

IOS Easy VPN Remote Hardware Client to a PIX Easy VPN Server **컨피그레이션 예**

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소개

이 문서에서는 Cisco IOS® Easy VPN Remote Hardware Client와 PIX Easy VPN Server 간의 IPsec에 대한 샘플 컨피그레이션을 제공합니다.

참고: Easy VPN Remote 기능은 Hardware Client 및 EzVPN Client라고도 합니다.

Cisco VPN 3000 Concentrator에 연결하기 위해 NEM(Network Extension Mode)에서 Cisco IOS 라우터를 EzVPN으로 구성하는 방법에 대한 자세한 내용은 IOS 라우터의 NEM이 있는 EzVPN with NEM 컨피그레이션 예를 참조하십시오.

PIX/ASA 7.x 이상을 참조하십시오. Easy VPN을 사용하여 Cisco PIX/ASA 7.x와 Cisco 871 라우터 간에 IPsec을 구성하는 방법에 대한 자세한 내용은 Easy VPN Remote Configuration 예시로서 ASA 5500을 서버로 사용하는 Easy VPN을 참조하십시오.

IOS 라우터를 참조하십시오. Easy VPN(EzVPN) with Network-Extension Mode(NEM) 컨피그레이션 예 Cisco 7200 Router를 EzVPN으로 구성하고 Cisco 871 Router를 Easy VPN Remote 클라이언트로 구성하는 방법에 대한 정보를 제공합니다.

사전 요구 사항

요구 사항

이 구성을 시도하기 전에 다음 요구 사항을 충족해야 합니다.

- Cisco IOS 및 하드웨어가 Easy VPN Remote 기능을 지원하는지 확인합니다. [Software Advisor](#)를 참조하십시오(등록된 고객만 해당).
- Easy VPN Server가 PIX 소프트웨어 버전 6.2 이상을 실행하는 PIX 방화벽인지 확인합니다.
- PIX에 3DES 라이선스가 설치되어 있는지 확인합니다. 활성화 [키 업그레이드](#)를 참조하십시오.

사용되는 구성 요소

이 문서의 정보는 다음 소프트웨어 및 하드웨어 버전을 기반으로 합니다.

- Cisco IOS Easy VPN Remote Hardware Client는 Cisco IOS Software 릴리스 12.3(8)T를 실행하는 831 라우터입니다.
- Easy VPN Server는 PIX Software 버전 6.3(3)을 실행하는 PIX 525입니다.

이 문서의 정보는 특정 랩 환경의 디바이스를 토대로 작성되었습니다. 이 문서에 사용된 모든 디바이스는 초기화된(기본) 컨피그레이션으로 시작되었습니다. 현재 네트워크가 작동 중인 경우, 모든 명령어의 잠재적인 영향을 미리 숙지하시기 바랍니다.

표기 규칙

문서 규칙에 대한 자세한 내용은 [Cisco 기술 팁 표기 규칙을 참고하십시오](#).

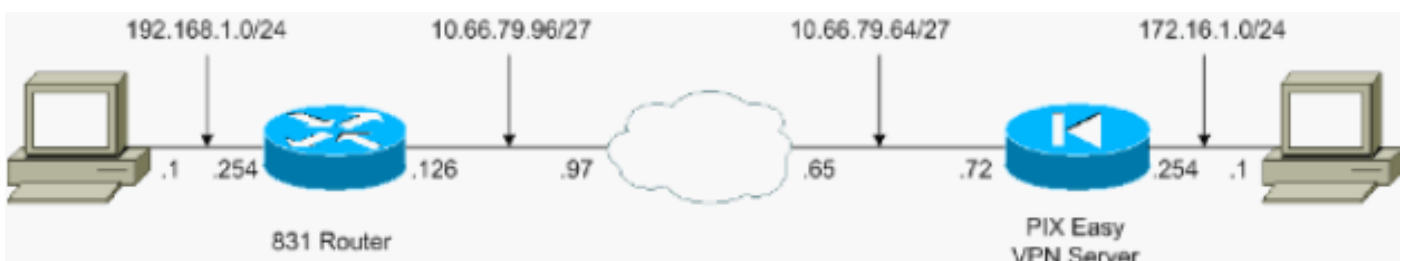
구성

이 섹션에서는 이 문서에 설명된 기능을 구성하는 정보를 제공합니다.

참고: [명령 조회 도구](#)(등록된 고객만 해당)를 사용하여 이 섹션에 사용된 명령에 대한 자세한 내용을 확인하십시오.

네트워크 다이어그램

이 문서에서는 다음 네트워크 설정을 사용합니다.



구성

이 문서에서는 다음 구성을 사용합니다.

- [PIX Easy VPN 서버](#)
- [Cisco IOS Easy VPN Remote Hardware Client](#)

PIX Easy VPN 서버

```
pix525#show running-config
: Saved
:
PIX Version 6.3(3)
interface ethernet0 auto
interface ethernet1 auto
interface ethernet2 auto shutdown
interface ethernet3 auto shutdown
interface ethernet4 auto shutdown
interface ethernet5 auto shutdown
interface ethernet6 auto shutdown
nameif ethernet0 outside security0
nameif ethernet1 inside security100
nameif ethernet2 intf2 security4
nameif ethernet3 intf3 security6
nameif ethernet4 intf4 security8
nameif ethernet5 intf5 security10
nameif ethernet6 intf6 security12
enable password 8Ry2YjIyt7RRXU24 encrypted
passwd 2KFQnbNIdI.2KYOU encrypted
hostname pix525
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

!--- Specify the access list to bypass !--- Network
Address Translation (NAT) for VPN traffic. access-list
nonat permit ip 172.16.1.0 255.255.255.0 192.168.1.0
255.255.255.0 !--- Specify the split tunneling access
list. access-list 110 permit ip 172.16.1.0 255.255.255.0
192.168.1.0 255.255.255.0 pager lines 24 mtu outside
1500 mtu inside 1500 mtu intf2 1500 mtu intf3 1500 mtu
intf4 1500 mtu intf5 1500 mtu intf6 1500 ip address
outside 10.66.79.72 255.255.255.224 ip address inside
172.16.1.254 255.255.255.0 no ip address intf2 no ip
address intf3 no ip address intf4 no ip address intf5 no
ip address intf6 ip audit info action alarm ip audit
attack action alarm no failover failover timeout 0:00:00
failover poll 15 no failover ip address outside no
failover ip address inside no failover ip address intf2
no failover ip address intf3 no failover ip address
intf4 no failover ip address intf5 no failover ip
address intf6 pdm history enable arp timeout 14400 !---
Configure NAT/Port Address Translation (PAT) !--- for
non-encrypted traffic, as well as NAT for IPsec traffic.
global (outside) 1 interface nat (inside) 0 access-list
nonat nat (inside) 1 172.16.1.0 255.255.255.0 0 0 route
outside 0.0.0.0 0.0.0.0 10.66.79.65 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 no snmp-server location no snmp-server
contact snmp-server community public no snmp-server
enable traps floodguard enable sysopt connection permit-
ipsec !--- Configure IPsec transform set and dynamic
crypto map. crypto ipsec transform-set tripledes esp-
3des esp-sha-hmac crypto dynamic-map dynmap 10 set
transform-set tripledes crypto map mymap 10 ipsec-isakmp
dynamic dynmap !--- Apply crypto map to the outside
interface. crypto map mymap interface outside !---
Configure Phase 1 Internet Security Association !--- and
Key Management Protocol (ISAKMP) parameters. isakmp
enable outside isakmp identity address isakmp policy 10
authentication pre-share isakmp policy 10 encryption
3des isakmp policy 10 hash sha isakmp policy 10 group 2
isakmp policy 10 lifetime 86400 !--- Configure VPN Group
parameters that are sent down to the client. vpngroup
vpn-hw-client-group dns-server 172.16.1.1 vpngroup vpn-
hw-client-group wins-server 172.16.1.1 vpngroup vpn-hw-
client-group default-domain cisco.com vpngroup vpn-hw-
client-group split-tunnel 110 vpngroup vpn-hw-client-
group idle-time 1800 vpngroup vpn-hw-client-group
password ***** telnet timeout 5 ssh timeout 5 console
timeout 0 terminal width 80
Cryptochecksum:700fe4d4e7fcdc6750953e64046930c0 : end
```

