PIX-to-PIX 6.x: نيوكت لاثم VPN لهس (NEM)

المحتويات

المقدمة

يقدم هذا المستند نموذجا لتكوين IPsec بين عميل الأجهزة البعيدة ل VPN سهل PIX وخادم PIX سهل VPN. تم إدخال ميزة Easy VPN Remote ل PIX في الإصدار 6.2 من PIX ويشار إليها أيضا باسم عميل الأجهزة/عميل EzVPN. يتم دعم خادم Cisco Easy VPN في الإصدار 6.0 من البرنامج PIX والإصدارات الأحدث.

ارجع إلى PIX/ASA 7.x Easy VPN مع ASA 5500 كالخادم و PIX 506E كمثال تكوين العميل (NEM) لمعرفة المزيد حول نفس السيناريو الذي يعمل فيه جهاز الأمان مع الإصدار x.7 من البرنامج.

ارجع إلى PIX/ASA 7.x Easy VPN مع ASA 5500 كالخادم و Cisco 871 كمثال التكوين عن بعد السهل VPN للحصول على مزيد من المعلومات حول سيناريو مماثل حيث يعمل الموجه Cisco 871 كجهاز التحكم في الشبكة الخاصة الظاهرية (VPN) بسهولة.

ارجع إلى عميل أجهزة VPN على جهاز أمان PIX 501/506 Series مع مثال تكوين مركز VPN 3000 للحصول على مزيد من المعلومات حول سيناريو مماثل حيث يعمل مركز Cisco VPN 3000 كخادم VPN سهل.

ارجع إلى PIX 501/506 Easy VPN Remote إلى موجه IOS في وضع امتداد الشبكة مع مثال تكوين المصادقة الموسعة للحصول على مزيد من المعلومات حول سيناريو مشابه حيث يعمل موجه Cisco IOS® كخادم VPN سهل.

المتطلبات الأساسية

المتطلبات

تأكد من استيفاء المتطلبات التالية قبل أن تحاول إجراء هذا التكوين:

- تأكد من أن عميل الأجهزة البعيدة VPN سهل PIX هو PIX 501 أو PIX 506/506e الذي يشغل الإصدار 6.2 من برنامج PIX أو إصدار أحدث.
- تأكد من أن خادم VPN السهل الخاص بك هو جدار حماية PIX الذي يشغل الإصدار 6.0 من برنامج PIX أو إصدار أحدث.

المكونات المستخدمة

تستند المعلومات الواردة في هذا المستند إلى إصدارات البرامج والمكونات المادية التالية:

- عميل الأجهزة البعيدة PIX Easy VPN Remote Hardware Client هو PIX 501 الذي يشغل الإصدار 6.3(1) من برنامج PIX.
- خادم Easy VPN هو PIX 515 الذي يشغل إصدار برنامج PIX 6.3(1).

تم إنشاء المعلومات الواردة في هذا المستند من الأجهزة الموجودة في بيئة معملية خاصة. بدأت جميع الأجهزة المستخدمة في هذا المستند بتكوين ممسوح (افتراضي). إذا كانت شبكتك مباشرة، فتأكد من فهمك للتأثير المحتمل لأي أمر.

الاصطلاحات

راجع اصطلاحات تلميحات Cisco التقنية للحصول على مزيد من المعلومات حول اصطلاحات المستندات.

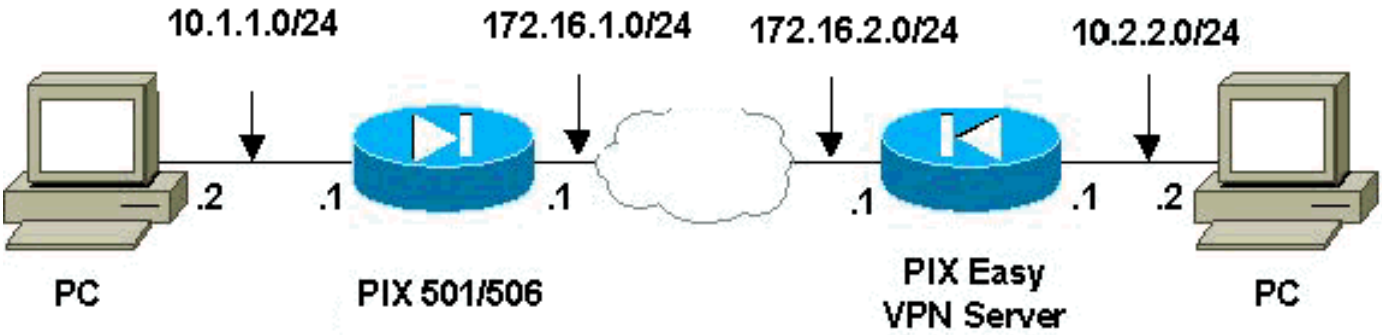
التكوين

في هذا القسم، تُقدّم لك معلومات تكوين الميزات الموضحة في هذا المستند.

ملاحظة: أستخدم أداة بحث الأوامر (للعملاء المسجلين فقط) للحصول على مزيد من المعلومات حول الأوامر المستخدمة في هذا القسم.

