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RGOS 10.3(4b6)p4

ㅅ` V2.0

©2014

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1 Ң

1.1

ˆ Firewall˜ ‘Ω„ (Internet)‡ ˘ Э
Â ч ˘
Л Лъ Internet ˚ WEB ˘ Ы
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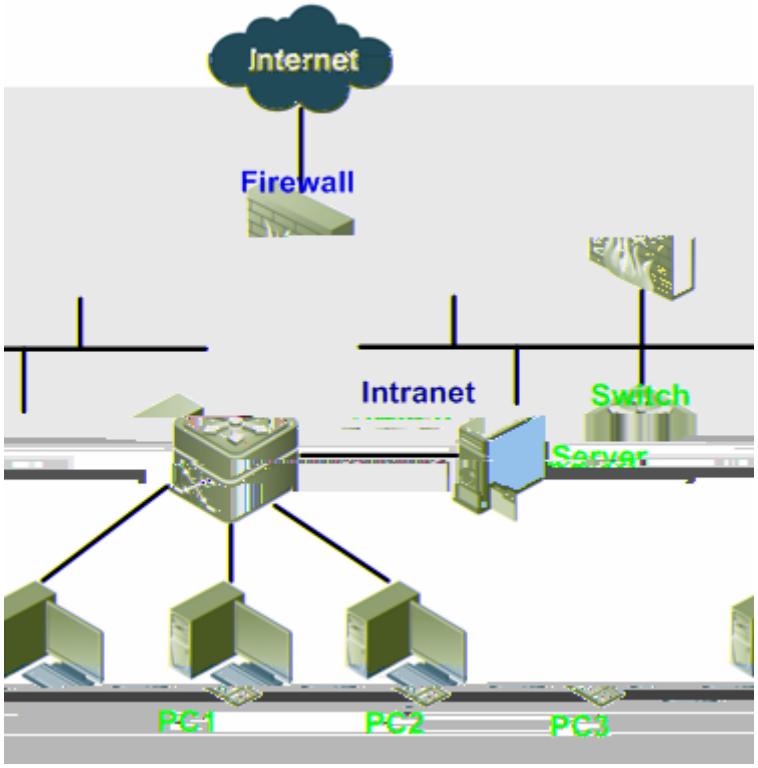

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Â ˘ à Â

1.2

ˆ SECM /RG-WALL1600-B-DC˜ ˘
S8600/S12000 ˘ vlan
Ь ˘ ˘ ˘ Ь˘
` Ь ˘ ѝ Â

1.3 ў

ˆ SECM /RG-WALL1600-B-DC˜ ў ЛЬЮ ‘
ч 10G Лъ л б ˘ ¯ б л
20G’
Ь ˘ ˘ Ь a л Â
л Лъ . Æˆ л S86 Æ ˜ ˘ з
л ` л ˘ a ` Â

1.4 ў ╖

ў ╖ ‘
‘ л ‡˘ ╟ UDP TCP л
Â ˘ л Лъ ’
╖ ‘ ˆ FTP ä RTSP è
TCP/UDP ˜ ˘ ˘ ╟ ¤
’
╖ ‘ Land ä Smurf ä Fraggle ä Ping of Death ä Tear Drop ä
IP ł ä ARP ä TCP Æ a ä ICMP ä ä л
˘ SYN Flood ä UPD Flood ä ICMP Flood äł Flood DDoS
’ ICMP a л ╖ ’ IP
╖ ’ ╟ ¯ ’
ä
‘ ä Лъ RIP ä OSPF ╟ ’

NAT

HAˆ AS ˜

2

2.1

Л Љ / Â

Л Љ a
˘ IP ł ^ ¨ IP ~ Â

ŕ ˘ Л Љ IP ˚ ч
˘ Л ˘ MAC Л Â

ч Ь Л^ Ь Л Ь Л Ь
VLAN Л~˘ ˘ MAC Л˘ MAC
Л з IP è ˘ Â

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Л Ю˘ è Л Ю˘ ˚ Л Л ˘
Ю Â

2.2

. S86 ˘ ЉЮ . Ю Â

2.2.1

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ŕ . ˘ Э Ю Â

1) … 2 VLAN˘ Л Л ╗ a˚ VLAN
2) б 2 ¨I Љ Л ŕ Л˘ trunk ˘
Э VLAN

Step 14	Ruijie(config)#**interface Aggretegateport** *port-group-number*	ﻠ
Step 15	Ruijie(config-if)#**switchport mode trunk**	ﻠ ﻱ trunk ﻠ
Step 16	Ruijie(config-if)# **switchport trunk allowed vlan {all | [add | remove | except] }** vlan-list	Э … ч VLAN trunk ﻠ ﻉ VLAN a
Step 17	Ruijie# **show vlan**	ﻠ VLAN