Cisco IOS Easy VPN Remote Hardware Client

```
831#show running-config
831#show run
Building configuration...

Current configuration : 1226 bytes
!
version 12.3
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname 831
!
boot-start-marker
boot-end-marker
!
!
no aaa new-model
ip subnet-zero
!
!
!
!
ip name-server 172.16.1.1
ip ips po max-events 100
no ftp-server write-enable
!
!
!
!
!
```

```
!  
!  
!  
crypto ipsec client ezvpn vpn-hw-client  
  connect auto  
  group vpn-hw-client-group key password  
  mode network-extension  
  peer 10.66.79.72  
!  
!  
!  
!  
interface Ethernet0  
  ip address 192.168.1.254 255.255.255.0  
  crypto ipsec client ezvpn vpn-hw-client inside  
!  
interface Ethernet1  
  ip address 10.66.79.126 255.255.255.224  
  duplex auto  
  crypto ipsec client ezvpn vpn-hw-client  
!  
interface FastEthernet1  
  no ip address  
  duplex auto  
  speed auto  
!  
interface FastEthernet2  
  no ip address  
  duplex auto  
  speed auto  
!  
interface FastEthernet3  
  no ip address  
  duplex auto  
  speed auto  
!  
interface FastEthernet4  
  no ip address  
  duplex auto  
  speed auto  
!  
ip classless  
ip route 0.0.0.0 0.0.0.0 10.66.79.97  
!  
ip http server  
no ip http secure-server  
!  
!  
no cdp run  
!  
control-plane  
!  
!  
line con 0  
  no modem enable  
  transport preferred all  
  transport output all  
line aux 0  
line vty 0 4  
!  
scheduler max-task-time 5000  
end
```

다음을 확인합니다.

이 섹션을 사용하여 컨피그레이션이 제대로 작동하는지 확인합니다.

- [PIX Easy VPN 서버](#)
- [Cisco IOS Easy VPN Remote Hardware Client](#)

PIX Easy VPN 서버

Output [Interpreter 도구](#)([등록된](#) 고객만 해당)(OIT)는 특정 **show** 명령을 지원합니다.OIT를 사용하여 **show** 명령 출력의 분석을 봅니다.

- **show crypto isakmp sa** - 피어의 현재 IKE(Internet Key Exchange) 보안 연결(SA)을 모두 표시합니다.

```
pix525(config)#show crypto isakmp sa
Total      : 1
Embryonic  : 0
dst        src        state    pending  created
10.66.79.72  10.66.79.126  QM_IDLE  0        1
```

- **show crypto ipsec sa** - 피어 간에 구축된 IPSec SA를 표시합니다.

```
pix525(config)#show crypto ipsec sa

!--- This command is issued after a ping !--- is attempted from the PC behind the !--- Easy
VPN Client to the PC !--- behind the server. interface: outside Crypto map tag: mymap, local
addr. 10.66.79.72 local ident (addr/mask/prot/port): (172.16.1.0/255.255.255.0/0/0) remote
ident (addr/mask/prot/port): (192.168.1.0/255.255.255.0/0/0) current_peer: 10.66.79.126:500
dynamic allocated peer ip: 0.0.0.0 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 decompress failed: 0
#send errors 0, #rcv errors 0 !--- ping packets !--- are successfully exchanged between the
!--- Easy VPN Remote Hardware Client !--- and the Easy VPN Server. local crypto endpt.:
10.66.79.72, remote crypto endpt.: 10.66.79.126 path mtu 1500, ipsec overhead 56, media mtu
1500 current outbound spi: 13f1aa83 inbound esp sas: spi: 0xf4dd4178(4108140920) transform:
esp-3des esp-sha-hmac , in use settings = {Tunnel, } slot: 0, conn id: 1, crypto map: mymap
sa timing: remaining key lifetime (k/sec): (4607999/28567) IV size: 8 bytes replay detection
support: Y inbound ah sas: inbound pcp sas: outbound esp sas: spi: 0x13f1aa83(334604931)
transform: esp-3des esp-sha-hmac , in use settings = {Tunnel, } slot: 0, conn id: 2, crypto
map: mymap sa timing: remaining key lifetime (k/sec): (4607999/28567) IV size: 8 bytes
replay detection support: Y outbound ah sas: outbound pcp sas:
```

Cisco IOS Easy VPN Remote Hardware Client

Output [Interpreter 도구](#)([등록된](#) 고객만 해당)(OIT)는 특정 **show** 명령을 지원합니다.OIT를 사용하여 **show** 명령 출력의 분석을 봅니다.

- **show crypto isakmp sa** - 피어의 현재 모든 IKE SA를 표시합니다.

```
831#show crypto isakmp sa
dst        src        state    conn-id slot
10.66.79.72  10.66.79.126  QM_IDLE  1        0
```

