

# PIX/ASA 7.x VPN fácil con un ASA 5500 como el servidor y el PIX 506E como el ejemplo de configuración del cliente (NEM)

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## Introducción

Este documento proporciona una configuración de ejemplo para IPsec entre un Cisco Adaptive Security Appliance (ASA) 5520 y un router Cisco PIX 506E que usa EasyVPN. El ASA 5520 actúa como servidor EasyVPN y el PIX 506E actúa como cliente remoto del EasyVPN. Mientras que esta configuración utiliza un dispositivo ASA 5520 que ejecuta la versión de software ASA 7.0(4), también puede utilizar esta configuración para los dispositivos de firewall PIX que ejecutan la versión del sistema operativo 7.0 del PIX y posterior.

Refiera al [PIX/ASA 7.x VPN fácil con un ASA 5500 como el servidor y Cisco 871 como el ejemplo de la configuración VNP remota sencilla](#) para más información sobre un escenario similar donde el Cisco 871 Router actúa como el Easy VPN Remote.

Refiera al [hardware cliente VPN en un dispositivo de seguridad de las 501/506 Series PIX con el ejemplo de configuración concentrador VPN 3000](#) para más información sobre un escenario similar donde el Cisco VPN 3000 Concentrator actúa como el Easy VPN Server.

Refiera al [Easy VPN Remote PIX 501/506 a un router IOS® en el modo de ampliación de la red con el ejemplo de configuración de la autenticación ampliada](#) para más información sobre un escenario similar donde el router del Cisco IOS actúa como el Easy VPN Server.

Refiera a [PIX-a-PIX 6.x: Ejemplo de configuración fácil VPN \(NEM\)](#) para más información sobre un escenario similar donde el PIX 506 6.x actúa como el Easy VPN Server.

## prerrequisitos

### Requisitos

Asegúrese de cumplir estos requisitos antes de intentar esta configuración:

- Asegúrese de que usted tenga una comprensión básica del IPSec y ASA/PIX los sistemas operativos 6.x y 7.x.

### Componentes Utilizados

La información que contiene este documento se basa en las siguientes versiones de software y hardware.

- El cliente del hardware remoto del EasyVPN es un PIX 506E que funciona con la versión 6.3(5).
- El servidor del EasyVPN es un ASA 5520 que funciona con la versión 7.0(4).

**Note:** La versión 7.x de las 5500 Series ASA funciona con el mismo software considerado en la versión de PIX 7.x. Las configuraciones en este documento son aplicables a ambas líneas de producto.

La información que contiene este documento se creó a partir de los dispositivos en un ambiente de laboratorio específico. Todos los dispositivos que se utilizan en este documento se pusieron en funcionamiento con una configuración verificada (predeterminada). Si la red está funcionando, asegúrese de haber comprendido el impacto que puede tener cualquier comando.

### Convenciones

Consulte [Convenciones de Consejos Técnicos de Cisco](#) para obtener más información sobre las convenciones sobre documentos.

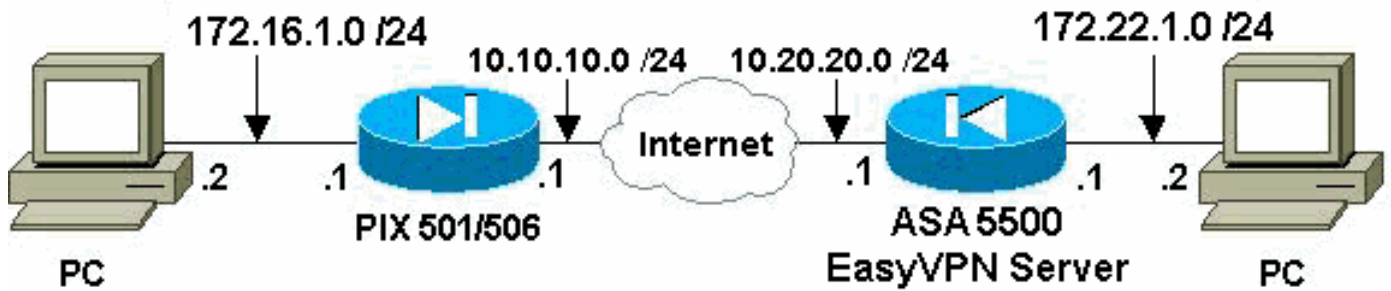
## Configurar

En esta sección encontrará la información para configurar las funciones descritas en este documento.

**Note:** Utilice la herramienta [Command Lookup Tool](#) ([clientes registrados solamente](#)) para obtener más información sobre los comandos utilizados en esta sección.

### Diagrama de la red

En este documento, se utiliza esta configuración de red:



## Configuraciones

En este documento, se utilizan estas configuraciones:

- [Easy VPN Server \(ASA 5520\)](#)
- [Hardware cliente del Easy VPN Remote](#)

