ʅ	ƕƲ ʅ	
	mac-address-table notification	MAC سم فخ ╖ Â
	show mac-address-table notification	MAC سم فخ ╖ Ռ ə Â

ɺ	

ﻩU 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
```

ﻩU ﻉ	
address-bind	ﻡﺳ ﻑﺧ Â

MAC فخ سم hu ڄ

show mac-address-table dynamic	╟ فخ سم Â
show mac-address-table interface	٨ صر سم فخ ٩ Â
show mac-address-table vlan	VLAN صر سم فخ ٩
show mac-address-table count	سم فخ è سم فخ ٥ Â
show mac-address-table static	سم فخ Â
show mac-address-table filtering	سم فخ Â

٨

ħu ٦ ٦ ٨

/١	
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11.2.4 show mac-address-table aging-time

╟ سم فخ ٧ Â

show mac-address-table aging-time

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ħu ٦

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w R

```
Ruijie# show mac-address-table aging-time
Aging time    : 300
```

ΩħU ٦

ħu ٦	
mac-address-table aging-time	╟ سم فخ ٧ Â

٨

ىلإ ءارجإ لخدلا	ةمئاقلا	
	-	-

11.2.5 show mac-address-table count

ىسفخ ةمس è ىسفخ ةمس ىلع Â

show mac-address-table count

ةمئاقلا	ةمئاقلا	
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ىلإ ءارجإ

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Ruijie#

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11.2.6 show mac-address-table dynamic

╟ ѫ ѳ ѧ Â

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

ѱ		
ѱ	*mac-addr*	MAC ѫ ѳ Â
	vlan-id	VLAN Â
	interface-id	↑ ↓ѱ ѱ (↓ Л Ъ ѱ AggregatePort)
	ѽ ѧ	
ъ ъ		
G		
ѡ R	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	
ѽ ъ ъ		

ъ ъ	
clear mac-address-table dynamic	╟ ѫ ѳ Â

ѵ		
ъ ъ ↑ ѵ	ѵ	

	-	-

11.2.7 show mac-address-table filtering

سم فخ ؟

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

	¶	
¶	*mac-addr*	MAC سم فخ Â
	vlan-id	VLAN Â

interface-id	٨ (٦ ЛU ٨ AggregatePort) Â
vlan-id	VLAN Â

ىU ؟

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```
Ruijie#
```

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٩	
interface *interface-id*	٩ ٨ Â ٩ Э MAC ٦ Â
history	MAC ٦ ٤ ٩ Â

MAC فخ سم ٦ ٩ Â

hu ٦

G

```
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
```

	hu ٦	
٦Ωhu	**mac-address-table notification**	MAC فخ سم ٦ Â
	snmp trap mac-notification	٩ MAC فخ سم ٦ Â

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

	vlan-id	VLAN ID Â

ħu ٦

G

w R

```
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
```

ّΩħu ٦

ħu ٦	
show mac-address-table static	فخ سم Â
show mac-address-table filtering	فخ سم Â
show mac-address-table dynamic	╟ فخ سم Â
show mac-address-table address	فخ سم صر فخ سم ٩ Â
show mac-address-table interface	٨ صر فخ سم ٩ Â
show mac-address-table count	Â ٥ فخ سم è فخ سم

٨

ħu ٦ ٦ ٨		
	٨	
	-	-

11.2.12 show mac-address-learning

٨ سم فخ ‾ F

٩	٩	

ىلإ ةعجار

G

ةروص

R 1' ةلاحلا فخسم ىلإ ةعجار F'

Ruijie# show mac-address-learning

ةلاحلا ىلإ ةعجار

ىلإ ةعجار	

ةلاحلا

ىلإ ةعجار لوح ةلاحلا

ةلاحلا	

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) ------------------------ ------- ------------

ЎЮћu ҙ	ћu ҙ	

	show ip dhcp snooping	DHCP snooping ə Â

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	⅄	
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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**

⅋		
	⅋	
	-	-

	╖ ˝Ω Â
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)
-----------------------  -------    ------------
```

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

ΐΩƕu ʢ	ƕu ʢ	
	show ip dhcp snooping	DHCP snooping ә

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ƕu ʢ ˥ ˩ʎ	/ʎ	
	-	-

12.1.4 ip dhcp snooping database write-to-flash

Ʉ DHCP Snooping ╟ ә ῆ ώ FLASH ̈ ̆ ޖ ΰ
Ю ƕu ʢ Â

ip dhcp snooping database write-to-flash

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	-	-

ƕu ʢ	ΰ Â

G ƕu ʢ ̆ ˩ Ռ

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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**

٩		
٩	-	-
	╖ ˷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**	

ʌ DHCP ˘ ҽ ʌ ЮO ħu ҳ Â ħu ҳ no ˘ ʌ ʌ ⁸ Â

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

ʌ

ʌ	
rate-value	˘ PPS[Packet Per Second]

⁸

ħu ҳ ʌ

G

ħu ҳ ѝ ħu ҳ Â

Ш DHCP Snooping ⁸ VLAN ӫ ʌ ˘ ↑ ҽ˙ ʌ Â

ʃ ң ҏ Э˘ ҁ CPP[CPU Protect Protocol]Ш Â CPP˳ ˅ DHCP ⁸˘ ѡ ɣ CPP . ″I ɣ DHCP Snooping ⁸ Ш Â ӟΩ ɣ CPP ʃ ˘ ɛ ɛ Â

ɻ Л∪ **show ip dhcp snooping** ħu ҳ˘ ʌ Э ⁸ Â

w R

ЮO ʌ 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
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)
-----------------------  -------    ------------
FastEthernet0/1           NO         100
```

ӟΩħu ҳ

ħu ҳ	
show ip dhcp snooping	DHCP snooping ҽ Â

ɻ

ʌ DHCP snooping əɻ̇ ỳ TRUST ʌˇ æ̧ ʌ ⅠO ħu ʒ Â
ħu ʒ no ˇ ʌ ỳ UNTRUST ʌ Â

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

ʌ	ʌ	
	-	-

	ɑ ⅠO˝ ʌ ỳ UNTRUST ʌ Â
ħu ʒ	ʌ Â
G	ħu ʒˇ ʎ DHCP Ł ⅄ ʌ ỳ TRUST ʌ ÂTRUST ʌ ↑ DHCP ꞉ ↵ˇ UNTRUST ʌ ↑ DHCP ꞉ x Â

ⅠO ʌ **fastethernet** 0/1 ỳ TRUST ʌ 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
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)
-----------------------  -------    ------------
FastEthernet0/1           YES         unlimited
```

12.3 DHCP snooping

12.3.1 show ip dhcp snooping

DHCP Snooping ɱń ɋˇ ₰ ƗO ƫu ʒ Â

show ip dhcp snooping

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	-	-

ƫu ʒ

G ƫu ʒˇ ˩ ɅƱ ɱń DHCP Snooping ɋ Â

ƗO ɱń DHCP Snooping ɋ 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

ƫu ʒ	
ip dhcp snooping	DHCP snooping ŏ ˜Ω Â
ip dhcp snooping verify mac-address	DHCP snooping mac ˜Ω Â
ip dhcp snooping write-delay	ɲ̃ flash Â
Ip dhcp snooping information option	₰ DHCP è ╗ ώ option82 Â
ip dhcp snooping bootp-bind	DHCP Snooping Bootp ╗ Â
ip dhcp snooping trust	ʕ ʮ DHCP snooping trust ʕ Â

˜Ωƫu ʒ

⊿I

ħu ɔ¦ ˥ ⊿I	/I	
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12.3.2 show ip dhcp snooping binding

DHCP Snooping è ə¢ ˘ æ ŀO ħu ɔ¦ Â

show ip dhcp snooping binding

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	-	-

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G	ħu ɔ¦˘ ⊿ Л∪ ŋń DHCP Snooping è ə¢ Â

ŀO R '

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12.4 DHCP snooping

12.4.1 clear ip dhcp snooping binding

ī DHCP Snooping è ╠ ˘ ₫ ЮO ħu ɜ Â

clear ip dhcp snooping binding

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ħu ɜ	
show ip dhcp snooping binding	DHCP snooping ə Â

ħu ɜ ˥ ɻ	
-	-

12.4.2 debug ip dhcp snooping

₫ Ꮋ Э DHCP Snooping ╖ ˜Ω˘ ₫ ЮO ħu ɜ Â

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

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G ħu ३ˇ DHCP snooping ╖ ə Â

ĦO DHCP snooping ˇΩ R '

w R
```
Ruijie# debug ip dhcp snooping event
Ruijie# debug ip dhcp snooping packet
```

ħu ३	
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13 IGMP Snooping

13.1

13.1.1 deny

ㄴ profile ㅌ ˘ profile ЮO ħυ ҂ deny Â

deny

٩	
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

ϡ	
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
```

ħu ϩ	
ip igmp profile	… У э profile
range	تن فخ سم

ّΩħu ϩ

ϡ

ħu ϩ ٦ ϡ

ϡ	
-	-

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

ḣ Â

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

G

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)#
```

ʗΩħυ ϡ

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

ʌ

ħυ ϡ ˥ ʌ

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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G

ҷ Ю˘ ʌ VLAN ҭ Â ў ʅ б ұ ʅ У э VLAN
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

ħu ɮ ώ Â

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

w R

ЮO R ج vlan 2 Э igmp snooping'

```
Ruijie(config)# ip igmp snooping vlan 2
```

ˇΩħu ɮ

ħu ɮ	
ip igmp snooping ivgl	igmp snooping ivgl Â
ip igmp snooping ivgl-svgl	igmp snooping ʌ Â

ʌ

ħu ɮ ˥ ʌ

ʌ	
-	-

13.1.7 ip igmp snooping svgl profile

ج profile تن SVGL ˘ ŏ ħu ɮ **ip igmp snooping svgl profile** Â ħu ɮ no ʌ Â

ip igmp snooping svgl profile *profile-number*

no ip igmp snooping svgl profile

ʎ

ʎ	
profile-number	profile ʌ˘ ʌ ḣ تن<1-65536>

ą ЮO svgl ˇΩ profile Â

ħu ɮ ŏ Â

G ħu ɮ ʌ ج SVGL IVGL-SVGL ЮO Â

w R

ЮO R ج ѝ igmp snooping svgl ˇΩ profile 2'

```
Ruijie(config)# ip igmp snooping svgl profile 2
```

ˇΩħu ɮ

ħu ɮ	
ip igmp snooping svgl	igmp snooping svgl Â
ip igmp snooping ivgl-svgl	igmp snooping ʌ Â

ʌ

ip igmp snooping fast-leave enable

no ip igmp snooping fast-leave enable

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disable Â

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G ٨ Ꮋ ÿ ٨ ĵ ў ٤ IP IGMP
˘ ٨ ÿ ٤ ٨ " è∃ Â ٨˘ Ꮋ ĵ
IP IGMP ˘ Ꮋ a Ą ٨ ٤ Â ج Ꮋ Э˘
٨ Ю ٤ У э ˘ ‡ ٤ Л G ٨ ╗ Л Ո Â

ѡ R Ю R ج Э igmp snooping fast-leave'
Ruijie(config)# **ip igmp snooping fast-leave enable**

ĩΩħυ ϡ	
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ħυ ϡ ٦ ٨	
-	-

13.1.10 ip igmp snooping query-max-response-time

Ꮋ ĵ query ٨ ˜ ╗ ώ ˘ ĵ
˜ ╗ ώ ə ˘ ‡ ѝ ˜ ˘ ∃ ˜ Â

ip igmp snooping query-max-response-time *time*

no ip igmp snooping query-max-response-time

٨	
time	╠ ˉ ٨ ע Â

10s

ħυ ϡ ѽ Â

G æ ĵ IGMP У Л˘ ˚ ˜ Ы У Ы˘
Ы й : ˘ Ы ḣ ˜ й 0 ˘ ‡ й Ч a Ą ˜ ˘
γ ˚ Ч ÿ IGMP Snooping Ч è ĵ Â
æ ĵ IGMP Л˘ ˚ ˜ Ч ŭ ╟ У
Ы˘ Ы й : ˘ Ы ḣ ˜ й 0 ˘ ‡ й Ч a Ą ˜
˘ ˚ Ч ÿ IGMP Snooping Ч è ĵ Â
ɣ IGMPv3 ˘ a ṁ Ы Â

w R Ю R æ ╟ ˉ Ч У й 100s
Ruijie(config)# **ip igmp snooping query-max-response-time** *100*

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ħυ ϡ	

Ѧ

ħυ ϡ ˥ Ѧ

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13.1.11 ip igmp snooping limit-ipmc

╕ IP ˘ ѽ ħυ ϡ **ip igmp snooping limit-ipmc vlan** ˘ ħυ ϡ no ĵ IP Â

ip igmp snooping limit-ipmc vlan *vid* **address** *gaddress* **server** *saddress*

no ip igmp snooping limit-ipmc vlan *vid* **address** *gaddress* **server** *saddress*

Ч

Ч	
vid	ip vlan id Â
gaddress	ѳ ѯ Â
saddress	ѳ ѯ (┗ Ы) Â

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ħυ ϡ ѽ Â

G ˝I IP ╖ ╕ Â

w R Ю R ╕ ɷ У ip Â
Ruijie(config)# **ip igmp snooping limit-ipmc vlan** *1* **address** *224.0.0.1* **server** 192.168.4.243

ˇΩħu ҳ

ħu ҳ	
ip igmp snooping source-check default-server	IP ⅄ IP Â

⅄

ħu ҳ ˥ ⅄

⅄	
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13.1.12 ip igmp snooping suppression enable

igmp snooping Report ⁸ ╖ ˘ ώ ħu ҳ **ip igmp snooping suppression enable** Â ħu ҳ no ˇΩ igmp snooping suppression Â

ip igmp snooping suppression enable

no ip igmp snooping suppression enable

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-	-

disable Â

ħu ҳ ώ Â

G G ɷ IGMP ˘ ˇΩ ˆ ⁸ ╖ ⅄˘ ⊿ У э ά ᐧ˳ ˆ vlan ά ˆ э ﻓﻐﺳ ά У э IGMP Report ᐧ ᐧ˘ ⅄ IGMP Report a ⅄ ᐧ ᐧ˘ ⅄Ʊ ˇ è Â ɷ ħu ҳ ⅄˘ suppression ╖ ŭ ╟˘ Ꮋ ˳ IGMPv1/v2 report ⁸˘ Л a˳ IGMPv3 report ⁸ Â

w R Ю R ⊿ Э **igmp snooping suppression**
Ruijie(config)# **ip igmp snooping suppression**

ħυ ३

	ip igmp snooping vlan mrouter learn pim-dvmrp	vlan Э ʌ ╟ ˜ ╖

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	ʎ	
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13.1.14 ip igmp snooping vlan mrouter interface

ʌ б è ʌ, ʌ˘ ώ
ħυ ϟ **ip igmp snooping vlan mrouter interface** Â ħυ ϟ 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

ḣ Â

ħυ ϟ	ώ Â
G	ϟ Л υ Ң Э ʌ ѝ Ы ʌ˘ ÿ G Ң Э ĭ IP ϟ Л υ ʌ ϟ Ы Â ج ʌ Ю˘ ϟ ÿ ʌ ώ ϟ˘ è x Â
	ج ʌ ╟ ˜ ╖ ˜Ω ą Ю˘ ϟ Л υ ʌ Â

w R	Ю R ج У э ʌ'
	Ruijie(config)# **ip igmp snooping vlan** *1* **mrouter interface fastEthernet** *0/1*

˜Ωħυ ϟ		
	ħυ ϟ	
	ip igmp snooping source-check port	ʌ

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ħυ ϡ ϒ ϳ	ʃ	
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13.1.15 ip igmp snooping vlan mrouter learn pim-dvmrp

Ϸ ╟ ш ΰ IGMP Query/Dvmrp/PIM Hellp ˘ Ʌυ ╟ ⁞ ʅ˘
ώ ħυ ϡ **ip igmp snooping vlan mrouter learn** Â ħυ ϡ no ϳ ╟
˗ Â

ip igmp snooping vlan *vid* **mrouter learn pim-dvmrp**

no ip igmp snooping vlan *vid* **mrouter learn pim-dvmrp**

ʅ	ʅ	
	vid	ʅ vlan id Â

	╥ ˜Ω Â
ħυ ϡ	ώ Â

ʅ б è ʅ Â ąЮ˘ ų У э
VLAN ╟ ʅ ˗ ˘ щ ϥ

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no ip igmp snooping filter *profile-number*

٧	
profile-number	profile ٨˘ ٧ ḣ تن<1-65536>

ḣ Â

ħυ ϗ ٧ Â

G IGMP Profile جھ У ə ٧ЮЎ ٧ ĵ IGMP Report ˘ ‡ ̧ ə ٧ ╗ ώ فخسھ ĭ جھ IGMP Profile ĭ تن ڎ ϊ Â ˘ ‡ ĭ ╗ ώ˘ ڎ ٨ ٨ Â ˝I … profile˘ ٨ filter ˝Ω Â

ЮR جھ ˝I ٧ 0/1 Э˝Ω profile 1'

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

˝Ωħυ ϗ		
ip igmp profile	… У ə profile

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13.1.18 ip igmp snooping max-groups

٧ ĭ ύ ə ╠ ╗ ώ ٧, ٧ ħυ ϗ **ip igmp snooping max-groups** ħυ ϗ Â ħυ ϗ no ٨ ⁸ Â

ip igmp snooping max-groups *number*

no ip igmp snooping max-groups

٧	
number	٧ تن ѝ <0 – 1024>

٧ ə a ٨ ⁸ Â

ħu ३ ٨ Â

G ɷ ï ˜ ˘ ‡ ح ٨ Ɔ˘ ╟ ˜ ˥ ɔ
ï ˘ Ꮋ a Ạ ˜ IGMP Report … ٦ Â

w R ЮR ˥I ٨ 0/1 Ɔ ٨ 100 ɔ '

```
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ip igmp snooping max-group 100
```

ˇΩħu ३

ħu ३	
ip igmp snooping filter	٨ Â

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ħu ३ ٦ ٨

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13.2

13.2.1 show ip igmp snooping

igmp snooping ˇΩ ə Â

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

٨

٨	
	igmp snooping ╖ Â
gda-table	٦ ‡ Â
interfaces	igmp snooping filtring Â
mrouter	٨ ə Â
statistics [**vlan** *vlan-id*]	snooping ə Â
vlan	vlan ЮR ˇΩ snooping ə

ħu ३ EXEC

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w R

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13.2.2 show ip igmp profile [profile-number]

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ऻ	[redacted]
	profile ə
profile-number	profile ə

ħu ३ EXEC

G m profile ə

w R

IGMP Snooping Debug ə ˜Ω Â ħu ɮ no ˜Ω ˜Ω Â

debug igmp-snp

debug igmp-snp event

debug igmp-snp packet

debug igmp-snp msf

debug igmp-snp warning

undebug igmp-snp

undebug igmp-snp event

undebug igmp-snp packet

undebug igmp-snp msf

undebug igmp-snp warning

ʅ

ʅ	
	IGMP Snooping ə
event	IGMP Snooping ˜Ω Y ˙ ə
packet	IGMP Snooping ˜Ω ə
msf	IGMP Snooping б Ꮋ ə
warning	IGMP Snooping ˜Ω ˆ ə

ħu ɮ EXEC

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w R

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14 MSTP

14.1

14.1.1 bpdu src-mac-check

э ∧ bpdu mac Â ⅃Ո ƅυ ҳ no ˜Ω ∧ 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

˜Ω Â

ƅυ ҳ ∧ Â

G

w R

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# bpdu src-mac-check 00d0.f800.1e2f
```

˜Ωƅυ ҳ	ƅυ ҳ	
	-	-

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ƅυ ҳ ˥ ⅄	/∧	
	-	-

14.1.2 clear spanning-tree detected-protocols

ћu ҷ ѿ Â

G **forward-time à hello-time à max-age** Ь э ћ ىت ℡ ˘ g ⍵ ὲ è У э˛ ⁝ ĵ è ы ч э ћ ىت Â Ь э ћ ڑ У э ⁸ ℡ '

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

a ⅄ э ˚ ћ ≠˛ a ╖ Â

ѡ R

R 1' spanning-tree ╖ '

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

R 2' BridgeForwardDelay'

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

℡ћu ҷ

ћu ҷ	
show spanning-tree	STP ѿ ə Â
spanning-tree mst cost	STP ∧ PathCost Â
spanning-tree tx-hold-count STP	ѿ TxHoldCount Â

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ћu ҷ ٦ ⅄

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14.1.4 spanning-tree autoedge

э ∧ Autoedge ℡ Â ┘Л ћu ҷ disabled ℡ ∧ Autoedge ℡ Â

spanning-tree autoedge [**disabled**]

∧

∧	
disabled	℡ ∧ Autoedge ℡ Â

Â

ћu ҷ ∧ Â

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w R

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

Ωħυ ३

ħυ ३	
show spanning-tree interface	∧ STP ə Â

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14.1.6 spanning-tree bpduguard

ɜ ʌ BPDU Guard ˜Ω Â ˩ Ո ħυ ϛ 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 ϛ	ʌ Â

ᴳ Ş Ɛ ɻ ʀ Λ - ϛ **config)#.012**

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w R Ruijie(config-if)#**spanning-tree compatible enable**

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ใน ๆ	
-	spanning-tree guard none0

ฯ root guard

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G		
w R	Ruijie(config)# **interface gigabitethernet** *1/1* Ruijie(config-if)# **spanning-tree link-type point-to-point**	

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14.1.13 spanning-tree max-hops

ﻫ ѿ Ю G ђ ғ ﻝ Л BPDU ^ Max-hops Count˜ ˇ
Q < ﻱ Ủ Ȯ 1 ﻁ r ٦ Ȯ

instance Ո- vlan ՀΩ Vlan ج Instance 0 è Â
name ѝ s Â
revision ѝ 0 Â

ħυ ҷ ѿ .