ﺓ Ю ﻭ ﻍ ﻝ Ł Â

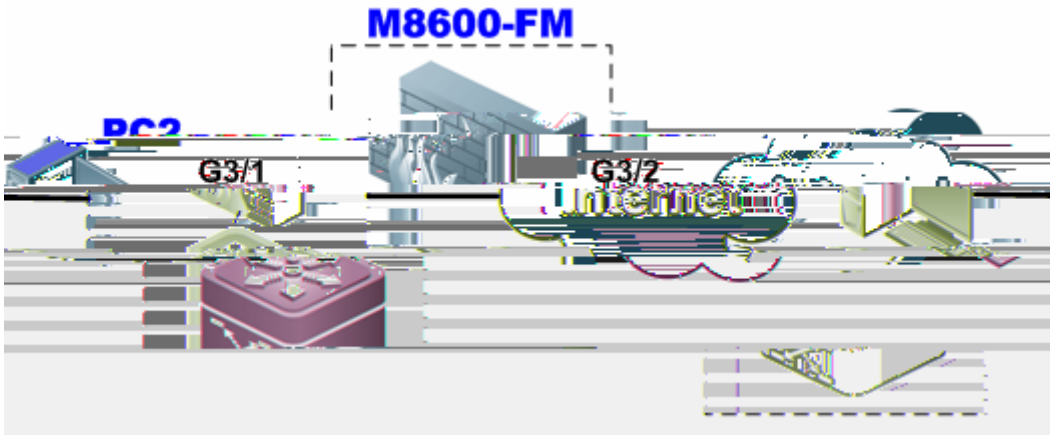
	ﺯ	
Step 1	M8600-FW# **configure terminal**	Â
Step 2	M8600-FW(config)#**interface vlan** *vlan-id*	… VLAN ﻠ
Step 3	M8600-FW(config-if)# **ip address** *ip_addrss mask*	ﻠ IP
Step 4	M8600-FW(config)#**interface vlan** *vlan-id*	… ﻱ VLAN ﻠ
Step 5	M8600-FW(config-if)# **ip address** *ip_addrss mask*	ﻠ IP

2.2.3

ﻋ ﻱ ﻛ G3/1 ﻠ ﻎ ﻠ ﻭ G3/2 ﻠ Internet

Â ﻗ

Â



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1˜

… VLAN 2 VLAN 3Â ⊿ GigabitEthernet 3/1 GigabitEthernet 3/2 Access ⊿˘
ĺ ╗ VLAN 2 VLAN 3Â

```
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 7 ˜ TenGigabitethernet 7/1 TenGigabitethernet 7/2
(ч ⊿ ⊿) ù ⊿ Aggretegateport 2 ˙

```
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
```

⊿ Aggretegateport 2 Trunk Ю˘ VLAN 2 VLAN 3
Â

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

2˜

#

```
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
```

PCˆ IP ù 202.1.1.2˜ ping ˆ ù 101.1.1.2˜ ˘ ⊿Лъ
ping ˆ Ь ˜ ˘ ˚ ˘ 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

IP ACL

S86

1) … / VLAN a VLAN

2) trunk VLAN

VLAN trunk a VLAN VLAN

1) … 2 / VLAN VLAN ID

2) 2 / VLAN a VLAN

… VLAN VLAN 2 2

2.3.2

Step 1

Ruijie# **configure terminal**	

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

ł Ю ˘ έ Ґ Ь Â

	٩	
Step 1	M8600-FW# **configure terminal**	Â
Step 2	M8600-FW(config)#**interface vlan** *vlan-id*	… VLAN ⅄
Step 3	M8600-FW(config-if)#**bridge-group** *group-num*	⅄ ╗ bridge-group
Step 4	M8600-FW(config)#**interface vlan** *vlan-id*	… Y VLAN ⅄
Step 5	M8600-FW(config-if)#**bridge-group** *group-num*	⅄ ╗ ˇ bridge-group

2.3.3 ή

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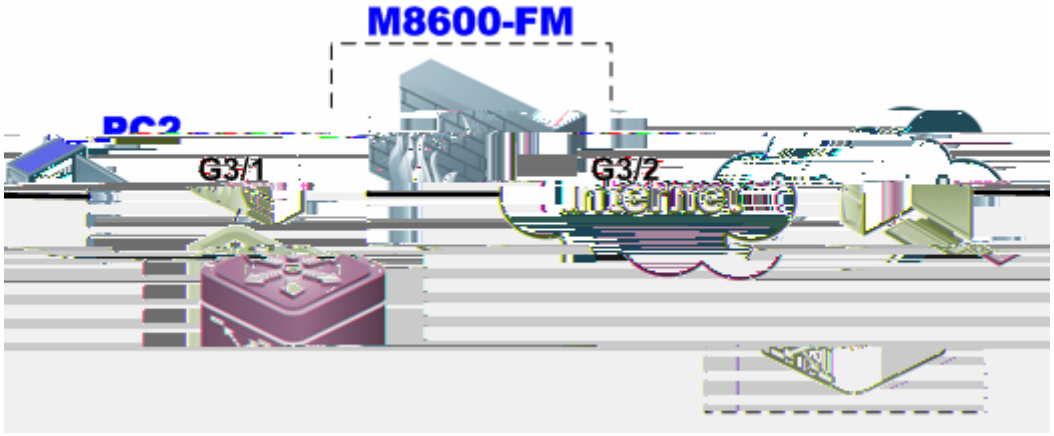
ˆ ѝ ˜ G3/1 ⅄ Ѽ ⅄ ˇ G3/2 ⅄ Internet˝
Â ╗ ˇ
Â



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1˜

… VLAN 2 VLAN 3˝ ⅄ GigabitEthernet 3/1 GigabitEthernet 3/2 Access ⅄˜
ĺ ╗ VLAN 2 VLAN 3 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 7 ˜ TenGigabitethernet 7/1 TenGigabitethernet 7/2 (ч ⅄ ⅄) ѝ ⅄ Aggretegateport 2 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
```