- **show crypto ipsec sa** - 피어 간에 구축된 IPSec SA를 표시합니다.

```
831#show crypto ipsec sa
```

```
!--- This command is issued after a ping !--- is attempted from the PC behind the !--- Easy
VPN Client to the PC !--- behind the server. interface: Ethernet1 Crypto map tag: Ethernet1-
head-0, local addr. 10.66.79.126 protected vrf: local ident (addr/mask/prot/port):
(192.168.1.0/255.255.255.0/0/0) remote ident (addr/mask/prot/port):
```

```
(172.16.1.0/255.255.255.0/0/0) current_peer: 10.66.79.72:500 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 not decompressed: 0, #pkts decompress failed: 0 #send errors 0, #recv errors
0 !--- ping packets !--- are successfully exchanged between !--- the Easy VPN Remote
Hardware Client !--- and the Easy VPN Server. local crypto endpt.: 10.66.79.126, remote
crypto endpt.: 10.66.79.72 path mtu 1500, media mtu 1500 current outbound spi: F4DD4178
inbound esp sas: spi: 0x13F1AA83(334604931) transform: esp-3des esp-sha-hmac , in use
settings = {Tunnel, } slot: 0, conn id: 20, flow_id: 1, crypto map: Ethernet1-head-0 crypto
engine type: Hardware, engine_id: 2 sa timing: remaining key lifetime (k/sec):
(4444258/28648) ike_cookies: A12E6D0D 2C8D9B92 41AB02FB A00A5B03 IV size: 8 bytes replay
detection support: Y inbound ah sas: inbound pcp sas: outbound esp sas: spi:
0xF4DD4178(4108140920) transform: esp-3des esp-sha-hmac , in use settings = {Tunnel, } slot:
0, conn id: 21, flow_id: 2, crypto map: Ethernet1-head-0 crypto engine type: Hardware,
engine_id: 2 sa timing: remaining key lifetime (k/sec): (4444258/28647) ike_cookies:
A12E6D0D 2C8D9B92 41AB02FB A00A5B03 IV size: 8 bytes replay detection support: Y outbound ah
sas: outbound pcp sas:
```

- **show crypto ipsec client ezvpn - VPN Client 또는 Easy VPN Remote 디바이스 컨피그레이션 정보를 표시합니다.**

```
831#show crypto ipsec client ezvpn
Easy VPN Remote Phase: 2
```

```
Tunnel name : vpn-hw-client
Inside interface list: Ethernet0,
Outside interface: Ethernet1
Current State: IPSEC_ACTIVE
Last Event: SOCKET_UP
DNS Primary: 172.16.1.1
DNS Secondary: 172.16.1.1
NBMS/WINS Primary: 172.16.1.1
NBMS/WINS Secondary: 172.16.1.1
Default Domain: cisco.com
Split Tunnel List: 1
    Address      : 172.16.1.0
    Mask         : 255.255.255.0
    Protocol     : 0x0
    Source Port  : 0
    Dest Port    : 0
```

문제 해결

이 섹션에서는 컨피그레이션 문제를 해결하는 데 사용할 수 있는 정보를 제공합니다.

- [PIX Easy VPN 서버](#)
- [Cisco IOS Easy VPN Remote Hardware Client](#)

이 문서에 설명된 대로 Easy VPN Remote Hardware Client 및 Easy VPN Server를 설정했지만 문제가 계속 발생하면 각 디바이스의 디버그 출력 및 Cisco TAC(Technical Assistance Center)의 분석을 위한 **show** 명령의 출력을 수집합니다.

문제 해결에 대한 자세한 내용은 [IP 보안 문제 해결 - 디버그 명령 이해 및 사용](#) 및 [PIX를 참조하여 설정된 IPSec 터널에서 데이터 트래픽을 전달하십시오](#).

PIX Easy VPN 서버

Output [Interpreter 도구](#)([등록된](#) 고객만 해당)(OIT)는 특정 **show** 명령을 지원합니다.OIT를 사용하여 **show** 명령 출력의 분석을 봅니다.

참고: debug 명령을 사용하기 전에 디버그 [명령에 대한 중요 정보](#)를 참조하십시오.

- **debug crypto ipsec** - 2단계의 IPSec 협상을 표시합니다.
- **debug crypto isakmp** - 1단계의 ISAKMP 협상을 표시합니다.

샘플 출력은 다음과 같습니다.

```
pix525(config)#  
!--- As soon as the crypto ipsec client ezvpn vpn-hw-client command !--- is issued on the  
outside interface of the Cisco IOS Easy VPN Remote !--- Hardware Client, the server receives an  
IKE negotiation request.
```

```
crypto_isakmp_process_block:src:10.66.79.126, dest:10.66.79.72 spt:500 dpt:500  
OAK_AG exchange
```

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

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

```
ISAKMP: encryption 3DES-CBC
```

```
ISAKMP: hash SHA
```

```
ISAKMP: default group 2
```

```
ISAKMP: extended auth pre-share (init)
```

```
ISAKMP: life type in seconds
```

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

```
ISAKMP (0): atts are not acceptable. Next payload is 3
```

```
ISAKMP (0): Checking ISAKMP transform 2 against priority 10 policy
```

```
ISAKMP: encryption 3DES-CBC
```

```
ISAKMP: hash MD5
```

```
ISAKMP: default group 2
```

```
ISAKMP: extended auth pre-share (init)
```

```
ISAKMP: life type in seconds
```

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

```
ISAKMP (0): atts are not acceptable. Next payload is 3
```

```
ISAKMP (0): Checking ISAKMP transform 3 against priority 10 policy
```

```
ISAKMP: encryption DES-CBC
```

```
ISAKMP: hash SHA
```

```
ISAKMP: default group 2
```

```
ISAKMP: extended auth pre-share (init)
```

```
ISAKMP: life type in seconds
```

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

```
ISAKMP (0): atts are not acceptable. Next payload is 3
```

```
ISAKMP (0): Checking ISAKMP transform 4 against priority 10 policy
```

```
ISAKMP: encryption 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 0x20 0xc4 0x9b
```

```
ISAKMP (0): atts are not acceptable. Next payload is 3
```

```
ISAKMP (0): Checking ISAKMP transform 5 against priority 10 policy
```

```
ISAKMP: encryption 3DES-CBC
```

```
ISAKMP: hash SHA
```

```
ISAKMP: default group 2
```

```
ISAKMP: auth pre-share
```

```
ISAKMP: life type in seconds
```