G ѭ˙ ˘ ώ end ħυ ҷ˘ ώ Ctrl+C ʎ Â
ѭ˙ ѿ ˘ ώ exit ħυ ҷ Â
ώ MST ʎ˘ ˩ Л υ G ЛυЮħυ ҷ ٧ '
instance *instance-id* **vlan** *vlan-range* MST ˙ ˘ ˩ Л υ ˩ Л υ ΰ 32 ҷ Â ˩ Лa no name ىتن ѝ 0ˉ 64 Âvlan è ḣ Â
revision *version* MST ˘ ىتن 0ˉ 65535 Â ˩ Л υ no revision è ḣ Â
show ɱḣ MST region ə Â

ЮO ѡ R ¦ ώ MST ˘ VLAN 3, 5-10 ˚ MST Instance 1.

```
Ruijie(config)# spanning-tree mst configuration
Ruijie(config-mst)# instance 1 vlan 3˘ 5-10
Ruijie(config-mst)# name region 1
Ruijie(config-mst)# revision 1
Ruijie(config-mst)# show
MST configuration
Name [region1]
Revision 1
Instance  Vlans Mapped
----------  --------------------
0       1-2,4,11-4094
1       3,5-10
---------------------------------
Ruijie(config-mst)# exit
Ruijie(config)#
```

ѡ R

VLAN 3 ÿ Instance 1 è† ˘ ѫ ώ MST Л˘ Ю

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

э Instance 1† ˘ Ю'

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

↓Л∪ MST ħυ ϧ è show Э Â

ħυ ϧ	

MSTP

G ⁂ Region ϑ˘ . ˝I . ˝I ∧ ɣ ∨ Â. ˝I ⊿ ˘ Ʌυ ∧ /\ ∧ Â

ЮR ⁂ Instance 20 è Gigabitethernet 1/1 ∧ . ˝I ḣ ḣ ὴ 10˙

ѡ R

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

⊿Ʌυ ώ **show spanning-tree mst instance interface** *interface-id* ħυ ϛ Э Â

ħυ ϛ	
show spanning-tree mst	∧ MSTP ə Â

G ѿ .

w R Ю R Instance 20 ″I ḣ ѝ 8192″

```
Ruijie(config-if)# spanning-tree mst 20 priority 8192
```

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

ˇΩћu ҳ

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

ㅓ

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14.1.19 spanning-tree pathcost method

ㅕ Â G ћu ҳ no ḣ Â

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

no spanning-tree pathcost method

ㅕ

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

802.1T ñ Path-cost ḣ Â

ћu ҳ ѿ Â

G

w R

```
Ruijie(config-if)# spanning-tree pathcost method  long
```

ˇΩћu ҳ

ћu ҳ	

	show spanning-tree interface	STP ∧ Â

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14.1.20 spanning-tree portfast

э ∧ Portfast ΄Ω Â ∠ Л∪ ħυ ϗ disabled ΄Ω ∧ Portfast ΄Ω Â

spanning-tree portfast [**disabled**]

∧	∧	
	disabled	΄Ω ∧ Portfast ΄Ω Â

΄Ω Â

ħυ ϗ ∧ Â

G -

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

΄ΩħυϗΩ	ħυ ϗ	
	show spanning-tree interface	∧ STP ə Â

∠

ħυ ϗ ϒ ∠	∕	
	-	-

14.1.21 spanning-tree portfast bpdufilter default

ώ BPDU filter Â ∠ Л∪ ħυ ϗ no ώ ΄Ω BPDU filter Â

spanning-tree portfast bpdufilter default

no spanning-tree portfast bpdufilter default

ϰ	
-	-

ΐΩ BPDU filter

ħu ϡ	ώ Â

G	BPDU Filter ϗ˘ ϰ˳ a ϟ ≠ a BPDU Â G **show spanning-tree** ħu ϡ Â

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

ΐΩħu ϡ	ħu ϡ	
	show spanning-tree interface	STP ώ Â

ϗ

ħu ϡ ϒ ϗ	ϱ	
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14.1.22 spanning-tree portfast bpduguard default

ώ BPDU guard Â ϟ ϱ ħu ϡ no ώ ΐΩ BPDU guard Â

spanning-tree portfast bpduguard default

no spanning-tree portfast bpduguard default

ϰ	
-	-

ΐΩ BPDU Guard.

ħu ϡ	ώ Â

G	BPDU guarď ϡ ϰ Ɔ ϯ BPDU

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

ħU ३

14.1.24 spanning-tree reset

ə spanning-tree ѝ ḣ Â ħυ ҳ no Â

spanning-tree reset

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-	-

ħυ ҳ ŏ Â

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

ħυ ҳ	
show spanning-tree	STP ŏ ə Â
show spanning-tree interface	STP ٧ Â

ل

ħυ ҳ ٦ ل	٨	
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14.1.25 spanning-tree tc-guard

٧ tc- guard ˜Ω Â G ħυ ҳ no ˜Ω tc- guard ˜Ω Â ŭ tc-guard ╖ ˘ tc Â

spanning-tree tc-guard

no spanning-tree tc-guard

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-	-

˜Ω tc- guard ˜Ω Â

ħυ ϗ	ʌ
G	
w R	Ruijie(config-if)# **spanning-tree tc-guard**

ʗΩħυ ϗ	ħυ ϗ	
	-	-

ʌ

ħυ ϗ ϒ ʌ	ʌ	
	-	-

14.1.26 spanning-tree tc-protection

ώ tc- protection ʗΩ Â G ħυ ϗ no ώ ʗΩ tc- protection ʗΩ Â

spanning-tree tc- protection

no spanning-tree tc- protection

ʌ	ʌ	
	-	-

	tc- protection ʗΩ Â
ħυ ϗ	ώ Â
G	
w R	Ruijie(config)#**0** ´

/ſ

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

ḣ 3 Â

ћυ ϟ ώ Â

G

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

ћυ ϟ	
ΩћυϟΩ	**show spanning-tree**

tx-hold-count	TxHoldCount Â
pathcost method	Â

ħU ३ Â

G

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

5

G

w R

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

ॅΩħυ ३

ħυ ३	
spanning-tree mst configuration	ώ MST region
spanning-tree mst cost	instance
spanning-tree mst max-hops	instance
spanning-tree mst priority	instance ॅ
spanning-tree mst port-priority	instance ∧ ॅ

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ħυ ३ ᐦ ᐧ

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15 SPAN

15.1

15.1.1 monitor session

… У э SPAN˳ ∧ˆ ∧˜ Ո ∧ˆ ∧˜ .ᴳ ħυ ҙ no
 ᶖ ˳ ´ ᶖ ∧ ∧ Â

monitor session *session_number* {**source interface** *interface-id* [**both** | **rx** | **tx**] | **destination interface** *interface-id* { **encapsulation | switch** } | **mac** {**source** *mac-addr*| **destination** *mac-addr* } [**both** | **rx** | **tx**]} [**acl** *name*]

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

no monitor session all

∧	
session_number	SPAN˳ ∧ Â
source interface *interface-id*	∧ Â ų *interface-id* ∧ ∧˘ ∨ ѝ ∧˘ a ∨ Л∪ ѝ SVI Â
destination interface *interface-id*	∧ Â ų *interface-id* ∧ ∧˘ ∨ ѝ ∧˘ a ∨ Л∪ ѝ SVI Â
mac source *mac-addr*	ę

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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
```

ΐΩħυ ϗ

ħυ ϗ	
show monitor	ę˳ ą Â

ϡ a ϟ ϰ ҥ ҏ ώ reflector-port ΐΩ Â

ħυ ϗ ΐ ϡ

ϡ	
-	-

16.1.2 remote-span

G ħυ ϗ RSPAN VLAN

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

ϰ

ϰ	
-	-

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
```

ΐΩħυ ϗ

ħυ ϗ	

	show vlan	Vlan ə 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 ѭѩѫѭ Â ч э ˘ Лѵ э IP ѭѩѫѭ Â
Â ѫѫ ѰѰ ү ˘ ,ѓ Â IP ѭѩѫѭ G ˩ Лѵ
G ˘ ѓ ѫѫ ѰѰ IP Â ѰѰ э ˘ У э IP ѭѩѫѭ Â
Â У э ч э ˩ У э ˘ æо ˩ Лѵ... У э ˘
IP ѭѩѫѭ ˘ Â У э а ѿ ч э ч э
ЛѵЭ ˩ Â

Р

ЛѵЮ R ˘ ѽ ˩ ў IP ѭѩѫѭ й 10.10.10.1˘ й 255.255.255.0 Â

```
ip address 10.10.10.1 255.255.255.0
```

ѣѵ ѯ	
show interface	˩ ѧ Â

˝Ωѣѵ ѯ

Ę

˩

Â ѵ ѧ ЛЬЮ ⁸ '

Â Л ѧ a ѵ ѧ Â

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

Л è ˘ ѯ ѳ ѧ ї ѵ ѧ Â X.25 a ї

ѵ ѧ Â

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

SNMP ѯ Л ѳ ѵ ѧ Â

Â a ѵ ѧ ŭ ╟ Â

ЛЬЮ ˘ ѧ ѝ ѵ ѧ ˘ ЎΩ ѧ ѝ FastEthernet 0/1 Â ЎΩ ѧ

IP ѫ ѳ Â

ip unnumbered fastEthernet 0/1

ЎΩђ ѯ

ђ ѯ	
show interface	ѧ ə ą Â

ѯ

ђ ѯ ˥ ѯ

ѵ	
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17.2

17.2.1 arp

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

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

	ARP ă è ˙ ¦ Â
ƙ ƒ	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**

ʬ R

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
```

ىU ٹ	

	Arp retry times *number*	ARP ·

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ħυ ʒ ˥ ⁄	⁄	
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17.2.4 arp retry times

G ħυ ʒˇ ˩Л ѕѫ · arp ˇ. ˩ У э IP ѕѫˇ ˩ ARP
Â G ħυ ʒ no ˩Л · 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

٩		
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	

ΐΩħU ϗ		
	ħU ϗ	
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ﻝ

ħU ϗ ΐ ﻝ		
	ﻝ	
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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 ѝ 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
```

ƙU ƺ

mask ﻯ ﻡ ﺍ . ﷺ ARP ˘

mask

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
```

W R

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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G	У э ٨ ų ٨ ˘ RGOS ˚ ج è … У Â ٨ ٨ RGOS ˚ ٨ ٨ Л∪ ٨ ↑ Â ٨ ÿ ٨ ٨ й a ٨ ˘ RGOS ˚ ˚ ÿ è Â ٨ ų ٨ ˘ ï ٨ ٨ ą ˘ ˜ ˚ Ľ UP Ł' Θ ų ٨ ˘ ٨ ˚ Ľ UP Ł Â a ٨ ٨ ص˘ ٨ a У ˘ ق й Ҩ ̈ Ҩ Ḇ ٨ Â

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

ىلإ ةرشابملا ليوحتلا ةقيرط نيكمت وأ نيكمت ىلع

show ip redirects

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	ىلإ ةرشابملا ليوحتلا ةقيرط نيكمت متي

	ىلع **show ip redirects** رمألا لخدأ
	Ruijie# **show ip redirects**
	Default Gateway: 192.168.195.1

	ip default-gateway	ةيضارتفالا ةرابعلا ةقيرط نيكمت متي

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17.4

17.4.1 ip default-gateway

ج γ Э ̃Ω ŭ ħu ʒ **ip default-gateway** Â ħu ʒ no ĵ ̃Ω Â

ip default-gateway

no ip default-gateway

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̃Ω

ħu ʒ ŭ

G ج è a ↑ ٦ ĵ ف У э فذسم ˘ ↑ ٦ ĵ ̃Ω Â ٦ G **show ip redirects** ħu ʒ ̃Ω Â

w R ЛЬЮ R ˘ ̃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 ѽ

ħυ ϗ˘ DHCP Relay ₰ ┘ DHCP ˚ option server-id
G ┘ DHCP Ь Ы Â ħυ ϗ˘ ‡ ┘ DHCP Ь Ы ┘ DHCP
Â

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∪ 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 ╖ ˘ ٨ ٨ 802.1x ˜Ω Â

ħυ ϗ ѽ

G ╖ б option dot1x ╖ ц ˘ a ┘ ┘ Â

ш R ЛЬЮ R ˘ ₰ DHCP è Э˘ ů opion82 ╖ '

```
Ruijie# configure terminal
Ruijie(config)# Ip dhcp relay information option82
```

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

┘

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18.1.4 ip dhcp relay information option vpn

DHCP Relay DHCP Relay Aware VRF ╖ ˘ ┘Лυ G ħυ ϗ Â
G ħυ ϗ no ℨΩ ╖ Â

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ℨΩ

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G ╖ Ո option82 ┤ option dot1x a ă Â

ш R ЛЬЮ R ˘ ₰ DHCP è Э ů DHCP Relay Aware VRF ╖ '

```
Ruijie# configure terminal
Ruijie(config)#Ip dhcp relay information option vpn
```

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	ip dhcp relay information option dot1x	DHCP option dot1x ╖

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18.1.5 ip dhcp relay suppression

ح ٨ Э DHCP Relay ◡ ō ٨ Л υ G ҳ ȯ ʤ Ҷ Ȯ ı

18.1.6 ip helper-address

╕ У э DHCP ┗ ℵ ѕ ф ˘ ┘ Л υ G ħυ ϩ Â ħυ ϩ no ˘ ╖ У э ┗ ℵ ѕ ф Â DHCP ┗ ℵ ѕ ф ┘ Л υ ж ŏ Ո ∧ Ю Â

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

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	∧	
	-	-
	┗ ℵ ѕ ф Â	
ħυ ϩ	ŏ / ∧ Â	
G	ŏ э Ь ∧ Э ┘ Л υ 20 э DHCP ┗ ℵ ѕ ф Â ж ∧ DHCP ┗ ℵ ѕ ф ą Ю˘ DHCP Relay ŏ DHCP ┗ ℵ ѕ ф’ ∧ ₡ DHCP ┗ ℵ ѕ ф˘ DHCP Relay G ∧ Э ┗ ℵ ѕ ф˘ a ŏ ┗ ℵ ѕ ф Â ж vrf ∧ Ą˘ ѫ ц ŏ Ո ѫ ц ∧ a ┘ Â ѫ ц ŏ a vrf ∧ ˘ a ц˙ ¡ vrf ѫ ц ∧ a vrf ∧ ˘ ɱ ┗ ℵ Ո ∧ ц ┘ У vrf Â	

ѡ R	ЛυЮ R ˘ ч э ┗ ℵ ѕ ф’
	1¨ ŏ ┗ ℵ 192.168.1.1’
	2˙ ѫ ц vrf R й dep1 ┗ ℵ 192.168.2.1’
	`Ruijie# configure terminal`
	`Ruijie(config)# ip helper-address 192.168.1.1`
	`Ruijie(config)# ip helper-address vrf dep1 192.168.2.1`	

˜Ωħυ ϩ		
	ħυ ϩ	
	service dhcp	DHCP è Â

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18.1.7 service dhcp

ﻉ Ꮋ Ɔ ŭ DHCP è ╖ ˘ ┘ Ո G ħυ ϗ Â ħυ ϗ no ˜Ω ╖ Â

[**no**] **service dhcp**

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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

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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

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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

	/	
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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

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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

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ħυ ҳ ˥ ∀

21 NTP

21.1 NTP

21.1.1 no ntp

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no ntp

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	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⅄

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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*

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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

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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

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ѝ NTP Ь У э ѿ NTP Â

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

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Ѵ ϱ ѕѕ б ⊿ ˘ ⊿Л ħυ ϩ ѕѕ
Ѱ ⊿ ˘ ѝ è ы k ⊿ Â
У ϖ ˘ ғ a˛ б è ḣ ⊿ Â

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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

~

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ЛЮ ¦ ѕѕ Ѱ ⊿ ˘ è ѝ 12 Â

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

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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*

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no ntp	ˇΩ NTP ┗ ╗ Â

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w R ЛuЮ R ˘ NTP ⅄ Â

Ntp synchronize

Ћu ҳ

ћu ҳ	
ntp server	У э NTP Ь Ж ⅄

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ћu ҳ ˥ ⅄

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21.1.9 ntp trusted-key

У э ID й ѿ ą̇

ntp trusted-key *key-id*

no ntp trusted-key *key-id*

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key-id	ѿ ą̇ ID Â

ąЮ ą̇ Â

ћu ҳ ѿ Â

G æ NTP ⅂ ⅄ ą̇ ˘ D x v ⅄ ~ I

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

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21.1.10 ntp update-calendar

NTP G ÿ ϻ ḣ ˚ Â ħυ ϛ no ϻ ˚ ╖ Â

ntp update-calendar

no ntp update-calendar

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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
```

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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 ɣ ə ˘ G ħu ϡ no ˝Ω ə Â

debug ftpserver

no debug ftpserver

ϰ	ϰ	
	-	-

˝Ω ə Â

ħu ϡ Â

G G **debug ftpserver** ħu ϡ ϗ ЛυѼ FTP Ł ɣ è ə Â

ʁ 1' ЛυЮ ¦ Ł ɣ 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.
```

ʁ 2' ЛυЮ ¦ ˝Ω Ł ɣ ə '

```
Ruijie# no debug ftpserver
```

	-	-

22.1.2 ftp-server enable

ŭ FTP Ł ɣ˘ G ħυ ҳ no ˜Ω FTP Ł ɣ Â

ftp-server enable

no ftp-server enable

	٩	

ftp-server password [*type*] *password*

no ftp-server password

٩	
type	⊮ ╗ ر' 0 7Â0 ϡ ╗ ˆ ~ ' 7 ϡ ٭ ╗ Â
password	⊾ ⊻

22.1.4 ftp-server topdir

⁸ FTP ˚ ĵ̃ ɔ ىتن Â G ħυ ϛ no
FTP ┺ ⅄ Ǝ˙ ¡ ˚ Â

ftp-server topdir *directory*

no ftp-server topdir

٩	
directory	FTP ɔ

ˆ a ĭ ĵ̃˙ ¡ ˜ Â

ħυ ϛ ѿ Â

FTP

G

	ɹ Â
ħυ ҷ	ŏ Â
G	FTP ŀ Ø ᵏ Â ɹ Â ɻ ᵏ ɹ ŷ 64 ə ˇʌ è âĦTP Ł ⅄ Â ↓ ɹ ↓ Л υ У э ɹ ãÂ `
~	FTP Ł ⅄ a ɒ ɹ ˇ ɷ ɹ Ł ⅄ ` Â
ᴡ R	R 1' ЛυЮ ¦ ɹ ŷ user' Ruijie(config)# **ftp-server username** *user* R 2' ЛυЮ ¦ ↓ ɹ ' Ruijie(config)# **no ftp-server username**

ħυ ϡ Â

G

FTP ┺ ⅄ ˜Ω ə ˘ ↑ '

Â ┺ ⅄ ĭ ů ╟

Â ĭ ⁸ ˆ ˜Ω IP à Port˜

Â ĭ ˆ ў ╟ ╟ ˘ Λυ ⊣ ˜Ω IP à Port˜

Â ɱ ˚ · ص

Â ┺ ⅄ ɹ à ˆ Θ ˜

Â ┺ ⅄

Â ˚

w R

ΛυЮ ¦ FTP ┺ ⅄ ˜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 ϡ

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23 UDP-Helper ¾

23.1

23.1.1 ip forward-protocol

Ъu ¾ è ¬ UDP ¬ Â G Ъu ¾ **no** ‡ ¬ UDP ¬ ↑ è ¬ ╖ 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 سه تن Â
aclname	" ɻ ˘ ˜Ω " ˘ MIB ipv4 NMS فخ سه تن Â
ipv6_aclname	ipv6 " ɻ ˘ ˜Ω " ˘ MIB ipv6 NMtĂgĸ99tĵF‘"UR.ėv‘"UR.ñ56gs4Cé@w;UeĐe!’l#S‡

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

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-	-

24.1.8 snmp-server location

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

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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

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	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 "

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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

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-	-

	˜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	
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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

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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

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seconds	˘ ´ Æ ŷ ˘ ٦ ḣ تن' 1 – 1000 Â

30

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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

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ћu ҳ ˥ ѧ	ѧ	
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24.1.16 snmp trap link-status

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24.2

24.2.1 show snmp

SNMP ą ˘ ћu ҳ **show snmp** Â

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

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	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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/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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ħυ ϗ ↿ ↓	↗	
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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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	-	-

ħu ɂ	ʌ
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

ɜ Ʌu ʌ G ħu ɂ Â G no ˩ Â

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
```

w R

ħu ҙ	
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

w R

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

ЯΩħu ҳ

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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

ħυ ϗ

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

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

w R

ΫΩħυ ϗ		
-	-	

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ђu ҙ ˥ ѵ	ѵ	
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26.1.2 ipv6 address

й ѵ У э IPV6 فخ سم ,

У э IPV6 ʌ … з й UP IPV6 @ ш ṁ

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۹	۷ ۹ Â Э ˜Ω ˘ ϗ ╟ىس

default

ђu ҙ	∧
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	
	-	-

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

ђu ҳ ᴎ

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

ᴎ

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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ᐯ	
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
```

ᵡΩђu ҳ

ђu ҳ	
show ipv6 neighbors	ə
clear ipv6 neighbors	╟ ᵎ

⅄

ħυ ϗ˘ ϟ ⁸ G ѕѫ ѕѫ ƭƒϕ Ɔ Ӄ ѕѫ ƭƒϕ Â ľ **no ipv6**
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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	-	-

	ϟ ˘ Л ѕѫ ѕѫ ƭƒϕ Ɔ Ӄ ѕѫ ƭƒϕ Â
ħυ ϗ	ѽ Â
G	
ѡ R	Ruijie(config)# **no ipv6 ns-linklocal-src**

ϗΩħυ ϗ	**ħυ ϗ**	
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ѵ		

ħυ ϗ ϒ ѵ	**Ѵ**	
	-	-

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

ђu ҙ ŭ

G

	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	

w R

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

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ђu ҙ	
show ipv6 route	IPV6 ə

Л

ђu ҙ ٦ Л

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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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Ђu ҙ ٦ ﻝ	ﻯ	
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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**]

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

ħυ ҳ

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
```

ᴿ 2' ə

```
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	ѕѫ ҙ҂ Mac ѕѫ ҙ˘ ‡ incomplete
Interface	ѫ ^
State	' state/H(R) STATE ḣ Ю' INCMP(Incomplete)— ѕѫ ҙ҂ ѫ è˘ (NS) ч п ĵ (NA) Â REACH(Reachable) — ÿ ĵ ˘ ѫ ɻ ч a ╟ ɔ Â STALE — ѝ ч¦ ¦ ˘ ѫ a ╟ ɔ ĵ ч ĵ Э˘ . ŭ ╟ NUD (Neighbor Unreachability Detection) Â DELAY— ɻ ų STALE ч ˘ STALE ѝ DELAY ˘ ѫ DELAY_FIRST_PROBE_TIME seconds(5) ǫ̈ ¦ ч ą ˘ ѫ DELAY ѝ PROBE˘ ɻ ɻ ч (NS)˘ ŭ ╟ NUD Â PROBE— NUD ŭ ╟˘ ч ˘ RetransTimer milliseconds ɻ ч (NS) ¦ ¦ ѽ ч ¦ Э ḣ MAX_UNICAST_SOLICIT(3 ə) ?— /R— ѝ У э /H— ѝ У э ў
Age	ѝ ɻ¦ ˘ '-‘ ч ˘ ŋ ų ĭ˙ ч Â 'expired' ѝ ч ĵ ˘ ч NUD Â
Asked	Ⱶ Ⱶ

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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10.4	У ώ

27.1.4 permit

ї profile تن ˘ profile Ю ћu ҷ permit Â

permit

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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
```

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

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ѵ	
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

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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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	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

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VLAN a ḥ ɨ ă ą ₅ з ˌ

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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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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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/I	
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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G	╟ ⁻ ˩ ə ̨ Â

w R	╟ ⁻ ˩ ə ̨ '

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

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⁄

ħu ɝ ˥ ⁄	/¶	
	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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ħu ɝ

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*]

^

^	
	profile ə
profile-number	profile ə

ħu ҳ Â

G mld profile ˜Ω ə

w R

```
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
```

˜Ωħu ҳ

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ħu ҳ ˥ ᐧ

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10.4	У ώ

28

28.1

28.1.1 strom-control

∧ ⁸ ˜Ω Â ᴳ Ъυ ҙ **no** ˜Ω ⁸ ╖ Â

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

ʌ	-

ƀ ʒ ˥ ʌ	ʌ	
	-	-

28.1.3 switchport port-security

ʌ ŏ ╖ ˘ ʌ ŏ R Â G ƀ ʒ no ˜Ω ʌ ŏ ˘ ŏ R ḣ Â

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

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

ʌ	ʌ	
	port-security	ʌ ŏ ˜Ω
	violation protect	ɻ R˘ ‡ x R Â
	violation restrict	ɻ R˘ ‡ x R ʒ ɻ trap Â
	violation shutdown	ɻ R˘ ‡ x à ɻ Trap ʒ ˜Ω ʌ Â

