TACACS+ 사용자 인증 컨피그레이션이 포함된 Windows용 IOS 라우터와 Cisco VPN 클라이언트 4.x 간 IPsec 터널 예

목차

소개

이 문서에서는 사용자 인증을 위해 라우터와 Cisco VPN(Virtual Private Network) Client 4.x(Terminal Access Controller Access Control System Plus(TACACS+)를 사용하는 IPsec 연결을 구성하는 방법에 대해 설명합니다. Cisco IOS® Software 릴리스 12.2(8)T 이상 릴리스는 Cisco VPN Client 4.x에서 연결을 지원합니다. VPN Client 4.x는 Diffie-Hellman(D-H) 그룹 2 정책을 사용합니다. isakmp **policy # group 2** 명령을 사용하면 4.x 클라이언트가 연결할 수 있습니다.

이 문서에서는 라우터에서 로컬로 수행되는 WINS(Windows Internet Naming Service) 및 DNS(Domain Naming Service) 할당과 같은 권한 부여를 사용하여 TACACS+ 서버에 대한 인증을 보여 줍니다.

Cisco IOS 라우터에서 사용자 인증이 로컬로 발생하는 시나리오에 대한 자세한 내용은 Windows용 Cisco VPN Client 3.x 구성 로컬 확장 인증을 사용하여 IOS로 구성을 참조하십시오.

사용자 인증이 RADIUS 프로토콜에서 외부에서 발생하는 시나리오에 대한 자세한 내용은 Cisco IOS 라우터와 Windows용 Cisco VPN 클라이언트 4.x 간 IPSec 구성 사용자 인증을 참조하십시오.

사전 요구 사항

요구 사항

이 구성을 시도하기 전에 다음 요구 사항을 충족해야 합니다.

- IPsec에 할당할 주소 풀
- 비밀번호가 "cisco123"인 "vpngroup"이라는 그룹
- TACACS+ 서버에서 사용자 인증

사용되는 구성 요소

이 문서의 정보는 다음 소프트웨어 및 하드웨어 버전을 기반으로 합니다.

- Windows 버전 4.0.2D용 Cisco VPN Client(모든 VPN 클라이언트 3.x 이상이 작동해야 함)
- Cisco Secure for Windows 버전 3.0(모든 TACACS+ 서버가 작동해야 함)
- IPsec 기능 세트와 함께 로드된 Cisco IOS 1710 Router 버전 12.2(8)T1라우터의 **show version** 명령의 출력이 여기에 표시됩니다.

```
1710#show version
Cisco Internetwork Operating System Software
IOS (tm) C1700 Software (C1710-K9O3SY-M),
   Version 12.2(8)T1, RELEASE SOFTWARE (fc2)
TAC Support: http://www.cisco.com/tac
Copyright (c) 1986-2002 by cisco Systems, Inc.
Compiled Sat 30-Mar-02 13:30 by ccai
Image text-base: 0x80008108, data-base: 0x80C1E054

ROM: System Bootstrap, Version 12.2(1r)XE1, RELEASE SOFTWARE (fc1)

1710 uptime is 1 week, 6 days, 22 hours, 30 minutes
System returned to ROM by reload
System image file is "flash:c1710-k9o3sy-mz.122-8.T1"

cisco 1710 (MPC855T) processor (revision 0x200)
   with 27853K/4915K bytes of memory.
Processor board ID JAD052706CX (3234866109), with hardware revision 0000
MPC855T processor: part number 5, mask 2
Bridging software.
X.25 software, Version 3.0.0.
1 Ethernet/IEEE 802.3 interface(s)
1 FastEthernet/IEEE 802.3 interface(s)
1 Virtual Private Network (VPN) Module(s)
32K bytes of non-volatile configuration memory.
16384K bytes of processor board System flash (Read/Write)

Configuration register is 0x2102
```

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 규칙을 참조하십시오.

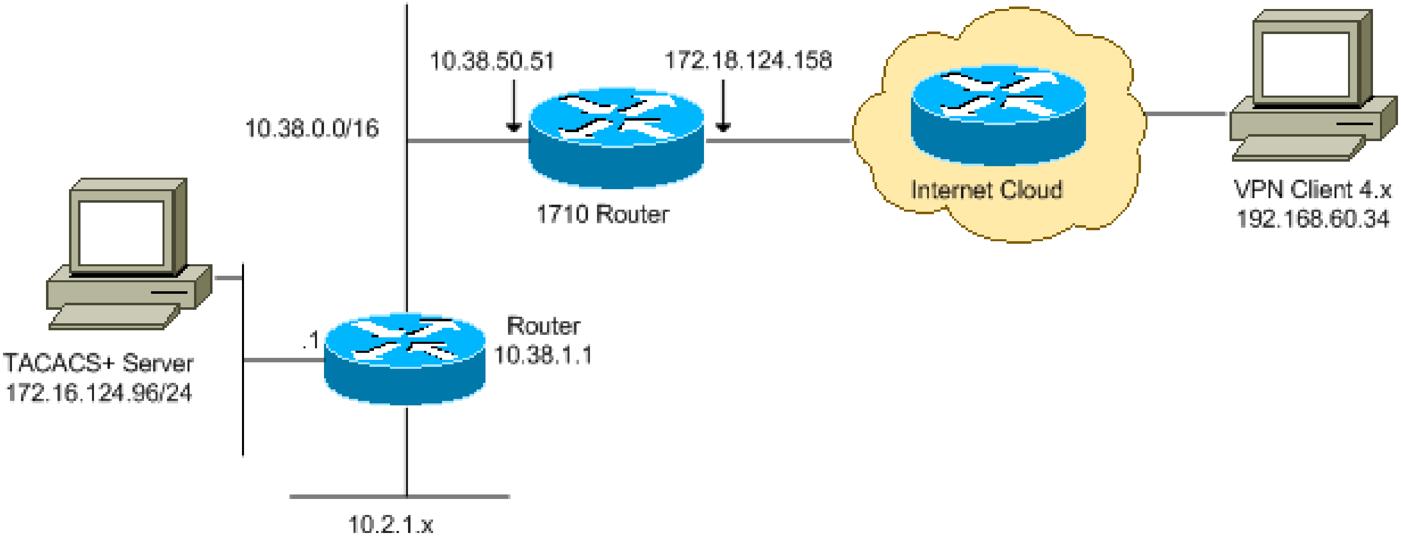
구성

이 섹션에는 이 문서에서 설명하는 기능을 구성하기 위한 정보가 표시됩니다.

참고: 이 문서에 사용된 명령에 대한 자세한 내용을 보려면 명령 조회 도구(등록된 고객만 해당)를 사용하십시오.

네트워크 다이어그램

이 문서에서는 다음 네트워크 설정을 사용합니다.



참고: 이 구성에 사용된 IP 주소 지정 체계는 인터넷에서 합법적으로 라우팅할 수 없습니다. 이는 실습 환경에서 사용된 RFC 1918 주소입니다.

구성

이 문서에서는 다음 구성을 사용합니다.

- Cisco 1710 Router
- TACACS+ 서버
- VPN 클라이언트 4.x
- 스플릿 터널링

Cisco 1710 Router

Cisco 1710 Router

```
1710#show run
Building configuration...

Current configuration : 1884 bytes
!
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname 1710
!
!--- Enable authentication, authorization and accounting
```

```
(AAA) !--- for user authentication and group
authorization. aaa new-model
!
!--- In order to enable extended authentication (Xauth)
for user authentication, !--- enable the aaa
authentication commands. !--- The group TACACS+ command
specifies TACACS+ user authentication.

aaa authentication login userauthen group tacacs+
!--- In order to enable group authorization, !--- enable
the aaa authorization commands.

aaa authorization network groupauthor local
!
!
ip subnet-zero
!
!
!
ip audit notify log
ip audit po max-events 100
!
!--- Create an Internet Security Association and !---
Key Management Protocol (ISAKMP) policy for Phase 1
negotiations. crypto isakmp policy 3
encr 3des
authentication pre-share
group 2
!
!--- Create a group in order to specify the !--- WINS
and DNS server addresses to the VPN Client, !--- along
with the pre-shared key for authentication. crypto
isakmp client configuration group vpngroup
key cisco123
dns 10.2.1.10
wins 10.2.1.20
domain cisco.com
pool ippool
!
!--- Create the Phase 2 policy for actual data
encryption. crypto ipsec transform-set myset esp-3des
esp-sha-hmac
!

!--- Create a dynamic map, and !--- apply the transform
set that was previously created. crypto dynamic-map
dynmap 10
set transform-set myset
!
!--- Create the actual crypto map, !--- and apply the
AAA lists that were created earlier. crypto map
clientmap client authentication list userauthen
crypto map clientmap isakmp authorization list
groupauthor
crypto map clientmap client configuration address
respond
crypto map clientmap 10 ipsec-isakmp dynamic dynmap
!
!
fax interface-type fax-mail
mta receive maximum-recipients 0
!
!
!
```

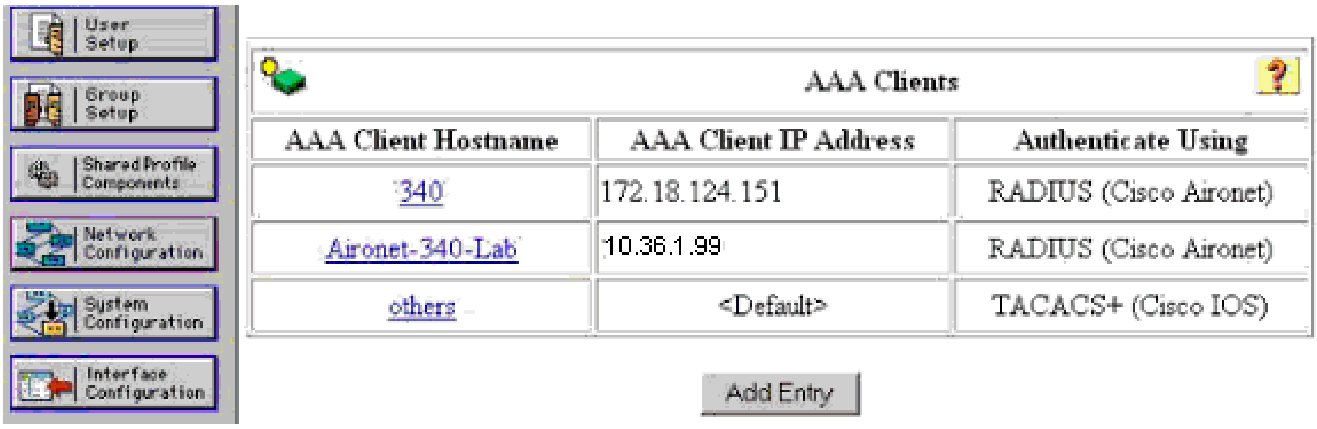
```
!--- Apply the crypto map on the outside interface.
interface FastEthernet0
ip address 172.18.124.158 255.255.255.0
crypto map clientmap
!
interface Ethernet0
ip address 10.38.50.51 255.255.0.0
!

!--- Create a pool of addresses to be assigned to the
VPN Clients. ip local pool ippool 10.1.1.100 10.1.1.200
ip classless
ip route 0.0.0.0 0.0.0.0 172.18.124.1
ip route 172.16.124.0 255.255.255.0 10.38.1.1
ip route 10.2.1.0 255.255.255.0 10.38.1.1
ip http server
ip pim bidir-enable
!
!
!
!--- Specify the IP address of the TACACS+ server, !---
along with the TACACS+ shared secret key. tacacs-server
host 172.16.124.96 key cisco123
!
!
line con 0
 exec-timeout 0 0
line aux 0
line vty 0 4
!
!
end
```

TACACS+ 서버

TACACS+ 서버를 구성하려면 다음 단계를 완료합니다.

