在使用扩展身份验证的网络扩展模式下将 PIX 501/506 Easy VPN 远程客户端配置为 IOS 路由器

目录

简介

本文说明了，Cisco IOS®软件的最新版本中可用的Easy VPN服务器功能和PIX Easy VPN远程硬件客户端功能之间的IPSec配置。PIX的Easy VPN Remote功能被引入PIX版本6.2，也请参见硬件客户端/EzVPN客户端。当Easy VPN Remote连接到头端设备时，至少有五个安全关联(SA)，包括一个互联网密钥交换(IKE)和四个IPSec关联。当Easy VPN Remote连接到头端时，它始终会将两个IPSec SA与PIX外部接口的IP地址协商到VPN服务器后面的任何地址。这可用于管理目的，从Cisco IOS 路由器后面的网络（通过Secure Shell [SSH]、用于 PIX 设备管理器 [PDM] 的安全 HTTP 或 Telnet）连接到 PIX 的外部接口。 默认情况下，SA是在不进行任何配置的情况下创建的，另外两个SA是为PIX后的网络和Cisco IOS路由器之间的数据流量创建的。

有关 PIX 506 6.x 充当 Easy VPN Server 的类似方案的详细信息，请参阅 PIX 到 PIX 6.x：Easy VPN (NEM) 配置示例。

有关 PIX/ASA 7.x 充当 Easy VPN 服务器的类似情况的详细信息，请参阅 ASA 5500 作为服务器和 PIX 506E 作为客户端 (NEM) 情况下 PIX/ASA 7.x Easy VPN 的配置示例。

有关将 Cisco 871 路由器用作 Easy VPN Remote 的类似方案的详细信息，请参阅将 ASA 5500 用作服务器，将 Cisco 871 用作 Easy VPN Remote 的 PIX/ASA 7.x Easy VPN 配置示例。

有关 Cisco VPN 3000 集中器充当 Easy VPN Server 的类似方案的详细信息，请参阅使用 VPN 3000 集中器配置 PIX 501/506 系列安全设备上的 VPN 硬件客户端的示例。

先决条件

要求

本文档没有任何特定的要求。

使用的组件

本文档中的信息基于以下软件和硬件版本：

- 运行 6.3(5) 版软件的 PIX 防火墙**注意**：PIX上的Easy VPN客户端功能在版本6.2中引入。
- 运行 12.4(4)T1 版软件的 Cisco 7200 系列 IOS 路由器**注意**：Easy VPN服务器功能在版本12.2(8)T中引入。

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您使用的是真实网络，请确保您已经了解所有命令的潜在影响。

规则

有关文档规则的详细信息，请参阅 Cisco 技术提示规则。

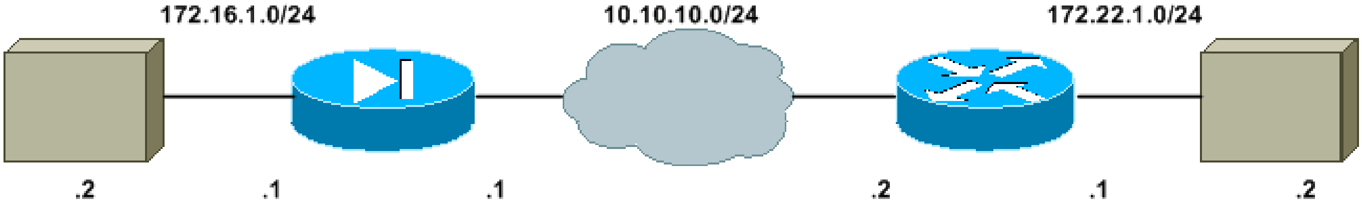
配置

本部分提供有关如何配置本文档所述功能的信息。

注意：使用命令查找工具(仅限注册客户)可查找有关本文档中使用的命令的详细信息。

网络图

本文档使用以下网络设置：



配置

本文档使用以下配置：

- Cisco IOS 路由器
- PIX

Cisco IOS 路由器

```
ezvpn_server#show running-config
Building configuration...

Current configuration : 1894 bytes
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname ezvpn_server
!
boot-start-marker
boot system disk1:c7200-adventerprisek9-mz.124-4.T1.bin
boot-end-marker
!
!
!--- Enable the authentication, authorization, and
accounting (AAA) !--- access control model. aaa new-
model
!
!
!--- Enable X-Auth for user authentication. aaa
authentication login userauthen local
!--- Enable group authorization. aaa authorization
network groupauthor local
!
aaa session-id common
!
resource policy
!
ip subnet-zero
ip cef
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!--- For local authentication of the IPSec user, !---
create the user with password. username remoteuser1
password 0 remotepass
username cisco password 0 cisco
!
!
!
!--- Create an Internet Security Association and Key
Management Protocol !--- (ISAKMP) policy for Phase 1
```

```
negotiations for the hardware client. crypto isakmp
policy 10
 hash md5
 authentication pre-share
 group 2
!
!--- Create a group that will be used to specify the !--
- Windows Internet Name Service (WINS) and Domain Name
System (DNS) !--- servers' addresses to the hardware
client for authentication. crypto isakmp client
configuration group hwclient
 key test123
 dns 172.22.1.101
 wins 172.22.1.102
 domain cisco.com
 pool ippool
!
!
!--- Create the Phase 2 Policy for actual data
encryption. crypto ipsec transform-set myset esp-des
esp-md5-hmac
!
!--- Create a dynamic map and apply the transform set
that was created above. crypto dynamic-map dynmap 10
 set transform-set myset
!
!
!--- Create the actual crypto map, and apply !--- the
aaa lists that were created earlier. crypto map
clientmap client authentication list userauthen
crypto map clientmap isakmp authorization list
groupauthor
crypto map clientmap client configuration address
respond
crypto map clientmap 10 ipsec-isakmp dynamic dynmap
!
!
!
!
!
interface FastEthernet0/0
 ip address 10.10.10.2 255.255.255.0
 duplex half
!--- Apply the crypto map on the outside interface.
crypto map clientmap
!
interface ATM2/0
 no ip address
 shutdown
 no atm ilmi-keepalive
!
interface FastEthernet4/0
 no ip address
 shutdown
 duplex half
!
interface Ethernet5/0
 ip address 172.22.1.1 255.255.255.0
 duplex half
!
interface Ethernet5/1
 no ip address
 shutdown
 duplex half
```

```
!
interface Ethernet5/2
 no ip address
 shutdown
 duplex half
!
interface Ethernet5/3
 no ip address
 shutdown
 duplex half
!
!--- Create a pool of addresses to be assigned to the
VPN Clients. ip local pool ippool 172.22.1.50
172.22.1.70
ip classless
no ip http server
no ip http secure-server
!
!
!
logging alarm informational
!
!
!
!
control-plane
!
!
!
!
!
!
gatekeeper
 shutdown
!
!
line con 0
 stopbits 1
line aux 0
 stopbits 1
line vty 0 4
!
!
end


ezvpn_server#
```

PIX

```

pix506#show running-config
: Saved
:
PIX Version 6.3(5)

!--- Specify speed and duplex settings. interface
ethernet0 auto
interface ethernet1 auto
nameif ethernet0 outside security0
nameif ethernet1 inside security100
enable password WwXYvtKrnjXqGbu1 encrypted
passwd 2KFQnbNIdI.2KYOU encrypted
hostname pix506
```

```
domain-name cisco.com
fixup protocol dns maximum-length 512
fixup protocol ftp 21
fixup protocol h323 h225 1720
fixup protocol h323 ras 1718-1719
fixup protocol http 80
fixup protocol rsh 514
fixup protocol rtsp 554
fixup protocol sip 5060
fixup protocol sip udp 5060
fixup protocol skinny 2000
fixup protocol smtp 25
fixup protocol sqlnet 1521
fixup protocol tftp 69
names
pager lines 24
mtu outside 1500
mtu inside 1500

!--- Define IP addresses for the PIX's inside and
outside interfaces. ip address outside 10.10.10.1
255.255.255.0
ip address inside 172.16.1.1 255.255.255.0
ip audit info action alarm
ip audit attack action alarm
pdm history enable
arp timeout 14400

!--- Define the outside router as the default gateway.
!--- Typically this is the IP address of your ISP's
router. route outside 0.0.0.0 0.0.0.0 10.10.10.2 1
timeout xlate 3:00:00
timeout conn 1:00:00 half-closed 0:10:00 udp 0:02:00 rpc
0:10:00 h225 1:00:00
timeout h323 0:05:00 mgcp 0:05:00 sip 0:30:00 sip_media
0:02:00
timeout sip-disconnect 0:02:00 sip-invite 0:03:00
timeout uauth 0:05:00 absolute
aaa-server TACACS+ protocol tacacs+
aaa-server TACACS+ max-failed-attempts 3
aaa-server TACACS+ deadtime 10
aaa-server RADIUS protocol radius
aaa-server RADIUS max-failed-attempts 3
aaa-server RADIUS deadtime 10
aaa-server LOCAL protocol local
no snmp-server location
no snmp-server contact
snmp-server community public
no snmp-server enable traps
floodguard enable
telnet timeout 5
ssh timeout 5
console timeout 0

!--- Define the VPN peer IP address. vpnclient server
10.10.10.2

!--- Specify whether Client/PAT (Port Address
Translation) mode !--- is to be used or whether Network
Extension Mode (NEM) is to be used. vpnclient mode
network-extension-mode

!--- Define Easy VPN Remote parameters. !--- This is the
pre-shared key used in IKE negotiation. vpnclient
```

```
vpngroup hwclient password ********

!--- This is the extended authentication username and
password. vpnclient username cisco password ********

!---This enables vpnclient on the PIX. vpnclient enable
terminal width 80
Cryptochecksum:fdbd365f0b4cdc6707a50efeeeb8ed44
: end
```

验证

PIX show 命令和示例输出

使用本部分可确认配置能否正常运行。

命令输出解释程序（仅限注册用户）(OIT) 支持某些 show 命令。使用 OIT 可查看对 show 命令输出的分析。

- **vpnclient enable 命令 - 启用 Easy VPN Remote 连接。**在NEM中，即使没有要和头端Easy VPN服务器交换的触发数据流，隧道仍然是开启的。

  ```
  pix506(config)#vpnclient enable
  ```

- **show crypto isakmp policy - 显示适用于每个 IKE 策略的参数。**

  ```
  pix506(config)#show crypto isakmp policy

  Default protection suite
          encryption algorithm:   DES - Data Encryption Standard (56 bit keys).
          hash algorithm:         Secure Hash Standard
          authentication method:  Rivest-Shamir-Adleman Signature
          Diffie-Hellman group:   #1 (768 bit)
          lifetime:               86400 seconds, no volume limit
  ```

