

配置 Cisco VPN 客户端，通过一台中心 PIX 以隧道方式连接两个远程站点

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简介

本文展示了如何配置Cisco VPN客户端，使之在通过隧道连接到一台PIX的同时，连接到另一台PIX的内部。该功能可以完成，方法是终止VPN客户端已连接到的PIX的不同接口上的隧道。

远程VPN客户端将连接到snow (PIX 525) 并收到包含在12.0.0.1-12.0.0.34范围的IP地址。VPN客户端能够建立到snow (10.0.0.0/24的)内部，以及另一个PIX(此配置中为rain)内部的完全连接。

开始使用前

规则

有关文档规则的详细信息，请参阅 [Cisco 技术提示规则](#)。

先决条件

尝试此配置之前，请确保满足下列前提条件：

- **rain**用于rain的配置基于[“使用IPSec，配置简单的PIX间VPN隧道”的示例配置](#)。唯一的区别在于crypto map access-list中必须包括用于客户端的保留IP池。换句话说，我们希望保护从我们的LAN (11.0.0.0/24)传输到远程专用LAN (10.0.0.0/24)和远程客户端(12.0.0.0/24)的数据流。
- **snow**为了保证此配置正常运行，您需要有两个不同的接口连接到“外部”网络，通常是指互联网

服务提供商(ISP)。您也需要有两个加密映射。应将加密映射应用于intf2 (典型的DMZ), intf2将映射rain配置;这将保护去远程LAN (11.0.0.0/24)的内部网络(10.0.0.0/24)虽然同样保护去远程LAN的VPN客户端软件池(12.0.0.0/24)。"[第二个crypto map应当用于外部接口\(通常是eth0\), 作为典型动态crypto map, 如下文中描述的: Cisco PIX 5.1-to-VPN Client Wild-card, Pre-shared, 带扩展认证的模式配置。](#)"

当PIX (本示例中的rain)尝试连接到intf2 (属于193.0.0.5), 互联网密钥交换(IKE)协商可能出现故障, 因为另一PIX (snow)将应答193.0.0.1的外部地址。(这是因为PIX典型地有一个默认路由对外部。)要解决问题, 请添加一个特定路由到远程LAN到intf2接口。并且请添加一个主机路由到去的远程PIX的外部地址通过intf2。

无论PIX上配置的是什么转换机制, 您都必需将VPN数据流配置为无转换机制(NAT 0转换)。为达到这个目标, 请配置两个访问;列表(no-nat-inside和no-nat-intf2), 通过以下命令应用它们:

```
nat (inside) 0 access-list no-nat-inside
nat (intf2) 0 access-list no-nat-intf2
```

使用的组件

本文档中的信息基于以下软件和硬件版本。

- 有思科PIX防火墙软件版本6.2(2)的PIX 525
- 有Cisco Secure PIX防火墙软件版本的PIX 515 6.2(2)
- Cisco IOS 7200软件(C7200-JO3S56I-M), 版本12.2(6)
- Microsoft Windows 2000的Cisco VPN Client 3.6.1

本文档中的信息都是基于特定实验室环境中的设备创建的。本文档中使用的所有设备最初均采用原始(默认)配置。如果您是在真实网络上操作, 请确保您在使用任何命令前已经了解其潜在影响。

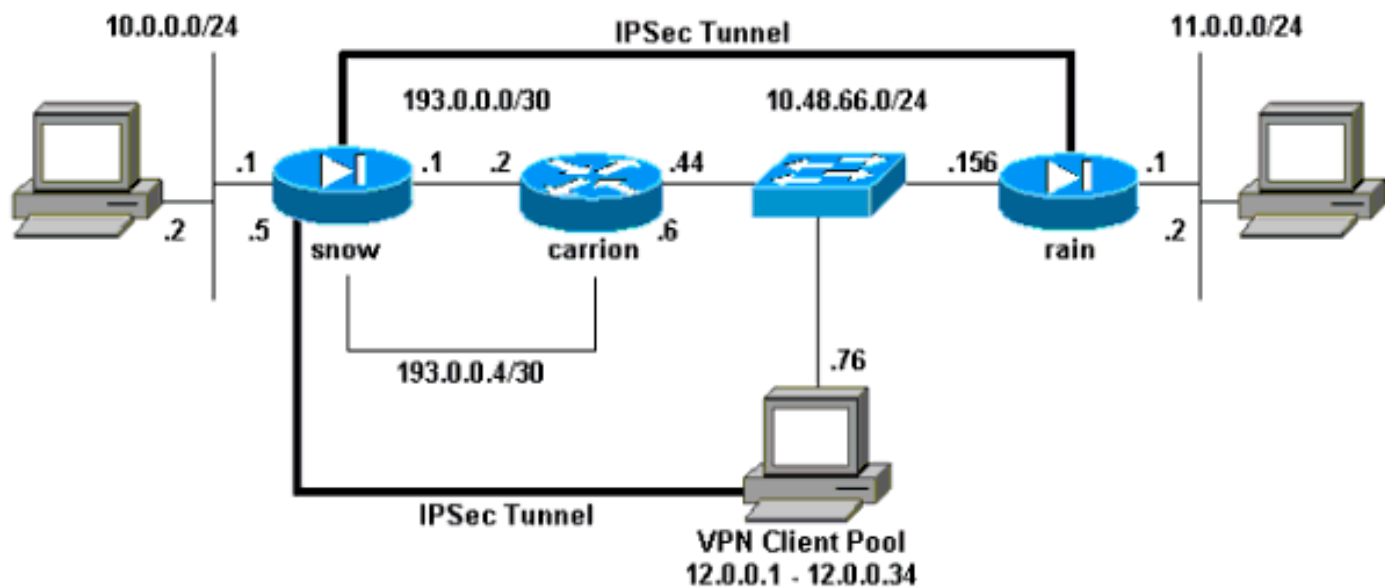
配置

本部分提供有关如何配置本文档所述功能的信息。

注意: 要查找本文档所用命令的其他信息, 请使用[命令查找工具](#) (仅限注册用户)。

网络图

本文档使用下图所示的网络设置。



配置

本文档使用如下所示的配置。

- [snow](#)
- [rain](#)
- [carrion](#)

snow

```
nat (inside) 0 access-list no-nat-inside
nat (intf2) 0 access-list no-nat-intf2
```

rain

```
rain# write terminal
Building configuration...
: Saved
:
PIX Version 6.2(2)
nameif ethernet0 outside security0
nameif ethernet1 inside security100
nameif ethernet2 intf2 security10
nameif ethernet3 intf3 security15
nameif ethernet4 intf4 security20
nameif ethernet5 intf5 security25
enable password 8Ry2YjIyt7RRXU24 encrypted
passwd 2KFQnbNIdI.2KYOU encrypted
hostname rain
fixup protocol ftp 21
fixup protocol http 80
fixup protocol h323 1720
fixup protocol rsh 514
fixup protocol rtsp 554
fixup protocol smtp 25
fixup protocol sqlnet 1521
fixup protocol sip 5060
fixup protocol skinny 2000
names
access-list acl-out permit icmp any any
access-list vpn-to-snow permit ip 11.0.0.0 255.255.255.0
10.0.0.0 255.255.255.0
```

```
access-list vpn-to-snow permit ip 11.0.0.0 255.255.255.0
 12.0.0.0 255.255.255.0
no pager
interface ethernet0 auto
interface ethernet1 auto
interface ethernet2 auto shutdown
interface ethernet3 auto shutdown
interface ethernet4 auto shutdown
interface ethernet5 auto shutdown
icmp permit any outside
mtu outside 1500
mtu inside 1500
mtu intf2 1500
mtu intf3 1500
mtu intf4 1500
mtu intf5 1500
ip address outside 10.48.66.156 255.255.255.0
ip address inside 11.0.0.1 255.255.255.0
ip address intf2 127.0.0.1 255.255.255.255
ip address intf3 127.0.0.1 255.255.255.255
ip address intf4 127.0.0.1 255.255.255.255
ip address intf5 127.0.0.1 255.255.255.255
ip audit info action alarm
ip audit attack action alarm
no failover
failover timeout 0:00:00
failover poll 15
failover ip address outside 0.0.0.0
failover ip address inside 0.0.0.0
failover ip address intf2 0.0.0.0
failover ip address intf3 0.0.0.0
failover ip address intf4 0.0.0.0
failover ip address intf5 0.0.0.0
pdm history enable
arp timeout 14400
nat (inside) 0 access-list vpn-to-snow
access-group acl-out in interface outside
route outside 10.0.0.0 255.255.255.0 193.0.0.5 1
route outside 12.0.0.0 255.255.255.0 193.0.0.5 1
route outside 193.0.0.0 255.255.255.0 10.48.66.44 1
timeout xlate 3:00:00
timeout conn 1:00:00 half-closed 0:10:00 udp 0:02:00
  rpc 0:10:00 h323 0:05:00 sip 0:30:00 sip_media
0:02:00
timeout uauth 0:05:00 absolute
aaa-server TACACS+ protocol tacacs+
aaa-server RADIUS protocol radius
no snmp-server location
no snmp-server contact
snmp-server community public
no snmp-server enable traps
no floodguard enable
sysopt connection permit-ipsec
no sysopt route dnats
crypto ipsec transform-set TRANS esp-des esp-sha-hmac
crypto map vpn-outside 10 ipsec-isakmp
crypto map vpn-outside 10 match address vpn-to-snow
crypto map vpn-outside 10 set peer 193.0.0.5
crypto map vpn-outside 10 set transform-set TRANS
crypto map vpn-outside interface outside
isakmp enable outside
isakmp key ***** address 193.0.0.5 netmask
255.255.255.255
isakmp policy 10 authentication pre-share
```

```
isakmp policy 10 encryption des
isakmp policy 10 hash sha
isakmp policy 10 group 2
isakmp policy 10 lifetime 86400
telnet timeout 5
ssh timeout 5
terminal width 80
Cryptochecksum:a2181c3b31cfcf3be90c24f622c17eed
: end
[OK]
```