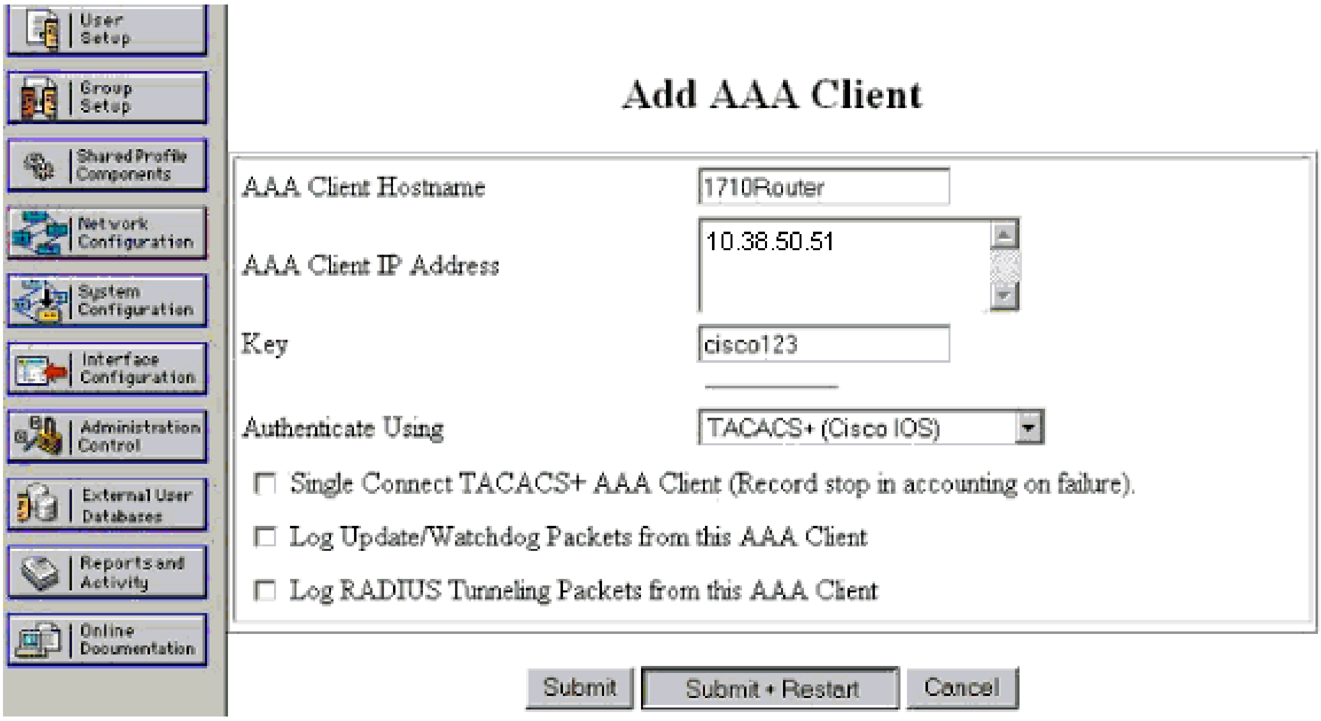
1. TACACS+ 서버 데이터베이스에서 라우터에 대한 항목을 추가하려면 Add Entry를 클릭합니다.



AAA Clients

AAA Client Hostname	AAA Client IP Address	Authenticate Using
340	172.18.124.151	RADIUS (Cisco Aironet)
Aironet-340-Lab	10.36.1.99	RADIUS (Cisco Aironet)
others	<Default>	TACACS+ (Cisco IOS)

2. Add AAA Client(AAA 클라이언트 추가) 페이지에서 다음 이미지에 표시된 대로 라우터 정보를 입력합니다.



Add AAA Client

AAA Client Hostname: 1710Router

AAA Client IP Address: 10.38.50.51

Key: cisco123

Authenticate Using: TACACS+ (Cisco IOS)

□ Single Connect TACACS+ AAA Client (Record stop in accounting on failure).

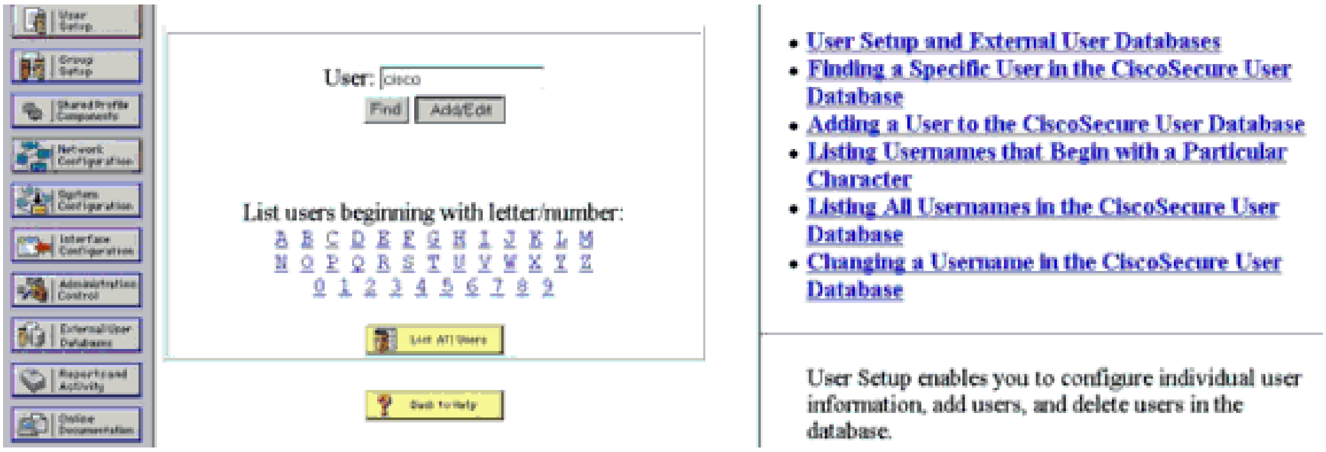
□ Log Update/Watchdog Packets from this AAA Client

□ Log RADIUS Tunneling Packets from this AAA Client

AAA Client Hostname 필드에 라우터의 이름을 입력합니다.AAA Client IP Address 필드에 **10.38.50.51을 입력합니다**.Key 필드에 **cisco123**을 공유 비밀 키로 입력합니다.Authenticate Using(다음을 사용하여 인증) 드롭다운 목록에서 **TACACS+(Cisco IOS)**를 선택하고 **Submit(제출)**을 클릭합니다.

3. User 필드에 Cisco Secure 데이터베이스에 있는 VPN 사용자의 사용자 이름을 입력하고 Add/**Edit**를 클릭합니다.이 예에서 사용자 이름은 *cisco*입니다

   .



User: cisco

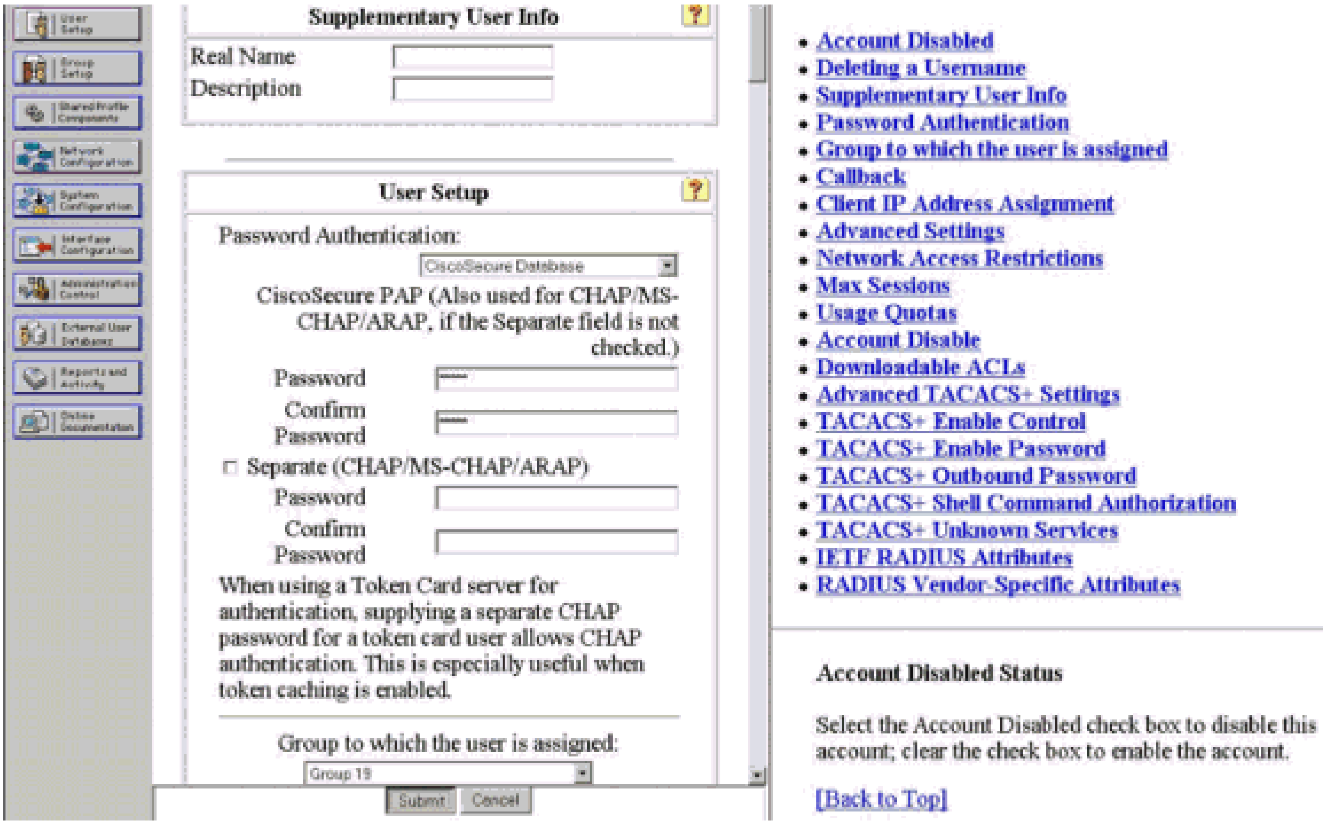
List users beginning with letter/number:

- User Setup and External User Databases
- Finding a Specific User in the CiscoSecure User Database
- Adding a User to the CiscoSecure User Database
- Listing Usernames that Begin with a Particular Character
- Listing All Usernames in the CiscoSecure User Database
- Changing a Username in the CiscoSecure User Database

User Setup enables you to configure individual user information, add users, and delete users in the database.

