”Ą

Ł

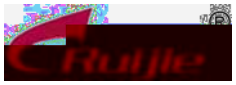
RGOS 10.3(4b6)p4

ㅓ V2.0

˘ ĄĄ ĺ Â

Л˘ a Лъ ĄĄ ĺ

à à à à à è à è ĺ Â



à à à à à

ʻ _____ Â

Л Љ ң à ң ǂ à ң
ā à ˚ ` Â

ʻ _____Â

Л Љ ˘ ľ Ŀ à à
˚ Â Ю ˘ Л Ђ̄ يي à ˚ ˘ Â

ʻ _____ Â

Л Љ ѝ ╠ ā
Â ң à ˚ Љ è ˘
Ŀ Â

× Ŀ ʻ

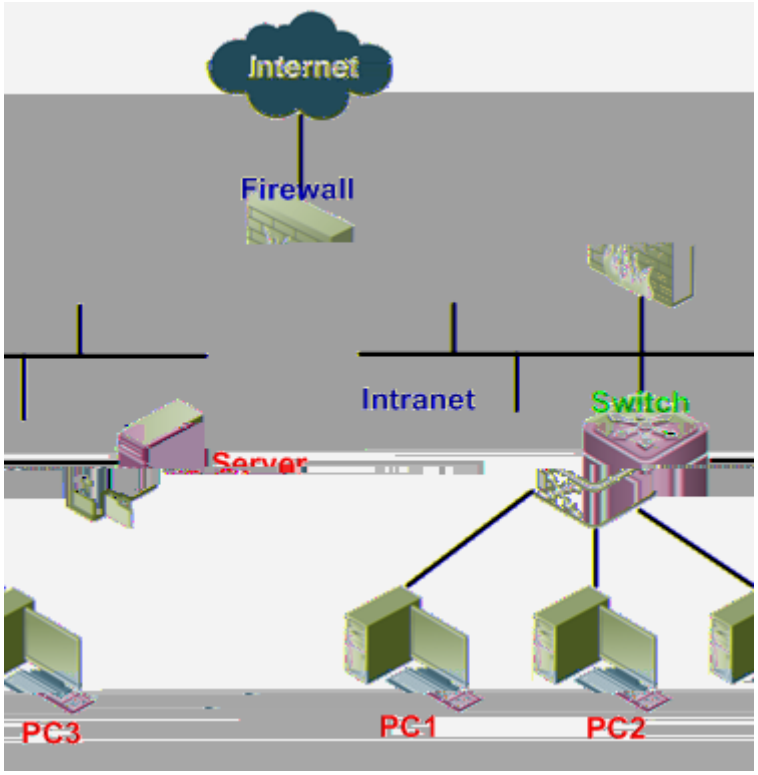
ʻ _____

б Л ʻ _____

1 ң

1.1

ˆ ˜ ˘ Э
Â ч
˘
Л Љ ˘ ˘ Ц
˘ ¨ ľ ˇ Ł ˘ ˇ ľ a
ˇ Ł ˘ Â ˘ Э ˆ
Ю ľ Ł ˜ a ˘ ˇ ≠
˘ ` Â



ي 1 ي

˘ Ж ˘ ˘ ˘ ˘ ≠
Â ˘ à Â

1.2

ˆ ˜ ˘

˘

Ь ˘ ˚ ˘ Ь˘

` Ь ˘ ѝ Â

1.3 ў

ˆ ˜ ў ЛЬЮ ‘

ч Лъ л б ˘ ¨ б л

Ь ˚ ˘ Ь а л Â

л Лъ . Æˆ л Æ ˜ ˘ з

л ` л ˘ а ` Â

1.4 ў ╖

ў ╖ ‘

‘ л ‡˘ ╟ л

Â ˘ л Лъ ,

╖ ‘ ˆ ä è

˜ ˘ ˘ ╟ ¤

,

╖ ‘ ä ä ä ä ä

ǂ ä ä æ а ä ä ä л

˘ ä ä äǂ

, а л ╖ ,

╖ , ╟ ¨ ,

ă

‘ ä Лъ ä ╟ ,

NAT

HAˆ AS ˜

2

2.1

Л Љ Â

Л Љ a ˇ

˘ ł ˆ ¨ ~ Â

ѝ ˘ Л Љ ˚ ч

˘ Л ˘ Л Â

ч Ь Л^ Ь Л Ь Л Ь

Л ~ ˘ ˘ Л ˘

Л з è ˘ Â

˘ Л Љ ˘ Ь a ҳ ˛ ˘

Л Ю ˝ è Л Ю ˚ Л Л ˘

Ю Â

2.2

. ˘ ЉЮ . Ю Â

2.2.1

˛

.

ѝ . ˘ Э Ю Â

… ˘ Л Л ╗ a ˚

б ¨І Љ Л ѝ Л ˘ ˘

Э

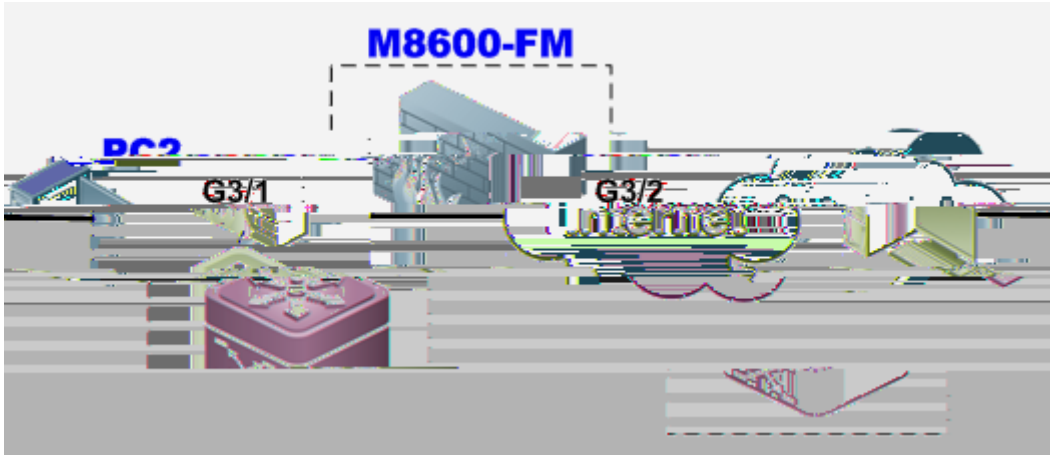
Step 14	**interface Aggretegateport** *port-group-number*	ﻝ
Step 15	**switchport mode trunk**	ﻝ ﻯ ﻝ
Step 16	**switchport trunk allowed vlan {all | [add | remove | except] }**	Э … ч ﻝ ˘ è a
Step 17	**show vlan**	ﻝ