carrion

```
rain# write terminal
Building configuration...
: Saved
:
PIX Version 6.2(2)
nameif ethernet0 outside security0
nameif ethernet1 inside security100
nameif ethernet2 intf2 security10
nameif ethernet3 intf3 security15
nameif ethernet4 intf4 security20
nameif ethernet5 intf5 security25
enable password 8Ry2YjIyt7RRXU24 encrypted
passwd 2KFQnbNIdI.2KYOU encrypted
hostname rain
fixup protocol ftp 21
fixup protocol http 80
fixup protocol h323 1720
fixup protocol rsh 514
fixup protocol rtsp 554
fixup protocol smtp 25
fixup protocol sqlnet 1521
fixup protocol sip 5060
fixup protocol skinny 2000
names
access-list acl-out permit icmp any any
access-list vpn-to-snow permit ip 11.0.0.0 255.255.255.0
 10.0.0.0 255.255.255.0
access-list vpn-to-snow permit ip 11.0.0.0 255.255.255.0
 12.0.0.0 255.255.255.0
no pager
interface ethernet0 auto
interface ethernet1 auto
interface ethernet2 auto shutdown
interface ethernet3 auto shutdown
interface ethernet4 auto shutdown
interface ethernet5 auto shutdown
icmp permit any outside
mtu outside 1500
mtu inside 1500
mtu intf2 1500
mtu intf3 1500
mtu intf4 1500
mtu intf5 1500
ip address outside 10.48.66.156 255.255.255.0
ip address inside 11.0.0.1 255.255.255.0
ip address intf2 127.0.0.1 255.255.255.255
ip address intf3 127.0.0.1 255.255.255.255
ip address intf4 127.0.0.1 255.255.255.255
ip address intf5 127.0.0.1 255.255.255.255
ip audit info action alarm
ip audit attack action alarm
no failover
```

```
failover timeout 0:00:00
failover poll 15
failover ip address outside 0.0.0.0
failover ip address inside 0.0.0.0
failover ip address intf2 0.0.0.0
failover ip address intf3 0.0.0.0
failover ip address intf4 0.0.0.0
failover ip address intf5 0.0.0.0
pdm history enable
arp timeout 14400
nat (inside) 0 access-list vpn-to-snow
access-group acl-out in interface outside
route outside 10.0.0.0 255.255.255.0 193.0.0.5 1
route outside 12.0.0.0 255.255.255.0 193.0.0.5 1
route outside 193.0.0.0 255.255.255.0 10.48.66.44 1
timeout xlate 3:00:00
timeout conn 1:00:00 half-closed 0:10:00 udp 0:02:00
    rpc 0:10:00 h323 0:05:00 sip 0:30:00 sip_media
0:02:00
timeout uauth 0:05:00 absolute
aaa-server TACACS+ protocol tacacs+
aaa-server RADIUS protocol radius
no snmp-server location
no snmp-server contact
snmp-server community public
no snmp-server enable traps
no floodguard enable
sysopt connection permit-ipsec
no sysopt route dnat
crypto ipsec transform-set TRANS esp-des esp-sha-hmac
crypto map vpn-outside 10 ipsec-isakmp
crypto map vpn-outside 10 match address vpn-to-snow
crypto map vpn-outside 10 set peer 193.0.0.5
crypto map vpn-outside 10 set transform-set TRANS
crypto map vpn-outside interface outside
isakmp enable outside
isakmp key ***** address 193.0.0.5 netmask
255.255.255.255
isakmp policy 10 authentication pre-share
isakmp policy 10 encryption des
isakmp policy 10 hash sha
isakmp policy 10 group 2
isakmp policy 10 lifetime 86400
telnet timeout 5
ssh timeout 5
terminal width 80
Cryptochecksum:a2181c3b31cfcf3be90c24f622c17eed
: end
[OK]
```

验证

本部分所提供的信息可用于确认您的配置是否正常工作。

[命令输出解释程序工具](#) ([仅限注册用户](#)) 支持某些 **show** 命令，使用此工具可以查看对 **show** 命令输出的分析。

show 命令输出

snow的show命令输出

```
snow# show version
```

```
Cisco PIX Firewall Version 6.2(2)
```

```
Compiled on Tue 11-Sep-01 07:45 by morlee
```

```
snow up 11 mins 19 secs
```

```
Hardware: PIX-525, 256 MB RAM, CPU Pentium III 600 MHz
```

```
Flash E28F128J3 @ 0x300, 16MB
```

```
BIOS Flash AM29F400B @ 0xffffd8000, 32KB
```

```
0: ethernet0: address is 0002.b945.9ff1, irq 10
```

```
1: ethernet1: address is 0002.b945.9ff2, irq 11
```

```
2: ethernet2: address is 00e0.b602.236f, irq 11
```

```
3: ethernet3: address is 00e0.b602.236e, irq 10
```

```
4: ethernet4: address is 00e0.b602.236d, irq 9
```

```
5: ethernet5: address is 00e0.b602.236c, irq 5
```

```
Licensed Features:
```

```
Failover: Enabled
```

```
VPN-DES: Enabled
```

```
VPN-3DES: Disabled
```

```
Maximum Interfaces: 8
```

```
Cut-through Proxy: Enabled
```

```
Guards: Enabled
```

```
Websense: Enabled
```

```
Inside Hosts: Unlimited
```

```
Throughput: Unlimited
```

```
ISAKMP peers: Unlimited
```

```
Serial Number: 480380577 (0x1ca206a1)
```

```
Activation Key: 0x9c2c232e 0xaad98633 0x3667fa1b 0x76404050
```

```
snow#
```

```
snow(config)# show route
```

```
outside 0.0.0.0 0.0.0.0 193.0.0.2 1 OTHER static
```

```
inside 10.0.0.0 255.255.255.0 10.0.0.1 1 CONNECT static
```

```
intf2 10.48.66.156 255.255.255.255 193.0.0.6 1 OTHER static
```

```
intf2 11.0.0.0 255.255.255.0 193.0.0.6 1 OTHER static
```

```
intf3 127.0.0.1 255.255.255.255 127.0.0.1 1 CONNECT static
```

```
outside 193.0.0.0 255.255.255.252 193.0.0.1 1 CONNECT static
```

```
intf2 193.0.0.4 255.255.255.252 193.0.0.5 1 CONNECT static
```

```
snow(config)# show access-list
```

```
access-list acl-out permit icmp any any (hitcnt=0)
```

```
access-list acl-intf2 permit icmp any any (hitcnt=0)
```

```
access-list vpn-intf2 permit ip 10.0.0.0 255.255.255.0
```

```
11.0.0.0 255.255.255.0 (hitcnt=12)
```

```
access-list vpn-intf2 permit ip 12.0.0.0 255.255.255.0
```

```
11.0.0.0 255.255.255.0 (hitcnt=34)
```

```
access-list no-nat-inside permit ip 10.0.0.0 255.255.255.0
```

```
11.0.0.0 255.255.255.0 (hitcnt=18)
```

```
access-list no-nat-inside permit ip 10.0.0.0 255.255.255.0
```

```
12.0.0.0 255.255.255.0 (hitcnt=32)
```

```
access-list no-nat-intf2 permit ip 11.0.0.0 255.255.255.0
```

```
12.0.0.0 255.255.255.0 (hitcnt=50)
```

```
access-list dynacl6 permit ip host 193.0.0.1 host 12.0.0.1 (hitcnt=0)
```

```
access-list dynacl7 permit ip any host 12.0.0.1 (hitcnt=6)
```

snow(config)# **show crypto isa sa**

```
Total      : 2
Embryonic  : 0
dst          src          state    pending  created
10.48.66.156 193.0.0.5  QM_IDLE 0        1
193.0.0.1   10.48.66.76 QM_IDLE 0        2
```

snow(config)# **show crypto ipsec sa**

interface: intf2

Crypto map tag: vpn-intf2, local addr. 193.0.0.5

local ident (addr/mask/prot/port): (10.0.0.0/255.255.255.0/0/0)

remote ident (addr/mask/prot/port): (11.0.0.0/255.255.255.0/0/0)

current_peer: 10.48.66.156

PERMIT, flags={origin_is_acl,}

#pkts encaps: 0, #pkts encrypt: 0, #pkts digest 0

#pkts decaps: 0, #pkts decrypt: 0, #pkts verify 0

#pkts compressed: 0, #pkts decompressed: 0

#pkts not compressed: 0, #pkts compr. failed: 0,

#pkts decompress failed: 0

#send errors 0, #recv errors 0

local crypto endpt.: 193.0.0.5, remote crypto endpt.: 10.48.66.156

path mtu 1500, ipsec overhead 0, media mtu 1500

current outbound spi: 0

inbound esp sas:

inbound ah sas:

inbound pcp sas:

outbound esp sas:

outbound ah sas:

outbound pcp sas:

local ident (addr/mask/prot/port): (12.0.0.0/255.255.255.0/0/0)

remote ident (addr/mask/prot/port): (11.0.0.0/255.255.255.0/0/0)

current_peer: 10.48.66.156

PERMIT, flags={origin_is_acl,}

#pkts encaps: 6, #pkts encrypt: 6, #pkts digest 6

#pkts decaps: 6, #pkts decrypt: 6, #pkts verify 6

#pkts compressed: 0, #pkts decompressed: 0

#pkts not compressed: 0, #pkts compr. failed: 0,

#pkts decompress failed: 0

#send errors 2, #recv errors 0

local crypto endpt.: 193.0.0.5, remote crypto endpt.: 10.48.66.156

path mtu 1500, ipsec overhead 56, media mtu 1500

current outbound spi: 8312e721

inbound esp sas:
spi: 0x661d4fad(1713196973)
transform: esp-des esp-sha-hmac ,
in use settings ={Tunnel, }
slot: 0, conn id: 1, crypto map: vpn-intf2
sa timing: remaining key lifetime (k/sec): (4607999/27978)
IV size: 8 bytes
replay detection support: Y

inbound ah sas:

inbound pcp sas:

outbound esp sas:
spi: 0x8312e721(2199054113)
transform: esp-des esp-sha-hmac ,
in use settings ={Tunnel, }
slot: 0, conn id: 2, crypto map: vpn-intf2
sa timing: remaining key lifetime (k/sec): (4607999/27978)
IV size: 8 bytes
replay detection support: Y

outbound ah sas:

outbound pcp sas:

interface: outside

Crypto map tag: toOUT, local addr. 193.0.0.1

local ident (addr/mask/prot/port): (0.0.0.0/0.0.0.0/0/0)
remote ident (addr/mask/prot/port): (12.0.0.1/255.255.255.255/0/0)
current_peer: 10.48.66.76
dynamic allocated peer ip: 12.0.0.1

