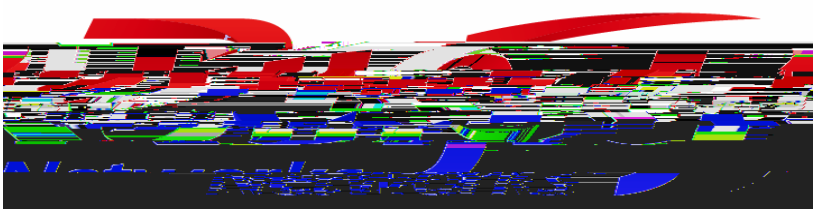

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RG-EG “ ۸ ٦Ω ڻ ث

RGOS 10.3(4T90)

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à [redacted] à
à

à
à [redacted] à RGOS® à
RGNOS® à [redacted] à
à

à 锐捷®

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3.

1 Ôf… ÚÖ¸. G!5B

1 CLI

1.1 alias

У Ф ३ ⁞ ˝ ˘ Л Лъ ف ѿ Ю G Ф ३ Â G
Ф ३

```
aaa-gs                AAA server group mode
acl                   acl configure mode
bgp                   Configure bgp Protocol
config                globle configure mode
```

Ф ३ ⁝ ‟ ╟ ə ˘ ژ ⁝ ‟ m ˚ У э ⁄ ˜ ˘ з ˚ ЛЮ ˙

*ℍn =ℍn

R ˘ ژ Ю Ф ३ ⁝ ‟ Ω Â ‡ ώ ⁄ Л Ъ
⁄ Ω ⁊ ⁝ ‟ ╟ ə ˙

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

⁝ ‟ ३ Ф ३ a У э ` ˘ ‡ ˚ G ⁄ Ф ३ ˆ Â R ˘ ژ
Ю ⁝ ‟ ३ Ф ३ **show version** ˘ ‡ ˙

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

⁝ ‟ ÿ ώ Ф ३ У э ˘ m a Â Э R ˘
ژ Ф ३ Ǯ m ώ ϖ ˘ a ˊ ⁝ ‟ ˙

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

Ф ३ ⁝ ‟ ≠ ⁄ Л Ъ ⁄ Ф ३ ⁄ ╟ ə ˘ R ⁄ Ю Ф ३ ⁝
‟ ”ia” ३ ”ip address” ˜ ‡ ژ ⁄ Ю ˙

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

“ ϖ **”ip address”** Ф ३ ł ⁄ ə ˘ з ⁝ ‟ Ф ३ Â

Ф ३ ⁝ ‟ ژ G ώ˘ ŭ ‡ a ⁝ Â

G **show aliases** Ф ३ ⁄ Л Ъ è ⁝ ‟ Â

ð w R Ô

ЛЮ R ˘ ŏ Ю˘ G Ф ३ ⁝ ‟ ३
˙

```
Ruijie# configure terminal
Ruijie(config)# aliasconfig
```

```
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   def-route   def-route   def-route   def-route   def-route   def
```

exec	
interface	৲
ip-dhcp-pool	ھ ک
keychain	
keychain-key	
time-range	

ð w R Ô

ЛЬЮ R ˘ ⁝ ৲ ३ й ˘ **reload** Ф ३ ˘ ⁄ Л Ть
Æ Â

```
Ruijie(config)# enable secret level 10 test
Ruijie(config)# privilege exec level 1 reload
```

˘ G ⁝ ώ ˘ ৷ ⁄ Л Ть G **reload** Ф ३ ˙

```
Ruijie> reload ?
<cr>
```

ŏ Ф ३ ⁝ ˘ ‡ ⁄ Л Ть G **all** Ѿ ˙

```
Ruijie(config)# privilege exec all level 1 reload
```

˘ G ⁝ ώ ˘ ৷ ⁄ Л Ть G **reload** ŏ Ф ३ ˙

```
Ruijie> reload ?
at                    reload at a specific time/date
cancel                cancel pending reload scheme
in                    reload after a time interval
<cr>
```

ð Ѿ Ф ३ Ô

Ф ३	
enable secret	⁝ ৲ ३

1.3 show aliases

Ф ३ ⁝ Ф ३ Ю Ф ३ ⁝ ˘ ⁄ Л Ть ফ Ю G
show aliases Ф ३ Â

show aliases mode

ð ৺ Ô

‘ ⁞ ३ Ф ३ Ф ३ Â

ð α Ô

ð Ф ३ Ô

ð G ’ Ô

ώ Ф ३ ˘ ‡ Ф ३ ⁞ Â

ð w R Ô

ЛЮ R ˘ Ю Ф ३ ⁞ ‘

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

ð ‘Ω Ф ३ Ô

Ф ३	
alias	Ф ३ ⁞

2

2.1

2.1.1 disable

ƒ ƟƆ æ ɱ ƒ ⁞ˇ Ƒ ३ Â

disable privilege-level

৻	
privilege-level	

Ƒ ३

G Ƒ ३ ÿ ˆ Â ╗ Ɔ ˇ ‡ ɱ

G

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disable Ƒ ३ ɨ	ɣ ɱ Â

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Ruijie# disable ⓪

W R

	ÿ ώˆ ˇ ˆ ⁞ Â

[redacted]

a ˇ ⁝ ⅄ ३ˇ ώ Ф ३ **enable password** Â Ф ३ **no** ⁇ ⁝ ⅄ ३ Â

enable password level level password **0 7** encrypted-password **no enable password**

⅄	
Password	ώ ⅄ ३ Â
Level	⁝ Â

0|7 ⅄ ३ ╗ ό e ς

a ˇ ⁝ ώ ⅄ ३ˇ ώ ₯ ३ **enable secret** Â ₯ ३ **no** ⁝ ⅄ ३ Â

enable secret **level** level secret **0 | 5** encrypted-secret

no enable secret

⅄	
Secret	ώ ⅄ ३ Â
Level	⁝ Â
0|5	⅄ ३ ╗ ˇ ╗ ˇ ώ ╗ Â

⅄

৲	
ssh-sesrver	б ̃Ω ˘ Ф ३ ̊ n ⊢’
telnet-server	б ̃Ω ˘ Ф ३ ̊ n ⊢’
web-server	б ̃Ω ˘ Ф ३ ̊ n ⊢’
snmp-agent	б ̃Ω ˘ Ф ३ ̊ n ⊢’

Ф ३ ώ

G Ф ३ ¥ б ̃Ω ⊢Â G **no enable service** Ф ३ ̃Ω ⊢Â

w R Ю R Ф ३’ ╖ ‘

Ruijie(Config˜ # enable service ssh-sesrver

̃ΩФ ३	Ф ३	
	show service	m ⊢ ’

৴

Ф ३ ৲ ৴	৴	

2.1.5 execute

˚ è Ф ३˘ Ф ३ **execute** Ф ३ Â

execute flash: filename

৲	
flash:	˚ Э
filename	˚ ˝

[illegible]

[illegible]

[illegible]

[illegible] **Telnet** [illegible]

```
configure terminal
line tty 1 16
transport input all
no exec
end
```

[illegible]

```
Ruijie# execute flash: [illegible]
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  16
Ruijie(config-line)# transport input all
Ruijie(config-line)# no exec
Ruijie(config-line)# end
```

[illegible]

[illegible]	

[illegible]

[illegible]

[illegible]	

2.1.6 ip http authentication

[illegible] **ip http authentication** [illegible]

ip http authentication enable local

৲	
enable	Ф ३ ৲ ३ ˘ ৲ ३ Â Â
local	ک Ф ३ ˝ p ৲ ३ ˘ Â

Â

Ф ३ ŏ

G Ф ३ ¥ Â G **no ip http authentication** Ф ३ ŷ ḣ Â

w R Ю R Ф ३˘ ‘ Ruijie(config)# ip http authentication local

Ф ३	
enable service	б ˇΩ ⊨ Â

৴

Ф ३ ৲ ৴	

2.1.7 ip http port

⊨ ৲˘ ڤ Ю ৴ Л G **ip http port** Ф ३˙

ip http port number

৲	
number	৲˘ ḣ ŷ Â

ḣ ŷ Â

Ф ३ ŏ

G Ɗ ३ ¥ ⊨ ⅄ ÂG **no ip http port** Ɗ ३ ⅄ ѝ ḣ Â

W R

Ф ३ ५ ⅄

⅄	
	Ф ३

2.1.9 lock

ज़ Э У э ⅄ ३˘ Ф ३ **lock** Â

lock

⅄

⅄	

Ф ३

G

æ ï ⅄ ३ ˘ ज़ ق تي ˘ ˘ в Лъ Â
ЛъЮ в ˙

У ˙ ώ **lock** Ф ३˘ ˚ ώ ⅄ ३'

Y ˙ ώ ⅄ ३˘ ⅄Лъ ˙ s Â ώ ł˘ ˚ ώ ⅄ ३˘
ł˘ ˚ ˘ l' Ł ą '

ώ ˘ ώ ï ⅄ ३ Â

ज़ Э G в ˥ ˘ æ ज़ Ю **lockable** Ф ३˘ ज़
Э в Â

Ю R й в У э ˙

W R

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

Ω Ф ३

Ф ३	
lockable	ज़ Э в Â

⅄

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2.1.11 login

ƒƒ ˜Ω ąƗƠ ƒƒ ⅄ Ɔ ` ⅄ ३ ˘ ⅄
ƑƆ ३ **login** Â ƑƆ ३ **no** ⅄ ⅄ ३ Â

login

no login

⅄	

ƑƆ ३

G
í ŏ ⊢˘ ‡ ƑƆ ३ ¥ ɔ ` ⅄ ३ Â ⅄ ३ ⅄ è ⅄ ३ Â

W R
ƗƠ R ƒƒ Ɔ ⅄ ३ Â `Ruijie(config)#` no aaa new-model `Ruijie(config)#` line vty 0 `Ruijie(config-line)#` password 0 ƒƒ `Ruijie(config-line)#` login

˜ΩƑƆ ३	
ƑƆ ३	
password	⅄ ३ Â

⅄

ƑƆ ३ ⅄ ⅄	
⅄	

2.1.12 login authentication

ƒƒ ąƗƠ ⊢ ˘ G ƑƆ ३ ˜Ω
“ Â ƑƆ ३ **no** ˥ “ Â

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₪ ३ ⌧ ą Â

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Ю R ⌧ Э ⌧ Â

```
Ruijie(config)# no aaa new-model
Ruijie(config)# username ⌧ password 0⌧
Ruijie(config)# line vty 0
Ruijie(config-line)# login local
```

₪ ३

₪ ३	
username	⌧ ą Â

⌃

₪ ३ ⌃ ⌃

⌃	

2.1.14 privilege mode

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2.1.15 password

ʎ ३˘ Ɗ ३ **password** Â Ɗ ३ **no** ī ʎ ३ Â

password password 0|7 encrypted-password

no password

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ʎ	
password	ʎ ३ Â
0|7	ʎ ३ ╗ ّشخ ╗ ˘ ` ╗ Â
encrypted-password	ʎ ३ Â

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2.1.16 service password-encryption

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ˆ ˘ ⊓ ৷ a˚ й Â

service password-encryption

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Ф ३ ŏ

G Ф ३ 8˘ Ф ३ Ζ ˘ ژ ⊥
ھ Л ˘ G ,
Ф ३ Л ł˘ ф Л ł˘ Ζ ৷ , Ą Ζ
˘ ৷ й a˚ й Â

W R Ю R ৰ ३ ╗ ‘
`Ruijie(config)#` service password-encryption

Ζ Ф ३	
enable password	a˚ ⁞ ৰ ३ Â

ৰ

Ф ३ ৲ ৰ	

2.1.17 telnet

ˆ У ৰ ╙ ئۇ˘ ف ^ ~ Ю˘ G **telnet** Ф ३
Â

telnet host port **/source ip** A.B.C.D **| ipv6** X:X:X:X::X**| interface** interface-name}
/vrf vrf-name

ৰ	
Host	╙ ئۇ ھ ک ä ھ ک ŭ ˘˘

Port	ئۇ ┣ ⅄ ⅄˘ ḣ й
/source	G ⅄
ip A.B.C.D	G هه كه
ipv6 X:X:X:X::X	G هه كه
interface interface-name	G ⅄
/vrf vrf-name	

Ф ३

G

Ф ३ ¥ ˺ У ⅄ ئۇ ┣ Â

/vrf ˜Ω ˘ Θ فخ ئۇ è ˹

/ipv6 ˜Ω ˘ Θ فخ è ˹

W R

R ‘ Ю R ˘ كه هه й ˘ ⅄ G ḣ˘

⅄ й ˘ й ’

Ruijie# telnet [redacted] /source interface [redacted]1 /vrf [redacted]

R ‘ Ю R ˘ كه هه й ’

Ruijie# telnet [redacted]

˜Ω Ф ३

Ф ३	
ip telnet source-interface	⅄ Э كه هه ɔ й كه هه’
show session	ṃ ’
exit	ṃ ’

⅄

Ф ३ ↓ ⅄

⅄	

2.1.18 username

كه ˘ ˘ ώ Ф ३ Â

username name **[web-auth]** **nopassword password** password **0|7** encrypted-password

username name **privilege** privilege-level

no username name

৲	
Name	Â
Password	৲ ३ Â
0|7	৲ ३ ╗ ╗ ╗ Â
encrypted-password	৲ ३ Â
privilege-level	Â
filename	ώ

Ф ३ ώ

G

Ф ३ ¥ ک k G Â
╗ й ‡ ώ й Â
╗ й Â У ąЮ ৲ 8 ╗
৲ ३ ╗ й Â

w R

Ю R У э ⁞ й

Ruijie(config)# username privilege password 0

Ю R web ж ⁞ ৲ ३ :

Ruijie(config)# username user1 web-auth password 0

Ω Ф ३

Ф ३	
login local	ک Â

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Ф ३ ৲ ৲

৲	

2.1.19 username import

ÿ è ώ ą Ю ЮФ ३

username import filename

৲	
filename	ώ ˘ ˝

Ƒ ३

G

Ƒ ३ ¥ ÿ ώ ą ˘ k G Â
ώ ą Θ k G

w R

Ю R ώ ą :

Ruijie#username import ◙

Ƒ ३	

Ruijie#username export ■

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ƑƐ	
web-auth	Â

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2.2.2 banner motd

ঋ ˘ ঠ ও ঔ Ю Ф ३ **banner motd**

clock set hh:mm:ss month day year

৲	
hh:mm:ss	ɱ ˘ ѝ ˆ 8 ˜ ˆ
day	ˆ ˜ ˘ У э è Â
month	` ˆ ˜ ˘ У è `
year	ʼΩ ĩ ˆ ˜ ˘ a G ŋ̃ Â

Ф ३

G Ф ३ ˘ ƒ Â
Ɣ k ˘ G Э Ѳ
˘ Ю ɨ˘ Â
ɱ˘ k ˘ ˈ ȁ ȁ ȁ Â

Ю R ɱ ѝ Э´ ˆ ˈ

```
Ruijie# clock set    10:20:30 3 17 2003
Ruijie# show clock
clock: 2003-3-17 10:20:32
```

Ф ३	
show clock	ɱ

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Ф ३ ৲ ৴	

2.2.4 clock update-calendar

˘ ѝ ɱ ˘ ḣ Â

clock update-calendar

৲	

w R	Ю R й ꜛ ‛ `Ruijie(config-line)# exec-timeout 5 30`

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2.2.6 hostname

g ў ̈ ̆ ὤ Ֆ ३ **hostname** Â

hostname name

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ˇ	
name	ў ̈ ̆ ʎ G s ä Љ ˇ Â й э Â

ў ̈ й Â

Ֆ ३ ὤ

G ў ̈ ў ɏ ⁝ Љ ˇ ʎ ɳ è ɔ й Â

w R	Ю R ў ̈ й ‛
	`Ruijie(config)# hostname`
	`BeiJingAgenda(config)#`

ᷘΩ Ֆ ३

Ֆ ३	

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Ֆ ३ Ꮙ ʌ

ʎ	

2.2.7 prompt

Ƒ ३ ˘ ƒƫ ŏ Ю Ƒ ३ **prompt** Â ৲ Ƒ ३ ˘ G **no prompt** Ƒ ३ Â

prompt string

৲

৲	
string	Ƒ ३ s˘ ৴ Ɲ ə

Ƒ ३ ŏ

G æ Ƒ ३ ˘ ‡ ̈ ṁ ẏ ˘ ̈ ৴ ◻ ৴ ◻ Â Ƒ ३ ৴ EXEC Â

W R Ю R Ƒ ३ ẏ ‘

```
Ruijie(config)# prompt
Ruijie(config)# end
RGOS
```

Ƒ Ω Ƒ ३

Ƒ ३	
-	

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Ƒ ३ ৲ ৴

৴	

2.2.8 reload

˘ Ƒ ३ **reload** Â

reload text **in** hh: mm text **at** hh:mm month day day month text **cancel**

৲

৲	
text	৲ ژ˘ ə Â
in hh: mm	ƫ ł ˘ ẏ Â

at hh:mm	ڤڂ 2
month	` ˘ ` ˘
day	˘ ÿ ˆ
cancel	٨ ,

Ф ३

G

G Ф ३ ٨ Л ڤڂ 2 ˆ ‖˘ ₤ Â

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Ю R ˆ Л ł ‘

Ruijie# reload in ⓪

Router will reload in 600 seconds.

Ω Ф ३

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-	

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Ф ३ ٧ ٨

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2.2.9 session-timeout

ḿ Э ˆ ˘ G

session-timeout Ф ३ Â **no session-timeout** Ф ३˘ ٨ Ю ˆ

˚ ˘ ˚ a Â

session-timeout minutes **output**

no session-timeout

٧	
minutes	ˆ ’
output	ŭ ≠ ɔ ŕ ώ˘ ″ ŭ ’

ŕ Â

[illegible]

G [illegible]

[illegible] Ю [illegible]

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

[illegible]

[illegible]	
-	

[illegible]

[illegible]

[illegible]	

2.2.10 speed

[illegible] Ю [illegible] **speed** speed Â
[illegible] G **no speed** [illegible] Â

speed speed

[illegible]

[illegible]	
Speed	[illegible] Â [illegible]

[illegible]

[illegible] [illegible]

G G [illegible] Â

Ю [illegible]

```
Ruijie(config)# line console 0
Ruijie(config-line)# speed [illegible]
```

[illegible]

[illegible]	

Λ

Ƒ ३ Ϟ Λ

Λ	

2.2.11 write

ˆ ˜ ɖ ˺ Æ Â

write memory network terminal

Ϟ

Ϟ	
memory	ŋ̃ ώ ˘ ˅ ¥ **copy running-config startup-config** Â
network	ɖ ˺ ᴸ ئو Ɔ˘ ˅ ¥ **copy running-config tftp** Â
terminal	˘ ˅ ¥ **show running-config** Â

Ƒ ३

G

Ƒ ३ ३ Ƒ ३˘ ɲ ¥ è G n Λ˘ Лъ ŋ ɖ Ю ɾ G Â

ƒ G **boot config** Ф ३ í ╟ ˅ Э˘ **write memory** Ф ३ ε E й Ю

G **boot config** Ф ३ í ╟ ˅ ˅ ˅ ‡ ɖ ʃ ą è ľ Ł ˅ è Â

G **boot config** Ф ३ ɑ í ╟ ˅ ˅ ˅ з ˅ ƒ˘ ‡ ɖ ʃ ˅ è Â

G **boot config** Ф ३ ɑ í ╟ ˅ ˅ ˅ ɲ ˅ a ƒ˘ ‡˙

˅ ƒ˘ ╟… ˅ ŋ ώ ,

˅ a ƒ ʌ ą й˙ í ╟ ˅ ƒ . ǯ ʌ ╟ ẏ Э˘ ƒ

write memory Ф ३ ╗ ˜ ˅ ‡ ŭ ɱ ɖ ¥ í ╟ ˅ ľ Ł è˘ ني ɔ Â

R ˙ ЛЬЮ ı ƒ a **boot config** Ф ३ Э ɖ ˙

```
Ruijie# write
Building configuration...
[OK]
```

R ˙ ЛЬЮ ƒ **boot config** Ф ३ Э í ╟ ˅ й Э ˅ ǯ ł˘ ƒ ɱ ł **write** Ф ३ a˘ й˙

```
Ruijie(config)# boot config [redacted]
Ruijie# write
Building configuration...
Write to boot config file: [usb1:config.text]
[OK]
Ruijie# usb remove 1
0:1:1:38 Ruijie: USB-5-USB_DISK_REMOVED: USB Device <USB Mass Storage Device> Removed!
Ruijie# write
Building configuration...
Write to boot config file: [usb1:config.text]
[Failed]
The device [usb1] does not exist, write to the default config file [flash:config.text]? [no] yes
Write to the default config file: [flash:config.text]
[OK]
```

w R

ƒ Ω Ф ३	Ф ३	

boot config	[illegible]
copy	[illegible]
show running-config	

[illegible]

[illegible]

[illegible]	

2.3

2.3.1 show clock

[illegible] **show clock** [illegible]

show clock

[illegible]

[illegible]	

[illegible]

[illegible]

[illegible] [illegible]

[illegible] **show clock** [illegible]

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

[illegible]

[illegible]	
clock set	

[illegible]

[illegible]	

2.3.2 show line

[illegible] **show line** Â

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

[illegible]	
console	[illegible]
aux	[illegible]
vty	[illegible]
line-num	

[illegible]

[illegible]

[illegible] [illegible] Â

```
[illegible]
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
```

[illegible]	

	-

/١

ƒ a **boot config** Ƒ ३ Ɔ˘ ɖ ¥ ą̈ è
˘ l' Ł è Â
ƒ G

```
Networks.
System start time      : 2011-09-14 11:54:47
System uptime         : 5:4:43:28
System hardware version : 1.00
System software version : RGOS 10.3(4T90), Release(123368)
System BOOT version    : 10.3.122172(Master), 0.0.0(Slave)
```

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3

3.1

3.1.1 cd

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cd DIRECTORY

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DIRECTORY ˙

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ð ɢ ˘ Ô

Э ৻ ѝ ώ ˘ ὲ ὲ Э У ˘ ˘ ὲ

cp sour SOURCE_FILE **dest** DESTINE_FILE DIRECTORY

ð ৺ Ô

DESTINE_FILE˙ ˆ У э ˅

DIRECTORY˙ 8ˆ ˅

SOURCE_FILE ˙ 8 ˅ ˝ ˆ

ð ą Ô

ḣ Â

ð Ƒ ३ Ô

Â

ð G ˅ Ô

˅ ˆ ˅ è˘ ˅ ƶ˘ ‡ ɔ
ą Â

ƶ G ˘ ɱ **cp** Ƒ ३ a n 8 Â

ð w R Ô

ЛЬЮ R ɱ ˆ Э У

Ruijie# cp sour ƀ dest ../ƀ

ð ˇΩƑ ३ Ô

3.1.3 ls

ɱ Ю ˅ ą Â

ls PATHNAME

ð ৺ Ô

PATHNAME˙ Λ ৺ ˘ ˘ ą ѝ ɱ Ю ą

ð ą Ô

Λ˅ ɱ ɔ Ю ą Â

ð Ƒ ३ Ô

Â

ð G ˃ Ô

ώ Ю ˅ ə ˘ ⊀

Ю ˅ ə Â

ɔ ˅ a

ð w R Ô

m Ю ˅ ə

```
Ruijie# ls
```

Ю ˅ ə

```
Ruijie# ls m
```

ð Ƒ Ω Ƒ ३ Ô

Ƒ Ω Ƒ ३

3.1.4 makefs

Ю w R ˈ G ˅ ˘ ˅
ˈ

Ruijie# makefs dev /dh /1fs ß

ð ‘Ω Ƒ ३ Ô

‘Ω Ƒ ३

3.1.5 mkdir

…

mkdir DIRECTORY

ð ৲ Ô

DIRECTORY ˈ …

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Â

ð G ˅ Ô

ώ … ˅ ˅ Λ ˆ ৲ Â

Э ফ a ফ ৲ ˘ … ˅ Â

ð w R Ô

ফ Ю… ˈ

Ruijie# mkdir ৳

ð ‘Ω Ƒ ३ Ô

3.1.6 mv

‖ ˅ ↑ ৲ У ৩ ˅

mv sour SOURCE_FILE **dest** DESTINE_FILE DIRECTORY

mv dest DESTINE_FILE DIRECTORY **sour** SOURCE_FILE

ð ৲ Ô

SOURCE_FILE ʿ ╟ ̈

DESTINE_FILE/DIRECTORY ʿ ᾽ ̈

ǒ ą Ô

ḣ Â

ǒ ₷ ҙ Ô

Â

ǒ G ̉ Ô

₷ ҙ Э ώ Ⴗ ̆ شخ ̈ ᾇ ᾽ ῆ Â
فخ G ɛ ʿ ȁ ῼ ώ **type** ꞑ **file** ȁ ╠ G ̆ فخ
a ώ ӣ ӂ Ⴗ ̆ Л Љ ώ ₷ ҙ ə Љ ώ ₷ ҙ Â

ǒ w R Ô

Ю R ╠ Э У ̈ ӣ ̈ ̈ ̈ ‡
Ⴗ ̈ ̈ ̈ ʿ

Ruijie# mv sour ▒ dest ..▒

Ю R ╠ Ю

Ruijie# mv dest ▒ sour ▒

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3.1.7 pwd

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pwd

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ð w R Ô

Ю R ɱ ɔ ə Â

Ruijie# pwd

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ˇΩƑ ३

3.1.8 rm

ˉ ˅ Â

rm FILE

ð ৺ Ô

FILE˙ ˉ ˅ ˍ ˆ ŭ ə

ð ɑ Ô

ḣ Â

ð Ƒ ३ Ô

Â

ð G ˅ Ô

a ɔ

3.1.9 rmdir

ī Â

rmdir DIRECTORY

ð ৺ Ô

DIRECTORY ´ ī ¨ ѝ

ð ą Ô

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ð Ƒ ३ Ô

Â

ð ᴳ ˅ Ô

a ɔ ī ѝ Â ɣ Ƒ ३ ĩ ثر ᴳ **rm** Ƒ ३
˅ ʌ Ɲ ī ɔ Â

ð w ᴿ Ô

ṃ Ю У э ˘ з è ˅ Â

```
Ruijie# rmdir ṃ
Ruijie# ls
```

ð ᾖ Ω Ƒ ३ Ô

ᾖ Ω Ƒ ३

4

4.1

Ȳ ƒ ў Ю Ƒ ३ ` Â

~ ` ' **copy xmodem** Ƒ ३

~ ` ' **copy tftp** Ƒ ३

4.1.1 copy xmodem

~ ` Ƒ ३˘ ~ Э· ŋ Ю
Â

copy flash filename **xmodem**

copy xmodem flash filename

a

˞ ˟ è ˘ ˞ ˟ ╗ Э ˊ˄˘ R '

ð ˄ Ô

filename' Э ˞ ˟

ð ɣ Ô

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ð Ƒ ३ Ô

ð G ˞ Ô

╗ ˘ ‡ ˞ Â ŭ ‡˘ ą Â ~
˄ Лъ ˞ ! ˞ ˘ ў ˞ à ˄ ˞ Â ˄ ^ s
˄ ˜ Â

Ю w ɛ э R У э ÿ ў ~ ˞ ↑ ' Y э
Э ˞ ~ Э ↑ ў Â

ð w R Ô

Ю Э· ŋ Ю R

```
Ruijie# copy xmodem flash : ß
Ruijie# copy flash : ß xmodem
```

ð ‘Ω Ƒ ३ Ô

‘Ω Ƒ ३

4.1.2 copy tftp

~ ` Ƒ ३˘ ~ Э· ŋ Ю Â

copy flash: filename **tftp** ocation filename

copy tftp ocation filename **flash:** filename

copy flash: filename **tftp** ocation filename **vrf**

copy tftp ocation filename **flash:** filename **vrf**

5 HTTP

5.1

5.1.1 http check-version

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http check-version

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W R

```
R 1' HTTP` '
Ruijie#http check-version
files need to be updated: bin, web, config, character-db, normal.
bin:
support identification of 31 kinds of popular games.
```

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	Ð ३

5.1.2 http update

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http update web route-db config character-db normal url-db feedback

৲	
web	˅
route-db	ھ ک
config	˅
character-db	
normal	˅
url-db	˅
feedback	৲ ع ‡ ˅

Ƀ ३

G Ƀ ३ شخ ˅ ` Â` ╗ ɨ ˘ ˅ ╟ Â

w R

R ‘ ╟` ˅ n ‘

```
Ruijie#http update web character-db
updating files, please wait...
update success!
```

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	-	

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		Ƀ ३
		╗ Ƀ ३

5.1.3 http update mode

` й ╟` à ╟` n ╟ Â

http update mode auto-update manual auto-detect

৲	
auto-update	╟`
manual	╟`
auto-detect	╟

	ąЮ̈ ѝ ╟` Â
Ф ३	Â

Ф ३ ` Â ╟ ॰ ফ ` ˘ ` ⊥ ئؤ Э
` ॰ ˘ ফ` ╖ ł ˘ ╟

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Ƀ ३

G

Ƀ ३ ` ╞ ھ ک ئۇ n ⅄ ⅄ Â ` ˘ ˙ ˝I Ƀ ३
╞ ھ ک ئۇ ˘ a Ɔ˘ ‡˚ ɜ ک ╞ ھ ک ئۇ ˘ ˺ ˺
⅄ ╞ ئۇ Â ╞ ئۇ ˘ ‡ ` Â

W R

R ‘ ` ╞ ھ ک ئۇ n ⅄ ⅄‘

Ruijie#config

Ruijie(config)#http update server port θ

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	Ƀ ३

5.1.5 http update set oob

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no http update set oob

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W R

R ‘ ÿ ⅄` ‘

Ruijie#config

Ruijie(config)#http update set oob

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		Ф ३

5.1.6 http update time

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http update time daily hh:mm

५	५	
	hh:mm	`

	α Ю` й

Ф ३

G	Ф ३ ‖` Â ४ й э Â

W R	R ‘ ‖` ‘ Ruijie#config Ruijie(config)#http update time daily 2 // ‖` й 23:40

Ω Ф ३	Ф ३	
	-	

Ф ३ ५ ४	४	
		Ф ३

5.1.7 feedback enable

í ५ ॥ Â

feedback enable

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ą Ю ৸ ╗ ̃Ω

Ф ३

G Ф ३ ́ ৸ ╗ Â

R ‘ ́ ╗ ‘

w R

```
Ruijie#config
Ruijie(config)# feedback enable
```

R ‘ ̃Ω ╗ ‘

```
Ruijie#config
Ruijie(config)#no feedback enable
```

̃ΩФ ३	Ф ३	
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		Ф ३

5.1.8 feedback update

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feedback update

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Ф ३

G Ф ३ ́ ৸ ╗ Â

w R R ‘ ╟ ৸ ą ‘

Ruijie# feedback update

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6

6.1

6.1.1 bandwidth

ফ ৲ Ю G **bandwidth** ৶ ৩ ৲ ৲ ˘ G ৶ ৩ **no**
৲ ḣ Â

bandwidth kilobits

no bandwidth

ð ৲ Ô

kilobits ˙ ˘ Л ѝ ` Æ

ð ৶ ৩ Ô

৲

ð Ô

৲ è **bandwidth** ৶ ৩ ৲ ˘ ফ Ю **show**
interfaces ৶ ৩ è ḣ

ð G ˚ Ô

bandwidth ৶ ৩ a ط э ৲ ˘ ৴ ৳ ৲
˘ У ˘ Л ৲ يز ˘ ৴ Л α Â
৴ э ৲ ˘ a ط ৲ Â

ð w R Ô

ЛЮ R ৲ ৲ ˙

Ruijie(config-if)# bandwidth 64

6.1.2 carrier-delay

ফ ৲ Ю G ৶ ৩ **carrier-delay** ফ ৲ ˘ G ৶ ৩ **no**
تي ḣ Â

carrier-delay seconds

no carrier-delay

ð ⊀ Ô

seconds ʿ ⊿ ⊀ ˘ Лъ ѝ ` Æ˘ ىز ˙

ð Ô

ḣ

ð Ƀ ϟ Ô

⊿

ð ᴳ ˚ Ô

⊀ ⊿ ϡ ⊿ ϡ ˘
ڤ ǯ ϟ ⊀ ⊿ ◻˘ ж ⊿ ◻ a ɣ Э
˜ ى Â

è ˘ ж ⊀ ḣ ˘ ⊿ Лъ ╗
˘ Лъ ₽ ⊿ Лъ Â è ˘ з ɣ
˘ ж ⊀ ˘ Лъ ȯ Â

ð w ᴿ Ô

ЛъЮ ᴿ ⊿ ѝ ʿ

```
Ruijie(config)# interface gigabitethernet 0
Ruijie(coinfig)# carrier-delay 5
```

6.1.3 clear counters

ڤ Ю ᴳ Ƀ ϟ **clear counters** ⊿ ḣ Â

clear counters interface-type slot-number/interface-numbe

ð ⊀ Ô

interface-type ʿ ⊿ ڭ ᴿ ʿ Â

Slot-number/interface-number ʿ ⊿ ڭ ⊿ ⊿ ⊿ Â

ð Ƀ ϟ Ô

ð ᴳ ˚ Ô

⊿ Э ϡ ⊿ ◻ a ϡ ⊿ ◻˘ ˘ ѝ ϡ ȯ Лъ ϡ
ϡ ˘ ⊿ ϡ ˘ ṃ ϡ ⊿ Лъ ϡ ⊿ ṃ ⊿
ą Â a ⊿˘ ‡ ⊿ ئۇ Â

ð w ᴿ Ô

Ռ ৰ ḣ˘ Ю ঊ ২ʿ

Ruijie# clear counters gigabitethernet 0

ঠ ঊ ঊ ২ Ô

ঊ ২	G
show interfaces	ৰ ঋ Ռ ৷

6.1.4 description

ফ ৰ Ю G **description** ঊ ২ ৰ ˘ G ঊ ২ **no** ˥ ৰ Â

description string

no description

ঠ ৷ Ô

string ʿ ৰ s

ঠ Ô

ৰ

ঠ ঊ ২ Ô

ৰ

ঠ G ʾ Ô

G **show interfaces** ঊ ২ ৰ ঋ ˘ ৷ Ռ ˥ ৰ Â

ঠ w R Ô

Ruijie(config)# interface gigabitethernet 0
Ruijie(config-if)# description GBIC-1

ঠ ঊ ঊ ২ Ô

ঊ ২	
show interfaces	ৰ ঋ Ռ ৷

6.1.5 duplex

ڤ ৲ Ю ᴳ ৶ ৩ ৲ ৲ Â ᴳ ৶ ৩ **no**
й ḣ

duplex auto full half

no duplex

ð ৲ Ô

auto ώ ৲ ṇ ´ ৲ Â
full ώ ৲ Â
half ´ ৲ *Â*

ð Ô

ώ ৲ ṇ ´ ৲ Â

ð ৶ ৩ Ô

৲

ð ᴳ ᵊ Ô

৲ ৲ б ৲ ڤ ᾶΩ Â ৲ ᴛ ᴳ **show interfaces** ৶ ৩ ৲ ৲
Â

ð w ᴿ Ô

`Ruijie(config-if)#` duplex full

ð ᾶΩ৶ ৩ Ô

৶ ৩	

show interfaces A60091E09A013B37BD60 Tc 0 Tw160.223 7.706 Td[<C12C2F0F197909B6<

ৰ

ð Ô

Лъ ৰ й̀

ð G ʼ Ô

У э ñ ˜ ˘ ϒ ফ , ǐ ϒ ŋ Ь
ǯ ц Â

Л ফ Лъ ৰ ৰ Э Â

ð w R Ô

Ю R ফ ৰ Э ˘ VLANID й ʻ

```
Ruijie(config)# interface GigabitEthernet 0
Ruijie(config-subif)# encapsulation dot1Q 0
```

6.1.7 interface

ফ ŏ Ю G **interface** Ф ৩ ώ ৰ Â

interface type slot-number/interface-number

ð ৰ Ô

type ʻ ৰ ϟ ḿ à à à
à à ৰ Â

Slot-number/port-number ʻ ৰ ৰ˘ ৰ ৰ ৰ ˘ ৰ ৰ ফ
৷ э Э̂ ў Э ৰ ৰ й̀ ˜ ˘ ৰ ৰ ৰ ফ э Э ৰ Â

sub-interface-number ʻ ৰ ৰ Â

ð Ф ৩ Ô

ŏ

ð G ʼ Ô

ৰ̂ à ˜ ˘ a Ф
৩ Â G **show interfaces** Ф ৩ ৰ

ð w R Ô

ώ ʼ ˮI Лъ ৰʻ

```
Ruijie(config)# interface gigabitEthernet 0
Ruijie(config-if)#
```

ώ ৰ˙

```
Ruijie(config)# interface gigabitEthernet 0
Ruijie(config-subif)#
```

ώ Ъ ”I ৰ˙

```
Ruijie(config)# interface tenGigabitEthernet 0
Ruijie(config-if)#
```

ð ‘Ω Ъ ३ Ô

Ъ ३	
show interfaces	ৰ ą Лъ ৷

6.1.8 ip address

ঠ্ৰ ৰ Ю G **ip** Ъ ३ ৩ ৰ ক ম˘ G Ъ ३ **no** ī ৰ ক ম Â

ip address ip-address sub-mask **secondary**

no ip address ip-address sub-mask **secondary**

ð ৰ Ô

ip-address ˙ ~ ţ ক ম Â

sub-mask ˙ ক ম Â

secondary ˙ ৰ ক ম Â

ð Ъ ३ Ô

ৰ

ð Ô

ৰ ক ম

ð G ˙ Ô

a G ~ ˘ ŭ ‡ У ৩ ৰ a ৰ˘ ক ম Â G **ip address** ƒ è è Â

ঠ্ৰ ক ম ˘ ˘ ক ম ‡˘ ņ è ৰ a ঠ্ৰ˘ У ৩ ˘ ņ˘ У ৩ ম è ў Ь a ˘ У ৩ ক ম˘ ŭ ‡ Â

˚ У э ৲ ৲ ৶˚ э ৯ ৯˘ з а Θ Θ ৲ ч э˘ ৲ ৶
secondary ৲ Â

ð w R Ô

৶Ю R ফ ৶ ৲ Э ৯ ৯˙

```
Ruijie(config)# interface GigabitEthernet 0/0
Ruijie(config-line)# ip address 192.168.12.1 255.255.255.0
```

ð ‘Ω ৶ ৩ Ô

‘Ω ৶ ৩	G
ip unnumbered	B̲ è ৲ ৯ ৯

6.1.9 ip unnumbered

ফ ৲ Ю G **ip unnumbered** ৶ ৩ B̲ è ৲ ৯ ৯ ৶ ৩˘ G
৶ ৩ **no** ৲ Â

ip unnumbered type interface-number

no ip unnumbered

ð ৲ Ô

type ˙ ৲ شخ Â

Interface-number ˙ ৲ شخ è ৲ ৲ Â

ð ৶ ৩ Ô

৲

ð G ɢ Ω

ȍ w ᴿ Ô

ফ Л Ъ ৰ Э ˘ Ъ ३ ৰ Л Л Ъ ˘ ৷ ˘
Л Ъ ৰ Л ţ Э ھ ک ھ ŭ Â

Ъ ३ ৷ ˘ У G ˘ 8 '

ৰ ţ Л Ъ ৰ Л Â

Л Ъ ৰ Л Э G ک ھ Â

৷ ک ھ ھ ک ھ ک ৰ Л a ফ ˘ У Э Ą˘
ফ ৰ Л Э Â

ð w R Ô

ফ Л Ъ ৰ Л Э Л Ъ ৰ Л ╟ ╖

```
Ruijie# config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# interface GigabitEthernet 0
Ruijie(config-if)# keepalive 5 ping 8
Ruijie(config-if)# end
```

ফ Л Ъ ৰ Л Э Л Ъ ৰ Л ╟ ╖

```
Ruijie# config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# interface GigabitEthernet 0
Ruijie(config-if)# keepalive 0 dns 8
Ruijie(config-if)# end
```

6.1.11 load-interval

ফ ৰ Ю G **load-interval** Ъ ३ У Э ৰ ˘ G
Ъ ३ **no** Â

load-interval seconds

no load-interval

ð ৷ Ô

seconds ' ˘ ৷ ḣ ئز ˺

ð Ъ ३ Ô

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ð Ô

ð G ˚ Ô

ফ ৰ è Ф ३ ৰ Л ώ α˘ У
У ώ n Â w ɜ R ˘ ফ ৰ
è ৰ ˘ **show interface GigabitEthernet**
0/0 Л Л ˆ ˙

ð w R Ô

ЛЬЮ R ফ è

```
Ruijie(config)# interface GigabitEthernet 0/0
Ruijie(config-if)# load-interval 0
```

ð Ω Ф ३ Ô

Ф ३	G
show interfaces	ৰ ą Л ৰ

6.1.12

э Лъ ৰ У э ѿ ڈ У ھ ھ Â ˘ Лъ ৰ ھ ھ
ᴨ Лъ ᵍ ˘ ᴨ ɖ ˅ У ھھ Э ھ ھ ڈ У Â ھ ھ ᴨ ˅
ط ھ ھھ ق ˘ ق Ю a ھ ھ Â

ঠ w ᴿ Ô

ЛъЮ ᴿ ھھ Лъ ৰ è ھ ھ˅

```
Ruijie(config)# interface GigabitEthernet 0
Ruijie(config-if)# mac-address 0
```

6.1.13 media-type

ৰ ھھ Â ᴳ ৡ ৩ **no** ḣ

media-type baset | basex auto

no media-type

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basex auto ˅ ˝I ৰ

baset ˅ ৰ

ঠ Ô

ৰ Â

ঠ ৡ ৩ Ô

ৰ ˆ ৰ˘ a ˆ n ˜

ঠ ᴳ ˅ Ô

˅ У ৰ ᴨ Лъ ˝I ৰ n ৰ ч ȳ ھھ˘ ᴨ ᴳ è è ڈ У Â У
ȳ ھھ ڈ ˅ ھھ ˅ ھھ ᴿ à ৰ n ˘ ৰ m
ھھ Â ᴨ ᴨ ھھ ˅ ھھ ৰ ھھ è ˘ ᴨ Лъ
Â

ঠ w ᴿ Ô

```
Ruijie(config)# interface gigabitethernet 0
Ruijie(config-if)# media-type basex auto
```

```
Changing media to fiber auto mode. You may need to update the
speed and duplex settings for this interface.
```

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show interfaces	৲ ৷ ৷

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ᵍ Ū شخ Â

6.1.14 mtu

ففز ৲ Ю ᴳ **mtu** ৶ ২ ৲ · ` ĩ ^
˜ ˘ ᴳ ৶ ২ **no** Â

mtu num

no mtu

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num ˙ ৲ ḣ ز ù ˘ Лъ ù ` Æ Â ḣ ৲ ژ ڼ ث aˇ ৲ شخ a
ˇ aˇ ˘ У ù Â

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```
Ruijie(config)# interface gigabitethernet 0
Ruijie(config-if)# mtu 0
```

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৶ ২	

show interfaces	ৰ ৰ ঢ ৰ

6.1.15 shutdown

ঞ ৰ ৰ ˘ G ঈ ২ ঁ Ω ৰ Â G ঈ ২ **no** ৰ

shutdown

no shutdown

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Ÿ ৰ^ ঢ ৰ à ৰ à ৰ ˜ ˘ ঈ ২ ঁ Ω ৰˇ ৰ è ঃ
Ÿ ঞˇ ঢ a ɔ Â G **show interfaces** ঈ ২ ৰ Â

ঃ w R Ô

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```
Ruijie(config)# interface gigabitEthernet 0
Ruijie(config-if)# shutdown
```

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```
Ruijie(config)# interface gigabitEthernet 0/1
Ruijie(config-if)# no shutdown
```

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ঈ ২	
show interfaces	ৰ ৰ ঢ ৰ

G ṁ **no shutdown** ৰ ɔˇ ৰ ˬ ৰ ৰ
ৰ Â

6.1.16 snmp trap link-status

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G **show interfaces** ৰ ৰ Â ৰ ৰ a ˘ ˘ ĭ ৰ ≠ ˚
a ˚ Â ˘ ৰ ৰ a ĭ ৰ Â

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```
Ruijie(config)# interface gigabitethernet 0
Ruijie(config-if)# speed 0
```

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ৰ ৰ	
show interfaces	ৰ ৰ ৰ

6.2

6.2.1 show interfaces

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show interfaces interface-id **counters | description | status**

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interface-id ' ৰ ^ ^ ৰ ৰ à ৰ à ৰ à
ৰ à ৰ à ৰ ~

counters ' ৰ ৰ Â

description ' ৰ ˘ ^ Â

status ' Y ৰ ৰ ৰ ˘ ^ à ৰ Â

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Ruijie# show interfaces gigabitEthernet ⓪

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ৗ ৩	
clear counters	ৰ ḣ
description	ৰ
duplex	ৰ ৷ Â
interface	ώ ৰ Â
load-interval	ৰ
media-type	ৰ ﺷﺨ
shutdown	ﺫﺨ ৰ è˘ ᴳ ৗ ৩ ৗ ৰ Â
speed	ৰ Â

7

7.1

7.1.1 bridge-map

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bridge-map bridge-num

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bridge-num	৸ Â ΰ ᾷ ৲˘ ΰ э Â R ‘ Ь ᾷ ৲˘ ‡ ৲ ᾶ й Â

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G ᾷ ৸ ‘Ω ῃ ɔ Â
Ф ३˘ ώ Ф ३ Â ᾶ Ф ३ è˘ ৸ Ω
Ф ३ a ΐ Â

W R R ‘ ώ Ф ३ ‘

```
Ruijie#config
Ruijie(config)#bridge-map 1
Ruijie(config-bridge-map)#
```

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Ф ३	

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	Ф ३

7.1.2 link-mode

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no link-mode

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		Ф ३

7.1.3 native-vlan

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ѝ ḣ Â

no native-vlan vlan-id num

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	vlan-id num	ḣ˘ ५ ĭ ز ѝ

	ą Ю ḣ ѝ ˘ G ⁄ Л Ъ ѝ ḣ Â
Ф ३	Ф ३
G	Â ⁝ ѝ ǂ Â
W R	R ‘ ѝ ‘ Ruijie(config)#bridge-map 1 Ruijie(config-bridge-map)#native-vlan 0

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		Ф ३

7.1.4 specify interface

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specify interface interface-name

no sys-mode gateway

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ɔ ڤڠ Ѿ Ю ˘ ৲ ˘ Λ Лъ ˘
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ɔ ڤڠ Ѿ Ю ˘ ৲ ˘ a ˘
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g) #no sys-mode gateway

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Ruijie(config-if-GigabitEthernet 0/0)#vlan-enable

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7.1.7 bypass

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bypass couple couple-num

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no bypass couple couple-num

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Л	
bypass	Л ↓ ƒ ‘ Â
couple	↓ У

couple-num	couple ⅄

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w R R ‘ У ⅄ ƒ ‘

```
Ruijie(config)# bypass couple 0
```

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bypass copper couple couple-num

bypass fiber couple couple-num

Ƒ ३ ⅄ ⅄ ˘

no bypass copper couple couple-num

no bypass fiber couple couple-num

⅄

⅄	
bypass	⅄ ɔ ƒ ˘ Â
copper	⅄
fiber	⅄ I˘
couple	⅄ У
couple-num	couple ⅄

Ƒ ३ ŏ Â

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R ‘ У ⅄ ڤ ˇ ⅄ ‘

```
Ruijie(config)# bypass copper couple 0
```

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7.2

7.2.1 show bridge-map

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show bridge-map bridge-num

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bridge-num	⅄ Â ŭ ą̈ ⅄˘ ŭ э Â R ‘ Ь ą̈ ⅄˘ ‡ ⅄ ز й Â

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Ruijie#show bridge-map 0

```
BRIDGE MAP 0,STATE is DOWN
```

```
  Inside   interface   is   GigabitEthernet   0/0,Outside   interface   is
GigabitEthernet 0/1
  Working mode is forward
  Native vlan is 1
```

Ф ३	

```
LAN: GigabitEthernet 0/0 GigabitEthernet 0/3
WAN: GigabitEthernet 0/1 GigabitEthernet 0/2 GigabitEthernet 0/4
```

Ð ३

POWER 2 is not present!

