

# Configuring an IPSec Tunnel Between a Cisco VPN 3000 Concentrator and a Checkpoint NG Firewall

Document ID: 23786

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## Introduction

This document demonstrates how to configure an IPSec tunnel with pre-shared keys to communicate between two private networks. In this example, the communicating networks are the 192.168.10.x private network inside the Cisco VPN 3000 Concentrator and the 10.32.x.x private network inside the Checkpoint Next Generation (NG) Firewall.

## Prerequisites

### Requirements

- Traffic from inside the VPN Concentrator and inside the Checkpoint NG to the Internet represented here by the 172.18.124.x networks must flow prior to beginning this configuration.
- Users must be familiar with IPSec negotiation. This process can be broken down into five steps, including two Internet Key Exchange (IKE) phases.
  1. An IPSec tunnel is initiated by interesting traffic. Traffic is considered interesting when it travels between the IPSec peers.
  2. In IKE Phase 1, the IPSec peers negotiate the established IKE Security Association (SA) policy. Once the peers are authenticated, a secure tunnel is created with the Internet Security Association and Key Management Protocol (ISAKMP).
  3. In IKE Phase 2, the IPSec peers use the authenticated and secure tunnel in order to negotiate IPSec SA transforms. The negotiation of the shared policy determines how the IPSec tunnel is established.
  4. The IPSec tunnel is created, and data is transferred between the IPSec peers based on the

- IPSec parameters configured in the IPSec transform sets.
5. The IPSec tunnel terminates when the IPSec SAs are deleted or when their lifetime expires.

## Components Used

This configuration was developed and tested with these software and hardware versions:

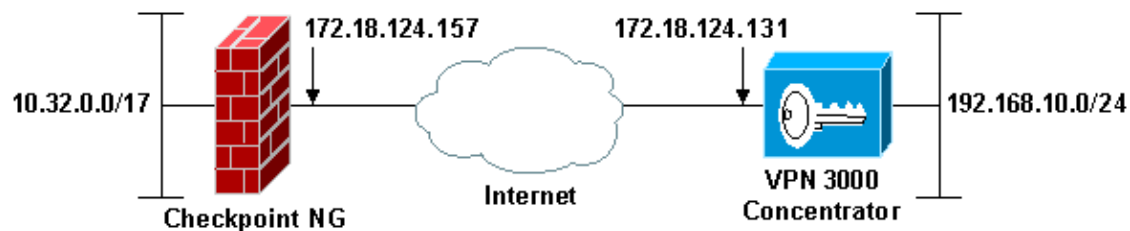
- VPN 3000 Series Concentrator 3.5.2
- Checkpoint NG Firewall

## Conventions

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

## Network Diagram

This document uses this network setup:



**Note:** The IP addressing scheme used in this configuration is not legally routable on the Internet. They are RFC 1918 addresses, which have been used in a lab environment.

## Configurations

### Configure the VPN 3000 Concentrator

Complete these steps in order to configure the VPN 3000 Concentrator:

1. Go to **Configuration > System > Tunneling Protocols > IPSec LAN-to-LAN** in order to configure the LAN-to-LAN session. Set the options for authentication and IKE algorithms, pre-shared key, peer IP address, and local and remote network parameters. Click **Apply**.

In this configuration, authentication was set as ESP-MD5-HMAC and encryption was set as 3DES.

Configuration | System | Tunneling Protocols | IPSec LAN-to-LAN | Modify

Modify an IPSec LAN-to-LAN connection.

<b>Name</b>	<input type="text" value="Checkpoint"/>	Enter the name for this LAN-to-LAN connection.
<b>Interface</b>	<input type="text" value="Ethernet 2 (Public) (172.18.124.131)"/>	Select the interface to put this LAN-to-LAN connection on.
<b>Peer</b>	<input type="text" value="172.18.124.157"/>	Enter the IP address of the remote peer for this LAN-to-LAN connection.
<b>Digital Certificate</b>	<input type="text" value="None (Use Preshared Keys)"/>	Select the Digital Certificate to use.
<b>Certificate Transmission</b>	<input type="radio"/> Entire certificate chain <input checked="" type="radio"/> Identity certificate only	Choose how to send the digital certificate to the IKE peer.
<b>Preshared Key</b>	<input type="text" value="ciscortpules"/>	Enter the preshared key for this LAN-to-LAN connection.
<b>Authentication</b>	<input type="text" value="ESP/MD5+HMAC-128"/>	Specify the packet authentication mechanism to use.
<b>Encryption</b>	<input type="text" value="3DES-168"/>	Specify the encryption mechanism to use.
<b>IKE Proposal</b>	<input type="text" value="IKE-3DES-MD5"/>	Select the IKE Proposal to use for this LAN-to-LAN connection.
<b>Routing</b>	<input type="text" value="None"/>	Choose the routing mechanism to use. <b>Parameters below are ignored if Network Autodiscovery is chosen.</b>

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**Local Network**

<b>Network List</b>	<input type="text" value="Use IP Address/Wildcard-mask below"/>	Specify the local network address list or the IP address and wildcard mask for this LAN-to-LAN connection.
<b>IP Address</b>	<input type="text" value="192.168.10.0"/>	
<b>Wildcard Mask</b>	<input type="text" value="0.0.0.255"/>	<b>Note: Enter a <i>wildcard</i> mask, which is the reverse of a subnet mask. A wildcard mask has 1s in bit positions to ignore, 0s in bit positions to match. For example, 10.10.1.0/0.0.0.255 = all 10.10.1.nnn addresses.</b>

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**Remote Network**

<b>Network List</b>	<input type="text" value="Use IP Address/Wildcard-mask below"/>	Specify the remote network address list or the IP address and wildcard mask for this LAN-to-LAN connection.
<b>IP Address</b>	<input type="text" value="10.32.0.0"/>	
<b>Wildcard Mask</b>	<input type="text" value="0.0.127.255"/>	<b>Note: Enter a <i>wildcard</i> mask, which is the reverse of a subnet mask. A wildcard mask has 1s in bit positions to ignore, 0s in bit positions to match. For example, 10.10.1.0/0.0.0.255 = all 10.10.1.nnn addresses.</b>

- Go to **Configuration > System > Tunneling Protocols > IPSec > IKE Proposals** and set the required parameters.

Select the IKE proposal IKE-3DES-MD5 and verify the parameters selected for the proposal. Click **Apply** in order to configure the LAN-to-LAN session.

These are the parameters for this configuration:

Configuration | System | Tunneling Protocols | IPSec | IKE Proposals | Modify

Modify a configured IKE Proposal.

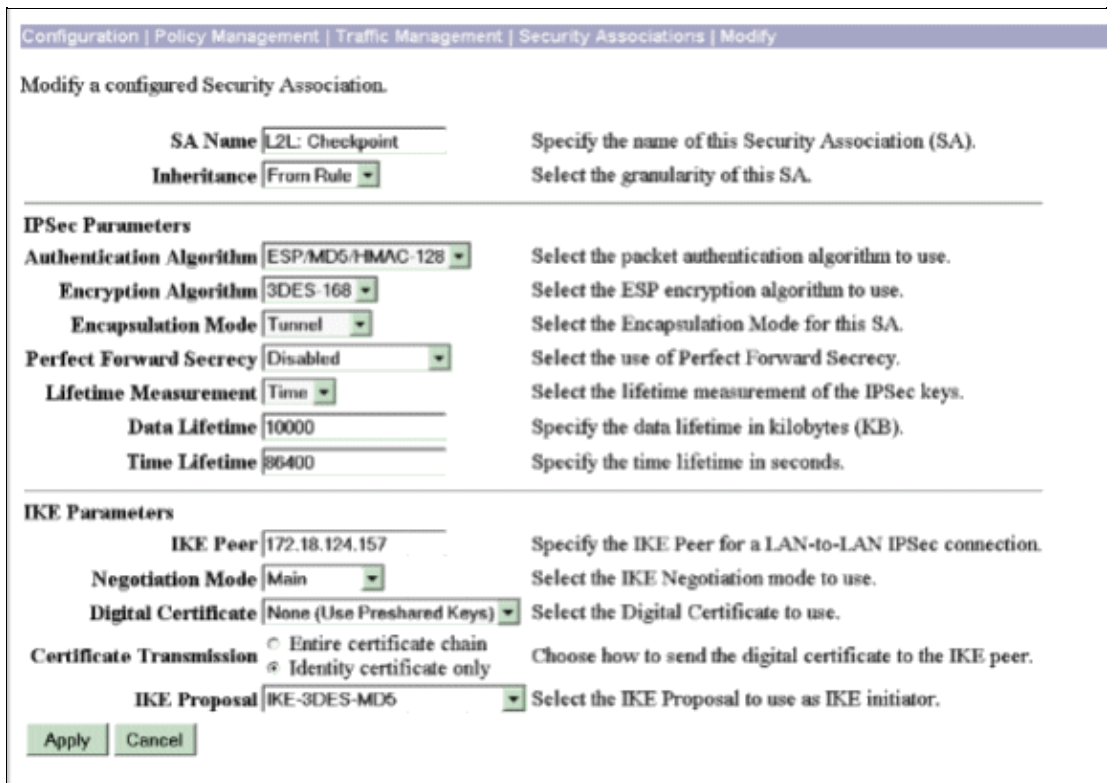
<b>Proposal Name</b>	<input type="text" value="IKE-3DES-MD5"/>	Specify the name of this IKE Proposal.
<b>Authentication Mode</b>	<input type="text" value="Preshared Keys"/>	Select the authentication mode to use.
<b>Authentication Algorithm</b>	<input type="text" value="MD5+HMAC-128"/>	Select the packet authentication algorithm to use.
<b>Encryption Algorithm</b>	<input type="text" value="3DES-168"/>	Select the encryption algorithm to use.
<b>Diffie-Hellman Group</b>	<input type="text" value="Group 2 (1024-bits)"/>	Select the Diffie Hellman Group to use.
<b>Lifetime Measurement</b>	<input type="text" value="Time"/>	Select the lifetime measurement of the IKE keys.
<b>Data Lifetime</b>	<input type="text" value="10000"/>	Specify the data lifetime in kilobytes (KB).
<b>Time Lifetime</b>	<input type="text" value="86400"/>	Specify the time lifetime in seconds.

- Go to **Configuration > Policy Management > Traffic Management > Security Associations**, select the IPSec SA created for the session, and verify the IPSec SA parameters chosen for the LAN-to-LAN session.

In this configuration the LAN-to-LAN session name was "Checkpoint," so the IPSec SA was created automatically as "L2L: Checkpoint."



