

Configuring Cisco PIX to Cisco Secure VPN Client Wild-Card, Pre-Shared, Mode Configuration

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Contents

Introduction

Prerequisites

- Requirements
- Components Used
- Conventions

Configure

- Network Diagram
- Configurations

Verify

Troubleshoot

- Troubleshoot Commands

Related Information

Introduction

This configuration demonstrates how to connect a VPN Client to a PIX Firewall with the use of wildcards, mode-config, and the **sysopt connection permit-ipsec** command. The **sysopt connection permit-ipsec** command implicitly permits any packet that comes from an IPSec tunnel. This command also bypasses the checks of an associated **access-list**, **conduit**, or **access-group** command statement for IPSec connections.

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 6.3(3) with Cisco Secure VPN Client 1.0 (shown as 2.0.7 in the **Help > About** menu)

or

- Cisco Secure PIX Software Release 6.3(3) with Cisco Secure VPN Client 1.1 (shown as 2.1.12 in the **Help > About** menu)

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 your network is live, ensure that you understand the potential impact of any command .

Conventions

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

Configure

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

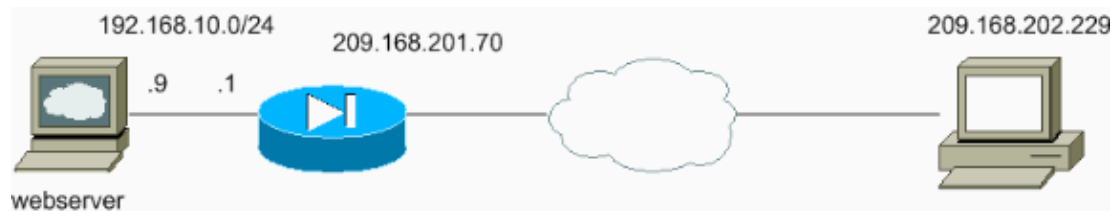
A user with a VPN Client connects and receives an IP address from the Internet service provider (ISP). This is replaced by an IP address from the mode-config pool on the PIX (172.16.1.1 – 172.16.1.255). The user has access to everything on the inside of the firewall, which includes networks. Users who do not run the VPN Client can connect to the web server with the help of the address provided by the static assignment. Traffic of inside users does not go through the IPsec tunnel when the user connects to the Internet.

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

Note: In order to find additional information on the commands used in this document, refer to the Command Lookup Tool (registered customers only) .

Network Diagram

This document uses this network setup.



Configurations

This document uses these configurations.

- PIX Configuration
- VPN Client Configuration

PIX Configuration

```
sv2-5(config)#show run
: Saved
:
PIX Version 6.3(3)
interface ethernet0 auto
interface ethernet1 auto
nameif ethernet0 outside security0
nameif ethernet1 inside security100
enable password 8Ry2YjIyt7RRXU24 encrypted
passwd 2KFQnbNIdI.2KYOU encrypted
hostname sv2-5
fixup protocol dns maximum-length 512
fixup protocol ftp 21
fixup protocol h323 h225 1720
```

```
fixup protocol h323 ras 1718-1719
fixup protocol http 80
fixup protocol rsh 514
fixup protocol rtsp 554
fixup protocol sip 5060
fixup protocol sip udp 5060
fixup protocol skinny 2000
fixup protocol smtp 25
fixup protocol sqlnet 1521
fixup protocol tftp 69
names

!--- Access-list defined for nat 0.

access-list 101 permit ip 192.168.10.0 255.255.255.0 172.16.1.0 255.255.255.0

!--- Access-list applied on the outside interface.

access-list 102 permit tcp any host 209.168.201.9 eq www
access-list 102 permit icmp any any
pager lines 24
logging on
logging buffered debugging
mtu outside 1500
mtu inside 1500
ip address outside 209.168.201.70 255.255.255.0
ip address inside 192.168.10.1 255.255.255.0
ip audit info action alarm
ip audit attack action alarm

!--- Set up the mode-config pool.

ip local pool test 172.16.1.1-172.16.1.255
no failover
failover timeout 0:00:00
failover poll 15
no failover ip address outside
no failover ip address inside
pdm history enable
arp timeout 14400
global (outside) 1 interface

!--- Do not do Network Address Translation (NAT) for the VPN Client pool.

nat (inside) 0 access-list 101
nat (inside) 1 0.0.0.0 0.0.0.0 0 0

!--- Also allow *unencrypted* communication if desired.

static (inside,outside) 209.168.201.9 192.168.10.9 netmask 255.255.255.255 0 0
access-group 102 in interface outside
route outside 0.0.0.0 0.0.0.0 209.168.201.1 1
timeout xlate 3:00:00
timeout conn 1:00:00 half-closed 0:10:00 udp 0:02:00 rpc 0:10:00 h225 1:00:00
timeout h323 0:05:00 mgcp 0:05:00 sip 0:30:00 sip_media 0:02:00
timeout uauth 0:05:00 absolute
aaa-server TACACS+ protocol tacacs+
aaa-server RADIUS protocol radius
aaa-server LOCAL protocol local
no snmp-server location
no snmp-server contact
snmp-server community public
no snmp-server enable traps
```

```

floodguard enable
sysopt connection permit-ipsec

!--- These are IPSec parameters.

crypto ipsec transform-set myset esp-des esp-md5-hmac
crypto dynamic-map dynmap 10 set transform-set myset
crypto map mymap 10 ipsec-isakmp dynamic dynmap
crypto map mymap client configuration address initiate
crypto map mymap client configuration address respond
crypto map mymap interface outside

!--- These are IKE parameters.

isakmp enable outside
isakmp key ***** address 0.0.0.0 netmask 0.0.0.0
isakmp identity address
isakmp client configuration address-pool local test outside
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 86400
telnet timeout 5
ssh timeout 5
console timeout 0
vpdn username cisco password ***** store-local
terminal width 80
Cryptochecksum:4f21dc73759ffae29935430132e662ef
: end