  本例显示启用硬件客户端之后 **show crypto isakmp policy 命令的输出。**

  ```
  pix506(config)#show crypto isakmp policy

  Protection suite of priority 65001
         encryption algorithm: DES - Data Encryption Standard (56 bit keys).
         hash algorithm: Message Digest 5
         authentication method: Pre-Shared Key with XAUTH
         Diffie-Hellman group: #2 (1024 bit)
         lifetime: 86400 seconds, no volume limit
  Protection suite of priority 65002
         encryption algorithm: DES - Data Encryption Standard (56 bit keys).
         hash algorithm: Message Digest 5
         authentication method: Pre-Shared Key
         Diffie-Hellman group: #2 (1024 bit)
         lifetime: 86400 seconds, no volume limit
  ```

- **show crypto ipsec transform - 显示当前的 IPSec 转换。**

  ```
  pix506(config)#show crypto ipsec transform
  ```

  本例显示启用硬件客户端之后 **show crypto ipsec transform 命令的输出。**在使用 **vpnclient enable 命令之前，只有一个默认的保护套件适用于 ISAKMP。**发出此命令后，除了默认保护套件之外，Easy VPN Remote 还自动地生成四种方案。此外，在使用 **enable 命令之前，没有任何 IPSec 转换集。**发出此命令之后，将动态生成转换集。

  ```
  pix506(config)#show crypto ipsec transform-set
  ```

```
Transform set _vpnc_tset_9: { esp-des esp-md5-hmac }
will negotiate = { Tunnel, },

Transform set _vpnc_tset_10: { esp-null esp-md5-hmac }
will negotiate = { Tunnel, },

Transform set _vpnc_tset_11: { esp-null esp-sha-hmac }
will negotiate = { Tunnel, },
```

- show crypto isakmp sa - 显示对等体上的所有当前 IKE SA。

```
pix506(config)#show crypto isakmp sa
Total     : 1
Embryonic : 0
        dst               src        state     pending     created
      10.10.10.2       10.10.10.1    QM_IDLE         0           2
```

- show vpnclient - 显示 VPN 客户端或 Easy VPN Remote 设备的配置信息。

```
pix506(config)#show vpnclient

LOCAL CONFIGURATION
vpnclient server 10.10.10.2
vpnclient mode network-extension-mode
vpnclient vpngroup hwclient password ********
vpnclient username cisco password ********
vpnclient enable

DOWNLOADED DYNAMIC POLICY
Current Server                     : 10.10.10.2
Primary DNS                        : 172.22.1.101
Primary WINS                       : 172.22.1.102
Default Domain                     : cisco.com
PFS Enabled                        : No
Secure Unit Authentication Enabled : No
User Authentication Enabled        : No
Backup Servers                     : Deleted by order of the headend
```

- show crypto ipsec sa - 显示对等体之间构建的 IPSec SA。

```
pix506(config)#show crypto ipsec sa
interface: outside
    Crypto map tag: _vpnc_cm, local addr. 10.10.10.1

   local  ident (addr/mask/prot/port): (10.10.10.1/255.255.255.255/0/0)
   remote ident (addr/mask/prot/port): (0.0.0.0/0.0.0.0/0/0)
   current_peer: 10.10.10.2:500
     PERMIT, flags={origin_is_acl,}
    #pkts encaps: 3, #pkts encrypt: 3, #pkts digest 3
    #pkts decaps: 3, #pkts decrypt: 3, #pkts verify 3
    #pkts compressed: 0, #pkts decompressed: 0
    #pkts not compressed: 0, #pkts compr. failed: 0,
    #pkts decompress failed: 0
    #send errors 0, #recv errors 0
!--- As shown here, ping packets were successfully exchanged !--- between the Easy VPN
Remote (PIX) and the Easy VPN Server (IOS). local crypto endpt.: 10.10.10.1, remote crypto
endpt.: 10.10.10.2 path mtu 1500, ipsec overhead 56, media mtu 1500 current outbound spi:
533f74a9 inbound esp sas: spi: 0xad0984cc(2903082188) transform: esp-des esp-md5-hmac , in
use settings ={Tunnel, } slot: 0, conn id: 4, crypto map: _vpnc_cm sa timing: remaining key
lifetime (k/sec): (4607999/3001) IV size: 8 bytes replay detection support: Y inbound ah
sas: inbound pcp sas: outbound esp sas: spi: 0x533f74a9(1396667561) transform: esp-des esp-
md5-hmac , in use settings ={Tunnel, } slot: 0, conn id: 3, crypto map: _vpnc_cm sa timing:
remaining key lifetime (k/sec): (4607999/3001) IV size: 8 bytes replay detection support: Y
outbound ah sas: outbound pcp sas: local ident (addr/mask/prot/port):
(172.16.1.0/255.255.255.0/0/0) remote ident (addr/mask/prot/port): (0.0.0.0/0.0.0.0/0/0)
current_peer: 10.10.10.2:500 PERMIT, flags={origin_is_acl,} #pkts encaps: 5, #pkts encrypt:
5, #pkts digest 5 #pkts decaps: 5, #pkts decrypt: 5, #pkts verify 5 #pkts compressed: 0,
#pkts decompressed: 0 #pkts not compressed: 0, #pkts compr. failed: 0, #pkts decompress
failed: 0 #send errors 0, #recv errors 0 !--- As shown here, ping packets were successfully
```

```
exchanged !--- between hosts behind the Easy VPN Remote (PIX) and the Easy !--- VPN Server
(IOS). local crypto endpt.: 10.10.10.1, remote crypto endpt.: 10.10.10.2 path mtu 1500,
ipsec overhead 56, media mtu 1500 current outbound spi: 2eca448b inbound esp sas: spi:
0xc82c0695(3358328469) transform: esp-des esp-md5-hmac , in use settings ={Tunnel, } slot:
0, conn id: 2, crypto map: _vpnc_cm sa timing: remaining key lifetime (k/sec):
(4607999/2997) IV size: 8 bytes replay detection support: Y inbound ah sas: inbound pcp sas:
outbound esp sas: spi: 0x2eca448b(785007755) transform: esp-des esp-md5-hmac , in use
settings ={Tunnel, } slot: 0, conn id: 1, crypto map: _vpnc_cm sa timing: remaining key
lifetime (k/sec): (4607999/2988) IV size: 8 bytes replay detection support: Y outbound ah
sas: outbound pcp sas:
```

- **show access-list** - 显示访问列表的内容。

```
access-list cached ACL log flows: total 0, denied 0 (deny-flow-max 1024)
            alert-interval 300
access-list _vpnc_acl; 2 elements
access-list _vpnc_acl line 1 permit ip 172.16.1.0 255.255.255.0
 any (hitcnt=18)
access-list _vpnc_acl line 2 permit ip host 10.10.10.1
 any (hitcnt=6)
!--- The above output shows the dynamically built access lists to identify !--- interesting
traffic for encryption.
```

IOS show 命令和示例输出

- **show crypto isakmp sa** - 显示对等体上的所有当前 IKE SA。

```
ezvpn_server#show crypto isakmp sa
IPv4 Crypto ISAKMP SA
dst             src             state          conn-id slot status
10.10.10.2      10.10.10.1      QM_IDLE           1026    0 ACTIVE
```

- **show crypto ipsec sa** - 显示对等体之间构建的 IPSec SA。

```
ezvpn_server#show crypto ipsec sa

!--- As shown above, ping packets were successfully exchanged !--- between the Easy VPN
Remote (PIX) and the Easy VPN Server (IOS) !--- as well as hosts behind them. interface:
FastEthernet0/0 Crypto map tag: clientmap, local addr 10.10.10.2 protected vrf: (none) local
ident (addr/mask/prot/port): (0.0.0.0/0.0.0.0/0/0) remote ident (addr/mask/prot/port):
(10.10.10.1/255.255.255.255/0/0) current_peer 10.10.10.1 port 500 PERMIT, flags={} #pkts
encaps: 3, #pkts encrypt: 3, #pkts digest: 3 #pkts decaps: 3, #pkts decrypt: 3, #pkts
verify: 3 #pkts compressed: 0, #pkts decompressed: 0 #pkts not compressed: 0, #pkts compr.
failed: 0 #pkts not decompressed: 0, #pkts decompress failed: 0 #send errors 0, #recv errors
0 local crypto endpt.: 10.10.10.2, remote crypto endpt.: 10.10.10.1 path mtu 1500, ip mtu
1500 current outbound spi: 0xAD0984CC(2903082188) inbound esp sas: spi:
0x533F74A9(1396667561) transform: esp-des esp-md5-hmac , in use settings ={Tunnel, } conn
id: 21, flow_id: SW:21, crypto map: clientmap sa timing: remaining key lifetime (k/sec):
(4470133/2836) IV size: 8 bytes replay detection support: Y Status: ACTIVE inbound ah sas:
inbound pcp sas: outbound esp sas: spi: 0xAD0984CC(2903082188) transform: esp-des esp-md5-
hmac , in use settings ={Tunnel, } conn id: 22, flow_id: SW:22, crypto map: clientmap sa
timing: remaining key lifetime (k/sec): (4470133/2834) IV size: 8 bytes replay detection
support: Y Status: ACTIVE outbound ah sas: outbound pcp sas: protected vrf: (none) local
ident (addr/mask/prot/port): (0.0.0.0/0.0.0.0/0/0) remote ident (addr/mask/prot/port):
(172.16.1.0/255.255.255.0/0/0) current_peer 10.10.10.1 port 500 PERMIT, flags={} #pkts
encaps: 5, #pkts encrypt: 5, #pkts digest: 5 #pkts decaps: 5, #pkts decrypt: 5, #pkts
verify: 5 #pkts compressed: 0, #pkts decompressed: 0 #pkts not compressed: 0, #pkts compr.
failed: 0 #pkts not decompressed: 0, #pkts decompress failed: 0 #send errors 0, #recv errors
0 local crypto endpt.: 10.10.10.2, remote crypto endpt.: 10.10.10.1 path mtu 1500, ip mtu
1500 current outbound spi: 0xC82C0695(3358328469) inbound esp sas: spi:
0x2ECA448B(785007755) transform: esp-des esp-md5-hmac , in use settings ={Tunnel, } conn id:
23, flow_id: SW:23, crypto map: clientmap sa timing: remaining key lifetime (k/sec):
(4589382/2832) IV size: 8 bytes replay detection support: Y Status: ACTIVE inbound ah sas:
inbound pcp sas: outbound esp sas: spi: 0xC82C0695(3358328469) transform: esp-des esp-md5-
hmac , in use settings ={Tunnel, } conn id: 24, flow_id: SW:24, crypto map: clientmap sa
timing: remaining key lifetime (k/sec): (4589382/2830) IV size: 8 bytes replay detection
support: Y Status: ACTIVE outbound ah sas: outbound pcp sas:
```