4. 다음 페이지에서 사용자 *cisco*의 비밀번호를 입력하고 확인합니다.이 예에서는 비밀번호도 *cisco*입니다

   .



Supplementary User Info

Real Name

Description

User Setup

Password Authentication:

CiscoSecure Database

CiscoSecure PAP (Also used for CHAP/MS-CHAP/ARAP, if the Separate field is not checked.)

Password ••••••

Confirm Password ••••••

□ Separate (CHAP/MS-CHAP/ARAP)

Password

Confirm Password

When using a Token Card server for authentication, supplying a separate CHAP password for a token card user allows CHAP authentication. This is especially useful when token caching is enabled.

Group to which the user is assigned:

Group 19

- Account Disabled
- Deleting a Username
- Supplementary User Info
- Password Authentication
- Group to which the user is assigned
- Callback
- Client IP Address Assignment
- Advanced Settings
- Network Access Restrictions
- Max Sessions
- Usage Quotas
- Account Disable
- Downloadable ACLs
- Advanced TACACS+ Settings
- TACACS+ Enable Control
- TACACS+ Enable Password
- TACACS+ Outbound Password
- TACACS+ Shell Command Authorization
- TACACS+ Unknown Services
- IETF RADIUS Attributes
- RADIUS Vendor-Specific Attributes

Account Disabled Status

Select the Account Disabled check box to disable this account; clear the check box to enable the account.

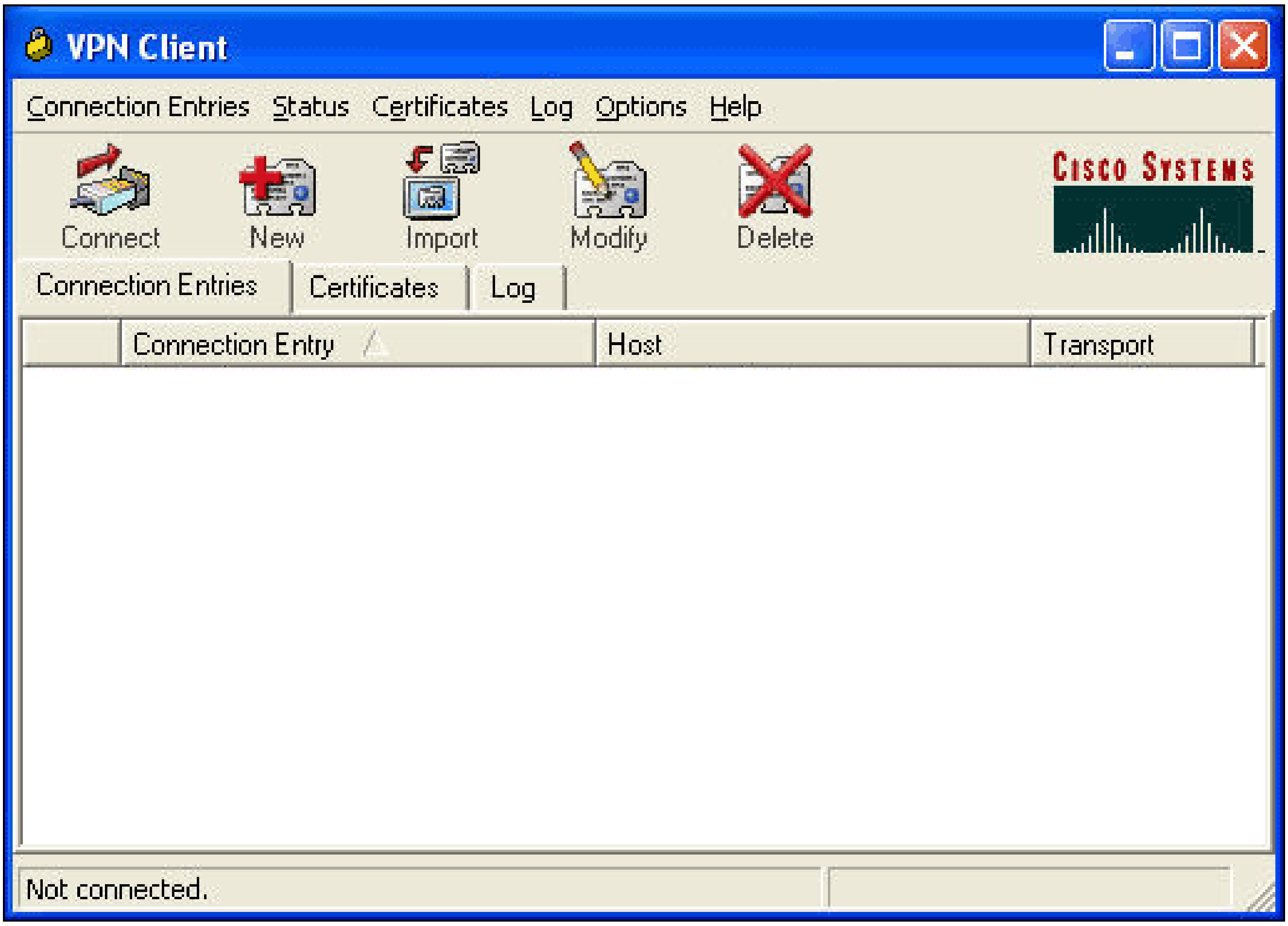
[Back to Top]

5. 사용자 계정을 그룹에 매핑하려면 지금 해당 단계를 완료하십시오. 완료되면 Submit(제출)을 **클릭합니다**.

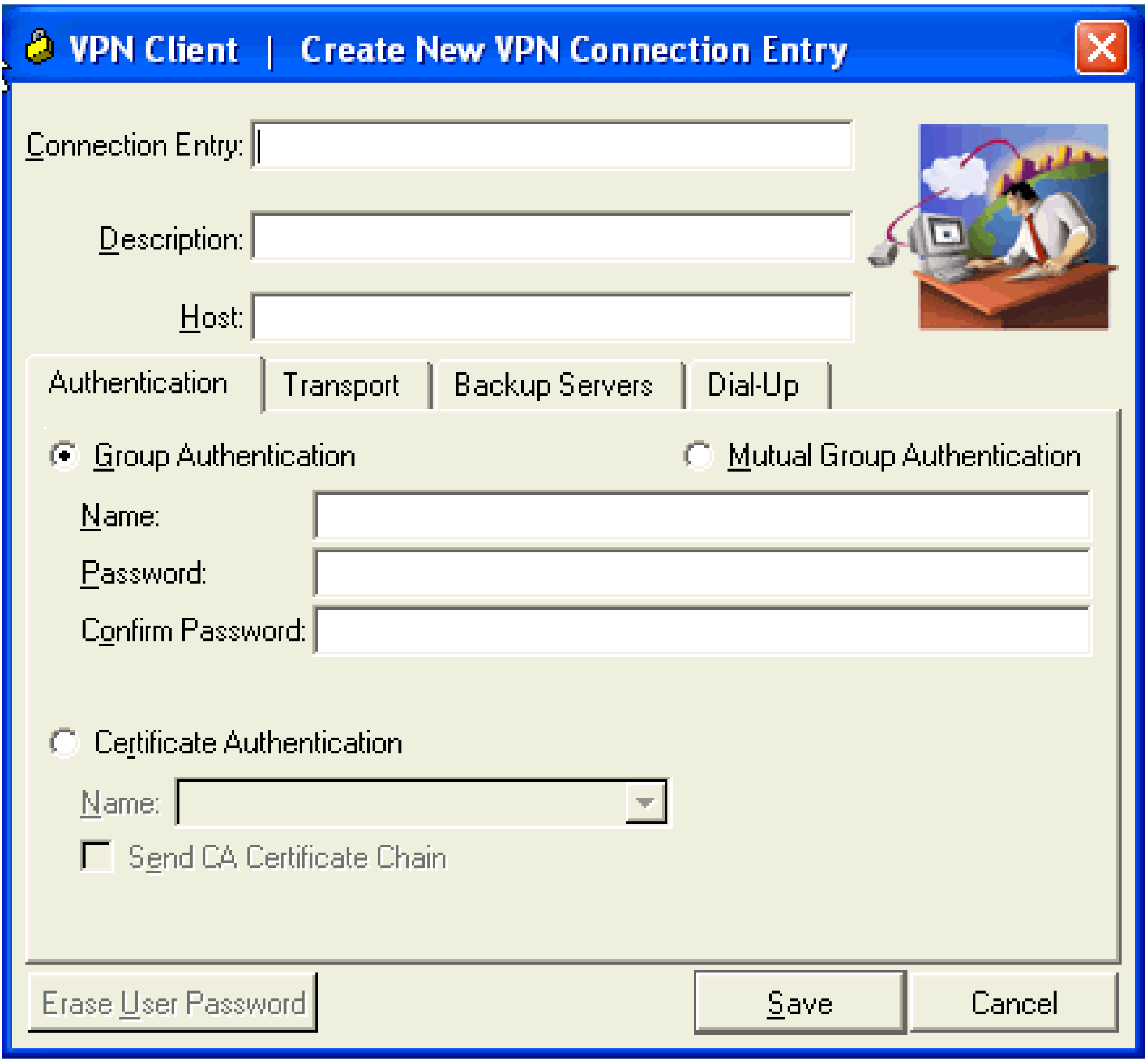
VPN 클라이언트 4.x

VPN Client 4.x를 구성하려면 다음 단계를 완료하십시오.

