Configuring PIX to Cisco Secure VPN Client Wild−card, Pre−shared, No Mode−Config

Document ID: 9354

Contents

Introduction

This configuration demonstrates how to connect a VPN Client to a PIX firewall with the use of wildcards and the **sysopt connection permit−ipsec** and **sysopt ipsec pl−compatible** commands. This document also covers the **nat 0 access−list** command.

Note: Encryption technology is subject to export controls. It is your responsibility to know the law related to the export of encryption technology. If you have any questions related to export control, send an E−mail to export@cisco.com.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

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

- Cisco Secure PIX Software release 5.0.3 with Cisco Secure VPN Client 1.0 (shown as 2.0.7 in the Help > About menu) or Cisco Secure PIX Software release 6.2.1 with Cisco Secure VPN Client 1.1 (shown as 2.1.12 in the Help > About menu).
- Internet machines access the web host on the inside with the IP address 192.68.0.50.
- The VPN Client accesses all machines on the inside with the use of all ports (10.1.1.0 /24 and 10.2.2.0 /24).

The information presented in this document was created from devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If you work in a live network,

ensure that you understand the potential impact of any command before you use it.

Conventions

For more information on document conventions, refer to the Cisco Technical Tips Conventions.

Background Information

On the PIX, the **access−list** and **nat 0** commands work together. The **nat 0 access−list** command is intended to be used instead of the **sysopt ipsec pl−compatible** command. If you use the **nat 0** command with the matching **access−list** command, you have to know the IP address of the client that makes the VPN connection in order to create the matching access control list (ACL) to bypass the NAT.

Note: The **sysopt ipsec pl−compatible** command scales better than the **nat 0** command with the matching **access−list** command ir order to bypass Network Address Translation (NAT). The reason is because you do not need to know the IP address of the clients that make the connection. The interchangeable commands are bold in the configuration in this document.

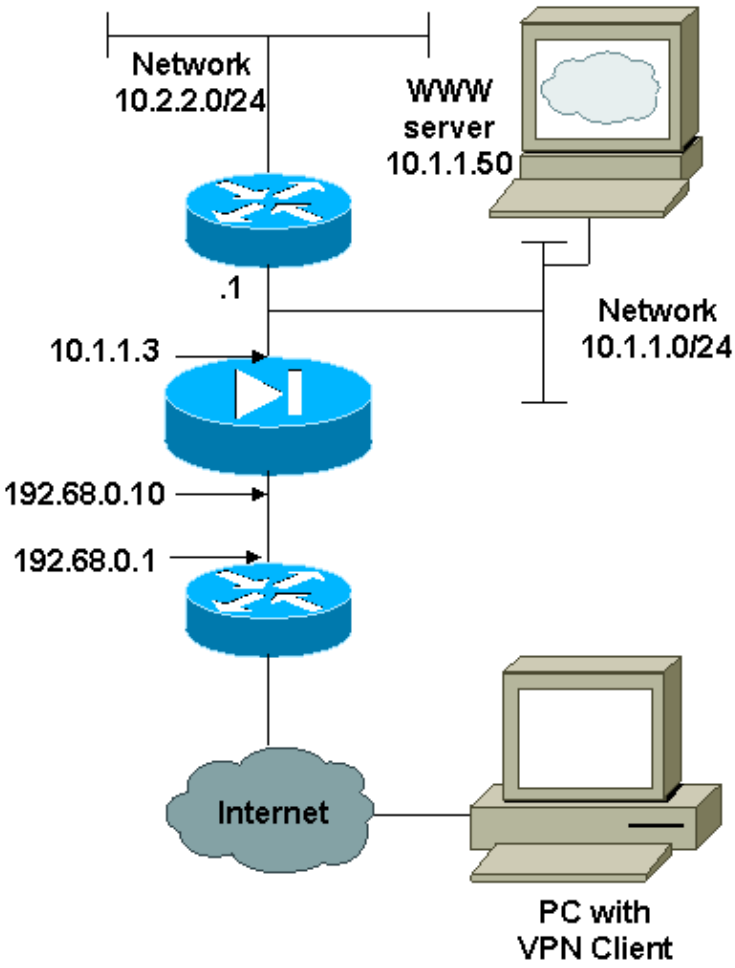
A user with a VPN Client connects and receives an IP address from their Internet service provider (ISP). The user has access to everything on the inside of the firewall. This includes networks. Also, users who do not run the client can connect to the web server with the use of the address provided by the static assignment. Users on the inside can connect to the Internet. It is not necessary for their traffic to go through the IPSec tunnel.