ł Ю ˘ é Ľ Ł Â

	ﻉ	
Step 1	**configure terminal**	Â
Step 2	**interface vlan** *vlan-id*	… ﻝ
Step 3	**ip address** *ip_addrss mask*	ﻝ
Step 4	**interface vlan** *vlan-id*	… ץ ﻝ
Step 5	**ip address** *ip_addrss mask*	ﻝ

2.2.3

ˆ ﻯ ˜ ﻝ ﻉ ﻝ ˘ ˘
Â ╕
Â



ﻱ 1 ﻱ

Э ľ Ł ť

˜

… Â ⅄ ⅄˘
ť ╕ Â

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# vlan 2
Ruijie(config-vlan)# exit
Ruijie(config)# vlan 3
Ruijie(config-vlan)# exit
Ruijie(config)# interface Gigabitethernet 3/1
Ruijie(config-if)# switchport access vlan 2
Ruijie(config-if)# exit
Ruijie(config)# interface Gigabitethernet 3/2
Ruijie(config-if)# switchport access vlan 3
Ruijie(config-if)# exit
```

ˆ Æ ˜
ч ⅄ ⅄ ѝ ⅄ ˙

```
Ruijie(config)# interface TenGigabitethernet 7/1
Ruijie(config-if)# port-group 2
Ruijie(config-if)# exit
Ruijie(config)# interface TenGigabitethernet 7/2
Ruijie(config-if)# port-group 2
Ruijie(config-if)# exit
```

⅄ Ю˘
Â

```
Ruijie(config)# interface Aggretegateport 2
Ruijie(config-if)# switchport mode trunk
Ruijie(config-if)# switchport trunk allowed vlan remove 1,4-4094
```

˜

```
M8600-FW(config)#interface vlan 2
M8600-FW(config-if)#ip address 202.1.1.1 255.255.255.0
M8600-FW(config)#interface vlan 3
M8600-FW(config-if)# ip address 101.1.1.1 255.255.255.0
```

ˆ ѝ ˜ ˆ ѝ ˜ ˘ ⅄ Л
ˆ Ь ˜ ˘ ˇ ˘ Ю ˙

```
M8600-FW#show ip fpm counters
Droped packet counters:
```

```
Count     Reason
0         Non-IPv4 packet
0         Bad IPv4 header length
0         Bad IPv4 total length
0         IPv4 fragment with DF bit set
0         Too small IPv4 fragment
0         Bad IPv4 fragment offset
0         IPv4 fragment timeout
0         Bad IPv4 checksum
0         Invalid IPv4 address
0         Invalid TCP flags
0         Invalid TCP initial flags
0         Invalid TCP initial ACK number
0         Invalid TCP initial window
0         Invalid TCP sequence
0         Invalid ICMP message type
0         Invalid ICMP initial message type
0         Exceptional connection state
0         Droped by policy
0         Out of capability
<end>
Rejected or terminated connection counters:
Count     Reason
0         Out of life time
0         Exceptional TCP connection
0         Exceptional UDP connection
8         Exceptional ICMP connection
0         Exceptional RawIP connection
0         Rejected by policy
<end>
M8600-FW#show ip fpm statistics
The capacity of the flow table:2000000
Number of active flows:10
```

2.3

2.3.1

2.3.2

Step 1	**configure terminal**

Step 2	**vlan** *vlan-id*	…
Step 3	**exit**	
Step 4	**interface** *interface-name interface-number*	⅄
Step 5	**switchport access vlan** *vlan-id*	⅄ ╗
Step 6	**vlan** *vlan-id*	… Y
Step 7	**exit**	
Step 8	**interface** *interface-name interface-number*	⅄
Step 9	**switchport access vlan** *vlan-id*	⅄ ╗ Y
Step 10	**interface TenGigabitethernet** *interface-number*	б . ”I Л⁢ ⅄
Step 11	**port-group** *port-group-number*	⅄ ╗ ⅄
Step 12	**interface TenGigabitethernet** *interface-number*	б . ”I Л⁢ ⅄ Y
Step 13	**port-group** *port-group-number*	⅄ ╗ ˇ ⅄
Step 14	**interface Aggretegateport** *port-group-number*	⅄
Step 15	**switchport mode trunk**	⅄ ѝ ⅄
Step 16	**switchport trunk allowed vlan {all | [add | remove | except] }**	Э … ч ⅄ˇ è a
Step 17	**show vlan**	⅄

ł Ю ˇ έ Ľ Ь Â

	₹	
Step 1	**configure terminal**	Â
Step 2	**interface vlan** *vlan-id*	… ⅄
Step 3	**bridge-group** *group-num*	⅄ ╗
Step 4	**interface vlan** *vlan-id*	… Y ⅄
Step 5	**bridge-group** *group-num*	⅄ ╗ ˇ

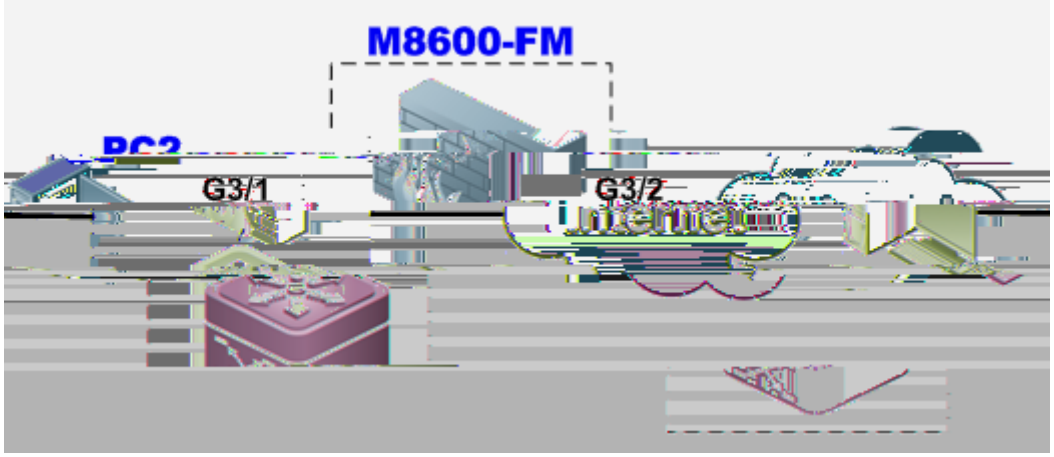
2.3.3 ѝ

‘

ˆ ѝ ~ ˬ Ѽ ˇ ˬ ˇ

Â ╗ ˇ

Â



ي 2 **ي**

Э ľ Ł ĺ Â

~

… ˇ ˬ ˬˇ

ĺ ╗ Â

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# vlan 2
Ruijie(config-vlan)# exit
Ruijie(config)# vlan 3
Ruijie(config-vlan)# exit
Ruijie(config)# interface Gigabitethernet 3/1
Ruijie(config-if)# switchport access vlan 2
Ruijie(config-if)# exit
Ruijie(config)# interface Gigabitethernet 3/2
Ruijie(config-if)# switchport access vlan 3
Ruijie(config-if)# exit
```