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

```
ISAKMP (0): atts are acceptable. Next payload is 3
```

```
ISAKMP (0): processing vendor id payload
```

```
ISAKMP (0:0): vendor ID is NAT-T
```

```
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 NONCE payload. message ID = 0

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

ISAKMP (0): remote peer supports dead peer detection

ISAKMP (0): processing vendor id payload

ISAKMP (0): received xauth v6 vendor id

ISAKMP (0): processing vendor id payload

ISAKMP (0): claimed IOS but failed authentication

ISAKMP (0): processing vendor id payload

ISAKMP (0): speaking to a Unity client

ISAKMP (0): ID payload
    next-payload : 10
    type          : 1
    protocol      : 17
    port         : 500
    length        : 8
ISAKMP (0): Total payload length: 12
return status is IKMP_NO_ERROR
crypto_isakmp_process_block:src:10.66.79.126, dest:10.66.79.72 spt:500 dpt:500
OAK_AG exchange
ISAKMP (0): processing HASH payload. message ID = 0
ISAKMP (0): processing NOTIFY payload 24578 protocol 1
    spi 0, message ID = 0
ISAKMP (0): processing notify INITIAL_CONTACTIPSEC(key_engine): got a queue event...
IPSEC(key_engine_delete_sas): rec'd delete notify from ISAKMP
IPSEC(key_engine_delete_sas): delete all SAs shared with    10.66.79.126

ISAKMP (0): SA has been authenticated
ISAKMP: Created a peer struct for 10.66.79.126, peer port 62465
return status is IKMP_NO_ERROR
ISAKMP (0): sending phase 1 RESPONDER_LIFETIME notify
ISAKMP (0): sending NOTIFY message 24576 protocol 1
VPN Peer: ISAKMP: Added new peer: ip:10.66.79.126/500 Total VPN Peers:1
VPN Peer: ISAKMP: Peer ip:10.66.79.126/500 Ref cnt incremented to:1 Total
VPN Peers:1
ISAKMP: peer is a remote access client
crypto_isakmp_process_block:src:10.66.79.126, dest:10.66.79.72 spt:500 dpt:500
ISAKMP_TRANSACTION exchange
ISAKMP (0:0): processing transaction payload from 10.66.79.126.
    message ID = 63324444
ISAKMP: Config payload CFG_REQUEST
ISAKMP (0:0): checking request:
ISAKMP: attribute    IP4_DNS (3)
ISAKMP: attribute    IP4_DNS (3)
ISAKMP: attribute    IP4_NBNS (4)
ISAKMP: attribute    IP4_NBNS (4)
ISAKMP: attribute    ALT_SPLIT_INCLUDE (28676)
ISAKMP: attribute    ALT_SPLITDNS_NAME (28675)
ISAKMP: attribute    ALT_DEF_DOMAIN (28674)
ISAKMP: attribute    UNKNOWN (28673)
    Unsupported Attr: 28673
ISAKMP: attribute    UNKNOWN (28678)
```

```

Unsupported Attr: 28678
ISAKMP: attribute ALT_PFS (28679)
ISAKMP: attribute ALT_BACKUP_SERVERS (28681)
ISAKMP: attribute APPLICATION_VERSION (7)
ISAKMP (0:0): responding to peer config from 10.66.79.126. ID = 2563858956
return status is IKMP_NO_ERROR
crypto_isakmp_process_block:src:10.66.79.126, dest:10.66.79.72 spt:500 dpt:500
OAK_QM exchange
oakley_process_quick_mode:
OAK_QM_IDLE
ISAKMP (0): processing SA payload. message ID = 3238088328

```

```
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 (VPI) of 0x0 0x20 0xc4 0x9b
ISAKMP: SA life type in kilobytes
ISAKMP: SA life duration (VPI) of 0x0
crypto_isakmp_process_block:src:10.66.79.126, dest:10.66.79.72 spt:500 dpt:500
OAK_QM exchange
ISADB: reaper checking SA 0x3c6420c, conn_id = 0

```

[Cisco IOS Easy VPN Remote Hardware Client](#)

Output [Interpreter 도구\(등록된 고객만 해당\)\(OIT\)](#)는 특정 **show** 명령을 지원합니다.OIT를 사용하여 **show** 명령 출력의 분석을 봅니다.

참고: debug 명령을 사용하기 전에 디버그 [명령에 대한 중요 정보](#)를 참조하십시오.

- **debug crypto ipsec** - 2단계의 IPsec 협상을 표시합니다.
- **debug crypto isakmp** - 1단계의 ISAKMP 협상을 표시합니다.

샘플 출력은 다음과 같습니다.

```

831(config)#int eth 1
831(config-if)#crypto ipsec client ezvpn vpn-hw-client
*Mar 1 01:42:18.739: ISAKMP: callback: no SA found for 0.0.0.0/0.0.0.0 [vrf 0]
*Mar 1 01:42:18.739: %CRYPTO-6-ISAKMP_ON_OFF: ISAKMP is ON
*Mar 1 01:42:18.743: ISAKMP: Looking for a matching key for 10.66.79.72 in default
*Mar 1 01:42:18.743: ISAKMP: received ke message (1/1)
*Mar 1 01:42:18.743: ISAKMP:(0:0:N/A:0): SA request profile is (NULL)
*Mar 1 01:42:18.743: ISAKMP: Created a peer struct for 10.66.79.72, peer port 500
*Mar 1 01:42:18.743: ISAKMP: Locking peer struct 0x81F05E5C, IKE refcount
  1 for isakmp_initiator
*Mar 1 01:42:18.747: ISAKMP:(0:0:N/A:0):Setting client config settings 81C8F564
*Mar 1 01:42:18.747: ISAKMP: local port 500, remote port 500
*Mar 1 01:42:18.747: insert sa successfully sa = 81C8EEB8
*Mar 1 01:42:18.747: ISAKMP:(0:0:N/A:0): client mode configured.
*Mar 1 01:42:18.751: ISAKMP:(0:0:N/A:0): constructed NAT-T vendor-03 ID
*Mar 1 01:42:18.751: ISAKMP:(0:0:N/A:0): constructed NAT-T vendor-02 ID
*Mar 1 01:42:19.203: ISAKMP:(0:1:HW:2):SA is doing pre-shared key authentication
  plus XAUTH using id type ID_KEY_ID
*Mar 1 01:42:19.203: ISAKMP (0:268435457): ID payload
  next-payload : 13
  type          : 11
  group id      : vpn-hw-client-group
  protocol      : 17
  port         : 0