Configure

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

Network Diagram

This document uses the network setup shown in this diagram.



Configurations

This document uses the configurations shown here.

- PIX
- VPN Client

PIX Configuration

```
PIX Version 6.2.1
nameif ethernet0 outside security0
nameif ethernet1 inside security100
enable password 8Ry2YjIyt7RRXU24 encrypted
passwd 2KFQnbNIdI.2KYOU encrypted
hostname pixfirewall
fixup protocol ftp 21
fixup protocol http 80
fixup protocol smtp 25
fixup protocol h323 1720
fixup protocol rsh 514
fixup protocol sqlnet 1521
names

!--- The ACL to bypass the NAT. You have to know the
!--- IP address of the Client. In this case, it is
!--- subnet 65.10.10.0/24.

access-list 103 permit ip 10.0.0.0 255.0.0.0 65.10.10.0 255.255.255.0
pager lines 24
```

```
no logging timestamp
no logging standby
logging console debugging
no logging monitor
no logging buffered
no logging trap
logging facility 20
logging queue 512
interface ethernet0 10baset
interface ethernet1 auto
mtu outside 1500
mtu inside 1500
ip address outside 192.68.0.10 255.255.255.0
ip address inside 10.1.1.3 255.255.255.0
no failover
failover timeout 0:00:00
failover ip address outside 0.0.0.0
failover ip address inside 0.0.0.0
arp timeout 14400
global (outside) 1 192.68.0.11-192.168.0.15 netmask 255.255.255.0

!--- Binding ACL 103 to the NAT statement in order to
!--- avoid NAT on the IPSec packet.

nat (inside) 0 access-list 103
nat (inside) 1 0.0.0.0 0.0.0.0 0 0
static (inside,outside) 192.68.0.50 10.1.1.50 netmask 255.255.255.255 0 0
conduit permit icmp any any
no rip outside passive
no rip outside default
no rip inside passive
no rip inside default
route outside 0.0.0.0 0.0.0.0 192.68.0.1 1
route inside 10.2.2.0 255.255.255.0 10.1.1.1 1
timeout xlate 3:00:00 conn 1:00:00 half-closed 0:10:00 udp 0:02:00
timeout rpc 0:10:00 h323 0:05:00
timeout uauth 0:05:00 absolute
aaa-server TACACS+ protocol tacacs+
aaa-server RADIUS protocol radius
no snmp-server location
no snmp-server contact
snmp-server community public
no snmp-server enable traps

!--- The sysopt ipsec pl-compatible command
!--- avoids conduit on the IPSec encrypted traffic.
!--- This command needs to be used if you do not use
!--- the nat 0 access-list command.

sysopt ipsec pl-compatible
sysopt connection permit-ipsec
crypto ipsec transform-set myset esp-des esp-md5-hmac
crypto dynamic-map cisco 1 set transform-set myset
crypto map dyn-map 20 ipsec-isakmp dynamic cisco
crypto map dyn-map interface outside
isakmp enable outside
isakmp key cisco123 address 0.0.0.0 netmask 0.0.0.0
isakmp policy 10 authentication pre-share
isakmp policy 10 encryption des
isakmp policy 10 hash md5
isakmp policy 10 group 1
isakmp policy 10 lifetime 1000
telnet timeout 5
terminal width 80
Cryptochecksum:c687aa0afb1dd03abce04c31566b5c52
: end
```

```
[OK]
```