	ʌ ŏ ˜Ω Â
ƀ ʒ	ʌ
G	¯ ʌ ŏ ə ˘ ɻ Л⊍ ⁸ ï Э ə ʌ MAC ѫ ƒ ѕ Л⊍ ˥ IP(ɻ) ш ⁸ ʌ ώ Â ŷ ŏ ʌ(ɷ ʌ ŏ ╖ ʌ) ɷ У Ҿ ŏ ѫ ƒ ѕ ʌ˘ ‡ ɷ ѫ ƒ ѕ ŷ Ҿ ŏ ѫ ƒ ѕ ˆ ˘ ə ʌ a ɻ è ˙ ¡ Â ˘ ɻ Л⊍ ⁸ У э ʌ Э ˆ ŭ ŏ ѫ ƒ ѕ ə ˘ э ŷ 1 ʒ ŷ ʌ У э ŏ ѫ ƒ ѕ˘ ‡ ĵ э ʌ ɔ ˆ è ѫ ƒ ѕ ŷ ŏ M ѫ ƒ ѕ˜ ʍ ʌ ŏ Â

Ю R ج ʌ Gigabitethernet 1/1 Э ʌ ŏ ╖ ˘ R ŷ shutdown'

ѡ R

	show port-security	∧ ѽ ҕ Ո ѽѫ ƒ Â

Ъυ ҂

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*

ΩЪυ ҳ

Ъυ ҳ	
switchport port-security	∧ ѽ
switchport port-security binding	∧ Ю ѽѫ
Switchport port-security mac-address	ѽѫ
switchport port-security aging	∧ ѽѫ ∨
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

ЎΩЪu ҷ

Ъu ҷ	
storm-control	^ ⁸ ЎΩ Â

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Ъu ҷ ˥ ᵭ

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-	-

28.2.2 show port-security

^ ѽ ə Ո ѽѫ ƒ Â

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

^

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

Ъu ҷ

G

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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Ъ ҳ	
switchport port-security	∧ ѿ ╖ ˘ ∧ ѿ R Â
switchport port-security aging	ѝ У э ∧ Э ѿ ѩ ѧ ѫ ѵ Â
switchport port-security mac-address	∧ ѿ ѫ ѩ Â

∧

Ъ ҳ ˥ ∧

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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

ſϤ	ſϤ	
	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
```

ѽħυ ϡ	ħυ ϡ	
	show dot1x auto-req	ў ╟ ə ϥ Â

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ħυ ϡ ϒ ϟ	-	-

29.1.4 dot1x auto-req user-detect

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dot1x auto-req user-detect

no dot1x auto-req user-detect

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G ў ╟ ٦ ˘ ٦ Л Ʊ G **show dot1x auto-req** ħυ ٯ ٣ Â

Ю ў ج Э ٨ ɱ ٨ ٩ ٦ '

```
Ruijie# configure terminal
Ruijie(config)# dot1x auto-req user-detect
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 ╟ ą Â

٨ ! 5BËǂ ◂Âů Â)pÁ— Ä — e, ñvX! p BáÂ— Ä. t%# 1wBR0 p BrB6)pÁvX(T0e1T'4@ t%" ™ 0`…!AbrB" , N

29.2.1 dot1x timeout quiet-period

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~ Â G ħυ ҳ **no** ŭ ĥ Â

dot1x timeout quiet-period *seconds*

no dot1x timeout quiet-period

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∧	*seconds*	Ђ ц ∧ĵ ĭ Â ĥ ش 0 ĵ 65535 Â´ æ s

ĥ 10 Â

ħυ ҳ ώ Â

G ∧˘ a ĭ . ∨ ˘ У Â∨ Л υ G **show dot1x** ħυ ҳ Â

Ю ŭ 1000s'

```
Ruijie# configure terminal
Ruijie(config)# dot1x timeout quiet-period 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:     3600 sec
Quiet Timer Period:   1000 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
```

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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 ѕ Ӈ ц ˘ ђ ىن 0 ! 65535 Â

ђ Ä

```
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

Ю ╖ '

```
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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	-	-- QnwY**d9pDpB2A1a1a2**[illegible]

```
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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G ₰ ₸ ˇΩ Â

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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

ħu ϡ ٨ Â

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

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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#
```

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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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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
```

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show dot1x	802.1x ə Â

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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

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	ϻ	
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	ΎΩ ϧ ΎΩ

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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

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	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

ѡ 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
```

ΈΩƫυ ҳ

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

∧

ƫυ ҳ ˥ ∧

∧	
10.3(5)	ƫυ ҳ ώ

29.5.11 ph-b timeout-activity)

¯Ωÿu ¾	Þu ¾	
	show dot1x port-control interface	¼ 802.1x ª Â

¼

Þu ¾ ¯ ¼	¼	
	10.3(5)	Þu ¾ 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

¼	¼	

R

Þu ¾ ¼ Â

G ¬ЛU G **show run** Þu ¾ 802.1x Â

w R 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
```

¯Ωÿu ¾	Þu ¾	
	show dot1x port-control interface	¼ 802.1x ª Â

¼

ħυ ϗ ϒ ϟ	/ſ	
	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

ϡ	ϡ	
	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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ƕ ɂ ˥ ˩		
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29.5.15 dot1x port-control auto

æ ˥ è˘ ˥ ĭ ˥ ╗ Â ᴳ ƕ ɂ **no** ḣ Â

dot1x port-control auto

no dot1x port-control

˥	
-	-

	∧ 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

⌟	
Ъu ъ ⌝ ⌟	∧ ∧ Ю
	-

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

ʌ

ʌ

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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	۷	
	-	-
	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**

٩	
url-string	URL ѫ ȥ

ƫυ ȝ

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ѡ ᴿ

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

٨	
-	-

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

3

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ϣ R

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

ʎ

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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ʌ	
num	ɻ

1

ƫυ ϡ

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w R

R 1' ⅃ ϶' 3'

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

ʹΩħυ ϗ

ħυ ϗ	
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

dot1x auth-mode	802.1x Â
dot1x max-req	ï · Â
dot1x port-control auto	˄ ǐ ˄ ╗ Â
dot1x reauth-max	
dot1x re-authentication	ǐ Â
dot1x timeout quiet-period	˅ˈ ï Â
dot1x timeout re-authperiod	Â
dot1x timeout server-timeout	∩ Ŀ ˘ Ƹ Ꮋ ч Â
dot1x timeout supp-timeout	∩ Ƹ Ꮋ ч Â
dot1x timeout tx-period	· ˘ · Â

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```
max-req: 2 times
Ruijie#
```

ƕ ƙ	
dot1x auth-mode	802.1x Â
dot1x max-req	ï · Â
dot1x port-control auto	ሃ ǐ ሃ ╗ Â
dot1x reauth-max	
dot1x re-authentication	ǐ Â
dot1x timeout quiet-period	ሇ ï Â
dot1x timeout re-authperiod	Â
dot1x timeout server-timeout	∩ Ŀ ⅄ ƺ Ꮋ ч Â
dot1x timeout supp-timeout	∩ ƺ Ꮋ ч 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*]

ሃ		
	interface	ሃ

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ƗO R '

```
Ruijie# show dot1x port-control
interface dyn-user static-user max-user qos
```

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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#
```

ƕ ȝ	
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#

˝Ωƫ ɝ	ƫ ɝ	
	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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Ю R '

```
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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ƕ ȝ	
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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```
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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ƫυ ȝ ˥ ʃ	ʃ	
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29.7

29.7.1 dot1x redirect

ŏ ƗO ˥ ˘ ŏ ƫυ ȝ **dot1x redirect** Â ƫυ ȝ **no** ˜Ω ŏ ƗO ˥ Â

dot1x redirect

no dot1x redirect

˥	˥	
	-	-

ƫυ ȝ

G

ƗO ŏ ƗO ˥ R '

w R

```
Ruijie# configure terminal
Ruijie(config)# dot1x redirect
```

˜Ωƫυ ȝ	ƫυ ȝ	

ʃ

ƫυ ϗ ϒ ϡ	
10.2(5)	ƫυ ϗ

29.7.2 http redirect

HTTP ϡ IP ϕϧ ϖ ˘ ώ ƫυ ϗ **http redirect** Â ƫυ ϗ **no** HTTP ϡ IP ϕϧ Â

http redirect *ip-address*

no http redirect

ϟ		
	ip-address	HTTP ϡ IP ϕϧ

	HTTP ϡ IP ϕϧ
ƫυ ϗ	ώ
G	ϖ ╠ ϟ ϖ ˘ HTTP ϡ IP ϕϧ Â ώ ϟ في HTTP ˘ ώ ϡϱ Ю ˘ Ю ˘ Ю ˘ Â
ϢR	Ю ώ Ю ϖ R ' Ruijie# **configure terminal** Ruijie(config)# **http redirect** *172.16.0.1* Ruijie(config)# **end**

˝Ωƫυ ϗ	ƫυ ϗ	
	show http redirect	HTTP ϡ
	http redirect homepage	ў ϕϧ Â

ϡ

ƫυ ϗ ϒ ϡ	
10.2(5)	ƫυ ϗ

29.7.3 http redirect direct-site

ȯ ⫟ Â ⌟ Ʌυ ƫυ ϛ **no** ⫞ ȯ
⫟ Â

http redirect direct-site *ip-address* [*ip-mask]* [**arp**]

no http redirect direct-site *ip-address* [*ip-mask*] [**arp**]

٩	

http redirect homepage *url-string*

no http redirect homepage

٩	
url-string	Ю Ь ў ىسفذ ѝ *url-string*˘ Л

port-session-num

ħυ ϡ ώ

G ⅃ Â ϩ ὶ Ь ╗ Л˘ ϟ HTTP GET/HEAD ˘ Л ϣ HTTP ⅃ Л ʹΩ Â ϶ ⁸ ϟ Л∪ a ϟ GET/HEAD ˘ ϟ ´ TCP Â

w R Ю R ⅃ ὶ 4'

```
Ruijie# configure terminal
Ruijie(config)# http redirect timeout 4
```

ʹΩħυ ϡ

ħυ ϡ	
show http redirect	HTTP ⅃

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ħυ ϡ ϒ Л

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10.2(5)	ħυ ϡ

29.7.8 show http redirect

HTTP ⅃ Â

show http redirect

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-	-

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w R Ю R HTTP ⅃ '

```
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
```

ЎΩђu ҙ

ђu ҙ	
http redirect	HTTP ۔ IP فخ سم
http redirect direct-site	ó تن
http redirect homepage	Ю ь ў فخ سم
http redirect port	ч ٨ /١ HTTP ۔
http redirect session-limit	۔ у HTTP ِ

http redirect timeout ۔ ж

ђu ҙ ˥ ۔

/١	
10.2(5)	ђu ҙ

30 Web

30.1 Web

30.1.1 http redirect

HTTP ⊿ IP ѫ ҂ ˘ ѽ ђυ ҙ **http redirect** Â ђυ ҙ **no** HTTP ⊿ IP ѫ Â

http redirect *ip-address*

no http redirect

[redacted]

*ip-address***HTTPG[redacted]FQ[redacted]**

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		
٩	*ip-address*	ȯ IP سم فخ Â
	ip-mask	ȯ IP سم فخ Â
	arp	ώ ὖ ϖ ARP CHECK ╗ ˘ ϗ ȯ تن ARP ˘ **arp** ΐΩ Â

ȯ Â

ħυ ϡ ώ Â

G ὖ ╟ Web ⅄˘ ΐ Web ˘ Â ⊖
˘ ≠ ⅃ Л ⊖ ˘ G ħυ ϡ Â ə ¥ ȯ
˘ ϗ ⅃ Л ə Â
ǐ 50 ə ȯ تن

ϣ R R 1' IP سم فخ ή 172.16.0.1 ή ȯ Â

```
Ruijie(config)# http redirect direct-site 172.16.0.1
```

ΐΩħυ ϡ	ħυ ϡ	
	show http redirect	HTTP ⅄ Â

⅄

ħυ ϡ ٦ ⅄	⅄	
	10.2(5)	ħυ ϡ

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 ˘ Л“http://” “https://” ˇ ї ‡ a ╖ ˇ й 255 э Â

ў ѫ ѯ Â

ħυ ϡ ѽ Â

G ╖ Web ╖ ˇ ў ѫ ѯ Â

ѡ R R 1' ў ѫ ѯ й http://*www.web-auth.net/login* Â

```
Ruijie(config)#
http redirect homepage http://www.web-auth.net/login
```

ħυ ϡ	
show http redirect	HTTP ┘ Â
http redirect	┗ ┘ IP ѫ ѯ Â

ѧ

ħυ ϡ ϒ ѧ	ѫ	
	10.2(5)	ħυ ϡ

30.1.4 http redirect port

┤ ϟ ѫ HTTP WEB ┘˘ G **http redirect port** ħυ ϡ Â ┤Л ħυ ϡ **no** ї ϟ ѫ HTTP WEB ┘ Â

http redirect port *port-num*

no http redirect port *port-num*

ϟ	
port-num	HTTP WEB ϟ ѫ Â

┤ ϟ 80 HTTP Â

ħυ ҳ	ѽ Â
	˘ ˛ ↴ HTTP ˘ ώ HTTP ˘ ″ ΐ̈ ج ’ ώ ˚ ج ˘ ˘ ⊥ Â
G	ąЮ˘ ώ ↴ ↙ ↗ 80 HTTP ˘ ΐ̈ ج Â ώ ↴ ↙ ↗ HTTP ˘ G ħυ ҳ Â ї 10 ə a ⊥ ↙ ↗˘ ↙ ↗ 80 ≠ ΰ̈ ج تن ą̈ Â

w R

R 1' ↴ ↙ ↗ ϋ 8080 HTTP WEB ⊥ Â

```
Ruijie(config)# http redirect port 8080
```

R 1' a ↴ ↙ ↗ ϋ 80

ώ э HTTP˳ й 255˝ э ЯЮ
HTTP˳ й 300Â

ħυ ϡ ώ Â

G й ѫ ч HTTP ˘ ώ TCP ˘ ѯ ώ
Э 8 HTTP˳ Â
ɣ ѯ ˘˳´ У э HTTP˳ ˘ ѐы ≠ ч ´ HTTP
˳ ˘ ϱ a HTTP˳ й 1Â

w R R 1' HTTP˳ й 4Â

```
Ruijie(config)# http redirect session-limit 4
```

ħυ ϡ	
show http redirect	

GET/HEAD ˘ ﾉ ﻫ HTTP ﾉ ﾉ ˜Ω Â ə ⁸ ﾚ ﾉ Ծ
a ﾚ GET/HEAD ˘ ﾚ ´ TCP Â

ΫΩħυ ϡ	ħυ ϡ	
	show web-auth allow-vlan	ѫ ϒ VLAN Web VLAN " ə Â

ϻ

ħυ ϡ ϗ ϻ	ϻ	
	10.4(2b2)	ħυ ϡ

30.1.8 web-auth direct-host

IP تن Â ϻ Л∪ ħυ ϡ **no** ϻ Â

web-auth direct-host *ip-address* [i*p-mask*] [**port** *interface-name*] [**arp**]

no web-auth direct-host *ip-address*

ϡ	ϡ	
	ip-address	IP ѫ فخ Â
	ip-mask	IP ѫ فخ Â
	port *interface-name*	IP б ώ ϡ Â
	arp	ώ ΰ ϖ ARP CHECK ╗ ˘ ѫ ὸ IP تن ARP ˘ **arp** ΫΩ Â

˘ ″I Web ˘ ϻ Â

ħυ ϡ	ΏΏ Â

G	й ˘ ѫ a Web ˘ ≠ ϻ Л∪ ϻ Â ï 50 ə تن Â

ϣ R	R 1' IP ѫ فخ й 172.16.0.1 й Â Ruijie(config)# **web-auth direct-host** *172.16.0.1*

ΫΩħυ ϡ	ħυ ϡ	
	show web-auth direct-host	ὸ web تن Â

⁄

ħυ ३ ˥ ⁄	⁄	
	10.2(5)	ħυ ३

30.1.9 web-auth offline-detect-mode flow

ѧ ¥ ĭ Ю Â ⁄ Л ħυ ३ **no** ˜Ω ѧ ¥
ĭ Ю Â

web-auth offline-detect-mode flow

no web-auth offline-detect-mode flow

¶

¶	

ħυ ϗ ϒ ϡ	ϻ	
	10.2(5)	ħυ ϗ

30.1.10 web-auth port-control

ϧ ϰ Э ΰ ╟ Web Â ϡ Л∪ ħυ ϗ **no** ϧ ϰ Э ΅Ω Web Â

web-auth port-control [**ip-only-mode**]

no web-auth port-control

ϰ	ϰ	
	ip-only-mode	ϙ Ю Web Л∪ л ˘ IP à MAC Ո ϰ Â ϰ Ю Ь ˘ ϶ ϖ a ϡ IP έ ϡ MAC ѫ ϙ ˘ G э ϰ ˘ G Л∪ л ˘ Θ IP Ո ϰ Â ϳ Ą ˘ ˚ ϰ Ю ϧ ⁸ Ю ˘ Â

	ϧ ϰ Э ΅Ω Web Â
ħυ ϗ	ϰ Â
G	ℼ Web ℼ ˘ ў ѫ Â

ѡ R	R 1' ϧ ϰ *FastEthernet 0/14* Э ΰ ╟ Web Â
	`Ruijie(config)# **interface** *FastEthernet 0/14*`
	`Ruijie(config-if)# **web-auth port-control**`

΅Ωħυ ϗ	**ħυ ϗ**	
	show web-auth port-control	ϰ Web ą Â
	http redirect	┗ ϟ IP ѫ Â
	http redirect homepage	ў ѫ Â
	web-auth portal key	ώ б ┗ ϟ ϧ ą

ϡ

ħυ ҳ ٦ ل	٨	
	10.2(5)	ħυ ҳ
	10.4(2b2)	╗ **ip-only-mode** ٩

30.1.11 web-auth portal key

ώ б Ь Ы Ѯ ą Â ل Л ħυ ҳ **no**
HTTP WEB ل ٨ WEB б Ь Ы ą Â

web-auth portal key *key-string*

no web-auth portal key

	٩	
٩	*key-string*	ώ б Ь Ы Ѯ ą ˘ ѝ 255 ə Â

Â

ħυ ҳ	ŏ Â
G	╗ Web ╗ ˘ ώ б Ь Ы Ѯ ą Â

30.1.12 web-auth update-interval

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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
```

w R

Web ƕυ ҙ

Â

ħυ ҳ Â

G Â

R 1' ѫ ɣ VLAN Web VLAN " ə Â

```
Ruijie# show web-auth allow-vlan
  Allow-vlan list  :  1-3,5
```

ѡ R

ᴿ 1' Â

```
Ruijie# show web-auth direct-host
Direct hosts:
  Address          Mask             Port        ARP Binding
  ---------------- ---------------- ----------- ------------
  192.168.0.1      255.255.255.255  Fa0/2       On
  192.168.4.11     255.255.255.255  Fa0/10      On
  192.168.5.0      255.255.255.0    Fa0/16      Off
```

ẇ ᴿ

Address	IP فخ سم Â
Mask	IP فخ سم Â
Port	б IP ώ ٨ Â
ARP Binding	ΐ ARP Â

ΎΩħυ ϡ

ħυ ϡ	
web-auth direct-host	IP تن Â

ϡ

ħυ ϡ ϒ ϡ

ϡ	
10.2(5)	ħυ ϡ

30.2.4 show web-auth port-control

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show web-auth port-control

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G Â

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
```

	10.2(5)	ħυ ҳ

31 AAA

31.1

31.1.1 aaa authentication dot1x

G AAA

ЎΩћu ҙ

ћu ҙ	
aaa new-model	G AAA ŏ Ł
dot1x authentication	₰ 802.1X ˜ Э ЎΩ "
username	Ћ₪ ₥

ѵ

ћu ҙ Ў ѵ

ѵ	
-	-

31.1.2 aaa authentication enable

G AAA Enable ˘ ŏ ћu ҙ **aaa authentication enable** Enable " Â ћu ҙ no ў " Â

aaa authentication enable default *method1* [*method2*...]

no aaa authentication enable default

ѱ

ѱ	
default	G ѱ ˘ ‡ ѵ Ћ₪ " ɔ и Enable ÂEnable ₥ ɣ ŏ ˘ ɱ ѱ " Â
method	ľ local à none à group Ł " ЎΩ ʒ У˘ У ɔ " 4 ɔ
local	G ₥ ѵ
none	a
group	G Ł Ы ˘ ɱ RADIUS Ո TACACS+ Ł Ы

ћu ҙ ŏ Â

ŭ AAA Enable Ł˘ G AAA Enable ˜ Ы Â

G G **aaa authentication enable** ћu ҙ " ɣ Enabl

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

Ш R Ю R ЂЖ У э ɻ ŕ list-1 AAA Login " Â " G سم Â ɻ جم VTY 0 - 4 Э Â

```
Ruijie(config)# aaa authentication login list-1 local
Ruijie(config)# line vty 0 4
Ruijie(config-line)# login authentication list-1
```

ЂU ҂

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 ϡ ╟ ˘ ѽ
ħυ ϡ **aaa accounting commands** Â ħυ ϡ no ↓ ħυ ϡ ╖ Â

aaa accounting commands *level* {**default** | *list-name*} **start-stop** *method1* [*method2*...]

no aaa accounting commands *level* {**default** | *list-name*}

↰	
level	ħυ ϡ ¦˘ ىت 0~15˘ ā ف ə ¦ ħυ ϡ ˘ ə٩ Â
default	G ↰ ˘ ‡ Л Ⱨ " ɔ и ħυ ϡ Â
list-name	Ⱨ У ə ħυ ϡ " ˘ ↓ Л ˙ ¡ s Â
method '	ľ **none** à **group** Ŀ " ˜Ω ʒ У˘ У ə " 4

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

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	-	-

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	۸۸ 8ˇ ۷ 8 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

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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	
	-	-

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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 ˧ ⅍A Â

w R

ƗO R '

```
Ruijie# show aaa user lockout all
```

ʗΩƫu ʒ

ƫu ʒ	
show running-config	Ꮋ ɱń
show aaa lockout	ɱń login ˥

˩

ƫu ʒ ˥ ˩

/ł	
-	-

32 RADIUS

32.1 RADIUS

RADIUS ↑ ЛuЮ ˇΩћu ҳ'

32.1.1 ip radius source-interface

radius ѫ˘ ѽ ћu ҳ **ip radius source-interface** Â ћu ҳ **no** ˙ RADIUS ѫ Â

ip radius source-interface *interface*

no radius source-interface

٨	
Interface	radius ѫ ٨

	radius ѫ Â
ћu ҳ	ѽ Â
G	й ѭ ˇ ѫ radius Ь Ы Э nas ą ɔ ˘ ˧ Лu ћu ҳ radius ѫ Â ћu ҳ ٨ У э ip ѫ ɔ й radius ѫ˘ ћu ҳ ѫ Ь G Â
ѡ R	Ю R ѭ radius ÿ fastEthernet 0/0 ٨ ˧ ip ѫ ɔ й radius ѫ' Ruijie(config)# **ip radius source-interface fastEthernet** *0/0*