```

```
length          : 27
*Mar 1 01:42:19.203: ISAKMP:(0:1:HW:2):Total payload length: 27
*Mar 1 01:42:19.207: ISAKMP:(0:1:HW:2):Input = IKE_MSG_FROM_IPSEC, IKE_SA_REQ_AM
*Mar 1 01:42:19.207: ISAKMP:(0:1:HW:2):Old State = IKE_READY New State = IKE_I_AM1

*Mar 1 01:42:19.207: ISAKMP:(0:1:HW:2): beginning Aggressive Mode exchange
*Mar 1 01:42:19.207: ISAKMP:(0:1:HW:2): sending packet to 10.66.79.72
  my_port 500 peer_port 500 (I) AG_INIT_EXCH
*Mar 1 01:42:19.267: ISAKMP (0:268435457): received packet from 10.66.79.72
  dport 500 sport 500 Global (I) AG_INIT_EXCH
*Mar 1 01:42:19.271: ISAKMP:(0:1:HW:2): processing SA payload. message ID = 0
*Mar 1 01:42:19.271: ISAKMP:(0:1:HW:2): processing ID payload. message ID = 0
*Mar 1 01:42:19.271: ISAKMP (0:268435457): ID payload
  next-payload : 10
  type          : 1
  address       : 10.66.79.72
  protocol      : 17
  port          : 500
  length        : 12
*Mar 1 01:42:19.271: ISAKMP:(0:1:HW:2): processing vendor id payload
*Mar 1 01:42:19.271: ISAKMP:(0:1:HW:2): vendor ID seems Unity/DPD but major
  215 mismatch
*Mar 1 01:42:19.275: ISAKMP:(0:1:HW:2): vendor ID is XAUTH
*Mar 1 01:42:19.275: ISAKMP:(0:1:HW:2): processing vendor id payload
*Mar 1 01:42:19.275: ISAKMP:(0:1:HW:2): vendor ID is DPD
*Mar 1 01:42:19.275: ISAKMP:(0:1:HW:2): processing vendor id payload
*Mar 1 01:42:19.275: ISAKMP:(0:1:HW:2): vendor ID is Unity
*Mar 1 01:42:19.275: ISAKMP:(0:1:HW:2): local preshared key found
*Mar 1 01:42:19.275: ISAKMP : Scanning profiles for xauth ...
*Mar 1 01:42:19.279: ISAKMP:(0:1:HW:2): Authentication by xauth preshared
*Mar 1 01:42:19.279: ISAKMP:(0:1:HW:2):Checking ISAKMP transform 1 against
  priority 65527 policy
*Mar 1 01:42:19.279: ISAKMP:      encryption 3DES-CBC
*Mar 1 01:42:19.279: ISAKMP:      hash SHA
*Mar 1 01:42:19.279: ISAKMP:      default group 2
*Mar 1 01:42:19.279: ISAKMP:      auth pre-share
*Mar 1 01:42:19.279: ISAKMP:      life type in seconds
*Mar 1 01:42:19.279: ISAKMP:      life duration (VPI) of 0x0 0x20 0xC4 0x9B
*Mar 1 01:42:19.279: ISAKMP:(0:1:HW:2):Authentication method offered does
  not match policy!
*Mar 1 01:42:19.283: ISAKMP:(0:1:HW:2):atts are not acceptable.
  Next payload is 0
*Mar 1 01:42:19.283: ISAKMP:(0:1:HW:2):Checking ISAKMP transform 1
  against priority 65528 policy
*Mar 1 01:42:19.283: ISAKMP:      encryption 3DES-CBC
*Mar 1 01:42:19.283: ISAKMP:      hash SHA
*Mar 1 01:42:19.283: ISAKMP:      default group 2
*Mar 1 01:42:19.283: ISAKMP:      auth pre-share
*Mar 1 01:42:19.283: ISAKMP:      life type in seconds
*Mar 1 01:42:19.283: ISAKMP:      life duration (VPI) of 0x0 0x20 0xC4 0x9B
*Mar 1 01:42:19.283: ISAKMP:(0:1:HW:2):Hash algorithm offered does not
  match policy!
*Mar 1 01:42:19.283: ISAKMP:(0:1:HW:2):atts are not acceptable. Next
  payload is 0
*Mar 1 01:42:19.287: ISAKMP:(0:1:HW:2):Checking ISAKMP transform 1
  against priority 65529 policy
*Mar 1 01:42:19.287: ISAKMP:      encryption 3DES-CBC
*Mar 1 01:42:19.287: ISAKMP:      hash SHA
*Mar 1 01:42:19.287: ISAKMP:      default group 2
*Mar 1 01:42:19.287: ISAKMP:      auth pre-share
*Mar 1 01:42:19.287: ISAKMP:      life type in seconds
*Mar 1 01:42:19.287: ISAKMP:      life duration (VPI) of 0x0 0x20 0xC4 0x9B
*Mar 1 01:42:19.287: ISAKMP:(0:1:HW:2):Encryption algorithm offered does
  not match policy!
```

```
*Mar 1 01:42:19.287: ISAKMP:(0:1:HW:2):atts are not acceptable.
  Next payload is 0
*Mar 1 01:42:19.291: ISAKMP:(0:1:HW:2):Checking ISAKMP transform
  1 against priority 65530 policy
*Mar 1 01:42:19.291: ISAKMP:      encryption 3DES-CBC
*Mar 1 01:42:19.291: ISAKMP:      hash SHA
*Mar 1 01:42:19.291: ISAKMP:      default group 2
*Mar 1 01:42:19.291: ISAKMP:      auth pre-share
*Mar 1 01:42:19.291: ISAKMP:      life type in seconds
*Mar 1 01:42:19.291: ISAKMP:      life duration (VPI) of 0x0 0x20 0xC4 0x9B
*Mar 1 01:42:19.291: ISAKMP:(0:1:HW:2):Encryption algorithm offered
  does not match policy!
*Mar 1 01:42:19.291: ISAKMP:(0:1:HW:2):atts are not acceptable. Next
  payload is 0
*Mar 1 01:42:19.295: ISAKMP:(0:1:HW:2):Checking ISAKMP transform 1
  against priority 65531 policy
*Mar 1 01:42:19.295: ISAKMP:      encryption 3DES-CBC
*Mar 1 01:42:19.295: ISAKMP:      hash SHA
*Mar 1 01:42:19.295: ISAKMP:      default group 2
*Mar 1 01:42:19.295: ISAKMP:      auth pre-share
*Mar 1 01:42:19.295: ISAKMP:      life type in seconds
*Mar 1 01:42:19.295: ISAKMP:      life duration (VPI) of 0x0 0x20 0xC4 0x9B
*Mar 1 01:42:19.295: ISAKMP:(0:1:HW:2):atts are acceptable. Next payload is 0
*Mar 1 01:42:19.295: ISAKMP:(0:1:HW:2): processing KE payload. message ID = 0
*Mar 1 01:42:19.747: ISAKMP:(0:1:HW:2): processing NONCE payload. message ID = 0
*Mar 1 01:42:19.747: ISAKMP:(0:1:HW:2):SKEYID state generated
*Mar 1 01:42:19.747: ISAKMP:(0:1:HW:2): processing HASH payload. message ID = 0
*Mar 1 01:42:19.751: ISAKMP:(0:1:HW:2):SA authentication status:
  authenticated
*Mar 1 01:42:19.751: ISAKMP:(0:1:HW:2):SA has been authenticated with 10.66.79.72
*Mar 1 01:42:19.751: ISAKMP: Trying to insert a peer
  10.66.79.126/10.66.79.72/500/, and inserted successfully.
*Mar 1 01:42:19.751: ISAKMP:(0:1:HW:2):Send initial contact
*Mar 1 01:42:19.759: ISAKMP:(0:1:HW:2): sending packet to 10.66.79.72
  my_port 500 peer_port 500 (I) AG_INIT_EXCH
*Mar 1 01:42:19.759: ISAKMP:(0:1:HW:2):Input = IKE_MSG_FROM_PEER, IKE_AM_EXCH
*Mar 1 01:42:19.759: ISAKMP:(0:1:HW:2):Old State = IKE_I_AM1
  New State = IKE_P1_COMPLETE

*Mar 1 01:42:19.763: ISAKMP:(0:1:HW:2):Need config/address
*Mar 1 01:42:19.763: ISAKMP:(0:1:HW:2):Need config/address
*Mar 1 01:42:19.763: ISAKMP: set new node -1731108340 to CONF_ADDR
*Mar 1 01:42:19.763: ISAKMP: Sending APPLICATION_VERSION string:
  Cisco IOS Software, C831 Software (C831-K903SY6-M), Version 12.3(8)T,
  RELEASE SOFTWARE (fc2)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2004 by Cisco Systems, Inc.
Compiled Fri 14-May-04 01:40 by eaarmas
*Mar 1 01:42:19.775: ISAKMP:(0:1:HW:2): initiating peer config to
  10.66.79.72. ID = -1731108340
*Mar 1 01:42:19.775: ISAKMP:(0:1:HW:2): sending packet to 10.66.79.72
  my_port 500 peer_port 500 (I) CONF_ADDR
*Mar 1 01:42:19.775: ISAKMP:(0:1:HW:2):Input = IKE_MSG_INTERNAL,
  IKE_PHASE1_COMPLETE
*Mar 1 01:42:19.775: ISAKMP:(0:1:HW:2):Old State = IKE_P1_COMPLETE
  New State = IKE_CONFIG_MODE_REQ_SENT

*Mar 1 01:42:19.775: ISAKMP (0:268435457): received packet from 10.66.79.72
  dport 500 sport 500 Global (I) CONF_ADDR
*Mar 1 01:42:19.779: ISAKMP: set new node -531260300 to CONF_ADDR
*Mar 1 01:42:19.783: ISAKMP:(0:1:HW:2): processing HASH payload.
  message ID = -531260300
*Mar 1 01:42:19.783: ISAKMP:(0:1:HW:2): processing NOTIFY