ˆ Æ ~

ч ˬ ˬ ѝ ˬ Â

```
Ruijie(config)# interface TenGigabitethernet 7/1
Ruijie(config-if)# port-group 2
Ruijie(config-if)# exit
Ruijie(config)# interface TenGigabitethernet 7/2
Ruijie(config-if)# port-group 2
Ruijie(config-if)# exit
```

ˬ Ю Â

```
Ruijie(config)# interface Aggretegateport 2
Ruijie(config-if)# switchport mode trunk
```

```
Ruijie(config-if)# switchport trunk allowed vlan remove 1,4-4094
```

˜

```
M8600-FW(config)#interface vlan 2
M8600-FW(config-if)#bridge-group 5
M8600-FW(config)#interface vlan 3
M8600-FWconfig-if)#bridge-group 5
```

˘ Л Љ show ip fpm flows˘ show ip fpm counters˘ show ip fpm statistics . Э Â

2.4

˘ ˚ ˘ Л˘

Л з è ˘ Â

2.4.1

. ˘ ЉЮ . Ю Â

.

й . ˘ Э Ю Â

… ˘ Л Л ╗ a˚

б ”I Љ Л й Л˘ ˘ .

2.4.2

ЛЬЮ

Ю й

Step 1	**configure terminal**
Step 2	**vlan** *vlan-id*
Step 3	
Step 4	
Step 5	**switchport access vlan** *vlan-id*
Step 6	**vlan** *vlan-id*
Step 7	
Step 8	
Step 9	**switchport access vlan** *vlan-id*
Step 10	**vlan** *vlan-id*
Step 11	
Step 12	
Step 13	**switchport access vlan** *vlan-id*
Step 14	**vlan** *vlan-id*
Step 15	
Step 16	
Step 17	**switchport access vlan** *vlan-id*
Step 18	**interface TenGigabitethernet** *interface-number*
Step 19	**port-group** *port-group-number*
Step 20	**interface TenGigabitethernet** *interface-number*
Step 21	**port-group** *port-group-number*

Step 22	**interface Aggretegateport** *port-group-number*	ﻝ
Step 23	**switchport mode trunk**	ﻝ ﻯ ﻝ
Step 24	**switchport trunk allowed vlan {all | [add | remove | except] }**	Э … ч ﻝ ˇ è a
Step 25	**show vlan**	ﻝ

ł Ю ˇ é ľ Ł Â

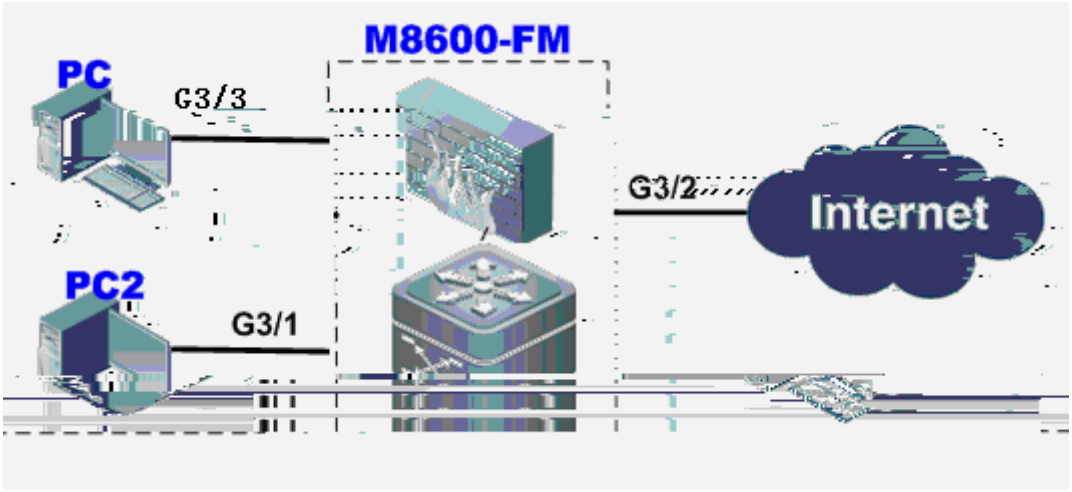
	٪	
Step 1	**configure terminal**	Â
Step 2	**interface vlan** *vlan-id*	… ﻝ
Step 3	**bridge-group** *group-num*	ﻝ ╗
Step 4	**interface vlan** *vlan-id*	… Ɣ ﻝ
Step 5	**bridge-group** *group-num*	ﻝ ╗
Step 6	**interface vlan** *vlan-id*	… Ь ﻝ
Step 7	**bridge-group** *group-num*	ﻝ ╗ Ɣ
Step 8	**interface vlan** *vlan-id*	… ﻝ
Step 9	**bridge-group** *group-num*	ﻝ ╗ Ɣ
Step 10	**interface BVI** *bridge-group id*	… ﻝ
Step 11	**ip address** *ip_addrss mask*	ﻯ ﻝ
Step 12	**interface BVI** *bridge-group id*	… Ɣ ﻝ
Step 13	**ip address** *ip_addrss mask*	ﻯ ﻝ

2.4.3 ﻯ

ˆ ﻯ ˜ ﻝ ﻭ ﻝ ˇ ﻭ ﻝ ˇ ﻝ

ˇ Â ╗

ˇ Â



3

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# vlan 2
Ruijie(config-vlan)# exit
Ruijie(config)# vlan 3
Ruijie(config-vlan)# exit
Ruijie(config)# vlan 4
Ruijie(config-vlan)# exit
Ruijie(config)# interface Gigabitethernet 3/1
Ruijie(config-if)# switchport access vlan 2
Ruijie(config-if)# exit
Ruijie(config)# interface Gigabitethernet 3/2
Ruijie(config-if)# switchport access vlan 3
Ruijie(config-if)# exit
Ruijie(config)# interface Gigabitethernet 3/3
Ruijie(config-if)# switchport access vlan 4
Ruijie(config-if)# exit
```

```
Ruijie(config)# interface TenGigabitethernet 7/1
Ruijie(config-if)# port-group 2
Ruijie(config-if)# exit
Ruijie(config)# interface TenGigabitethernet 7/2
Ruijie(config-if)# port-group 2
Ruijie(config-if)# exit
```

```
Ruijie(config)# interface Aggretegateport 2
Ruijie(config-if)# switchport mode trunk
Ruijie(config-if)# switchport trunk allowed vlan remove 1,5-4094
```

3 ﻝ

3.1 ﻝ

Э˘ ﻝ ˙ ﻝ à ﻝ à

Л Ї ł˘ Ў Л Ћъ Л˘ ≠ Л Ћъ Л Ї
Â

Ћ	
Л	Л Ћъ Ю ’
Л	Л Ћъ Ю ’
Л MTU	Л Ћъ Ю ’
Л LinkTrap	Л Ћъ Ю ’
… VLAN Л	Л Ћъ Ю… VLAN Л

VLAN <%.

ﻠ

ﻠ

ﻠ

ﻠ †

3.3.1 ﻠ ﻠ ‡

VLAN ﻠˇ è ﻠ VLAN ﻠ VLAN ID Â

3.3.2 ﻠ ϗ

ﻠ Ю interface ϗ ﻠ Â

ｷ	
Ruijie(config-if)# **shutdown**	ﾉ

Ю ˘ Э˘ ﾉ VLAN 100 shutdown˙