ˇΩћu ҳ	ћu ҳ	
	radius-server host	ћ RADIUS Ь Ы
	ip address	٨ ip ѫ

˧

ħu ३ ी ↓	/ा	
	-	-

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**

५	५	
	id	॥ id <1-255>
	type	type

↓ /ा ⋮ '

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

ϙ'

id	ℸℓ	type
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

Ъu ҙ ŏ Â

G G ћu ҙ صر ḣ Â

ѡ R Ю R max up-rate صر ḣ ћ ѝ 211'

```
Ruijie(config)# radius attribute 16 vendor-type 211
```

ӟ Ωћu ҙ

ћu ҙ	
radius set qos cos	radius· Ю qos ḣ ѝ ۷ cos ḣ

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ћu ҙ ˥ ۷

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-	-

32.1.3 radius-server attribute 31

RADIUS Calling-Station-ID ˆ ѫ ɣ MAC˜ ˘ ŏ ћu ҙ **radius-server attribute 31** Â ћu ҙ **no** ѝ ḣ Â

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

no radius-server attribute 31 mac format

۸

۸	
ietf	ETF˜ RFC3580˜ ñ ˘ G ļ - Ľ ɔ ѝ† Â R ' 00-D0-F8-33-22-AC Â
normal	MAC ف س ˆ † ˉ Ω 8 ~ ˘ G ļ . Ľ ɔ ѝ† Â R ' 00d0.f833.22ac Â
unformatted	˘ ˙ ¡† ˘ G ɘ Â R ' 00d0f83322ac Â

G unformatted Â

ћu ҙ ŏ Â

G † RADIUS ŏ ㄴ ⅄ˆ ў ɣ 802.1x ˜ ۷ ۷ ⁞ IETF ˘ ą Ю Calling-Station-ID ѝ IETF صر Â

ѡ R Ю R ћ RADIUS Calling-Station-ID ѝ IETF '

```
Ruijie(config)# radius-server attribute 31 mac format ietf
```

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ћu ҳ ˥ ˩	/ˡ	
	-	-

32.1.5 radius-server host

RADIUS ŏ Ł ў ˘ ŏ ћu ҳ **radius-server** Â ћu ҳ **no** ĩ RADIUS ŏ Ł ў Â

radius-server host { *ipv4-address* | *ipv6-address*} [**auth-port** *port-number*] [**acct-port** *port-number*]

no radius-server host { *ipv4-address* | *ipv6-address*}

ˡ	ˡ	
	ipv4-address	RADIUS ŏ Ł ў IPv4 فذسم Â
	ipv6-address	RADIUS ŏ Ł ў IPv6 فذسم Â
	auth-port	RADIUS ` UDP ˡ Â
	port-number	RADIUS ` UDP ˡ /ˡ˘ ѝ Ơ ‡ ў a ` Â
	acct-port	Radius UDP ˡ
	port-number	RADIUS UDP ˡ /ˡ˘ ѝ Ơ ‡ ў a Â

RADIUS ў Â

ћu ҳ ŏ Â

G ѝ ѫ G RADIUS AAA ŏ Ł˘ ЊR RADIUS ŏ Ł ў Â ˩ Л G **radius-server** ћu ҳ ЊR У ə ə RADIUS ŏ Ł ў Â

w R

Ю R ЊR У ə IPv4 Ю RADIUS ŏ Ł ў '

```
Ruijie(config)# radius-server host 192.168.12.1
```

Ю R ЊR У ə IPv6 Ю RADIUS ŏ Ł ў '

```
Ruijie(config)# radius-server host 3000::100
```

ЎЋu ҳ

ћu ҳ	
aaa authentication	ЊR AAA ` "
radius-server key	ЊR RADIUS ŏ Ł Ўм ˡ ҳ

radius-server retransmit	ћѫ RADIUS ч
radius-server timeout	ћѫ RADIUS ѵ

ѵ

ћu ҙ ˥ ѵ	
ѵ	
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32.1.6 radius-server key

ћѫ Ь ѵ˄ ~ б RADIUS ѽ Ь ѵ ə ˝Ω м ѵ ҙ˘ ѽ
ћu ҙ **radius-server key** Â ћu ҙ no ч ˝Ω м ѵ ҙ Â

radius-server key *text-string*

no radius-server key

ѵ	
text-string	˝Ω м ѵ ҙ

˝Ω м ѵ ҙ Â

ћu ҙ	ѽ Â

G	˝Ω м ѵ ҙ Ո RADIUS ѽ Ь ѵ ə ѫ Â й ф G Ո RADIUS ѽ Ь ѵ ə˘ ѯ Ո RADIUS ѽ Ь ѵ Э ћѫ ˩ ˝Ω м ѵ ҙ Â

w R	Ю R ћѫ RADIUS ѽ Ь ѵ ˝Ω м ѵ ҙ й aaa˙ `Ruijie(config)# radius-server key aaa`

˝Ωћu ҙ		
radius-server host	ћѫ RADIUS ѽ Ь ѵ ў
radius-server retransmit	ћѫ RADIUS ч
radius-server timeout	ћѫ RADIUS ѵ

ѵ

ћu ҙ ˥ ѵ		
ѵ		

	-	-

radius-server timeout *seconds*

no radius-server timeout

५	

५

seconds

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ŏ Â

G

ħυ ҳ˘ ˩Л · Ю qos ḣ ɔ ѝ cos ḣ˘ ɔ ѝ dscp ḣ

ѡ R

Ю R'

```
Ruijie(config)# radius set qos cos
```

ЎΩħυ ҳ

ħυ ҳ	
radius vendor-specific extend	Radius ѝ a ѡ ⁞ ˜ ك id

˩

ħυ ҳ ˥ ˩

Л	
-	-

radius set	qos ĭ G cos

ᴊ

ħu ҳ ˥ ᴊ

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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**]

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ħu ҳ EXEC Â

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˜Ωħu ҳ

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ħu ҳ ˥ ᴊ

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32.2.2 show radius parameter

RADIUS ᴸ ᴌ ѽ ᵑ Â

show radius parameter

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ħu ҳ Â

G ᴳ ħu ҳ radius ᴸ ᴌ ᵑ Â

ᴡ ᴿ

```
Ruijie# show radius parameter
Server Timout:   5 Seconds
Server Deadtime: 5 Minutes
Server Retries:  3
Server Key:      ******
```

ʹΩħu ҳ

ħu ҳ	
radius-server host	ᵻ RADIUS ѽ ᴸ ᴌ ў
radius-server retransmit	ᵻ RADIUS ᵑ
radius-server key	ᵻ RADIUS ʹΩ ᴍ ᵑ ҳ
radius-server timeout	ᵻ RADIUS

ᵑ

ħu ҳ ˥ ᵑ

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ħu ʒ Â

G G ħu ʒ radius Ł ɲ 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
```

ˇΩħu ʒ

ħu ʒ	
radius-server host	ħ RADIUS ώ Ł ɲ ў
radius-server retransmit	ħ RADIUS ɻ
radius-server key	ħ RADIUS ˇΩ м ʌ ʒ
radius-server timeout	ħ RADIUS

ʌ

ħu ʒ ˥ ʌ

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32.2.4 show radius vendor-specific

RADIUS ص Â

show radius vendor-specific

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G G ħυ ३ 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
```

w R

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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

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ћu ъ ℸ л		
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33.1.2 ip tacacs source-interface

ħu ϡ TACACS+ ﻡﺳ ﻑﺥ Â

ip tacacs source-interface *interface*

no ip tacacs source-interface

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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 Ҽ ћѫ TACACS+ ѽ Ҽ Â ҷ ЛU G **tacacs-server** ћu ҙ ћѫ У ə ə TACACS+ ѽ Ҽ Â
ѡ R	Ю R ћѫ У ə TACACS+ ѽ Ҽ ў ' Ruijie(config)# **tacacs-server host** *192.168.12.1* Ruijie(config)# **tacacs-server host** *2001::1*

ћu ҙ	
aaa authentication	ћѫ AAA ` "
tacacs-server key	ѽ ћѫ TACACS+ ѽ Ҽ Ѽ Ӎ ^ ҙ
tacacs-server timeout	ѽ ћѫ TACACS+ Ҽ : Ы

^

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 ⅂ ⅄

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-	-

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

ʴ	
-	

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

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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 ╖ ˘

৺ ᴿ	৲ ᴳ 2ʹ Ruijie# **configure terminal** Ruijie(config)# **ip ssh version** *2*

ʺΩħυ ३

ħυ ३	
show ip ssh	SSH Server ɱ Â

৶ ˚ RGOS10.1 ЛЏЭ

	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

५	
-	-

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 э 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 cpu bandwidth *bandwidth_value*

CPU ٨

cpu-protect cpu bandwidth *bandwidth_value*

٨	٨	
	bandwidth_value	" ˘ ٨ ḣ ىتن ѝ 64 1000000(kbps)
	S2900 " CPU ٨ ѝ 100000kbps Â	
ƕ ɤ	ѽ Â	
G		

CPU ٨ ѝ 2000 kbps˜ R'

```
Ruijie# configure terminal
```

ѡ R

ƕʊ ʇ ˥ ɹ	ᐱ	
	-	-

35.1.2 cpu-protect mac-address storm-control enable *value*

فخسم ˉ 8

cpu-protect mac-address storm-control enable *value*

ᛋ	ᛋ	
	value	ǐ ң فخسم э ˇ ɹ ḣ تن 200˙ 51200

ḣ 2000 Â

ƕʊ ʇ ώ Â

G

ɯ R

CPU ᛋ й 2000˘ kbps˜ R'

```
Ruijie#configure terminal
Ruijie(config)# cpu-protect mac-address storm-control enable 3000
Ruijie(config)#end
Ruijie# show cpu-protect mac-address storm-control
%MAC address storm control state: enable
%MAC address storm control rate:  3000(address/second)
```

ƕʊ ʇ

cpu-protect traffic-class id *id_num* **bandwidth** *bandwidth_value*

٩		
٩	*id_num*	" ID˘ ٧ ḣ تن ẏ 0˙ 7
	bandwidth_value	" ˘ ٧ ḣ تن ẏ 32˙ 131072(kbps)

S2900 " " 7 ẏ 100000kbps˘ è ы " ẏ 1000kbps Â

ƕ ɤ ő Â

G

Ю " 7 ẏ 312(kbps)'

```
Ruijie#configure terminal
Ruijie(config)# cpu-protect traffic-class id 7  bandwidth 312
Ruijie(config)#end
Ruijie# show cpu-protect traffic-class id 7
%*********traffic class     bandwidth(kbps)**********
             7                 312
```

ƕ ɤ		
˜Ωƕ ɤ	**cpu-protect type** packet-type **traffic-class** *traffic-class-num*	Ո " ˜Ω
	cpu-protect traffic-class all bandwidth *bandwidth_value*	"

٧

/١		
ƕ ɤ ˥ ٧	-	-

35.1.4 cpu-protect traffic-class all bandwidth *bandwidth_value*

" Â

cpu-protect traffic-class id *id_num* **bandwidth** *bandwidth_value*

٩	٩	

*bandwidth_*

S2900 " ɑ Ю Ո " ʖΩ Ю '

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35.2

35.2.1 show cpu-protect cpu

CPU

show cpu-protect cpu

	-	-

35.2.2 show cpu-protect traffic-class id id_num

ə " Â

show cpu-protect traffic-class id *id_num*

۸		
۸	*idt_num*	۷ ḣ ىن ۇ 0-7 Â

ƕ ɜ	Â
G	ƕ ɜ ə " Â

ЮR " 1 CPU ɗ ə Â

```
Ruijie#show cpu-protect traffic-class id 1
%*********traffic class     bandwidth(kbps)**********
1000
```

ƕ ɜ	
show cpu-protect type *packet-type*	ص "
show cpu-protect traffic-class all	"

-	-

ƕ ɮ Â

G ƕ ɮ " Â

ЛьЮ R G **show cpu-protect traffic-class al**l ƕ ɮ " '

w R

```
Ruijie# show cpu-protect traffic-class all
%*********traffic class     bandwidth(kbps)**********
            0                1000
            1                1000
            2                1000
            3                1000
            4                1000
            5                1000
            6                1000
            7                100000
```

ƕ ɮ	
show cpu-protect type *packet-type*	ص "
show cpu-protect traffic-class id id_num	ɘ " Â id_num ɻ ḣ ىت ѝ 0ʹ 7
show cpu-protect cpu	CPU ɻ Â

ɻ

ƕ ɮ ˥ ɻ	
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35.2.4 show cpu-protect type packet-type

ص " Â

show cpu-protect type *packet-type*

ɻ		
	ɻ	

-	-

ƕ ɤ Â

G ƕ ɤ ص " Â

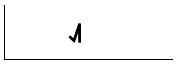
G **show cpu-protect type all** ƕ ɤ "'

```
%**********packet type      traffic-class**********
                bpdu           6
                 arp           5
                 tpp           6
               dot1x           3
                gvrp           3
                rldp           6
                dhcp           2
      unknown-ipv6-mc           1
        known-ipv6-mc           1
      unknown-ipv4-mc           1
        known-ipv4-mc           1
          udp-helper            0
              dvmrp           5
                igmp           3
                icmp           5
                ospf           5
                 pim           5
                 rip           5
                vrrp           5
                  mld           3
                   ns          5
           error-ttl            0
     error-hop-limit            0
       local-telnet            5
         local-snmp            5
         local-http            5
         local-tftp            5
         local-other           5
```

w R

```
ipv4-uc          4
ipv6-uc          4
  other          0
```

ƕ ɜ	
show cpu-protect traffic-class id *id_num*	ə " Â id_num ɻ ɦ ىں 0 7
show cpu-protect traffic-class all	" Q



36 GSN

36.1

36.1.1 security address-bind enable

ƫ ɂ ɣ ʎ ʃ ǐ ѫ Â

security address-bind enable

no security address-bind enable

ʎ		
	ʎ	
	-	-
ƫ ɂ	ʎ ˘ ɣ Ɥ ʎ^ a ↑ AP Ո AP ˜ ʎ˜ Â	
G	ƫ ɂ Â ‡ ʎ ѫ . ˘ ƫ ɂ ѭ 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
ɻ	˚ RGOS10.1 ЛЭ Â	
ƫ ɂ ˥ ɻ	ɻ	
	-	-

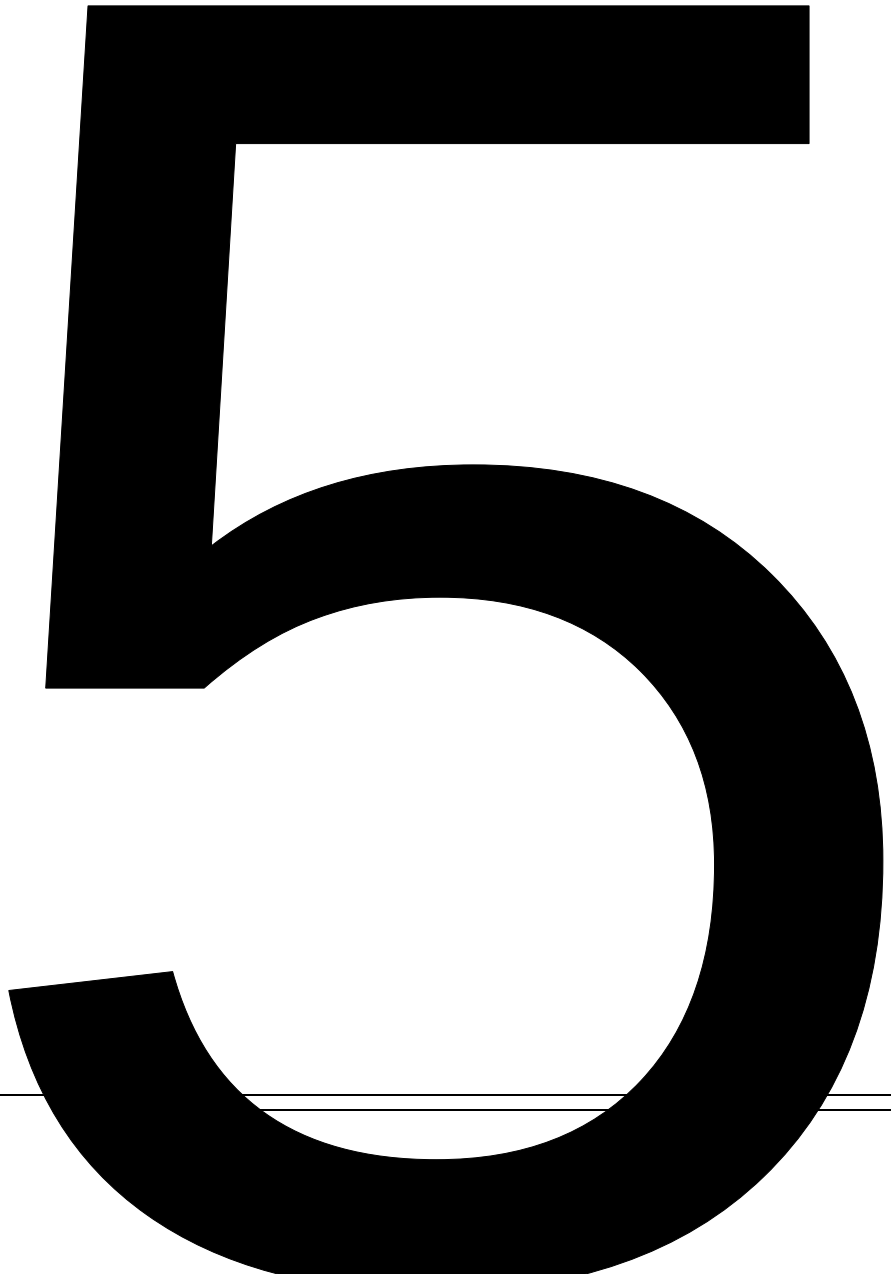
36.1.2 security community

ƫ ɂ ɣ Ո smp Ŧ ɳ ʓ ŏ ɹ Ŕ

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



	5
Ъ ҳ	ŏ
G	Ъ ҳ Â G **show security event interval** Â
w R	ŏ Y ˚ ' Ruijie(config)# **security event interval** *10*

ΩЪ ҳ	Ъ ҳ	
	show security event interval	ŏ Y ˚ Â

⁄	˚ RGOS10.1 Л Э

Ъ ҳ ˥ ⁄		
	⁄	
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36.1.4 security gsn enable

Ъ ҳ ¥ ŏ 8 GSN ╖ Ω Â no ⁄ ⁄ ⁄

security gsn enable

no security gsn enable

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Ъ ҳ	ŏ
G	GSN ŏ ˘ Ъ ҳ G

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⊿	˚ RGOS10.1 Лυ Э

Ъυ ҳ ˥ ⊿	/⁄	
	-	-

36.1.5 smp-server host

Ъυ ҳ ¥ smp-server ip ƒф ѕм Â

smp-server host *ip-address*

no smp-server host

⁄¶	⁄¶	
	ip-address	smp server ip ƒф ѕм

	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 ˥ ⊿	/⁄	
	-	-

36.2

36.2.1 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
```

ЎΩЪυ ҳ

Ъυ ҳ	
security event interval *interval*	ŏ Y ˇ Â

ل ˇ RGOS10.1 Л Э Â

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36.2.2 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

Ъu ҙ

Ъu ҙ	
smp-server host	smp server ip فخ سه Â

RGOS10.1 Л Э Â

Ъu ҙ ˥ ˩

Л	
-	-

37 DAI

37.1 VLAN DAI

37.1.1 ip arp inspection vlan

G ħυ ϗ˘ ϟ Ѓυ ΰ *vlan-id* VLAN DAI ╖ Â ħυ ϗ no ϟ Ѓυ
˺Ω *vlan-id* VLAN DAI ╖ ˘ ϒ *vlan-id*ď ‡ ˺Ω VLAN
Э DAI ╖ Â

ip arp inspection vlan *vlan-id*

no ip arp inspection vlan [*vlan-id*]

ϒ	
vlan-id	vlan ΛÂ

	VLAN Э˺Ω DAI ╖ Â

ħυ ϗ	ώ Â

G	G ħυ ϗ ϟ ɔ ˘ ″I ΰ DAI ╖ ˘ ϒ Э У Â

ѡ R	ЛυЮ ˘ и VLAN 1 Э ↑ ARP Â Ruijie(config)# **ip arp inspection** Ruijie(config)# **ip arp inspection vlan** *1*

˺Ωħυ ϗ		
show ip arp inspection vlan	VLAN ΐ DAI ╖ Â

ϟ	Â

ħυ ϗ ˥ ϟ		
	Λ	
	-	-

37.2

37.2.1 ip arp inspection trust

γ ∧ ΐ ˩ ə ˘ G ∧ ħυ ϛ **ip arp inspection trust** Â ħυ ϛ **no** γ ∧ ὶ a ə Â

ip arp inspection trust

no ip arp inspection trust

∧	
-	-

∧ ɣ a ə Â

ħυ ϛ ∧ Â

G ə ∧ ∫ ARP ˚ DAI ˘ ˩Ʌυ è ˩ ə ˘ τ a ∧ ∫ ARP ˘ τ ∧ Â

G	NFPP(ɗ) ɥ ɒ˘ 8 NFPP ˘ a Ạ
&	DAI ˘ ɕ ˜Ωħυ ϛ **show ip arp inspection interface** ˩ ∧ ə Â

ɅυЮ R ˘ gigabitEthernet 0/19 ∧ ˩ ə Â

```
Ruijie(config)# interface gigabitEthernet 0/19
Ruijie(config-if-GigabitEthernet 0/19)# switchport mode trunk
```

37.3.1 ip arp inspection limit-rate limit-rate

ӇӾУ э ʌ ARP ˇ ʌ ħυ ҳ **ip arp inspection limit-rate** Â ħυ ҳ **no** ˩Лυ Â

ip arp inspection limit-rate {*limit-rate* | **none** }

no ip arp inspection limit-rate

ʌ		
ʌ	**none**	ʌ a ṁ ⁸ Â
	limit-rate	ˇ ˩ ḣ تن ӈ^ 1˜ 2048˜ Â
	ạ˙ ʌ ⁸ ӈ 15 э ARP / Âạ˙ ʌ ӈ 0̊ . a ⁸˜ Â	
ħυ ҳ	ʌ Â	
G	˩ ŭ DAI ╖ ˇ ⁸ Â ʌ ˇ ﷺ ɖ (Network Foundation Protection Policy) ╖ ˇ Лυ a Ạ ᵏ ħυ ҳ Â	

ᴡ ᴿ	ЛυЮ ᴿ ˇ ﷺ ɣ VLAN 2 ʌ gigabitEthernet 0/2 ⁸ ӈ 10 э ARP / Â
	`Ruijie(config)# ip arp inspection`
	`Ruijie(config)# interface gigabitEthernet 0/2`
	`Ruijie(config-if)# ip arp inspection limit-rate 10`	

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	ħυ ҳ	
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	ʌ	
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37.4 DHCP Snooping

ŭ ɷ VLAN DAI ╖ ˇ ɜ ARP ɣ ʌ ɣ a ˩ ạ˙ ˇ ARP ‡ У ʌ ˇ ŋ DHCP Snooping ˜Ω ạ .

38 arp

ϟ Ю Ϋ arp ə Â

show anti-arp-spoofing

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ħυ ϗ

G

w R