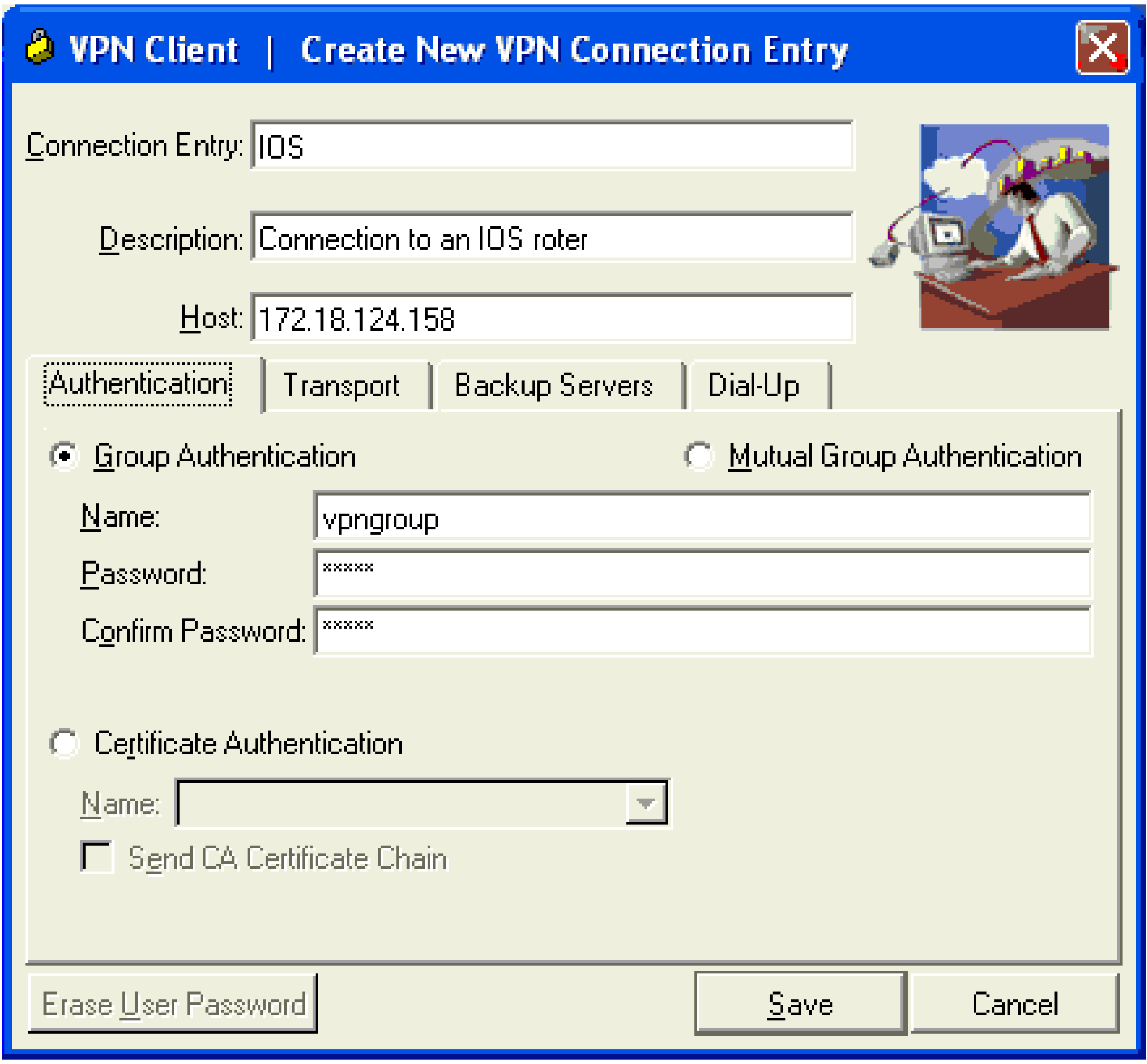
1. VPN Client를 시작하고 New(**새로 만들기)를** 클릭하여 새 연결을 생성합니다
   .



VPN Client Create New VPN Connection Entry 대화 상자가 나타납니다



2. Create New VPN Connection Entry(새 VPN 연결 항목 생성) 대화 상자에서 다음 이미지에 표시된 대로 연결 정보를 입력합니다



Connection Entry: IOS

Description: Connection to an IOS roter

Host: 172.18.124.158

● Group Authentication ○ Mutual Group Authentication

Name: vpngroup

Password: *****

Confirm Password: *****

○ Certificate Authentication

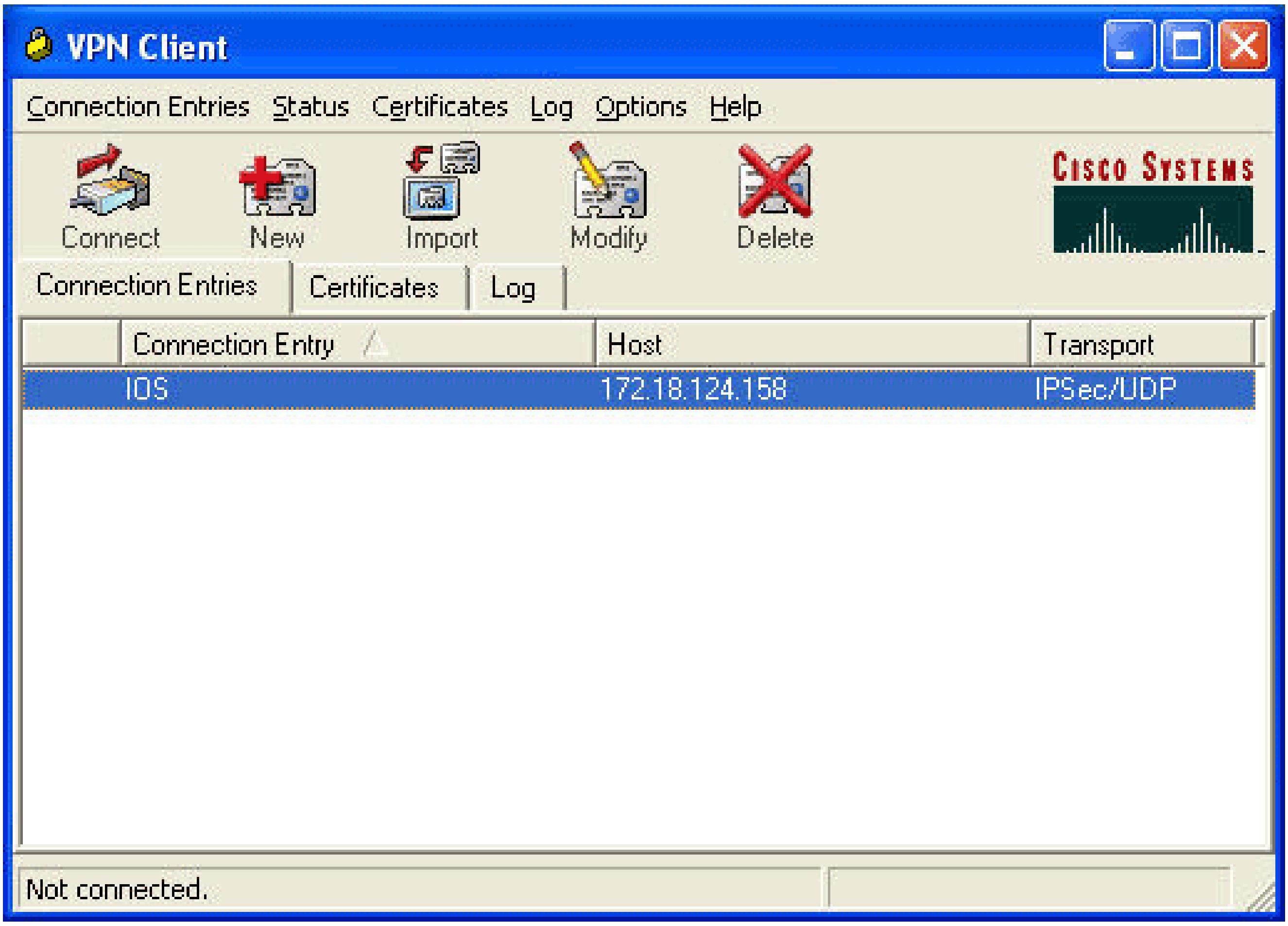
Name:

□ Send CA Certificate Chain

.Connection Entry 필드에 연결 이름을 입력합니다.Description 및 Host 필드에 연결 항목에 대한 설명과 호스트 IP 주소를 입력합니다.Authentication(인증) 탭에서 **Group Authentication(그룹 인증)** 라디오 버튼을 클릭하고 사용자의 이름과 비밀번호를 입력합니다.연결을 저장하려면 **Save**(저장)를 클릭합니다.

3. VPN Client(VPN 클라이언트) 창에서 생성한 연결 항목을 선택하고 **Connect(연결)를** 클릭하여 라우터에 연결합니다

.



	Connection Entry	Host	Transport
	IOS	172.18.124.158	IPSec/UDP

Not connected.

4. IPsec이 협상할 때 사용자 이름과 암호를 입력하라는 메시지가 표시됩니다. 사용자 이름과 암호를 입력합니다.창에 다음 메시지가 표시됩니다."보안 프로파일 협상.""링크가 이제 안전해졌습니다."

스플릿 터널링

VPN 연결에 대해 스플릿 터널링을 활성화하려면 라우터에서 ACL(액세스 제어 목록)을 구성해야 합니다. 이 예에서 **access-list 102** 명령은 스플릿 터널링을 위해 그룹과 연결되며 터널은 10.38.X.X /16 및 10.2.x.x 네트워크로 구성됩니다. 트래픽은 ACL 102(예: 인터넷)에 없는 디바이스에 암호화되지 않은 상태로 이동합니다.

```
access-list 102 permit ip 10.38.0.0 0.0.255.255 10.1.1.0 0.0.0.255
access-list 102 permit ip 10.2.0.0 0.0.255.255 10.1.1.0 0.0.0.255
```

그룹 속성에 ACL을 적용합니다.

```
crypto isakmp client configuration group vpngroup
 key cisco123
 dns 10.2.1.10
 wins 10.2.1.20
 domain cisco.com
 pool ippool
 acl 102
```

다음을 확인합니다.

이 섹션에서는 컨피그레이션이 제대로 작동하는지 확인하는 데 사용할 수 있는 정보를 제공합니다.

특정 **show** 명령은 Output Interpreter Tool에서 지원됩니다(등록된 고객만 해당). 이 도구를 사용하면 **show** 명령 출력의 분석을 볼 수 있습니다.

```
1710#show crypto isakmp sa
dst             src             state           conn-id   slot
172.18.124.158  192.168.60.34   QM_IDLE                3       0


1710#show crypto ipsec sa

interface: FastEthernet0
Crypto map tag: clientmap, local addr. 172.18.124.158

local ident (addr/mask/prot/port): (172.18.124.158/255.255.255.255/0/0)
remote ident (addr/mask/prot/port): (10.1.1.114/255.255.255.255/0/0)
current_peer: 192.168.60.34
PERMIT, flags={}
#pkts encaps: 0, #pkts encrypt: 0, #pkts digest 0
#pkts decaps: 0, #pkts decrypt: 0, #pkts verify 0
#pkts compressed: 0, #pkts decompressed: 0
#pkts not compressed: 0, #pkts compr. failed: 0, #pkts decompress failed: 0
#send errors 0, #recv errors 0

local crypto endpt.: 172.18.124.158, remote crypto endpt.: 192.168.60.34
path mtu 1500, media mtu 1500
current outbound spi: 8F9BB05F

inbound esp sas:
spi: 0x61C53A64(1640315492)
transform: esp-3des esp-sha-hmac ,
in use settings ={Tunnel, }
slot: 0, conn id: 200, flow_id: 1, crypto map: clientmap
sa timing: remaining key lifetime (k/sec): (4608000/3294)
IV size: 8 bytes
replay detection support: Y

inbound ah sas:

inbound pcp sas:

outbound esp sas:
spi: 0x8F9BB05F(2409345119)
transform: esp-3des esp-sha-hmac ,
in use settings ={Tunnel, }
slot: 0, conn id: 201, flow_id: 2, crypto map: clientmap
sa timing: remaining key lifetime (k/sec): (4608000/3294)
IV size: 8 bytes
replay detection support: Y

outbound ah sas:

outbound pcp sas:


local ident (addr/mask/prot/port): (10.38.0.0/255.255.0.0/0/0)
remote ident (addr/mask/prot/port): (10.1.1.114/255.255.255.255/0/0)
```

```
current_peer: 192.168.60.34
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 decompress failed: 0
#send errors 0, #recv errors 0

local crypto endpt.: 172.18.124.158, remote crypto endpt.: 192.168.60.34
path mtu 1500, media mtu 1500
current outbound spi: 8B57E45E

inbound esp sas:
spi: 0x89898D1A(2307493146)
transform: esp-3des esp-sha-hmac ,
in use settings ={Tunnel, }
slot: 0, conn id: 202, flow_id: 3, crypto map: clientmap
sa timing: remaining key lifetime (k/sec): (4607999/3452)
IV size: 8 bytes
replay detection support: Y

inbound ah sas:

inbound pcp sas:

outbound esp sas:
spi: 0x8B57E45E(2337793118)
transform: esp-3des esp-sha-hmac ,
in use settings ={Tunnel, }
slot: 0, conn id: 203, flow_id: 4, crypto map: clientmap
sa timing: remaining key lifetime (k/sec): (4607999/3452)
IV size: 8 bytes
replay detection support: Y

outbound ah sas:

outbound pcp sas:


1710#show crypto engine connections active

ID   Interface       IP-Address      State  Algorithm           Encrypt  Decrypt
2    FastEthernet0   172.18.124.158  set    HMAC_SHA+3DES_56_C  0        0
200  FastEthernet0   172.18.124.158  set    HMAC_SHA+3DES_56_C  0        0
201  FastEthernet0   172.18.124.158  set    HMAC_SHA+3DES_56_C  0        0
202  FastEthernet0   172.18.124.158  set    HMAC_SHA+3DES_56_C  0        3
203  FastEthernet0   172.18.124.158  set    HMAC_SHA+3DES_56_C  3        0
```