```
Ruijie# configure terminal
Ruijie(config)# interface vlan 100
Ruijie(config-if)# shutdown
```

3.3.4 ﾉ

ﾉЛъ ﾉ ˘ ﾉ ﾉ□ Â

ﾉ ﾉÿ ˘ ÿ ˘

ﾉ□˘ ж ﾉ□˘ Лъ Э ﾉ

Â

ѝ 1 ˘ ѝ 2 Â

ｷ a ﾉ NULL ﾉЭ ˘ ѐ ﾉﾉЛъ Â

ｷ	
Ruijie(config-if)# **carrier-delay** *seconds*	ﾉ seconds˙ <0-60>

Ю ˘ Э˘ ﾉ VLAN 100 ˙

```
Ruijie# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# interface vlan 100
Ruijie(config-if)# carrier-delay 10
Ruijie(config-if)# end
```

3.3.5 ﾉ MTU

ﾉЛъ ﾉ MTU ﾉ Â

MTU ˘ ˘ a Лъ Â

ﾉ ˘ MTU˙ Â

MTU ˘ a˚ ң Â ѝ 4 ˘ ѝ 1500 Â

ｷ a VLAN ﾉ à BVI ﾉ à NULL ﾉ à LOOPBACK ﾉЭ ˘ ѐ ﾉﾉ Лъ Â

ｷ	
Ruijie(config-if)# **mtu** *num*	ﾉ MTU MTU ˘ ѓ ң ѓ ﾉ Â

Ю ˘ Э˘ ﾉ dailer 100 MTU˙

```
Ruijie# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# interface dailer 100
Ruijie(config-if)# mtu 1000
Ruijie(config-if)# end
```

3.3.6 ㅓ LinkTrap

ㅓ Л Ъ ㅓ Э ˇ LinkTrap Â ╗ ˇ ㅓ Link ㅓ ◘ ˇ
SNMP LinkTrap ˇ ㅓ ‡ a Â Ю ˇ ╗ Â

ч	
Ruijie(config-if)# [**no**] **snmp trap link-status**	ㅓ link trap ╗ Â

Ю ˇ Э ˇ ㅓ VLAN 100 a LinkTrap ˙

```
Ruijie# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# interface vlan 100
Ruijie(config-if)# no snmp trap link-status
Ruijie(config-if)# end
```

3.3.7 … VLAN ㅓ

ў Э ˇ … VLAN ㅓ ˇ Л Ъ VLAN ㅓ ╗ Â
ㅓ Л Ъ **interface vlan** *vlan-id* ч ˇ … VLAN ㅓ Â ㅓ Л Ъ bridge-group
ч ˇ VLAN ㅓ ╗ Â

VLAN ㅓ ˇ ㅓ Л Ъ ㅓ Ю no bridge-group ч Â

VLAN ㅓ ˇ ㅓ Л Ъ Ю **no interface vlan** *vlan-id* ч Â

VLAN ㅓ ╗ ^ Bridge-Group ˇ ˇ ㅓ ‘

	ч	
Step 1	Ruijie(config)# **interface vlan** *vlan-id*	… VLAN ㅓ ’
Step 2	Ruijie(config-if)# **bridge-group** *bridge-group-id*	ㅓ ╗ ˇ ㅓ Л Ъ 500 ˇ ㅓ 1---500 Â

Ю ˇ Э ˇ … VLAN ㅓ ˇ ㅓ ╗ 100 ‘

```
Ruijie# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# interface vlan 10
Ruijie(config-if)# bridge-group 100
```

VLAN ㅓ IP ˇ ㅓ ‘

	₹	
Step 1	Ruijie(config)# **interface vlan** *vlan-id*	… VLAN Л’
Step 2	Ruijie(config-if)# **ip address** *ip_address subnet_mask*	IP Â

Ю ˘ Э˘ … VLAN Л˘ з Л¦ IP ‘

```
Ruijie# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# interface vlan 100
Ruijie(config-if)# ip address 192.168.100.1 255.255.255.0
Ruijie(config-if)#
```

3.3.8 … BVI Л

ў Э˘ … BVI Л˘ Лъ BVI Л Э ₹ Â

Л Лъ **interface bvi** *bridge-group-id* … BVI Л Â

BVI Л˘ Л Лъ **no interface bvi** *bridge-group-id* ₹ Â

BVI Л Э IP ˘ BVI Л ˘ Л Лъ ˘ Л

‘

	₹	
Step 1	Ruijie(config)# **interface bvi** *bridge-group-id*	… BVI Л’ Л Лъ… 500 ˘ Л 1---500 Â
Step 2	Ruijie(config-if)# **ip address** *ip_address subnet_mask*	IP Â

Ю ˘ Э˘ VLAN Л ¦ ’ з … BVI Л˘ з BVI Л¦ IP ‘

```
Ruijie# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# interface vlan 100
Ruijie(config-subif)# bridge-group 100
Ruijie(config-subif)# exit
Ruijie(config)# interface vlan 200
Ruijie(config-subif)# bridge-group 100
Ruijie(config-subif)# exit
Ruijie(config)# interface vlan 300
Ruijie(config-subif)# bridge-group 100
Ruijie(config-subif)# exit
Ruijie(config)# interface bvi 100
Ruijie(config-if)# ip address 192.168.100.1 255.255.255.0
Ruijie(config-if)# no shutdown
```

3.3.9 Л ¦

ў Э˘ … ﻝ ﺡ Â

Э˘ ﾉ Л VLAN ﻝ BVI ﻝ ﺡ Â

ﻝ ﺡ ł˘ ﾉ Л ﻝ˘ з ﾉ Л ﻝ
Â Ю˘ ﾉ Л ﻝ˘ з ﾉ Л Â

ﻝ ﺡ ˘ ﾉ Л ﻝ **ip vrf forwarding** ҂ Â

ﻝ ў ˘ ﾉ Л ﻝ **no ip vrf forwarding** ҂ Â

ﻝ Ю˘ ﻝ ﺡ ‘

	҂	
Step 1	Ruijie(config)# **interface** *<interface-id>*	ﻝ ’ Э˘ VLAN ﻝ BVI ﻝ’
Step 2	Ruijie(config-if)# **ip vrf forwarding** *context-name*	ﻝ ﺡ ’

Ю ˘ Э˘ VLAN ﻝ ₴ ’ ‘