故障排除

使用本部分可排除配置故障。

如果您按照本文描述已经设置了Easy VPN远程(PIX)和Easy VPN服务器(IOS)，但仍然存在问题，请从PIX和IOS中收集Debug输出，从show命令中收集输出，供思科技术支持中心(TAC)分析。 请参见“排除已建立IPSec隧道上的PIX故障，以通过数据流量”，或者参见“IP安全故障排除--了解和使用debug命令。”在 PIX 上启用 IPsec 调试。

PIX debug 命令和示例输出

PIX debug 命令

注意：在使用debug命令之前，请参阅有关Debug命**令的**重要信息。

- **debug crypto ipsec - 显示第 2 阶段的 IPsec 协商。**
- **debug crypto isakmp - 显示第 1 阶段的 ISAKMP 协商。**

PIX 示例输出

```
ISAKMP (0): ID payload
next-payload : 13
type         : 11
protocol     : 17
port         : 0
length       : 12pix506(config)#
ISAKMP (0): Total payload length: 16
ISAKMP (0:0): sending NAT-T vendor ID - rev 2 & 3
ISAKMP (0): beginning Aggressive Mode exchange
crypto_isakmp_process_block:src:10.10.10.2, dest:10.10.10.1 spt:500 dpt:500
OAK_AG exchange
ISAKMP (0): processing SA payload. message ID = 0

 !--- The PIX checks the received proposal against !--- its dynamically generated policies
looking for a match. ISAKMP (0): Checking ISAKMP transform 1 against priority 65001 policy
ISAKMP: encryption DES-CBC ISAKMP: hash MD5 ISAKMP: default group 2 ISAKMP: extended auth pre-
share (init) ISAKMP: life type in seconds ISAKMP: life duration (VPI) of 0x0 0x1 0x51 0x80
ISAKMP (0): atts are not acceptable. Next payload is 0 ISAKMP (0): Checking ISAKMP transform 1
against priority 65002 policy ISAKMP: encryption DES-CBC ISAKMP: hash MD5 ISAKMP: default group
2 ISAKMP: extended auth pre-share (init) ISAKMP: life type in seconds ISAKMP: life duration
(VPI) of 0x0 0x1 0x51 0x80 ISAKMP (0): atts are not acceptable. Next payload is 0 ISAKMP (0):
Checking ISAKMP transform 1 against priority 65003 policy ISAKMP: encryption DES-CBC ISAKMP:
hash MD5 ISAKMP: default group 2 ISAKMP: extended auth pre-share (init) ISAKMP: life type in
seconds ISAKMP: life duration (VPI) of 0x0 0x1 0x51 0x80 ISAKMP (0): atts are not acceptable.
Next payload is 0 ISAKMP (0): Checking ISAKMP transform 1 against priority 65004 policy ISAKMP:
encryption DES-CBC ISAKMP: hash MD5 ISAKMP: default group 2 ISAKMP: extended auth pre-share
(init) ISAKMP: life type in seconds ISAKMP: life duration (VPI) of 0x0 0x1 0x51 0x80 ISAKMP (0):
atts are not acceptable. Next payload is 0 ISAKMP (0): Checking ISAKMP transform 1 against
priority 65005 policy ISAKMP: encryption DES-CBC ISAKMP: hash MD5 ISAKMP: default group 2
ISAKMP: extended auth pre-share (init) ISAKMP: life type in seconds ISAKMP: life duration (VPI)
of 0x0 0x1 0x51 0x80 ISAKMP (0): atts are not acceptable. Next payload is 0 ISAKMP (0): Checking
ISAKMP transform 1 against priority 65006 policy ISAKMP: encryption DES-CBC ISAKMP: hash MD5
ISAKMP: default group 2 ISAKMP: extended auth pre-share (init) ISAKMP: life type in seconds
ISAKMP: life duration (VPI) of 0x0 0x1 0x51 0x80 ISAKMP (0): atts are not acceptable. Next
payload is 0 ISAKMP (0): Checking ISAKMP transform 1 against priority 65007 policy ISAKMP:
```

```
encryption DES-CBC ISAKMP: hash MD5 ISAKMP: default group 2 ISAKMP: extended auth pre-share
(init) ISAKMP: life type in seconds ISAKMP: life duration (VPI) of 0x0 0x1 0x51 0x80 ISAKMP (0):
atts are not acceptable. Next payload is 0 ISAKMP (0): Checking ISAKMP transform 1 against
priority 65008 policy ISAKMP: encryption DES-CBC ISAKMP: hash MD5 ISAKMP: default group 2
ISAKMP: extended auth pre-share (init) ISAKMP: life type in seconds ISAKMP: life duration (VPI)
of 0x0 0x1 0x51 0x80 ISAKMP (0): atts are not acceptable. Next payload is 0 ISAKMP (0): Checking
ISAKMP transform 1 against priority 65009 policy ISAKMP: encryption DES-CBC ISAKMP: hash MD5
ISAKMP: default group 2 ISAKMP: extended auth pre-share (init) 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): processing vendor id payload ISAKMP (0): processing vendor id payload ISAKMP
(0): remote peer supports dead peer detection ISAKMP (0): processing vendor id payload
crypto_isakmp_process_block:src:10.10.10.2, dest:10.10.10.1 spt:500 dpt:500
crypto_isakmp_process_block:src:10.10.10.2, dest:10.10.10.1 spt:500 dpt:500 ISAKMP : attributes
being requested crypto_isakmp_process_block:src:10.10.10.2, dest:10.10.10.1 spt:500 dpt:500
ISAKMP (0): beginning Quick Mode exchange, M-ID of -582033986:dd4eddbeIPSEC (key_engine): got a
queue event... IPSEC(spi_response): getting spi 0x61cf8d08(1640992008) for SA from 10.10.10.2 to
10.10.10.1 for prot 3 crypto_isakmp_process_block:src:10.10.10.2, dest:10.10.10.1 spt:500
dpt:500 OAK_QM exchange oakley_process_quick_mode: OAK_QM_IDLE ISAKMP (0): processing SA
payload. message ID = 3712933310 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-MD5 ISAKMP (0): atts are
acceptable.IPSEC(validate_proposal_request): proposal part #1, (key eng. msg.) dest= 10.10.10.2,
src= 10.10.10.1, dest_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4), src_proxy=
10.10.10.1/255.255.255.255/0/0 (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 = 3712933310 ISAKMP (0): processing ID payload. message ID =
3712933310 ISAKMP (0): processing ID payload. message ID = 3712933310 ISAKMP (0): processing
NOTIFY payload 24576 protocol 3 spi 1327036890, message ID = 3712933310 ISAKMP (0): processing
responder lifetime ISAKMP (0): responder lifetime of 3600s ISAKMP (0): Creating IPSec SAs
inbound SA from 10.10.10.2 to 10.10.10.1 (proxy 0.0.0.0 to 10.10.10.1) has spi 1640992008 and
conn_id 1 and flags 4 lifetime of 3600 seconds lifetime of 4608000 kilobytes outbound SA from
10.10.10.1 to 10.10.10.2 (proxy 10.10.10.1 to 0.0.0.0) has spi 1327036890 and conn_id 2 and
flags 4 lifetime of 3600 seconds lifetime of 4608000 kilobytesIPSEC(key_engine): got a queue
event... IPSEC(initialize_sas): , (key eng. msg.) dest= 10.10.10.1, src= 10.10.10.2, dest_proxy=
10.10.10.1/255.255.255.255/0/0 (type=1), src_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4), protocol= ESP,
transform= esp-des esp-md5-hmac , lifedur= 3600s and 4608000kb, spi= 0x61cf8d08(1640992008),
conn_id= 1, keysize= 0, flags= 0x4 IPSEC(initialize_sas): , (key eng. msg.) src= 10.10.10.1,
dest= 10.10.10.2, src_proxy= 10.10.10.1/255.255.255.255/0/0 (type=1), dest_proxy=
0.0.0.0/0.0.0.0/0/0 (type=4), protocol= ESP, transform= esp-des esp-md5-hmac , lifedur= 3600s
and 4608000kb, spi= 0x4f18f9da(1327036890), conn_id= 2, keysize= 0, flags= 0x4 !--- The IPSec
SAs shown above are for management purposes. VPN Peer: IPSEC: Peer ip:10.10.10.2/500 Ref cnt
incremented to:2 Total VPN Peers:1 VPN Peer: IPSEC: Peer ip:10.10.10.2/500 Ref cnt incremented
to:3 Total VPN Peers:1 return status is IKMP_NO_ERROR ISAKMP (0): beginning Quick Mode exchange,
M-ID of -419501328:e6feeaf0IPSEC (key_engine): got a queue event... IPSEC(spi_response): getting
spi 0xf3d52246(4090831430) for SA from 10.10.10.2 to 10.10.10.1 for prot 3
crypto_isakmp_process_block:src:10.10.10.2, dest:10.10.10.1 spt:500 dpt:500 OAK_QM exchange
oakley_process_quick_mode: OAK_QM_IDLE ISAKMP (0): processing SA payload. message ID =
3875465968 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-MD5 ISAKMP (0): atts are
acceptable.IPSEC(validate_proposal_request): proposal part #1, (key eng. msg.) dest= 10.10.10.2,
src= 10.10.10.1, dest_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4), src_proxy=
172.16.1.0/255.255.255.0/0/0 (type=4), 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 = 3875465968 ISAKMP (0): processing ID payload. message ID = 3875465968
ISAKMP (0): processing ID payload. message ID = 3875465968 ISAKMP (0): processing NOTIFY payload
24576 protocol 3 spi 465396864, message ID = 3875465968 ISAKMP (0): processing responder
lifetime ISAKMP (0): responder lifetime of 3600s ISAKMP (0): Creating IPSec SAs inbound SA from
10.10.10.2 to 10.10.10.1 (proxy 0.0.0.0 to 172.16.1.0) has spi 4090831430 and conn_id 3 and
flags 4 lifetime of 3600 seconds lifetime of 4608000 kilobytes outbound SA from 10.10.10.1 to
10.10.10.2 (proxy 172.16.1.0 to 0.0.0.0) has spi 465396864 and conn_id 4 and flags 4 lifetime of
3600 seconds lifetime of 4608000 kilobytesIPSEC(key_engine): got a queue event...
```

```
IPSEC(initialize_sas): , (key eng. msg.) dest= 10.10.10.1, src= 10.10.10.2, dest_proxy=
172.16.1.0/255.255.255.0/0/0 (type=4), src_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4), protocol= ESP,
transform= esp-des esp-md5-hmac , lifedur= 3600s and 4608000kb, spi= 0xf3d52246(4090831430),
conn_id= 3, keysize= 0, flags= 0x4 IPSEC(initialize_sas): , (key eng. msg.) src= 10.10.10.1,
dest= 10.10.10.2, src_proxy= 172.16.1.0/255.255.255.0/0/0 (type=4), dest_proxy=
0.0.0.0/0.0.0.0/0/0 (type=4), protocol= ESP, transform= esp-des esp-md5-hmac , lifedur= 3600s
and 4608000kb, spi= 0x1bbd6480(465396864), conn_id= 4, keysize= 0, flags= 0x4 !--- The IPSec SAs
shown above are for actual data traffic. VPN Peer: IPSEC: Peer ip:10.10.10.2/500 Ref cnt
incremented to:4 Total VPN Peers:1 VPN Peer: IPSEC: Peer ip:10.10.10.2/500 Ref cnt incremented
to:5 Total VPN Peers:1
```