These are the parameters for this SA:



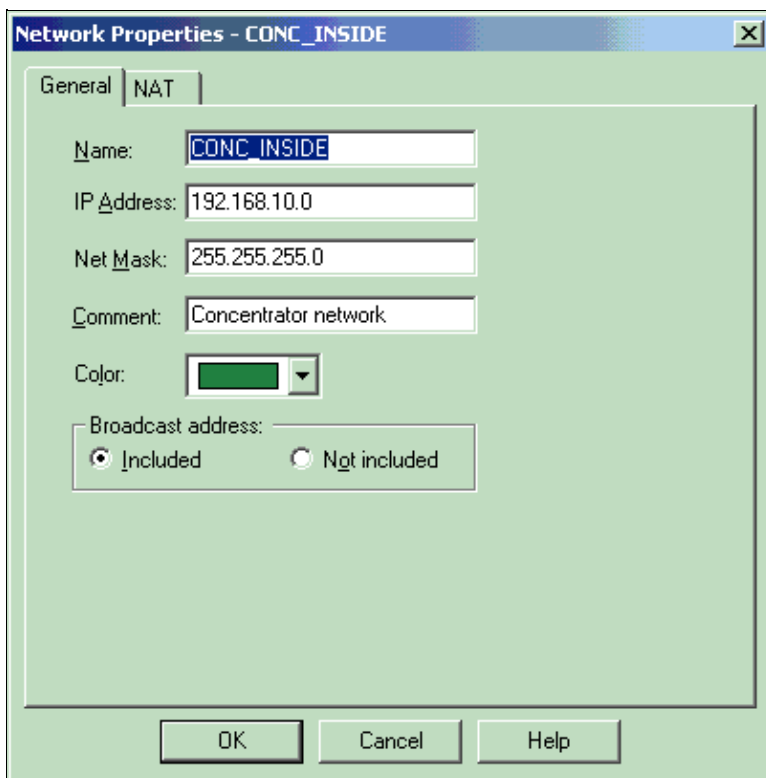
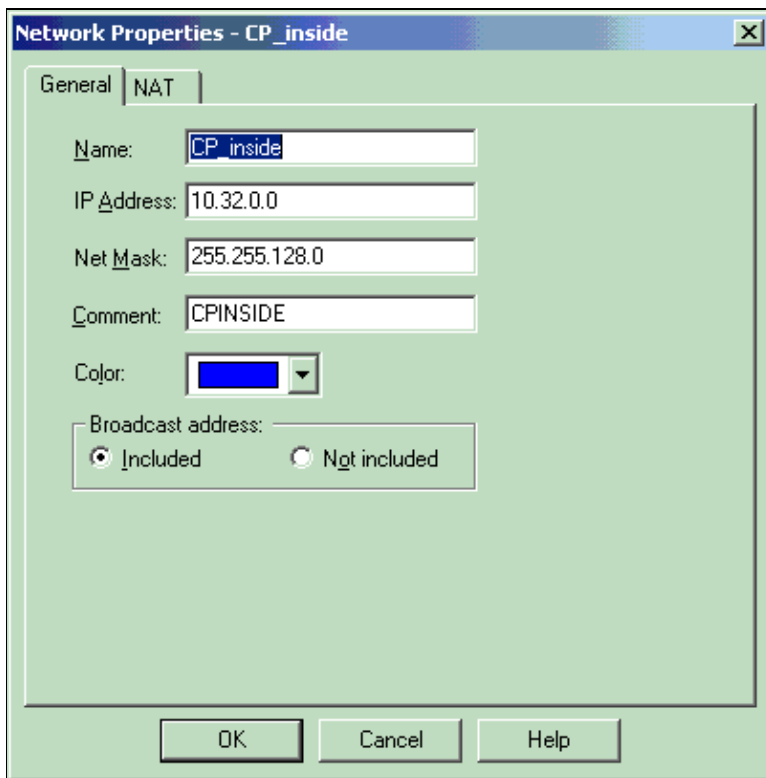
## Configure the Checkpoint NG

Network objects and rules are defined on the Checkpoint NG in order to make up the policy that pertains to the VPN configuration to be set up. This policy is then installed with the Checkpoint NG Policy Editor to complete the Checkpoint NG side of the configuration.

1. Create the two network objects for the Checkpoint NG network and VPN Concentrator network that will encrypt the interesting traffic.

in order to create objects, select **Manage > Network Objects**, then select **New > Network**. Enter the appropriate network information, then click OK.

These examples show the set up of network objects called CP\_inside (the inside network of the Checkpoint NG) and CONC\_INSIDE (the inside network of the VPN Concentrator).



2. Go to **Manage > Network Objects** and selecting **New > Workstation** in order to create workstation objects for the VPN devices, Checkpoint NG and VPN Concentrator.

**Note:** You can use the Checkpoint NG workstation object created during initial Checkpoint NG setup. Select the options to set the workstation as Gateway and Interoperable VPN Device, then click **OK**.

These examples show the set up of objects called ciscocp (Checkpoint NG) and CISCO\_CONC (VPN 3000 Concentrator):

**Workstation Properties - ciscocp**

**General**

Name:

IP Address:

Comment:

Color:

Type:  Host  Gateway

Check Point Products

Check Point products installed: Version

VPN-1 & FireWall-1  
 FloodGate-1  
 Policy Server  
 Primary Management Station

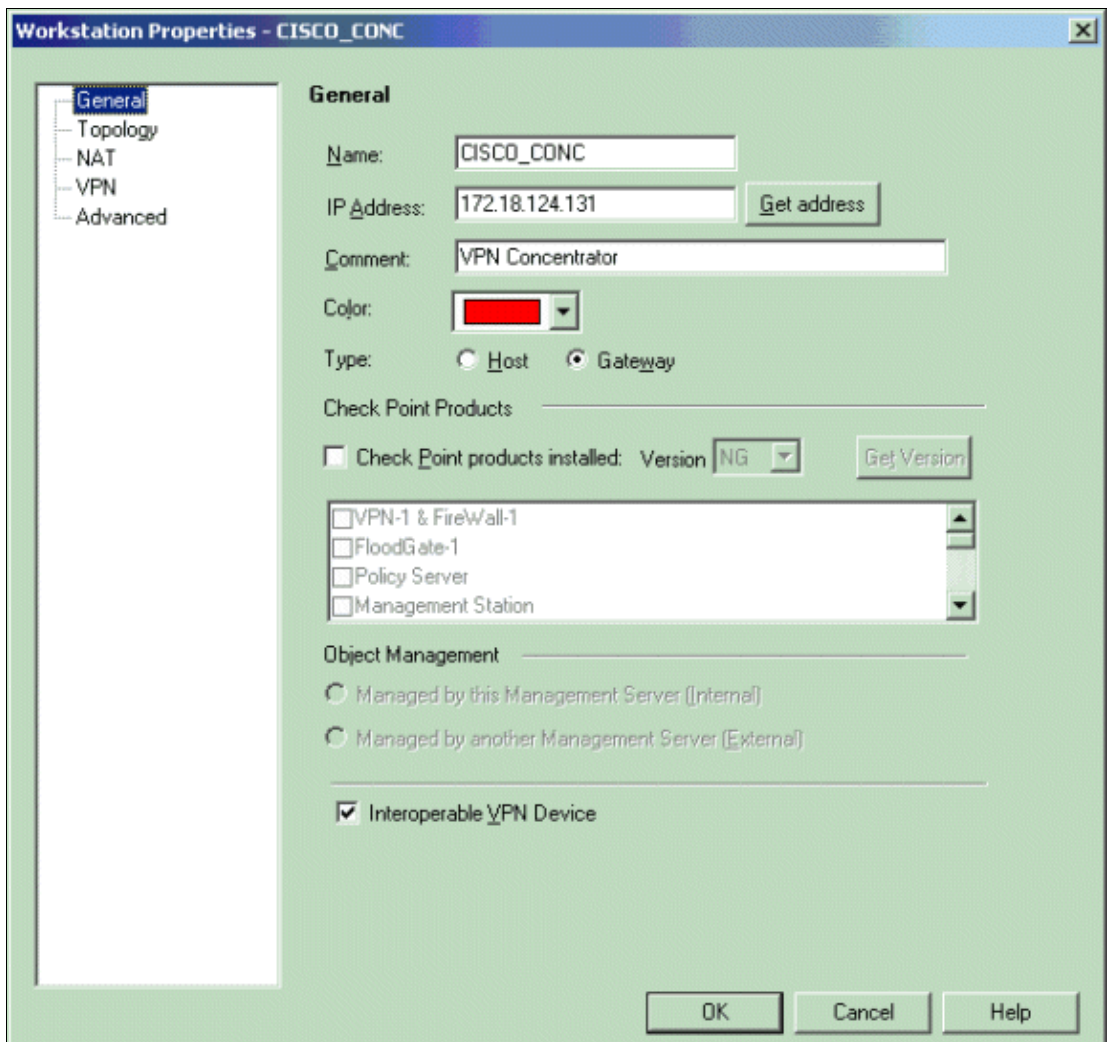
Object Management

Managed by this Management Server (Internal)  
 Managed by another Management Server (External)

Secure Internal Communication

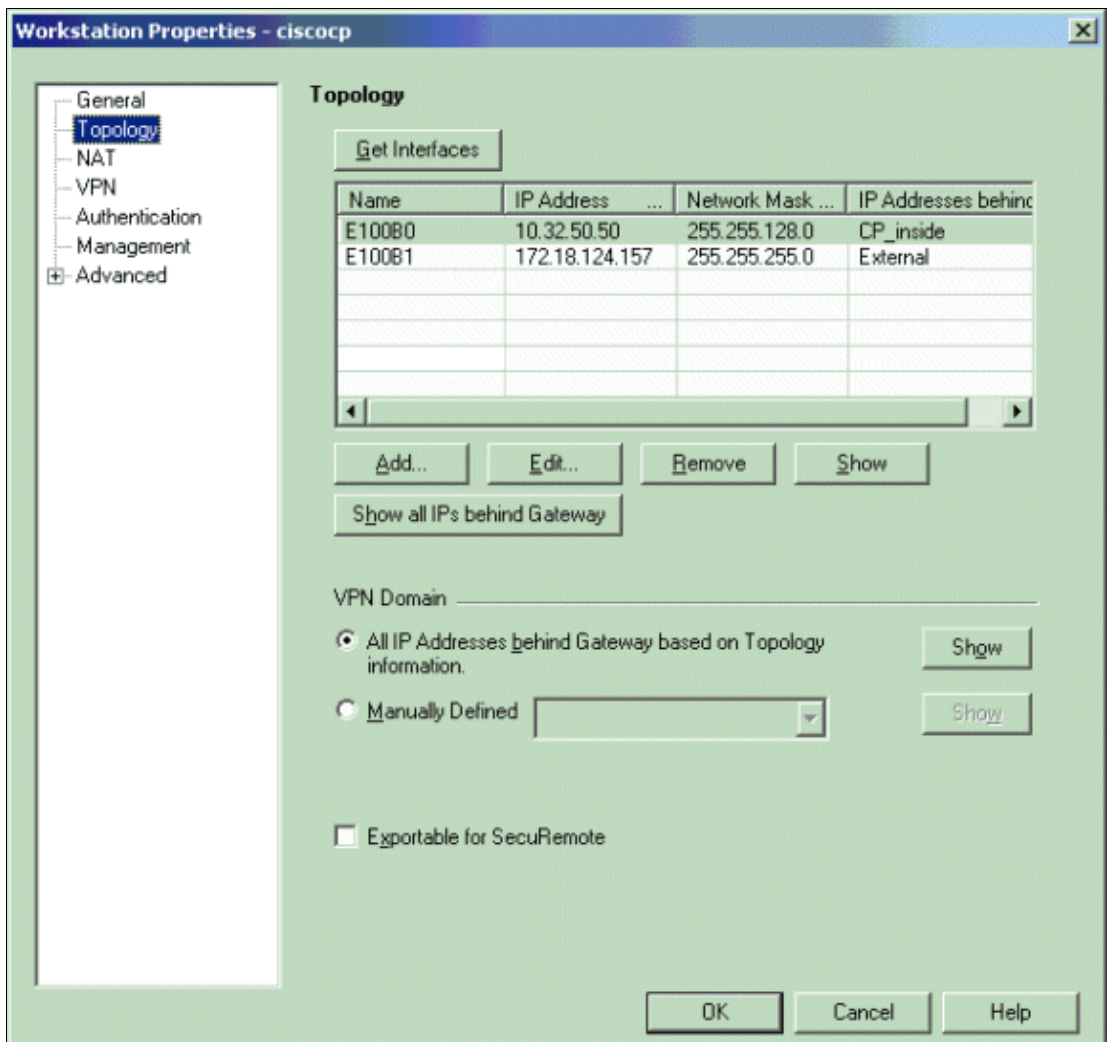
DN:

Interoperable VPN Device



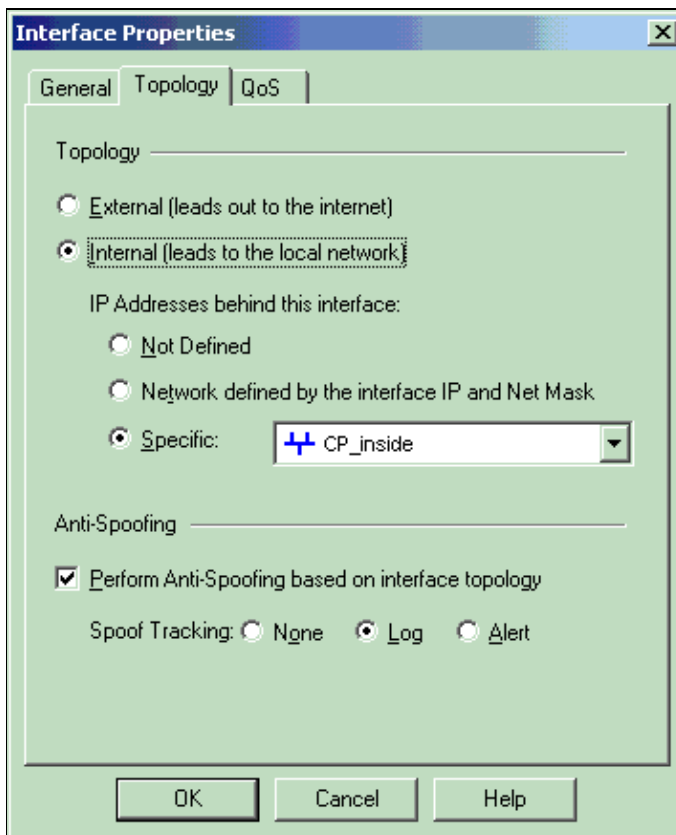
3. Go to **Manage > Network Objects > Edit** in order to open the Workstation Properties window for the Checkpoint NG workstation (ciscocp in this example). Select **Topology** from the choices on the left side of the window, then select the network to be encrypted. Click **Edit** in order to set the interface properties.

In this example, CP\_inside is the inside network of the Checkpoint NG.

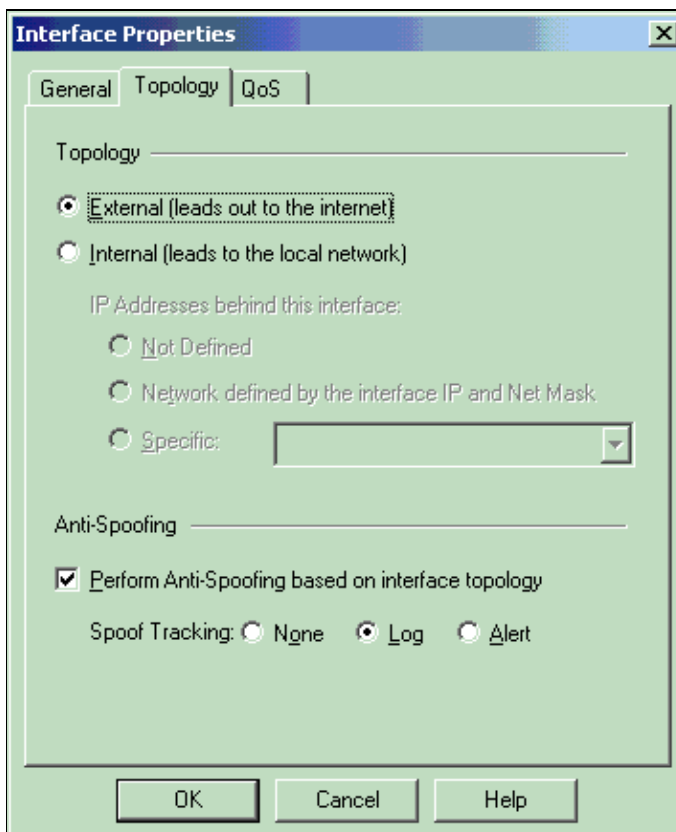


4. On the Interface Properties window, select the option to designate the workstation as internal, then specify the appropriate IP address. Click **OK**.

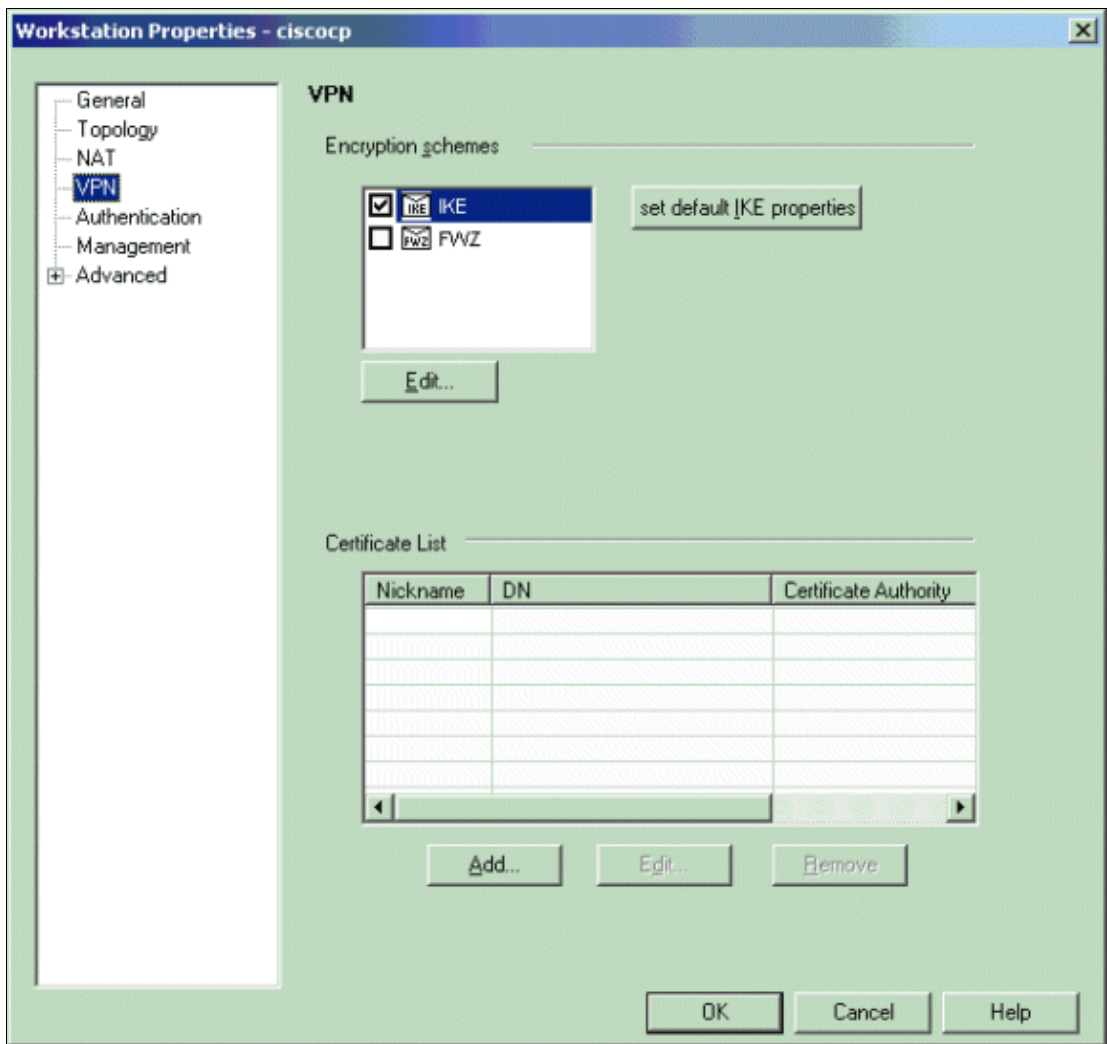
The topology selections shown designate the workstation as internal and specify IP addresses behind the CP\_inside interface:



- From the Workstation Properties window, select the outside interface on the Checkpoint NG that leads out to the Internet, then click **Edit** in order to set the interface properties. Select the option to designate the topology as external, then click **OK**.

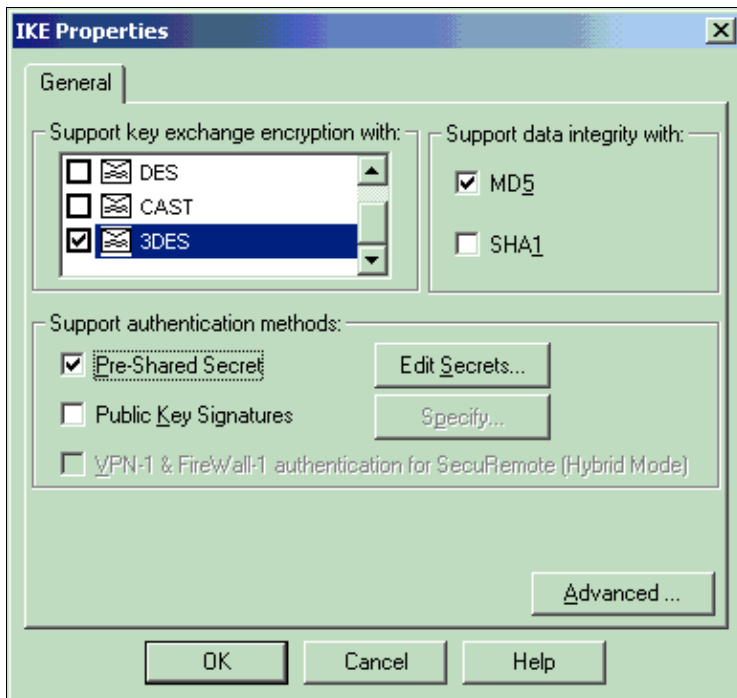


- From the Workstation Properties window on the Checkpoint NG, select **VPN** from the choices on the left side of the window, then select the IKE parameters for encryption and authentication algorithms. Click **Edit** in order to configure the IKE properties.

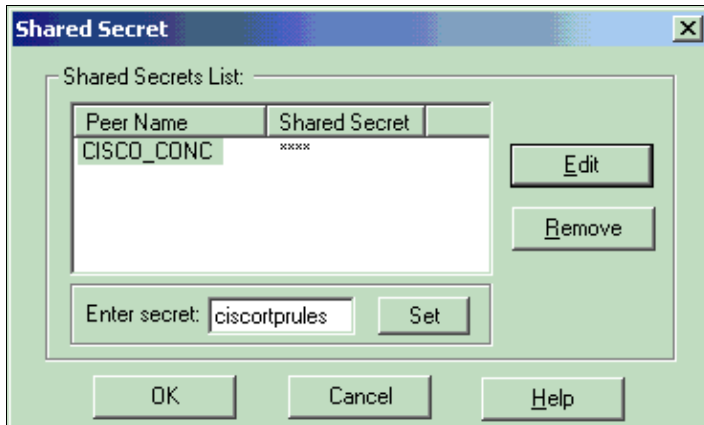


7. Set the IKE properties to match the properties on the VPN Concentrator.

In this example, select the encryption option for **3DES** and the hashing option for **MD5**.