문제 해결

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

문제 해결 명령

Output Interpreter 도구(등록된 고객만 해당)(OIT)는 특정 **show** 명령을 지원합니다. **show** 명령 출력의 분석을 보려면 OIT를 사용합니다.

참고: debug **명령**을 사용하기 전에 디버그 명령에 대한 중요 정보를 참조하십시오.

- **debug crypto ipsec** - IPsec 연결에 대한 디버그 정보를 표시합니다.
- **debug crypto isakmp** - IPsec 연결에 대한 디버그 정보를 표시하고 양쪽 끝에서 비호환성으로 인해 거부된 첫 번째 특성 집합을 표시합니다.
- **debug crypto engine** - 암호화 엔진의 정보를 표시합니다.
- **debug aaa authentication**—AAA/TACACS+ 인증에 대한 정보를 표시합니다.
- **debug aaa authorization** - AAA/TACACS+ 권한 부여에 대한 정보를 표시합니다.
- **debug tacacs** - TACACS+ 서버와 라우터 간의 통신 문제를 해결할 수 있는 정보를 표시합니다.

라우터 로그

```
1710#show debug
General OS:
TACACS access control debugging is on
AAA Authentication debugging is on
AAA Authorization debugging is on
Cryptographic Subsystem:
Crypto ISAKMP debugging is on
Crypto Engine debugging is on
Crypto IPSEC debugging is on



1710#
1w6d: ISAKMP (0:0): received packet from 192.168.60.34 (N) NEW SA
1w6d: ISAKMP: local port 500, remote port 500
1w6d: ISAKMP (0:2): (Re)Setting client xauth list userauthen and state
1w6d: ISAKMP: Locking CONFIG struct 0x8158B894 from
   crypto_ikmp_config_initialize_sa, count 2
1w6d: ISAKMP (0:2): processing SA payload. message ID = 0
1w6d: ISAKMP (0:2): processing ID payload. message ID = 0
1w6d: ISAKMP (0:2): processing vendor id payload
1w6d: ISAKMP (0:2): vendor ID seems Unity/DPD but bad major
1w6d: ISAKMP (0:2): vendor ID is XAUTH
1w6d: ISAKMP (0:2): processing vendor id payload
1w6d: ISAKMP (0:2): vendor ID is DPD
1w6d: ISAKMP (0:2): processing vendor id payload
1w6d: ISAKMP (0:2): vendor ID is Unity
1w6d: ISAKMP (0:2): Checking ISAKMP transform 1 against priority 3 policy
1w6d: ISAKMP: encryption 3DES-CBC
1w6d: ISAKMP: hash SHA
1w6d: ISAKMP: default group 2
1w6d: ISAKMP: auth XAUTHInitPreShared
1w6d: ISAKMP: life type in seconds
1w6d: ISAKMP: life duration (VPI) of 0x0 0x20 0xC4 0x9B
1w6d: ISAKMP (0:2): atts are acceptable. Next payload is 3
1w6d: CryptoEngine0: generate alg parameter
1w6d: CryptoEngine0: CRYPTO_ISA_DH_CREATE(hw)(ipsec)
1w6d: CRYPTO_ENGINE: Dh phase 1 status: 0
1w6d: ISAKMP (0:2): processing KE payload. message ID = 0
1w6d: CryptoEngine0: generate alg parameter
1w6d: CryptoEngine0: CRYPTO_ISA_DH_SHARE_SECRET(hw)(ipsec)
1w6d: ISAKMP (0:2): processing NONCE payload. message ID = 0
1w6d: ISAKMP (0:2): processing vendor id payload
1w6d: ISAKMP (0:2): processing vendor id payload
1w6d: ISAKMP (0:2): processing vendor id payload
1w6d: AAA: parse name=ISAKMP-ID-AUTH idb type=-1 tty=-1
1w6d: AAA/MEMORY: create_user (0x817F63F4) user='vpngroup' ruser='NULL' ds0=0
   port='ISAKMP-ID-AUTH' rem_addr='192.168.60.34' authen_type=NONE
   service=LOGIN priv=0 initial_task_id='0'
1w6d: ISAKMP (0:2): Input = IKE_MESG_FROM_PEER, IKE_AM_EXCH
```

```
Old State = IKE_READY New State = IKE_R_AM_AAA_AWAIT

1w6d: ISAKMP-ID-AUTH AAA/AUTHOR/CRYPTO AAA(1472763894):
   Port='ISAKMP-ID-AUTH' list='groupauthor' service=NET
1w6d: AAA/AUTHOR/CRYPTO AAA: ISAKMP-ID-AUTH(1472763894) user='vpngroup'
1w6d: ISAKMP-ID-AUTH AAA/AUTHOR/CRYPTO AAA(1472763894): send AV service=ike
1w6d: ISAKMP-ID-AUTH AAA/AUTHOR/CRYPTO AAA(1472763894): send AV protocol=ipsec
1w6d: ISAKMP-ID-AUTH AAA/AUTHOR/CRYPTO AAA(1472763894): found list "groupauthor"
1w6d: ISAKMP-ID-AUTH AAA/AUTHOR/CRYPTO AAA(1472763894): Method=LOCAL
1w6d: AAA/AUTHOR (1472763894): Post authorization status = PASS_ADD
1w6d: ISAKMP: got callback 1
AAA/AUTHOR/IKE: Processing AV service=ike
AAA/AUTHOR/IKE: Processing AV protocol=ipsec
AAA/AUTHOR/IKE: Processing AV tunnel-password=cisco123
AAA/AUTHOR/IKE: Processing AV default-domain*cisco.com
AAA/AUTHOR/IKE: Processing AV addr-pool*ippool
AAA/AUTHOR/IKE: Processing AV key-exchange=ike
AAA/AUTHOR/IKE: Processing AV timeout*0
AAA/AUTHOR/IKE: Processing AV idletime*0
AAA/AUTHOR/IKE: Processing AV inacl*102
AAA/AUTHOR/IKE: Processing AV dns-servers*10.1.1.10 0.0.0.0
AAA/AUTHOR/IKE: Processing AV wins-servers*10.1.1.20 0.0.0.0
1w6d: CryptoEngine0: create ISAKMP SKEYID for conn id 2
1w6d: CryptoEngine0: CRYPTO_ISA_SA_CREATE(hw)(ipsec)
1w6d: ISAKMP (0:2): SKEYID state generated
1w6d: ISAKMP (0:2): SA is doing pre-shared key authentication plux
   XAUTH using id type ID_IPV4_ADDR
1w6d: ISAKMP (2): ID payload
next-payload : 10
type : 1
protocol : 17
port : 500
length : 8
1w6d: ISAKMP (2): Total payload length: 12
1w6d: CryptoEngine0: generate hmac context for conn id 2
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_HMAC(hw)(ipsec)
1w6d: ISAKMP (0:2): sending packet to 192.168.60.34 (R) AG_INIT_EXCH
1w6d: ISAKMP (0:2): Input = IKE_MESG_FROM_AAA, PRESHARED_KEY_REPLY
Old State = IKE_R_AM_AAA_AWAIT New State = IKE_R_AM2

1w6d: AAA/MEMORY: free_user (0x817F63F4) user='vpngroup'
   ruser='NULL' port='ISAK MP-ID-AUTH' rem_addr='192.168.60.34'
   authen_type=NONE service=LOGIN priv=0
1w6d: ISAKMP (0:2): received packet from 192.168.60.34 (R) AG_INIT_EXCH
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_DECRYPT(hw)(ipsec)
1w6d: ISAKMP (0:2): processing HASH payload. message ID = 0
1w6d: CryptoEngine0: generate hmac context for conn id 2
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_HMAC(hw)(ipsec)
1w6d: ISAKMP (0:2): processing NOTIFY INITIAL_CONTACT protocol 1
   spi 0, message ID = 0, sa = 81673884
1w6d: ISAKMP (0:2): Process initial contact, bring down
   existing phase 1 and 2 SA's
1w6d: ISAKMP (0:2): returning IP addr to the address pool: 10.1.1.113
1w6d: ISAKMP (0:2): returning address 10.1.1.113 to pool
1w6d: ISAKMP (0:2): peer does not do paranoid keepalives.

1w6d: ISAKMP (0:2): SA has been authenticated with 192.168.60.34
1w6d: CryptoEngine0: clear dh number for conn id 1
1w6d: CryptoEngine0: CRYPTO_ISA_DH_DELETE(hw)(ipsec)
1w6d: IPSEC(key_engine): got a queue event...
1w6d: IPSEC(key_engine_delete_sas): rec'd delete notify from ISAKMP
1w6d: IPSEC(key_engine_delete_sas): delete all SAs shared with 192.168.60.34
1w6d: CryptoEngine0: generate hmac context for conn id 2
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_HMAC(hw)(ipsec)
```

```
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_ENCRYPT(hw)(ipsec)
1w6d: ISAKMP (0:2): sending packet to 192.168.60.34 (R) QM_IDLE
1w6d: ISAKMP (0:2): purging node 1324880791
1w6d: ISAKMP: Sending phase 1 responder lifetime 86400

1w6d: ISAKMP (0:2): Input = IKE_MESG_FROM_PEER, IKE_AM_EXCH
Old State = IKE_R_AM2 New State = IKE_P1_COMPLETE

1w6d: ISAKMP (0:2): Need XAUTH
1w6d: AAA: parse name=ISAKMP idb type=-1 tty=-1
1w6d: AAA/MEMORY: create_user (0x812F79FC) user='NULL'
   ruser='NULL' ds0=0 port='
ISAKMP' rem_addr='192.168.60.34' authen_type=ASCII service=LOGIN
   priv=0 initial_task_id='0'
1w6d: ISAKMP (0:2): Input = IKE_MESG_INTERNAL, IKE_PHASE1_COMPLETE
Old State = IKE_P1_COMPLETE New State = IKE_XAUTH_AAA_START_LOGIN_AWAIT

1w6d: AAA/AUTHEN/START (2017610393): port='ISAKMP' list='userauthen'
   action=LOGIN service=LOGIN
1w6d: AAA/AUTHEN/START (2017610393): found list userauthen
1w6d: AAA/AUTHEN/START (2017610393): Method=tacacs+ (tacacs+)
1w6d: TAC+: send AUTHEN/START packet ver=192 id=2017610393
1w6d: TAC+: Using default tacacs server-group "tacacs+" list.
1w6d: TAC+: Opening TCP/IP to 172.16.124.96/49 timeout=5
1w6d: TAC+: Opened TCP/IP handle 0x8183D638 to 172.16.124.96/49