الرسم التخطيطي للشبكة

يستخدم هذا المستند إعداد الشبكة التالي:



التكوينات

يستخدم هذا المستند التكوينات التالية:

- خادم PIX Easy VPN
- عميل الأجهزة البعيدة PIX Easy VPN Remote Hardware Client

خادم PIX Easy VPN

```
pix515#write terminal
...Building configuration
Saved :
:
(PIX Version 6.3(1
Specify speed and duplex settings. interface ---!
ethernet0 auto interface ethernet1 auto interface
ethernet2 auto shutdown interface ethernet3 auto
shutdown interface ethernet4 auto shutdown interface
ethernet5 auto shutdown nameif ethernet0 outside
security0 nameif ethernet1 inside security100 nameif
ethernet2 intf2 security4 nameif ethernet3 intf3
security6 nameif ethernet4 intf4 security8 nameif
ethernet5 intf5 security10 enable password
8Ry2YjIyt7RRXU24 encrypted passwd 2KFQnbNIdI.2KYOU
encrypted hostname pix515 fixup protocol ftp 21 fixup
protocol h323 h225 1720 fixup protocol h323 ras 1718-
1719 fixup protocol http 80 fixup protocol ils 389 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 names !--- Specify split tunnelling access list and
"nonat" access list. access-list 101 permit ip 10.2.2.0
255.255.255.0 10.1.1.0 255.255.255.0 pager lines 24 mtu
outside 1500 mtu inside 1500 mtu intf2 1500 mtu intf3
1500 mtu intf4 1500 mtu intf5 1500 !--- Define IP
address for the PIX's inside and outside interfaces. ip
address outside 172.16.2.1 255.255.255.0 ip address
inside 10.2.2.1 255.255.255.0 no ip address intf2 no ip
address intf3 no ip address intf4 no ip address intf5 ip
audit info action alarm ip audit attack action alarm ip
local pool ippool 10.3.3.1-10.3.3.254 no failover
failover timeout 0:00:00 failover poll 15 no failover ip
address outside no failover ip address inside no
failover ip address intf2 no failover ip address intf3
no failover ip address intf4 no failover ip address
intf5 pdm history enable arp timeout 14400 !---
Configure Network Address Translation (NAT)/ !--- Port
Address Translation (PAT) for regular traffic, !--- as
well as NAT for IPsec traffic. global (outside) 1
interface nat (inside) 0 access-list 101 nat (inside) 1
0.0.0.0 0.0.0.0 0 0 !--- Define the outside router as
the default gateway. !--- Typically this is the IP
address of your !--- Internet service provider's (ISP)
router. route outside 0.0.0.0 0.0.0.0 172.16.2.2 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 uauth 0:05:00 absolute aaa-server TACACS+
protocol tacacs+ aaa-server RADIUS protocol radius aaa-
server LOCAL protocol local no snmp-server location no
snmp-server contact snmp-server community public no
snmp-server enable traps floodguard enable sysopt
connection permit-ipsec !--- Configure IPsec transform
set and dynamic crypto map. crypto ipsec transform-set
myset esp-aes esp-md5-hmac crypto dynamic-map dynmap 10
set transform-set myset crypto map mymap 10 ipsec-isakmp
dynamic dynmap !--- Apply crypto map to the outside
interface. crypto map mymap interface outside !---
Configure Phase 1 Internet Security Association !-- and
Key Management Protocol (ISAKMP) parameters. isakmp
```

```
 enable outside isakmp identity address isakmp policy 10
authentication pre-share isakmp policy 10 encryption aes
      isakmp policy 10 hash md5 isakmp policy 10 group 2
 isakmp policy 10 lifetime 86400 !--- Configure VPNGroup
     parameters, to be sent down to the client. vpngroup
 mygroup address-pool ippool vpngroup mygroup dns-server
 10.2.2.2 vpngroup mygroup wins-server 10.2.2.2 vpngroup
mygroup default-domain cisco.com vpngroup mygroup split-
     tunnel 101 vpngroup mygroup idle-time 1800 vpngroup
  mygroup password ******** vpngroup idle-time idle-time
   1800 telnet timeout 5 ssh timeout 5 console timeout 0
                                          terminal width 80
   Cryptochecksum:67106d7a5a3aa3da0caaeea93b9fc8d6 : end
                                          [OK] pix515#
```

عميل الأجهزة البعيدة PIX Easy VPN Remote Hardware Client

```
                                          pix501#write terminal
                                  ...Building configuration
                                                  Saved :
                                                       :
                                             (PIX Version 6.3(1
       Specify speed and duplex settings. interface ---!
       ethernet0 auto interface ethernet1 100full nameif
     ethernet0 outside security0 nameif ethernet1 inside
  security100 enable password 8Ry2YjIyt7RRXU24 encrypted
 passwd 2KFQnbNIdI.2KYOU encrypted hostname pix501 fixup
     protocol ftp 21 fixup protocol h323 h225 1720 fixup
protocol h323 ras 1718-1719 fixup protocol http 80 fixup
  protocol ils 389 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 names pager lines 24 mtu
 outside 1500 mtu inside 1500 !--- Define IP address for
     the PIX's inside and outside interfaces. ip address
      outside 172.16.1.1 255.255.255.0 ip address inside
    10.1.1.1 255.255.255.0 ip audit info action alarm ip
audit attack action alarm pdm history enable arp timeout
        14400 !--- Configure NAT for traffic that is not
   encrypted. global (outside) 1 interface nat (inside) 1
   0.0.0.0 0.0.0.0 0 0 !--- Define the outside router as
      the default gateway. !--- Typically this is the IP
     address of your ISP's router. route outside 0.0.0.0
 0.0.0.0 172.16.1.2 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 uauth 0:05:00 absolute aaa-
      server TACACS+ protocol tacacs+ aaa-server RADIUS
protocol radius aaa-server LOCAL protocol local no snmp-
      server location no snmp-server contact snmp-server
 community public no snmp-server enable traps floodguard
 enable telnet timeout 5 ssh timeout 5 console timeout 0
!--- Define Easy VPN Remote parameters. vpnclient server
        172.16.2.1 vpnclient mode network-extension-mode
vpnclient vpngroup mygroup password ******** !--- Enable
   the VPN Client. !--- (This automatically initiates the
   IPSec tunnel to the server.) vpnclient enable terminal
width 80 Cryptochecksum:b8242b410ad8e3b372018cd1cff77f91
                                          [: end [OK
```

التحقق من الصحة

استخدم هذا القسم لتأكيد عمل التكوين بشكل صحيح.

