4008-111-000
http://www.ruijie.com.cn

©2000-2013

4008-111-000
http://www.ruijie.com.cn

http://www.ruijie.com.cn/

http://webchat.ruijie.com.cn

8:30 6 “ ”

http://www.ruijie.com.cn/service.aspx

7 × 24 4008-111-000

http://support.ruijie.com.cn

service@ruijie.com.cn

WEB	WEB

! ?Ô

RGOS®10.3 (4b8)p3

//

3.

a !

!

4.

1.

2.

3.

4.

5. HTTP

no default

CLI

CLI

CLI

?

User EXEC

show

Privileged EXEC

“Ruijie”

abbreviated-command-entry?	Ruijie# di? dir disable
abbreviated-command-entry<Tab>	Ruijie# show conf<Tab> Ruijie# show configuration
?	Ruijie# show ?
command keyword ?	Ruijie(config)# snmp-server community ? WORD SNMP community string

show configuration

Ruijie# show conf

no no

% Ambiguous command:
"show c"

	Ctrl-B	
	Ctrl-F	
	Ctrl-A	
	Ctrl-E	
	Backspace	
	Delete	
	Return	
	Space	

interface
$static 00d0.f800.0c0c vlan 1 interface fastEthernet
$static 00d0.f800.0c0c vlan 1 interface fastEthernet 0/1

Ctrl-A
$

-address-table static 00d0.f800.0c0c vlan 1 interface $

a _

80

show

show ئم

Ruijie# showany-commanɖ
include regular-expression

start-terminal-service

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

”ia” ”ip address”

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

Ruijie(config-if)# ip address

”ip address”

show aliases

CLI PC
CLI
Console Outband
Telnet

	CLI

TFTP

15

Ruijie(config)# [level] {password | encryption-type encrypted-password}	15 15 15 15

Ruijie(config)# [level] {encryption-type encrypted-password}	
Ruijie(config)#	
Ruijie# [level] Ruijie# [level]	

1

15 16

Ruijie#	

Ruijie(config)# mode [ ] {mode

mode [ ]

level command

1 1

” ”

Ruijie# configure terminal

Ruijie(config)# privilege exec all level 1 reload

Ruijie(config)# enable secret level 1 0 test

Ruijie(config)# end

1

Ruijie# disable 1

Ruijie> reload ?

at reload at a specific time/date

cancel cancel pending reload scheme

in reload after a time interval

<cr>

reload

Ruijie# configure terminal

Ruijie(config)# privilege exec all reset reload

Ruijie(config)# end

1

Ruijie# disable 1 reload

EXEC

Ruijie(config-line)#	
Ruijie#	

AAA

RADIUS

RADIUS

RADIUS

web ePortal

ePortal

AAA

AAA

web

Ruijie(config)# name [ ] [ ] [password | encryption-type encrypted password]	, (AAA)
Ruijie(config)# name [level]	

/

csv txt csv excel

csv excel

aaa aaa
bbb bbb
ccc ccc

Txt :

```
aaa,aaa
bbb,bbb
ccc,ccc
```

web CLI CLI

Ruijie# filename	flash flash
Ruijie# filename	web flash web tftp

Ruijie(config-line)#	AAA
Ruijie(config-line)# { | list-name}	AAA AAA AAA Radius

calendar

Ruijie#	

Ruijie# clock update-calendar

[modifiers] scheme

( )

modifers

modifiers

mmm | hhh:mm [string]

mmm hhh:mm

string

10 10 test

hh:mm month day year [string]

ê % S‰ bþ ÚJs âG¡ ðíÂQ ,G¡ qó ÚJs âG¡ €°

reload cancel

8 30

31

,

Ruijie# hh:mm month day [year] [reload-reason]	year month day hh mm reload relaod reload-reason ( )

2005 1 11 12:00 (
2005 1 11 8:30)

Ruijie# reload at 1 2:00 1 11 2005 midday //

Ruijie# show reload //

Reload scheduled in 16581 seconds.
At 2005-01-11 12:00
Reload reason: midday

Ruijie# mmm [reload-reason]	mmm reload-reason( )
Ruijie# hhh:mm [reload-reason]	hhh mm reload-reason( )

125 (2005-01-10
12:00)

```
Ruijie#      reload in       125 test              //
Ruijie#      reload in       2:5 test              //
Ruijie#      show reload                           //

System will reload in 7485 seconds.
```

Ruijie#	

(System Name)

CLI 32

32

“ Ruijie ”

Ruijie(Config)# name	32

RGOS

```
Ruijie#     configure terminal                    //
Ruijie(config)#          hostname RGOS       //                    RGOS
```

RGOS(config)# //

32

32

EXEC

(message of the
day) c
(
’&’)

Ruijie(config)# c message c

```
Ruijie(config)#
```


Length: 25 lines, Width: 80 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: 22 bytes
Total output: 115 bytes
Data overflow: 0 bytes
stop rx interrupt: 0 times
Modem: READY

Telnet TCP/IP

Trying 192.168.65.119 ... Open
User Access Verification //
Password:

Telnet Server

Ruijie#	Telnet Server IPV4

LINE

Ruijie(config-line)# minutes [seconds]	LINE minutes seconds

LINE LINE

Ruijie# configure terminal //
Ruijie# line vty 0 // LINE
Ruijie(config-line)# exec-timeout 20 // 20min

LINE

LINE

Ruijie(config-line)# minutes [ ]	LINE minutes

LINE LINE

```
Ruijie#      configure terminal                          //
Ruijie(config)#          line vty      0                  //      LINE
Ruijie(config-line)#          session-timeout      20     //              20min
```

CLI

Ruijie# {[ ] filename}	

line_rcms_script.text

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

Ruijie#      execute flash:       line_rcms_script.text
executing script file line_rcms_script.text ......
executing done
Ruijie#      configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
```

```
Ruijie(config)#          line vty       1 16
Ruijie(config-line)#              transport input all
Ruijie(config-line)#              no exec
Ruijie(config-line)#             end
```

	PC TFTP Flash CLI

SNMP Server/SSH Server/Telnet Server/Web Server

نعي	
Ruijie(Config)#	SNMP Server
Ruijie(Config)#	SSH Server
Ruijie(Config)#	Telnet Server
Ruijie(Config)#	Http Server https server