IOS debug 命令和示例输出

IOS debug 命令

注意：在使用debug命令之前，请参阅有关Debug命令的重要信息。

- **debug crypto ipsec — 显示详细的 IPSec 事件。**
- **debug crypto isakmp — 显示关于 IKE 事件的消息。**
- **debug crypto engine - 显示已加密的流量。**

IOS 示例输出

```
!--- As soon as the vpnclient enable command is issued on the PIX, !--- the IOS device receives
an IKE negotiation request.

*Jan 20 16:48:22.267: ISAKMP (0:0): received packet from 10.10.10.1 dport
 500 sport 500 Global (N) NEW

SA
*Jan 20 16:48:22.271: ISAKMP: Created a peer struct for 10.10.10.1,
 peer port 500
*Jan 20 16:48:22.271: ISAKMP: New peer created peer = 0x6758C6D0
 peer_handle = 0x80000026
*Jan 20 16:48:22.271: ISAKMP: Locking peer struct 0x6758C6D0,
 refcount 1 for

crypto_isakmp_process_block
*Jan 20 16:48:22.271: ISAKMP:(0):Setting client config settings 6679B340
*Jan 20 16:48:22.271: ISAKMP:(0):(Re)Setting client xauth list  and state
*Jan 20 16:48:22.271: ISAKMP/xauth: initializing AAA request
*Jan 20 16:48:22.271: ISAKMP: local port 500, remote port 500
*Jan 20 16:48:22.271: insert sa successfully sa = 658E0874
*Jan 20 16:48:22.271: ISAKMP:(0): processing SA payload. message ID = 0
*Jan 20 16:48:22.271: ISAKMP:(0): processing ID payload. message ID = 0
*Jan 20 16:48:22.271: ISAKMP (0:0): ID payload
next-payload : 13
type         : 11
group id     : hwclient
protocol     : 17
port         : 0
length       : 16
*Jan 20 16:48:22.271: ISAKMP:(0):: peer matches *none* of the profiles
*Jan 20 16:48:22.271: ISAKMP:(0): processing vendor id payload
*Jan 20 16:48:22.271: ISAKMP:(0): vendor ID seems Unity/DPD but
 major 215 mismatch
*Jan 20 16:48:22.271: ISAKMP:(0): vendor ID is XAUTH
*Jan 20 16:48:22.271: ISAKMP:(0): processing vendor id payload
```

```
*Jan 20 16:48:22.271: ISAKMP:(0): vendor ID is DPD
*Jan 20 16:48:22.271: ISAKMP:(0): processing vendor id payload
*Jan 20 16:48:22.271: ISAKMP:(0): claimed IOS but failed authentication
*Jan 20 16:48:22.271: ISAKMP:(0): processing vendor id payload
*Jan 20 16:48:22.271: ISAKMP:(0): vendor ID is Unity
*Jan 20 16:48:22.271: ISAKMP:(0): Authentication by xauth preshared
*Jan 20 16:48:22.271: ISAKMP:(0):Checking ISAKMP transform 1 against
 priority 10 policy
*Jan 20 16:48:22.271: ISAKMP:      encryption AES-CBC
*Jan 20 16:48:22.271: ISAKMP:      keylength of 256
*Jan 20 16:48:22.271: ISAKMP:      hash SHA
*Jan 20 16:48:22.271: ISAKMP:      default group 2
*Jan 20 16:48:22.271: ISAKMP:      auth XAUTHInitPreShared
*Jan 20 16:48:22.271: ISAKMP:      life type in seconds
*Jan 20 16:48:22.271: ISAKMP:      life duration (VPI) of  0x0 0x1 0x51 0x80
*Jan 20 16:48:22.271: ISAKMP:(0):Encryption algorithm offered does
 not match policy!
*Jan 20 16:48:22.271: ISAKMP:(0):atts are not acceptable. Next payload is 3
*Jan 20 16:48:22.271: ISAKMP:(0):Checking ISAKMP transform 2 against
 priority 10 policy
*Jan 20 16:48:22.271: ISAKMP:      encryption AES-CBC
*Jan 20 16:48:22.275: ISAKMP:      keylength of 256
*Jan 20 16:48:22.275: ISAKMP:      hash MD5
*Jan 20 16:48:22.275: ISAKMP:      default group 2
*Jan 20 16:48:22.275: ISAKMP:      auth XAUTHInitPreShared
*Jan 20 16:48:22.275: ISAKMP:      life type in seconds
*Jan 20 16:48:22.275: ISAKMP:      life duration (VPI) of  0x0 0x1 0x51 0x80
*Jan 20 16:48:22.275: ISAKMP:(0):Encryption algorithm offered
 does not match policy!
*Jan 20 16:48:22.275: ISAKMP:(0):atts are not acceptable. Next payload is 3
*Jan 20 16:48:22.275: ISAKMP:(0):Checking ISAKMP transform 3 against
 priority 10 policy
*Jan 20 16:48:22.275: ISAKMP:      encryption AES-CBC
*Jan 20 16:48:22.275: ISAKMP:      keylength of 192
*Jan 20 16:48:22.275: ISAKMP:      hash SHA
*Jan 20 16:48:22.275: ISAKMP:      default group 2
*Jan 20 16:48:22.275: ISAKMP:      auth XAUTHInitPreShared
*Jan 20 16:48:22.275: ISAKMP:      life type in seconds
*Jan 20 16:48:22.275: ISAKMP:      life duration (VPI) of  0x0 0x1 0x51 0x80
*Jan 20 16:48:22.275: ISAKMP:(0):Encryption algorithm offered
 does not match policy!
*Jan 20 16:48:22.275: ISAKMP:(0):atts are not acceptable. Next payload is 3
*Jan 20 16:48:22.275: ISAKMP:(0):Checking ISAKMP transform 4 against
 priority 10 policy
*Jan 20 16:48:22.275: ISAKMP:      encryption AES-CBC
*Jan 20 16:48:22.275: ISAKMP:      keylength of 192
*Jan 20 16:48:22.275: ISAKMP:      hash MD5
*Jan 20 16:48:22.275: ISAKMP:      default group 2
*Jan 20 16:48:22.275: ISAKMP:      auth XAUTHInitPreShared
*Jan 20 16:48:22.275: ISAKMP:      life type in seconds
*Jan 20 16:48:22.275: ISAKMP:      life duration (VPI) of  0x0 0x1 0x51 0x80
*Jan 20 16:48:22.275: ISAKMP:(0):Encryption algorithm offered
 does not match policy!
*Jan 20 16:48:22.275: ISAKMP:(0):atts are not acceptable. Next payload is 3
*Jan 20 16:48:22.275: ISAKMP:(0):Checking ISAKMP transform 5 against
 priority 10 policy
*Jan 20 16:48:22.275: ISAKMP:      encryption AES-CBC
*Jan 20 16:48:22.275: ISAKMP:      keylength of 128
*Jan 20 16:48:22.275: ISAKMP:      hash SHA
*Jan 20 16:48:22.275: ISAKMP:      default group 2
*Jan 20 16:48:2f  0x0 0x1 0x51 0x80
*Jan 20 16:48:22.275: ISAKMP:(0):Encryption algorithm offered
 does not match policy!
*Jan 20 16:48:22.275: ISAKMP:(0):atts are not acceptable. Next payload is 3
```

```
*Jan 20 16:48:22.275: ISAKMP:(0):Checking ISAKMP transform 6 against
 priority 10 policy
*Jan 20 16:48:22.275: ISAKMP:      encryption AES-CBC
*Jan 20 16:48:22.275: ISAKMP:      keylength of 128
*Jan 20 16:48:22.275: ISAKMP:      hash MD52.275: ISAKMP:   auth XAUTHInitPreShared
*Jan 20 16:48:22.275: ISAKMP:      life type in seconds
*Jan 20 16:48:22.275: ISAKMP:      life duration (VPI) o
*Jan 20 16:48:22.275: ISAKMP:      default group 2
*Jan 20 16:48:22.275: ISAKMP:      auth XAUTHInitPreShared
*Jan 20 16:48:22.275: ISAKMP:      life type in seconds
*Jan 20 16:48:22.275: ISAKMP:      life duration (VPI) of  0x0 0x1 0x51 0x80
*Jan 20 16:48:22.275: ISAKMP:(0):Encryption algorithm offered
 does not match policy!
*Jan 20 16:48:22.275: ISAKMP:(0):atts are not acceptable. Next payload is 3
*Jan 20 16:48:22.275: ISAKMP:(0):Checking ISAKMP transform 7 against
 priority 10 policy
*Jan 20 16:48:22.275: ISAKMP:      encryption 3DES-CBC
*Jan 20 16:48:22.275: ISAKMP:      hash SHA
*Jan 20 16:48:22.275: ISAKMP:      default group 2
*Jan 20 16:48:22.275: ISAKMP:      auth XAUTHInitPreShared
*Jan 20 16:48:22.279: ISAKMP:      life type in seconds
*Jan 20 16:48:22.279: ISAKMP:      life duration (VPI) of  0x0 0x1 0x51 0x80
*Jan 20 16:48:22.279: ISAKMP:(0):Encryption algorithm offered
 does not match policy!
*Jan 20 16:48:22.279: ISAKMP:(0):atts are not acceptable. Next payload is 3
*Jan 20 16:48:22.279: ISAKMP:(0):Checking ISAKMP transform 8 against
 priority 10 policy
*Jan 20 16:48:22.279: ISAKMP:      encryption 3DES-CBC
*Jan 20 16:48:22.279: ISAKMP:      hash MD5
*Jan 20 16:48:22.279: ISAKMP:      default group 2
*Jan 20 16:48:22.279: ISAKMP:      auth XAUTHInitPreShared
*Jan 20 16:48:22.279: ISAKMP:      life type in seconds
*Jan 20 16:48:22.279: ISAKMP:      life duration (VPI) of  0x0 0x1 0x51 0x80
*Jan 20 16:48:22.279: ISAKMP:(0):Encryption algorithm offered