```
Ruijie# show interfaces vlan 100
 Index(dec):4196 (hex):1064
 Vlan 100 is UP  , line protocol is UP
 Hardware is Firewall Interface Vlan, address is 001a.a987.654b (bia
 001a.a987.654b)
 Interface address is: no ip address
 ARP type: ARPA,ARP Timeout: 3600 seconds
 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
 30 seconds input rate 0 bits/sec, 0 packets/sec
 30 seconds output rate 0 bits/sec, 0 packets/sec
 0 packets input, 0 bytes, 0 no buffer, 0 dropped
 Received 0 broadcasts, 0 runts, 0 giants
 0 input errors, 0 CRC, 0 frame, 0 overrun, 0 abort
 5462 packets output, 251252 bytes, 0 underruns , 0 dropped
 0 output errors, 0 collisions, 0 interface resets
```

4 MAC

MAC ˘ MAC
Â

4.1 MAC

4.1.1

ˆ ~ ў ╖
ˆ ѝ Ү ╖ ˜˘ MAC ⅄˘
MAC MAC б ⅄ Â
MAC MAC ˆ Bridge Group˜ ˘ a˚
˚ MAC Â Э MAC Â
⌐ MAC ˘ è ˘ ⅄ ˘ Ÿ ⌐ Â
MAC ЛЬЮ ‘

MAC地址	桥组（Bridge Group）	端口	虚拟防火墙	类型

ي 1 à MAC

MAC ‘ MAC ’
ˆ Bridge Group˜ ‘ ⅄ ’
⅄’ MAC ⅄’ Э˘ VLAN ⅄’
‘ … ’
‘ ╟ à MAC ’
MAC ˘ ⅄ Лъ ЛЬЮ ч ‘
╟ ⌐

˘ MAC Лъ ˘ MAC
⅄ Â ˘ ⅄ ‘
‘ MAC б MAC ˘
з ⅄ ˘ ÿ ⅄ Â
‘ MAC ѝ ˘ MAC MAC
а ˘ ⅄ ⅄ Â

4.1.2

╠

╠ ¯ ң MAC й ╠ ˘ Л ╠
◘ Â

MAC ˘ ‟Ą ¯ ╠ MAC ˘
Â

╠ ¯

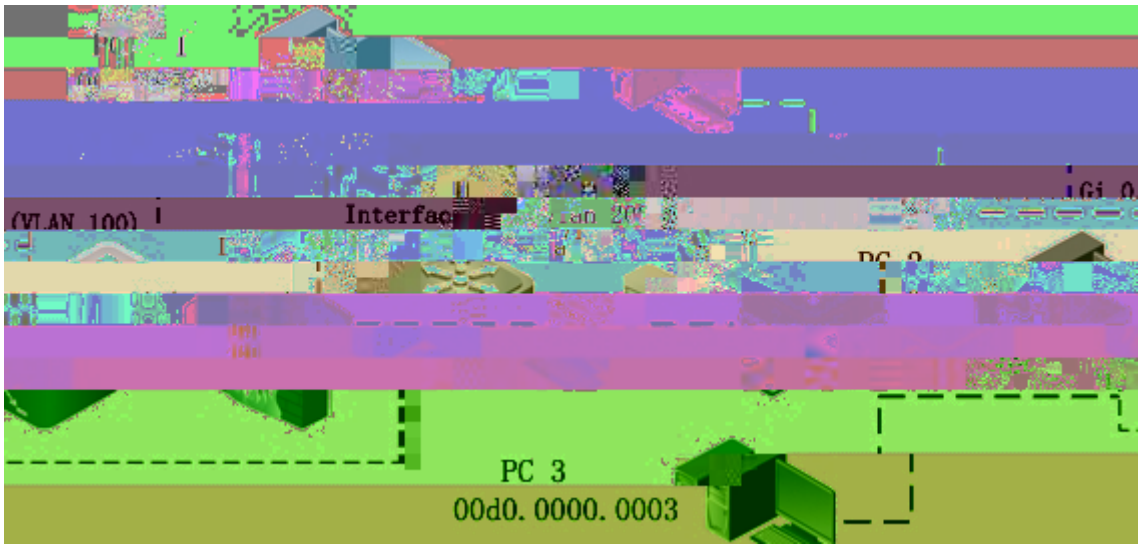
Ю MAC ╠ ¯ ˘ è Ю

1. Юي 2 ˘ Ю

   a) PC1 à PC2 à PC3ſ S86 Gi 0/1 à 0/2 à 0/3 Л’ PC1 IP й 192.168.1.2’ PC2 IP й 192.168.1.3’ PC3 IP й 192.168.1.4’

   b) S86 Э Gi 0/1 à 0/2 à 0/3 Лſ VLAN 100 à VLAN 200 à VLAN 300˝ ſ Э Л interface vlan 100 à interface vlan 200 à interface vlan 300’

   c) Л interface vlan 100 à interface vlan 200 à interface vlan 300 abc˘ з ╗ Bridge Group 1’



ي 2 à

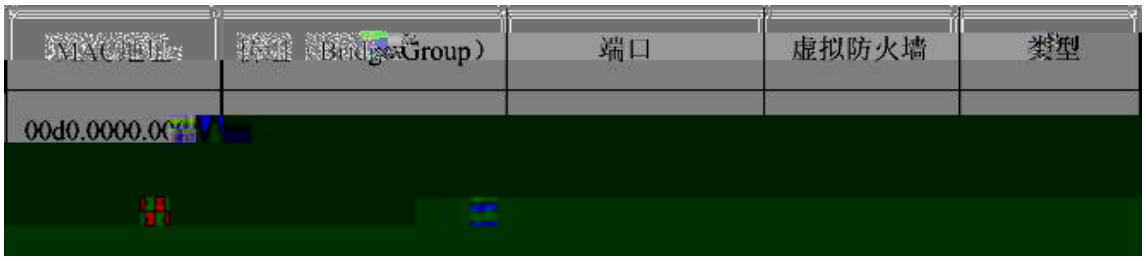
2. PC1 PC2 PING ˘ Ю PC1 PC2 ARP ˘ ‟I ARP ˘ PC2 MAC Â interface vlan 100 PC1 ˘ з interface vlan 100 ¯ PC1 MAC Â 1’

MAC 地址	桥组（Bridge Group）	端口	虚拟防火墙	类型？
00d0.0000.0001	Bridge Group 100	VLAN 100	abc	Dynamic

1 à ¯ PC1 MAC

3. ARP ˘ ⁄ ˘ PC2 PC3
Â

4. PC2 PC1 ARP ł˘ PC1 ARP ˘
PC2 ˘ ˉ PC2 MAC Â 2˙



2 à ˉ PC2 MAC

5. PC1 ˉ PC2 ARP ł˘ ⁄ Л PC2 ICMP Â ù
Э ˉ PC2 MAC ˘ ⁄ PC2 ⁄˘ PC3 a Ą PC1
PC2 Â

╠ ◘

MAC ˘ ◘ a MAC
◘ Â

ˉ ˚ ╠ ◘ ˘ ◘ ˘
Ą Л ù MAC ˘ ж ◘ ł˘ ÿ
MAC Â

MAC ˘ MAC б ⁄ Â ⁄
╕ ˘ ł ˘ a Â

˘ ⁄ Л MAC MAC à ⁄ à б
Â

MAC ˘ 1 ╠ ˉ MAC ˘
Л MAC ⁄ Л ╕ ╖ Â

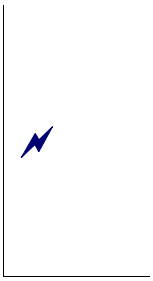
MAC ˘ MAC ù Â
⁄ ╕ ˘ ł ˘ MAC a Â

MAC ù ˘ ⁄ Л
Â

MAC ˘ 1 ╠ ˉ MAC ˘
Л MAC ⁄ Л ╕ ╖ Â

4.3 MAC

ʖ	
Ruijie(config-ctx)# **mac-limit** *limit-num*	ʌ Ɲ MAC Â limit-num ʌ ˙ 0 – MAC Â Ю˘ ʌ Ɲ MAC ˘ ˘ MAC Â
Ruijie# **show mac-limit**	MAC Â



Ɲ ʌ ʌ Ɲ MAC Â MAC мˇ Ɲ a ʌ Ɲ ж MAC Â ʖ ˘ MAC ˘ ˘ ʖ ˘ ʖ Â ˝I ╟ MAC ʖ / MAC ł ˘ ʌ Ɲ Â

Ю Э˘ MAC ˙

