نفق LAN-to-LAN بين ASA 5505 و ASA/PIX تشكيل مثال

المحتويات

المقدمة

يقدم هذا المستند نموذجا لتكوين نفق IPsec من شبكة LAN إلى شبكة LAN (من موقع إلى موقع) بين أجهزة الأمان من Cisco (ASA/PIX) وجهاز الأمان القابل للتكيف (5505 (ASA.

المتطلبات الأساسية

المتطلبات

لا توجد متطلبات خاصة لهذا المستند.

المكونات المستخدمة

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

- Cisco 5500 Series ASA أن يركض البرمجية صيغة x.7 وفيما بعد
- Cisco 5505 ASA أن يركض البرمجية صيغة x.7 وفيما بعد

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.

المنتجات ذات الصلة

كما يمكن إستخدام هذا التكوين مع إصدارات الأجهزة والبرامج التالية:

- جهاز الأمان Cisco 500 Series PIX Security Appliance الذي يشغل الإصدار x.7 من البرنامج والإصدارات الأحدث
- Cisco 5505 ASA أن يركض البرمجية صيغة x.7 وفيما بعد

الاصطلاحات

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

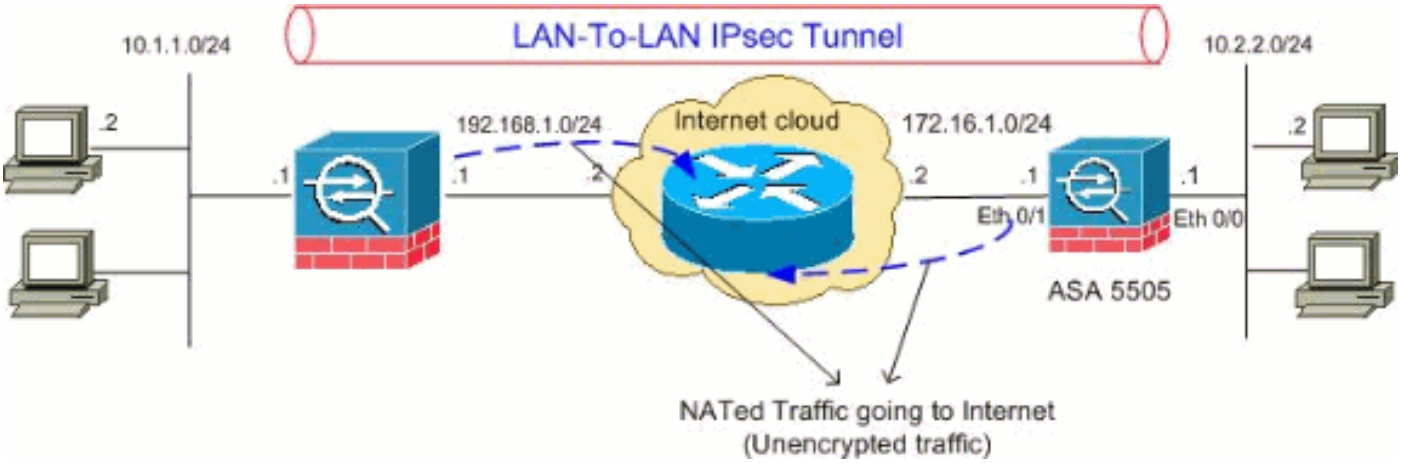
التكوين

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:

- تكوين Cisco 5505 ASA
- تكوين Cisco 5510 ASA

تكوين Cisco 5505 ASA

```
ASA5505#show running-config
Saved :
:
(ASA Version 8.0(2
!
hostname ASA5505
enable password 8Ry2YjIyt7RRXU24 encrypted
names
```

```
!
interface Vlan1
 no nameif
 no security-level
 no ip address
!
interface Vlan2
 nameif outside
 security-level 0
 ip address 172.16.1.1 255.255.255.0
!
interface Vlan3
 nameif inside
 security-level 100
 ip address 10.2.2.1 255.255.255.0
!
interface Ethernet0/0
 switchport access vlan 3
!
interface Ethernet0/1
 switchport access vlan 2
!
interface Ethernet0/2
 shutdown
!
interface Ethernet0/3
 shutdown
!
interface Ethernet0/4
 shutdown
!
interface Ethernet0/5
 shutdown
!
interface Ethernet0/6
 shutdown
!
interface Ethernet0/7
 shutdown
!
passwd 2KFQnbNIdI.2KYOU encrypted
boot system disk0:/asa802-k8.bin
ftp mode passive
access-list 100 extended permit ip 10.2.2.0
 255.255.255.0 10.1.1.0 255.255.255.0

Access-list for interesting traffic (Site to Site) ---!
 to be !--- encrypted between ASA 5505 and ASA/PIX
networks. access-list nonat extended permit ip 10.2.2.0
 255.255.255.0 10.1.1.0 255.255.255.0

 Access-list for traffic to bypass the network ---!
 address !--- translation (NAT) process. pager lines 24
 mtu inside 1500 mtu outside 1500 no failover icmp
 unreachable rate-limit 1 burst-size 1 asdm image
 disk0:/asdm-602.bin no asdm history enable arp timeout
 14400 nat-control global (outside) 1 interface
 nat (inside) 0 access-list nonat
 nat (inside) 1 0.0.0.0 0.0.0.0

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
```

```
route outside 10.1.1.0 255.255.255.0 172.16.1.2 1
route outside 192.168.1.0 255.255.255.0 172.16.1.2 1
timeout xlate 3:00:00
timeout conn 1:00:00 half-closed 0:10:00 udp 0:02:00
icmp 0:00:02
timeout sunrpc 0:10:00 h323 0:05:00 h225 1:00:00 mgcp
0:05:00 mgcp-pat 0:05:00
timeout sip 0:30:00 sip_media 0:02:00 sip-invite 0:03:00
sip-disconnect 0:02:0
timeout uauth 0:05:00 absolute
dynamic-access-policy-record DfltAccessPolicy
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. crypto ipsec transform-set
myset esp-3des esp-sha-hmac

Define the transform set for Phase 2. crypto map ---!
outside_map 20 match address 100

Define which traffic can be sent to the IPsec peer. ---!
crypto map outside_map 20 set peer 192.168.1.1

Sets the IPsec peer. crypto map outside_map 20 set ---!
transform-set myset

Sets the IPsec transform set "myset" !--- to be ---!
used with the crypto map entry "outside_map" crypto map
outside_map interface outside

Crypto map applied to the outside interface of the ---!
ASA crypto isakmp enable outside
crypto isakmp policy 10
authentication pre-share
encryption 3des
hash sha
group 2
lifetime 86400

PHASE 1 CONFIGURATION ---! !--- This configuration ---!
uses isakmp policy 10. !--- These configuration commands
!--- define the Phase 1 policies that are used. telnet
timeout 5 ssh timeout 5 console timeout 0 threat-
detection basic-threat threat-detection statistics
access-list ! class-map inspection_default match
default-inspection-traffic ! ! policy-map type inspect
dns preset_dns_map parameters message-length maximum 512
policy-map global_policy class inspection_default
inspect dns preset_dns_map 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 tunnel-group 192.168.1.1
type ipsec-l2l

In order to create and manage the database of ---!
connection-specific records !--- for ipsec-l2l—IPsec
(LAN-to-LAN) tunnels, use the tunnel-group !--- command
in global configuration mode. !--- For L2L connections
the name of the tunnel group MUST be the IP !--- address
```

```
.of the IPsec peer



tunnel-group 192.168.1.1 ipsec-attributes
 * pre-shared-key

Enter the pre-shared-key in order to configure the ---!
        authentication method. prompt hostname context
  Cryptochecksum:68eba159fd8e4c893f24185ffb40bb6f : end
                                                ASA5505#
```