 does not match policy!
*Jan 20 16:48:22.279: ISAKMP:(0):atts are not acceptable. Next payload is 3
*Jan 20 16:48:22.279: ISAKMP:(0):Checking ISAKMP transform 9 against
 priority 10 policy
*Jan 20 16:48:22.279: ISAKMP:      encryption DES-CBC
*Jan 20 16:48:22.279: ISAKMP:      hash MD5
*Jan 20 16:48:22.279: ISAKMP:      default group 2
*Jan 20 16:48:22.279: ISAKMP:      auth XAUTHInitPreShared
*Jan 20 16:48:22.279: ISAKMP:      life type in seconds
*Jan 20 16:48:22.279: ISAKMP:      life duration (VPI) of  0x0 0x1 0x51 0x80
*Jan 20 16:48:22.279: ISAKMP:(0):atts are acceptable. Next payload is 3
```

```
!--- Both the IOS device and the PIX accept the policy for ISAKMP. *Jan 20 16:48:22.279:
ISAKMP:(0): processing KE payload. message ID = 0 *Jan 20 16:48:22.279: crypto_engine: Create DH
shared secret *Jan 20 16:48:22.279: crypto_engine: Modular Exponentiation *Jan 20 16:48:22.319:
ISAKMP:(0): processing NONCE payload. message ID = 0 *Jan 20 16:48:22.319: ISAKMP:(0): vendor ID
is NAT-T v3 *Jan 20 16:48:22.319: ISAKMP:(0): vendor ID is NAT-T v2 *Jan 20 16:48:22.319:
ISAKMP:(0):Input = IKE_MESG_FROM_PEER, IKE_AM_EXCH *Jan 20 16:48:22.319: ISAKMP:(0):Old State =
IKE_READY New State = IKE_R_AM_AAA_AWAIT *Jan 20 16:48:22.319: crypto_engine: Create IKE SA *Jan
20 16:48:22.319: crypto engine: deleting DH phase 2 SW:38 *Jan 20 16:48:22.319: crypto_engine:
Delete DH shared secret *Jan 20 16:48:22.319: ISAKMP:(1030): constructed NAT-T vendor-03 ID *Jan
20 16:48:22.319: ISAKMP:(1030):SA is doing pre-shared key authentication plus XAUTH using id
type ID_IPV4_ADDR *Jan 20 16:48:22.323: ISAKMP (0:1030): ID payload next-payload : 10 type : 1
address : 10.10.10.2 protocol : 17 port : 0 length : 12 *Jan 20 16:48:22.323:
ISAKMP:(1030):Total payload length: 12 *Jan 20 16:48:22.323: crypto_engine: Generate IKE hash
*Jan 20 16:48:22.323: ISAKMP:(1030): sending packet to 10.10.10.1 my_port 500 peer_port 500 (R)
AG_INIT_EXCH *Jan 20 16:48:22.323: ISAKMP:(1030):Input = IKE_MESG_FROM_AAA, PRESHARED_KEY_REPLY
*Jan 20 16:48:22.323: ISAKMP:(1030):Old State = IKE_R_AM_AAA_AWAIT New State = IKE_R_AM2 *Jan 20
16:48:22.479: ISAKMP (0:1030): received packet from 10.10.10.1 dport 500 sport 500 Global (R)
AG_INIT_EXCH *Jan 20 16:48:22.479: crypto_engine: Decrypt IKE packet *Jan 20 16:48:22.479:
```

```
ISAKMP:received payload type 20 *Jan 20 16:48:22.479: ISAKMP:received payload type 20 *Jan 20
16:48:22.479: ISAKMP:(1030): processing HASH payload. message ID = 0 *Jan 20 16:48:22.479:
crypto_engine: Generate IKE hash *Jan 20 16:48:22.483: ISAKMP:(1030): processing NOTIFY
INITIAL_CONTACT protocol 1 spi 0, message ID = 0, sa = 658E0874 *Jan 20 16:48:22.483:
ISAKMP:(1030):SA authentication status: authenticated *Jan 20 16:48:22.483: ISAKMP:(1030):SA has
been authenticated with 10.10.10.1 *Jan 20 16:48:22.483: ISAKMP:(1030):SA authentication status:
authenticated *Jan 20 16:48:22.483: ISAKMP:(1030): Process initial contact, bring down existing
phase 1 and 2 SA's with local 10.10.10.2 remote 10.10.10.1 remote port 500 *Jan 20 16:48:22.483:
ISAKMP:(1030):returning IP addr to the address pool *Jan 20 16:48:22.483: ISAKMP: Trying to
insert a peer 10.10.10.2/10.10.10.1/500/, and inserted successfully 6758C6D0. *Jan 20
16:48:22.483: IPSEC(key_engine): got a queue event with 1 KMI message(s) *Jan 20 16:48:22.483:
ISAKMP: set new node -1980405900 to CONF_XAUTH *Jan 20 16:48:22.483: crypto_engine: Generate IKE
hash *Jan 20 16:48:22.483: ISAKMP:(1030):Sending NOTIFY RESPONDER_LIFETIME protocol 1 spi
1727476520, message ID = -1980405900 *Jan 20 16:48:22.483: crypto_engine: Encrypt IKE packet
*Jan 20 16:48:22.483: ISAKMP:(1030): sending packet to 10.10.10.1 my_port 500 peer_port 500 (R)
QM_IDLE *Jan 20 16:48:22.483: ISAKMP:(1030):purging node -1980405900 *Jan 20 16:48:22.483:
ISAKMP: Sending phase 1 responder lifetime 86400 *Jan 20 16:48:22.483: ISAKMP:(1030):Input =
IKE_MESG_FROM_PEER, IKE_AM_EXCH *Jan 20 16:48:22.483: ISAKMP:(1030):Old State = IKE_R_AM2 New
State = IKE_P1_COMPLETE *Jan 20 16:48:22.483: ISAKMP:(1030):Need XAUTH !--- The IOS device now
processes the Extended Authentication phase !--- after Phase 1 is successful. *Jan 20
16:48:22.483: ISAKMP: set new node -791275911 to CONF_XAUTH *Jan 20 16:48:22.487: ISAKMP/xauth:
request attribute XAUTH_USER_NAME_V2 *Jan 20 16:48:22.487: ISAKMP/xauth: request attribute
XAUTH_USER_PASSWORD_V2 *Jan 20 16:48:22.487: crypto_engine: Generate IKE hash *Jan 20
16:48:22.487: ISAKMP:(1030): initiating peer config to 10.10.10.1. ID = -791275911 *Jan 20
16:48:22.487: crypto_engine: Encrypt IKE packet *Jan 20 16:48:22.487: ISAKMP:(1030): sending
packet to 10.10.10.1 my_port 500 peer_port 500 (R) CONF_XAUTH *Jan 20 16:48:22.487:
ISAKMP:(1030):Input = IKE_MESG_INTERNAL, IKE_PHASE1_COMPLETE *Jan 20 16:48:22.487:
ISAKMP:(1030):Old State = IKE_P1_COMPLETE New State = IKE_XAUTH_REQ_SENT *Jan 20 16:48:22.519:
ISAKMP (0:1030): received packet from 10.10.10.1 dport 500 sport 500 Global (R) CONF_XAUTH *Jan
20 16:48:22.519: crypto_engine: Decrypt IKE packet *Jan 20 16:48:22.519:
ISAKMP:(1030):processing transaction payload from 10.10.10.1. message ID = -791275911 *Jan 20
16:48:22.519: crypto_engine: Generate IKE hash *Jan 20 16:48:22.519: ISAKMP: Config payload
REPLY *Jan 20 16:48:22.519: ISAKMP/xauth: reply attribute XAUTH_USER_NAME_V2 *Jan 20
16:48:22.519: ISAKMP/xauth: reply attribute XAUTH_USER_PASSWORD_V2 *Jan 20 16:48:22.519:
ISAKMP:(1030):deleting node -791275911 error FALSE reason "Done with xauth request/reply
exchange" *Jan 20 16:48:22.519: ISAKMP:(1030):Input = IKE_MESG_FROM_PEER, IKE_CFG_REPLY *Jan 20
16:48:22.519: ISAKMP:(1030):Old State = IKE_XAUTH_REQ_SENT New State =
IKE_XAUTH_AAA_CONT_LOGIN_AWAIT *Jan 20 16:48:22.519: ISAKMP: set new node 44674085 to CONF_XAUTH
*Jan 20 16:48:22.519: crypto_engine: Generate IKE hash *Jan 20 16:48:22.519: ISAKMP:(1030):
initiating peer config to 10.10.10.1. ID = 44674085 *Jan 20 16:48:22.519: crypto_engine: Encrypt
IKE packet *Jan 20 16:48:22.519: ISAKMP:(1030): sending packet to 10.10.10.1 my_port 500
peer_port 500 (R) CONF_XAUTH *Jan 20 16:48:22.519: ISAKMP:(1030):Input = IKE_MESG_FROM_AAA,
IKE_AAA_CONT_LOGIN *Jan 20 16:48:22.519: ISAKMP:(1030):Old State =
IKE_XAUTH_AAA_CONT_LOGIN_AWAIT New State = IKE_XAUTH_SET_SENT *Jan 20 16:48:22.571: ISAKMP
(0:1030): received packet from 10.10.10.1 dport 500 sport 500 Global (R) CONF_XAUTH *Jan 20
16:48:22.571: crypto_engine: Decrypt IKE packet *Jan 20 16:48:22.571: ISAKMP:(1030):processing
transaction payload from 10.10.10.1. message ID = 44674085 *Jan 20 16:48:22.571: crypto_engine:
Generate IKE hash *Jan 20 16:48:22.571: ISAKMP: Config payload ACK *Jan 20 16:48:22.571:
ISAKMP:(1030): XAUTH ACK Processed *Jan 20 16:48:22.571: ISAKMP:(1030):deleting node 44674085
error FALSE reason "Transaction mode done" *Jan 20 16:48:22.571: ISAKMP:(1030):Input =
IKE_MESG_FROM_PEER, IKE_CFG_ACK *Jan 20 16:48:22.571: ISAKMP:(1030):Old State =
IKE_XAUTH_SET_SENT New State = IKE_P1_COMPLETE *Jan 20 16:48:22.571: ISAKMP:(1030):Input =