```
Ruijie#show anti-arp-spoofing
                port            ip
                -------         -----------
                Fa0/1           192.168.1.1
```

Ϋħυ ϗ

ħυ ϗ	
anti-arp-spoofing ip	Ϋ arp ħυ ϗ

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ħυ ϗ ϒ ϡ

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39 IP Source Guard

39.1 IP Source Guard

39.1.1 ip source binding

ج IP فخ سم è ╗ ə ˇ **no**

	show ip source binding	IP ففد سم ə٩

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ħυ ϗ ٦ ʎ

ʎ	
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39.2 IP Source Guard

39.2.1 ip verify source

ʎ Ɔ IP Source Guard ╖ ˘ **no** ˜Ω ╖ Â

[**no**] **ip verify source** [**port-security**]

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ʎ	
port-security	IP Source Guard ╖ ₥ ¥ IP+MAC Â

˜Ω Â

ħυ ϗ ʎ Â

G

ħυ ϗ ʎ IP Source Guard ╖ ˘ ˩Ո ₥ ¥ IP ˘ ₥ ¥ IP+MAC ’

IP Source Guard ╖ ΘΘ ج DHCP Snooping ٩˙ ʎ Ɔ ˘ ≠ ˘ ج Trust ʎՈ ˩ DHCP Snooping ⁸ ʎ Ɔ IP Source Guard ╖ ˘ IP Source Guard ╖ a Â

w R

Ю ʎ 1 Ɔ IP Source Guard ╖ ’

```
Ruijie# configure terminal
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ip verify source
Ruijie(config-if)# end
```

ђu ҳ ٦ ل	/ا	
	-	-

39.3 IP Source Guard

39.3.1 show ip source binding

ђu ҳ IP فخ سم

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

٩	
ip-address	ip
mac-address	mac ي ٶ ’
dhcp-snooping	╟ پ
static	پ
vlan-id	vlan ي ٶ ’

ϡ

ħυ ϗ ϒ ϡ

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39.3.2 show ip verify source

ħυ ϗ IP Source Guard

show ip verify source [**interface** *interface-id*]

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ϡ	
interface-id	ϡ Â

Â

ħυ ϗ

ϗ G **interface** ϡ ϡ IP Source Guard ╖ ˘ ˛ ϗ .
ΗΟ ą ' "IP source guard is not configured on the interface FastEthernet 0/10" Â
ɱ IP Source Guard (ą **mode** ") ↑ ΗΟ'
Â **inactive-no-snooping-vlan** ' DHCP Snooping ⁸ ϡ'
Â **inactive-trust-port** ' DHCP Snooping ⁸ ą˙ ϡ Ϟ'
Â **active** ' DHCP Snooping ⁸ ą˙ ϡ Ϟ Â

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ƕ ҙ صر ´ " ǰ Â

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

٩	
percent_vaule	ǰ ˘ ٧ ḣ تن 1ǰ 100

	pps	˘ ´ Æ ˘ ↓ ḣ تن [1,9999] Â

э IP ϕϧ Ո э MAC ϕϧ 8 э˘ э ∧
200 э Â

ħυ ϡ NFPP

G a ¥ Â

ψ 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
```

ΏħυϡϡΩ

ħυ ϡ	
nfpp arp-guard policy	Ո
show nfpp arp-guard summary	ə
show nfpp arp-guard hosts	↓ ў
clear nfpp arp-guard hosts	ў

↓

ħυ ϡ ϡ ↓

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40.3.2 arp-guard enable

ħυ ϡ ώ ARP ╖ Â

arp-guard enable

∧

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-	-

ARP ╖

ħυ ϡ NFPP

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w R

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

Ωħu ३

ħu ३	
nffp arp-guard enable	ॾ ∧ Э ARP ╖
show nfpp arp-guard summary	ҽ

∧

ħu ३ ˥ ∧

∧	
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40.3.3 arp-guard isolate-period

ħu ३ ѽ Â

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

∧

∧	
seconds	˘ ´ Æ ˘ ∨ ḣ ىں 0 [30, 86400] Â
permanent	⊬

ѽ ḣ Ơ . a Â

ħu ३ NFPP

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w R

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

Ωħu ३

ħu ३	
nfpp arp-guard isolate-period	ॾ ∧ Э
show nfpp arp-guard summary	ҽ

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40.3.4 arp-guard monitor-period

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arp-guard monitor-period *seconds*

৭

৭	
seconds	˘ ´ Æ ˘ ৰ ḣ تن [180, 86400] Â

ḣ 600 Â

ħυ ३ NFPP

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Â ج ˚ è˘ ṅ ḣ ˘ ╟ ˚
ৰ ˚ ˘ з ṅ Â ج ṅ 0 ą Ю
Ⱨ Â
Â ÿ ḣ ˘ ℨ ৭ ╕ ˘ a
˚ Â

w R

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

ℨħυ ३

ħυ ३	
show nfpp arp-guard summary	ą
show nfpp arp-guard hosts	ৰ ў
clear nfpp arp-guard hosts	ў

ৰ

40.3.5 arp-guard monitored-host-limit

ħυ ३ ৸ ў Â

arp-guard monitored-host-limit *number*

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number	৸ ў ˘ ৸ ḣ ت ѝ 1↑ 4294967295

৸ ў ѝ 1000 ə Â

ħυ ३ NFPP

G

৸ ў ↑ 1000 ə˘ ˜ ৸ ў ɣ 1000˝ a˳ ǐ ৸ ў ˘ . ą ľ %ERROR' The value that you configured is smaller than current monitored hosts 1000˝ ৸ ў ~ ˘ please clear a part of monitored hosts. Ŀ ˜ ˘ ǐ ǐ ў Â

৸ ў ˘ . ľ % NFPP_ARP_GUARD-4-SESSION_LIMIT: Attempt to exceed limit of 1000˝ ৸ ў ~ monitored hosts. Ŀ ˜ Â

w R

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

ˆΩħυ ३

ħυ ३	
show nfpp arp-guard summary	ą

৸

ħυ ३ ৭ ৸

৸	
-	-

per-src-ip	ə IP فخ سم
per-src-mac	ə MAC فخ سم
per-port	ə ٨
pps	ḣ˘ ٧ ḣ تن [1,9999] Â

ə IP فخ سم Ո ə MAC فخ سم 4 ə˘ ə ٨
100 ə Â

ħυ ϡ NFPP

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ψ R

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# arp-guard rate-limit per-src-ip 2
Ruijie(config-nfpp)# arp-guard rate-limit per-src-mac 3
Ruijie(config-nfpp)# arp-guard rate-limit per-port 50
```

ђυ ҳ NFPP

10 ∫ 15 э ЛЭ ARP ˘ MAC

G

w R

VLAN 1 ᛋ g 0/1 ў Â

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

ΐΩħυ ϡ

ħυ ϡ	
arp-guard attack-threshold	ώ
nfpp arp-guard policy	∩
show nfpp arp-guard hosts	↓ ў

↓

ħυ ϡ ˥ ↓

/ǀ	
-	-

40.3.9 clear nfpp arp-guard scan

ARP Â

clear nfpp arp-guard scan

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-	-

ħυ ϡ

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w R

```
Ruijie# clear nfpp arp-guard scan
```

ħυ ϡ	

ħυ ϗ ϒ ϟ	/ϡ	
	-	-

40.3.10 nfpp arp-guard enable

ħυ ϗ ϰ ϡ Э ARP ϓ Â

nfpp arp-guard enable

ϡ	ϡ	
	-	-

	ϡ ARP ΄Ω΅ ώ ΄Ω Â
ħυ ϗ	ϡ
G	ϡ ARP ΄Ω ΅Ι ϔ ώ ARP ΄Ω Â

w R	Ruijie(config)# **interface G0/1** Ruijie(config-if)# **nfpp arp-guard enable**

΄Ωħυ ϗ	ħυ ϗ	
	arp-guard enable	ώ ARP ϓ
	show nfpp arp-guard summary	ϑ

ϟ	

ħυ ϗ ϒ ϟ	/ϡ	
	10.4	ħυ ϗ

40.3.11 nfpp arp-guard isolate-period

ħυ ϗ ϰ ϡ Э Â

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

ϡ	ϡ	

seconds	˘ ´ Æ ˘ ↓ ḣ ټ 0 [30, 86400]ˇ 0 a Â
permanent	ⱵA

ɑ ˘ ŏ Â

ħυ ϗ ∧

G

ψ R

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp arp-guard isolate-period 180
```

ŽΩħυ ϗ

ħυ ϗ	
arp-guard isolate-period	ŏ
show nfpp arp-guard summary	ə

↓

ħυ ϗ ˥ ↓

∕	
10.4	ħυ ϗ

40.3.12 nfpp arp-guard policy

ج ∧ Э Ո Â

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

∧

∧	
per-src-ip	э IP فخ سم Ո Â
per-src-mac	э MAC فخ سم Ո Â
per-port	э ∧ Ո Â
rate-limit-pps	˘ ↓ ḣ ټ 1¦ 9999 Â
attack-threshold-pps	˘ ↓ ḣ ټ 1¦ 9999 Â

∧ Ո ˘ ŏ Ո Â

NFPP ħu ҙ

ħu ҙ

G

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
```

arp-guard attack-threshold	ѽ
arp-guard rate-limit	ѽ
show nfpp arp-guard summary	ҷ
show nfpp arp-guard hosts	ӌ ў
clear nfpp arp-guard hosts	ў

ӷ

ϣ R

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp arp-guard scan-threshold 20
```

ϔΩħυ ϗ

ħυ ϗ	
arp-guard scan-threshold	ώ
show nfpp arp-guard summary	ə
show nfpp arp-guard scan	ARP
clear nfpp arp-guard scan	ARP

ϡ

ħυ ϗ ϒ ϡ

ϡ	
10.4	ħυ ϗ

40.4 DHCP

40.4.1 dhcp-guard attack-threshold

ώ ˘ . Ąˇ ϶ جھ ϶ Â

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

ϟ

ϟ	
per-src-mac	ə MAC فذسه Â
per-port	ə ϟ Â
pps	˘ ´ Æ ˘ ϡ ḣ تن [1,9999] Â

ħu ҳ	
nfpp dhcp-guard policy	Ո
show nfpp dhcp-guard summary	ə
show nfpp dhcp-guard hosts	↓ ў
clear nfpp dhcp-guard hosts	↓ ў

ʃ

ħu ҳ ˥ ↓	ʃ	
	-	-

40.4.2 dhcp-guard enable

ħu ҳ DHCP ╖ Â

dhcp-guard enable

ʅ	ʅ	
	-	-

	ʅ DHCP ʿΩ˘ ώ ʿΩ Â

ħu ҳ	NFPP

G

w R	Ruijie(config)# **nfpp** Ruijie(config-nfpp)# **dhcp-guard enable**

ʿΩħu ҳ	ħu ҳ	
	nffp dhcp-guard enable	₂ ʅ Э DHCP ╖
	show nfpp dhcp-guard summary	ə

↓

ħu ҳ ˥ ↓	ʃ	

	-	-

40.4.3 dhcp-guard isolate-period

ħυ ҙ ѿ Â

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

	٩	
٩	*seconds*	˘ ´ Æ ˘ ٧ ḣ ىں 0 [30, 86400]ٜ 0 a Â

۹	
seconds	˘ ´ Æ ˘ ۷ ḣ تن [180, 86400] Â

ώ ḣ 600 Â

ħυ ҳ NFPP

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Â Ạ˘ ὴ Ơ ˚ ˘ ὴ
Â ج ˚ è˘ ὴ ḣ ˘ ╟ ˚
۷ ˚ ˘ ȝ ὴ Â ج ὴ 0 ą Ю
₩ Â
Â ÿ ḣ ˘ ℨΩ ۸ ˥ ˘ a
˚ Â

ш R

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

NFPP ħυ ҳ

ẘ ᴿ

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcp-guard rate-limit per-src-mac 8
Ruijie(config-nfpp)# dhcp-guard rate-limit per-port 100
```

ʷΩħυ ३

ħυ ३	
nfpp dhcp-guard policy	∩
show nfpp dhcp-guard summary	ə

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ħυ ३ ˥ ᵲ

ᵰ	
-	-

40.4.7 clear nfpp dhcp-guard hosts

˘ . Â

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

ᵰ

ᵰ	
vid	ᵰ
interface-id	ᵰ ᵲ
mac-address	MAC - D2Df 0.48 ref341.6 3156(- D2Df 00.1 ref246.84 515.72

	show nfpp dhcp-guard hosts	ў

ѵ

ħu ҳ ˥ ѵ	ѵ	
	-	-

40.4.8 nfpp dhcp-guard enable

ħu ҳ ѧ ʌ Э DHCP ╖ Â

nfpp dhcp-guard enable

ʌ	ʌ	
	-	-

	ʌ DHCP ˜Ω˜ ѽ ˜Ω Â
ħu ҳ	ʌ
G	ʌ DHCP ˜Ω ¨l ɣ ѽ DHCP ˜Ω Â

w R

```
Ruijie(config)# interface G0/1
Ruijie(config-if)# nfpp dhcp-guard enable
```

˜Ωħu ҳ	ħu ҳ	
	dhcp-guard enable	ѽ DHCP ╖
	show nfpp dhcp-guard summary	ҽ

ѵ

ħu ҳ ˥ ѵ	ѵ	
	10.4	ħu ҳ

40.4.9 nfpp dhcp-guard isolate-period

ħu ҳ ѧ ʌ Э Â

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

ϰ	
seconds	˘ ´ Æ ˘ ↓ ḣ ټ 0 [30, 86400] 0 a Â
permanent	ⱵA

ɑ ˘ ŏ Â

ħυ ϗ ϰ

G

ψ 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	ϡ

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/ϰ	
10.4	ħυ ϗ

40.4.10 nfpp dhcp-guard policy

ج ϰ Ɔ Ո Â

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

ϰ	
per-src-mac	ə MAC فذسه Ո Â
per-port	ə ϰ Ո Â
rate-limit-pps	˘ ↓ ḣ ټ 1↑ 9999 Â
attack-threshold-pps	˘ ↓ ḣ ټ 1↑ 9999 Â

ϰ 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	ҽ
show nfpp dhcp-guard hosts	↓ ў
clear nfpp dhcp-guard hosts	ў

↓

ħu ҷ ˥ ↓

ʌ	
10.4	ħu ҷ

40.5 DHCPv6

40.5.1 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 ҧ Â
per-port	ə ʌ Â
pps	˘ ´ Æ ˘ ↓ ḣ ҭ [1,9999] Â

ə MAC ҧ 10 ə˘ ə ʌ 300 ə Â

ħu ҷ NFPP

G

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

nfpp dhcpv6-guard policy Ո ŋ

nffp dhcpv6-guard enable	ح ٨ Э DHCPv6 ╖
show nfpp dhcpv6-guard summary	ə

٨

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	10.4	ħυ ϗ

40.5.3 dhcpv6-guard isolate-period

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

٨		
	٨	
	seconds	˘ ´ Æ ˘ ٧ ḣ ىت 0 [30, 86400]ʃ 0 a Â
	permanent	ⱵA

ώ ḣ 0ʃ . a Â

ħυ ϗ	NFPP
G	ǂ ѝ ώ Ո٠ ѫ ɣ ٨ ˆ . ~ Â ɣ ə ٨˘ ѫ ɣ ٨ ˘ ϫ ώ ' ǐ ‡˘ ѫ ɣ ٨ Â
ѡ R	Ruijie(config)# **nfpp** Ruijie(config-nfpp)# **dhcpv6-guard isolate timeout** *180*

ΐΩħυ ϗ	ħυ ϗ	
	nfpp dhcpv6-guard isolate-period	ح ٨ Э
	show nfpp dhcpv6-guard summary	ə

٨

ħυ ϗ ٦ ٨	٨	

10.4	ħυ ϩ

40.5.4 dhcpv6-guard monitor-period

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dhcpv6-guard monitor- period *seconds*

٩	
seconds	˘ ´ Æ ˘ ↓ ḣ ىت [180, 86400] Â

ŏ ḣ 600 Â

ħυ ϩ NFPP

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Â ج ˚ è˘ ὶ ḣ ˘ ╟ ˚
↓ ˚ ˘ ɜ ὶ Â ج ὶ 0 ą Ю
Ⱨ Â
Â ÿ ḣ ˘ ˜Ω ٩ ˥ ˘ a
˚ Â

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

ħυ ϩ	
show nfpp dhcpv6-guard summary	ə
show nfpp dhcpv6-guard hosts	↓ ў
clear nfpp dhcpv6-guard hosts	ў

↓

/١	
10.4	ħυ ϩ

40.5.5 dhcpv6-guard monitored-host-limit

ħυ ϩ ↓ ў Â

dhcpv6-guard monitored-host-limit *number*

۹	
number	۷ ў ˘ ۷ ћ ىت ى 1ڀ 4294967295

۷ ў ى 1000 ə

ћυ ҳ NFPP

۷ ў ڀ 1000 ə˘ ˜ ۷ ў

ұ 1000˝ a˛ ˉ ۷ ў ˘ . ąٔ ľ %ERROR' The value that you configured is smaller than current monitored hosts 1000˝ ۷ ў ~ ˘

G please clear a part of monitored hosts. Ł ˜ ىشي˜

w R VLAN 1 ∧ g 0/1 Â

```
Ruijie# clear nfpp dhcpv6-guard hosts vlan 1 interface g0/1
```

ΎΩħυ ϗ

ħυ ϗ	
dhcpv6-guard attack-threshold	ώ
nfpp dhcpv6-guard policy	Ո
show nfpp dhcpv6-guard hosts	ў

∧

ħυ ϗ ϒ ∧

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10.4	ħυ ϗ

40.5.8 nfpp dhcpv6-guard enable

ħυ ϗ ≏ ∧ Э DHCPv6 ╖ Â

nfpp dhcpv6-guard enable

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∧ DHCPv6 ΎΩ ώ ΎΩ Â

ħυ ϗ ∧

G ∧ DHCPv6 ΎΩ ΅Ι ɣ ώ DHCP ΎΩ Â

w R

```
Ruijie(config)# interface G0/1
Ruijie(config-if)# nfpp dhcpv6-guard enable
```

ΎΩħυ ϗ

ħυ ϗ	
dhcpv6-guard enable	ώ DHCPv6 ╖
show nfpp dhcpv6-guard summary	ə

∧

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	10.4	ħυ ϩ

40.5.9 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

ʅ	
per-src-mac	ə MAC ف س Ո Â
per-port	ə ʅ Ո Â
rate-limit-pps	˘ ˩ ḣ ت 1↑ 9999 Â
attack-threshold-pps	˘ ˩ ḣ ت 1↑ 9999 Â

ʅ Ո ˘ ŏ Ո Â

ƫ ȝ ʅ

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
```

ƫ ȝ	
dhcpv6-guard attack-threshold	ŏ
dhcpv6-guard rate-limit	ŏ
show nfpp dhcpv6-guard summary	ə
show nfpp dhcpv6-guard hosts	˩ ў
clear nfpp dhcpv6-guard hosts	ў

˩

/ʅ	
10.4	ƫ ȝ

40.6 ICMP

40.6.1 icmp-guard attack-threshold

ŏ ˘ . Ą˘ ˡ ج ˡ Â

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

۹	
per-src-ip	ə IP فذ سم ℐ

ħυ ३	NFPP
G	
ѡ R	Ruijie(config)# **nfpp** Ruijie(config-nfpp)# **icmp-guard enable**

ЎΩħυ ३	ħυ ३	
	nffp icmp-guard enable	ॵ ∧ Э ICMP ℸ
	show nfpp icmp-guard summary	ə

∧

ħυ ३ ℸ ∧	/\	
	-	-

40.6.3 icmp-guard isolate-period

ħυ ३ ѽ Â

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

∧	∧	
	seconds	˘ ´ Æ ˘ ∨ ḣ ت 0 [30, 86400]ᵀ 0 a Â
	permanent	ⱵA

	ѽ ḣ 0ᵀ . a Â

ħυ ३	NFPP

ǂ ѝ ѽ Ո ѫ ¥ ∧ ˆ . ˜ Â

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ħυ ३	
nfpp icmp-guard isolate-period	ह ۸ Э

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40.6.5 icmp-guard monitored-host-limit

ħυ ҳ ﻝ ў Â

icmp-guard monitored-host-limit *number*

ﻡ

ﻡ	
number	ﻝ ў ˘ ﻝ ḣ تن ﻭ 1↑ 4294967295

ﻝ ў ﻭ 1000 ə Â

ħυ ҳ NFPP

G

ﻝ ў ↑ 1000 ə˘ ˜ ﻝ ў ɣ 1000˝ a˛ ǐ ﻝ ў ˘ . ą ľ %ERROR' The value that you configured is smaller than current monitored hosts 1000˝ ﻝ ў ~ ˘ please clear a part of monitored hosts. Ł ˜ ˘ ǐ ǐ ў Â

ﻝ ў ˘ . ľ % NFPP_ICMP_GUARD-4-SESSION_LIMIT: Attempt to exceed limit of 1000˝ ﻝ ў ~ monitored hosts. Ł ˜ Â

ɯ R

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

˝Ωħυ ҳ

ħυ ҳ	
show nfpp icmp-guard summary	ą

ﻝ

ħυ ҳ ٦ ﻝ

ﻡ	
-	-

40.6.6 icmp-guard rate-limit

ѽ Â

NFPP ħu ҳ

ħυ ३

G a ∧ ˘ ў Â

ш R VLAN 1 ∧ g 0/1 ∨ ў Â

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

ħυ ३	” ॐ ╥

	show nfpp icmp-guard summary	ə٩

ϡ

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	ϱ	
	10.4	ħυ ϗ

40.6.10 nfpp icmp-guard isolate-period

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nfpp icmp-guard isolate-period {*seconds* | **permanent**}

ϰ		
	ϰ	
	seconds	˘ ´ Æ ˘ ϡ ḣ ىن 0 [30, 86400]ˇ 0 a Â
	permanent	ⱵA

	ɑ ˘ ώ Â	

ħυ ϗ ϰ

G

ᵂ 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 ϒ ϡ		
	ϱ	
	10.4	ħυ ϗ

ѫ ᴎ Э Ո Â

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

ᴎ	
per-src-ip	э IP ڤخ سم Ո Â
per-port	э ᴎ Ո Â
rate-limit-pps	˘ ᴊ ḣ ىتن 1↑ 9999 Â
attack-threshold-pps	˘ ᴊ ḣ ىتن 1↑ 9999 Â

ᴎ Ո ˘ ѿ Ո Â

ħυ ҳ ᴎ

G a ɣ Â

w R
```
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
```

ЎΩħυ ҳ

ħυ ҳ	
icmp-guard attack-threshold	ѿ
icmp-guard rate-limit	ѿ
show nfpp icmp-guard summary	ҷ
show nfpp icmp-guard hosts	ᴊ ў
clear nfpp icmp-guard hosts	ў