PERMIT, flags={}
#pkts encaps: 6, #pkts encrypt: 6, #pkts digest 6
#pkts decaps: 28, #pkts decrypt: 28, #pkts verify 28
#pkts compressed: 0, #pkts decompressed: 0
#pkts not compressed: 0, #pkts compr. failed: 0,
#pkts decompress failed: 0
#send errors 0, #recv errors 0

local crypto endpt.: 193.0.0.1, remote crypto endpt.: 10.48.66.76
path mtu 1500, ipsec overhead 56, media mtu 1500
current outbound spi: 62c47dd7

inbound esp sas:
spi: 0x331a3e87(857357959)
transform: esp-des esp-md5-hmac ,
in use settings ={Tunnel, }
slot: 0, conn id: 7, crypto map: toOUT
sa timing: remaining key lifetime (k/sec): (4607996/27359)
IV size: 8 bytes
replay detection support: Y

inbound ah sas:

inbound pcp sas:

outbound esp sas:

spi: 0x62c47dd7(1657044439)
transform: esp-des esp-md5-hmac ,
in use settings ={Tunnel, }
slot: 0, conn id: 8, crypto map: toOUT
sa timing: remaining key lifetime (k/sec): (4607999/27359)
IV size: 8 bytes
replay detection support: Y

outbound ah sas:

outbound pcp sas:

local ident (addr/mask/prot/port): (193.0.0.1/255.255.255.255/0/0)
remote ident (addr/mask/prot/port): (12.0.0.1/255.255.255.255/0/0)
current_peer: 10.48.66.76
dynamic allocated peer ip: 12.0.0.1

PERMIT, flags={}
#pkts encaps: 0, #pkts encrypt: 0, #pkts digest 0
#pkts decaps: 0, #pkts decrypt: 0, #pkts verify 0
#pkts compressed: 0, #pkts decompressed: 0
#pkts not compressed: 0, #pkts compr. failed: 0,
#pkts decompress failed: 0
#send errors 0, #recv errors 0

local crypto endpt.: 193.0.0.1, remote crypto endpt.: 10.48.66.76
path mtu 1500, ipsec overhead 56, media mtu 1500
current outbound spi: 4e13c751

inbound esp sas:

spi: 0x4f3e0026(1329463334)
transform: esp-des esp-md5-hmac ,
in use settings ={Tunnel, }
slot: 0, conn id: 3, crypto map: toOUT
sa timing: remaining key lifetime (k/sec): (4608000/27972)
IV size: 8 bytes
replay detection support: Y

inbound ah sas:

inbound pcp sas:

outbound esp sas:

spi: 0x4e13c751(1309919057)
transform: esp-des esp-md5-hmac ,
in use settings ={Tunnel, }
slot: 0, conn id: 4, crypto map: toOUT
sa timing: remaining key lifetime (k/sec): (4608000/27963)
IV size: 8 bytes
replay detection support: Y

outbound ah sas:

outbound pcp sas:

rain的show命令输出

rain# **show version**

Cisco PIX Firewall Version 6.2(2)

Compiled on Tue 11-Sep-01 07:45 by morlee

rain up 2 hours 23 mins

Hardware: PIX-525, 256 MB RAM, CPU Pentium III 600 MHz

Flash E28F128J3 @ 0x300, 16MB

BIOS Flash AM29F400B @ 0xffffd8000, 32KB

0: ethernet0: address is 0002.b945.a001, irq 10
1: ethernet1: address is 0002.b945.a002, irq 11
2: ethernet2: address is 00e0.b602.4797, irq 11
3: ethernet3: address is 00e0.b602.4796, irq 10
4: ethernet4: address is 00e0.b602.4795, irq 9
5: ethernet5: address is 00e0.b602.4794, irq 5

Licensed Features:

Failover: Enabled

VPN-DES: Enabled

VPN-3DES: Enabled

Maximum Interfaces: 8

Cut-through Proxy: Enabled

Guards: Enabled

Websense: Enabled

Inside Hosts: Unlimited

Throughput: Unlimited

ISAKMP peers: Unlimited

Serial Number: 480380580 (0x1ca206a4)

Activation Key: 0x3a08e996 0x3d4a15af 0x604a1272 0xd8fbe3b8

rain# **show route**

outside 10.0.0.0 255.255.255.0 193.0.0.5 1 OTHER static
outside 10.48.66.0 255.255.255.0 10.48.66.156 1 CONNECT static
inside 11.0.0.0 255.255.255.0 11.0.0.1 1 CONNECT static
outside 12.0.0.0 255.255.255.0 193.0.0.5 1 OTHER static
outside 193.0.0.0 255.255.255.0 10.48.66.44 1 OTHER static

rain# **show crypto isa sa**

Total : 2

Embryonic : 0

dst	src	state	pending	created
10.48.66.156	193.0.0.5	QM_IDLE	0	1
193.0.0.5	10.48.66.156	QM_IDLE	0	2

rain# **show crypto ipsec sa**

interface: outside

Crypto map tag: vpn-outside, local addr. 10.48.66.156

```
local ident (addr/mask/prot/port): (11.0.0.0/255.255.255.0/0/0)
remote ident (addr/mask/prot/port): (10.0.0.0/255.255.255.0/0/0)
current_peer: 193.0.0.5
  PERMIT, flags={origin_is_acl,}
  #pkts encaps: 8, #pkts encrypt: 8, #pkts digest 8
  #pkts decaps: 8, #pkts decrypt: 8, #pkts verify 8
  #pkts compressed: 0, #pkts decompressed: 0
  #pkts not compressed: 0, #pkts compr. failed: 0,
  #pkts decompress failed: 0
  #send errors 0, #recv errors 0

local crypto endpt.: 10.48.66.156, remote crypto endpt.: 193.0.0.5
path mtu 1500, ipsec overhead 56, media mtu 1500
current outbound spi: 0

inbound esp sas:

inbound ah sas:

inbound pcp sas:

outbound esp sas:

outbound ah sas:

outbound pcp sas:
```

```
local ident (addr/mask/prot/port): (11.0.0.0/255.255.255.0/0/0)
remote ident (addr/mask/prot/port): (12.0.0.0/255.255.255.0/0/0)
current_peer: 193.0.0.5
  PERMIT, flags={origin_is_acl,}
  #pkts encaps: 22, #pkts encrypt: 22, #pkts digest 22
  #pkts decaps: 22, #pkts decrypt: 22, #pkts verify 22
  #pkts compressed: 0, #pkts decompressed: 0
  #pkts not compressed: 0, #pkts compr. failed: 0,
  #pkts decompress failed: 0
  #send errors 0, #recv errors 0

local crypto endpt.: 10.48.66.156, remote crypto endpt.: 193.0.0.5
path mtu 1500, ipsec overhead 56, media mtu 1500
current outbound spi: 661d4fad

inbound esp sas:
  spi: 0x8312e721(2199054113)
  transform: esp-des esp-sha-hmac ,
  in use settings ={Tunnel, }
  slot: 0, conn id: 1, crypto map: vpn-outside
  sa timing: remaining key lifetime (k/sec): (4607999/27529)
  IV size: 8 bytes
  replay detection support: Y

inbound ah sas:

inbound pcp sas:
```

```
outbound esp sas:
spi: 0x661d4fad(1713196973)
transform: esp-des esp-sha-hmac ,
in use settings =(Tunnel, )
slot: 0, conn id: 2, crypto map: vpn-outside
sa timing: remaining key lifetime (k/sec): (4607999/27529)
IV size: 8 bytes
replay detection support: Y
```

```
outbound ah sas:
```

```
outbound pcp sas:
```

carrion的show命令输出

```
carrion# show version
Cisco Internetwork Operating System Software
IOS (tm) RSP Software (RSP-JK9O3SV-M), Version 12.2(6),
RELEASE SOFTWARE (fc2)
Copyright (c) 1986-2001 by cisco Systems, Inc.
Compiled Wed 07-Nov-01 21:44 by pwade
Image text-base: 0x600109C8, data-base: 0x61B42000

ROM: System Bootstrap, Version 11.1(2) [nitin 2],
RELEASE SOFTWARE (fc1)
BOOTLDR: RSP Software (RSP-BOOT-M), Version 12.2(6),
RELEASE SOFTWARE (fc2)

carrion uptime is 2 weeks, 3 days, 22 hours, 32 minutes
System returned to ROM by reload at 12:27:14 UTC Wed Oct 10 2001
System image file is "slot0:rsp-jk9o3sv-mz.122-6.bin"

cisco RSP2 (R4700) processor with 131072K/2072K bytes of memory.
R4700 CPU at 100Mhz, Implementation 33, Rev 1.0
Last reset from power-on
G.703/E1 software, Version 1.0.
G.703/JT2 software, Version 1.0.
X.25 software, Version 3.0.0.
SuperLAT software (copyright 1990 by Meridian Technology Corp).
Bridging software.
TN3270 Emulation software.
Chassis Interface.
1 EIP controller (4 Ethernet).
3 FSIP controllers (24 Serial).
1 VIP2 controller (1 HSSI).
4 Ethernet/IEEE 802.3 interface(s)
24 Serial network interface(s)
1 HSSI network interface(s)
123K bytes of non-volatile configuration memory.

20480K bytes of Flash PCMCIA card at slot 0 (Sector size 128K).
8192K bytes of Flash internal SIMM (Sector size 256K).
No slave installed in slot 7.
Configuration register is 0x2002
```