```
Ruijie#     configure terminal                          //
Ruijie(config)#          enable service ssh-server      //       SSH Server
```

http ò ź - ɑ ȳ Ò ò א allÒ
http https http
http https https

a	https ,https httpd_cert.crt httpd_key.pem tftp

Web

https server port: 4443

a	http https http https , http https http https http

Flash

Flash

4096

a _ 白

flash 128M

dir

flash flash 32M
512K flash
USB flash USB
flash 512K

flash flash 512M
4M flash
USB flash USB
flash 4M

flash 110%

10MB flash
10MB flash 11MB

Ruijie# cd directroy	directory
Ruijie# cd ../	
Ruijie# cd ./	

MNT Document

Ruijie# cd

Ruijie# copy flash: filenameflash: directoryname	
Ruijie# copy flash: filenamesour directoryname	

Ruijie# copy flash: config.tex flash: tmp/
Ruijie# copy flash: con_bak.txt flash: config.text

Ruijie# dir	
Ruijie# dir directory	

Ruijie# dir
Ruijie# dir ../bak

Ruijie# makefs devdevnamefs fs_name	fs_name dev

dev MTD JFFS2

Ruijie# makefs dev /dev/mtd/mtdblock/1 fs jffs2

JFFS2 MTDBLOCK

Ruijie# mkdir directoryname	

BAK

Ruijie# mkdir bak

Ruijie# rename flash: old_filename flash: new_filename	old_filename new_filename

Ruijie# pwd	

Ruijie# rm [recursive] filename	
Ruijie# delete[recursive] filename	

MNT large.c

Ruijie# delete mnt/large.c

aaa

Ruijie# delete recursive aaa

Red-Giant# rmdir directoryname	

MNT

Ruijie# rmdir mnt

CTRL

TFTP

Xmodem

TFTP

XMODEM

CLI

TFTP Server

Location TFTP Server IP

Ruijie# copy tftp: //location/ filenameflash: filename[vrf vrfname]	URL filename

CLI

TFTP Server

Ruijie# copy flash: filename tftp: //loca tion/filename[vrf vrfname]	filename URL

a _ 터

tftp

copy tftp:”//localtion/filename” flash:filename [vrf vrfname]

copy tftp://localtion/filename flash:”filename” [vrf vrfname]

CLI

Windows

Windows “

” “ ” ӈ

Ruijie# copy xmodem flash:filename	filename

CLI

Windows

Windows “

” “ ”

“Xmodem” “

” “ ”

a _ 런

copy xmodem flash:"filename" copy flash:"filename" xmodem

tftp xmodem

1

2

a _ 런

show version

redundancy force-switchover

1 rgos.bin

2 copy

3

Upgrade Slave CM MAIN successful!!

Upgrade CM MAIN successful!!

1

2

The version synchronization of card in slot [3] get finished successfully.

---

a _ É

\ !

---

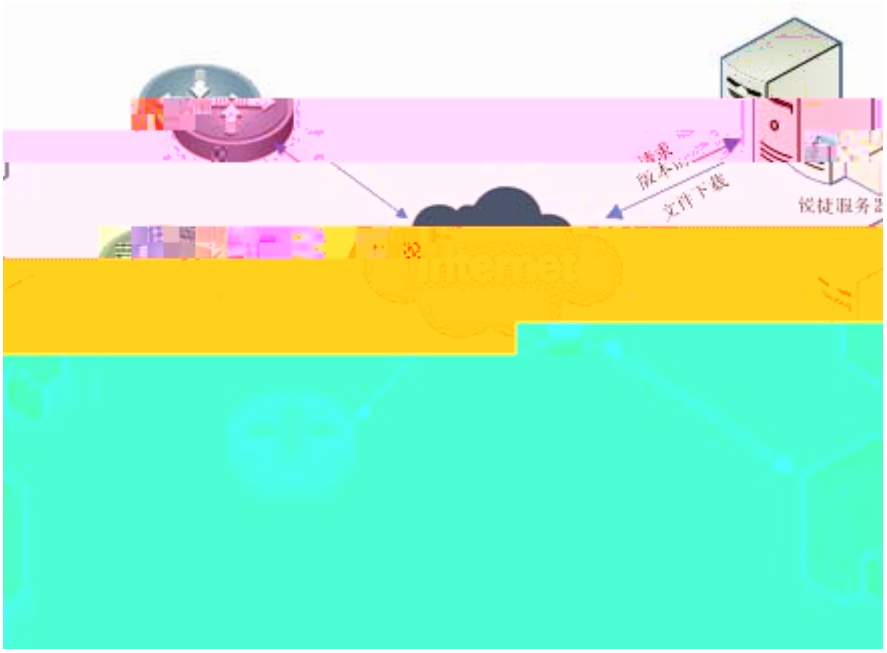
1 7

HTTP HTTP HTTP
HTTP HTTP

HTTP HTTP WEB

HTTP

CLI Ò



HTTP WEB

RFC1945 - Hypertext Transfer Protocol -- HTTP/1.0
RFC2616 - Hypertext Transfer Protocol -- HTTP/1.1
RFC1867 - Form-based File Upload in HTML

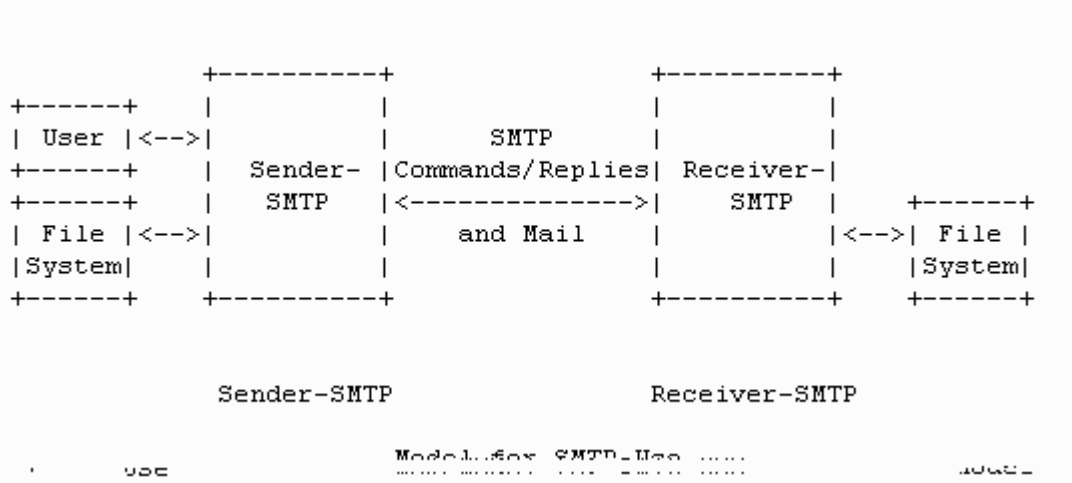
HTTP

1. 1
2. 2 HTTP

1.
2.

SMTP

SMTP



SMTP

Sender-SMTP

Ò

HTTP HTTP POST FORM

RFC1945 - Hypertext Transfer Protocol -- HTTP/1.0
RFC2616 - Hypertext Transfer Protocol -- HTTP/1.1
RFC1867 - Form-based File Upload in HTML
RFC821 - Simple Mail Transfer Protocol -- SMTP
RFC822 – Standard for the format of arpa internet text messages -- MIME

HTTP

	0.0.0.0
	80

HTTP POST	

1. Â
2. Â

HTTP

http check-version	
http update { all | string}	

HTTP

Ruijie# http check-version

files need to be updated: web, config, character-db, normal.

bin:

support identification of 31 kinds of popular games.

Ruijie# http update web character-db // WEB

updating files, please wait...

update success!

HTTP 0.0.0.0 80

configure terminal	
http update server host [port port-value]	
show running	

#

Ruijie# configure terminal

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

Ruijie(config)# http update server 10.83.132.1

Ruijie(config)# exit

1. Â
2. Â
3. Â
4. Â

HTTP

Ruijie# configure terminal	
Ruijie(config)# http update set oob	
Ruijie# show running	

HTTP

Ruijie# configure terminal

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

Ruijie(config)# http update set oob

Ruijie(config)# exit

HTTP

Ruijie# configure terminal	
Ruijie(config)# http update mode { auto-update | auto-detect | manual }	
Ruijie(config)# http update auto-update { all | string }	
Ruijie(config)# end	
Ruijie# show running	

HTTP URL

Ruijie# configure terminal

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

Ruijie(config)# http update mode auto-update

Ruijie(config)# http update auto-update url-db character-db route-db

Ruijie(config)# exit

HTTP

Ruijie# configure terminal	
Ruijie(config)# http update time daily mm:ss	
Ruijie# show running	

3 HTTP

Ruijie# configure terminal

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

Ruijie(config)# http update time daily 03:00

Ruijie(config)# exit

HTTP

Ruijie# configure terminal	
Ruijie(config)# http update set oob	

Ruijie# show running	

HTTP

```
Ruijie#      configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)#          http update set oob
Ruijie(config)#          exit
```

```
Ruijie(config)#
```

no. name ignore

1, no memory, NO

2, no flash, YES

3, high cpu, NO

[1(

1.

2.

3.

4.

5.

6. Port VLAN

7. Native VLAN

8.

9. ip/mac

10. LINE

11.

12.

Ruijie

Dialer NULL

Loopback

Ruijie

	GigabitEthernet tenGigabitEthernet	IEEE802.3 RFC894
Dialer	dialer	—
Loopback	Loopback	—
NULL	NULL	—
	GigabitEthernet 0/0.10( )	—

Ruijie(config)# interface-type interface-number	
Ruijie(config)# interface-type interface-number	

0 0

```
Ruijie#      config terminal
Ruijie(config)#          interface GigabitEthernet              0/0
```

NULL

Ruijie(config-if)# kilobits	Bandwidth
Ruijie(config-if)#	Bandwidth

Ruijie# [interface-type interface-number]	

Ruijie# [interface-type interface-number]	0
Ruijie# [interface-type interface-number]	

0/0

Ruijie# show interface gigabitEthernet 0/0
GigabitEthernet 0/0 is DOWN , line protocol is DOWN
Interface address is: 192.168.10.10/24
MTU 1500 bytes, BW 2000 Kbit
Keepalive interval is 10 sec , set

Carrier delay is 2 sec
RXload is 1 ,Txload is 1
Queueing strategy: WFQ
5 minutes input rate 0 bits/sec, 0 packets/sec
5 minutes output rate 0 bits/sec, 0 packets/sec
1425 packets input, 22800 bytes, 0 no buffer
Received 0 broadcasts, 0 runts, 0 giants
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 abort
1425 packets output, 22800 bytes, 0 underruns
0 output errors, 0 collisions, 2 interface resets

0/0

Ruijie# show interface gigabitEthernet 0/0
GigabitEthernet 0/0 is DOWN , line protocol is DOWN
Interface address is: 192.168.10.10/24
MTU 1500 bytes, BW 2000 Kbit
Keepalive interval is 10 sec , set
Carrier delay is 2 sec
RXload is 1 ,Txload is 1
Queueing strategy: WFQ
5 minutes input rate 0 bits/sec, 0 packets/sec
5 minutes 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 abort
0 packets output, 0 bytes, 0 underruns
0 output errors, 0 collisions, 2 interface resets

Ruijie(config-if)#	
Ruijie(config-if)#	

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

```
Ruijie(config)#          Interface
Ruijie(config-if)#             shutdown
```

VLAN

IP

MTU

interface

Ruijie(config)# interface-type interface-number	interface interface range interface range macro

Gigabitethernet 0/1

Ruijie(config)# interface gigabitethernet 0/1
Ruijie(config-if)#

Ruijie(config)# {port-range | macro_name}	macro ,

range

slot/{ port} - { port}

slot/{ port} - { port}

TenGigabitethernet

Ruijie# configure terminal
Ruijie(config)# interface range GigabitEthernet 0/1 - 7
Ruijie(config-if-range)# no shutdown
Ruijie(config-if-range)#

, range

Ruijie# configure terminal
Ruijie(config)# interface range GigabitEthernet 0/1-5, 0/6-7
Ruijie(config-if-range)# no shutdown
Ruijie(config-if-range)#

Ruijie(config)# macro_name interface-range	macro_name 32
Ruijie(config)# macro_name	

– slot/{ port} - { port}
– slot/{ port} - { port}

GigabitEthernet0/1-4

```
Ruijie# configure terminal
Ruijie(config)# define interface-range resource
GigabitEthernet 0/1-4
Ruijie(config)# end
```

```
Ruijie# configure terminal
Ruijie(config)# define interface-range ports1to2N5to7
GigabitEthernet 0/1-2, 0/5-7
Ruijie(config)# end
```

ports1to2N5to7

```
Ruijie# configure terminal
Ruijie(config)# interface range macro ports1to2N5to7
Ruijie(config-if-range)#
```

ports1to2N5to7

Ruijie# configure terminal
Ruijie(config)# no define interface-range ports1to2N5to7
Ruijie# end

IP

Ruijie (Config-if)# ip-address ip-mask [ ]	IP
Ruijie (Config-if)# ip-address ip-mask [ ]	IP

IP Secondary IP
IP

MAC
MAC MAC

MAC

Ruijie (Config-if)# mac-address	MAC
Ruijie (Config-if)#	MAC

MAC
MAC

(Description)

Ruijie(config-if)# string	32

Gigabitethernet 0/1

```
Ruijie#      config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)#          interface gigabitethernet          0/1
Ruijie(config-if)#             description        PortForUser A
Ruijie(config-if)#             end
```

Up Down

Ruijie(config-if)# { | }	baset: basex auto:

Gigabitethernet 0/1

Ruijie# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# interface gigabitethernet 0/1
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.
Ruijie(config-if)# end

Ruijie(config-if)# { | | | }	auto 1000
Ruijie(config-if)# { | | }	speed,duplex, auto

Gigabitethernet 0/1

100M

Ruijie# configure terminal
Ruijie(config)# interface gigabitethernet 0/1
Ruijie(config-if)# speed 100
Ruijie(config-if)# duplex full
Ruijie(config-if)# end

a _ 든

IEEE Master Slave

..

jumbo MTU

MTU

MTU MTU

MTU

MTU 64~1500 4 1500

SVI MTU

Ruijie(config-if)# num	MTU Num <64-1500>

Gigabitethernet 0/1 MTU

