

# LAN-to-LAN and EzVPN Client on PIX with VPN Client Access to a Hub Router using ISAKMP Profiles Configuration Example

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## Introduction

This document provides a sample configuration for the configuration of IPsec tunnels using ISAKMP profiles on a hub router with two PIX remote sites. One PIX remote site consists of LAN-to-LAN and the other consists of EzVPN Remote Access mode configuration. The hub router is configured for local authentication for the EzVPN tunnels, and RADIUS authentication for the software VPN Client.

## Prerequisites

### Requirements

There are no specific requirements for this document.

### Components Used

The information in this document is based on these software and hardware versions:

- Cisco Secure PIX Firewall Appliance 501 that runs 6.3(3)
- Cisco Router 1750 that runs Cisco IOS® Software Release 12.3.9a
- Cisco Secure PIX Firewall Appliance 506 that runs 6.3(3)
- Cisco VPN Client that runs 4.0 (Rel) (User authentication using RADIUS server)

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

## Conventions

Refer to the Cisco Technical Tips Conventions for more information on document conventions.

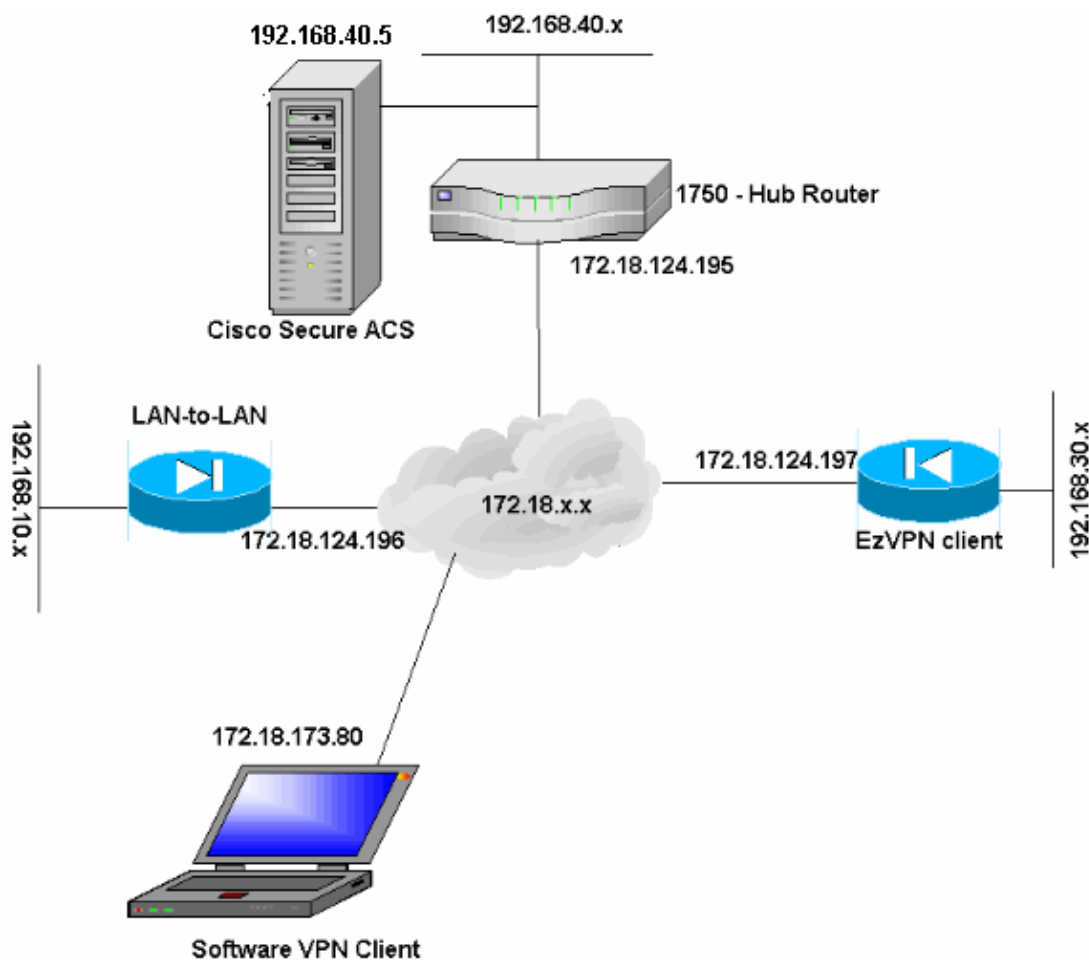
## Configure

In this section, you are presented with the information to configure the features described in this document.

**Note:** Use the Command Lookup Tool (registered customers only) to find additional information on the commands used in this document.

## Network Diagram

This document uses this network setup:



## Configurations

This document uses these configurations:

- VPN 1750 Hub Router
- PIX-501 – LAN-to-LAN
- PIX-506-B – EzVPN Client
- VPN Client

### VPN 1750 Hub Router

```

version 12.3
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname VPN1750

!--- Local authentication username and password, for EzVPN Client.

username jerry password 0 wells123
username cisco password 0 letmein

!--- Enable AAA.

aaa new-model
!
!

!--- Default local login.

aaa authentication login default local

!--- RADIUS authentication for VPN Client.

aaa authentication login userauth group radius local

!--- Local authentication for EzVPN Client.

aaa authentication login EZVPN local
aaa authorization exec default local

!--- Local group authorization for VPN Client.

aaa authorization network groupauthor local

!--- Local authorization for EzVPN Client.

aaa authorization network EZVPN local
aaa session-id common
ip subnet-zero
!
!
ip domain name cisco.com
!
ip cef
ip audit po max-events 100

!--- Keyring specification for Phase 1 authentication.

crypto keyring vpn
pre-shared-key address 172.18.124.196 key cisco123

```

```
!  
  
!--- Specify ISAKMP policy.  
  
crypto isakmp policy 20  
encr 3des  
hash md5  
authentication pre-share  
group 2  
!  
  
!--- EzVPN Client configuration that specifies the group, key and IP pool to use.  
  
crypto isakmp client configuration group polo  
key mark123  
pool ezpool  
!  
  
!--- VPN Client configuration that specifies the group, key and IP pool to use.  
  
crypto isakmp client configuration group tennis  
key matchpoint  
domain cisco.com  
pool vpnpool  
  
!--- ISAKMP profile specification for LAN-to-LAN.  
  
crypto isakmp profile l2lvpn  
keyring vpn  
match identity address 172.18.124.196 255.255.255.255  
  
!--- ISAKMP profile specification for EzVPN Client.  
  
crypto isakmp profile ezvpnprofile  
match identity group polo  
client authentication list EZVPN  
isakmp authorization list EZVPN  
client configuration address respond  
  
!--- ISAKMP profile specification for software VPN Client.  
  
crypto isakmp profile softclient  
match identity group tennis  
client authentication list userauth  
isakmp authorization list groupauthor  
client configuration address respond  
!  
!  
  
!--- Set transform-set.  
  
crypto ipsec transform-set pix501 esp-3des esp-sha-hmac  
crypto ipsec transform-set vpnclient esp-3des esp-sha-hmac  
crypto ipsec transform-set ezvpn esp-3des esp-md5-hmac  
!  
  
!--- Specify crypto map set and ISAKMP profile for VPN Client.
```

```
crypto dynamic-map rtpmap 10
set transform-set vpnclient
set isakmp-profile softclient

!--- Specify crypto map set and ISAKMP profile for EzVPN Client.

crypto dynamic-map rtpmap 20
set transform-set ezvpn
set isakmp-profile ezvpnprofile
!
!
crypto map rtp 5 ipsec-isakmp dynamic rtpmap

!--- Specify crypto map set and ISAKMP profile for LAN-to-LAN.

crypto map rtp 10 ipsec-isakmp
set peer 172.18.124.196
set transform-set pix501
set isakmp-profile l2lvpn
match address 101
!
!
!
interface Ethernet0
ip address 192.168.40.1 255.255.255.0
!
interface FastEthernet0
ip address 172.18.124.195 255.255.255.0
speed auto

!--- Apply crypto map on the outside interface.

crypto map rtp
!

!--- VPN Client pool addresses.

ip local pool vpnpool 10.50.50.1 10.50.50.10

!--- EzVPN Client pool addresses.

ip local pool ezpool 172.25.70.1 172.25.70.10
ip classless
ip route 0.0.0.0 0.0.0.0 172.18.124.1
!

!--- Encryption access-list applied to the crypto map.

access-list 101 permit ip 192.168.40.0 0.0.0.255 192.168.10.0 0.0.0.255
!

!--- Define ACS server for VPN Client user authentication.

radius-server host 192.168.40.5 auth-port 1645 acct-port 1646 key cisco123
!
line con 0
exec-timeout 0 0
line aux 0
line vty 0 4
```

```
!  
end
```

## PIX-501 – LAN-to-LAN

```
PIX Version 6.3(3)  
interface ethernet0 auto  
interface ethernet1 100full  
nameif ethernet0 outside security0  
nameif ethernet1 inside security100  
enable password 8Ry2YjIyt7RRXU24 encrypted  
passwd 2KFQnbNIdI.2KYOU encrypted  
hostname PIX-501  
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  
  
!--- Encryption access-list for interesting traffic to be encrypted.  
  
access-list 101 permit ip 192.168.10.0 255.255.255.0 192.168.40.0 255.255.255.0  
  
!--- NAT 0 access-list for encryption traffic to bypass NAT process.  
  
access-list nonat permit ip 192.168.10.0 255.255.255.0 192.168.40.0 255.255.255.0  
pager lines 24  
mtu outside 1500  
mtu inside 1500  
ip address outside 172.18.124.196 255.255.255.0  
ip address inside 192.168.10.1 255.255.255.0  
ip audit info action alarm  
ip audit attack action alarm  
pdm history enable  
arp timeout 14400  
global (outside) 1 interface  
  
!--- Bypass NAT for IPsec traffic.  
  
nat (inside) 0 access-list nonat  
nat (inside) 1 192.168.10.0 255.255.255.0 0 0  
route outside 0.0.0.0 0.0.0.0 172.18.124.1 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 uauth 0:05:00 absolute  
aaa-server TACACS+ protocol tacacs+  
aaa-server RADIUS protocol radius  
aaa-server LOCAL protocol local  
floodguard enable
```

*!--- This command avoids applied ACLs or conduits on encrypted packets.*

```
sysopt connection permit-ipsec
```

*!--- Configuration of IPsec Phase 2.*

```
crypto ipsec transform-set fox esp-3des esp-sha-hmac
crypto map fox 10 ipsec-isakmp
crypto map fox 10 match address 101
crypto map fox 10 set peer 172.18.124.195
crypto map fox 10 set transform-set fox
crypto map fox interface outside
```