⅄ Aggretegateport 2 Trunk Ю˝ VLAN 2 VLAN 3 Â

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

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

2˜

#

```
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

˘ ˚ ˘ MAC Л˘

MAC Л з IP è ˘ Â

2.4.1

. S86 ˘ ЉЮ . Ю Â

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й . ˘ Э Ю Â

1) … 4 VLAN˘ Л Л ╗ a˚ VLAN

2) б 2 ”I Љ Л й Л˘ trunk ˘ .

2.4.2

ЛЪЮ

Ю й

	₹	
Step 1	Ruijie# **configure terminal**	Â
Step 2	Ruijie(config)#**vlan** *vlan-id*	… VLAN
Step 3	Ruijie(config-vlan)#exit	VLAN
Step 4	Ruijie(config)#interface interface-name interface-number	⅄
Step 5	Ruijie(config-if)#**switchport access vlan** *vlan-id*	Access ⅄ ╗ VLAN
Step 6	Ruijie(config)#**vlan** *vlan-id*	… Ɣ VLAN
Step 7	Ruijie(config-vlan)#exit	VLAN
Step 8	Ruijie(config)#interface interface-name interface-number	⅄
Step 9	Ruijie(config-if)#**switchport access vlan** *vlan-id*	Access ⅄ ╗ Ɣ VLAN
Step 10	Ruijie(config)#**vlan** *vlan-id*	… Ь VLAN
Step 11	Ruijie(config-vlan)#exit	VLAN
Step 12	Ruijie(config)#interface interface-name interface-number	⅄
Step 13	Ruijie(config-if)#**switchport access vlan** *vlan-id*	Access ⅄ ╗ Ь VLAN
Step 14	Ruijie(config)#**vlan** *vlan-id*	… VLAN
Step 15	Ruijie(config-vlan)#exit	VLAN
Step 16	Ruijie(config)#interface interface-name interface-number	⅄
Step 17	Ruijie(config-if)#**switchport access vlan** *vlan-id*	Access ⅄ ╗ VLAN
Step 18	Ruijie(config)#**interface TenGigabitethernet** *interface-number*	б . ”I Лъ ⅄
Step 19	Ruijie(config-if)#**port-group** *port-group-number*	⅄ ╗ AP ⅄
Step 20	Ruijie(config)#**interface TenGigabitethernet** *interface-number*	б . ”I Лъ ⅄ Ɣ
Step 21	Ruijie(config-if)#**port-group** *port-group-number*	⅄ ╗ ˚ AP ⅄

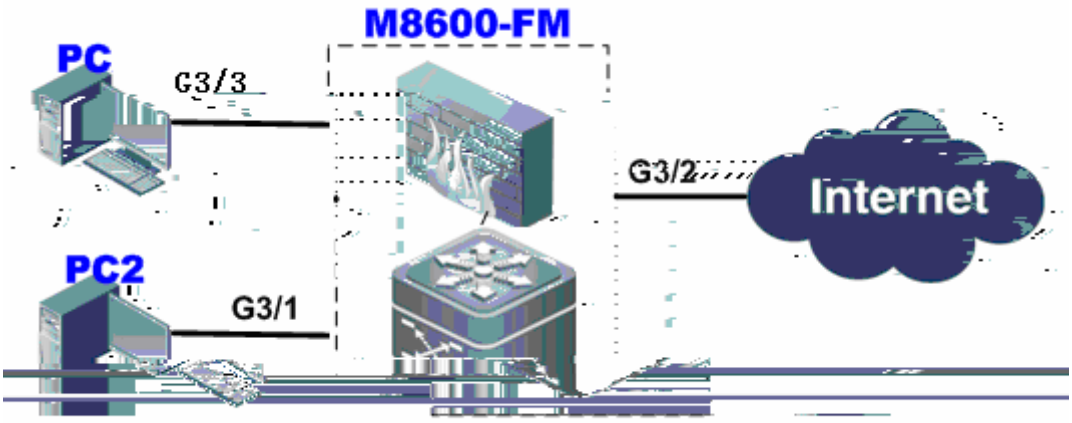
Step 22	Ruijie(config)#**interface Aggretegateport** *port-group-number*	ﻠ
Step 23	Ruijie(config-if)#**switchport mode trunk**	ﻠ ﻱ trunk ﻠ
Step 24	Ruijie(config-if)# **switchport trunk allowed vlan {all | [add | remove | except] }** vlan-list	Э … ч VLAN trunk ﻠ ﻉ VLAN a
Step 25	Ruijie# **show vlan**	ﻠ VLAN

ﺇ Ю ﻍ ﻑ ﻝ Ь Â

	ﺇ	
Step 1	M8600-FW# **configure terminal**	Â
Step 2	M8600-FW(config)#**interface vlan** *vlan-id*	… VLAN ﻠ
Step 3	M8600-FW(config-if)#**bridge-group** *group-num*	ﻠ ╗ bridge-group
Step 4	M8600-FW(config)#**interface vlan** *vlan-id*	… ﻉ VLAN ﻠ
Step 5	M8600-FW(config-if)#**bridge-group** *group-num*	ﻠ ╗ bridge-group
Step 6	M8600-FW(config)#**interface vlan** *vlan-id*	… Ь VLAN ﻠ
Step 7	M8600-FW(config-if)#**bridge-group** *group-num*	ﻠ ╗ ﻉ bridge-group
Step 8	M8600-FW(config)#**interface vlan** *vlan-id*	… VLAN ﻠ
Step 9	M8600-FW(config-if)#**bridge-group** *group-num*	ﻠ ╗ ﻉ bridge-group
Step 10	M8600-FW(config)#**interface BVI** *bridge-group id*	… ﻠ
Step 11	M8600-FW(config-if)# **ip address** *ip_addrss mask*	ﻱ ﻠ ip
Step 12	M8600-FW(config)#**interface BVI** *bridge-group id*	… ﻉ ﻠ
Step 13	M8600-FW(config-if)# **ip address** *ip_addrss mask*	ﻱ ﻠ ip

2.4.3 ﻩ

ˆ ﻱ ˜ G3/1 G3/3 ﻠ ﻭ ﻠ ˇ ﻭ ﻠ ˇ G3/2 ﻠ
Internet Â ╗
ˇ Â



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1˜

… VLAN 2 à VLAN 3 VLAN4 Â ﻝ GigabitEthernet 3/1 à GigabitEthernet 3/2 GigabitEthernet 3/3 Access ﻝ˜ ĵ ╗ VLAN 2 à VLAN 3 à VLAN4 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)# 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
```