```
Ruijie# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# interface gigabitethernet 0/1
Ruijie(config-if)# mtu 64
Ruijie(config-if)# end
```

Ruijie# [interface-id]	

Ruijie# [interface-id]	

Ruijie# show interface GigabitEthernet 0/0
GigabitEthernet0/0 is up, line protocol is up
HardwareisPQ3TSECGIGABITETHERNETCONTROLLERGigabitEthernet,
address is 0a0b.0c0d.0e0e (bia 0a0b.0c0d.0e0e)
Internet address is 192.168.200.1/24
MTU 1500 bytes, BW 1000000 Kbit
Encapsulation protocol is Ethernet-II, loopback not set
Keepalive interval is 10 sec set
Carrier delay is 2 sec
RXload is 1 ,Txload is 1
Queueing strategy: FIFO
Output queue 0/40, 0 drops;
Input queue 0/75, 0 drops
5 minutes input rate 281 bits/sec, 0 packets/sec
5 minutes output rate 0 bits/sec, 0 packets/sec
82 packets input, 7947 bytes, 0 no buffer
Received 76 broadcasts, 0 runts, 0 giants
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 abort
0 packets output, 0 bytes, 0 underruns
0 output errors, 0 collisions, 3 interface resets
Link Mode: 1000M/Full-Duplex, media-type is twisted-pair.
Output flowcontrol is off;Input flowcontrol is off.

Ruijie# interface-number	

LinkTrap

Link SNMP LinkTrap,

Ruijie(config-if)# [ ]	link trapFa

802.1Q 802.1Q

802.1Q

802.1Q

4 802.1Q

4 802.1Q 2

VLAN

VLAN

IP

VLAN

Ruijie(config)# Sub_interface_number	802.1Q
Ruijie((config-subif))# VlanID	802.1Q VLAN ID VLANID VLANID

VLAN

Ruijie# [VlanID]	VLAN
Ruijie# [VlanID]	VLAN

```
encapsulation dot1Q 20                  //  802.1Q  VlANID  20
ip addr 192.168.0.1 255.255.255.0               //  IP
!
interface GigabitEthernet0/0.21
encapsulation dot1Q 21                  //  802.1Q  VlANID  21
ip addr 192.168.1.1 255.255.255.0               //  IP
!
interface GigabitEthernet0/1
no ip address
shutdown
!
end
```

Loopback( ) NULL( ) Dialer(

1)

ſ ¢

“ ”

NBR

a	1 2 NBR

Ruijie#	
Ruijie(config)# interface-name { lan | wan}	interface-name lan wan

(LAN/WAN) num

lan no convert port num

Ruijie#	
Ruijie(config)# num	num wan /lan

num

Ruijie(config)#	

4 ADSL 4
2 2
4

1 3 4 LAN3 LAN4 wan

```
Ruijie#  configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)#  convert port  3 to wan
##### Please save config and reload the system!!!!!
Ruijie(config)#  convert port  4 to wan
##### Please save config and reload the system!!!!!
```

2

```
Ruijie(config)#exit
Ruijie#wr

Building configuration...

[OK]
Ruijie#reload
Processed with reload? [no]y
Reloading...
```

```
Ruijie(config)#exit
  Ruijie#show convert cur-info
  PORT0  PORT0
  PORT1  PORT1
  PORT2  PORT2
  PORT3  WAN3
  PORT4  WAN2
```

2 802.1Q VLAN

1 VLAN 10

```
Ruijie(config)# interface gigabitEthernet 0/0.1
Ruijie(config-subif)# encapsulation dot1Q 10
Ruijie(config-subif)# vlan port 0 0 tag
Ruijie(config-subif)# ip address 192.168.0.1 255.255.255.0
```

2 VLAN 20

```
Ruijie(config)# interface gigabitEthernet 0/0.2
Ruijie(config-subif)# encapsulation dot1Q 20
Ruijie(config-subif)# vlan port 1 1 tag
Ruijie(config-subif)#ip address192.168.1.1 255.255.255.0
```

Native VLAN VLAN vlan tag
vlan tag vlan tag VLAN VlanID
“ ” Native
VLAN flooding
Native VLAN lan

a	Native VLAN VLAN

Native VLAN
Native VLAN Native VLAN

vlan tag native vlan tag
vlan tag

IEEE 802.1Q

native vlan

Native VLAN	

Ruijie(config)# Sub_interface_number	
Ruijie(config-subif)# vlan_num	802.1Q VLAN ID
Ruijie(config-subif)# min_port max_port	VLAN LAN
Ruijie(config)#native lan numvid value	LAN Native VLAN value 1-4085

no native lan num lan Native VLAN

show running-config

LAN0 PC PC1 PC2 LAN1 PC PC3 PC4
PC1 PC2 PC3 PC4
VLAN PC

Native VLAN LAN0 Native VLAN VLAN 10 LAN1 Native VLAN VLAN 20 vlan tag

1 VLAN 10 tag

```
Ruijie(config)# interface gigabitEthernet 0/0.1
Ruijie(config-subif)# encapsulation dot1Q 10
Ruijie(config-subif)# vlan port 0 0
Ruijie(config-subif)# ip address 192.168.0.1 255.255.255.0
```

2 VLAN 20 tag

```
Ruijie(config)# interface gigabitEthernet 0/0.2
Ruijie(config-subif)# encapsulation dot1Q 20
Ruijie(config-subif)# vlan port 1 1
Ruijie(config-subif)# ip address 192.168.1.1 255.255.255.0
```

3) LAN0 Native VLAN VLAN 10 LAN1 Native VLAN VLAN 20

```
Ruijie(config-subif)#exit
Ruijie(config)#native lan 0 vid 10
```

```
Ruijie(config)#native lan 1 vid 20
```

a

Ruijie#	
Ruijie(config)# mirror master port port-num slave port port-num [rx | tx | all]	slave master

show running-config

lan0 lan1 lan2

Ruijie(config)# mirror master port 0 slave port 1 rx

Ruijie(config)# mirror master port 0 slave port 2 rx

lan0 lan1

Ruijie(config)# mirror master port 0 slave port 1 all

lan0 lan1

Ruijie(config)# no mirror master port 0 slave port 1 all

ip mac

cpu

ip/mac	

Ruijie#	

Ruijie(config)# ip-address [mac-address] mac-address	ip mac ip/mac

Ruijie#	
Ruijie(config)# ip-address [mac-address] mac-address	ip mac all ip mac

Ruijie(config)#	ip mac

mac 0000.1111.0000

Ruijie(config)# 0000.1111.0000

ip 192.168.1.200

Ruijie(config)# 192.168.1.200

ip 192.168.1.201 mac 0000.1111.0001

Ruijie(config)# 192.168.1.201 0000.1111.0001

mac 0000.1111.0000

Ruijie(config)# 0000.1111.0000

ip mac

```
Ruijie(config)#show pkt-block
ip : 192.168.1.200
ip : 192.168.1.201 mac: 0000.1111.0001
```

LINE

LINE

/ LINE VTY

LINE

LINE LINE LINE

LINE ±¢ KÞÏÀNE ¹ ß VEÄ

Ruijie(config)# line-number	LINE VTY
Ruijie(config)# line-number	LINE VTY

LINE

VTY TTY

line number	Line
{ | | | }	Line
	LINE
	LINE

LINE

Line

line number	Line
access-list-number { }	Line
access-list-number { }	Line

DLDP

DLDP

arp

mac mac

mac

ICMP echo

UP echo

DLDP / arp icmp echo

icmp echo dldp

ip

interval

retry

Ruijie(config-if)#	

\ !

1) ICMP ECHO ICMP

2) up

3) down

4) ip

Ruijie(config-if)#	

Ruijie(config-if)#	

Ruijie(config-if)#	

Ruijie(config-if)# pool-number	(, pppoe)
Ruijie(config-if)#	, (, pppoe)

a _ É

dail-on-demand no-ddr dail-on-demand PPPOE DDR , DDR no-ddr pppoe , pppoe .

PPPOE PPP PPPOE

Ruijie(config)# dialer-number	
Ruijie(config-if#	شم

\ !

MTU 6/AU

PPPOE, EXEC

Ruijie# { | }	tunnel session
Ruijie# dialer-number	IP
Ruijie# { | | | }	PPPOE

PPPOE

1. 5 5

2. pppoe pppoe

3. NAT 192.168.0.0/24

```
!
hostname "Ruijie"
!
ip subnet-zero

#       PPPOE,                  10
interface GigabitEthernet0/0
no ip address
duplex auto
pppoe enable
pppoe-client dial-pool-number 10 dial-on-demand