  RESPONDER_LIFETIME protocol 1
```

```
spi 0, message ID = -531260300, sa = 81C8EEB8
*Mar 1 01:42:19.783: ISAKMP:(0:1:HW:2):SA authentication status:
    authenticated
*Mar 1 01:42:19.787: ISAKMP:(0:1:HW:2): processing responder lifetime
*Mar 1 01:42:19.787: ISAKMP:(0:1:HW:2): start processing isakmp
    responder lifetime
*Mar 1 01:42:19.787: ISAKMP:(0:1:HW:2): restart ike sa timer to 86400 secs
*Mar 1 01:42:19.787: ISAKMP:(0:1:HW:2):deleting node -531260300 error
    FALSE reason "Informational (in) state 1"
*Mar 1 01:42:19.787: ISAKMP:(0:1:HW:2):Input = IKE_MSG_FROM_PEER,
    IKE_INFO_NOTIFY
*Mar 1 01:42:19.787: ISAKMP:(0:1:HW:2):Old State = IKE_CONFIG_MODE_REQ_SENT
    New State = IKE_CONFIG_MODE_REQ_SENT

*Mar 1 01:42:19.791: ISAKMP (0:268435457): received packet from 10.66.79.72
    dport 500 sport 500 Global (I) CONF_ADDR
*Mar 1 01:42:19.795: ISAKMP:(0:1:HW:2):processing transaction payload from
    10.66.79.72. message ID = -1731108340
*Mar 1 01:42:19.795: ISAKMP: Config payload REPLY
*Mar 1 01:42:19.799: ISAKMP(0:268435457) process config reply
*Mar 1 01:42:19.799: ISAKMP:(0:1:HW:2):deleting node -1731108340 error
    FALSE reason "Transaction mode done"
*Mar 1 01:42:19.799: ISAKMP:(0:1:HW:2):Input = IKE_MSG_FROM_PEER,
    IKE_CFG_REPLY
*Mar 1 01:42:19.799: ISAKMP:(0:1:HW:2):Old State = IKE_CONFIG_MODE_REQ_SENT
    New State = IKE_P1_COMPLETE

*Mar 1 01:42:19.807: ISAKMP:(0:1:HW:2):Input = IKE_MSG_INTERNAL,
    IKE_PHASE1_COMPLETE
*Mar 1 01:42:19.807: ISAKMP:(0:1:HW:2):Old State = IKE_P1_COMPLETE
    New State = IKE_P1_COMPLETE

*Mar 1 01:42:19.815: IPSEC(sa_request): ,
    (key eng. msg.) OUTBOUND local= 10.66.79.126, remote= 10.66.79.72,
    local_proxy= 192.168.1.0/255.255.255.0/0/0 (type=4),
    remote_proxy= 172.16.1.0/255.255.255.0/0/0 (type=4),
    protocol= ESP, transform= esp-3des esp-sha-hmac (Tunnel),
    lifedur= 2147483s and 4608000kb,
    spi= 0x13F1AA83(334604931), conn_id= 0, keysize= 0, flags= 0x400A
*Mar 1 01:42:19.815: IPSEC(sa_request): ,
    (key eng. msg.) OUTBOUND local= 10.66.79.126, remote= 10.66.79.72,
    local_proxy= 192.168.1.0/255.255.255.0/0/0 (type=4),
    remote_proxy= 172.16.1.0/255.255.255.0/0/0 (type=4),
    protocol= ESP, transform= esp-3des esp-md5-hmac (Tunnel),
    lifedur= 2147483s and 4608000kb,
    spi= 0xAD8C95C7(2911671751), conn_id= 0, keysize= 0, flags= 0x400A
*Mar 1 01:42:19.819: IPSEC(sa_request): ,
    (key eng. msg.) OUTBOUND local= 10.66.79.126, remote= 10.66.79.72,
    local_proxy= 192.168.1.0/255.255.255.0/0/0 (type=4),
    remote_proxy= 172.16.1.0/255.255.255.0/0/0 (type=4),
    protocol= ESP, transform= esp-des esp-sha-hmac (Tunnel),
    lifedur= 2147483s and 4608000kb,
    spi= 0x7B5EBFA(129362938), conn_id= 0, keysize= 0, flags= 0x400A
*Mar 1 01:42:19.819: IPSEC(sa_request): ,
    (key eng. msg.) OUTBOUND local= 10.66.79.126, remote= 10.66.79.72,
    local_proxy= 192.168.1.0/255.255.255.0/0/0 (type=4),
    remote_proxy= 172.16.1.0/255.255.255.0/0/0 (type=4),
    protocol= ESP, transform= esp-des esp-md5-hmac (Tunnel),
    lifedur= 2147483s and 4608000kb,
    spi= 0x702568AE(1881499822), conn_id= 0, keysize= 0, flags= 0x400A
*Mar 1 01:42:19.823: ISAKMP: received ke message (1/4)
*Mar 1 01:42:19.823: ISAKMP: set new node 0 to QM_IDLE
*Mar 1 01:42:19.823: ISAKMP:(0:1:HW:2): sitting IDLE. Starting QM
    immediately (QM_IDLE )
```

```

*Mar 1 01:42:19.823: ISAKMP:(0:1:HW:2):beginning Quick Mode exchange,
  M-ID of -1056878968
*Mar 1 01:42:19.835: ISAKMP:(0:1:HW:2): sending packet to 10.66.79.72
  my_port 500 peer_port 500 (I) QM_IDLE
*Mar 1 01:42:19.835: ISAKMP:(0:1:HW:2):Node -1056878968, Input =
  IKE_MSG_INTERNAL, IKE_INIT_QM
*Mar 1 01:42:19.843: ISAKMP:(0:1:HW:2):Old State = IKE_QM_READY
  New State = IKE_QM_I_QM1
*Mar 1 01:42:19.859: ISAKMP (0:268435457): received packet from
  10.66.79.72 dport 500 sport 500 Global (I) QM_IDLE
*Mar 1 01:42:19.863: ISAKMP:(0:1:HW:2): processing HASH payload.
  message ID = -1056878968
*Mar 1 01:42:19.863: ISAKMP:(0:1:HW:2): processing SA payload.
  message ID = -1056878968
*Mar 1 01:42:19.863: ISAKMP:(0:1:HW:2):Checking IPsec proposal 1
*Mar 1 01:42:19.863: ISAKMP: transform 1, ESP_3DES
*Mar 1 01:42:19.863: ISAKMP:   attributes in transform:
*Mar 1 01:42:19.863: ISAKMP:     encaps is 1 (Tunnel)
*Mar 1 01:42:19.867: ISAKMP:     SA life type in seconds
*Mar 1 01:42:19.867: ISAKMP:     SA life duration (VPI) of  0x0 0x20 0xC4 0x9B
*Mar 1 01:42:19.867: ISAKMP:     SA life type in kilobytes
*Mar 1 01:42:19.867: ISAKMP:     SA life duration (VPI) of  0x0 0x46 0x50 0x0
*Mar 1 01:42:19.867: ISAKMP:     authenticator is HMAC-SHA
*Mar 1 01:42:19.867: ISAKMP:(0:1:HW:2):atts are acceptable.
*Mar 1 01:42:19.871: IPSEC(validate_proposal_request): proposal part #1,
  (key eng. msg.) INBOUND local= 10.66.79.126, remote= 10.66.79.72,
  local_proxy= 192.168.1.0/255.255.255.0/0/0 (type=4),
  remote_proxy= 172.16.1.0/255.255.255.0/0/0 (type=4),
  protocol= ESP, transform= esp-3des esp-sha-hmac (Tunnel),
  lifedur= 0s and 0kb,
  spi= 0x0(0), conn_id= 0, keysize= 0, flags= 0x2
*Mar 1 01:42:19.871: Crypto mapdb : proxy_match
  src addr      : 192.168.1.0
  dst addr      : 172.16.1.0
  protocol      : 0
  src port      : 0
  dst port      : 0
*Mar 1 01:42:19.871: ISAKMP:(0:1:HW:2): processing NONCE payload.
  message ID = -1056878968
*Mar 1 01:42:19.875: ISAKMP:(0:1:HW:2): processing ID payload.
  message ID = -1056878968
*Mar 1 01:42:19.875: ISAKMP:(0:1:HW:2): processing ID payload.
  message ID = -1056878968
*Mar 1 01:42:19.875: ISAKMP:(0:1:HW:2): processing NOTIFY
  RESPONDER_LIFETIME protocol 3
  spi 4108140920, message ID = -1056878968, sa = 81C8EEB8
*Mar 1 01:42:19.875: ISAKMP:(0:1:HW:2):SA authentication status:
  authenticated
*Mar 1 01:42:19.875: ISAKMP:(0:1:HW:2): processing responder lifetime
*Mar 1 01:42:19.875: ISAKMP (268435457): responder lifetime of 28800s
*Mar 1 01:42:19.879: IPsec: Flow_switching Allocated flow for flow_id 268435457
*Mar 1 01:42:19.879: IPsec: Flow_switching Allocated flow for flow_id 268435458
*Mar 1 01:42:19.887: %CRYPTO-5-SESSION_STATUS: Crypto tunnel is UP .
  Peer 10.66.79.72:500      Id: 10.66.79.72
*Mar 1 01:42:19.887: ISAKMP: Locking peer struct 0x81F05E5C, IPSEC
  refcount 1 for for stuff_ke
*Mar 1 01:42:19.887: ISAKMP:(0:1:HW:2): Creating IPsec SAs
*Mar 1 01:42:19.895:      inbound SA from 10.66.79.72 to 10.66.79.126
  (f/i)  0/ 0
  (proxy 172.16.1.0 to 192.168.1.0)
*Mar 1 01:42:19.895:      has spi 0x13F1AA83 and conn_id 20 and flags 2
*Mar 1 01:42:19.895:      lifetime of 28790 seconds
*Mar 1 01:42:19.895:      lifetime of 4608000 kilobytes
*Mar 1 01:42:19.895:      has client flags 0x0