### Easy VPN Server (ASA 5520)

```
ASA5520-704#write terminal
: Saved
:
ASA Version 7.0(4)
!
hostname ASA5520-704
enable password 8Ry2YjIyt7RRXU24 encrypted
names
!

!--- Configure the outside and inside interfaces.
interface GigabitEthernet0/0 nameif outside security-
level 0 ip address 10.20.20.1 255.255.255.0 ! interface
GigabitEthernet0/1 nameif inside security-level 100 ip
address 172.22.1.1 255.255.255.0 ! interface
GigabitEthernet0/2 shutdown no nameif no security-level
no ip address ! interface GigabitEthernet0/3 shutdown no
nameif no security-level no ip address ! interface
Management0/0 shutdown no nameif no security-level no ip
address ! passwd 2KFQnbNIdI.2KYOU encrypted ftp mode
passive !--- This access list is used for a nat zero
command that prevents !--- traffic which matches the
access list from undergoing !--- network address
translation (NAT).

access-list no-nat extended permit ip 172.22.1.0
255.255.255.0 172.16.1.0 255.255.255.0
!--- This access list is used to define the traffic !---
that should pass through the tunnel. !--- It is bound to
the group policy which defines !--- a dynamic crypto
map. access-list ezvpn1 extended permit ip 172.22.1.0
255.255.255.0 172.16.1.0 255.255.255.0 pager lines 24
mtu outside 1500 mtu inside 1500 no failover icmp permit
any echo-reply outside icmp permit any inside no asdm
history enable arp timeout 14400 !--- Specify the NAT
configuration. !--- NAT 0 prevents NAT for the ACL
defined in this configuration. !--- The nat 1 command
specifies NAT for all other traffic.
```

```

global (outside) 1 interface
nat (inside) 0 access-list no-nat
nat (inside) 1 0.0.0.0 0.0.0.0
route outside 0.0.0.0 0.0.0.0 10.20.20.2 1
timeout xlate 3:00:00
timeout conn 1:00:00 half-closed 0:10:00 udp 0:02:00
icmp 0:00:02
timeout sunrpc 0:10:00 h323 0:05:00 h225 1:00:00 mgcp
0:05:00
timeout mgcp-pat 0:05:00 sip 0:30:00 sip_media 0:02:00
timeout uauth 0:05:00 absolute

!--- This defines the group policy you use with EasyVPN.
!--- Specify the networks !--- that should pass through
the tunnel and that you want to !--- use network
extension mode. group-policy myGROUP internal group-
policy myGROUP attributes split-tunnel-policy
tunnelspecified split-tunnel-network-list value ezvpn1
nem enable webvpn !--- Here the username and password
associated with !--- this VPN connection are defined.
You !--- can also use AAA for this function. username
cisco password 3USUCOPFUIMCO4Jk encrypted no snmp-server
location no snmp-server contact snmp-server enable traps
snmp authentication linkup linkdown coldstart !--- PHASE
2 CONFIGURATION ---! !--- The encryption types for Phase
2 are defined here. !--- A single DES encryption with !-
-- the md5 hash algorithm is used. crypto ipsec
transform-set mySET esp-des esp-md5-hmac !--- Defines a
dynamic crypto map with !--- the specified encryption
settings. crypto dynamic-map myDYN-MAP 5 set transform-
set mySET !--- Binds the dynamic map to the IPsec/ISAKMP
process. crypto map myMAP 60 ipsec-isakmp dynamic myDYN-
MAP !--- Specifies the interface to be used with !---
the settings defined in this configuration. crypto map
myMAP interface outside !--- PHASE 1 CONFIGURATION ---!
!--- This configuration uses isakmp policy 1. !---
Policy 65535 is included in the default !---
configuration. The configuration commands here define
the Phase !--- 1 policies that are used. isakmp enable
outside isakmp policy 1 authentication pre-share isakmp
policy 1 encryption des isakmp policy 1 hash md5 isakmp
policy 1 group 2 isakmp policy 1 lifetime 86400 isakmp
policy 65535 authentication pre-share isakmp policy
65535 encryption 3des isakmp policy 65535 hash sha
isakmp policy 65535 group 2 isakmp policy 65535 lifetime
86400 !--- The tunnel-group commands bind the
configurations !--- defined in this configuration to the
tunnel that is !--- used for EasyVPN. This tunnel name
is the one specified on the remote side. tunnel-group
mytunnel type ipsec-ra tunnel-group mytunnel general-
attributes default-group-policy myGROUP tunnel-group
mytunnel ipsec-attributes !--- The pre-shared-key used
here is "cisco". pre-shared-key * telnet timeout 5 ssh
timeout 5 console timeout 0 ! class-map
inspection_default match default-inspection-traffic ! !
policy-map global_policy class inspection_default
inspect dns maximum-length 512 inspect ftp inspect h323
h225 inspect h323 ras inspect netbios inspect rsh
inspect rtsp inspect skinny inspect esmtp inspect sqlnet
inspect sunrpc inspect tftp inspect sip inspect xdmcp !
service-policy global_policy global
Cryptochecksum:42123a94a33d8d10ae6a1505fb4ba653 : end
[OK] ASA5520-704#

```

## Hardware cliente del Easy VPN Remote

```
pix506-635#write terminal
Building configuration...
: Saved
:
PIX Version 6.3(5)
!--- Brings the interfaces out of a shutdown state.
interface ethernet0 auto interface ethernet1 auto !---
Assign the interface names. nameif ethernet0 outside
security0 nameif ethernet1 inside security100 enable
password 8Ry2YjIyt7RRXU24 encrypted passwd
2KFQnbNIdI.2KYOU encrypted hostname pix506-635 domain-
name cisco.com 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 pager
lines 24 icmp permit any outside mtu outside 1500 mtu
inside 1500 !--- Assign the interface IP addresses. ip
address outside 10.10.10.1 255.255.255.0 ip address
inside 172.16.1.1 255.255.255.0 ip audit info action
alarm ip audit attack action alarm pdm history enable
arp timeout 14400 !--- Set the standard NAT
configuration. !--- EasyVPN provides the NAT exceptions
needed. global (outside) 1 interface nat (inside) 1
0.0.0.0 0.0.0.0 0 0 !--- Specify the default route.
route outside 0.0.0.0 0.0.0.0 10.10.10.2 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 sip-
disconnect 0:02:00 sip-invite 0:03:00 timeout uauth
0:05:00 absolute aaa-server TACACS+ protocol tacacs+
aaa-server TACACS+ max-failed-attempts 3 aaa-server
TACACS+ deadtime 10 aaa-server RADIUS protocol radius
aaa-server RADIUS max-failed-attempts 3 aaa-server
RADIUS deadtime 10 aaa-server LOCAL protocol local no
snmp-server location no snmp-server contact snmp-server
community public no snmp-server enable traps floodguard
enable telnet timeout 5 ssh timeout 5 console timeout 0
!--- EasyVPN Client Configuration ---! !--- Specify the
IP address of the VPN server. vpnclient server
10.20.20.1 !--- This example uses network extension
mode. vpnclient mode network-extension-mode !--- Specify
the group name and the pre-shared key. vpnclient
vpngroup mytunnel password ***** !--- Specify the
authentication username and password. vpnclient username
cisco password ***** !---- After you issue this
command, the tunnel is established. vpnclient enable
terminal width 80
Cryptochecksum:1564fd62a9e4312020f51846bd1b3534 : end
[OK] pix506-635#
```

## Verificación

Use esta sección para confirmar que su configuración funciona correctamente.