*!--- Configuration of IPsec Phase 1.*

```
isakmp enable outside
```

*!--- IKE pre-shared key used by peers to authenticate.*

```
isakmp key ***** address 172.18.124.195 netmask 255.255.255.255
isakmp identity address
isakmp policy 10 authentication pre-share
isakmp policy 10 encryption 3des
isakmp policy 10 hash md5
isakmp policy 10 group 2
isakmp policy 10 lifetime 86400
telnet timeout 5
ssh timeout 5
console timeout 0
terminal width 80
Cryptochecksum:9e09996cdf390036841e71da006balf1
: end
```

### PIX-506-B – EzVPN Client

```
PIX Version 6.3(3)
interface ethernet0 auto
interface ethernet1 auto
nameif ethernet0 outside security0
nameif ethernet1 inside security100
enable password 8Ry2YjIyt7RRXU24 encrypted
passwd 2KFQnbNIdI.2KYOU encrypted
hostname PIX-506-B
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 172.18.124.197 255.255.255.0
ip address inside 192.168.30.1 255.255.255.0
ip audit info action alarm
ip audit attack action alarm
pdm history enable
arp timeout 14400
global (outside) 1 interface
nat (inside) 1 192.168.30.0 255.255.255.0 0 0
route outside 0.0.0.0 0.0.0.0 172.18.124.1 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 uauth 0:05:00 absolute
aaa-server TACACS+ protocol tacacs+
aaa-server RADIUS protocol radius
aaa-server LOCAL protocol local
floodguard enable
sysopt connection permit-ipsec
crypto ipsec transform-set tiger esp-3des esp-md5-hmac
telnet timeout 5
ssh timeout 5
console timeout 0

!--- Define the EzVPN server IP address.

vpnclient server 172.18.124.195

!--- Specify the mode to be used (client-mode or Network Extension Mode).

vpnclient mode client-mode

!--- Define EzVPN connection parameters.

vpnclient vpngroup polo password *****
vpnclient username jerry password *****

!--- Enable VPN Client on the PIX.

vpnclient enable
terminal width 80
Cryptochecksum:1bb41de13c5e15537a50cb1f39f131b9
: end

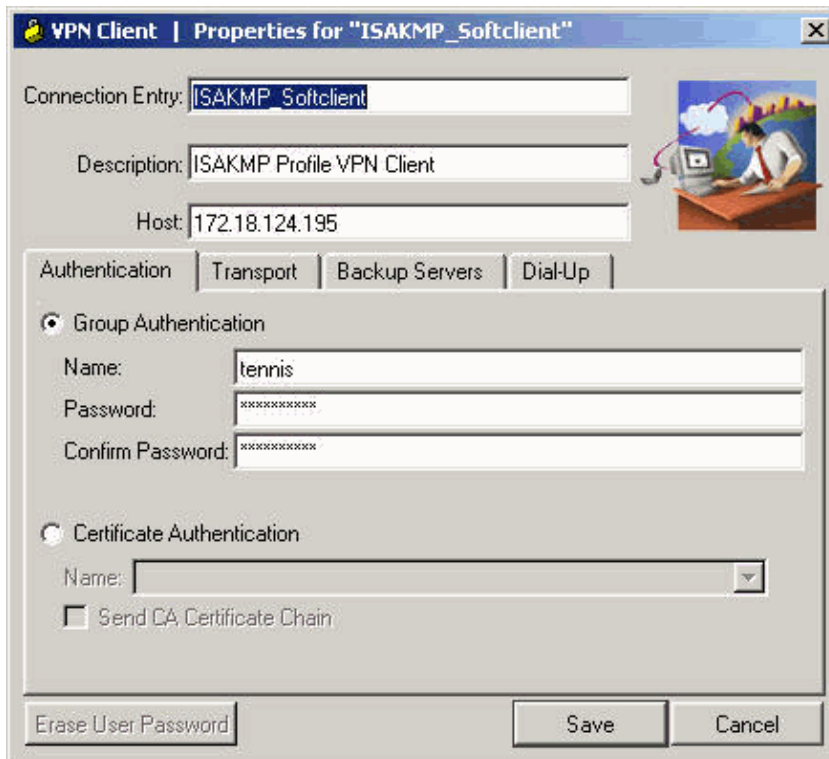
```

## VPN Client Configuration

Complete these steps to configure the VPN Client.

1. Launch the VPN Client and create a new connection with the required connection entry parameters.





2. Once the connection entry is created, click **Connect** and authenticate with the user parameters configured on the RADIUS server.



## Verify

This section provides information you can use to confirm your configuration is working properly. Refer to IP Security Troubleshooting – Understanding and Using debug Commands for additional verification/troubleshooting. If you should encounter any VPN Client issues or errors, refer to the VPN Client GUI Error Lookup Tool.

Certain **show** commands are supported by the Output Interpreter Tool (registered customers only) , which allows you to view an analysis of **show** command output.

- **show crypto isakmp profile** Displays all ISAKMP profiles and their configurations on the router.
- **show crypto isakmp key** Displays all the keyrings and their preshared keys. Use this command to verify your crypto keyring configuration on the router.
- **debug crypto ipsec** Displays information on IPsec SA negotiations on the router.
- **debug crypto isakmp** Displays the ISAKMP SA that is built and the IPsec attributes that are negotiated. During ISAKMP SA negotiation, the PIX might discard several proposals as "not acceptable" before one is accepted. Once the ISAKMP SA is agreed upon, the IPsec attributes are negotiated.

## LAN-to-LAN debugs on the VPN 1750 Hub Router Using debug crypto isakmp and debug crypto ipsec

```
May 11 20:44:51.370: ISAKMP (0:0): received packet
                        from 172.18.124.196 dport 500 sport 500 Global
                        (N) NEW SA
May 11 20:44:51.370: ISAKMP: local port 500, remote port 500
May 11 20:44:51.370: ISAKMP: insert sa successfully sa = 81789610
May 11 20:44:51.374: ISAKMP (0:1): Input = IKE_MESG_FROM_PEER, IKE_MM_EXCH
May 11 20:44:51.374: ISAKMP (0:1): Old State = IKE_READY New State = IKE_R_MM1

May 11 20:44:51.374: ISAKMP (0:1): processing SA payload. message ID = 0
May 11 20:44:51.374: ISAKMP: Looking for a matching key for 172.18.124.196
                        in default
May 11 20:44:51.374: ISAKMP: Looking for a matching key for 172.18.124.196
                        in vpn : success
May 11 20:44:51.374: ISAKMP (0:1): found peer pre-shared key matching
                        172.18.124.196
May 11 20:44:51.378: ISAKMP (0:1) local preshared key found
May 11 20:44:51.378: ISAKMP : Scanning profiles for xauth ... l2lvpn ezvpnprofile
May 11 20:44:51.378: ISAKMP (0:1) Authentication by xauth preshared
May 11 20:44:51.378: ISAKMP (0:1): Checking ISAKMP transform 1 against
                        priority 20 policy
May 11 20:44:51.378: ISAKMP: encryption 3DES-CBC
May 11 20:44:51.378: ISAKMP: hash MD5
May 11 20:44:51.378: ISAKMP: default group 2
May 11 20:44:51.378: ISAKMP: auth pre-share
May 11 20:44:51.378: ISAKMP: life type in seconds
May 11 20:44:51.378: ISAKMP: life duration (VPI) of 0x0 0x1 0x51 0x80
May 11 20:44:51.382: ISAKMP (0:1): atts are acceptable. Next payload is 0

!--- Phase 1 proposal accepted.

May 11 20:44:51.598: ISAKMP (0:1): Input = IKE_MESG_INTERNAL,
                        IKE_PROCESS_MAIN_MODE
May 11 20:44:51.598: ISAKMP (0:1): Old State = IKE_R_MM1 New State = IKE_R_MM1

May 11 20:44:51.602: ISAKMP (0:1): sending packet to 172.18.124.196
                        my_port 500 peer_port 500 (R) MM_SA_SETUP
May 11 20:44:51.602: ISAKMP (0:1): Input = IKE_MESG_INTERNAL, IKE_PROCESS_COMPLETE
May 11 20:44:51.602: ISAKMP (0:1): Old State = IKE_R_MM1 New State = IKE_R_MM2

May 11 20:44:52.130: ISAKMP (0:1): received packet from 172.18.124.196
                        dport 500 sport 500 Global (R) MM_SA_SETUP
May 11 20:44:52.130: ISAKMP (0:1): Input = IKE_MESG_FROM_PEER, IKE_MM_EXCH
May 11 20:44:52.130: ISAKMP (0:1): Old State = IKE_R_MM2 New State = IKE_R_MM3

.....

May 11 20:44:52.954: ISAKMP (0:1): processing ID payload. message ID = 0
May 11 20:44:52.954: ISAKMP (0:1): ID payload
next-payload : 8
type : 1
address : 172.18.124.196
protocol : 17
port : 500
length : 12
May 11 20:44:52.958: ISAKMP (0:1): peer matches l2lvpn profile

!--- ISAKMP profile is matched in the router for LAN-to-LAN configuration.

May 11 20:44:52.958: ISAKMP: Looking for a matching key for 172.18.124.196
                        in default
May 11 20:44:52.958: ISAKMP: Looking for a matching key for 172.18.124.196
                        in vpn : success
```

May 11 20:44:52.958: ISAKMP (0:1): **Found ADDRESS key in keyring vpn**  
May 11 20:44:52.958: ISAKMP (0:1): processing HASH payload. message ID = 0  
May 11 20:44:52.958: ISAKMP (0:1): **SA authentication status: authenticated**

*!--- Security Associations are authenticated between the peers.*

May 11 20:44:52.994: ISAKMP (0:1): Old State = IKE\_P1\_COMPLETE  
New State = **IKE\_P1\_COMPLETE**

*!--- Phase 1 negotiations completed.*

....

May 11 20:44:53.002: ISAKMP (0:1): Checking IPsec proposal 1  
May 11 20:44:53.002: ISAKMP: transform 1, ESP\_3DES  
May 11 20:44:53.002: ISAKMP: attributes in transform:  
May 11 20:44:53.002: ISAKMP: encaps is 1 (Tunnel)  
May 11 20:44:53.002: ISAKMP: SA life type in seconds  
May 11 20:44:53.002: ISAKMP: SA life duration (basic) of 28800  
May 11 20:44:53.002: ISAKMP: SA life type in kilobytes  
May 11 20:44:53.002: ISAKMP: SA life duration (VPI) of 0x0 0x46 0x50 0x0  
May 11 20:44:53.002: ISAKMP: authenticator is HMAC-SHA  
May 11 20:44:53.006: ISAKMP (0:1): **atts are acceptable.**

*!--- Phase 2 proposal accepted.*

May 11 20:44:53.006: IPSEC(validate\_proposal\_request): proposal part #1,  
(key eng. msg.) **INBOUND local= 172.18.124.195, remote= 172.18.124.196,**  
**local\_proxy= 192.168.40.0/255.255.255.0/0/0 (type=4),**  
**remote\_proxy= 192.168.10.0/255.255.255.0/0/0 (type=4),**

*!--- Encryption access-list verification process.*

protocol= ESP, transform= esp-3des esp-sha-hmac (Tunnel),  
lifedur= 0s and 0kb,  
spi= 0x0(0), conn\_id= 0, keysize= 0, flags= 0x2  
...