```
Ruijie# show mac-limit
Context         MAC Limit Num
------------    -------------
  vfw1            2000
  vfw2          3000
  vfw3              4000
```

4.4 ╟

ʖ	
Ruijie(config-if)# **no mac-address-learning**	ʌ ╟ ˉ Â ʌ ˘ Â show mac-address-learning ʖ ʌ ˉ
Ruijie(config)# **mac-address-table aging-time** [*0* | *10-1000000*]	ˉ ł ╟ ˘ Æ ˘ 10˙ 1000000 ˘ ѝ 300 Â ѝ 0 ˘ ◘ ╖ ˘ ˉ a ◘ Â

Ruijie# **clear mac-address-table dynamic**	╟ MAC ˘ Â
Ruijie# **clear mac-address-table dynamic address** *mac-address* **bridge-group** *bridge-group-id*	MAC Â *mac-address*˙ MAC MAC Â *bridge-group-id*ď MAC Â
Ruijie# **clear mac-address-table dynamic interface** *interface-id* [**bridge-group** *bridge-group-id*]	MAC Â *interface-id*ď MAC VLAN ⅄ Â *bridge-group-id*ď MAC Â
Ruijie# **clear mac-address-table dynamic bridge-group** *bridge-group-id*	MAC Â *bridge-group-id*ď MAC Â
Ruijie# **show mac-address-table aging-time**	MAC ◘ Â
Ruijie# **show mac-address-table dynamic**	╟ ˘ Â
Ruijie# **show mac-address-table dynamic address** *mac-address* [**bridge-group** *bridge-group-id*]	MAC Â *mac-address*˙ MAC MAC Â *bridge-group-id*ď MAC Â
Ruijie# **show mac-address-table dynamic interface** *interface-id* [**bridge-group** *bridge-group-id*]	MAC Â *interface-id*ď MAC VLAN ⅄ Â *bridge-group-id*ď MAC Â
Ruijie# **show mac-address-table dynamic bridge-group** *bridge-group-id*	MAC Â *Bridge-group-id*ď MAC Â
Ruijie# **show mac-address-table count**	Â

Ю ˘ Ю˝ ⅄ **VLAN** 100 ¯ Â

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# interface vlan 100
Ruijie(config-if)# bridge-group 100
Ruijie(config-if)# no mac-address-learning
```

Ю ˘ Ю˝ ˆ ˜ MAC ◘ ѝ 180 Â

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# mac-address-table aging-time 180
```

Ю ˘ Э˘ ⅄ VLAN 100 ╟ Â

```
Ruijie# clear mac-address-table dynamic interface vlan 100
```

Ю ˘ Э˘ vfw1 MAC ˘ Bridge Group 100 Ю ╟ MAC Â

```
Ruijie# changeto vfw1
```

```
Ruijie/vfw1# show mac-address-table dynamic bridge-group 100
Bridge Group   MAC Address          Type     Interface
------------   ----------------    -------   -------------------
   100         0000.5e00.010c       DYNAMIC   VLAN 100
   100         00d0.f822.33aa       DYNAMIC   VLAN 100
   100         00d0.f822.a219       DYNAMIC   VLAN 200
   100         00d0.f8a6.5af7       DYNAMIC   VLAN 200
```

Ю ˘ Э˘ vfw2 MAC ˙

```
Ruijie/vfw2# show mac-address-table count
Dynamic Address Count  : 30
Static  Address Count  : 0
Filtering Address Count: 0
Total Mac Addresses    : 30
Total Mac Address Space Available: 8159
```

4.5

ҳ	
Ruijie(config)# **mac-address-table static** *mac-address* **bridge-group** *bridge-group-id* **interface** *interface-id*	MAC ˘ Â mac-address˙ MAC MAC Â *bridge-group-id*˙ MAC Â interface-id˙ MAC VLAN ⅄ Â Э Лъ mac-address ѝ ˘ з ⅄ б MAC ⅄ а ˘ Â Э Лъ mac-address ѝ ˘ interface-id ⅄ Э Â
Ruijie(config)# **no mac-address-table static** *mac-address* **bridge-group** *bridge-group-id* **interface** *interface-id*	˘ б ╗ ҳ Â

Ruijie# **show mac-address-table static**	˘ Â

Ю ˘ vfw3 Э˘ ѝ Л VLAN 200
Â

```
Ruijie/vfw3# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie/vfw3(config)# mac-address-table static 00d0.f800.073c bridge-group
100 interface vlan 200
```

Ю ˘ vfw2 Э˘ MAC Â

```
Ruijie/vfw2# show mac-address-table static
Bridge Group   MAC Address      Type      Interface
------------   ---------------  --------  -----------------
 100            00d0.f800.1111   STATIC    VLAN 100
 100            00d0.f800.2222   STATIC    VLAN 200
 200            00d0.f800.3333   STATIC    VLAN 300
 200            00d0.f800.4444   STATIC    VLAN 400
```

4.6

¾	
Ruijie(config)# **mac-address-table** **bridge-group**	MAC ˘ Â

- 1 Tf10.02 0 C2_0 1 Tf0 Tc 6.6

f77ltering
filteringbridge-gr16.982 0.946 Td[<1DB92CDF459B>6<24B8>]TJ/TTbridge-group-id

Ю ˘ vfw1 Э˘ Â