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ħυ ҳ ٦ ᴊ

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10.4	ħυ ҳ

40.7 ND

40.7.1 nd-guard attack-threshold

ѿ ˘ . Ąˇ ѝ ѫ ѝ Â

nd-guard attack-threshold per-port {**ns-na** | **rs** | **ra-redirect**} *pps*

٩	
ns-na	Ո Ώ̃
rs	⅄
ra-redirect	⅄ Ώ̃ Ո ⅃
pps	˘ ´ Æ ˘ ٧ ḣ تن [1,9999] Â

ə ٩ /Ώ̃ 30 ə˘ ⅄
30 ə˘ ⅄ Ώ̃ / ⅃ 30 ə Â

ħu ϡ NFPP

G a ɣ Â

ıreshold per-port ns-na *20*
ıreshold per-port rs *10*
hreshold per-port ra-redir

nfpp nd-guard policy

	ND ҵ
ħu ҳ	NFPP
G	
w R	Ruijie(config)# **nfpp** Ruijie(config-nfpp)# **nd-guard enable**

ʼΩħu ҳ		
	ħu ҳ	
	nffp nd-guard enable	ҽ ሃ Ɔ ND ҵ
	show nfpp nd-guard summary	ҽ

ሃ	
ħu ҳ ˥ ሃ	

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10.4	ħu ҳ

40.7.3 nd-guard rate-limit

ѿ Â

ሃ		
	ሃ	
	ns-na	∩ Ѽ
	rs	⅄
	ra-redirect	⅄ Ѽ ∩ ⅃
	pps	ḣ ˇ ሃ ḣ ټ [1,9999] Â

	ɔ ሃ /Ѽ 15 ɔ ˇ ⅄ 15 ɔ ˇ ⅄ Ѽ / ⅃ 15 ɔ Â
ħu ҳ	NFPP
G	

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
```

ΐΩħυ ϗ

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nfpp nd-guard policy	Ո
show nfpp nd-guard summary	ə

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10.4	ħυ ϗ

40.7.4 nfpp nd-guard enable

ħυ ϗ æ ϰ Ɔ ND ╖ Â

nfpp nd-guard enable

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ϰ ND ΐΩ ő ΐΩ Â

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G ϰ ND ΐΩ ΅Ι ɣ ő ΐΩ Â

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```
Ruijie(config)# interface G0/1
Ruijie(config-if)# nfpp nd-guard enable
```

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nd-guard enable	ő ND ╖
show nfpp nd-guard summary	ə

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	10.4	ЂU ҂

40.7.5 nfpp nd-guard policy

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nfpp nd-guard policy per-port {**ns-na** | **rs** | **ra-redirect**} *rate-limit-pps attack-thresh old-pps*

˄	
ns-na	Ո ‘Ω˜
rs	˩

nd-guard attack-threshold	ѿ
nd-guard rate-limit	ѿ
show nfpp nd-guard summary	ҽ

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40.8 NFPP

40.8.1 clear nfpp log

NFPP ă ʊ Â

clear nfpp log

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40.8.2 log-buffer entries

NFPP ă ʁ Â

log-buffer entries *number*

ϥ		
ϥ	*number*	ă ʁ ˘ ´ Æ ˘ ˪ ḣ تن [0,1024]
	ă ʁ ѝ 256 Â	
ħυ ϗ	NFPP	
G		
ʁ R	NFPP ă ʁ ѝ 50 Â Ruijie(config)# **nfpp** Ruijie(config-nfpp)# **log-buffer entries** *50*	

ħυ ϗ		
ΩħυϗϞ	**log-buffer logs** number_of_message **interval** length_in_seconds	NFPP ÿ ă ʁ ˪ Â
	show nfpp log	NFPP ă ʁ
˪		

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	10.4	ħυ ϗ

40.8.3 log-buffer logs

NFPP ÿ ă ʁ ˪ Â

log-buffer logs *number_of_message* **interval** *length_in_seconds*

ϥ	ϥ	
	number_of_message	تن ѝ 0-1024 0 ѽ جھ ă ʁ˘ a Â

ă ш ˘ ʌ x ˘ ɻ ﺝ ă ш è У

ѝ ”-” Â ˜ ╗ ă ш Â

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Protocol ЛъЮ ↓ ḣ'

- Â ARP ARP ~
- Â IP IP ~
- Â ICMP ICMP ~
- Â DHCP DHCP ~
- Â DHCPv6 DHCPv6 ~
- Â NS-NA ND è Ո Ω ~
- Â RS ND è Ы ~
- Â RA-REDIRECT ND è Ы Ω Ո ˩ ~

Reason Ы ϡ 5 ↓ ḣ'

- Â DoS ˥ Ь
- Â ISOLATED ˚ ╖ ѕѕ
- Â ISOLATE_FAILED
- Â SCAN ˥
- Â PORT_ATTACKED ∧

Ъυ ϛ	

interface-id	۸ ۱
ip-address	IP فخ سم

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

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```
Ruijie# show nfpp arp-guard scan statistics
ARP scan table has 4 record(s).
```

' ľ ARP Ώ 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 23ǂ 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)
```

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arp-guard scan-threshold	ώ
nfpp arp-guard scan-threshold	
clear nfpp arp-guard scan	ARP

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40.9.3 show nfpp arp-guard summary

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show nfpp arp-guard summary

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```
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 ћ˜ ˘ Attack-threshold ђ Â ї - Ѣ Â

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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	
nfpp arp-guard policy	Ո
nfpp arp-guard scan-threshold	

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40.10 DHCP

40.10 -1 show nfpp dhcp-guard hosts

↓ ў Â

show nfpp dhcp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

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statistics	↓ ў ə
vid	ﻫ /١
interface-id	٩ ↓
mac-address	MAC ﻓﺦ ﺳﻫ

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Ruijie# **show nfpp dhcp-guard hosts statistics**

success fail total

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

100 20 120

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ˆ ↓ ج ¨ a ˇ ˚ a ~ Â

W R

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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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40.10.2 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
```

w R

ˆ 1˜ Interface и Global ŏ Â

ˆ 2˜ Status ĭ ℸ Â

ˆ 3˜ Rate-limit й IP فخ سم / MAC فخ سم / ٨ ḣ˜ ˘ Attack-threshold ɔ Â ľ - Ŀ Â

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dhcp-guard attack-threshold	ŏ
dhcp-guard enable	ŏ DHCP ℸ
dhcp-guard isolate-period	ŏ

dhcp-guard monitor-per0.01it

dhcp-guard rate-limit	ώ
nfpp dhcp-guard enable	ֆ ٨ Э DHCP ٦
nfpp dhcp-guard isolate-period	
nfpp dhcp-guard policy	Ո

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40.11 DHCPv6

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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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40.11.2 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.˜
```

w R

```
Global      Enable  300             -/5/150     -/10/300
Gi 0/1       Enable  180             -/6/-       -/8/-
Gi 0/2       Disable 200             -/5/30      -/10/50
```

٩	
statistics	٧ ў ə٫
vid	ѕѕ ٨
interface-id	٩ ٧
ip-address	IP فخ سه

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Ruijie#**show nfpp icmp-guard hosts statistics**

success fail total

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

100 20 120

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w R

Ruijie# **show nfpp icmp-guard hosts**

If column 1 shows '*', it means "hardware failed to isolate host".

VLAN interface IP address remain-time(s)

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

1 Gi0/1 1.1.1.1 110

2 Gi0/2 1.1.2.1 61

Total' 2 host(s)

΄Ωħυ ϡ

ħυ ϡ	
clear nfpp icmp-guard hosts	٧ ў

٧

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40.12.2 show nfpp icmp-guard summary

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show nfpp icmp-guard summary

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	-	-

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nfpp icmp-guard isolate-period	
nfpp icmp-guard policy	

NFPP ħu ҳ

nd-guard attack-threshold	ώ
nd-guard enable	ώ ND ℸ
nd-guard rate-limit	ώ
nfpp nd-guard enable	⇜ ∧ Ǝ ND ℸ
nfpp nd-guard policy	∩

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10.4	ƀυ ɜɬ

41 ACL

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	ŭ ЊЖ
id	" ḣ ٨ Â ل تن IP ñ ACL' 1-99 1300-1999 IP ACL' 100-199 2000-2699 MAC ACL' 700–799 ж ACL' 2700–2899
name	ACL ɻ
sn	ACL ٨ (. ˝l ҥ ҏ)
start-sn	٨ ḣ
inc-sn	٨
deny	٦ ˘ ‡
permit	٦ ˘ ‡ ĭ
prot	~ ٨˘ ɣ IPv6 ل ѝ ipv6 icmp˘ tcp˘ udp ٩ ḣ 0-255 ɣ IPv4 ل Лυ eigrp˘ gre˘ ipinip˘ igmp˘ nos˘ ospf icmp˘ udp˘ €ÐÈ ÍÁb„Ôü Ð,€

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	˜ /ǀ	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 ∧ǀ	46
	G	Ctrl	20	U	TCP ∧ǀ	48
	H	Org Code	21	V	" /ǀ	50
	I					

4) Expert " ^ 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*]

Â ↑ ŭ Л∪ ص 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*]

Â ˜ 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*]

Â У ҏ ˜ 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 ┘ ىتن 1-99ᵕ 100-199ᵕ 1300-1999ᵕ 2000-2699ᵕ 2700 – 2899ᵕ 700 - 799˜ Â
Deny	٦ ˘ ‡ Â
Permit	٦ ˘ ‡ ĭ Â
Source	فخ سم ^ ў فخ سم فخ سم ˜
source-wildcard	فخ سم Â ┘ Л υ G a ˘ 0.255.0.32
protocol	IP ˜ ⁄١˘ ┘ Л υ EIGRP àGRE àIPINIP àIGMP à NOS à OSPF à ICMP à UDP à TCP à IP è У ə˘ ≠ ┘ Л υ ϛ IP ˜ 0-255 ⁄١ Â У ҽ ˜ ICMP/TCP/UDP ´ " Â
Destination	فخ سم IP ў فخ سم فخ سم ˜

destination-wildcard Ã 640D040D1445EE>6<472130F4D7168()8 re f 10.467 -0.006 Td [<18791B5B

match-all	ҁ *tcp flag* Æ
tcp-flag	tcp flag

ˑ ¦ ACL

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ѝ ѫ G ‟ ˘ ‶I ђu ҳ **access-list** ђѪУ ‟ ‟

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G

- Â dod-host-prohibited
- Â dod-net-prohibited
- Â echo
- Â echo-reply
- Â fragment-time-exceeded
- Â general-parameter-problem
- Â host-isolated
- Â host-precedence-unreachable
- Â host-redirect
- Â host-tos-redirect
- Â host-tos-unreachable
- Â host-unknown
- Â host-unreachable
- Â information-reply
- Â information-request
- Â mask-reply
- Â mask-request
- Â mobile-redirect
- Â net-redirect
- Â net-tos-redirect
- Â net-tos-unreachable
- Â net-unreachable
- Â network-unknown
- Â no-room-for-option
- Â option-missing
- Â packet-too-big
- Â parameter-problem
- Â port-unreachable
- Â precedence-unreachable
- Â protocol-unreachable
- Â redirect
- Â router-advertisement
- Â router-solicitation
- Â source-quench
- Â source-route-failed
- Â time-exceeded
- Â timestamp-reply
- Â timestamp-request

Â ttl-exceeded
Â unreachable
Ю TCP ٨ ɻ ˘ TCP ⅃ Л Ʊ G ٨ ɻ ٨ Л έ E ٨'
Â bgp
Â chargen
Â cmd
Â daytime
Â discard
Â domain
Â echo
Â exec
Â finger
Â ftp
Â ftp-data
Â gopher
Â hostname
Â ident
Â irc
Â klogin
Â kshell
Â login
Â nntp
Â pim-auto-rp
Â pop2
Â pop3
Â smtp
Â sunrpc
Â syslog
Â tacacs
Â talk
Â telnet
Â time
Â uucp
Â whois
Â www
Ю UDP ٨ ɻ ˘ UDP ⅃ Л Ʊ G ٨ ɻ ٨ Л έ E ٨'
Â biff
Â bootpc

Â bootps
Â discard
Â dnsix
Â domain
Â echo
Â isakmp
Â mobile-ip
Â nameserver
Â netbios-dgm
Â netbios-ns
Â netbios-ss
Â ntp
Â pim-auto-rp
Â rip
Â snmp
Â snmptrap
Â sunrpc
Â syslog
Â tacacs
Â talk
Â tftp
Â time
Â who
Â xdmcp

Л υ ˜ ص Ethernet-type Ю'

Â aarp
Â arp
Â appletalk
Â decnet-iv
Â diagnostic
Â etype-6000
Â etype-8042
Â lat
Â lavc-sca
Â mop-console
Â mop-dump
Â mumps
Â netbios

Â vines-echo

Â xns-idp

R 1' IP ñ " R

Ю IP ыы " ї ъзсм ф й 192.168.1.64 - 192.168.1.127 ˘ è ы

'

```
Ruijie(config)# access-list 1 permit 192.168.1.64 0.0.0.63
```

R 2' IP " R

Ю IP " ї 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 ср й 100 Лu

˘ ĵ ч 1Â '

w R

```
Ruijie(config)# access-list 702 deny host 00d0f8000c0c any aarp
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# mac access-group 702 in
```

R 4' Expert " R

Ю R ¦ … ч У Expert Extended ACL˘ ж ACL IP ъзсм ф й 192.168.12.3 з MAC ъзсм ф й 00d0.f800.0044 TCP Â

```
Ruijie(config)# access-list 2702 deny tcp host
192.168.12.3 mac 00d0.f800.0044 any any
Ruijie(config)# access-list 2702 permit any any any any
Ruijie(config)# show access-lists
expert access-list extended 2702
10 deny tcp  host  192.168.12.3 mac 00d0.f800.0044 any any
10 permit any any any any
```

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show access-lists	"

41.1.2 deny

У э э x (deny) ˚ Лυ ɣ ᾱ ч x Â

1˜ IP ñ ″

[*sn*] **deny** {*source source-wildcard* 1

[*sn*] **d**{] [(s)-

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 ҽ ˜ expert " '

Â **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*] [**fragments**] [**time-range** *time-range-name*]

Â **Transmission Control Protocol** (TCP)

[*sn*] **deny tcp** [[**VID** [*out*][**inner** *in*]]]{*source source-wildcard* | **host** *Source* | **any**} {**host** *source-mac-address* | **any** } [*operator* **port** [*port*]] {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [*operator* **port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag*]

Â **User Datagram Protocol** (UDP)

[*sn*] **deny udp** [[**VID** [*out*][**inner** *in*]]]{*source source –wildcard* | **host** *source* | **any**} {**host** *source-mac-address* | **any** } [*operator* **port** [*port*]] {*destination destination-wildcard* | **host** *destination* | **any**}{**host** *destination-mac-address* | **any**} [*operator* **port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

Â **Address Resolution Protocol** (ARP)

[*sn*] **deny arp** {**vid** *vlan-id*}[*source-mac-address source-wildcard* |**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*] **deny protocol**{*source-ipv6-prefix*/*prefix-length* | **any** | **host** *source-ipv6-address* } {*destination-ipv6-prefix / prefix-length* | **any**| *hostdestination-ipv6-address*} [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragments**] [**range** *lower upper*] [**time-range**

[[*icmp-type* [*icmp-code*]] | [*icmp-message*]] [**dscp** *dscp*] [**flow-label** *flow-label*] [**fragments**] [**time-range** *time-range-name*]

Â **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*]

Â **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*]

¶	
Sn	ACL /¶
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 ⊣ ѝ IPV6 | icmp | tcp | udp ⊣ <0-255>

¶

16 re f 29344 281.3 62.76 (16 6612 142.32 280Tf 10.02 0 0 10. 142.32 268.4603 Tm32.5

 ϒ ϰ 1Â '

```
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
```

ħυ ϗ	
show access-lists	"
ipv6 traffic-filter	֍ ϰ Э IPV6 "
ip access-group	IP ACL ϰ
mac access-group	MAC ACL ϰ
ip access-list	IP ACL ԋ
mac access-list	MAC ACL ԋ
expert access-list	ж ACL ԋ
ipv6 access-list	IPV6 ACL ԋ
permit	ñ ԋħυ ϗ

ϰ

ħυ ϗ ϒ ϲ	
V10.0	˚ V10.0 ΠυЭ˜ arp ˜Ω ֍ ˚ V10.2(3) ϟ ΠυЭ Â

41.1.3 expert access-group

У э EXPERT ACL ϱ ϰ Â ᴳ ħυ ϗ **no** ϲ Â

expert access-group {*id* | *name*} {**in** | **out**}

no expert access-group {*id* | *name*} {**in** | **out**}

ϰ	
id	Expert " Λˆ 2700-2899˜
name	Expert " ϳ

in	ώ ٨
out	ÿ ٨

٨ Expert ACL

ħυ ३ ٨

G ħu ɮ ɻ Ɲ **show expert access-lists** ħu ɮ Â

ẇ 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)#
```

ˇΩħu ɮ

ħu ɮ	
show expert access-lists	ж "

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ħu ɮ ˥ ɻ

ʎ	
V10.0	˚ V10.0 Ɲ Ɔ

41.1.5 ip access-group

ɛ E " ɣ ʎ˘ ʎ ħu ɮ **ip access-group** Â ħu ɮ no ɻ " Ո ʎ ˇΩ Â

ip access-group {*id* | *name*} {**in** | **out**}

no ip access-group { *id* | *name*} {**in** | **out**}

ʎ

ʎ	
id	IP " ʎˆ 1-199˜ 1300-2699˜
name	IP " ɻ
in	ώ ʎ
out	ÿ ʎ

ʎ ACL

ħu ҳ	ʌ
G	G **ip access-group** ħu ҳ " ¥ ʌ˘ . ů Â
w R	Ю R جہ fastEthernet0/0 Э " 120 ώ ' Ruijie(config)# **interface fastEthernet** *0/0* Ruijie(config-if)#**ip access-group** *120* **in**

ħu ҳ 4190 1.64 re141.6 342. Tf154 55.02 ef362.16 706

ᵂ ᴿ

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
```

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ħu ϧ	
show ip access-lists	IP "

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ħu ϧ ˥ ᶩ

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V10.0	˚ V10.0 ᾉ Э

41.1.7 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*}

ᾀ

ᾀ	
Id	ACL ᾀ
name	ACL ᾉ
start-sn	ᾀ ḣ
inc-sn	ᾀ

start-sn' 10

inc-sn' 10

ħu ϧ ŏ

G ħu ϡ ˩ Л **show access-lists** ħu ϡ Â

ACL '

```
Ruijie# show access-lists
ip access-list standard 1
10 permit host 192.168.4.12
20 deny any any
Ruijie# config
Ruijie(config)# ip access-list resequence 1 21 43
Ruijie(config)# exit
Ruijie# show access-lists
ip access-list standard 1
21 permit host 192.168.4.12
64 deny any any
```

w R

ˇΩħu ϡ

ħu ϡ	
show access-lists	"

ħu ϡ ʎ

G ACL ¥ ʎ Ɜˇ ¥ ʎ ώ ⁸ ÂG **show ipv6 traffic-filter** ħu ϡ

w R

ЮR ¦ access-list v6-acl ¥ Gigabit ʎ 1 Ɜ'

```
Ruijie(config)# interface GigaEthernet 0/1
Ruijie(config-if)# ipv6 traffic-filter v6-acl in
```

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ħu ϡ	
show access-group	ʎ Ɜ ACL Â

ϡ

ħu ϡ ϒ ϡ

ʃ	
V10.0	˚ V10.0 ЛυЭ

41.1.9 ipv6 access-list

ħu ϡ … IPV6 ACLˇ ώ Â G ħu ϡ **no** ϯ ACL

ipv6 access-list *name*

no ipv6 access-list *name*

ʎ

ʎ	
name	ACL ϡ

ħu ϡ ώ

G ħu ϡ ϡЛυ **show access-lists** ħu ϡ 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

ЎΩЂu ҙ	Ђu ҙ	
	show ipv6 access-lists	IPV6 "

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Ђu ҙ ٦ ∢	∕	
	V10.0	˚ V10.0 Л Э

41.1.10 MAC access-group

У э MAC ACL ⁞ ∢ Â G Ђu ҙ **no** ∢ Â

mac access-group {*id* | *name*}{**in** | **out**}

no mac access-group {*id* | *name*} {**in** | **out**}

∢	∢	
	id	MAC " ∕^ 700-799˜
	name	MAC " ∤
	in	ώ ∢
	out	ÿ ∢

ħυ ϩ ϒ ϳ	/\	
	V10.0	˚ V10.0 ЛЬ Э

41.1.11 MAC access-list

ħυ ϩ … MAC ACL

ħυ ҳ ϒ ⊿	Λ	
	V10.0	˚ V10.0 Л Э

41.1.13 permit

У э э ĭ (**permit**) ˚ Л ų ą ā ч x Â

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 " '

Â **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*]

Â **Transmission Control Protocol** (TCP)

[*sn*] **permit tcp** {*source source-wildcard* | **host** *Source* | **any**} [*operator* **port** [*port*]] {*destination destination-wildcard* | **host** *destination* | **any**}[*operator* **port** [*port*]] [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*] [**match-all** *tcp-flag*]

Â **User Datagram Protocol** (UDP)

[*sn*] **permit udp** {*source source -wildcard*|**host** *source* |**any**} [*operator* **port** [*port*]] {*destination destination-wildcard* |**host** *destination* | **any**} [**operator port** [*port*]]

a host o ild

ˆ ΰ ЛU صر Ethernet-type cos

[*sn*] **permit** {*ethernet-type*| **cos** [*out*] [**inner** *in*]} [**VID** [*out*][**inner** *in*]] {*source source-wildcard* | **host** *source* | **any**} {**host** *source-mac-address* | **any** } {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [**time-range** *time-range-name*]

˜ Protocol

[*sn*] **permit protocol** [**VID** [*out]***[inner** *in*]] {*source source-wildcard* | **host** *Source* | **any**} {**host** *source-mac-address* | **any** } {*destination destination-wildcard* | **host** *destination* | **any**} {**host** *destination-mac-address* | **any**} [**precedence** *precedence*] [**tos** *tos*] [**fragments**] [**range** *lower upper*] [**time-range** *time-range-name*]

У ҏ ˜ Expert " '

 Â **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*]

 Â **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*]

 Â **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*]

 Â **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 " '

Â **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*]

Â **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*]

Â **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*]

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	ЛЪЮ ĵ ٩ deny	-

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ħu ҷ ACL Ю

G ج ACL Ю ACL ĭ ˇ

ш R

R 1' Ю R ¡ … ٩ У Expert Extended ACLˇ ж ACL ĭ IP فذ سم й 192.168.4.12 з MAC فذ سم й 001300498272 TCP Â

```
Ruijie(config)# expert access-list extended exp-acl
Ruijie(config-exp-nacl)# permit tcp host 192.168.4.12 host 0013.0049.8272 any any
Ruijie(config-exp-nacl)# deny any any any any
Ruijie(config-exp-nacl)# show access-lists
expert access-list extended exp-acl
10 permit tcp host 192.168.4.12 host 0013.0049.8272 any any
20 deny any any any any
Ruijie(config-exp-nacl)#
```

R 2' Ю IP ACL G Rˇ ñ IP й 192.168.4.12 ў k TCP

ᴎ ѝ 100 ᴸ˘ ˥ ᴎ 1Â

```
Ruijie(config)# ip access-list extended 102
Ruijie(config-ext-nacl)# permit tcp host 192.168.4.12 eq 100 any
Ruijie(config-ext-nacl)# show access-lists
ip access-list extended 102
10 permit tcp host 192.168.4.12 eq 100 any
Ruijie(config-ext-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# ip access-group 102 in
```