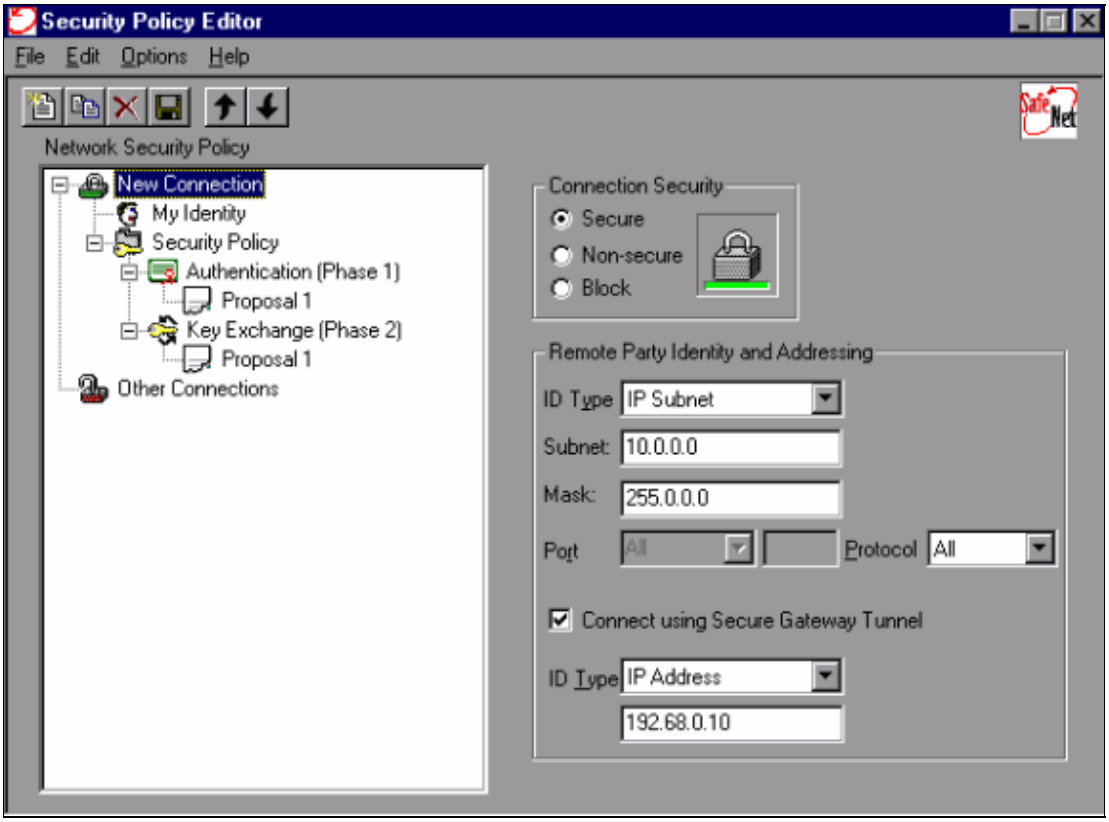
VPN Client Configuration

```
Network Security policy:
 1- TACconn
     My Identity
          Connection security: Secure
          Remote Party Identity and addressing
          ID Type: IP subnet
          10.0.0.0
           255.0.0.0
          Port all Protocol all

     Connect using secure tunnel
          ID Type: IP address
          192.68.0.10

     Authentication (Phase 1)
     Proposal 1
         Authentication method: pre-shared key
         Encryp Alg: DES
         Hash Alg: MD5
         SA life: Unspecified
         Key Group: DH 1


     Key exchange (Phase 2)
     Proposal 1
         Encapsulation ESP
         Encrypt Alg: DES
         Hash Alg: MD5
         Encap: tunnel
         SA life: Unspecified
         no AH


 2- Other Connections
        Connection security: Non-secure
        Local Network Interface
          Name: Any
          IP Addr: Any
          Port: All
```

