

PIX/ASA 7.x Easy VPN con ASA 5500 come server e PIX 506E come esempio di configurazione client (NEM)

Sommario

[Introduzione](#)

[Prerequisiti](#)

[Requisiti](#)

[Componenti usati](#)

[Convenzioni](#)

[Configurazione](#)

[Esempio di rete](#)

[Configurazioni](#)

[Verifica](#)

[PIX EasyVPN Server show Commands e output di esempio](#)

[Comandi show e output di esempio del client hardware remoto PIX EasyVPN](#)

[Risoluzione dei problemi](#)

[Comandi server EasyVPN](#)

[Comandi client hardware remoto EasyVPN](#)

[Informazioni correlate](#)

[Introduzione](#)

In questo documento viene fornito un esempio di configurazione per IPsec tra un Cisco Adaptive Security Appliance (ASA) 5520 e un Cisco PIX 506E con EasyVPN. ASA 5520 funge da server EasyVPN e PIX 506E da client remoto EasyVPN. Sebbene questa configurazione utilizzi un dispositivo ASA 5520 con software ASA versione 7.0(4), è possibile utilizzarla anche per i dispositivi PIX Firewall con sistema operativo PIX versione 7.0 e successive.

Per ulteriori informazioni su uno scenario simile in cui il router Cisco 871 [opera](#) come [router](#) Easy VPN Remote, fare riferimento a [PIX/ASA 7.x Easy VPN con ASA 5500 come server e Cisco 871 come esempio di configurazione remota di Easy VPN](#).

Per ulteriori informazioni su uno scenario simile in cui Cisco VPN 3000 Concentrator opera come server Easy VPN, fare riferimento a [VPN Hardware Client su un'appliance di sicurezza serie PIX 501/506 con configurazione VPN 3000 Concentrator](#).

Per ulteriori informazioni su uno scenario simile in cui il router Cisco IOS opera come server Easy VPN, fare riferimento agli [esempi PIX 501/506 Easy VPN Remote to an IOS® Router in Network Extension Mode with Extended Authentication Configuration](#).

Per ulteriori informazioni, fare riferimento al documento [PIX-to-PIX 6.x: Esempio di configurazione Easy VPN \(NEM\)](#) per ulteriori informazioni su uno scenario simile in cui PIX 506 6.x funge da server Easy VPN.

Prerequisiti

Requisiti

Prima di provare questa configurazione, accertarsi di soddisfare i seguenti requisiti:

- Accertarsi di avere una conoscenza di base di IPsec e dei sistemi operativi ASA/PIX 6.x e 7.x.

Componenti usati

Le informazioni fornite in questo documento si basano sulle seguenti versioni software e hardware:

- Il client hardware remoto EasyVPN è un PIX 506E con versione 6.3(5).
- Il server EasyVPN è un'appliance ASA 5520 con versione 7.0(4).

Nota: ASA serie 5500 versione 7.x esegue lo stesso software della versione 7.x di PIX. Le configurazioni riportate in questo documento sono applicabili a entrambe le linee di prodotti.

Le informazioni discusse in questo documento fanno riferimento a dispositivi usati in uno specifico ambiente di emulazione. Su tutti i dispositivi menzionati nel documento la configurazione è stata ripristinata ai valori predefiniti. Se la rete è operativa, valutare attentamente eventuali conseguenze derivanti dall'uso dei comandi.

Convenzioni

Fare riferimento a [Cisco Technical Tips Conventions per ulteriori informazioni sulle convenzioni dei documenti](#).

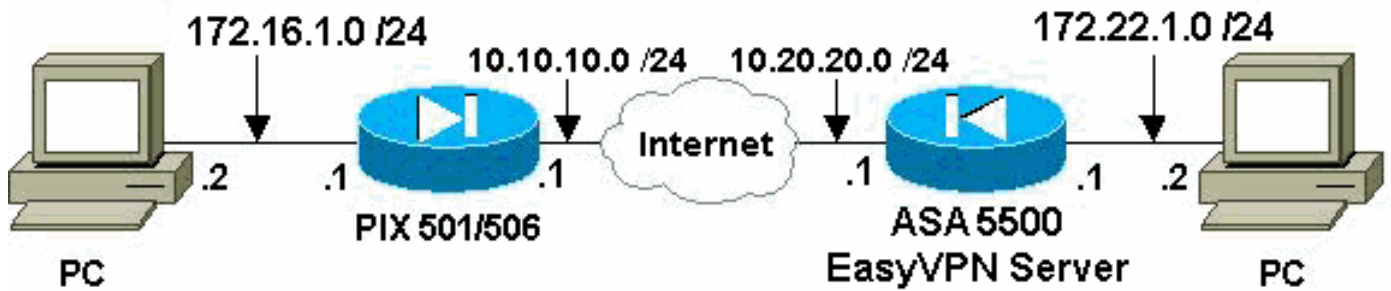
Configurazione

In questa sezione vengono presentate le informazioni necessarie per configurare le funzionalità descritte più avanti nel documento.

