

PIX/ASA 7.x Easy VPN配置示例，ASA 5500作為伺服器而PIX 506E作為客戶端(NEM)

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簡介

本文檔提供使用EasyVPN的Cisco自適應安全裝置(ASA)5520和Cisco PIX 506E之間的IPsec配置示例。ASA 5520充當EasyVPN伺服器，PIX 506E充當EasyVPN遠端客戶端。雖然此配置使用運行ASA軟體版本7.0(4)的ASA 5520裝置，但您也可以將此配置用於運行PIX作業系統7.0及更高版本的PIX防火牆裝置。

請參閱[PIX/ASA 7.x Easy VPN\(將ASA 5500作為伺服器，將Cisco 871作為Easy VPN Remote配置示例\)](#)，瞭解有關將Cisco 871路由器作為Easy VPN Remote的類似方案的詳細資訊。

請參閱[PIX 501/506系列安全裝置上的VPN硬體客戶端和VPN 3000集中器配置示例](#)，以瞭解有關Cisco VPN 3000集中器充當Easy VPN伺服器的類似方案的詳細資訊。

請參閱[PIX 501/506 Easy VPN Remote to an IOS® Router in Network Extension Mode with Extended Authentication配置示例](#)，以獲取有關Cisco IOS路由器充當Easy VPN伺服器的類似方案的詳細資訊。

請參閱[PIX到PIX 6.x:Easy VPN\(NEM\)配置示例](#)，瞭解有關PIX 506 6.x充當Easy VPN伺服器的類似方案的詳細資訊。

必要條件

需求

嘗試此組態之前，請確保符合以下要求：

- 確保您對IPsec以及ASA/PIX 6.x和7.x作業系統有基本的瞭解。

採用元件

本文中的資訊係根據以下軟體和硬體版本：

- EasyVPN遠端硬體客戶端是運行版本6.3(5)的PIX 506E。
- EasyVPN伺服器是運行版本7.0(4)的ASA 5520。

註：ASA 5500系列版本7.x運行與PIX版本7.x相同的軟體。本文檔中的配置適用於這兩種產品系列。

本文中的資訊是根據特定實驗室環境內的裝置所建立。文中使用到的所有裝置皆從已清除（預設）的組態來啟動。如果您的網路正在作用，請確保您已瞭解任何指令可能造成的影響。

慣例

請參閱[思科技術提示慣例以瞭解更多有關文件慣例的資訊。](#)

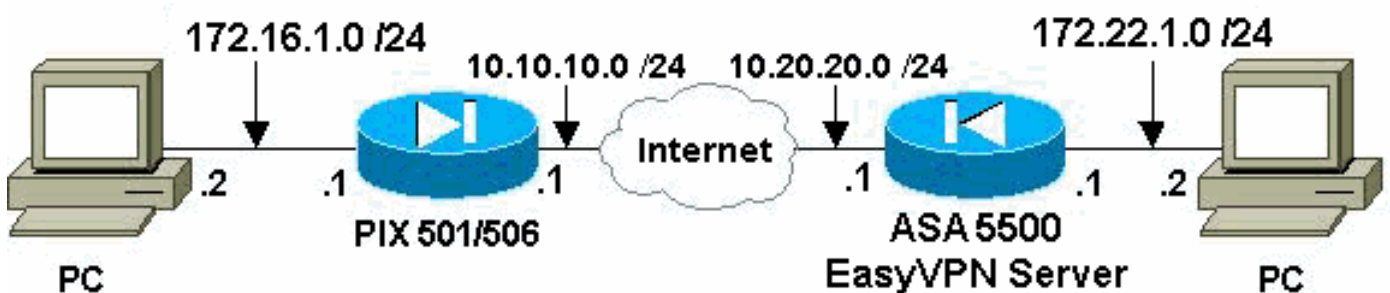
設定

本節提供用於設定本文件中所述功能的資訊。

註：使用[Command Lookup Tool](#)(僅供已註冊客戶使用)可獲取本節中使用的命令的詳細資訊。

網路圖表

本檔案會使用以下網路設定：



組態

本檔案會使用以下設定：

- [Easy VPN伺服器\(ASA 5520\)](#)
- [Easy VPN遠端硬體客戶端](#)

Easy VPN伺服器(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遠端硬體客戶端

```

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#

```

驗證

使用本節內容，確認您的組態是否正常運作。

[輸出直譯器工具](#)(僅供已註冊客戶使用)(OIT)支援某些show命令。使用OIT檢視show命令輸出的分析

。

- [PIX EasyVPN伺服器show命令和輸出示例](#)
- [PIX EasyVPN遠端硬體客戶端show命令和輸出示例](#)

PIX EasyVPN伺服器show命令和輸出示例

- **show crypto isakmp sa** — 顯示對等體上的所有當前網際網路金鑰交換(IKE)安全關聯(SA)。

```
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** — 顯示對等體之間構建的IPsec SA。

```

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#

```

[PIX EasyVPN遠端硬體客戶端show命令和輸出示例](#)

- **vpnclient enable** — 啟用EasyVPN遠端連線。在網路擴展模式(NEM)下，即使沒有要與頭端EasyVPN伺服器交換的關注流量，隧道也會啟動。

```

pix506-635(config)#vpnclient enable

```

- **show crypto isakmp policy** — 顯示每個IKE策略的引數。

```

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

```

此輸出顯示了啟用硬體客戶端後show crypto isakmp policy命令。

```

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** — 顯示對等體上的所有當前IKE SA。

```

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** — 顯示對等體之間構建的IPsec SA。

```

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** — 顯示VPN客戶端或EasyVPN遠端裝置配置資訊。

```
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#
```

疑難排解

本節提供的資訊可用於對組態進行疑難排解。

如果已經按照本文檔所述設定了EasyVPN遠端硬體客戶端和EasyVPN伺服器，並且仍然遇到問題，請收集每個PIX的**debug**輸出和**show**命令的輸出，以供Cisco技術支援進行分析。另請參閱[排除](#)

[PIX故障以在已建立的IPSec隧道上傳遞資料流量或IP安全故障排除 — 瞭解和使用debug命令](#)。在PIX上啟用IPsec調試。

以下各節顯示PIX **debug**命令和示例輸出。

- [EasyVPN伺服器命令](#)
- [EasyVPN遠端硬體客戶端命令](#)

[輸出直譯器工具](#)(僅供已註冊客戶使用)(OIT)支援某些**show**命令。使用OIT檢視**show**命令輸出的分析。

附註：使用 **debug** 指令之前，請先參閱[有關 Debug 指令的重要資訊](#)。

[EasyVPN伺服器命令](#)

- **debug crypto ipsec** — 顯示第2階段的IPsec協商。
- **debug crypto isakmp** — 顯示第1階段的ISAKMP協商。

示例輸出如下所示。

```
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)
```

[EasyVPN遠端硬體客戶端命令](#)

- **debug crypto ipsec** — 顯示第2階段的IPsec協商。
- **debug crypto isakmp** — 顯示第1階段的ISAKMP協商。

```
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** — 顯示特定於VPN客戶端的協商。

```

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)#
```

相關資訊

- [Cisco PIX防火牆軟體](#)
- [Cisco Secure PIX防火牆命令參考](#)
- [安全產品現場通知 \(包括PIX \)](#)
- [要求建議 \(RFC\)](#)
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