#ˆ Æ 7 ˜ TenGigabitethernet 7/1 TenGigabitethernet 7/2 (ч ﻝ ﻝ) й ﻝ Aggretegateport 2 ˙

```
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
```

٭ Aggretegateport 2 Trunk Ю VLAN 2 VLAN 3
Â
```
Ruijie(config)# interface Aggretegateport 2
Ruijie(config-if)# switchport mode trunk
Ruijie(config-if)# switchport trunk allowed vlan remove 1,5-4094
```

2˜

#

#VLAN2 VLAN4

3 ʌ

3.1 ʌ

Э˘ ʌ ' VLAN ʌ à BVI ʌ à LoopBack

ﻝ ﺟ ﻩ ﻳ Ÿ ﻝﺎﺑ ﻝ ﺎﺑ ﻝ ﺟ ﻩ

Â

ﺕﺍ	
ﻝ	ﻝﺎﺑ Ю ’
ﻝ	ﻝﺎﺑ Ю ’
ﻝ MTU	ﻝﺎﺑ Ю ’
ﻝ LinkTrap	ﻝﺎﺑ Ю ’
… VLAN ﻝ	ﻝﺎﺑ Ю… VLAN ﻝ

VLAN <%.

ﻝ LinkTrap
VLAN ﻝ
BVI ﻝ
ﻝ ‡

3.3.1 ﻝ ﻝ ‡

VLAN ﻝˇ è ﻝ VLAN ﻝ VLAN ID Â

3.3.2 ﻝ ҂

ﻟ Ю interface ҂ ﻝ Â

¶	
Ruijie(config-if)# **shutdown**	Л

Ю ˘ Э˘ Л VLAN 100 shutdown˙

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

3.3.4 Л

Л Лъ Л ˘ Л Л ◘ Â

Л Л ÿ DOWN UP˝ ÿ UP DOWN ˘ DCD Л ◘˘ ж Л ◘˘ Лъ Э Л Â

ѝ 1 ˘ ѝ 2 Â

ҙ а Л NULL Л Э ˘ è Л Л Лъ Â

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

Ю ˘ Э˘ Л 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 Л MTU

Л Лъ Л MTU Л Â

MTU ˘ ˘ а Лъ Â

Л ˘ MTU˝ Â

MTU ˘ а˚ ң Â ѝ 4 ˘ ѝ 1500 Â

ҙ а VLAN Л à BVI Л à NULL Л à LOOPBACK Л Э ˘ è Л Л Лъ Â

¶	
Ruijie(config-if)# **mtu** *num*	Л MTU MTU ˘ é ң é Л Â

Ю ˘ Э˘ Л 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 Ъ ㅓ Э˘ LinkTrap Â ╗ ˘ ㅓ Link ㅓ □˘
SNMP LinkTrap˘ ㅓ ‡ a Â Ю˘ ╗ Â

٩	
Ruijie(config-if)# [**no**] **snmp trap link-status**	ㅓ link trap ╗ Â

Ю ˘ Э˘ 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˘ … VLAN ㅓ˘ Ъ VLAN ㅓ ╗ Â
ㅓ Ъ **interface vlan** *vlan-id* ٩˘ … VLAN ㅓ Â ㅓ Ъ bridge-group
٩˘ VLAN ㅓ ╗ Â
VLAN ㅓ ˘ ㅓ Ъ ㅓ Ю no bridge-group ٩ Â
VLAN ㅓ˘ ㅓ Ъ Ю **no interface vlan** *vlan-id* ٩ Â
VLAN ㅓ ╗ ^ Bridge-Group˘ ˘ ㅓ ‘