[La herramienta Output Interpreter Tool \(clientes registrados solamente\)](#) (OIT) soporta ciertos

comandos show. Utilice la OIT para ver un análisis del resultado del comando show.

- [Comandos show del servidor del EasyVPN PIX y salida de muestra](#)
- [Comandos show del cliente del hardware remoto del EasyVPN PIX y salida de muestra](#)

## [Comandos show del servidor del EasyVPN PIX y salida de muestra](#)

- **muestre isakmp crypto sa** — Visualiza todas las asociaciones de seguridad actuales del Internet Key Exchange (IKE) (SA) en un par.

```
ASA5520-704#show crypto isakmp sa
```

```
Active SA: 1
Rekey SA: 0 (A tunnel will report 1 Active and 1 Rekey SA during rekey)
Total IKE SA: 1
```

```
1 IKE Peer: 10.10.10.1
Type : user Role : responder
Rekey : no State : AM_ACTIVE
ASA5520-704#
```

- **muestre IPsec crypto sa** — SA de IPsec de las visualizaciones construido entre los pares.

```
ASA5520-704#show crypto ipsec sa
```

```
interface: outside
```

```
    Crypto map tag: myDYN-MAP, seq num: 5, local addr: 10.20.20.1
```

```
local ident (addr/mask/prot/port): (172.22.1.0/255.255.255.0/0/0)
remote ident (addr/mask/prot/port): (172.16.1.0/255.255.255.0/0/0)
current_peer: 10.10.10.1, username: cisco
dynamic allocated peer ip: 0.0.0.0
```

```
#pkts encaps: 655, #pkts encrypt: 655, #pkts digest: 655
#pkts decaps: 706, #pkts decrypt: 706, #pkts verify: 706
#pkts compressed: 0, #pkts decompressed: 0
#pkts not compressed: 655, #pkts comp failed: 0, #pkts decomp failed: 0
#send errors: 0, #recv errors: 0
```

```
local crypto endpt.: 10.20.20.1, remote crypto endpt.: 10.10.10.1
```

```
path mtu 1500, ipsec overhead 60, media mtu 1500
current outbound spi: 3EA12BBE
```

```
inbound esp sas:
spi: 0x9B94D824 (2610223140)
transform: esp-des esp-md5-hmac
in use settings ={RA, Tunnel, }
slot: 0, conn_id: 4, crypto-map: myDYN-MAP
sa timing: remaining key lifetime (sec): 25015
IV size: 8 bytes
replay detection support: Y
```

```
outbound esp sas:
spi: 0x3EA12BBE (1050749886)
transform: esp-des esp-md5-hmac
in use settings ={RA, Tunnel, }
slot: 0, conn_id: 4, crypto-map: myDYN-MAP
sa timing: remaining key lifetime (sec): 25011
IV size: 8 bytes
replay detection support: Y
```

```
ASA5520-704#
```

## [Comandos show del cliente del hardware remoto del EasyVPN PIX y salida de](#)

## [muestra](#)

- **permiso vpnclient** — Habilita una conexión remota del EasyVPN. En el Modo de ampliación de la red (NEM), el túnel está para arriba incluso cuando no hay tráfico interesante que se intercambiará por el servidor del EasyVPN del headend.

```
pix506-635(config)#vpnclient enable
```

- **show crypto isakmp policy** – Muestra los parámetros para cada política IKE.

```
pix506-635#show crypto isakmp policy
```

```
Default protection suite
```

```
  encryption algorithm:  DES - Data Encryption Standard (56 bit keys).
  hash algorithm:        Secure Hash Standard
  authentication method: Rivest-Shamir-Adleman Signature
  Diffie-Hellman group:  #1 (768 bit)
  lifetime:              86400 seconds, no volume limit
```

Esta salida muestra el comando **show crypto isakmp policy** después de que habiliten al hardware cliente.

```
pix506-635(config)#show crypto isakmp policy
```

```
Protection suite of priority 65001
```

```
  encryption algorithm:  AES - Advanced Encryption Standard (256 bit keys).
  hash algorithm:        Secure Hash Standard
  authentication method: Pre-Shared Key with XAUTH
  Diffie-Hellman group:  #2 (1024 bit)
  lifetime:              86400 seconds, no volume limit
```

```
Protection suite of priority 65002
```

```
  encryption algorithm:  AES - Advanced Encryption Standard (256 bit keys).
  hash algorithm:        Message Digest 5
  authentication method: Pre-Shared Key with XAUTH
  Diffie-Hellman group:  #2 (1024 bit)
  lifetime:              86400 seconds, no volume limit
```

```
Protection suite of priority 65003
```

```
  encryption algorithm:  AES - Advanced Encryption Standard (192 bit keys).
  hash algorithm:        Secure Hash Standard
  authentication method: Pre-Shared Key with XAUTH
  Diffie-Hellman group:  #2 (1024 bit)
  lifetime:              86400 seconds, no volume limit
```

```
Protection suite of priority 65004
```

```
  encryption algorithm:  AES - Advanced Encryption Standard (192 bit keys).
  hash algorithm:        Message Digest 5
  authentication method: Pre-Shared Key with XAUTH
  Diffie-Hellman group:  #2 (1024 bit)
  lifetime:              86400 seconds, no volume limit
```

```
Protection suite of priority 65005
```

```
  encryption algorithm:  AES - Advanced Encryption Standard (128 bit keys).
  hash algorithm:        Secure Hash Standard
  authentication method: Pre-Shared Key with XAUTH
  Diffie-Hellman group:  #2 (1024 bit)
  lifetime:              86400 seconds, no volume limit
```

```
Protection suite of priority 65006
```

```
  encryption algorithm:  AES - Advanced Encryption Standard (128 bit keys).
  hash algorithm:        Message Digest 5
  authentication method: Pre-Shared Key with XAUTH
  Diffie-Hellman group:  #2 (1024 bit)
  lifetime:              86400 seconds, no volume limit
```

```
Protection suite of priority 65007
```

```
  encryption algorithm:  Three key triple DES
  hash algorithm:        Secure Hash Standard
  authentication method: Pre-Shared Key with XAUTH
  Diffie-Hellman group:  #2 (1024 bit)
```