```

```

*Mar 1 01:42:19.895:      outbound SA from 10.66.79.126 to 10.66.79.72
(f/i) 0/0
      (proxy 192.168.1.0 to 172.16.1.0)
*Mar 1 01:42:19.895:      has spi -186826376 and conn_id 21 and flags A
*Mar 1 01:42:19.895:      lifetime of 28790 seconds
*Mar 1 01:42:19.895:      lifetime of 4608000 kilobytes
*Mar 1 01:42:19.895:      has client flags 0x0
*Mar 1 01:42:19.899: IPSEC(key_engine): got a queue event with 2 kei messages
*Mar 1 01:42:19.899: IPSEC(initialize_sas): ,
      (key eng. msg.) INBOUND local= 10.66.79.126, remote= 10.66.79.72,
      local_proxy= 192.168.1.0/255.255.255.0/0/0 (type=4),
      remote_proxy= 172.16.1.0/255.255.255.0/0/0 (type=4),
      protocol= ESP, transform= esp-3des esp-sha-hmac (Tunnel),
      lifedur= 28790s and 4608000kb,
      spi= 0x13F1AA83(334604931), conn_id= 268435476, keysize= 0, flags= 0x2
*Mar 1 01:42:19.899: IPSEC(initialize_sas): ,
      (key eng. msg.) OUTBOUND local= 10.66.79.126, remote= 10.66.79.72,
      local_proxy= 192.168.1.0/255.255.255.0/0/0 (type=4),
      remote_proxy= 172.16.1.0/255.255.255.0/0/0 (type=4),
      protocol= ESP, transform= esp-3des esp-sha-hmac (Tunnel),
      lifedur= 28790s and 4608000kb,
      spi= 0xF4DD4178(4108140920), conn_id= 268435477, keysize= 0, flags= 0xA
*Mar 1 01:42:19.903: Crypto mapdb : proxy_match
      src addr      : 192.168.1.0
      dst addr      : 172.16.1.0
      protocol      : 0
      src port      : 0
      dst port      : 0
*Mar 1 01:42:19.903: IPSEC(crypto_ipsec_sa_find_ident_head):
      reconnecting with the same proxies and 10.66.79.72
*Mar 1 01:42:19.903: IPSEC(policy_db_add_ident): src 192.168.1.0,
      dest 172.16.1.0, dest_port 0
*Mar 1 01:42:19.907: IPSEC(create_sa): sa created,
      (sa) sa_dest= 10.66.79.126, sa_prot= 50,
      sa_spi= 0x13F1AA83(334604931),
      sa_trans= esp-3des esp-sha-hmac , sa_conn_id= 268435476
*Mar 1 01:42:19.907: IPSEC(create_sa): sa created,
      (sa) sa_dest= 10.66.79.72, sa_prot= 50,
      sa_spi= 0xF4DD4178(4108140920),
      sa_trans= esp-3des esp-sha-hmac , sa_conn_id= 268435477
*Mar 1 01:42:19.911: ISAKMP:(0:1:HW:2): sending packet to
      10.66.79.72 my_port 500 peer_port 500 (I) QM_IDLE
*Mar 1 01:42:19.911: ISAKMP:(0:1:HW:2):deleting node -1056878968
      error FALSE reason "No Error"
*Mar 1 01:42:19.911: ISAKMP:(0:1:HW:2):Node -1056878968, Input =
      IKE_MESG_FROM_PEER, IKE_QM_EXCH
*Mar 1 01:42:19.911: ISAKMP:(0:1:HW:2):Old State = IKE_QM_I_QM1
      New State = IKE_QM_PHASE2_COMPLETE
*Mar 1 01:43:09.787: ISAKMP:(0:1:HW:2):purging node -531260300
*Mar 1 01:43:09.799: ISAKMP:(0:1:HW:2):purging node -1731108340
*Mar 1 01:43:09.911: ISAKMP:(0:1:HW:2):purging node -1056878968