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# ipv6 traffic-filter v6-acl in
```

ħυ ϡ	
show access-lists	"
ipv6 traffic-filter	₰ ∧ Э IPV6 "
ip access-group	IP ACL ∧
mac access-group	MAC ACL ∧
ip access-list	IP ACL ⊮
mac access-list	MAC ACL ⊮
expert access-list	ж ACL ⊮
ipv6 access-list	IPV6 ACL ⊮
deny	⊮ ACL

∧

/∧	
V10.0	ˇ V10.0 ЛЭˇ arp ˇΩ ₰ ˇ V10.2(3) ∧ЛЭ Â

41.2

41.2.1 show access-group

∧ Э ACL

show access-group [**interface** <*interface*>]

∧	
<*interface*>	∧

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G ∧ Э ACLˇ a ώ ∧ Э 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.
```

ˇΩħu ɂ

ħu ɂ	
ip access-group	ip " ㅐ
mac access-group	MAC " ㅐ
expert access-group	Expert " ㅐ
ipv6 traffic-filter	IPV6 " ㅐ

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V10.0	˚ V10.0 ɅЪЭ

41.2.2 show access-lists

ACL ɻ ACL

show access-lists [*id* | *name*]

ɳ

ɳ	
id	" ɻ
name	" ɻ

ħu ɂ

G acl˘ *id* *name˘* ‡ ACL

w 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
ip access-list extended 101
mac access-list extended mac-acl
expert access-list extended exp-acl
ipv6 access-list extended v6-acl
```

ŽΩħu ३

[redacted]	[redacted]
ip access-list	IP ACL Ħ Â
mac access-list	MAC ACL Ħ
expert access-list	Expert ACL Ħ
ipv6 access-list	IPv6 ACL Ħ

ل

[redacted]

w R

```
Ruijie# show expert access-group interface gigabitethernet 0/2
expert access-group ee in
Applied On interface GigabitEthernet 0/2.
```

ʷΩħu ϡ

ħu ϡ	
expert access-list	Expert ACL ⊮

ϥ

ħu ϡ ˥ ϥ

ϥ	
V10.0	V10.0 ΠЪ Э

41.2.4 show ip access-group

ϥ IP ACL

show ip access-group[**interface** <*interface*>]

	V10.0	˚ V10.0 Л Э

41.2.5 show ipv6 traffic-filter

ʌ IPV6 "

show ipv6 traffic-filter [**interface** <*interface*>]

ʌ	ʌ	
	<*interface*>	ʌ

ħu ɂ	
G	ʌ ˇΩ IPv6 ACLˇ ʌˇ ‡ ʌ IPv6 ACL

w R	Ruijie# **show ipv6 traffic-filter interface gigabitethernet** *0/4* ipv6 traffic-filter v6 in Applied On interface GigabitEthernet 0/4.

ˇΩħu ɂ	ħu ɂ	
	ipv6 access-list	IPV6 ص ACL ₦

ʎ

ħu ɂ ˥ ʎ	ʎ	
	V10.0	˚ V10.0 Л Э

41.2.6 show mac access-group

ʌ MAC "

show mac access-group[**interface** <*interface*>]

ʌ	ʌ	
	<*interface*>	ʌ

˜Ωħυ ϡ	ħυ ϡ	
	show secu-acl	ώ

ϡ

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	V10.2	˚ V10.2 ΛυЭ

41.3.2 security global access-group

ώ ώ

security global access-group {*id*|*name*}

no security global access-group

ϡ	ϡ	
	id	ACL id
	name	ACL ϡ

ħυ ϡ ώ

G ώ ώ

w R `Ruijie(config)#`**`security global access-group`** *`1`*

˜Ωħυ ϡ	ħυ ϡ	
	show secu-acl	ώ

ϡ

ħυ ϡ ϒ ϡ	ϡ	
	V10.2	˚ V10.2 ΛυЭ

41.3.3 security uplink enable

ʌ ώ R ʌ

security uplink enable

no security uplink enable

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-	-

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G ώ R ʌ

w R Ruijie(config-if)#**security uplink enable**

ђu ҙ	
show secu-acl	ώ

ɯ R

```
Ruijie(config-if)#show secu-acl
Ports     Type      access-group
---------- ---------- ------------
Fa0/4     security   50
Global    security   60
Fa0/6     uplink     --
```

ʹΩħu ɂ

ħu ɂ	
security global access-group	ŏ ŏ ⊮
security access-group	ʌ ŏ ⊮
security uplink enable	ŏ R ʌ

ʃ

ħu ɂ ˥ ʃ

ʃ	
V10.2	˚ V10.2 ɅЪ Э

42 QOS

42.1

ѫ QoS ڗ ɱ˘ Ո QoS ˷Ω ЛЬЮ ű ą '

Â У э ᛋ ˷Ω 1 э policy-map

Â У э policy-map ᒉ Лυ э class-map

Â У э class-map ˷Ω 1 э ACL˘ ACL ACE έ ᒉ ѫ
,

Â У э ᛋ Э˷Ω ACE э ÿ “ ѽ ACL” ⁸ Â

ą ЮЎ QoS ╖ ˷Ω Ậ ᒉ Âл æ У э Policy Map ˷Ω ∫ У э ᛋ Э˘ ¢ ᛋ ą˙ ˘ ᛋ QoS ╖ . Â ˷Ω ᛋ QoS ╖ ˘ ā ᛋ Policy Map ˘ ᛋ ą˙ й Off . ᒉ Â ЛЬЮ й QOS '

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

&	S29	"	a	DRR Weight Range Â

42.2

42.2.1 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
```

ħυ ३	

	show mls qos queueing	-

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ħu ३ ˥ ʎ	ʎ	
	-	-

42.2.3 interface rate-limit

ʌ 8

rate-limit {**input** | **output**}

	-	-

42.2.4 mls qos cos

ʌ CoS ḣ

mls qos cos *default-cos*

no mls qos cos

ʌ	

dscp	↓ ḣ ت ŋ ң ҏ a ↓ a ↓
no	ḣ

ħυ ϗ ŏ

G

w R Ruijie(config)# **mls qo map cos-dscp** *8 10 16 18 24 26 32 34*

ħυ ϗ	
show mls qos maps	dscp-cos maps,dscp-cos maps Ո ip-prec-dscp maps

↓

/\	
-	-

42.2.6 mls qos map dscp-cos

ӫ DSCP ḣ ĵ CoS ḣ

mls qos map dscp-cos *dscp-list* to *cos*

no mls qos map dscp-cos

^|	
dscp-list	↓ ḣ ت ŋ ң ҏ a ↓ a ↓
cos	↓ ḣ ت 0˙ 7
no	ḣ

ħυ ϗ ŏ

w R Ruijie(config)# **0s1q6 1aEtp2c0s**

42.2.8 mls qos scheduler

"

mls qos scheduler [**sp** | **wrr** | **drr**]

no mls qos scheduler

٨		
٨	**sp**	˝l
	wrr	
	drr	
	no	ḣ

ὴ wrr

ħυ ҳ ὥ

G

w R Ruijie(config)# **mls qos scheduler sp**

˝ΩħυҳҳΩħυ ҳ	ħυ ҳ	
	show mls qos scheduler	-

٨

ħυ ҳ ˥ ٨	/\	
	-	-

42.2.9 mls qos trust

٨ Qos ạ̇

mls qos trust [**cos** | **dscp** | *ip-precedence*]

no mls qos trust

٨	٨	
	cos	٨ Qos ạ̇ ὴ CoS

policy-map-name

"

[no] **priority-queue**

ϟ	
priority-queue	" ϳ SP (S2900 ")
no priority-queue	" ϳ WRR

" ϳ WRR

ħυ ϛ ώ

G

w R Ruijie(config)# **no priority-queue**

ΩħυϛΩ	ħυ ϛ	
	show mls qos queueing	-

ϡ

ħυ ϛ ϡ	ϟ	
	-	-

42.2.12 priority-queue cos-map

" Ω CoS ḣ

QAcenf7ĕ8@ce.&8eV1aDu5Ce@P18DaUOC3aDu5f8DaVA566YPaf;TPCeCF@P18DaUOC7aD

G

w R Ruijie(config)# **priority-queue cos-map** *1 0 1*

ʕΩħu ɂ

ħu ɂ	
show mls qos queueing	-

ɻ a ɻ " ɳ a ɻˇ

ħu ɂ ˥ ɻ

ɻ	
-	-

42.2.13 service-policy

policy map ˩ ɳ Ɛ

service-policy {**input** | **output**} *policy-map-name*

no service-policy {**input** | **output**}

ɳ

ɳ	
policy-map-name	… policymap ɻ
no	policy map ح ɳ Ɛ

ħu ɂ ɳ

G

w R
```
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# service-policy input po
```

ʕΩħu ɂ

ħu ɂ	
show mls qos interface	-

ɻ S2900 " ɳ input

ƫυ ҳ ˥ ˩	/ǀ	
	-	-

42.3

42.3.1 show class-map

class map E ϙ

show class-map [*class-name*]

˥	˥	
	class-name	class map ˩

class map

ƫυ ҳ

G

w R Ruijie# **show class-map**

˝Ωƫυ ҳ	ƫυ ҳ	
	-	-

˩ S2900 "

ƫυ ҳ ˥ ˩	/ǀ	
	-	-

42.3.2 show policy-map

QoS policy map E [è class class-name] ϙ

show policy-map [*policy-name* [**class** *class-name*]]

˥	˥	
	policy-name	policy name ˩

	class-name	class map ɹ

policy name

ħu ɂ

G

w R Ruijie# **show policy-map**

ʔΩħu ɂ	ħu ɂ	
	-	-

ʌ

ħu ɂ ˥ ʌ	ʌ	
	-	-

42.3.3 show mls qos interface

ʌ QoS ə

show mls qos interface *interface-id* [**policers**]

ʌ	ʌ	
	interface-id	ʌ
	policers	ʌ ʔΩ police

ʌ QOS ə

ħu ɂ

G

w R Ruijie# **show mls qos interface fastEthernet** *0/1*

ʔΩħu ɂ	ħu ɂ	

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ꓤ

ꓤ꓄ ꓶ ꓤ	ꓤ	
	-	-

42.3.4 show mls qos maps

dscp-cos maps,dscp-cos maps ꓵ꓾ ip-prec-dscp maps

show mls qos maps [**cos-dscp** | **dscp-cos** | **ip-prec-dscp**]

	ꓤ	
		cos-dscp maps
		dscp-cos maps
		ip-prec-dscp maps

[redacted]

naps ꓵ꓾ ip-prec-dscp maps

[redacted]

ꓦ ᴿ Ruijie# **show mls qos maps**

[redacted]

show mls qos queueing

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-	-

ƅu ३

G

w R Ruijie#

˝Ωħυ ϡ	ħυ ϡ	
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ħυ ϡ ˥ ⊀	⊀	
	-	-

42.3.7 show mls qos scheduler

⊀ ˝ ˥ "

show mls qos scheduler

⊀	⊀	
	-	-

ħυ ϡ

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w R	Ruijie# **show mls qos scheduler**

˝Ωħυ ϡ	ħυ ϡ	
	-	-

⊀	-

ħυ ϡ ˥ ⊀	⊀	
	-	-

43 Voice VLAN

43.1

43.1.1 voice vlan

ώ G Voice VLAN˘ У э VLAN ѝ Voice VLAN Â ⅃ Л G ħu ҳ **no** ˇΩ Voice VLAN ╖ Â

voice vlan *vlan-id*

no voice vlan

٩	
vlan-id	Voice VLAN ID Â

ˇΩ Â

ħu ҳ

G Voice VLAN Remot /C2_ê 1 Ťſ ŧ ڭc 0 ŝ-AT-WC2Ě-5036ñ-f-0.00Tbd

show voice vlan	Voice VLAN ә ц б ґn Â 43-2

43.1.3 voice vlan cos

ѽ Voice VLAN CoS ḣ Â ⅃ Ѣ ᴳ ħυ ҳ **no** ⅉ ḣ Â

voice vlan cos *cos-value*

no voice vlan cos

٩	٩	
	cos-value	Voice VLAN CoS ḣ Â

	cos-value ٩ ḣ ӣ 6 Â
ħυ ҳ	ѽ

G g

dscp-value	Voice VLAN DSCP ћ Â

dscp-value ৲ ћ и 46 Â

ћu ҙ ѽ

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
```

ћu ҙ	
show voice vlan	Voice VLAN ə б ɱ Â

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 ﻩ ˘ ∧
╗ ώ Voice VLAN˝ ɖ Voice VLAN ╖ Â
2˜ ∧ ɔ ɣ ╟ ˘ ὴ ɖ ╖ ˘ a
∧ native VLAN ὴ Voice VLAN Â
3˜ ң ҕ Trunk Port/Hybrid Port ┘Л· VLAN ˘
˝I Voice VLAN ÿ ∧ VLAN ┘ " è ˘ Ą Voice
VLAN ╖ ˘ Л υ ɖ ∧ a ¸ ╗ ώ Voice VLAN˝
a G ∧ У ﻩ

G	ŏ Ѓ ˛ MAC ﻓﺨ ﺳﻢ ˘ MAC ﻓﺨ ﺳﻢ ﻝ ⋮ Voice VLAN OUI ﻓﺨ ﺳﻢ ˘ ï ﺟ Voice VLAN ą· ˘ ĭ ‡ x Â
~	a ﺟ Voice VLAN è ﻝ · Ո н ┺ Â ˘ Voice VLAN ŏ ˝Ω Â
&	ŏ Ю˘ Θ untagged ┤ Voice VLAN tag MAC ﻓﺨ ﺳﻢ ˘ ų è Voice VLAN tag ˘ VLAN ‡ ┤ Ո x ˘ a ﻝ Voice VLAN ŏ/ : Â

w R

R 1' Voice VLAN ŏ Â

```
Ruijie(config)# voice vlan security enable
```

˝Ωhu ϟ

hu ϟ	
show voice vlan	Voice VLAN ą б ɱ́ Â

Ѓ

ħυ ३

G ħυ ३˘ ˩ Voice VLAN ə б ɱ ˘ ↑ G Voice VLAN ╖ ˥ ɔ Â

ɯ R

```
R 1'          ɱ  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  //  ѿ     ĭ
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    ˥ б
PORT                    MODE
--------------------------------------------------
Fa0/1                   Auto
```

ʹΩħυ ३

ħυ ३	
voice vlan *vlan-id*	ѿ G Voice VLAN˘ У э VLAN ɲ 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 ˥ Voice VLAN ╖ Â
voice vlan mode auto	˥ Voice VLAN ɔ Â
voice vlan security enable	Voice VLAN ѿ Â

˩

ħυ ३ ˥ ˩

˩	
10.4	ħυ ३

43.2.2 show voice vlan oui

ɱ OUI ﻓﺨﺴﻢ à OUI ﻓﺨﺴﻢ Ո ə Â

show voice vlan oui

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ƫu ҳ

G ƫu ҳ˘ ⊿ ⅿ

44

44.1

44.1.1 rgos-security compatible

ϙ ƠĬ Ꮋ ѽ ╖ ӣ RGOS ò ΈΩ ˘ ƫ ɤ **rgos-security compatible** ò ΈΩ ' RGOS ò ΈΩ ˘ G no ƫ ɤ '

rgos-security compatible

no rgos-security compatible

٩	

	ƠĬ Ꮋ ѽ ╖ ӣ RGOS ò ΈΩ
ƫ ɤ	ѽ
G	~ g ò ΈΩ ƫ ɤ ʖ ʃ˘ ů Ꮋ G
w R	R 1' ѽ ╖ ӣ RGOS ò ΈΩ ' Ruijie(config)#**no gos-security compatible**

ΈΩƫ ɤ	

45 RLDP

45.1

45.1.1 rldp detect-interval

G ћu ҳ RLDP ҷ ۷ Э ۷ Â

rldp detect-interval *interval*

no rldp detect-interval

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۷	
interval	˘ ۷ ḣ تن ѝ 2-15

3 Â

ћu ҳ ŏ Â

G ҷ ŭ ҁ stp Ю˘ ¦ ۸ ˆ ұ stp Â

ѡ R Ю У э ѝ 5s R :

```
Ruijie(config)# rldp detect-interval 5
```

˜Ωћu ҳ

ћu ҳ	
rldp detect-max	

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ћu ҳ ٦ ۸

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-	-

45.1.2 rldp detect-max

G ћu ҳ RLDP ҷ ۷ Э ۷ ˘ э ˘

۷ Ў ˸ ˘ ‡ ѝ Â

rldp detect-max *num*

no rldp detect-max

ϥ	ϥ	
	num	, ϡ ḣ تن ϧ 2-10

	2
ħυ ϗ	ώ Â
G	ħυ ϗ Ո ϡ G ˘ ¥ Â
ϣ R	Ю У э ϧ 5 R ' Ruijie(config)# **rldp detect-max** *5*

ΈΩħυ ϗ	ħυ ϗ	
	rldp detect-interval	

ϡ

ħυ ϗ ϒ ϡ	ϡ	
	-	-

45.1.3 rldp enable

ħυ ϗ 8 RLDP ώ ϖ ΈΩ Â

rldp enable

no rldp enable

ϥ	ϥ	

	ΈΩ Â
ħυ ϗ	ώ Â

G ۷ ѽ RLDP ˘ ۷ RLDP Â

w R ЮR '

```
Ruijie(config)# rldp enable
```

ˇΩħu ҳ

ħu ҳ	
rldp port	۷ RLDP ╖

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ħu ҳ ˥ ۶

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-	-

45.1.4 rldp port

ħu ҳ ۷ rldp ˘ ۶ صر Ո Â

rldp port {**unidirection-detect | bidirection-detect | loop-detect** } {**warning | shutdown-svi | shutdown-port | block**}

no rldp port { **unidirection-detect | bidirection-detect | loop-detect** }

۷

۷	
unidirection-detect	´ ۶ صر
bidirection-detect	۷ ۶ صر
loop-detect	صر
warning	ˆ
shutdown-svi	shutdown ۷ جھ svi
shutdown-port	shutdown ۷
block	ˇΩ ۷ ˜ ۷

ḣ Â

ħu ҳ ۷ Â

G ۷ ѽ RLDP ąЮ˘ ۷ RLDP ɔ Â

w R ЮR جھ fas 0/1 Э ɷ rldp ˘ صر ѝ ˘ ѝ ˇΩ

ʎ ˉ ˩ Â

```
Ruijie(config)# interface fas 0/1
Ruijie(config-if)# rldp port loop-detect block
```

ʺΩħυ ϗ

ħυ ϗ	
rldp enable	ώ rldp ħυ ϗ

ϡ

ħυ ϗ ˥ ϡ

ʃ	
-	-

45.1.5 rldp reset

ħυ ϗ G **rldp shutdown** **disable** ʎ ώ rldp Â

rldp reset

ʎ

ʎ	
-	-

ħυ ϗ Â

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w R ΗΟ R ħυ ϗ G '

```
Ruijie# rldp reset
```

ʺΩħυ ϗ

ħυ ϗ	
rldp enable	Rldp ώ ħυ ϗ

45.2

45.2.1 show rldp

rldp ५ ə Â

show rldp [**interface** *interface-id*]

५

५	
Interface-id	५

ħu ३ EXEC

G

w R

ʹΩħu ३

ħu ३	
-	-

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ħu ३ ٦ ५

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-	-

45.2.2 debug rldp

rldp ٤ ʹΩ Â ħu ३ no ʹΩ ʹΩ Â

debug rldp [**packet | event | error**]

undebug rldp [**packet | event | error**]

५

५	
packet	٤ rldp ə Â
event	५ ٤ ע ə Â
error	è ٤ ə Â

ħυ ३ EXEC

G

w R

ΩħυΩ ३

ħυ ३	
-	-

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ħυ ३ ग

ग	
-	-

46 TPP

46.1

46.1.1 topology guard

æ ŏ ђu ҳ ЮЎ G topology guard ђu ҳ ŭ ℸ ŏ ʹΩ Â G ђu ҳ no ℸ Â

[**no**] **topology guard**

ч	
-	-

	ℸ ѝ
ђu ҳ	ŏ ђu ҳ
G	ℸ ˘ ↓Л ɖ ˘ Л ȯ ҷ ↓ Â б ђu ҳ **cpu topology-limit** ʌ G Â
w R	Ю R ¦ ŭ Ґʹ Ω ŏ ℸ ' Ruijie(config)# **topology guard** Ruijie(config)# **no topology guard**

ʹΩђu ҳ	**ђu ҳ**	
	tp-guard port enable	G ч ℸ Â
	cpu topology-limit	CPU ¯ Â

ʌ

ђu ҳ ˥ ↓	ʌ	
	-	-

46.1.2 tp-guard port enable

G ʎ ╖ ˘ G ƫu ȝ no ʎ ╖ Â

[**no**] **tp-guard port enable**

ʎ	

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ħu ३

G

ħu ३ ¥ ɱ tpp ⁻ ᴺ ɑ Â

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ⱷ ᴿ ! ℸ ə ˈ

Ruijie# **show tpp**

ʗΩħu ३

ħu ३	
topology guard	ᴳ ώ ℸ

ᴊ

ħu ३ ˥ ᴊ

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47

47.1

47.1.1 cd

˚ ɱή Â

cd [*filesystem:*][*directory*]

٩		
٩	*filesystem*	˚ Â ٩ Ľ' Ŀ
	directory	

ɱή æ æ flash Ю

Ъυ ҳ

G

cd Ъυ ҳ ɹ ɱή ˚ ɱή Â ˚ è ы Ъυ ҳ è˘ G ˆ . a
Ли Ľ / Ŀ ~ ˘ ‡ ɹ ¥ ɱή Â ɱή ˘ G pwd Ъυ ҳ Â

w R

R 1' ɱή и usb0
```
Ruijie# cd usb0:/
```
R 2' ɱή и sd´
```
Ruijie# cd sd0:/
```

ЪΩЪυ ҳ

Ъυ ҳ	
pwd	ɱή ˚

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Ъυ ҳ ٦ ٨

/١	

47.1.2 copy

ÿ ĺ ˙ ˚ Â

copy *source-url destination-url*

٩		
٩	*source-url*	˚ URL Â ˚ Э· Ю ╟ ɔ˘ э ѫ ғ ⊣ Л υ ѫ Â
	destination-url	˚ URL Â ˚ Э· Ю ╟ ɔ˘ э ѫ ғ ⊣ Л υ ѫ Â

Ъυ ҳ

G copy Ъυ ҳ ⊣ Л υ ѫ ⊿ ÿ Ў ⫝̸ Л υ ⊣ Ո ⊨ Ы ⫝̸ ˚ . Â

˚ URL ⫙ '

⫙	
flash:	flash ÿ Ў Â э ⫙ ⫝ Э ⊣ Л υ G Â URL a G ⫙ Ą˘ flash Â ŭ ╟ ў ⫝ flash Э Â
tftp:	TFTP ⊨ Ы
xmodem:	G xmodem ˜ ⊿ ⊣ ˚
slave:	è ÿ Э flash
usb0:	У э usb
usb1:	ү э usb
sd0:	У э sd ´

G

~	ɔ a .
&	URL ⫙ ‡ ⫙ ˚

w R R 1' ÿ tftp ⊨ Ы Э Ю ˚

Ruijie#**copy** *tftp://192.168.201.54/rgos.bin flash:/*

R 2' Э· ˚ ∫ 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' ˚ ∫ U

Ruijie#**copy** *flash:/config.text usb0:/config.text*

R 5' ˚ ∫ ÿ

*Ruijie#**copy** flash:/config.text slave:/config.text*

R 6' ˚ ÿ flash ∫ sd ´

*Ruijie#**copy** flash:/rgos.bin sd0:/rgos.bin*

R 7' ˚ ÿ U ∫ 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
```

ˇΩЪυ ҳ

Ъυ ҳ	
copy	˚
dir	ɱ Э ˚ ´

ᴊ

Ю ҳ

G ώ Ю ˙ ə ˘ ٧ Ю ˙ ə Â

~ ɔ a .