تدعم أداة مترجم الإخراج (للعملاءالمسجلين فقط) بعض أوامر **show**. استخدم أداة مترجم الإخراج (OIT) لعرض تحليل مُخرَج الأمر **show** .

خادم PIX سهل VPN يعرض الأوامر وعينة الإخراج

- **show crypto isakmp sa**— يعرض جميع اقترانات أمان تبادل مفتاح الإنترنت (IKE) الحالية في نظير.

```
pix515#show crypto isakmp sa
                                                Total     : 1
                                                Embryonic : 0
      dst             src        state     pending     created
        QM_IDLE       0           2    172.16.1.1      172.16.2.1
                                                              pix515#
```

- **show crypto ipSec sa**— يعرض رسائل IPsec SAs التي تم إنشاؤها بين النظراء.

```
pix515#show crypto ipsec sa
   This command was issued after a ping !--- was attempted from the PC behind the !--- ---!
Easy VPN Client to the PC !--- behind the server. interface: outside Crypto map tag: mymap,
     local addr. 172.16.2.1 local ident (addr/mask/prot/port): (10.2.2.0/255.255.255.0/0/0)
           remote ident (addr/mask/prot/port): (10.1.1.0/255.255.255.0/0/0) current_peer:
  172.16.1.1:500 dynamic allocated peer ip: 0.0.0.0 PERMIT, flags={} #pkts encaps: 4, #pkts
        encrypt: 4, #pkts digest 4 #pkts decaps: 4, #pkts decrypt: 4, #pkts verify 4 #pkts
 compressed: 0, #pkts decompressed: 0 #pkts not compressed: 0, #pkts compr. failed: 0, #pkts
decompress failed: 0 #send errors 0, #recv errors 0 !--- Ping packets !--- were successfully
    exchanged between the !--- Easy VPN Remote Hardware Client !--- and the Easy VPN Server.
     local crypto endpt.: 172.16.2.1, remote crypto endpt.: 172.16.1.1 path mtu 1500, ipsec
          overhead 64, media mtu 1500 current outbound spi: 3a5a28e4 inbound esp sas: spi:
  0x505c96c6(1348245190) transform: esp-aes esp-md5-hmac , in use settings ={Tunnel, } slot:
 0, conn id: 2, crypto map: mymap sa timing: remaining key lifetime (k/sec): (4607999/28471)
 IV size: 16 bytes replay detection support: Y inbound ah sas: inbound pcp sas: outbound esp
 sas: spi: 0x3a5a28e4(978987236) transform: esp-aes esp-md5-hmac , in use settings ={Tunnel,
        } slot: 0, conn id: 1, crypto map: mymap sa timing: remaining key lifetime (k/sec):
 (4607999/28471) IV size: 16 bytes replay detection support: Y outbound ah sas: outbound pcp
          sas: local ident (addr/mask/prot/port): (10.2.2.0/255.255.255.0/0/0) remote ident
(addr/mask/prot/port): (172.16.1.1/255.255.255.255/0/0) current_peer: 172.16.1.1:500 dynamic
 allocated peer ip: 0.0.0.0 PERMIT, flags={} #pkts encaps: 0, #pkts encrypt: 0, #pkts digest
0 #pkts decaps: 0, #pkts decrypt: 0, #pkts verify 0 #pkts compressed: 0, #pkts decompressed:
  0 #pkts not compressed: 0, #pkts compr. failed: 0, #pkts decompress failed: 0 #send errors
0, #recv errors 0 local crypto endpt.: 172.16.2.1, remote crypto endpt.: 172.16.1.1 path mtu
1500, ipsec overhead 64, media mtu 1500 current outbound spi: 27f378f9 inbound esp sas: spi:
  0xf2bb4f00(4072361728) transform: esp-aes esp-md5-hmac , in use settings ={Tunnel, } slot:
 0, conn id: 3, crypto map: mymap sa timing: remaining key lifetime (k/sec): (4608000/27796)
 IV size: 16 bytes replay detection support: Y inbound ah sas: inbound pcp sas: outbound esp
 sas: spi: 0x27f378f9(670267641) transform: esp-aes esp-md5-hmac , in use settings ={Tunnel,
        } slot: 0, conn id: 4, crypto map: mymap sa timing: remaining key lifetime (k/sec):
 (4608000/27787) IV size: 16 bytes replay detection support: Y outbound ah sas: outbound pcp
                                                                  sas: pix515#
```

عرض الأوامر وعينة الإخراج PIX Easy VPN Remote Hardware Client

vpnClient enable—يتيح إمكانية الاتصال عن بعد بالشبكة الخاصة الظاهرية (VPN) بسهولة. (في وضع امتداد الشبكة (NEM)، يتم رفع النفق حتى عندما لا يكون هناك حركة مرور مثيرة للاهتمام لتبادلها مع خادم VPN لسهولة وحدة الاستقبال والبث.)

```
pix501(config)#vpnclient enable
```

- **show crypto isakmp policy**—يعرض المعلمات لكل نهج IKE.

```
pix501#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
```

يتم عرض الإخراج من الأمر **show crypto isakmp policy** بعد تمكين عميل الأجهزة هنا.

```
pix501(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**— يعرض جميع شبكات IKE الحالية في نظير.

```
                                pix501(config)#show crypto isakmp sa
                                                  Total     : 1
                                                  Embryonic : 0
        dst               src        state     pending     created
          QM_IDLE         0           1    172.16.1.1      172.16.2.1
```

- **show crypto ipSec sa**— يعرض رسائل IPsec SAs التي تم إنشاؤها بين النظراء.