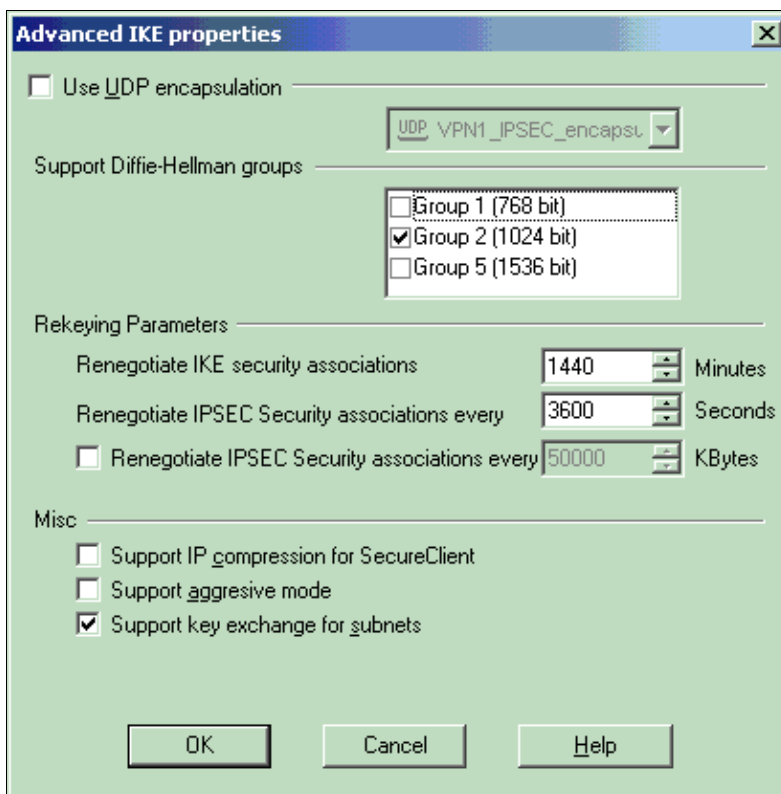
8. Select the authentication option for **Pre-Shared Secrets**, then click **Edit Secrets** to set the pre-shared key to be compatible with the pre-shared key on the VPN Concentrator. Click **Edit** in order to enter your key as shown, then click **Set, OK**.



9. From the IKE properties window, click **Advanced...** and change these settings:

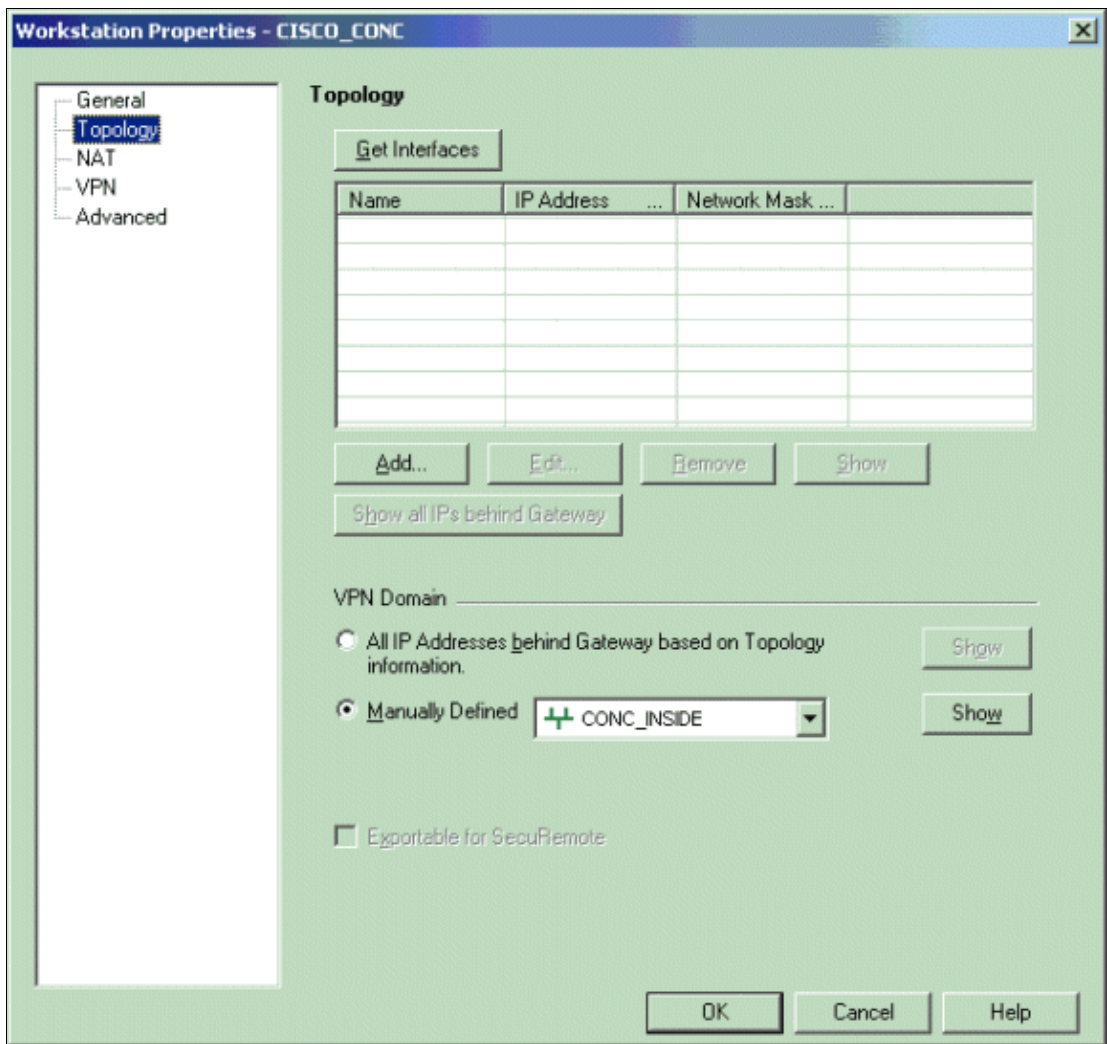
- ◆ Deselect the option for **Support aggressive mode**.
- ◆ Select the option for **Support key exchange for subnets**.

When you are finished, click **OK, OK**.

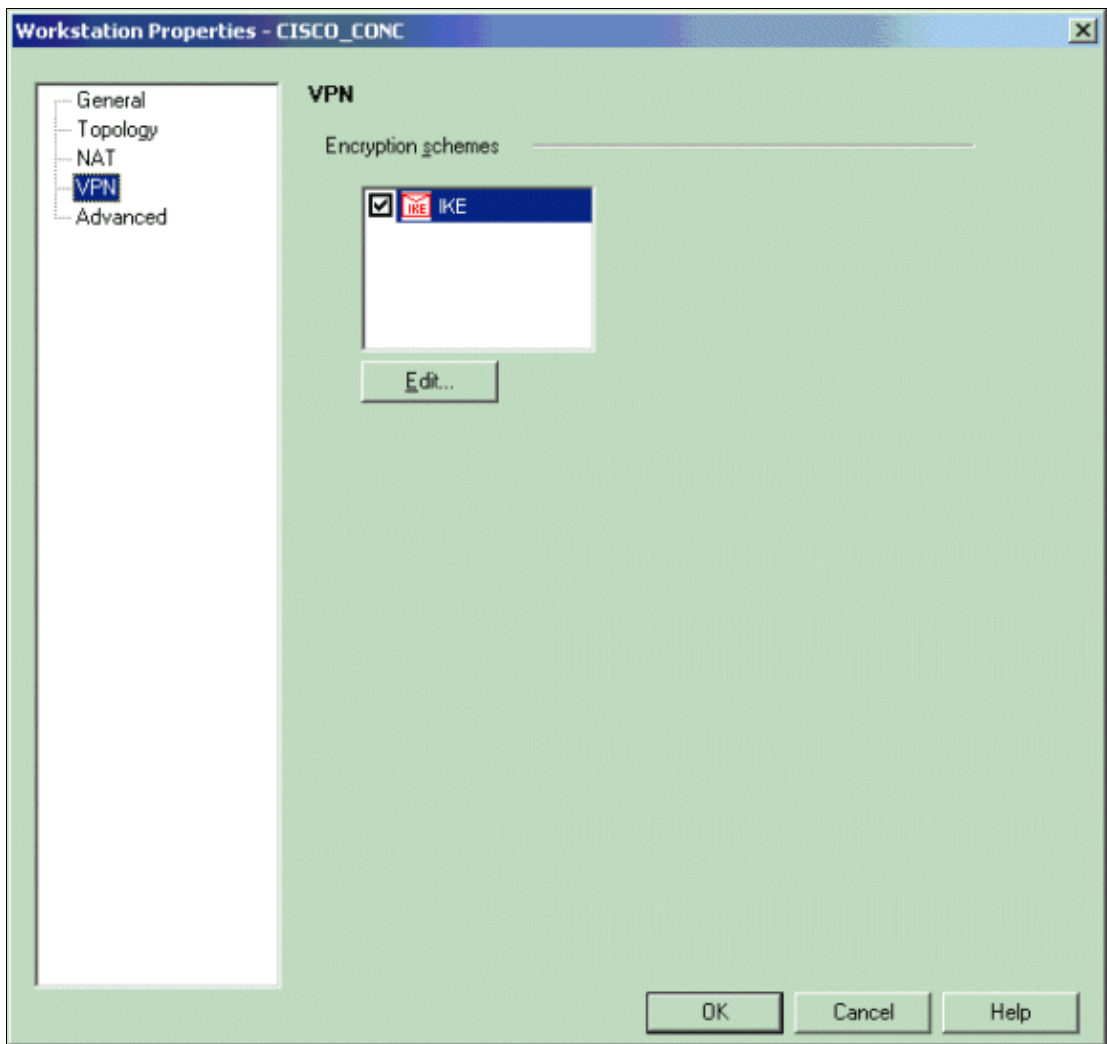


10. Go to **Manage > Network Objects > Edit** in order to open the Workstation Properties window for the VPN Concentrator. Select **Topology** from the choices on the left side of the window in order to manually define the VPN domain.

In this example, CONC\_INSIDE (the inside network of the VPN Concentrator) is defined as the VPN domain.

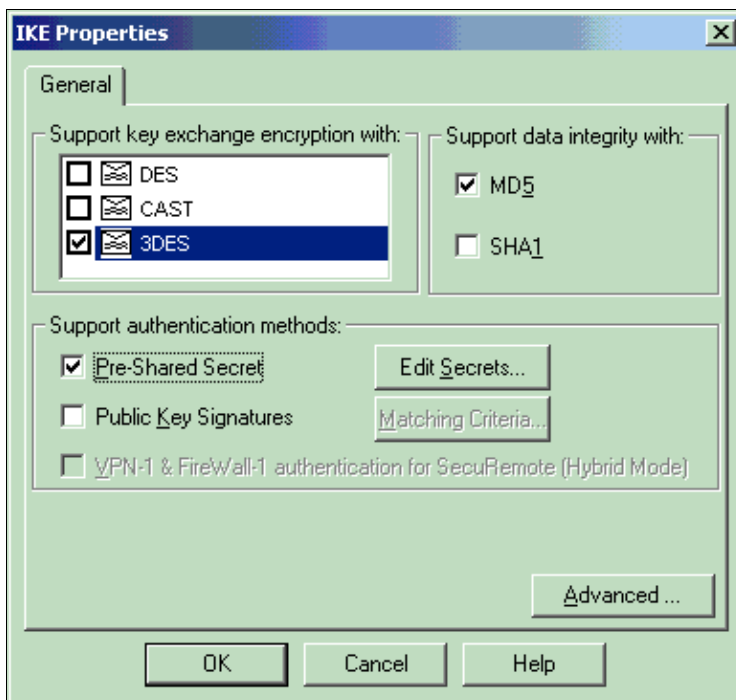


11. Select **VPN** from the choices on the left side of the window, then select **IKE** as the encryption scheme. Click **Edit** in order to configure the IKE properties.