IKE_MESG_INTERNAL, IKE_PHASE1_COMPLETE *Jan 20 16:48:22.571: ISAKMP:(1030):Old State =
IKE_P1_COMPLETE New State = IKE_P1_COMPLETE !--- Extended authentication is complete, !--- and
mode configuration is now processed. *Jan 20 16:48:22.619: ISAKMP (0:1030): received packet from
10.10.10.1 dport 500 sport 500 Global (R) QM_IDLE *Jan 20 16:48:22.619: ISAKMP: set new node -
2005047200 to QM_IDLE *Jan 20 16:48:22.619: crypto_engine: Decrypt IKE packet *Jan 20
16:48:22.623: ISAKMP:(1030):processing transaction payload from 10.10.10.1. message ID = -
2005047200 *Jan 20 16:48:22.623: crypto_engine: Generate IKE hash *Jan 20 16:48:22.623: ISAKMP:
Config payload REQUEST *Jan 20 16:48:22.623: ISAKMP:(1030):checking request: *Jan 20
16:48:22.623: ISAKMP: DEFAULT_DOMAIN *Jan 20 16:48:22.623: ISAKMP: IP4_NBNS *Jan 20
16:48:22.623: ISAKMP: IP4_DNS *Jan 20 16:48:22.623: ISAKMP: SPLIT_INCLUDE *Jan 20 16:48:22.623:
ISAKMP: SPLIT_DNS *Jan 20 16:48:22.623: ISAKMP: PFS *Jan 20 16:48:22.623: ISAKMP:
CONFIG_MODE_UNKNOWN Unknown Attr: 0x7800 *Jan 20 16:48:22.623: ISAKMP: CONFIG_MODE_UNKNOWN
```

```
Unknown Attr: 0x7801 *Jan 20 16:48:22.623: ISAKMP: CONFIG_MODE_UNKNOWN Unknown Attr: 0x7802 *Jan
20 16:48:22.623: ISAKMP: CONFIG_MODE_UNKNOWN Unknown Attr: 0x7803 *Jan 20 16:48:22.623: ISAKMP:
CONFIG_MODE_UNKNOWN Unknown Attr: 0x7804 *Jan 20 16:48:22.623: ISAKMP: CONFIG_MODE_UNKNOWN
Unknown Attr: 0x7805 *Jan 20 16:48:22.623: ISAKMP: CONFIG_MODE_UNKNOWN Unknown Attr: 0x7806 *Jan
20 16:48:22.623: ISAKMP: BACKUP_SERVER *Jan 20 16:48:22.623: ISAKMP: APPLICATION_VERSION *Jan 20
16:48:22.623: ISAKMP/author: Author request for group hw client successfully sent to AAA *Jan 20
16:48:22.623: ISAKMP:(1030):Input = IKE_MESG_FROM_PEER, IKE_CFG_REQUEST *Jan 20 16:48:22.623:
ISAKMP:(1030):Old State = IKE_P1_COMPLETE New State = IKE_CONFIG_AUTHOR_AAA_AWAIT *Jan 20
16:48:22.623: ISAKMP:(1030):attributes sent in message: *Jan 20 16:48:22.623: ISAKMP: Sending
DEFAULT_DOMAIN default domain name: cisco.com *Jan 20 16:48:22.623: ISAKMP: Sending IP4_NBNS
server address: 172.22.1.102 *Jan 20 16:48:22.623: ISAKMP: Sending IP4_DNS server address:
172.22.1.101 *Jan 20 16:48:22.623: ISAKMP (0/1030): Unknown Attr: CONFIG_MODE_UNKNOWN (0x7800)
*Jan 20 16:48:22.623: ISAKMP (0/1030): Unknown Attr: CONFIG_MODE_UNKNOWN (0x7801) *Jan 20
16:48:22.623: ISAKMP (0/1030): Unknown Attr: CONFIG_MODE_UNKNOWN (0x7802) *Jan 20 16:48:22.623:
ISAKMP (0/1030): Unknown Attr: CONFIG_MODE_UNKNOWN (0x7803) *Jan 20 16:48:22.623: ISAKMP
(0/1030): Unknown Attr: CONFIG_MODE_UNKNOWN (0x7804) *Jan 20 16:48:22.623: ISAKMP (0/1030):
Unknown Attr: CONFIG_MODE_UNKNOWN (0x7805) *Jan 20 16:48:22.627: ISAKMP (0/1030): Unknown Attr:
CONFIG_MODE_UNKNOWN (0x7806) *Jan 20 16:48:22.627: ISAKMP: Sending APPLICATION_VERSION string:
Cisco IOS Software, 7200 Software (C7200-ADVENTERPRISEK9-M), Version 12.4(4)T1, RELEASE SOFTWARE
(fc4) Technical Support: http://www.cisco.com/techsupport Copyright (c) 1986-2005 by Cisco
Systems, Inc. Compiled Wed 21-Dec-05 22:58 by ccai *Jan 20 16:48:22.627: crypto_engine: Generate
IKE hash *Jan 20 16:48:22.627: ISAKMP:(1030): responding to peer config from 10.10.10.1. ID = -
2005047200 *Jan 20 16:48:22.627: crypto_engine: Encrypt IKE packet *Jan 20 16:48:22.627:
ISAKMP:(1030): sending packet to 10.10.10.1 my_port 500 peer_port 500 (R) CONF_ADDR *Jan 20
16:48:22.627: ISAKMP:(1030):deleting node -2005047200 error FALSE reason "No Error" *Jan 20
16:48:22.627: ISAKMP:(1030):Input = IKE_MESG_FROM_AAA, IKE_AAA_GROUP_ATTR *Jan 20 16:48:22.627:
ISAKMP:(1030):Old State = IKE_CONFIG_AUTHOR_AAA_AWAIT New State = IKE_P1_COMPLETE *Jan 20
16:48:22.627: ISAKMP:(1030):Input = IKE_MESG_INTERNAL, IKE_PHASE1_COMPLETE *Jan 20 16:48:22.627:
ISAKMP:(1030):Old State = IKE_P1_COMPLETE New State = IKE_P1_COMPLETE *Jan 20 16:48:27.695:
ISAKMP (0:1030): received packet from 10.10.10.1 dport 500 sport 500 Global (R) QM_IDLE *Jan 20
16:48:27.695: ISAKMP: set new node 1887305923 to QM_IDLE *Jan 20 16:48:27.695: crypto_engine:
Decrypt IKE packet *Jan 20 16:48:27.699: crypto_engine: Generate IKE hash *Jan 20 16:48:27.699:
ISAKMP:(1030): processing HASH payload. message ID = 1887305923 *Jan 20 16:48:27.699:
ISAKMP:(1030): processing SA payload. message ID = 1887305923 *Jan 20 16:48:27.699:
ISAKMP:(1030):Checking IPSec proposal 1 *Jan 20 16:48:27.699: ISAKMP: transform 1, ESP_AES *Jan
20 16:48:27.699: ISAKMP: attributes in transform: *Jan 20 16:48:27.699: ISAKMP: encaps is 1
(Tunnel) *Jan 20 16:48:27.699: ISAKMP: SA life type in seconds *Jan 20 16:48:27.699: ISAKMP: SA
life duration (basic) of 28800 *Jan 20 16:48:27.699: ISAKMP: SA life type in kilobytes *Jan 20
16:48:27.699: ISAKMP: SA life duration (VPI) of 0x0 0x46 0x50 0x0 *Jan 20 16:48:27.699: ISAKMP:
authenticator is HMAC-SHA *Jan 20 16:48:27.699: ISAKMP: key length is 256 *Jan 20 16:48:27.699:
CryptoEngine0: validate proposal *Jan 20 16:48:27.699: ISAKMP:(1030):atts are acceptable. *Jan
20 16:48:27.699: IPSEC(validate_proposal_request): proposal part #1 *Jan 20 16:48:27.699:
IPSEC(validate_proposal_request): proposal part #1, (key eng. msg.) INBOUND local= 10.10.10.2,
remote= 10.10.10.1, local_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4), remote_proxy=
10.10.10.1/255.255.255.255/0/0 (type=1), protocol= ESP, transform= esp-aes 256 esp-sha-hmac
(Tunnel), lifedur= 0s and 0kb, spi= 0x0(0), conn_id= 0, keysize= 256, flags= 0x0 *Jan 20
16:48:27.699: IPSEC(crypto_ipsec_process_proposal): transform proposal not supported for
identity: {esp-aes 256 esp-sha-hmac } *Jan 20 16:48:27.699: ISAKMP:(1030): IPSec policy
invalidated proposal *Jan 20 16:48:27.699: ISAKMP:(1030):Checking IPSec proposal 2 *Jan 20
16:48:27.699: ISAKMP: transform 1, ESP_AES *Jan 20 16:48:27.699: ISAKMP: attributes in
transform: *Jan 20 16:48:27.699: ISAKMP: encaps is 1 (Tunnel) *Jan 20 16:48:27.699: ISAKMP: SA
life type in seconds *Jan 20 16:48:27.699: ISAKMP: SA life duration (basic) of 28800 *Jan 20
16:48:27.699: ISAKMP: SA life type in kilobytes *Jan 20 16:48:27.699: ISAKMP: SA life duration
(VPI) of 0x0 0x46 0x50 0x0 *Jan 20 16:48:27.699: ISAKMP: authenticator is HMAC-MD5 *Jan 20
16:48:27.699: ISAKMP: key length is 256 *Jan 20 16:48:27.699: CryptoEngine0: validate proposal
*Jan 20 16:48:27.699: ISAKMP:(1030):atts are acceptable. !--- Proceed for processing Phase 2.
*Jan 20 16:48:27.699: IPSEC(validate_proposal_request): proposal part #1 *Jan 20 16:48:27.699:
IPSEC(validate_proposal_request): proposal part #1, (key eng. msg.) INBOUND local= 10.10.10.2,
remote= 10.10.10.1, local_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4), remote_proxy=
10.10.10.1/255.255.255.255/0/0 (type=1), protocol= ESP, transform= esp-aes 256 esp-md5-hmac
(Tunnel), lifedur= 0s and 0kb, spi= 0x0(0), conn_id= 0, keysize= 256, flags= 0x0 *Jan 20
16:48:27.699: IPSEC(crypto_ipsec_process_proposal): transform proposal not supported for
identity: {esp-aes 256 esp-md5-hmac } *Jan 20 16:48:27.699: ISAKMP:(1030): IPSec policy
invalidated proposal *Jan 20 16:48:27.703: ISAKMP:(1030):Checking IPSec proposal 3 *Jan 20
```