```
                                pix501(config)#show crypto ipsec sa
This command was issued after a ping !--- was attempted from the PC behind the !--- ---!
```

```
Easy VPN client to the PC !--- behind the server. interface: outside Crypto map tag:
                    _vpnc_cm, local addr. 172.16.1.1 local ident (addr/mask/prot/port):
                       (10.1.1.0/255.255.255.0/0/0) remote ident (addr/mask/prot/port):
    (10.2.2.0/255.255.255.0/0/0) current_peer: 172.16.2.1:500 PERMIT, flags={origin_is_acl,}
  #pkts encaps: 4, #pkts encrypt: 4, #pkts digest 4 #pkts decaps: 4, #pkts decrypt: 4, #pkts
    verify 4 #pkts compressed: 0, #pkts decompressed: 0 #pkts not compressed: 0, #pkts compr.
  failed: 0, #pkts decompress failed: 0 #send errors 1, #recv errors 0 !--- Ping packets !---
    were successfully exchanged between !--- the Easy VPN Remote Hardware Client !--- and the
  Easy VPN Server. local crypto endpt.: 172.16.1.1, remote crypto endpt.: 172.16.2.1 path mtu
1500, ipsec overhead 64, media mtu 1500 current outbound spi: 505c96c6 inbound esp sas: spi:
0x3a5a28e4(978987236) transform: esp-aes esp-md5-hmac , in use settings ={Tunnel, } slot: 0,
 conn id: 4, crypto map: _vpnc_cm sa timing: remaining key lifetime (k/sec): (4607999/28745)
 IV size: 16 bytes replay detection support: Y inbound ah sas: inbound pcp sas: outbound esp
sas: spi: 0x505c96c6(1348245190) transform: esp-aes esp-md5-hmac , in use settings ={Tunnel,
      } slot: 0, conn id: 3, crypto map: _vpnc_cm sa timing: remaining key lifetime (k/sec):
 (4607999/28745) IV size: 16 bytes replay detection support: Y outbound ah sas: outbound pcp
       sas: local ident (addr/mask/prot/port): (172.16.1.1/255.255.255.255/0/0) remote ident
    (addr/mask/prot/port): (10.2.2.0/255.255.255.0/0/0) current_peer: 172.16.2.1:500 PERMIT,
   flags={origin_is_acl,} #pkts encaps: 0, #pkts encrypt: 0, #pkts digest 0 #pkts decaps: 0,
      #pkts decrypt: 0, #pkts verify 0 #pkts compressed: 0, #pkts decompressed: 0 #pkts not
     compressed: 0, #pkts compr. failed: 0, #pkts decompress failed: 0 #send errors 0, #recv
   errors 0 local crypto endpt.: 172.16.1.1, remote crypto endpt.: 172.16.2.1 path mtu 1500,
      ipsec overhead 64, media mtu 1500 current outbound spi: f2bb4f00 inbound esp sas: spi:
0x27f378f9(670267641) transform: esp-aes esp-md5-hmac , in use settings ={Tunnel, } slot: 0,
 conn id: 1, crypto map: _vpnc_cm sa timing: remaining key lifetime (k/sec): (4608000/28125)
 IV size: 16 bytes replay detection support: Y inbound ah sas: inbound pcp sas: outbound esp
sas: spi: 0xf2bb4f00(4072361728) transform: esp-aes esp-md5-hmac , in use settings ={Tunnel,
      } slot: 0, conn id: 2, crypto map: _vpnc_cm sa timing: remaining key lifetime (k/sec):
 (4608000/28125) IV size: 16 bytes replay detection support: Y outbound ah sas: outbound pcp
                                                                  #(sas: pix501(config
```

- **show vpnClient**— يعرض معلومات تكوين جهاز عن بعد ل VPN Client أو VPN سهل.

```
                                                  pix501(config)#show vpnclient
                                                          LOCAL CONFIGURATION
                                                    vpnclient server 172.16.2.1
                                              vpnclient mode network-extension-mode
                                        ******** vpnclient vpngroup mygroup password
                                                          vpnclient enable

                                                       DOWNLOADED DYNAMIC POLICY
                                          Current Server                     : 172.16.2.1
                                            Primary DNS                      : 10.2.2.2
                                            Primary WINS                     : 10.2.2.2
                                           Default Domain                    : cisco.com
                                                  PFS Enabled                       : No
                                                  Secure Unit Authentication Enabled : No
                                                  User Authentication Enabled       : No
                                 Split Networks                   : 10.2.2.0/255.255.255.0
                                              Backup Servers                   : None

                                                                  #(pix501(config
```

استكشاف الأخطاء وإصلاحها

يوفر هذا القسم معلومات يمكنك استخدامها لاستكشاف أخطاء التكوين وإصلاحها.

إذا قمت بإعداد "عميل الأجهزة البعيدة للشبكة الخاصة الظاهرية (VPN)" السهل وخادم الشبكة الخاصة الظاهرية (VPN) السهل كما هو موضح في هذا المستند ولا تزال تواجه مشاكل، فعليك تجميع إخراج تصحيح الأخطاء من كل PIX والمخرجات من أوامر **show** للتحليل بواسطة مركز المساعدة التقنية (TAC) من Cisco. راجع أيضا أستكشاف أخطاء PIX وإصلاحها لتمرير حركة مرور البيانات على نفق IPsec أو أستكشاف أخطاء أمان IP وإصلاحها - فهم أوامر تصحيح الأخطاء واستخدامها. تمكين تصحيح أخطاء IPsec على PIX.

يتم عرض أوامر **تصحيح أخطاء** PIX والمخرجات النموذجية هنا.

- أوامر خادم VPN سهلة
- أوامر VPN Remote Hardware Client سهلة

ملاحظة: ارجع إلى معلومات مهمة حول أوامر التصحيح قبل إستخدام أوامر **debug**.

أوامر خادم VPN سهلة

- **debug crypto ipSec**—يعرض مفاوضات IPsec للمرحلة 2.
- **debug crypto isakmp**—يعرض مفاوضات ISAKMP للمرحلة 1.

هذا نموذج للمخرجات.