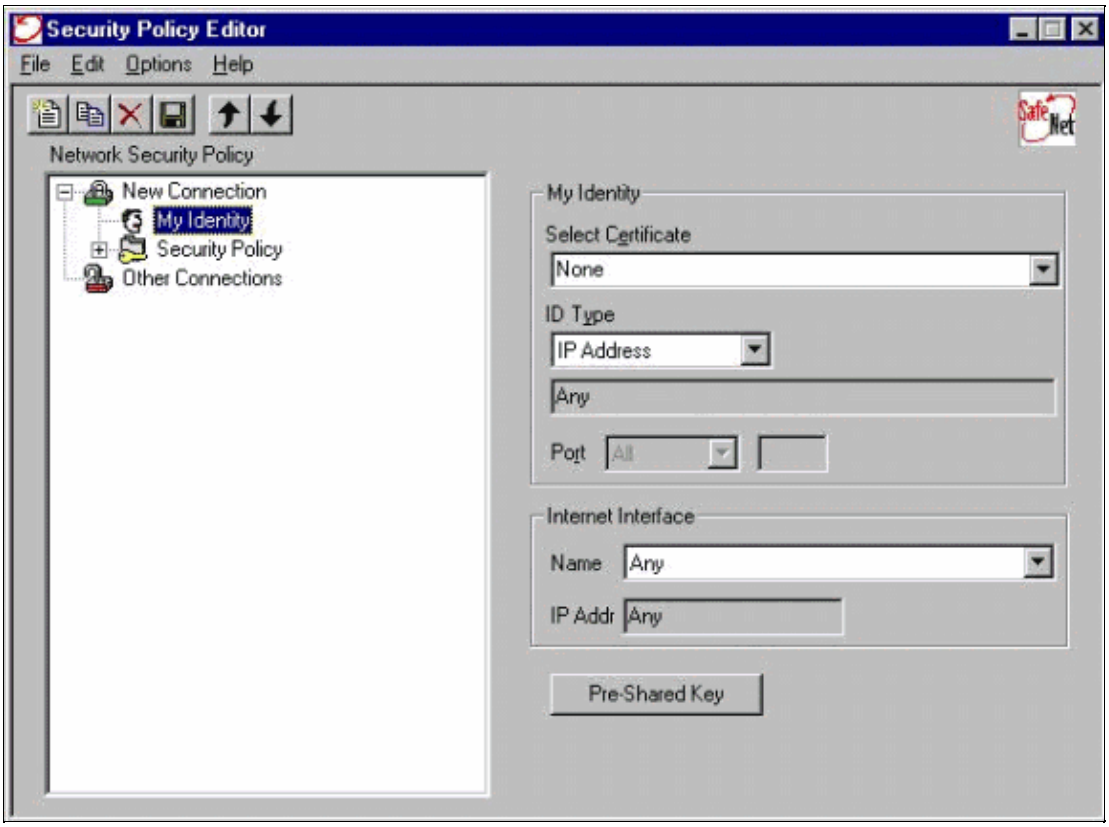
Configure the Policy for the VPN Client IPSec Connection

Follow these steps to configure the policy for the VPN Client IPSec connection.

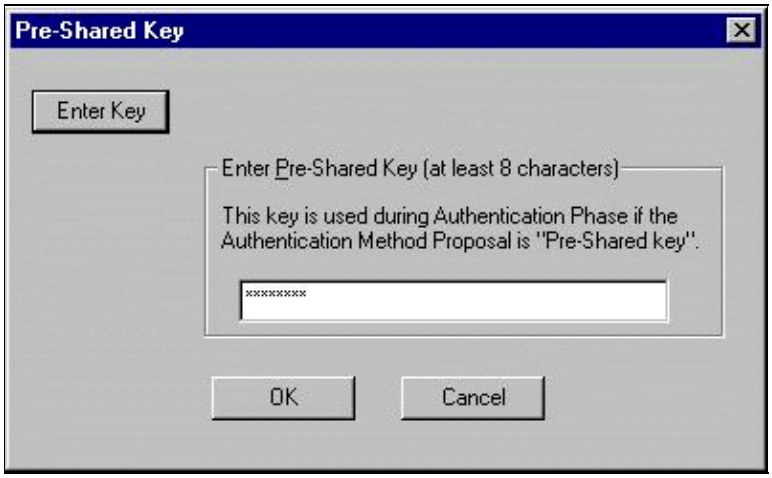
1. On the Remote Party Identity and Addressing tab, define the private network you want to be able to reach with the use of the VPN Client. Next, select **Connect using Secure Gateway Tunnel** and define the outside IP address of the PIX.