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16:48:27.703: ISAKMP: transform 1, ESP_AES *Jan 20 16:48:27.703: ISAKMP: attributes in
transform: *Jan 20 16:48:27.703: ISAKMP: encaps is 1 (Tunnel) *Jan 20 16:48:27.703: ISAKMP: SA
life type in seconds *Jan 20 16:48:27.703: ISAKMP: SA life duration (basic) of 28800 *Jan 20
16:48:27.703: ISAKMP: SA life type in kilobytes *Jan 20 16:48:27.703: ISAKMP: SA life duration
(VPI) of 0x0 0x46 0x50 0x0 *Jan 20 16:48:27.703: ISAKMP: authenticator is HMAC-SHA *Jan 20
16:48:27.703: ISAKMP: key length is 192 *Jan 20 16:48:27.703: CryptoEngine0: validate proposal
*Jan 20 16:48:27.703: ISAKMP:(1030):atts are acceptable. *Jan 20 16:48:27.703:
IPSEC(validate_proposal_request): proposal part #1 *Jan 20 16:48:27.703:
IPSEC(validate_proposal_request): proposal part #1, (key eng. msg.) INBOUND local= 10.10.10.2,
remote= 10.10.10.1, local_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4), remote_proxy=
10.10.10.1/255.255.255.255/0/0 (type=1), protocol= ESP, transform= esp-aes 192 esp-sha-hmac
(Tunnel), lifedur= 0s and 0kb, spi= 0x0(0), conn_id= 0, keysize= 192, flags= 0x0 *Jan 20
16:48:27.703: IPSEC(crypto_ipsec_process_proposal): transform proposal not supported for
identity: {esp-aes 192 esp-sha-hmac } *Jan 20 16:48:27.703: ISAKMP:(1030): IPSec policy
invalidated proposal *Jan 20 16:48:27.703: ISAKMP:(1030):Checking IPSec proposal 4 *Jan 20
16:48:27.703: ISAKMP: transform 1, ESP_AES *Jan 20 16:48:27.703: ISAKMP: attributes in
transform: *Jan 20 16:48:27.703: ISAKMP: encaps is 1 (Tunnel) *Jan 20 16:48:27.703: ISAKMP: SA
life type in seconds *Jan 20 16:48:27.703: ISAKMP: SA life duration (basic) of 28800 *Jan 20
16:48:27.703: ISAKMP: SA life type in kilobytes *Jan 20 16:48:27.703: ISAKMP: SA life duration
(VPI) of 0x0 0x46 0x50 0x0 *Jan 20 16:48:27.703: ISAKMP: authenticator is HMAC-MD5 *Jan 20
16:48:27.703: ISAKMP: key length is 192 *Jan 20 16:48:27.703: CryptoEngine0: validate proposal
*Jan 20 16:48:27.703: ISAKMP:(1030):atts are acceptable. *Jan 20 16:48:27.703:
IPSEC(validate_proposal_request): proposal part #1 *Jan 20 16:48:27.703:
IPSEC(validate_proposal_request): proposal part #1, (key eng. msg.) INBOUND local= 10.10.10.2,
remote= 10.10.10.1, local_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4), remote_proxy=
10.10.10.1/255.255.255.255/0/0 (type=1), protocol= ESP, transform= esp-aes 192 esp-md5-hmac
(Tunnel), lifedur= 0s and 0kb, spi= 0x0(0), conn_id= 0, keysize= 192, flags= 0x0 *Jan 20
16:48:27.703: IPSEC(crypto_ipsec_process_proposal): transform proposal not supported for
identity: {esp-aes 192 esp-md5-hmac } *Jan 20 16:48:27.703: ISAKMP:(1030): IPSec policy
invalidated proposal *Jan 20 16:48:27.703: ISAKMP:(1030):Checking IPSec proposal 5 *Jan 20
16:48:27.703: ISAKMP: transform 1, ESP_AES *Jan 20 16:48:27.703: ISAKMP: attributes in
transform: *Jan 20 16:48:27.703: ISAKMP: encaps is 1 (Tunnel) *Jan 20 16:48:27.703: ISAKMP: SA
life type in seconds *Jan 20 16:48:27.703: ISAKMP: SA life duration (basic) of 28800 *Jan 20
16:48:27.703: ISAKMP: SA life type in kilobytes *Jan 20 16:48:27.707: ISAKMP: SA life duration
(VPI) of 0x0 0x46 0x50 0x0 *Jan 20 16:48:27.707: ISAKMP: authenticator is HMAC-SHA *Jan 20
16:48:27.707: ISAKMP: key length is 128 *Jan 20 16:48:27.707: CryptoEngine0: validate proposal
*Jan 20 16:48:27.707: ISAKMP:(1030):atts are acceptable. *Jan 20 16:48:27.707:
IPSEC(validate_proposal_request): proposal part #1 *Jan 20 16:48:27.707:
IPSEC(validate_proposal_request): proposal part #1, (key eng. msg.) INBOUND local= 10.10.10.2,
remote= 10.10.10.1, local_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4), remote_proxy=
10.10.10.1/255.255.255.255/0/0 (type=1), protocol= ESP, transform= esp-aes esp-sha-hmac
(Tunnel), lifedur= 0s and 0kb, spi= 0x0(0), conn_id= 0, keysize= 128, flags= 0x0 *Jan 20
16:48:27.707: IPSEC(crypto_ipsec_process_proposal): transform proposal not supported for
identity: {esp-aes esp-sha-hmac } *Jan 20 16:48:27.707: ISAKMP:(1030): IPSec policy invalidated
proposal *Jan 20 16:48:27.707: ISAKMP:(1030):Checking IPSec proposal 6 *Jan 20 16:48:27.707:
ISAKMP: transform 1, ESP_AES *Jan 20 16:48:27.707: ISAKMP: attributes in transform: *Jan 20
16:48:27.707: ISAKMP: encaps is 1 (Tunnel) *Jan 20 16:48:27.707: ISAKMP: SA life type in seconds
*Jan 20 16:48:27.707: ISAKMP: SA life duration (basic) of 28800 *Jan 20 16:48:27.707: ISAKMP: SA
life type in kilobytes *Jan 20 16:48:27.707: ISAKMP: SA life duration (VPI) of 0x0 0x46 0x50 0x0
*Jan 20 16:48:27.707: ISAKMP: authenticator is HMAC-MD5 *Jan 20 16:48:27.707: ISAKMP: key length
is 128 *Jan 20 16:48:27.707: CryptoEngine0: validate proposal *Jan 20 16:48:27.707:
ISAKMP:(1030):atts are acceptable. *Jan 20 16:48:27.707: IPSEC(validate_proposal_request):
proposal part #1 *Jan 20 16:48:27.707: IPSEC(validate_proposal_request): proposal part #1, (key
eng. msg.) INBOUND local= 10.10.10.2, remote= 10.10.10.1, local_proxy= 0.0.0.0/0.0.0.0/0/0
(type=4), remote_proxy= 10.10.10.1/255.255.255.255/0/0 (type=1), protocol= ESP, transform= esp-
aes esp-md5-hmac (Tunnel), lifedur= 0s and 0kb, spi= 0x0(0), conn_id= 0, keysize= 128, flags=
0x0 *Jan 20 16:48:27.707: IPSEC(crypto_ipsec_process_proposal): transform proposal not supported
for identity: {esp-aes esp-md5-hmac } *Jan 20 16:48:27.707: ISAKMP:(1030): IPSec policy
invalidated proposal *Jan 20 16:48:27.707: ISAKMP:(1030):Checking IPSec proposal 7 *Jan 20
16:48:27.707: ISAKMP: transform 1, ESP_3DES *Jan 20 16:48:27.707: ISAKMP: attributes in
transform: *Jan 20 16:48:27.707: ISAKMP: encaps is 1 (Tunnel) *Jan 20 16:48:27.707: ISAKMP: SA
life type in seconds *Jan 20 16:48:27.707: ISAKMP: SA life duration (basic) of 28800 *Jan 20
16:48:27.707: ISAKMP: SA life type in kilobytes *Jan 20 16:48:27.707: ISAKMP: SA life duration
(VPI) of 0x0 0x46 0x50 0x0 *Jan 20 16:48:27.707: ISAKMP: authenticator is HMAC-SHA *Jan 20
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16:48:27.711: CryptoEngine0: validate proposal *Jan 20 16:48:27.711: ISAKMP:(1030):atts are
acceptable. *Jan 20 16:48:27.711: IPSEC(validate_proposal_request): proposal part #1 *Jan 20
16:48:27.711: IPSEC(validate_proposal_request): proposal part #1, (key eng. msg.) INBOUND local=
10.10.10.2, remote= 10.10.10.1, local_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4), remote_proxy=
10.10.10.1/255.255.255.255/0/0 (type=1), protocol= ESP, transform= esp-3des esp-sha-hmac
(Tunnel), lifedur= 0s and 0kb, spi= 0x0(0), conn_id= 0, keysize= 0, flags= 0x0 *Jan 20
16:48:27.711: IPSEC(crypto_ipsec_process_proposal): transform proposal not supported for
identity: {esp-3des esp-sha-hmac } *Jan 20 16:48:27.711: ISAKMP:(1030): IPSec policy invalidated
proposal *Jan 20 16:48:27.711: ISAKMP:(1030):Checking IPSec proposal 8 *Jan 20 16:48:27.711:
ISAKMP: transform 1, ESP_3DES *Jan 20 16:48:27.711: ISAKMP: attributes in transform: *Jan 20
16:48:27.711: ISAKMP: encaps is 1 (Tunnel) *Jan 20 16:48:27.711: ISAKMP: SA life type in seconds
*Jan 20 16:48:27.711: ISAKMP: SA life duration (basic) of 28800 *Jan 20 16:48:27.711: ISAKMP: SA
life type in kilobytes *Jan 20 16:48:27.711: ISAKMP: SA life duration (VPI) of 0x0 0x46 0x50 0x0
*Jan 20 16:48:27.711: ISAKMP: authenticator is HMAC-MD5 *Jan 20 16:48:27.711: CryptoEngine0:
validate proposal *Jan 20 16:48:27.711: ISAKMP:(1030):atts are acceptable. *Jan 20 16:48:27.711:
IPSEC(validate_proposal_request): proposal part #1 *Jan 20 16:48:27.711:
IPSEC(validate_proposal_request): proposal part #1, (key eng. msg.) INBOUND local= 10.10.10.2,
remote= 10.10.10.1, local_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4), remote_proxy=
10.10.10.1/255.255.255.255/0/0 (type=1), protocol= ESP, transform= esp-3des esp-md5-hmac
(Tunnel), lifedur= 0s and 0kb, spi= 0x0(0), conn_id= 0, keysize= 0, flags= 0x0 *Jan 20
16:48:27.715: IPSEC(crypto_ipsec_process_proposal): transform proposal not supported for
identity: {esp-3des esp-md5-hmac } *Jan 20 16:48:27.715: ISAKMP:(1030): IPSec policy invalidated
proposal *Jan 20 16:48:27.715: ISAKMP:(1030):Checking IPSec proposal 9 *Jan 20 16:48:27.715:
ISAKMP: transform 1, ESP_DES *Jan 20 16:48:27.715: ISAKMP: attributes in transform: *Jan 20
16:48:27.715: ISAKMP: encaps is 1 (Tunnel) *Jan 20 16:48:27.715: ISAKMP: SA life type in seconds
*Jan 20 16:48:27.715: ISAKMP: SA life duration (basic) of 28800 *Jan 20 16:48:27.715: ISAKMP: SA
life type in kilobytes *Jan 20 16:48:27.715: ISAKMP: SA life duration (VPI) of 0x0 0x46 0x50 0x0
*Jan 20 16:48:27.715: ISAKMP: authenticator is HMAC-MD5 *Jan 20 16:48:27.715: CryptoEngine0:
validate proposal *Jan 20 16:48:27.715: ISAKMP:(1030):atts are acceptable. *Jan 20 16:48:27.715:
IPSEC(validate_proposal_request): proposal part #1 *Jan 20 16:48:27.715:
IPSEC(validate_proposal_request): proposal part #1, (key eng. msg.) INBOUND local= 10.10.10.2,
remote= 10.10.10.1, local_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4), remote_proxy=
10.10.10.1/255.255.255.255/0/0 (type=1), protocol= ESP, transform= esp-des esp-md5-hmac
(Tunnel), lifedur= 0s and 0kb, spi= 0x0(0), conn_id= 0, keysize= 0, flags= 0x0 *Jan 20
16:48:27.715: ISAKMP:(1030): processing NONCE payload. message ID = 1887305923 *Jan 20
16:48:27.715: ISAKMP:(1030): processing ID payload. message ID = 1887305923 *Jan 20
16:48:27.715: ISAKMP:(1030): processing ID payload. message ID = 1887305923 *Jan 20
16:48:27.715: ISAKMP:(1030): asking for 1 spis from ipsec *Jan 20 16:48:27.715:
ISAKMP:(1030):Node 1887305923, Input = IKE_MESG_FROM_PEER, IKE_QM_EXCH *Jan 20 16:48:27.715:
ISAKMP:(1030):Old State = IKE_QM_READY New State = IKE_QM_SPI_STARVE *Jan 20 16:48:27.719:
IPSEC(key_engine): got a queue event with 1 KMI message(s) *Jan 20 16:48:27.719:
IPSEC(spi_response): getting spi 185206738 for SA from 10.10.10.2 to 10.10.10.1 for prot 3 *Jan
20 16:48:27.719: crypto_engine: Generate IKE hash *Jan 20 16:48:27.719: crypto_engine: Generate
IKE QM keys *Jan 20 16:48:27.719: crypto_engine: Create IPSec SA (by keys) *Jan 20 16:48:27.719:
crypto_engine: Generate IKE QM keys *Jan 20 16:48:27.719: crypto_engine: Create IPSec SA (by
keys) *Jan 20 16:48:27.719: ISAKMP:(1030): Creating IPSec SAs *Jan 20 16:48:27.719: inbound SA
from 10.10.10.1 to 10.10.10.2 (f/i) 0/ 0 (proxy 10.10.10.1 to 0.0.0.0) *Jan 20 16:48:27.719: has
spi 0xB0A07D2 and conn_id 0 *Jan 20 16:48:27.719: lifetime of 28800 seconds *Jan 20
16:48:27.719: lifetime of 4608000 kilobytes *Jan 20 16:48:27.719: outbound SA from 10.10.10.2 to
10.10.10.1 (f/i) 0/0 (proxy 0.0.0.0 to 10.10.10.1) *Jan 20 16:48:27.719: has spi 0xB22446D and
conn_id 0 *Jan 20 16:48:27.719: lifetime of 28800 seconds *Jan 20 16:48:27.719: lifetime of
4608000 kilobytes *Jan 20 16:48:27.719: crypto_engine: Encrypt IKE packet *Jan 20 16:48:27.719:
ISAKMP:(1030): sending packet to 10.10.10.1 my_port 500 peer_port 500 (R) QM_IDLE *Jan 20
16:48:27.719: ISAKMP:(1030):Node 1887305923, Input = IKE_MESG_FROM_IPSEC, IKE_SPI_REPLY *Jan 20
16:48:27.719: ISAKMP:(1030):Old State = IKE_QM_SPI_STARVE New State = IKE_QM_R_QM2 *Jan 20
16:48:27.719: IPSEC(key_engine): got a queue event with 1 KMI message(s) *Jan 20 16:48:27.723:
IPSec: Flow_switching Allocated flow for sibling 80000014 *Jan 20 16:48:27.723:
IPSEC(policy_db_add_ident): src 0.0.0.0, dest 10.10.10.1, dest_port 0 *Jan 20 16:48:27.723:
IPSEC(create_sa): sa created, (sa) sa_dest= 10.10.10.2, sa_proto= 50, sa_spi=
0xB0A07D2(185206738), sa_trans= esp-des esp-md5-hmac , sa_conn_id= 37 *Jan 20 16:48:27.723:
IPSEC(create_sa): sa created, (sa) sa_dest= 10.10.10.1, sa_proto= 50, sa_spi=
0xB22446D(186795117), sa_trans= esp-des esp-md5-hmac , sa_conn_id= 38 !--- The two IPSec SAs
shown above are for management purposes. *Jan 20 16:48:27.771: ISAKMP (0:1030): received packet
from 10.10.10.1 dport 500 sport 500 Global (R) QM_IDLE *Jan 20 16:48:27.771: crypto_engine:
```