```
                                                    #(pix515(config
As soon as the vpnclient enable command !--- is issued on the remote client PIX, !--- the ---!
                                                    .server receives an IKE negotiation request

                                                    ,crypto_isakmp_process_block:src:172.16.1.1
                                                            dest:172.16.2.1 spt:500 dpt:500
                                                                OAK_AG exchange
                                                ISAKMP (0): processing SA payload. message ID = 0

                                        ISAKMP (0): Checking ISAKMP transform 1 against priority 10 policy
                                                                ISAKMP:      encryption AES-CBC
                                                                  ISAKMP:      keylength of 256
                                                                          ISAKMP:      hash SHA
                                                                   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 3
                                        ISAKMP (0): Checking ISAKMP transform 2 against priority 10 policy
                                                                ISAKMP:      encryption AES-CBC
                                                                  ISAKMP:      keylength of 256
                                                                          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 3
                                        ISAKMP (0): Checking ISAKMP transform 3 against priority 10 policy
                                                                ISAKMP:      encryption AES-CBC
                                                                  ISAKMP:      keylength of 192
                                                                          ISAKMP:      hash SHA
                                                                   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 3
                                        ISAKMP (0): Checking ISAKMP transform 4 against priority 10 policy
                                                                ISAKMP:      encryption AES-CBC
                                                                  ISAKMP:      keylength of 192
                                                                          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 3
                                        ISAKMP (0): Checking ISAKMP transform 5 against priority 10 policy
```

```
                                        ISAKMP:      encryption AES-CBC
                                          ISAKMP:      keylength of 128
                                                  ISAKMP:      hash SHA
                                           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 3
 ISAKMP (0): Checking ISAKMP transform 6 against priority 10 policy
                                        ISAKMP:      encryption AES-CBC
                                          ISAKMP:      keylength of 128
                                                  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 3
 ISAKMP (0): Checking ISAKMP transform 7 against priority 10 policy
                                       ISAKMP:      encryption 3DES-CBC
                                                  ISAKMP:      hash SHA
                                           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 3
 ISAKMP (0): Checking ISAKMP transform 8 against priority 10 policy
                                       ISAKMP:      encryption 3DES-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 3
 ISAKMP (0): Checking ISAKMP transform 9 against priority 10 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 3
ISAKMP (0): Checking ISAKMP transform 10 against priority 10 policy
                           ,crypto_isakmp_process_block:src:172.16.1.1
                                    dest:172.16.2.1 spt:500 dpt:500
                                                  OAK_AG exchange
                  ISAKMP (0): processing HASH payload. message ID = 0
                    ISAKMP (0): processing NOTIFY payload 24578 protocol 1
                                           spi 0, message ID = 0
      :(ISAKMP (0): processing notify INITIAL_CONTACTIPSEC(key_engine
                                                ...got a queue event
        IPSEC(key_engine_delete_sas): rec'd delete notify from ISAKMP
IPSEC(key_engine_delete_sas): delete all SAs shared with 172.16.1.1

                                  ISAKMP (0): processing vendor id payload

                                   ISAKMP (0): received xauth v6 vendor id

                                  ISAKMP (0): processing vendor id payload

                       ISAKMP (0): remote peer supports dead peer detection

                                  ISAKMP (0): processing vendor id payload

                                  !ISAKMP (0): speaking to another IOS box
```

```
                                    ISAKMP (0): processing vendor id payload

                                  ,crypto_isakmp_process_block:src:172.16.1.1
                                          dest:172.16.2.1 spt:500 dpt:500
                                                 ISAKMP_TRANSACTION exchange
                                  ,crypto_isakmp_process_block:src:172.16.1.1
                                          dest:172.16.2.1 spt:500 dpt:500
                                                              OAK_QM exchange
                                                :oakley_process_quick_mode
                                                                  OAK_QM_IDLE
                        ISAKMP (0): processing SA payload. message ID = 4788683

                                             ISAKMP : Checking IPSec proposal 1

                                                   ISAKMP: transform 1, ESP_AES
                                             :ISAKMP:   attributes in transform
                                                      ISAKMP:      encaps is 1
                                                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:      authenticator is HMAC-SHA
                                    :(ISAKMP:      key length is 256IPSEC(validate_proposal
                  transform proposal (prot 3, trans 12, hmac_alg 2) not supported

                                ISAKMP (0): atts not acceptable. Next payload is 0
                                             ISAKMP : Checking IPSec proposal 2

                                                   ISAKMP: transform 1, ESP_AES
                                             :ISAKMP:   attributes in transform
                                                      ISAKMP:      encaps is 1
                                                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:      authenticator is HMAC-MD5
                                    :(ISAKMP:      key length is 256IPSEC(validate_proposal
                  transform proposal (prot 3, trans 12, hmac_alg 1) not supported

                                ISAKMP (0): atts not acceptable. Next payload is 0
                                             ISAKMP : Checking IPSec proposal 3

                                                   ISAKMP: transform 1, ESP_AES
                                             :ISAKMP:   attributes in transform
                                                      ISAKMP:      encaps is 1
                                                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:      authenticator is HMAC-SHA
                                    :(ISAKMP:      key length is 192IPSEC(validate_proposal
                  transform proposal (prot 3, trans 12, hmac_alg 2) not supported

                                ISAKMP (0): atts not acceptable. Next payload is 0
                                             ISAKMP : Checking IPSec proposal 4