#
interface GigabitEthernet0/1
ip address 192.168.0.1 255.255.255.0
ip nat inside
ip mtu 1488
duplex auto
```

```
speed auto

#
interface Dialer1
ip address negotiate
mtu 1488
encapsulation ppp
ip nat outside
dialer pool 10                                  //          10
dialer-group 1
dialer idle-timeout 300                                 //5
ppp pap sent-username pppoe password 0 pppoe
!
ip nat inside source list 1 interface Dialer1
access-list 1 permit any
ip route 0.0.0.0 0.0.0.0 Dialer1
!
dialer-list 1 protocol ip permit
!
line con 0
line aux 0
line vty 0 4
login
!
end
```

IP

1. IP
2. IPv4
3.
4. NAT
5.

IP 32

8 0~255 “ . ”

“ 192.168.1.1 ” IP

IP IP 32 IP

1 2

IP

A “ 0 ” 7 24

128 A

B “ 10 ” 14 16

16,348 B

C “ 110 ” 22 8

2,097,152 C

D “ 1110 ”

B	172.16.0.0~172.31.255.255	16 B
C	192.168.0.0~192.168.255.255	256 C

IP TCP/UDP RFC 1971 0 996P/UDP7.44 717.38 0.4

IP

IP

IP IP
IP IP IP IP
IP IP
IP

C
254 254 C
C
IP

IP
IP
IP

IP

\!
IP IP
IP IP
IP

IP

Ruijie(config-if)# ip-address mask	IP
Ruijie(config-if)# ip-address mask	IP

IP 1

MAC MAC MAC
IP 2 IP

IP 48 MAC
IP MAC ARP MAC
IP RARP 1
ARP 2 Proxy ARP ARP Proxy ARP
RARP RFC 826 RFC 1027 RFC 903

ARP MAC IP IP ARP
MAC MAC IP MAC
ARP MAC IP
IP ARP Ethernet
II SNAP

RARP ARP RARP MAC
IP RARP

ARP

ARP

ARP

ARP IP MAC
ARP IP ARP

ARP

Ruijie(config)# ip-address mac-address arp-type	ARP arp-type arpa
Ruijie(config)# ip-address	ARP

ARP Ethernet II ARPA

ARP IP MAC
ARP ARP
ARP

ARP

Ruijie(config-if)# seconds	ARP 0-2147483 0
Ruijie(config-if)#	

3600 1

ARP ARP arp
arp ARP
ARP ARP
ARP

Ruijie(config-if)#	arp
Ruijie(config-if)#	arp

arp

ARP ARP

IP IP

UP UP IP

Ruijie(config-if)# start-ip-address end-ip-address	ARP

ARP

a _ E

1 ARP IP

2 IP ARP

ARP

1024

3 ARP IP IP

IP IP 22

4 ARP IP IP IP IP

IP

web ARP ARP

ARP ARP

ARP ARP ARP ARP

ARP ARP ARP ARP

ARP ARP —— ARP

IP IP

IP

IP

IP IP IP
172.16.16.255

IP

IP “ 1 ”

1) ARP

2) IP

3)

Ruijie#	ARP
Ruijie# {network [mask] | *}	IP

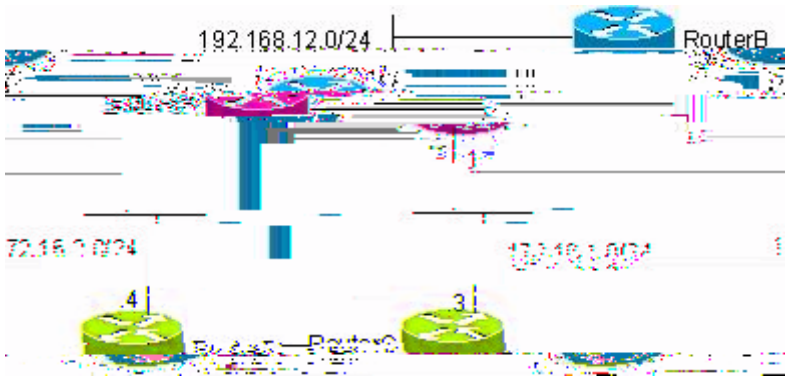
IP

Ruijie#	ARP
Ruijie#	IP ARP
Ruijie# [interface-type interface-number]	IP
Ruijie# [network [mask]]	
Ruijie#	
Ruijie# ip-address [bytes] [times] [seconds]	

IP

IP

IP



RIP RIPv1 C
172.16.2.0/24 D 172.16.1.0/24

RIPv1
172.16.1.0/24 172.16.2.0/24 C 192.168.12.0/24
C D
RIP

A B 192.168.12.0/24 172.16.3.0/24
A B

A

```
interface GigabitEthernet 0/0
ip address 172.16.3.1 255.255.255.0 secondary
ip address 192.168.12.1 255.255.255.0
!
interface GigabitEthernet 0/1
ip address 172.16.1.1 255.255.255.0
!
router rip
```

network 172.16.0.0
network 192.168.12.0

B :
interface GigabitEthernet 0/0
ip address 172.16.3.2 255.255.255.0 secondary
ip address 192.168.12.2 255.255.255.0
!
interface GigabitEthernet 0/1
ip address 172.16.2.1 255.255.255.0
!
router rip
network 172.16.0.0
network 192.168.12.0

IP

IP

no

ip-address	

IP IP ICMP
ICMP
ICMP RFC 792
IP
ICMP
ICMP
ICMP
IP MTU
IP

IP
ICMP
ICMP

ICMP

Ruijie(config-if)#	ICMP
Ruijie(config-if)#	ICMP

ICMP

ICMP

Ruijie(config-if)#	ICMP
Ruijie(config-if)#	ICMP

ICMP ICMP
ICMP

ICMP

Ruijie(config-if)#	
Ruijie(config-if)#	

MTU MTU

MTU MTU IP MTU IP
MTU MTU IP MTU
MTU

MTU

RFC 791

ICMP

IP

IP

Ruijie(config)#	IP
Ruijie(config)#	IP

(Prefix Tree+Adjacency) Ruijie Express Forwarding REF REF

REF

Ruijie# [ ]	/ REF

Ruijie# [| | ip | (	

Ruijie# [ip_protocol_number urce_ip source_ip_mask_len dest_ip dest_ip_mask_len]	

Ruijie#	

Ruijie#	

Ruijie#	

ip session timeout

Ruijie#	{

	10s
	10s
	30s
	600s
	60s

ip session timeout tcp-fin-wait 10

ip session timeout tcp-syn-sent 5

ip session timeout tcp-time-wait 5

UDP udp-connected

udp-closed udp-connected

ip session timeout udp-closed 5

ip session timeout udp-connected 600

NAT( )

NAT

NAPT

NAT

TCP

NAT

NAT

ALG

NAT IP

IP NAT

NAT

NAT

NAT

NAT

Ruijie(config)# local-address global-address [-] [vrf_name] [mask] [interface]	
Ruijie(config)# interface-type interface-number	
Ruijie(config-if)#	
Ruijie(config)# interface-type interface-number	
Ruijie(config-if)#	

Inside outside

NAT

NAT

Ruijie(config)# address-pool start-address end-address { mask | prefix-length}	IP
Ruijie(config)# access-list-number ip-address wildcard Ruijie(config)# access-list-number address-pool [	

Ruijie(config)# interface-type

Ruijie(config)# interface-type interface-number	
Ruijie(config-if)#	
Ruijie(config)# interface-type interface-number	
Ruijie(config-if)#	

TCP TCP
NAT TCP NAT
TCP

Ruijie(config)# address-pool start-address end-address { mask | prefix-length}	IP
Ruijie(config)# access-list-number permit ip-address	IP4U Ñ³ãP @

Ruijie(config)#	SIP ALG
Ruijie(config)#	TFTP ALG

TCP

NAT Net200
200.168.12.2~200.168.12.100 1
NAT

```
!
interface GigabitEthernet 0/0
ip address 192.168.12.1 255.255.255.0
ip nat inside
!
interface GigabitEthernet 0/1
ip address 200.168.12.1 255.255.255.0
ip nat outside
!
ip nat pool net200 200.168.12.2 200.168.12.100 netmask
255.255.255.0
ip nat inside source list 1 pool net200
!
access-list 1 permit 192.168.12.0 0.0.0.255
```

NAPT 8.1 NAT
NAPT NAT Net200
200.168.12.200 IP
1 NAT

```
!
interface GigabitEthernet 0/0
ip address 192.168.12.1 255.255.255.0
```

TCP

NAT ACL IP ACL

```
!
interface GigabitEthernet 0/0
ip address 10.10.10.1 255.255.255.0
ip nat inside
!
interface GigabitEthernet 0/1
ip address 200.198.12.1 255.255.255.0
ip nat outside
!
ipnatpoolrealhosts10.10.10.210.10.10.3netmask255.255.255.0
type rotary
ip nat inside destination list 100 pool realhosts
!
access-list 100 permit ip any host 10.10.10.100
!
```

NAT

```
Ruijie# sh ip nat translations
ProInside global Insidelocal Outsidelocal Outside
global
tcp 10.10.10.100:23 10.10.10.2:23 100.100.100.100:1178
100.100.100.100:1178
tcp 10.10.10.100:23 10.10.10.3:23 200.200.200.200:1024
200.200.200.200:1024
```

(FTP WEB E-MAIL)

Internet NAT NAT

NAT

```
#
  Ruijie>     enable
#
  Ruijie# config terminal
  Enter configuration commands, one per line. End with CNTL/Z.
#       WAN0
  Ruijie(config)#interface GigabitEthernet                0/1
#       WAN
  Ruijie(config-if)#          ip address      218.5.19.2 255.255.255.0
#       WAN                     Internet
  Ruijie(config-if)#          ip nat outside

#       WAN
  Ruijie(config-if)#          no shut
#
  Ruijie(config-if)#          end
  Ruijie#
#                                   WAN             UP      (               ).
  %LINK-CHANGED: Interface GigabitEthernet 0/1, changed state to up
  %LINEPROTO-CHANGE: Interface GigabitEthernet 0/1, changed state
  to UPRuijie#      config terminal
  Enter configuration commands, one per line. End with CNTL/Z.
#       LAN
  Ruijie(config)# interface GigabitEthernet               0/0
```

```
#       LAN
  Ruijie(config-if)#          ip address      192.168.0.1 255.255.255.0
#       LAN                     Intranet
  Ruijie(config-if)#          ip nat inside
#       LAN
  Ruijie(config-if)#          no shut
  Ruijie(config-if)#          end
  Ruijie#
  %LINKCHANGED:InterfaceGigabitEthernet0/0,changedstatetoup
```

```
Ruijie(config-line)#              end
Ruijie#
Ruijie# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# enable secret private
#
Ruijie(config)#          host    EG
RUIJIE(config)#          end
RUIJIE#
#
RUIJIE#    write
Building configuration...
[OK]
RUIJIE#
#
RUIJIE# show running-config
Building configuration...
Current configuration:
!
!
hostname EG
!
!
specify interface GigabitEthernet 0/0 lan
specify interface GigabitEthernet 0/1 wan
!
access-list 1 permit any
!
!
interface GigabitEthernet 0/0
ip address 192.168.0.1 255.255.255.0
ip nat inside
!
interface GigabitEthernet 0/1
ip address 218.5.19.2 255.255.255.0
ip nat outside
!
ip nat inside source list 1 interface GigabitEthernet 0/1
ip nat inside source static tcp 192.168.0.4 110 218.5.19.2 110
ip nat inside source static tcp 192.168.0.4 25 218.5.19.2 25
ip nat inside source static tcp 192.168.0.3 80 218.5.19.2 80
ip nat inside source static tcp 192.168.0.2 21 218.5.19.2 21
```