EG1000M:

```
Ruijie#show environment
---environment information---
CPU Temperature is 41
fan works in low speed mode.

FAN 1 NOT OK!
FAN 2 is OK!
FAN 3 is OK!
FAN 4 is OK!

POWER 1 is not present!
POWER 2 is present!
POWER 2 power on successfully!

Power2 type: RG-PA300I
        Hardware version: 1.00
        Software version: RGNOS 0.03,Release(100625)
        Power SN: A66204100600401V0.2A
        current output power: 75.14(W)
        output voltage: 12.10(V)
        output electric current: 6.21(A)
        power temperature: 26.00(Ṇ)
        power supply: OK
```

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8

8.1

ѐ ѐ Ѣ ҩ **mtu** ѐ **speed** ѐ **duplex** ѐ **flowcontrol** ѐ **description** ҕ **shutdown** ѯ б Ѭ

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8.1.2 gateway

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gateway ip-address

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config

```
Ruijie(config)#interface mgmt 0
Ruijie(config-if-Mgmt 0)#gateway
Ruijie(config-if-Mgmt 0)#end
Ruijie#
```

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8.1.3 ip address

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ip address ip-address subnet-mask

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config

```
Ruijie(config)#interface mgmt 0
Ruijie(config-if-Mgmt 0)#ip address
Ruijie(config-if-Mgmt 0)#end
```

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8.1.4 ping oob

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ping oob host

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```
Ruijie#config
Ruijie(config)#sntp enable oob
```

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8.1.6 telnet oob

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telnet oob host

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```
Ruijie#telnet oob 0
User Access Verification

Password:
```

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8.1.7 traceroute oob

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traceroute oob host

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Ruijie#traceroute oob

```
  < press Ctrl+C to break >
Tracing the route to 192.168.200.1

 1   192.168.196.1 10 msec 10 msec 0 msec
 2   192.168.187.1 10 msec 10 msec 10 msec
 3   192.168.198.43 0 msec 10 msec 0 msec
 4   192.168.200.1 10 msec 10 msec 10 msec
```

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9 LINE

9.1 LINE

9.1.1 line

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line aux console tty vty first-line last-line

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aux	ⅎ˘ Ɐ Ө ﬓ ﯘ ‟ ң ث Э
console	⁸ ⅎ
tty	ⅎ˘ Ɐ Ө ﬓ ﯘ ‟ ң ث Э
vty	˘ ¥
First-line	ώ ﬠ
Last-line	ώ ﬠ

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Ruijie(config)# line vty 1 3

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9.1.2 line vty

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line vty line-number

no line vty line-number

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α Ю˜ Л й ˘ ৺ й Â

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╗ ˜ Л ˘ Л Ъ G Э Ф ३ Â

ð w R Ô

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Ruijie(config)# line vty ৯

Л ˜ ˆ ˘ Л ৺ ন й Â

Ruijie(config)# line vty ০

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9.1.3 transport input

Ю Л Ъ ˜ ˘ G **transport input** Ф ३ Ю Л Ъ ˜ ÂG **default transport input** й Ю ĭ ˜ й ḣ Â

transport input all | ssh | telnet | none

default transport input

ð ৺ Ô

৺	
all	Ю˜ ĭ ˜ Â
ssh	Ю˜ Л ĭ ˜ Â
telnet	Ю˜ Л ĭ ˜ Â

none	Ю a ĭ ˙ ı˜ Â

ð Ô

˘ ĭ ˜ Â è ښ ḣ ẏ ˘
a ĭ ˙ ı˜ Â ɑ ˜ Λ Лъ ɨ˘ Λ Лъ G **default**
transport input Ƒ ३ ẏ ḣ Â

ð Ƒ ३ Ô

ð G ˙ Ô

Ƒ ३ Ю ĭ ˜ Â ڤ ɑ Ю ĭ ˜ ą Â
ɑ ĭ ˜ ɨ˘ Λ ˜ Λ Лъ ڤ Э ╗ Â G
show running Ƒ ३ Ю ą Â

G **default transport input** Ƒ ३ Â **no transport input** Ƒ ३˘
Ю ą˜ Â б **transport input none** ˚ Â

ð w R Ô

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

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Ƒ ३	
show running	ą Â

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9.1.4 access-class

Ю ˆ 8 ‘‘ ˜ Â G **access-class** acl-no
in | out Ƒ ३ Ю 8 ‘‘ Â G **access-class**
access-list-number **in | out** Ƒ ३ Λ Ю Â

no access-class access-list-number **in | out**

ð ৲ Ô

৲	
access-list-number	Ж 8 “ Â
in	৲ 8 Â
out	8 Â

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ð Ф ३ Ô

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Ф ३ Ю 8 “ Â ą Ю ĭ ৲ ώ б ˘ a Â ą **access-class** ł ˘ ৲ ˘ ৲ Лъ ╗ Â G **show running** Ф ३ Ю ą Â

ð w R Ô

ফ Ю ţ ৲ й ˙

```
Ruijie# configure terminal
Ruijie(config)# line vty 0 4
Ruijie(config-line)# access-class 0 in
```

ð Ω Ф ३ Ô

Ф ३	
show running	ą Â

ð Ô

˚ Лъ Э

10 DLDP

10.1.1

Ruijie(config-if)#

˘ ip ѝ 20.1.1.1˘ ЮУ ip ѝ 10.1.1.1˙

Ruijie(config)# dldp 20.1.1.1 10.1.1.1

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10.1.3 dldp passive

Ф ३ ɔ ɣ ╟ ˘ **no** Ф ३ ὲ ḣ Â

dldp passive

no dldp passive

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ą Ю ɔ ѝ ў ╟ Â

ð Ф ३ Ô

ð G ˙ Ô

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ð w R Ô

ЛъЮ R ѝ ˘ dldp ɔ ɣ ў ˙

Ruijie(config-if)# dldp passive

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ð Ô

Ф ३ Θ ƒ ǯ ł Э ƒ˘ ˆ ð̈ Â

11

11.1

11.1.1 clear counters

ৰ ৗ ৄ **clear counters** Â

clear counters interfece-type interface-number

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interface-type ˙ ৰ ˘ ˆ à à à à à Â

interface-number ˙ ৰ ৰ Â

ð ৗ ৄ Ô

ð G ˚ Ô

ৰ ৄ **show interface** ˚ Â G ৗ ৄ ৰ ৄ ˘ ˘ ˘ G Â

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```
Ruijie# show interface async 1
Async1 is down, line protocol is down
Hardware is Async Serial
Internet address is 1.1.1.1/24
MTU 1500 bytes, BW 9 Kbit, DLY 100000 usec, rely 255/255,
load 1/255
Encapsulation PPP, loopback not set, keepalive not set
DTR is pulsed for 5 seconds on reset
LCP Closed
Closed: ipcp
Last input 18:17:02, output 18:17:02, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0 (size/max/drops); Total output drops:
0
Queueing strategy: weighted fair
Output queue: 0/64/0 (size/threshold/drops)
Conversations  0/1 (active/max active)
```

```
Reserved Conversations 0/0 (allocated/max allocated)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
1396 packets input, 20516 bytes, 0 no buffer
Received 0 broadcasts, 0 runts, 0 giants
1 input errors, 1 CRC, 0 frame, 0 overrun, 0 ignored,
0 abort
1467 packets output, 22937 bytes, 0 underruns
0 output errors, 0 collisions, 11 interface resets
0 output buffer failures, 0 output buffers swapped out
0 carrier transitions
Ruijie# clear  counters
Clear "show interface" counters on all interfaces
[confirm]
Ruijie#
%COUNTERS: Clear counter on all interfaces by console
Ruijie# show interface async 1
Async1 is down, line protocol is down
Hardware is Async Serial
Internet address is 1.1.1.1/24
MTU 1500 bytes, BW 9 Kbit, DLY 100000 usec, rely 255/255,
load 1/255
Encapsulation PPP, loopback not set, keepalive not set
DTR is pulsed for 5 seconds on reset
LCP Closed
Closed: ipcp
Last input 18:17:15, output 18:17:15, output hang never
Last clearing of "show interface" counters 00:00:02
Input queue: 0/75/0 (size/max/drops); Total output drops:
0
Queueing strategy: weighted fair
Output queue: 0/64/0 (size/threshold/drops)
Conversations  0/1 (active/max active)
Reserved Conversations 0/0 (allocated/max allocated)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
0 packets input, 0 bytes, 0 no buffer
Received 0 broadcasts, 0 runts, 0 giants
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored,
0 abort
0 packets output, 0 bytes, 0 underruns
0 output errors, 0 collisions, 0 interface resets
0 output buffer failures, 0 output buffers swapped out
0 carrier transitions
```

11.1.4 clear line

˘ Λ Ʃ Ƒ ३ **clear line** Â

clear line line-type line-number

ð ƒ Ô

line-type ˙ ˇشخ ˆ **aux** ä **console** ä **vty** Â
‡ ù **tty** Â

line-number ˙ ƒ Â

ð Ƒ ३ Ô

ð G ˚ Ô

Ƒ ३ Λ Ʃ ¥ ƒ ˆ **tty** ä **aux**˜ ä ˆ **vty** ä **console**˜ Â
Ƒ ३˘ G ¥ Â

ð w R Ô

Ю R ˙

Ruijie# clear line vty 0

11.1.5 debug dialer

ƒˆ ˜ ˜Ω˘ Ƒ ३ **debug dialer** Â

debug dialer pkt mlp|callback|event

ð ƒ Ô

pkt ˙ ƒ 1

mlp ˙ ƒ يم

callback˙ تي Y˚

event˙ ƒ يم Y˚

ð Ƒ ३ Ô

ð G ˚ Ô

Ƒ ३ Λ Ʃ ƒ ƒ ˜Ω Â

11.1.6 debug ppp

˜ ى ˜Ω ʎ Ɲ Ƒ ३ **debug ppp** Â

debug ppp authentication error event negotiation packet

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authentication ˙

error ˙ ˜ ى

event ˙ Y˘

negotiation ˙ ˜ ى

packet ˙ ˜ ى

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Ruijie# debug ppp event

11.1.7 dialer enable-timeout

˘ ʎ Ƒ ३ **dialer enable-timeout** Â
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dialer enable-timeout seconds

no dialer enable-timeout

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senconds ˙ ˆ ˜ Â

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ʎ ɖ “˘ ʎ Ƒ ३ **dialer hold-queue** Â Ƒ ३ **no** ˇΩ ɖ “ Â

dialer hold-queue packets **timeout** seconds

no dialer hold-queue packets **timeout** seconds

ð ʎ Ô

packet ˙ “ è ɖ ǰ ˘ ʌ ḣ ǰ Â

timeout seconds ˙ ǰ ɖ ƒ “ ˆ ˜ ˘ Â

ð Ô

ˇΩ ɖ “

ð Ƒ ३ Ô

ʎ

ð G ˙ Ô

G ʎ У ˜ ى ˘ ƒ ˚ x
Âɲ ɞ ɖ “˘ ‡ ʎ Ʃ 1 ʎ ‡ ɖ ƒ
Ɜ˘ Ʃ ɨ˘ ˝ ʌ Â

ð w R Ô

Ю R ɖ “ ỳ ˙

```
Ruijie(config)# interface async 1
Ruijie(config-if)# dialer hold-queue 50
```

11.1.10 dialer idle-timeout

˘ ʎ Ƒ ३ **dialer idle-timeout** Â Ƒ ३ Â

dialer idle-timeout seconds

no dialer idle-timeout

ð ʎ Ô

seconds ˙ ˆ ˜ Â

ð Ô

ð Ƒ ३ Ô

ʎ

ð G ˙ Ô

ʌ ƒϕ ϡ ʃ ˘ ʃ

У ϡʃ ھ ھ ˘ Æ Â

ð w R Ô

Ю R ʌ й ‘

```
Ruijie(config)# int async 1
Ruijie(config-if)# dialer idle-timeout θ
```

ð ‘Ω Ф ३ Ô

Ф ३

ð w ᴿ Ô

Ю ᴿ Ж ч ₁ ƒ ‡˘ У ї ₁ ƒ˘
У Л ї ˊ “ ₁ ƒ˙

```
Ruijie(config)# access-list 0 permit tcp
0000
Ruijie(config)# dialer-list 1 protocol ip permit
Ruijie(config)# dialer-list 2 protocol ip list 0
```

ð Ѿ Ф ३ Ô

Ф ३	
dialer-group	ƒ Л Э Ѿ ₁ ƒ ‡
access-list	Ж “

11.1.12 dialer pool

ƒ ƒ è˘ Л Ѿ é ᴇ Л ƒ
ƒ˘ Ѿ ƒ ˘ Л Ф ३ **dialer pool** Â Ф ३
no Л Ѿ Â

dialer pool number

no dialer pool number

ð Л Ô

number ˙ ƒ ƒ˘ ḣ й ǯ Â

ð Ô

a Ѿ ƒ

ð Ф ३ Ô

Л

ð ᴳ ˙ Ô

ƒ è˘ Л Ѿ é ᴇ ƒ Â й ⓖ
Л ṇ Л Ѿ ˘ ᴳ ƒ Â ˝Ї˘ é ᴇ Л
╗ ώ У э э ƒ ˘ ł˘ ƒ Л Э Ѿ è è У э ƒ ˘ ÿ
Л ṇ Л Ѿ Â

У э Л Л Ѣ ц э ƒ ˘ ⊓ У э Л Л Ѿ У э ƒ
˘ Л ƒ é ᴇ ƒ Ą˘ ƒ è Л
ƒ Â

ð w ᴿ Ô

Ю ᴿ ƒ ʎ Э ˜Ω ʎ ˙

```
Ruijie(config)# interface dialer 0
Ruijie(config-if)# dialer pool 1
```

ð ˜Ω Ф ३ Ô

Ф ३	
dialer pool-member	ʎ ╗ ώ ʎ
dialer remote-name	ў ¨ Â

11.1.13 dialer pool-member

ʎ ╗ ώ ʎ è ˘ ʎ Ф ३ **dialer pool-member** Â Ф ३ **no** ʎ ʎ ⊔ ʎ ˜Ω Â

dialer pool-member number **priority** priority

no dialer pool-member number **priority** priority

ð ʎ Ô

number ˙ ʎ ʎ

priority priority ˙ ʎ ƒ ʎ è . ˝I ˆ ˆ ˜ ˘ й æ. ˝I ˘ й . ˝I Â ʎ ˝I ᴳ ʎ è . ˝I ʎ ʎ Â

ð Ô

ʎ a ╗ ώ ʎ Â . ˝I й Â

ð Ф ३ Ô

ʎ

ð ᴳ ˙ Ô

Ф ३ ʎ ╗ ώ ʎ ˘ ᵏ ʎ ʎ ᴳ Â

У э ʎ ʎ Лъ╗ ώ э ʎ ˘ ˚ ƒ э ʎ è . ˝I Â ʎ ƒ ᴳ ʎ ʎ ˘ ˝I з. ˝I ʎ Â

ð w ᴿ Ô

Ю ᴿ ʎ ╗ ώ ʎ ⊔ ˘. ˝I ˆ ⁞ й ⊔ ˙

```
Ruijie(config)# interface async 1
Ruijie(config-if)# dialer pool-member 1 priority θ
```

Ruijie(config-if)# dialer pool-member 2 priority 0

ð ˜Ω Ð ¾ Ô

Ð ¾	
dialer pool	ƒ ƒ Э ˜Ω ƒ Â
dialer remote-name	ý ¨ Â

11.1.14 dialer priority

ƒ ƒ ƒ ˆ ˜ è . ”I ˘ ƒ
Ð ¾ **dialer priority** Â Ð ¾ **no** Â

dialer priority number

no dialer priority

ð ƒ Ô

number ˙ . ”I ˆ · ˜ ˘ ḣ ˘ . ”I ˘ ḣ ẋ Â

ð Ô

ḣ ẋ

ð Ð ¾ Ô

ƒ

ð G ˚ Ô

Ð ¾ ƒ ƒ è G Â ẋ G Ę à ą
˚ . ”I G ˘ ƒ Ƨ Ę ƒ . ”I .
”I ˘ ƒ ƒ ƒ ˘ ”I Ę. ”I
ƒ ƒ Â

ð w R Ô

Ю R ƒ . ”I ẋ ˙

Ruijie(config)# interface async 1
Ruijie(config-if)# dialer priority 0

11.1.15 ip address negotiated

ƒ ˜ ى ك ھ˘ G ƒ Ð ¾ **ip address negotiated** Â Ð ¾ **no** ˥ ˥ Â

ip address negotiated

no ip address negotiated

ð Ô

ḣ

ð Ƒ ३ Ô

ƒ

ð G ˙ Ô

Ƒ ३ ў ¥ ƒ ˘ G ھ ھ ╚ ئؤ ╠
ǂ ˘ ₮ ṇ ھ ھ Â

ð w R Ô

Ю R ƒ ھ ھ ~ ى ˙

Ruijie(config)# interface async 1
Ruijie(config-if)# ip address negotiate

ð Ƒ Ƒ ३ Ô

Ƒ ३	
encapsulation ppp	~
ip address	ƒ ھ ھ
ip unnumbered	Ƒ ε ы ƒ ھ ھ

11.1.16 ip address-pool

Ж ŏ ھ ھ ǂ ˘ ŏ Ƒ ३ **ip address-pool** Â
Ƒ ३ **no** Â

ip address-pool local

no ip address-pool

ð ƒ Ô

local ˙ ھ ھ ھ ǂ ˘ G ھ ھ ھ й ώ ǂ
ھ ھ Â

ð Ô

a ŏ ھ ھ ǂ

ð Ƒ ३ Ô

ŏ

ð G ˙ Ô

Ф ϟ й ώ ϡ ϡ ϡ ˘ ϡ ЛЬЮ α ЮΎ ώ ϡ ϡϡ

G **peer default ip address** Ф ϟ ϡ ʎ Э й ώ ϡ ϡ ϡ ϡ ϡ ˘

ð w R Ô

Ю R ώ ϡ ϡϡ й G ϡ ϡ ϡ ϡ ˙

Ruijie(config)# ip address-pool local

ð ΩФ ϟ Ô

Ф ३ ĭ ` э У Â ł

aux console vty ̃Ω ˘ ‡ ㅓ ㅓ ù й ㅓ˘ ㅓ

Λ Л

ȍ ৵ Ô

ip-address ʿ й ὼ У э ݣ ݤ˘ й ࣶ ȯ э ὼ G ݣ ݤ ˘ a ڣ ٳ è G ৵ й ὼ У э ݣ ݤ Â

pool ʿ ɨ G pool-name-list ݣ ݤ ˘ ‡ G ὤ ݣ ݤ ᷉ è ݣ ݤ Â

pool-name-list ʿ ݣ ݤ ᷮ

ȍ Ô

G ὤ ݣ ݤ ᷉ è ݣ ݤ й ὼ ᷉ ݣ ݤ Â

ȍ Ֆ ҙ Ô

৵

ȍ G ʾ Ô

Ֆ ҙ ڣ è й ݣ ݤ˘ ݣ ݣ ݤ˘ ‡ G ݣ ݤ Â

ڣ ЉЮ ᾳ Ю̆ Ֆ ҙ ὤ ݣ ݤ ᷉ è ʿ

G **peer default ip address** ip-address й ݣ ݤ

G **peer default ip address pool-name-list** ݣ ݣ ݤ й ᷉ ݣ ݤ

ȍ w R Ô

Ю R й ৵ ὼ ݣ ݤʿ

```
Ruijie(config)# interface async 1
Ruijie(config-if)# peer default ip address 2
```

ȍ ῼ Ֆ ҙ Ô

Ֆ ҙ	
ip address-pool	ὤ ݣ ݤ
ip dhcp-server	ط ﯙ
ip local pool	ݣ ݣ ݤ

11.1.20 ppp max-bad-auth

˘ ৵ Ֆ ҙ **ppp max-bad-auth** Â Ֆ ҙ **no** Â

ppp max-bad-auth number

no ppp max-bad-auth

ð ʎ Ô

number ˙ ˘ й Â

ð Ô

a

ð Ƒ ३ Ô

ʎ

ð G ˚ Ô

ˆ ÜÜ У ˘ ¨ й ˘ У
Лъ ł˘ Â ł У Лъ ł˘ ˆ Æ˜ Â

ð w R Ô

Ю R ʎ й

```
Ruijie(config)# interface async 1
Ruijie(config-if)# ppp max-bad-auth 4
```

ð ˇΩƑ ३ Ô

Ƒ ३	
Ppp authentication	

11.1.21 pppoe enable

Лъ ʎ Э í

Ф ฯ У ف “ G Â

ð w R Ô

Ю R í “ Лъ Э ‘

```
Ruijie(config)# interface GigabitEthernet 0/0
Ruijie(config-if)# pppoe enable
```

ð Ѿ Ф ฯ Ô

Ф ฯ	
pppoe-client	í ╗

11.1.22 pppoe-client

Лъ ห ห^ ~ ╗ ˘ G ห Ф ฯ **pppoe-client** Â Ф ฯ **no** ห ห ╗ Â

pppoe-client dial-pool-number number **dial-on-demand| no-ddr}**

no pppoe-client dial-pool-number number

ð ห Ô

number ‘ ห ห

dial-on-demand PPPoE Client ห Â

no-ddr PPPoE Client НА ف Â

ð Ô

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ð Ф ฯ Ô

ห

ð G ’ Ô

G Ф ฯ Лъ ห ˆ У э ห ˘ ห G ห ˘ ÿ й Лъ ห п ห Ѿ ˘ ห Â

Л Лъ ч ห ‘

~ ‘ й **dial-on-demand** ˘ ˉ 1 ห ‡ ˆ ˘ ˘ ‡ 1 Лъ ห ห Â

ə˘ ‡ Â

~ ‘ й ˘ ‡ a ˉ ‡ ห˘ ≠ a ห 8 ط˘ ╟ 1 Лъ ห ห Â

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12 IP

12.1

12.1.1 ip address

Ф ३ ⅄ ص ص˘ ⅄ Лъ ĩ ⅄ ص ص ÂФ ३ Ю˙

ip address ip-address network-mask **secondary**

no ip address ip-address network-mask **secondary**

ð ⅄ Ô

⅄	
ip-address	э Æ ص ص˘ Æ У ˘ Лъ π ⁸ ˘ ǯ Â
network-mask	э Æ ˘ Æ˘ ў Æ Â Æ У ˘ Лъ π ⁸ ˘ ǯ Â
secondary	ص ص Â

ð ą Ô

⅄ ص ص Â

ð Ф ३ Ô

⅄

ð ᴳ ˘ Ô

У э ⅄ ɢ ص ص˘ ⅄ Лъ ɲ ⅄ ˘ ⅄ ɢ ص ص˘ ⅄ ĭ ˜ Â

≠ У э Æ ḣ˘ ص ص ١ ŭ э ѝ ĭ Â è˘ ḣ ѝ ľ Ł ص ص Æ ѝ ĭ ˘ ḣ ѝ ľ Ł ص ص Æ ѝ ў ص ص ĭ Â ѝ ľ Ł Â æ ⅄ Лъ ¯ У э ,ĭ ˘ ,ĭ У э ў ص ص ĭ У Ę Æ ≠ ɔ ѝ ĭ ˘ ў ˘ ╗ ˘ ѝ Â

˚ ᐱᒪᖞ У э ᐧ э ᔑᔕ˘ ὲ ὲ У э ὶ ў ᔑᔕ˘ ὲ м ὥ
ὶ ᔑᔕ Â ᔑᔕ Э ⁸˘ ᐱᒪᖞ ˘ ᒥ ᐱ ᐱ
ɑ ў ᔑᔕ ł ᔑᔕ Â ᔑᔕ ᐱᒪᖞ б ў ᔑᔕ ᥱ˚ У э
a˚ Âᔕᔥ è˘ ˚ ᴳ ˆ ᔑᔕ˘ ᔕᔥᒪᖞЮ ᥱ Ю
ᔑᔕ˙

interface-number	̃Ω ⅄ ⅃

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ą Ю̆ ⅃ ⅄ Â

ȍ Ф ३ Ô

⅄

ȍ ᴳ ̓ Ô

⅃ ⅄ ⅄ ⅄ ⅄ ⅄ ⅄ í ╟ ̃ ̆ ⊓ a ⅄ ค ห ̆ ⅃ ⅄ ̃Ω
У э é У э Ƹ [า ═

no arp ip-address MAC-address type **alias**

ip-address	
MAC-address	
type	
alias	

clear arp-cache

```
arp 1.1.1.1 4e54.3800.0002 arpa
```

clear arp-cache	

12.2.2 arp retry interval

arp retry interval seconds

no arp retry interval

ð ৺ Ô

৺	
seconds	· Λ Лъ й Í Í ˘ ḣ й

ð ą Ô

· й Â

ð Ф ३ Ô

ŏ̈

ð G ˚ Ô

Λ ą̈̃ Λ ˘ è ˘ Λ Лъ · У ˘ У a ╟ ◘ Â

ð w R Ô

ЛъЮ ˘ · й

```
arp retry interval 30
```

ð ‘Ω Ф ३ Ô

Ф ३	
Arp retry times number	·

12.2.3 arp retry times

G Ф ३˘ Λ Лъ ك · ˘ ˚ ˚ У э ك ھ˘ Λ Â G Ф ३ Λ Лъ · Â

arp retry times number

no arp retry times

ð ৺ Ô

৺	
number	˚ У э Λ ˘ ز Â й ˘ a · ˘ Λ Λ

ﻩ α Ô

ﺃ ˘ ﺍ ˘ ﺩ Â

ﻩ ﻭ ﻯ Ô

ﻫ

ﻩ G ﺃ Ô

ﺍ ﻫ ﺍ ˘ ﺑ ˘ ﺍﻟﻢ
· ﻳ ˘ ﻳ a · Â

ﻩ w R Ô

ﻟﻢﻮ ˘ ﻫ a · Â

arp retry times 1

ﻟﻢﻮ ˘ ﻫ · Â

arp retry times 2

ﻩ ﻭﻭ ﻭ ﻯ Ô

ﻭ ﻯ	
arp retry interval seconds	·

12.2.4 arp trusted NUM

G ﻭ ﻯ˘ ﺍﻟﻢ ﺍ ﻋ ﻩ Â ﻭ ﻯ ﻫ Â

arp trusted number

no arp trusted

ﻩ ﺍ Ô

ﺍ	
number	ﺍﻟﻢ ﺍ ﻋ ﻩ ﺍ ﻫ ﻫ Â

G Ф ३ ˘ ˝I í Л ą˙ ╗ Â Л ą˙ Ц è ˝Ω м ą̈
˘ Л ą˙ . ˘ Л ╟ a Â У ˘
a Â

ð w ᴿ Ô

ЛЬЮ ˘ Л Ль э Л ą˙ Â

```
arp trusted 1000
```

ð ˝ΩФ ३ Ô

Ф ३	
service trustedarp	í Л ą˙ ╗

12.2.5 arp trust-monitor enable

Ф ३ í ۸ ˝Ω Л ą ╗ Â Ф ३ ˝Ω ╗ Â

arp trust-monitor enable

no arp trust-monitor enable

۸	

ą Ю ╗ ˝Ω Â

Ф ३ ۸ Â

G

ą̀ ۸ ˝Ω Л ą ╗ ججي Ą ۸ ˘ G ۸ ╟ ◘ ۸ ˘
˝Ω ″ ۸ ╟ ◘ ѝ ‡ ѝ ḣ ’

ą̀ ۸ ˝Ω Л ą ╗ a˚ Ą Л ą ╗ ˘ è شخ Ÿ ╟ ˘
◘ ۸ ╟ ◘ 8˘ Л ˝ ѝ ѝ ш ‘ فخ ˝
Ą˘ ˚ ۸ ` ˘ ˆ ˝ ˘ ŭ ‡ a˚
˝ ’

ą̀ ˆ ˘ Л a فخ ˘ è ѝ ѝ ۸ ˘
◘ ˘ Э ۸ ` ’

ą̀ ˆ ˘ Л ◘ a Â
ѝ ‘ ◘ ˘ ‡ Л ѝ ’ a ˘ ‡ ◘ ѝ ◘
˘ Э ۸ ` ’

w R

R ʻ ЛЬЮ ˘ ĺ ⅄ ˜Ω ⅄ ᔑ ℸ Â

```
Ruijie(config)# interface gi 0/0
Ruijie(config-if-GigabitEthernet 0/0)# arp trust-monitor enable
```

R ʻ ЛЬЮ ˘ ˜Ω ⅄ ˜Ω ⅄ ᔑ ℸ

```
Ruijie(config)# interface gi 0/0
Ruijie(config-if-GigabitEthernet 0/0)# noarptrust-monitorenable
```

˜ΩꞒ ३

Ꞓ ३	

Ꞓ ३ ⅂ ⅄

⅄	

12.2.6 arp trusted aging

G Ꞓ ३˘ ⅄ Ль ⅄ ᔑ˙ □ Â Ꞓ ३ ô

ᏼ ᏿	
service trustedarp	ί ᎯᏠ ᏿ ᏿

12.2.7 arp unresolve

oãPâÍV™` ‰` ARP

G Ꭰ ᏿ ᎯᏠ è ᎾᏠ Ꭰ ᏿ ᎯᏠ
ḣ Â

arp unresolve number

no arp unresolve

ð ᎯᏠ Ô

no arp gratuitous-send

ð ৻ Ô

৻	
seconds	৸ ȯ ˘ ` Æ ˘ ৸ ḣ ۺ Â

ð ą Ô

ৎ í ৸ ȯ ╗ Â

ð Ф ३ Ô

ৎ

ð ᴳ ᵊ Ô

ৎ ṁ ѝ Ю ˜Ω ˘ Ю è ṭ ʻI ˜Ω ѝ˘ ‡
ʌ Лъ ڤ ৎ ৸ ȯ ˘ ʻΩ ˜ ˜Ω Â

ð w ᴿ Ô

ЛъЮ ˘ ą̈ ৸ У ȯ Â

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

ЛъЮ ˘ ṃ ą̈ ৸ ȯ

```
Ruijie(config)# interface vlan 1
```

ط ˘ ط ص ص й Лъ ص ص Â Лъ Э ३
ϖ Â

ȍ w ʀ Ô

ЛъЮ ˘ ف Лъ í ३

12.3.1 ip broadcast-addresss

[illegible] **ip broadcast-addresss** [illegible]

ip broadcast-addresss ip-address

no ip broadcast-addresss ip-address

[illegible]

[illegible]	
ip-address	[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

```
ip broadcast-address  0.0.0.0
```

12.3.2 ip directed-broadcast

[illegible] **ip directed-broadcast** [illegible]

ip directed-broadcast access-list-number

no ip directed-broadcast

[illegible]

[illegible]	
	[illegible]

access-list-number

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] **no ip directed-broadcast** [illegible]

[illegible]

[illegible]

```
interface GigabitEthernet 0/1
ip directed-broadcast
```

12.4 IP

12.4.1 clear arp-cache

[illegible]

clear arp-cache A.B.C.D **interface** interface-name

[illegible]

[illegible]

ئا ئب ئه ڕ [9] Â

ڤه ڵجي ڤ Э˘
э كه هه ئا У э ˘ ч
ڤه ڤ˘ ئا ˬ ɣ э а ڢ ɑ Â

ئه w [R] Ô

ئبئو [R] ˘ ī ╟ ă Â

```
clear arp-cache
```

ئبئو [R] ˘ ī ╟

```
clear arp-cache 1.1.1.1
```

ئبئو [R] ˘ ī ئا ئو ╟

```
clear arp-cache interface Vlan 1
```

ئه ئۆئه ڕ Ô

ئه ڕ	
arp	ڤه è ╗ Â

12.4.2 show arp

كه هه ˜ ˆ ˜ ă

show arp ip mask mac-address **static** **complete** **incomplete**

ئه ئا Ô

ئا	
ip	كه هه˘ كه هه
ip mask	ˆ
mac-address	كه هه
static	
complete	╟
incomplete	╟

ক্ষ ক্ষ ক্ষ Ô

ক্ষ w ᴿ Ô

ЛЪЮ й

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

ă è ⅃ ȕ ЪЖ Ю

	ক্ষ ক্ষ ~ ˘ ক্ষ й Â
	б ˚ ক্ষ ক্ষ ক্ষ Â

```
Ruijie# show arp
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
```

ЛЬЮ **show arp** 001a.a0b5.378d

```
Ruijie# show arp
Protocol  Address  Age(min)  Hardware  Type   Interface
Internet  192.168.195.67   4   001a.a0b5.378d  arpa   VLAN 1
```

12.4.3 show arp counter

è ‘Ω э

show arp counter

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ð Ф ع Ô

ð w ᴿ Ô

ЛЬЮ й **show arp counter** ‘

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

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ð w R Ô

ЛЬЮ й **show arp timeout**

```
Ruijie# show arp timeout
Interface              arp timeout(sec)
----------------------  ----------------
VLAN 1                 3600
```

α è ⌋ ð ЬЖ Ю

12.4.5 clear ip route

э ╗ è э ˘ Л Лъ

clear ip route Ъ ъ Â

clear ip route * network netmask

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netmask	^ Л ~

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```
clear ip route 192.168.12.0
```

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show ip route	

12.4.6 show ip arp

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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
GigabitEthernet 0/0
Internet  192.168.7.112    10          0050.eb08.6617    ARPA
GigabitEthernet 0/0
Internet  192.168.7.79      12         00d0.f808.3d5c    ARPA
GigabitEthernet 0/0
Internet  192.168.7.1       50         00d0.f84e.1c7f    ARPA
GigabitEthernet 0/0
Internet  192.168.7.215    36          00d0.f80d.1090    ARPA
GigabitEthernet 0/0
Internet  192.168.7.127    0           0060.97bd.ebee    ARPA
GigabitEthernet 0/0
Internet  192.168.7.195    57          0060.97bd.ef2d    ARPA
GigabitEthernet 0/0
Internet  192.168.7.183    --          00d0.f8fb.108b    ARPA
GigabitEthernet 0/0
```

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[illegible]

[illegible]

12.4.7 show ip interface

[illegible]

show ip interface interface-type interface-number

[illegible]

[illegible]	[illegible]
Interface-type	[illegible]
Interface-number	[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] **show ip interface** [illegible]

```
Ruijie# show ip interface GigabitEthernet [illegible] 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
Route horizontal-split is: ON
Help address is: 0.0.0.0
Proxy ARP is: ON
Outgoing access list is not set.
Inbound access list is not set.
```

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12.4.8 show ip redirects

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show ip redirects

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Ю й **show ip redirects** Â

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

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13 IP

13.1 IP

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ip default-gateway

ip mask-reply

ip mtu

ip redirects

ip source-route

ip unreachables

13.1.1 ip default-gateway

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ip default-gateway

no ip default-gateway

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```
ip default-gateway 192.168.1.1
```

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show ip redirects	Ѿ Θ ফ γ Â

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13.1.2 ip mask-reply

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Ф ३ **ip mask-reply** Â Ф ३ Ѿ ∧ ط Â

ip mask-reply

no ip mask-reply

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```
interface GigabitEthernet 0/1
ip mask-reply
```

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13.1.3 ip mtu

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ip mtu bytes

no ip mtu

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```
interface GigabitEthernet 0/1
ip mtu 512
```

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13.1.4 ip redirects

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```
interface GigabitEthernet 0/1
no ip redirects
```

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```
no ip source-route
```

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13.1.6 ip unreachables

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ip unreachables

no ip unreachables

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```
interface GigabitEthernet 0/1
no ip unreachables
```

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14 IPv4 REF

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14.1.2 ip ref load-sharing original-only

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```
Ruijie(config)# ip ref load-sharing original-only
```

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```
Ruijie(config)# no ip ref load-sharing original-only
```

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14.1.3 ref parameter

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ref parameter {20-95} [200-1000]

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14.2 IPv4 REF

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show ip ref packet-statistic

clear

14.2.1 show ip ref packet-statistic

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show ip ref packet-statistic clear

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```
Ruijie#show ip ref adjacency
id     state      type     ip    rfct  chg  vid  tid    len  l2add
interface
1     unresolve   local   0.0.0.0         3    0    0    0     0
0000.0000.0000
4     resolved    forward 192.168.52.58   1    0    0   800   14
001a.a0b4.ce5c  FastEthernet 0/0
3     unresolve   glean   0.0.0.0         1    0    0    0     0
0000.0000.0000  FastEthernet 0/0
```

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	show ip ref route	m REF ید è ə

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show ip ref exact-route vrf vrf_name source-ipaddress dest_ipaddress

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source-ipaddress	ھ ھ
dest_ipaddress	ھ ھ

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```
Ruijie#show ip ref exact-route 20.1.1.1 192.168.52.5
20.1.1.1 --> 192.168.52.5 (vrf global):
id    state      type    ip            rfct chg vid tid   len l2add
interface
2     unresolve   glean   0.0.0.0         1    0    0    0     0
0000.0000.0000  FastEthernet 0/0
```

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```
Ruijie#show ip ref route
Codes: * - default route
# - zero route
 ip       mask       adj-id   next-hop          weight   interface
224.0.0.0      224.0.0.0      1      0.0.0.0        1
192.168.52.0     255.255.255.0    11        0.0.0.0            1
FastEthernet 0/0
192.168.52.255  255.255.255.255 1      0.0.0.0        1
 192.168.52.68   255.255.255.255 1      0.0.0.0        1
192.168.52.58     255.255.255.255  12         192.168.52.58     1
FastEthernet 0/0
 20.0.0.0          255.255.255.0    10        0.0.0.0            1
FastEthernet 0/1.1
 20.0.0.255     255.255.255.255 1      0.0.0.0        1
 20.0.0.3       255.255.255.255 1      0.0.0.0        1
```

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next-hop	Ю У ﻩ ﻫ
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15.2

15.2.1 show ip fpm counters

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```
Ruijie#show ip fpm flows
Pr  SrcAddr          DstAddr          SrcPort     DstPort     Vrf
SendBytes  RecvBytes  St
1   192.168.52.68    192.168.52.67      5           2048        0
100       100       2
Ruijie#show ip fpm flows filter 1 192.168.52.0 24 192.168.52.67 24
Pr  SrcAddr          DstAddr          SrcPort     DstPort     Vrf
SendBytes  RecvBytes  St
1   192.168.52.68    192.168.52.67      5           2048        0
100       100       2
```

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15.2.3 show ip fpm statistics

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show ip fpm statistics

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```
Ruijie#show ip fpm statistics
The capacity of the flow table:32000
Number of active flows:0
Number of the defragment contexts:0
Number of the buffers hold by FPM:0
Event count (%256):3
```

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15.2.4 show ip fpm users

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show ip fpm users

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```
Ruijie#sho ip fpm users
Active Users:
IP address       Active time  Connections
19 192.168.52.68    1
```

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16 IP NAT

16.1

16.1.1 address

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address start-ip end-ip **match interface** interface

no address tart-ip end-ip **match interface** interface

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ip nat pool	Ⱨ

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16.1..36 626.0727.22 394.98 0.48 ref66.84 699.38 0.24 5266.84 620.6 0.24 0.48 ref14

```
ip nat pool net200 200.168.12.1 200.168.12.15 prefix-length 28
ip nat inside source list 1 pool net200
!
access-list 1 permit 192.168.12.0 0.0.0.255
```

```
!
ip nat inside source list 1 pool net200
ip nat application source list 1 destination udp 192.168.1.1 53
dest-change 202.101.98.55 53
```

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address	Ł֎ հ հ ամ հ ազ
ip nat	Ł֎ ՛ Â
ip nat inside destination	í ą հ հ Â
ip nat inside source	í ą հ հ Â
ip nat outside source	í հ հ Â
show ip nat translations	Â

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16.1.5 ip nat inside source

[illegible] **ip nat inside source** [illegible] **no** [illegible]

ip nat inside source list access-list-number **interface** interface-type interface-number **pool** pool-name **overload** **vrf** name

no ip nat inside source list access-list-number **vrf** name

ip nat inside source static local-ip global-ip **match** interface-type interface-number **permit-inside** **vrf** name **netmask** mask

no ip nat inside source static local-ip global-ip **permit-inside** **match** interface-type interface-number **vrf** name

ip nat inside source static protocol local-ip local-port global-ip

global-port **match** interface-type interface-number **permit-inside** **vrf** name

no ip nat inside source static protocol local-ip local-port global-ip

global-port **match** interface-type interface-number **permit-inside** **vrf** name

[illegible]	
list	[illegible]
interface	[illegible]

permit-inside	ʎ ƒƣ Ƒ ȝ è˘ ɣ ĭ ą̈ Ƛ ў Â ˇΩ Θ ƒƣ ƣʊ Э Â
vrf	̈ ˘ ƒƣ ą̈
match	ʎ
netmask mask	ʔ ھ ک

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```
!
interface GigabitEthernet 0/0
ip address 192.168.12.6 255.255.255.0
ip nat inside
!
interface GigabitEthernet 0/1
ip address 200.168.12.17 255.255.255.240
ip nat outside
!
ip nat pool net200 200.168.12.1 200.168.12.15 prefix-length 28
ip nat inside source list 1 pool net200
!
access-list 1 permit 192.168.12.0 0.0.0.255
```

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16.1.7 ip nat pool

ip nat pool

ip nat pool pool-name start-ip end-ip **netmask** netmask **prefix-length** prefix-length **type rotary**

ip nat pool pool-name **netmask** netmask **prefix-length** prefix-length **type rotary**

no ip nat pool pool-name

pool-name	
start-ip	
end-ip	
netmask netmask	
prefix-length prefix-length	
type	

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```
ip nat pool net192 192.168.12.1 200.168.12.254 prefix-length 24
```

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	tftp	
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w R	R 1ʿ ЉЮ R ˘ Ω DNS ALG `no ip nat translation dns`	

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16.2

16.2.1 show ip nat translations

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show ip nat translations acl_num **gre** **icmp** **tcp** **udp** **vrf** vrf_name **verbose**

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```
Ruijie# show ip nat translations verbose
Pro Inside global     Inside local      Outside local     Outside
global timeout vrf
tcp   192.168.5.103:1987   192.168.211.21:1987   211.67.71.7:80
211.67.71.7:80 timeout=85139 1
udp  192.168.5.103:1041  192.168.211.183:1041  202.101.98.55:53
202.101.98.55:53 timeout=38 1
```

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17.1

17.1.1 mllb enable

[illegible]

mllb enable

no mllb enable

[illegible]	
no	[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

```
Ruijie(config)# mllb enable
```

[illegible]	

[illegible]

[illegible]	
	[illegible]

17.1.2 mllb policy

[illegible]

mllb policy bandwidth latency load intelligent

no mllb policy

[illegible]

[illegible]	
bandwidth	[illegible]
latency	[illegible]
load	[illegible]
intelligent	[illegible]
no	[illegible]

[illegible]

[illegible]

[illegible]

bandwidth latency load intelligent [illegible] **mllb policy** [illegible] **no mllb policy** [illegible] **bandwidth** [illegible]

[illegible] **load**

```
Ruijie(config)# mllb policy load
```

[illegible]

```
Ruijie(config)# no mllb policy load
```

[illegible]

[illegible]	
mllb enble	[illegible]
bandwidth	

[illegible]

[illegible]

[illegible]	
	[illegible]

17.1.3 mllb policy intelligent

[illegible]

mllb policy intelligent **bandwidth** base1 **latency** base2 **load** base3

no mllb policy intelligent

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ﺩ	
bandwidth base1	ﺩﺯ ﺟﻲ ﺩ ﺩ ﻫ ﺩﺯ
latency base2	ﺩﺯ ﺟﻲ ﺩ ﺩ ﻫ ﺩﺯ
load base3	ﺩﺯ ﺟﻲ ﺩ ﺩ ﻫ ﺩﺯ
no	ﺩﺯ ﻳ ﻫ

ﺟﻲ

ﺑﺩ ﺩ

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ﺩﺧ ﻫﺋ ﻳ **intelligent** ﺩﺯ ﻳ ﻳ
ﺟﻲ ﺩﺧ ﺩﺯ ﺟﻲ ﺩ ﺩ ﺩﺯ ﺟﻲ ﺩ ﺩ ﺩﺯ ﺟﻲ ﻫ
ﻫ

R ﺩﺋ ﻳ **intelligent** ﻳ ﻳ ﻳ ﻳ

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```
Ruijie(config)# mllb policy bandwidth 50 latency 60 load 100
```

ﺑﺩ ﺩ	
mllb enble	ﺩﺋ
bandwidth	
mllb policy	ﺩﺋ

ﺩ

ﺩ	
	ﺑﺩ ﺩ

17.1.4 mllb threshold

ﺩﺧ ﺩﺋ ﻫﺋ ﻫ

mllb threshold percent

no mllb threshold

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```
Ruijie(config)# mllb load-sharing original
```

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mllb enable	ؾ ⅋

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17.2

17.2.1 show mllb config

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show mllb config

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```
Ruijie(config)# show mllb config

 muti-link load balance configure:
 muti-link load balance state: enabled
 muti-link load balance threshold: 95
 muti-link load balance policy: intelligent
     bandwidth weight base = 100
     latency weight base = 100
     load weight base = 100
```

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mllb enable	ؾ ؾ ؾ
mllb policy	ؾ

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18.1

18.1.1 layer23 classify enable

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[no] layer23 classify enable

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R ˙ í γ Ь ǂ ⁝ ╗ ˙
config

w R R ˙ ̃Ω γ Ь ǂ ⁝ ╗ ˙
Ruijie#config
Ruijie(config)#no layer23 classify enable

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19 vlan

19.1

19.1.1 vlan-group

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vlan-group name **vlan** vid-list

no vlan-group name

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⁝ ফ ̃Ω Ю Â
ফ ą̈ ৲ Э Ƀ ३˘ ą̈ ৲
˘ ⁝ Â

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config

w R **vlan-group** vlan-group1 **vlan** 1,3,7-9

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Ruijie#config

Ruijie(config)#no vlan

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show vlan-group group name	ə Ɗ ३
vlan-enable	ʎ ˘ í Ɗ ३ G ⁝
flow-rule **vlan-group** **subscriber** **network-group** **app-group** **time-range**	‡ Ɗ ३

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19.2

19.2.1 show vlan-group

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show vlan-group group name

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Ruijie#show vlan-group

```
vlan-group    police_flow     police_url    flow     vlan id
----------    -----------     ---------     ------  ----------
any            9               0             0
vlan1          0               0             0        1
vlan2          0               0             0        3-5
vlan3          0               0             0        7,9
```

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20

20.1

20.1.1 subscriber export

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subscriber export txt | csv filename

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*ÌÇJƶQ R ̣	R ʻ ľ Ł˘ ɛ̀ ľ Ł˘ ľ Ł ľ Ł ʻ **config** 1 R ʻ ৲ ľ Ł ȯ ʻ Ruijie#config Ruijie(config)#no subscriber set 1attribute avoid-monitor
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⯐ ⯐ ⯐ Ь ˘ Ль ⯐ ̂ ÿ̈ ⯐ ⵣ a ̂ ÿ̈ ⯐
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⯐ ⯐ ⯐ a Л Ль̆ ̂ ÿ̈ ⯐ ⯐ Â ⯐ ⯐ ⵣ ⯐ ⯐ ̆ ⯐ è ˘ Ль
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config

subscriber static name 1 **parent** / / 1 **ip-host**

W R 192.168.196.156

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20.2

20.2.1 show subscriber

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show subscriber all static dynamic parent name | **root**

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Ruijie#show subscriber all

```
name   mac           flow police_flow police_url dir dynamic avoid deny  ip
/     0000.0000.0000  0       0        0         1    0       0    0    192.168.196.100
    1  0000.0000.0000 3        0        0         0    0       0    0    192.168.196.101
    2  0000.0000.0000 0        0        0         0    0       0    0    192.168.196.102
```

show subscriber Ɖ ३ Ṗ

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subscriber static name name **parent** parent **ip-host** ip-addr **mac** mac-addr **| ip-subnet** subnet mask **| ip-range** start end	Ɗ ३

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21

21.1

21.1.1 network-group

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network-group name name **{ip-host** ip-addr **| ip-subnet** subnet mask **| ip-range** start end **] }**

no network-group name

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config
network-group name network1 **ip-subnet** 192.168.196.0 255.255.255.0
R ̇ ĩ l' Ь̇
Ruijie#config
Ruijie(config)#no network-group name

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show network-group	३ Ф ३

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```
network2        0          0          0        192.168.197.1
network3        0          0          0        192.168.197.2
```

R ‘ ৰ ‘

```
Ruijie#show network-group      network1
network-group police_flow police_url flow     ip
------------  -------     --------   ------   ----------
/              0          0          0
network1        0          0          0        192.168.197.3
```

show network-group Ф ३ ৰ ‘

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	ˇΩ ‡
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	ˆ ˇˇΥ

Ф ३	
network-group name name **{ip-host** ip-addr **| ip-subnet** subnet mask **| ip-range** start end **] }**	Ф ३

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	Ф ३

22

22.1

22.1.1 identify-application custom

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no identify-application custom name software-name **class** class-name **tcp udp sport** sport-low sport-high **dport** dport-low dport-high

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software-name	˚ ˝ Â
class-name	ĭ ˝ Â
sport-low	৲ Â
sport-high	৲ Â
dport-low	৲ Â
dport-high	৲ Â

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ز й ĭ ˘ ৲ ز й ĭ ˘ ˜ ش й ˙
Ruijie#config
Ruijie(config)# identify-application custom name class
Ƕ

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	flow-rule num **vlan-group** vlan-group-name **subscriber** subscriber-name **network-group** network-group-name **app-group** app-group-name **time-range** time-rang-name	‡ ₰ ₹

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		₰ ₹

22.1.3 identify-application inhibitive

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identify-application inhibitive app-name

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	app-name	⁼

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W R Ruijie#config
Ruijie(config)#identify-application inhibitive ℳ

	₰ ₹	
˜Ω₰ ₹	**flow-rule** num **vlan-group** vlan-group-name **subscriber** subscriber-name	

22.1.4 identify-application key

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identify-application key app-name

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app-name	‟

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```
Ruijie#config
Ruijie(config)#identify-application signature update
```

⅊ ३	
flow-rule num **vlan-group** vlan-group-name **subscriber** subscriber-name **network-group** network-group-name **app-group** app-group-name **time-range** time-rang-name	‡ ⅊ ३

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22.2

22.2.1 show identify-application

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show identify-application

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Ruijie#show identify-application

any 255-4095-63-48

1-0-0-0

1-1-0-0

MSN 1-6-0-0

MSN-CHAT 1-6-1-0

MSN-AUDIO 1-6-2-0

MSN-FILE 1-6-3-0

MSN- 1-6-4-0

MSN- 1-6-5-0

QQ 1-7-0-0

QQ-CHAT 1-7-1-0

QQ- 1-7-2-0

QQ- 1-7-3-0

QQ- Ω ṃ 1-7-4-0

QQ- 1-7-5-0

QQ- 1-7-14-0

WEBIM 1-9-0-0

MSN-WEBIM 1-9-1-0

YAHOO-WEBIM 1-9-2-0

AIM 1-9-3-0

1-12-0-0

₰ 1-14-0-0

IP 2-0-0-0

SKYPE 2-7-0-0

h232 ~ 2-12-0-0

H323-HOSTCALLSC 2-12-4-0

CALL-SIG-TRANS 2-12-5-0

RTCP 2-12-6-0

RTP 2-12-7-0

IMTC-MCS 2-12-10-0

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show identify-application inhibitive

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Ruijie#show identify-application inhibitive

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22.2.5 show identify-application key

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show identify-application key

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```
Ruijie#show  identify-application key
IP
    QQ
MSN
FTP
```

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22.2.6 show identify-application userdef-rule

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show identify-application userdef-rule

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```
Ruijie#show  identify-application userdef-rule
TYPE  NAME              CLASS              SPL    SPH    DPL    DPH
TCP                       Ⅱ                1      10     1      100
TCP   myqq                                 any    any    200    888
UDP   myxunlei           myp2p             18     18     any    any
```

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22.3

22.3.1 identify-application clear key-inhibitive group

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identify-application clear key-inhibitive group

23

23.1

23.1.1 auto-pir

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auto-pir enable [interval NUM **[root-rate** Percentage **]]**

no auto-pir enable

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NUM	˘ ` Æ˙ ˘ a й ˘ ґґ й ˙
Percentage	Ч 8 ḣ˙ ¯ ˘ Ю˙ ¥ ḣ ৭ Ч 8 ˘ ґґ ˘ ‡ Ч 8 ὲ ’ æ ¥ ḣ э ǂ ৭ ’ Ӯ ¥ ¥ ч ǯ a ṁ a й ˘ ґґ й ˙ Â Â Лъ ḣ й R˘ æ ¥ ৭ ˘ ¥ ৭ Ч 8 ˘ Ӯ ¥ ṇ ǯ a ṁ Â

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Ф ३ **channel-tree** Â

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G ґґ **inbound** **PIR** ╥ ˙

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```
Ruijie# config
Ruijie(config)# flow- control ґґ
Ruijie(config-flow-control)# channel-tree inbound
Ruijie(config-channel-tree)# auto-pir enable
```

	Ф ३	
ॐФ ३	Ф ३	
	show flow-control	ʌ ʎ Ф ३ **Inbound** **Outbound** ॠ
ʌ		
Ф ३ ५ ʌ	ʌ	
		Ф ३

23.1.2 change-priority

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channel-group name **parent NULL** parent_name **cir** cir_num **pir** pir_num **pri** pri_num **schedule-type fifo sfq per-net per-mask** mask **per-cir** pcir_num **per-pir** ppir_num **limit** limit_num **session-limit** session_limit_num **auto**

no channel-group name

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no channel-group name **pool** pool_name

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name	… ˝
parent	…
NULL	a ƒ ˘ ‡ … й
parent_name	… ˝ ˘ й …
cir cir_num	ə ˘˝ ɖ ˘ ώ ηz й · ˘ ` Æ˙
pir pir_num	ḣ ə ˘ ˝ ⁄ Л Ъ ˘ ¥ ¥ **cir˘** **cir** ĩ й ä Ḇ ˘ ώ ηz й · ˘ ` Æ˙
pri pri_num	. ˝I ˘ ώ ηz · ˘ . ˝I ˘ . ˝I ˝ . ˝I ĩ

schedule-type

	auto	ʎ a ʖ ˘ ˝ **per-cir**
		ŋ **limit** o ɣ ɣ **cir** ʖ ‡ a ṁ
		˘ ў ɣ ╟ ⸗

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… ˘ ώ **pri** ʖ ˘ ˙ ʼI ѝ ˘ ώ **schedule-type**

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Ф ҳ	**channel-tree**	Â

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cir ˘ **cir** б ὲ ʼI **cir** ʒ̆ ŋ ɣ ɣ **cir**ʼ

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23.1.5 channel-tree

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no channel-tree {inbound | outbound}

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inbound	… Ю
outbound	… Э

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Ф ३ **flow-control**

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Ruijie(config)#flow-control в
Ruijie(config-flow-control)#channel-tree inbound
Ruijie(config-channel-tree)#exit
Ruijie(config-flow-control)#channel-tree outbound
Ruijie(config-channel-tree)#exit

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channel-default	
channel-group	…

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23.1.6 flow-control

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flow-control name

no flow-control name

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name	8 ¨ Â

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W R	R ‘ ‘ Ruijie#config Ruijie(config)#flow- control ₿ Ruijie(config-flow-control)# R ‘ ‘ Ruijie#config Ruijie(config)# flow- control ₿ Ruijie(config-flow-control)# R ‘ ī ‘ Ruijie#config Ruijie(config)#no flow-control ₿

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		فز Л 8

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		Ф ३

23.1.7 flow-policy

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flow-policy name

no flow-policy

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name	8 ¨ Â

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```
R ˙ ↑ Э˙
Ruijie#config
Ruijie(config)#interface gi 0/1
Ruijie(config-if-GigabitEthernet 0/1)#flow-policy 1
Ruijie(config-if-GigabitEthernet 0/1)#
R ˙ ↑ Э˙
Ruijie#config
Ruijie(config)#interface gi 0/2
Ruijie(config-if-GigabitEthernet 0/2)#flow-policy 2
Ruijie(config-if-GigabitEthernet 0/2)#
R ˙ ⅄ Э ⅄ ˙
Ruijie#config
Ruijie(config)#interface gi 0/1
Ruijie(config-if-GigabitEthernet 0/1)#no flow-policy
```

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23.1.8 flow-rule

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flow-rule num **vlan-group** vlan-group-name **subscriber** subscriber-name **network-group** network-group-name **app-group** app-group-name **time-range** time-rang-name

flow-rule num **session-limit** session-num **action** **drop** | **log-drop** | **pass** **in-channel** in-channel-name **out-channel** out-channel-name **commet** string

flow-rule num **disable**

no flow-rule num

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[illegible]

```
Ruijie#config
Ruijie(config)#flow-control [illegible]
Ruijie(config-flow-control)#flow-rule 1 vlan-group [illegible] subscriber [illegible] network-group [illegible] app-group [illegible] time-rang [illegible]
Ruijie(config-flow-control)#flow-rule 1 session-limit [illegible] 0 action pass out-channel [illegible]
```

[illegible]

```
Ruijie#config
Ruijie(config)#flow-control [illegible]
Ruijie(config-flow-control)#flow-rule 1 vlan-group [illegible] subscriber [illegible] network-group [illegible] app-group [illegible] time-rang [illegible]
Ruijie(config-flow-control)#flow-rule 1 session-limit [illegible] 0 action drop
```

[illegible]

```
Ruijie#config
Ruijie(config)#flow-control [illegible]
Ruijie(config-flow-control)#no flow-rule 1
```

[illegible]

[illegible]	
time-range name	
vlan-group name	
subscriber static name	
network-group name	
identify-application custom name	[illegible]

[illegible]

[illegible]

share-pool Name **rate** num1 **type** **normal** **per-ip limit** num2
no share-pool Name

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share-pool Name	╗ ĩ ″Ω м ¨
rate num1	… ″Ω м
	… ″Ω м ثشخ a ώ й **normal** ثشخ
normal	**normal** ثشخ
per-ip	**per-ip** ثشخ
limit num2	**per-ip** ثشخ″Ω м 8

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Ƒ ३ **channel-tree** Â

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```
Ruijie#config
Ruijie(config)#flow-control
Ruijie(config-flow-control)# channel-tree inbound
Ruijie(config-channel-tree)# share-pool
```
rate typenormal

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Channel-group	… ŋ ╗ ώ ″Ω м Ƒ ३

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23.2

23.2.1 show flow-control

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show flow-control Name **{inbound | outbound} [channel-group** channel-name **detail]**

[illegible]

show flow-control Name **{inbound | outbound} [share-pool [**pool-name **]]**

[illegible]

show flow-control Name **{inbound | outbound} auto-pir**

[illegible]

[illegible]	
flow-control Name	[illegible]
inbound	[illegible]
outbound	[illegible]
channel-group channel-nam	[illegible] **detail** [illegible]
share-pool [pool-name **]**	[illegible]

[illegible]

[illegible]

[illegible] **channel-group** channel-name [illegible]

[illegible]

```
Ruijie#show flow-control test inbound channel-group root
Group-name          CIR          PIR          Pri          Schedule
CIDR/CIR/PIR/Limit/Sess-limit/Share-pool
----------  --    --   --   -------- ----------------------------
root        100   100   4    per-net  32/10/10/10/100/test
```

[illegible]

```
Ruijie#show flow-control test inbound
Group-name          CIR          PIR          Pri          Schedule
CIDR/CIR/PIR/Limit/Sess-limit/Share-pool
```

```
---------- --   --   --   -------- -------------------------
root       100  100  4    per-net  32/10/10/10/100/test
part1      100  100  4    fifo     /////test1
```