Nota: per ulteriori informazioni sui comandi menzionati in questa sezione, usare lo [strumento di ricerca](#) dei comandi (solo utenti [registrati](#)).

Esempio di rete

Nel documento viene usata questa impostazione di rete:



Configurazioni

Nel documento vengono usate queste configurazioni:

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

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#
```

Easy VPN Remote Hardware Client

```
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#
```

Verifica

Per verificare che la configurazione funzioni correttamente, consultare questa sezione.

Lo [strumento Output Interpreter](#) (solo utenti [registrati](#)) (OIT) supporta alcuni comandi **show**. Usare

l'OIT per visualizzare un'analisi dell'output del comando **show**.

- [PIX EasyVPN Server show Commands e output di esempio](#)
- [Comandi show e output di esempio del client hardware remoto PIX EasyVPN](#)

[PIX EasyVPN Server show Commands e output di esempio](#)

- **show crypto isakmp sa:** visualizza tutte le associazioni di protezione (SA) IKE (Internet Key Exchange) correnti in un peer.

```
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#
```

- **show crypto ipsec sa:** visualizza le SA IPsec generate tra peer.

```
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#
```

[Comandi show e output di esempio del client hardware remoto PIX EasyVPN](#)

- **vpnclient enable:** abilita una connessione remota EasyVPN. In modalità di estensione della rete (NEM), il tunnel è attivo anche quando non vi è traffico interessante da scambiare con il server EasyVPN headend.

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

- **show crypto isakmp policy:** visualizza i parametri per ciascun criterio 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
```

Questo output mostra il comando **show crypto isakmp policy** dopo l'abilitazione del client hardware.

```
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:** visualizza tutte le SA IKE correnti in un peer.

```
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#
```

- **show crypto ipsec sa:** visualizza le SA IPsec generate tra peer.

```
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, #recv 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:** visualizza le informazioni di configurazione del client VPN o del dispositivo remoto EasyVPN.

```
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#
```

Risoluzione dei problemi

Le informazioni contenute in questa sezione permettono di risolvere i problemi relativi alla configurazione.

Se sono stati configurati il client hardware remoto EasyVPN e il server EasyVPN come descritto in questo documento e si verificano ancora problemi, raccogliere l'output di **debug** da ciascun PIX e l'output dei comandi **show** per l'analisi da parte del supporto tecnico Cisco. Vedere anche [Risoluzione dei problemi relativi al PIX per il passaggio del traffico dati su un tunnel IPSec esistente](#) o [Risoluzione dei problemi di protezione IP - Informazioni e uso dei comandi di debug](#). Abilitare il debug IPSec sul PIX.

Nelle sezioni seguenti vengono visualizzati i comandi di **debug** PIX e l'output di esempio.

- [Comandi server EasyVPN](#)
- [Comandi client hardware remoto EasyVPN](#)

Lo [strumento Output Interpreter](#) (solo utenti [registrati](#)) (OIT) supporta alcuni comandi **show**. Usare l'OIT per visualizzare un'analisi dell'output del comando **show**.

Nota: consultare le [informazioni importanti sui comandi di debug](#) prima di usare i comandi di **debug**.

Comandi server EasyVPN

- **debug crypto ipsec:** visualizza le negoziazioni IPsec della fase 2.
- **debug crypto isakmp:** visualizza le negoziazioni ISAKMP della fase 1.

Di seguito è riportato un esempio di output.

```
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)

```

[Comandi client hardware remoto EasyVPN](#)

- **debug crypto ipsec**: visualizza le negoziazioni IPsec della fase 2.
- **debug crypto isakmp**: visualizza le negoziazioni ISAKMP della fase 1.

```

pix506-635(config)#vpncclient 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:** visualizza le negoziazioni specifiche del client 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)#
```

[Informazioni correlate](#)

- [Software Cisco PIX Firewall](#)
- [Riferimenti per i comandi di Cisco Secure PIX Firewall](#)
- [Avvisi sui prodotti per la sicurezza \(inclusi PIX\)](#)
- [RFC \(Requests for Comments\)](#)
- [Negoziazione IPsec/protocolli IKE](#)
- [Documentazione e supporto tecnico – Cisco Systems](#)