```
ip nat inside source static tcp 192.168.0.2 20 218.5.19.2 20
!
ip route 0.0.0.0 0.0.0.0 GigabitEthernet 0/1 218.5.19.1
!
line con 0
line vty 0 4
password remoteuser
login
!
end
RUIJIE#
```

arp

arp

192.168.12.0 200.198.12.0

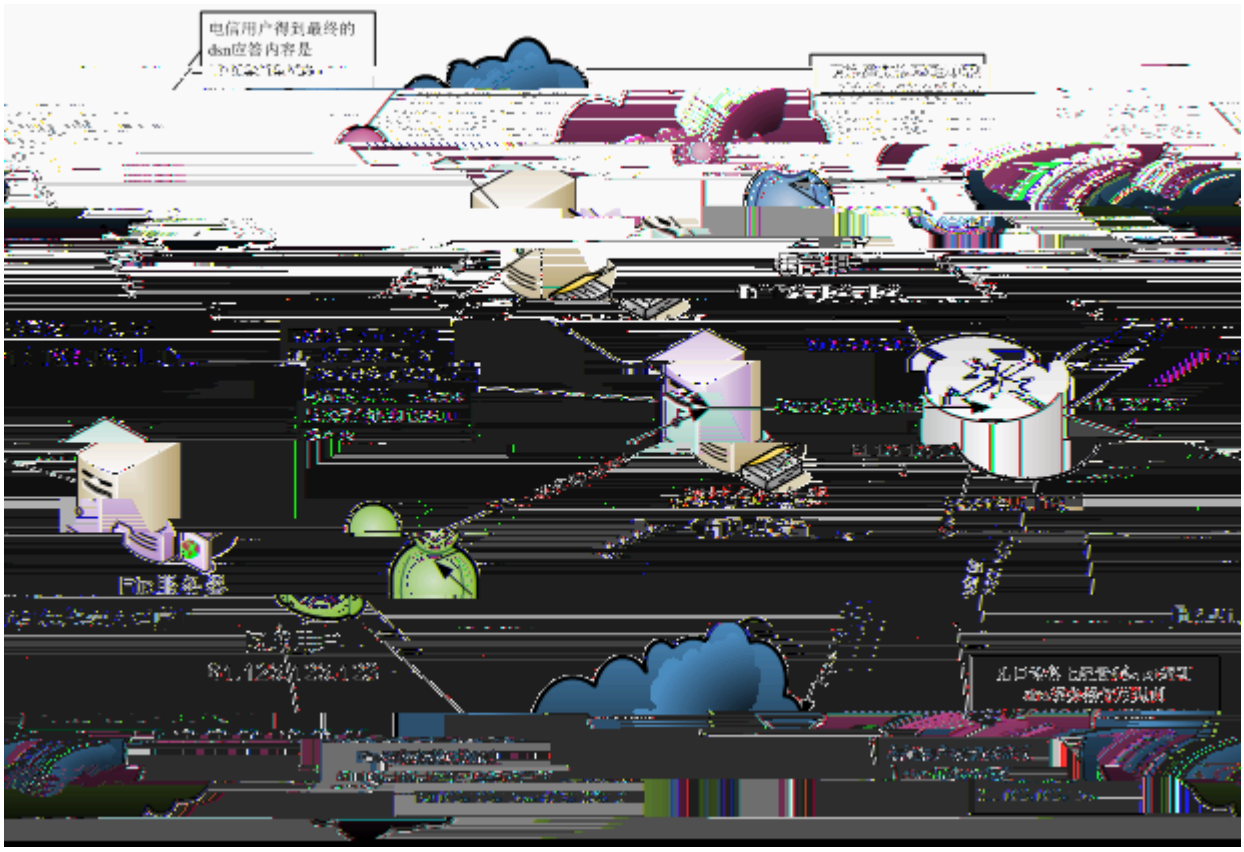
```
!
interface GigabitEthernet 0/0
ip address 192.168.12.1 255.255.255.0
ip nat inside
!
interface GigabitEthernet 0/1
ip address 200.198.12.1 255.255.255.0
ip nat outside
!
ip nat inside source static 192.168.12.0 200.198.12.0 netmask
255.255.255.0
```

NAT dns alg dns

3. DNS

4.
   DNS

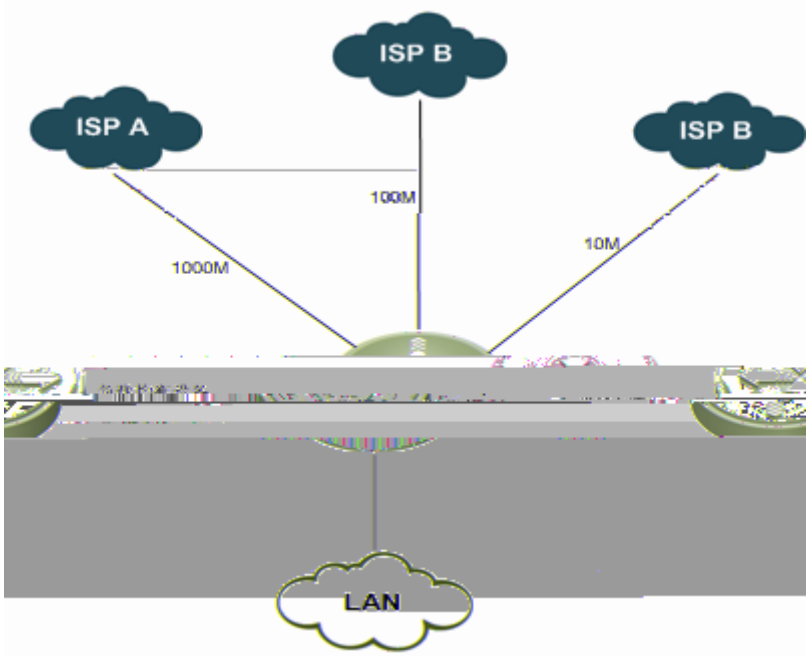
5. DNS




```
interface GigabitEthernet 0/0
 ip address 10.123.123.123 255.255.255.0
 ip nat outside
 duplex auto
 speed auto
 description
interface GigabitEthernet 0/1
 ip address 61.123.123.123 255.255.255.0
 ip nat outside
```

duplex auto

speed auto



2

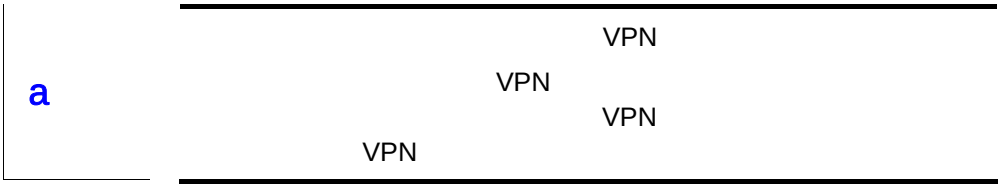
/

ECMP

	10.3(4b8)

pbr > >

(session) IP IP VRF



IP ECMP

IP

IP

ECMP ICMP UDP IP

ECMP

ECMP

ECMP

IP ECMP

IP

Ruijie#	
Ruijie(config)#	
Ruijie(config)#	

#

dt

1 100.

Ruijie#	
Ruijie(config)# mllb threshold percent-upper | percent [lower percent-lowe]	1-100

bandwidth

Ruijie# configure terminal

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

Ruijie(config)# mllb policy bandwidth

IP

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

Ruijie(config)# mllb first-choice gi0/1

a	Mllb 10.3(4b8) ECMP Mllb first-choice

+ /2

Ruijie#	
Ruijie(config)#load-monitor {uplink | mixed-link}	uplink mixed-link
Ruijie(config)#end	

#

```
Ruijie#      configure      terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)#          over-load-protect enable
```

10

Ruijie (config)#	

show running-config

Ruijie# show mllb config

multi-link load balance configure:

multi-link load balance state: enabled

multi-link load balance policy: load

multi-link load balance load-interval: 5

multi-link load balance threshold: 90 lower: 90

multi-link load balance load-monitor: down-link

multi-link load balance first-choice set to GigabitEthernet 0/5 is up

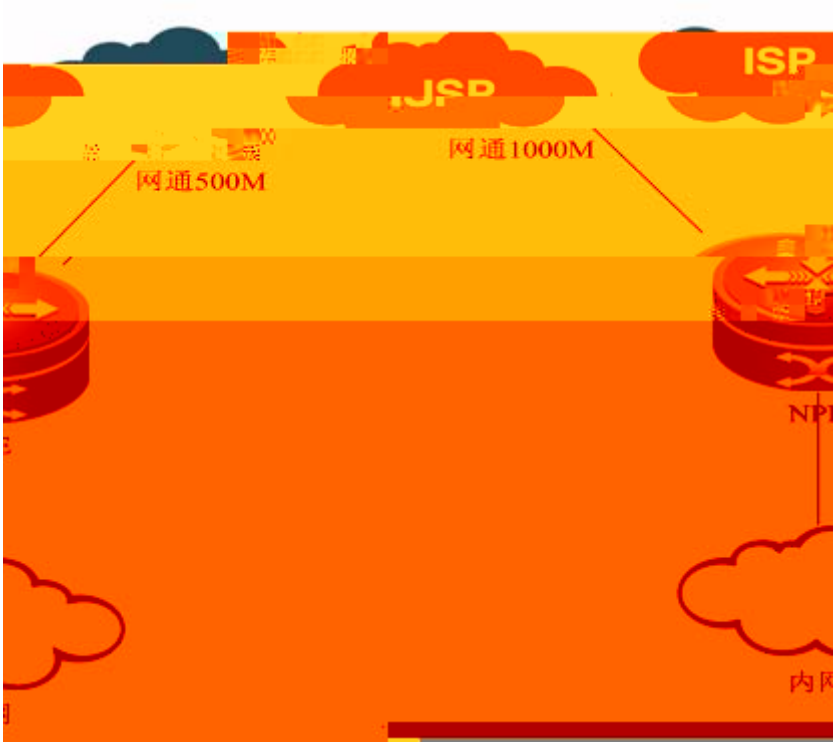
multi-link load balance load-sharing original

Ruijie (config)#	

#

Ruijie(config)#show load-monitor configure
>Load-monitor: down-link

ISP 2 gi0/2 gi0/3
1000M 500M



1

#

Ruijie# configure terminal

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

Ruijie(config)# mllb enable

2

Ruijie# configure terminal

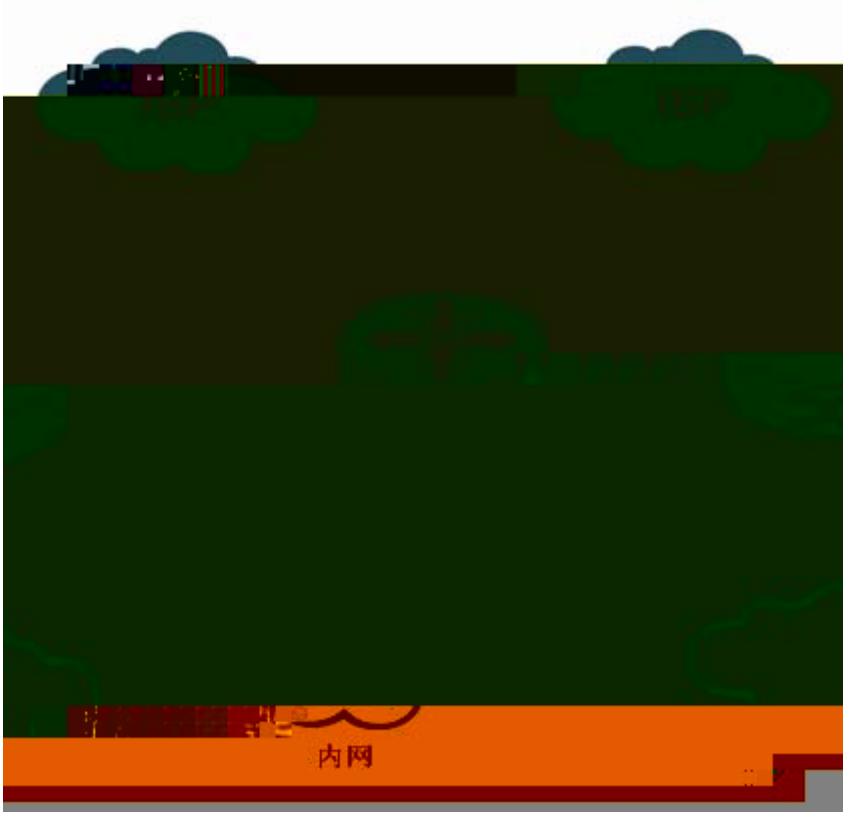
Enter configuration commands, one per line. End with CNTL/Z.

#

Ruijie(config)#

ISP 1 1000M 1 500M

first-choice



1

#