lifetime: 86400 seconds, no volume limit  
Protection suite of priority 65008  
encryption algorithm: Three key triple DES  
hash algorithm: Message Digest 5  
authentication method: Pre-Shared Key with XAUTH  
Diffie-Hellman group: #2 (1024 bit)  
lifetime: 86400 seconds, no volume limit  
Protection suite of priority 65009  
encryption algorithm: DES - Data Encryption Standard (56 bit keys).  
hash algorithm: Message Digest 5  
authentication method: Pre-Shared Key with XAUTH  
Diffie-Hellman group: #2 (1024 bit)  
lifetime: 86400 seconds, no volume limit  
Protection suite of priority 65010  
encryption algorithm: AES - Advanced Encryption Standard (256 bit keys).  
hash algorithm: Secure Hash Standard  
authentication method: Pre-Shared Key  
Diffie-Hellman group: #2 (1024 bit)  
lifetime: 86400 seconds, no volume limit  
Protection suite of priority 65011  
encryption algorithm: AES - Advanced Encryption Standard (256 bit keys).  
hash algorithm: Message Digest 5  
authentication method: Pre-Shared Key  
Diffie-Hellman group: #2 (1024 bit)  
lifetime: 86400 seconds, no volume limit  
Protection suite of priority 65012  
encryption algorithm: AES - Advanced Encryption Standard (192 bit keys).  
hash algorithm: Secure Hash Standard  
authentication method: Pre-Shared Key  
Diffie-Hellman group: #2 (1024 bit)  
lifetime: 86400 seconds, no volume limit  
Protection suite of priority 65013  
encryption algorithm: AES - Advanced Encryption Standard (192 bit keys).  
hash algorithm: Message Digest 5  
authentication method: Pre-Shared Key  
Diffie-Hellman group: #2 (1024 bit)  
lifetime: 86400 seconds, no volume limit  
Protection suite of priority 65014  
encryption algorithm: AES - Advanced Encryption Standard (128 bit keys).  
hash algorithm: Secure Hash Standard  
authentication method: Pre-Shared Key  
Diffie-Hellman group: #2 (1024 bit)  
lifetime: 86400 seconds, no volume limit  
Protection suite of priority 65015  
encryption algorithm: AES - Advanced Encryption Standard (128 bit keys).  
hash algorithm: Message Digest 5  
authentication method: Pre-Shared Key  
Diffie-Hellman group: #2 (1024 bit)  
lifetime: 86400 seconds, no volume limit  
Protection suite of priority 65016  
encryption algorithm: Three key triple DES  
hash algorithm: Secure Hash Standard  
authentication method: Pre-Shared Key  
Diffie-Hellman group: #2 (1024 bit)  
lifetime: 86400 seconds, no volume limit  
Protection suite of priority 65017  
encryption algorithm: Three key triple DES  
hash algorithm: Message Digest 5  
authentication method: Pre-Shared Key  
Diffie-Hellman group: #2 (1024 bit)  
lifetime: 86400 seconds, no volume limit  
Protection suite of priority 65018  
encryption algorithm: DES - Data Encryption Standard (56 bit keys).  
hash algorithm: Message Digest 5



```
authentication method: Pre-Shared Key
Diffie-Hellman group: #2 (1024 bit)
lifetime: 86400 seconds, no volume limit
```

- **show crypto isakmp sa** — Muestra todas las asociaciones actuales de seguridad (SA) IKE de un par.

```
pix506-635#show crypto isakmp sa
```

```
Total : 1
Embryonic : 0
      dst          src          state    pending    created
      10.20.20.1   10.10.10.1  QM_IDLE    0          4
pix506-635#
```