	٩	
Step 1	Ruijie(config)# **interface vlan** *vlan-id*	… VLAN ㅓ’
Step 2	Ruijie(config-if)# **bridge-group** *bridge-group-id*	ㅓ ╗ ˘ ㅓ Ъ 500 ˘ ㅓ 1---500 Â

Ю ˘ Э˘ … VLAN ㅓ˘ 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 ˘ ㅓ ‘

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

Ю ˘ Э˘ … VLAN ﾑ˘ з ﾑ¦ 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 ﾑ

ў Э˘ … BVI ﾑ˘ Лъ BVI ﾑ Э ｷ Â

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

BVI ﾑ˘ ﾑ Лъ **no interface bvi** *bridge-group-id* ｷ Â

BVI ﾑ Э IP ˘ BVI ﾑ ˘ ﾑ Лъ ˘ ﾑ

‘

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

Ю ˘ Э˘ VLAN ﾑ ｩ ’ з … BVI ﾑ˘ з BVI ﾑ¦ 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 ﾑ ｩ

ў Э˘ … ﻝ ﻑ Â

Э˘ Л Ћ VLAN ﻝ BVI ﻝ ﻑ Â

ﻝ ﻑ ł˘ Л Ћ ﻝ˘ з Л Ћ ﻝ
Â Ю˘ Л Ћ ﻝ˘ з Л Ћ Â

ﻝ ﻑ ˘ Л Ћ ﻝ **ip vrf forwarding** ҂ Â

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

ﻝ Ю˘ ﻝ ﻑ ‘

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

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

╠

╠ ˉ ң MAC й╠ ˇ Л ╠
▫ Â

MAC ˇ ЎĄ ˉ ╠ MAC ˇ
Â

╠ ˉ

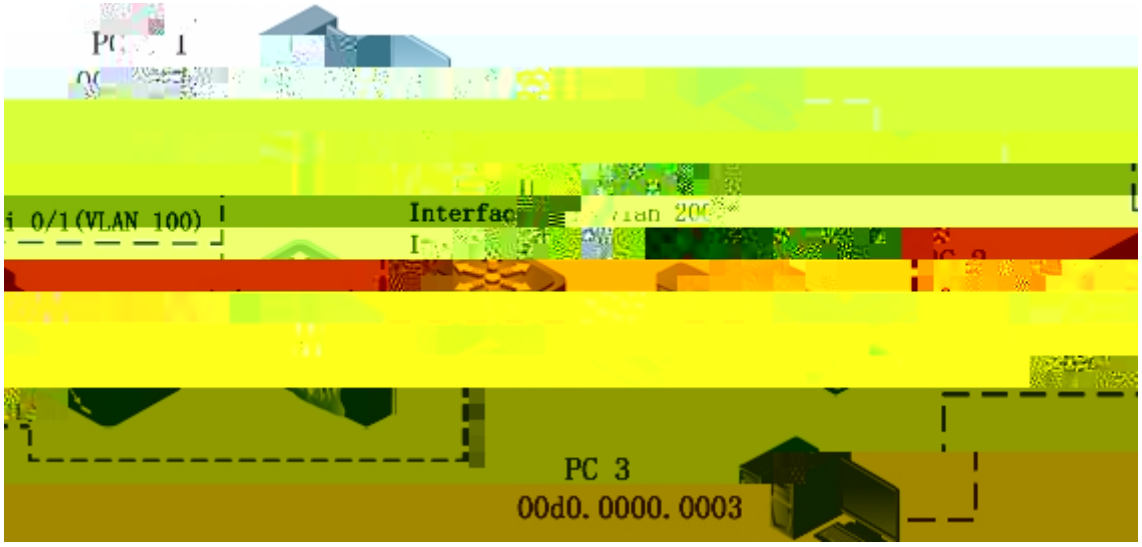
Ю MAC ╠ ˉ ˇ è Ю

1. Ю ي 2 ˇ Ю

   a) PC1 à PC2 à PC3 ł 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 Л ł VLAN 100 à VLAN 200 à VLAN 300 ˘ ł 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

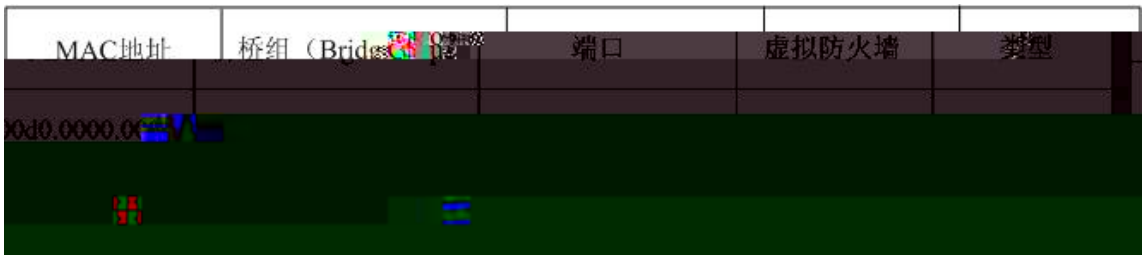
2. PC1 PC2 PING ˇ Ю˘ PC1 PC2 ARP ˇ ˝I ARP ˇ PC2 MAC Â interface vlan 100 PC1 ˇ з interface vlan 100 ˉ PC1 MAC Â 1’