تكوين Cisco 5510 ASA

```
                                ASA5510#show running-config
                                                Saved :
                                                    :
                                        (ASA Version 8.0(2
                                                    !
                                          hostname ASA5510
                    enable password 8Ry2YjIyt7RRXU24 encrypted
                                                 names
                                                    !
                                      interface Ethernet0/0
                                            nameif inside
                                       security-level 100
                                 ip address 10.1.1.1 255.255.255.0
                                                    !
                                      interface Ethernet0/1
                                           nameif outside
                                      security-level 0
                                ip address 192.168.1.1 255.255.255.0
                                                    !
                                      interface Ethernet0/2
                                              shutdown
                                            no nameif
                                       no security-level
                                           no ip address
                                                    !
                                      interface Ethernet0/3
                                              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
                          access-list 100 extended permit ip 10.1.1.0
                                 255.255.255.0 10.2.2.0 255.255.255.0

Access-list for interesting traffic (Site to Site) ---!
      to be !--- encrypted between ASA 5505 and ASA/PIX
networks. access-list nonat extended permit ip 10.1.1.0
                                 255.255.255.0 10.2.2.0 255.255.255.0

     Access-list for traffic to bypass the network ---!
 address !--- translation (NAT) process. pager lines 24
```

```
mtu inside 1500 mtu outside 1500 no failover icmp
unreachable rate-limit 1 burst-size 1 asdm image
disk0:/asdm-522.bin no asdm history enable arp timeout
14400 nat-control global (outside) 1 interface
nat (inside) 0 access-list nonat
nat (inside) 1 0.0.0.0 0.0.0.0

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


route outside 10.2.2.0 255.255.255.0 192.168.1.2 1
route outside 172.16.1.0 255.255.255.0 192.168.1.2 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 mgcp-pat 0:05:00
timeout sip 0:30:00 sip_media 0:02:00 sip-invite 0:03:00
sip-disconnect 0:02:00
timeout uauth 0:05:00 absolute
dynamic-access-policy-record DfltAccessPolicy
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. crypto ipsec transform-set
myset esp-3des esp-sha-hmac

Define the transform set for Phase 2. crypto map ---!
outside_map 20 match address 100

Define which traffic can be sent to the IPsec peer. ---!
crypto map outside_map 20 set peer 172.16.1.1

Sets the IPsec peer. crypto map outside_map 20 set ---!
transform-set myset


Sets the IPsec transform set "myset" !--- to be ---!
used with the crypto map entry "outside_map" crypto map
outside_map interface outside

Crypto map applied to the outside interface of the ---!
ASA crypto isakmp enable outside
crypto isakmp policy 10
authentication pre-share
encryption 3des
hash sha
group 2
lifetime 86400

PHASE 1 CONFIGURATION ---! !--- This configuration ---!
uses isakmp policy 10. !--- These configuration commands
!--- define the Phase 1 policies that are used. crypto
isakmp policy 65535 authentication pre-share encryption
3des hash sha group 2 lifetime 86400 telnet timeout 5
ssh timeout 5 console timeout 0 threat-detection basic-
threat threat-detection statistics access-list ! class-
map inspection_default match default-inspection-traffic
! ! policy-map type inspect dns preset_dns_map
parameters message-length maximum 512 policy-map
```

```
      global_policy class inspection_default inspect dns
    preset_dns_map 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 tunnel-group 172.16.1.1 type
                                                ipsec-l2l

      In order to create and manage the database of ---!
    connection-specific records !--- for ipsec-l2l-IPsec
 (LAN-to-LAN) tunnels, use the tunnel-group !--- command
  in global configuration mode. !--- For L2L connections
the name of the tunnel group MUST be the IP !--- address
                                        .of the IPsec peer


                    tunnel-group 172.16.1.1 ipsec-attributes
                                                * pre-shared-key
 Enter the pre-shared-key in order to configure the ---!
          authentication method. prompt hostname context
   Cryptochecksum:d41d8cd98f00b204e9800998ecf8427e : end
                                                ASA5510#
```

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** .

- **show crypto isakmp sa**— يعرض جميع اقترانات أمان IKE (SAs) الحالية في نظير.
- **show crypto ipSec sa**— يعرض جميع رسائل IPsec الحالية.