故障排除

本部分提供的信息可用于对配置进行故障排除。

debug 命令的输出

注意： 在发出 debug 命令之前，请参阅[有关 Debug 命令的重要信息](#)。

snow的debug命令的输出

```
snow# show debug
debug crypto ipsec 1
debug crypto isakmp 1
debug crypto engine
debug icmp trace
debug fover status
txOff
rxOff
openOff
cableOff
txdmpOff
rxdmpOff
ifcOff
rxipOff
txipOff
getOff
putOff
verifyOff
switchOff
failOff
fmsgOff
snow# no debug icmp trace
ICMP trace off
snow#
snow#
snow#
snow#
snow# configure terminal
! the client is connecting !!!!!!!!!!!!!!!
Type help or '?' for a list of available commands.
snow#
crypto_isakmp_process_block: src 10.48.66.76, dest 193.0.0.1
VPN Peer: ISAKMP: Added new peer: ip:10.48.66.76 Total VPN Peers:1
VPN Peer: ISAKMP: Peer ip:10.48.66.76
Ref cnt incremented to:1 Total VPN Peers:1
OAK_AG exchange
ISAKMP (0): processing SA payload. message ID = 0

ISAKMP (0): Checking ISAKMP transform 1 against priority 10 policy
ISAKMP: encryption 3DES-CBC
ISAKMP: hash SHA
ISAKMP: default group 2
ISAKMP: extended auth pre-share
ISAKMP: life type in seconds
ISAKMP: life duration (VPI) of 0x0 0x20 0xc4 0x9b
ISAKMP (0): atts are not acceptable. Next payload is 3
ISAKMP (0): Checking ISAKMP transform 2 against priority 10 policy
ISAKMP: encryption 3DES-CBC
ISAKMP: hash MD5
ISAKMP: default group 2
ISAKMP: extended auth pre-share
ISAKMP: life type in seconds
ISAKMP: life duration (VPI) of 0x0 0x20 0xc4 0x9b
ISAKMP (0): atts are not acceptable. Next payload is 3
ISAKMP (0): Checking ISAKMP transform 3 against priority 10 policy
```

```
ISAKMP:      encryption 3DES-CBC
ISAKMP:      hash SHA
ISAKMP:      default group 2
ISAKMP:      auth pre-share
ISAKMP:      life type in seconds
ISAKMP:      life duration (VPI) of  0x0 0x20 0xc4 0x9b
ISAKMP (0): atts are not acceptable. Next payload is 3
ISAKMP (0): Checking ISAKMP transform 4 against priority 10 policy
ISAKMP:      encryption 3DES-CBC
ISAKMP:      hash MD5
ISAKMP:      default group 2
ISAKMP:      auth pre-share
ISAKMP:      life type in seconds
ISAKMP:      life duration (VPI) of  0x0 0x20 0xc4 0x9b
ISAKMP (0): atts are not acceptable. Next payload is 3
ISAKMP (0): Checking ISAKMP transform 5 against priority 10 policy
ISAKMP:      encryption DES-CBC
ISAKMP:      hash SHA
ISAKMP:      default group 2
ISAKMP:      extended auth pre-share
ISAKMP:      life type in seconds
ISAKMP:      life duration (VPI) of  0x0 0x20 0xc4 0x9b
ISAKMP (0): atts are not acceptable. Next payload is 3
ISAKMP (0): Checking ISAKMP transform 6 against priority 10 policy
ISAKMP:      encryption DES-CBC
ISAKMP:      hash MD5
ISAKMP:      default group 2
ISAKMP:      extended auth pre-share
ISAKMP:      life type in seconds
ISAKMP:      life duration (VPI) of  0x0 0x20 0xc4 0x9b
ISAKMP (0): atts are not acceptable. Next payload is 3
ISAKMP (0): Checking ISAKMP transform 7 against priority 10 policy
ISAKMP:      encryption DES-CBC
ISAKMP:      hash SHA
ISAKMP:      default group 2
ISAKMP:      auth pre-share
ISAKMP:      life type in seconds
ISAKMP:      life duration (VPI) of  0x0 0x20 0xc4 0x9b
ISAKMP (0): atts are acceptable. Next payload is 3
ISAKMP (0): processing KE payload. message ID = 0

ISAKMP (0): processing NONCE payload. message ID = 0

ISAKMP (0): processing ID payload. message ID = 0
ISAKMP (0): processing vendor id payload

ISAKMP (0): processing vendor id payload

ISAKMP (0): remote peer supports dead peer detection

ISAKMP (0): processing vendor id payload

ISAKMP (0): speaking to a Unity client

ISAKMP: Created a peer node for 10.48.66.76
ISAKMP (0): ID payload
next-payload : 10
type         : 1
protocol     : 17
port        : 500
length      : 8
ISAKMP (0): Total payload length: 12
return status is IKMP_NO_ERROR
crypto_isakmp_process_block: src 10.48.66.76, dest 193.0.0.1
```

```
OAK_AG exchange
ISAKMP (0): processing HASH payload. message ID = 0
ISAKMP (0): processing NOTIFY payload 24578 protocol 1
spi 0, message ID = 0
ISAKMP (0): processing notify INITIAL_CONTACTIPSEC(key_engine):
    got a queue event...
IPSEC(key_engine_delete_sas): rec'd delete notify from ISAKMP
IPSEC(key_engine_delete_sas): delete all SAs shared with 10.48.66.76

ISAKMP (0): SA has been authenticated
return status is IKMP_NO_ERROR
crypto_isakmp_process_block: src 10.48.66.76, dest 193.0.0.1
ISAKMP_TRANSACTION exchange
ISAKMP (0:0): processing transaction payload from 10.48.66.76.
    message ID = 0
ISAKMP: Config payload CFG_REQUEST
ISAKMP (0:0): checking request:
ISAKMP: attribute    IP4_ADDRESS (1)
ISAKMP: attribute    IP4_NETMASK (2)
ISAKMP: attribute    IP4_DNS (3)
ISAKMP: attribute    IP4_NBNS (4)
ISAKMP: attribute    ADDRESS_EXPIRY (5)
    Unsupported Attr: 5
ISAKMP: attribute    APPLICATION_VERSION (7)
    Unsupported Attr: 7
ISAKMP: attribute    UNKNOWN (28672)
    Unsupported Attr: 28672
ISAKMP: attribute    UNKNOWN (28673)
    Unsupported Attr: 28673
ISAKMP: attribute    UNKNOWN (28674)
ISAKMP: attribute    UNKNOWN (28676)
ISAKMP: attribute    UNKNOWN (28679)
    Unsupported Attr: 28679
ISAKMP: attribute    UNKNOWN (28680)
    Unsupported Attr: 28680
ISAKMP: attribute    UNKNOWN (28677)
    Unsupported Attr: 28677
ISAKMP (0:0): responding to peer config from 10.48.66.76.
    ID = 1245965288
return status is IKMP_NO_ERROR
crypto_isakmp_process_block: src 10.48.66.76, dest 193.0.0.1
OAK_QM exchange
oakley_process_quick_mode:
OAK_QM_IDLE
ISAKMP (0): processing SA payload. message ID = 2141307752

ISAKMP : Checking IPsec proposal 1

ISAKMP: transform 1, ESP_3DES
ISAKMP:  attributes in transform:
ISAKMP:     authenticator is HMAC-MD5
ISAKMP:     encaps is 1
ISAKMP:     SA life type in seconds
ISAKMP:     SA life duration (VPI) of
    0x0 0x20 0xc4 0x9b IPSEC(validate_proposal): transform proposal
    (prot 3, trans 3, hmac_alg 1) not supported

ISAKMP (0): atts not acceptable. Next payload is 0
ISAKMP (0): skipping next ANDED proposal (1)
ISAKMP : Checking IPsec proposal 2

ISAKMP: transform 1, ESP_3DES
ISAKMP:  attributes in transform:
ISAKMP:     authenticator is HMAC-SHA
```



```
ISAKMP:      encaps is 1
ISAKMP:      SA life type in seconds
ISAKMP:      SA life duration (VPI) of
      0x0 0x20 0xc4 0x9b IPSEC(validate_proposal): transform proposal
      (prot 3, trans 3, hmac_alg 2) not supported

ISAKMP (0): atts not acceptable. Next payload is 0
ISAKMP (0): skipping next ANDED proposal (2)
ISAKMP : Checking IPsec proposal 3

ISAKMP: transform 1, ESP_3DES
ISAKMP:  attributes in transform:
ISAKMP:      authenticator is HMAC-MD5
ISAKMP:      encaps is 1
ISAKMP:      SA life type in seconds
ISAKMP:      SA life duration (VPI) of
      0x0 0x20 0xc4 0x9b IPSEC(validate_proposal): transform proposal
      (prot 3, trans 3, hmac_alg 1) not supported

ISAKMP (0): atts not acceptable. Next payload is 0
ISAKMP : Checking IPsec proposal 4

ISAKMP: transform 1, ESP_3DES
ISAKMP:  attributes in transform:
ISAKMP:      authenticator is HMAC-SHA
ISAKMP:      encaps is 1
ISAKMP:      SA life type in seconds
ISAKMP:      SA life duration (VPI) of
      0x0 0x20 0xc4 0x9b IPSEC(validate_proposal): transform proposal
      (prot 3, trans 3, hmac_alg 2) not supported

ISAKMP (0): atts not acceptable. Next payload is 0
ISAKMP : Checking IPsec proposal 5

ISAKMP: transform 1, ESP_DES
ISAKMP:  attributes in transform:
ISAKMP:      authenticator is HMAC-MD5
ISAKMP:      encaps is 1
ISAKMP:      SA life type in seconds
ISAKMP:      SA life duration (VPI) of  0x0 0x20 0xc4 0x9b
ISAKMP (0): atts are acceptable.
ISAKMP (0): bad SPI size of 2 octets!
ISAKMP : Checking IPsec proposal 6

ISAKMP: transform 1, ESP_DES
ISAKMP:  attributes in transform:
ISAKMP:      authenticator is HMAC-SHA
ISAKMP:      encaps is 1
ISAKMP:      SA life type in seconds
ISAKMP:      SA life duration (VPI) of
      0x0 0x20 0xc4 0x9b IPSEC(validate_proposal): transform proposal
      (prot 3, trans 2, hmac_alg 2) not supported

ISAKMP (0): atts not acceptable. Next payload is 0
ISAKMP (0): skipping next ANDED proposal (6)
ISAKMP : Checking IPsec proposal 7

ISAKMP: transform 1, ESP_DES
ISAKMP:  attributes in transform:
ISAKMP:      authenticator is HMAC-MD5
ISAKMP:      encaps is 1
ISAKMP:      SA life type in seconds
ISAKMP:      SA life duration (VPI) of  0x0 0x20 0xc4 0x9b
ISAKMP (0): atts are acceptable.IPSEC(validate_proposal_request):
```

```
proposal part #1,
(key eng. msg.) dest= 193.0.0.1, src= 10.48.66.76,
  dest_proxy= 193.0.0.1/255.255.255.255/0/0 (type=1),
  src_proxy= 12.0.0.1/255.255.255.255/0/0 (type=1),
  protocol= ESP, transform= esp-des esp-md5-hmac ,
  lifedur= 0s and 0kb,
  spi= 0x0(0), conn_id= 0, keysize= 0, flags= 0x4

ISAKMP (0): processing NONCE payload. message ID = 2141307752

ISAKMP (0): processing ID payload. message ID = 2141307752
ISAKMP (0): ID_IPV4_ADDR src 12.0.0.1 prot 0 port 0
ISAKMP (0): processing ID payload. message ID = 2141307752
ISAKMP (0): ID_IPV4_ADDR dst 193.0.0.1 prot 0 port 0 IPSEC(key_engine):
  got a queue event...
IPSEC(spi_response): getting spi 0x4f3e0026(1329463334) for SA
from 10.48.66.76 to 193.0.0.1 for prot 3

return status is IKMP_NO_ERROR
crypto_isakmp_process_block: src 10.48.66.76, dest 193.0.0.1
OAK_QM exchange
oakley_process_quick_mode:
OAK_QM_IDLE
ISAKMP (0): processing SA payload. message ID = 2151626816

ISAKMP : Checking IPsec proposal 1

ISAKMP: transform 1, ESP_3DES
ISAKMP: attributes in transform:
ISAKMP: authenticator is HMAC-MD5
crypto_isakmp_process_block: src 10.48.66.76, dest 193.0.0.1
OAK_QM exchange
oakley_process_quick_mode:
OAK_QM_AUTH_AWAITmap_alloc_entry: allocating entry 3
map_alloc_entry: allocating entry 4

ISAKMP (0): Creating IPsec SAs
  inbound SA from 10.48.66.76 to 193.0.0.1 (proxy
12.0.0.1 to 193.0.0.1)
  has spi 1329463334 and conn_id 3 and flags 4
  lifetime of 2147483 seconds
  outbound SA from 193.0.0.1 to 10.48.66.76 (proxy
193.0.0.1 to 12.0.0.1)
  has spi 1309919057 and conn_id 4 and flags 4
  lifetime of 2147483 secondsIPSEC(key_engine): got a queue event...
IPSEC(initialize_sas): ,
(key eng. msg.) dest= 193.0.0.1, src= 10.48.66.76,
  dest_proxy= 193.0.0.1/0.0.0.0/0/0 (type=1),
  src_proxy= 12.0.0.1/0.0.0.0/0/0 (type=1),
  protocol= ESP, transform= esp-des esp-md5-hmac ,
  lifedur= 2147483s and 0kb,
  spi= 0x4f3e0026(1329463334), conn_id= 3, keysize= 0, flags= 0x4
IPSEC(initialize_sas): ,
(key eng. msg.) src= 193.0.0.1, dest= 10.48.66.76,
  src_proxy= 193.0.0.1/0.0.0.0/0/0 (type=1),
  dest_proxy= 12.0.0.1/0.0.0.0/0/0 (type=1),
  protocol= ESP, transform= esp-des esp-md5-hmac ,
  lifedur= 2147483s and 0kb,
  spi= 0x4e13c751(1309919057), conn_id= 4, keysize= 0, flags= 0x4

VPN Peer: IPSEC: Peer ip:10.48.66.76 Ref cnt
incremented to:2 Total VPN Peers:1
VPN Peer: IPSEC: Peer ip:10.48.66.76 Ref cnt
incremented to:3 Total VPN Peers:1
```

```
return status is IKMP_NO_ERROR
crypto_isakmp_process_block: src 10.48.66.76, dest 193.0.0.1
OAK_QM exchange
oakley_process_quick_mode:
OAK_QM_AUTH_AWAITmap_alloc_entry: allocating entry 7
map_alloc_entry: allocating entry 8

ISAKMP (0): Creating IPsec SAs
  inbound SA from      10.48.66.76 to      193.0.0.1 (proxy
12.0.0.1 to          0.0.0.0)
  has spi 857357959 and conn_id 7 and flags 4
  lifetime of 2147483 seconds
  outbound SA from      193.0.0.1 to      10.48.66.76 (proxy
0.0.0.0 to          12.0.0.1)
  has spi 1657044439 and conn_id 8 and flags 4
  lifetime of 2147483 secondsIPSEC(key_engine): got a queue event...
IPSEC(initialize_sas): ,
(key eng. msg.) dest= 193.0.0.1, src= 10.48.66.76,
  dest_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4),
  src_proxy= 12.0.0.1/0.0.0.0/0/0 (type=1),
  protocol= ESP, transform= esp-des esp-md5-hmac ,
  lifedur= 2147483s and 0kb,
  spi= 0x331a3e87(857357959), conn_id= 7, keysize= 0, flags= 0x4
IPSEC(initialize_sas): ,
(key eng. msg.) src= 193.0.0.1, dest= 10.48.66.76,
  src_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4),
  dest_proxy= 12.0.0.1/0.0.0.0/0/0 (type=1),
  protocol= ESP, transform= esp-des esp-md5-hmac ,
  lifedur= 2147483s and 0kb,
  spi= 0x62c47dd7(1657044439), conn_id= 8, keysize= 0, flags= 0x4

VPN Peer: IPSEC: Peer ip:10.48.66.76 Ref cnt incremented to:4 Total VPN Peers:1
VPN Peer: IPSEC: Peer ip:10.48.66.76 Ref cnt incremented to:5 Total VPN Peers:1
return status is IKMP_NO_ERROR602301: sa created, (sa) sa_dest= 193.0.0.1,
  sa_prot= 50, sa_spi= 0x4f3e0026(1329463334),
  sa_trans= esp-des esp-md5-hmac , sa_conn_id= 3

602301: sa created, (sa) sa_dest= 10.48.66.76, sa_prot= 50,
  sa_spi= 0x4e13c751(1309919057), sa_trans= esp-des esp-md5-hmac ,
  sa_conn_id= 4

602301: sa created, (sa) sa_dest= 193.0.0.1, sa_prot= 50,
  sa_spi= 0x331a3e87(857357959), sa_trans= esp-des esp-md5-hmac ,
  sa_conn_id= 7

602301: sa created, (sa) sa_dest= 10.48.66.76, sa_prot= 50,
  sa_spi= 0x62c47dd7(1657044439), sa_trans= esp-des esp-md5-hmac ,
  sa_conn_id= 8

ISADB: reaper checking SA 0x81153ac0, conn_id = 0
snow#
snow#
snow#
snow# 302010: 0 in use, 0 most used

snow#
snow#
snow#
snow#
snow# ! client will now ping 11.0.0.2
Type help or '?' for a list of available commands.
snow# 6
VPN Peer: ISAKMP: Added new peer: ip:10.48.66.156 Total VPN Peers:2
```

```
VPN Peer: ISAKMP: Peer ip:10.48.66.156
  Ref cnt incremented to:1 Total VPN Peers:2
ISAKMP (0): beginning Main Mode exchange09001:
  Built local-host intf2:11.0.0.

crypto_isakmp_process_block: src 10.48.66.156, dest 193.0.0.5
OAK_MM exchange
ISAKMP (0): processing SA payload. message ID = 0

ISAKMP (0): Checking ISAKMP transform 1 against priority 10 policy
ISAKMP:      encryption DES-CBC
ISAKMP:      hash SHA
ISAKMP:      default group 2
ISAKMP:      auth pre-share
ISAKMP:      life type in seconds
ISAKMP:      life duration (VPI) of 0x0 0x1 0x51 0x80
ISAKMP (0): atts are acceptable. Next payload is 0
ISAKMP (0): SA is doing pre-shared key authentication
  using id type ID_IPV4_ADDR
return status is IKMP_NO_ERROR2
702303: sa_request, (key eng. msg.
crypto_isakmp_process_block: src 10.48.66.156, dest 193.0.0.5
OAK_MM exchange
ISAKMP (0): processing KE payload. message ID = 0

ISAKMP (0): processing NONCE payload. message ID = 0

ISAKMP (0): processing vendor id payload

ISAKMP (0): processing vendor id payload

ISAKMP (0): remote peer supports dead peer detection

ISAKMP (0): processing vendor id payload

ISAKMP (0): speaking to another IOS box!

ISAKMP (0): ID payload
next-payload : 8
type          : 1
protocol      : 17
port          : 500
length       : 8
ISAKMP (0): Total payload length: 12
return status is IKMP_NO_ERROR
crypto_isakmp_process_block: src 10.48.66.156, dest 193.0.0.5
OAK_MM exchange
ISAKMP (0): processing ID payload. message ID = 0
ISAKMP (0): processing HASH payload. message ID = 0
ISAKMP (0): SA has been authenticated

ISAKMP (0): beginning Quick Mode exchange,
  M-ID of -931180733:c87f4f43IPSEC(key_engine): got a queue event...
IPSEC(spi_response): getting spi 0x661d4fad(1713196973) for SA
from 10.48.66.156 to 193.0.0.5 for prot 3

return status is IKMP_NO_ERROR
ISAKMP (0): sending INITIAL_CONTACT notify
crypto_isakmp_process_block: src 10.48.66.156, dest 193.0.0.5
OAK_QM exchange
oakley_process_quick_mode:
OAK_QM_IDLE
ISAKMP (0): processing SA payload. message ID = 3363786563
```