May 11 20:44:53.282: IPSEC(create\_sa): sa created,  
(sa) sa\_dest= 172.18.124.195, sa\_prot= 50,  
sa\_spi= 0xFBFA852C(4227499308),  
sa\_trans= esp-3des esp-sha-hmac , sa\_conn\_id= 2000  
May 11 20:44:53.282: IPSEC(create\_sa): sa created,  
(sa) sa\_dest= 172.18.124.196, sa\_prot= 50,  
sa\_spi= 0x79EFEFCE(2045767630),  
sa\_trans= esp-3des esp-sha-hmac , sa\_conn\_id= 2001

*!--- SAs are created with connection IDs.*

May 11 20:44:53.290: ISAKMP (0:1): received packet from 172.18.124.196  
dport 500 sport 500 Global (R) **QM\_IDLE**

*!--- Tunnel has been established.*

May 11 20:44:53.294: ISAKMP (0:1): deleting node 156512779  
error FALSE reason "quick mode done (await)"  
May 11 20:44:53.294: ISAKMP (0:1): Node 156512779, Input =  
IKE\_MSG\_FROM\_PEER, IKE\_QM\_EXCH  
May 11 20:44:53.294: ISAKMP (0:1): Old State = IKE\_QM\_R\_QM2  
New State = **IKE\_QM\_PHASE2\_COMPLETE**

*!--- Phase 2 negotiations complete.*

## EzVPN Client Connection debugs using debug crypto isakmp and debug crypto ipsec

```
May 11 20:55:47.266: ISAKMP (0:0): received packet from 172.18.124.197
                                dport 500 sport 500 Global (N) NEW SA
May 11 20:55:47.266: ISAKMP: local port 500, remote port 500
May 11 20:55:47.270: ISAKMP: insert sa successfully sa = 81797590
May 11 20:55:47.270: ISAKMP (0:2): processing SA payload. message ID = 0
May 11 20:55:47.270: ISAKMP (0:2): processing ID payload. message ID = 0
May 11 20:55:47.274: ISAKMP (0:2): ID payload
next-payload : 13
type : 11
group id : polo
protocol : 17
port : 0
length : 12
May 11 20:55:47.274: ISAKMP (0:2): peer matches ezvpnprofile profile

!--- Profile match for EzVPN Client connection.

May 11 20:55:47.274: ISAKMP: Looking for a matching key for 172.18.124.197 in default
May 11 20:55:47.274: ISAKMP: Looking for a matching key for 172.18.124.197 in vpn
May 11 20:55:47.274: ISAKMP: Created a peer struct for 172.18.124.197, peer port 500
May 11 20:55:47.274: ISAKMP: Locking peer struct 0x81791484, IKE
                                refcount 1 for crypto_ikmp_config_initialize_sa
...

May 11 20:55:47.282: ISAKMP (0:2): Checking ISAKMP transform 1 against
                                priority 20 policy

!--- ISAKMP policies are checked.

May 11 20:55:47.282: ISAKMP: encryption AES-CBC
May 11 20:55:47.282: ISAKMP: keylength of 256
May 11 20:55:47.282: ISAKMP: hash SHA
May 11 20:55:47.282: ISAKMP: default group 2
May 11 20:55:47.282: ISAKMP: auth XAUTHInitPreShared
May 11 20:55:47.282: ISAKMP: life type in seconds
May 11 20:55:47.282: ISAKMP: life duration (VPI) of 0x0 0x1 0x51 0x80
May 11 20:55:47.282: ISAKMP (0:2): Encryption algorithm offered does
                                not match policy!
May 11 20:55:47.286: ISAKMP (0:2): atts are not acceptable. Next payload is 3
...

May 11 20:55:47.306: ISAKMP (0:2): Checking ISAKMP transform 8 against
                                priority 20 policy
May 11 20:55:47.306: ISAKMP: encryption 3DES-CBC
May 11 20:55:47.306: ISAKMP: hash MD5
May 11 20:55:47.306: ISAKMP: default group 2
May 11 20:55:47.306: ISAKMP: auth XAUTHInitPreShared
May 11 20:55:47.306: ISAKMP: life type in seconds
May 11 20:55:47.310: ISAKMP: life duration (VPI) of 0x0 0x1 0x51 0x80
May 11 20:55:47.310: ISAKMP (0:2): atts are acceptable. Next payload is 3

!--- Phase 1 attributes are validated.

May 11 20:55:47.530: ISAKMP (0:2): processing KE payload. message ID = 0
May 11 20:55:47.798: ISAKMP (0:2): processing NONCE payload. message ID = 0
May 11 20:55:47.802: ISAKMP (0:2): vendor ID is NAT-T v3
May 11 20:55:47.802: ISAKMP (0:2): vendor ID is NAT-T v2
May 11 20:55:47.802: ISAKMP (0:2): Input = IKE_MSG_FROM_PEER, IKE_AM_EXCH
May 11 20:55:47.802: ISAKMP (0:2): Old State = IKE_READY New State =
                                IKE_R_AM_AAA_AWAIT
```

```

May 11 20:55:47.806: ISAKMP: got callback 1
May 11 20:55:47.810: ISAKMP (0:2): SKEYID state generated
May 11 20:55:47.810: ISAKMP (0:2): constructed NAT-T vendor-03 ID
May 11 20:55:47.810: ISAKMP (0:2): SA is doing pre-shared key authentication
                        plus XAUTH using id type ID_IPV4_ADDR
May 11 20:55:47.814: ISAKMP (0:2): ID payload
next-payload : 10
type : 1
address : 172.18.124.195
protocol : 17
port : 0
length : 12
May 11 20:55:47.814: ISAKMP (2): Total payload length: 12
May 11 20:55:47.814: ISAKMP (0:2): sending packet to 172.18.124.197
                        my_port 500 peer_port 500 (R) AG_INIT_EXCH
May 11 20:55:47.814: ISAKMP (0:2): Input = IKE_MESG_FROM_AAA, PRESHARED_KEY_REPLY
May 11 20:55:47.818: ISAKMP (0:2): Old State = IKE_R_AM_AAA_AWAIT
                        New State = IKE_R_AM2

May 11 20:55:49.114: ISAKMP (0:2): received packet from 172.18.124.197
                        dport 500 sport 500 Global (R) AG_INIT_EXCH
May 11 20:55:49.114: ISAKMP:received payload type 20
May 11 20:55:49.118: ISAKMP:received payload type 20
May 11 20:55:49.118: ISAKMP (0:2): processing HASH payload. message ID = 0
May 11 20:55:49.118: ISAKMP (0:2): processing NOTIFY INITIAL_CONTACT protocol 1
spi 0, message ID = 0, sa = 81797590
May 11 20:55:49.118: ISAKMP (0:2): SA authentication status: authenticated

!--- Phase 1 has been authenticated.

May 11 20:55:49.118: ISAKMP (0:2): Process initial contact,
bring down existing phase 1 and 2 SA's with local authentication status: authenticated
May 11 20:55:49.122: ISAKMP (0:2): SA has been authenticated with 172.18.124.197
May 11 20:55:49.122: ISAKMP: Trying to insert a peer
                        172.18.124.195/172.18.124.197/500/, and inserted successfully.
May 11 20:55:49.126: ISAKMP: set new node 1554218001 to CONF_XAUTH

!--- User authentication phase starts.

May 11 20:55:49.126: ISAKMP (0:2): sending packet to 172.18.124.197 my_port
                        500 peer_port 500 (R) QM_IDLE
May 11 20:55:49.126: ISAKMP (0:2): purging node 155421800118.124.195 remote
                        172.18.124.197 remote port 500
May 11 20:55:49.130: ISAKMP (0:2): Input = IKE_MESG_FROM_PEER, IKE_AM_EXCH
May 11 20:55:49.130: ISAKMP (0:2): Old State = IKE_R_AM2 New State =
                        IKE_P1_COMPLETE

May 11 20:55:49.130: ISAKMP (0:2): Need XAUTH
May 11 20:55:49.130: ISAKMP (0:2): FSM action returned error: 4
May 11 20:55:49.134: ISAKMP (0:2): Input = IKE_MESG_INTERNAL, IKE_PHASE1_COMPLETE
May 11 20:55:49.134: ISAKMP (0:2): Old State = IKE_P1_COMPLETE
                        New State = IKE_XAUTH_AAA_START_LOGIN_AWAIT

May 11 20:55:49.134: ISAKMP: got callback 1
May 11 20:55:49.134: ISAKMP: set new node -1233989434 to CONF_XAUTH
May 11 20:55:49.134: ISAKMP/xauth: request attribute XAUTH_USER_NAME_V2

!--- Username request.

May 11 20:55:49.134: ISAKMP/xauth: request attribute XAUTH_USER_PASSWORD_V2

!--- Password request.

May 11 20:55:49.138: ISAKMP (0:2): initiating peer config to
                        172.18.124.197. ID = -1233989434
May 11 20:55:49.138: ISAKMP (0:2): sending packet to 172.18.124.197

```

my\_port 500 peer\_port 500 (R) CONF\_XAUTH

...