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 ˉ PC1 MAC

3. ARP ˘ ⁄ ˘ PC2 PC3
Â

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



2 à ˝ PC2 MAC

5. PC1 ˝ PC2 ARP ł˘ ⁄Љ PC2 ICMP Â ѝ
Э ˝ PC2 MAC ˘ ⁄ PC2 ⁄˘ PC3 a Ѧ PC1
PC2 Â

╠ ◘

MAC ˘ ◘ a MAC
◘ Â

˝ ˚ ╠ ◘ ˘ ◘ ˘
Ѧ Љ ѝ MAC ˘ ж ◘ ł˘ ÿ
MAC Â

MAC ˘ MAC б ⁄ Â ⁄
╕ ˘ ł ˘ a Â

˘ ⁄Љ MAC MAC à ⁄ à б
Â

MAC ˘ 1 ╠ ˝ MAC ˘
Љ MAC ⁄Љ ╕ ╖ Â

MAC ˘ MAC ѝ Â
⁄ ╕ ˘ ł ˘ MAC a Â

MAC ѝ ˘ ⁄Љ
Â

MAC ˘ 1 ╠ ˝ MAC ˘
Љ MAC ⁄Љ ╕ ╖ Â

4.3 MAC

Ruijie(config-ctx)# **mac-limit** *limit-num*	MAC limit-num 0 – MAC MAC MAC MAC
Ruijie# **show mac-limit**	MAC

MAC

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

4.4

Ruijie(config-if)# **no mac-address-learning**	show mac-address-learning
Ruijie(config)# **mac-address-table aging-time** [*0* | *10-1000000*]	10 1000000 300 0

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 ◘ и 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

⅋	
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 ╗ ⅋ 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

ҳ	
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

ip

ip

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2) IP

IP IP

default

default

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5.1.3

5.1.3.1

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5.1.3.2

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‘ ACL˘ IP ầ IP ầ

Л ầ Л ₫ ˘ ₫ ACL ‡

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IP ầ IP ^ TCP UDP Л / Л ầ ICMP

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Y Л Л ‡ ˘ ˚ Л IP ‡

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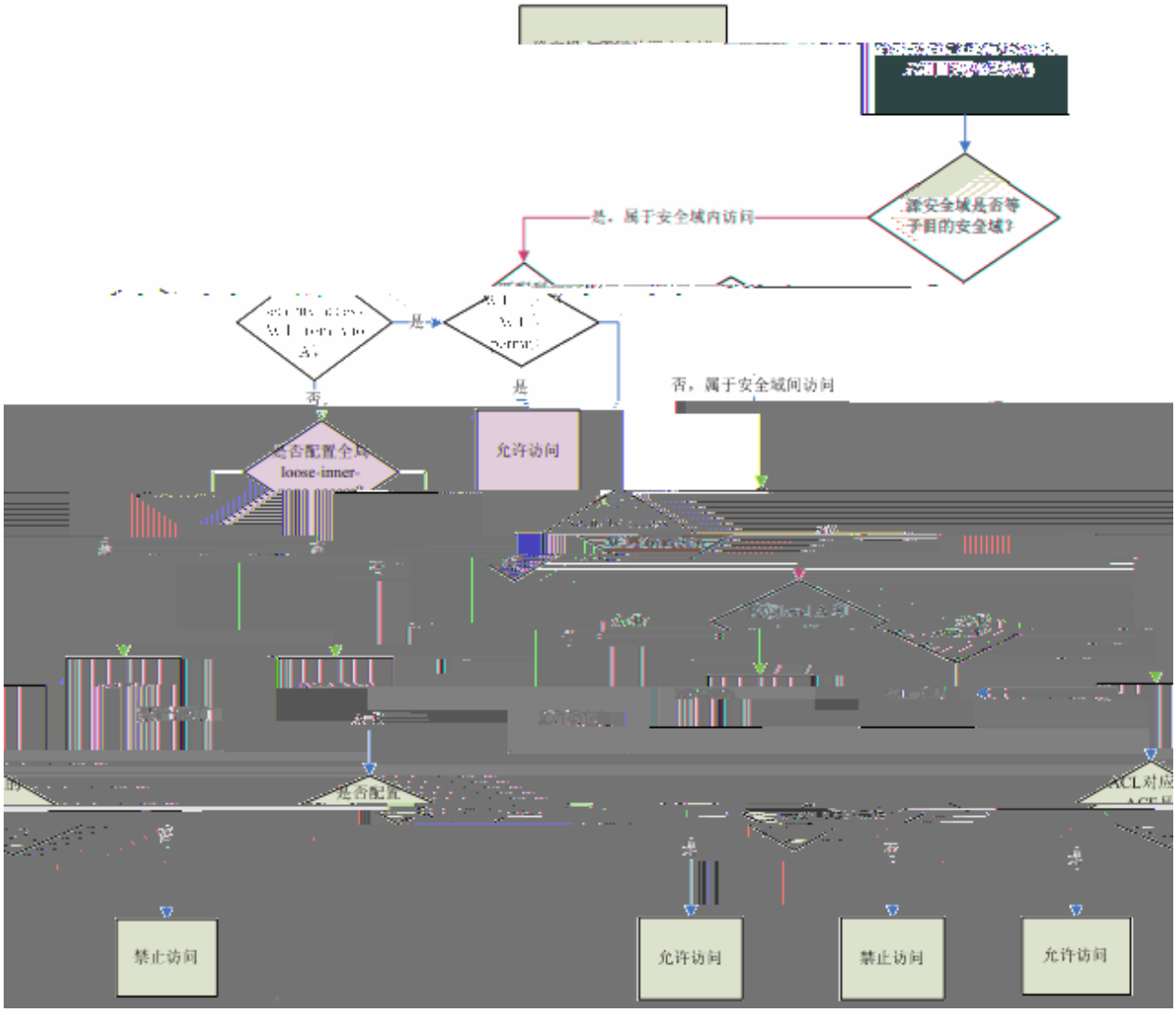
ZoneA˘ ZoneB˘ è levelA ầlevelB‡ ỳ ZoneA ZoneB . ˝I ˜‘