- **muestre IPsec crypto sa** — SA de IPsec de las visualizaciones construido entre los pares.

```
pix506-635#show crypto ipsec sa
```

```
interface: outside
```

```
Crypto map tag: _vpnc_cm, local addr. 10.10.10.1
```

```
local ident (addr/mask/prot/port): (172.16.1.0/255.255.255.0/0/0)
```

```
remote ident (addr/mask/prot/port): (172.22.1.0/255.255.255.0/0/0)
```

```
current_peer: 10.20.20.1:500
```

```
PERMIT, flags={origin_is_acl,}
```

```
#pkts encaps: 706, #pkts encrypt: 706, #pkts digest 706
```

```
#pkts decaps: 655, #pkts decrypt: 655, #pkts verify 655
```

```
#pkts compressed: 0, #pkts decompressed: 0
```

```
#pkts not compressed: 0, #pkts compr. failed: 0, #pkts decompress f ailed: 0
```

```
#send errors 1, #rcv errors 0
```

```
local crypto endpt.: 10.10.10.1, remote crypto endpt.: 10.20.20.1
```

```
path mtu 1500, ipsec overhead 56, media mtu 1500
```

```
current outbound spi: 9b94d824
```

```
inbound esp sas:
```

```
spi: 0x3ea12bbe(1050749886)
```

```
transform: esp-des esp-md5-hmac ,
```

```
in use settings = {Tunnel, }
```

```
slot: 0, conn id: 3, crypto map: _vpnc_cm
```

```
sa timing: remaining key lifetime (k/sec): (4607941/24712)
```

```
IV size: 8 bytes
```

```
replay detection support: Y
```

```
inbound ah sas:
```

```
inbound pcp sas:
```

```
outbound esp sas:
```

```
spi: 0x9b94d824(2610223140)
```

```
transform: esp-des esp-md5-hmac ,
```

```
in use settings = {Tunnel, }
```

```
slot: 0, conn id: 4, crypto map: _vpnc_cm
```

```
sa timing: remaining key lifetime (k/sec): (4607958/24712)
```

```
IV size: 8 bytes
```

```
replay detection support: Y
```

```
outbound ah sas:
```

```
outbound pcp sas:
```

- **show vpnclient** — Información de la configuración del dispositivo remoto del cliente VPN o del EasyVPN de las visualizaciones.

```
pix506-635#show vpnclient
```

```
LOCAL CONFIGURATION
vpnclient server 10.20.20.1
vpnclient mode network-extension-mode
vpnclient vpngroup mytunnel password *****
vpnclient username cisco password *****
vpnclient enable
```

```
DOWNLOADED DYNAMIC POLICY
Current Server : 10.20.20.1
PFS Enabled : No
Secure Unit Authentication Enabled : No
User Authentication Enabled : No
Split Networks : 172.22.1.0/255.255.255.0
Backup Servers : None
```

```
pix506-635#
```

## Troubleshooting

En esta sección encontrará información que puede utilizar para solucionar problemas de configuración.

Si usted ha configurado el cliente del hardware remoto del EasyVPN y el servidor del EasyVPN como este documento todavía describe y usted experimenta los problemas, recolecte la **salida de los debugs de cada PIX** y la salida de los **comandos show** para el análisis por el Soporte técnico de Cisco. También refiera a [resolver problemas el PIX para pasar el tráfico de datos en un túnel de IPSec establecido](#) o el [Troubleshooting de IP Security - entendiendo y con los comandos debug](#). Habilite el debugging de IPSec en el PIX.

Estas secciones visualizan los comandos del PIX debug y la salida de muestra.

- [Comandos server del EasyVPN](#)
- [Comandos client del hardware remoto del EasyVPN](#)

[La herramienta Output Interpreter Tool \(clientes registrados solamente\)](#) (OIT) soporta ciertos comandos show. Utilice la OIT para ver un análisis del resultado del comando show.

**Note:** Consulte [Información Importante sobre Comandos de Debug](#) antes de usar un **comando debug**.

### Comandos server del EasyVPN

- **IPSec del debug crypto** — Visualiza los IPSec Negotiations de la fase 2.
- **debug crypto isakmp** — Muestra las negociaciones ISAKMP para la fase 1.

La salida de muestra se muestra aquí.

```
ASA5520-704#debug crypto ipsec 2
ASA5520-704#debug crypto isakmp 2
ASA5520-704# Sep 15 23:02:42 [IKEv1]: IP = 10.10.10.1, Connection landed
on tunnel_group mytunnel
```

```

Sep 15 23:02:43 [IKEv1]: Group = mytunnel, Username = cisco, IP = 10.10.10.1,
User (cisco) authenticated.
Sep 15 23:02:48 [IKEv1]: Group = mytunnel, Username = cisco, IP = 10.10.10.1,
PHASE 1 COMPLETED
Sep 15 23:02:48 [IKEv1]: Group = mytunnel, Username = cisco, IP = 10.10.10.1,
IKE: requesting SPI!
Sep 15 23:02:48 [IKEv1]: Group = mytunnel, Username = cisco, IP = 10.10.10.1,
Security negotiation complete for User (cisco) Responder, Inbound SPI = 0x436fbef1,
Outbound SPI = 0x5c6b5137
Sep 15 23:02:48 [IKEv1]: Group = mytunnel, Username = cisco, IP = 10.10.10.1,
IKE: requesting SPI!
Sep 15 23:02:48 [IKEv1]: Group = mytunnel, Username = cisco, IP = 10.10.10.1,
Starting P2 Rekey timer to expire in 27360 seconds
Sep 15 23:02:48 [IKEv1]: Group = mytunnel, Username = cisco, IP = 10.10.10.1,
PHASE 2 COMPLETED (msgid=dc3aalef)
Sep 15 23:02:48 [IKEv1]: Group = mytunnel, Username = cisco, IP = 10.10.10.1,
Security negotiation complete for User (cisco) Responder, Inbound SPI = 0x69352d74,
Outbound SPI = 0x4a7e47fc
Sep 15 23:02:48 [IKEv1]: Group = mytunnel, Username = cisco, IP = 10.10.10.1,
Starting P2 Rekey timer to expire in 27360 seconds
Sep 15 23:02:48 [IKEv1]: Group = mytunnel, Username = cisco, IP = 10.10.10.1,
PHASE 2 COMPLETED (msgid=58a397ad)

```

## Comandos client del hardware remoto del EasyVPN

- **IPSec del debug crypto** — Visualiza los IPSec Negotiations de la fase 2.
- **debug crypto isakmp** — Muestra las negociaciones ISAKMP para la fase 1.  