May 11 20:55:51.278: ISAKMP: got callback 1  
May 11 20:55:51.278: ISAKMP (0:2): attributes sent in message:  
May 11 20:55:51.278: Address: 240.2.112.2  
May 11 20:55:51.282: ISAKMP (0:2): **allocating address 172.25.70.6**

*!--- IP address assigned to EzVPN Client from the address pool.*

May 11 20:55:51.282: ISAKMP: Sending private address: 172.25.70.6  
May 11 20:55:51.286: ISAKMP: Sending APPLICATION\_VERSION string:  
Cisco Internetwork Operating System Software  
IOS (tm) C1700 Software (C1700-K9O3SY7-M), Version 12.3(9a),  
RELEASE SOFTWARE (fc4)  
Copyright (c) 1986-2004 by cisco Systems, Inc.  
Compiled Fri 23-Jul-04 02:20 by kellythw  
May 11 20:55:51.286: ISAKMP (0:2): responding to peer config from  
172.18.124.197. ID = -591421152  
May 11 20:55:51.290: ISAKMP (0:2): sending packet to 172.18.124.197  
my\_port 500 peer\_port 500 (R) CONF\_ADDR  
May 11 20:55:51.290: ISAKMP (0:2): deleting node -591421152 error FALSE reason ""  
May 11 20:55:51.290: ISAKMP (0:2): Input = IKE\_MESG\_FROM\_AAA, IKE\_AAA\_GROUP\_ATTR  
May 11 20:55:51.290: ISAKMP (0:2): Old State = IKE\_CONFIG\_AUTHOR\_AAA\_AWAIT  
New State = IKE\_P1\_COMPLETE

May 11 20:55:51.294: ISAKMP (0:2): Input = IKE\_MESG\_INTERNAL,  
IKE\_PHASE1\_COMPLETE  
May 11 20:55:51.294: ISAKMP (0:2): Old State = IKE\_P1\_COMPLETE  
New State = IKE\_P1\_COMPLETE  
May 11 20:55:53.102: ISAKMP (0:2): received packet from 172.18.124.197  
dport 500 sport 500 Global (R) QM\_IDLE  
May 11 20:55:53.102: ISAKMP: set new node -183955662 to QM\_IDLE

...

May 11 20:55:53.178: ISAKMP (0:2): IPsec policy invalidated proposal  
May 11 20:55:53.178: ISAKMP (0:2): Checking IPsec proposal 8  
May 11 20:55:53.178: ISAKMP: transform 1, ESP\_3DES  
May 11 20:55:53.178: ISAKMP: attributes in transform:  
May 11 20:55:53.178: ISAKMP: encaps is 1 (Tunnel)  
May 11 20:55:53.178: ISAKMP: SA life type in seconds  
May 11 20:55:53.182: ISAKMP: SA life duration (basic) of 28800  
May 11 20:55:53.182: ISAKMP: SA life type in kilobytes  
May 11 20:55:53.182: ISAKMP: SA life duration (VPI) of 0x0 0x46 0x50 0x0  
May 11 20:55:53.182: ISAKMP: authenticator is HMAC-MD5  
May 11 20:55:53.182: ISAKMP (0:2): **atts are acceptable.**

*!--- Proposals are validated.*

May 11 20:55:53.182: IPSEC(validate\_proposal\_request): proposal part #1,  
(key eng. msg.) INBOUND local= 172.18.124.195, remote= 172.18.124.197,  
local\_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4),  
remote\_proxy= 172.25.70.6/255.255.255.255/0/0 (type=1),  
protocol= ESP, transform= esp-3des esp-md5-hmac (Tunnel),  
lifedur= 0s and 0kb,  
spi= 0x0(0), conn\_id= 0, keysize= 0, flags= 0x2

...

local\_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4),  
remote\_proxy= 172.25.70.6/0.0.0.0/0/0 (type=1),  
protocol= ESP, transform= esp-3des esp-md5-hmac (Tunnel),  
lifedur= 28800s and 4608000kb,  
spi= 0x866452A1(2254721697), conn\_id= 2002, keysize= 0, flags= 0x2  
May 11 20:55:53.458: IPSEC(initialize\_sas): ,  
(key eng. msg.) OUTBOUND local= 172.18.124.195, remote= 172.18.124.197,

```
local_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4),
remote_proxy= 172.25.70.6/0.0.0.0/0/0 (type=1),
protocol= ESP, transform= esp-3des esp-md5-hmac (Tunnel),
lifedur= 28800s and 4608000kb,
spi= 0xCA8A5934(3398064436), conn_id= 2003, keysize= 0, flags= 0xA
May 11 20:55:53.458: IPSEC(kei_proxy): head = rtp, map->ivrf = , kei->ivrf =
May 11 20:55:53.458: IPSEC(kei_proxy): head = rtp, map->ivrf = , kei->ivrf =
May 11 20:55:53.462: IPSEC(kei_proxy): head = rtp, map->ivrf = , kei->ivrf =
May 11 20:55:53.462: IPSEC(add mtree): src 172.18.124.195, dest 172.25.70.6,
dest_port 0
```

```
May 11 20:55:53.462: IPSEC(create_sa): sa created,
(sa) sa_dest= 172.18.124.195, sa_prot= 50,
sa_spi= 0x866452A1(2254721697),
sa_trans= esp-3des esp-md5-hmac , sa_conn_id= 2002
May 11 20:55:53.462: IPSEC(create_sa): sa created,
(sa) sa_dest= 172.18.124.197, sa_prot= 50,
sa_spi= 0xCA8A5934(3398064436),
sa_trans= esp-3des esp-md5-hmac , sa_conn_id= 2003
```

*!--- Security Association Connection IDs.*

```
May 11 20:55:54.442: ISAKMP (0:2): received packet from 172.18.124.197
      dport 500 sport 500 Global (R) QM_IDLE
May 11 20:55:54.446: ISAKMP (0:2): deleting node -183955662 error FALSE
      reason "quick mode done (await)"
May 11 20:55:54.446: ISAKMP (0:2): Node -183955662, Input =
      IKE_MSG_FROM_PEER, IKE_QM_EXCH
May 11 20:55:54.446: ISAKMP (0:2): Old State = IKE_QM_R_QM2 New State =
      IKE_QM_PHASE2_COMPLETE
May 11 20:55:54.446: IPSEC(key_engine): got a queue event...
May 11 20:55:54.446: IPSEC(key_engine_enable_outbound):
      rec'd enable notify from ISAKMP
May 11 20:55:54.446: IPSEC(key_engine_enable_outbound):
      enable SA with spi 3398064436/50 for 172.18.124.197
May 11 20:55:57.450: ISAKMP (0:2): received packet from
      172.18.124.197 dport 500 sport 500 Global (R) QM_IDLE
May 11 20:55:57.450: ISAKMP: set new node -1115155724 to QM_IDLE
May 11 20:55:57.454: ISAKMP (0:2): processing HASH payload.
      message ID = -1115155724
May 11 20:55:57.458: ISAKMP (0:2): processing SA payload.
      message ID = -1115155724
May 11 20:55:57.458: ISAKMP (0:2): Checking IPsec proposal 1
May 11 20:55:57.458: ISAKMP: transform 1, ESP_AES
May 11 20:55:57.458: ISAKMP: attributes in transform:
May 11 20:55:57.458: ISAKMP: encaps is 1 (Tunnel)
May 11 20:55:57.458: ISAKMP: SA life type in seconds
May 11 20:55:57.458: ISAKMP: SA life duration (basic) of 28800
May 11 20:55:57.458: ISAKMP: SA life type in kilobytes
May 11 20:55:57.458: ISAKMP: SA life duration (VPI) of 0x0 0x46 0x50 0x0
May 11 20:55:57.458: ISAKMP: authenticator is HMAC-SHA
May 11 20:55:57.458: ISAKMP: key length is 256
May 11 20:55:57.462: ISAKMP (0:2): atts are acceptable.
May 11 20:55:57.462: IPSEC(validate_proposal_request): proposal part #1,
(key eng. msg.) INBOUND local= 172.18.124.195, remote= 172.18.124.197,
local_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4),
remote_proxy= 172.18.124.197/255.255.255.255/0/0 (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= 0x2
...
May 11 20:55:58.362: ISAKMP (0:2): sending packet to 172.18.124.197
      my_port 500 peer_port 500 (R) QM_IDLE
```

*!--- Confirmation of tunnel establishment.*

```

May 11 20:55:58.362: ISAKMP (0:2): Node -1115155724, Input =
      IKE_MSG_FROM_IPSEC, IKE_SPI_REPLY
May 11 20:55:59.438: ISAKMP (0:2): received packet from 172.18.124.197
      dport 500 sport 500 Global (R) QM_IDLE
May 11 20:55:59.438: ISAKMP (0:2): deleting node -1115155724 error
      FALSE reason "quick mode done (await)"
May 11 20:55:59.442: ISAKMP (0:2): Node -1115155724, Input =
      IKE_MSG_FROM_PEER, IKE_QM_EXCH
May 11 20:55:59.442: ISAKMP (0:2): Old State = IKE_QM_R_QM2
      New State = IKE_QM_PHASE2_COMPLETE

```

## VPN Client Debugs on PIX End using debug crypto isakmp and debug crypto ipsec

```

May 11 21:16:52.154: ISAKMP (0:0): received packet from 172.18.173.80 dport 500
sport 500 Global (N) NEW SA

May 11 21:16:52.154: ISAKMP: local port 500, remote port 500

May 11 21:16:52.158: ISAKMP: insert sa successfully sa = 8179D054

May 11 21:16:52.158: ISAKMP (0:3): processing SA payload. message ID = 0

May 11 21:16:52.158: ISAKMP (0:3): processing ID payload. message ID = 0

May 11 21:16:52.158: ISAKMP (0:3): ID payload

next-payload : 13

type : 11

group id : tennis
protocol : 17
port : 500
length : 14
May 11 21:16:52.158: ISAKMP (0:3): peer matches softclient profile

!--- ISAKMP profile match for VPN Software Clients.

May 11 21:16:52.158: ISAKMP: Looking for a matching key for 172.18.173.80
      in default
May 11 21:16:52.158: ISAKMP: Looking for a matching key for 172.18.173.80 in vpn
May 11 21:16:52.158: ISAKMP: Created a peer struct for 172.18.173.80, peer
      port 500
May 11 21:16:52.162: ISAKMP: Locking peer struct 0x81791484, IKE refcount
      1 for crypto_ikmp_config_initialize_sa
May 11 21:16:52.162: ISAKMP (0:3): Setting client config settings 81EEB340
May 11 21:16:52.162: ISAKMP (0:3): (Re)Setting client xauth list and state
May 11 21:16:52.162: ISAKMP (0:3): processing vendor id payload
May 11 21:16:52.162: ISAKMP (0:3): vendor ID seems Unity/DPD but major
      215 mismatch
May 11 21:16:52.162: ISAKMP (0:3): vendor ID is XAUTH
May 11 21:16:52.162: ISAKMP (0:3): processing vendor id payload
May 11 21:16:52.162: ISAKMP (0:3): vendor ID is DPD
May 11 21:16:52.162: ISAKMP (0:3): processing vendor id payload
May 11 21:16:52.166: ISAKMP (0:3): vendor ID seems Unity/DPD but major 123 mismatch
May 11 21:16:52.166: ISAKMP (0:3): vendor ID is NAT-T v2
May 11 21:16:52.166: ISAKMP (0:3): processing vendor id payload
May 11 21:16:52.166: ISAKMP (0:3): vendor ID seems Unity/DPD but major 194 mismatch
May 11 21:16:52.166: ISAKMP (0:3): processing vendor id payload
May 11 21:16:52.166: ISAKMP (0:3): vendor ID is Unity
May 11 21:16:52.166: ISAKMP (0:3) Authentication by xauth preshared
May 11 21:16:52.166: ISAKMP (0:3): Checking ISAKMP transform 1 against
      priority 20 policy