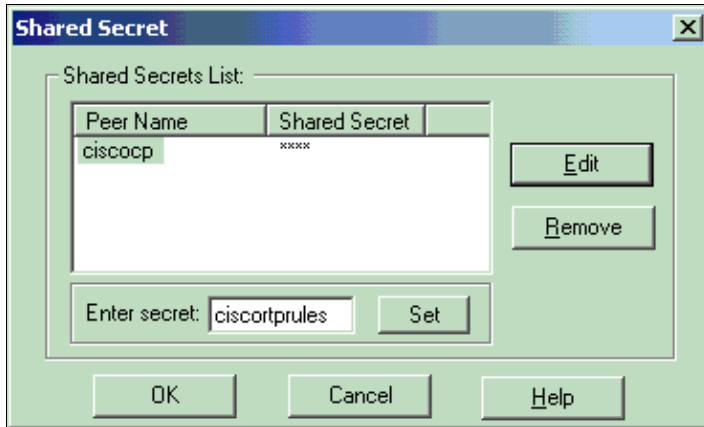


12. Set the IKE properties to reflect the current configuration on the VPN Concentrator.

In this example, set the encryption option for **3DES** and the hashing option for **MD5**.



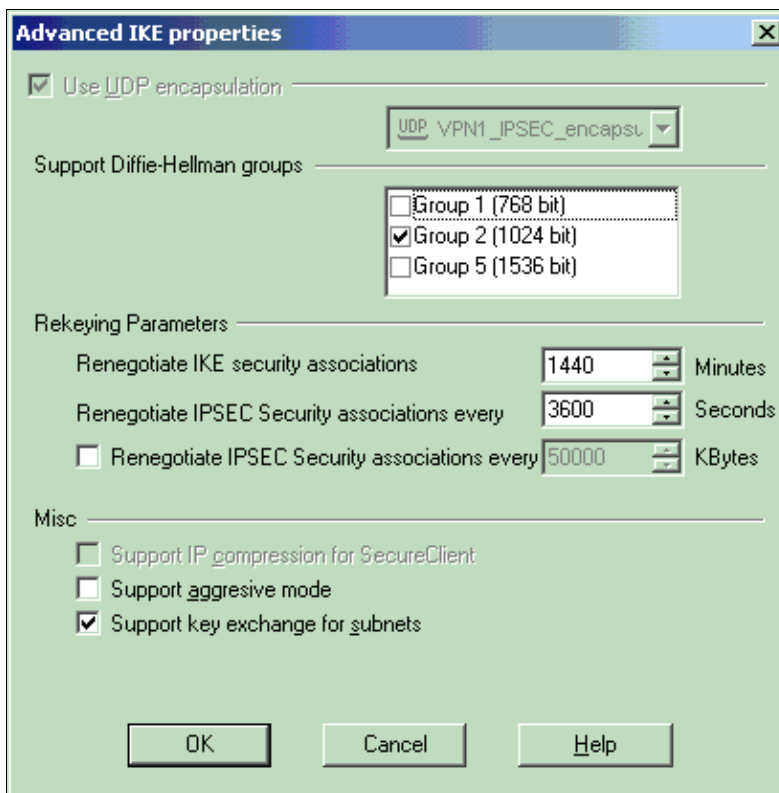
13. Select the authentication option for **Pre-Shared Secrets**, then click **Edit Secrets** in order to set the pre-shared key. Click **Edit** in order to enter your key as shown, then click **Set, OK**.



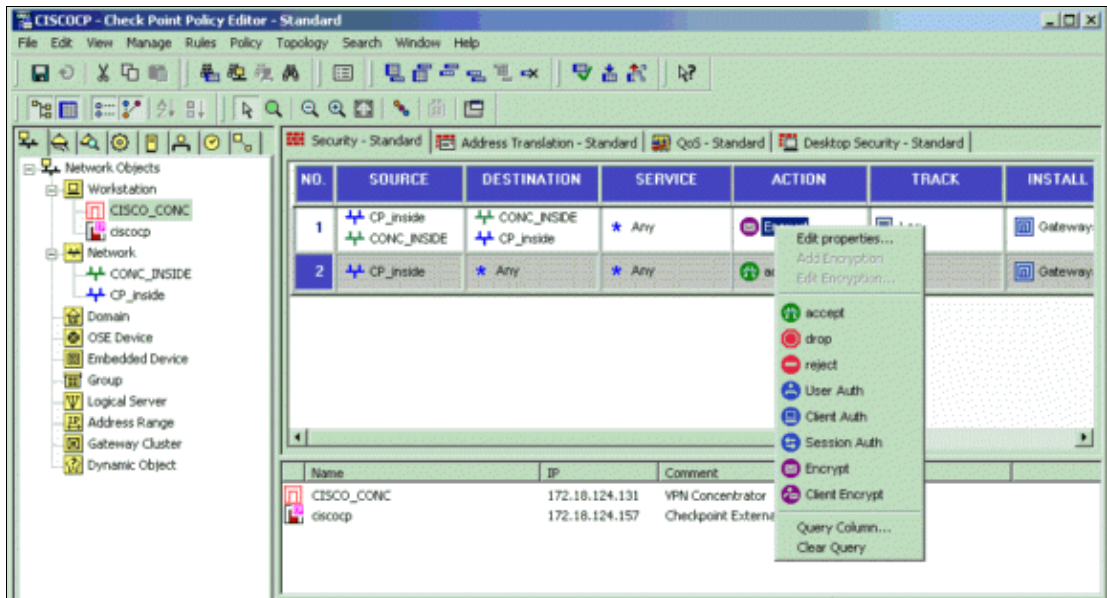
14. From the IKE properties window, click **Advanced...** and change these settings:

- ◆ Select the Diffie-Hellman group appropriate for the IKE properties.
- ◆ Deselect the option for **Support aggressive mode**.
- ◆ Select the option for **Support key exchange for subnets**.

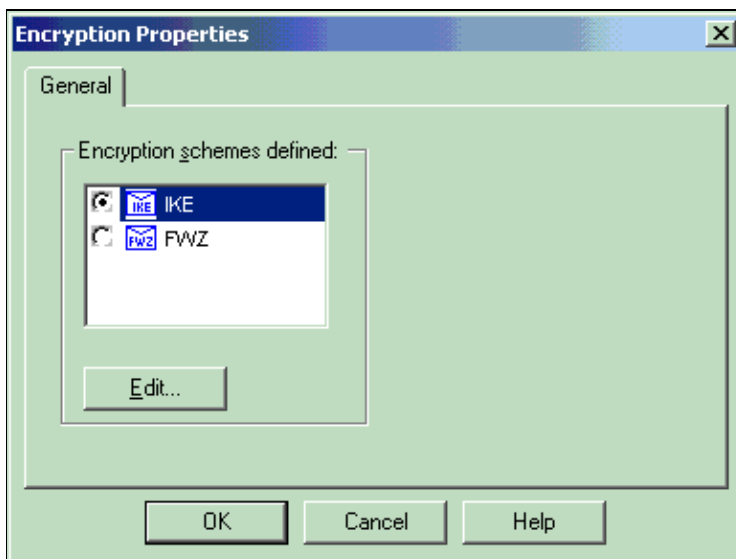
When you are finished, click **OK, OK**.



15. Select **Rules > Add Rules > Top** in order to configure the encryption rules for the policy. In the Policy Editor window, insert a rule with source as CP\_inside (inside network of the Checkpoint NG) and destination as CONC\_INSIDE (inside network of the VPN Concentrator). Set values for **Service = Any**, **Action = Encrypt**, and **Track = Log**. When you have added the Encrypt Action section of the rule, right-click **Action** and select **Edit Properties**.



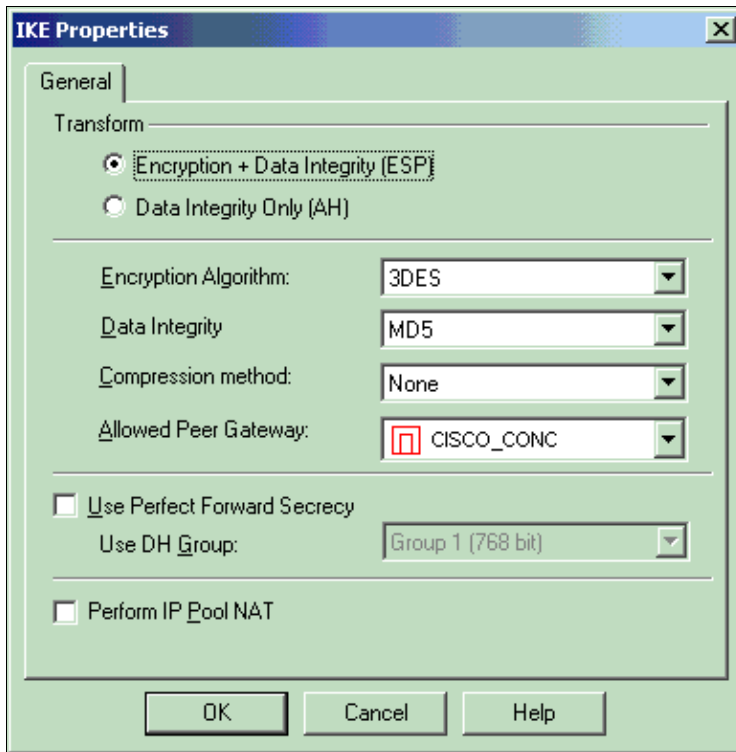
16. Select **IKE** and click **Edit**.



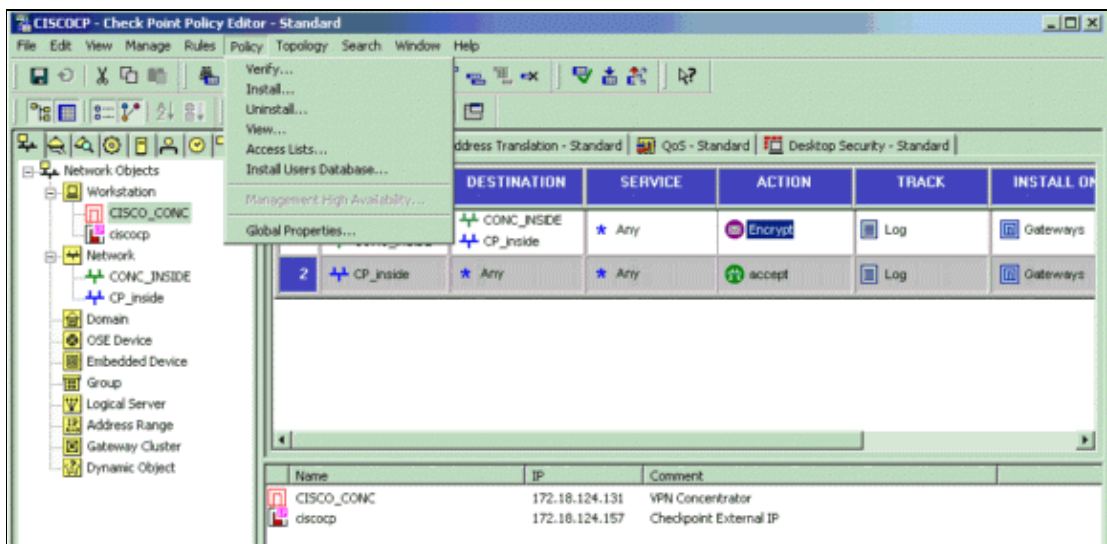
17. On the IKE Properties window, change the properties to agree with the VPN Concentrator transform.