pix506-635(config)#**vpnclient enable**

```

ISAKMP (0): ID payload
next-payload : 13
type : 11
protocol : 17
port : 0
length : 12pix506-635(config)#
ISAKMP (0): Total payload length: 16
ISAKMP (0:0): sending NAT-T vendor ID - rev 2 & 3
ISAKMP (0): beginning Aggressive Mode exchange
crypto_isakmp_process_block:src:10.20.20.1, dest:10.10.10.1 spt:500 dpt:500
OAK_AG exchange
ISAKMP (0): processing SA payload. message ID = 0

ISAKMP (0): Checking ISAKMP transform 9 against priority 65001 policy
ISAKMP: encryption DES-CBC
ISAKMP: hash MD5
ISAKMP: default group 2
ISAKMP: extended auth pre-share (init)
ISAKMP: life type in seconds
ISAKMP: life duration (VPI) of 0x0 0x1 0x51 0x80
ISAKMP (0): atts are not acceptable. Next payload is 0
ISAKMP (0): Checking ISAKMP transform 9 against priority 65002 policy
ISAKMP: encryption DES-CBC
ISAKMP: hash MD5
ISAKMP: default group 2
ISAKMP: extended auth pre-share (init)
ISAKMP: life type in seconds
ISAKMP: life duration (VPI) of 0x0 0x1 0x51 0x80
ISAKMP (0): atts are not acceptable. Next payload is 0
ISAKMP (0): Checking ISAKMP transform 9 against priority 65003 policy
ISAKMP: encryption DES-CBC
ISAKMP: hash MD5
ISAKMP: default group 2
ISAKMP: extended auth pre-share (init)

```

```
ISAKMP: life type in seconds
ISAKMP: life duration (VPI) of 0x0 0x1 0x51 0x80
ISAKMP (0): atts are not acceptable. Next payload is 0
ISAKMP (0): Checking ISAKMP transform 9 against priority 65004 policy
ISAKMP: encryption DES-CBC
ISAKMP: hash MD5
ISAKMP: default group 2
ISAKMP: extended auth pre-share (init)
ISAKMP: life type in seconds
ISAKMP: life duration (VPI) of 0x0 0x1 0x51 0x80
ISAKMP (0): atts are not acceptable. Next payload is 0
ISAKMP (0): Checking ISAKMP transform 9 against priority 65005 policy
ISAKMP: encryption DES-CBC
ISAKMP: hash MD5
ISAKMP: default group 2
ISAKMP: extended auth pre-share (init)
ISAKMP: life type in seconds
ISAKMP: life duration (VPI) of 0x0 0x1 0x51 0x80
ISAKMP (0): atts are not acceptable. Next payload is 0
ISAKMP (0): Checking ISAKMP transform 9 against priority 65006 policy
ISAKMP: encryption DES-CBC
ISAKMP: hash MD5
ISAKMP: default group 2
ISAKMP: extended auth pre-share (init)
ISAKMP: life type in seconds
ISAKMP: life duration (VPI) of 0x0 0x1 0x51 0x80
ISAKMP (0): atts are not acceptable. Next payload is 0
ISAKMP (0): Checking ISAKMP transform 9 against priority 65007 policy
ISAKMP: encryption DES-CBC
ISAKMP: hash MD5
ISAKMP: default group 2
ISAKMP: extended auth pre-share (init)
ISAKMP: life type in seconds
ISAKMP: life duration (VPI) of 0x0 0x1 0x51 0x80
ISAKMP (0): atts are not acceptable. Next payload is 0
ISAKMP (0): Checking ISAKMP transform 9 against priority 65008 policy
ISAKMP: encryption DES-CBC
ISAKMP: hash MD5
ISAKMP: default group 2
ISAKMP: extended auth pre-share (init)
ISAKMP: life type in seconds
ISAKMP: life duration (VPI) of 0x0 0x1 0x51 0x80
ISAKMP (0): atts are not acceptable. Next payload is 0
ISAKMP (0): Checking ISAKMP transform 9 against priority 65009 policy
ISAKMP: encryption DES-CBC
ISAKMP: hash MD5
ISAKMP: default group 2
ISAKMP: extended auth pre-share (init)
ISAKMP: life type in seconds
ISAKMP: life duration (VPI) of 0x0 0x1 0x51 0x80
ISAKMP (0): atts are acceptable. Next payload is 0
ISAKMP (0): processing KE payload. message ID = 0

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

ISAKMP (0): processing ID payload. message ID = 0
ISAKMP (0): processing HASH payload. message ID = 0
crypto_isakmp_process_block:src:10.20.20.1, dest:10.10.10.1 spt:500 dpt:500
crypto_isakmp_process_block:src:10.20.20.1, dest:10.10.10.1 spt:500 dpt:500
ISAKMP : attributes being requested

crypto_isakmp_process_block:src:10.20.20.1, dest:10.10.10.1 spt:500 dpt:500
ISAKMP (0): beginning Quick Mode exchange, M-ID of 1567562998:5d6f1cf6IPSEC
(key_engine): got a queue event...
```

IPSEC(spi\_response): getting spi 0x411cf95(68276117) for SA  
from 10.20.20.1 to 10.10.10.1 for prot 3

crypto\_isakmp\_process\_block:src:10.20.20.1, dest:10.10.10.1 spt:500 dpt:500

OAK\_QM exchange

oakley\_process\_quick\_mode:

OAK\_QM\_IDLE

ISAKMP (0): processing SA payload. message ID = 1567562998

ISAKMP : Checking IPsec proposal 1

ISAKMP: transform 1, ESP\_DES

ISAKMP: attributes in transform:

ISAKMP: SA life type in seconds

ISAKMP: SA life duration (basic) of 28800

ISAKMP: SA life type in kilobytes

ISAKMP: SA life duration (VPI) of 0x0 0x46 0x50 0x0

ISAKMP: encaps is 1

ISAKMP: authenticator is HMAC-MD5

ISAKMP (0): atts are acceptable.IPSEC(validate\_proposal\_request):  
proposal part #1,