```



*!--- ISAKMP policy that matches against configured policy.*

```
May 11 21:16:52.166: ISAKMP: encryption AES-CBC
May 11 21:16:52.170: ISAKMP: hash SHA
May 11 21:16:52.170: ISAKMP: default group 2
May 11 21:16:52.170: ISAKMP: auth XAUTHInitPreShared
May 11 21:16:52.170: ISAKMP: life type in seconds
May 11 21:16:52.170: ISAKMP: life duration (VPI) of 0x0 0x20 0xC4 0x9B
May 11 21:16:52.170: ISAKMP: keylength of 256
May 11 21:16:52.170: ISAKMP (0:3): Encryption algorithm offered does not
      match policy!
May 11 21:16:52.170: ISAKMP (0:3): atts are not acceptable. Next payload is 3
      ....
May 11 21:16:52.198: ISAKMP (0:3): Checking ISAKMP transform 10 against
      priority 20 policy
May 11 21:16:52.198: ISAKMP: encryption 3DES-CBC
May 11 21:16:52.202: ISAKMP: hash MD5
May 11 21:16:52.202: ISAKMP: default group 2
May 11 21:16:52.202: ISAKMP: auth XAUTHInitPreShared
May 11 21:16:52.202: ISAKMP: life type in seconds
May 11 21:16:52.202: ISAKMP: life duration (VPI) of 0x0 0x20 0xC4 0x9B
May 11 21:16:52.202: ISAKMP (0:3): atts are acceptable. Next payload is 3
May 11 21:16:52.418: ISAKMP (0:3): processing KE payload. message ID = 0
May 11 21:16:52.686: ISAKMP (0:3): processing NONCE payload. message ID = 0
May 11 21:16:52.690: ISAKMP (0:3): vendor ID is NAT-T v2
May 11 21:16:52.690: ISAKMP (0:3): Input = IKE_MESG_FROM_PEER, IKE_AM_EXCH
May 11 21:16:52.690: ISAKMP (0:3): Old State = IKE_READY New State =
      IKE_R_AM_AAA_AWAIT
May 11 21:16:52.694: ISAKMP: got callback 1
May 11 21:16:52.698: ISAKMP (0:3): SKEYID state generated
May 11 21:16:52.698: ISAKMP (0:3): constructed NAT-T vendor-02 ID
May 11 21:16:52.702: ISAKMP (0:3): SA is doing pre-shared key authentication
      plus XAUTH using id type ID_IPV4_ADDR
May 11 21:16:52.702: ISAKMP (0:3): ID payload
next-payload : 10
type : 1
address : 172.18.124.195
protocol : 17
port : 0
length : 12
May 11 21:16:52.702: ISAKMP (3): Total payload length: 12
May 11 21:16:52.702: ISAKMP (0:3): sending packet to 172.18.173.80 my_port
      500 peer_port 500 (R) AG_INIT_EXCH
May 11 21:16:52.706: ISAKMP (0:3): Input = IKE_MESG_FROM_AAA, PRESHARED_KEY_REPLY
May 11 21:16:52.706: ISAKMP (0:3): Old State = IKE_R_AM_AAA_AWAIT
      New State = IKE_R_AM2
May 11 21:16:52.746: ISAKMP (0:3): received packet from 172.18.173.80 dport
      500 sport 500 Global (R) AG_INIT_EXCH
May 11 21:16:52.750: ISAKMP (0:3): processing HASH payload. message ID = 0
May 11 21:16:52.750: ISAKMP (0:3): processing NOTIFY INITIAL_CONTACT protocol 1
spi 0, message ID = 0, sa = 8179D054
May 11 21:16:52.750: ISAKMP (0:3): SA authentication status: authenticated
```

*!--- Phase 1 SAs are authenticated.*

```
May 11 21:16:52.750: ISAKMP (0:3): Process initial contact,
bring down existing phase 1 and 2 SA's with local 172.18.124.195
      remote 172.18.173.80 remote port 500
May 11 21:16:52.750: ISAKMP (0:3): returning IP addr to the address pool
May 11 21:16:52.754: ISAKMP:received payload type 20
May 11 21:16:52.754: ISAKMP:received payload type 20
May 11 21:16:52.754: ISAKMP (0:3): SA authentication status:
authenticated
May 11 21:16:52.754: ISAKMP (0:3): SA has been authenticated with 172.18.173.80
May 11 21:16:52.754: ISAKMP: Trying to insert a peer
```

172.18.124.195/172.18.173.80/500/, and inserted successfully.  
May 11 21:16:52.758: IPSEC(key\_engine): got a queue event...  
May 11 21:16:52.758: ISAKMP: set new node -1991824466 to **CONF\_XAUTH**

*!--- User Authentication phase starts.*

May 11 21:16:52.758: ISAKMP (0:3): sending packet to 172.18.173.80  
my\_port 500 peer\_port 500 (R) QM\_IDLE  
May 11 21:16:52.762: ISAKMP (0:3): purging node -1991824466  
May 11 21:16:52.762: ISAKMP: Sending phase 1 responder lifetime 86400  
May 11 21:16:52.762: ISAKMP (0:3): Input = IKE\_MESG\_FROM\_PEER, IKE\_AM\_EXCH  
May 11 21:16:52.762: ISAKMP (0:3): Old State = IKE\_R\_AM2 New State =  
IKE\_P1\_COMPLETE  
May 11 21:16:52.762: ISAKMP (0:3): Need XAUTH  
May 11 21:16:52.762: ISAKMP (0:3): FSM action returned error: 4  
May 11 21:16:52.766: ISAKMP (0:3): Input = IKE\_MESG\_INTERNAL,  
IKE\_PHASE1\_COMPLETE  
May 11 21:16:52.766: ISAKMP (0:3): Old State = IKE\_P1\_COMPLETE  
New State = IKE\_XAUTH\_AAA\_START\_LOGIN\_AWAIT  
May 11 21:16:52.766: ISAKMP: got callback 1  
May 11 21:16:52.766: ISAKMP: set new node -1773462433 to **CONF\_XAUTH**  
May 11 21:16:52.766: ISAKMP/xauth: **request attribute XAUTH\_USER\_NAME\_V2**

*!--- Requests user name.*

May 11 21:16:52.770: ISAKMP/xauth: **request attribute XAUTH\_USER\_PASSWORD\_V2**

*!--- Requests user password.*

May 11 21:16:52.770: ISAKMP (0:3): initiating peer config to 172.18.173.80.  
ID = -1773462433  
May 11 21:16:52.770: ISAKMP (0:3): sending packet to 172.18.173.80 my\_port  
500 peer\_port 500 (R) **CONF\_XAUTH**  
May 11 21:16:52.770: ISAKMP (0:3): Input = IKE\_MESG\_FROM\_AAA, IKE\_AAA\_START\_LOGIN  
...  
May 11 21:17:00.350: ISAKMP (0:3): Input = IKE\_MESG\_FROM\_PEER, IKE\_CFG\_REQUEST  
May 11 21:17:00.350: ISAKMP (0:3): Old State = IKE\_P1\_COMPLETE New State =  
IKE\_CONFIG\_AUTHOR\_AAA\_AWAIT  
May 11 21:17:00.434: ISAKMP: got callback 1  
May 11 21:17:00.438: ISAKMP (0:3): attributes sent in message:  
May 11 21:17:00.438: Address: 0.2.0.0  
May 11 21:17:00.438: ISAKMP (0:3): **allocating address 10.50.50.2**

*!--- Allocates the IP address for software VPN Client from the client IP pool.*

May 11 21:17:00.438: ISAKMP: Sending private address: 10.50.50.2  
May 11 21:17:00.442: ISAKMP: Sending ADDRESS\_EXPIRY seconds left to  
use the address: 86391  
May 11 21:17:00.442: ISAKMP: Sending APPLICATION\_VERSION string: Cisco  
Internetwork Operating System Software  
IOS (tm) C1700 Software (C1700-K9O3SY7-M), Version 12.3(9a),  
RELEASE SOFTWARE (fc4)  
Copyright (c) 1986-2004 by cisco Systems, Inc.  
Compiled Fri 23-Jul-04 02:20 by kellythw  
May 11 21:17:00.442: ISAKMP (0/3): Unknown Attr: UNKNOWN (0x7008)  
May 11 21:17:00.446: ISAKMP (0/3): Unknown Attr: UNKNOWN (0x700A)  
May 11 21:17:00.446: ISAKMP (0/3): Unknown Attr: UNKNOWN (0x7005)  
May 11 21:17:00.446: ISAKMP (0:3): responding to peer config from  
172.18.173.80. ID = 1330918554  
May 11 21:17:00.450: ISAKMP (0:3): sending packet to 172.18.173.80  
my\_port 500 peer\_port 500 (R) **CONF\_ADDR**  
May 11 21:17:00.450: ISAKMP (0:3): deleting node 1330918554  
error FALSE reason ""  
May 11 21:17:00.450: ISAKMP (0:3): Input = IKE\_MESG\_FROM\_AAA,  
IKE\_AAA\_GROUP\_ATTR  
May 11 21:17:00.450: ISAKMP (0:3): Old State = IKE\_CONFIG\_AUTHOR\_AAA\_AWAIT

```
New State = IKE_P1_COMPLETE
May 11 21:17:00.454: ISAKMP (0:3): Input = IKE_MSG_INTERNAL,
IKE_PHASE1_COMPLETE
May 11 21:17:00.454: ISAKMP (0:3): Old State = IKE_P1_COMPLETE
New State = IKE_P1_COMPLETE
...
May 11 21:17:01.474: ISAKMP (0:3): Creating IPsec SAs
```