يوضح هذا القسم مثال تكوينات التحقق ل:

- Cisco 5505 ASA
- Cisco 5510 ASA

تكوين Cisco 5505 ASA

```
                                ASA5505#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

                                IKE Peer: 192.168.1.1   1
      Type    : L2L               Role    : initiator
      Rekey   : no                State   : MM_ACTIVE


                                ASA5505#show crypto ipsec sa
                                                interface: outside
     Crypto map tag: outside_map, seq num: 20, local
                                                addr: 172.16.1.1

  access-list 100 permit ip 10.2.2.0 255.255.255.0
                                        10.1.1.0 255.255.255.0
```

```
                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: 192.168.1.1

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: 4, #pkts comp failed: 0,#
                                    #pkts decomp failed: 0
    pre-frag successes: 0, #pre-frag failures: 0,#
                                     #fragments created: 0
PMTUs sent: 0, #PMTUs rcvd: 0, #decapsulated frgs#
                                     needing reassembly: 0
                  send errors: 0, #recv errors: 0#

    local crypto endpt.: 172.16.1.1, remote crypto
                                       endpt.: 192.168.1.1

  path mtu 1500, ipsec overhead 58, media mtu 1500
                    current outbound spi: A0411DE6

                                      :inbound esp sas
                     (spi: 0x8312C39C (2199045020
          transform: esp-3des esp-sha-hmac none
               { ,in use settings ={L2L, Tunnel
slot: 0, conn_id: 8192, crypto-map: outside_map
    sa timing: remaining key lifetime (kB/sec):
                                          ((3824999/27807
                                IV size: 8 bytes
                    replay detection support: Y
                                      :outbound esp sas
                     (spi: 0xA0411DE6 (2688622054
          transform: esp-3des esp-sha-hmac none
               { ,in use settings ={L2L, Tunnel
slot: 0, conn_id: 8192, crypto-map: outside_map
    sa timing: remaining key lifetime (kB/sec):
                                          ((3824999/27807
                                IV size: 8 bytes
                    replay detection support: Y
```

تكوين Cisco 5510 ASA

```
                        ASA5510#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

                                  IKE Peer: 172.16.1.1   1
       Type    : L2L              Role    : responder
       Rekey   : no               State   : MM_ACTIVE

                                ASA5510#show crypto ipsec sa
                                        interface: outside
     Crypto map tag: outside_map, seq num: 20, local
                                       addr: 192.168.1.1

  access-list 100 permit ip 10.1.1.0 255.255.255.0
                                    10.2.2.0 255.255.255.0
                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: 172.16.1.1

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: 4, #pkts comp failed: 0,#
                                      #pkts decomp failed: 0
      pre-frag successes: 0, #pre-frag failures: 0,#
                                       #fragments created: 0
PMTUs sent: 0, #PMTUs rcvd: 0, #decapsulated frgs#
                                       needing reassembly: 0
                    send errors: 0, #recv errors: 0#

   local crypto endpt.: 192.168.1.1, remote crypto
                                         endpt.: 172.16.1.1

  path mtu 1500, ipsec overhead 58, media mtu 1500
                      current outbound spi: 8312C39C

                                        :inbound esp sas
                         (spi: 0xA0411DE6 (2688622054
            transform: esp-3des esp-sha-hmac none
                 { ,in use settings ={L2L, Tunnel
slot: 0, conn_id: 8192, crypto-map: outside_map
      sa timing: remaining key lifetime (kB/sec):
                                              ((4274999/27844
                                  IV size: 8 bytes
                      replay detection support: Y
                                        :outbound esp sas
                         (spi: 0x8312C39C (2199045020
            transform: esp-3des esp-sha-hmac none
                 { ,in use settings ={L2L, Tunnel
slot: 0, conn_id: 8192, crypto-map: outside_map
      sa timing: remaining key lifetime (kB/sec):
                                              ((4274999/27844
                                  IV size: 8 bytes
                      replay detection support: Y
```

استكشاف الأخطاء وإصلاحها

يوفر هذا القسم معلومات يمكنك استخدامها لاستكشاف أخطاء التكوين وإصلاحها.