```

VPN Client Configuration

```

Network Security policy:
  1- TACconn
    My Identity
      Connection security: Secure
      Remote Party Identity and addressing
      ID Type: IP subnet
      192.168.10.0
      255.255.255.0
      Port all Protocol all

    Connect using secure tunnel
      ID Type: IP address
      209.201.168.70

    Pre-shared Key=cisco1234

    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
```

Verify

There is currently no verification procedure available for this configuration.

Troubleshoot

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

Troubleshoot Commands

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

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

In order to see the VPN Client–side debugs, enable the Cisco Secure Log Viewer.

- **debug crypto ipsec sa** Displays the IPsec negotiations of phase 2.
- **debug crypto isakmp** Displays the Internet Security Association and Key Management Protocol (ISAKMP) negotiations of phase 1.

See this **debug** output:

```
crypto_isakmp_process_block:src:209.168.202.229,
dest:209.168.201.70 spt:500 dpt:500
OAK_MM exchange
ISAKMP (0): processing SA payload. message ID = 0

ISAKMP (0): Checking ISAKMP transform 1 against priority 10 policy
ISAKMP: encryption DES-CBC
ISAKMP: hash MD5
ISAKMP: default group 1
ISAKMP: auth pre-share
ISAKMP (0): atts are acceptable. Next payload is 0
ISAKMP (0): SA is doing pre-shared key authentication
using id type ID_IPV4_ADDR
return status is IKMP_NO_ERROR
crypto_isakmp_process_block:src:209.168.202.229,
dest:209.168.201.70 spt:500 dpt:500
OAK_MM exchange
ISAKMP (0): processing KE payload. message ID = 0

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

ISAKMP (0): processing vendor id payload

ISAKMP (0): processing vendor id payload

ISAKMP (0): received xauth v6 vendor id
```

```
return status is IKMP_NO_ERROR
crypto_isakmp_process_block:src:209.168.202.229,
dest:209.168.201.70 spt:500 dpt:500
OAK_MM exchange
ISAKMP (0): processing ID payload. message ID = 0
ISAKMP (0): processing HASH payload. message ID = 0
ISAKMP (0): processing NOTIFY payload 24578 protocol 1
spi 0, message ID = 0
ISAKMP (0): processing notify INITIAL_CONTACTIPSEC(key_engine):
got a queue event...
IPSEC(key_engine_delete_sas): rec'd delete notify from ISAKMP
IPSEC(key_engine_delete_sas): delete all SAs shared with 209.168.202.229
```

ISAKMP (0): SA has been authenticated

!--- Phase 1 is complete.

```
ISAKMP (0): ID payload
next-payload : 8
type : 1
protocol : 17
port : 500
length : 8
ISAKMP (0): Total payload length: 12
return status is IKMP_NO_ERROR
ISAKMP (0): sending phase 1 RESPONDER_LIFETIME notify
ISAKMP (0): sending NOTIFY message 24576 protocol 1
VPN Peer: ISAKMP: Added new peer: ip:209.168.202.229/500 Total VPN Peers:1
VPN Peer: ISAKMP: Peer ip:209.168.202.229/500 Ref cnt
incremented to:1 Total VPN Peers:1
crypto_isakmp_process_block:src:209.168.202.229,
dest:209.168.201.70 spt:500 dpt:500
OAK_QM exchange
ISAKMP (0:0): Need config/address
```