*!--- Creation of IPsec Security Associations.*

```
May 11 21:17:01.474: inbound SA from 172.18.173.80 to 172.18.124.195
(f/i) 0/ 0 (proxy 10.50.50.2 to 0.0.0.0)
May 11 21:17:01.474: has spi 0x1B139B2F and conn_id 2000 and flags 2
May 11 21:17:01.474: lifetime of 2147483 seconds
May 11 21:17:01.474: has client flags 0x0
May 11 21:17:01.474: outbound SA from 172.18.124.195 to 172.18.173.80
(f/i) 0/ 0 (proxy 0.0.0.0 to 10.50.50.2 )
May 11 21:17:01.474: has spi -895677582 and conn_id 2001 and flags A
May 11 21:17:01.474: lifetime of 2147483 seconds
May 11 21:17:01.474: has client flags 0x0
May 11 21:17:01.478: ISAKMP (0:3): sending packet to 172.18.173.80
my_port 500 peer_port 500 (R) QM_IDLE
May 11 21:17:01.478: ISAKMP (0:3): Node 896912581, Input =
IKE_MSG_FROM_IPSEC, IKE_SPI_REPLY
May 11 21:17:01.478: ISAKMP (0:3): Old State = IKE_QM_SPI_STARVE
New State = IKE_QM_R_QM2
May 11 21:17:01.482: IPSEC(key_engine): got a queue event...
May 11 21:17:01.482: IPSEC(initialize_sas): ,
(key eng. msg.) INBOUND local= 172.18.124.195, remote= 172.18.173.80,
local_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4),
remote_proxy= 10.50.50.2/0.0.0.0/0/0 (type=1),
protocol= ESP, transform= esp-3des esp-sha-hmac (Tunnel),
lifedur= 2147483s and 0kb,
spi= 0x1B139B2F(454269743), conn_id= 2000, keysiz= 0, flags= 0x2
May 11 21:17:01.482: IPSEC(initialize_sas): ,
(key eng. msg.) OUTBOUND local= 172.18.124.195, remote= 172.18.173.80,
local_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4),
remote_proxy= 10.50.50.2/0.0.0.0/0/0 (type=1),
protocol= ESP, transform= esp-3des esp-sha-hmac (Tunnel),
lifedur= 2147483s and 0kb,
spi= 0xCA9D0B72(3399289714), conn_id= 2001, keysiz= 0, flags= 0xA
May 11 21:17:01.486: IPSEC(kei_proxy): head = rtp, map->ivrf = , kei->ivrf =
May 11 21:17:01.486: IPSEC(kei_proxy): head = rtp, map->ivrf = , kei->ivrf =
May 11 21:17:01.486: IPSEC(add mtree): src 172.18.124.195,
dest 10.50.50.2, dest_port 0
May 11 21:17:01.486: IPSEC(create_sa): sa created,
(sa) sa_dest= 172.18.124.195, sa_prot= 50,
sa_spi= 0x1B139B2F(454269743),
sa_trans= esp-3des esp-sha-hmac , sa_conn_id= 2000
May 11 21:17:01.490: IPSEC(create_sa): sa created,
(sa) sa_dest= 172.18.173.80, sa_prot= 50,
sa_spi= 0xCA9D0B72(3399289714),
sa_trans= esp-3des esp-sha-hmac , sa_conn_id= 2001
```

*!--- Security Association connection IDs created.*

```
May 11 21:17:01.742: ISAKMP (0:3): received packet from 172.18.173.80
dport 500 sport 500 Global (R) QM_IDLE
```

*!--- Successful tunnel established.*

```
May 11 21:17:01.746: ISAKMP (0:3): deleting node 896912581 error
FALSE reason "quick mode done (await)"
May 11 21:17:01.746: ISAKMP (0:3): Node 896912581, Input =
IKE_MSG_FROM_PEER, IKE_QM_EXCH
May 11 21:17:01.746: ISAKMP (0:3): Old State = IKE_QM_R_QM2
```

```
New State = IKE_QM_PHASE2_COMPLETE
May 11 21:17:01.746: IPSEC(key_engine): got a queue event...
May 11 21:17:01.746: IPSEC(key_engine_enable_outbound): rec'd
enable notify from ISAKMP
May 11 21:17:01.746: IPSEC(key_engine_enable_outbound): enable SA
with spi 3399289714/50 for 172.18.173.80
```

## Debugs on PIX 501 (LAN-to-LAN connection)

```
PIX-501#
ISAKMP (0): beginning Main Mode exchange

crypto_isakmp_process_block:src:172.18.124.195, dest:172.18.124.196
spt:500 dpt:500
OAK_MM exchange
ISAKMP (0): processing SA payload. message ID = 0

ISAKMP (0): Checking ISAKMP transform 1 against priority 10 policy

!--- ISAKMP attributes check in process.

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 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_ERROR
crypto_isakmp_process_block:src:172.18.124.195, dest:172.18.124.196
spt:500 dpt:500
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): processing vendor id payload

ISAKMP (0): received xauth v6 vendor id

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:172.18.124.195, dest:172.18.124.196
spt:500 dpt:500
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 156512779:954320bIPSEC  
(key\_engine): got a queue event...  
IPSEC(spi\_response): getting spi 0x79efefce(2045767630) for SA  
from 172.18.124.195 to 172.18.124.196 for prot 3

return status is IKMP\_NO\_ERROR  
ISAKMP (0): sending INITIAL\_CONTACT notify  
ISAKMP (0): sending NOTIFY message 24578 protocol 1  
VPN Peer: ISAKMP: Added new peer: ip:172.18.124.195/500 Total VPN Peers:1  
VPN Peer: ISAKMP: Peer ip:172.18.124.195/500 Ref cnt incremented to:1 Total  
VPN Peers:1  
crypto\_isakmp\_process\_block:src:172.18.124.195, dest:172.18.124.196  
spt:500 dpt:500  
OAK\_QM exchange  
oakley\_process\_quick\_mode:  
OAK\_QM\_IDLE  
ISAKMP (0): processing SA payload. message ID = 156512779

ISAKMP : Checking IPsec proposal 1

ISAKMP: transform 1, ESP\_3DES  
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.**

*!--- Phase 1 attributes are negotiated.*

IPSEC(validate\_proposal\_request): proposal part #1,  
(key eng. msg.) dest= 172.18.124.195, src= 172.18.124.196,  
dest\_proxy= 192.168.40.0/255.255.255.0/0/0 (type=4),  
src\_proxy= 192.168.10.0/255.255.255.0/0/0 (type=4),  
protocol= ESP, transform= esp-3des esp-sha-hmac ,  
lifedur= 0s and 0kb,  
spi= 0x0(0), conn\_id= 0, keysize= 0, flags= 0x4

ISAKMP (0): processing NONCE payload. message ID = 156512779

ISAKMP (0): processing ID payload. message ID = 156512779  
ISAKMP (0): processing ID payload. message ID = 156512779  
ISAKMP (0): processing NOTIFY payload 24576 protocol 3  
spi 4227499308, message ID = 156512779  
ISAKMP (0): processing responder lifetime  
ISAKMP (0): responder lifetime of 3600s  
ISAKMP (0): Creating IPsec SAs  
inbound SA from 172.18.124.195 to 172.18.124.196 (proxy 192.168.40.0  
to 192.168.10.0)  
has spi 2045767630 and conn\_id 1 and flags 4  
lifetime of 3600 seconds  
lifetime of 4608000 kilobytes  
outbound SA from 172.18.124.196 to 172.18.124.195 (proxy  
192.168.10.0 to 192.168.40.0)  
has spi 4227499308 and conn\_id 2 and flags 4  
lifetime of 3600 seconds  
lifetime of 4608000 kilobytes  
IPSEC(key\_engine): got a queue event...  
IPSEC(initialize\_sas): ,  
(key eng. msg.) dest= 172.18.124.196, src= 172.18.124.195,  
dest\_proxy= 192.168.10.0/255.255.255.0/0/0 (type=4),  
src\_proxy= 192.168.40.0/255.255.255.0/0/0 (type=4),  
protocol= ESP, transform= esp-3des esp-sha-hmac ,

```
lifedur= 3600s and 4608000kb,  
spi= 0x79efefce(2045767630), conn_id= 1, keysize= 0, flags= 0x4  
IPSEC(initialize_sas): ,  
(key eng. msg.) src= 172.18.124.196, dest= 172.18.124.195,  
src_proxy= 192.168.10.0/255.255.255.0/0/0 (type=4),  
dest_proxy= 192.168.40.0/255.255.255.0/0/0 (type=4),  
protocol= ESP, transform= esp-3des esp-sha-hmac ,  
lifedur= 3600s and 4608000kb,  
spi= 0xfbfa852c(4227499308), conn_id= 2, keysize= 0, flags= 0x4
```

```
!--- Phase 2 tunnel establishment.
```

## Debugs on PIX-506-B (EzVPN Client Connection)

```
ISAKMP (0): ID payload  
next-payload : 13  
type : 11  
protocol : 17  
port : 0  
length : 8  
ISAKMP (0): Total payload length: 12  
ISAKMP (0:0): sending NAT-T vendor ID - rev 2 & 3  
ISAKMP (0): beginning Aggressive Mode exchange  
crypto_isakmp_process_block:src:172.18.124.195, dest:172.18.124.197  
spt:500 dpt:500  
OAK_AG exchange  
ISAKMP (0): processing SA payload. message ID = 0  
  
ISAKMP (0): Checking ISAKMP transform 1 against priority 65001 policy  
ISAKMP: encryption 3DES-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 3DES-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  
  
!--- Phase 1 attributes are accepted.  
  
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): processing vendor id payload  
  