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```
Ruijie#show flow-control test outbound share-pool
Global pool:    14          Global red obj:  0
Tree pool:      3

Share-pool     Rate       Type        Limit      Child
-------------- ---------- ---------- ---------- ----------
tcp            200        Normal     NA         1
udp            150        Normal     NA         1
p1             100        Normal     NA          2
```

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```
Ruijie#show flow-control test3 outbound share-pool p1
Pool:     p1
Rate:     100       Type:     Normal    Limit:    NA
State:    Green     Child:    2         Active:   NA
Kill flow: 0

Group-name  Cir     Pir     Pri  Type      Limit    Share-pool
----------- ------ ------- ---- -------- -------- ----------
p1-tcp      150     500     4    fifo      NA       p1
p1-udp      100     500     4    fifo      NA       p1
```

	[illegible]
	[illegible]
	[illegible]
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Ruijie#

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Ruijie#show flow-control-policy rule

```
Pri_num grp_id rule_num ifx   vlan_id    subs_id    net_wk_id  app_id
ichl_id ochl_id ses_num ses_lim state effec
1       0       1        0      0          814695740  0          0
NA      2       0       2000    up    0
2       0       2        0     18661884    18577704   18577496   0
1       NA      0       2000    0
3     1    3        6     18661884    18577704   18577496   4294967290
1       1       0       2000    up    1
```

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Ruijie#show flow-control-policy rule group ƥ

```
Pri_num grp_id rule_num ifx   vlan_id    subs_id    net_wk_id  app_id
ichl_id ochl_id ses_num ses_lim state effec
1       0       1        0      0          814695740  0          0
NA      2       0       2000    up    0
2       0       2        0     18661884    18577704   18577496   0
1       NA      0       2000    up    0
```

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24.1

24.1.1 flow-audit data-store

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flow-audit data-store n

no flow-audit enable

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w R	R ʻ ɖ й Ruijie#config Ruijie(config)#flow-audit data-store 2 R ʻ ɖ й ɖ ʻ Ruijie#config Ruijie(config)#no flow-audit data-store

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24.1.2 flow-audit enable

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flow-audit enable

no flow-audit enable

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subscriber-name **ip** ip-address

Download(pps)

DROP: Upload(bps) Download(bps) Upload(pps) Download(pps)

App1 46

62597 65955 15 17

0 0 0 0

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Ruijie# show flowrate application bridge 0 by-group

path:bridge-map 0

Application_group

PASS: Upload(bps) Download(bps) Upload(pps) Download(pps)

DROP: Upload(bps) Download(bps) Upload(pps) Download(pps)

App_group1

211 249 0 0

0 0 0 0

R 3 HO bridge 0 ƀ 2010 1 9 ʌ̊ 2010 1 9 ʌ ə ˘ ,

Ruijie# show flowrate application bridge 0 by-group day- i nterval 2019 to 2019

path:bridge-map 0

day-interval: 2010-1-9 ~ 2010-1-9

Application_group

PASS: Upload(KB) Download(KB) Upload(packets) Download(packets)

DROP: Upload(KB) Download(KB) Upload(packets) Download(packets)

P2P

0 6 24 24

0 0 0 0

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5229 116742 59983 89151

0 0 0 0

/ QQ

220 135 1349 1290

0 0 0 0

27684236 159994 363431164 226927

0 0 0 0

˚ ~ /Lotus-Notes ˚

793	772	5327	4766
0	0	0	0
~			
32	252	567	635
0	0	0	0
~ /NETBIOS			
2	98	24	1187
0	0	0	0
0	2	0	4
0	0	0	0

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end-year	
end-month	
end-day	
end-hour	
begin-hour2	
end-hour2	
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Ruijie#show flowrate channel

```
channel_group       channel_name
 type                    pass_rate(bits/sec,       packets/sec)
drop_rate(bits/sec, packets/sec)
 channel_groupA/  channel_nameA
  up                                  125520                , 33
0            , 0
 channel_groupB/  channel_nameB
  down                                128                   , 0
0            , 0
 channel_groupC/  channel_nameC
  down                                39632                 , 61
0            , 0
```

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Ruijie# show flowrate channel channel-name N time-interval 2810 to 1910

```
channel_group: channel_groupA
channel_name: channel_nameA
type:  down
PASS:  821170 KB, 2280990 Packets
```

```
DROP:  0 KB, 0 Packets

channel_group: channel_groupB
channel_name: channel_nameB
type:  up
PASS:  616543 KB, 1890126 Packets
DROP:  0 KB, 0 Packets
```

[illegible]

[illegible]	

[illegible]

[illegible]

[illegible]	
	[illegible]

24.2.3 show flowrate interface

[illegible]

show flowrate interface interface-name **recent** hour **| time-interval** begin-year begin-month begin-day begin-hour **to** end-year end-month end-day end-hour **day-interval** begin-year begin-month begin-day **to** end-year end-month end-day **hour-interval** begin-hour **to** end-hour begin-hour2 **to** end-hour2 **detail**

[illegible]	
interface-name	[illegible]
hour	
begin-hour	
begin-day	
begin-month	
begin-year	
end-hour	
end-day	
end-month	
end-year	

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```
Ruijie# show flowrate interface g0/1
Interface: GigabitEthernet 0/1
Input rate: 979685 bits/sec, 114 packets/sec
Output rate: 107233 bits/sec, 60 packets/sec
```

R 2 gigabitEthernet 0/1 2010 1 8 2 2010 1 9 11

```
Ruijie# show flowrate interface g0/1 time-interval 2810 to 1910
Interface:GigabitEthernet 0/1
PASS upload: 14478835 KB, 30655170 Packets
PASS download: 6342862 KB, 22501788 Packets
```

24.2.4 show flowrate ip

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show flowrate ip

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interface-name	ॅ
hour	
subscriber-name	ॅ
subscriber-group	ॅ
Ip-address	ھ ھ ک
application-name	ॅ
application-group	ॅ
application-type	ش ج
begin-hour	
begin-day	
begin-month	
begin-year	
end-day	
end-month	
end-year	
begin-hour	
end-hour	
begin-hour2	
end-hour2	
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Ruijie#show flowrate ip interface [illegible]

Subscriber Application-num

PASS: UplWEthernet 0/1 ,Xãhà |v|XÑà |r2[illegible]1Tz0PASS: PAS068f2 S713 T[(PASS

PASS (in-T*58T 98)-6TJ0 -1.713 T[(PASS:)-10S:

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```
  0                0                0                0
R 2˜   ˜Ω   Ю˜      ⌠ gigabitEthernet 0/1˜ 2010   1   8 ⌠⌡  2010
1   9 ⌠
Ruijie#showflowrateip          ⌠⌡day-                                i nterval
⌠⌡018       to ⌠⌡019
path:bridge-map 0
day-interval: 2010-1-8 ~ 2010-1-9
Subscriber
PASS ˙   Upload(KB)         Download(KB)           Upload(packets)
Download(packets)
DROP ˙   Upload(KB)         Download(KB)           Upload(packets)
Download(packets)
/User_groupA/User_nameA
  0                2871             0                16161
  0                0                0                0
/User_groupB/User_nameB
  153987           0                2022024          0
  0                0                0                0
/User_groupC/User_nameC
  153986           0                2022024          0
  0                0                0                0
/User_groupD/User_nameD
  213285           0                2800725          0
  0                0                0                0
/User_groupE/User_nameE
  161994           0                2127179          0
  0                0                0                0
```

[illegible]

show flowrate ip-application interface interface-name **| bridge** bridge-name **subscriber-group** subscriber-group **subscriber** subscriber-name **ip** ip-address **application-group** application-group **application-type** application-type **application** application-name **day-interval** begin-year begin-month begin-day **to** end-year end-month end-day **hour-interval** begin-hour1 **to** end-hour1 begin-hour2 **to** end-hour2 **order-by pass drop upload download ip subscriber|application desc asc top** n

[illegible]	
interface-name	[illegible]
hour	
subscriber-name	[illegible]
subscriber-group	[illegible]
Ip-address	[illegible]
application-name	[illegible]
application-group	[illegible]
application-type	[illegible]
begin-hour	
begin-day	
begin-month	
begin-year	
end-day	
end-month	
end-year	
begin-hour	
end-hour	
begin-hour2	
end-hour2	
n	[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

```
Ruijie#show flowrate ip-application interface [illegible]
path:GigabitEthernet 0/1
```

```
Subscriber         Application
PASS: Upload(bps)    Download(bps)   Upload(pps)    Download(pps)
DROP: Upload(bps)    Download(bps)   Upload(pps)    Download(pps)
/user_groupA/user_nameA       applicationA
  46003            2093107          93              173
  0                0                0               0
/user_groupB/user_nameB       applicationB
  46001            2093102          193              173
  0                0                0               0
/user_groupC/user_nameC       applicationC
  4003            1093107          63               73
  0                0                0               0
```

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24.2.6 show online ip

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show online ip interface interface-name **| bridge** bridge-name **subscriber** subscriber-name **subscriber-group** subscriber-group **ip** ip-address **day-interval** begin-year begin-month begin-day **to** end-year end-month end-day **hour-interval** begin-hour **to** end-hour begin-hour2 **to** end-hour2 **order-by pass drop upload download ip subscriber desc asc top**

∨	∨	
	interface-name	Ь ∨ ˘ فز Ω Ю G
	bridge-name	˘ فز Ю G
	subscriber-name	
	subscriber-group	
	Ip-address	ھ ک
	begin-hour	
	begin-day	
	begin-month	
	begin-year	
	end-day	
	end-month	
	end-year	
	begin-hour	
	end-hour	
	begin-hour2	
	end-hour2	

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```
/User_groupE/User_nameE
 192.168.203.39                  2010-1-8 8:48        530
  42329            515173           0                0
/User_groupF/User_nameF
 192.168.196.72                  2010-1-7 9:37        1922
  274249           396572           0                0
/User_groupG/User_nameG
 192.168.203.48                  2010-1-7 9:37        1922
  55562            380214           0                0
/User_groupH/User_nameH
 192.168.196.70                  2010-1-7 9:37        1922
  105615           285195           0                0
/User_groupI/User_nameI
 192.168.196.55                  2010-1-7 9:37        1922
  33071            205676           0                0
/User_groupJ/User_nameJ
 192.168.203.40                  2010-1-7 9:37        1922
  15904            160891           0                0
```

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Ruijie# show online ip interface [illegible] day- i nterval 2010 1 8 to 2010 1 8 hour 1 to 3 order-by pass download desc

```
path:GigabitEthernet 0/1
Subscriber
IP              OnlineTime(min)
PASS-Upload(KB)         PASS-Download(KB)         DROP-Upload(KB)
DROP-Download(KB)
/User_groupC/User_nameC
192.168.196.37     180
  75381            1193654          0                0
/User_groupD/User_nameD
192.168.203.36     180
  381              3120             0                0
/User_groupE/User_nameE
192.168.196.53     180
  206              1457             0                0
/User_groupF/User_nameF
192.168.196.63     135
  142              1437             0                0
```

```
Subscriber
IP                Application
LoginTime         OnlineTime(min)
PASS-Upload(KB)            PASS-Download(KB)            DROP-Upload(KB)
DROP-Download(KB)
/User_groupA/user_nameA
 192.168.196.14          UDP
  2010-1-8 19:7         0
   24              0               0              0
/user_groupB/user_groupB
 192.168.196.15          UDP
  2010-1-8 19:7         0
   24              0               0              0
/User_groupC/User_nameC
 192.168.196.16          UDP
  2010-1-8 19:7         0
   24              0               0              0
```

R 2˙ ˜Ω ƗƠ ⅄ gigabitEthernet 0/1 IP ѝ 192.168.196.70 IP ƒƒ ˘ ə

Ruijie#showonline ip-application interface [illegible] ip [illegible]

```
path:GigabitEthernet 0/1
Subscriber
IP                Application
LoginTime         OnlineTime(min)
PASS-Upload(KB)         PASS-Download(KB)         DROP-Upload(KB)
DROP-Download(KB)
/user_groupA/user_nameA
 192.168.196.70       by_pass
  2010-1-7 9:37         2032
   107182           327352           0               0
```

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24.2.8 show online ip-application history

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show online ip-application history interface interface-name **| bridge** bridge-name **subscriber** subscriber-name **subscriber-group** subscriber-group **ip** ip-address **application** application-name **application-group** application-group **application-type** application-type **order-by pass drop upload download ip subscriber application desc asc top** n

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interface-name	Ь ৲ ˘ ফ ˜Ω Ю G
bridge-name	˘ ফ Ю G
subscriber-name	
subscriber-group	£
application-name	
application-group	£
application-type	ش ش
Ip-address	ھ ھ
application-name	
application-group	£

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0 0 0 0
/User_groupA/User_groupA TCP
2496 35913 3 5
0 0 0 0
/User_groupA/User_groupA UDP
21216 0 34 0
0 0 0 0
R 2 Ω Ю ⅄ gigabitEthernet 0/1 IP й 192.168.196.70
IP ف N Դ
" Ω Ъ
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```
 2010-1-2 3:32       2010-1-2 3:34
 0               0               2               1
 0               0               0               0
/User_groupA/User_groupA
 192.168.196.70       DNS
 2010-1-2 3:32       2010-1-2 3:34
 0               0               1               1
 0               0               0               0
/User_groupA/User_groupA
 192.168.196.70       DNS
 2010-1-2 4:15       2010-1-2 4:16
 0               0               1               1
 0               0               0               0
/User_groupA/User_groupA
 192.168.196.70          HTTP
 2010-1-2 4:30       2010-1-2 4:34
 0               1               9               6
 0               0               0               0
/User_groupA/User_groupA
 192.168.196.70       DNS
 2010-1-2 4:32       2010-1-2 4:33
 0               0               1               1
 0               0               0               0
/User_groupA/User_groupA
 192.168.196.70          HTTP
 2010-1-2 4:39       2010-1-2 4:42
 1               1               4               2
 0               0               0               0
/User_groupA/User_groupA
 192.168.196.70       DNS
 2010-1-2 4:39       2010-1-2 4:42
 0               0               1               1
 0               0               0               0
/User_groupA/User_groupA
 192.168.196.70       DNS
 2010-1-2 5:15       2010-1-2 5:20
 0               0               1               1
 0               0               0               0
/User_groupA/User_groupA
 192.168.196.70          HTTP
```

```
 2010-1-2 5:42        2010-1-2 5:46
 0                0                2                1
 0                0                0                0
/User_groupA/User_groupA
 192.168.196.70       DNS
 2010-1-2 5:42        2010-1-2 5:46
 0                0                1                1
 0                0                0                0
/User_groupA/User_groupA
 192.168.196.70       DNS
 2010-1-2 6:16        2010-1-2 6:20
 0                0                1                1
 0                0                0                0
```

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24.2.9 show online ip history

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show online ip history interface interface-name **| bridge** bridge-name **subscriber** subscriber-name **subscriber-group** subscriber-group **ip** ip-address **order-by pass drop upload download ip subscriber desc asc top**

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	interface-name	Ь ۸ ۔ ڤڎ Ω Ю G
	bridge-name	۔ ڤڎ Ю G
	subscriber-name	۔
	subscriber-group	۔
	Ip-address	ھ ک
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Ruijie#show online ip history bridge 0

```
path:bridge-map 0
Subscriber
IP                AuthType     LoginTime       LogoutTime
PASS  Upload(KB)    Download(KB)     Upload(packets)   Download(packets)
DROP  Upload(KB)    Download(KB)     Upload(packets)   Download(packets)
/User_groupA/User_nameA
 192.168.196.61                   2010-1-8 16:52       2010-1-8 18:6
   8662            0               113726           0
  0               0               0               0
/User_groupB/User_nameB
 192.168.196.131                  2010-1-8 16:52       2010-1-8 18:6
   8662            0               113726           0
  0               0               0               0
/User_groupC/User_nameC
 192.168.196.38                   2010-1-8 16:52       2010-1-8 18:6
   8662            0               113726           0
  0               0               0               0
/User_groupD/User_nameD
 192.168.196.93                   2010-1-8 16:52       2010-1-8 18:6
   8662            0               113726           0
  0               0               0               0
/User_groupE/User_nameE
 192.168.196.245                  2010-1-8 16:52       2010-1-8 18:6
   8662            0               113726           0
  0               0               0               0
```

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```
/User_groupA/User_nameA
 192.168.203.41                    2010-1-2 2:12        2010-1-2
2:25
   1              3              16              14
  0              0              0              0
/User_groupB/User_nameB
 192.168.196.39                    2010-1-2 2:17        2010-1-2
2:25
   3              25             34              29
  0              0              0              0
```

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24.2.10 show online statistic

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show online statistics interface interface-name **| bridge** bridge-name **detail|recent** hour **| time-interval** begin-year begin-month begin-day begin-hour **to** end-year end-month end-day end-hour

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	interface-name	Ь ۸ ˘ ۸ Ю G
	bridge-name	˘ ۸ Ю G
	hour	
	begin-year	
	begin-month	
	begin-day	
	begin-hour	
	end-year	
	end-month	
	end-day	
	end-hour	

[illegible]

[illegible]

[illegible]

[illegible]

```
Ruijie#show online statistic bridge 0
path: bridge-map 0
online ip count: 251
online session: 254
```

[illegible]

```
Ruijie#show online statistic bridge 0 detail
path: bridge-map 0
id        ip            subscriber          session
1   192.168.196.70  /User_groupA/User_nameA  5
2   192.168.203.127 /User_groupB/User_nameB  2
3   192.168.196.77  /User_groupC/User_nameC  1
4   192.168.196.26  /User_groupD/User_nameD  1
5   192.168.196.150 /User_groupE/User_nameE  1
```

[illegible]

```
Ruijie# showonlinestatisticsinterface [illegible] recent 3
path: GigabitEthernet 0/1
recent hour: 3
Time slice: 15 min
count:12
ID       Online-IP     Online-Session
1              95           522
2              95           588
3              96           798
4              94           590
5              96           528
6              96           886
7              97           646
8              99           666
9              97           542
```

10	96	885
11	97	986
12	95	820

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25 URL

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25.1.1 class

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class class-name

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class-name	ǐ ¨ ˘ Л Л Ж ǐ ˘ ≠ Л Л ǐ

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```
# й URL ľ OBJA Ł ╗ У э URL ǐ
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# url-object OBJA
Ruijie(url-obj-config)# class
Ruijie(url-obj-config)# end
```

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25.1.2 comment

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comment comment-string

no comment

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comment-string	↑ ˘ э

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```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# url-object OBJA
Ruijie(url-obj-config)# comment mobile
```

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25.1.3 content-policy

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no content-policy policy-name

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policy-name	॑ ॔

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```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# content-policy     policyA
Ruijie(cont-plcy-config)# end
```

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policy-name	ą̈ ̈

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```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# interface    gi 0/1
Ruijie(config-if-GigabitEthernet 0/1)# content-policy-map     policyA
Ruijie(config-if-GigabitEthernet 0/1)# end
```

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25.1.5 regexp

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no regexp url-regexp

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url-regexp	‡ ˘ ñ ‡

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25.1.6 url

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no url url-string

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url-string	ǐ ^ ŭ ˘ ē ' à ЮЖ ǐ è ^ ŭ й ⸗ Ю ˘ ‡ ē Ю ˘ Â R ' й ľ Ł˘ ‡ ē ľ Ł Ю ą̈ Â à ЮЖ ǐ è ^ ŭ й ⸗ з а ŭ ˘ ‡ ē ⸗ ⸗ ⸗ ˘ R ' й ľ Ł˘ ‡ ē ľ Ł ⸗ ľ Ł à ľ Ł ⸗ Â

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à ⸗ ē ṃ Θ ⸗ ˘ й

ȁ ƒ ȉ **url-audit except-regexp** ‡ ˘ ‡ ȕ
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G ȁ ȉ **url-audit except-postfix** ˘ a Ю Ҭ ȁ ȁ ȁ

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Ruijie# configure terminal

W R Ruijie(config)# url-filter-notice display ˘ б Ц ˌ

Ruijie(config)#end

Ruijie# show running

w R	1 à У э URL -OBJA Ruijie# configure terminal Ruijie(config)# url-object Ø Ruijie(url-obj-config)#end Ruijie# show running

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25.1.11 url-rule

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[no] url-rule audit-default-enable

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url-rule rule-id **subscriber** subs-name **any** **url-object** obj-name **time-range** time-name **any** **action** **deny** **permit** **audit** **comment** comment-string]

no url-rule rule-id

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url-rule priority-swap rule-id1 rule-id2

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	rule-id	8 ‡ ˘ Ч ḣ ˆنز ~
	subs-name	‡ Ω

obj-name	‡ ˇΩ
time-name	‡
comment-string	‡
rule-id1	‡
rule-id2	‡

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```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# content-policy POLICYA
Ruijie(cont-plcy-ie(config1.3F981C.1 Tf> content 1 T132 -0.006 Tj/C2_0
```

Enter configuration commands, one per line. End with CNTL/Z.

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25.2.1 show url-audit detail

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show url-audit detail {recent time-range from to day-interval to [hour-interval to [to]]} [interface intf-name **| bridge** bridge-num **subscriber** subs-name **[url-class** class-name **| url-object** obj-name**] [host** host-string **] [permit | deny] order-by time | url-class |url | url-class | host-times | IP]**

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yyyy mm dd	
hh:mm:ss	ϟ
hour1	٭ ٬
hour2	٭ ٬
hour3	٭ ٬
hour4	٭ ٬
intf-name	৲ ̈
bridge-num	৲
subs-name	٭ ٬ ̈ ̆ ̄
class-name	٭ ٬ ϟ ̈ ̆ ̄
obj-name	٭ ٬ ̈ ̆ ̄

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[illegible]

[illegible]	
	[illegible]

25.2.2 show url-audit stat

[illegible]

show url-audit stat {recent [illegible] **time-range from** [illegible] **to** [illegible] **day-interval** [illegible] **to** [illegible] **[hour-interval** [illegible] **to** [illegible] **[** [illegible] **to** [illegible] **]]} [interface** intf-name **| bridge** bridge-num **subscriber** subs-name **[url-class** class-name **| url-object** obj-name**] [host** host-string **] [permit | deny] order-by time | url-class |url | url-class | host-times]**

[illegible]	
yyyy mm dd	
hh:mm:ss	[illegible]
hour1	[illegible]
hour2	[illegible]
hour3	[illegible]
hour4	[illegible]
intf-name	[illegible]
bridge-num	[illegible]
subs-name	[illegible]

class-name	٭ ٭ ٭ ٭ ٭
obj-name	٭ ٭ ٭ ٭

yyyy mm dd	
hh:mm:ss	
hour1	
hour2	
hour3	
hour4	
intf-name	
bridge-num	
subs-name	
class-name	

25.2.4 show url-rule

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show url-rule content-policy policy-name

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policy-name	¨

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```
#                URL  ‡    ৯
Ruijie#show url-rule content-policy POLICYA
content-policy:POLICYA
(active)url-rule 1 subscriber USERA url-object OBJA time-range any
action deny audit
(active)url-rule 2 subscriber any url-object OBJA time-range any
action permit audit
url-rule audit-default-enable
```

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26.1.1 content-object

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no content-object object-name

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object-name	ą̈ ¨

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```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# content-object     name1
Ruijie(content-obj-config)# keyword  hello
Ruijie(content-obj-config)# regexp  .*\.163\.com
Ruijie(content-obj-config)# end
```

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26.1.2 ftp-rule audit-default-enable

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ftp-rule audit-default-enable

no ftp-rule audit-default-enable

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```
R 1 POLICYA è FTP ‡
Ruijie# configure terminal
Ruijie(config)# content-policy POLICYA
Ruijie(cont-plcy-config)# ftp-rule delete-all
Ruijie(cont-plcy-config)# end
```

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26.1.4 ftp-rule priority-swap

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ftp-rule priority-swap rule-id1 rule-id2

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rule-id1	‡
rule-id2	‡

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```
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Ruijie# configure terminal
Ruijie(config)# content-policy POLICYA
Ruijie(cont-plcy-config)# ftp-rule priority-swap 10 20
Ruijie(cont-plcy-config)# end
```

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26.1.5 ftp-rule rule-id

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ftp-rule rule-id **subscriber** subs-name **any** **time-range** time-name **direction** **in** **|** **out** **|** **double** **relation** **and** **or** **directory** content-object-name1 **file-name** content-object-name2 **action** **permit** **|** **deny** **audit** **comment** comment-string

no ftp-rule rule-id

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```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# content-policy POLICYA
Ruijie(cont-plcy-config)# ftp-rule 2 subscriber anytime- range any
direction outrelation or file-name FileBaction deny audit comment
DenyAllUserUpload
Ruijie(cont-plcy-config)# end
```

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26.1.6 im-rule audit-default-enable

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im-rule audit-default-enable

no im-rule audit-default-enable

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26.1.9 im-rule rule-id subscriber

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im-rule rule-id **subscriber** subs-name **any** **time-range** time-name
action **permit | deny** **audit** **comment** comment-string

no im-rule rule-id

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rule-id	8 ‡ ˘ Л h ˆ ~
subs-name	‡ Ω
time-name	‡
comment-string	‡

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```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# content-policy POLICYA
Ruijie(cont-plcy-config)# im-rule 2 subscriber USERA time- r ange any
action permit audit comment PermitUserAMSN
Ruijie(cont-plcy-config)# im-rule 2 im-type msn relation or
account ACCOUNTA message KEYA comment PermitUserAMSN
Ruijie(cont-plcy-config)# end
```

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26.1.10 im-rule rule-id relation

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im-rule rule-id **im-type** im-name **relation and or account** content-object-name1 **message** content-object-name2

no im-rule rule-id

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rule-id	⁸ ‡ ˘ ⅄ ḣ ̃ ̂ ~
im-name	˅ Â s ˘ R s й ‡ ⅄ ˅ , R s й ‡ ⅄ ˅ ŋ ˅ Â
content-object-name1	⅄˘ a ƀ Â
content-object-name2	˘ a ƀ Â

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˘ з ⅄ ą̊ Â

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```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# content-policy POLICYA
Ruijie(cont-plcy-config)# im-rule 2 subscriber USERA time- r ange any
action permit audit comment PermitUserAMSN
Ruijie(cont-plcy-config)# im-rule 2 im-type msn relation or
account ACCOUNTA message KEYA comment PermitUserAMSN
Ruijie(cont-plcy-config)# end
```

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26.1.11 keyword

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no keyword string

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string	ą̈ ^ ŭ Ω

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```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# content-object     name1
Ruijie(content-obj-config)# keyword  hello
Ruijie(content-obj-config)# regexp  .*\.163\.com
Ruijie(content-obj-config)# end
```

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26.1.12 mail-rule audit-default-enable

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mail-rule audit-default-enable

no mail-rule audit-default-enable

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```
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Ruijie# configure terminal
Ruijie(config)# content-policy POLICYA
Ruijie(cont-plcy-config)# mail-rule priority-swap 10 20
Ruijie(cont-plcy-config)# end
```

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26.1.15 mail-rule rule-id subscriber

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mail-rule rule-id **subscriber** subs-name **any** **time-range** time-name **direction** **in | out | double** **action** **permit | deny** **audit** **comment** comment-string

no mail-rule rule-id

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rule-id	8 ‡ ˘ Ч h ˙ ˜
subs-name	‡ Ω
time-name	‡
comment-string	‡

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```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# content-policy POLICYA
Ruijie(cont-plcy-config)# mail-rule 1 subscriberanytime-ra ngeany
action permit audit comment mail-audit-1
Ruijie(cont-plcy-config)# mail-rule 1 relationorfrom OBJ-F subject
OBJ-S attachement-size less 20000
Ruijie(cont-plcy-config)# end
```

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26.1.16 mail-rule rule-id relation

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mail-rule rule-id **relation and or from** content-object-name1 **to** content-object-name2 **subject** content-object-name3 **body** content-object-name4 **attachment-name** content-object-name5 **mail-size greater greater-equal less less-equal**

no mail-rule rule-id

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rule-id	8 ‡ ˘ ^ ḣ ^ ~
content-object-name1	^ ˘ ж Ω ˘ a Ē Â
content-object-name2	˘ ж Ω ˘ a Ē Â

content-object-name3	̤ ῏Ω ˘ a ﬔ Â
content-object-name4	̤ ᾇ ῏Ω ˘ a ﬔ Â
content-object-name5	̤ ̿ ῏Ω ˘ a ﬔ Â
file-size	̤ ḣ˘ ѝ ˘ ˋ æ ѝ

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regexp	‡ ˘ ñ ‡ Ω͂

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```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# content-object     name1
Ruijie(content-obj-config)# keyword  hello
Ruijie(content-obj-config)# regexp  .*\.163\.com
Ruijie(content-obj-config)# end
```

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26.1.18 telnet-rule audit-default-enable

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26.1.20 telnet-rule priority-swap

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telnet-rule priority-swap rule-id1 rule-id2

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	rule-id1	‡ rule-id1

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		Ф ३

26.1.21 telnet-rule rule-id

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26.1.22 web-bbs-rule audit-default-enable

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web-bbs-rule audit-default-enable

no web-bbs-rule audit-default-enable

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```
R 1 í  WEB BBS
Ruijie# configure terminal
Ruijie(config)# content-policy     POLICYA
Ruijie(cont-plcy-config)# web-bbs-rule audit-default-enable
Ruijie(cont-plcy-config)# end
```

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rule-id1	‡
rule-id2	‡

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comment-string

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```
R 1 í  WEB MAIL
Ruijie# configure terminal
Ruijie(config)# content-policy     POLICYA
Ruijie(cont-plcy-config)# web-mail-rule audit-default-enable
Ruijie(cont-plcy-config)# end
```

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26.1.27 web-mail-rule delete-all

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```
Ruijie(config)# content-policy      POLICYA
Ruijie(cont-plcy-config)# web-mail-rule delete-all
Ruijie(cont-plcy-config)# end
```

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26.1.28 web-mail-rule priority-swap

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web-mail-rule priority-swap rule-id1 rule-id2

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rule-id1	‡
rule-id2	‡

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```
R 1 Ꞓ  WEB MAIL          ‡ 10 n  ‡ 20  ˙ ˝I
Ruijie# configure terminal
Ruijie(config)# content-policy      POLICYA
Ruijie(cont-plcy-config)# web-mail-rule priority-swap        10 20
Ruijie(cont-plcy-config)# end
```

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26.1.29 web-mail-rule rule-id subscriber

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web-mail-rule rule-id **subscriber** subs-name **any** **time-range**
time-name **direction**

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```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# content-policy POLICYA
Ruijie(cont-plcy-config)# web-mail-rule 1 subscriber any
time-range any action permit audit comment mail-audit-1
Ruijie(cont-plcy-config)# web-mail-rule 1 relation or from OBJ-F
subject OBJ-S mail-size less 20000
Ruijie(cont-plcy-config)# end
```

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26.1.31 web-search-rule audit-default-enable

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web-search-rule audit-default-enable

no web-search-rule audit-default-enable

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```
Ruijie(cont-plcy-config)# web-search-rule audit-default-enable
Ruijie(cont-plcy-config)# end
```

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26.1.32 web-search-rule delete-all

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```
Ruijie# configure terminal
Ruijie(config)# content-policy POLICYA
Ruijie(cont-plcy-config)# web-search-rule delete-all
Ruijie(cont-plcy-config)# end
```

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26.1.33 web-search-rule priority-swap

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web-search-rule priority-swap rule-id1 rule-id2

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rule-id1	‡
rule-id2	‡

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```
R 1 Ц WEB ‡ 10 n ‡ 20 ˙ ˝I
Ruijie# configure terminal
Ruijie(config)# content-policy POLICYA
Ruijie(cont-plcy-config)# web-search-rule priority-swap 10 20
Ruijie(cont-plcy-config)# end
```

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26.1.34 web-search-rule rule-id

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web-search-rule rule-id **subscriber** subs-name **any** **time-range**
time-name **content** content-object-name **action** **permit | deny** **audit**

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show ftp-audit stat day-interval to hour-interval to subscriber direction out

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rule-name	‡
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26.2.3 show im-audit stat

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show im-audit stat recent hours **time-range from** yyyy mm dd hh:mm::ss **to** yyyy mm dd hh:mm:ss **day-interval** yyyy mm dd **to** yyyy mm dd **hour-interval** hour1 **to** hour2 hour3 **to** hour4 **interface** intf-name **| bridge** bridge-num **subscriber** subs-name **direction in out double type qq msn message** keyword **account** account-string **rule-name** rule-name **ip** ip-address **permit | deny**

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hours	
yyyy mm dd	

```
Ruijie# 50
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show im-audit detail day-interval to hour-interval to subscriber type msn order-by time desc start-item end-item

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[redacted]

show mail-audit stat recent hours time-range [redacted] 1 | (ord2 | ord3 | e |

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26.2.6 show mail-audit detail

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show mail-audit detail recent hours **time-range from** yyyy mm dd hh:mm::ss **to** yyyy mm dd hh:mm:ss **day-interval** yyyy mm dd **to** yyyy mm dd **hour-interval** hour1 **to** hour2 hour3 **to** hour4 **interface** intf-name **| bridge** bridge-num **subscriber** subs-name **ip** addr **direction in out double from** keyword1 **to** keyword2 **subject** keyword3 **rule-name** rule-name **permit | deny order-by time subscriber internal-ip direction send-mail-addr | mail-size asc desc start-item** integer **end-item** integer

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hours	
yyyy mm dd	
hh:mm:ss	ǂ
hour1	˚ ،
hour2	˚ ،
hour3	˚ ،
hour4	˚ ،
intf-name	⅄ ˝
bridge-num	⅄
subs-name	˚ ، ˝ ˘ ɒ ، ə ˝ l' Ł
addr	˚ ، ˘ ɒ ، ə l' Ł
keyword1	˚ ، ˚ ⅄ Ω
Keyword2	˚ ، ˚ Ω
Keyword3	˚ ، ˚ ǔ Ω
rule-name	˚ ، ɒ ‡ ˝
Integer1	˜ è Æ
integer2	˜ è Æ

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show mail-audit detail day-interval to hour-interval to subscriber order-by time desc start-item end-item

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26.2.7 show mail-audit attachment-info

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show mail-audit attachment-info timestamp timestamp **rand-id**

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timestamp	
49 --id	

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G ˮI ₯ ʅ **show mail-audit detail** ̈ ṉ

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timestamp ѝ ˘ **rand-id** ѝ ̈ ̈ ə Â

show mail-audit attachment-info timestamp **49 --id**

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26.2.8 show telnet-audit stat

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show telnet-audit stat recent hours **time-range from** yyyy mm dd hh:mm::ss **to** yyyy mm dd hh:mm:ss **day-interval** yyyy mm dd **to** yyyy mm dd **hour-interval** hour1 **to** hour2 hour3 **to** hour4 **interface** intf-name **| bridge** bridge-num **subscriber** subs-name **ip** addr **direction in out double content** keyword **rule-name** rule-name **permit | deny**

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hours	
yyyy mm dd	
hh:mm:ss	¦
hour1	˘ ˛
hour2	˘ ˛
hour3	˘ ˛
hour4	˘ ˛
intf-name	৸˝
bridge-num	৸
subs-name	˘ ˛ ˝ ˘ ˘ ˛ ˝ ৯ ˛ ˘ ˛
addr	˘ ˛ ˘ ˘ ˛ ৯ ˛ ˘ ˛
keyword	˘ ˛ ˘ Ω
rule-name	˘ ˛ ˘ ‡˝

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show telnet-audit stat day-interval from to hour-interval from to subscriber

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26.2.9 show telnet-audit detail

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show telnet-audit detail **recent** hours **time-range from** yyyy mm dd hh:mm::ss **to** yyyy mm dd hh:mm:ss **day-interval** yyyy mm dd **to** yyyy mm dd **hour-interval** hour1 **to** hour2 hour3 **to** hour4 **interface** intf-name **| bridge** bridge-num **subscriber** subs-name **ip** addr **direction in out double content** keyword **rule-name** rule-name **permit | deny order-by time subscriber internal-ip | external-ip direction asc desc start-item** integer **end-item** integer

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hours	
yyyy mm dd	
hh:mm:ss	↑
hour1	، ˚
hour2	، ˚
hour3	، ˚
hour4	، ˚
intf-name	⸗٨
bridge-num	٨
subs-name	˚ ، ⸗ ˘ ⸗ ، ə ⸗ ٦ ٬ Ł
addr	˚ ، ˘ ⸗ ، ə ٦ ٬ Ł
keyword	˚ ، Ω
rule-name	˚ ، ⸗ ‡⸗
Integer1	ˉ è Æ
integer2	ˉ è Æ

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show telnet-audit detail day-interval to hour-interval to subscriber order-by time desc start-item end-item

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26.2.10 show web-bbs-audit stat

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show web-bbs-audit stat **recent** hours **time-range from** yyyy mm dd hh:mm::ss **to** yyyy mm dd hh:mm:ss **day-interval** yyyy mm dd **to** yyyy mm dd **hour-interval** hour1 **to** hour2 hour3 **to** hour4 **interface** intf-name **| bridge** bridge-num **subscriber** subs-name **ip** ip-list **content** keyword **rule-name** rule-name **permit | deny**

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26.2.11 show web-bbs-audit detail

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show web-bbs-audit detail **recent** hours **time-range from** yyyy mm dd hh:mm::ss **to** yyyy mm dd hh:mm:ss **day-interval** yyyy mm dd **to** yyyy mm dd **hour-interval** hour1 **to** hour2 hour3 **to** hour4 **interface** intf-name **| bridge** bridge-num **subscriber** subs-name **ip** ip-list **content** keyword **rule-name** rule-name **permit | deny** **order-by** **time** **subscriber** **inter**

rule-name

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26.2.12 show web-mail-audit stat

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show web-mail-audit stat recent hours { { # 4 - c 2 r A 1

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```

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show web-mail-audit detail day-interval to hour-interval to subscriber order-by time desc start-item end-item

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26.2.14 show web-search-audit stat

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show web-search-audit stat recent

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show web-search-audit stat day-interval to hour-interval to subscriber

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```

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27.1

27.1.1 ping

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ping **vrf** vrf-name **ip** ip-address **length** length **ntimes** times **timeout** seconds **data** data

[illegible]

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[illegible]

```
Ruijie# ping [illegible]
Sending 5, 100-byte ICMP Echoes to 192.168.5.1, timeout is 2
seconds:
  < press Ctrl+C to break >
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
1/2/10 ms
```

[illegible]

Ruijie# ping [illegible] length [illegible] ntimes [illegible] timeout 3 data
f source [illegible]

```
Sending 100, 1000-byte ICMP Echoes to 192.168.5.197, timeout
is 3 seconds:
  < press Ctrl+C to break >
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max
= 2/2/3 ms
```

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[illegible]

27.1.2 Traceroute

[illegible]

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

ð [illegible] Ô

[illegible]	[illegible]
vrf-name	[illegible]
Ip-address	[illegible] Â

number	۸
source-address	ھ ک
seconds	
minimum maximum	ṇ ḥ

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

1     192.168.12.1    0 msec  0 msec  0 msec
2     192.168.9.2     4 msec  4 msec 4 msec
3     192.168.9.1     8 msec  8 msec  4 msec
4     192.168.0.10    4 msec  28 msec  12 msec
5     202.101.143.130    4 msec  16 msec  8 msec
6     202.101.143.154   12 msec  8 msec  24 msec
7     61.154.22.36    12 msec  8 msec  22 msec
Ruijie#
```

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```
Ruijie# traceroute
< 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
Ruijie#
```

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```
Ruijie# traceroute    fy

Translating " fy            "...[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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28 DHCP

28.1 DHCP

28.1.1 bootfile

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bootfile file-name

no bootfile

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file-name	Ж ţ í ╟ ˅ ¨ Â

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k í ╟ ę ˅ ¨ ˘ Л Л ئۇ ┣
˜ Ю ˅ Â è ئۇ ┣ **next-server** Ъ ३ Ж Â

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`bootfile router.conf`

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ip dhcp pool	Ж ص ھ ¨ ˘ ώ ص ھ Â
next-server	í ╟ Ю У э ئۇ ┣ ص ھ Â

28.1.2 client-identifier

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Ф ३ **client-identifier** Â Ф ३ **no** Λ Л Â

client-identifier unique-identifier

no client-identifier

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unique-identifier	˘ Л π Ω 8 Â Â

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`client-identifier`

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hardware-address	Ж Â
host	Ж n Â ¥ Â
ip dhcp pool	Ж ё ώ Â

28.1.3 client-name

Ж ё Ф ३ **client-name** Â Ф ३ ї ё Â

client-name client-name

no client-name

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client-name	Ж ё Â Л Лъ ' ! ñ Â ё a ł ёё ˘ Ж й ё ˘ ^ a Ж й Â

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```
client-name river
```

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host	Ж ص ك ط ŋ Â ţ Â
ip dhcp pool	Ж ص ك ط ̈ ̆ ȯ ص ك ط Â

28.1.4 default-router

Ж Ѿ ص ك ط Ф ३ **default-router** Â Ф ३ **no** Л Лґ Ѿ Ж Â

default-router ip-address ip-address2 ip-address8

no default-router

ð ч Ô

ч	
ip-address	Ж ص ك ط Â У э Â
ip-address2 ip-address8	ˆ Л ˜ Л Лъ э Ѿ Â

ð ą Ô

Ж Ѿ Â

ð Ф ३ Ô

ص ك ط

ð ᴳ ˚ Ô

У ą Ю ÿ ئؤ Ѿ ą Â ئؤ й У э Ѿ ص ك ط˘ ص ك ط б ї ص ك ط ̊ У э Â

ð w ᴿ Ô

ЛъЮ ᴿ ˘ Ж ɑ ɔ й Ѿ Â

```
default-router 192.168.12.1
```

ð Ѿ Ф ३ Ô

Ф ३	
ip dhcp pool	Ж ص ك ط ̈ ̆ ȯ ص ك ط Â

28.1.5 dns-server

Ж ᄂ ᅳ운 ᄀᆞᄒᆞ Ф ३ **dns-server** Â
Ф ३ **no** ᄉᆞᄆᆞᆯ ᄂ ᅳ운 Ж Â

dns-server ip-address ip-address2 ip-address8
use-dhcp-client interface-type interface-number

no dns-server

ð ᄉᆡ Ô

ᄉᆡ	
ip-address	

ip dhcp pool	ҞӾ ڪ ۿ ۃ ˘ ώ ڪ ۿ Â

28.1.6 domain-name

ҞӾ ɨ ۿ ˘ ڪ ۿ ᵮ ϡ **domain-name** Â ᵮ ϡ **no** ЛЉ ɨ ۿ Â

domain-name domain-name

no domain-name

ŏ ᠡ Ô

ᠡ	
domain-name	ҞӾ ɨ ۿ s Â

ŏ ą Ô

ɨ ۿ Â

ŏ ᵮ ϡ Ô

ڪ ۿ

ŏ ᴳ Ô

ɢ ɨ ۿ ɨ ˘ έ ˘ ɨ ۿ ў ˘ ў ЛЉ ɢ Â

ŏ w ᴿ Ô

ЉЮ ᴿ ˘ ҞӾ ɢ ɨ ۿ Â

```
domain-name i-net.com.cn
```

ŏ ῼ ᵮ ϡ Ô

ᵮ ϡ	
dns-server	ҞӾ ﺋۇ
ip dhcp pool	ҞӾ ڪ ۿ ˘ ώ ڪ ۿ Â

28.1.7 hardware-address

Ж ˚ ھ ˘ ھ Ф ३ **hardware-address** Â
Ф ३ **no** Л Лґ ˚ ھ Ж Â

hardware-address hardware-address type

no hardware-address

ð ч Ô

ч	
hardware-address	Ж ھ Â
type	˚ Л ˜ ˘ Л Лґ s Ж Â s ˙ ˙ ˆ ˜ ˆ ˜

ð α Ô

˚ ھ Â

Ж ˚ ھ ˘ й Â

ð Ф ३ Ô

ھ

ð G ˚ Ô

Л ف Ж ˘ Л Лґ G Ф ३ Â

ð w R Ô

ЛґЮ R ˘ Ж ھ ش й ھ Â

```
hardware-address 00d0.f838.bf3d
```

ð Ω Ф ३ Ô

Ф ३	
client-identifier	Ж ك У ˆ Лґ π Ω 8 ˜ Â
host	Ж ھ p Â ¥ Â
ip dhcp pool	Ж ھ ˚ ˘ ώ ھ Â

28.1.8 host

Ня ў ص ھ ص ˘ ص ھ Ֆ ३ **host** Â
Ֆ ३ **no** Л Лҗ ص ھ ص Ня Â

host ip-address netmask

no host

ð ৺ Ô

৺	
ip-address	Ня ў ص ھ Â
netmask	Ня ў Â

ð ą Ô

Ня ў ص ھ ص Â

ð Ֆ ३ Ô

ص ھ

ð G ՝ Ô

Ня ئؤ ـ ص ھ Â
ص ھ й ՝ ص ھ й ՝ ص ھ й
Â

Л ف Ня ˘ Л Лъ G Ֆ ३ Â

ð w R Ô

ЛъЮ R ˘ ص ھ й ˘ й ó Â

host 192.168.12.91 255.255.255.240

ð Ֆ ३ Ô

Ֆ ३	
client-identifier	Ня ڈ У ^ Лъ π Ω 8 ~ Â

Ƕ ३

৲	
number	ˆ ৲ ˜ ز ÿ ˆ ˘ Ϋ̀ ɔ Â ч э ˆ Â

ȣ ɑ Ô

ˆ ⌋ ѝ Â

ȣ Ƕ ३ Ô

ѿ

ȣ ᴳ ˘ Ô

ᴸ ئؤ ÿ ھ ک è ڀي ھ ک ˘ ˬ ɔ ھ ک
ŭ ὲ ў . ˘ . Ю ˘ . ˆ Â
ɔ ѝ ৲ ч э ˆ˘ ৲ Лъ ৲ э ˆ Â

ȣ w ᴿ Ô

ЛъЮ ᴿ ˘ ɔ ৲ ˆ ѝ э Â

```
ip dhcp ping packets 3
```

ȣ Ϋ̀ Ƕ ३ Ô

Ƕ ३	

milli-seconds	ئۇ ˆ Лъ ˜ Â ʌ ḣ ز й ˆ Â

ð ą Ô

й Â

ð Ƒ ३ Ô

ὥ

ð ᴳ ˘ Ô

ЊЖ У э ˆ Â

ð w ᴿ Ô

ЛъЮ ᴿ ˘ ˆ й Â

```
ip dhcp ping timeout 600
```

ð ℧Ƒ ३ Ô

Ƒ ३	
clear ip dhcp conflict	ʌ ʌ ă Â
ip dhcp ping packets	ЊЖ ئۇ ˆ ھ ک ˘ ک ھ ă ɔ ʌ ˆ э Â
show ip dhcp conflict	ئۇ ˆ ھ ک ˘ ˆ ک ھ ă Â

Ĥ ھ ھ Â

ð Ƒ ३ Ô

ώ

ð G ʼ Ô

Ƒ ३˘ ˚ ώ ھ ھ ˘ й˙

Ruijie(dhcp-config)#

ƒ э è˘ ʌ Лъ ھ ھ ز à ئۇ à ˜Ω ʌ Â

ð w R Ô

ЛъЮ R ˘ Ĥ ھ У э˙˙ й ھ ھ Â

ip dhcp pool mypool0

ð ˜Ω Ƒ ३ Ô

Ƒ ३	
host	Ĥ ھ ھ n Â ¥ Â
ip dhcp excluded-address	Ĥ ئۇ a ˆ ھ ھ Â
network˜ ˜	Ĥ ھ ھ ʌ n Â

28.1.14 lease

Ĥ ئۇˆ ھ ھ ˘ ھ ھ **ĥoP Ƒ ھ leasP**

minutes	ˆ ⅄ ˜ ⅊ ˇ ⅃ⅎ й ` Æ Â ⅊ⅎ ⅿ ⅊ ⅿ Â
infinite	⅊ ⁸ Â

ð α Ô

й У Â

ð Ф ३ Ô

ھ ھ

ð ᴳ ˚ Ô

ˆ ˇ ˬ ⅄ Â ⊢ئؤ У ˬ ï ˇ
ھ ھ ⅆ a ⅄ Â

ð w ᴿ Ô

⅃⅄Ю ᴿ ˇ й Â

```
lease 0 1
```

⅃⅄Ю ᴿ ˇ й ˆ Â

```
lease 0 0 1
```

ð ℤΩФ ३ Ô

Ф ३	
ip dhcp pool	⅊ ھ ھ ˅ ˇ ώ ھ ھ Â

28.1.15 netbios-name-server

ˆ ⊢ئؤˇ ھ ھ

Ф ३ **netbios-name-server** Â Ф ३ ⅄ ⅃ⅎ ⊢ئؤ Â

netbios-name-server ip-address ip-address2 ip-address8

no netbios-name-server

ð ⅄ Ô

⅄	
ip-address	⅊ ⊢ئؤ ھ ھ Â У э Â

ip-address2 ip-address8	^ Л ~ Л Лъ э Ь ئۇ Â

ð α Ô

ЮЖ Ь ئۇ Â

ð Ф ३ Ô

ھ ھ

ð G ˚ Ô

ЮЖ э Ь ئۇ ˘ ĩ̃ ف ط ˙ ˝I ˘ Л б ف ط
Ь ئۇ ˘ ˬ ЮУ э Ь ئۇ Â

ð w R Ô

ЛъЮ R ˘ й ق Ь ئۇ Â

```
netbios-name-server 192.168.12.3
```

ð Ω Ф ३ Ô

Ф ३	

type	Ѭ ۺ ч Â Ѭ ۺ ग़ ÿ ˘ π Ω ⁸ ˘ ת ת ۸ ЛЬЮ ḣ ˙ ˘ ३ , ˘ ३ , ˘ ३ , ˘ ३ Â s Ѭ ˙ ˘ ۺ , ˘ ۺ , ˘ ˟ ۺ , ˘ ˟ ۺ Â

ȣ ą Ô

Ѭ ۺ Â

ȣ Ф ३ Ô

ھ ک

ȣ ᴳ ˘ Ô

˘ ۺ ˘ ۺ ˘ ˛ ~ ۺ تم ˘ ۺ ˘ ˘ ~ ¨ ,
˘ ۺ ˘ ˟ ۺ ˘ ˘ ~ ¨ , ئۇ ⊢
˟ ۺ ˘ ~ ¨ , ئۇ ⊢ б ˘ ɨ ¨
˘ ˘ ¨ ئۇ ⊢ ˘ I˝
¨ Â

ą Ю˘ ɔ ۺ й ۺ ˟ ۺ Â
ئۇ ⊢˘ й ۺ , ц ئۇ ⊢˘ α

28.1.17 network DHCP

Ж ص ص ۸ n ˘ ص ص Ф ३ **network** Â
Ф ३ **no** ۸ Л ЖÂ

network net-number net-mask

no network

ð ۸ Ô

۸	
net-number	ص ص ص ص ۸ Â
net-mask	ص ص ص ص Â Ж ˘ й Â

ð ą Ô

Ж ۸ n Â

ð Ф ३ Ô

ص ص

ð G ˚ Ô

Ж ص ص ۷ ε ˘ й ئۇ k ۶ У э ۸ ص
ص Â ص ص ˘ ŭ ‡ ص ص è ص ص ۸ Â
ژ ص ص è ص ص˘ ˘ ص ص ژ
è ص ص ژ è ژ˘ Ю У э ص ص˘ У э
ص ص Â

ص ص ą ۸ **show ip dhcp binding** Ф ३ ˘ ص ص ă ą ۸
show ip dhcp conflict Ф ३ Â

ð w R Ô

Л Ю R ˘ Ж ۶ ص ص ۸ й ˘ й

è ص

ip dhcp pool	Ж ھ ک ˅ ώ ھ ک Â

28.1.18 next-server

Ж í ╟ è í ╟ ╚ئ ˅ ھ ک
Ф ३ **next-server** Â Ф ३ **no** Л Лт í ╟ ╚ئ Ж Â

next-server ip-address ip-address2 ip-address8

no next-server

ð Л Ô

Л	
ip-address	Ж í ╟ ╚ئ ھ ک ˅ й ╚ئ Â У э Â
ip-address2 ip-address8	ˆ Л ˜ Л Лт í ╟ ╚ئ Â

ð ą Ô

Â

ð Ф ३ Ô

ھ ک

ð G ˚ Ô

Ж э í ╟ ╚ئ ˅ ĵ ƒ ṃ ˙ ˝I ˅ Л б ƒ ṃ í ╟ ╚ئ ˅ ˚ ЮУ э í ╟ ╚ئ Â

ð w R Ô

ЛЮ R ˅ й ɑ í ╟ ╚ئ Â

```
next-server 192.168.12.4
```

ð Ω Ф ३ Ô

Ф ३	
bootfile	Ж í ╟ ę ˚ ˝
ip dhcp pool	Ж ھ ک ˅ ώ ھ ک Â
ip help-address	Л Ж ھ ک
option	˚ ╚ئ Â

Ƕ ३

```
option   33   ip   172.16.12.0   192.168.12.12   172.16.16.0
192.168.12.16
```

ð ‘Ωƒ ३ Ô

Ƒ ३	
ip dhcp pool	Ĥ ھ ھ ˝ ˘ ώ ھ ھ Â

28.1.20 service dhcp

ƒ Э í ╚ ئ n è ३ ˘ ŏ Ƒ ३ **service dhcp** Â
Ƒ ३ **no** ∧ Ʃ ‘Ω ╚ ئ n è ३ Â

service dhcp

no service dhcp

ð ∢ Ô

ð α Ô

‘Ω ╚ ئ n è ३ Â

ð Ƒ ३ Ô

ŏ

ð ᴳ ˚ Ô

╚ ئ ∧ Ʃ ╟ ĭ

ð ৻ Ô

৻	
*	ĩ ھ ک ă Â
ip-address	ĩ ھ ک ă Â

ð ą Ô

й Â

ð Ƕ ३ Ô

ð ᴳ ˚ Ô

ᴸ ئؤ ھ ک ă ˽ ˘ ĩ ھ ک ăᴴ ھ ک | ججی ° º ᴍ

Â ھ ک ă Â

ð G ˚ Ô

ئۇ ˘ ɑ ھ ک à ╟ à
˘ n ^ ˩ ɑ Â **clear ip dhcp server statistics** Ф ३ ^ Л ˥ ^ ^ ˘ ÿ Â

ð w R Ô

ЛЬЮ R ˘ ئۇ Â