- ◆ Set the Transform option to **Encryption + Data Integrity (ESP)**.
- ◆ Set the Encryption Algorithm to **3DES**.
- ◆ Set the Data Integrity to **MD5**.
- ◆ Set the Allowed Peer Gateway to match the VPN Concentrator (**CISCO\_CONC**).

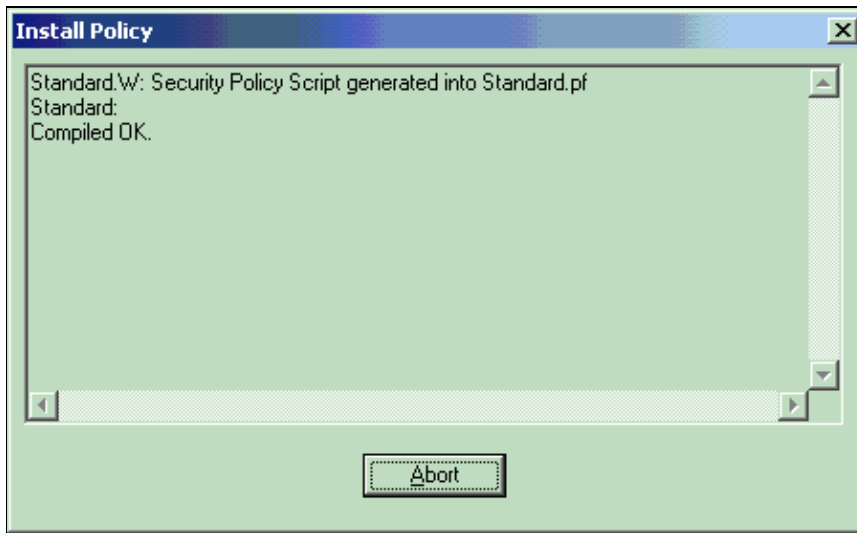
When you are finished, click **OK**.



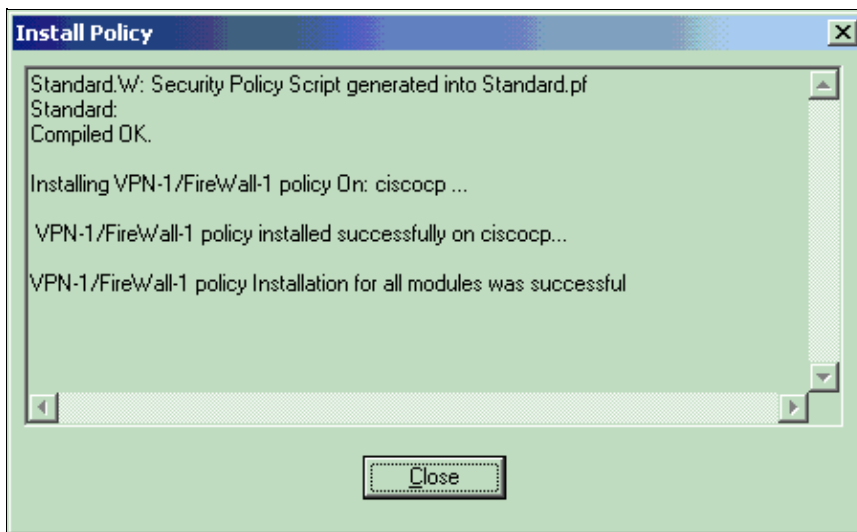
18. After the Checkpoint NG is configured, save the policy and select **Policy > Install** in order to enable it.



The installation window displays progress notes as the policy is compiled.



When the installation window indicates that the policy installation is complete, click **Close** in order to finish the procedure.



## Verify

Use this section to confirm that your configuration works properly.

### Verify the Network Communication

In order to test communication between the two private networks, you can initiate a ping from one of the private networks to the other private network. In this configuration, a ping was sent from the Checkpoint NG side (10.32.50.51) to the VPN Concentrator network (192.168.10.2).

```
C:\WINNT\System32\cmd.exe
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>ping 192.168.10.2

Pinging 192.168.10.2 with 32 bytes of data:

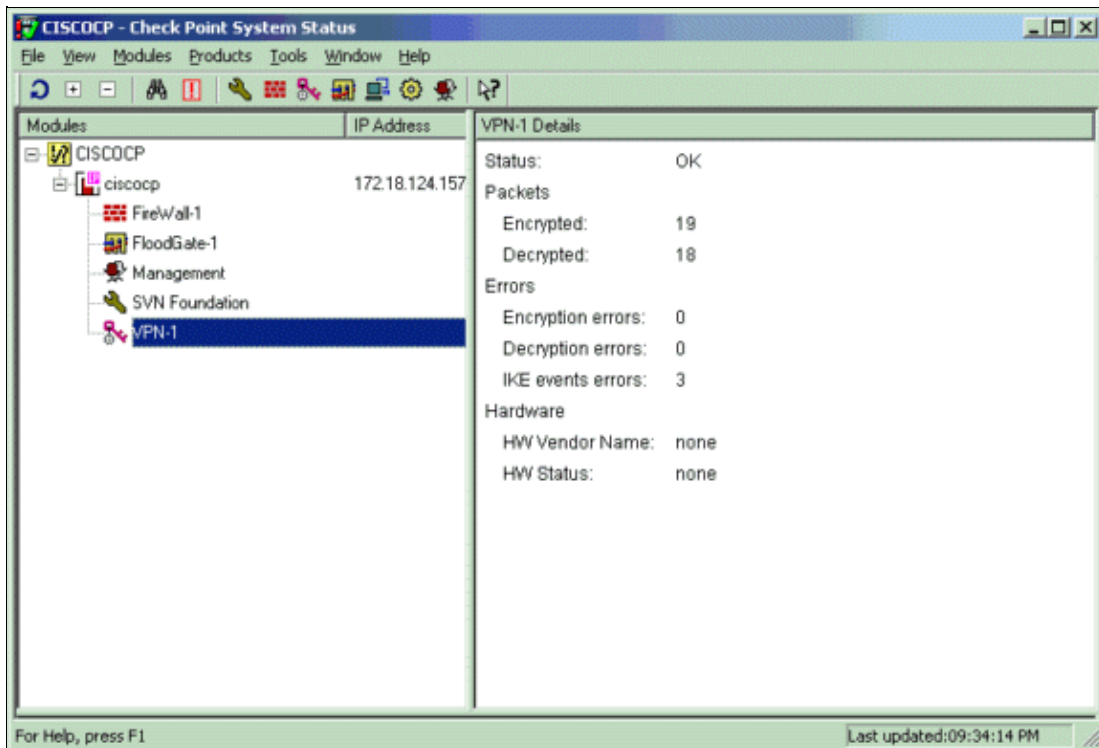
Reply from 192.168.10.2: bytes=32 time=10ms TTL=253
Reply from 192.168.10.2: bytes=32 time=10ms TTL=253
Reply from 192.168.10.2: bytes=32 time<10ms TTL=253
Reply from 192.168.10.2: bytes=32 time<10ms TTL=253

Ping statistics for 192.168.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 10ms, Average = 5ms

C:\>
C:\>
C:\>
C:\>
```

## View Tunnel Status on the Checkpoint NG

In order to view the tunnel status, go to the Policy Editor and select **Window > System Status**.



## View Tunnel Status on the VPN Concentrator

In order to verify the tunnel status on the VPN Concentrator, go to **Administration > Administer Sessions**.

Administration | Administer Sessions Wednesday, 11 September 2002 20:37:01  
Reset Refresh

This screen shows statistics for sessions. To refresh the statistics, click **Refresh**. Select a **Group** to filter the sessions. For more information on a session, click on that session's name. To log out a session, click **Logout** in the table below. To test the network connection to a session, click **Ping**.

Group:

Logout All: [PPTP User](#) | [L2TP User](#) | [IPSec User](#) | [L2TP/IPSec User](#) | [IPSec/UDP User](#) | [IPSec/TCP User](#) | [IPSec LAN-to-LAN](#)

### Session Summary

Active LAN-to-LAN Sessions	Active Remote Access Sessions	Active Management Sessions	Total Active Sessions	Peak Concurrent Sessions	Concurrent Sessions Limit	Total Cumulative Sessions
1	0	3	4	4	1500	17

### LAN-to-LAN Sessions [ [Remote Access Sessions](#) | [Management Sessions](#) ]

Connection Name	IP Address	Protocol	Encryption	Login Time	Duration	Actions
<a href="#">Checkpoint</a>	172.18.124.157	IPSec/LAN-to-LAN	3DES-168	Sep 11 20:36:03	0:00:57	[ <a href="#">Logout</a>   <a href="#">Ping</a> ]

Under LAN-to-LAN Sessions, select the connection name for the Checkpoint to view details on the SAs created and the number of packets transmitted/received.

Administration | Administer Sessions | Detail Wednesday, 11 September 2002 20:37:59  
Reset Refresh

[Back to Sessions](#)

Connection Name	IP Address	Protocol	Encryption	Login Time	Duration	Bytes Tx	Bytes Rx
Checkpoint	172.18.124.157	IPSec/LAN-to-LAN	3DES-168	Sep 11 20:36:03	0:01:55	256	256

**IKE Sessions: 1**  
**IPSec Sessions: 1**

IKE Session	
Session ID 1	Encryption Algorithm 3DES-168
Hashing Algorithm MD5	Diffie-Hellman Group Group 2 (1024-bit)
Authentication Mode Pre-Shared Keys	IKE Negotiation Mode Main
Rekey Time Interval 86400 seconds	

IPSec Session	
Session ID 2	Remote Address 10.32.0.0/0.0.127.255
Local Address 192.168.10.0/0.0.0.255	Encryption Algorithm 3DES-168
Hashing Algorithm MD5	SEP 1
Encapsulation Mode Tunnel	Rekey Time Interval 28800 seconds
Bytes Received 256	Bytes Transmitted 256

## Troubleshoot

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

**Note:** The traffic must not be PATed across the IPSec tunnel using the VPN Concentrator public IP address (outside interface). Otherwise, the tunnel fails. So, the IP address used for PATing must be an address other than the address configured on the outside interface.

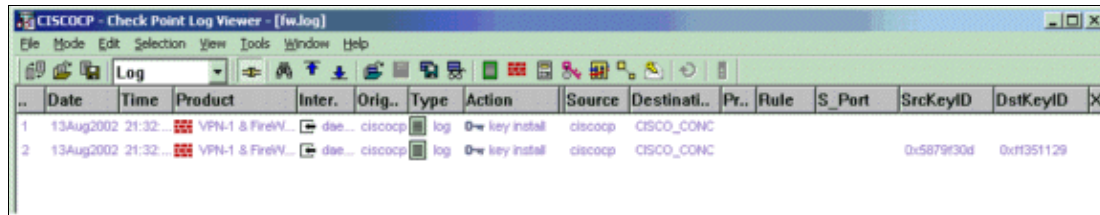
## Network Summarization

When multiple adjacent, inside networks are configured in the encryption domain on the Checkpoint, the device can automatically summarize the networks with regard to interesting traffic. If the VPN Concentrator is

not configured to match, the tunnel is likely to fail. For example, if the inside networks of 10.0.0.0 /24 and 10.0.1.0 /24 are configured to be included in the tunnel, these networks can be summarized to 10.0.0.0 /23.

## Debugs for the Checkpoint NG

In order to view the logs, select **Window > Log Viewer**.