ISAKMP : Checking IPsec proposal 1

ISAKMP: transform 1, ESP_DES

ISAKMP: attributes in transform:

ISAKMP: encaps is 1

ISAKMP: SA life type in seconds

ISAKMP: SA life duration (basic) of 28800

ISAKMP: SA life type in kilobytes

ISAKMP: SA life duration (VPI) of 0x0 0x46 0x50 0x0

ISAKMP: authenticator is HMAC-SHA

ISAKMP (0): atts are acceptable.IPSEC(validate_proposal_request):

proposal part #1,

(key eng. msg.) dest= 10.48.66.156, src= 193.0.0.5,

dest_proxy= 11.0.0.0/255.255.255.0/0/0 (type=4),

src_proxy= 12.0.0.0/255.255.255.0/0/0 (type=4),

protocol= ESP, transform= esp-des esp-sha-hmac ,

lifedur= 0s and 0kb,

spi= 0x0(0), conn_id= 0, keysize= 0, flags= 0x4

ISAKMP (0): processing NONCE payload. message ID = 3363786563

ISAKMP (0): processing ID payload. message ID = 3363786563

ISAKMP (0): processing ID payload.

message ID = 3363786563map_alloc_entry: allocating entry 1

map_alloc_entry: allocating entry 2

ISAKMP (0): Creating IPsec SAs

inbound SA from 10.48.66.156 to 193.0.0.5 (proxy

11.0.0.0 to 12.0.0.0)

has spi 1713196973 and conn_id 1 and flags 4

lifetime of 28800 seconds

lifetime of 4608000 kilobytes

outbound SA from 193.0.0.5 to 10.48.66.156 (proxy

12.0.0.0 to 11.0.0.0)

has spi 2199054113 and conn_id 2 and flags 4

lifetime of 28800 seconds

lifetime of 4608000 kilobytesIPSEC(key_engine): got a queue event...

IPSEC(initialize_sas): ,

(key eng. msg.) dest= 193.0.0.5, src= 10.48.66.156,

dest_proxy= 12.0.0.0/255.255.255.0/0/0 (type=4),

src_proxy= 11.0.0.0/255.255.255.0/0/0 (type=4),

protocol= ESP, transform= esp-des esp-sha-hmac ,

lifedur= 28800s and 4608000kb,

spi= 0x661d4fad(1713196973), conn_id= 1, keysize= 0, flags= 0x4

IPSEC(initialize_sas): ,

(key eng. msg.) src= 193.0.0.5, dest= 10.48.66.156,

src_proxy= 12.0.0.0/255.255.255.0/0/0 (type=4),

dest_proxy= 11.0.0.0/255.255.255.0/0/0 (type=4),

protocol= ESP, transform= esp-des esp-sha-hmac ,

lifedur= 28800s and 4608000kb,

spi= 0x8312e721(2199054113), conn_id= 2, keysize= 0, flags= 0x4

VPN Peer: IPSEC: Peer ip:10.48.66.156

Ref cnt incremented to:2 Total VPN Peers:2

VPN Peer: IPSEC: Peer ip:10.48.66.156

Ref cnt incremented to:3 Total VPN Peers:2

return status is IKMP_NO_ERROR) src= 193.0.0.5,

dest= 10.48.66.156, src_proxy= 12.0.0.0/255.255.255.0/0/0 (type=4),

dest_proxy= 11.0.0.0/255.255.255.0/0/0 (type=4), protocol= ESP,

transform= esp-des esp-sha-hmac , lifedur= 28800s and 4608000kb,

spi= 0x0(0), conn_id= 0, keysize= 0, flags= 0x4004

602301: sa created, (sa) sa_dest= 193.0.0.5, sa_prot= 50,

sa_spi= 0x661d4fad(1713196973), sa_trans= esp-des esp-sha-hmac ,

```
sa_conn_id= 1
```

```
602301: sa created, (sa) sa_dest= 10.48.66.156, sa_prot= 50,  
sa_spi= 0x8312e721(2199054113), sa_trans= esp-des esp-sha-hmac ,  
sa_conn_id= 2
```

rain的debug命令的输出

```
snow# show debug  
debug crypto ipsec 1  
debug crypto isakmp 1  
debug crypto engine  
debug icmp trace  
debug fover status  
txOff  
rxOff  
openOff  
cableOff  
txdmpOff  
rxdmpOff  
ifcOff  
rxipOff  
txipOff  
getOff  
putOff  
verifyOff  
switchOff  
failOff  
fmsgOff  
snow# no debug icmp trace  
ICMP trace off  
snow#  
snow#  
snow#  
snow#  
snow# configure terminal  
! the client is connecting !!!!!!!!!!!!!!!  
Type help or '?' for a list of available commands.  
snow#  
crypto_isakmp_process_block: src 10.48.66.76, dest 193.0.0.1  
VPN Peer: ISAKMP: Added new peer: ip:10.48.66.76 Total VPN Peers:1  
VPN Peer: ISAKMP: Peer ip:10.48.66.76  
Ref cnt incremented to:1 Total VPN Peers:1  
OAK_AG exchange  
ISAKMP (0): processing SA payload. message ID = 0  
  
ISAKMP (0): Checking ISAKMP transform 1 against priority 10 policy  
ISAKMP: encryption 3DES-CBC  
ISAKMP: hash SHA  
ISAKMP: default group 2  
ISAKMP: extended auth pre-share  
ISAKMP: life type in seconds  
ISAKMP: life duration (VPI) of 0x0 0x20 0xc4 0x9b  
ISAKMP (0): atts are not acceptable. Next payload is 3  
ISAKMP (0): Checking ISAKMP transform 2 against priority 10 policy  
ISAKMP: encryption 3DES-CBC  
ISAKMP: hash MD5  
ISAKMP: default group 2  
ISAKMP: extended auth pre-share  
ISAKMP: life type in seconds  
ISAKMP: life duration (VPI) of 0x0 0x20 0xc4 0x9b  
ISAKMP (0): atts are not acceptable. Next payload is 3  
ISAKMP (0): Checking ISAKMP transform 3 against priority 10 policy  
ISAKMP: encryption 3DES-CBC
```

```
ISAKMP:      hash SHA
ISAKMP:      default group 2
ISAKMP:      auth pre-share
ISAKMP:      life type in seconds
ISAKMP:      life duration (VPI) of  0x0 0x20 0xc4 0x9b
ISAKMP (0):  atts are not acceptable. Next payload is 3
ISAKMP (0):  Checking ISAKMP transform 4 against priority 10 policy
ISAKMP:      encryption 3DES-CBC
ISAKMP:      hash MD5
ISAKMP:      default group 2
ISAKMP:      auth pre-share
ISAKMP:      life type in seconds
ISAKMP:      life duration (VPI) of  0x0 0x20 0xc4 0x9b
ISAKMP (0):  atts are not acceptable. Next payload is 3
ISAKMP (0):  Checking ISAKMP transform 5 against priority 10 policy
ISAKMP:      encryption DES-CBC
ISAKMP:      hash SHA
ISAKMP:      default group 2
ISAKMP:      extended auth pre-share
ISAKMP:      life type in seconds
ISAKMP:      life duration (VPI) of  0x0 0x20 0xc4 0x9b
ISAKMP (0):  atts are not acceptable. Next payload is 3
ISAKMP (0):  Checking ISAKMP transform 6 against priority 10 policy
ISAKMP:      encryption DES-CBC
ISAKMP:      hash MD5
ISAKMP:      default group 2
ISAKMP:      extended auth pre-share
ISAKMP:      life type in seconds
ISAKMP:      life duration (VPI) of  0x0 0x20 0xc4 0x9b
ISAKMP (0):  atts are not acceptable. Next payload is 3
ISAKMP (0):  Checking ISAKMP transform 7 against priority 10 policy
ISAKMP:      encryption DES-CBC
ISAKMP:      hash SHA
ISAKMP:      default group 2
ISAKMP:      auth pre-share
ISAKMP:      life type in seconds
ISAKMP:      life duration (VPI) of  0x0 0x20 0xc4 0x9b
ISAKMP (0):  atts are acceptable. Next payload is 3
ISAKMP (0):  processing KE payload. message ID = 0

ISAKMP (0):  processing NONCE payload. message ID = 0

ISAKMP (0):  processing ID payload. message ID = 0
ISAKMP (0):  processing vendor id payload

ISAKMP (0):  processing vendor id payload

ISAKMP (0):  remote peer supports dead peer detection

ISAKMP (0):  processing vendor id payload

ISAKMP (0):  speaking to a Unity client

ISAKMP: Created a peer node for 10.48.66.76
ISAKMP (0): ID payload
next-payload : 10
type         : 1
protocol     : 17
port        : 500
length      : 8
ISAKMP (0): Total payload length: 12
return status is IKMP_NO_ERROR
crypto_isakmp_process_block: src 10.48.66.76, dest 193.0.0.1
OAK_AG exchange
```