```
Ruijie#      configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)#          mllb enable
```

2

Ruijie# configure terminal

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

#

Ruijie(config)# ip route 0.0.0.0 0.0.0.0 Gi0/4 58.63.60.33

Ruijie(config)# ip route 0.0.0.0 0.0.0.0 Gi0/5 192.168.14.2

3

lately

Ruijie(config)# mllb policy latelty

4

gi0/4

Ruijie(config)# route-auto-choose cnii Gi0/4 58.63.60.33

gi0/5

Ruijie(config)# route-auto-choose cernet Gi0/5 192.168.14.2

1000M gigabitEthernet 0/1 gigabitEthernet 0/2

1 1

#

Router(config)# interface-group 1

Router(config-intf-group)# interface gi 0/1

Router(config-intf-group)# interface gi 0/2

Router(config-intf-group)# exit

2

Ruijie(config)# over-load-protect enable

3 1

Ruijie(config)# over-load-protect interface-group 1

1.

2.

3.

4.

5.

6.

vlan IP IP

vlan tag IP
IP vlan

vlan vlan id vlan
vlan tag
“ any ” native vlan
vlan native vlan vlan
“ any ”

ip mac
ip mac
ip mac
mac ip mac

ip

web ip mac

IP ip mac

```
Ruijie#    configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)#        layer23 classify enable
Ruijie(config)#        end
```

Ruijie# configure terminal	
Ruijie(config)#	
Ruijie(config)#	
Ruijie#	

no layer23 deny-mode enable

#

```
Ruijie#    configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)#        layer23                enable
Ruijie(config)#        end
```


Ruijie# configure terminal	
Ruijie(config)#	
Ruijie(config)#	
Ruijie#	

#

Ruijie# configure terminal

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

Ruijie(config)# layer23 C2Df ( )Tj /TT4 1 T2 4533554 -6.549 TD (Ruijie(config)#)Tj /TT

vlan “ vlan-group1 ” vlan 1 vlan 3 vlan7 vlan8 vlan9

```
Ruijie#
Ruijie(config)# vlan-group vlan-group1 vlan 1,3,7-9
Ruijie(config)# end
```

Ruijie# [group name]	show vlan-group vlan vlan

vlan

```
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
```

Ruijie#	
Ruijie(config)# name parent [[ip-addr] [mac-addr] subnet mask start end]	
Ruijie(config)#	
Ruijie# [| | | [name |]]	

no subscriber static name name

“ / ” ip

5 4

“ / ”

“ / ” “ / ”

ip mac

ip ip ip

ip mac mac

mac ip

mac ip ip mac

“ 1 ” ip “ 192.168.196.156 ” “ 1 ” “ 1 ” “ ”

Ruijie# configure terminal

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

Ruijie(config)#subscriber static name 1 parent / /
1 ip-host 192.168.196.156

Ruijie(config)# end

Ruijie#	
Ruijie(config)# [no] subscriber set name attribute {avoid-monitor [flow-monitor] | deny | release | vip}	vip

Ruijie#	
Ruijie(config)# name parent [[ip-addr] subnet mask start end]	, parent
Ruijie(config)#	
Ruijie# [| | [name |]]	

name

“ / ”

ip ip

5 4

/

Ruijie#	
	| name

“ .txt ”

ip

“ ” “ ”

“ ”

“ .txt ”

/ / 1, 1,192.168.197.1

“ .csv ” Microsoft Excel “ .csv ”

3

ip

“ .csv ”

/group1	xinlang	192.168.196.11-192.168.196.25
/group1	baidu	192.168.197.0/24
/group1	user1	192.168.198.1
/group1	user2	

“ userfile ”

Ruijie# network-group import txt userfile

Ruijie# [|] filename	

“ userfile ”

Ruijie# network-group export txt userfile

UDP DPI

TCP DPI

TCP

NBR1300G NBR1500G NBR2000G

“

” “ "IP ” “ ” “ ” “ P2P

” “ ” “ ” “ ”

“ ” “ ” “ ” “ ” “

” “ ” “ ” “ ” “

” “ ” “ ” “

” “ ” “ ” “

” “ ” “ ” “

WEB , ” “ ” “ RFC ” “ HTTP ” “ ”

IP

DPI

IP

Ĥ

IP IP

IP

HTTP P2P

TCP HTTP1.1

1

2

a	1 2 VPN 3 TCP SYN

xml

web xml xml
xml

h ‘

DFI

DFI

HTTP

Ruijie# configure terminal	
Ruijie(config)#	
Ruijie(config)#	
Ruijie#show running	

#

Ruijie# configure terminal

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

Ruijie(config)# identify-application enable

Ruijie(config)#

Ruijie# configure terminal	
Ruijie(config)#	
Ruijie(config)#	
Ruijie#show running	

Ruijie# configure terminal	
Ruijie(config)#	

Ruijie(config)#

seconds

P2P DPI P2P DPI P2P P2P P2P “ P2P ” “ ”

DFI

Ruijie# configure terminal	
Ruijie(config)#	DFI
Ruijie(config)#	
Ruijie#show running	

DFI

DFI

Ruijie# configure terminal

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

Ruijie(config)# identify-application dfi gather

```
Ruijie# configure terminal
```

1		app-name	app-class
2	app-name	app-class	

#

```
Ruijie# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# identify-application custom name Ruijie
```

configure terminal no Ruijie#47 0 Td <01C3tify-application custom name

Ruijie# configure terminal	
Ruijie(config)# app-name	app-name
Ruijie(config)#	
Ruijie#show identity-application key	

app-name

FTP

Ruijie# configure terminal

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

Ruijie(config)# identify-application key FTP

Ruijie(config)#

Ruijie# configure terminal	
Ruijie(config)# app-name	app-name
Ruijie(config)#	
Ruijie#show identity-application inhibitive	

app-name

QQ

Ruijie# configure terminal

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

Ruijie(config)# identify-application QQ

Ruijie(config)#

Ruijie# configure terminal	
Ruijie(config)# app-name	app-name
Ruijie(config)#	
Ruijie#show identity-application inhibitive	

app-name

QQ

Ruijie# configure terminal

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

Ruijie(config)# identify-application QQ

Ruijie(config)#

Ruijie# configure terminal	
Ruijie(config)# group-name	group-name
Ruijie(config-app-group)# app-name	app-name group-name
Ruijie(config-app-group)#	
Ruijie# show identify-application custom-group group-name	

group-name

app-group app-name

MYQQ QQ MYQQ

Ruijie# configure terminal

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

Ruijie(config)# identify-application MYQQ

Ruijie(config-custom-group)# app-add QQ

Ruijie# configure terminal

100.1.1.1 10.1.1.10

UDP myxunlei myp2p 18 18 any any 192.168.1.2 192.168.1.2 66.12.11.34 66.12.11.36

#

Ruijie# show identity-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- 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

#

Ruijie# show identity-application key

IP

QQ

MSN

FTP

#

Ruijie# show identity-application inhibitive

#

Ruijie# show identity-application class

1-0-0-0

IP 2-0-0-0

3-0-0-0

4-0-0-0

P2P 5-0-0-0

6-0-0-0

HTTP 7-0-0-0

8-0-0-0

9-0-0-0

10-0-0-0

11-0-0-0

12-0-0-0

13-0-0-0

14-0-0-0

15-0-0-0

RFC 16-0-0-0

248-0-0-0

myP2P 249-0-0-0

#

Ruijie# show identity-application group-state

app group state: 1 //1 2

Ruijie#show identity-application disable application

RFC

FTP

Ruijie# show identify-application custom-group myqq

QQ

MSN

#

Ruijie# show identity-application proto-expect

protocol expectation state: on //

protocol expectation timeout: 180 / / 3

Ruijie#show running	

#

Ruijie# configure terminal

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

Ruijie(config)# identify-application clear key-inhibitive-block group

Ruijie(config)#

IP IP

ADSL M 7-8

+ADSL

P2P

ADSL

NBR1300G NBR1500G NBR2000G

“

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” “ ” “ ”

” “ HTTP ” “ HTTP ” “ HTTP

” “ ” “ ” “

” “ HTTP ” “ HTTP ” “ ”

“ ” “ ” “ ”

P2P	(all)	(all)	Y
	(all)	(all)	Y
	(all)	(all)	Y
HTTP			
	HTTP	(all)	Y
	(all)	(all)	Y
	(all)	(all)	Y
(IM)	(all)	(all)	Y

“ HTTP ”

a “ HTTP ”

a

IP

NAT IP

80%

DNS DNS

DNS DNS
IP
IP PC DNS

DNS HTTP DNS
HTTP DNS

DNS
DNS DNS DNS
DNS IP DNS

a

DNS

Ruijie>	
Ruijie#	
Ruijie(config)#	
Ruijie(config)#	

interface-name

IP hash

“ inhibitive_intf_group ” “ dialer 1 ” “ dialer 2 ” “ dialer 3 ” “ ”