(key eng. msg.) dest= 10.20.20.1, src= 10.10.10.1,  
dest\_proxy= 172.22.1.0/255.255.255.0/0/0 (type=4),  
src\_proxy= 10.10.10.1/255.255.255.255/0/0 (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 = 1567562998

ISAKMP (0): processing ID payload. message ID = 1567562998

ISAKMP (0): processing ID payload. message ID = 1567562998

ISAKMP (0): Creating IPsec SAs

inbound SA from 10.20.20.1 to 10.10.10.1 (proxy 172.22.1.0 to 10.10.10.1)  
has spi 68276117 and conn\_id 5 and flags 4

lifetime of 28800 seconds

lifetime of 4608000 kilobytes

outbound SA from 10.10.10.1 to 10.20.20.1 (proxy 10.10.10.1 to 172.22.1.0)  
has spi 418090151 and conn\_id 6 and flags 4

lifetime of 28800 seconds

lifetime of 4608000 kilobytesIPSEC(key\_engine): got a queue event...

IPSEC(initialize\_sas): ,

(key eng. msg.) dest= 10.10.10.1, src= 10.20.20.1,  
dest\_proxy= 10.10.10.1/255.255.255.255/0/0 (type=1),  
src\_proxy= 172.22.1.0/255.255.255.0/0/0 (type=4),  
protocol= ESP, transform= esp-des esp-md5-hmac ,  
lifedur= 28800s and 4608000kb,  
spi= 0x411cf95(68276117), conn\_id= 5, keysize= 0, flags= 0x4

IPSEC(initialize\_sas): ,

(key eng. msg.) src= 10.10.10.1, dest= 10.20.20.1,  
src\_proxy= 10.10.10.1/255.255.255.255/0/0 (type=1),  
dest\_proxy= 172.22.1.0/255.255.255.0/0/0 (type=4),  
protocol= ESP, transform= esp-des esp-md5-hmac ,  
lifedur= 28800s and 4608000kb,  
spi= 0x18eb8ca7(418090151), conn\_id= 6, keysize= 0, flags= 0x4

VPN Peer: IPSEC: Peer ip:10.20.20.1/500 Ref cnt incremented to:2

Total VPN Peers:1

VPN Peer: IPSEC: Peer ip:10.20.20.1/500 Ref cnt incremented to:3

Total VPN Peers:1

return status is IKMP\_NO\_ERROR

ISAKMP (0): beginning Quick Mode exchange,

M-ID of 43279810:29465c2IPSEC(key\_engine): got a queue event...

IPSEC(spi\_response): getting spi 0xa12022dd(2703237853) for SA

from 10.20.20.1 to 10.10.10.1 for prot 3

crypto\_isakmp\_process\_block:src:10.20.20.1, dest:10.10.10.1 spt:500 dpt:500  
OAK\_QM exchange  
oakley\_process\_quick\_mode:  
OAK\_QM\_IDLE  
ISAKMP (0): processing SA payload. message ID = 43279810

ISAKMP : Checking IPSec proposal 1

ISAKMP: transform 1, ESP\_DES  
ISAKMP: attributes in transform:  
ISAKMP: SA life type in seconds  
ISAKMP: SA life duration (basic) of 28800  
ISAKMP: SA life type in kilobytes  
ISAKMP: SA life duration (VPI) of 0x0 0x46 0x50 0x0  
ISAKMP: encaps is 1  
ISAKMP: authenticator is HMAC-MD5  
ISAKMP (0): atts are acceptable.IPSEC(validate\_proposal\_request): proposal  
part #1,  
(key eng. msg.) dest= 10.20.20.1, src= 10.10.10.1,  
dest\_proxy= 10.20.20.1/255.255.255.255/0/0 (type=1),  
src\_proxy= 10.10.10.1/255.255.255.255/0/0 (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 = 43279810

ISAKMP (0): processing ID payload. message ID = 43279810  
ISAKMP (0): processing ID payload. message ID = 43279810  
ISAKMP (0): Creating IPSec SAs  
inbound SA from 10.20.20.1 to 10.10.10.1 (proxy 10.20.20.1 to 10.10.10.1)  
has spi 2703237853 and conn\_id 3 and flags 4  
lifetime of 28800 seconds  
lifetime of 4608000 kilobytes  
outbound SA from 10.10.10.1 to 10.20.20.1 (proxy 10.10.10.1 to 10.20.20.1)  
has spi 1010314457 and conn\_id 4 and flags 4  
lifetime of 28800 seconds  
lifetime of 4608000 kilobytesIPSEC(key\_engine): got a queue event...  
IPSEC(initialize\_sas): ,  
(key eng. msg.) dest= 10.10.10.1, src= 10.20.20.1,  
dest\_proxy= 10.10.10.1/255.255.255.255/0/0 (type=1),  
src\_proxy= 10.20.20.1/255.255.255.255/0/0 (type=1),  
protocol= ESP, transform= esp-des esp-md5-hmac ,  
lifedur= 28800s and 4608000kb,  
spi= 0xa12022dd(2703237853), conn\_id= 3, keysize= 0, flags= 0x4  
IPSEC(initialize\_sas): ,  
(key eng. msg.) src= 10.10.10.1, dest= 10.20.20.1,  
src\_proxy= 10.10.10.1/255.255.255.255/0/0 (type=1),  
dest\_proxy= 10.20.20.1/255.255.255.255/0/0 (type=1),  
protocol= ESP, transform= esp-des esp-md5-hmac ,  
lifedur= 28800s and 4608000kb,  
spi= 0x3c382cd9(1010314457), conn\_id= 4, keysize= 0, flags= 0x4

VPN Peer: IPSEC: Peer ip:10.20.20.1/500 Ref cnt incremented to:4 Total  
VPN Peers:1