```
clear ip dhcp server statistics
```

ð ˇ Ω Ф ३ Ô

Ф ३	
show ip dhcp server statistics	ئۇ Â

28.2.4 debug ip dhcp client

˘ ف **debug ip dhcp client** Ф ३ Â

debug ip dhcp client

no debug ip dhcp client

ð ˥ Ô

ð ɑ Ô

ˇ Ω

ð Ф ३ Ô

ð G ˚ Ô

Ф ३ ¥ ف ¥ ئۇ Ҭ ц è ў ɑ ˘ Ль ˩ Â

ð w R Ô

ЛЬЮ R ˘ Э ˇ Ω Â

```
debug ip dhcp client
```

ð ˇ Ω Ф ३ Ô

28.2.5 debug ip dhcp server

˘ ফ **debug ip dhcp server** Ф ३ Â

debug ip dhcp server

no debug ip dhcp server

ð ৺ Ô

ð ą Ô

Ϊ͂

ð Ф ३ Ô

ð ᴳ ˚ Ô

Ф ३ ¥ ফ ¥ Ꜧ ц è ў ą̈ ˘ Ɲ ৺ Â

ð w ᴿ Ô

ƝꜦO ᴿ ˘ Ɔ ᶠ ῗ Â

`debug ip dhcp server`

ð ῗФ ३ Ô

28.2.6 show dhcp lease

ą ˘ Ф ३ **show dhcp lease** Â

show dhcp lease

ð ৺ Ô

ð ą Ô

й Â

ð Ф ३ Ô

ð ᴳ ˚ Ô

Ꜧ ক ম˘ ক ম ą Â Ꜧ ɢ ক ম˘ ৸ ক ম ą Â

ð w ᴿ Ô

ЛЬЮ й **show dhcp lease** Â

```
Ruijie# show dhcp lease
Temp IP addr: 192.168.5.71 for peer on Interface:
GigabitEthernet0/0
Temp sub net mask: 255.255.255.0
DHCP Lease server: 192.168.5.70, state: 3 Bound
DHCP transaction id: 168F
Lease: 600 secs, Renewal: 300 secs, Rebind: 525 secs
Temp default-gateway addr: 192.168.5.1
Next timer fires after: 00:04:29
Retry count: 0  Client-ID: redgaint-00d0.f8fb.5740-Fa0/0
```

28.2.7 show ip dhcp binding

ک ھ ϱ˘ Ф ३ **show ip dhcp binding** Â

show ip dhcp binding ip-address

ð ৺ Ô

৺	
ip-address	ˆ ʌ ˜ ʌ ک ھ ϱ Â

ð ϱ Ô

й Â

ð Ф ३ Ô

ð G ʼ Ô

Ҥ ک ھ˘ ک ھ ϱ Â Ҥ ϵ ک ھ˘ ʌ ک ھ ϱ Â

ð w R Ô

ЛЬЮ й **show ip dhcp binding** Â

```
Ruijie# show ip dhcp binding
IP address    Client-Id/        Lease expiration  Type
              Hardware address
192.168.1.2   00d0.f866.4777    IDLE              Manual
```

ɹ ð Ҥ ЮÂ

	؞ Â ھہ کہ
Client-Id/	۲ کہ ھہ
	’ 8 Â ؞ ґ ґ ژ ґ ґ ھہ کہ ґ Â ╟ ў
	’ ╟؞ Â شخ ھہ کہ Â ؞

ㄱ ŭ Ю Â

	a ⁄ ǐ ㅎ ㅎ Â
	ŏ Â
	ㅎ ㅎ ㄴ Â

ŏ Ω Ф ३ Ô

Ф ३	
clear ip dhcp confict	ŏ

28.2.9 show ip dhcp server statistics

ㄴ ㄱ ˘ Ф ३ **show ip dhcp server statistics** Â

show ip dhcp server statistics

ŏ ㅓ Ô

ŏ ą Ô

й Â

ŏ Ф ३ Ô

ŏ G ˚ Ô

Ф ३ ⁄ Л ㄴ ㄱ m ㄱ Â

ŏ w R Ô

ЛЮ й **show ip dhcp server statistics** Ф ३ Â

```
Ruijie# show ip dhcp server statistics
Address pools           4
Automatic bindings       4
Manual bindings          0
Expired bindings         0
Malformed messages 2
```

```
Message                 Received
BOOTREQUEST              216
DHCPDISCOVER             33
DHCPREQUEST              25
DHCPDECLINE              0
DHCPRELEASE              1
DHCPINFORM               150

Message                 Sent
BOOTREPLY                16
DHCPOFFER                9
DHCPACK                  7
DHCPNAK                  0
```

ر ÿ ЫЖ ЮÂ

	ھ ک ɜ
	ھ ک ╟ Â
	ھ ک Â
	ھ ک Â
	^ a Â
	ئو ╘ n ^ Â

ð ‘ΩФ ३ Ô

Ф ३	
clear ip dhcp server statistics	╕ ╘ ر Â

29 DHCP Relay

29.1 DHCP Relay

29.1.1 service dhcp

ফ Э í è ३ ˘ ŏ Ƒ ३ **ervice dhcp** Â Ƒ ३
Λ Лъ Ω ३ Â

service dhcp

no service dhcp

ð α Ô

Ω ३ Â

ð Ƒ ३ Ô

ŏ

ð G ˚ Ô

è Λ Лъ Λ è ئۇ˘ تي ˆ
ফ Λ ˘ è ɔ Â

ð w R Ô

ЛъЮ R ˘ í ɑ ئۇ n è Â

service dhcp

ð Ω Ƒ ३ Ô

Ƒ ३	
ip helper-address vrf A.B.C.D	╗ У э ھ ک

29.1.2 ip helper-address

G Ƒ ३ Λ Лъ ╗ У э ئۇ ک ھ Â Ƒ ३ ˘ ˆ У э ئۇ ک ھ Â

¥ ئۇ ک ھ Λ Лъ ŏ ˘ ≠ Λ Лъ ⅄ Â ژ Ƒ ३ Λ Лъ ফ ŏ
Ю ≠ Λ Лъ ফ ⅄ Ю ˘ ˆ ⁞ ╗ Ю ئۇ ə Â

ð α Ô

˙ ¡ ╚ ئۇ ə Â

ð Ƒ ʒ Ô

ŏ ⅄

ð ᴳ ˙ Ô

ƒ ə ⅄ Л Ъ ə ╚ ئۇ ھ ک ˘ ə ⅄ У ə ˬ ⅄
ʃ ə ╚ ئۇ Â ⅄ Л Ъ ÿ ə è У ə Â

ƒ ⅄ Ą˘ ججي ¥ ŏ ņ ججي ¥ Ę ⅄ a˘ ’ ججي ¥ ŏ
a ⅄ ˘ ɱ ╚ ئۇ a ¥˙ ¡ ╚ ئۇ ھ ک ’
ججي ¥ ⅄ a ⅄ ˘ ɱ ╚ ئۇ ņ ⅄ ¥˘ У ’

ð w ᴿ Ô

ЛЪЮ ᴿ ˘ ч ə ╚ ئۇ ھ ک ˘ ʃ ⁝˘ У ą̈ ╚ ئۇ й ˘
Лъ ⅄ ججي ¥ ᴿ̈ й ╚ ئۇ й Â

```
ip helper-address 61.154.26.49
ip helper-address vrf local 192.168.197.1
```

ð Ƒ Ω Ƒ ʒ Ô

Ƒ ʒ	
service dhcp	è ʒ

29.1.3 ip dhcp relay information option dot1x

ᴳ Ƒ ʒ **dhcp option dot1x** ╗ ˘ ᴳ Ƒ ʒ Ω **dhcp option dot1x** ╗ Â

ð α Ô

Ω

ð Ƒ ʒ Ô

ŏ

ð ᴳ ˙ Ô

Ƒ ʒ ˝I ˘ ⅄ ˊ Ω Â

ð w ᴿ Ô

```
Ip dhcp relay information option dot1x
```

ॐ

ð G ' Ô

Ƒ ३ б Ƒ ३ ц Â

ð w R Ô

Ip dhcp relay information option82

ð ‘Ω Ƒ ३ Ô

Ƒ ३	
Service dhcp	è ३ · Ă l Ƒ Ô

G Ƒ ३ ॐ ˘ G Ƒ ३ ॐ
˥ ˩ 8 ˥ Â

ȍ ą Ô

ॐ

ȍ Ƒ ३ Ô

˩

ȍ G ˚ Ô

˩ Ƒ ३ ł˘ ˩ a Â

ȍ w R Ô

ЛЮ R ˘ ˩ 8 ˥ Â

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

30 DNS

30.1

30.1.1 ip domain-lookup

í ╟ ᴂ̈ Â ᴳ Ɗ ३ ‡ ̃Ω ᴂ̈ ╥ Â

ð ৺ Ô

৺	
ip-address	مخه ئۇ ╘ هم كم

ð Ô

مخه ئۇ ╘

ð Ф ३ Ô

ŏ

ð G ˚ Ô

╗ هم كم Â Ф ३˘ ˚ ╗ У э Â
ÿ У э ৺ˆ مخه ˘ ˚ ä̈ α ł ŭ э ৺
˘ ˆ ˆ تي й Â

э ╘ ئۇ Â˥ ˘ ɑ ৺ ˘
‡ ৺˥ ╘ ئۇ˘ ŭ ‡˥ ╘ هم كم ئۇ Â

ð w R Ô

Ruijie(config)# ip name-server

ð ˜Ω Ф ३ Ô

Ф ३	
show hosts	˜Ω ə Â

ð Ô

Ф ३ m̀ Θ ف Э Â

30.1.3 ip host

Ф ३ ŭ n هم كم Â G Ф ३ ˥ ŭ " Â

ip host host-name ip-address

no ip host host-name ip-address

ð ৺ Ô

৺	
host-name	ŭ
ip-address	هم كم

Ⓓ ३ —	
show hosts	ў ¨ α

ȍ Ô

Ⓓ ३ ṃ Θ ڤ Ɔ Â

30.1.5 show hosts

ᵶ Â

31 NTP

31.1 NTP

31.1.1 no ntp

ʖΩ ˅ ⊨˘ ṃ б ⊨ ئۇ ˅ ˘ ҇ Â

no ntp

ð ⅄ Ô

Â

ð ϱ Ô

ϱ Ю ⊨ ʖΩ Â

ð Ƀ ३ Ô

ѿ Â

ð ᴳ ˅ Ô

ϡ ϱ Ю ⊤ ʖΩ ˅ ⊓ ⅄ ϖ ⊨ ئۇ ѿ ⋮
ᵒ˘ ⊤ ˅ Â

ð w ᴿ Ô

ЛЮ ᴿ ˅ ʖΩ ϖ ⊨ Â

no ntp

ð ʖΩƁ ३ Ô

Ƀ ३	
ntp server	У э ⊨ ئۇ

31.1.2 ntp access-group

⊨ ᵒ ˅ Ƀ ३ ⅄ ᵒ 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

ȣ ৻ Ô

৻	
peer	ĭ ⋍ ⊢ ⊓ ⁸ ˘ ≠ ĭ ⋍ б ˅ ˆ ŏ ˜ Â
serve	ĭ ⋍ ⊢ ⊓ ⁸ ˘ ⊓ a ĭ ⋍ б ˅ Â
serve-only	Θ ĭ ⋍ ⊢ Â
query-only	Θ ĭ ⋍ ⊢ ⁸ Â

⁸ “ ৸’ ⋥ й

access-list-number

▒ ε ⅓ ë

```
Ruijie(config)# ntp access-group peer 1
Ruijie(config)# ntp access-group serve-only 2
```

ð ŽƑ ३ Ô

Ƒ ३	
ip access-list	… 8 " Â

31.1.3 ntp authenticate

Ł G ŏ 8 Â

ntp authenticate

no ntp authenticate

ð ৺ Ô

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ð ą Ô

ą Ю ŏ 8 Ž Ω Â

ð Ƒ ३ Ô

ŏ Â

ð G ˙ Ô

G ŏ ŏ ⋮ 8˘ ‡ a ˚ ৲ ╗ Â ŏ ŏ ⋮
8˘ ˚ è ЫI ŏ ˘ ∧ ৺ ¥ Ł ئؤ ╗ ৲ Â

ñ **ntp authentication-key** ä **ntp trusted-key** ৲˙ Â

ð w R Ô

ফ ɑ ŏ è ŭ ŏ ৲˙ ł˘ 8 Â

```
ntp authentication-key 6 md5 wooooop
ntp trusted-key 6
ntp authenticate
```

ð ŽƑ ३ Ô

Ƒ ३	
ntp authentication-key	ŏ
ntp trusted-key	ŏ ৲˙ Â

31.1.4 ntp authentication-key

й Ь У э ѿ Â

ntp authentication-key key-id **md5** key-string enc-type

no ntp authentication-key key-id **md5** key-string enc-type

ð ч Ô

ч	
key-id	’
key-string	s’
enc-type	ˆ Л ˜ ŭ ╗ ˘ ╗ ˘ ` ╗ ’

ð ц Ô

Â

ð Ѣ ҩ Ô

ѿ Â

ð G ’ Ô

ѿ ˘ ╗ ˘ э У э ѷ У ˘ Л Лъ **ntp trusted-key** й ѿ ҕ Â

Э й э˘ п э Ь ѹ Ѳ Ѳ У э

ð w R Ô

ЛъЮ R У э й

```
ntp authentication-key 6 md5 wooooop
```

ð Ѿ Ѣ ҩ Ô

Ѣ ҩ	
ntp authenticate	ѿ ѿ ⋮ 8
ntp trusted-key	ѿ ҕ
ntp server	У э Ь ѹ

31.1.5 ntp disable

ʖΩ ৲ ╗ Â

ntp disable

ð ৲ Ô

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ð ą Ô

ąЮ ৲ ৴Лъ ৲ Â

ð Ƒ ३ Ô

৲ Â

ð ᴳ ˙ Ô

ڤ ąЮ˙ ˙ ৲ Э ৲ ৴Лъ ᵏ ˘
э ╗ ˘ ৴Лъ ৲ Э ˀ Â

ᾶ ৲ ৲ ৲˘ ڤ ὲ ыі ৲ Э
Ƒ ३ Â

ð w ᴿ Ô

ЛъЮ ᴿ ˘ ʖΩ ৲ Â

`no ntp`

ð ʖΩƑ ३ Ô

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31.1.6 ntp master

ک ɔ ὶй ў ˆ ک ৲ ৴ ~˘ ὶй ὲ ᵏˇ Â
Ƒ ३ ὶй ৲ ў Â

ntp master [stratum]
no ntp master

ð ৲ Ô

৲	
stratum	ک ˘ ترὶй ˙ , a ৲ ‡ ḣ ὶй Â

ð α Ô

a ў ╗ Â

ð Ƒ ২ Ô

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ð ᴳ ˚ Ô

ƒ α Ю ѧ ˚ ѧ б ˚ Â ⊓ Ɣ
৭ ز ѧ б ˚ ˘ ⁄ Лъ Ƒ ২
ѧ ৭ ⁄ ˘ й ѐ ы ᵏ˚ Â

У ɞ ˘ ɾ a˚ б ѐ ḣ ˚ Â

ᴳ Ƒ ২ ⁝ Â ѧ й ў ˆ ѐ ɞ æ
ḣ ˜ ⁄ Â ˚ У ѐ э ᴳ
ɞ Ƒ ২˘ ‡ ⁄ Ɣ ǯ ˚ a Â

ɻ ˘ ᴳ Ƒ ২ ṃ ÿ б ˚ ˘ ‡ ⁄ ╟ ñ
Лъ ɖ ѐ a˚ Ḷ Â

ð w ᴿ Ô

ЛъЮ ḭ ѧ ৭ ⁄ ˘ ѐ й Â

`Ruijie(config)# ntp master 2`

ð Ω Ƒ ২ Ô

31.1.7 ntp server

й У э ⊨ Â

ntp server ip-addr **version** version **source** if-name **key** keyid

version	ˆ ⅄ ˜ ˆ ˜˘ ,
if-name	ˆ ⅄ ˜ ∧ ⅄ Ь ⅄˜ ’
keyid	ˆ ⅄ ˜ б ⊨ ئۇ ҕ ╗
prefer	ˆ ⅄ ˜ ⊨ ئۇ й ⊨ ئۇ

ð ɑ Ô

⊨ ئۇ Â

ð Ƒ ३ Ô

ŏ Â

ð ᴳ ˚ Ô

ɱ ъ Ө ⊨ ئۇ ˘ ˚ ⊨ ئۇ Э й э Â

б ⊨ ئۇ ╗ ҕ˘ ”I ŏ ╗ Лъ ⅃ ŏ ҕ˙ ˘ ł
й ⊨ ئۇ ҕ˙ ˘ ⅄ Лъ ∧ Ұ ⊨ ئۇ ╗ ҕ˘ б ⊨
ئۇ ╗ ҕ ⊨ ئۇ ˚ ŏ ╗ б ŏ ҕ˙

ƒ ˚ ɑˆ ˜ Ю˘ ˙ ”I ˚

∧ ⅄ Ą У Ю˘ ⅄ й ɑ
⅄ Лъ ŋ ⊨ ئۇ ҕ ⅄ Â

ð w ᴿ Ô

ЛъЮ ᴿ ˘ Э й Â

˙ Ruijie(config)# ntp server 192.168.210.222

˙ Ruijie(config)# ntp server 10::2

ð ˇΩ Ƒ ३ Ô

Ƒ ३	
no ntp	ˇΩ ⊨ ╗ Â

31.1.8 ntp synchronize

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ntp synchronize

no ntp synchronize

ð ৺ Ô

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ð Ѣ ҩ Ô

ŏ Â

ð ᴳ ˚ Ô

б э ئۇ ˥ ˚ й э ˘ ǯ ɨ й У˥ ˚
˘ ف ╟˚ ˘ ‡ Λ Лъ ᴳ Ѣ ҩ

ð w ᴿ Ô

ЛъЮ ᴿ ˘ ˚ Â

Ntp synchronize

ð Ѿ Ѣ ҩ Ô

Ѣ ҩ	
ntp server	У э ئۇ ˚

31.1.9 ntp trusted-key

У э й ŏ ҷ˙

ntp trusted-key key-id

no ntp trusted-key key-id

ð ৺ Ô

৺	
key-id	ŏ ҷ˙ Â

ð ą Ô

ą Ю ҷ˙ Â

ð Ѣ ҩ Ô

ŏ Â

ð ᴳ ˚ Ô

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ϟ ϟ Лϟ ϟϕ ϟ

ϟ w ᴿ Ô

ЛϟЮ У э ϟ й ϟ ئۇ ϟ Â

```
ntp authentication-key 6 md5 wooooop
ntp trusted-key 6
ntp server 192.168.210.222 key 6
```

ϟ ϟΩƑ ϟ Ô

Ƒ ϟ	
ntp authenticate	ϟϕ ϟ ⁸ Â
ntp authentication-key	Â
ntp server	У э ئۇ Â

31.1.10 ntp update-calendar

ᴳ ÿ ϟ ḣ ϟ Â
Ƒ ϟ ϟ ϟ ϟ Â

ntp update-calendar
no ntp update-calendar

ϟ ϟ Ô

ϟ ϟ Ô

ϟ ϟ Â

ϟ Ƒ ϟ Ô

ϟϕ Â

ϟ ᴳ ϟ Ô

ᴳ ϟ ϟ Лϟ ᴳ ÿ ϟ ḣ
ϟ Â ϟ ϟ ᴳ ϟϕ ϟΩ ϟϕ Æ ϟ ЮЎ
ϟ Â

ϟϕ ϟ Ю ϟ Â ϟ ϟϕ б
ϟ ϟ ϟ ≠ϟ ϟ Â

ϟ w

ЛЪЮ !

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

ð ‘Ω Ƒ ३ Ô

31.2

31.2.1 debug ntp

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debug ntp

no debug ntp

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‘Ω Â

ð Ƒ ३ Ô

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ð G ’ Ô

π ˘ Λ Лъ Ƒ ३ ą ˘ ņ ņ

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ð w R Ô

ЛЪЮ R ˘ ‘Ω Â

```
debug ntp
```

ð ‘Ω Ƒ ३ Ô

Â

31.2.2 show ntp status

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show ntp status

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ѝ Â

ȍ Ƒ ३ Ô

ȍ ᴳ ᵊ Ô

Ꝉ ˘ ṃ ạ ˘ ڤ У ╗˘ Ꝉ ئ ڎ
ṃ Ƒ ३ a ̥ ~ ̇ ị ạ Â

ȍ w ᴿ Ô

ЛЪЮ ᴿ ˘ ṃ ạ Â

```
show ntp status
```

ȍ Ƣ Ƒ ३ Ô

32 SNTP

32.1

32.1.1 sntp enable

Ƒ ३ ╗ ˘ G Ƒ ३ è **no** ѝ ḣ
Â

no sntp enable

ð ৺ Ô

ð Ô

ð Ƒ ३ Ô

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ð G ˚ Ô

G **show sntp** Ƒ ३ ˇΩ ৺

ð w R Ô

`RedGiant(config)#` sntp enable

ð ˇΩƑ ३ Ô

Ƒ ३	
show sntp	
clock update-calendar	˚ ˘ ˚
clock set	˚

ð ৴ Ô

˚ ЛЪ Э

32.1.2 sntp server

Ƒ ३ ˘ ¥ ˜ n ő ò ˘ Лъ э
ő ∧ Лъ Э ’Ω Â

sntp server ip-addr

no sntp server

ð ∨ Ô

ip-addr ˙ ئۇ ے ھ ک

ð Ô

˙ ! ئۇ ے

ð Ƒ ३ Ô

ő

ð G ˚ Ô

G **show sntp** Ƒ ३ ˜Ω ∨

ð w R Ô

`RedGiant(config)#` sntp server

ð ˜ΩƑ ३ Ô

Ƒ ३	
show sntp	
sntp enable	

ð ∧ Ô

˚ Лъ Э

32.1.3 sntp interval

Ƒ ३ n ˚ Â

sntp interval seconds

no sntp interval

ð ∨ Ô

seconds ˙ ˚ ˘ ` Æ й ľ Ł نز й Â

ð Ô

ḣ й

ð Ф ३ Ô

ώ

ð G ' Ô

G **show sntp** Ф ३ ˜Ω ৲ Â

ð w R Ô

`RedGiant(config)#` sntp interval **θ**

ð ˜Ω Ф ३ Ô

Ф ३	
sntp enable	
show sntp	˜Ω ৲
clock update-calendar	˚ ˚ ˚

ð ৴ Ô

˚ Лъ Э

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a˚ ˜ ˘ ˜ ˘ ł
Ф ३ Â

32.2

б ^ ЛЬЮ Ф ३

show sntp

32.2.1 show sntp

Ф ३ ˜Ω ৲ Â

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ð Ф ३ Ô

ð G ˙ Ô

G **show sntp** Ƒ ३ ˜Ω ⊀

ð w R Ô

```
RedGiant# show sntp
SNTP state          : Enable
SNTP server         : 192.168.4.12
SNTP sync interval  : 60
Time zone           : +8
```

ð ˜ΩƑ ३ Ô

Ƒ ३	
sntp enable	
show sntp	˜Ω ⊀

ð ⊀ Ô

˚ Ɱ Ɜ

33 UDP-Helper ﻩ Ɗ ३

33.1

33.1.1 udp-helper enable

udp-helper enable Ɗ ३ í ╟ è ∧ ╥ Â**no udp-helper enable** Ɗ ३ ˜Ω è ∧ ╥ Â

ą Ю˘ è ∧ ¥ ˜Ω Â

udp-helper enable

no udp-helper enable

ð ∧ Ô

ð Ô

è ∧ ¥ ˜Ω

ð Ɗ ३ Ô

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ð G ˙ Ô

è ∧ ╥ ˘ ‡

è ∧ Â

ð w R Ô

Ю R í ╟ è ∧ ╥

Ruijie(config)# udp-helper enable

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Ɗ ३	
ip forward-protocol	è ∧ ∧

ð Ô

Ɗ ३ ḿ Θ ƒ Ɔ Â

33.1.2 ip helper-address

è ﻷ ﻠﺆﺍ G ﷺ

è ﻷ ﻠﺆﺍ

ip helper-address address

no ip helper-address address

ﷺ ﻷ ﷺ

ﷺ G ﷺ

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

no ip forward-protocol udp port **tftp | domain | time | netbios-ns |**

Ƒ ३	
udp-helper enable	G ৲
ip forward-protocol	è ৲ ৴

ȍ Ô

Ƒ ३ ṃ Θ ফ Ɔ Â

34 DDNS

34.1

34.1.1 peanut username

У Ф ३ Â Л Л G Ф ३ Ї Ф ३ Â

no peanut username name **password** word

Л	Л	
	name	"
	word	

	ą Ю й Ѓ ╗
Ф ३	ŏ Â
G	Ф ३ Л Л " n
W R	R ' í ╗ ' Ruijie#config Ruijie(config)# peanut username test password test

Ѓ Ф ३	Ф ३	

Л

Ф ३ Ч Л	Л		
		┐ ┐	

35 DNS

35.1

35.1.1 smartdns

У ‡ Â Л Лъ G Ф ३ ĩ ‡ Â

no smartdns A.B.C.D interface **map** X.X.X.X

Л

Л	
A.B.C.D	╚ ئۇ ۋ ھ ک Â
Interface	Л Â
X.X.X.X	ł ھ ک Â

Ф ३ ŏ Â

G Ф ३ Л Лъ ╗ У ‡ Â

w R R ' ч ‡˘ ۋ ╚ ئۇ ˘ ڤ Л Э

˘ ڤ Л Э '

```
Ruijie#config
Ruijie(config)# smartdns [redacted] gigabitethernet 0/1
202.101.99.55
Ruijie(config)# smartdns [redacted] gigabitethernet 0/1
58.66.101.33
```

Ѿ Ф ३

Ф ३	
smartdns enable	╗ G Ѿ

Л

Ф ३ Ч Л

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	┐

35.1.2 smartdns enable

í ╗ ˘ ∧ Л Ъ G Ƒ ३ ˜Ω ╗ Â

no smartdns enable

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36

36.1

36.1.1 ip policy route-map

ð w ᴿ Ô

ЛЪЮ ᴿ è˘ Лъ ⅄ ˆ ˘
ک ھ ϊ ˘ ‡ ЮУ ϊ ˘ ک ھ ϊ
‡ ЮУ ϊ ˘ ŭ ‡ ∧ Â

```
access-list 1 permit 10.0.0.1 0.0.0.0
access-list 2 permit 20.0.0.1 0.0.0.0
route-map lab1 permit 10
match ip address 1
set ip next-hop 196.168.4.6
exit
route-map lab1 permit 20
match ip address 2
set ip next-hop 196.168.5.6
exit
interface GigabitEthernet 0/0
ip policy route-map lab1
exit
```

ð ˇΩՖ ३ Ô

Ֆ ३	
access-list	ЫЖ " ‡ Â
route-map	ЫЖ يي Â
set ip next-hop	ЫЖ ЮУ
set ip default next-hop	ЫЖ ЮУ
set interface	ЫЖ ⅄
set default interface	ЫЖ ⅄
set ip tos	è
set ip dscp	
set ip precedence	è ˙ ˝I
match ip address	‡
match length	ē

˙ ˇΩՖ ३ ∧ ê ˜ ˇΩՖ ३ ∧ Ì

ip local policy route-map

ڪ ۸ í ˘ ڤ ƗO G Ƃ ३ **ip local policy route-map** Â ۸ ʼΩ G Ƃ ३ Â

ip local policy route-map route-map

no ip local policy route-map

Ɨ Ɔ a Ƃ ३ Â

ð ۸ Ô

۸	3

```
route-map ♭permit      ⓪
match ip address 1
                Ƶ0
exit
```

ð ‘Ω Ф ३ Ô

Ф ३	
access-list	Ж “ ‡
route-map	Ж يي
set ip next-hop	Ж Ю У
set ip default next-hop	Ж Ю У
set interface	Ж ⅄
set default interface	Ж ⅄
set ip tos	è
set ip dscp	
set ip precedence	è . ”I
match ip address	‡
match length	⅁

‘ ‘Ω Ф ३ ⅄ ê ˜ ‘Ω Ф ३ ⅄ Ì

36.1.2 ip policy

set ip nexthop ŋ м ` ﷺ ˘ ﷺ ŏ Ю G **ip policy** Â G Ф ३ **no** ⅄ Â

ip policy load-balance|redundance

no ip policy

ð ⅄ Ô

⅄	
load-balance|redundance	ﷺ ŋ м `

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ŋ м ` Â

ð Ф ३ Ô

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ð G ˘ Ô

ƒ يي è **set ip next-hop** ˘ Л Лъ э Ю У ˘ п
ɑ ŋ м ` ˘ Л У э Л Лъ Ю У ɔ ' ɑ
ﻫ ˘ э Ю У ɔ ˘ Л Лъ
э Ю У ˘ Л Лъ э Ю У Â Ю У
˘ ˚ ą Ю У Â

ð w R Ô

ЛъЮ R è˘ يي è ɑ э ƒ ŏ Ю
ɑ ŋ м ` ł˘ ‡ ƒ Э э يي Л У
э ɔ ˘ Л Â

```
access-list 1permit  0
access-list 2 permit 0
route-map bpermit     0
match ip address 1
set ip next-hop 0
set ip next-hop 0
set ip next-hop 0
exit
route-map bpermit     0
match ip address 2
set ip next-hop 0
set ip next-hop 0
set ip next-hop 0
exit
interface GigabitEthernet 0
ip policy route-map b
exit
ip policy redundance
```

37

37.1

[illegible]

[illegible]	[illegible]
[illegible]	[illegible]
	[illegible]

37.1.2 route-auto-choose update

[illegible]

route-auto-choose update

38 RIP

38.1

38.1.1 address-family RIP

ώ ک ھ ~ ˘ G ک ھ Ƀ ३
address-family ˘ ˥ ~ ک ھ ˘ G Ƀ ३
no Â

address-family ipv4 vrf vrf-name

no address-family ipv4 vrf vrf-name

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vrf vrf-name	Ƀ ३ ʖΩ ¨ Â

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G **address-family** Ƀ ३ G ώ ک ھ ^ ѝ ˘
~ Â У ʖΩ ˘ ˘ …
R Â ڤ Ю˘ Л Лъ
ə Â

˥ ک ھ تي ˘ G
exit-address-family **exit** Ƀ ३ Â

ð w R Ô

ЛъЮ R ˘ … ɞ У ə¨ ѝ ˘ ѝ …
R Â

```
Ruijie(config)# ip vrf vpn1
Ruijie(config-vrf)# exit
Ruijie(config)# interface GigabitEthernet 1/0
Ruijie(config-if)# ip vrf forwarding vpn1
Ruijie(config-if)# ip address
```

˘ ˇΩ ╟ ╥ Â ⊓ ∧ ˘ ∧ЛЪˇΩ
╟ ╥ ˘ ╟ Â

ð w ᴿ Ô

ЛЪЮ ᴿ ˘ ˇΩ ɢ ╟ Â

```
Ruijie(config)# router rip
Ruijie(config-router)# version 2
```

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३ ‡ ḣ ѝ Â

ð w ᴿ Ô

ЛЪЮ ᴿ ˘ ~ ~ ˀ ɢ
ˀ ˘ ҂ ˀ ˥ ḣ ѝ Â

```
Ruijie(config)# router rip
Ruijie(config-router)# default-metric 3
Ruijie(config-router)# redistribute ospf 0
```

ð Ѿ Ф ३ Ô

Ф ३	
redistribute	ÿ У э ˀ ˀ ˥ У э Â

ð Λ Ô

ð Ô

38.1.4 default-information originate(RIP)

ҧ ҥ У ˘ Λ Лъ ᴳ Ф ३
default-information originate Ф ३˘ Ф ३ **no** ^
Â

default-information originate always metric metric-value **route-map** map-name

no default-information originate always metric route-map map-name

ð ^ Ô

^	
always	ˆ Λ ~ Ѿ ᴳ ˅ ҥ ˘ a ҩ ŭ ҧ Â
metric metric-value	ˆ Λ ~ ˥ ḣ˘ metric-value ^ ḣ ˈ Â
route-map map-name	ˆ Λ ~ Ѿ ˅ Ѿ

ð Ô

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ð Ф ३ Ô

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è ﻫ ˘ a ̣ α̈ ʔ

˘ ᴳ **default-information originate** Ð ३

˘ α̈ ʔ Â

always Â ̣ ב ħ ﻫ . =

TfB12 A0C4 (f0 Tw 14 p 266.337 411 v (14.1651 8113 E F435828 F4547 21345 A4 5 T13E28>]]

distance distance ip-address wildcard

no distance distance ip-address wildcard

ð ৺ Ô

distance	˘ ĭ ǯ
ip-address	ন ঙ ṃ
wildcard	ĦĦ ন ঙ Æ˘ ° ȳ ˘ ˝ a ṁ Â

no distribute-list access-list-number name **prefix** prefix-list-name **gateway** prefix-list-name

ð Ô

38.1.7 distribute-list out RIP

8 ऽ ˘ Лъ ˘ G Ф ३

distribute-list out Â Ф ३ **no** ī Ĥ Â

distribute-list access-list-number name **prefix** prefix-list-nam **out** interface protocol process-id process-name

no distribute-list access-list-number name **prefix** prefix-list-nam **out** interface protocol process-id process-name

ð ৲ Ô

৲	
access-list-number	" Â ৲ " ĭ ˘ ৲ Лъ ৲ Â
prefix prefix-list-name	G m " Â
interface	৲ ĭ " ˘ ऽ 8 ৲ ফ ৲ Â
protocol	৲ ĭ " ˘ ĭ Â
process-id	৲ protocol ѝ ˘ ¥ Â
process-name	৲ protocol ѝ ˘ ¥ " Â

ð Ô

8 ऽ Â

ð Ф ३ Ô

Â

ð G ' Ô

Ф ३ a ' ĭ ৲ ৲ ˘ ऽ 8 ৲ ɔ ' ৲ ˘ ऽ 8 ৲ ৲ ɔ ' è ৲ ˘ ‡ ऽ 8 ৲ ɔ Â

ð w R Ô

ЛЪЮ R ˘ ৲ ऽ Â

```
Ruijie(config)# router rip
Ruijie(config-router)# network 0
Ruijie(config-router)# network 0
```

```
Ruijie(config-router)# distribute-list          0 out
Ruijie(config-router)# version    2
Ruijie(config)# access-list      0 permit      0
0
```

ò ‰Ð ¾ Ô

Ð ¾	
access-list	HX " ‡ Â
prefix-list	HXm " Â

address-family	ώ ھ Â

ð ৲ Ô

ð Ô

38.1.9 ip rip authentication key-chain

í ˘ G s˘ ৲ Ƒ ২ **ip rip authentication key-chain** Â Ƒ ২ **no** ˝ s Â

ip rip authentication key-chain name-of-keychain

no ip rip authentication key-chain

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name-of-keychain	s˝ ˘ G s Â

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`Ruijie(config)#` interface serial Ø0

`Ruijie(config-if)#` ip rip authentication key-chain

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38.1.10 ip rip authentication mode

HX ˘ G ⁄ Ð ३ **ip rip authentication mode** Â Ð ३ **no 1 Tf0.0171 Tc 083 0[(3267841952C153601D084116360EE4B0E2CD5**

38.1.11 ip rip authentication text-password

s˘ G ⊿ Ф ३ **ip rip authentication text-password** Â Ф ३ **no** ī s Â

ip rip authentication text-password password-string

no ip rip authentication text-password

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password-string	s˘ · Â

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Ruijie(config)# interface serial Ø0
Ruijie(config-if)# ipripauthenticationtext-password
 þ

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Ф ३	
ip rip authentication mode	ЊЖ Â
ip rip authentication key-chain	í ˘ G s Â ⊿ ˆ Â

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38.1.12 ip rip default-information

ÿ ⅄ ㄣ У ˘ G ⅄ Ф ३ **ip rip default-information** Â Ф ३ **no** ∧ ƒƒ ⅄ ㄣ Â

ip rip default-information¸ **only**¸ **originate**˘ **metric** metric-value

no ip rip default-information

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only	ㄣ ˘ a ㄣ è Â
originate	ㄣ ˘ ≠ ㄣ è Â
metric metric-value	ḣ˘ ∧ ḣ ˙ Â

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í ╟ ㄣ ł˘ metric й Â

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ƒƒ ⅄ ɑ Ф ३ ł˘ ¸ ÿ ⅄ ㄣ У ∧ Â

˘ ɑ ⅄ Ю **ip rip default-information** n̲

default-information originate˘ ‡ ⅄ ㄣ ⅄ Â

à ⅄ У э ⅄ ɑ **ip rip default-information**˘ a Ą ¯

ㄣ Â ¯ ⅄ ɑ ˘ ¸

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à ⅄ Э ɑ **ip rip default-information**˘ a¸ ¨ ∧ ˘ ƒƒ

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`Ruijie(config)#` interface ethernet Ø0

`Ruijie(config-if)#` ip rip default-information only

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default-information originate	ढ़ ह़

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38.1.13 ip rip receive enable

ĭ ढ़ У э ৲ Э ˇ ৲ Ф ३ **ip rip receive enable** Â Ф ३ **no** ढ़ У э ৲ Э ˆ Â

ip rip receive enable

no ip rip receive enable

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38.1.15 ip rip send enable

ĭ ফ У э ৲ Э ৷ ˘ ৲ Ф ३ **ip rip send enable** Â Ф ३ **no** ফ У э ৲ Э ৷ ˆ Â

ip rip send enable

no ip rip send enable

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৲ ৷ ˆ ˘ ফ ৲ ৲ Ю G Ф ३ **no** Â Ф ३ c

defaulto ৲ ৷

no ip rip send version

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ù ৲ ā ţ **version** Ƒ ३ Â

ð Ƒ ३ Ô

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Ƒ ३ ˘ ৴ Ɱ **vesion** Ƒ ३ Â Ƒ ३ ৴ ط
৴ ৲ ù˘ ৴ Ɱ ĭ ৴˚ ৲ ţ
ˆ Â Ƒ ३ a ৴ ‡ ù ৲ ā ţ Â

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```
Ruijie(config)# interface GigabitEthernet Ø0
Ruijie(config-if)# ip rip v2-broadcast
```

ð ˜Ω Ƒ ३ Ô

Ƒ ३	
version	ƗƘ ৴ ৲ ˆ Â

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38.1.18 ip split-horizon (RIP)

í ˇ → ˥ ˘ ᴳ ৴ Ƒ ३ **ip split-horizon** Â Ƒ ३ ˜Ω ˇ → ˥ Â

ip split-horizon

no ip split-horizon

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Ф ३ **ip summary-address rip** ف э ⅄Ю У э ك ه
Â ╟ ↑ Â ⅄ ⅄ э Â

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```
Ruijie(config)# interface GigabitEthernet 10
Ruijie(config-if)# ip summary-address rip
0
Ruijie(config-if)# ipaddress
Ruijie(config)# router rip
Ruijie(config-router)# network
Ruijie(config-router)# version 2
Ruijie(config-router)# no auto-summary
```

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wildcard	Ж ھ ک Æ Ð ˘ a ṁ Â

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Л Лˇ network-number n wildcard ۷ ˘ G ڭ ھ ک ڤ ڭ ۷ ھ ک ۷ б Â

wildcard ۷ ˘ ڭ ھ ک G ˘ ڭ ھ ک ڤ ڭ ۷ ھ ک ۷ б Â

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Лъ Ю R ˘ Ж ۞ б Ѿ ч э ۷˘ ї ڭ n ڭ ۷ ھ ک ۷ б ˚

```
Ruijie(config)# router rip
Ruijie(config-router)# network 0
Ruijie(config-router)# network 00
```

ð Ѿ Ф ३ Ô

ð ۷ Ô

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38.1.21 neighbor (RIP)

Ж ھ ک˘ Л Лъ Ф ३ **neighbor** Â Ф ३ **no** ї Ж Â

neighbor ip-address

no neighbor

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ip-address	ھ ک Â ک ھ ک Â

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Ф ३ **passive-interface** Λ й ╟ Λ˘ ɨ Λ Ы Ю

Λ Л Ъ ˆ ə Â Ф ३ a ъ ə Â

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38.1.22 offset-list(RIP)

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offset-list Ф ३ **no** ˆ “

offset-list access-list-number in out offset interface-type interface-number]

no offset-list access-list-number in out offset interface-type interface-number

ð Λ Ô

Λ	
access-list-number	ñ Λ
in	g
out	Λ g
offset	g Λ ╟ ḣ
interface-type	ˆ Λ
interface-number	Λ Λ

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ð Ф ३ Ô

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˘ ‡ ˚ ╗ ⅄ ḣ

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Ruijie(config-router)# offset-list 7out 7

ЛЪЮ R ˘ ˘ ƒ ƞ ƣ
˚ ╗ Â

Ruijie(config-router)# offset-list 7in 7
Ruijie(config-router)# offset-list 8 in 7
GigabitEthernet 1/0

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38.1.23 output-delay

⅄ ⅄ ˘ G Ф ३
output-delay Ф ३ **no** ⅄ ⅄ Â

output-delay delay

no output-delay

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delay	⅄ ˘ ` Æ й ˘ ƞ

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ภ ˘ ő̈ æ ฺ ˘ æ ฺ a
ő ˘ ฺ x Â ˘ G **output-delay**
Ф ३ ฺ ฺ ˘ G æ ő
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```
Ruijie(config)# router rip
Ruijie(config-router)# output-delay θ
```

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38.1.24 passive-interface

ฺ ฺ У э ฺ Э ฺ ฺ ˘ G ฺ Ф ३
passive-interface Ф ३ Â Ф ३ **no** í ฺ ฺ
Â

passive-interface default interface-type interface-num

no passive-interface default interface-type interface-num

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default	ฺ ฺ й
interface-type interface-num	ฺ ش б ฺ

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passive-interface default Ф ३ ฺ й ˘ ฺ
Лъ G **no passive-interface** intface-type interface-num Ф ३ ฺ
ฺ й Â

ف G **ip rip send enable** Ф ३ ţ **ip rip receive enable** Ф ३ ฺ
й ĭ ฺ ţ ą Ю Ф ३ ฺ й
˘ a Ą ฺ ˘ ภ ฺ Лъ ,

ŭ ^ ˘ **ip rip send enable** Ф ३ p **ip rip receive enable** Ф ३ 8 Â

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```
Ruijie(config-router)# passive-interface default
Ruijie(config-router)# no passive-interface ethernet
0
```

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Ф ३	
ip rip receive enable	ĭ ^ ˆ

ip rip send enable

38.1.26 router rip

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router rip Â Ф ३ **no** ĩ Â

router rip

no router rip

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У э ˘ ЊЖ У э ৺ Â Э ╟
˜ ˘ ফ ৺ **async default routing** Â

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update	˘ Лъ Âupdate ЊЖ ϭ ৭ Ϩ ˘ ˆ ˘ invalid ϱ Flush æ Â ৭ У Â
invalid	˘ Лъ ˘ ÿ У Âinvalid ЊЖ ϭ è ϯ ৭ й Â й Ь˝ ˘ ϕ ϕ̈ ˆ ˙ ! ˘ ৭ й ˘ ώ invalid ’ invalid ϕ̈ ˆ ˘ ˚ æ Â Invalid й Â
flush	˘ Лъ ˘ ÿ ώ invalid Â flush ˆ ˘ ϱ invalid Â Flush й Â

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ṃ ৭ ˘ Λ Лъ **show ip rip** Ф ҳ Â

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ˆ ˘ ৭ й ˘ ώ ’
ώ ϩ˘ ˘ Â

```
Ruijie(config)# router rip
Ruijie(config-router)# timers basic 0 0 0
```

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У ˘ Λ Лъ Â

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38.1.28 validate-update-source

Î ऽ ऽ˘ ˘ G Ð ३ **validate**

validate-update-source

no validate-update-source Â 2

38.1.29 version (RIP)

Ж э ˇ G Ф ३ **version** Â Ф ३ **no** Â

version 1 2

no version

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1	Ж ˆ й Â
2	Ж ˆ й Â

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ţ Ж э Л Â Л Лъ **ip rip receive version** à **ip rip send version** Ф ३ˇ э Л ৲ э Ж Â

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ЛъЮ R ˇ Л й Â

```
Ruijie(config)# router rip
Ruijie(config-router)# version 2
```

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Ф ३	
ip rip receive version	Ж ফ У э Л Э ৲ э ˆ Â
ip rip send version	Ж ফ У э Л Э ৲ ৲ э ˆ Â
show ip rip	m **rip** ˜ ą Â

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38.2

38.2.1 show ip rip

~ ~ اجي ع ˘ G **show ip rip** Â

show ip rip vrf vrf-name

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vrf vrf-name	ˆ ৲ ~ ع

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```
Ruijie# show ip rip
Routing Protocol is "rip"
Sending updates every 10 seconds
Invalid after 20 seconds, flushed after 10 seconds
Outgoing update filter list for all interface is: not
set
Incoming update filter list for all interface is: not
set
Default redistribution metric is 2
Redistributing: connected
Default version control: send version 2, receive version
2
Interface            Send  Recv
GigabitEthernet 1/1      2     2
GigabitEthernet 1/0      2     2
Routing for Networks:
```

```
192.168.26.0 255.255.255.0
192.168.64.0 255.255.255.0
Distance: (default is 50)
```

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```
Ruijie# show ip rip external connected
Protocol connected route:
[connected] 1.0.0.0/8 metric=0
nhop=0.0.0.0, if=2
[connected] 3.0.0.0/8 metric=0
nhop=0.0.0.0, if=16391
[connected] 4.4.0.0/16 metric=0
nhop=0.0.0.0, if=16388
[connected] 5.0.0.0/8 metric=0
nhop=0.0.0.0, if=16386
[connected] 192.168.195.0/24 metric=0
nhop=0.0.0.0, if=1
```

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```
Ruijie# show ip rip interface
GigabitEthernet 1/1 is down, line protocol is down
  RIP is not enabled on this interface
GigabitEthernet 1/0 is up, line protocol is up
  Routing Protocol: RIP
  Receive RIPv2 packets only
  Send RIPv2 packets only
  Passive interface: Disabled
  Split horizon: Enabled
  V2 Broadcast: Disabled
  Multicast register: Registed
  Interface Summary Rip:
    Not Configured
  Authentication mode: Text
  Authentication key-chain: ripk1
  Authentication text-password: ruijie
  Default-information: only, metric 5
  IP interface address:
    192.168.64.100/24, next update due in 14 seconds
    2.2.1.1/24, next update due in 24 seconds
      neighbor 2.2.1.6, next update due in 3 seconds
      neighbor 2.2.1.77, next update due in 13 seconds
    2.2.2.57/24, next update due in 16 seconds
```

í RIP б BFD ╟, ж Ф ३ Ю ą :

```
Ruijie#show ip rip interface
VLAN 1 is up, line protocol is up
  Routing Protocol: RIP
    Receive RIPv1 and RIPv2 packets
    Send RIPv1 packets only
    Receive RIP packet: Enabled
    Send RIP packet: Enabled
    Send RIP supernet routes: Enabled
    Passive interface: Disabled
    Split horizon: Enabled
```

```
BFD: Enabled
  V2 Broadcast: Disabled
  Multicast registe: Registed
  Interface Summary Rip:
    Not Configured
  IP interface address:
    2.2.2.111/24, next update due in 24 seconds
```

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show ip rip	ɱ ~ ə Â

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39 OSPF

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39.1.2 area authentication

í ۷ ۰۰۰ ˘ G Ƒ ३ **area authentication** Â
Ƒ ३ **no** ˜Ω ۷ ۰۰۰ Â

area area-id **authentication message-digest**

no area area-id **authentication**

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```
Ruijie(config)# interface GigabitEthernet 0
Ruijie(config-if)# ip address
255.255.255.0
Ruijie(config-if)# ip ospf message-digest-key 1 md5
```

~

```
Ruijie(config)# router ospf 1
Ruijie(config-router)# network
0.0.0.255 area 0
Ruijie(config-router)# area 0 authentication
message-digest
```

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39.1.3 area default-cost

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ḣ ~ ˘ G Ф ३ **area default-cost** Â Ф ३ **no**
Â

area area-id **default-cost** cost

no area area-id **default-cost**

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area-id	ऱ ऱ ऽ Â
cost	ώ ऱ ḣ Â

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У э ϰ й ч Ь ˜Ω Ф ३ **area stub˘ area nssa** n̲ **area default-cost** Â ˆ
Э˘ **area stub** Ф ३˘ ˆ ϰ **area nssa** Ф ३˘ ⊓ **area default-cost** Ф ३ Л ƒ Э Â

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```
Ruijie(config)# router ospf 1
Ruijie(config-router)# network 0.0.0.0
area 0
Ruijie(config-router)# network 0.0.0.0
area 1
Ruijie(config-router)# area 1 stub
Ruijie(config-router)# area 1 default-cost 0
```

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39.1.4 area filter-list

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area-id	৲ ৯ ৴ Â
acl-name	¨
prefix-name	¨
access prefix	˜Ω
in out	˚ ¥ ώ ৲ ৲

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```
Ruijie# configure terminal
Ruijie(config)# access-list 1 permit 0
Ruijie(config)# router ospf 0
Ruijie(config-router)# area 1 filter-list access 1 in
```

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39.1.5 area nssa

У ৯ ৲ ৯ й ˘ G Ф ३ **area nssa** Â
Ф ३ **no** ˚ ৲ ৯ ৲ ৯ Â

area area-id **nssa no-redistribution default-information-originate metric** 0-16777214 **metric-type** 1-2 **no-summary**

no area area-id **nssa no-redistribution default-information-originate no-summary**

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```
Ruijie(config-router)# network  00
area  1
Ruijie(config-router)# area 1nssa
```

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area default-cost	ĦX ‘ ḣ ˆ ḣ˜ Â

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39.1.6 area range

ˇ ˇ G Ф ३ **area range** Â Ф ३ **no** ˇ **no** ṃ б **cost** ⁄ ˇ ⁄ Л Ъ ḣˇ ⊓ a˛ Â

area area-id **range** ip-address net-mask **advertise** **not-advertise** **cost** cost

no area area-id **range** ip-address net-mask **cost**

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area-id	ώ ˇ ⁄ Â costA 5B<2 ¯ Ȳ

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Â

ð G ' Ô

area stub Ф ३ Â Л ä̈ ä̈ Л Ь ' ~ ش ˘ ' ~ ش ˘ ' ~ ش ˘ Â ÿ ˘ è Л ˘ ˆ ä̈ ˘ ˆ ŋ ä̈ Â a ˘ ˆ ä̈ Â

ö̈ ä̈˘ Л ف Э area stub Ф ३ ˘ Ω Â ö̈ ä̈ Л ˆ ä̈ ˘ Лъ ↓ ŋ ä̈ Â

У э ä̈ й ä̈ ч Ф ३ area stub n area default-cost Â ˆ ä̈ Э˘ area stub Ф ३˘ п area default-cost Ф ३ Л ف Э Â area default-cost Ф ३ Ж ä̈] ^ ~ Â

ð w R Ô

ЛъЮ R ˘ ä̈ й ä̈˘ ц ä̈ Â

```
Ruijie(config)# router ospf 1
Ruijie(config-router)# network 00
area 0
Ruijie(config-router)# network 100
area 1
Ruijie(config-router)# area 1 stub
```

ð Ω Ф ३ Ô

Ф ३	
area default-cost	Ж ä̈ ḣ^ ḣ~ Â

ð Л Ô

ð Ô

39.1.8 area virtual-link

Ж ˘ G Ф ३ area virtual-link Â Ф ३ no ˆ Ж Â

area area-id **virtual-link** router-id **authentication message-digest null dead-interval** seconds **hello-interval** seconds **retransmit-interval** seconds **transmit-delay** seconds **authentication-key** key **message-digest-key** key-id **md5** key

no area area-id **virtual-link** router-id

ð ৭ Ô

৭	
area-id	৲ ৷ Â ৲ ৷ ৷ Лъ У э π 8 ḣ˘ ≠ ৷ Лъ У э Â
router-id	Â ৷ Лъ Ф ३ Â
dead-interval seconds	ˆ ৷ ˜ Ю ৳ x ˘ Лъ й` æ˘ й Â ৭ б ф У Â
hello-interval seconds	ˆ ৷ ˜ ৸ ˘ Лъ й` æ˘ й Â ৭ б ф У Â
retransmit-interval seconds	ˆ ৷ ˜ ˆ ˜ · ˘ Лъ й` æ˘ й Â ˚ ˆ ফ Э Â

a

è м ৲ ḣ Â

ð Ф ३ Ô

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ð G ʾ Ô

ফ ন è˘ ৲ ন б ন ˘ ন ˘

ন ˘ ŭ ‡ Â

ফ ч э ৲ ন ˆ ˜ ǯ … ˘ ч э ‘Ω˚

৲ ন й ৲ ন Â ন˜ ˜ p a ɔ ѝ ৲

ন Â ≠ ৴ Лъ ɥ è ৲ ন Â

router-id ѝ ˘ a ḣ˘

show ip ospf neighbor Ф ३ Â৴ Лъ ক ম

ṁ Â

area virtual-link Ф ३ ৴ Ня ˘ í

৲ ন ˘ Ф ३ **area authentication** Â

ð w R Ô

ЛЬЮ R ˘ Лъ ৲ ন ɔ ѝ ৲ ন˘ б Â

```
Ruijie(config)# router ospf 1
Ruijie(config-router)# network [illegible] area
0
Ruijie(config-router)# network [illegible]
[illegible] area 1
Ruijie(config-router)# area 1 virtual-link 2
```