!--- Mode configuration.

```
ISAKMP (0:0): initiating peer config to 209.168.202.229.
ID = 2521514930 (0x964b43b2)
return status is IKMP_NO_ERROR
crypto_isakmp_process_block:src:209.168.202.229,
dest:209.168.201.70 spt:500 dpt:500
ISAKMP_TRANSACTION exchange
ISAKMP (0:0): processing transaction payload from
209.168.202.229. message ID = 16133588
ISAKMP: Config payload CFG_ACK
ISAKMP (0:0): peer accepted the address!
return status is IKMP_NO_ERROR
crypto_isakmp_process_block:src:209.168.202.229,
dest:209.168.201.70 spt:500 dpt:500
OAK_QM exchange
oakley_process_quick_mode:
OAK_QM_IDLE
ISAKMP (0): processing SA payload. message ID = 1524017329
```

ISAKMP : Checking IPsec proposal 1

```
ISAKMP: transform 1, ESP_DES
ISAKMP: attributes in transform:
ISAKMP: authenticator is HMAC-MD5
ISAKMP: encaps is 1
```

!--- Phase 2 starts.

ISAKMP (0): atts are acceptable.IPSEC(validate_proposal_request):

```

proposal part #1,
(key eng. msg.) dest= 209.168.201.70, src= 209.168.202.229,
dest_proxy= 192.168.10.0/255.255.255.0/0/0 (type=4),
src_proxy= 172.16.1.1/255.255.255.255/0/0 (type=1),
protocol= ESP, transform= esp-des esp-md5-hmac ,
lifedur= 0s and 0kb,
spi= 0x0(0), conn_id= 0, keysize= 0, flags= 0x4

ISAKMP (0): processing NONCE payload. message ID = 1524017329

ISAKMP (0): processing ID payload. message ID = 1524017329
ISAKMP (0): ID_IPV4_ADDR src 172.16.1.1 prot 0 port 0
ISAKMP (0): processing ID payload. message ID = 1524017329
ISAKMP (0): ID_IPV4_ADDR_SUBNET dst 192.168.10.0/255.255.255.0 prot 0 port
0IPSEC(key_engine): got a queue event...
IPSEC(spi_response): getting spi 0x9f068383(2668004227) for SA
from 209.168.202.229 to 209.168.201.70 for prot 3

return status is IKMP_NO_ERROR
crypto_isakmp_process_block:src:209.168.202.229,
dest:209.168.201.70 spt:500 dpt:500
OAK_QM exchange
oakley_process_quick_mode:
OAK_QM_AUTH_AWAIT

!--- Phase 2 complete IPsec SAs are created.

ISAKMP (0): Creating IPsec SAs
inbound SA from 209.168.202.229 to 209.168.201.70
(proxy 172.16.1.1 to 192.168.10.0)
has spi 2668004227 and conn_id 2 and flags 4
outbound SA from 209.168.201.70 to 209.168.202.229
(proxy 192.168.10.0 to 172.16.1.1)
has spi 3326135849 and conn_id 1 and flags 4IPSEC
(key_engine): got a queue event...
IPSEC(initialize_sas): ,
(key eng. msg.) dest= 209.168.201.70, src= 209.168.202.229,
dest_proxy= 192.168.10.0/255.255.255.0/0/0 (type=4),
src_proxy= 172.16.1.1/0.0.0.0/0/0 (type=1),
protocol= ESP, transform= esp-des esp-md5-hmac ,
lifedur= 0s and 0kb,
spi= 0x9f068383(2668004227), conn_id= 2, keysize= 0, flags= 0x4
IPSEC(initialize_sas): ,
(key eng. msg.) src= 209.168.201.70, dest= 209.168.202.229,
src_proxy= 192.168.10.0/255.255.255.0/0/0 (type=4),
dest_proxy= 172.16.1.1/0.0.0.0/0/0 (type=1),
protocol= ESP, transform= esp-des esp-md5-hmac ,
lifedur= 0s and 0kb,
spi= 0xc640ce29(3326135849), conn_id= 1, keysize= 0, flags= 0x4

VPN Peer: IPSEC: Peer ip:209.168.202.229/500 Ref cnt
incremented to:2 Total VPN Peers:1
VPN Peer: IPSEC: Peer ip:209.168.202.229/500 Ref cnt
incremented to:3 Total VPN Peers:1
return status is IKMP_NO_ERROR
sv2-5#

```

Related Information

- [IPSec Support Page](#)
- [Introduction to IPSec](#)
- [Establishing Connectivity Through Cisco PIX Firewalls](#)
- [Documentation for PIX Firewall](#)
- [PIX Command Reference](#)

- **PIX Support Page**
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