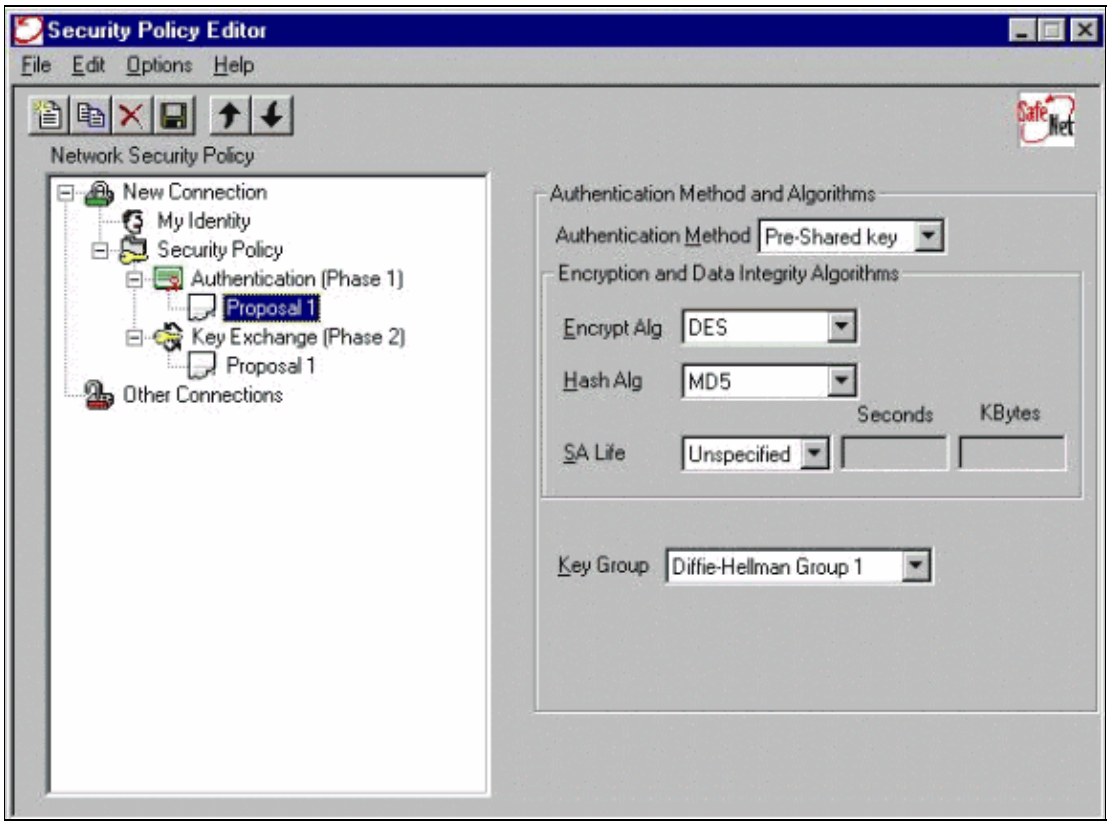
2. Select **My Identity** and leave the setting to the default. Next, click the **Pre−Shared Key** button.