ЛЬЮ R ˘ Лъ ৲ ন ɔ ѝ ৲ ন˘ б

Â ɢ ৲ ন p ৲ ন˘

˘ ѝ Â

```
Ruijie(config)# router ospf 1
Ruijie(config-router)# network [illegible]
[illegible] area 1
Ruijie(config-router)# network [illegible]
[illegible] area [illegible]
Ruijie(config-router)# area 0 authentication
message-digest
Ruijie(config-router)# area 1 virtual-link 1
message-digest-key 1 md5 hello
```

ð ‘ΩФ ३ Ô

Ƒ ३	
area authentication	ĺ ऱ ॐ ऽ Â
show ip ospf	ॠ ˘ ˆ Â

ð ⁄ Ô

ð Ô

39.1.9 auto-cost

Ƒ ३ ╟ ३ ˚ ╥ ˜Ω n ł ⁄ ˘ ⁄ ╟

```
Ruijie(config-router)# network [illegible] area 0
Ruijie(config-router)# auto- cost reference -bandwidth [illegible]
```

ð ‘ΩՖ ३ Ô

Ֆ ३	
show ip ospf	ŏ ‘Ω ३

ƒƫ ˆ ˇ У э ˇ . ˇ Ƀ
३ è G . ˝I ‡ è G
. ˝I ‡ Â

commpatible rfc1583

no commpatible rfc1583

ȣ ৻ Ô

always	^ Л ~ ˇΩ G ˅ ӊ ˘ a ھ ŭ ڤ Â
metric metric	^ Л ~ ˥ ḣ˘ ѝ Â
metric-type type	^ Л ~ ڭ Â ч ڭ ڭ ˘ a ˅ Э ˆ ḣ a У ’ ڭ ˘ ˆ ḣ У Â ڭ ڭ Л ҷ Â ѝ ڭ Â
route-map map-name	ˇΩ ˅ ˇΩ

ȍ ą Ô

a ӊ Â

ȍ Ф ҳ Ô

Â

ȍ G ˅ Ô

redistribute **default-information** Ф ҳ ˘
˅ ╟ Л ѝ ^ ھ ~ Â ⊓ a˅ ╟ ӊ
˘ ˇ ھ è Â ӊ
˘ **default-information originate** Ф ҳ
Â

Л ˘ a ŭ ڤ ˘ ˅ ą̈
ˇ У Â⊓ ھ a˅ ˘
ŭ ӊ ˘ Л Ѣ **show ip ospf database**
˘ ѝ ȣ Â

```
Ruijie(config-router)# network
Ruijie(config-router)# version 2
Ruijie(config-router)# exit
Ruijie(config)# router ospf
Ruijie(config-router)# network
area 0
Ruijie(config-router)# default-metric
Ruijie(config-router)#redistribute rip subnets
```

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Ƃ ३	
redistribute	Â
show ip ospf	

ð Ô

ð Ô

39.1.14 distance ospf

a

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```
Ruijie(config)# router ospf 1
Ruijie(config-router)# distance ospf external 0
```

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ð Л Ô

ð Ô

39.1.15 distribute-list in

distribute-list listname **gateway** plist-name **prefix** plist-name **in** **interface-type** num

no distribute-list listname **gateway** plist-name **prefix** plist-name **in** **interface-type** num

ð ч Ô

ч	
listname	G ‡
gateway plist-name	G ‡
prefix plist-name	G ‡
interface-type num	Л э ч

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ð Ф ҳ Ô

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ð G ˙ Ô

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Â a˚ ط ˘ ≠ a˚ ҥ ˙ ı̇
ط˘ Л˚ ط˚ ك Â ╗ У ҰҲ
˘ ڤ Л Лъ 8 ۹ ڭ Â

ð w R Ô

```
Ruijie(config)# access-list 3permit 0
0
Ruijie(config)# router ospf 2
Ruijie(config-router)# redistribute rip metric 0
```

```
Ruijie(config-router)# distribute-list 3 in ethernet 0
Ruijie(config-router)# distribute-list 3 in ethernet 1
```

ò ‘Ω Ф ३ Ô

ò ⁄ Ô

ò Ô

39.1.16 distribute-list out

† ˘ ╗ ı **redistribute** Ф ३

distribute-list

Ф ३	
show ip ospf	ŏ Ѿ ą
enable traps	╗

ð ⅄ Ô

ð Ô

39.1.18 enable traps

ṃ ⅄ ą ˘ ǐ ѝ ϩ̆ G Ю
Ф ३ ⅄ Лъ í ╟ ą ⅄ Â G Ф ३ **no** ⅄ Лъ Ѿ
ą ⅄ Â

enable traps error ifauthfailure | ifconfigerror | ifrxbadpacket | virtifauthfailure | virtifconfigerror | virtifrxbadpacket lsa lsdbapproachoverflow | lsdboverflow | maxagelsa | originatelsa retransmit iftxretransmit | virtiftxretransmit state-change ifstatechange | nbrstatechange | virtifstatechange | virtnbrstatechange

no enable traps error ifauthfailure | ifconfigerror | ifrxbadpacket | virtifauthfailure | virtifconfigerror | virtifrxbadpacket lsa lsdbapproachoverflow | lsdboverflow | maxagelsa | originatelsa retransmit iftxretransmit | virtiftxretransmit state-change ifstatechange | nbrstatechange | virtifstatechange | virtnbrstatechange

ð ⅄ Ô

⅄	
error	б Ѿ Ѿ ⅄ ⅄ Лъ Ю Ѿ **ifauthfailure** ⅄ **ifconfigerror** ⅄ ⅄ **ifrxbadpacket** ⅄ ǐ **virtifauthfailure** ⅄ **virtifconfigerror** ⅄ ⅄ **virtifrxbadpacket** ⅄ ǐ

lsa	б Ѿ Ѿ ч Л Лъ Ю Ѿ **lsdbapproachoverflow** ĺ ɞ Э ḣ ĺ ǯ Ç π **lsdboverflow** ĺ ɞ Э ḣ **maxagelsa** ĺ ◻ **originatelsa** ꜧ
retransmit	б Ѿ Ѿ ч Л Лъ Ю Ѿ **iftxretransmit** ⅄ Э ⅄ · **virtiftxretransmit** ⅄ Э ⅄ ·
state-change	б Ѿ Ѿ ч Л Лъ Ю Ѿ **ifstatechange** ⅄ ⅄ ◻ **nbrstatechange** ⅄ ◻ **virtifstatechange** ⅄ ⅄ ◻ **virtnbrstatechange** ⅄ ◻

ð ą Ô

ą Ю ŏ Ѿ Ѿ Â

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Ф ३ ⅄ **snmp-server** Ф ३ 8˘ ˇI Ѿ **snmp-server enable traps ospf** Лъ ɨ˘ Ф ३ Л Лъ Â

Ф ३ a ⅄ 8˘ ĭ a˘ ˘ Ѿ Â

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```
Ruijie(config)# router ospf 0
Ruijie(config)# enable traps
```

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Ф ३	
show ip ospf	ŏ Ѿ ą
enable mib-binding	

ð Л Ô

ð Ô

39.1.19 ip ospf authentication

Ф ३ ৲ ˘ G **no** ৲ Лъ й Â

ip ospf authentication message-digest null

no ip ospf authentication

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৲	
message-digest	ফ ৲ Э ╗ Â
null	a Â

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ð G ˙ Ô

Ф ३ ł a ˙ ı ফ
G **no** ḣ ˘ ŭ ৲ ফ ঁ
Э ā ˘ й **null** ‡ 8 й
a ৲ Э ṇ ৲ ফ ঁ ঁ .
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```
Ruijie(config)# interface GigabitEthernet 0
Ruijie(config-if)# ip address
0
Ruijie(config-if)# ip ospf authentication
message-digest
```

ð ˝Ω Ф ३ Ô

Ф ३	
area authentication	ı́ ঁ ঁ ЯЖ Â
ip ospf authentication-key	Â

ip ospf message-digest-key	Â

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ð Ô

39.1.20 ip ospf authentication-key

˘ G ⁄ Ф ३ **ip ospf authentication-key** Â Ф ३ **no** ˝ Â

ip ospf authentication-key key

no ip ospf authentication-key

ð ⁄ Ô

⁄	
Key	˘ ⁄ Ль э Â

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⁄ Â

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Ruijie(config-if)#ipospfauthentication-keyospfauth

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Ф ३	
area authentication	í ⅄ ⅄ ⅄ Â
Ip ospf authentication	í ⅄ Э ⅄

ð ⅄ Ô

ð Ô

39.1.21 ip ospf cost

⅄ ⅄ У э ^ ^ ~ ˘ G ⅄

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```
Ruijie(config)# interface serial 0
Ruijie(config-if)# ip ospf cost 0
```

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Ф ३	
bandwidth	⅄ Â a ˵ ⊾ · Â
show ip ospf	ŏ ‘Ω ə

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39.1.22 ip ospf database-filter all out

Ruijie(config-if)# ip ospf database-filter all out

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39.1.23 ip ospf dead-interval

″ ∧ ϟ ϟ G ∧ Ф ३ **ip ospf dead-interval** ë Ф ३ **no** ë

ip ospf dead-interval seconds

no ip ospf dead-interval

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∧	
seconds	ă ϟ ″ ϟ Лъ й` æ ë

ð ą Ô

й **ip ospf hello-interval** " ˝ ë

ð Ф ३ Ô

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ð G ˚ Ô

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ë ϟ й ˝ ϟ g ϖ

ϟ˚ ╟ g ϟ ë

Ф ३ ∧ Лъ g ″ ϟ ϟ ⊓ π˺ ë

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˚ У Э ϟ У ë

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ЛЪЮ R ϟ serial 1/0Yäà•0Ê€µ Êk@%€Ú

Ֆ ३	
ip ospf hello-interval	৲ Â

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ð Ô

39.1.24 ip ospf disable all

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ip ospf disable all

no ip ospf disable all

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ð G ˙ Ô

Ֆ ३ ৴ ৫ **network area** ŭ ŏ ˘ Ֆ ३ ł˘ ˝ G ৴ ¥ ˘ ≠ a Ą ন Â ش a ̥ ŋ ৲ ˙ ! ˘ ≠ a ৲ б Â

ð w R Ô

`Ruijie(config)#` interface serial 0

`Ruijie(config-if)#` ip address 0

0

`Ruijie(config-if)#` ip ospf disable all

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ð Ô

39.1.25 ip ospf hello-interval

৲ ˘ G ৴ Ֆ ३ **ip ospf hello-interval** Â Ֆ ३ **no** Â

ip ospf hello-interval seconds

no ip ospf hello-interval

ð ৲ Ô

৲	
seconds	৷ ˘ Лъ ѝ ` æ Â

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```
Ruijie(config)# interface serial 0
Ruijie(config-if)# ip address 0
0
Ruijie(config-if)# encapsulation ppp
Ruijie(config-if)# ip ospf hello-interval 5
```

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Ф ३	
ip ospf dead-interval	″ Ю Â

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39.1.26 ip ospf message-digest-key

˘ G ৲ Ф ३ **ip ospf message-digest-key** Â Ф ३ ˆ

Â

ip ospf message-digest-key key-id **md5** key

no ip ospf message-digest-key

ð ৭ Ô

৭	
Key	˘ Л Ть э Â

```
Ruijie(config-if)# ip ospf message-digest-key 5md5
hello5
```

╗ ɢ ɨ ˘ ŏ ĭ Â

```
Ruijie(config)# interface Serial 0
Ruijie(config-if)# noipospfmessage-digest-key 0 md5
hello10
```

ð ˇΩФ ३ Ô

Ф ३	
area authentication	í ˇ ˚ ЖЖ Â
ip ospf authentication	í ⅄ Э ЖЖ

ð ⅄ Ô

ð Ô

39.1.27 ip ospf mtu-ignore

⅄ ˚ ˆ ɨ **mtu** ⅄ Лъ ᴳ Ф ३ Â
Ф ३ **no** Â

ip ospf mtu-ignore

no ip ospf mtu-ignore

ð ⅄ Ô

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Ф ३ ⅄	

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ŭ ˘ ˆ è ⅄ ¥
⅄ ЖЖ ˇΩ a ⅄ Лъ ˇΩ
ā Â

ð w ᴿ Ô

ЛъЮ ᴿ ˘ ╗ ˇΩ Â

```
Ruijie(config)# interface serial
Ruijie(config-if)# ip ospf mtu-ignore
```

ð Ô

ð Ô

39.1.28 ip ospf network

ج G Ф ३ **ip ospf network** Â Ф ३ **no** Â

ip ospf network broadcast non-broadcast point-to-multipoint non-broadcast point-to-point

no ip ospf network broadcast non-broadcast point-to-multipoint non-broadcast point-to-point

ð Ô

broadcast	ج й جÂ
non-broadcast	ج й جÂ
point-to-multipoint non-broadcast	ج й جÂ ج й جÂ
point-to-point	ج й جÂ

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[illegible]

X.25 map [illegible] **frame-relay map** [illegible]

[illegible]

ð w R Ô

[illegible]

```
Ruijie(config)# interface Serial [illegible]
Ruijie(config-if)# ip address [illegible]
[illegible]
Ruijie(config-if)# encapsulation frame-relay
Ruijie(config-if)# ip ospf network broadcast
```

[illegible]

```
Ruijie(config)# interface Serial [illegible]
Ruijie(config-if)# ip address [illegible]
[illegible]
Ruijie(config-if)# encapsulation frame-relay
```

```
Ruijie(config-if)#ipospfnetworkpoint-to-multipoint
```

ЛЪЮ R ˘ è ⅄ й ˘ ˘
˝ ő ˚ ´ è ÂЛЪЮ ˘ ˛
a Э ˆ 8 й ˜ Â

```
Ruijie(config)# interface Serial 0
Ruijie(config-if)#ipaddress
Ruijie(config-if)# encapsulation frame-relay
Ruijie(config-if)# ip ospf network broadcast
Ruijie(config-if)# ip ospf priority 0
```

ð ˇΩФ ३ Ô

Ф ३	
dialer map ip	ЪЖ ⅄ ⅄ Â
frame-relay map	ЪЖ è Â
neighborˆ ˜	ЪЖ ˘ ⅄ ˝ ˛ Â
X25 map	ЪЖ Â

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39.1.29 ip ospf priority

⅄ . ˝I ḣ˘ G ⅄ Ф ३ **ip ospf priority** Â
Ф ३ **no** Â

ip ospf priority priority

no ip ospf priority

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Priority	⅄ . ˝I ḣ Â

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. ˝I ḣ й˝ Â

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⅄ Â

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̂ ̃ ̀ ̃ ˘ . ”І ḣ
˘ ѝ Â . ”І ḣ У ˘
ѝ Â ”І ḣ ѝ° ˘ a Л ѝ
Â Ф ३ Л **broadcast** n **non-broadcast** ش
Â

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Л ফ Ю У n w è ̈ ̊ Л . ”І

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ЛЪЮ R ˘ Л . ”І ḣ ѝ Â

```
Ruijie(config)# interface GigabitEthernet 0
Ruijie(config-if)# ip ospf priority 0
```

ð Ω Ф ३ Ô

Ф ३	
ip ospf network	Л ش Â

ð Л Ô

ð Ô

39.1.30 ip ospf retransmit-interval

ЪЖ Л ̂ ̃ . ˘ G Л
Ф ३ **ip ospf retransmit-interval** Â Ф ३ **no** Â

ip ospf retransmit-interval seconds

no ip ospf retransmit-interval

ð Л Ô

Л	
Seconds	. ˘ Лъ ѝ ` æ Â Ұ ч э ǯ ̂ . Â ѝ Â

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ʌ У ɜ

ip ospf transmit delay

area virtual-link retransmit-interval

```
Ruijie(config)# interface serial
Ruijie(config-if)# ip ospf transmit delay
```

area virtual-link	

39.1.32 log-adj-changes

no **default**

log-adj-changes detail

no log-adj-changes detail

detail	

detail

39.1.34 neighbor

HX ˘ G Ð ৩ **neighbor** Â Ð ৩ **no** ˝ Â

neighbor ip-address **poll-interval** seconds **priority** priority **cost** cost

no neighbor ip-address

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৭	
ip-address	৭ ৯ ৯ Â

poll-interval
seconds

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˘ . ”I ḣ й̀ ˘ й̀ Â

```
Ruijie(config)# router ospf 0
Ruijie(config-router)# network 0 0
area 0
Ruijie(config-router)# neighbor 0 priority 1
poll-interval 0
```

ð ‘ΩФ ३ Ô

Ф ३	
ip ospf priority	. ”I ḣ Â
ip ospf network	ش

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39.1.35 network area

Ж ١ ҂ ⅄ ˘ Лъ ⅄ ٲ ھ G
Ф ३ **network area** Â Ф ३ **no** ī ⅄ ٲ ھ Ж Â

network ip-address wildcard **area** area-id

no network ip-address wildcard **area** area-id

ð ⅄ Ô

⅄	
ip-address	⅄ ک ھ Â
wildcard	Ж ک ھ Æ˘ ° Ē ˘ ˝ a ṁ Â
area-id	ٲ ھ Â У э ٲ ھ ‘Ω У э ک ھ ز˘ й̀ ɢ ɾ ɣ ˘ ≠ ⅄ Лъ У э ɔ й̀ ٲ ھ Â

ð ɑ Ô

ٲ ھ Â

ð Ф ३ Ô

Â

ð G ˘ Ô

ip-address ꝑ wildcard ч э ᛧ Ӝ ĭ У Ֆ ʇ ᛰ Ꮑ э ᛧ Ώ ᛙ У э ᛕ Â У э ᛧ Э
ᛧ ў **network area** Ӝ ᛧ ᛧ ᛧ a Â

ᛧ б э **network** Ֆ ʇ Ӝ ᛧ ᛧ б Â

ð w ᴿ Ô

ᏡЮ ᴿ Ӝ э Â ᛧ Ӝ ᛧ Ӝ ἐ м ᛧ Ӝ Â

```
Ruijie(config)# router ospf
Ruijie(config-router)# network
area
Ruijie(config-router)# network
area 1
Ruijie(config-router)# network
area 0
```

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Ֆ ʇ	
router ospf	… Â

ð ᛰ Ô

ð Ô

39.1.36 overflow database

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overflow database 0-4294967294 **hard** **soft**

no overflow database

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ᛧ	
1-4294967294	
hard **soft**	˘ Ώ ᴿ ˘ Ꮑ Â

ð α Ô

ð Ф ३ Ô

Â

ð G ˘ Ô

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R ‘ ƒ ϊ a α Ю a ώ ‘

```
Ruijie(config)# router ospf 1
Ruijie(config-router)# no overflow memory-lack
```

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```
Ruijie(config)# router ospf ϑ
Ruijie(config-router)# passive -interface serial ⓪
```

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show ip ospf interface	⅄ ℞Ω ᶏ

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39.1.40 redistribute

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redistribute bgp isis area-tag **ospf** process-id **rip connected static level-1 level-1-2 level-2 metric** value **match internal external | external external nssa-external | nssa-external nssa-external metric-type 1|2 route-map** map-tag **tag** 0-4294967295 **subnets**

no redistribute bgp isis area-tag **ospf** process-id **rip connected static level-1 level-1-2 level-2 metric** value **match internal external external nssa-external nssa-external metric-type 1|2 route-map** map-tag **tag** 0-4294967295 **subnets**

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bgp isis area-tag **ospf** process-id **rip connected static**	↑ ˜ Â
metric	Â
Level-1/ level-1-2/ level-2	⅄ ↑ ∧ G ˘ ¥ ↑ ∧˘ ⅄ ĭ ↑ ∧ Â
match	⅄ ↑ ∧ G ˘ ¥ ↑ ∧˘ ĭ ↑ ∧’
metric-typ	شح й Â

route-map	ǂ Â
tag	ǂ ǂ ǫ ḣ Â
subnets	ʌ ǂ ñ Â

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```
Ruijie(config-router)# redistribute static subnets
Ruijie(config)# router ospf 1
Ruijie(config-router)# redistribute ospf 2 subnets
Ruijie(config-router)# redistribute ospf 2 match
external 1 internal
Ruijie(config-router)# redistribute isis [illegible]
Ruijie(config-router)# redistribute isis i [illegible]
[illegible]
```

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```
router ospf 1
redistribute ospf 2 match external 1 internal subnets
```

redistribute isis isis-001 level-1-2

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39.1.41 router ospf

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router ospf process-id **vrf** vrf-name

no router ospf process-id

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process-id	⁄
vrf-name	ফ ন্ত ث è˘ ¥

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Ruijie(config)# router ospf 0 vrf 1

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show ip protocols	ṁ ˜ ą Â
show ip ospf	ṁ ą Â

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39.1.42 router-id

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router-id router-id

no router-id

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summary-address Â Ф ३ **no** Ĥ Â

summary-address ip-address net-mask **not-advertise | tag** <0-4294967295> |

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ip-address	Â
net-mask	Â
not-advertise	a Ω ऽ ‡ ŷ Ω ऽ Â

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б **area rang** Ф ३ a ŷ ŷ ŷ Â

Ą ŷ **summary-address** Ф ३ ŋ Л ऽ Э ŷ з Л ĥ Â

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```
redRuijie(config)# router ospf 0
Ruijie(config-router)# summary-address 0 0
255.255.0.0
Ruijie(config-router)# redistribute static subnets
Ruijie(config-router)# network 00
area 1
Ruijie(config-router)# network 00
area 0
Ruijie(config-router)# area 1nssa
```

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area range	ઝ ઁ ઝ	Э ṁ	Â

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39.1.44 timers lsa-group-pacing

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timers lsa-group-pacing seconds **tno imers lsa-group-pacing)ĭ ĭHAÒ**

39.1.45 timers spf

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ч ˘ G Ф ३ **timers spf** Â
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timers spf spf-delay spf-holdtime

no timers spf

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spf-delay	ЖЖ ˘ ЛЪ й` æ Â ↑ ۱ ◻˘ ł˘ Â
spf-holdtime	ЖЖ ч ǯ ˘ ЛЪ й ` æ Â ↑ ɷ˘ ч ↑ ˘ a Â

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spf-delay ˈ ˈ spf-holdtime ˈ Â

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spf-delay ɲ spf-holdtime ˘ ۱ ◻
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```
Ruijie(config)# router ospf 0
Ruijie(config-router)# timers spf 39
```

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show ip ospf	ʔΩ ۹

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39.2

39.2.1 show ip ospf

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show ip ospf process-id

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process-id	८

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ЛЮ ù **show ip ospf** Ф ३

```
Ruijie# show ip ospf
Routing Process "ospf 1" with ID 1.1.1.1
Process uptime is 4 minutes
Process bound to VRF default
Conforms to RFC2328, and RFC1583Compatibility flag
isenabled
Supports only single TOS(TOS0) routes
Supports opaque LSA
This router is an ASBR (injecting external routing
information)
SPF schedule delay 5 secs, Hold time between two SPFs
10 secs
LsaGroupPacing: 240 secs
Number of incomming current DD exchange neighbors 0/5
Number of outgoing current DD exchange neighbors 0/5
Number of external LSA 4. Checksum 0x0278E0
Number of opaque AS LSA 0. Checksum 0x000000
Number of non-default external LSA 4
External LSA database is unlimited.
```

```
Number of LSA originated 6
Number of LSA received 2
Log Neighbor Adjency Changes : Enabled
Number of areas attached to this router: 1
Area 0 (BACKBONE)
Number of interfaces in this area is 1(1)
Number of fully adjacent neighbors in this area is 1
Area has no authentication
SPF algorithm last executed 00:01:26.640 ago
SPF algorithm executed 4 times
Number of LSA 3. Checksum 0x0204bf
Area 1 (NSSA)
Number of interfaces in this area is 1(1)
Number of fully adjacent neighbors in this area is 0
Number of fully adjacent virtual neighbors through this
area is 0
Area has no authentication
SPF algorithm last executed 02:09:23.040 ago
SPF algorithm executed 4 times
Number of LSA 6. Checksum 0x028638
NSSA Translator State iselected
```

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39.2.2 show ip ospf border-routers

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show ip ospf border-routers Â

show ip ospf process-id **border-routers**

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ЛъЮ й **show ip ospf border-routers** Ф ३ '

```
Ruijie# show ip ospf border-routers
OSPF internal Routing Table

Codes: i - Intra-area route, I - Inter-area route

i 1.1.1.1 [2] via 10.0.0.1, GigabitEthernet 0/1, ABR,
ASBR, Area 0.0.0.1 select
```

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39.2.3 show ip ospf database

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show ip ospf process-id area-id **database**

show ip ospf process-id area-id **database adv-router ip-**addr(a)<| process-id area-id

show ip ospf process-id area-id **database summary** link-state-id **self-originate**

show ip ospf process-id area-id **database asbr-summary** link-state-id

show ip ospf process-id area-id **database asbr-summary** link-state-id **adv-router** ip-address

show ip ospf process-id area-id **database asbr-summary** link-state-id **self-originate**

show ip ospf process-id area-id **database external** link-state-id

show ip ospf process-id area-id **database external** link-state-id **adv-router** ip-address

show ip ospf process-id area-id **database external** link-state-id **self-originate**

show ip ospf process-id area-id **database nssa-external** link-state-id

show ip ospf process-id area -id **database nssa-external** link-state-id **adv-router** ip-address

show ip ospf process-id area-id **database nssa-external** link-state-id **self-originate maxage**

show ip ospf process-id area-id **database database-summary**

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Area-id	ˆ ⁄ ˜ ˆ ⁄
adv-router	ˆ ⁄ ˜ ˆ Ω ˆ ˜ ą
link-state-id	ˆ ⁄ ˜ ⁄ ą Â
self-originate	ˆ ⁄ ˜ ą
maxage	ˆ ⁄ ˜ ˆ ˆ ˜
router	ˆ ⁄ ˜ ą Â
network	ˆ ⁄ ˜ ą Â
summary	ˆ ⁄ ˜ ą Â
asbr-summary	ˆ ⁄ ˜ ˆ Ω ¥ ą Â

external	ˆ Л ˜ ҷ Â
nssa-external	ˆ Л ˜ Ц ҷ Â
opaque-area	ˆ Л ˜ π
opaque-as	ˆ Л ˜ π У
opaque-link	ˆ Л ˜ Ç
database-summary	ˆ Л ˜ ˩ ҷ

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ЛЬЮ й **show ip ospf database** Ф ३ ˘

```
Ruijie# show ip ospf database
    OSPF Router with ID (1.1.1.1) (Process ID 1)

          Router Link States (Area 0.0.0.0)
Link ID         ADV Router      Age  Seq#       CkSum
Link count
1.1.1.1       1.1.1.1        2   0x80000011 0x6f39 2
3.3.3.3       3.3.3.3        120  0x80000002 0x26ac 1

         Network Link States (Area 0.0.0.0)

Link ID        ADV Router     Age  Seq#      CkSum
193.88.88.27   1.1.1.1        120  0x80000001 0x5366

         Summary Link States (Area 0.0.0.0)

Link ID         ADV Router      Age  Seq#       CkSum
Route
10.0.0.0       1.1.1.1         2    0x80000003 0x350d
10.0.0.0/24
100.0.0.0      1.1.1.1         2    0x8000000c 0x1ecb
100.0.0.0/16

      Router Link States (Area 0.0.0.1 [NSSA])
```

```
Link ID         ADV Router      Age  Seq#       CkSum
Link count
1.1.1.1        1.1.1.1        2   0x80000001 0x91a2 1

      Summary Link States (Area 0.0.0.1 [NSSA])

Link ID         ADV Router      Age  Seq#       CkSum
Route
100.0.0.0      1.1.1.1         2    0x80000001 0x52a4
100.0.0.0/16
192.88.88.0    1.1.1.1         2    0x80000001 0xbb2d
192.88.88.0/24

   NSSA-external Link States (Area 0.0.0.1 [NSSA])

Link ID         ADV Router      Age  Seq#       CkSum
Route            Tag
20.0.0.0       1.1.1.1        1   0x80000001 0x033c E2
20.0.0.0/24     0
100.0.0.0      1.1.1.1        1   0x80000001 0x9469 E2
100.0.0.0/28    0

               AS External Link States

Link ID         ADV Router      Age  Seq#       CkSum
Route            Tag
20.0.0.0       1.1.1.1         380  0x8000000a 0x7627
E2 20.0.0.0/24     0
100.0.0.0      1.1.1.1         620  0x8000000a 0x0854
E2 100.0.0.0/28    0
```

show ip ospf database Ф ҳ Ј ЮÂ

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ЛЬЮ й **show ip ospf database asbr-summary** Ф ३

```
Ruijie# show ip ospf database asbr-summary
OSPF Router with ID (1.1.1.35) (Process ID 1)
ASBR-Summary Link States (Area 0.0.0.1)
LS age: 47
Options: 0x2 (*|-|-|-|-|-|E|-)
LS Type: ASBR-summary-LSA
Link State ID: 3.3.3.3 (AS Boundary Router address)
Advertising Router: 1.1.1.1
LS Seq Number: 80000001
Checksum: 0xbe8c
Length: 28
Network Mask: /0
TOS: 0  Metric: 1
```

show ip ospf database asbr-summary Ф ३ ل
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ЛЪЮ й **show ip ospf database external** Ѣ ҳ

```
Ruijie# show ip ospf database external
OSPF Router with ID (1.1.1.35) (Process ID 1)
AS External Link States
LS age: 752
Options: 0x2 (*|-|-|-|-|-|E|-)
LS Type: AS-external-LSA
Link State ID: 20.0.0.0 (External Network Number)
Advertising Router: 1.1.1.1
LS Seq Number: 8000000a
Checksum: 0x7627
Length: 36
Network Mask: /24
Metric Type: 2 (Larger than any link state path)
TOS: 0
Metric: 20
Forward Address: 0.0.0.0
External Route Tag: 0
```

show ip ospf database external Ѣ ҳ ⅃ ЮÂ

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ЛЬЮ й **show ip ospf database network** Ѣ ҳ

```
Ruijie# show ip ospf database network
OSPF Router with ID (1.1.1.1) (Process ID 1)
Network Link States (Area 0.0.0.0)

LS age: 572
Options: 0x2 (*|-|-|-|-|-|E|-)
LS Type: network-LSA
Link State ID: 192.88.88.27 (address of Designated
Router)
Advertising Router: 1.1.1.1
LS Seq Number: 80000001
Checksum: 0x5366
Length: 32
Network Mask: /24
Attached Router: 1.1.1.1
Attached Router: 3.3.3.3
```

show ip ospf database network Ѣ ҳ ʌ ЮÂ

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ЛъЮ й **show ip ospf database router** Ф ҳ

```
Ruijie# show ip ospf database router
OSPF Router with ID (1.1.1.1) (Process ID 1)
Router Link States (Area 0.0.0.0)
LS age: 322
Options: 0x2 (*|-|-|-|-|-|E|-)
Flags: 0x3 : ABR ASBR
LS Type: router-LSA
Link State ID: 1.1.1.1
Advertising Router: 1.1.1.1
LS Seq Number: 80000012
Checksum: 0x6d3a
Length: 48
Number of Links: 2

Link connected to: Stub Network
(Link ID) Network/subnet number: 100.0.1.1
(Link Data) Network Mask: 255.255.255.255
Number of TOS metrics: 0
TOS 0 Metric: 0
```

show ip ospf database router Ф ҳ ҽ ЮÂ

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ЛЬЮ й **show ip ospf database summary** Ф ३ ˙

```
Ruijie# show ip ospf database summary
OSPF Router with ID (1.1.1.1) (Process ID 1)
Summary Link States (Area 0.0.0.0)
LS age: 499
Options: 0x2 (*|-|-|-|-|-|E|-)
LS Type: summary-LSA
Link State ID: 10.0.0.0 (summary Network Number)
Advertising Router: 1.1.1.1
LS Seq Number: 80000004
Checksum: 0x330e
Length: 28
Network Mask: /24
TOS: 0  Metric: 11
```

show ip ospf database summary Ф ३ ۷ ЮÂ

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ЛЬЮ й **show ip ospf database nssa-external** Ф ३

```
Ruijie# show ip ospf database nssa-external
OSPF Router with ID (1.1.1.1) (Process ID 1)
   NSSA-external Link States (Area 0.0.0.1 [NSSA])
LS age: 1
Options: 0x0 (*|-|-|-|-|-|-|-)
LS Type: AS-NSSA-LSA
Link State ID: 20.0.0.0 (External Network Number For
NSSA)
Advertising Router: 1.1.1.1
LS Seq Number: 80000001
Checksum: 0x033c
Length: 36
Network Mask: /24
Metric Type: 2 (Larger than any link state path)
TOS: 0
Metric: 20
NSSA: Forward Address: 100.0.2.1
External Route Tag: 0
```

show ip ospf database nssa-external Ф ३ ㆍ
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ЛъЮ й **show ip ospf database external** Ƃ ३

```
Ruijie#  show ip ospf database external
OSPF Router with ID (1.1.1.1) (Process ID 1)
AS External Link States
      : 1290
       : 0x2 (*|-|-|-|-|-|E|-)
LS Type: AS-external-LSA
Link State ID: 20.0.0.0 (External Network Number)
Advertising Router: 1.1.1.1
            : 8000000a
Checksum: 0x7627
Length: 36
Network Mask: /24
Metric Type: 2 (Larger than any link state path)
TOS: 0
Metric: 20
Forward Address: 0.0.0.0
External Route Tag: 0
```

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ЛЬЮ й **show ip ospf database database-summary** Ф ३

```
Ruijie# show ip ospf database database-summary
OSPF process 1:
Router Link States      : 4
Network Link States     : 2
Summary Link States     : 4
ASBR-Summary Link States : 0
AS External Link States  : 4
NSSA-external Link States: 2
```

show ip ospf database database-summary Ф ३ Л
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```
Internet Address 192.88.88.27/24, Ifindex 4, Area
0.0.0.0, MTU 1500
Matching network config: 192.88.88.0/24
Process ID 1, Router ID 1.1.1.1, Network Type BROADCAST,
Cost: 1
Transmit Delay is 1 sec, State DR, Priority 1
Designated Router (ID) 1.1.1.1, Interface Address
192.88.88.27
Backup Designated Router (ID) 3.3.3.3, Interface Address
192.88.88.72
Timer intervals configured, Hello 10, Dead 40, Wait 40,
Retransmit 5
Hello due in 00:00:03
Neighbor Count is 1, Adjacent neighbor count is 1
Crypt Sequence Number is 70784
Hello received 1786 sent 1787, DD received 13 sent 8
LS-Req received 2 sent 2, LS-Upd received 29 sent 53
LS-Ack received 46 sent 23, Discarded 1
```

show ip ospf interface serial 1/0 Ð ३ ل ЮÂ

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39.2.5 show ip ospf neighbor

˘ G Ƀ ३ **show ip ospf neighbor** Â

show ip ospf process-id **neighbor detail** interface-type interface-number neighbor-id

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detail	ˆ ۸ ˜ ҷ Â

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ЛЬЮ ù **show ip ospf neighbor** Ф ३ ˛

```
Ruijie# show ip ospf neighbor
OSPF process 1, 1 Neighbors, 1 is Full:
```

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39.2.6 show ip ospf route

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show ip ospf process-id **route count**

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process-id	⁄˘ ৲ Â
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```
Ruijie# show ip ospf route
OSPF process 1:
Codes: C - connected, D - Discard, O - OSPF,
IA - OSPF inter area  N1 - OSPF NSSA external type 1,
N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2
E2    100.0.0.0/24    [1/20]    via    192.88.88.126,
GigabitEthernet 1/0
C     192.88.88.0/24   [1]   is   directly   connected,
GigabitEthernet 1/0, Area 0.0.0.1
```

show ip ospf route Ƃ ३ ⅃ Ю

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39.2.7 show ip ospf summary-address

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show ip ospf summary-address Â

show ip ospf summary-address

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39.2.8 show ip ospf virtual-link

ą ˘ G Ф ३ **show ip ospf virtual-link** Â

show ip ospf process-id **virtual-link**

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˘ ৸ Ф ३ ˘ Л৬ ৺ ε ˇΩ ą Â **show ip ospf neighbor** Ф ३ a˚ Â

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ЛЬЮ ŷ **show ip ospf virtual-links** Ф ३

```
Ruijie# show ip ospf virtual-links
Virtual Link VLINK0 to router 1.1.1.1 is up
Transit area 0.0.0.1 via interface GigabitEthernet 0/1
Local address 10.0.0.37/32
Remote address 10.0.0.27/32
Transmit Delay is 1 sec, State Point-To-Point,
Timer intervals configured, Hello 10, Dead 40, Wait 40,
Retransmit 5
Hello due in 00:00:05
Adjacency state Full
```

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```
Ruijie(config)# router rip
Ruijie(config-router)# network
Ruijie(config-router)# distribute-list in
0
Ruijie(config-router)# no auto-summary
Ruijie(config-router)# exit
Ruijie(config)# access-list permit
```

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access-list	ƚƛ “ ‡
prefix-list	ƚƛ m “

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40.1.2 distribute-list out

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distribute-list out Â Ƌ ३ **no** ˆ ƚƛ Â

distribute-list access-list-number access-list-name **prefix** prefix-list-name **out** interface protocol process-id

no distribute-list access-list-number name **prefix** prefix-list-name **out** interface protocol process-id

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access-list-number	“ ⅄ ñ “ ⅄ ‘ ˘ “ ⅄ ‘ ˘
access-list-name	“ ¨
prefix prefix-list-name	G ḿ “
Interface	⅄ ˆ “ ˘ ⅂ 8 ⅄ ⅄
protocol	⅄ ˆ “ ˘ ˆ

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```
Ruijie(config)# router rip
Ruijie(config-router)# network
Ruijie(config-router)# network
Ruijie(config-router)# distribute-list out
Ruijie(config-router)# version 2
Ruijie(config-router)# exit
Ruijie(config)# access-list permit
```

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access-list	ⅈ “ ‡
prefix-list	ⅈ ḿ “

redistribute	ˆ

40.1.3 ip community-list

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ip community-list standard expanded community-list-name community-list-number **permit deny** community-number..

no ip community-list standard expanded community-list-name community-list-number

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standard	ñ ش E “
expanded	ش E “
community-list-name	ش E “ ¨ ش E “ ¨ a
community-list-number	ش E “ ۷ ñ ش E “ ˙ ۷ ز ù ش E “ ˙ ۷ ز ù
permit	ĭ
deny	
community-number	ش E ḣ Â ù ۷˙ ˘ У э ḣ˘ ز ˘ ЛЬЮ ЮЖ ḣ˙ ˘ ش E˘ Ư ش E Â ˘ a ۷ ˆ ˘ ˘ a ۷ è Â ˘ a ۷ ˙ ı У э Â ˘ a ۷ Â ز˙ Â ˙ ḿ э ش E “ э ش E ḣ Â

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Ruijie(config)# ip community-list standard test deny 00
Ruijie(config)# ipcommunity-liststandard test2 permit internet

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Ɗ ३	
match community	Ɔ ش E “
set comm-list delete	ش E “ ˥ è ش E ḣ
show ip community-list	ش E “ ə
show ip bgp community-list	Ɔ ش E “ ə

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40.1.4 ip default-network

˘ G ŏ Ɗ ३ **ip default-network** Â Ɗ ३ ʎ ƱƢ˥ Â

ip default-network network

no ip default-network network

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Ruijie(config)# ip route [redacted]

seq-number	У ɱ " Лъ " ⁄ Âὲ ɲɪ ˆ ˆ ÂƑ ३ ˆ ὖ э " ⁄˘ ‡ ˚ ὶ ɱ " ˆ У э " ⁄ Â У э " ⁄ ˘ ɨ У э ḣ " ⁄ ḣ ɱ У э " ⁄ У э ˝ ḣ
deny	ɣ ɔ̄ ɑ
permit	ɣ ɔ̄ ɑ ĭ
ip-prefix	˙ ھ ھ Лъ ⁄ Â ھ ھ ⁄ Лъ ھ ھ Â ÿ ˆ

minimum-prefix-length ˆ ⁄ ˜ ɲɪ ḣ ˝ ɲɪ

```
Ruijie# configure terminal
Ruijie(config)# ipprefix-listpre1permit
Ruijie(config)# router ospf
Ruijie(config-router)#distribute-listprefixpre1out
rip
Ruijie(config-router)# end
```

40.1.6 ip prefix-list description

ŷ У э ɱ “ ╗ ˘ G **ip prefix-list description** Ƌ ३ Â
Ƌ ३ **no** ˥ У э ɱ “ Â

ip prefix-list prefix-lis-name **description** descripton-text

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prefix-lis-name	ɱ “ ¨
descripton-text	ɱ “

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ЛЬЮ R ŷ ɱ “ ╗ **Deny routes from Net-A**
```
Ruijie# configure terminal
Ruijie(config)# ip prefix-list pre description Deny
routes from Net-A
```

40.1.7 ip prefix-list sequence-number

ŷ ɱ “ ˊ ╗ ˘ G **ip prefix-list description** Ƌ ३ Â
Ƌ ३ **no** ৺ ɱ “ ╗ Â

ip prefix-list sequence-number

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```
Ruijie# configure terminal
Ruijie(config)# ip prefix-list sequence-number
```

40.1.8 ip route

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ip route vrf vrf_name network net-mask ip-address interface ip-address distance **tag** tag permanent **weight** number disable enable

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vrf_name	¨
network	⌂ ⌂
net-mask	
ip-address	ЮУ ⌂ ⌂
Interface	ˆ ⅄ ˜ ЮУ ⅄
distance	ˆ ⅄ ˜
tag	ˆ ⅄ ˜ ḣ
permanent	ˆ ⅄ ˜ ЪΛ
number	ˆ ⅄ ˜ ḣ
disable/enable	ˆ ⅄ ˜ G

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й ˘ ⅄ Лъ ᴳ **show ip route weight** Ф ҳ
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```
ip route 172.16.100.0 255.255.255.0 192.168.12.1 115
```

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```
Ruijie(config)# ip route 172.16.100.0 255.255.255.0
GigabitEthernet 0/0 192.168.12.1
```

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distance/tag/weight ⅄ Â ж ъ ї ⅄
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ip route 20.0.0.0 255.0.0.0 Loopback 1 10.0.0.2 tag 5 weight 2

ip route 20.0.0.0 255.0.0.0 Loopback 1 100

˙

ip route 20.0.0.0 255.0.0.0 Loopback 1 10.0.0.2 tag 5 weight 2

ip route 20.0.0.0 255.0.0.0 10.0.0.2 100

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ip route 20.0.0.0 255.0.0.0 10.0.0.2

ip route 20.0.0.0 255.0.0.0 Loopback 1 100

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Ruijie(config)# no ip routing

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40.1.10 ip static route-limit

Э ˘ G ŏ Ƌ ϩ **ip static route-limit** Â
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ip static route-limit number

no ip static route-limit

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number	Э ˘ تز

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Э ѝ ϭ 8 ˘ **ip static route-limit** Э ˚ ˇ Ю ˘
a˚ Э Â **show running-config** Λ Лъ ṃ
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```
Ruijie(config)# ip static route-limit 900
Ruijie(config)# no ip static route-limit
```

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40.1.11 ipv6 prefix-list

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ipv6 prefix-list Ф ३ ¥ ɱ Â ɱ "
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```
Ruijie# configure terminal
Ruijie(config)# ipv6 prefix-list pre permit 2:/64
Ruijie(config)# ipv6 router rip
Ruijie(config-router)# redistribute ospf 1
Ruijie(config-router)# distribute-list prefix pre out
Ruijie(config-router)# end
```

40.1.12 ipv6 prefix-list description

й У э ɱ " ╗ ˘ G **ipv6 prefix-list description** Ф ३ Â Ф ३ **no** ˚ У э ɱ " Â

ipv6 prefix-list prefix-lis-name **description** descripton-text

ð ∧ Ô**Ї 0lF&JaF)ŕwh§A3aV^A)BRbVŇ/ŘF4‰**

prefix-lis-name	ɱ " ˝
descripton-text	ɱ "

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ЛЬЮ R ѝ ɱ “ ╗ Deny routes from Net-A‘

Ruijie# configure terminal

Ruijie(config)# ipv6 prefix-list pre description Deny routes from Net-A

40.1.13 ipv6 prefix-list sequence-number

ѝ ɱ “ í ╗ ˘ G **ipv6 prefix-list description** Ф ३ Â Ф ३ **no** ∧ ɱ “ ╗ Â

ipv6 prefix-list [illegible]@

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ЛЬЮ R ѝ ɥ **no** P[illegible] Âl p v 6 p t s e [(I P v

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as-path-acl-list-num	“ ৲ Â“ ৲ ئز

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match as-path Ƌ ३ ł ৲ Ɱ ɔ “ ৲ Â

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community-list-number	ش E " ৺ ñ ش E " ' ৺ ز ŷ ش E " ' ৺ ز ŷ
communitys-list-name	ش E " ¨ ش E " ¨ a
exact-match	ώ Ð "

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match community Ƌ ३ ł Λ Лъ э ش E " ৺ ش E " ¨ ˘ Π ч p a ţ Â

э **exact-match** ˇΩ Θ g ṃ У э " ˘ a g Ð " Â

У э ي ‡ è˘ Λ Лъ э э **match** Ƌ ३ p э э **set** Ƌ ३ Â **match** Ƌ ३˘ ‡ Ð ' **set** Ƌ ३˘ ‡ a ṁ˙ ı ɔ Â

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Ruijie(config)# ipcommunity-list 1 permit [illegible]
Ruijie(config)# route-map [illegible]
Ruijie(config-route-map)# match community 1 exact-match
Ruijie(config-route-map)# set local-preference 0

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Ƌ ३	
ip community-list	ش E "
match as-path	Ð ḣ
match metric	Ð ḣ
match origin	Ð ৺ ḣ
set as-path prepend	ˀ Â

set comm-list delete	ˉ ƐƏ ش E ḣ
set community	ش E ḣ
set metric	ˊ ḣ

40.1.16 match interface

ƐƏ Ю У ⅄ й ⅄ˇ G يي Ƒ ३ **match interface** Â Ƒ ३ **no** ˉ ˀ Â

match interface interface-type interface-number interface-type interface-number

no match interface interface-type interface-number interface-type interface-number

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interface-type	⅄ خش
interface-number	⅄ ⅄

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match interface Ƒ ३ ł ⅄ Лъ ə ⅄ Â

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У э يي ‡ è˘ ⅄ Лъ э э **match** Ƒ ३ p̲ э э **set** Ƒ ३ Â **match** Ƒ ३˘ ‡ ƐƏ ˈ **set** Ƒ ३˘ ‡ a ṁ˙ ı ɔ Â

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```
Ruijie(config-router)# redistribute rip subnets
route-map jd
Ruijie(config-router)# network 00
area 0
Ruijie(config-router)# exit
Ruijie(config)# access-list 0 permit 0
0
Ruijie(config)# route-map jd permit 10
Ruijie(config-route-map)# match ip address 0
Ruijie(config-route-map)# set metric 0
Ruijie(config-route-map)# set metric-type type-1
```

ð ˇΩ Ф ३ Ô

Ф ३	

access-list-name **prefix-list** prefix-list-name prefix-list-name...