أستخدم هذه الأوامر كما هو موضح:

- **مسح التشفير sa** isakmp—يمحو المرحلة 1 من SAs.**تحذير:** أمر **التشفير الواضح isakmp sa** دخلي، والذي سيقوم بمسح جميع أنفاق شبكات VPN النشطة. بدءا من الإصدار 8.0(3) من برنامج PIX/ASA، يمكن مسح IKE SA فردي باستخدام الأمر **clear crypto isakmp sa** *<peer ip address>*. قبل إصدار برنامج 8.0(3)، يمكن إستخدام الأمر *<vpn-sessiondb logoff tunnel-group <tunnel-group-name* لمسح *أسماء IKE* و IPsec للنفق الواحد.

```
ASA5505#vpn-sessiondb logoff tunnel-group 192.168.1.1
Do you want to logoff the VPN session(s)? [confirm] Y
INFO: Number of sessions from TunnelGroup "192.168.1.1" logged off : 1

ASA5505# Jan 19 13:58:43 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, P
                                    itcher: received key delete msg, spi 0xaa157573
Jan 19 13:58:43 [IKEv1]: Group = 192.168.1.1, IP = 192.168.1.1, Connection termi
```

```
,nated for peer 192.168.1.1.  Reason: Administrator Reset  Remote Proxy 10.1.1.0
                                                          Local Proxy 10.2.2.0
:Jan 19 13:58:43 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, IKE SA MM
 116f1ccf rcv'd Terminate: state MM_ACTIVE  flags 0x0021c042, refcnt 1, tuncnt 1
Jan 19 13:58:43 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, sending de
                                                  lete/delete with reason message
Jan 19 13:58:43 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, constructi
                                                          ng blank hash payload
Jan 19 13:58:43 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, constructi
                                                        ng IPSec delete payload
Jan 19 13:58:43 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, constructi
                                                            ng qm hash payload
Jan 19 13:58:43 [IKEv1]: IP = 192.168.1.1, IKE_DECODE SENDING Message (msgid=c17
46fb4) with payloads : HDR + HASH (8) + DELETE (12) + NONE (0) total length : 68
Jan 19 13:58:43 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, Active uni
                           .t receives a delete event for remote peer 192.168.1.1

Jan 19 13:58:43 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, IKE Deleti
                                ng SA: Remote Proxy 10.1.1.0, Local Proxy 10.2.2.0
:Jan 19 13:58:43 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, IKE SA MM
                      116f1ccf terminating:  flags 0x0121c002, refcnt 0, tuncnt 0
Jan 19 13:58:43 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, sending de
                                                  lete/delete with reason message
Jan 19 13:58:43 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, constructi
                                                          ng blank hash payload
Jan 19 13:58:43 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, constructi
                                                          ng IKE delete payload
Jan 19 13:58:43 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, constructi
                                                            ng qm hash payload
Jan 19 13:58:43 [IKEv1]: IP = 192.168.1.1, IKE_DECODE SENDING Message (msgid=a7e
78fac) with payloads : HDR + HASH (8) + DELETE (12) + NONE (0) total length : 80
 Jan 19 13:58:43 [IKEv1 DEBUG]: Pitcher: received key delete msg, spi 0xaa157573
 Jan 19 13:58:43 [IKEv1 DEBUG]: Pitcher: received key delete msg, spi 0x746fe476
Jan 19 13:58:43 [IKEv1]: IP = 192.168.1.1, Received encrypted packet with no mat
                                                            ching SA, dropping
```

- **مسح نظير IPsec للتشفير** *<address* peer>—يمحو المرحلة المطلوبة 2 SA.

```
                                ASA5505(config)#clear ipsec sa peer 192.168.1.1
ASA5505(config)# IPSEC: Deleted inbound decrypt rule, SPI 0x8030618F
                                                          Rule ID: 0xD4E56A18
                          IPSEC: Deleted inbound permit rule, SPI 0x8030618F
                                                          Rule ID: 0xD4DF4110
                     IPSEC: Deleted inbound tunnel flow rule, SPI 0x8030618F
                                                          Rule ID: 0xD4DAE1F0
                          IPSEC: Deleted inbound VPN context, SPI 0x8030618F
                                                       VPN handle: 0x00058FBC
                        IPSEC: Deleted outbound encrypt rule, SPI 0x0D6CDEEB
                                                          Rule ID: 0xD4DA4348
                         IPSEC: Deleted outbound permit rule, SPI 0x0D6CDEEB
                                                          Rule ID: 0xD4DAE7A8
                         IPSEC: Deleted outbound VPN context, SPI 0x0D6CDEEB
                                                       VPN handle: 0x0005633C
```