1w6d: TAC+: 172.16.124.96 (2017610393) AUTHEN/START/LOGIN/ASCII queued
1w6d: TAC+: (2017610393) AUTHEN/START/LOGIN/ASCII processed
1w6d: TAC+: ver=192 id=2017610393 received AUTHEN status = GETUSER
1w6d: AAA/AUTHEN(2017610393): Status=GETUSER
1w6d: ISAKMP: got callback 1
1w6d: ISAKMP/xauth: request attribute XAUTH_TYPE_V2
1w6d: ISAKMP/xauth: request attribute XAUTH_MESSAGE_V2
1w6d: ISAKMP/xauth: request attribute XAUTH_USER_NAME_V2
1w6d: ISAKMP/xauth: request attribute XAUTH_USER_PASSWORD_V2
1w6d: CryptoEngine0: generate hmac context for conn id 2
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_HMAC(hw)(ipsec)
1w6d: ISAKMP (0:2): initiating peer config to 192.168.60.34. ID = 1641488057
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_ENCRYPT(hw)(ipsec)
1w6d: ISAKMP (0:2): sending packet to 192.168.60.34 (R) CONF_XAUTH
1w6d: ISAKMP (0:2): Input = IKE_MESG_FROM_AAA, IKE_AAA_START_LOGIN
Old State = IKE_XAUTH_AAA_START_LOGIN_AWAIT
   New State = IKE_XAUTH_REQ_SENT

1w6d: ISAKMP (0:2): received packet from 192.168.60.34 (R) CONF_XAUTH
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_DECRYPT(hw)(ipsec)
1w6d: ISAKMP (0:2): processing transaction payload from 192.168.60.34.
   message ID = 1641488057
1w6d: CryptoEngine0: generate hmac context for conn id 2
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_HMAC(hw)(ipsec)
1w6d: ISAKMP: Config payload REPLY
1w6d: ISAKMP/xauth: reply attribute XAUTH_TYPE_V2 unexpected
1w6d: ISAKMP/xauth: reply attribute XAUTH_USER_NAME_V2
1w6d: ISAKMP/xauth: reply attribute XAUTH_USER_PASSWORD_V2
1w6d: ISAKMP (0:2): deleting node 1641488057 error FALSE
   reason "done with xauth request/reply exchange"
1w6d: ISAKMP (0:2): Input = IKE_MESG_FROM_PEER, IKE_CFG_REPLY
Old State = IKE_XAUTH_REQ_SENT
   New State = IKE_XAUTH_AAA_CONT_LOGIN_AWAIT

1w6d: AAA/AUTHEN/CONT (2017610393): continue_login (user='(undef)')
1w6d: AAA/AUTHEN(2017610393): Status=GETUSER
1w6d: AAA/AUTHEN(2017610393): Method=tacacs+ (tacacs+)
1w6d: TAC+: send AUTHEN/CONT packet id=2017610393
1w6d: TAC+: 172.16.124.96 (2017610393) AUTHEN/CONT queued
```

```
1w6d: TAC+: (2017610393) AUTHEN/CONT processed
1w6d: TAC+: ver=192 id=2017610393 received AUTHEN status = GETPASS
1w6d: AAA/AUTHEN(2017610393): Status=GETPASS
1w6d: AAA/AUTHEN/CONT (2017610393): continue_login (user='cisco')
1w6d: AAA/AUTHEN(2017610393): Status=GETPASS
1w6d: AAA/AUTHEN(2017610393): Method=tacacs+ (tacacs+)
1w6d: TAC+: send AUTHEN/CONT packet id=2017610393
1w6d: TAC+: 172.16.124.96 (2017610393) AUTHEN/CONT queued
1w6d: TAC+: (2017610393) AUTHEN/CONT processed
1w6d: TAC+: ver=192 id=2017610393 received AUTHEN status = PASS
1w6d: AAA/AUTHEN(2017610393): Status=PASS
1w6d: ISAKMP: got callback 1
1w6d: TAC+: Closing TCP/IP 0x8183D638 connection to 172.16.124.96/49
1w6d: CryptoEngine0: generate hmac context for conn id 2
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_HMAC(hw)(ipsec)
1w6d: ISAKMP (0:2): initiating peer config to 192.168.60.34. ID = 1736579999
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_ENCRYPT(hw)(ipsec)
1w6d: ISAKMP (0:2): sending packet to 192.168.60.34 (R) CONF_XAUTH
1w6d: ISAKMP (0:2): Input = IKE_MESG_FROM_AAA, IKE_AAA_CONT_LOGIN
Old State = IKE_XAUTH_AAA_CONT_LOGIN_AWAIT
   New State = IKE_XAUTH_SET_SENT

1w6d: AAA/MEMORY: free_user (0x812F79FC) user='cisco' ruser='NULL'
   port='ISAKMP' rem_addr='192.168.60.34' authen_type=ASCII
   service=LOGIN priv=0
1w6d: ISAKMP (0:2): received packet from 192.168.60.34 (R) CONF_XAUTH
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_DECRYPT(hw)(ipsec)
1w6d: ISAKMP (0:2): processing transaction payload from 192.168.60.34.
   message ID = 1736579999
1w6d: CryptoEngine0: generate hmac context for conn id 2
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_HMAC(hw)(ipsec)
1w6d: ISAKMP: Config payload ACK
1w6d: ISAKMP (0:2): XAUTH ACK Processed
1w6d: ISAKMP (0:2): deleting node 1736579999 error FALSE
   reason "done with transaction"
1w6d: ISAKMP (0:2): Input = IKE_MESG_FROM_PEER, IKE_CFG_ACK
Old State = IKE_XAUTH_SET_SENT New State = IKE_P1_COMPLETE

1w6d: ISAKMP (0:2): Input = IKE_MESG_INTERNAL, IKE_PHASE1_COMPLETE
Old State = IKE_P1_COMPLETE New State = IKE_P1_COMPLETE

1w6d: ISAKMP (0:2): received packet from 192.168.60.34 (R) QM_IDLE
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_DECRYPT(hw)(ipsec)
1w6d: ISAKMP (0:2): processing transaction payload from 192.168.60.34.
   message ID = 398811763
1w6d: CryptoEngine0: generate hmac context for conn id 2
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_HMAC(hw)(ipsec)
1w6d: ISAKMP: Config payload REQUEST
1w6d: ISAKMP (0:2): checking request:
1w6d: ISAKMP: IP4_ADDRESS
1w6d: ISAKMP: IP4_NETMASK
1w6d: ISAKMP: IP4_DNS
1w6d: ISAKMP: IP4_NBNS
1w6d: ISAKMP: ADDRESS_EXPIRY
1w6d: ISAKMP: APPLICATION_VERSION
1w6d: ISAKMP: UNKNOWN Unknown Attr: 0x7000
1w6d: ISAKMP: UNKNOWN Unknown Attr: 0x7001
1w6d: ISAKMP: DEFAULT_DOMAIN
1w6d: ISAKMP: SPLIT_INCLUDE
1w6d: ISAKMP: UNKNOWN Unknown Attr: 0x7007
1w6d: ISAKMP: UNKNOWN Unknown Attr: 0x7008
1w6d: ISAKMP: UNKNOWN Unknown Attr: 0x7005
1w6d: AAA: parse name=ISAKMP-GROUP-AUTH idb type=-1 tty=-1
1w6d: AAA/MEMORY: create_user (0x812F79FC) user='vpngroup' ruser='NULL' ds0=0 po
```

```
rt='ISAKMP-GROUP-AUTH' rem_addr='192.168.60.34' authen_type=NONE service=LOGIN pr
iv=0 initial_task_id='0'
1w6d: ISAKMP (0:2): Input = IKE_MESG_FROM_PEER, IKE_CFG_REQUEST
Old State = IKE_P1_COMPLETE New State = IKE_CONFIG_AUTHOR_AAA_AWAIT

1w6d: ISAKMP-GROUP-AUTH AAA/AUTHOR/CRYPTO AAA(1059453615):
   Port='ISAKMP-GROUP-AUTH' list='groupauthor' service=NET
1w6d: AAA/AUTHOR/CRYPTO AAA: ISAKMP-GROUP-AUTH(1059453615)
   user='vpngroup'
1w6d: ISAKMP-GROUP-AUTH AAA/AUTHOR/CRYPTO AAA(1059453615):
   send AV service=ike
1w6d: ISAKMP-GROUP-AUTH AAA/AUTHOR/CRYPTO AAA(1059453615):
   send AV protocol=ipsec
1w6d: ISAKMP-GROUP-AUTH AAA/AUTHOR/CRYPTO AAA(1059453615):
   found list "groupauthor"
1w6d: ISAKMP-GROUP-AUTH AAA/AUTHOR/CRYPTO AAA(1059453615):
   Method=LOCAL
1w6d: AAA/AUTHOR (1059453615): Post authorization status = PASS_ADD
1w6d: ISAKMP: got callback 1
AAA/AUTHOR/IKE: Processing AV service=ike
AAA/AUTHOR/IKE: Processing AV protocol=ipsec
AAA/AUTHOR/IKE: Processing AV tunnel-password=cisco123
AAA/AUTHOR/IKE: Processing AV default-domain*cisco.com
AAA/AUTHOR/IKE: Processing AV addr-pool*ippool
AAA/AUTHOR/IKE: Processing AV key-exchange=ike
AAA/AUTHOR/IKE: Processing AV timeout*0
AAA/AUTHOR/IKE: Processing AV idletime*0
AAA/AUTHOR/IKE: Processing AV inacl*102
AAA/AUTHOR/IKE: Processing AV dns-servers*10.1.1.10 0.0.0.0
AAA/AUTHOR/IKE: Processing AV wins-servers*10.1.1.20 0.0.0.0
1w6d: ISAKMP (0:2): attributes sent in message:
1w6d: Address: 0.2.0.0
1w6d: ISAKMP (0:2): allocating address 10.1.1.114
1w6d: ISAKMP: Sending private address: 10.1.1.114
1w6d: ISAKMP: Unknown Attr: IP4_NETMASK (0x2)
1w6d: ISAKMP: Sending IP4_DNS server address: 10.1.1.10
1w6d: ISAKMP: Sending IP4_NBNS server address: 10.1.1.20
1w6d: ISAKMP: Sending ADDRESS_EXPIRY seconds left to use the address: 86396
1w6d: ISAKMP: Sending APPLICATION_VERSION string:
   Cisco Internetwork Operating System Software IOS (tm) C1700 Software
   (C1710-K9O3SY-M), Version 12.2(8)T1, RELEASE SOFTWARE (fc2)
   TAC Support: http://www.cisco.com/tac
   Copyright (c) 1986-2002 by cisco Systems, Inc.