ð ৺ Ô

৺	
access-list-number	“ ৺ ñ “ ৺ ˙ ˘ “ ৺ ˙ ˘
access-list-name	“ ¨
prefix-list prefix-list-name	ɔ̄ ṃ “ ¨

ð Ô

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ð ƋƊ ३ Ô

ي Â

ð ᴳ ˚ Ô

match ip next-hop ƋƊ ३ ɨ ৸ Ƛ ɔ “ ৺ “ ¨ Â

ą ৸ Ƛ ÿ У ɔ ˇ ˇ ˩ У ɔ ˥ Â
৸ Ƛ ˇ ˇ ˩ У ɔ ˥ Â ৸ Ƛ
ˇ ɨ ˩ˇ ˇ è˘ ≠ ৸ Ƛ
ˇ ɨ ˩ˇ ˇ è Â ɥ ˇ ৸
Ƛ ƒ ˜ ǯ Â

ƒ ˇ è˘ ي ˜ ˘ ч ɔ ˇ
ǯ ɥˇ ˚ ⁸ Â

У ɔ ي ‡ è˘ ৸ Ƛ ɔ ɔ **match** ƋƊ ३ ɲ ɔ
ɔ **set** ƋƊ ३ Â **match** ƋƊ ३˘ ‡ ɔ̄ ’ **set** ƋƊ ३˘
‡ a ṁ ˙ ı ɔ Â

ð w ᴿ Ô

ƛЮ ᴿ ˘ ˜ ˇ Â ৸ Ю
У ک ھ ˊ “ ˘ ĭ è ˇ Â

```
Ruijie(config)# router ospf
Ruijie(config-router)# redistribute rip subnets
route-map ȋ
Ruijie(config-router)# network ▮▮
area 0
Ruijie(config-router)# exit
Ruijie(config)# access-list ▮ permithost ▮
```

```
Ruijie(config)# access-list 0 permit host 0
Ruijie(config)# route-map p permit 0
Ruijie(config-route-map)# match ip next-hop 00
```

ð ‘Ω Ф ३ Ô

Ф ३	
access-list	ЊЖ “ ‡
match ip address	Ð “ è ھ ک
match interface	Ð Ю У ۸
match ip route-source	Ð “ è ھ ک
match metric	Ð ḣ
match route-type	Ð شخ
match tag	Ð ḣ
set metric	ĭ ḣ

access-list-name	“ ¨
prefix-list prefix-list-name	Ē ɱ “ ¨

ð Ô

Â

ð Ƌ ३ Ô

ي Â

ð ᴳ ˘ Ô

match ip route-source Ƌ ३ ɨ Λ Лъ э “ ʌ Â

ą Λ Лъ ÿ У э ˅ ˅ ˩ У э ˥ Â Λ Лъ ˅ ɨ ˄˅ ˅ è˘ ≠ Λ Лъ

˅ ˅ ɨ ˄˅ ˅ è Â ц ˅ Λ Лъ ƒ ˜ ǯ Â

ƒ ˅ è˘ ي ˜ ˘ ч э ˅

match ip next-hop	ƕ " è ЮУ ھ ھ
match metric	ƕ ḣ
match route-type	ƕ ڭ
match tag	ƕ ḣ
set metric	ǂ ḣ
set metric-type	ǂ ڭ
set tag	ǂ ḣ

ð ⅄ Ô

ð Ô

40.1.20 match ipv6 address

ǂ " ṃ " è ĭ ˘ G
ي Ƌ ३ **match ipv6 address** Â Ƌ ३ **no** ǂ Â

match ipv6 address access-list-name **prefix-list** prefix-list-name

no match ipv6 address

ð ⅄ Ô

⅄	
access-list-name	" ˝
prefix-list prefix-list-name	ƕ ṃ " ˝

ð Ô

Â

ð Ƌ ३ Ô

ي Â

ð G ˙ Ô

ą ⅄ Лъ ÿ У э ǂ ǂ ⅃ У э ℼ Â ⅄
Лъ ھ ǂ ł ⅃ǂ ھ è˘ ≠ ⅄ Лъ
ھ ǂ ł ⅃ǂ ھ è Â ц ǂ ⅄
Лъ ƒھ ˜ ǯ Â

ƒھ ǂ è˘ ي ˜ ˘ ч э ھ
ǯ цǂ ˚ 8 Â

40.1.21 match ipv6 next-hop

ˆ Ю У ھ ک ˇ " ḿ " ‡
ˇ G ي Ƌ ३ **match ipv6 address** Â Ƌ ३ **no** ˆ
Â

match ipv6 next-hop access-list-name **prefix-list** prefix-list-name

no match ipv6 next-hop

ð ৺ Ô

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```
Ruijie(config-router)# redistribute rip subnets
route-map [illegible]
Ruijie(config-router)# exit
Ruijie(config)# ipv6 access-list [illegible]
Ruijie(config-ipv6-acl)# [illegible] permit ipv6 [illegible] any
Ruijie(config-ipv6-acl)# exit
Ruijie(config)# route-map [illegible] permit [illegible]
Ruijie(config-route-map)# match ipv6 next-hop [illegible]
Ruijie(config-route-map)# set metric [illegible]
```

ð ‘Ω Ð ३ Ô

Ð ३	
ipv6 access-list	[illegible] " ‡
match interface	[illegible] Ю У [illegible]
match ipv6 address	[illegible] " è Ю У [illegible]
match ipv6 route-source	[illegible] " è [illegible]

access-list-name	“ ¨
prefix-list prefix-list-name	ē ṁ “ ¨

ð Ô

Â

ð Ƌ ३ Ô

ييِ Â

ð ᴳ ˙ Ô

ą Λ Лъ ÿ У э ǐ ǐ ɹ У э ˥ Â Λ Лъ ˢᵒ ǐ ł ˡ̌ǐ ˢᵒ è˘ ≠ Λ Лъ ˢᵒ ǐ ł ˡ̌ǐ ˢᵒ è Â ц ǐ Λ Лъ ˢᵒ ˜ ǯ Â

ˢᵒ ǐ è˘ ييِ ˜ ˘ ч э ˢᵒ ǯ цǐ ˚ ⁸ Â

У э ييِ ‡ è˘ Λ Лъ э э **match** Ƌ ३ p̲ э э **set** Ƌ ३ Â **match** Ƌ ३˘ ‡ ē ’ **set** Ƌ ३˘ ‡ a ṁ˙ ı ɔ Â

ð w ᴿ Ô

ييِ πǐ ˘ Λ Лъ ˢᵒ ǐ p̲ Э Â a ı ييِ˘ ὲ ч У ˘ Λ Ƌ ३ a˘ Â ˝ ᴳ˘ ˢᵒ ǐ Э˘ a˘ ˜ ييِ˘ ὲ ᴳ Ƌ ३ ≠ a ˘ Â

ЛъЮ ᴿ ˘ ˜ ǐ ˘ Λ ǐ ˘ “ ˘ ˢᵒ ˢᵒ è˘ ˢᵒ ˢᵒ й ˘ ˥ ḣ й Â

```
Ruijie(config)# ipv6 router ospf
Ruijie(config-router)# redistribute rip subnets
route-map ᵽ
Ruijie(config-router)# exit
Ruijie(config)# ipv6 access-list ᵽ
Ruijie(config-ipv6-acl)# ⓪ permit ipv6 ⓪ any
Ruijie(config-ipv6-acl)# exit
Ruijie(config)# route-map ᵽ permit ⓪
Ruijie(config-route-map)# match ipv6 route-sourc e
ᵽ
Ruijie(config-route-map)# set metric θ
```

ð ˇΩƊ ३ Ô

Ƌ ३	
ipv6 access-list	⊮ ‟ ‡
match interface	ƕ Ю У ⅄
match ipv6 address	ƕ ‟ è Ю У ھ ک
match ipv6 route-source	ƕ ‟ è ھ ک
match metric	ƕ ḣ
match route-type	ƕ ڭ
match tag	ƕ ḣ
set metric	ϟ ḣ
set metric-type	ϟ ڭ
set tag	ϟ ḣ

ȍ ⅄ Ô

ȍ Ô

40.1.23 match length

ﺟﻲ ¥ ˇ G ﻳﻲ Ƌ ३ **match length** Â Ƌ ३ **no** ^ ⅄ ⎍ ⊮ Â

match length min-length max-length

no match length min-length max-length

ȍ ⅄ Ô

⅄	
min-length	^
max-length	^

ȍ ȍ ⅄

Λ ˆ ╗ ¥ اجي У

ˆ ¡ ā يي ɷ Â ⁸

ˇ ā يي ɷ У ɜ ˆ ЮУ Λ

match metric metric

no match metric

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৺	
metric	ḣ ৺ ḣ ˙

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ييِ Â

ð ᴳ ˚ Ô

ą ΛЛЪ ÿ У э ˆ ˆ ˅ У э ˥ Â Λ
ЛЪ ˆ ł ˆ˥ è˘ ≠ ΛЛЪ
ˆ ł ˆ˥ è Â ц ˆ Λ
ЛЪ ˜ ǰ Â

ˆ ˆ è˘ ييِ ˜ ˘ ч э
ǰ цˆ ˚ ⁸ Â

У э ييِ ‡ è˘ ΛЛЪ э э **match** Ƒ ३ p̲ э
э **set** Ƒ ३ Â **match** Ƒ ३˘ ‡ ɔ ˚ **set** Ƒ ३˘
‡ a ṁ˙ ı ɔ Â

ð w ᴿ Ô

ЛЪЮ ᴿ ˘ ˜ ˆ Â Λ ḣ й
˘ ˚ ˆ Â

```
Ruijie(config)# router ospf
Ruijie(config-router)# redistribute rip subnets
route-map [illegible]
Ruijie(config-router)# network [illegible]0 [illegible].255
area 0
Ruijie(config-router)# exit
Ruijie(config)# route-map [illegible] permit [illegible]
Ruijie(config-route-map)# match metric [illegible]
```

ð ˇΩƑ ३ Ô

Ƒ ३	
access-list	Ƙ “ ‡
match ip address	ɔ “ è ˆ ˆ

match interface	ƀ Ю У ʌ
match ip next-hop	ƀ “ è Ю У ھ ک
match ip route-source	ƀ “ è ھ ک
match route-type	ƀ ش
match tag	ƀ ḣ
set metric	ţ ḣ
set metric-type	ţ ش
set tag	ţ ḣ

ð ʌ Ô

ð Ô

40.1.25 match origin

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```
Ruijie(config)# route-map M 0 permit
Ruijie(config-route-map)# match origin egp
Ruijie(config-route-map)# set community 0
Ruijie(config-route-map)# exit
Ruijie(config)# route-map M 0 permit
Ruijie(config-route-map)# match origin incomplete
Ruijie(config-route-map)# set community no-export
```

ð ٦Ω ٦ ٦ Ô

٦ ٦	
match as-path	٥ ḣ
match metric	٥ ḣ
match origin	٥ ٨ ḣ
set as-path prepend	٦
set metric	٦ ḣ
set origin	٦ شخ

40.1.26 match route-type

٥ شخ G يي ٦ ٦ **match route-type** Â
٦ ٦ **no** ٦ Â

match route-type local | internal | external type-1 | type-2 | level-1 | level-2

no match route-type local | internal | external type-1 | type-2 | level-1 | level-2

ð ٨ Ô

٨	
local	كم
Internal	ق
external	
type-1 type-2	شخ شخ
level-1 level-2	

ð Ô

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ð Ƌ ३ Ô

ييِ Â

ð ᴳ ˙ Ô

ą ΛЛЬ ÿ У э ˇ ˆ ˅ У э ˥ Â Λ
ЛЬ ˢ ˇ ł ˅ˆ ˢ è˘ ≠ ΛЛЬ
ˢ ˇ ł ˅ˆ ˢ è Â ц ˇ Λ
ЛЬ ˢ ˜ ˇ Â

ˢ ˇ è˘ ييِ ˜ ˘ ч э ˢ
ˇ цˆ ˚ ⁸ Â

У э ييِ ‡ è˘ ΛЛЬ э э **match** Ƌ ३ p̲ э
э **set** Ƌ ३ Â **match** Ƌ ३˘ ‡ ē ’ **set** Ƌ ३˘
‡ a ṁ ı ɔ Â

ð w ᴿ Ô

ЛЬЮ ᴿ ˘ ˜ ˇ Â Λ ˇ
ˢ ˝ Â

```
Ruijie(config)# router rip
Ruijie(config-router)#  redistribute  ospf  route-map
[illegible]
Ruijie(config-router)# network  [illegible]
Ruijie(config-router)# exit
Ruijie(config)# route-map  [illegible]  permit  [illegible]
Ruijie(config-route-map)# match route-type internal
```

ð ˇΩƋ ३ Ô

Ƌ ३	
access-list	ЬЖ “ ‡
match ip address	ē “ è ھ ک
match interface	ē ЮУ ⅄
match ip next-hop	ē “ è ЮУ ھ ک
match ip route-source	ē “ è ھ ک
match metric	ē ḣ
match tag	ē ḣ
set metric	ˇ ḣ
set metric-type	ˇ شخ
set tag	ˇ ḣ

ð ⁄l Ô

ð Ô

40.1.27 match tag

```
Ruijie(config)# route-map ȷd ȷ permit 0
Ruijie(config-route-map)# match tag θθ
```

ð ˇΩƋ ३ Ô

Ƌ ३	
access-list	Ⱨⱦⱦ " ‡
match ip address	ɔ̄ " è ھ ک
match interface	ɔ̄ ЮУ ⅄
match ip route-source	ɔ̄ " è ھ ک
match metric	ɔ̄ ḣ
match ip next-hop	ɔ̄ " è ЮУ ھ ک
match route-type	ɔ̄ ش
set metric	ʅ ḣ
set metric-type	ʅ ش
set tag	ʅ ḣ

ð ⅄ Ô

ð Ô

40.1.28 maximum-paths

ˈ ˘ G ŏ Ƌ ३ **maximum-paths** Â Ƌ ३

ð G ˚ Ô

й ȣ 8 ˘

maximum-paths ł ˬ Н Ю ˘ ف ئه

Ю ئه ˇ a ˬ Â **show running**

config Λ Лъ m ˚ Â

ƋƋ ३ p ˚ ˘ ≠ ˘ ȣ ƋƋ ३ ˘ ˆ

У ك ˚ ḣ ˘ ˆ У

ك ˚ ≠ ḣ Â

ð w R Ô

ЛъЮ R ˘ ˚ й ˘ ł ḣ Â

Ruijie(config)# maximum-paths 0

Ruijie(config)# no maximum-paths

ð Λ Ô

ƋƋ ३ ف y Э a Â

40.1.29 route-map

ЊЖ يي ˘ ώ يي ˘ G ώ ƋƋ ३ **route-map** Â

ƋƋ ३ **no** ˆ يي ЊЖ Â

route-map route-map-name **permit** **deny** sequence-number

no route-map route-map-name **permit** **deny** sequence-number

ð ⊣ Ô

] conff08>Tj/TT1 1 T0 1tch7 0 T174 437.4203 Tm3.1316E43C32β TT1 3C31590Df-0.F48C7E 1 TfC7E > 0 T

deny	ˆ ˊ ˜ Ж ɑ ˇΩ ˇ ˋ ˊ Ж Ð ‡ Â ‡ a˚ ˙ ¡ ɔˇ يي a ĭ ˆ ˇ ɜ يي ɔ Â Ж ɑ ˇΩ ˇ a ˊ Ж Ð ‡ Â ‡ ώ Ю У ɜ يي ɔ Â ˆ ɑ Ф ३ Â
sequence-number	يي ˋ Â æ ˋ ˙ ˇI ˆ G ˇ ثز ˋ Â

ð Ô

```
Ruijie(config)# router ospf
Ruijie(config-router)# redistribute rip subnets
route-map p1
Ruijie(config-router)# network 0.0.0.0
area 0
Ruijie(config-router)# exit
Ruijie(config)# route-map p1 permit 10
Ruijie(config-route-map)# match metric 4
Ruijie(config-route-map)# set metric
```

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```
Ruijie(config)# route-map set-as-path
Ruijie(config-route-map)# match as-path 1
Ruijie(config-route-map)# set as-path prepend
```

ð ‘Ω Ð ३ Ô

Ð ३	
match as-path	Ð ḣ
match community	Ð ش E ḣ
match metric	Ð ḣ
match origin	Ð Λ ḣ
set community	ǂ
set metric	ǂ ḣ
set metric-type	ǂ شخ

40.1.32 set comm-list delete

Ð ‡ ǂ è

ḣ˘ G يي Ð ३ **set comm-list delete** Â Ð

३ **no** ǂ Â Ð ३ Θ ɣ Â

set comm-list

يي Â

ð G ˚ Ô

Ƌ ३ ɔ̃ ˺ ف è ˥ ش E " Â

ð w R Ô

```
Ruijie(config)# router bgp [redacted]
Ruijie(config-router)# neighbor [redacted] remote-as [redacted]
Ruijie(config-router)# neighbor [redacted] route-map [redacted] in
Ruijie(config-router)# neighbor [redacted] route-map
```

set community community-number community-number **additive none**

no set community community-number community-number **additive none**

ð ৲ Ô

৲	
community-number	ش E ḣ Â й ৲ ˘ У э ḣ ˘ ز ˘ ЛЬЮ ЬЖ ḣ ʿ ˘ ش E ˘ Ư ش E Â ˘ a ৲ ˺ ˘ ˘ a ৲ ɛ̀ Â ˘ a ৲ ˙ ı̣ У э Â ˘ a ৲ Â
additive	ف ৲ ي Э ╗
none	ش E й

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```
Ruijie(config)# route-map [redacted] permit
Ruijie(config-route-map)# match as-path 1
Ruijie(config-route-map)# set community [redacted]
Ruijie(config-route-map)# exit
Ruijie(config)# route-map [redacted] permit
Ruijie(config-route-map)# match as-path 2
Ruijie(config-route-map)# set community no-export
```

ð ‘Ω Ф ३ Ô

Ƌ ३	
match as-path	ƕ ḣ
match community	ƕ ش E ḣ
match metric	ƕ ḣ
match origin	ƕ ∧ ḣ
set as-path prepend	ˆ
set origin	ˆ
set metric-type	ˆ شخ

40.1.34 set dampening

ƕ ‡ ∧ ˘ G يي Ƌ ३ **set dampening** Â Ƌ ३ **no** ˆ Â

set dampening half-life reuse suppress max-suppress-time

no set dampening

ð ∧ Ô

∧	
half-life	∧ a ∧ ´ Â نز ˆ ˘ ḣ ѝ ˆ

ð G ˙ Ô

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```
Ruijie(config)# route-map g
Ruijie(config-route-map)# match as path 0
Ruijie(config-route-map)# set dampening 0 0 0
0
Ruijie(config-route-map)# exit
Ruijie(config)# router bgp 0
Ruijie(config-router)# neighbor 5
route-map g in
```

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set default interface Ƌ ३ ɨ ʌ Лъ э ʌ Â

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⁸ Â ɑ ييα ¡ ˆ
ˇ ييα ɑ У э ˆ ЮУ ˄ Â

ˇ G ييˇ з … ييÂ
У э ييˇ э ЊЖ ɑ э э ɔ̄
‡ n ɔ ÂУ э ʌ ɨˇ ʌ ˆ ˆ
ˇ a ˊ ييˇ ¡ ˆ ˄
ˇ ˊ ييè э ˆ è ЊЖ ɔ
Â

У э ЊЖ ʌ ʌ й ˇ ɣ э Ƌ ३
ʌ Â У э ييè ʌ Лъ э ɔ Â

ð w R Ô

ЛъЮ R ˇ ففí ˇ ʌ ˆ ˆ
¥ ˇ з è ˇ ÿ
ʌ ˄ ˆ Â

```
Ruijie(config)# interface ⓪
Ruijie(config-if)# ip policy route-map ⓜ
Ruijie(config-if)# exit
Ruijie(config)# route-map ⓜ permit ⓪
Ruijie(config-route-map)# match length 0θ
Ruijie(config-route-map)# set default interface
⓪
```

ð ˇΩƋ ३ Ô

Ƌ ३	
match as-path	Ɔ ḣ
match community	Ɔ ش E ḣ
match metric	Ɔ ḣ
match origin	Ɔ ^ ḣ
set as-path prepend	ˆ
set metric	ˆ ḣ
set metric-type	ˆ شخ

40.1.37 set interface

Ɔ ‡ ^ ^˘ G يي Ƌ ३ **set interface** Â Ƌ ३ **no** ˆ Â

set interface interface-type interface-number interface-type interface-number

no set interface interface-type interface-number interface-type interface-number

ð ^ Ô

ˇ G ˇ ي ३ … ي Â
У э ي ˇ э ЊЖ ɷ э э Ƌ
‡ ɲ ɔ ÂУ э ⅄ ɨˇ ⅄ ˆ
ˇ a ˊ ˇ ي ¡ ˆ ⅄
ˇ ˊ ي è э ˆ è ЊЖ ɔ
Â

У э ЊЖ ⅄ ⅄ й ˇ γ э Ƌ ३
⅄ Â У э ي è ⅄Лъ э ɔ Â

⅄ й ˇ ˆ x Â

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¥ ˇ ÿ ⅄ ⅄ ˆ Â

```
Ruijie(config)#interface serial 0
Ruijie(config-if)#ip policy route-map ƀn

Ruijie(config)#route-map ƀn permit 0
Ruijie(config-route-map)#match length 0θ
Ruijie(config-route-map)#set interface
GigabitEthernet 0
```

ð ˇΩƋ ३ Ô

Ƌ ३	
route-map	ЊЖ ي
match ip address	Ƌ “ è ھ ھ
match length	Ƌ ˆ ز

40.1.39 set ip dscp

ƕ ‡ ḣˇ G ي Ƌ ३ **set ip dscp** Â Ƌ ३ **no** ˆ Â

set ip dscp dscp_value

no set ip dscp

ð ৲ Ô

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dscp_value	è ḣ

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ي Â

ð G ˙ Ô

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ð ˇΩƋ ३ Ô

Ƌ ३	
route-map	ƗƦ ي
match ip address	ƕ “ è ھ ک
set default interface	ˆ ৲ˇ è
set default interface	ˆ ৲ˇ è
set interface	ˆ ৲
set ip default next-hop	ˆ Ю У ک ھˇ è
set ip precedence	ˆ . ˝I ḣ

ð ৲ Ô

ð Ô

40.1.40 set ip next-hop

ɔ̄ ‡ ˆ ЮУ ھ ھ˘ G ي Ƌ
३ **set ip next-hop** Â Ƌ ३ˆ **no** ī Â Ƌ ३ Θ ¥
Â

set ip next-hop ip-address weight ip-address weight

no set ip next-hop ip-address weight ip-address weight

ð ৺ Ô

৺	
ip-address	ЮУ ھ ھ
weight	ЮУ

ð Ô

Â

ð Ƌ ३ Ô

ي Â

ð G ˙ Ô

set Ƌ ३ ч ˙ ھئ ˘
ھئ Âفخ ɱ У ЮЎ ώ
ḣ ھئ Â

set ip next-hop Ƌ ३ ł Λ Лъ э ھ ھ˘ a э Â

فخ ł ╗ ḣ˘ ‡ Λ Лъ a э
ھ ھ Â

˘ فخ˙ ı У э ł ḣ˘ G **set** Ƌ ३
╟╢˙ й ھئ Â فخ ھئ
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```
Ruijie(config)#interface serial 0
Ruijie(config-if)#ip policy route-map 1

Ruijie(config)#access-list 1 permit 1
2
Ruijie(config)#access-list 2 permit 2
2

Ruijie(config)#route-map 1 permit 1
Ruijie(config-route-map)#match ip address 1
Ruijie(config-route-map)#setipnext-hop 1

Ruijie(config)#route-map 1 e permit 2
Ruijie(config-route-map)#match ip address 2
Ruijie(config-route-map)#set ip next-hop 1

Ruijie(config)#route-map 1 permit 3
Ruijie(config-route-map)#set interface Null 0
```

ð ˇΩƋ ३ Ô

Ƌ ३	
route-map	ЊЖ يي
match ip address	ƵƵ “ è كه هه
set default interface	ˆ Λˇ è
set default interface	ˆ Λˇ è
set interface	ˆ Λ
set ip default next-hop	ˆ ЮУ كه هه˘ è
set ip precedence	ˆ . ˝I ḣ

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40.1.41 set ip next-hop verify-availability

ЮУ ھ ک ⅄ ˘ G ي Ƌ ३ **set ip next-hop verify-availability** Â Ƌ ३ **no** ĩ Â Ƌ ३ Θ ɣ Â

set ip next-hop verify-availability ip-address **track** track-obj-num

no set ip next-hop verify-availability ip-address **track** track-obj-num

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ip-address	ЮУ ھ ک
track-obj-num	⅄

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```
Ruijie(config)#interface serial 0
Ruijie(config-if)#ip policy route-map 1

Ruijie(config)#access-list 0 permit 0
0
Ruijie(config)#access-list 0 permit 0
0

Ruijie(config)#route-map 1 permit 0
```

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ƒ يي ‡ è˘ ΛЛъ э **set ip precedence** Ƌ ३˘ ת Λ
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```
Ruijie(config)#access-list 1 permit
0
Ruijie(config)#route-map m
Ruijie(config-route-map)#match ip address 1
Ruijie(config-route-map)#set ip precedence 4
Ruijie(config)#interface GigabitEthernet 0
Ruijie(config-if)#ip policy route-map m
```

ð ˇΩƋ ३ Ô

Ƌ ३	
match interface	Ð ЮУ Λ
match ip address	Ð " è ک ھ
match ip next-hop	Ð " è ЮУ ک ھ
match ip route-source	Ð " è ک ھ
match metric	Ð ḣ
match route-type	Ð شخ
match tag	Ð ḣ
set metric-type	˥ شخ
set tag	˥ ḣ
set ip tos	

40.1.43 set ip tos

Ð ‡ G يي Ƌ
३ **set ip tos** Â Ƌ ३ **no** ˘ ḣ˥ Â

set ip tos 0-15 max-reliability max-throughput min-delay

min-monetary-cost normal

no set ip tos 0-15 max-reliability max-throughput min-delay min-monetary-cost normal

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```
Ruijie(config)#access-list 1 permit 0
0
Ruijie(config)#route-map m
Ruijie(config-route-map)#match ip address 1
Ruijie(config-route-map)#set ip tos 4
Ruijie(config)#interface GigabitEthernet 0
Ruijie(config-if)#ip policy route-map m
```

ð ˇΩƋ ३ Ô

Ƌ ३	
match interface	ƌ ЮУ Λ

40.1.44 set level

Ð ‡ ώ ‘ ‘ G ي
Ф ३ **set level** Â Ф ३ **no** ‘ Â

set level level 1 level 2 level 1-2 stub-area backbone

no set level

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```
Ruijie(config)# router ospf
Ruijie(config-router)# redistribute rip subnets
route-map p1
Ruijie(config-router)# network 10.0.0.0
area 0
Ruijie(config-router)# exit
Ruijie(config)# route-map p1 permit 10
Ruijie(config-route-map)# set level backbone
```

ð ‘Ω Ф ३ Ô

Ф ३	
match interface	Ð ЮУ Л
match ip address	Ð “ è هم كم
match ip next-hop	Ð “ è ЮУ هم كم
match ip route-source	Ð “ è هم كم
match metric	Ð ḣ
match route-type	Ð شخ
match tag	Ð ḣ
set metric-type	‘ شخ
set tag	‘ ḣ

40.1.45 set local-preference

ƕ ‡ ḣˇ G
ﻳﻲ Ƌ ३ **set local-preference** Â Ƌ ३ **no** ˆ Â

set local-preference number

no set local-preference

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number	ﻛﻢ . ˝I ḣ Â ﻧﺰ ˙

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```
Ruijie(config)# route-map  R  permit  0
Ruijie(config-route-map)# match as-path  1
Ruijie(config-route-map)#  set local-preference  θ
Ruijie(config-route-map)#  exit
Ruijie(config)#  route-map  R  permit  0
Ruijie(config-route-map)# match as-path  2
Ruijie(config-route-map)#  set local-preference  θ
```

ð ˇΩƋ ३ Ô

Ƌ ३	
match as-path	ƕ ḣ
match metric	ƕ ḣ
match origin	ƕ ﾊ ḣ

set as-path prepend ˆ

set metric-type	ˆ شخ

40.1.46 set metric

ƕ ‡ ḣ˘ G يي Ƌ ३ **set metric** Â Ƌ ३ **no** ˆ Â

set metric metric-value **-** metric-value metric-value

no set metric

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```
Ruijie(config)# router ospf
Ruijie(config-router)# redistribute rip subnets
route-map [illegible]
Ruijie(config-router)# network [illegible]
area 0
Ruijie(config-router)# exit
Ruijie(config)# route-map [illegible] permit [illegible]
Ruijie(config-route-map)# set metric [illegible]
```

ð ˇΩƋ ३ Ô

Ƌ ३	
match interface	[illegible] ЮУ [illegible]
match ip address	[illegible] " è [illegible]
match ip next-hop	[illegible] " è ЮУ [illegible]
match ip route-source	[illegible] " è [illegible]
match metric	[illegible] ḣ
match route-type	[illegible] شخ
match tag	[illegible] ḣ
set metric-type	[illegible] شخ

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40.1.48 set next-hop

Ф ३ **set next-hop** Â Ф ३ **no** Â Ф ३ Θ ¥ Â

set next-hop ip-address

no set next-hop ip-address

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p-address	Ю У

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У э ‡ è˘ Л Лъ э э **match** Ф ३ п э э **set** Ф ३ Â **match** Ф ३˘ ‡ ‚ **set** Ф ३˘ ‡ a ṁ˙ ı ɔ Â

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Лъ Ю ᴿ ˘ ⁸ ″ Ю У й Â

```
Ruijie(config)# route-map      permit
Ruijie(config-route-map)# match ip address      1
Ruijie(config-route-map)# set next-hop
```

ð ‘Ω Ф ३ Ô

Ð ३	
match interface	Ð Ю У ⅄
match ip address	Ð “ è ھ ک
match ip next-hop	Ð “ è Ю У ھ ک
match ip route-source	Ð “ è ھ ک
match metric	Ð ḣ
match route-type	Ð شخ
match tag	Ð ḣ
set metric-type	ˇ شخ
set tag	ˇ ḣ

40.1.49 set origin

Ð ‡ ə ˘ G ي

Ð ३ **set origin** Â Ð ३ **no** ˇ Â

set origin egp igp incomplete

no set origin

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egp	
igp	ک
incomplete	a ١

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```
Ruijie(config)# route-map ■ ■ permit
```

```
Ruijie(config-route-map)# match as-path 1
Ruijie(config-route-map)# set origin igp
Ruijie(config-route-map)# exit
config-rout igp
```

te-map)# match as-path

```
Ruijie(config-route-map)# set originator-id 5
Ruijie(config-route-map)# exit
Ruijie(config)# route-map 0 permit
Ruijie(config-route-map)# match as-path 2
Ruijie(config-route-map)# set originator-id 6
```

ð ˇΩƋ ३ Ô

Ƌ ३	
match as-path	ƋĠ ḣ
match metric	ƋĠ ḣ
match origin	ƋĠ ˆ ḣ
set as-path prepend	ˇ
set metric	ˇ ḣ
set local-preference	ˇ ˇI

40.1.51 set tag

ƋĠ ‡ ˘ G يي Ƌ ३ **set tag** Â
Ƌ ३ **no** ˇ Â

set tag tag

no set tag

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```
Ruijie(config)# router ospf
Ruijie(config-router)# redistribute rip subnets
route-map [illegible]
Ruijie(config-router)# network [illegible]
area 0
Ruijie(config-router)# exit
Ruijie(config)# route-map [illegible] permit [illegible]
Ruijie(config-route-map)# set tag [illegible]
```

ð ˇΩƋ ३ Ô

Ƌ ३	
match interface	ð Ю У ⅄
match ip address	ð " è هم كم
match ip next-hop	ð " è Ю У هم كم
match ip route-source	ð " è هم كم
match metric	ð ḣ
match route-type	ð شخ
match tag	ð ḣ
set metric	ˆ ḣ
set metric-type	ˆ شخ

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40.1.52 set weight

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set weight Â Ƌ ३ **no** ˆ Â

set weight number

no set weight

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show ip community-list community-list-number community-community-list-name

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community-list-number	ə ش E “ ৲ ñ ش E “ ˙ ৲ ز й ش E “ ˙ ৲ ز й
community-list-name	ə ش E “ ¨ ش E “ ¨ a

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```
Ruijie# show ip community-list
Community-list standard local
permit local-AS
Community-list standard Red-Giant
permit 0:10
deny 0:20
```

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Ƌ ३	
match community	ƋƋ ش E “
set comm-list delete	ش E “ ˇ ش è E ḣ

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40.2.2 show ip prefix-list

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show ip prefix-list prefix-name

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prefix-name	ɱ " ¨

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```
Ruijie# show ip prefix-list
ip prefix-list pre: 2 entries
seq 5 permit 192_0 8g34205B5164302>Tj/fix-list8g3442>6<01D0>]14E3g3
```

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ƛЮ ѝ **show ip route** Ƌ ३ ˙

```
Ruijie# show ip route
Codes:  C - connected, S - static, R - RIP, B - BGP
O - OSPF, IA - OSPF inter area
N1-OSPF NSSA external type 1,N2 - OSPF NSSA external type
2
E1 - OSPF external type 1, E2 - OSPF external type 2
i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2
- IS-IS level-2
ia - IS-IS inter area, * - candidate default

Gateway of last resort is no set
S    20.0.0.0/8 is directly connected, VLAN 1
S    22.0.0.0/8 [1/0] via 20.0.0.1
O E2 30.0.0.0/8 [110/20] via 192.1.1.1, 00:00:06, VLAN
1
R    40.0.0.0/8 [120/20] via 192.1.1.2, 00:00:23, VLAN
1
B    50.0.0.0/8 [120/0] via 192.1.1.3, 00:00:41
C    192.1.1.0/24 is directly connected, VLAN 1
C    192.1.1.254/32 is local host.
```

show ip route Ƌ ३ ƛЮ˙

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	ЮУ كم هم
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40.2.4 show ipv6 prefix-list

ɱ " ə ɱ " ə ˘ G **show ipv6 prefix-list** Ƌ ३ Â

show ipv6 prefix-list prefix-name

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prefix-name	ɱ " ¨

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```
Ruijie# show ipv6 prefix-list
ipv6 prefix-list p6: 2 entries
permit 13::/20
permit 14::/20
```

40.2.5 show route-map

ي ə ˘ G Ƌ ३ **show route-map** Â

show route-map route-map-name ⁄

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route-map-name	ˆ ৺ ˜ ৺ ي ə

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```
Ruijie# show route-map
route-map AAA, permit, sequence 10
Match clauses:
ip address 2
Set clauses:
metric 10
```

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41.1

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access-list

ip access-list

mac access-list

expert access-list

ip access-list resequence

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deny

permit

list-remark text

no sn

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ip access-group

mac access-group

expert access-group

41.1.1 access-list

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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

access-list id **deny** **permit** **tcp** **VID** out **inner** in source source-wildcard **host** Source **any** **host** source-mac-address **any** **operator** port destination destination-wildcard **host** destination **any** **host** destination-mac-address **any** **operator port** port **precedence** precedence **tos** tos **fragments** **time-range** time-range-name **match-all** tcp-flag

User Datagram Protocol

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** **time-range** time-range-name

“

access-list list-remark text

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id ˙ “ ৻ Â ৻ ˆ ˘ ˘ ˘ ˘
˘ ˜ Â

Deny ˙ ƀ ˘ ৻ “

tos ˈ ⊢ ڭ ḣ^ ~

icmp-type ˈ ڭ ~

icmp-code ˈ ڭ ҳ ^ ~

icmp-message ˈ ڭ

operator ˈ ɔ ^ ¥˘ ¥˘ ¥˘ a ¥˘ ~ڑ

port port ˈ ⅄ ⅄˘ range ч э ⅄ ⅄ ˘ ė ыı ɔ ⅄ У э ⅄ ⅄ Â

host source-mac-address ˈ ў ھ ھ Â

host destination-mac-address ˈ ў ھ ھ Â

VID vid ˈ ȝ

ethernet-type ˈ Лъ ~ ڭ

match-all ˈ ȝ tcp flag Æ

tcp-flag ˈ

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urg

ack

psh

rst

syn

fin

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critical

flash

flash-override

immediate

internet

network

priority

routine

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max-reliability

max-throughput

min-delay

min-monetary-cost

normal

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administratively-prohibited

dod-host-prohibited

dod-net-prohibited

echo

echo-reply

fragment-time-exceeded

general-parameter-problem

host-isolated

host-precedence-unreachable

host-redirect

host-tos-redirect

z

network-unknown

no-room-for-option

option-missing

packet-too-big

parameter-problem

port-unreachable

precedence-unreachable

protocol-unreachable

redirect

router-advertisement

router-solicitation

source-quench

source-route-failed

time-exceeded

timestamp-reply

timestamp-request

ttl-exceeded

unreachable

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bgp

chargen

cmd

daytime

discard

domain

echo

exec

finger

ftp

ftp-data

gopher

hostname

ident

irc

klogin

kshell

ldp

login

nntp

pim-auto-rp

pop2

pop3

smtp

sunrpc

syslog

syslog

tacacs

talk

tftp

time

who

xdmcp

Лъ ˜ شخ Ю

aarp

appletalk

decnet-iv

diagnostic

etype-6000

etype-8042

lat

lavc-sca

mop-console

mop-dump

mumps

netbios

vines-echo

xns-idp

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```
Ruijie(config)# access-list 1 permit 0
0
```

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```
Ruijie(config)# access-list 0 permit tcp any any eq domain
Ruijie(config)# access-list 0 permit udp any any eq domain
Ruijie(config)# access-list 0 permit icmp any any echo
Ruijie(config)# access-list 0 permit icmp any any echo-reply
```

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Лъ ˘ ˆ ۸ Â ˘

```
Ruijie(config)# access-list 0 denyhost 0 anyaarp
Ruijie(config)# interface gigabitethernet 1
Ruijie(config-if)# mac access-group 0in
```

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```
Ruijie(config)# access-list
```

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ᅀ **deny** n **permit** Ф ३ ñ n Â G **show access-lists** Ф ३
Â

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```
Ruijie(config)# ip access-list extended 123
Ruijie(config-ext-nacl)# show access-lists
ip access-list extended 123
Ruijie(config-ext-nacl)#
```

…

```
Ruijie(config)# ip access-list standard std-acl
Ruijie(config-std-nacl)# show access-lists
ip access-list standard std-acl
Ruijie(config-std-nacl)#
```

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show access-lists	“

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41.1.3 expert access-list

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expert access-list extended id name

no expert access-list extended id name

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Id “ ᅀ^ ~

Name ‘ ‘‘

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Ƒ ३ Â G **show access-lists** Ƒ ३ Â

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```
Ruijie(config)# expert access-list extended
Ruijie(config-exp-nacl)# show access-lists
expert access-list extended exp-acl
Ruijie(config-exp-nacl)#
```

… ж '

```
Ruijie(config)# expert access-list extended
Ruijie(config-exp-nacl)# show access-lists
expert access-list extended 2704
Ruijie(config-exp-nacl)#
```

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start-sn ʿ

inc-sn ʿ

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Ð ३ Â G **show access-lists** Ð ३ Â

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```
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
```

Ruij9/TT3 1 Tex-1.4.8 0 Td(conf9/TTj/TT3 1 Tf-4.8#1.497 TD(Ruiji

destination-wildcard **precedence** precedence **tos** tos **fragments** **time-range** time-range-name

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Internet Control Message Protocol

sn **deny icmp** source source-wildcard **host** source **any** destination destination-wildcard **host** destination **any** icmp-type icmp-type icmp-code

destination-wildcard **host** destination **any** **host**
destination-mac-address **any** **precedence** precedence **tos** tos
fragments **time-range** time-range-name

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Internet Control Message Protocol

sn **deny icmp** **VID** out **inner** in source source-wildcard **host** source **any**
host source-mac-address **any** destination
destination-wildcard **host** destination **any** **host**
destination-mac-address **any** icmp-type icmp-type icmp-code
icmp-message **precedence** precedence **tos** tos **fragments**
time-range time-range-name

Transmission Control Protocol

sn **deny tcp** **VID** out **inner** in source source-w ildcard **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** **time-range** time-range-name
match-all tcp-flag

User Datagram Protocol

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** **time-range** time-range-name

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ЛЪЮ ĺ ৺ **access-list**

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dscp ‘ ḣ˘ ŋ

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```
Ruijie(config)# expert access-list extended 2
Ruijie(config-exp-nacl)# deny tcp host
9 host 9 any any
Ruijie(config-exp-nacl)# permit any any any any
Ruijie(config-exp-nacl)# show access-lists
expert access-list extended 2702
10 deny tcp host 192.168.4.12 host 0013.0049.8272 any any
20 permit any any any any
Ruijie(config-exp-nacl)#
```

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```
Ruijie(config)# ip access-list extended 1
Ruijie(config-ext-nacl)# denytcphost 9 eq 0 any
Ruijie(config-ext-nacl)# show access-lists
ip access-list extended ip-ext-acl
10 deny tcp host 192.168.4.12 eq 100 any
Ruijie(config-ext-nacl)# exit
Ruijie(config)# interface gigabitethernet 1
Ruijie(config-if)# ip access-group 1 in
Ruijie(config-if)#
```

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```
Ruijie(config)# mac access-list extended 1n
Ruijie(config-mac-nacl)# deny host 9 any aarp
Ruijie(config-mac-nacl)# show access-lists
mac access-list extended mac1
10 deny host 0013.0049.8272 any aarp
Ruijie(config-mac-nacl)# exit
Ruijie(config)# interface gigabitethernet 1
Ruijie(config-if)# mac access-group mac1 in
```

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```
Ruijie(config)# ip access-list standard 3
Ruijie(config-ext-nacl)# deny host 192.168.4.12
Ruijie(config-ext-nacl)# show access-lists
ip access-list standard 34
10 deny host 192.168.4.12
```

```
Ruijie(config-ext-nacl)# exit
Ruijie(config)# interface gigabitethernet 1
Ruijie(config-if)# ip access-group 3 in
```

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show access-lists	“
ip access-group	⅄
mac access-group	⅄
ip access-list	⅍
mac access-list	⅍
expert access-list	ж ⅍
permit	ñ ⅍ƑƆ ३

Transmission Control Protocol

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** **time-range** time-range-name **match-all** tcp-flag

User Datagram Protocol

sn **permit udp** source source -wildcard **host** source **any** operator **port** port destination destination-wildcard **host** destination **any** **operator** **port** port **precedence** precedence **tos** tos **fragments** **time-range** time-ra nge-name

“

sn **permit** **any** **host** source-mac-address **any** **host** destination-mac-address ethernet-type **cos** out **inner** in

“

sn **permit** **protocol** ethernet-type **cos** out **inner** in **VID** out][**inner** in] source source-wildcard **host** source **any** **host** source- **mac**-address **any** destination destination-wildcard **host** destination **any** **host** destination-mac-address **any** **precedence** precedence **tos** tos **fragments** **time-range** time-ra nge-name

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sn **permit** ethernet-type| **cos** out **inner** in **VID** out **inner** in source source-wildcard **host** source **any** **host** source-mac-address **any** destination1 Tf 0.0031 Tc 7.289T1 1 T({)Tj /TT2 1 Tf6D0 Td (]Tf -0.0085

time-raa

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

sn **permit tcp** **VID** ou **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** **time-range** time-range-name **match-all** tcp-flag

User Datagram Protocol

sn **permit udp** **VID** out **inner** in source source wildcard **host** source **any** **host** source-mac-address **any** operator **port** port destination destination-wildcard **host** destination **any** **host** destination-mac-address **any** operator **port** port **precedence** **precedence** **tos** tos **fragments** **time-range** time-range-name

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```
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-if)#
```

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```
Ruijie(config)# mac access-list extended 102
Ruijie(config-mac-nacl)# permit host 0013.0049.8272 any aarp
Ruijie(config-mac-nacl)# show access-lists
mac access-list extended
10 permit host 0013.0049.8272 any aarp102
Ruijie(config-mac-nacl)# exit
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# mac access-group
```

mac access-list	Ня
expert access-list	ж Ня
deny	Ня

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41.1.7 list-remark text

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list-remark text

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Text ˊ ə

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```
Ruijie# ip access-list extended 102
Ruijie(config-ext-nacl)# list-remark this acl is to filter the host 192.168.4.12
Ruijie(config-ext-nacl)# show access-lists
ip access-list extended 102
deny ip host 192.168.4.12 any
1000 hits
this acl is to filter the host 192.168.4.12
Ruijie(config-ext-nacl)#
```

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show access-lists	“
ip access-list	“ Ня

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41.1.8 no sn

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```
Ruijie(config)# ip access-list extended 0
Ruijie(config-ext-nacl)# permit ip host 9 any
Ruijie(config-ext-nacl)# 2deny ip any any
Ruijie(config-ext-nacl)# show access-lists
ip access-list extended 100
10 permit ip host 192.168.4.12 any
12 deny ip any any
Ruijie(config-ext-nacl)# no 2
Ruijie(config-ext-nacl)# show access-lists
ip access-list extended 100
10 permit ip host 192.168.4.12 any
```

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Ф ३	
show access-lists	“
ip access-list	Ня
deny	Ня Ня
permit	Ня ї Ня

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41.1.9 ip access-group

ɛ́ ɛ " ¥ ⅄˘ ⅄ Ƒ ३ **ip access-group** Â Ƒ ३
⅄ " n ⅄ ˇΩ Â

ip access-group id name **in** **out** **reflect | unreflect**

no ip access-group id name **in** **out** **reflect | unreflect**

ð ⅄ Ô

id ˊ " ⅄^ ˘ ~

name ˊ " ¨

in ˊ ώ ⅄

out ˊ ÿ ⅄

unreflect

expert access-group id name **in out unreflect**
no expert access-group id name **in out unreflect**

ð ⅄ Ô

id ʻ “ ⅄^ ~

name ʻ “ ¨

in ʻ ώ ⅄

out ʻ ÿ ⅄

unreflect ʻ ⅂

ð Ô

⅄

ð Ƃ ३ Ô

⅄

ð ᴳ ʼ Ô

ɣ ⅄ Ɔ˘ ᴳ ὲ ⅄ ώ ⁸ Âᴳ **show access-group** Ƃ ३

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Ruijie(config)# interface GigaEthernet 0
Ruijie(config-if)# expert access-group accept_00d0f8xxxxxx_only in

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show access-group	⅄ Ɔ Â

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show access-lists

show ip access-group

show mac access-group

show expert access-group

show access-group

41.2.1 show access-lists

show access-lists id name

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id ´ " ৺

name ´ " "

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˘ id name˘ ‡

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```
Ruijie# show access-lists n
ip access-list standard n_acl
Ruijie# show access-lists 0
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
```

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show ip access-group interface interface

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interface ʿ ʃ

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ʃ ˘ ʃ˘ ‡ ʃ ˜Ω

ð w R Ô

```
Ruijie# show ip access-group interface gigabitethernet 0
ip access-group aaa in
Applied On interface GigabitEthernet 0/1.
```

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ip access-list	HX Â

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41.2.3 show expert access-group

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show expert access-group interface interface

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interface ʿ ʃ

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ð G ʾ Ô

ʃ ˘ ʃ˘ ‡ ʃ ˜Ω

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```
Ruijie# showexpertaccess-groupinterfacegigabitethernet 0
expert access-group ee in
```

Applied On interface GigabitEthernet 0/2.

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42.1

42.1.1 reverse-path

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reverse-path

no reverse-path

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w R

reverse-path

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43.1

43.1.1 acpp

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acpp bw-rate rate **bw-burst-rate** burst-rate **log**

no acpp

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rate	8ˆ ` Æ й ˜
burst-rate	۷ 8ˆ ` Æ й ˜

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```
Ruijie(config)# control-plane data
Ruijie(config-cp)# acpp bw-rate 200 bw-burst-rate 300
```

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	ώ

43.1.2 arp-car

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arp-car packet_rate_per_group **log**

no arp-car

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	packet_rate_per_group	ḣˆ ` æ ѝ ˜

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W R	R ˘ ЛЮ R ˘ ƒ ৲ Э˘ з ˆ ˘ У э ˆ ˜ ৲ ѝ ˘ Ruijie(config)# control-plane manage Ruijie(config-cp)# arp-car 10

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43.1.3 control-plane

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control-plane protocol manage data

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```
Ruijie(config)# control-plane protocol
Ruijie(config-cp)#
```

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	control-plane protocol manage data	ώ ˘ ΛЛъ ώ ʌ

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43.1.6 management-interface

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43.1.7 port-filter

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port-filter log

no port-filter

Ч **64_0 1 Tf64 0 Tort-Filter**

[illegible]

scpp list acl_no **bw-rate** bw-rate **bw-burst-rate** bw-burst-rate **log**

no scpp list

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acl_no	[illegible]
bw-rate	[illegible]
bw-burst-rate	[illegible]

[illegible]

Ƒ ३ [illegible]

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[illegible]

```
Ruijie(config)# access-list 100 permit tcp 192.168.52.0 0.0.0.255 any
Ruijie(config)# control-plane manage
Ruijie(config-cp)# scpp list 100 bw-rate 100 bw-burst-rate 150
```

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control-plane protocol manage data	[illegible]

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43.2

```
    STATISTIC:
      bandwidth rate limit dropped 0 packets
    TOTALLY droped 0 packets
  Protocol subinterface: disable
ARP CAR information: //ARP-CAR    n    ə
  Manage subinterface: enable
    RULE:
      allow packet rate per source: 30(pps)
      log: off
    STATISTIC:
      dropped 181 packets
Glean CAR information:  //Glean-CAR    n    ə
  Data subinterface: disable
Port Filter information:
  Manage subinterface: disable
Management plane protection information:  //MPP    n    ə
  Manage subinterface: disable
```

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show ip inspect parameter

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parameter: ʌ ৲ **name** inspection_name ˈ 8 ʌ ‡

interface ˈ ফ ئۇ ৲ Э ‡

all ˈ ৻

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```
Ruijie# show ip inspect name abc
Inspection name abc
    ftp
    mms
```

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44.1.3 ip inspect

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ip inspect inspection_name **in out**

no ip inspect inspection_name **in out**

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inspection_name ‡ ¨

in out: ɔ ফ ৲ Э ą̈

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Ruijie(conf)# interface ethernet 1/0
Ruijie(conf-if)# ip inspect bin

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44.2 IP MAC

44.2.1 ipmacbind

У э ھ ھ ‡ Â Ф ҇ **no** ˆ ‡ Â

ipmacbind A.B.C.D H.H.H **log**

no ipmacbind A.B.C.D H.H.H **log**

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A.B.C.D ھ ھ

H.H.H ھ ھ

log ‗̆

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permit	ĭ	ɔ̄	Ɜ	ھ ک	‡
deny		ɔ̄	Ɜ	ھ ک	‡

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```
Ruijie# clear ipmacbind dynamic
```

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44.2.5 show ipmacbind

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show ipmacbind table | hash | statistic

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table	ھ ھ	‡
hash	ھ ھ	‡ ز
statistic	ھ ھ	ٰ ˆ x ˆ ˜

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```
Ruijie# show ipmacbind table
No.    Type   IP address    MAC address        Log
```

Type 116.6

no ip ingress-filter

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log ŭ

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interface ethernet 1/0

`Ruijie(conf-if)` **ip ingress-filter log**

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44.3.2 show ip ingress-filter

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show ip ingress-filter

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```
Ruijie# show ip ingress-filter
Firewall Network-ingress-filter is enable, blocked 0 flows
```

```
Interface GigabitEthernet 1/0: log is on, blocked 0 flows
```

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44.4 TCP SYN

44.4.1 ip tcp-intercept list

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ip tcp-intercept list extended_ACL_# **in out log**

no ip tcp-intercept list extended_ACL_# **in out log**

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extended_ACL_#

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```
Ruijie(config)# access-list 100 tcp permit any any
Ruijie(config)# interface ethernet 1/0
Ruijie(config-if)# ip tcp-intercept list 100 in log
```

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44.4.2 show ip tcp-intercept

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show ip tcp-intercept

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```
Ruijie# show ip tcp-intercept
Intercepting new connections using access-list 100 at
GigabitEthernet 0/1 in
12 incomplete, 5 established connections (total 17)
```

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44.5 TCP

44.5.1 ip inspect name tcp

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ip inspect name inspection_name **tcp**

no ip inspect name inspection_name **tcp**

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inspection_name ‡ ¨ ˘ ɪ ¥ è ¨

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```
session-limit access-group 1 rate 100 concurrent 10000 in log
```

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44.7

44.7.1 ip rate-control

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ip rate-control acl_no **bandwidth both|up|down** rate **<session total** session_no> < **rate** rate_no **>**

no ip rate-control acl_no **bandwidth both|up|down** rate **<session total** session_no> < **rate** rate_no **>**

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```
ip rate-control 1 bandwidth both 200 session total 500 rate 100
```

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44.8

44.8.1 ip session log-on

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ip session log-on

no ip session log-on

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Ruijie(config)#ip session log-on

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44.8.2 ip session timeout

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ip session timeout icmp-closed timeout _value

ip session timeout icmp-started timeout _value

ip session timeout icmp-connected timeout _value

ip session timeout tcp-established timeout _value

ip session timeout tcp-syn-sent timeout _value

ip session timeout tcp-syn-receive timeout _value

ip session timeout tcp-fin-wait timeout _value

ip session timeout tcp-time-wait timeout _value

ip session timeout tcp-closed timeout _value

ip session timeout tcp-close-wait timeout_ value

ip session timeout tcp-last-ack timeout _value

ip session timeout udp-closed timeout _value

ip session timeout udp-started timeout _value

ip session timeout udp-connected timeout _value

ip session timeout udp-established timeout _value

ip session timeout rawip-closed timeout _value

ip session timeout rawip-started timeout _value

ip session timeout rawip-connected timeout _value

ip session timeout rawip-established timeout _value

no ip session timeout icmp-closed

no ip session timeout icmp-started

no ip session timeout icmp-connected

no ip session timeout tcp-established

no ip session timeout tcp-syn-sent

no ip session timeout tcp-syn-receive

no ip session timeout tcp-fin-wait

no ip session timeout tcp-time-wait

no ip session timeout tcp-closed

no ip session timeout tcp-close-wait

no ip session timeout tcp-last-ack

no ip session timeout udp-closed

no ip session timeout udp-started

no ip session timeout udp-connected

no ip session timeout udp-established

```
Ruijie(config)#ip session timeout icmp-connected 10
```

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44.8.3 ip session threshold

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ip session threshold icmp-closed threshold _value

ip session threshold icmp-started threshold _value

ip session threshold tcp-syn-sent threshold _value

ip session threshold tcp-syn-receive threshold _value

ip session threshold tcp-closed threshold _value

ip session threshold udp-closed threshold _value

ip session threshold rawip-closed threshold _value

no ip session threshold icmp-closed

no ip session threshold icmp-started

no ip session threshold tcp-syn-sent

no ip session threshold tcp-syn-receive

no ip session threshold tcp-closed

no ip session threshold udp-closed

no ip session threshold rawip-closed

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threshold_value ᾶ ḣ˘ ` æ й э

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Ruijie(config)#ip session threshold icmp-started 10

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44.8.4 ip session track-state-strictly

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ip session track-state-strictly

no ip session track-state-strictly

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Ruijie(config)#ip session track-state-strictly

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45 VPDN

45.1 VPDN

45.1.1 vpdn enable

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vpdn enable

no vpdn enable

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```
Ruijie(config)# vpdn enable
Ruijie(config)#
```

45.1.2 vpdn source-ip

Ƒ ३ m k ╗ G ϰ ϰ ϰ˘ ὲ **no**
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vpdn source-ip A.B.C.D

no vpdn source-ip

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A.B.C.D ' k ╗ G ϰ ϰ ϰ

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```
Ruijie(config)# vpdn source-ip
Ruijie(config)#
```

45.1.3 vpdn session-limit

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Â

vpdn session-limit sessions

no vpdn session-limit

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```
Ruijie(config)# vpdn session-limit
Ruijie(config)#
```

45.2 VPDN

```
%CHANGED: Interface Virtual-Access1, changed state to
administratively down

Ruijie# show vpdn
%No active L2TP tunnels
%No active PPTP tunnels
Ruijie#
```

45.2.2 show vpdn

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show vpdn session | tunnel

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tunnel ˙

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```
Ruijie# show vpdn
L2TP Tunnel and Session Information Total tunnels 1 sessions
1
LocID RemID Remote Name  State  Remote Address  Port  Sessions
L2TP Class/
VPDN Group
4    77   BLIZZARD     est   192.168.12.213  1701  1       1
LocID      RemID      TunID      Username, Intf/      State
Last Chg
                            Vcid, Circuit
1          1          4          ms,Vi1                est
00:33:58
%No active PPTP tunnels
Ruijie#
```

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```
Ruijie# show vpdn tunnel
L2TP Tunnel Information Total tunnels 1
LocID RemID Remote Name   State  Remote Address  Port  Sessions
L2TP Class/
VPDN Group
4     77    BLIZZARD     est    192.168.12.213  1701  1       1
%No active PPTP tunnels
Ruijie#
```

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```
Ruijie# show vpdn session
L2TP Session Information Total sessions 1
LocID       RemID       TunID       Username,  Intf/       State
Last Chg
                                Vcid,  Circuit
1           1           4           ms,Vi1                 est
00:37:03
%No active PPTP tunnels
Ruijie#
```

45.2.3 debug vpdn

Ƒ ३ ॅΩ **vpdn** ॡ Â

debug vpdn error event l2x-data l2x-errors l2x-events l2x-packets packet

no debug vpdn error event l2x-data l2x-errors l2x-events l2x-packets packet

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error ‘ ~ ऽ

event ‘ ~ ~ ऽ Y˘

l2x-data ‘ ৺ α

l2x-errors ‘ ~ ऽ

l2x-events ‘ ~ ~ ऽ Y˘

l2x-packets ‘ ~ 8 ॅα

packet ‘ ~ ॅα

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```
Protocol Version 0x100
Framing Type 0x2
Bearer Type 0x3
Maximum Channels 0x0
Firmware Revision 0x100
Host Name: Dingjs
Vendor String: Ret-Giant Network Operating System
PPTP: I Outgoing-Call-Request len 168 Magic Cookie 0x1A2B3C4D
Call Id 0x4000
Call Serial Number 0x96A5
Min BPS 0x12C
Max BPS 0x5F5E100
Bearer Type 0x3
Framing Type 0x3
Rec Window Size 0x40
Proc Delay 0x0
Phone Number Length 0x0
Phone Number:
Subaddress:
PPTP: O Outgoing-Call-Reply len 32 Magic Cookie 0x1A2B3C4D
Call Id 0x1
Peer Call Id 0x4000
Result Code 0x1
Error Code 0x0
Cause Code 0x0
Connect Speed 0xFA00
Rec Window Size 0x10
Physical Channel Id 0x0
PPTP: I Set-Link-Info len 24 Magic Cookie 0x1A2B3C4D
Peer Call Id 0x1
Send ACCM 0xFFFFFFFF
Recv ACCM 0xFFFFFFFF
%UPDOWN: Interface Virtual-Access1, changed state to up
Vi1 VPDN PROCESS Into tunnel: Sending 54 byte pak
Vi1 VPDN PROCESS Into tunnel: Sending 64 byte pak
Vi1 VPDN PROCESS Into tunnel: Sending 50 byte pak
PPTP: I Set-Link-Info len 24 Magic Cookie 0x1A2B3C4D
Peer Call Id 0x1
Send ACCM 0xFFFFFFFF
Recv ACCM 0xFFFFFFFF
Vi1 VPDN PROCESS Into tunnel: Sending 45 byte pak
Vi1 VPDN PROCESS Into tunnel: Sending 46 byte pak
Vi1 VPDN PROCESS Into tunnel: Sending 187 byte pak
Vi1 VPDN PROCESS Into tunnel: Sending 56 byte pak
```

```
Vi1 VPDN PROCESS Into tunnel: Sending 64 byte pak
Vi1 VPDN PROCESS Into tunnel: Sending 50 byte pak
Vi1 VPDN PROCESS Into tunnel: Sending 50 byte pak
Vi1 VPDN PROCESS Into tunnel: Sending 52 byte pak
```

Лъ è ˜ й ʳˇ **debug vpdn error** ą Ю