- debugs ISAKMP SA— **debug crypto isakmp sa** *<debug level>* تفاوض.

```
                                    ASA5505(config)#debug crypto isakmp 7
 ASA5505(config)# Jan 19 13:39:49 [IKEv1]: IP = 192.168.1.1, IKE_DECODE RECEIVED
Message (msgid=0) with payloads : HDR + SA (1) + VENDOR (13) + VENDOR (13) + VEN
                                     DOR (13) + NONE (0) total length : 188
          Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, processing SA payload
  Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, Oakley proposal is acceptable
         Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, processing VID payload
Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, Received NAT-Traversal ver 02 V
                                                                             ID
         Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, processing VID payload
```

```
Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, Received NAT-Traversal ver 03 V
                                                                              ID
         Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, processing VID payload
     Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, Received Fragmentation VID
Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, IKE Peer included IKE fragmenta
          tion capability flags:  Main Mode:        True  Aggressive Mode:  True
      Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, processing IKE SA payload
 Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, IKE SA Proposal # 1, Transform
                                     acceptable  Matches global IKE entry # 2 1 #
 Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, constructing ISAKMP SA payload
 Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, constructing NAT-Traversal VID
                                                                    ver 02 payload
 Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, constructing Fragmentation VID
                                                  extended capabilities payload +
 (Jan 19 13:39:49 [IKEv1]: IP = 192.168.1.1, IKE_DECODE SENDING Message (msgid=0
with payloads : HDR + SA (1) + VENDOR (13) + VENDOR (13) + NONE (0) total length
                                                                          128 :
(Jan 19 13:39:49 [IKEv1]: IP = 192.168.1.1, IKE_DECODE RECEIVED Message (msgid=0
 with payloads : HDR + KE (4) + NONCE (10) + VENDOR (13) + VENDOR (13) + VENDOR
    VENDOR (13) + NAT-D (130) + NAT-D (130) + NONE (0) total length : 304 + (13)
         Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, processing ke payload
       Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, processing ISA_KE payload
        Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, processing nonce payload
          Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, processing VID payload
Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, Received Cisco Unity client VID
         Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, processing VID payload
          Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, Received xauth V6 VID
         Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, processing VID payload
Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, Processing VPN3000/ASA spoofing
                 (IOS Vendor ID payload (version: 1.0.0, capabilities: 20000001
         Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, processing VID payload
Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, Received Altiga/Cisco VPN3000/C
                                                                  isco ASA GW VID
Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, processing NAT-Discovery payloa
                                                                              d
   Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, computing NAT Discovery hash
Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, processing NAT-Discovery payloa
                                                                              d
   Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, computing NAT Discovery hash
        Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, constructing ke payload
     Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, constructing nonce payload
Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, constructing Cisco Unity VID pa
                                                                          yload
Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, constructing xauth V6 VID paylo
                                                                              ad
                   Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, Send IOS VID
Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, Constructing ASA spoofing IOS V
                       (endor ID payload (version: 1.0.0, capabilities: 20000001
       Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, constructing VID payload
Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, Send Altiga/Cisco VPN3000/Cisco
                                                                    ASA GW VID
Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, constructing NAT-Discovery payl
                                                                          oad
   Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, computing NAT Discovery hash
Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, constructing NAT-Discovery payl
                                                                          oad
   Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, computing NAT Discovery hash