ISAKMP (0): processing HASH payload. message ID = 0
ISAKMP (0): processing NOTIFY payload 24578 protocol 1
spi 0, message ID = 0
ISAKMP (0): processing notify INITIAL_CONTACTIPSEC(key_engine):
got a queue event...
IPSEC(key_engine_delete_sas): rec'd delete notify from ISAKMP
IPSEC(key_engine_delete_sas): delete all SAs shared with 10.48.66.76

ISAKMP (0): SA has been authenticated
return status is IKMP_NO_ERROR
crypto_isakmp_process_block: src 10.48.66.76, dest 193.0.0.1
ISAKMP_TRANSACTION exchange
ISAKMP (0:0): processing transaction payload from 10.48.66.76.
message ID = 0

ISAKMP: Config payload CFG_REQUEST
ISAKMP (0:0): checking request:
ISAKMP: attribute IP4_ADDRESS (1)
ISAKMP: attribute IP4_NETMASK (2)
ISAKMP: attribute IP4_DNS (3)
ISAKMP: attribute IP4_NBNS (4)
ISAKMP: attribute ADDRESS_EXPIRY (5)
Unsupported Attr: 5
ISAKMP: attribute APPLICATION_VERSION (7)
Unsupported Attr: 7
ISAKMP: attribute UNKNOWN (28672)
Unsupported Attr: 28672
ISAKMP: attribute UNKNOWN (28673)
Unsupported Attr: 28673
ISAKMP: attribute UNKNOWN (28674)
ISAKMP: attribute UNKNOWN (28676)
ISAKMP: attribute UNKNOWN (28679)
Unsupported Attr: 28679
ISAKMP: attribute UNKNOWN (28680)
Unsupported Attr: 28680
ISAKMP: attribute UNKNOWN (28677)
Unsupported Attr: 28677

ISAKMP (0:0): responding to peer config from 10.48.66.76.
ID = 1245965288
return status is IKMP_NO_ERROR
crypto_isakmp_process_block: src 10.48.66.76, dest 193.0.0.1
OAK_QM exchange
oakley_process_quick_mode:
OAK_QM_IDLE

ISAKMP (0): processing SA payload. message ID = 2141307752

ISAKMP : Checking IPsec proposal 1

ISAKMP: transform 1, ESP_3DES
ISAKMP: attributes in transform:
ISAKMP: authenticator is HMAC-MD5
ISAKMP: encaps is 1
ISAKMP: SA life type in seconds
ISAKMP: SA life duration (VPI) of
0x0 0x20 0xc4 0x9b IPSEC(validate_proposal): transform proposal
(prot 3, trans 3, hmac_alg 1) not supported

ISAKMP (0): atts not acceptable. Next payload is 0
ISAKMP (0): skipping next ANDED proposal (1)
ISAKMP : Checking IPsec proposal 2

ISAKMP: transform 1, ESP_3DES
ISAKMP: attributes in transform:
ISAKMP: authenticator is HMAC-SHA
ISAKMP: encaps is 1

ISAKMP: SA life type in seconds
ISAKMP: SA life duration (VPI) of
0x0 0x20 0xc4 0x9b IPSEC(validate_proposal): transform proposal
(prot 3, trans 3, hmac_alg 2) not supported

ISAKMP (0): atts not acceptable. Next payload is 0

ISAKMP (0): skipping next ANDed proposal (2)

ISAKMP : Checking IPsec proposal 3

ISAKMP: transform 1, ESP_3DES

ISAKMP: attributes in transform:

ISAKMP: authenticator is HMAC-MD5

ISAKMP: encaps is 1

ISAKMP: SA life type in seconds

ISAKMP: SA life duration (VPI) of

0x0 0x20 0xc4 0x9b IPSEC(validate_proposal): transform proposal
(prot 3, trans 3, hmac_alg 1) not supported

ISAKMP (0): atts not acceptable. Next payload is 0

ISAKMP : Checking IPsec proposal 4

ISAKMP: transform 1, ESP_3DES

ISAKMP: attributes in transform:

ISAKMP: authenticator is HMAC-SHA

ISAKMP: encaps is 1

ISAKMP: SA life type in seconds

ISAKMP: SA life duration (VPI) of

0x0 0x20 0xc4 0x9b IPSEC(validate_proposal): transform proposal
(prot 3, trans 3, hmac_alg 2) not supported

ISAKMP (0): atts not acceptable. Next payload is 0

ISAKMP : Checking IPsec proposal 5

ISAKMP: transform 1, ESP_DES

ISAKMP: attributes in transform:

ISAKMP: authenticator is HMAC-MD5

ISAKMP: encaps is 1

ISAKMP: SA life type in seconds

ISAKMP: SA life duration (VPI) of 0x0 0x20 0xc4 0x9b

ISAKMP (0): atts are acceptable.

ISAKMP (0): bad SPI size of 2 octets!

ISAKMP : Checking IPsec proposal 6

ISAKMP: transform 1, ESP_DES

ISAKMP: attributes in transform:

ISAKMP: authenticator is HMAC-SHA

ISAKMP: encaps is 1

ISAKMP: SA life type in seconds

ISAKMP: SA life duration (VPI) of

0x0 0x20 0xc4 0x9b IPSEC(validate_proposal): transform proposal
(prot 3, trans 2, hmac_alg 2) not supported

ISAKMP (0): atts not acceptable. Next payload is 0

ISAKMP (0): skipping next ANDed proposal (6)

ISAKMP : Checking IPsec proposal 7

ISAKMP: transform 1, ESP_DES

ISAKMP: attributes in transform:

ISAKMP: authenticator is HMAC-MD5

ISAKMP: encaps is 1

ISAKMP: SA life type in seconds

ISAKMP: SA life duration (VPI) of 0x0 0x20 0xc4 0x9b

ISAKMP (0): atts are acceptable.IPSEC(validate_proposal_request):
proposal part #1,

```
(key eng. msg.) dest= 193.0.0.1, src= 10.48.66.76,
  dest_proxy= 193.0.0.1/255.255.255.255/0/0 (type=1),
  src_proxy= 12.0.0.1/255.255.255.255/0/0 (type=1),
  protocol= ESP, transform= esp-des esp-md5-hmac ,
  lifedur= 0s and 0kb,
  spi= 0x0(0), conn_id= 0, keysize= 0, flags= 0x4

ISAKMP (0): processing NONCE payload. message ID = 2141307752

ISAKMP (0): processing ID payload. message ID = 2141307752
ISAKMP (0): ID_IPV4_ADDR src 12.0.0.1 prot 0 port 0
ISAKMP (0): processing ID payload. message ID = 2141307752
ISAKMP (0): ID_IPV4_ADDR dst 193.0.0.1 prot 0 port 0 IPSEC(key_engine):
  got a queue event...
IPSEC(spi_response): getting spi 0x4f3e0026(1329463334) for SA
from 10.48.66.76 to 193.0.0.1 for prot 3

return status is IKMP_NO_ERROR
crypto_isakmp_process_block: src 10.48.66.76, dest 193.0.0.1
OAK_QM exchange
oakley_process_quick_mode:
OAK_QM_IDLE
ISAKMP (0): processing SA payload. message ID = 2151626816

ISAKMP : Checking IPsec proposal 1

ISAKMP: transform 1, ESP_3DES
ISAKMP: attributes in transform:
ISAKMP: authenticator is HMAC-MD5
crypto_isakmp_process_block: src 10.48.66.76, dest 193.0.0.1
OAK_QM exchange
oakley_process_quick_mode:
OAK_QM_AUTH_AWAITmap_alloc_entry: allocating entry 3
map_alloc_entry: allocating entry 4

ISAKMP (0): Creating IPsec SAs
  inbound SA from 10.48.66.76 to 193.0.0.1 (proxy
12.0.0.1 to 193.0.0.1)
  has spi 1329463334 and conn_id 3 and flags 4
  lifetime of 2147483 seconds
  outbound SA from 193.0.0.1 to 10.48.66.76 (proxy
193.0.0.1 to 12.0.0.1)
  has spi 1309919057 and conn_id 4 and flags 4
  lifetime of 2147483 secondsIPSEC(key_engine): got a queue event...
IPSEC(initialize_sas): ,
(key eng. msg.) dest= 193.0.0.1, src= 10.48.66.76,
  dest_proxy= 193.0.0.1/0.0.0.0/0/0 (type=1),
  src_proxy= 12.0.0.1/0.0.0.0/0/0 (type=1),
  protocol= ESP, transform= esp-des esp-md5-hmac ,
  lifedur= 2147483s and 0kb,
  spi= 0x4f3e0026(1329463334), conn_id= 3, keysize= 0, flags= 0x4
IPSEC(initialize_sas): ,
(key eng. msg.) src= 193.0.0.1, dest= 10.48.66.76,
  src_proxy= 193.0.0.1/0.0.0.0/0/0 (type=1),
  dest_proxy= 12.0.0.1/0.0.0.0/0/0 (type=1),
  protocol= ESP, transform= esp-des esp-md5-hmac ,
  lifedur= 2147483s and 0kb,
  spi= 0x4e13c751(1309919057), conn_id= 4, keysize= 0, flags= 0x4

VPN Peer: IPSEC: Peer ip:10.48.66.76 Ref cnt
  incremented to:2 Total VPN Peers:1
VPN Peer: IPSEC: Peer ip:10.48.66.76 Ref cnt
  incremented to:3 Total VPN Peers:1
return status is IKMP_NO_ERROR
```

crypto_isakmp_process_block: src 10.48.66.76, dest 193.0.0.1
OAK_QM exchange
oakley_process_quick_mode:
OAK_QM_AUTH_AWAITmap_alloc_entry: allocating entry 7
map_alloc_entry: allocating entry 8

ISAKMP (0): Creating IPsec SAs
inbound SA from 10.48.66.76 to 193.0.0.1 (proxy
12.0.0.1 to 0.0.0.0)
has spi 857357959 and conn_id 7 and flags 4
lifetime of 2147483 seconds
outbound SA from 193.0.0.1 to 10.48.66.76 (proxy
0.0.0.0 to 12.0.0.1)
has spi 1657044439 and conn_id 8 and flags 4
lifetime of 2147483 secondsIPSEC(key_engine): got a queue event...