```
VPDN: PPTP session Virtual-Access1 wait pak ack timeout(wait
seq=37, ack=36), decrease send window to half of current = 33!
VPDN: PPTP session Virtual-Access1 adjust ATO to 220 ms!
VPDN: PPTP session Virtual-Access1 wait pak ack timeout(wait
seq=38, ack=36), decrease send window to half of current = 16!
VPDN: PPTP session Virtual-Access1 adjust ATO to 280 ms!
VPDN: PPTP session Virtual-Access1 wait pak ack timeout(wait
seq=39, ack=36), decrease send window to half of current = 8!
VPDN: PPTP session Virtual-Access1 adjust ATO to 400 ms!
VPDN: Pptp EGRE encap fail, err=-4!
VPDN: PPTP session Virtual-Access1 wait pak ack timeout(wait
seq=40, ack=36), decrease send window to half of current = 4!
VPDN: PPTP session Virtual-Access1 adjust ATO to 640 ms!
```

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```
Ruijie# debug vpdn error
vpdn protocol errors debugging is on
Ruijie# debug vpdn event
vpdn events debugging is on
Ruijie# debug vpdn packet
vpdn packet debugging is on
Ruijie# show debug
VPDN:
vpdn events debugging is on
vpdn protocol errors debugging is on
vpdn packet debugging is on
Ruijie#
VPDN PROCESS From tunnel: Received 158 byte pak
L2X: UDP socket write 168 bytes, 192.168.12.217(1701) to
192.168.12.242(1701)
L2X: UDP socket write 40 bytes, 192.168.12.217(1701) to
192.168.12.242(1701)
VPDN PROCESS From tunnel: Pak consumed
VPDN PROCESS From tunnel: Received 70 byte pak
L2X: UDP socket write 40 bytes, 192.168.12.217(1701) to
192.168.12.242(1701)
VPDN PROCESS From tunnel: Pak consumed
```

```
VPDN PROCESS From tunnel: Received 76 byte pak
Get virtual-access from free queue: Virtual-Access1
Clone virtual-access from interface Virtual-Template1
L2X: UDP socket write 56 bytes, 192.168.12.217(1701) to
192.168.12.242(1701)
L2X: UDP socket write 40 bytes, 192.168.12.217(1701) to
192.168.12.242(1701)
VPDN PROCESS From tunnel: Pak consumed
VPDN PROCESS From tunnel: Received 76 byte pak
L2X: UDP socket write 40 bytes, 192.168.12.217(1701) to
192.168.12.242(1701)
Vi1 Tnl/Sn 3/1 L2TP: Virtual interface created for unknown,
bandwidth 1024 Kbps
Vi1 Tnl/Sn 3/1 L2TP: VPDN session up
VPDN PROCESS From tunnel: Pak consumed
VPDN PROCESS From tunnel: Received 50 byte pak
Vi1 VPDN PROCESS From tunnel: Queue 14 byte pak to ppp parse
and iqueue
Vi1 VPDN PROCESS From tunnel: Pak send successful
%UPDOWN: Interface Virtual-Access1, changed state to up
Vi1 VPDN PROCESS Into tunnel: Sending 54 byte pak
L2X: UDP socket write 54 bytes, 255.255.255.255(1701) to
4.83.68.68(1701)
VPDN PROCESS From tunnel: Received 50 byte pak
Vi1 VPDN PROCESS From tunnel: Queue 14 byte pak to ppp parse
and iqueue
Vi1 VPDN PROCESS From tunnel: Pak send successful
Vi1 VPDN PROCESS Into tunnel: Sending 50 byte pak
L2X: UDP socket write 50 bytes, 255.255.255.255(1701) to
4.83.68.68(1701)
Vi1 VPDN PROCESS Into tunnel: Sending 54 byte pak
L2X: UDP socket write 54 bytes, 255.255.255.255(1701) to
4.83.68.68(1701)
VPDN PROCESS From tunnel: Received 50 byte pak
Vi1 VPDN PROCESS From tunnel: Queue 14 byte pak to ppp parse
and iqueue
Vi1 VPDN PROCESS From tunnel: Pak send successful
Vi1 VPDN PROCESS Into tunnel: Sending 50 byte pak
L2X: UDP socket write 50 bytes, 255.255.255.255(1701) to
4.83.68.68(1701)
Vi1 VPDN PROCESS Into tunnel: Sending 54 byte pak
L2X: UDP socket write 54 bytes, 255.255.255.255(1701) to
4.83.68.68(1701)
VPDN PROCESS From tunnel: Received 50 byte pak
```

```
Vi1 VPDN PROCESS From tunnel: Queue 14 byte pak to ppp parse
and iqueue
Vi1 VPDN PROCESS From tunnel: Pak send successful
Vi1 VPDN PROCESS Into tunnel: Sending 50 byte pak
L2X: UDP socket write 50 bytes, 192.168.12.217(1701) to
192.168.12.242(1701)
Vi1 VPDN PROCESS Into tunnel: Sending 54 byte pak
L2X: UDP socket write 54 bytes, 192.168.12.217(1701) to
192.168.12.242(1701)
VPDN PROCESS From tunnel: Received 54 byte pak
Vi1 VPDN PROCESS From tunnel: Queue 18 byte pak to ppp parse
and iqueue
Vi1 VPDN PROCESS From tunnel: Pak send successful
VPDN PROCESS From tunnel: Received 56 byte pak
Vi1 VPDN PROCESS From tunnel: Queue 20 byte pak to ppp parse
and iqueue
Vi1 VPDN PROCESS From tunnel: Pak send successful
Vi1 VPDN PROCESS Into tunnel: Sending 45 byte pak
L2X: UDP socket write 45 bytes, 192.168.12.217(1701) to
192.168.12.242(1701)
Vi1 VPDN PROCESS Into tunnel: Sending 50 byte pak
L2X: UDP socket write 50 bytes, 192.168.12.217(1701) to
192.168.12.242(1701)
VPDN PROCESS From tunnel: Received 50 byte pak
Vi1 VPDN PROCESS From tunnel: Queue 14 byte pak to ppp parse
and iqueue
Vi1 VPDN PROCESS From tunnel: Pak send successful
Vi1 VPDN PROCESS Into tunnel: Sending 50 byte pak
L2X: UDP socket write 50 bytes, 192.168.12.217(1701) to
192.168.12.242(1701)
VPDN PROCESS From tunnel: Received 50 byte pak
Vi1 VPDN PROCESS From tunnel: Queue 14 byte pak to ppp parse
and iqueue
Vi1 VPDN PROCESS From tunnel: Pak send successful
VPDN PROCESS From tunnel: Received 50 byte pak
Vi1 VPDN PROCESS From tunnel: Queue 14 byte pak to ppp parse
and iqueue
Vi1 VPDN PROCESS From tunnel: Pak send successful
Vi1 VPDN PROCESS Into tunnel: Sending 50 byte pak
L2X: UDP socket write 50 bytes, 192.168.12.217(1701) to
192.168.12.242(1701)
%UPDOWN: Line protocol on Interface Virtual-Access1, changed
state to up
```

```
Vi1 Tnl/Sn 20/1 L2TP: Session state change from
wait-for-service-selection- iccn to established
%UPDOWN: Interface Virtual-Access1, changed state to up
%UPDOWN: Line protocol on Interface Virtual-Access1, changed
state to up
```

ʎ ώ ˆ б ̣ è **debug vpdn l2x-packets** R '

```
L2TP: I SCCRQ from C3640 tnl 18889
L2X: Parse  AVP 0, len 8, flag 0x8000 (M)
L2X: Parse SCCRQ
L2X: Parse  AVP 2, len 8, flag 0x8000 (M)
L2X: Protocol Ver 1
L2X: Parse  AVP 6, len 8, flag 0x0
L2X: Firmware Ver 0x1130
L2X: Parse  AVP 7, len 11, flag 0x8000 (M)
L2X: Hostname C3640
L2X: Parse  AVP 8, len 25, flag 0x0
L2X: Vendor Name Cisco Systems, Inc.
L2X: Parse  AVP 10, len 8, flag 0x8000 (M)
L2X: Rx Window Size 800
L2X: Parse  AVP 11, len 22, flag 0x8000 (M)
L2X: Chlng
       98 20 4E 34 6A 4C E1 E7 FA CF 58 07 FF 4E 56 A3
L2X: Parse  AVP 9, len 8, flag 0x8000 (M)
L2X: Assigned Tunnel ID 18889
L2X: Parse  AVP 3, len 10, flag 0x8000 (M)
L2X: Framing Cap 0x3
L2X: Parse  AVP 4, len 10, flag 0x8000 (M)
L2X: Bearer Cap 0x3
L2X: No missing AVPs in SCCRQ
L2X: I SCCRQ, flg TLS, ver 2, len 130, tnl 0, ns 0, nr 0 contiguous
pak, size 130
C8 02 00 82 00 00 00 00 00 00 00 00 80 08 00 00
00 00 00 01 80 08 00 00 00 02 01 00 00 08 00 00
00 06 11 30 80 0B 00 00 00 07 43 33 36 34 30 00
19 00 00 00 08 43 69 73 63 6F 20 53 79 73 74 65
6D 73 2C 20 49 6E 63 2E ...
Tnl 22 L2TP: O SCCRP  to C3640 tnlid 18889
Tnl 22 L2TP: O SCCRP, flg TLS, ver 2, len 140, tnl 18889, ns
0, nr 1
C8 02 00 8C 49 C9 00 00 00 00 00 01 80 08 00 00
00 00 00 02 80 08 00 00 00 02 01 00 80 0A 00 00
00 03 00 00 00 01 80 0A 00 00 00 04 00 00 00 00
```

```
00 08 00 00 00 06 11 30 80 0A 00 00 00 07 52 36
32 31 00 0E 00 00 00 08 ...
Tnl 22 L2TP: O ZLB ctrl ack, flg TLS, ver 2, len 12, tnl 18889,
ns 1, nr 1
C8 02 00 0C 49 C9 00 00 00 01 00 01
Tnl 22 L2TP: Parse  AVP 0, len 8, flag 0x8000 (M)
Tnl 22 L2TP: Parse SCCCN
Tnl 22 L2TP: I SCCCN from C3640 tnl 18889
Tnl 22 L2TP: Parse  AVP 13, len 22, flag 0x8000 (M)
Tnl 22 L2TP: Chlng Resp
5C D5 A4 37 36 A6 7D 0F FE EF 22 48 B8 DF F5 12
Tnl 22 L2TP: No missing AVPs in SCCCN
Tnl 22 L2TP: I SCCCN, flg TLS, ver 2, len 42, tnl 22, ns 1, nr
1 contiguous pak, size 42
C8 02 00 2A 00 16 00 00 00 01 00 01 80 08 00 00
00 00 00 03 80 16 00 00 00 0D 5C D5 A4 37 36 A6
7D 0F FE EF 22 48 B8 DF F5 12
Tnl 22 L2TP: O ZLB ctrl ack, flg TLS, ver 2, len 12, tnl 18889,
ns 1, nr 2
C8 02 00 0C 49 C9 00 00 00 01 00 02
Tnl 22 L2TP: Parse  AVP 0, len 8, flag 0x8000 (M)
Tnl 22 L2TP: Parse ICRQ
Tnl 22 L2TP: I ICRQ from C3640 tnl 18889
Tnl 22 L2TP: Parse  AVP 15, len 10, flag 0x8000 (M)
Tnl 22 L2TP: Serial Number -1714567290
Tnl 22 L2TP: Parse  AVP 14, len 8, flag 0x8000 (M)
Tnl 22 L2TP: Assigned Call ID 1280
Tnl 22 L2TP: Parse  AVP 18, len 10, flag 0x8000 (M)
Tnl 22 L2TP: Bearer Type 0
Tnl 22 L2TP: No missing AVPs in ICRQ
```

```
Tnl/Sn 22/1 L2TP: Parse  AVP 0, len 8, flag 0x8000 (M)
Tnl/Sn 22/1 L2TP: Parse ICCN
Vi1 Tnl/Sn 22/1 L2TP: Parse  AVP 24, len 10, flag 0x8000 (M)
Vi1 Tnl/Sn 22/1 L2TP: Connect Speed 0
Vi1 Tnl/Sn 22/1 L2TP: Parse  AVP 19, len 10, flag 0x8000 (M)
Vi1 Tnl/Sn 22/1 L2TP: Framing Type 1
Tnl/Sn 22/1 L2TP: No missing AVPs in ICCN
Tnl/Sn 22/1 L2TP: I ICCN, flg TLS, ver 2, len 48, tnl 22, lsid
1, rsid 1280, ns 3, nr 2 contiguous pak, size 48
C8 02 00 30 00 16 00 01 00 03 00 02 80 08 00 00
00 00 00 0C 80 0A 00 00 00 18 00 00 00 00 80 0A
00 00 00 13 00 00 00 01 00 08 00 00 00 1D 00 04
Tnl 22 L2TP: O ZLB ctrl ack, flg TLS, ver 2, len 12, tnl 18889,
ns 2, nr 4
C8 02 00 0C 49 C9 00 00 00 02 00 04
%UPDOWN: Interface Virtual-Access1, changed state to up
%UPDOWN: Line protocol on Interface Virtual-Access1, changed
state to up
```

46 VPDN-Group

46.1 VPDN-Group

46.1.1 accept dialin

Ф ҷ ɔ й ʌ ώ˘ è **no** Â

accept-dialin

no accept-dialin

ð Ô

ą Ю˘ ɔ Â

ð Ф ҷ Ô

ʌ

ð G ˙ Ô

ą Ю˘ й ˙ ı ɔ Â
˝I ɔ У ɔ ˜ б
ʌ Â Ф ҷ ʌ ˚ ˝ ƒ ƒ ˝Ω ў ╟
8 Â

ð w R Ô

ɔ й ʌ ώ

```
Ruijie(config-vpdn)# accept-dialin
Ruijie(config-vpdn)#
```

46.1.2 ip precedence

Ф ҷ . ˝I ˘ è **no** Â

ip precedence precedence-value **critical flash flash-override immediate internet network priority routine**

no ip precedence

ð ʌ Ô

precedence-value ˙ . ˝I ˘ ḣ˘ ʌ ḣ й

critical ˙ . ˝I ḣ й

flash ‘ . ”I ȯ ḣ ȯ̀

flash-override ‘ . ”I ȯ ḣ ȯ̀

immediate ‘ . ”I ȯ ḣ ȯ̀

internet ‘ . ”I ȯ ḣ ȯ̀

network ‘ . ”I ȯ ḣ ȯ̀

priority ‘ . ”I ȯ ḣ ȯ̀

routine ‘ . ”I ȯ ḣ ȯ̀

ð Ô

ą Ю . ”I ȯ ḣ ȯ̀ ” **routine** Â

ð Ф ३ Ô

ʎ

ð G ” Ô

. ”I ʎ Ɓ G Ф ३ Â Ф ३
˚ ” ط · ˘ ⊓ a˚ ˜Ω ў ╟ 8 Â

ð w R Ô

. ”I ȯ̀ Â

```
Ruijie(config-vpdn)# ip precedence 7
Ruijie(config-vpdn)#
```

46.1.3 ip tos

Ф ३ ȯ˘ ὲ **no**
Â

ip tos tos-value **max-reliability max-throughput min-delay min- monetary-cost normal reflect**

no ip tos

ð ʎ Ô

tos-value ‘ ȯ ḣ˘ ʎ ḣ ȯ̀

max-reliability ‘ ȯ ḣ ȯ̀

max-throughput ‘ ȯ ḣ ȯ̀

min-delay ‘ ȯ ḣ ȯ̀

min-monetary-cost ‘ ȯ ḣ ȯ̀

normal ‘ ȯ ḣ ȯ̀

reflect ʻ G ˆ ɔ ѝ

ѐ

ð Ô

ϱ Ю ѐ ѝ Â

ð Ƒ ২ Ô

ʎ

ð G ʾ Ô

ʎ Ƛ G Ƒ ২ Â Ƒ ২

˚ ˝ ط ˙ ˘ ʃ a˚ ˜Ω ў ╟ 8 Â

ð w R Ô

46.1.5 protocol

Ф ३ G ~ Â Ф ३ **no** Â

protocol any l2tp pptp

no protocol

ð ৺ Ô

any ' ē ⁄ ~

l2tp ' ē ~

pptp ' ē ~

ð Ô

ą Ю й ~ Â

ð Ф ३ Ô

ɔ ⁄

ð G ' Ô

G ~ ˘ ˙ ! ~

˚ ƒ̀ Ω ў ╟ Â

ð w R Ô

~ й Â

```
Ruijie(config-vpdn)# accept-dialin
Ruijie(config-vpdn-acc-in)# protocol l2tp
Ruijie(config-vpdn-acc-in)#
```

46.1.6 source-ip

Ф ३ m G ک ک ھ ˘ è **no**

Â

source-ip A.B.C.D

no source-ip

ð ৺ Ô

A.B.C.D ' m G ک ک ھ

ð Ô

ą Ю 8 G ک ک

ھ Â

ð Ф ҳ Ô

ʎ

ð G ʾ Ô

ɢ ŏ ╖ G ᴤ ᴤ ᴤ ˘ ж
G ᴤ ᴤ ᴤ б ǯ У Â Ф ҳ
ʎ ˬ ˝ ᴤ ᴤ Ω ў ╟ 8 Â

ð w R Ô

ḿ G ᴤ ᴤ ѝ

```
Ruijie(config-vpdn)# source-ip
Ruijie(config-vpdn)#
```

46.1.7 terminate-from

Ф ҳ ў ˝ ˘ ѐ **no** Â

terminate-from hostname remote-hostname-string

no terminate-from

ð ʎ Ô

remote-hostname-string ʿ ў ˝

ð Ô

ɑ Ю ў ˝ Â

ð Ф ҳ Ô

ʎ

ð G ʾ Ô

ʎ Ѣ G Ф ҳ 8 ώ ў ˝ ˘
ў ˝ ˘ ж a 8 ώ ў ˝ Â
ˈ ! ў ˝ ᴤ
ᴤ 8 ў ╟ Â ˬ

ð w R Ô

ў ˝ ѝ

```
Ruijie(config-vpdn)# terminate-from hostname
Ruijie(config-vpdn)#
```

46.1.8 virtual-template

Ф ҳ ṃ ⅄ ̆ è **no**
Â

virtual-template number

no virtual-template

ð ⅄ Ô

number ̇ ⅄ ⅃

ð Ô

ą Ю ̇ ı ⅄ ̊ Э Â

ð Ф ҳ Ô

Ɔ ⅄

ð ᴳ ̇ Ô

⅄ Лъ ᴳ Ф ҳ ᴳ ⅄ ÿ ā
̊ ⅄ ⅄ Â ᵏ
⅄ Â ̇ ı ⅄
ƒƒ ⁸ Â

ð w ᴿ Ô

⅄ ̊ ƒƒ Э

```
Ruijie(config-vpdn-acc-in)# virtual-template 1
Ruijie(config-vpdn-acc-in)#
```

46.1.9 vpdn-group

Ф ҳ ̈ ⅄ ̆ a ƒƒ
⅄ … У э Лъ ̈ й ̈ ⅄ ̆
è **no** ̄ ̈ ⅄ Â

vpdn-group vpdn-group-name

no vpdn-group vpdn-group-name

ð ⅄ Ô

vpdn-group-name ̇ vpdn-group ⅄ ̈

ð Ô

ą Ю ̇ ı vpdn-group ⅄ Â

ð Ф ҳ Ô

ŏ

ð ᴳ ̇ Ô

ئۇ Ɪ ˘ …

ʎ Â ʌ Ɲ G Ƒ ২ ʎ Â ʎ

ĩ ف ў ╟ 8 Â

ȍ w R Ô

… ¨ й ʎ

```
Ruijie(config)# vpdn-group   1
Ruijie(config-vpdn)#
```

47 PPTP

47.1 PPTP

47.1.1 Pptp flow-control receive-window

Ф ҷ Ю Ж ˚ ƒ ˆ Ğ ṃ ĭ ∧
˘ й ∧˘ ε **no** Â

Pptp flow-control receive-window packets

No pptp flow-control receive-window

ð ∧ Ô

packets ˙ ˚ ƒ ˆ Ğ ṃ ĭ ∧
Â ∧ ḣ ŋ Â

ð Ô

ḣ й ˘ ḣ й Â

ð Ф ҷ Ô

ð G ˙ Ô

~ ж Ф ҷ˘ Лъ ˝I **protocol pptp**
protocol any Ф ҷ ѣ˘ ĭ n̲ Ф ҷ Â

~ ˘ ˚ ∧ ~ ى è ˆ
∧ У´ ɔ й ⌉ ∧ ∧ Â ∧ ∧ ˘
ṃ ˚ ą̈ ∧ ∧ ∧ ˜´ ˆ й ˘ ƒ ˆ
∧ ѣ ∧ Â ą̈ ∧ ṃ ∧ э
э ą ˘ ‡ ∧ ∧ ╗ ˘
ˆ Ţ ∧ ḣ Â ˘
˘ G ж Â

ð w R Ô

˚ ∧ ḣ й ˙

```
Ruijie(config-vpdn)# accept-dialin
Ruijie(config-vpdn-acc-in)# protocol pptp
Ruijie(config-vpdn-acc-in)# exit
Ruijie(config-vpdn)# pptp flow-control receive-window
ȝ
Ruijie(config-vpdn)#
```

echo-packet-interval ˑ ৲ ˘ Лъ
й ` Æ Â ৲ ḣ ﻧﺮ Â

ð Ô

й Â

ð Ƒ ২ Ô

ð ᴳ ˞ Ô

˜ ж Ƒ ২˘ Лъ ˝I **protocol pptp**
protocol any Ƒ ২ ɨ˘ ĭ ḉ Ƒ ২ Â
echo-packet-interval й ˘ a ў ╟ ৲ Â

echo-packet-interval a й ˘ ﻫﺫ echo-packet-interval
ˀ ˑ ¡˝ ˜ ˘ ‡ ў ╟ ৲ У э
Лъ ˘ **echo reply**
Â ˥ й ˘ У ˘ ‡ ˝ ৲ ɣ э
echo request˞ ﻫﺫ ṃ У ﻟﺟﻲ Э У˝ ˘
Â a ˀ **echo reply** ‡ й ˘
৴ ɛ ˆ ŭ ˚ ˝Ω Â

ð w ᴿ Ô

pptp echo request й ˑ

```
Ruijie(config-vpdn)# accept-dialin
Ruijie(config-vpdn-acc-in)# protocol pptp
Ruijie(config-vpdn-acc-in)# exit
Ruijie(config-vpdn)# pptp tunnel echo θ
Ruijie(config-vpdn)#
```

l2tpv2 G · Â

ð Ô

ą Ю˘ ƒ Â

ð Ф ҷ Ô

ฺ

ð G ˙ Ô

ƒ ฺ Э˘ ˝I У
· ฺ Â

ð w R Ô

й̀

```
Ruijie(config-pw-class)# encapsulation l2tpv2
Ruijie(config-pw-class)#
```

48.1.3 hello

Ф ҷ й̀ ฺ ฺ Â Ф ҷ
no Â

hello interval

no hello

ð ฺ Ô

interval ˙ ฺ

ð Ô

ą Ю˘ ฺ й̀ Â

ð Ф ҷ Ô

ฺ

ð G ˙ Ô

ฺ Лъ ฺ Лъ ŭ ŋ ฺ Â
ฺ ˘ ฺ Лъ ฺ й У э ḣ Â˙ ị
ฺ ฺ ˚ ƒ ў ╟ 8 Â

ð w R Ô

ฺ й̀

```
Ruijie(config-l2tp-class)# hello
```

```
Ruijie(config-l2tp-class)#
```

48.1.4 hostname (L2TP)

Ƒ ३ ک ŭ ̈ ˘ ὲ **no** Â

hostname local-hostname-string

no hostname

ð ৲ Ô

local-hostname-string ʿ ک ŭ ̈

ð Ô

ą Ю G ئۇ ̈ ɔ ѝ ک ŭ ̈ Â

ð Ƒ ३ Ô

৲

ð G ʾ Ô

৲ Лъ ک ŭ ̈ Лъ Â˙ ı ک
ŭ ̈ ৲ ˬ ڤڭ ⁸ ŭ ╟ Â

ð w R Ô

ک ŭ ̈ ѝ

```
Ruijie(config-l2tp-class)# hostname
Ruijie(config-l2tp-class)#
```

48.1.5 ip dfbit set

Ƒ ३ ĭ ৸ ˘ ὲ ḣ Â

ip dfbit set

no ip dfbit set

ð Ô

ą Ю ĭ ĭ ৸ Â

ð Ƒ ३ Ô

৲

ð G ʾ Ô

Л Л ŭ ĭ ĭ Л Â˙ ! ĭ Л П
╟ ˬ ¨ Л ˆ · Э˘ П aˬ
8 Â

ð w R Ô

ĭ Л

```
Ruijie(config-pw-class)# ip dfbit set
Ruijie(config-pw-class)#
```

48.1.6 ip local interface

Ф ३ G ھ Л˘ è **no** Â

ip local interface interface-name

ttl-value ˙ ह ḣ˘ ^ ḣ ग़ ѝ

ð Ô

ą Ю˘ ह ѝ Â

ð Ф ३ Ô

^

ð G ˙ Ô

^ Лъ ह Â˙ ị
ह ‖ ˬ ˝ ^ ˆ ˙ Э˘ ⊓ a ˬ
8 Â

ð w R Ô

ह ѝ

```
Ruijie(config-pw-class)# ip ttl 3
Ruijie(config-pw-class)#
```

48.1.8 l2tp ip udp checksum

Ф ३ Ɪ ह˘ ε **no**
Â

l2tp ip udp checksum

no l2tp ip udp checksum

ð Ô

ą Ю˘ ह ѝ ˝ ѝ Â

ð Ф ३ Ô

^

ð G ˙ Ô

^ Лъ ŋ ŭ Ɪ
ह Â˙ ị ह ‖ ˬ ˝
^ ˆ ˙ Э˘ ⊓ a ˬ 8 Â

ð w R Ô

k

```
Ruijie(config-vpdn)# l2tp ip udp checksum
Ruijie(config-vpdn)#
```

48.1.9 l2tp tunnel authentication

Ф ३ í ╗ ˘ è **no** Â

l2tp tunnel authentication

no l2tp tunnel authentication

ð Ô

ą Ю ╗ Â

ð Ф ३ Ô

⅄

ð ᴳ ˙ Ô

⅄ Лъ í ╗ Â˙ ¡ ╗
╟ ˬ ˜Ω ⁸ ў ╟ Â

ð w ᴿ Ô

í ╗

```
Ruijie(config-vpdn)# l2tp tunnel authentication
Ruijie(config-vpdn)#
```

48.1.10 l2tp tunnel hello

Ф ३ ∧ ˘ è **no**
Â

l2tp tunnel hello interval

no l2tp tunnel hello

ð ⅄ Ô

interval ˙ ∧ ˘ Лъ й ` Æ

ð Ô

ą Ю ∧ й Â

ð Ф ३ Ô

⅄

ð ᴳ ˙ Ô

⅄ Лъ Лъ ⅃ ∧ Â˙ ¡
∧ ⅄ ˬ ⁸ ў ╟ Â

ð w ᴿ Ô

ᴺ й

```
Ruijie(config-vpdn)# l2tp tunnel hello θ
Ruijie(config-vpdn)#
```

48.1.11 l2tp tunnel password

Ф ३ ¥ ᴺ ३˘ è **no** ᴺ ३ Â

l2tp tunnel password password-string

no l2tp tunnel password

ð ᴺ Ô

password-string ˙ ᴺ ३

ð Ô

α Ю˘ ᴺ ३ Â

ð Ф ३ Ô

ᴺ

ð ᴳ ˙ Ô

˘ ж ч í ╗ ᴳ ˚
ᴺ ३ Â˙ ! ᴺ ३ ᴺ ˚ ⁸
ў ╟ Â

ð w ᴿ Ô

ᴺ ३ й

```
Ruijie(config-vpdn)# l2tp tunnel password share
Ruijie(config-vpdn)#
```

48.1.12 l2tp tunnel receive-window

Ф ३ ⁸ ᴺ ᴺ ˘ è **no** Â

l2tp tunnel receive-window size

α Ю 8 ⊼ ⊼ й Â

ð Ф ३ Ô

⊼

ð G ' Ô

' ! 8 ⊼ ⊼ ⊼ ˅
8 Â

ð w R Ô

8 ⊼ ⊼ й

```
Ruijie(config-vpdn)# l2tp tunnel receive-window 2
Ruijie(config-vpdn)#
```

48.1.13 l2tp tunnel retransmit

Ф ३ 8 · ⊼ ˘ ε **no** Â

l2tp tunnel retransmit retries number **timeout min max** seconds

no l2tp tunnel retransmit retries timeout min max

ð ⊼ Ô

number ' 8 ·

seconds ' 8 ·

ð Ô

α Ю 8 · й ˘ 8 · й ˘
й Â

ð Ф ३ Ô

⊼

ð G ' Ô

' ! 8 · ⊼ g ˅ 8 ў
‖ Â

ð w R Ô

8 · й

```
Ruijie(config-vpdn)# l2tp tunnel retransmit retries 0
Ruijie(config-vpdn)#
```

48.1.14 l2tp tunnel timeout

Ф ३ ĭ ˅ 8 ˘ ὲ **no**
Â

l2tp tunnel timeout no-session | setup seconds

no l2tp tunnel timeout no-session setup

ȍ ৺ Ô

no-session ˈ ⊓ ˅

setup ˈ 8

seconds ˈ ˘ ` Æ ѝ

ȍ Ô

ϱ Ю ĭ ˅ ѝ ˘ ĭ 8
ѝ Â

ȍ Ф ३ Ô

৺

ȍ ᴳ ˈ Ô

˙ ! ĭ ˅ 8 ৺
˅ Ѿ 8 ў ╟ Â

ȍ w ᴿ Ô

ĭ ˅ ѝ

```
Ruijie(config-vpdn)# l2tp tunnel timeout no-session 0
Ruijie(config-vpdn)#
```

48.1.15 l2tp-class

Ф ३ ¨ ৺˘ a ফ ¨ ৺ … Ѣ
¨ ѝ¨ ৺˘ ὲ **no** ˥ ¨ ৺ Â

l2tp-class l2tp-class-name

no l2tp-class l2tp-class-name

ȍ ৺ Ô

l2tp-class-name ˈ ৺ ¨

ȍ Ô

ą Ю˘ ˙ ! ⅄ Â

ð **Ф ३ Ô**

ŏ̈

ð G ˘ **Ô**

/ Л Ъ 8 Ɔ ⅄ Â

ð **w** R **Ô**

… ¨ й ⅄

```
Ruijie(config)# l2tp-class l2x
Ruijie(config-l2tp-class)#
```

48.1.16 password (L2TP)

Ф ३ ¥ ⅄ ३˘ è **no** Â

password password-string

no password

ð ⅄ **Ô**

password-string ˙ ¥ ⅄ ३

ð **Ô**

ą Ю˘ ╗ ≠ ¥ ⅄ ३ Â

ð **Ф ३ Ô**

⅄

ð G ˘ **Ô**

˘ ж ч í ╗ G ˘

⅄ ३ Â˙ ! ⅄ ३ ⅄ ˚ 8

ў ╟ Â

ð **w** R **Ô**

⅄ ३ й

```
Ruijie(config-l2tp-class)# password share
Ruijie(config-l2tp-class)#
```

48.1.17 protocol (L2TP)

Ф ३ 8 ⅄ ˘ è **no** Â

protocol l2tpv2 l2tp-class-name

no protocol

ð ৲ Ô

l2tpv2 ˈ G ɔ й ˜

l2tp-class-name ˈ ৲̈

ð Ô

ą Ю˘ G ɔ й ˜ Â

ð Ф ३ Ô

৲

ð G ˙ Ô

˙ ! 8 ৲ ৲ ˚ 8 ў ╟ Â

ð w R Ô

˜ й 8 ৲

```
Ruijie(config-pw-class)# protocol l2tpv2 l2x
Ruijie(config-pw-class)#
```

48.1.18 pseudowire

Ф ३ ‡˘ è **no** Â

pseudowire peer-ip-address vcid **encapsulation l2tpv2 pw-class** pw-class-name **pw-class** pw-class-name

no pseudowire

hostname ৲ **pseudowire**

pseudowire hostname peer-hostname vcid **encapsulation l2tpv2 pw-class** pw-class-name **pw-class** pw-class-name

no pseudowire

ð ৲ Ô

peer-ip-address ˈ ھ ک

peer-hostname ˈ ˆ ˜ ڤ

pw-class-name

ð Ô

α Ю ‡ Â

ð Ф ३ Ô

ð G Ô

‡ ⅄ ⅄ Э Â ⅄ Э
‡ ⅄ ⁸ ў ╟ Â

ð w R Ô

⅄ Э ‡ ὲ è ⅄

```
Ruijie(config)# interface virtual-ppp 1
Ruijie(config-if)# pseudowire 3 pw-class pw
Ruijie(config-if)#
```

hostname R

ip domain-lookup

ip name-server 192.168.5.119

ip name-server 61.154.22.41

interface Virtual-ppp 1

pseudowire hostname encapsulation l2tpv2

ip route 0.0.0.0 0.0.0.0 192.168.52.1

48.1.19 pseudowire-class

Ф ३ ̈ ˇ a ̈
˄ … Л ̈ й ̈ ˇ è **no**
̄ ̈ ˄ Â

pseudowire-class pseudowire-class-name

no pseudowire-class pseudowire-class-name

ð ˄ Ô

pseudowire-class-name ˈ ˄ ̈

ð Ô

α Ю ̆ Э ˙ ! ˄ Â

ð Ф ३ Ô

ώ

ð G ˙ Ô

˄ Л Л ˄ Э ˄ Â

ð w R Ô

… ̈ й ˄

```
Ruijie(config)# pseudowire-class pw
Ruijie(config-pw-class)#
```

48.1.20 receive-window

Ф ३ 8 ˄ ˄ ˇ è **no** Â

receive-window size

no receive-window

ð ˄ Ô

size ˈ 8 ˄ ˄

ð Ô

α Ю ̆ 8 ˄ ˄ й Â

ð Ф ३ Ô

⅄

ð G ˘ Ô

˙ ! 8 ∧ ⅄ ⅄ ˬ 8 ў ╟ Â

ð w R Ô

8 ∧ ⅄ й

```
Ruijie(config-l2tp-class)# receive-window 12
Ruijie(config-l2tp-class)#
```

48.1.21 retransmit

Ф ३ 8 · ⅄ ˘ ε **no** Â

retransmit initial retries initial-retries **timeout max min** initial-timeout **retries** retries **timeout max min** timeout

no retransmit initial retries max min retries timeout max min

ð ⅄ Ô

initial-retries ˙ ·

initial-timeout ˙ ·

retries ˙ ε ы 8 ·

timeout ˙ ε ы 8 ·

ð Ô

α Ю˘ · й ˘ ε ы 8 · й ˘ 8 · й ˘ 8 · й Â

ð Ф ३ Ô

⅄

ð G ˘ Ô

˙ ! 8 · ⅄ ˬ 8 ў ╟ Â

ð w R Ô

· й

```
Ruijie(config-l2tp-class)# retransmit initial retries 3
Ruijie(config-l2tp-class)#
```

48.1.22 timeout setup

Ф ३ ĭ 8 ˘ ὲ **no**
Â

timeout setup seconds

no timeout setup

ð ৺ Ô

seconds ‘ ĭ 8 ˘ ` Æ й

ð Ô

ąЮ˜ ĭ 8 ὶй Â

ð Ф ३ Ô

৺ 3

ð G ˘ Ô

‘ I ĭ 8 g ˘ ’H
8 ў ╟ Â

ð w R Ô

ĭ 8 ὶй

```
Ruijie(config-l2tp-class)# timeout setup 2
Ruijie(config-l2tp-class)#
```

49 IPSec

49.1

49.1.1 authentication (IKE policy)

˘ Ƒ ३ **authentication** Â Ƒ ३

no Â

authentication pre-share rsa-sig

no authentication

५		
५	**pre-share**	‘Ω ॠ
	rsa-sig	¨

Лъ ł ¨ Â ṃ ‘Ω ॠ

Ƒ ३ ╗ Â

G ṃ ˜ ऽ è ¨ ˘ б ˚ ˘
‘Ω ॠ ‡ ╗ У э ˆ ‘Ω ॠ ˜ Â

w R ˘

Ƒ ३		
‘Ω Ƒ ३	**crypto isakmp enable**	G Â
	encryption des 3des	╗
	hash sha md5	
	group 1 2	
	lifetime	ŏ Ƒ Ω Â

ʌ

Ƒ ३ ५ ʌ	ʌ	

-	

49.1.2 clear crypto isakmp

ƒ ŏ ˘ G Ƒ ३ **clear crypto isakmp** Â

clear crypto isakmp connection-id

৻	
connection-id	ŏ ৸ Â

G connection-id ৻ ˘ ‡ Ƒ ३ ƒ ŏ

Ƒ ३ Â

G У α Ю ৸ ৯ ε ε ŏ ˘ ৸ Л Ъ ˝I G **show crypto isakmp sa** Ƒ ३ ŏ ৸˘ ł Ą G **clear crypto isakmp** ৯ ε ε ŏ Â

w R Â

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49.1.3 clear crypto sa

ŏ ˘ ЛЪЮ Ƒ ३ **clear crypto sa** è У Â

clear crypto sa

clear crypto sa peer ip-address peer-name

clear crypto sa map map-name

clear crypto sa spi destination-address **ah esp** spi

৺	
ip-address	E ک ھ Â
Peer-name	E ŭ ¨
Map-name	╗ ¨
Destination-address	ک E ک ھ
Spi	У э ŏ ৺

a **peer** ằ **map** ằ **spi** э ŏ ‟ ˘ ‡ ŏ Â

Ƒ ३ Â

Э Ƒ ३ ¥ ŏ ˘ G **peer** ằ **map** ằ **spi** ˜Ω ˘ ‡ ŏ ˥ Â

ŏ ˘ ж ъ ˘ ৺ ˥

˘ ˜ ى ŏ Â ŏ ˘ ж ŏ

з ¨ Â

G ɢ ৺ ˘ ৸ ł ˜ ى ŏ ɔ ˘ a ط ŏ Â й ɢ ৺

ɔ ¥ ŏ ˘ ৸ Ƒ ३ ŏ ˘ ˜ ى Â

ŏ ˘ ą è ˘ й ɢ a G ε ы ą è ˘ G

peer ằ **map** ằ **spi** ŏ Â

˘ ৸ У э ŏ ˘ ε ы ŏ й ж ж ą˘ ৸ Лъ

ŏ ˜ ى Â

w R R 1 Ю R ŏ

```
Ruijie# clear crypto sa
```

Ƒ ३	
clear crypto isakmp	ŏ

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ƒ Ю ŏ ⅄ ḣ˘ ŏ Ƒ ३ **crypto ipsec df-bit clear set copy**

⅄	
clear	˘ ⅄ ˆ ╗ Э
set	˘ ⅄ ˘ ⅄ ˆ
copy	⅄ ḣ ɔ ѝ ḣ˘

Ƒ ३

Ƒ ३

ŏ Â

G

ƒ Ю **clear** ˘ æ ⅄ ḣ ˆ˘ æ a ˆ Â

э Ƒ ३ ḣ í ˘ **copy** ɔ ѝ ḣ Â

W R

R ˙ ЛЮ R ƒ ⅄

crypto ipsec df-bit clear

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seconds seconds	ŏ ˆ ˜ Â ḣ ỳ ˆ ˜ Â
kilobytes kilobytes	ŏ ą ˆ Лъ ’ ˜ Â ỳ

ˆ ˜ ṇ ˆ Лъ ą э ˜ Â

Ƀ ३ ŏ Â

ŏ ╗ ą ফ G ‘Ω м ﺟﺒ Э Âỳ ɑ ɑ̣ ŏ ŏ ফ
У ą ǯ ł ˘ ˜ ى˘ G ‘Ω м Â ফ ŏ
˜ ى ˘ G E ṇ ﻛ Ƀ Ω ḣ è ɔ ỳ ŏ
Ƀ Ω Â
Ω ч ‘ Ƀ Ω ȁ ą Ƀ Ω Â ч э Ƀ Ω è ৷ э ’I˺ ˘
ŏ Â ৷ ɑ ŏ Ƀ Ω ˘ ৷ ৷ ɔ ą ł ˜ ى ŏ ˘
a˚ ط ŏ Â ˘ ৷ Лъ G **clear crypto sa** Ƀ ३
˺ ŏ ŏ ą̇ Â
ŏ Ƀ Ω ˘ G Ƀ ३ **crypto ipsec security-associationlifetime**
seconds Â Ƀ Ω ɑ ŏ ফ ɑ У ł Â g ŏ
ą Ƀ Ω ˘ G Ƀ ३ **crypto ipsec security-association lifetime kilobytes** Â
ą Ƀ Ω ɑ ŏ G ŏ ╗ ą ˆ Лъ ˜ ˺ ɑ У
Лъ ł Â
Ω ḣ ˘ ‡ ╗˘ ژ ỳ ˺ ˘ У ╗
Â ⊓ ˘ Ƀ Ω ˘ ą ŏ Â ফ
ŏ Ƀ Ω Â
Ω ɔ ৭ ‘ ɑ У ˆ **seconds** ‘Ω ˜ ą ɑ У
ą ˆ **kilobytes** ‘Ω ˜ ˘ ч ˘ Y ৷ ˘ ’I ৷ ˘ ŏ ˆ Лъ
৷ ˜ Â ŏ ফ ৭ ŏ Ą˘ Ƀ Ω ḣ˺ Лъ ṃ
˜ ى˘ Лъ ɑ̣ ৭ ŏ Ą˘ У э ŏ ৷ Лъ G
ɑ Â ŏ ফ **seconds** Ƀ Ω ṃ ˘ ą
kilobytes Ƀ Ω ˜ ىˆ ৷ э ’I ৷ ˜ Â ফ У э ŏ
э Ƀ Ω è ą ˘ ж ŏ Ą a˚
ŏ ˜ ى Â ﻛ˘ ŏ ৷ ৷৷˺ ɑ̣ ˺
˜ ى Â

G 1˙ Ю G ŏ Ω ỳ ˘ ą Ƀ Ω ỳ
Лъ ą´ э ‘

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Ƒ ३	
show crypto ipsec transform-set	۱ ˎ

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Ƒ ३ ५ ۱	
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49.1.7 crypto dynamic-map

… ╟ ╗ ȯ ╗ ˘ G **crypto dynamic-map** ŏ Ƒ ३ Â Ƒ ३ **no** ī ╗ Â

crypto dynamic-map dynamic-map-name dynamic-seq-num

no crypto dynamic-map dynamic-map-name dynamic-seq-num

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dynamic-map-name	╗ ˝
dynamic-seq-num	╗ ۱

╟ ╗ ƒ Â

Ƒ ३ ŏ Â

╟ ╗ … ɑ У э ˘ E ˜ ى ŏ ˘ ˝ G æ a
p̲ E ۱ ˆ R E ھ ھ ˜ ˘ ۱ Лъ E ˜
ى Â` У э B̲ ╟ ۱ E ˘ ŭ ŭ ╗
Â a ŭ ˙ ı ╗ ˘ ˚ ˜ ى ╗ ˆ ŭ̈ ɑ У э ╟
╗ Â
╟ ╗ У э ˘ ۱ ƒ ╟ ╗ ˙ ۱ Â
۱ ˘ ŏ Ω ˘ ˚ ˚ ╗
G Â ˜ ى ʿI Â ƒ э Э G ï ╗ ę
╗ Â У ŏ Ω ˘ ï ╗ ī Â
╟ ╗ a ţ ۱ ŏ ˜ ى˘ ת ы ъ ţ ā ŭ ď
Â
╗ ˘ ╗ ˘ У э ˎ Â æ Ю ɑ У э ╗
ˎ ˆ ŭ ŭ У У э ˜ ˘ æ **crypto map** Ƒ ३ ╟ ╗ ↑
ľ Ł ╗ У э Â ľ Ł ╗ ţ У э ۱ Â
æ ╗ ↑ ╟ ╗ ɔ й æ. ʿI ˘ ˜ ى

Ő ˚ . ˝I G ╗ Â ʌ ╗ a ƺ ╠

╗ Â

ǐ ȣ G ╠ ╗ ↄ ǐ ╗ æ. ˝I ˘ ╠ ╗ ǐ

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49.1.9 crypto isakmp key

˜ ى G Ѿ м ˘ ŏ Ф ३ **crypto isakmp key** Â
Ф ३ **no** ĩ Ѿ м Â

crypto isakmp key 0|7 keystring **hostname** peer-hostname **address** peer-address mask

no crypto isakmp key 0|7 keystring **hostname** peer-hostname **address** peer-address mask

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0|7	й й
keystring	Ѿ м s˘ Л Ль G э Â
peer-hostname	е ў ˝
peer address	е ھ ھ
mask	ھ ھ й У э ھ ھ ھ ھ

˙ ı Ѿ м Â

Ф ३

ŏ Â

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У G Ѿ м˜ ى˘ G ╗ ŏ ˘ G Ф ३ ڤ
ч э е Э ˚ Ѿ м Â е й У э ˘
Â ţ й Ѿ м
Â

w R

R ˙ Ю R б е ˜ ى Ѿ м й ˙
Ruijie(config)# crypto isakmp key 0 mysecret address ▯
Ruijie(config)# crypto isakmp key 0 mysecret address ▯
▯

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Ф ३	
crypto isakmp enable	G Â
**encryption des	3des**	╗

	hash sha | md5	
	authentication pre-share | rsa-sig	
	group 1 | 2	
	lifetime	ŏ Ƒ Ω Â

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49.1.10 crypto isakmp keepalive

	crypto isakmp keepalive 60 5 on-demand

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49.1.11 crypto isakmp mode-detect

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49.1.12 crypto isakmp policy

Ю Э. ”I ˘ ŏ Ф ३ **crypto isakmp policy** ȯ Â Ф ३ **no** ˜ Э. ”I Â

crypto isakmp policy priority

no crypto isakmp policy priority

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priority	. ”I Â G ˆ ˘ . ”I æ. ”I Â

. ”I Â

Ф ३ ŏ Â

G Ф ३ ফ ˜ ى ŏ ৭ Â Ф ३ ȯ Â ফ è˘ ৷ Лъ ЛъЮ ৭ ‘ ‘ ḣ ‘ ḣ ‘ ḣ ‘ ḣ ‘ ḣ ˆ ˜ Э ৭ ḣ ˘ ‡ G ৭ ḣ Â ফ Э ৷ Лъ Э Â ফ ˜ ى ˘ يي ˆ ফ ч ‘Ω‘Ω ˘ ÿ E Э . ”I Â

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R ‘ Ю R У Э. ”I ѝ ‘

```
Ruijie(config)# crypto isakmp policy 0
Ruijie(config-isakmp)# authentication pre-share
Ruijie(config-isakmp)# encryption des
Ruijie(config-isakmp)# group 2
Ruijie(config-isakmp)# hash sha
Ruijie(config-isakmp)# ^Z
Ruijie# show crypto isakmp policy
Protection suite of priority 100
encryption algorithm:   DES - Data Encryptin Standard (56 bit keys).
hash algorithm:         Secure Hash Standard
authentication method:  Pre-Shared Key
Diffie-Hellman group:   #2 (1024 bit)
```

W R

```
lifetime:              3600 seconds
Default protection suite
encryption algorithm:   DES - Data Encryption Standard (56 bit keys).
hash algorithm:        Secure Hash Standard
authentication method:  Rsa-Sig
Diffie-Hellman group:   #1 (768 bit)
```

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crypto isakmp enable	G Â
encryption des 3des	╗
hash sha md5	
authentication pre-share rsa-sig	
group 1 2	
lifetime	ŏ Ƒ Ω Â

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49.1.13 crypto map (global IPSec)

… g У э ╗ ˘ ŏ Ƒ ३ **crypto map** Â Ƒ ३ **no** ʎ У э ╗ Â

crypto map map-name seq-num ipsec-manual

crypto map map-name seq-num ipsec-isakmp **dynamic**

dynamic-map-name

no crypto map map-name seq-num

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map-name	╗ ˛ ¨
seq-num	╗ ʎ ˝
ipsec-manual	¥ ŏ Â
ipsec-isakmp	¥ ˜ ɔ ŏ Â

	dynamic-map-name	ɔ ѝ ╟ ╗ ¨
	a ƶ ╗	
Ƌ ३	ŏ ˘ G Ƌ ३ ȯ ╗ Â	

```
Ruijie(config)# crypto map mymap 3 ipsec-manual
Ruijie(config-crypto-map)# set peer 2.2.2.2
Ruijie(config-crypto-map)# set session-key inbound esp 0 cipher
0
Ruijie(config-crypto-map)# set sesession-key
outbound esp 0 cipher 0
Ruijie(config-crypto-map)# set transform-set myset
Ruijie(config-crypto-map)# match address 0
˜ ऽ ŏ
Ruijie(config)# crypto map mymap 4 ipsec-isakmp
Ruijie(config-crypto-map)# set peer 2
Ruijie(config-crypto-map)# set transform-set myset
Ruijie(config-crypto-map)# match address 0
```

Ъ Ф ३

Ф ३	
crypto map(interface IPSec)	╗ Ї ⅄
match address	й ╗ " У э " Â
Set peer	E
Set transform-set	⅄ ˜
show crypto map	╗ ॠ

⅄

Ф ३ Ч ⅄

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49.1.14 crypto map (interface IPSec)

"I Ы ╗ ˜ ⅄ Э˜ ⅄ Лъ G **crypto map** ⅄ Ф ३ Â Ф ३ **no** ÿ У э ⅄ Э Ч ╗ ˜ Ъ Â

crypto map map-name

no crypto map map-name

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map-name	╗ ˝

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G G Ƀ ३ ╗ ˊ ¥ ⅄ Â ƒ ⅄ Э k ╗ ɖ ˘
У э ╗ ˊ ¥ ⅄ Â ¥ У э ⅄˘ ⅄ ˜Ω У э ╗ ˊ Â
э ╗ ɛ́ ˚ map-name ŋ a˚ seq-num ˘ ж ъ æ ¥˚ У
ˊ ˘ ¥˚ У ⅄ Э˘ ж Seq-num ╗ . ˝I ˘ з ˝I
˝ Â

w R R ˙ Ю R ¨ й ╗ ¥ ⅄ Э˙

```
Ruijie(config)# interface serial 0
Ruijie(config-if)# crypto map mymap
```

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crypto map(global IPSec)	Ҥ╗
show crypto map	╗ ҷ

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49.1.15 crypto map local-address

ƒ ⅄ ˘ ŏ Ƀ ३ **crypto map local-address** Â
Ƀ ३ **no** ⅄ ⅄ ⅄ Â

crypto map map-name **local-address** interface-type interface-number

no crypto map map-name **local-address**

⅄

⅄	
map-name	╗ ¨
interface-type interface-number	ɔ й ⅄ ⅄ ŋ ⅄

ÿ ı э ⅄ ⅄˘ Лъ ŋ ⅄ ⅄ й ⅄ ⅄ Â

Ƀ ३ ŏ Â

G У э ╗ ¥ э ⅄ з э Ƀ ३˘ ˚ е з ˚
ƒ э ⅄ … ⅃ ŏ ˘ ąЮ ╗ ⅄

ɔ ỳ ƙ ƙ ƙ Â G Ƒ ३ ƙ ƙ ƙ Ƨ ɨ˘ ˚ У ɜ ╗ ¥ ŭ ɜ ʎ˘ ʎ
… У ɜ ŏ ˘ У G У ɜ ŏ Â
У ʎ ɜ ʎ ĭ ǫ˘ ỳ ɢ ɨ ˘ ʎ Ƨ G Ƒ ३
ƙ ƙ ƙ˘ G ɣ ` У ƙ ƙ ƙ б ǫ Â
У ɑ Ю˘ ʊ G **loopback** ƙ ƙ ɔ ỳ ƙ ƙ ƙ Â

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R ˙ Ю R ƙ ƙ ɔ ỳ ƙ ƙ ƙ˙

```
interface serial0
crypto map mymap
interface serial1
crypto map mymap
crypto map mymap local˙ address loopback0
```

Ω Ƒ ३

Ƒ ३	
crypto isakmp enable	G Â
encryption	╗
hash sha md5	
authentication pre-share rsa-sig	
group 1 2	
lifetime	ŏ Ƒ Ω Â

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49.1.16 crypto software

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49.1.17 debug crypto engine

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debug crypto engine

no debug crypto engine

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connection-id	ŏ ʎ Â

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49.1.18 debug crypto ipsec

ˇΩ ¥ ˇΩ **debug** Â

debug crypto ipsec

no debug crypto ipsec

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49.1.19 debug crypto isakmp

ˇΩ ¥ Y˚ **debug** Â

debug crypto isakmp

no debug crypto isakmp

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49.1.20 encryption (IKE policy)

╗ ˘ Ф ३ **encryption** Â Ф ३
ḣ Â

encryption des 3des|aes-128|aes-192|aes-256

no encryption

Ч

Ч	
des	56 DES-CBC ɔ й ╗ Â
3des	168 3DES-CBC ɔ й ╗ Â
aes-128	й 128 AES ɔ й ╗ Â
aes-192	й 192 AES ɔ й ╗ Â
aes-256	й ɔ й ╗ Â

ˆ AES- Advanced Encryption Standard˜ Â

╗ Â

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	╗ Â
w R	R ‘ Ю R ╗ ѝ ‘ Ruijie(config)# crypto isakmp policy 0 Ruijie(config-isakmp)# encryption des

	Ƒ ३	
Ƣ Ƒ ३	**crypto isakmp enable**	G Â
	hash sha md5	
	authentication pre-share rsa-sig	
	group 1 2	
	lifetime	ŏ Ƒ Ƣ Â

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Ƒ ३ ʎ ʌ	-	

49.1.21 group (IKE policy)

è ˘ G Ƒ ३ **group** Â

Ƒ ३ **no** ѝ ḣ Â

group 1|2

no group

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```
Ruijie(config)# crypto isakmp policy 0
Ruijie(config-isakmp)# group 2
```

Ƒ ३	
crypto isakmp enable	G Â
encryption des | 3des	╗
hash sha | md5	
authentication pre-share | rsa-sig	
lifetime	ŏ Ƒ Ω Â

Ƒ ३ ५ ८

८	
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49.1.22 hash (IKE policy)

è ˘ G Ƒ ३ **hash** Â Ƒ ३ **no** ù ḣ Â

hash sha | md5

no hash

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sha	८ E Ɔ ù Â
Md5	८ E Ɔ ù Â

ù Â

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```
Ruijie(config)# crypto isakmp policy 0
Ruijie(config-isakmp)# hash md5
```

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Ω Ƀ ३	**crypto isakmp enable**	G Â
	encryption des | 3des	╗
	authentication pre-share | rsa-sig	
	group 1 | 2	
	lifetime	ŏ Ƀ Ω Â

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Ƀ ३ ϒ ʌ	-	

49.1.23 lifetime (IKE policy)

ŏ Ƀ Ω ˘ Ƀ ३ **lifetime** Â Ƀ ३ **no** Ƀ Ω й ḣ Â

Lifetime seconds

no lifetime

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ϒ	seconds	Ƀ Ω ḣˆ ˜ Â G ↑ ǯ Â

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G	G Ƀ ३ ŏ Ƀ Ω Â ˜ ى ˘ ṁ У˘ Y й ὲ ƒ ŏ ϒ Э У Â Ϟ У ϒ ƒ э E Э ŏ ˘ ƒ э E Э ɖ ↑ ŏ Ƀ Â ƒ ṃ ǯ ṃ˜ ى Â ¥ ŏ ˜ ى ƒ ŏ ﺟﻲ Э ˘ ش ˘ ˜ ى ŏ ˘ ŏ Ƀ Â ˘ ʌ p Ƀ Ω ˘ ˝ Ƀ Ω ˘ ʌ ˘ Ƀ Ω ˘ ʌ ˘ ش У э˝ Ƀ Ω ˆ ´ ˜ Â
W R	R ˑ Ю R ŏ Ƀ Ω й ˑ

w R

R ˙ Ю R ƒ̈ й ╗ Э ̃Ω “ ˙

```
Ruijie(config)# crypto map mymap 4 ipsec-isakmp
Ruijie(config-crypto-map)# match address 0
```

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crypto map(global IPSec)	Ж╗
show crypto map	╗ ३
crypto map(interface IPSec)	ƒ ∧ Э ̃Ω ╗

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∧	
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49.1.25 mode (IPSec)

∧ ╗ ∧ ˘ ˘ ╗ ∧ Ƒ ३ **mode** Â Ƒ ३ **no** Â

mode tunnel transport

no mode

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∨	
tunnel|transport	∧ ˙ ˙ .