```
Router(config)#interface-group inhibitive_intf_group
Router(config-intf-group)#interface-member dialer 1
Router(config-intf-group)#interface-member dialer 2
Router(config-intf-group)#interface-member dialer 3;
Router(config-intf-group)#load-balance policy load
Router(config-intf-group)#exit
```

a	WAN dialer WAN WAN LAN

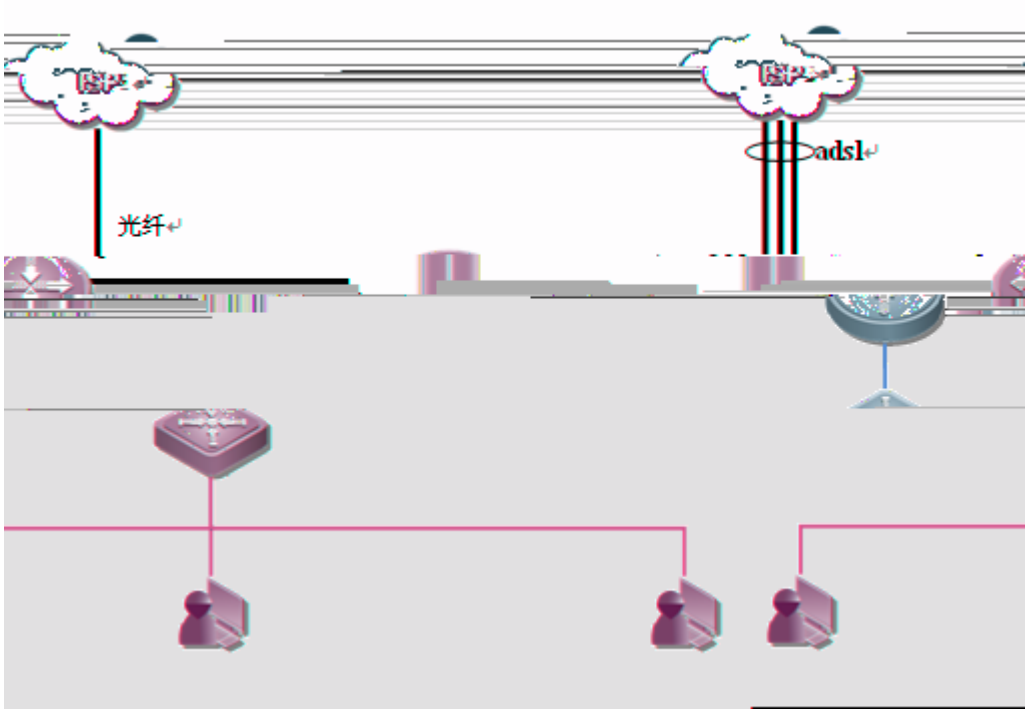
WAN

Ruijie>	
Ruijie#	
Ruijie(config)# type number	
Ruijie(config-if)# ip-address	
Ruijie(config-if)#	

GigabitEthernet 0/1 100.0.0.1