   Compiled Sat 30-Mar-02 13:30 by ccai
1w6d: ISAKMP: Unknown Attr: UNKNOWN (0x7000)
1w6d: ISAKMP: Unknown Attr: UNKNOWN (0x7001)
1w6d: ISAKMP: Sending DEFAULT_DOMAIN default domain name: cisco.com
1w6d: ISAKMP: Sending split include name 102 network 10.38.0.0
   mask 255.255.0.0 protocol 0, src port 0, dst port 0

1w6d: ISAKMP: Unknown Attr: UNKNOWN (0x7007)
1w6d: ISAKMP: Unknown Attr: UNKNOWN (0x7008)
1w6d: ISAKMP: Unknown Attr: UNKNOWN (0x7005)
1w6d: CryptoEngine0: generate hmac context for conn id 2
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_HMAC(hw)(ipsec)
1w6d: ISAKMP (0:2): responding to peer config from 192.168.60.34. ID = 398811763
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_ENCRYPT(hw)(ipsec)
1w6d: ISAKMP (0:2): sending packet to 192.168.60.34 (R) CONF_ADDR
1w6d: ISAKMP (0:2): deleting node 398811763 error FALSE reason ""
1w6d: ISAKMP (0:2): Input = IKE_MESG_FROM_AAA, IKE_AAA_GROUP_ATTR
Old State = IKE_CONFIG_AUTHOR_AAA_AWAIT New State = IKE_P1_COMPLETE

1w6d: AAA/MEMORY: free_user (0x812F79FC) user='vpngroup'
   ruser='NULL' port='ISAKMP-GROUP-AUTH' rem_addr='192.168.60.34'
   authen_type=NONE service=LOGIN priv=0
1w6d: ISAKMP (0:2): received packet from 192.168.60.34 (R) QM_IDLE
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_DECRYPT(hw)(ipsec)
1w6d: CryptoEngine0: generate hmac context for conn id 2
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_HMAC(hw)(ipsec)
1w6d: ISAKMP (0:2): processing HASH payload. message ID = 1369459046
1w6d: ISAKMP (0:2): processing SA payload. message ID = 1369459046
1w6d: ISAKMP (0:2): Checking IPSec proposal 1
1w6d: ISAKMP: transform 1, ESP_3DES
1w6d: ISAKMP: attributes in transform:
1w6d: ISAKMP: authenticator is HMAC-MD5
1w6d: ISAKMP: encaps is 1
1w6d: ISAKMP: SA life type in seconds
1w6d: ISAKMP: SA life duration (VPI) of 0x0 0x20 0xC4 0x9B
1w6d: validate proposal 0
1w6d: IPSEC(validate_proposal): transform proposal
   (prot 3, trans 3, hmac_alg 1) not supported
1w6d: ISAKMP (0:2): atts not acceptable. Next payload is 0
1w6d: ISAKMP (0:2): skipping next ANDed proposal (1)
1w6d: ISAKMP (0:2): Checking IPSec proposal 2
1w6d: ISAKMP: transform 1, ESP_3DES
1w6d: ISAKMP: attributes in transform:
1w6d: ISAKMP: authenticator is HMAC-SHA
1w6d: ISAKMP: encaps is 1
1w6d: ISAKMP: SA life type in seconds
1w6d: ISAKMP: SA life duration (VPI) of 0x0 0x20 0xC4 0x9B
1w6d: validate proposal 0
1w6d: ISAKMP (0:2): atts are acceptable.
1w6d: ISAKMP (0:2): Checking IPSec proposal 2
1w6d: ISAKMP (0:2): transform 1, IPPCP LZS
1w6d: ISAKMP: attributes in transform:
1w6d: ISAKMP: encaps is 1
1w6d: ISAKMP: SA life type in seconds
1w6d: ISAKMP: SA life duration (VPI) of 0x0 0x20 0xC4 0x9B
1w6d: IPSEC(validate_proposal): transform proposal
   (prot 4, trans 3, hmac_alg 0) not supported
1w6d: ISAKMP (0:2): atts not acceptable. Next payload is 0
1w6d: ISAKMP (0:2): Checking IPSec proposal 3
1w6d: ISAKMP: transform 1, ESP_3DES
1w6d: ISAKMP: attributes in transform:
1w6d: ISAKMP: authenticator is HMAC-MD5
1w6d: ISAKMP: encaps is 1
1w6d: ISAKMP: SA life type in seconds
1w6d: ISAKMP: SA life duration (VPI) of 0x0 0x20 0xC4 0x9B
1w6d: validate proposal 0
1w6d: IPSEC(validate_proposal): transform proposal
   (prot 3, trans 3, hmac_alg 1) not supported
1w6d: ISAKMP (0:2): atts not acceptable. Next payload is 0
1w6d: ISAKMP (0:2): Checking IPSec proposal 4
1w6d: ISAKMP: transform 1, ESP_3DES
1w6d: ISAKMP: attributes in transform:
1w6d: ISAKMP: authenticator is HMAC-SHA
1w6d: ISAKMP: encaps is 1
1w6d: ISAKMP: SA life type in seconds
1w6d: ISAKMP: SA life duration (VPI) of 0x0 0x20 0xC4 0x9B
1w6d: validate proposal 0
1w6d: ISAKMP (0:2): atts are acceptable.
1w6d: IPSEC(validate_proposal_request): proposal part #1,
   (key eng. msg.) INBOUND local= 172.18.124.158,
   remote= 192.168.60.34, local_proxy= 172.18.124.158/255.255.255.255/0/0
   (type=1), remote_proxy= 10.1.1.114/255.255.255.255/0/0 (type=1),
   protocol= ESP, transform= esp-3des esp-sha-hmac , lifedur= 0s and 0kb,
   spi= 0x0(0), conn_id= 0, keysize= 0, flags= 0x4
1w6d: validate proposal request 0
```

```
1w6d: ISAKMP (0:2): processing NONCE payload. message ID = 1369459046
1w6d: ISAKMP (0:2): processing ID payload. message ID = 1369459046
1w6d: ISAKMP (0:2): processing ID payload. message ID = 1369459046
1w6d: ISAKMP (0:2): asking for 1 spis from ipsec
1w6d: ISAKMP (0:2): Node 1369459046, Input = IKE_MESG_FROM_PEER, IKE_QM_EXCH
Old State = IKE_QM_READY New State = IKE_QM_SPI_STARVE

1w6d: IPSEC(key_engine): got a queue event...
1w6d: IPSEC(spi_response): getting spi 1640315492 for SA
   from 172.18.124.158 to 192.168.60.34 for prot 3
1w6d: ISAKMP: received ke message (2/1)
1w6d: CryptoEngine0: generate hmac context for conn id 2
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_HMAC(hw)(ipsec)
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_ENCRYPT(hw)(ipsec)
1w6d: ISAKMP (0:2): sending packet to 192.168.60.34 (R) QM_IDLE
1w6d: ISAKMP (0:2): Node 1369459046,
   Input = IKE_MESG_FROM_IPSEC, IKE_SPI_REPLY
Old State = IKE_QM_SPI_STARVE New State = IKE_QM_R_QM2

1w6d: ISAKMP (0:2): received packet from 192.168.60.34 (R) QM_IDLE
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_DECRYPT(hw)(ipsec)
1w6d: CryptoEngine0: generate hmac context for conn id 2
1w6d: CryptoEngine0: CRYPTO_ISA_IKE_HMAC(hw)(ipsec)
1w6d: ipsec allocate flow 0
1w6d: ipsec allocate flow 0
1w6d: CryptoEngine0: CRYPTO_ISA_IPSEC_KEY_CREATE(hw)(ipsec)
1w6d: CryptoEngine0: CRYPTO_ISA_IPSEC_KEY_CREATE(hw)(ipsec)
1w6d: ISAKMP (0:2): Creating IPSec SAs
1w6d: inbound SA from 192.168.60.34 to 172.18.124.158
   (proxy 10.1.1.114 to 172.18.124.158)
1w6d: has spi 0x61C53A64 and conn_id 200 and flags 4
1w6d: lifetime of 2147483 seconds
1w6d: outbound SA from 172.18.124.158 to 192.168.60.34
   (proxy 172.18.124.158 to 10.1.1.114 )
1w6d: has spi -1885622177 and conn_id 201 and flags C
1w6d: lifetime of 2147483 seconds
1w6d: ISAKMP (0:2): deleting node 1369459046 error FALSE
   reason "quick mode done (await()"
1w6d: ISAKMP (0:2): Node 1369459046,
   Input = IKE_MESG_FROM_PEER, IKE_QM_EXCH
Old State = IKE_QM_R_QM2 New State = IKE_QM_PHASE2_COMPLETE

1w6d: IPSEC(key_engine): got a queue event...
1w6d: IPSEC(initialize_sas): ,
   (key eng. msg.) INBOUND local= 172.18.124.158,
   remote= 192.168.60.34, local_proxy= 172.18.124.158/0.0.0.0/0/0
   (type=1), remote_proxy= 10.1.1.114/0.0.0.0/0/0 (type=1),
   protocol= ESP, transform= esp-3des esp-sha-hmac ,
   lifedur= 2147483s and 0kb, spi= 0x61C53A64(1640315492),
   conn_id= 200, keysize= 0, flags= 0x4
1w6d: IPSEC(initialize_sas): , (key eng. msg.)
   OUTBOUND local= 172.18.124.158, remote= 192.168.60.34,
   local_proxy= 172.18.124.158/0.0.0.0/0/0 (type=1),
   remote_proxy= 10.1.1.114/0.0.0.0/0/0 (type=1),
   protocol= ESP, transform= esp-3des esp-sha-hmac ,
   lifedur= 2147483s and 0kb, spi= 0x8F9BB05F(2409345119),
   conn_id= 201, keysize= 0, flags= 0xC
1w6d: IPSEC(create_sa): sa created, (sa) sa_dest= 172.18.124.158,
   sa_prot= 50, sa_spi= 0x61C53A64(1640315492),
   sa_trans= esp-3des esp-sha-hmac , sa_conn_id= 200
1w6d: IPSEC(create_sa): sa created, (sa) sa_dest= 192.168.60.34,
   sa_prot= 50, sa_spi= 0x8F9BB05F(2409345119),
   sa_trans= esp-3des esp-sha-hmac , sa_conn_id= 201
```