ISAKMP (0): received xauth v6 vendor id  
  
ISAKMP (0): processing vendor id payload
```

ISAKMP (0:0): vendor ID is NAT-T  
ISAKMP (0): processing KE payload. message ID = 0  
  
ISAKMP (0): processing ID payload. message ID = 0  
ISAKMP (0): processing NONCE payload. message ID = 0  
  
ISAKMP (0): processing HASH payload. message ID = 0  
ISAKMP (0:0): Detected NAT-D payload  
ISAKMP (0:0): recalc my hash for NAT-D  
ISAKMP (0:0): NAT match MINE hash  
ISAKMP (0:0): Detected NAT-D payload  
ISAKMP (0:0): recalc his hash for NAT-D  
ISAKMP (0:0): NAT match HIS hash  
ISAKMP (0): **SA has been authenticated**

*!--- SAs have been authenticated.*

crypto\_isakmp\_process\_block:src:172.18.124.195, dest:172.18.124.197  
spt:500 dpt:500  
ISAKMP (0): processing NOTIFY payload 24576 protocol 1  
spi 0, message ID = 1554218001  
ISAKMP (0): processing responder lifetime  
ISAKMP (0): phase 1 responder lifetime of 86400s  
ISAKMP (0): not overriding 86400s  
return status is IKMP\_NO\_ERR\_NO\_TRANS  
crypto\_isakmp\_process\_block:src:172.18.124.195, dest:172.18.124.197  
spt:500 dpt:500  
ISAKMP\_TRANSACTION exchange  
ISAKMP (0:0): processing transaction payload from 172.18.124.195.  
message ID = 15250780  
ISAKMP: Config payload CFG\_REQUEST  
ISAKMP (0:0): **checking request:**

*!--- Extended authentication process check.*

**ISAKMP: attribute XAUTH\_USER\_NAME (16521)**  
**ISAKMP: attribute XAUTH\_USER\_PASSWORD (16522)**  
ISAKMP (0:0): responding to peer config from 172.18.124.195. ID = 3060977862  
return status is IKMP\_NO\_ERROR  
crypto\_isakmp\_process\_block:src:172.18.124.195, dest:172.18.124.197  
spt:500 dpt:500  
ISAKMP\_TRANSACTION exchange  
ISAKMP (0:0): processing transaction payload from 172.18.124.195.  
message ID = 15250780  
ISAKMP: Config payload CFG\_SET  
ISAKMP (0:0): checking SET:  
ISAKMP: **XAUTH\_STATUS XAUTH-OK**

*!--- Extended authentication checked.*

ISAKMP (0:0): attributes sent in message:  
Status: 1  
return status is IKMP\_NO\_ERROR  
ISAKMP : attributes being requested  
INTERNAL\_IPV\_ADDRESS  
ALT\_DEF\_DOMAIN  
INTERNAL\_IPV\_NBNS  
INTERNAL\_IPV\_DNS  
ALT\_SPLIT\_INCLUDE  
ALT\_SPLITDNS\_NAME  
ALT\_PFS  
ALT\_CFG\_SEC\_UNIT  
ALT\_CFG\_USER\_AUTH  
ALT\_CFG\_IDLE\_TIME  
ALT\_CFG\_IP\_TEL  
ALT\_CFG\_AUTH\_SRVNAME

ALT\_CFG\_AUTH\_SRVPORT  
ALT\_CFG\_AUTH\_SRVSEC  
ALT\_BACKUP\_SERVERS

...

ISAKMP : Checking IPsec proposal 1  
ISAKMP: transform 1, ESP\_3DES  
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 proposal accepted.*

IPSEC(validate\_proposal\_request): proposal part #1,  
(key eng. msg.) dest= 172.18.124.195, src= 172.18.124.197,  
dest\_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4),  
src\_proxy= 172.25.70.6/255.255.255.255/0/0 (type=1),  
protocol= ESP, transform= esp-3des esp-md5-hmac ,  
lifedur= 0s and 0kb,  
spi= 0x0(0), conn\_id= 0, keysize= 0, flags= 0x4

ISAKMP (0): processing NONCE payload. message ID = 4111011634  
ISAKMP (0): processing ID payload. message ID = 4111011634  
ISAKMP (0): processing ID payload. message ID = 4111011634  
ISAKMP (0): processing NOTIFY payload 24576 protocol 3  
spi 2254721697, message ID = 4111011634  
ISAKMP (0): processing responder lifetime  
ISAKMP (0): responder lifetime of 3600s  
ISAKMP (0): Creating IPsec SAs  
inbound SA from 172.18.124.195 to 172.18.124.197 (proxy 0.0.0.0 to 172.25.70.6)  
has spi 3398064436 and conn\_id 2 and flags 4  
lifetime of 3600 seconds  
lifetime of 4608000 kilobytes  
outbound SA from 172.18.124.197 to 172.18.124.195 (proxy 172.25.70.6 to 0.0.0.0)  
has spi 2254721697 and conn\_id 1 and flags 4  
lifetime of 3600 seconds  
lifetime of 4608000 kilobytes  
IPSEC(key\_engine): got a queue event...  
IPSEC(initialize\_sas): ,  
(key eng. msg.) dest= 172.18.124.197, src= 172.18.124.195,  
**dest\_proxy= 172.25.70.6/255.255.255.255/0/0 (type=1),**  
**src\_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4),**  
protocol= ESP, transform= esp-3des esp-md5-hmac ,  
lifedur= 3600s and 4608000kb,  
spi= 0xca8a5934(3398064436), conn\_id= 2, keysize= 0, flags= 0x4  
IPSEC(initialize\_sas): ,  
(key eng. msg.) src= 172.18.124.197, dest= 172.18.124.195,  
**src\_proxy= 172.25.70.6/255.255.255.255/0/0 (type=1),**  
**dest\_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4),**

*!--- IPsec SAs created.*

protocol= ESP, transform= esp-3des esp-md5-hmac ,  
lifedur= 3600s and 4608000kb,  
spi= 0x866452a1(2254721697), conn\_id= 1, keysize= 0, flags= 0x4



## Debugs on VPN Client

Select **Start > Programs > Cisco VPN Client > Log Viewer.**

```
Cisco Systems VPN Client Version 4.0 (Rel)
Copyright (C) 1998-2003 Cisco Systems, Inc. All Rights Reserved.
Client Type(s): Windows, WinNT
Running on: 5.1.2600

1 15:47:01.430 08/19/04 Sev=Info/6 IKE/0x6300003B
Attempting to establish a connection with 172.18.124.195.

2 15:47:01.460 08/19/04 Sev=Info/4 IKE/0x63000013
SENDING >>> ISAKMP OAK AG (SA, KE, NON, ID, VID(Xauth), VID(dpd),
VID(Nat-T), VID(Frag), VID(Unity)) to 172.18.124.195

3 15:47:01.947 08/19/04 Sev=Info/5 IKE/0x6300002F
Received ISAKMP packet: peer = 172.18.124.195

4 15:47:01.947 08/19/04 Sev=Info/4 IKE/0x63000014
RECEIVING <<< ISAKMP OAK AG (SA, VID(Unity), VID(dpd), VID(?), VID(Xauth),
VID(Nat-T), KE, ID, NON, HASH, NAT-D, NAT-D) from 172.18.124.195

5 15:47:01.947 08/19/04 Sev=Info/5 IKE/0x63000001
Peer is a Cisco-Unity compliant peer

6 15:47:01.947 08/19/04 Sev=Info/5 IKE/0x63000001
Peer supports DPD

7 15:47:01.947 08/19/04 Sev=Info/5 IKE/0x63000001
Peer supports DWR Code and DWR Text

8 15:47:01.947 08/19/04 Sev=Info/5 IKE/0x63000001
Peer supports XAUTH

9 15:47:01.947 08/19/04 Sev=Info/5 IKE/0x63000001
Peer supports NAT-T

10 15:47:01.977 08/19/04 Sev=Info/6 IKE/0x63000001
IOS Vendor ID Construction successful

11 15:47:01.977 08/19/04 Sev=Info/4 IKE/0x63000013
SENDING >>> ISAKMP OAK AG *(HASH, NOTIFY:STATUS_INITIAL_CONTACT,
NAT-D, NAT-D, VID(?), VID(Unity)) to 172.18.124.195

12 15:47:01.977 08/19/04 Sev=Info/4 IKE/0x63000082
IKE Port in use - Local Port = 0x01F4, Remote Port = 0x01F4

13 15:47:01.977 08/19/04 Sev=Info/5 IKE/0x63000071
Automatic NAT Detection Status:
Remote end is NOT behind a NAT device
This end is NOT behind a NAT device

!--- NAT device detection process.

14 15:47:01.986 08/19/04 Sev=Info/5 IKE/0x6300002F
Received ISAKMP packet: peer = 172.18.124.195

15 15:47:01.986 08/19/04 Sev=Info/4 IKE/0x63000014
RECEIVING <<< ISAKMP OAK INFO *(HASH, NOTIFY:STATUS_RESP_LIFETIME)
from 172.18.124.195

16 15:47:01.986 08/19/04 Sev=Info/5 IKE/0x63000044
RESPONDER-LIFETIME notify has value of 86400 seconds
```

17 15:47:01.986 08/19/04 Sev=Info/5 IKE/0x63000046  
This SA has already been alive for 0 seconds, setting expiry to 86400  
seconds from now

18 15:47:01.996 08/19/04 Sev=Info/5 IKE/0x6300002F  
Received ISAKMP packet: peer = 172.18.124.195

19 15:47:01.996 08/19/04 Sev=Info/4 IKE/0x63000014  
RECEIVING <<< ISAKMP OAK TRANS \*(HASH, ATTR) from 172.18.124.195

20 15:47:02.689 08/19/04 Sev=Info/4 IPSEC/0x63700008  
IPSec driver successfully started

21 15:47:02.689 08/19/04 Sev=Info/4 IPSEC/0x63700014  
Deleted all keys

22 15:47:02.689 08/19/04 Sev=Info/6 IPSEC/0x6370002B  
Sent 85 packets, 0 were fragmented.

23 15:47:06.044 08/19/04 Sev=Info/4 IKE/0x63000013  
SENDING >>> ISAKMP OAK TRANS \*(HASH, ATTR) to 172.18.124.195

24 15:47:06.064 08/19/04 Sev=Info/5 IKE/0x6300002F  
Received ISAKMP packet: peer = 172.18.124.195

25 15:47:06.064 08/19/04 Sev=Info/4 IKE/0x63000014  
RECEIVING <<< ISAKMP OAK TRANS \*(HASH, ATTR) from 172.18.124.195

26 15:47:06.064 08/19/04 Sev=Info/4 IKE/0x63000013  
SENDING >>> ISAKMP OAK TRANS \*(HASH, ATTR) to 172.18.124.195

27 15:47:06.103 08/19/04 Sev=Info/5 IKE/0x6300005D  
Client sending a firewall request to concentrator

28 15:47:06.103 08/19/04 Sev=Info/5 IKE/0x6300005C  
Firewall Policy: Product=Cisco Systems Integrated Client, Capability=  
(Centralized Protection Policy).

29 15:47:06.113 08/19/04 Sev=Info/4 IKE/0x63000013  
SENDING >>> ISAKMP OAK TRANS \*(HASH, ATTR) to 172.18.124.195

30 15:47:06.132 08/19/04 Sev=Info/5 IKE/0x6300002F  
Received ISAKMP packet: peer = 172.18.124.195

31 15:47:06.132 08/19/04 Sev=Info/4 IKE/0x63000014  
RECEIVING <<< ISAKMP OAK TRANS \*(HASH, ATTR) from 172.18.124.195

32 15:47:06.132 08/19/04 Sev=Info/5 IKE/0x63000010  
**MODE\_CFG\_REPLY: Attribute = INTERNAL\_IPV4\_ADDRESS: , value = 10.50.50.2**

*!--- Assigned IP address for the VPN Client.*

33 15:47:06.132 08/19/04 Sev=Info/5 IKE/0xA3000017  
MODE\_CFG\_REPLY: The received (INTERNAL\_ADDRESS\_EXPIRY) attribute and  
value (842150403) is not supported

34 15:47:06.132 08/19/04 Sev=Info/5 IKE/0x6300000E  
MODE\_CFG\_REPLY: Attribute = MODECFG\_UNITY\_DEFDOMAIN: , value = cisco.com

35 15:47:06.132 08/19/04 Sev=Info/5 IKE/0x6300000E  
MODE\_CFG\_REPLY: Attribute = APPLICATION\_VERSION, value = Cisco  
Internetwork Operating System Software  
IOS (tm) C1700 Software (C1700-K9O3SY7-M), Version 12.3(9a),  
RELEASE SOFTWARE (fc4)

Copyright (c) 1986-2004 by cisco Systems, Inc.  
Compiled Fri 23-Jul-04 02:20 by kellythw