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.
```

w R

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.
```

ΩЮ ҳ

Ю ҳ	
pwd	ɱ

47.1.5 mkdir

…

mkdir *directory*

٩	
directory	… ﻝ

Ъυ ҳ

G	ώ … ﻝ . ﻝ (↑ ə) Â
	… ˚ ﻉ ˘ ‡ … Â … Э У
	a ﻉ ˘ ‡ … Â ˘ …
~	flash:/backup/temp ˘ ת flash:/backup a ﻉ ˘ ‡ …
	Â ã ″I … flash:/bakcup ˘ ﻝ ″Ą…
	flash:/backup/temp

ᴡ R	ᴿ 1' ﻉ ЮΟ… test '
	Ruijie# **mkdir** *test*
	ᴿ 2' ﻉ sd ´ ЮΟ… test2
	*Ruijie# **mkdir** sd0:/test2*

″ΩЪυ ҳ	Ъυ ҳ	
	rmdir	″
	pwd	ɱ˚

ﻝ

Ъυ ҳ ٦ ﻝ	ﻝ	

47.1.6 rename

╟ ˚ ɻ ˚

rename *url1 url2*

٩	

47.1.7 rmdir

ȷ Â

rmdir *directory*

٩	
directory	ȷ ɻ, ѝ

Ъυ ҳ

G a ɔ, ȷ ѝ Â

w R ɱѝ Ю У э tmp ˘ з è ˚ Â
Ruijie# **rmdir** *tmp*

Ъυ ҳ	

ЎЪυ ҳ

mkdir

৭

G

˚ ə Ъυ ҳ˘ ⊿Л υ ⋓ ⋔ Э ˚ ˘ Л υ ⊣ ⊖
˚ Э ⊿ ϙ Â

w R

R 1' ˚ ə

Ruijie#**show file systems**

ˇΩЪυ ҳ

Ъυ ҳ	

⊿

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48

48.1 CPU

48.1.1 cpu-log

CPU ¯ ą ㄱ , ㄱ Ո G **cpu-log** Â

cpu-*log* *log-limit low_num high_num*

˜Ωhυ ϡ	hυ ϡ	
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⊿	

hυ ϡ ˥ ⊿	⊿	
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48.1.2 show cpu

CPU ¯ ə ˇ hυ ϡ **show cpu** Â

show cpu

⊰	⊰	
	-	-

hυ ϡ	Â

G	G hυ ϡ ⊿ Λυ CPU ¯ ϙˇ ↑ 5 ϙ à 1† ϙ à 5 † ϙ CPU ¯ ˇ Λυ ⊰ ə˙ Ł† ⋮ ج 5 ϙ à 1† ϙ à 5 † ϙ CPU ¯ ə Â

Ю R **show cpu** У э Â

```
Ruijie# show cpu
=====================================
    CPU Using Rate Information
CPU utilization in five seconds: 25%
CPU utilization in one minute  : 20%
CPU utilization in five minutes: 10%
  NO   5Sec   1Min   5Min   Process
  0     0%     0%     0%    LISR INT
  1     7%     2%     1%    HISR INT
  2     0%     0%     0%    ktimer
  3     0%     0%     0%    atimer
  4     0%     0%     0%    printk_task
```

w R

```
 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
4t_daemon
4t_daemon
4t_dvmp_snp   17     0%  39     0%
```

```
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
```

ᵴ Э " ' 3 ⎪ ⁞ ü ᵴ ‘Ð è 1⎪ è 5⎪ ą

CPU ¯ ‘O ↑ ШISR à HISR Ո ' ñ ' é €PU ¯ ‘O ⎪

ą è ' У " ü Ⱨ₹˜H

5Sec	ü ' Ł ‘Ω 5 è CPU ¯
1Min	ü ' Ł ‘Ω 1⎪ è CPU ¯
5Min	ü ' Ł ‘Ω 5⎪ è CPU ¯

hu ʒ " m 2 ,X Ş

ѝ bgp Â

ɣ ŭ ˜ ˘ ѝ˙ ˝l ˜ ˘ a ╠ ϊ̈

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&	ɷ ΘΘ У Э ɖ ϊ̈ a н Ŀ˘ ϊ̈ У ˘ ˜ ɱ Â ˜ ʌ˳ ѫ ч† ʓ ʌ ŭ ╟ Â

ð R Ô

R 1' ЛЬЮ w R ɷ ѝ BGP ѝ˙ ˝l ˜ Â

```
Ruijie(config)# memory-lack exit-policy bgp
```

ð ˝ΩЬυ ϛ Ô

Ьυ ϛ	
show memory	ϊ̈ ą

ð ʌ Ô

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ð Ьυ ϛ ˥ ʌ Ô

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10.3(4b3)	Ьυ ϛ

48.2.2 show memory

ɱ ϊ̈ G ɑ ą ˘ Ьυ ϛ **show memory** Â

show memory

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	-	-
Ьυ ϛ	Â	
G	G Ьυ ϛ ˩ Л ɱ ϊ̈ Ո ϊ̈ G ɑ˘ ↑ ϊ̈ ˘ Л ˥ ɱ à ϊ̈ ˝Ω ą Â	

w R	Ю R **show memory** У э Â
	`Ruijie#show memory`
	`System Memory Statistic:`	

```
Free pages: 1079
  watermarks : min 379, lower 758, low 1137, high 1516
System Total Memory : 128MB, Current Free Memory : 5283KB
Used Rate : 96%
```

Э " è ą ↑ ŭ Ю ú э ĭ '

1. ↓ ą э ˘ У э ą й 4k ą Â

2. ą ḣ˘ Ю й ∧ ą Ћ'

min	ą a ˘ Ө ą ˘ ĵ ˘ Э a ↓ Â
lower	ą ш a ˘ ĵ ˘ У э Э ~ ╟ ˘ ą Â ~ ⁸ ↰ **memory-lack exit-policy** ћ ę Â
low	ą a ˘ ĵ ˘ Э ~ ώ OVERFLOW ˘ Ю˘ a Ą ˉ Â ą a ˘ ⁸ ∧ a ĭ ћ ę Â
high	ą ĭ ˘ Л Э˘ ą ĭ ˘ ∧ ~ ÿ OVERFLOW

49

49.1

49.1.1 threshold set

ѓ Ъ' ѕ k 3 ' ї ё й CPU ¯ ђ ў ¯
ђ Â ц CPU ¯ Ґ ў ¯ ' ў ц k MIB ѕ' ѫ
CPU Ґ ў ' syslog Â

ѕ **no** У Ъ Â

threshold set {cpu | memory } [M1 | M2 | slot *n* | **member** *n***]** *warning_value critical_value*

no threshold set {cpu | memory }

ѓ	
cpu | memory	' **cpu** й CPU ¯ ' **memory** й ў ¯
M1 | M2 | slot *n*	Æ' ' Э ' *n* й ´ ѓ
member *n*	' ѓ ' ' Э ' *n* й ѓ ' ѓ
warning_value	У ' ' **cpu** Ґ **memory** ' 1 ~ 100 й
critical_value	ц ' ш ' ' ' Â**cpu** Ґ **memory** ' 1 ~ 100 й
no	У Ъ

й Ъ Â
CPU ¯ У й 90 ц й 100.
ў ¯ У й 90 ц й 100.

Ъ ъ ѡ Â

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ʀ 1' M1 ϙ ¯ Â

```
Ruijie(config)# threshold set memory M1 70 90
```

ʍ ʀ

ʀ 2' ﺞﺠ ٧ γ ٨ ˜ CPU ¯ Â

```
Ruijie(config)# threshold set cpu member 2 70 90
```

ħυ ϗ	

```
Ruijie# show threshold cpu M1

R 2'      ىتى ۸1          ˜    ۋ   –       Â
Ruijie# show threshold memory
```

ΩЪυ ҳ

50

50.1

50.1.1 clear logging

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clear logging

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Ħυ ϡ

G Ħυ ϡ ٧ ą ă ш è ą Â a ą Â

ш R ЮО R ą ă ш è ą Â

```
Ruijie# clear logging
```

Ħυ ϡ	
logging on	ˇΩ
show logging	ă ш è
logging buffered	ą ↑ ą ă ш

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more flash:filename

۷	
Filename '	˚ ɻ

Ъυ ҳ

G æ FLASH è ˚ ˚ ɻ ɱ ”//f2/˜ ”//f3/’ ˚ Â Ъυ ҳ ۷ ї
˚ ˘ a ї G Ъυ ҳ ۷ è ы ˚ Â

	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 ϗ ѽ

ᷟ ă ѡ G ˘ ᷟ ѡ ᷠ ˘ ‡ ą Â ᷟ ă ѡ ą ˘ G ħυ ϗ **show logging Â**

ᷟ ă ѡ è ą ï ˘ ů ħυ ϗ clear logging˘

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50.1.4 logging console

ϊ ѫ ⁸ ⊿ Э ą ⁞˘ ѫ ѽ Ю Ъυ ϗ Â Ъυ ϗ no ѫ ⁸ ⊿ Э . Â

logging console *level*

no logging console

⁄⁄		
⁄⁄	*level*	ш ˘ ت ÿ 0⁞ 7 Â ⊿ Л υ G ⁞ ⊿ ˘ ≠ ⊿ Л υ G Â ℨ Ω ¥ ą ш ˘ ⁄⁄ 1 Â

	Debugging (7)
Ъυ ϗ	ѽ
G	У э ш Л υ ⊿ ˘ ѫ ḣ Э ¥ æ ¥ ш ⁞ ѫ ⁸ ⊿ Э Â **show logging** Ъυ ϗ ⊿ Л υ ℨ Ω ⁄⁄ Ո Â
ѡ R	Ю R ϊ ѫ ⁸ ⊿ ą ⁞ и б′ Ruijie(config)# **logging console informational**

ℨ Ω Ъυ ϗ	Ъυ ϗ	
	logging on	ℨ Ω
	show logging	ă ѱ è ˘ Л υ ⊣ ℨ Ω ⁄⁄

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Ъυ ϗ ϒ ⊿	⁄⁄	
	-	-

50.1.5 logging count

ℸ ˘ ѯ ѽ ЊO Ћυ ϗ Â ʹΩ
ℸ ˘ G Ћυ ϗ no Â

logging count

no logging count

ϰ	
-	-

	ʹΩ
Ћυ ϗ	ѽ
G	Ћυ ϗ ℸ Âÿ Ћυ ϗ Â **no logging count** Ћυ ϗ ˘ ℸ ʹΩ ˘ ϶ Â
ѡ R	ℸ '

```
Ruijie(config)# logging count
```

Ћυ ϗ	
show logging count	è ϰ ϟ ϑ ϡ
show logging	ϟ ϣ ϑ ϡ б ă ѱ è ϑ ϡ

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facility-type	Syslog ḣ˘ ɛ E ḣ ٩ G ´ Â

Local7(23)

ЋU ҳ ѿ

ЮO ˆ 2˜ Syslog ٬ 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 ѝ (local7) 23 Â
ѡ R	Ю Syslog ħ ѝ kerneľ `Ruijie(config)#` **`logging facility kern`**

˝Ωħυ ҳ	ħυ ҳ	
	logging console	ї ҷ 8 ⅄ Э ą ⁞

⅄

ħυ ҳ ˥ ⅄	⅄	
	-	-

50.1.7 logging file flash

ą ɖ ҷ FLASH è˘ ҷ ѿ Ю ħυ ҳ Â ⅄ ҷ FLASH è ą ˘ G ħυ ҳ no Â

logging file flash:filename [*max-file-size*] [*level*]

no logging file

⅋	⅋	
	Filename	˚ ⅃ Â a ˚ ѕр˘ ш ѝ txt ѕр Â
	max-file-size	˚ ħ Â ÿ 128K↑ 6M bytes˘ ѝ 128K Â
	level	ї ↑ ˚ è ą ⁞ Â ⅃ Л∪ G ⁞ ⅃ ˘ ≠ ⅃ Л∪ G Â ⫯↑ FLASH è ⁞ ѝ 6Â˜Ω ¥ ą ⁞˘ ⅋ 1 Â

	a ą ↑ FLASH è Â
ħυ ҳ	ѿ
G	Syslog Serveř ѫ ¥ ⅄ ѿ a ҷ è· ą ˘ ⅃ Л∪ ą ɖ ҷ FLASH è Â ˚ ⅄ ѝ ш ѝ txť ˚ ⅄ ⅃ Â

~	ə ţ FLASH˝ ˄ FLASH˝ FLASH˝ logging file flash ╟ ˘ a ĭ Â

w R

Ю R ї VTY Ӏ Э . ә ⋮ й б

```
Ruijie(config)# logging monitor informational
```

ħυ ҳ	

logging	ә ї Syslog Server
logging file flash:	ә ј FLASH Э
logging console	ї ј ё Э ә ⁞
logging monitor	ї ј VTY (telnet) Э ә ⁞
logging trap	ї ї Syslog Server ә ⁞

Ђ ї ї

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50.1.10 logging rate-limit

ё ї ˘ ё ў ї ә ˘ ј ѓ Ю Ђ ї Â ˝ Ω ё ї ˘ G Ђ ї no Â

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

no logging rate-limit

number	ў ї ә ˘ ти й 1—10000
all	ә ё ˘ ↑ 0—7 ә ’
console	ў ї ј ё Э ә ’
except	¥ ¥ ш ⁞ ә ˘ a ё ’ ⁞ й error(3) ˘ ¥ ¥ error ⁞ ә a ё ’
severity	ә ш ⁞ ˘ ⁞ ˘ ш ˘ ти й 0—7

ц Ю a ё Â

Ђ ї ѓ

G Ђ ї ё ә Â

ϕ ї ə ^ ↑ debug˜ й 10 ˇ л warning ч ш

ш R ⁞ a ⁸'

```
Ruijie(config)#logging rate-limit all 10 except warnings
```

Ђ ҳ	
show logging count	è ѵ ж ə
show logging	ж ы ə б ă ш è ə

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R 2

ชื่อใบงาน	ใบงาน	
	logging	ตั้งค่า Syslog server

ผลการเรียนรู้	
ใบงานที่ผ่านการประเมิน	ผ่าน

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50.1.14 logging synchronous

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Ю Ђ ї Â Ї ѕ б ф ї ї ї G Ђ ї no Â

logging synchronous

no logging synchronous

ї		
	-	-

	ц Ю ї ѕ б ф ї ї Ї Â

Ђ ї

G	Ђ ї ѕ б ф ї ї ї Л ѕ ѕ Â

```
Ruijie(config)#line console 0
Ruijie(config-line)#logging synchronous
     ѕ ѕ Ђ ї ї . ї UP-DOWN ф ї ‡ ѕ 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        //     ѕ Ђ ї ї a
```

Ї Ђ ї		
	show running-config	ф

ї

Ђ ї ї ї		
	-	-

50.1.15 logging trap

ĭ ϟ Syslog Server ə ⁞˘ ѯ ѽ ЮО ħυ ϗ Â ħυ ϗ no ϟ Syslog Server Â

logging trap *level*

no logging trap

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٩		ш Â ϟ Л ᴳ ⁞ ɻ ˘ ≠ ϟ Л

level

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service sequence-numbers

no service sequence-numbers

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	ə è a /Ⅰ Â
Ъu ъ	ŏ
G	ŧ æ ə è ╗ Э ə Л ˇ ↓ Лæ ə è ╗ Э /ˇ /Ⅰ ÿ 1 Â ╗ Э /Ⅰ Л /ˇ ↓ Л ѫ ə x ˇ Л ↑ ң ″I ⁄ Â
W R	Ю R æ ə è ╗ Э /' Ruijie(config)# **service sequence-numbers**

″Ω Ъu ъ	Ъu ъ	
	logging on	″Ω
	service timestamps	ŭ ə è

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Ъu ъ ″ ↓	/Ⅰ	
	-	-

50.1.17 service sysname

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service sysname

no service sysname

↑	
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ə ̨ è a ɹ Â

Ъυ ҳ ŏ̈

G Ъυ ҳ˘ ɻ Ո ˘ ā ҷ ə ̨ è v

datetime	ɱ ˘ ' ' ǂ ' ˘ R' Jul 27 16:53:07
msec	ɱ ˘ ' :ǂ : . R' Jul 27 16:53:07.299
year	ɱ ` ˘ ' ' ǂ ' R' 2007 Jul 27 16:53:07

ə è ˘ ˙ ɱ Â RTC˝ ‡ ╟ ˙ ŭ ╟ Â

Ъu ҳ ѽ

G G Uptime ÿ Э ŭ ╟↑ ɱ ˘ ´ Æ ˙ Â G Datetime ˙ ɱ ˘ · · ' ǂ ' Â

w R Ю R ŭ Log ə Ո Debug ə ˘ ˙ 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
```

ЎΩЪu ҳ

Ъu ҳ	
logging on	ЎΩ
service sequence-numbers	ŭ ə è Л

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50.1.19 terminal monitor

Ъu ҳ ї ₰ ɱ VTY Ч Э ə Â ЎΩ ₰ ɱ VTY Ч Э ə ˘ G Ъu ҳ no Â

terminal monitor

terminal no monitor

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-	-

ąЮ ҽ VTY ٧ Э a ї ą Â

Ъυ ҳ

Ъυ ҳ ٧ ґ VTY ї Â ɔ ѝ ї ˘ a˛ ЮА ɖ Â ҽ VTY ˛ ٨˘ ї Â ⁸ ٨ Э ≠ ٦ Л υ Ъυ ҳ˘ Л a ɔ Â

w R Ю R˘ ґ VTY ٧ ї . ą Â

Ruijie# **terminal monitor**

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50.2

50.2.1 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 Л Э ә ¦ˇ Л Ч
Monitor logging	. ж VTY Л Э ә ¦ˇ Л Ч
Buffer logging	ж ё ă Ш è ә ¦ˇ Л Ч
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

ЎΩЪυ ҳ

Ъυ ҳ	
logging on	ЎΩ
clear logging	ă ш è

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50.2.2 show logging count

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show logging count

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show logging Ъυ ҳˇ ч Лυ ↑ ə¢ ℼ ї Â

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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
```

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logging count	ll ˜Ω
show logging	ə ш ˛ ˚ б ə è ш ă
clear logging	ə ш ă

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51.1.1 device-description

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device-description [**member** *member*] *description*

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	member	۷ ḣ 1-MAX, ˜ .
	description	ẏ 31, ⋮ ۶

ẏ SWITCH

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G G **show member** ə

w R ˜ 2 ⋮ ۶ ẏ red-giant

```
Ruijie(config)# device-description member 2 red-giant
```

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	show member [*member*]	member ə Â

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51.1.2 device-priority

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device-priority [*member*] **priority**

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```
Ruijie(config)# member 2
Ruijie@2(config)# exit
Ruijie(config)#
```

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51.1.4 stack

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stack {**on** | **off**} [**copper** | **fiber**]

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on	۸ ὶй جی ۱ ۸
off	۸ a ὶй جی ۱ ۸
copper	۸ ὶй جی ۱˘ ˝I ۸
fiber	۸ ὶ ˝I جی ۱˘ ˝I ۸

جی ۱ هج ὶй جی ۱ ۸ , è м ƙ a ¥ جی ۱ ۸

ħu ҳ ۸

G Ꮋ è ۸ ч э جی ۱ ۸ ۸ , ɷ э جی ۱ ۸ , ᴳ Ю Ѵ ‡ جی ۱ ۸ : هجƒ ὶй Ь :جی ۱ هج- ╟ هج-ثن هج. ˝I ᴳ ɱƒ , è ч э Лu Э جی ۱ ۸ , ‡ ۸ ID ч э جی ۱ ۸ ὶй جی ۱ ۸

ʷ ᴿ ˜ 2 gigabitEthernet 0/3 ۸ ὶй جی ۱ ۸

```
Ruijie(config)# interface gigabitEthernet 2/0/3
Ruijie(config-if)# stack on
```

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ħu ҳ	

	show stack interface	جى ١ ١ ə Â
١	S2900 " Ч ١ switch port и جى ١ ١	
ЬU ٦ ٦ ١	١	
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51.1.5 synchronize

١ ˚ ĺ جى ١ ˜

synchronize flash: *filename*

١	١	
	filename	١ ˚ ١
ЬU ٦		
G	جى ١ Ю TFTP XMODEM Ю ˚ ╟ ١ ĺ ˜ .	
W R	ώ Ո ˜ 2 Ruijie(config)# **member** *2* Ruijie@2(config)# **exit** Ruijie(config)#	
˝ΩЬU ٦	ЬU ٦	
	-	-
١		
ЬU ٦ ٦ ١	١	
	-	-

51.2

51.2.1 show member

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show member [*member*]

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member	ﻝ ﻫ 1-MAX, ﷺ .

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w R

```
Member  Mac Address      Priority    Software Ver   Hardware Ver
Description
---------   --------    ------------     ----   ------------
1  00d0.f822.3100        1   RGOS 10.1      1.0        SWITCH
2  00d3.f822.33aa        1   RGOS 10.1      1.0        SWITCH
3  00d3.f824.33ac        1   RGOS 10.1      1.0        SWITCH
4  00d3.f824.33b2        1   RGOS 10.1      1.0        SWITCH
5  00d3.f824.33b4        1   RGOS 10.1      1.0        SWITCH
6  00d3.f824.33b6        1   RGOS 10.1      1.0        SWITCH
7  00d3.f824.33b8        1   RGOS 10.1      1.0        SWITCH
8  00d0.f822.8803        8   RGOS 10.1      1.0        SWITCH
```

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51.2.2 show stack interface

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show stack interface

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```
Member  Interface Running Status  Configure Status   Status    Type
------ ----------  --------------  --------   ------    -----
    1    Gi1/0/1      active         stack on    up    copper
    1   Gi1/0/24      active         stack on    up    fiber
    2    Gi2/0/1      active         stack on    up    copper
    2   Gi2/0/24      active         stack on    up    fiber
    3    Gi3/0/1      active         stack on    up    copper
    3   Gi3/0/24      active         stack on    up    fiber
    4    Gi4/0/1      active         stack on    up    copper
    4   Gi4/0/24      active         stack on    up    fiber
    5    Gi5/0/1      active         stack on    up    copper
    5   Gi5/0/24      active         stack on    up    fiber
    6    Gi6/0/1      active         stack on    up    copper
    6   Gi6/0/24      active         stack on    up    fiber
    7    Gi7/0/1      active         stack on    up    copper
    7   Gi7/0/24      active         stack on    up    fiber
    8    Gi8/0/1      active         stack on    up    copper
    8   Gi8/0/48      active         stack on    up    fiber
```

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