```
Ruijie/vfw1# show mac-address-table filtering
Bridge-Group   MAC Address      Type       Interface
-----------   ---------------  ---------  -------------------
   4           00d0.f800.1111    FILTER
   4           00d0.f800.2222    FILTER
```

5

5.1

5.1.1

5.1.2

Л Â

‘ Ю a Л è ˘ è

≠ a Л ^ Ю ~ ’

≠ a Л Â

’

Ь ‘ ъ ъ ’

˘ ^ ~ a Л

Â

5.1.3

5.1.3.1

Ю a Л ˘ ’

5.1.3.2

˘ Л

˘ ч ‘

‘ ˘ ъ ъ

Л ъ Л Ѕ ˘ Ѕ ‡

Â

Y‘ ‡ ъ Ь ˘ ъ

ъ ^ Л Л ъ

~ ъ Ѕ ‡˘ Ѕ Â

Y Л Л Ї ˘ ˚ Л Ї

Â

ч ‘ ~ ˝I

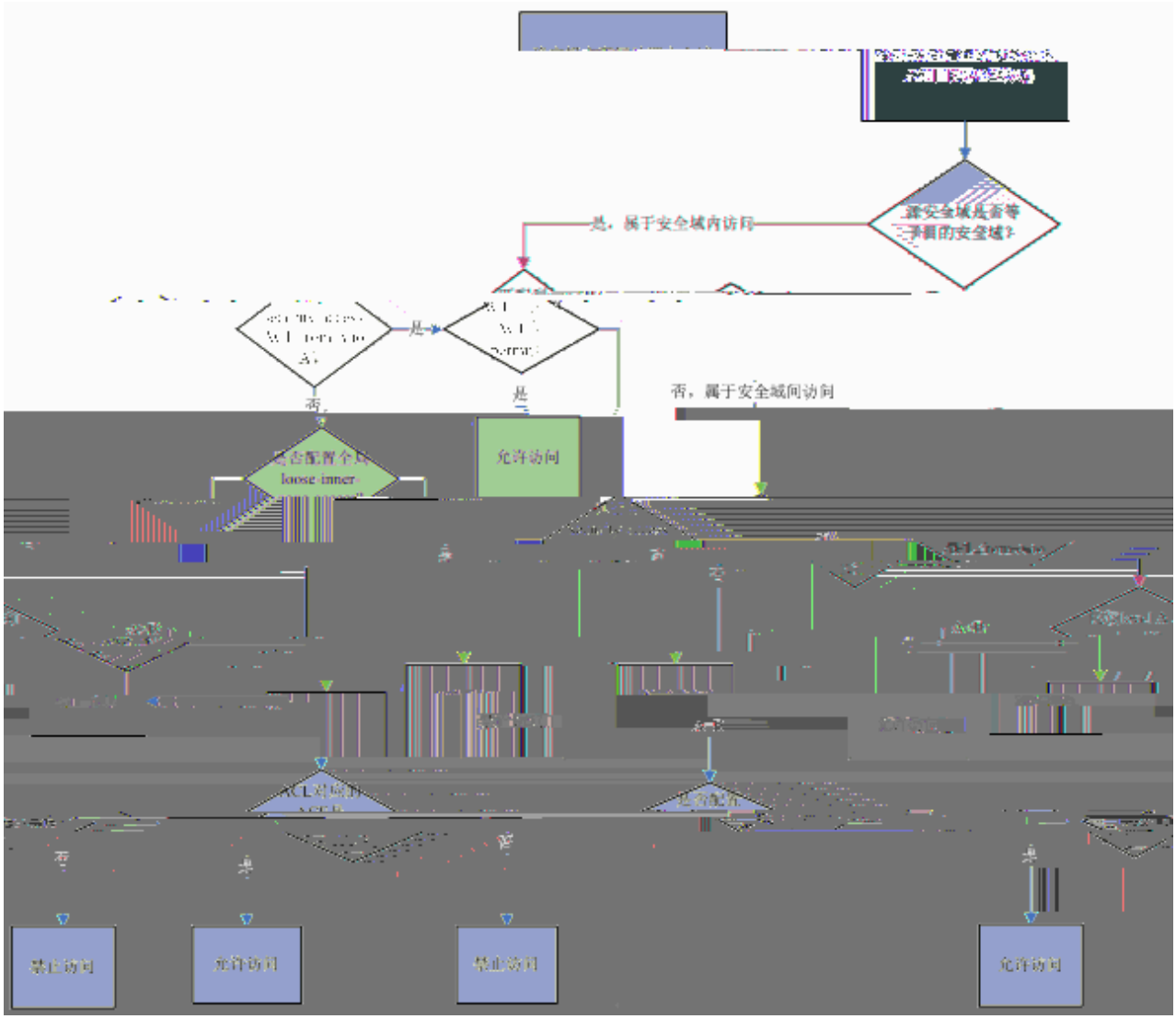
’ ~ ˚ Л Â

˘ ˝I ‡˘ Л a

‡ Â

ѝ ъ ˘ Юيي ^

˘ ˘ è ъ Ї ѝ ˝I ~‘



ي 2 ي

5.1.3.3

p ș c T̰ Ḥ ⁸ Ώ ﻡ

ip access-group *access-list*	Â *access-list* ¨ Â

6.1.1.4 ⁄

ł ⁄ ˘ ⁄ ⁄ Â ⁄ ł

ł Â

‘ Ю a ⁄ è ˘ è

≠ a ⁄ ƛ ỹ^ ~ ’

level-num	*level-num* Â Â Â

security access sequence *sequence-number* **deny permit from** *zone-name* **to** *zone-name* **src-address-object** *src-object-name* **dest-address-object** *dest-object-name* **service** *serv-name* **time-range** *time-range-name* **inactive description** *string*	ÿ ˘ Â ‡ Â ‚ ƒ ‚ ˘ Y ‡ Â ‚ ƒ „ Â *sequence-number* ‘ ‚ ˘ è Â ‚ . ”I Ð Â ‚ ‚˘ ‡ ‰ „ Â ‚ ‚ ˘ ł ‚ ł ‚ ^ **security-access-step** ‚ ˜ ’ **deny**‘ Ð ‡ ł a ’ **permit**‘ Ð ‡ ł ’ *zone-name*‘ ‘ ’ *src-object-name*‘ ‘ ˘ ’ *dest-object-name* ‘ ‘ ˘ ’ *serv-name*‘ Ł ‘ ˘ Ł ’ *time-range-name*‘ ‡ *string*‘ **inactive**‘ ‡
security access sequence *sequence-number* **active**	‡ Â *sequence-number* ‘ ‚ ˘ è Â **active**‘ ‡
no security access sequence *sequence-number* **active**	‡ ‡ Â *sequence-number* ‘ ‚ ˘ è Â **active**‘ ‡
security-access-step *step-number*	**security-access** ‚ ‚ ˘ ˘ è Â

loose-inter-zone-access	a Â a a Â

6.1.3.2

Э **access** *access-list*

‡ Â

loose-inner-zone-access	a Â a a

6.1.4

6.1.4.1

violation **notification** *threshlold*	Â *threshold* Â a Â
violation **notification log | trap| log&trap**	‡ Ь Л a Â
violation timeout *days*	Â Â Â

6.1.4.2

violation blocking

threshlold

threshold

violation block

6.1.6

ৡ	
Ruijie#show security-access-blocking	¨ ^ ~ ` Л ¦ Â
Ruijie#show security-access-rules	
Ruijie#show security-zone *zone-name*	
Ruijie#show security-zone-host *ip-address*	¦ ˘ ў ў ˘
Ruijie#show security-zone-match {*ip-protocol* **| icmp | tcp | udp}** *source-ip dst-ip* **[***src_port dst_port***]**	¦ ˘ ˘ ѓ ˘
Ruijie#show security-zone-match {*ip_protocol* **| icmp | tcp | udp}** *source-ip dst-ip* **[***src_port dst_port***] from** *interface* **to** *interface*	Л ¦ ˘ ˘ ѓ ˘
Ruijie#show security-zone-violation-log [source-ip *source-ip***] time-interval** *begin-year begin-mon begin-day begin-hour* **to** *end-year end-mon end-day end-hour* **[offset** *offset-number* **limit** *limit-number*	˘ Л Љ
Ruijie#show security-zone-violation-log status	

7 Web

7.1 Web

7.1.1 Web

ˇ

a ж ˚ ˇ ˚ Л Лъ Â

ˇ Ь ˇ Л

ł Л Лъ Â ييè

ˇ Ь ˇ ÿ ˇ Â

ˈ Л ˆ ˇ з

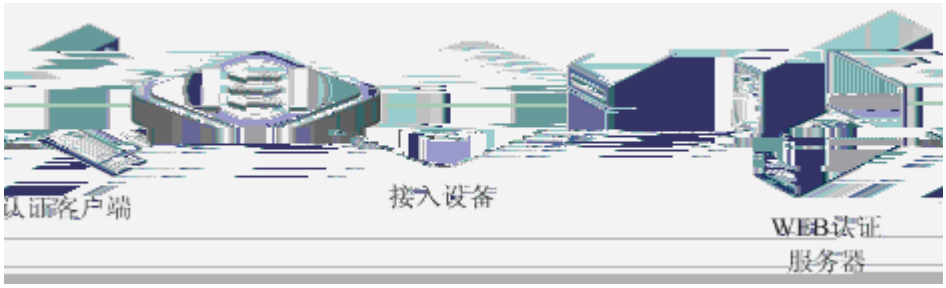
ييè

ييè a Â

7.1.2 Web

ѝ Юيي ˇ Ь ˈ à à

Ь Â



ييэ 3 WEB ѝ ييэ

ˇ й Â

ˆ ˜

ў Ь ˈ

ˇ Ь ,

ˇ б Ь ˇ ,

ł ˇ Â

Ь

ʌ Ь ˘ Ь ˘ б

Â

7.2

Ю

7.3.1 IP

Step 1	**configure terminal**
Step 2	**http redirect** *ip-address*
Step 3	**show http redirect**

no http redirect

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# http redirect 176.10.0.1
Ruijie(config)# show http redirect
```