## Debugs for the VPN Concentrator

In order to enable debugs on the VPN Concentrator, go to **Configuration > System > Events > Classes**. Enable AUTH, AUTHDBG, IKE, IKEDBG, IPSEC, and IPSECDBG for severity to log as 1 – 13. In order to view debugs, select **Monitoring > Filterable Event Log**.

```
1 09/11/2002 20:36:03.610 SEV=8 IKEDBG/0 RPT=506 172.18.124.157
RECEIVED Message (msgid=0) with payloads :
HDR + SA (1) + VENDOR (13) + NONE (0) ... total length : 128

3 09/11/2002 20:36:03.610 SEV=9 IKEDBG/0 RPT=507 172.18.124.157
processing SA payload

4 09/11/2002 20:36:03.610 SEV=8 IKEDBG/0 RPT=508
Proposal # 1, Transform # 1, Type ISAKMP, Id IKE
Parsing received transform:
Phase 1 failure against global IKE proposal # 1:
Mismatched attr types for class Auth Method:
Rcv'd: Preshared Key
Cfg'd: XAUTH with Preshared Key (Initiator authenticated)

10 09/11/2002 20:36:03.610 SEV=8 IKEDBG/0 RPT=509
Phase 1 failure against global IKE proposal # 2:
Mismatched attr types for class DH Group:
Rcv'd: Oakley Group 2
Cfg'd: Oakley Group 1

13 09/11/2002 20:36:03.610 SEV=7 IKEDBG/0 RPT=510 172.18.124.157
Oakley proposal is acceptable

14 09/11/2002 20:36:03.610 SEV=9 IKEDBG/47 RPT=9 172.18.124.157
processing VID payload

15 09/11/2002 20:36:03.610 SEV=9 IKEDBG/0 RPT=511 172.18.124.157
processing IKE SA

16 09/11/2002 20:36:03.610 SEV=8 IKEDBG/0 RPT=512
Proposal # 1, Transform # 1, Type ISAKMP, Id IKE
Parsing received transform:
Phase 1 failure against global IKE proposal # 1:
Mismatched attr types for class Auth Method:
Rcv'd: Preshared Key
Cfg'd: XAUTH with Preshared Key (Initiator authenticated)

22 09/11/2002 20:36:03.610 SEV=8 IKEDBG/0 RPT=513
Phase 1 failure against global IKE proposal # 2:
Mismatched attr types for class DH Group:
```

Rcv'd: Oakley Group 2  
Cfg'd: Oakley Group 1

**25 09/11/2002 20:36:03.610 SEV=7 IKEDBG/28 RPT=9 172.18.124.157**  
**IKE SA Proposal # 1, Transform # 1 acceptable**  
**Matches global IKE entry # 3**

26 09/11/2002 20:36:03.610 SEV=9 IKEDBG/0 RPT=514 172.18.124.157  
constructing ISA\_SA for isakmp

27 09/11/2002 20:36:03.610 SEV=8 IKEDBG/0 RPT=515 172.18.124.157  
SENDING Message (msgid=0) with payloads :  
HDR + SA (1) + NONE (0) ... total length : 84

29 09/11/2002 20:36:03.630 SEV=8 IKEDBG/0 RPT=516 172.18.124.157  
RECEIVED Message (msgid=0) with payloads :  
HDR + KE (4) + NONCE (10) + NONE (0) ... total length : 184

31 09/11/2002 20:36:03.630 SEV=8 IKEDBG/0 RPT=517 172.18.124.157  
RECEIVED Message (msgid=0) with payloads :  
HDR + KE (4) + NONCE (10) + NONE (0) ... total length : 184

33 09/11/2002 20:36:03.630 SEV=9 IKEDBG/0 RPT=518 172.18.124.157  
processing ke payload

34 09/11/2002 20:36:03.630 SEV=9 IKEDBG/0 RPT=519 172.18.124.157  
processing ISA\_KE

35 09/11/2002 20:36:03.630 SEV=9 IKEDBG/1 RPT=91 172.18.124.157  
processing nonce payload

36 09/11/2002 20:36:03.660 SEV=9 IKEDBG/0 RPT=520 172.18.124.157  
constructing ke payload

37 09/11/2002 20:36:03.660 SEV=9 IKEDBG/1 RPT=92 172.18.124.157  
constructing nonce payload

38 09/11/2002 20:36:03.660 SEV=9 IKEDBG/46 RPT=37 172.18.124.157  
constructing Cisco Unity VID payload

39 09/11/2002 20:36:03.660 SEV=9 IKEDBG/46 RPT=38 172.18.124.157  
constructing xauth V6 VID payload

40 09/11/2002 20:36:03.660 SEV=9 IKEDBG/48 RPT=19 172.18.124.157  
Send IOS VID

41 09/11/2002 20:36:03.660 SEV=9 IKEDBG/38 RPT=10 172.18.124.157  
Constructing VPN 3000 spoofing IOS Vendor ID payload (version: 1.0.0,  
capabilities: 20000001)

43 09/11/2002 20:36:03.660 SEV=9 IKEDBG/46 RPT=39 172.18.124.157  
constructing VID payload

44 09/11/2002 20:36:03.660 SEV=9 IKEDBG/48 RPT=20 172.18.124.157  
Send Altiga GW VID

45 09/11/2002 20:36:03.660 SEV=9 IKEDBG/0 RPT=521 172.18.124.157  
Generating keys for Responder...

46 09/11/2002 20:36:03.670 SEV=8 IKEDBG/0 RPT=522 172.18.124.157  
SENDING Message (msgid=0) with payloads :  
HDR + KE (4) + NONCE (10) ... total length : 256

48 09/11/2002 20:36:03.690 SEV=8 IKEDBG/0 RPT=523 172.18.124.157  
RECEIVED Message (msgid=0) with payloads :  
HDR + ID (5) + HASH (8) + NONE (0) ... total length : 60

50 09/11/2002 20:36:03.690 SEV=9 IKEDBG/1 RPT=93 172.18.124.157  
Group [172.18.124.157]  
Processing ID

51 09/11/2002 20:36:03.690 SEV=9 IKEDBG/0 RPT=524 172.18.124.157  
Group [172.18.124.157]  
processing hash

52 09/11/2002 20:36:03.690 SEV=9 IKEDBG/0 RPT=525 172.18.124.157  
Group [172.18.124.157]  
computing hash

53 09/11/2002 20:36:03.690 SEV=9 IKEDBG/23 RPT=10 172.18.124.157  
Group [172.18.124.157]  
Starting group lookup for peer 172.18.124.157

54 09/11/2002 20:36:03.690 SEV=8 AUTHDBG/1 RPT=10  
AUTH\_Open() returns 9

55 09/11/2002 20:36:03.690 SEV=7 AUTH/12 RPT=10  
Authentication session opened: handle = 9

56 09/11/2002 20:36:03.690 SEV=8 AUTHDBG/3 RPT=10  
AUTH\_PutAttrTable(9, 748174)

57 09/11/2002 20:36:03.690 SEV=8 AUTHDBG/6 RPT=10  
AUTH\_GroupAuthenticate(9, 2f1b19c, 49c648)

58 09/11/2002 20:36:03.690 SEV=8 AUTHDBG/59 RPT=10  
AUTH\_BindServer(51a6b48, 0, 0)

59 09/11/2002 20:36:03.690 SEV=9 AUTHDBG/69 RPT=10  
Auth Server e054d4 has been bound to ACB 51a6b48, sessions = 1

60 09/11/2002 20:36:03.690 SEV=8 AUTHDBG/65 RPT=10  
AUTH\_CreateTimer(51a6b48, 0, 0)

61 09/11/2002 20:36:03.690 SEV=9 AUTHDBG/72 RPT=10  
Reply timer created: handle = 4B0018

62 09/11/2002 20:36:03.690 SEV=8 AUTHDBG/61 RPT=10  
AUTH\_BuildMsg(51a6b48, 0, 0)

63 09/11/2002 20:36:03.690 SEV=8 AUTHDBG/64 RPT=10  
AUTH\_StartTimer(51a6b48, 0, 0)

64 09/11/2002 20:36:03.690 SEV=9 AUTHDBG/73 RPT=10  
Reply timer started: handle = 4B0018, timestamp = 1163319,  
timeout = 30000

65 09/11/2002 20:36:03.690 SEV=8 AUTHDBG/62 RPT=10  
AUTH\_SndRequest(51a6b48, 0, 0)

66 09/11/2002 20:36:03.690 SEV=8 AUTHDBG/50 RPT=19  
IntDB\_Decode(3825300, 156)

67 09/11/2002 20:36:03.690 SEV=8 AUTHDBG/47 RPT=19  
IntDB\_Xmt(51a6b48)

68 09/11/2002 20:36:03.690 SEV=9 AUTHDBG/71 RPT=10  
xmit\_cnt = 1

69 09/11/2002 20:36:03.690 SEV=8 AUTHDBG/47 RPT=20  
IntDB\_Xmt(51a6b48)

70 09/11/2002 20:36:03.790 SEV=8 AUTHDBG/49 RPT=10  
IntDB\_Match(51a6b48, 3eb7ab0)

71 09/11/2002 20:36:03.790 SEV=8 AUTHDBG/63 RPT=10  
AUTH\_RcvReply(51a6b48, 0, 0)

72 09/11/2002 20:36:03.790 SEV=8 AUTHDBG/50 RPT=20  
IntDB\_Decode(3eb7ab0, 298)

73 09/11/2002 20:36:03.790 SEV=8 AUTHDBG/48 RPT=10  
IntDB\_Rcv(51a6b48)

74 09/11/2002 20:36:03.790 SEV=8 AUTHDBG/66 RPT=10  
AUTH\_DeleteTimer(51a6b48, 0, 0)

75 09/11/2002 20:36:03.790 SEV=9 AUTHDBG/74 RPT=10  
Reply timer stopped: handle = 4B0018, timestamp = 1163329

76 09/11/2002 20:36:03.790 SEV=8 AUTHDBG/58 RPT=10  
AUTH\_Callback(51a6b48, 0, 0)

77 09/11/2002 20:36:03.790 SEV=6 AUTH/41 RPT=10 172.18.124.157  
Authentication successful: handle = 9, server = Internal,  
group = 172.18.124.157

78 09/11/2002 20:36:03.790 SEV=7 IKEDBG/0 RPT=526 172.18.124.157  
Group [172.18.124.157]  
Found Phase 1 Group (172.18.124.157)

79 09/11/2002 20:36:03.790 SEV=8 AUTHDBG/4 RPT=10  
AUTH\_GetAttrTable(9, 748420)

80 09/11/2002 20:36:03.790 SEV=7 IKEDBG/14 RPT=10 172.18.124.157  
Group [172.18.124.157]  
Authentication configured for Internal

81 09/11/2002 20:36:03.790 SEV=9 IKEDBG/19 RPT=19 172.18.124.157  
Group [172.18.124.157]  
IKEGetUserAttributes: IP Compression = disabled

82 09/11/2002 20:36:03.790 SEV=9 IKEDBG/19 RPT=20 172.18.124.157  
Group [172.18.124.157]  
IKEGetUserAttributes: Split Tunneling Policy = Disabled

83 09/11/2002 20:36:03.790 SEV=8 AUTHDBG/2 RPT=10  
AUTH\_Close(9)

84 09/11/2002 20:36:03.790 SEV=9 IKEDBG/1 RPT=94 172.18.124.157  
Group [172.18.124.157]  
constructing ID

85 09/11/2002 20:36:03.790 SEV=9 IKEDBG/0 RPT=527  
Group [172.18.124.157]  
construct hash payload

86 09/11/2002 20:36:03.790 SEV=9 IKEDBG/0 RPT=528 172.18.124.157  
Group [172.18.124.157]  
computing hash

87 09/11/2002 20:36:03.790 SEV=9 IKEDBG/46 RPT=40 172.18.124.157  
Group [172.18.124.157]  
constructing dpd vid payload