클라이언트 로그

로그를 보려면 VPN 클라이언트에서 로그 뷰어를 시작하고 구성된 모든 클래스에 대해 필터를 *High*로 설정합니다.

샘플 로그 출력이 여기에 표시됩니다.

```
1 11:56:06.609 06/05/02 Sev=Info/6 DIALER/0x63300002
Initiating connection.

2 11:56:06.609 06/05/02 Sev=Info/4 CM/0x63100002
Begin connection process

3 11:56:06.609 06/05/02 Sev=Info/4 CM/0x63100004
Establish secure connection using Ethernet

4 11:56:06.609 06/05/02 Sev=Info/4 CM/0x63100026
Attempt connection with server "172.18.124.158"

5 11:56:06.609 06/05/02 Sev=Info/6 IKE/0x6300003B
Attempting to establish a connection with 172.18.124.158.

6 11:56:06.669 06/05/02 Sev=Info/4 IKE/0x63000013
SENDING >>> ISAKMP OAK AG (SA, KE, NON, ID, VID, VID, VID) to 172.18.124.158

7 11:56:07.250 06/05/02 Sev=Info/5 IKE/0x6300002F
Received ISAKMP packet: peer = 172.18.124.158

8 11:56:07.250 06/05/02 Sev=Info/4 IKE/0x63000014
RECEIVING <<< ISAKMP OAK AG (SA, VID, VID, VID, VID, KE, ID, NON, HASH) from
172.18.124.158

9 11:56:07.250 06/05/02 Sev=Info/5 IKE/0x63000059
Vendor ID payload = 12F5F28C457168A9702D9FE274CC0100

10 11:56:07.250 06/05/02 Sev=Info/5 IKE/0x63000001
Peer is a Cisco-Unity compliant peer

11 11:56:07.250 06/05/02 Sev=Info/5 IKE/0x63000059
Vendor ID payload = AFCAD71368A1F1C96B8696FC77570100

12 11:56:07.250 06/05/02 Sev=Info/5 IKE/0x63000001
Peer supports DPD

13 11:56:07.250 06/05/02 Sev=Info/5 IKE/0x63000059
Vendor ID payload = 0A0E5F2A15C0B2F2A41B00897B816B3C

14 11:56:07.250 06/05/02 Sev=Info/5 IKE/0x63000059
Vendor ID payload = 09002689DFD6B712

15 11:56:07.280 06/05/02 Sev=Info/4 IKE/0x63000013
SENDING >>> ISAKMP OAK AG *(HASH, NOTIFY:STATUS_INITIAL_CONTACT) to
172.18.124.158

16 11:56:07.320 06/05/02 Sev=Info/5 IKE/0x6300002F
Received ISAKMP packet: peer = 172.18.124.158

17 11:56:07.320 06/05/02 Sev=Info/4 IKE/0x63000014
RECEIVING <<< ISAKMP OAK INFO *(HASH, NOTIFY:STATUS_RESP_LIFETIME) from
```

```
172.18.124.158

18 11:56:07.320 06/05/02 Sev=Info/5 IKE/0x63000044
RESPONDER-LIFETIME notify has value of 86400 seconds

19 11:56:07.320 06/05/02 Sev=Info/5 IKE/0x63000046
This SA has already been alive for 1 seconds, setting expiry to 86399 seconds
from now

20 11:56:07.561 06/05/02 Sev=Info/5 IKE/0x6300002F
Received ISAKMP packet: peer = 172.18.124.158

21 11:56:07.561 06/05/02 Sev=Info/4 IKE/0x63000014
RECEIVING <<< ISAKMP OAK TRANS *(HASH, ATTR) from 172.18.124.158

22 11:56:07.561 06/05/02 Sev=Info/4 CM/0x63100015
Launch xAuth application

23 11:56:07.571 06/05/02 Sev=Info/4 IPSEC/0x63700014
Deleted all keys

24 11:56:09.734 06/05/02 Sev=Info/4 CM/0x63100017
xAuth application returned

25 11:56:09.734 06/05/02 Sev=Info/4 IKE/0x63000013
SENDING >>> ISAKMP OAK TRANS *(HASH, ATTR) to 172.18.124.158

26 11:56:10.174 06/05/02 Sev=Info/5 IKE/0x6300002F
Received ISAKMP packet: peer = 172.18.124.158

27 11:56:10.184 06/05/02 Sev=Info/4 IKE/0x63000014
RECEIVING <<< ISAKMP OAK TRANS *(HASH, ATTR) from 172.18.124.158

28 11:56:10.184 06/05/02 Sev=Info/4 CM/0x6310000E
Established Phase 1 SA. 1 Phase 1 SA in the system

29 11:56:10.184 06/05/02 Sev=Info/4 IKE/0x63000013
SENDING >>> ISAKMP OAK TRANS *(HASH, ATTR) to 172.18.124.158

30 11:56:10.204 06/05/02 Sev=Info/5 IKE/0x6300005D
Client sending a firewall request to concentrator

31 11:56:10.204 06/05/02 Sev=Info/5 IKE/0x6300005C
Firewall Policy: Product=Cisco Integrated Client, Capability= (Centralized
Policy Push).

32 11:56:10.204 06/05/02 Sev=Info/4 IKE/0x63000013
SENDING >>> ISAKMP OAK TRANS *(HASH, ATTR) to 172.18.124.158

33 11:56:10.265 06/05/02 Sev=Info/5 IKE/0x6300002F
Received ISAKMP packet: peer = 172.18.124.158

34 11:56:10.265 06/05/02 Sev=Info/4 IKE/0x63000014
RECEIVING <<< ISAKMP OAK TRANS *(HASH, ATTR) from 172.18.124.158

35 11:56:10.265 06/05/02 Sev=Info/5 IKE/0x63000010
MODE_CFG_REPLY: Attribute = INTERNAL_IPV4_ADDRESS: , value = 10.1.1.114

36 11:56:10.265 06/05/02 Sev=Info/5 IKE/0x63000010
MODE_CFG_REPLY: Attribute = INTERNAL_IPV4_DNS(1): , value = 10.1.1.10

37 11:56:10.265 06/05/02 Sev=Info/5 IKE/0x63000010
MODE_CFG_REPLY: Attribute = INTERNAL_IPV4_NBNS(1) (a.k.a. WINS) : , value =
10.1.1.20
```

```
38 11:56:10.265 06/05/02 Sev=Info/5 IKE/0xA3000017
MODE_CFG_REPLY: The received (INTERNAL_ADDRESS_EXPIRY) attribute and value
(86396) is not supported

39 11:56:10.265 06/05/02 Sev=Info/5 IKE/0x6300000E
MODE_CFG_REPLY: Attribute = APPLICATION_VERSION,
value = Cisco Internetwork Operating System Software
IOS (tm) C1700 Software (C1710-K9O3SY-M), Version 12.2(8)T1,
RELEASE SOFTWARE (fc2)
TAC Support: http://www.cisco.com/tac
Copyright (c) 1986-2002 by cisco Systems, Inc.
Compiled Sat 30-Mar-02 13:30 by ccai

40 11:56:10.265 06/05/02 Sev=Info/5 IKE/0x6300000E
MODE_CFG_REPLY: Attribute = MODECFG_UNITY_DEFDOMAIN: , value = cisco.com

41 11:56:10.265 06/05/02 Sev=Info/5 IKE/0x6300000D
MODE_CFG_REPLY: Attribute = MODECFG_UNITY_SPLIT_INCLUDE (# of split_nets),
value = 0x00000001

42 11:56:10.265 06/05/02 Sev=Info/5 IKE/0x6300000F
SPLIT_NET #1
subnet = 10.38.0.0
mask = 255.255.0.0
protocol = 0
src port = 0
dest port=0

43 11:56:10.265 06/05/02 Sev=Info/4 CM/0x63100019
Mode Config data received

44 11:56:10.275 06/05/02 Sev=Info/5 IKE/0x63000055
Received a key request from Driver for IP address 172.18.124.158, GW IP =
172.18.124.158

45 11:56:10.275 06/05/02 Sev=Info/4 IKE/0x63000013
SENDING >>> ISAKMP OAK QM *(HASH, SA, NON, ID, ID) to 172.18.124.158

46 11:56:10.575 06/05/02 Sev=Info/4 IPSEC/0x63700014
Deleted all keys

47 11:56:10.605 06/05/02 Sev=Info/5 IKE/0x6300002F
Received ISAKMP packet: peer = 172.18.124.158

48 11:56:10.605 06/05/02 Sev=Info/4 IKE/0x63000014
RECEIVING <<< ISAKMP OAK QM *(HASH, SA, NON, ID, ID,
NOTIFY:STATUS_RESP_LIFETIME) from 172.18.124.158

49 11:56:10.605 06/05/02 Sev=Info/5 IKE/0x63000044
RESPONDER-LIFETIME notify has value of 3600 seconds

50 11:56:10.605 06/05/02 Sev=Info/5 IKE/0x63000045
RESPONDER-LIFETIME notify has value of 4608000 kb

51 11:56:10.605 06/05/02 Sev=Info/4 IKE/0x63000013
SENDING >>> ISAKMP OAK QM *(HASH) to 172.18.124.158

52 11:56:10.605 06/05/02 Sev=Info/5 IKE/0x63000058
Loading IPsec SA (Message ID = 0x51A04966 OUTBOUND SPI = 0x61C53A64 INBOUND
SPI = 0x8F9BB05F)

53 11:56:10.605 06/05/02 Sev=Info/5 IKE/0x63000025
Loaded OUTBOUND ESP SPI: 0x61C53A64
```

```
54 11:56:10.605 06/05/02 Sev=Info/5 IKE/0x63000026
Loaded INBOUND ESP SPI: 0x8F9BB05F

55 11:56:10.605 06/05/02 Sev=Info/4 CM/0x6310001A
One secure connection established

56 11:56:10.625 06/05/02 Sev=Info/6 DIALER/0x63300003
Connection established.

57 11:56:10.735 06/05/02 Sev=Info/6 DIALER/0x63300008
MAPI32 Information - Outlook not default mail client

58 11:56:11.677 06/05/02 Sev=Info/4 IPSEC/0x63700010
Created a new key structure

59 11:56:11.677 06/05/02 Sev=Info/4 IPSEC/0x6370000F
Added key with SPI=0x643ac561 into key list

60 11:56:11.677 06/05/02 Sev=Info/4 IPSEC/0x63700010
Created a new key structure

61 11:56:11.677 06/05/02 Sev=Info/4 IPSEC/0x6370000F
Added key with SPI=0x5fb09b8f into key list
```

관련 정보

- TACACS+(Terminal Access Controller Access Control System) 지원
- Unix 지원을 위한 Cisco Secure Access Control Server
- Windows용 Cisco Secure ACS 지원
- Cisco VPN 클라이언트 지원
- IPSec 협상/IKE 프로토콜 지원
- 기술 지원 및 문서 – Cisco Systems