                                                   ISAKMP: transform 1, ESP_AES
                                             :ISAKMP:   attributes in transform
                                                      ISAKMP:      encaps is 1
                                                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:      authenticator is HMAC-MD5
                                  :(ISAKMP:      key length is 192IPSEC(validate_proposal
                          transform proposal (prot 3, trans 12, hmac_alg 1) not supported

                                       ISAKMP (0): atts not acceptable. Next payload is 0
                                            ISAKMP : Checking IPSec proposal 5

                                                   ISAKMP: transform 1, ESP_AES
                                               :ISAKMP:   attributes in transform
                                                        ISAKMP:      encaps is 1
                                                  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:      authenticator is HMAC-SHA
                                  :(ISAKMP:      key length is 128IPSEC(validate_proposal
                          transform proposal (prot 3, trans 12, hmac_alg 2) not supported

                                       ISAKMP (0): atts not acceptable. Next payload is 0
                                            ISAKMP : Checking IPSec proposal 6

                                                   ISAKMP: transform 1, ESP_AES
                                               :ISAKMP:   attributes in transform
                                                        ISAKMP:      encaps is 1
                                                  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:      authenticator is HMAC-MD5
                                                        ISAKMP:      key length is 128
                          :(ISAKMP (0): atts are acceptable.IPSEC(validate_proposal_request
                                                                  ,proposal part #1
                                     ,key eng. msg.) dest= 172.16.2.1, src= 172.16.1.1)
                                     ,(dest_proxy= 10.2.2.0/255.255.255.0/0/0 (type=4
                                  ,(src_proxy= 172.16.1.1/255.255.255.255/0/0 (type=1
                                     , protocol= ESP, transform= esp-aes esp-md5-hmac
                                                                 ,lifedur= 0s and 0kb
                                   spi= 0x0(0), conn_id= 0, keysize= 128, flags= 0x4
Both PIXes accept the policy for IPsec. ISAKMP (0): processing NONCE payload. message ID = ---!
    4788683 ISAKMP (0): processing ID payload. message ID = 4788683 ISAKMP (0): ID_IPV4_ADDR src
    172.16.1.1 prot 0 port 0 ISAKMP (0): processing ID payload. message ID = 4788683 ISAKMP (0):
      ID_IPV4_ADDR_SUBNET dst 10.2.2.0/255.255.255.0 prot 0 port 0IPSEC(key_engine): got a queue
      event... IPSEC(spi_response): getting spi 0xf5720496(4117890198) for SA from 172.16.1.1 to
172.16.2.1 for prot 3 return status is IKMP_NO_ERROR crypto_isakmp_process_block:src:172.16.1.1,
    dest:172.16.2.1 spt:500 dpt:500 OAK_QM exchange oakley_process_quick_mode: OAK_QM_AUTH_AWAIT
    ISAKMP (0): Creating IPSec SAs inbound SA from 172.16.1.1 to 172.16.2.1 (proxy 172.16.1.1 to
                10.2.2.0) has spi 4117890198 and conn_id 3 and flags 4 lifetime of 28800 seconds
        crypto_isakmp_process_block:src:172.16.1.1, dest:172.16.2.1 spt:500 dpt:500 ISAKMP (0):
  processing NOTIFY payload 36136 protocol 1 spi 0, message ID = 843197376 ISAMKP (0): received
  DPD_R_U_THERE from peer 172.16.1.1 ISAKMP (0): sending NOTIFY message 36137 protocol 1 return
     status is IKMP_NO_ERR_NO_TRANS crypto_isakmp_process_block:src:172.16.1.1, dest:172.16.2.1
     spt:500 dpt:500 ISAKMP (0): processing NOTIFY payload 36136 protocol 1 spi 0, message ID =
  1985282089 ISAMKP (0): received DPD_R_U_THERE from peer 172.16.1.1 ISAKMP (0): sending NOTIFY
                                  message 36137 protocol 1 return status is IKMP_NO_ERR_NO_TRANS
        crypto_isakmp_process_block:src:172.16.1.1, dest:172.16.2.1 spt:500 dpt:500 ISAKMP (0):
  processing NOTIFY payload 36136 protocol 1 spi 0, message ID = 1510977390 ISAMKP (0): received
   DPD_R_U_THERE from peer 172.16.1.1 ISAKMP (0): sending NOTIFY message 36137 protocol 1 return
                                                                  status is IKMP_NO_ERR_NO_TRANS
```

أوامر VPN Remote Hardware Client سهلة

- **debug crypto ipSec**—يعرض مفاوضات IPsec للمرحلة 2.
- **debug crypto isakmp**—يعرض مفاوضات ISAKMP للمرحلة 1.

```
                                        pix501(config)#vpnclient enable
                                      cIoSnAfKigM)P#  (0): ID payload)
                                             next-payload : 13
                                             type         : 11
                                             protocol     : 17
                                              port         : 0
                                             length       : 11
                                  ISAKMP (0): Total payload length: 15
                          ISAKMP (0:0): sending NAT-T vendor ID - rev 2 & 3
                             ISAKMP (0): beginning Aggressive Mode exchange
                                ,crypto_isakmp_process_block:src:172.16.2.1
                                         dest:172.16.1.1 spt:500 dpt:500
                                                          OAK_AG exchange
                          ISAKMP (0): processing SA payload. message ID = 0