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Ƒ ३	
crypto ipsec transform-set	Ƚ ╗ ৲ ˇ

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49.1.26 self-identity

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self-identity address fqdn fqdn **user-fqdn** user-fqdn

no self-identity

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address	ক ক ক
fqdn	ক ˝
user-fqdn	ক n ˝

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```
Ruijie(config)# self-identity fqdn
Ruijie(config)# self-identity user-fqdn
Ruijie(config)# self-identity address
```

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49.1.28 set peer (IPSec)

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49.1.31 set transform-set

й э ╗ G ı Ҏ ʌ ˅ ˘ G ╗ Ƒ ३ **set transform-set** Â Ƒ ३ **no** ī ╗ ŋ ʌ ˅ ˇΩ Â

Set transform-set transform-set-name1 transform-set-name2 transform-set-name3 transform-set-name4 transform-set-name5 transform-set-name6

no set transform-set

ϒ	
transfrom-set	ʌ ˅ ˅ ˘ ʌ ЛЪ й ╗ ˇΩ э ʌ ˅ Â

ˈ ı ʌ ˅ Â

Ƒ ३ ╗ Â

G ʌ ˅ ŏ ╗ ˅ Â ˈ ı ╗ G Ƒ ३ ʌ ˅ Â

R ˈ Ю R ╗ ʌ ˅ й ˈ

w R

```
Ruijie(config)# crypto ipsec transform-set
Ruijie(config)# crypto map mymap 5 ipsec-isakmp
Ruijie(config-crypto-map)# set transform-set
```

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49.2

49.2.1 show crypto dynamic-map (IPSec)

╟ ╗ ३ ˘ Ƒ ३ **show crypto dynamic-map** Â

show crypto dynamic-map map-name

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map-name	╗ ¨ Â

╗ ¨ ˘ ‡ Ɔ ╟ ╗ ३ Â

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```
R 1' Ruijie# show crypto dynamic-map
      Crypto Map Template "mydmap" 1
No matching address list set.
Security association lifetime: 4608000 kilobytes/3600
seconds(id=34)
PFS (Y/N): N
Transform sets = { }
```

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49.2.2 show crypto ipsec sa

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show crypto ipsec sa

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```
Ruijie# show crypto ipsec sa
Interface: Serial0
Crypto map tag:mymap, local addr  2.2.2.2
   ɱ ╗ ¨ ˘ G ⌂ ⌂ ⌂
media mtu 1500
local  ident (addr/mask/prot/port):
(192.168.202.0/0.0.0.255/0/0))
remote  ident (addr/mask/prot/port):
(192.168.12.0/0.0.0.255/0/0))
PERMIT
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```

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```
IV size: 8 bytes
   ą̈      ѝ
Replay detection support:Y

outbound esp sas:
     ˆ        ŏ   ˘ ˜   ѝ
spi:0x106A0DFA (275385850)
     ḣ ѝ
transform: esp-des esp-md5-hmac
 ৲    ˊ  ѝ
in use settings={Tunnel,}

sa timing: remaining key lifetime (k/sec): (4607999/3577)
    ŏ       Ƒ Ω  ˆ       ˋ          ˊ
IV size: 8 bytes
   ą̈      ѝ
Replay detection support:Y
```

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49.2.3 show crypto ipsec transform-set

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show crypto ipsec transform-set

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```
Ruijie# show crypto ipsec transform-set
transform set myset: { esp-sha-hmac,esp-des,}
will negotiate = {Tunnel,}
transform set myset1: { esp-des,}
will negotiate = {Tunnel,}
```

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49.2.4 show crypto isakmp policy

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show crypto isakmp policy

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```
Ruijie# show crypto isakmp p
Protection suite of priority 9
encryption algorithm:   3DES - Data Encryption Standard (56 bit
keys).
hash algorithm:        Message Digest 5
authentication method:  Pre-Shared Key
```

```
Diffie-Hellman group:   #2 (1024 bit)
lifetime:             1000 seconds
Protection suite of priority 10
encryption algorithm:   DES - Data Encryption Standard (56 bit keys).
hash algorithm:        Message Digest 5
authentication method:  Pre-Shared Key
Diffie-Hellman group:   #2 (1024 bit)
lifetime:             1000 seconds
Default protection suite
encryption algorithm:   DES - Data Encryption Standard (56 bit keys).
hash algorithm:        Secure Hash Standard
authentication method:  Rsa-Sig
Diffie-Hellman group:   #1 (768 bit)
lifetime:             86400seconds
```

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```
Ruijie# show crypto isakmp sa
destination   source state  conn-id lifetime(second)
2.2.2.1   2.2.2.2      QM_IDLE   36     5013
```

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49.2.6 show crypto map (IPSec)

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show crypto map map-name

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map-name	╗ ¨ Â

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```
Ruijie# show crypto map mymap
Crypto Map:"mymap" 1 ipsec-isakmp
Peer = 0.0.0.0
No matching address list set.
Security   association   lifetime:   2304000   kilobytes/2500
seconds(id=32)
PFS (Y/N): N
Transform sets = {  }
Crypto Map:"mymap" 4 ipsec-isakmp
Peer = 2.2.2.2
Extended IP access list 101
```

```
Security association lifetime: 2304000 kilobytes/2500
seconds(id=35)
PFS (Y/N): N
Transform sets = { myset, }
Crypto Map:"mymap" 5 ipsec-isakmp
Peer = 2.2.2.2
No matching address list set.
Security association lifetime: 2304000 kilobytes/2500
seconds(id=36)
PFS (Y/N): N
Transform sets = { myset, }
```

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50 Tunnel

50.1

50.1.1 tunnel checksum

ฟ ฬ ฬ G **tunnel checksum** ฮ ฯ ฎ ฬ
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tunnel checksum

no tunnel checksum

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ﻧﻔ ﻻ Ю G **tunnel destination** ﻷ ﻵ ﻻ ﻵ ﻷ G ﻷ ﻵ ﻻ ﻵ Â

tunnel destination ip-address

no tunnel destination

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```
Ruijie(config)# interface tunnel 0
Ruijie(config-if)# tunnel destination
```

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	show interface tunnel	ﻻ ﻷ ﻵ

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50.1.3 tunnel key

ﻧﻔ ﻻ ﻷ ﻵ **tunnel key** ﻷ ﻵ У э G ﻷ ﻵ Â

tunnel key value

no tunnel key

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	value	tunnel ﻻ ﻵ ﻻ ﻵ ﻧﻔ 0-4294967295 Â

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G	У ҿ ɖ ˘ ᆟ ᆟ ὠ φ Â \ ɖ Â **tunnel key** Ֆ ३ ᆟ ࢼ ᆟ Љ Â
w R	R ʿ ࢼ ᆟ è ʿ `Ruijie(config)#` interface tunnel 0 `Ruijie(config-if)#` tunnel key 4
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show interface tunnel	ᆟ Ω ə

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50.1.4 tunnel mode

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tunnel mode gre ip | ipip | ipv6ip

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gre ip	ᆟ Љ ࢼ

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50.1.6 tunnel source

ফ ৲ Ю G **tunnel source** ₯ ३ ৲ ھ ھ ˘
G ₯ ३ ˥ ৲ ھ ھ Â

tunnel source ip-address interface-type interface-number

no tunnel source

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ip-address	ھ ھ ھ ھ ˘ ফ ৲ ˜Ω Э ε ৲ ھ ھ Â
interface-type	৲ ˜ش R ‘ ৻ ৲ à Л ৲ à ’ ”I Л ৲ à ৲ à ৲ Â
nterface-number	৲ ৻

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no tunnel ttl

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hop-count	৲ ḣ Â

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51 Web

51.1

51.1.1 http redirect

ä̈ ص ھ ╖ ˘ ŏ Ƒ ३ **http redirect** Â
Ƒ ३ **no** ä̈ ص ھ Â

http redirect ip-address

no http redirect

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ip-address	ä̈ ص ھ Â

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Ruijie(config)# http redirect

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show http redirect	ä̈ Â
http redirect homepage	ў ص ھ Â

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51.1.2 http redirect direct-site

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http redirect direct-site ip-address ip-mask

no http redirect direct-site ip-address ip-mask

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ʎ	ip-address	ȯ ـكـ ـهـ Â
	ip-mask	ȯ ـكـ ـهـ Â

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

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show http redirect	ä̈ Â

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51.1.3 http redirect homepage

ä̈ ў ـكـ ـهـ Â ʌ Лъ Ƒ ३ **no** ʔ
ў ـكـ ـهـ Â

http redirect homepage url-string

no http redirect homepage

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url-string	ў ـكـ ـهـ˘ Лъ ˘ ŭ̈ ‡ a ˥˘ ȉ э Â

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

show http redirect	
http redirect	

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51.1.4 http redirect port

http redirect port **no**

http redirect port port-num

no http redirect port port-num

port-num	

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ώ ∧ ∧ ∧ ˘ G Ƒ ३ Â
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Ruijie(config)# http redirect port θ
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R ˙ a ∧ ∧ ∧ й ä̈ Â

```
Ruijie(config)# no http redirect port θ
```

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show http redirect	ä̈ Â

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Ruijie(config)# http redirect session-limit 4

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show http redirect	ą̈ Â

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51.1.6 http redirect timeout

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http redirect timeout seconds

no http redirect timeout

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seconds	ą̈ ’ seconds ˘ ৲ ḣ ŋ Â

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Ruijie(config)# http redirect timeout 4

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show http redirect	ą̈ Â

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51.1.7 web-auth direct-host

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web-auth direct-host ip-address p-mask

no web-auth direct-host ip-address

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	ip-address	ھ ھ ک Â
	ip-mask	ھ ھ ک Â

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51.1.9 web-auth offline-detect flow

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web-auth offline-detect flow

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web-auth port-control	ژف ۸ Ɜ í ╟ Â

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51.1.11 web-auth update-interval

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٤ й Â

web-auth update-interval seconds

no web-auth update-interval

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seconds	˘ ` Æ ˘ ۸ ḣ ننز Â

ژف ٤ й Â

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ژف ٤ ˘ G Ƒ ३ Â

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`Ruijie(config)#` web-auth update-interval θ

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51.1.12 web-auth user-mode

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Ruijie(config)# web-auth webauth-type external

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51.1.14 web-auth redirect url

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web-auth redirect url url-string

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url-string	ھ ھ ˘ Лъ ˘ ŭ ‡ а ˘ й э Â

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R ‘ ŭ ھ ھ й www.baidu.com/

Ruijie(config)#

web-auth redirect url http://

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web-auth direct-host ip-address p-mask	نز

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web-auth local-portal port port

no web-auth local-portal port

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R 1˙ IP й 192.168.1.10 ip ھ ک Ю :

```
Ruijie# clear web-auth user 192.168.1.10
```

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web-auth authentication	ϕ "
web-auth local-portal port	ϕ ئۇ ㄴ ㄱ

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51.3.3 debug web-auth

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debug web-auth

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```
Ruijie# debug web-auth
```

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web-auth	ॅΩФ ३

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51.3.4 show http redirect

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show http redirect

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Ruijie# show

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```
Ruijie# show  web-auth direct-host
Direct hosts:
  Address           Mask
  ---------------- ----------------
  192.168.0.1      255.255.255.255
  192.168.4.11     255.255.255.255
  192.168.5.0      255.255.255.0
```

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	Â هه که

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web-auth direct-host	Â نز

```
Public account : disable
```

Server-port	⊨ ⊿
AAA method-list	
Public account	ŭ ĭ ⊿ Ω м

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	10.3(4t76)	Ф ३

51.3.7 show web-auth user

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show web-auth user ip-address | **{online | all}** [pos count]

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	ip-address	ھ ک Â
	pos	ÿ ⊾ ɜ
	count	ɜ ə

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```
Ruijie# show web-auth user
 Current user num  :  4

User            Address        Online   Time Limit     Time Used        Status
--------------- -------------  -------  -------------  --------------   --------
```

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	10.3(4t76)	Ф ३

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52 VRRP

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52.1.1 vrrp authentication

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vrrp group authentication string

no vrrp group **authentication**

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group ˙ ⅄

string ˙ Ţ s a э ˘
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```
vrrp 1 authentication x30dn78k
```

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vrrp group ip paddress **secondary**	í ╗

52.1.2 vrrp delay

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vrrp delay **minimum** min-seconds **reload** reload-seconds

no vrrp delay

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min-seconds

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vrrp group **description** text

no vrrp group description

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group ˙ ৺

text ˙

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```
interface GigabitEthernet 0/0
ip address 10.0.1.1 255.255.255.0
vrrp 1 ip 10.0.1.20
vrrp 1 description “Building A - Marketing and Administration”
```

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Ф ३	
vrrp group ipaddress **secondary**	í ╗ ھ ک

52.1.4 vrrp ip

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vrrp group **ip** ipaddress **secondary**

no vrrp group **ip** ipaddress **secondary**

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group ˙ ৺

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ipaddress ˙ ھ ک

secondary ˙ ھ ک

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Ф ҳ ⅄ ھ ک ˘ ˚ й ⓖ ˘ ш й ƒ
ھ Э ƒ ч э ˘ ھ ک Â

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й ˘ ў ھ ک й ˘ ھ ک й Â

```
interface GigabitEthernet 0/0
no switchport
ip address 10.0.1.1 255.255.255.0
ip address 10.0.2.1 255.255.255.0 secondary
vrrp 1 ip 10.0.1.20
vrrp 1 ip 10.0.2.20 secondary
```

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Ф ҳ	
show vrrp brief | group	ṃ

52.1.5 vrrp preempt

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vrrp group **preempt delay** seconds

no vrrp group **preempt delay**

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group ˙ ⅄

delay seconds ˙ Λ ⅄ ˘ ⅄ Ҩ ⓖ ñ ˘
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```
vrrp 1 preempt delay 15
vrrp 1 priority 200
```

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vrrp group **ip** ipaddress **secondary**	í ╗ ھ ك
vrrp group **priority** level	. ˝I

52.1.6 vrrp priority

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vrrp group **priority** level

no vrrp group **priority**

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group ˚ Л

level ˚ . ˝I

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```
vrrp 1 priority 254
```

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vrrp group **ip** ipaddress **secondary**	í ╗ ক ষ
vrrp group **preempt delay** seconds	¥ .

52.1.7 vrrp timers advertise

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vrrp group **timers advertise** interval

no vrrp group **timers advertise**

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group ʿ ৷

interval ʿ ъ ৷ Лъ й ` Æ

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```
vrrp 1 timers advertise 4
```

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vrrp group **ip**
ipaddress **secondary**

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52.1.9 vrrp track

í ۸ G **vrrp** group **track** interface-type number Ф ҳ˘ í ھ ک ╗ ˘ G **vrrp** group **track** ip-address Ф ҳ˘ **vrrp** group **track bfd** ˘ ὲ **no** ˇΩ ╗ Â Ф ҳ Ю˙

vrrp group **track** [interface-type number **bfd** interface-type interface-number ipv4-addess priority

vrrp group **track** ip-address **interval** interval-value **timeout** timeout-value **retry** retry-value priority

vrrp group **track** [interface-type number **bfd** interface-type interface-number ipv4-addess ip-address

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group ˙ ۸

interface-type ˙ ۸ ش

number ˙ ۸ ۸

ipv4-addres ˙ ھ ک˘ ˚

interval-value ˙ ھ ک ŭ ۸ Â a ˘ ḣ ѝ

timeout-value ˙ ″ ȁ ھ ک a ۸ Â a ˘ ḣ ѝ

a ۸ ˘ ف retry-value ˚ ˘ ‡ ѝ a ۸ Â` Æ ѝ ˘ a ˘ ḣ ѝ Â

priority ˙ ۸ ھ ک ۸ ۸ ὲ ˙ ″I ۸ Â a ˘ ḣ ѝ

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```
Ruijie# debug vrrp
Ruijie#
VRRP: Grp 1 Advertisement priority 120, ipaddr
192.168.201.213
VRRP: Grp 1 Event - Advert higher or equal priority
%VRRP-6-STATECHANGE: GigabitEthernet 0/0 Grp 1 state
Master -> Backup
VRRP: Grp 1 Advertisement from 192.168.201.213 has
invalid virtual address 192.168.1.1
%VRRP-6-STATECHANGE: GigabitEthernet 0/0 Grp 1 state
Backup -> Master
Ruijie#
```

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```
Ruijie#
VRRP: Grp 1 Advertisement from 192.168.201.213 has
invalid virtual address 192.168.1.1
VRRP: Grp 1 Advertisement from 192.168.201.213 has
invalid virtual address 192.168.1.1
VRRP: Grp 1 Advertisement from 192.168.201.213 has
invalid virtual address 192.168.1.1
```

52.2.3 debug vrrp events

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debug vrrp events

no debug vrrp events

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```
Ruijie# debug vrrp events
Ruijie#
VRRP: Grp 1 Event - Advert higher or equal priority
VRRP: Grp 1 Event - Advert higher or equal priority
VRRP: Grp 1 Event - Advert higher or equal priority
```

52.2.4 debug vrrp packets

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debug vrrp packets

no debug vrrp packets

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```
Ruijie# debug vrrp packets
Ruijie#
VRRP: Grp 2 sending Advertisement checksum DD4D
VRRP: Grp 2 sending Advertisement checksum DD4D
VRRP: Grp 2 sending Advertisement checksum DD4D
```

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```
Ruijie# debug vrrp packets
Ruijie#
VRRP: Grp 1 Advertisement priority 120, ipaddr
192.168.201.213
VRRP: Grp 1 Advertisement priority 120, ipaddr
192.168.201.213
VRRP: Grp 1 Advertisement priority 120, ipaddr
192.168.201.213
```

52.2.5 debug vrrp state

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```
Ruijie(config)# interface GigabitEthernet 0/0
Ruijie(config-if)# no shutdown
Ruijie(config-if)# end
Ruijie#
%VRRP-6-STATECHANGE: GigabitEthernet 0/0 Grp 2 state
Master -> Init

Ruijie#
```

52.3

52.3.1 show vrrp

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show vrrp brief grou

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```
Ruijie# show vrrp
GigabitEthernet 0/0 - Group 1
State is Backup
Virtual IP address is 192.168.201.1 configured
Virtual MAC address is 0000.5e00.0101
Advertisement interval is 3 sec
Preemption is enabled
min delay is 0 sec
Priority is 100
Master Router is 192.168.201.213 , pritority is 120
Master Advertisement interval is 3 sec
Master Down interval is 9 sec
GigabitEthernet 0/0 - Group 2
State is Master
Virtual IP address is 192.168.201.2 configured
```

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```
Virtual MAC address is 0000.5e00.0102
Advertisement interval is 3 sec
Preemption is enabled
min delay is 0 sec
Priority is 120
Master Router is 192.168.201.217 (local), priority is
120
Master Advertisement interval is 3 sec
Master Down interval is 9 sec
Ruijie#
```

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```
Ruijie# show vrrp brief
Interface        Grp Pri Time  Own Pre State   Master
addr    Group addr
GigabitEthernet 0/0   1   100   -    -   P  Backup
192.168.201.213 192.168.201.1
GigabitEthernet 0/0   2   120   -    -   P  Master
192.168.201.217 192.168.201.2
Ruijie#
```

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vrrp group ip ipaddress **secondary**	í ╗ ھ ک

52.3.2 show vrrp interface

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show vrrp interface type number **brief**

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number ‘ ⅄ ⅄

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```
Ruijie# show vrrp interface GigabitEthernet 0
GigabitEthernet 0/0 - Group 1
State is Backup
Virtual IP address is 192.168.201.1 configured
Virtual MAC address is 0000.5e00.0101
Advertisement interval is 3 sec
Preemption is enabled
min delay is 0 sec
Priority is 100
Master Router is 192.168.201.213 , pritority is 120
Master Advertisement interval is 3 sec
Master Down interval is 9 sec
GigabitEthernet 0/0 - Group 2
State is Master
Virtual IP address is 192.168.201.2 configured
Virtual MAC address is 0000.5e00.0102
Advertisement interval is 3 sec
Preemption is enabled
min delay is 0 sec
Priority is 120
Master Router is 192.168.201.217 (local), priority is
120
Master Advertisement interval is 3 sec
Master Down interval is 9 sec
```

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vrrp group **ip** ip address **secondary**	í ╗ ھ ک

53 MULTI-LDP

53.1

53.1.1 clear multi-ldp

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clear multi-ldp

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```
Ruijie#config
Ruijie(config)#interface gigabitEthernet 0/1
Ruijie(config-if-GigabitEthernet 0/1)#clear multi-ldp
```

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53.1.2 multi-ldp

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multi-ldp **icmp** dest-ip1 next-hop **dns** dest-ip2 **tcp** dest-ip3

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```
192.168.78.1
2010-12-23 09:31:03   50      1       0       8.8.8.8
220.181.112.76:80
```

R ‘ **show multi-ldp interface** gigabitEthernet 0/3

```
Interface            State    Retry    UpCnt    ICMP
Next-hop
StartTime            Interval Resume   DownCnt  DNS           TCP
================================================================
===============
GigabitEthernet 0/3   UP      5       1       192.168.198.1
192.168.78.1
2010-12-23 09:31:03   50      1       0       8.8.8.8
220.181.112.76:80
```

Interface	⅄

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```
2009-12-18 04:37:10    61%
2009-12-18 04:42:10    61%
2009-12-18 04:47:10    61%
2009-12-18 04:52:10    61%
2009-12-18 04:57:10    61%
2009-12-18 05:02:10    61%
2009-12-18 05:07:10    61%
2009-12-18 05:12:10    61%
2009-12-18 05:17:10    61%
2009-12-18 05:22:10    61%
2009-12-18 05:27:10    61%
2009-12-18 13:32:10    61%
2009-12-18 13:37:10    61%
2009-12-18 13:42:10    64%
2009-12-18 13:47:10    64%
2009-12-18 14:02:29    61%
2009-12-18 14:07:29    61%
2009-12-18 14:18:45    61%
2009-12-18 14:23:45    61%
2009-12-18 14:28:45    61%
2009-12-18 14:33:45    61%
2009-12-18 14:38:45    61%
2009-12-18 14:43:45    61%
2009-12-18 14:48:45    61%
2009-12-18 14:53:45    61%
2009-12-18 14:58:45    61%
```

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```
Ruijie#show dev-audit cpu from        0140
Date & Time            CPU
2010-01-14 12:03:16    0%
2010-01-14 12:08:16    0%
2010-01-14 12:13:16    0%
2010-01-14 12:18:16    0%
2010-01-14 12:23:16    0%
2010-01-14 12:28:16    0%
2010-01-14 12:33:16    0%
2010-01-14 12:38:16    0%
2010-01-14 12:43:16    0%
```

```
2010-01-14 12:48:16    0%
2010-01-14 12:53:16    0%
2010-01-14 12:58:16    0%
2010-01-14 13:03:16    0%
2010-01-14 13:08:16    0%
2010-01-14 13:13:16    0%
2010-01-14 13:18:16    0%
2010-01-14 13:23:16    0%
2010-01-14 13:28:16    0%
2010-01-14 13:33:16    0%
2010-01-14 13:38:16    0%
2010-01-14 13:43:16    0%
2010-01-14 13:48:16    0%
2010-01-14 13:53:16    0%
2010-01-14 13:58:16    0%
2010-01-14 14:03:16    0%
2010-01-14 14:08:16    0%
2010-01-14 14:13:16    8%
```

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Ruijie#show dev-audit flash from 2014

Date & Time	FLASH(KB)		SATA(MB)	
	Total	Available	Total	Available
2010-01-14 01:13:16	523776	470152	163746	163451
2010-01-14 02:13:16	523776	470152	163746	163449
2010-01-14 03:13:16	523776	470152	163746	163448
2010-01-14 04:13:16	523776	470152	163746	163447
2010-01-14 05:13:16	523776	470152	163746	163445
2010-01-14 06:13:16	523776	470152	163746	163444
2010-01-14 07:13:16	523776	470152	163746	163442
2010-01-14 08:13:16	523776	470152	163746	163441
2010-01-14 09:13:16	523776	470152	163746	163439
2010-01-14 10:13:16	523776	470152	163746	163436
2010-01-14 11:13:16	523776	470152	163746	163430
2010-01-14 12:13:16	523776	470152	163746	163421
2010-01-14 13:13:16	523776	470152	163746	163416
2010-01-14 14:13:16	523776	470112	163746	163409

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55 CPU-LOG

55.1

55.1.1 show cpu

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show cpu

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```
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
  5     0%     0%     0%    waitqueue_process
  6     0%     0%     0%    tasklet_task
```

```
  7     0%     0%     0%    kevents
  8     0%     0%     0%    snmpd
  9     0%     0%     0%    snmp_trapd
 10     0%     0%     0%    mtdblock
 11     0%     0%     0%    gc_task
 12     0%     0%     0%    Context
 13     0%     0%     0%    kswapd
 14     0%     0%     0%    bdflush
 15     0%     0%     0%    kupdate
 16     0%     3%     1%    ll_mt
 17     0%     0%     0%    ll main process
 18     0%     0%     0%    bridge_relay
 19     0%     0%     0%    d1x_task
 20     0%     0%     0%    secu_policy_task
 21     0%     0%     0%    dhcpa_task
 22     0%     0%     0%    dhcpsnp_task
 23     0%     0%     0%    igmp_snp
 24     0%     0%     0%    mstp_event
 25     0%     0%     0%    GVRP_EVENT
 26     0%     0%     0%    rldp_task
 27     0%     2%     1%    rerp_task
 28     0%     0%     0%    reup_event_handler
 29     0%     0%     0%    tpp_task
 30     0%     0%     0%    ip6timer
 31     0%     0%     0%    rtadvd
 32     0%     0%     0%    tnet6
 33     2%     0%     0%    tnet
 34     0%     0%     0%    Tarptime
 35     0%     0%     0%    gra_arp
 36     0%     0%     0%    Ttcptimer
 37     8%     1%     0%    ef_res
 38     0%     0%     0%    ef_rcv_msg
 39     0%     0%     0%    ef_inconsistent_daemon
 40     0%     0%     0%    ip6_tunnel_rcv_pkt
 41     0%     0%     0%    res6t
 42     0%     0%     0%    tunrt6
 43     0%     0%     0%    ef6_rcv_msg
 44     0%     0%     0%    ef6_inconsistent_daemon
 45     0%     0%     0%    imid
 46     0%     0%     0%    nsmd
 47     0%     0%     0%    ripd
 48     0%     0%     0%    ripngd
 49     0%     0%     0%    ospfd
 50     0%     0%     0%    ospf6d
```

```
51     0%     0%     0%    bgpd
52     0%     0%     0%    pimd
53     0%     0%     0%    pim6d
54     0%     0%     0%    pdmd
55     0%     0%     0%    dvmrpd
56     0%     0%     0%    vty_connect
57     0%     0%     0%    aaa_task
58     0%     0%     0%    Tlogtrap
59     0%     0%     0%    dhcp6c
60     0%     0%     0%    sntp_recv_task
61     0%     0%     0%    ntp_task
62     0%     0%     0%    sla_deamon
63     0%     3%     1%    track_daemon
64     0%     0%     0%    pbr_guard
65     0%     0%     0%    vrrpd
66     0%     0%     0%    psnpd
67     0%     0%     0%    igsnpd
68     0%     0%     0%    coa_recv
69     0%     0%     0%    co_oper
70     0%     0%     0%    co_mac
71     0%     0%     0%    radius_task
72     0%     0%     0%    tac+_acct_task
73     0%     0%     0%    tac+_task
74     0%     0%     0%    dhcpd_task
75     0%     0%     0%    dhcps_task
76     0%     0%     0%    dhcpping_task
77     0%     0%     0%    dhcpc_task
78     0%     0%     0%    uart_debug_file_task
79     0%     0%     0%    ssp_init_task
80     0%     0%     0%    rl_listen
81     0%     0%     0%    ikl_msg_operate_thread
82     0%     0%     0%    bcmDPC
83     0%     0%     0%    bcmL2X.0
84     3%     3%     3%    bcmL2X.0
85     0%     0%     0%    bcmCNTR.0
86     0%     0%     0%    bcmTX
87     0%     0%     0%    bcmXGS3AsyncTX
88     0%     2%     1%    bcmLINK.0
89     0%     0%     0%    bcmRX
90     0%     0%     0%    mngpkt_rcv_thread
91     0%     0%     0%    mngpkt_recycle_thread
92     0%     0%     0%    stack_task
93     0%     0%     0%    stack_disc_task
94     0%     0%     0%    redun_sync_task
```

95	0%	0%	0%	conf_dispatch_task
96	0%	0%	0%	devprob_task
97	0%	0%	0%	rdp_snd_thread
98	0%	0%	0%	rdp_rcv_thread
99	0%	0%	0%	rdp_slot_change_thread
100	4%	2%	1%	datapkt_rcv_thread
101	0%	0%	0%	keepalive_link_notify
102	0%	0%	0%	rerp_msg_recv_thread
103	0%	0%	0%	ip_scan_guard_task
104	0%	0%	0%	ssp_ipmc_hit_task
105	0%	0%	0%	ssp_ipmc_trap_task
106	0%	0%	0%	hw_err_snd_task
107	0%	0%	0%	rerp_packet_send_task
108	0%	0%	0%	idle_vlan_proc_thread
109	0%	0%	0%	cmic_pause_detect
110	1%	1%	1%	stat_get_and_send
111	0%	1%	0%	rl_con
112	75%	80%	90%	idle

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```
ruijie(config)# cpu-log log-limit 70
```

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```
Oct 20 15:47:01 %SYSCHECK-5-CPU_USING_RATE: CPU utilization in
one minute : 95%˘ Using most cpu's task is ktimer : 94%
```

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```
Oct 20 15:47:01 %SYSCHECK-5-CPU_USING_RATE: CPU
utilization in one minute :68%˘ Using most cpu's task
is ktimer : 60%
Oct 20 15:47:01 %SYSCHECK-5-CPU_USING_RATE: The CPU
using rate has down!
```

55.1.3 show environment

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Ю R **show environment** У э Â

```
Ruijie# show environment
---environment information---
CPU Temperature is 30
fan works in high speed mode.

FAN 1 is OK!
FAN 2 is OK!
FAN 3 is OK!
FAN 4 is OK!

POWER 1 is present!
POWER 1 power on successfully!
POWER 2 is not present!
```

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```
Ruijie# show threshold cpu M1
```

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```
Ruijie# show threshold memory
```

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57

57.1

57.1.1 show memory

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show memory

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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%
```

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57.1.2 memory-lack exit-policy

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memory-lack exit-policy bgp ospf pim-sm rip

no memory-lack exit-policy

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a ˜ ˘ Лъ ꞁ ѓ ą Ю ɖ ў н ⊾ Â
è ˘ б н ⊾ ˜Ω̆ ‡ ⅄ Лъ ą̈ a
ѝ Â
Ҥ í ˜ ˘ ѝ. ˝Ꞓ ˜ ˘ a ╟
ą̈ Â

ⓒ Ѳ Ѳ У Э ɖ ą̈ a н ⊾˘ ą̈ У ˘ ˜ ṃ Â ˜ ꞇ. ѓ ч˺ ǯ ꞇ í ╟ Â	

LDP	20000000
Total	206000000

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58 SATA

58.1

58.1.1 show sata

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show sata

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```
Ruijie#show sata
Vendor: ST9250315AS
    Disk Partitions:
    c: /dev/sata/disc0/part5 --> /mnt/sata/c
    size : 34356962304B(31G)
    d: /dev/sata/disc0/part6 --> /mnt/sata/d
    size : 34356962304B(31G)
    e: /dev/sata/disc0/part7 --> /mnt/sata/e
    size : 34356962304B(31G)
    f: /dev/sata/disc0/part8 --> /mnt/sata/f
    size : 34356962304B(31G)
    g: /dev/sata/disc0/part9 --> /mnt/sata/g
    size : 34356962304B(31G)
    h: /dev/sata/disc0/part10 --> /mnt/sata/h
    size : 34356962304B(31G)
    i: /dev/sata/disc0/part11 --> /mnt/sata/i
    size : 34356962304B(31G)
    j: /dev/sata/disc0/part12 --> /mnt/sata/j
    size : 9549517824B(8G)
```

Total 274721406976 bytes (261994MB) in this device, 265138470912 bytes (252855MB) available.

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59

59.1

59.1.1 logging on

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logging on

no logging on

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ƶ a ˇ Э˙ ą̈ ą̆ ৲ ą̀ ą̀ Â Ƒ ३ ą̀
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Ruijie(config)# no logging on

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logging buffered	ą ˺ ą̈ ą̆ ৲
logging	ą ৲
logging file flash:	ą ƶ Э

logging console	ĭ ɔɟɑ 8 ʎ Э ə ⁝
logging monitor	ĭ ɔɟɑ ʎ ʎ Э ə ⁝
logging trap	ĭ ʌ ə ⁝

59.1.2 terminal monitor

Ф ३ ĭ ɔɟɑ ɱ ʎ Э ə Â ˜Ω ɔɟɑ ɱ ʎ Э
ə ˘ G Ф ३ Â

terminal monitor

terminal no monitor

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ɑ Ю˘ ɔɟɑ ʎ Э a ĭ ɔɟɑ ʎ Э ə Â

ð Ф ३ Ô

ð G ˘ Ô

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ˬ ɨ˘ ï Â

й ɑ ɨ ˘ ĭ ɔɟɑ 8 ʎ Э G Ф ३ Â ɔɟɑ 8 ʎ Э Ф ३
ʎ ĭ ш ⁝ й ˘ Â

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Ю R˘ ɱ ʎ ĭ ˜ ə Â

```
Ruijie# terminal monitor
Ruijie#
```

59.1.3 logging buffered

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Ф ३ Â Ф ३ ɔɟɑ ɑ̈ ă ⅄ è ə Â

logging buffered buffer-size level

no logging buffered

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buffer-size ʿ ă ৲ ˘ ৺ ḣ ز ÿ ˀ Â

levelI ʿ ą ш ˘ ÿ ˀ Â ∧ Лъ G ⁞ ˘ ≠ ∧ Лъ G Â

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ą̈ ă ৲ G ˘ ą̈ ৲ ţ̃ ˘ ‡ ą
Â ą̈ ă ৲ ą ˘ G Ф ३ **show logging Â**

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˘ ă ৲ è ą Â ˘ ţ̃ˀ
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Ruijie(config)# logging buffered 06

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Ф ३	
logging on	ˇΩ
show logging	ă ↖ è
clear logging	ă ↖ è

59.1.4 logging server

↑ **Syslog Sever** ƒ ő Ю G Ф ३ Â ↑ **Syslog server** " è ↔ **Syslog Sever** G Ф ३ Â

logging server ip-address **vrf** vrf-name **ipv6** ipv6-address

no logging server ip-address **vrf** vrf-name **ipv6** ipv6-address

ð ↓ Ô

ip-address ą ŭ ↔ ’

vrf vrf-name ↑ ŭ ^ ↓ ~ R ’

ipv6 ipv6-address ą ŭ ↔ ’

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Ю R У ɔ ↔ й ˙

Ruijie(config)# logging server 0

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```
Ruijie(config)#
```

э ˅ 8˘ ą ƒ ĩ ώ У э ˅ ǯ ɱ˘ " è
˅ ˅ ˘ ‡ ˙
˅ ˘ ‡ … У э ˅
˅ ˅ ˅ ƒ ч ˅ ˅ è ώ ʌ˘ й ˙ ˅ ˅ ʌ˘ ł Ÿ ,
ʌ й ˘ ĵ ˘ ‡ У э ˅ Â ƫ ˘ У
ą ĵ Ф ३˘ ˅ ƒ è э ˅ ,

ð w R Ô

Ю R ą ƒ è˘ ˅ ˅ й ˘ ˅ й
ą ⁞ й Â

`Ruijie(config)#` logging file flash:trace

ð Ω Ф ३ Ô

Ф ३	
logging on	Ω
show logging	ă ˂ è ˘ Лъ ˅ Ω ч
more flash	è ą

59.1.6 logging console

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Ф ३ ƒ 8 ʌ Э ˜ Â

logging console level

no logging console

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level ˙ ш ˘ ƫ ÿ ĵ Â ʌ Лъ G ⁞˅ ˘ ≠ ʌ Лъ G
Â Ω ţ ą ш ˘ ч Â

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У э ш Лъ ѣ˘ ѫ ḣ Э ҷ æ ҷ ш ⁝
ѫ ⁸ ⅄ Э Â

show logging Ф ३ ⅄ Лъ ˜Ω ⅄ ṇ Â

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Ю ᴿ ĭ ѫ ⁸ ⅄ ҕ ⁝ ѝ ˈ

`Ruijie(config)#` logging console informational

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logging on	˜Ω
show logging	ă ˊ˂ è ˘ Лъ ⅄ ˜Ω ⅄

59.1.7 logging monitor

ĭ ѫ ⅄^ ⅄ ȁ ⅄ ˜ Э ҕ ⁝˘
ѫ ŏ Ю Ф ३ Â Ф ३ ѫ ⅄ Э ˜ Â

logging monitor level

no logging monitor

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level ˈ ш Â ⅄ Лъ ᴳ ⁝ ˘ ≠ ⅄ Лъ ᴳ Â ˜Ω ҷ
ҕ ш ˘ ⅄ Â

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ѫ ⅄ Э ˜ ҕ ˘ ˝I Ф ३ **terminal monitor** ĭ ѫ
ṃ ⅄ ˜ ҕ Â ĭ ҕ ⁝ ‡ **logging monitor**
Ҥ Â

Logging monitor Ҥ ҕ ⁝ ⅄ Â

ð w ᴿ Ô

Ю ᴿ ĭ ѫ ⅄ Э ˜ ҕ ⁝ ѝ ˈ

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

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logging on	ॐ
logging	ৠ ৸
show logging	ă ৲ è ˘ Ɱ ৶ ॐ ৶

59.1.9 logging source interface

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logging source interface interface-type interface-number

no logging source interface

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interface-type ˋ ৶ ش

interface-number ˋ ৶ ৸

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`Ruijie(config)#` logging source interface loopback 0

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logging	ৠ ৸

59.1.10 logging source ip| ipv6

[illegible] Ю Ф ३ Â Ф ३ [illegible]
[illegible] Â

logging source ip ip-address **ipv6** ipv6-address

no logging source ip ipv6

ð [illegible] Ô

ip-address [illegible] ў [illegible]

ipv6-address [illegible] ў [illegible]

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[illegible] Ю [illegible] [illegible] Â й
[illegible] ˘ [illegible] G Ф ३ [illegible] й [illegible]
[illegible] [illegible] [illegible] ÿ [illegible] [illegible] Â

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Ю R [illegible] й [illegible]

`Ruijie(config)#` logging source ip [illegible]

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logging	[illegible]

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Numerical Code	Facility

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`Ruijie(config)#` logging facility kern

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logging console	ĭ ƻ 8 ⁄ Э ҷ ⁞

59.1.12 logging count

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logging count

no logging count

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Ф ३ ˘ Â ÿ Ф ३ Â **no logging count** Ф ३ ˘ Ѿ ˘ 3 Â

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`Ruijie(config)#` logging count

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logging rate-limit number all number console number all number

show running-config	ą

59.1.15 service sequence-numbers

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ż ą è ˊ Â

service sequence-numbers

no service sequence-numbers

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`Ruijie(config)#` service sequence-numbers

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logging on	ˇΩ
service timestamps	ˊ ą è

59.1.16 service timestamps

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service timestamps message-type uptime datetime msec year

no service timestamps message-type

default service timestamps message-type

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message-type ʿ ʖʃʘ ч ɲ Â ə ʤ ш ⁝ ʤ ˙ ǯ ə ˘ ə ш ⁝ ѝ ə Â

uptime ʿ í ╟ ˘ ʿ ↑ ˘ R ʿ

datetime ʿ ɱ ˘ ʿ ʿ ↑ ʿ ˘ R ʿ

msec ɱ ˘ ʿ ↑ R ʿ

year ɱ ˋ ˘ ʿ ↑ R ʿ

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ə è ˘ ѝ ɱ Â ˘ ‡ ╟ ѝ í ╟ Â

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logging on	Ω
show logging	ă È è
logging buffered	ą ˆ ą̈ ă È

59.2

59.2.1 show logging

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show logging

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```
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
GigabitEthernet 0/0, changed state to up
00002 2004-11-17 10:20:59 Ruijie: %7:%LINE PROTOCOL CHANGE:
Interface GigabitEthernet 0/0, changed state to UP
```

```
00003 2004-11-17 10:57:18  Ruijie: %7:%LINK CHANGED: Interface
GigabitEthernet 0/1, changed state to administratively down
00004 2004-11-17 10:57:21  Ruijie: %7:%LINK CHANGED: Interface
GigabitEthernet 0/1, changed state to down
00005 2004-11-17 10:57:41  Ruijie: %7:%LINK CHANGED: Interface
GigabitEthernet 0/1, changed state to administratively down
00006 2004-11-17 10:57:43  Ruijie: %7:%LINK CHANGED: Interface
GigabitEthernet 0/1, changed state to down
```

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60 RLOG

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60.1.1 rlog export-rate

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rlog export-rate number

no rlog export-rate

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Ruijie(config)# rlog export-rate 0

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60.1.2 rlog filter

[illegible]

rlog filter number

no rlog filter

[illegible]

[illegible]	
	[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Ruijie(config)# rlog filter [illegible] 0

[illegible]	

[illegible]

[illegible]

[illegible]	
	[illegible]

60.1.3 rlog server

[illegible]

rlog server server-ip **vrf** vrf-name | **oob** **port** port-num

no rlog server server-ip

[illegible]

[illegible]	
server-ip	[illegible]
vrf-name	[illegible]

port-num	[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Ruijie(config)# rlog server [illegible] port [illegible]

[illegible]	
	-

[illegible]

[illegible]

[illegible]	
	[illegible]
	[illegible]

60.1.4 rlog type

[illegible]

rlog type n **server** server-ip **priority** prio

no rlog type n **server** server-ip

[illegible]	
	[illegible]
server-ip	[illegible]
	[illegible]

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```
Ruijie(config)# rlog type 2 server 9 priority 5
```

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[illegible]

```
Ruijie(config)# nat-log enable
```

[illegible]

[illegible]	[illegible]

[illegible]

[illegible]

[illegible]

[illegible]	[illegible]
	[illegible]

60.1.6 ip nat-log on

[illegible]

ip nat-log on

no ip nat-log on

[illegible]	[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

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show rlog-type

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Show rlog-type

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```
Ruijie#show rlog-type
XLOG_TYPE_FLOW              16
XLOG_TYPE_CPU_MEM           17
XLOG_TYPE_DISC              18
XLOG_TYPE_DEV_LOG           19
XLOG_TYPE_URL_AUDIT         20
XLOG_TYPE_SESSION           21
XLOG_TYPE_IP_APP            22
XLOG_TYPE_IP                23
XLOG_TYPE_CHANNEL           24
XLOG_TYPE_INTERFACE         25
XLOG_TYPE_IP_OFFLINE        26
```

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```
XLOG_TYPE_MAIL_AUDIT        27
XLOG_TYPE_TELNET_AUDIT      28
XLOG_TYPE_WEB_SEARCH_AUDIT   29
XLOG_TYPE_WEB_BBS_AUDIT     30
XLOG_TYPE_IM_AUDIT          31
XLOG_TYPE_FTP_AUDIT         32
XLOG_TYPE_WEB_AUDIT         33
```

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show rlog-status

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Show rlog-status server server-ip

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Server-ip	ھ کہ ئۇ ۷

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```
Ruijie(config)#show rlog-s server 192.168.195.52
server:192.168.195.52
type                        status    prio
XLOG_TYPE_FLOW               off
```

W R

```
XLOG_TYPE_CPU_MEM           off
XLOG_TYPE_DISC              off
XLOG_TYPE_DEV_LOG           off
XLOG_TYPE_URL_AUDIT         off
XLOG_TYPE_SESSION           off
XLOG_TYPE_IP_APP            off
XLOG_TYPE_IP                off
XLOG_TYPE_CHANNEL           off
XLOG_TYPE_INTERFACE         off
XLOG_TYPE_IP_OFFLINE        off
XLOG_TYPE_MAIL_AUDIT        off
XLOG_TYPE_TELNET_AUDIT      on      1
XLOG_TYPE_WEB_SEARCH_AUDIT  off
XLOG_TYPE_WEB_BBS_AUDIT     off
XLOG_TYPE_IM_AUDIT          off
XLOG_TYPE_FTP_AUDIT         off
XLOG_TYPE_WEB_AUDIT         off
```

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show nat-log

Show nat-log [username user_name **] [ip-protocol** p-protocol **] [source-ip** source-ip **] [dst-ip** dst-ip **] [src-port** src-port **] [dst-port** dst-port **] time-interval** begin-year begin-mon begin-day begin-hour **to** end-year end-mon end-day end-hour

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user_name	¨
ip-protocol	˜ ⅄
source-ip	
dst-ip	
src-port	⅄
dst-port	⅄
begin-year	
begin-mon	
begin-day	
begin-hour	
end-year	
end-mon	
end-day	
end-hour	

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```
Ruijie#show nat-log time-interval 2010 10 6 3 t 2010 10 6 5
count:427
Pr    SrcAddr                                          DstAddr
UserName
SrcPort     DstPort     Vrf       SendBytes  RecvBytes  time
17   192.168.122.62  (0.0.0.0)           192.168.122.255(0.0.0.0)
192.168.122.62
138  (0)     138  (0)     0         2028       0         2010-10-6
3:1
17   192.168.100.55  (0.0.0.0)           192.168.100.255(0.0.0.0)
192.168.100.55
138  (0)     138  (0)     0         732        0         2010-10-6
3:1
17   192.168.122.54  (0.0.0.0)           192.168.122.255(0.0.0.0)
```

192.168.122.54
137 (0) 137 (0) 0 864 0 2010-10-6 3:1
17 192.168.195.55 192.168.195.255 192.168.195.55
138 138 0 705 0 2010-10-6 3:1
6 192.168.7.92 (0.0.0.0) 113.105.146.82 (0.0.0.0) 192.168.7.92
35942(0) 80 (0) 0 192 0 2010-10-6 3:2
17 192.168.122.54 (0.0.0.0) 192.168.122.255(0.0.0.0) 192.168.122.54
137 (0) 137 (0) 0 1386 0 2010-10-6 3:2
17 192.168.7.92 (0.0.0.0) 202.104.241.3 (0.0.0.0) 192.168.7.92
13528(0) 8000 (0) 0 97 0 2010-10-6 3:2
17 192.168.195.202 192.168.195.255 192.168.195.202
138 138 0 774 0 2010-10-6 3:3
17 192.168.7.97 (0.0.0.0) 192.168.7.255 (0.0.0.0) 192.168.7.97
138 (0) 138 (0) 0 732 0 2010-10-6 3:3
17 192.168.2.164 (0.0.0.0) 192.168.2.255 (0.0.0.0) 192.168.2.164
138 (0) 138 (0) 0 714 0 2010-10-6 3:3

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61 SNMP

61.1

61.1.1 no snmp-server

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no snmp-server

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`Ruijie(config)#` no snmp-server

61.1.2 snmp-server chassis-id

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snmp-server chassis-id text

no snmp-server chassis-id

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text ' " ⅄ ˘ ⅄ Л G Â

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```
Ruijie(config)# access-list 2 permit 0
Ruijie(config)# access-list 2 deny any
Ruijie(config)# snmp-server community public rost
```

61.1.5 snmp-server enable traps

í ў ╟ ∧ ˘ ¥ ъ у ęY˘ ∧ ˘ ŏ Ƃ ३ **snmp-server enable trap** Â Ƃ ३ ą̈ ў ╟ ∧ Â

snmp-server enable traps snmp

no snmp-server enable traps

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```
Ruijie(config)# snmp-server enable traps snmp
Ruijie(config)# snmp-server host [illegible] public snmp
```

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snmp-server host	ў

61.1.6 snmp-server host

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host-addr ˈ ў ھ ک

ipv6-addr ˈ ў ھ ک ˆ ˜

vrfname ˈ ৲ ¨

version ˈ ˘ ä ä

auth noauth priv ˈ ő ⁝ Â

community-string ˈ ش E s ¨ ˆ ˜ Â

port-num ˈ ў ৲

notification-type ˈ ў ╟ ৲ ش R Â

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Æ ə ˘ ŏ Ƒ ३ **snmp-server location** Â
Ƒ ३ ৲ Æ ə Â

snmp-server location text

no snmp-server location

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Ruijie(config)# snmp-server packetsize 9

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snmp-server queue-length	"

61.1.9 snmp-server queue-length

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snmp-server queue-length length

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length ' " ˘ ÿ ˆ Â

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í ╗ ˘ ŏ Ƒ ३ **snmp-server system-shutdown** Â Ƒ ३ ^ ˜Ω ╗ Â

snmp-server system-shutdown

no snmp-server system-shutdown

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`Ruijie(config)#` snmp-server system-shutdown

61.1.11 snmp-server trap-source

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snmp-server trap-source interface

no snmp-server trap-source

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interface ˙ ţ ɔ й̀ ᴓ ᴓ ^

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ą Ю ÿ ١ э ^ ^˘ G ١ э ^ ᴓ ᴓ ɔ й̀ ᴓ ᴓ˘ й̀ ɑ ƒ ţ ŋ ⁞˘ ^ Лъ G Ƒ ३ ţ G У э ᴓ ᴓ ᴓ ɔ й̀ ᴓ ᴓ Â

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```
Ruijie(config)# snmp-server trap-source GigabitEthernet 0
```

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snmp-server enable traps

snmp-server user username groupname **v1 v2 v3 encrypted**
auth md5 sha auth-password **priv des56** priv-password
access num name

no snmp-server user username groupname **v1 v2c v3**

ˇ ŏ Ƒ ३ **snmp-server group** Â Ƒ ३
ĩ Â

snmp-server group groupname **v1** **v2c** **v3** **auth** **noauth** **priv** **read** readview **write** writeview **access** num name

no snmp-server group groupname **v1** **v2c** **v3**

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v1 **v2c** **v3** ˙ Â

auth˙ · ภ a ɖ ˇ ৸ Â

noauth˙ · a ≠ a ɖ ˇ ৸ Â

priv˙ · ˘ · ɖ ˇ ৸ Â

readview˙ ˇΩ У ɜ ৸ ي Â

writeview˙ ˇΩ У ɜ ĩ ي Â

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`Ruijie(config)#` snmp-server group ƀn v3 priv read ƀn

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show snmp group	ɚ

61.1.15 snmp-server view

ˇي ŏ Ƒ ३ **snmp-server view** Â Ƒ ३
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snmp-server view view-name oid-tree **include** **exclude**

no snmp-server view view-name oid-tree

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view-name ˙ ˇي Â

oid-tree ˙ يي Ω ˘ У Â

include ˙ ˆ ü ف يي ǯ ǫ Â

exclude ˙ ف يي ǯ Â

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Ruijie(config)# snmp-server view ƀƀ include

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show snmp view	يي ǫ

61.1.16 snmp-server if-index persist

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snmp-server if-index persist

no snmp-server if-index persist

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Ruijie(config)# snmp-server if-index persist

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show run	ॅΩ ə

61.2

61.2.1 show snmp

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show snmp mib user view group

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show snmp Ƒ ३ ॅΩ ə ’

show snmp mib è ə ’

show snmp user ə ’

show snmp view يي ə ’

show snmp group ə ’

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```
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
```

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snmp-server chassis-id	“ ⁄