```
Decrypt IKE packet *Jan 20 16:48:27.771: crypto_engine: Generate IKE hash *Jan 20 16:48:27.771:
ISAKMP:(1030):deleting node 1887305923 error FALSE reason "QM done (await)" *Jan 20
16:48:27.771: ISAKMP:(1030):Node 1887305923, Input = IKE_MESG_FROM_PEER, IKE_QM_EXCH *Jan 20
16:48:27.771: ISAKMP:(1030):Old State = IKE_QM_R_QM2 New State = IKE_QM_PHASE2_COMPLETE *Jan 20
16:48:27.771: IPSEC(key_engine): got a queue event with 1 KMI message(s) *Jan 20 16:48:27.771:
IPSEC(key_engine_enable_outbound): rec'd enable notify from ISAKMP *Jan 20 16:48:27.771:
IPSEC(key_engine_enable_outbound): enable SA with spi 186795117/50 *Jan 20 16:48:27.771:
IPSEC(update_current_outbound_sa): updated peer 10.10.10.1 current outbound sa to SPI B22446D
*Jan 20 16:48:27.771: ISAKMP (0:1030): received packet from 10.10.10.1 dport 500 sport 500
Global (R) QM_IDLE *Jan 20 16:48:27.771: ISAKMP: set new node -1259355083 to QM_IDLE *Jan 20
16:48:27.771: crypto_engine: Decrypt IKE packet *Jan 20 16:48:27.775: crypto_engine: Generate
IKE hash *Jan 20 16:48:27.775: ISAKMP:(1030): processing HASH payload. message ID = -1259355083
*Jan 20 16:48:27.775: ISAKMP:(1030): processing SA payload. message ID = -1259355083 *Jan 20
16:48:27.775: ISAKMP:(1030):Checking IPSec proposal 1 *Jan 20 16:48:27.775: ISAKMP: transform 1,
ESP_AES *Jan 20 16:48:27.775: ISAKMP: attributes in transform: *Jan 20 16:48:27.775: ISAKMP:
encaps is 1 (Tunnel) *Jan 20 16:48:27.775: ISAKMP: SA life type in seconds *Jan 20 16:48:27.775:
ISAKMP: SA life duration (basic) of 28800 *Jan 20 16:48:27.775: ISAKMP: SA life type in
kilobytes *Jan 20 16:48:27.775: ISAKMP: SA life duration (VPI) of 0x0 0x46 0x50 0x0 *Jan 20
16:48:27.775: ISAKMP: authenticator is HMAC-SHA *Jan 20 16:48:27.775: ISAKMP: key length is 256
*Jan 20 16:48:27.775: CryptoEngine0: validate proposal *Jan 20 16:48:27.775: ISAKMP:(1030):atts
are acceptable. *Jan 20 16:48:27.775: IPSEC(validate_proposal_request): proposal part #1 *Jan 20
16:48:27.775: IPSEC(validate_proposal_request): proposal part #1, (key eng. msg.) INBOUND local=
10.10.10.2, remote= 10.10.10.1, local_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4), remote_proxy=
172.16.1.0/255.255.255.0/0/0 (type=4), protocol= ESP, transform= esp-aes 256 esp-sha-hmac
(Tunnel), lifedur= 0s and 0kb, spi= 0x0(0), conn_id= 0, keysize= 256, flags= 0x0 *Jan 20
16:48:27.775: IPSEC(crypto_ipsec_process_proposal): transform proposal not supported for
identity: {esp-aes 256 esp-sha-hmac } *Jan 20 16:48:27.775: ISAKMP:(1030): IPSec policy
invalidated proposal *Jan 20 16:48:27.775: ISAKMP:(1030):Checking IPSec proposal 2 *Jan 20
16:48:27.775: ISAKMP: transform 1, ESP_AES *Jan 20 16:48:27.775: ISAKMP: attributes in
transform: *Jan 20 16:48:27.775: ISAKMP: encaps is 1 (Tunnel) *Jan 20 16:48:27.775: ISAKMP: SA
life type in seconds *Jan 20 16:48:27.775: ISAKMP: SA life duration (basic) of 28800 *Jan 20
16:48:27.775: ISAKMP: SA life type in kilobytes *Jan 20 16:48:27.775: ISAKMP: SA life duration
(VPI) of 0x0 0x46 0x50 0x0 *Jan 20 16:48:27.775: ISAKMP: authenticator is HMAC-MD5 *Jan 20
16:48:27.775: ISAKMP: key length is 256 *Jan 20 16:48:27.775: CryptoEngine0: validate proposal
*Jan 20 16:48:27.775: ISAKMP:(1030):atts are acceptable. *Jan 20 16:48:27.775:
IPSEC(validate_proposal_request): proposal part #1 *Jan 20 16:48:27.799: IPSEC(create_sa): sa
created, (sa) sa_dest= 10.10.10.2, sa_proto= 50, sa_spi= 0x990A0C2C(2567572524), sa_trans= esp-
des esp-md5-hmac , sa_conn_id= 39 *Jan 20 16:48:27.799: IPSEC(create_sa): sa created, (sa)
sa_dest= 10.10.10.1, sa_proto= 50, sa_spi= 0x9FBC4C0D(2679917581), sa_trans= esp-des esp-md5-
hmac , sa_conn_id= 40 !--- The two IPSec SAs shown above are for actual data traffic.
```

相关信息

- IPsec 协商/IKE 协议
- PIX 500 系列安全设备
- PIX 命令参考
- 请求注解 (RFC)
- 技术支持和文档 - Cisco Systems