ISAKMP (0): Checking ISAKMP transform 1 against priority 65001 policy
                                       ISAKMP:      encryption AES-CBC
                                         ISAKMP:      keylength of 128
                                                 ISAKMP:      hash MD5
                                          ISAKMP:      default group 2
                                           ISAKMP:      auth pre-share
                                       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 1 against priority 65002 policy
                                       ISAKMP:      encryption AES-CBC
                                         ISAKMP:      keylength of 128
                                                 ISAKMP:      hash MD5
                                          ISAKMP:      default group 2
                                           ISAKMP:      auth pre-share
                                       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 1 against priority 65003 policy
                                       ISAKMP:      encryption AES-CBC
                                         ISAKMP:      keylength of 128
                                                 ISAKMP:      hash MD5
                                          ISAKMP:      default group 2
                                           ISAKMP:      auth pre-share
                                       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 1 against priority 65004 policy
                                       ISAKMP:      encryption AES-CBC
                                         ISAKMP:      keylength of 128
                                                 ISAKMP:      hash MD5
                                          ISAKMP:      default group 2
                                           ISAKMP:      auth pre-share
                                       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 1 against priority 65005 policy
                                       ISAKMP:      encryption AES-CBC
                                         ISAKMP:      keylength of 128
                                                 ISAKMP:      hash MD5
                                          ISAKMP:      default group 2
                                           ISAKMP:      auth pre-share
                                       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 1 against priority 65006 policy
                                       ISAKMP:      encryption AES-CBC
```

```
                                        ISAKMP:      keylength of 128
                                               ISAKMP:      hash MD5
                                         ISAKMP:      default group 2
                                          ISAKMP:      auth pre-share
                                      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 1 against priority 65007 policy
                                        ISAKMP:      encryption AES-CBC
                                          ISAKMP:      keylength of 128
                                                 ISAKMP:      hash MD5
                                           ISAKMP:      default group 2
                                            ISAKMP:      auth pre-share
                                        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 1 against priority 65008 policy
                                        ISAKMP:      encryption AES-CBC
                                          ISAKMP:      keylength of 128
                                                 ISAKMP:      hash MD5
                                           ISAKMP:      default group 2
                                            ISAKMP:      auth pre-share
                                        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 1 against priority 65009 policy
                                        ISAKMP:      encryption AES-CBC
                                          ISAKMP:      keylength of 128
                                                 ISAKMP:      hash MD5
                                           ISAKMP:      default group 2
                                            ISAKMP:      auth pre-share
                                        ISAKMP:      life type in seconds
                  ISAKMP:      life duration (VPI) of  0x0 0x1 0x51 0x80
                                      ISAKMP : attributes being requested

                                ,crypto_isakmp_process_block:src:172.16.2.1
                                         dest:172.16.1.1 spt:500 dpt:500
                                 ,ISAKMP (0): beginning Quick Mode exchange
...M-ID of 1112046058:424879eaIPSEC(key_engine): got a queue event
        IPSEC(spi_response): getting spi 0x274d3063(659370083) for SA
             from     172.16.2.1 to     172.16.1.1 for prot 3

                                ,crypto_isakmp_process_block:src:172.16.2.1
                                         dest:172.16.1.1 spt:500 dpt:500
                                                       OAK_QM exchange
                                                :oakley_process_quick_mode
                                                            OAK_QM_IDLE
           ISAKMP (0): processing SA payload. message ID = 1112046058

                                      ISAKMP : Checking IPSec proposal 1

                                            ISAKMP: transform 1, ESP_AES
                                       :ISAKMP:   attributes in transform
                                                  ISAKMP:      encaps is 1
                                     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:      authenticator is HMAC-MD5
                                           ISAKMP:      key length is 128
    :(ISAKMP (0): atts are acceptable.IPSEC(validate_proposal_request
                                                    ,proposal part #1
                     ,key eng. msg.) dest= 172.16.2.1, src= 172.16.1.1)
                     ,(dest_proxy= 10.2.2.0/255.255.255.0/0/0 (type=4
```

```
                ,(src_proxy= 172.16.1.1/255.255.255.255/0/0 (type=1
                   , protocol= ESP, transform= esp-aes esp-md5-hmac
                                              ,lifedur= 0s and 0kb
                  spi= 0x0(0), conn_id= 0, keysize= 128, flags= 0x4

      ISAKMP (0): processing NONCE payload. message ID = 1112046058

         ISAKMP (0): processing ID payload. message ID = 1112046058
         ISAKMP (0): processing ID payload. message ID = 1112046058
                                    ISAKMP (0): Creating IPSec SAs
               inbound SA from 172.16.2.1 to 172.16.1.1
                                 (proxy 10.2.2.0 to 172.16.1.1)
            has spi 659370083 and conn_id 2 and flags 4
                                 lifetime of 28800 seconds
                           lifetime of 4608000 kilobytes
             outbound SA from 172.16.1.1 to 172.16.2.1
                                 (proxy 172.16.1.1 to 10.2.2.0)
            has spi 264316759 and conn_id 1 and flags 4
                                 lifetime of 28800 seconds
          :(lifetime of 4608000 kilobytesIPSEC(key_engine
                                          ...got a queue event
                                        , :(IPSEC(initialize_sas
             ,key eng. msg.) dest= 172.16.1.1, src= 172.16.2.1)
           ,(dest_proxy= 172.16.1.1/255.255.255.255/0/0 (type=1
               ,(src_proxy= 10.2.2.0/255.255.255.0/0/0 (type=4
             , protocol= ESP, transform= esp-aes esp-md5-hmac
                                ,lifedur= 28800s and 4608000kb
spi= 0x274d3063(659370083), conn_id= 2, keysize= 128, flags= 0x4
                                        , :(IPSEC(initialize_sas
             ,key eng. msg.) src= 172.16.1.1, dest= 172.16.2.1)
          ,(src_proxy= 172.16.1.1/255.255.255.255/0/0 (type=1
             ,(dest_proxy= 10.2.2.0/255.255.255.0/0/0 (type=4
             , protocol= ESP, transform= esp-aes esp-md5-hmac
                                ,lifedur= 28800s and 4608000kb
 spi= 0xfc12757(264316759), conn_id= 1, keysize= 128, flags= 0x4

   VPN Peer: IPSEC: Peer ip:172.16.2.1/500 Ref cnt incremented to:2
                                           Total VPN Peers:1
   VPN Peer: IPSEC: Peer ip:172.16.2.1/500 Ref cnt incremented to:3
                                           Total VPN Peers:1
                                 return status is IKMP_NO_ERROR
                                              #(pix501(config
                                              #(pix501(config
            ISAKMP (0): sending NOTIFY message 36136 protocol 1
                    ,crypto_isakmp_process_block:src:172.16.2.1
                             dest:172.16.1.1 spt:500 dpt:500
         ISAKMP (0): processing NOTIFY payload 36137 protocol 1
                           spi 0, message ID = 136860646n
      ISAMKP (0): received DPD_R_U_THERE_ACK from peer 172.16.2.1
```

- **debug vpn**—يعرض المفاوضات الخاصة بعميل VPN.