```
Router(config)#interface gi 0/1
Router(config-if-GigabitEthernet 0/1)# nexthop 100.0.0.1
```

a	WAN WAN LAN



1

#

Router(config)#ip route 0.0.0.0 0.0.0.0 202.100.12.5

2

dialer 1,2,3

Router(config)#interface-group inhibitive_intf_group

Router(config-intf-group)# interface-member dialer 1

Router(config-intf-group)# interface-member dialer 2

Router(config-intf-group)# interface-member dialer 3

config-intf-group)# load-balance policy load config-intf-group)#exit

3 config)#time-range no_midnight

Router (config-time-range)#periodic daily 9:00 to 23:00

Router (config-time-range)#exit

4

#

Router(config)#app route enable

http

Router(config)#app route P2P interface-group inhibitive_intf_group

Router(config)#app route interface-group inhibitive_intf_group time-range no_midnight

Router(config)#app route HTTP interface-group inhibitive_intf_group time-range no_midnight

Router(config)#app route interface-group inhibitive_intf_group

Router(config)#app route interface-group inhibitive_intf_group

Router(config)#app route interface-group inhibitive_intf_group

1

Router#show app route

CLASS	INTERFACE(GRPUP)	time-range	state
P2P	inhibitive_intf_group(group)	NA	UP
	inhibitive_intf_group(group)	no_midnight	UP
HTTP	inhibitive_intf_group(group)	no_midnight	UP
	inhibitive_intf_group(group)	NA	UP
	inhibitive_intf_group(group)	NA	UP
	inhibitive_intf_group(group)	NA	UP

CLASS

2

Router#show app route statistics

CLASS INTERFACE(GROUP)

HIT DATA(byte) HIT RATE(Mb/s)

SUM DATA(byte) SUM RATE(Mb/s)

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

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

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

HTTP inhibitive_intf_group(group)

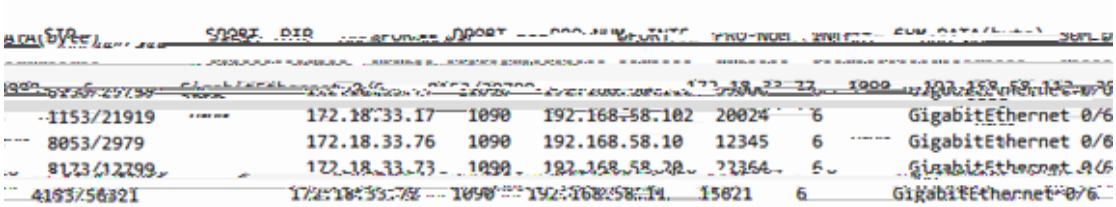
81535/297997 0.5/3.75

101918/342496 0.6/4.68

CLASS	(/ / /)
INTERFACE(GROUP)	/
HIT DATA(byte)	/
HIT RATE(Mb/s)	= / /
SUM DATA(byte)	= + /
SUM RATE(Mb/s)	= / /

3 “ HTTP ”

Router#show app route HTTP session

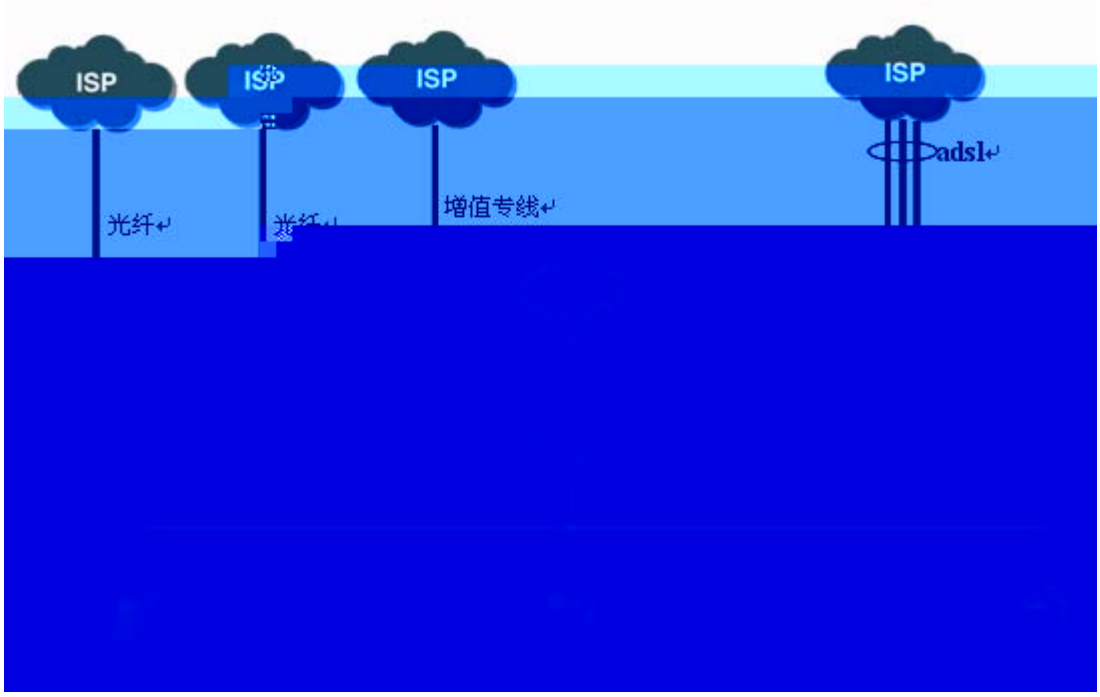


SIP	IP
SPORT	
DIP	IP
DPORT	
SUM DATA(byte)	/

3

ADSL 88.0.0.0/8 80

ADSL



1

ecmp

Router(config)#ip route 0.0.0.0 0.0.0.0 gi0/1 202.100.12.51

Router(config)#ip route 0.0.0.0 0.0.0.0 gi0/2 202.96.128.86

gi0/1 gi0/2

Router(config)#route-auto-choose cnii gi0/1 202.100.12.51

Router(config)#route-auto-choose cnc gi0/2 202.96.128.86

3 PBR

88.0.0.0/8 www 88.0.0.1

Router(config)# access-list 100 permit ip any 88.0.0.0 0.255.255.255

Router(config)# access-list 101 permit tcp any any eq www

Router(config)# route-map RM_FOR_PBR 10

Ruijie(config-route-map)#match ip address 100

Ruijie(config-route-map)#match ip address 101

Ruijie(config-route-map)#set ip nexthop 88.0.0.1

Gi 0/0

Ruijie(config)#interface GigabitEthernet 0/0

Ruijie(config-if)#ip policy route-map RM_FOR_PBR

2

dialer 1,2,3

Router(config)#interface-group inhibitive_intf_group

Router(config-intf-group)# interface-member dialer 1

Router(config-intf-group)# interface-member dialer 2

Router(config-intf-group)# interface-member dialer 3

#

Router(config-intf-group)# load-balance policy load

Router(config-intf-group)#exit

3

Router(config)#time-range no_midnight

Router (config-time-range)#periodic daily 9:00 to 23:00

Router (config-time-range)#exit

4

#

Router(config)#app route enable

#

Router(config)#app route P2P interface-group inhibitive_intf_group

Router(config)#app route interface-group inhibitive_intf_group time-range no_midnight

Router(config)#app route interface-group inhibitive_intf_group

Router(config)#app route interface-group inhibitive_intf_group

Router(config)#app route interface-group inhibitive_intf_group

1

Router#show app route

CLASS INTERFACE(GRPUP) time-range state

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

P2P inhibitive_intf_group(group) NA UP

inhibitive_intf_group(group) no_midnight UP

ȯ

60168/91067 0.1/1.41

inhibitive_intf_group(group)

20136/40359 0.1/0.98

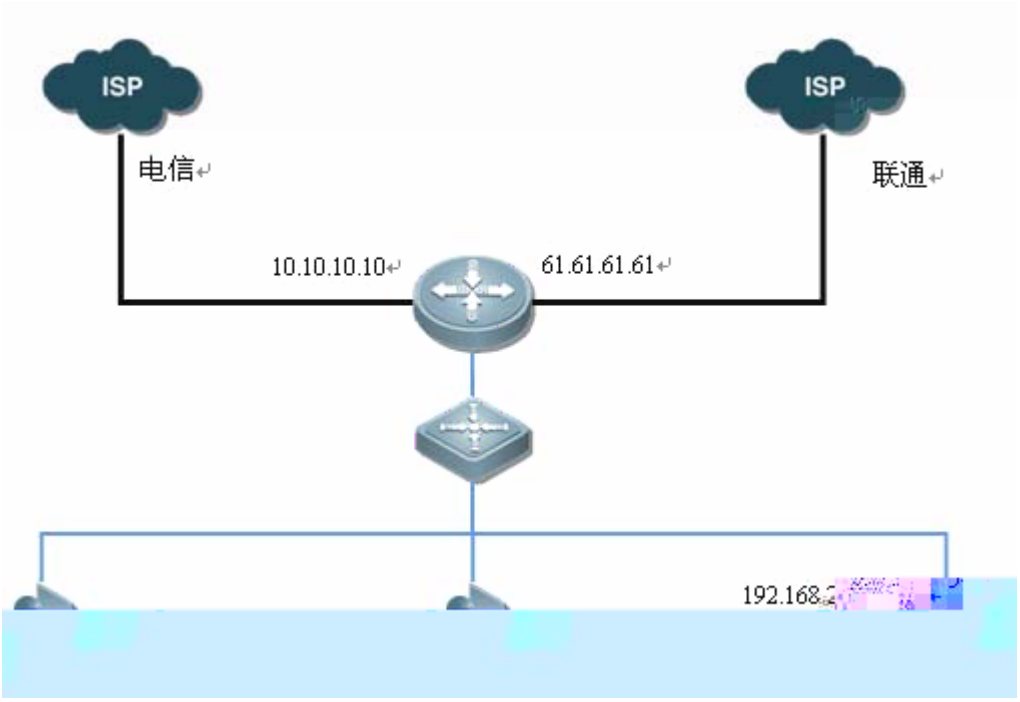
21031/60594 0.2/2.01

3 “HTTP ”

Router#show app route HTTP session

2

HTTP



1

#

Router(config)#ip route 0.0.0.0 0.0.0.0 202.100.12.51

2

Router(config)#time-range no_midnight

Router (config-time-range)#periodic daily 9:00 to 23:00

Router (config-time-range)#exit

3 DNS

DNS

Router(config)#interface gi 0/1

Router(config-if-GigabitEthernet 0/1)#dns 202.96.199.133

Router(config-if-GigabitEthernet 0/1)#exit

Router(config)#interface gi 0/2

Router(config-if-GigabitEthernet 0/2)#dns 58.240.57.33

Router(config-if-GigabitEthernet 0/2)#exit

DNS

Router(config)#dns-proxy enable

4

Router(config)#interface gi 0/2

Router(config-if-GigabitEthernet 0/1)#nexthop 61.61.61.1

5

#

Router(config)#app route enable

http

Router(config)#app route P2P GigabitEthernet 0/2

Router(config)#app route GigabitEthernet 0/2 time-range no_midnight

Router(config)#app route HTTP GigabitEthernet 0/2 time-range no_midnight

Router(config)#app route GigabitEthernet 0/2

Router(config)#app route GigabitEthernet 0/2

Router(config)#app route GigabitEthernet 0/2

1

Router#show app route

CLASS INTERFACE(GRPUP) time-range state

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

P2P GigabitEthernet 0/2(interface) NA UP

GigabitEthernet 0/2(interface) no_midnight UP

HTTP GigabitEthernet 0/2(interface) no_midnight UP

GigabitEthernet 0/2(interface) NA UP

GigabitEthernet 0/2(interface) NA UP

GigabitEthernet 0/2(interface) NA UP

2

Router#show app route statistics

CLASS INTERFACE(GROUP)

HIT DATA(byte) HIT RATE(Mb/s)

SUM DATA(byte) SUM RATE(Mb/s)

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

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

P2P inhibitive_intf_group(group)

92333/297997 0.6/3.75

202918/342496 0.7/4.68

inhibitive_intf_group(group)

31030/101901 0.2/1.75

401189/212002 0.3/2.61

inhibitive_intf_group(group)

10120/201331 0.1/2.57

100121/204691 0.2/2.98

inhibitive_intf_group(group)

41035/97997 0.3/1.01

60168/91067 0.1/1.41

inhibitive_intf_group(group)

20136/40359 0.1/0.98

21031/60594 0.2/2.01

3 “HTTP ”

Router#show app route HTTP session

ISP ADSL

30 ADSL 20 ADSL

Router(config)#ip route 0.0.0.0 0.0.0.0 dialer 44
Router(config)#ip route 0.0.0.0 0.0.0.0 dialer 45
Router(config)#ip route 0.0.0.0 0.0.0.0 dialer 46
Router(config)#ip route 0.0.0.0 0.0.0.0 dialer 47
Router(config)#ip route 0.0.0.0 0.0.0.0 dialer 48
Router(config)#ip route 0.0.0.0 0.0.0.0 dialer 49

2

ADSL dialer 1-30

Router(config)#interface-group inhibitive_intf_group
Router(config-intf-group)# interface-member dialer 1
Router(config-intf-group)# interface-member dialer 2
Router(config-intf-group)# interface-member dialer 3
Router(config-intf-group)# interface-member dialer 4
Router(config-intf-group)# interface-member dialer 5
Router(config-intf-group)# interface-member dialer 6
Router(config-intf-group)# interface-member dialer 7
Router(config-intf-group)# interface-member dialer 8
Router(config-intf-group)# interface-member dialer 9
Router(config-intf-group)# interface-member dialer 10
Router(config-intf-group)# interface-member dialer 11
Router(config-intf-group)# interface-member dialer 12
Router(config-intf-group)# interface-member dialer 13
Router(config-intf-group)# interface-member dialer 14
Router(config-intf-group)# interface-member dialer 15
Router(config-intf-group)# interface-member dialer 16
Router(config-intf-group)# interface-member dialer 17
Router(config-intf-group)# interface-member dialer 18
Router(config-intf-group)# interface-member dialer 19
Router(config-intf-group)# interface-member dialer 20
Router(config-intf-group)# interface-member dialer 21
Router(config-intf-group)# interface-member dialer 22
Router(config-intf-group)# interface-member dialer 23
Router(config-intf-group)# interface-member dialer 24
Router(config-intf-group)# interface-member dialer 25
Router(config-intf-group)# interface-member dialer 26
Router(config-intf-group)# interface-member dialer 27
Router(config-intf-group)# interface-member dialer 28
Router(config-intf-group)# interface-member dialer 29
Router(config-intf-group)# interface-member dialer 30

#

2

Router#show app route statistics

CLASS INTERFACE(GROUP)

HIT DATA(byte) HIT RATE(Mb/s)

SUM DATA(byte) SUM RATE(Mb/s)

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

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

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

P2P inhibitive_intf_group(group)

92333/297997 0.6/3.75

202918/342496 0.7/4.68

inhibitive_intf_group(group)

31030/101901 0.2/1.75

401189/212002 0.3/2.61

inhibitive_intf_group(group)

10120/201331 0.1/2.57

100121/204691 0.2/2.98

inhibitive_intf_group(group)

41035/97997 0.3/1.01

60168/91067 0.1/1.41

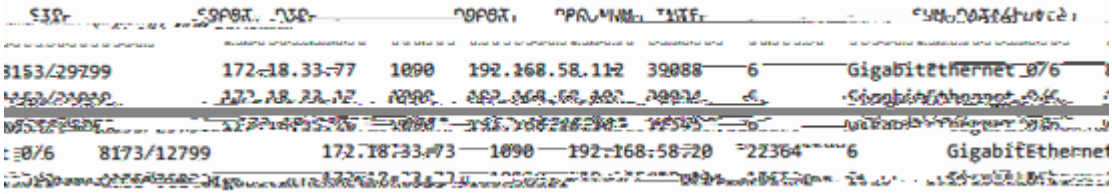
inhibitive_intf_group(group)

20136/40359 0.1/0.98

21031/60594 0.2/2.01

3 “HTTP ”

Router#show app route HTTP session



VOIP Voice Over Internet Protocol P2P Peer-to-Peer P2P

1

QOS

2 /

/ /

a) P2P

Ruijie(config)# no flow-pre-mgr enable

Ruijie(config)# limit-number	limit-number 0

no flow-pre-mgr total-limit

a	1 2
	NBR1300G\1500G\2000G

20 20

Ruijie# configure terminal

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

Ruijie(config)# flow-pre-mgr total-limit 200000

/

/

Ruijie(config)# rule-id subs_name total-limit-number per-limit-number	/ block by-pass trust rule-id 1~50 subs_name total-limit-number / 0 per-limit-number / IP total-limit-number 0

no flow-pre-mgr

Ruijie(config)# flow-pre-mgr 1 subscriber UserGroupA action trust total-limit 5000 per-ip-limit 300

ACL

```
Ruijie#      config terminal
Ruijie(config)#          interface GigabitEthernet              0/0
```

NULL