IPSEC(initialize_sas): ,
(key eng. msg.) dest= 193.0.0.1, src= 10.48.66.76,
dest_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4),
src_proxy= 12.0.0.1/0.0.0.0/0/0 (type=1),
protocol= ESP, transform= esp-des esp-md5-hmac ,
lifedur= 2147483s and 0kb,
spi= 0x331a3e87(857357959), conn_id= 7, keysize= 0, flags= 0x4

IPSEC(initialize_sas): ,
(key eng. msg.) src= 193.0.0.1, dest= 10.48.66.76,
src_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4),
dest_proxy= 12.0.0.1/0.0.0.0/0/0 (type=1),
protocol= ESP, transform= esp-des esp-md5-hmac ,
lifedur= 2147483s and 0kb,
spi= 0x62c47dd7(1657044439), conn_id= 8, keysize= 0, flags= 0x4

VPN Peer: IPSEC: Peer ip:10.48.66.76 Ref cnt incremented to:4 Total VPN Peers:1
VPN Peer: IPSEC: Peer ip:10.48.66.76 Ref cnt incremented to:5 Total VPN Peers:1
return status is IKMP_NO_ERROR602301: sa created, (sa) sa_dest= 193.0.0.1,
sa_prot= 50, sa_spi= 0x4f3e0026(1329463334),
sa_trans= esp-des esp-md5-hmac , sa_conn_id= 3

602301: sa created, (sa) sa_dest= 10.48.66.76, sa_prot= 50,
sa_spi= 0x4e13c751(1309919057), sa_trans= esp-des esp-md5-hmac ,
sa_conn_id= 4

602301: sa created, (sa) sa_dest= 193.0.0.1, sa_prot= 50,
sa_spi= 0x331a3e87(857357959), sa_trans= esp-des esp-md5-hmac ,
sa_conn_id= 7

602301: sa created, (sa) sa_dest= 10.48.66.76, sa_prot= 50,
sa_spi= 0x62c47dd7(1657044439), sa_trans= esp-des esp-md5-hmac ,
sa_conn_id= 8

ISADB: reaper checking SA 0x81153ac0, conn_id = 0
snow#
snow#
snow#
snow# 302010: 0 in use, 0 most used

snow#
snow#
snow#
snow#
snow# ! client will now ping 11.0.0.2
Type help or '?' for a list of available commands.
snow# 6

VPN Peer: ISAKMP: Added new peer: ip:10.48.66.156 Total VPN Peers:2
VPN Peer: ISAKMP: Peer ip:10.48.66.156

```
Ref cnt incremented to:1 Total VPN Peers:2
ISAKMP (0): beginning Main Mode exchange09001:
  Built local-host intf2:11.0.0.

crypto_isakmp_process_block: src 10.48.66.156, dest 193.0.0.5
OAK_MM exchange
ISAKMP (0): processing SA payload. message ID = 0

ISAKMP (0): Checking ISAKMP transform 1 against priority 10 policy
ISAKMP:      encryption DES-CBC
ISAKMP:      hash SHA
ISAKMP:      default group 2
ISAKMP:      auth pre-share
ISAKMP:      life type in seconds
ISAKMP:      life duration (VPI) of  0x0 0x1 0x51 0x80
ISAKMP (0): atts are acceptable. Next payload is 0
ISAKMP (0): SA is doing pre-shared key authentication
  using id type ID_IPV4_ADDR
return status is IKMP_NO_ERROR2
702303: sa_request, (key eng. msg.
crypto_isakmp_process_block: src 10.48.66.156, dest 193.0.0.5
OAK_MM exchange
ISAKMP (0): processing KE payload. message ID = 0

ISAKMP (0): processing NONCE payload. message ID = 0

ISAKMP (0): processing vendor id payload

ISAKMP (0): processing vendor id payload

ISAKMP (0): remote peer supports dead peer detection

ISAKMP (0): processing vendor id payload

ISAKMP (0): speaking to another IOS box!

ISAKMP (0): ID payload
next-payload : 8
type         : 1
protocol     : 17
port         : 500
length       : 8
ISAKMP (0): Total payload length: 12
return status is IKMP_NO_ERROR
crypto_isakmp_process_block: src 10.48.66.156, dest 193.0.0.5
OAK_MM exchange
ISAKMP (0): processing ID payload. message ID = 0
ISAKMP (0): processing HASH payload. message ID = 0
ISAKMP (0): SA has been authenticated

ISAKMP (0): beginning Quick Mode exchange,
  M-ID of -931180733:c87f4f43IPSEC(key_engine): got a queue event...
IPSEC(spi_response): getting spi 0x661d4fad(1713196973) for SA
from 10.48.66.156 to 193.0.0.5 for prot 3

return status is IKMP_NO_ERROR
ISAKMP (0): sending INITIAL_CONTACT notify
crypto_isakmp_process_block: src 10.48.66.156, dest 193.0.0.5
OAK_QM exchange
oakley_process_quick_mode:
OAK_QM_IDLE
ISAKMP (0): processing SA payload. message ID = 3363786563

ISAKMP : Checking IPsec proposal 1
```

```
ISAKMP: transform 1, ESP_DES
ISAKMP:  attributes in transform:
ISAKMP:    encaps is 1
ISAKMP:    SA life type in seconds
ISAKMP:    SA life duration (basic) of 28800
ISAKMP:    SA life type in kilobytes
ISAKMP:    SA life duration (VPI) of  0x0 0x46 0x50 0x0
ISAKMP:    authenticator is HMAC-SHA
ISAKMP (0): atts are acceptable.IPSEC(validate_proposal_request):
  proposal part #1,
(key eng. msg.) dest= 10.48.66.156, src= 193.0.0.5,
  dest_proxy= 11.0.0.0/255.255.255.0/0/0 (type=4),
  src_proxy= 12.0.0.0/255.255.255.0/0/0 (type=4),
  protocol= ESP, transform= esp-des esp-sha-hmac ,
  lifedur= 0s and 0kb,
  spi= 0x0(0), conn_id= 0, keysize= 0, flags= 0x4

ISAKMP (0): processing NONCE payload. message ID = 3363786563

ISAKMP (0): processing ID payload. message ID = 3363786563
ISAKMP (0): processing ID payload.
  message ID = 3363786563map_alloc_entry: allocating entry 1
map_alloc_entry: allocating entry 2

ISAKMP (0): Creating IPsec SAs
  inbound SA from 10.48.66.156 to 193.0.0.5 (proxy
11.0.0.0 to 12.0.0.0)
  has spi 1713196973 and conn_id 1 and flags 4
  lifetime of 28800 seconds
  lifetime of 4608000 kilobytes
  outbound SA from 193.0.0.5 to 10.48.66.156 (proxy
12.0.0.0 to 11.0.0.0)
  has spi 2199054113 and conn_id 2 and flags 4
  lifetime of 28800 seconds
  lifetime of 4608000 kilobytesIPSEC(key_engine): got a queue event...
IPSEC(initialize_sas): ,
(key eng. msg.) dest= 193.0.0.5, src= 10.48.66.156,
  dest_proxy= 12.0.0.0/255.255.255.0/0/0 (type=4),
  src_proxy= 11.0.0.0/255.255.255.0/0/0 (type=4),
  protocol= ESP, transform= esp-des esp-sha-hmac ,
  lifedur= 28800s and 4608000kb,
  spi= 0x661d4fad(1713196973), conn_id= 1, keysize= 0, flags= 0x4
IPSEC(initialize_sas): ,
(key eng. msg.) src= 193.0.0.5, dest= 10.48.66.156,
  src_proxy= 12.0.0.0/255.255.255.0/0/0 (type=4),
  dest_proxy= 11.0.0.0/255.255.255.0/0/0 (type=4),
  protocol= ESP, transform= esp-des esp-sha-hmac ,
  lifedur= 28800s and 4608000kb,
  spi= 0x8312e721(2199054113), conn_id= 2, keysize= 0, flags= 0x4

VPN Peer: IPSEC: Peer ip:10.48.66.156
  Ref cnt incremented to:2 Total VPN Peers:2
VPN Peer: IPSEC: Peer ip:10.48.66.156
  Ref cnt incremented to:3 Total VPN Peers:2
return status is IKMP_NO_ERROR) src= 193.0.0.5,
  dest= 10.48.66.156, src_proxy= 12.0.0.0/255.255.255.0/0/0 (type=4),
  dest_proxy= 11.0.0.0/255.255.255.0/0/0 (type=4), protocol= ESP,
  transform= esp-des esp-sha-hmac , lifedur= 28800s and 4608000kb,
  spi= 0x0(0), conn_id= 0, keysize= 0, flags= 0x4004

602301: sa created, (sa) sa_dest= 193.0.0.5, sa_prot= 50,
  sa_spi= 0x661d4fad(1713196973), sa_trans= esp-des esp-sha-hmac ,
  sa_conn_id= 1
```

```
602301: sa created, (sa) sa_dest= 10.48.66.156, sa_prot= 50,  
sa_spi= 0x8312e721(2199054113), sa_trans= esp-des esp-sha-hmac ,  
sa_conn_id= 2
```

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