```
                                    pix501(config)#vpnclient enable
 pix501(config)# 505: VPNC CFG: transform set unconfig attempt done
                                 VPNC CLI: no isakmp keepalive 10 :506
                              VPNC CLI: no isakmp nat-traversal 20 :507
                                 VPNC CFG: IKE unconfig successful :508
                                 VPNC CLI: no crypto map _vpnc_cm :509
                        VPNC CFG: crypto map deletion attempt done :510
                              VPNC CFG: crypto unconfig successful :511
                               VPNC CLI: no global (outside) 65001 :512
                 VPNC CLI: no nat (inside) 0 access-list _vpnc_acl :513
                           VPNC CFG: nat unconfig attempt failed :514
```

```
VPNC CLI: no http 10.1.1.1 255.255.255.0 inside :515
                    VPNC CLI: no http server enable :516
                  VPNC CLI: no access-list _vpnc_acl :517
                VPNC CFG: ACL deletion attempt failed :518
VPNC CLI: no crypto map _vpnc_cm interface outside :519
                VPNC CFG: crypto map de/attach failed :520
          VPNC CLI: no sysopt connection permit-ipsec :521
             VPNC CLI: sysopt connection permit-ipsec :522
                  VPNC CFG: transform sets configured :523
                   VPNC CFG: crypto config successful :524
                        VPNC CLI: isakmp keepalive 10 :525
                    VPNC CLI: isakmp nat-traversal 20 :526
                      VPNC CFG: IKE config successful :527
          VPNC CLI: http 10.1.1.1 255.255.255.0 inside :528
                           VPNC CLI: http server enable :529
                  VPNC CLI: no access-list _vpnc_acl :530
                VPNC CFG: ACL deletion attempt failed :531
                        VPNC CLI: access-list _vpnc_acl :532
                 permit ip host 172.16.1.1 host 172.16.2.1
VPNC CLI: crypto map _vpnc_cm 10 match address _vpnc_acl :533
                VPNC CFG: crypto map acl update successful :534
VPNC CLI: no crypto map _vpnc_cm interface outside :535
             VPNC CLI: crypto map _vpnc_cm interface outside :536
                   VPNC INF: IKE trigger request done :537
               VPNC INF: Constructing policy download req :538
          VPNC INF: Packing attributes for policy request :539
                    VPNC INF: Attributes being requested :540
                    VPNC ATT: ALT_DEF_DOMAIN: cisco.com :541
                  VPNC ATT: INTERNAL_IP4_NBNS: 10.2.2.2 :542
                  VPNC ATT: INTERNAL_IP4_DNS: 10.2.2.2 :543
                           VPNC ATT: ALT_SPLIT_INCLUDE :544
                VPNC INF:  10.2.2.0/255.255.255.0 :545
                               VPNC ATT: ALT_PFS: 0 :546
                      VPNC ATT: ALT_CFG_SEC_UNIT: 0 :547
                     VPNC ATT: ALT_CFG_USER_AUTH: 0 :548
                  VPNC CLI: no access-list _vpnc_acl :549
                     VPNC CLI: access-list _vpnc_acl :550
   permit ip 10.1.1.0 255.255.255.0 10.2.2.0 255.255.255.0
                     VPNC CLI: access-list _vpnc_acl :551
          permit ip host 172.16.1.1 10.2.2.0 255.255.255.0
                   VPNC CFG: _vpnc_acl ST define done :552
              VPNC CFG: Split DNS config attempt done :553
VPNC CLI: crypto map _vpnc_cm 10 match address _vpnc_acl :554
                VPNC CFG: crypto map acl update successful :555
VPNC CLI: no crypto map _vpnc_cm interface outside :556
             VPNC CLI: crypto map _vpnc_cm interface outside :557
                  VPNC CLI: no global (outside) 65001 :558
       VPNC CLI: no nat (inside) 0 access-list _vpnc_acl :559
                VPNC CFG: nat unconfig attempt failed :560
          VPNC CLI: nat (inside) 0 access-list _vpnc_acl :561
                   VPNC INF: IKE trigger request done :562
```

معلومات ذات صلة

- صفحة دعم PIX
- مراجع أوامر PIX
- صفحة دعم مفاوضة IPsec/بروتوكولات IKE
- طلبات التعليقات (RFCs)
- الدعم الفني - Cisco Systems

حول هذه الترجمة
ترجمت Cisco هذا المستند باستخدام مجموعة من التقنيات الآلية والبشرية لتقديم محتوى دعم للمستخدمين في جميع أنحاء العالم بلغتهم الخاصة. يُرجى ملاحظة أن أفضل ترجمة آلية لن تكون دقيقة كما هو الحال مع الترجمة الاحترافية التي يقدمها مترجم محترف. تخلي Cisco Systems مسئوليتها عن دقة هذه الترجمات وتُوصي بالرجوع دائمًا إلى المستند الإنجليزي الأصلي (الرابط متوفر).