2

5.1.3.3

p ș c T̰ Ḥ ⁸ Ω

Ruijie(config-security-zone)# **ip access-group** *access-list*	ACL Â *access-list* ip acl¨ Â

6.1.1.4 ⅄

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ɟ default Â

default ‘ Ю default a Ⅰ è ˘ è
≠ a Ⅰ default ƛ ỹˆ ~ ’

Ruijie(config-security-zone)#security-level *level-num*	*level-num* 1~100 security-level a

6.1.3

6.1.3.1

Ruijie(config)#**security-access-match-object**	**security-access-match-object** ACL **security-access** *access-list* **no security-access-match-object** **security-access** [**sequence** *sequence-number*]
Ruijie(config)#**security-access** *access-list* **from** *zone-name* **to** *zone-name* [**log**]	*access-list* *zone-name* IP/ IP/ (tcp/udp)/ **log** access-list26 25c 10.5 304

Ruijie(config)#**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 ▪▪ ▪▪ ▪ ˘ Y ▪▪ ▪ ‡ **Â** ҂ ⁄ ↓ ⁄ Â *sequence-number*ʻ ⁄ ˘ è 1 2147483647 Â ⁄ ˙ ″I Ƀ Â ҂ ⁄ˇ ‡ ѝ ⁄ ⁄ Â ⁄ step-numberʺ ł ⁄ ł ⁄ step-numberʻ **security-access-step** ҂ ˜ ’ **deny**ʻ Ƀ ‡ ł a ’ **permit**ʻ Ƀ ‡ ł ’ *zone-name*ʻ ▪▪ ’ *src-object-name*ʻ ▪▪ ˘ any_address ’ *dest-object-name* ʻ ▪▪ ˘ any_address ’ *serv-name*ʻ Ь ▪▪ ˘ any_service Ь ’ *time-range-name*ʻ ‡ *string*ʻ **inactive**ʻ ‡
Ruijie(config)#**security-access sequence** *sequence-number* **active**	‡ Â *sequence-number* ʻ ⁄ ˘ è 1 2147483647 Â **active**ʻ ‡
Ruijie(config)#**no security-access sequence** *sequence-number* [**active**]	‡ ‡ Â *sequence-number* ʻ ⁄ ˘ è 1 2147483647 Â **active**ʻ ‡
Ruijie(config)#**security-access-step** *step-number*	**security-access** ҂ ⁄ ˘ 10ʺ è 1 2147483647 Â

Ruijie(config)#**loose-inter-zone-access**	a security-level ˇ ip Â ʒˇ a security-level ˇ ip a Â

6.1.3.2

Э security-**access** *access-list* ʒ ˇ
‡ Â

ʒ	
Ruijie(config)#**loose-inter-zone-access**	a ip Â ʒˇ a ip a

6.1.4

6.1.4.1

ʒ	
Ruijie(config-security-zone) # **violation notification** *threshlold*	Â *threshold* ɨˇ ’ ‘ 1~65535 Â a ’ ‘ /ʃ IP ʈ Â
Ruijie(config-security-zone) # **violation notification** { **log | trap| log&trap** }	╟ ‘ à trap ˇ ˇ trap Ь ’ Л RLOG ˆ ˇ /ʃ ˚ ˇ. 10M ~ a trap’ ‘ /ʃ IP ʈ Â
Ruijie(config-security-zone) # **violation timeout** *days*	◘ Â ╕ ‡ Â ◘ 1 ’ ‘ 1~3650 ’ ‘ /ʃ IP ʈ Â

6.1.4.2

Ruijie(config-security-zone)# **violation blocking** *threshlold*	*threshold* 1~65535

6.1.6

ৡ	
Ruijie#show security-access-blocking	IP
Ruijie#show security-access-rules	
Ruijie#show security-zone [***zone-name***]	
Ruijie#show security-zone-host *ip-address*	IP
Ruijie#show security-zone-match {*ip-protocol* **| icmp | tcp | udp}** *source-ip dst-ip* **[***src_port dst_port***]**	IP
Ruijie#show security-zone-match {*ip_protocol* **| icmp | tcp | udp}** *source-ip dst-ip* **[***src_port dst_port***] from** *interface* **to** *interface*	
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*]	ip
Ruijie#show security-zone-violation-log status	