88 09/11/2002 20:36:03.790 SEV=8 IKEDBG/0 RPT=529 172.18.124.157  
SENDING Message (msgid=0) with payloads :  
HDR + ID (5) + HASH (8) ... total length : 80

90 09/11/2002 20:36:03.790 SEV=4 IKE/119 RPT=10 172.18.124.157  
Group [172.18.124.157]  
PHASE 1 COMPLETED

91 09/11/2002 20:36:03.790 SEV=6 IKE/121 RPT=10 172.18.124.157  
Keep-alive type for this connection: None

92 09/11/2002 20:36:03.790 SEV=6 IKE/122 RPT=10 172.18.124.157  
Keep-alives configured on but peer does not  
support keep-alives (type = None)

93 09/11/2002 20:36:03.790 SEV=7 IKEDBG/0 RPT=530 172.18.124.157  
Group [172.18.124.157]  
Starting phase 1 rekey timer: 64800000 (ms)

94 09/11/2002 20:36:03.790 SEV=4 AUTH/22 RPT=16  
User 172.18.124.157 connected

95 09/11/2002 20:36:03.790 SEV=8 AUTHDBG/60 RPT=10  
AUTH\_UnbindServer(51a6b48, 0, 0)

96 09/11/2002 20:36:03.790 SEV=9 AUTHDBG/70 RPT=10  
Auth Server e054d4 has been unbound from ACB 51a6b48, sessions = 0

97 09/11/2002 20:36:03.790 SEV=8 AUTHDBG/10 RPT=10  
AUTH\_Int\_FreeAuthCB(51a6b48)

98 09/11/2002 20:36:03.790 SEV=7 AUTH/13 RPT=10  
Authentication session closed: handle = 9

99 09/11/2002 20:36:03.790 SEV=8 IKEDBG/0 RPT=531 172.18.124.157  
RECEIVED Message (msgid=54796f76) with payloads :  
HDR + HASH (8) + SA (1) + NONCE (10) + ID (5) + ID (5) + NONE (0)  
... total length : 156

102 09/11/2002 20:36:03.790 SEV=9 IKEDBG/0 RPT=532 172.18.124.157  
Group [172.18.124.157]  
processing hash

103 09/11/2002 20:36:03.790 SEV=9 IKEDBG/0 RPT=533 172.18.124.157  
Group [172.18.124.157]  
processing SA payload

104 09/11/2002 20:36:03.790 SEV=9 IKEDBG/1 RPT=95 172.18.124.157  
Group [172.18.124.157]  
processing nonce payload

105 09/11/2002 20:36:03.790 SEV=9 IKEDBG/1 RPT=96 172.18.124.157  
Group [172.18.124.157]  
Processing ID

106 09/11/2002 20:36:03.790 SEV=5 IKE/35 RPT=6 172.18.124.157  
Group [172.18.124.157]  
Received remote IP Proxy Subnet data in ID Payload:  
Address 10.32.0.0, Mask 255.255.128.0, Protocol 0, Port 0

109 09/11/2002 20:36:03.790 SEV=9 IKEDBG/1 RPT=97 172.18.124.157  
Group [172.18.124.157]  
Processing ID

110 09/11/2002 20:36:03.790 SEV=5 IKE/34 RPT=6 172.18.124.157  
Group [172.18.124.157]  
Received local IP Proxy Subnet data in ID Payload:  
Address 192.168.10.0, Mask 255.255.255.0, Protocol 0, Port 0

113 09/11/2002 20:36:03.790 SEV=8 IKEDBG/0 RPT=534  
QM IsRekeyed old sa not found by addr

114 09/11/2002 20:36:03.790 SEV=5 IKE/66 RPT=8 172.18.124.157  
Group [172.18.124.157]  
IKE Remote Peer configured for SA: L2L: Checkpoint

115 09/11/2002 20:36:03.790 SEV=9 IKEDBG/0 RPT=535 172.18.124.157  
Group [172.18.124.157]  
processing IPSEC SA

116 09/11/2002 20:36:03.790 SEV=7 IKEDBG/27 RPT=8 172.18.124.157  
Group [172.18.124.157]  
IPSec SA Proposal # 1, Transform # 1 acceptable

117 09/11/2002 20:36:03.790 SEV=7 IKEDBG/0 RPT=536 172.18.124.157  
Group [172.18.124.157]  
IKE: requesting SPI!

118 09/11/2002 20:36:03.790 SEV=9 IPSECDBG/6 RPT=39  
IPSEC key message parse - msgtype 6, len 200, vers 1, pid 00000000,  
seq 10, err 0, type 2, mode 0, state 32, label 0, pad 0,  
spi 00000000, encrKeyLen 0, hashKeyLen 0, ivlen 0, alg 0, hmacAlg 0,  
lifetype 0, lifetime1 17248580, lifetime2 0, dsId 300

122 09/11/2002 20:36:03.790 SEV=9 IPSECDBG/1 RPT=139  
Processing KEY\_GETSPI msg!

123 09/11/2002 20:36:03.790 SEV=7 IPSECDBG/13 RPT=10  
Reserved SPI 305440147

124 09/11/2002 20:36:03.790 SEV=8 IKEDBG/6 RPT=10  
IKE got SPI from key engine: SPI = 0x1234a593

125 09/11/2002 20:36:03.790 SEV=9 IKEDBG/0 RPT=537 172.18.124.157  
Group [172.18.124.157]  
oakley constructing quick mode

126 09/11/2002 20:36:03.800 SEV=9 IKEDBG/0 RPT=538 172.18.124.157  
Group [172.18.124.157]  
constructing blank hash

127 09/11/2002 20:36:03.800 SEV=9 IKEDBG/0 RPT=539 172.18.124.157  
Group [172.18.124.157]  
constructing ISA\_SA for ipsec

128 09/11/2002 20:36:03.800 SEV=9 IKEDBG/1 RPT=98 172.18.124.157  
Group [172.18.124.157]  
constructing ipsec nonce payload

129 09/11/2002 20:36:03.800 SEV=9 IKEDBG/1 RPT=99 172.18.124.157  
Group [172.18.124.157]  
constructing proxy ID

130 09/11/2002 20:36:03.800 SEV=7 IKEDBG/0 RPT=540 172.18.124.157  
Group [172.18.124.157]  
Transmitting Proxy Id:  
Remote subnet: 10.32.0.0 Mask 255.255.128.0 Protocol 0 Port 0  
Local subnet: 192.168.10.0 mask 255.255.255.0 Protocol 0 Port 0

134 09/11/2002 20:36:03.800 SEV=9 IKEDBG/0 RPT=541 172.18.124.157  
Group [172.18.124.157]  
constructing qm hash

135 09/11/2002 20:36:03.800 SEV=8 IKEDBG/0 RPT=542 172.18.124.157  
SENDING Message (msgid=54796f76) with payloads :

HDR + HASH (8) + SA (1) ... total length : 152

137 09/11/2002 20:36:03.800 SEV=8 IKEDBG/0 RPT=543 172.18.124.157  
RECEIVED Message (msgid=54796f76) with payloads :  
HDR + HASH (8) + NONE (0) ... total length : 48

139 09/11/2002 20:36:03.800 SEV=9 IKEDBG/0 RPT=544 172.18.124.157  
Group [172.18.124.157]  
processing hash

140 09/11/2002 20:36:03.800 SEV=9 IKEDBG/0 RPT=545 172.18.124.157  
Group [172.18.124.157]  
loading all IPSEC SAs

141 09/11/2002 20:36:03.800 SEV=9 IKEDBG/1 RPT=100 172.18.124.157  
Group [172.18.124.157]  
Generating Quick Mode Key!

142 09/11/2002 20:36:03.800 SEV=9 IKEDBG/1 RPT=101 172.18.124.157  
Group [172.18.124.157]  
Generating Quick Mode Key!

143 09/11/2002 20:36:03.800 SEV=7 IKEDBG/0 RPT=546 172.18.124.157  
Group [172.18.124.157]  
Loading subnet:  
Dst: 192.168.10.0 mask: 255.255.255.0  
Src: 10.32.0.0 mask: 255.255.128.0

146 09/11/2002 20:36:03.800 SEV=4 IKE/49 RPT=7 172.18.124.157  
Group [172.18.124.157]  
Security negotiation complete for LAN-to-LAN Group (172.18.124.157)  
Responder, Inbound SPI = 0x1234a593, Outbound SPI = 0x0df37959

149 09/11/2002 20:36:03.800 SEV=9 IPSECDBG/6 RPT=40  
IPSEC key message parse - msgtype 1, len 606, vers 1, pid 00000000,  
seq 0, err 0, type 2, mode 1, state 64, label 0, pad 0,  
spi 0df37959, encrKeyLen 24, hashKeyLen 16, ivlen 8, alg 2, hmacAlg 3,  
lifecycle 0, lifetimel 17248580, lifetime2 0, dsId 0

153 09/11/2002 20:36:03.800 SEV=9 IPSECDBG/1 RPT=140  
Processing KEY\_ADD msg!

154 09/11/2002 20:36:03.800 SEV=9 IPSECDBG/1 RPT=141  
key\_msghdr2secassoc(): Enter

155 09/11/2002 20:36:03.800 SEV=7 IPSECDBG/1 RPT=142  
No USER filter configured

156 09/11/2002 20:36:03.800 SEV=9 IPSECDBG/1 RPT=143  
KeyProcessAdd: Enter

157 09/11/2002 20:36:03.800 SEV=8 IPSECDBG/1 RPT=144  
KeyProcessAdd: Adding outbound SA

158 09/11/2002 20:36:03.800 SEV=8 IPSECDBG/1 RPT=145  
KeyProcessAdd: src 192.168.10.0 mask 0.0.0.255,  
dst 10.32.0.0 mask 0.0.127.255

159 09/11/2002 20:36:03.810 SEV=8 IPSECDBG/1 RPT=146  
KeyProcessAdd: FilterIpssecAddIkeSa success

160 09/11/2002 20:36:03.810 SEV=9 IPSECDBG/6 RPT=41  
IPSEC key message parse - msgtype 3, len 327, vers 1, pid 00000000,  
seq 0, err 0, type 2, mode 1, state 32, label 0, pad 0,  
spi 1234a593, encrKeyLen 24, hashKeyLen 16, ivlen 8, alg 2, hmacAlg 3,  
lifecycle 0, lifetimel 17248580, lifetime2 0, dsId 0

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164 09/11/2002 20:36:03.810 SEV=9 IPSECDBG/1 RPT=147
Processing KEY_UPDATE msg!

165 09/11/2002 20:36:03.810 SEV=9 IPSECDBG/1 RPT=148
Update inbound SA addresses

166 09/11/2002 20:36:03.810 SEV=9 IPSECDBG/1 RPT=149
key_msghdr2secassoc(): Enter

167 09/11/2002 20:36:03.810 SEV=7 IPSECDBG/1 RPT=150
No USER filter configured

168 09/11/2002 20:36:03.810 SEV=9 IPSECDBG/1 RPT=151
KeyProcessUpdate: Enter

169 09/11/2002 20:36:03.810 SEV=8 IPSECDBG/1 RPT=152
KeyProcessUpdate: success

170 09/11/2002 20:36:03.810 SEV=8 IKEDBG/7 RPT=7
IKE got a KEY_ADD msg for SA: SPI = 0x0df37959

171 09/11/2002 20:36:03.810 SEV=8 IKEDBG/0 RPT=547
pitcher: rcv KEY_UPDATE, spi 0x1234a593

172 09/11/2002 20:36:03.810 SEV=4 IKE/120 RPT=7 172.18.124.157
Group [172.18.124.157]
PHASE 2 COMPLETED (msgid=54796f76)

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