Step 1	**configure terminal**	Â
Step 2	**http redirect port** *port-num*	Â a Â
Step 3	**show http redirect**	

no http redirect port *port-num* Â

Â

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# http redirect port 8080
Ruijie(config)# show http redirect
```

a Â Â

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# no http redirect port 80
Ruijie(config)# show http redirect
```

7.3.3 ÿ

Â Â Â Â

Step 1	**configure terminal**	Â
Step 2	**http redirect homepage** *url-string*	ÿ *url-string* Â
Step 3	**show http redirect**	

ÿ **no http redirect homepage** Â

Â

ÿ Â */login.html* Â

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# http redirect homepage http://192.168.32.123/login.html
Ruijie(config)# show http redirect
```

7.3.4 HTTP

˘ ˘
˘ Â ù ˘
˘ Э Â
˘ . ˘ è ≠ Л . ˘
a ù Â Ю
ù **50** Â

˘ Ю ‘

	٩	
Step 1	**configure terminal**	Â
Step 2	**http redirect session-limit** *session-num*	ù *session-num*˘ ٨ Â
Step 3	**show http redirect**	Â

ù ˘ Ю **no http redirect session-limit** Â

‘

ù Â

```
Ruijie# configure terminal
```

˘ Â

Â

˘ Â

Â

Â

Â

Ю˘ **no http redirect direct-site**

Â

line. End with CNTL/Z.
site *172.16.0.0 255.255.0.0*

no web-auth key

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# web-auth portal key web-auth
```

7.3.8 IP

Step 1	**configure terminal**	
Step 2	**web-auth direct-host** *ip-address ip-mask*	

no web-auth direct-host *ip-address [ip-mask]*

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# web-auth direct-host 176.10.0.1
```

web Web Web standby Web

7.3.9 Web

Step 1	**configure terminal**	
Step 2	**web-auth on**	

Step 3

show web-auth global	Â

ℸ ˘ Ю **no web-auth on** Â

‘

╟ ℸ Â

```
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)# web-auth on
Ruijie(config)# show web-auth global
```

/ ℸ ɨ˘ ℸ Ю Â

7.3.10 HTTP

Ю Ю ҁ ‘

ҁ	
show http redirect	Â

Step 1

ЛЬЮ ‘

```
Ruijie# show http redirect
http redirect settings
 server        : 192.168.32.123
 port          : 80 8080
 homepage      : http://192.168.32.123/index.html
 session-limit : 3
 timeout       : 3

direct-site
  Address          Mask
  ---------------  ----------------
  176.10.0.1       255.255.255.255
  176.10.5.0       255.255.255.128
```

7.3.11 web

Ю Ю ҁ ‘

ҁ	
show web-auth direct-host	Â

Step 1

ЛЬЮ ‘

```
Ruijie# show web-auth direct-host
direct-host
  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
```

7.3.12

ЮО ЮО ҳ

ҳ	
Step 1 **show web-auth global**	Â

ЛЬЮО

```
Ruijie# show web-auth global
web authentication is on
```

7.3.13

ЮО ЮО ҳ

ҳ	
Step 1 **show web-auth** *ip-address*	Â

ЛЬЮО

```
Ruijie# show web-auth user
  Current user num  :  4

  Address      Online   Time Limit(s) Time Used(s)   Status
  ----------- -------  ------------- ------------- --------
  192.168.0.11   On      01:00:00    00:15:10     Active
  192.168.0.13   On      0           00:00:59     Active
  192.168.0.25   Off     0            0           Create
  192.168.0.46   Off     01:00:00    01:00:00    Distroy

Ruijie# show web-auth user 192.168.0.11
 Address        :   192.168.0.11
 Online         :   On
 Time Limit(s)  :   01:00:00
 Time Used(s)   :   00:15:10
 Time Start     :   2009-02-22 20:05:10
 Status         :    Active
```

7.4 Web ѝ