```

• **debug vpnclient** - VPN 클라이언트에 특정한 협상을 표시합니다.
샘플 출력은 다음과 같습니다.

```

831(config)#int eth 1
831(config-if)#crypto ipsec client ezvpn vpn-hw-client
*Mar 1 01:49:26.543: %CRYPTO-6-ISAKMP_ON_OFF: ISAKMP is ON
*Mar 1 01:49:26.547: EZVPN(vpn-hw-client): Current State: IDLE
*Mar 1 01:49:26.547: EZVPN(vpn-hw-client): Event: VALID_CONFIG_ENTERED
*Mar 1 01:49:26.547: EZVPN(vpn-hw-client): ezvpn_check_tunnel_interface_state

```

```

*Mar 1 01:49:26.547: EZVPN(vpn-hw-client): New State: VALID_CFG
*Mar 1 01:49:26.547: EZVPN(vpn-hw-client): Current State: VALID_CFG
*Mar 1 01:49:26.547: EZVPN(vpn-hw-client): Event: VALID_CONFIG_ENTERED
*Mar 1 01:49:26.547: EZVPN(vpn-hw-client): No state change
*Mar 1 01:49:26.547: EZVPN(vpn-hw-client): Current State: VALID_CFG
*Mar 1 01:49:26.551: EZVPN(vpn-hw-client): Event: TUNNEL_INTERFACE_UP
*Mar 1 01:49:26.551: EZVPN(vpn-hw-client): ezvpn_check_tunnel_interface_address
*Mar 1 01:49:26.551: EZVPN(vpn-hw-client): New State: TUNNEL_INT_UP
*Mar 1 01:49:26.551: EZVPN(vpn-hw-client): Current State: TUNNEL_INT_UP
*Mar 1 01:49:26.551: EZVPN(vpn-hw-client): Event: TUNNEL_HAS_PUBLIC_IP_ADD
*Mar 1 01:49:26.551: EZVPN(vpn-hw-client): New State: CONNECT_REQUIRED
*Mar 1 01:49:26.551: EZVPN(vpn-hw-client): Current State: CONNECT_REQUIRED
*Mar 1 01:49:26.551: EZVPN(vpn-hw-client): Event: CONNECT
*Mar 1 01:49:26.555: EZVPN(vpn-hw-client): ezvpn_connect_request
*Mar 1 01:49:26.555: EZVPN(vpn-hw-client): New State: READY
*Mar 1 01:49:27.535: EZVPN(vpn-hw-client): Current State: READY
*Mar 1 01:49:27.535: EZVPN(vpn-hw-client): Event: CONN_UP
*Mar 1 01:49:27.535: EZVPN(vpn-hw-client): ezvpn_conn_up A12E6D0D D9C3B1AE
41AB02FB 62DD1B01
*Mar 1 01:49:27.539: EZVPN(vpn-hw-client): No state change
*Mar 1 01:49:27.563: EZVPN(vpn-hw-client): Current State: READY
*Mar 1 01:49:27.563: EZVPN(vpn-hw-client): Event: MODE_CONFIG_REPLY
*Mar 1 01:49:27.563: EZVPN(vpn-hw-client): ezvpn_mode_config
*Mar 1 01:49:27.563: EZVPN(vpn-hw-client): ezvpn_parse_mode_config_msg
*Mar 1 01:49:27.563: EZVPN: Attributes sent in message:
*Mar 1 01:49:27.563:         DNS Primary: 172.16.1.1
*Mar 1 01:49:27.567:         DNS Secondary: 172.16.1.1
*Mar 1 01:49:27.567:         NBMS/WINS Primary: 172.16.1.1
*Mar 1 01:49:27.567:         NBMS/WINS Secondary: 172.16.1.1
*Mar 1 01:49:27.567:         Split Tunnel List: 1
*Mar 1 01:49:27.567:             Address      : 172.16.1.0
*Mar 1 01:49:27.567:             Mask          : 255.255.255.0
*Mar 1 01:49:27.567:             Protocol     : 0x0
*Mar 1 01:49:27.567:             Source Port  : 0
*Mar 1 01:49:27.567:             Dest Port   : 0
*Mar 1 01:49:27.567:         Default Domain: cisco.com
*Mar 1 01:49:27.567: EZVPN: Unknown/Unsupported Attr: PFS (0x7007)
*Mar 1 01:49:27.571: EZVPN(vpn-hw-client): ezvpn_nat_config
*Mar 1 01:49:27.571: EZVPN: close old connection, len 0
*Mar 1 01:49:27.575: EZVPN(vpn-hw-client): New State: SS_OPEN
*Mar 1 01:49:27.587: EZVPN(vpn-hw-client): Current State: SS_OPEN
*Mar 1 01:49:27.587: EZVPN(vpn-hw-client): Event: SOCKET_READY
*Mar 1 01:49:27.587: EZVPN(vpn-hw-client): No state change
*Mar 1 01:49:27.619: %CRYPTO-5-SESSION_STATUS: Crypto tunnel is UP .
Peer 10.66.79.72:500      Id: 10.66.79.72
*Mar 1 01:49:27.623: EZVPN(vpn-hw-client): Current State: SS_OPEN
*Mar 1 01:49:27.623: EZVPN(vpn-hw-client): Event: MTU_CHANGED
*Mar 1 01:49:27.623: EZVPN(vpn-hw-client): No state change
*Mar 1 01:49:27.627: EZVPN(vpn-hw-client): Current State: SS_OPEN
*Mar 1 01:49:27.627: EZVPN(vpn-hw-client): Event: SOCKET_UP
*Mar 1 01:49:27.631: ezvpn_socket_up
*Mar 1 01:49:27.631: EZVPN(vpn-hw-client): New State: IPSEC_ACTIVE

```

관련 정보

- [PIX 500 Series 지원 페이지](#)
- [PIX 방화벽 설명서](#)
- [PIX 명령 참조](#)
- [IPSec 협상/IKE 프로토콜 지원 페이지](#)