```
37 15:47:06.171 08/19/04 Sev=Info/4 IKE/0x63000013
SENDING >>> ISAKMP OAK QM *(HASH, SA, NON, ID, ID) to 172.18.124.195

38 15:47:06.444 08/19/04 Sev=Info/5 IKE/0x6300002F
Received ISAKMP packet: peer = 172.18.124.195

39 15:47:06.454 08/19/04 Sev=Info/4 IKE/0x63000014
RECEIVING <<< ISAKMP OAK QM *(HASH, SA, NON, ID, ID, NOTIFY:STATUS_RESP_LIFETIME
from 172.18.124.195

40 15:47:06.454 08/19/04 Sev=Info/5 IKE/0x63000044
RESPONDER-LIFETIME notify has value of 3600 seconds

41 15:47:06.454 08/19/04 Sev=Info/5 IKE/0x63000045
RESPONDER-LIFETIME notify has value of 4608000 kb

42 15:47:06.454 08/19/04 Sev=Info/4 IKE/0x63000013
SENDING >>> ISAKMP OAK QM *(HASH) to 172.18.124.195

43 15:47:06.454 08/19/04 Sev=Info/5 IKE/0x63000058
Loading IPsec SA (MsgID=83D109EC OUTBOUND SPI = 0x422186D5 INBOUND
SPI = 0x5D94CB41)

44 15:47:06.454 08/19/04 Sev=Info/5 IKE/0x63000025
Loaded OUTBOUND ESP SPI: 0x422186D5

45 15:47:06.454 08/19/04 Sev=Info/5 IKE/0x63000026
Loaded INBOUND ESP SPI: 0x5D94CB41

46 15:47:09.307 08/19/04 Sev=Info/4 IPSEC/0x63700014
Deleted all keys

47 15:47:09.307 08/19/04 Sev=Info/4 IPSEC/0x63700010
Created a new key structure

48 15:47:09.307 08/19/04 Sev=Info/4 IPSEC/0x6370000F
Added key with SPI=0xd5862142 into key list

49 15:47:09.307 08/19/04 Sev=Info/4 IPSEC/0x63700010
Created a new key structure

50 15:47:09.307 08/19/04 Sev=Info/4 IPSEC/0x6370000F
Added key with SPI=0x41cb945d into key list

51 15:47:09.307 08/19/04 Sev=Info/4 IPSEC/0x6370002E
Assigned VA private interface addr 10.50.50.2

52 15:47:16.568 08/19/04 Sev=Info/6 IKE/0x6300003D
Sending DPD request to 172.18.124.195, seq# = 2346900535

53 15:47:16.568 08/19/04 Sev=Info/4 IKE/0x63000013
SENDING >>> ISAKMP OAK INFO *(HASH, NOTIFY:DPD_REQUEST) to 172.18.124.195

54 15:47:16.578 08/19/04 Sev=Info/5 IKE/0x6300002F
Received ISAKMP packet: peer = 172.18.124.195

55 15:47:16.578 08/19/04 Sev=Info/4 IKE/0x63000014
RECEIVING <<< ISAKMP OAK INFO *(HASH, NOTIFY:DPD_ACK) from 172.18.124.195

56 15:47:16.578 08/19/04 Sev=Info/5 IKE/0x6300003F
Received DPD ACK from 172.18.124.195, seq# received = 2346900536,
seq# expected = 2346900536
```

# Troubleshoot

This section provides information you can use to troubleshoot your configuration.

## Troubleshooting Commands

Certain **show** commands are supported by the Output Interpreter Tool (registered customers only), which allows you to view an analysis of **show** command output.

**Note:** Refer to Important Information on Debug Commands before you issue **debug** commands.

- **show crypto isakmp sa** Displays all current Internet Key Exchange (IKE) SAs at a peer.

```
VPN1750#show crypto isakmp sa
dst          src          state         conn-id slot
172.18.124.195 172.18.173.80 QM_IDLE       3      0

!--- VPN Client.

172.18.124.195 172.18.124.197 QM_IDLE       2      0

!--- EzVPN between hub router and PIX-506-B.

172.18.124.195 172.18.124.196 QM_IDLE       1      0

!--- EzVPN between hub router and PIX-501.
```

- **show crypto ipsec sa** Displays the settings used by current SAs.

```
VPN1750#show crypto ipsec sa
interface: FastEthernet0
Crypto map tag: rtp, local addr. 172.18.124.195

protected vrf:
local ident (addr/mask/prot/port): (192.168.40.0/255.255.255.0/0/0)
remote ident (addr/mask/prot/port): (192.168.10.0/255.255.255.0/0/0)
current_peer: 172.18.124.196:500
PERMIT, flags={origin_is_acl,}
#pkts encaps: 4, #pkts encrypt: 4, #pkts digest 4
#pkts decaps: 4, #pkts decrypt: 4, #pkts verify 4
#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.: 172.18.124.195, remote crypto endpt.:
172.18.124.196
path mtu 1500, ip mtu 1500, ip mtu idb FastEthernet0
current outbound spi: DB79E16D

inbound esp sas:
spi: 0xAF634F08(2942521096)
transform: esp-3des esp-sha-hmac ,
in use settings = {Tunnel, }
slot: 0, conn id: 2000, flow_id: 1, crypto map: rtp
sa timing: remaining key lifetime (k/sec): (4433404/3282)
IV size: 8 bytes
replay detection support: Y

inbound ah sas:

inbound pcp sas:
```

```
outbound esp sas:
  spi: 0xDB79E16D(3682197869)
  transform: esp-3des esp-sha-hmac ,
  in use settings = {Tunnel, }
  slot: 0, conn id: 2001, flow_id: 2, crypto map: rtp
  sa timing: remaining key lifetime (k/sec): (4433404/3282)
  IV size: 8 bytes
  replay detection support: Y

outbound ah sas:

outbound pcp sas:

protected vrf:
local ident (addr/mask/prot/port): (172.18.124.195/0.0.0.0/0/0)
remote ident (addr/mask/prot/port): (50.50.50.7/255.255.255.255/0/0)
current_peer: 172.18.173.80:500
  PERMIT, flags={}
#pkts encaps: 6, #pkts encrypt: 6, #pkts digest 6
#pkts decaps: 47, #pkts decrypt: 47, #pkts verify 47
  #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.: 172.18.124.195, remote crypto endpt.:
  172.18.173.80
  path mtu 1500, ip mtu 1500, ip mtu idb FastEthernet0
  current outbound spi: 72149A7D

inbound esp sas:
  spi: 0x3467B12A(879210794)
  transform: esp-3des esp-sha-hmac ,
  in use settings = {Tunnel, }
  slot: 0, conn id: 2006, flow_id: 7, crypto map: rtp
  sa timing: remaining key lifetime (k/sec): (4381078/3577)
  IV size: 8 bytes
  replay detection support: Y

inbound ah sas:

inbound pcp sas:

outbound esp sas:
  spi: 0x72149A7D(1913952893)
  transform: esp-3des esp-sha-hmac ,
  in use settings = {Tunnel, }
  slot: 0, conn id: 2007, flow_id: 8, crypto map: rtp
  sa timing: remaining key lifetime (k/sec): (4381086/3577)
  IV size: 8 bytes
  replay detection support: Y

outbound ah sas:

outbound pcp sas:

protected vrf:
local ident (addr/mask/prot/port): (172.18.124.195/0.0.0.0/0/0)
remote ident (addr/mask/prot/port): (172.25.70.8/255.255.255.255/0/0)
current_peer: 172.18.124.197:500
  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.: 172.18.124.195, remote crypto endpt.:
172.18.124.197
path mtu 1500, ip mtu 1500, ip mtu idb FastEthernet0
current outbound spi: 2DE8E3C9

inbound esp sas:
spi: 0xED6381E5(3982721509)
transform: esp-3des esp-md5-hmac ,
in use settings ={Tunnel, }
slot: 0, conn id: 2002, flow_id: 3, crypto map: rtp
sa timing: remaining key lifetime (k/sec): (4561846/3283)
IV size: 8 bytes
replay detection support: Y

inbound ah sas:

inbound pcp sas:

outbound esp sas:
spi: 0x2DE8E3C9(770237385)
transform: esp-3des esp-md5-hmac ,
in use settings ={Tunnel, }
slot: 0, conn id: 2003, flow_id: 4, crypto map: rtp
sa timing: remaining key lifetime (k/sec): (4561846/3281)
IV size: 8 bytes
replay detection support: Y

outbound ah sas:

outbound pcp sas:

protected vrf:
local ident (addr/mask/prot/port): (172.18.124.195/0.0.0.0/0/0)
remote ident (addr/mask/prot/port): (172.18.124.197/255.255.255.255/0/0)
current_peer: 172.18.124.197:500
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 not decompressed: 0, #pkts decompress failed: 0
#send errors 0, #recv errors 0

local crypto endpt.: 172.18.124.195, remote crypto endpt.:
172.18.124.197
path mtu 1500, ip mtu 1500, ip mtu idb FastEthernet0
current outbound spi: 87066AED

inbound esp sas:
spi: 0x8C8106A4(2357266084)
transform: esp-3des esp-md5-hmac ,
in use settings ={Tunnel, }
slot: 0, conn id: 2004, flow_id: 5, crypto map: rtp
sa timing: remaining key lifetime (k/sec): (4525643/3285)
IV size: 8 bytes
replay detection support: Y

inbound ah sas:

inbound pcp sas:


outbound esp sas:
spi: 0x87066AED(2265344749)
```

```
transform: esp-3des esp-md5-hmac ,
in use settings ={Tunnel, }
slot: 0, conn id: 2005, flow_id: 6, crypto map: rtp
sa timing: remaining key lifetime (k/sec): (4525643/3285)
IV size: 8 bytes
replay detection support: Y
```

outbound ah sas:

outbound pcp sas:

## Related Information

- [Troubleshooting the PIX to Pass Data Traffic on an Established IPSec Tunnel](#)
- [IP Security Troubleshooting – Understanding and Using debug Commands](#)
- [PIX 500 Series Firewalls Product Support Pages](#)
- [IPSec Technology Support Pages](#)
- [Cisco VPN Client Support Page](#)
- [Documentation for PIX Firewall](#)
- [PIX Command References](#)
- [Requests for Comments \(RFCs\)](#) 
- [RADIUS Support Page](#)
- [RADIUS in IOS Documentation](#)
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