7 Web

7.1 Web

7.1.1 Web

Web

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WEB Ł Л

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WEB Ł ÿ WEB Â

web Л ip з

default è web

default è a web Â

7.1.2 Web

WEB ђ Юي Ь à à WEB

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HTTP WEB Ł

б WEB Ł

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3. WEB

Web

7.2

( ) Web ╖
(ʌ) HTTP
(ʌ)
(ʌ)

7.3.1 ┺ IP

╖ Web ╖ ˘ ┺ IP Â
˘ ˘ ˘
┺ Â
ЮЎ ┺ IP ’ ┺ IP ˘ ЮЎ

	٩	
Step 1	Ruijie# **configure terminal**	Â
Step 2	Ruijie(config)# **http redirect** *ip-address*	┺ IP Â
Step 3	Ruijie(config)# **show http redirect**	HTTP

┺ IP ˘ ЮЎ **no http redirect** Â

‘

┺ IP ѝ 176.10.0.1 Â

```
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
```

┺ ≠ ʌЛЪ ┺ ˘ ┺ Web ˘
SU ˚ ЮО Â 802.1x Э ˘
SU ˚ ЮЎ ʌ Э ┺
˘ ЮО SU ѣ˘ ʌЛЪ 802.1x Э Â
SU ˘ SU ѣ 802.1x
Â

Step 1	Ruijie# **configure terminal**	Â
Step 2	Ruijie(config)# **http redirect port** *port-num*	PC Л Л HTTP WEB Â 10 a˚ Л Л˘ Л Л 80 ≠ Â
Step 3	Ruijie(config)# **show http redirect**	HTTP

PC Л Л HTTP WEB ˘ Ю˘ **no http redirect port** *port-num* Â

‘

PC Л Л и 8080 HTTP WEB 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 PC Л Л и 80 HTTP WEB 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 ў

╟ Web ╖ ˘ ″I ў Â Web ˘ ˘ Web Â

˘ ў Â ў ˘ Ю ‘

	₹	
Step 1	Ruijie# **configure terminal**	Â
Step 2	Ruijie(config)# **http redirect homepage** *url-string*	ў и *url-string*˘ Лъ ľ http:// Ł ľ https:// Ł ˘ a ↖† ’ и 255 Â
Step 3	Ruijie(config)# **show http redirect**	HTTP

ў ˘ Ю˘ **no http redirect homepage** Â

‘

ў и http://192.168.32.123/*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

ˇ PC HTTP ˇ HTTP
ˇ Web Â ù HTTP ˇ
TCP ˇ Э HTTP Â

ˇ . HTTP ˇ è ≠ Л . HTTP ˇ
a HTTP ù 1Â Ю HTTP
ù **50** Â

HTTP ˇ Ю ‘

	₹	
Step 1	Ruijie# **configure terminal**	Â
Step 2	Ruijie(config)# **http redirect session-limit** *session-num*	HTTP ù *session-num*ˇ Л 1-255 Â
Step 3	Ruijie(config)# **show http redirect**	HTTP Â

HTTP ù 50ʊ Ю **no http redirect session-limit** Â

‘

HTTP ù 4 Â

```
Ruijie# configure terminal
```

˘ Â

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˘ ж ( ) Л Ц

Â

Â
˘ 50 Â
HTTP Â

Ю˘ **no http redirect direct-site**

Â

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

PC HTTP WEB ł WEB б Ł
˘ Ю **no web-auth key** Â

‘

PC HTTP WEB ł WEB б Ł ѝ
web-auth Â

```
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

IP ˘ ж a Web ˘ ≠ Л
Â ˘ ˘ ”I Web ˘
Â

˘ Ю ‘

	₹	
Step 1	Ruijie# **configure terminal**	Â
Step 2	Ruijie(config)# **web-auth direct-host** *ip-address* [*ip-mask*]	˘ 50 Â

Л ˘ Ю **no web-auth direct-host** *ip-address [ip-mask]* Â

‘

IP ѝ 176.10.0.1 ѝ Â

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

˘ web Ю Web ”I Web Â
standby ў a ˘ ≠ a Web ˘ ѝ
╗ Â

7.3.9 Web ╗

Ю Web ╗ ˘
≠ a Web Â ╠ Web ╗ ˘ ”I Ł IP
ў Â

╠ Web ╗ ˘ Ю ‘

	₹	
Step 1	Ruijie# **configure terminal**	Â
Step 2	Ruijie(config)# **web-auth on**	╠ Web ╗ Â

Step 3		
	Ruijie(config)# **show web-auth global**	Web Â

Web ╗ ˘ Ю˘ **no web-auth on** Â

‘

╠ Web ╗ 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
```

/ Web ╗ ŧ˘ su ╗ Ю Â

7.3.10 HTTP

Ю Ю ҁ HTTP ‘

	ҁ	
Step 1	Ruijie# **show http redirect**	HTTP Â

ЛЬЮ HTTP ‘

```
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 web ‘

	ҁ	
Step 1	Ruijie# **show web-auth direct-host**	web Â

ЛЬЮ web ‘

```
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 Web

ҳ	
Step 1 Ruijie# **show web-auth global**	Web Â

ЛЬЮО Web

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

7.3.13

ЮО ЮО ҳ

ҳ	
Step 1 Ruijie# **show web-auth** user [*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 ђ