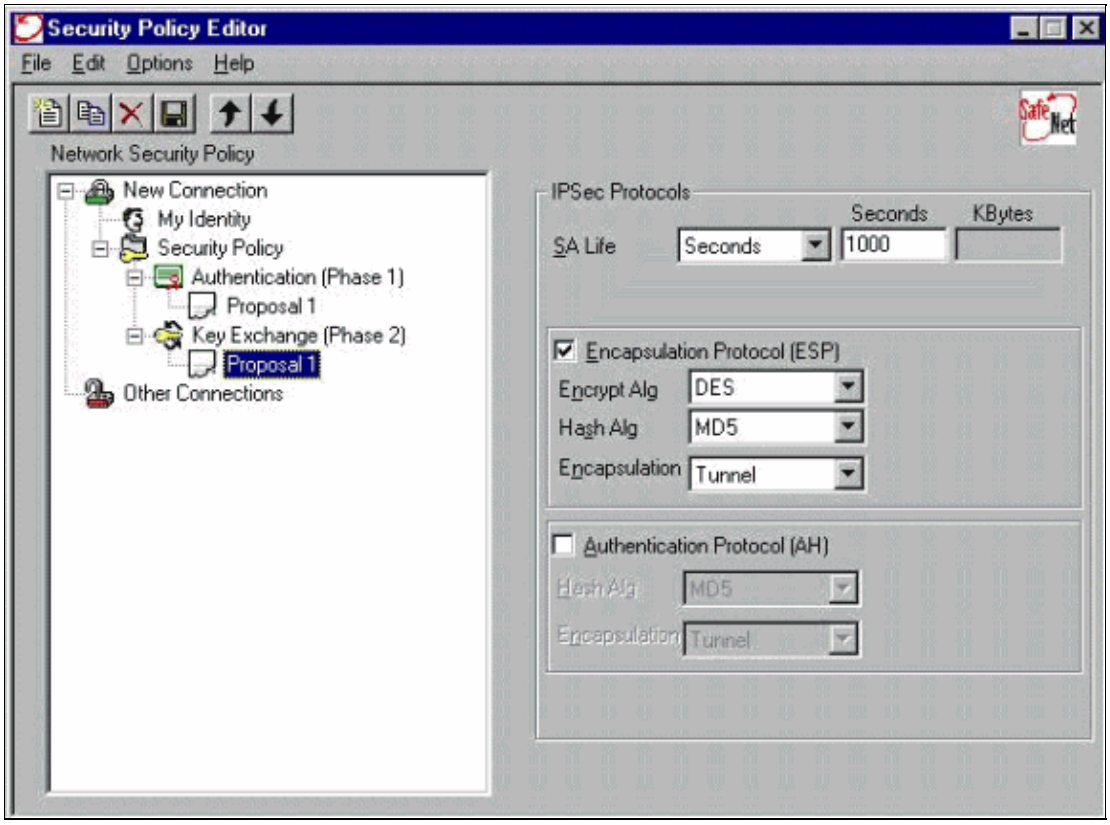
3. Enter the Pre−shared Key that is configured on the PIX.



4. Configure the Authentication proposal (Phase 1 policy).



5. Configure the IPSec proposal (Phase 2 policy).



Note: Do not forget to save the policy when you are finished. Open up a DOS window and ping a known host on the inside network of the PIX in order to initiate the tunnel from the client. You receive an Internet Control Message Protocol (ICMP) unreachable message from the first ping as it tries to negotiate the tunnel.

Verify

There is currently no verification procedure available for this configuration.

Troubleshoot

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

debug Commands

Note: Before you issue **debug** commands, refer to Important Information on Debug Commands.

In order to see the Client−side debugs, enable the Cisco Secure Log Viewer:

- **debug crypto ipsec sa** − Displays the IPSec negotiations of phase 2.
- **debug crypto isakmp sa** − Displays the ISAKMP negotiations of phase 1.
- **debug crypto engine** − Displays the encrypted sessions.

Related Information

- **Cisco Secure PIX Firewall Command References**
- **Security Product Field Notices (including PIX)**
- **Cisco PIX Firewall Software Product Support**
- **Requests for Comments (RFCs)**

- **IP Security (IPSec) Product Support Pages**
- **Configuring IPSec Network Security**
- **Configuring Internet Key Exchange Security Protocol**
- **An Introduction to IP Security (IPSec) Encryption**
- **Connectivity through the PIX Firewall**
- **Configuring IPSec**
- **Technical Support & Documentation − Cisco Systems**

Updated: Mar 24, 2008 Document ID: 9354