VPN Peer: IPSEC: Peer ip:10.20.20.1/500 Ref cnt incremented to:5 Total  
VPN Peers:1

return status is IKMP\_NO\_ERROR

ISAKMP (0): sending NOTIFY message 36136 protocol 1  
crypto\_isakmp\_process\_block:src:10.20.20.1, dest:10.10.10.1 spt:500 dpt:500  
ISAKMP (0): processing NOTIFY payload 36137 protocol 1  
spi 0, message ID = 1608818011

```
ISAKMP (0): received DPD_R_U_THERE_ACK from peer 10.20.20.1
return status is IKMP_NO_ERR_NO_TRANS
pix506-635(config)#
```

- **debug vpnclient** — Visualiza las negociaciones específicas al cliente VPN.

```
pix506-635(config)#vpnclient enable
pix506-635(config)# 44: VPNC CFG: transform set unconfig attempt done
45: VPNC CLI: no isakmp keepalive 10 5
46: VPNC CLI: no isakmp nat-traversal 20
47: VPNC CFG: IKE unconfig successful
48: VPNC CLI: no crypto map _vpnc_cm
49: VPNC CFG: crypto map deletion attempt done
50: VPNC CFG: crypto unconfig successful
51: VPNC CLI: no global (outside) 65001
52: VPNC CLI: no nat (inside) 0 access-list _vpnc_acl
53: VPNC CFG: nat unconfig attempt failed
54: VPNC CLI: no http 172.16.1.1 255.255.255.0 inside
55: VPNC CLI: no http server enable
56: VPNC CLI: no access-list _vpnc_acl
57: VPNC CFG: ACL deletion attempt failed
58: VPNC CLI: no crypto map _vpnc_cm interface outside
59: VPNC CFG: crypto map de/attach failed
60: VPNC CLI: no sysopt connection permit-ipsec
61: VPNC CLI: sysopt connection permit-ipsec
62: VPNC CFG: transform sets configured
63: VPNC CFG: crypto config successful
64: VPNC CLI: isakmp keepalive 10 5
65: VPNC CLI: isakmp nat-traversal 20
66: VPNC CFG: IKE config successful
67: VPNC CLI: http 172.16.1.1 255.255.255.0 inside
68: VPNC CLI: http server enable
69: VPNC CLI: aaa-server _vpnc_nwp_server protocol tacacs+
70: VPNC CLI: aaa-server _vpnc_nwp_server (outside) host 10.20.20.1
71: VPNC CLI: access-list _vpnc_nwp_acl permit ip any 172.22.1.0 255.255.255.0
72: VPNC CLI: aaa authentication match _vpnc_nwp_acl outbound _vpnc_nwp_server
73: VPNC CLI: no access-list _vpnc_acl
74: VPNC CFG: ACL deletion attempt failed
75: VPNC CLI: access-list _vpnc_acl permit ip host 10.10.10.1 host 10.20.20.1
76: VPNC CLI: crypto map _vpnc_cm 10 match address _vpnc_acl
77: VPNC CFG: crypto map acl update successful
78: VPNC CLI: no crypto map _vpnc_cm interface outside
79: VPNC CLI: crypto map _vpnc_cm interface outside
80: VPNC INF: IKE trigger request done
81: VPNC INF: Constructing policy download req
82: VPNC INF: Packing attributes for policy request
83: VPNC INF: Attributes being requested
84: VPNC ATT: ALT_SPLIT_INCLUDE
85: VPNC INF: 172.22.1.0/255.255.255.0
86: VPNC ATT: ALT_PFS: 0
87: VPNC INF: Received application version 'Cisco Systems, Inc
ASA5520 Version 7.0(4) built by builders on Thu 13-Oct-05 21:43'
88: VPNC ATT: ALT_CFG_SEC_UNIT: 0
89: VPNC ATT: ALT_CFG_USER_AUTH: 0
90: VPNC CLI: no aaa authentication match _vpnc_nwp_acl outbound _vpnc_nwp_server
91: VPNC CLI: no access-list _vpnc_nwp_acl permit ip any 172.22.1.0 255.255.255.0
92: VPNC CLI: no aaa-server _vpnc_nwp_server
93: VPNC CLI: no access-list _vpnc_acl
94: VPNC CLI: access-list _vpnc_acl permit ip 172.16.1.0 255.255.255.0
172.22.1.0 255.255.255.0
95: VPNC CLI: access-list _vpnc_acl permit ip host 10.10.10.1 172.22.1.0
255.255.255.0
96: VPNC CLI: access-list _vpnc_acl permit ip host 10.10.10.1 host 10.20.20.1
97: VPNC CFG: _vpnc_acl ST define done
98: VPNC CFG: Split DNS config attempt done
```

```
99: VPNC CLI: crypto map _vpnc_cm 10 match address _vpnc_acl
100: VPNC CFG: crypto map acl update successful
101: VPNC CLI: no crypto map _vpnc_cm interface outside
102: VPNC CLI: crypto map _vpnc_cm interface outside
103: VPNC CLI: no global (outside) 65001
104: VPNC CLI: no nat (inside) 0 access-list _vpnc_acl
105: VPNC CFG: nat unconfig attempt failed
106: VPNC CLI: nat (inside) 0 access-list _vpnc_acl
107: VPNC INF: IKE trigger request done
108: VPNC INF: IKE trigger request done
```

```
pix506-635(config)#
```

## **[Información Relacionada](#)**

- **[Cisco PIX Firewall Software](#)**
- **[Referencias de Comandos de Cisco Secure PIX Firewall](#)**
- **[Avisos de campos de productos de seguridad \(incluido PIX\)](#)**
- **[Solicitudes de Comentarios \(RFC\)](#)**
- **[Negociación IPSec/Protocolos IKE](#)**
- **[Soporte Técnico y Documentación - Cisco Systems](#)**