Jan 19 13:39:49 [IKEv1]: IP = 192.168.1.1, Connection landed on tunnel_group 192
                                                                    168.1.1.
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, Generating
                                                        ...keys for Responder
 (Jan 19 13:39:49 [IKEv1]: IP = 192.168.1.1, IKE_DECODE SENDING Message (msgid=0
) with payloads : HDR + KE (4) + NONCE (10) + VENDOR (13) + VENDOR (13) + VENDOR
     VENDOR (13) + NAT-D (130) + NAT-D (130) + NONE (0) total length : 304 + (13
```

```
(Jan 19 13:39:49 [IKEv1]: IP = 192.168.1.1, IKE_DECODE RECEIVED Message (msgid=0
with payloads : HDR + ID (5) + HASH (8) + IOS KEEPALIVE (128) + VENDOR (13) + N
                                                    ONE (0) total length : 96
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, processing
                                                                  ID payload
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, processing
                                                              hash payload
 Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, Computing
                                                            hash for ISAKMP
Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, Processing IOS keep alive paylo
                                                .ad: proposal=32767/32767 sec
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, processing
                                                               VID payload
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, Received D
                                                                    PD VID
Jan 19 13:39:49 [IKEv1]: Group = 192.168.1.1, IP = 192.168.1.1, Automatic NAT De
 tection Status:     Remote end is NOT behind a NAT device     This   end is NOT
                                                          behind a NAT device
Jan 19 13:39:49 [IKEv1]: IP = 192.168.1.1, Connection landed on tunnel_group 192
                                                                  168.1.1.
Jan 19 13:39:49 [IKEv1]: Group = 192.168.1.1, IP = 192.168.1.1, Freeing previous
                             ly allocated memory for authorization-dn-attributes
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, constructi
                                                            ng ID payload
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, constructi
                                                            ng hash payload
 Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, Computing
                                                            hash for ISAKMP
Jan 19 13:39:49 [IKEv1 DEBUG]: IP = 192.168.1.1, Constructing IOS keep alive pay
                                                .load: proposal=32767/32767 sec
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, constructi
                                                          ng dpd vid payload
 (Jan 19 13:39:49 [IKEv1]: IP = 192.168.1.1, IKE_DECODE SENDING Message (msgid=0
with payloads : HDR + ID (5) + HASH (8) + IOS KEEPALIVE (128) + VENDOR (13) + NO
                                                    NE (0) total length : 96
Jan 19 13:39:49 [IKEv1]: Group = 192.168.1.1, IP = 192.168.1.1, PHASE 1 COMPLETE
                                                                          D
 :Jan 19 13:39:49 [IKEv1]: IP = 192.168.1.1, Keep-alive type for this connection
                                                                        DPD
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, Starting P
                                                .rekey timer: 73440 seconds 1
Jan 19 13:39:49 [IKEv1]: IP = 192.168.1.1, IKE_DECODE RECEIVED Message (msgid=94
+ (21905f) with payloads : HDR + HASH (8) + SA (1) + NONCE (10) + ID (5) + ID (5
                                      NOTIFY (11) + NONE (0) total length : 196
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, processing
                                                              hash payload
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, processing
                                                                SA payload
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, processing
                                                            nonce payload
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, processing
                                                              ID payload
 Jan 19 13:39:49 [IKEv1]: Group = 192.168.1.1, IP = 192.168.1.1, Received remote
IP Proxy Subnet data in ID Payload:   Address 10.1.1.0, Mask 255.255.255.0, Prot
                                                            ocol 0, Port 0
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, processing
                                                              ID payload
Jan 19 13:39:49 [IKEv1]: Group = 192.168.1.1, IP = 192.168.1.1, Received local I
P Proxy Subnet data in ID Payload:   Address 10.2.2.0, Mask 255.255.255.0, Proto
                                                             col 0, Port 0
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, processing
                                                            notify payload
Jan 19 13:39:49 [IKEv1]: Group = 192.168.1.1, IP = 192.168.1.1, QM IsRekeyed old
                                                          sa not found by addr
```

```
Jan 19 13:39:49 [IKEv1]: Group = 192.168.1.1, IP = 192.168.1.1, Static Crypto Ma
                                ...p check, checking map = outside_map, seq = 20
Jan 19 13:39:49 [IKEv1]: Group = 192.168.1.1, IP = 192.168.1.1, Static Crypto Ma
                        p check, map outside_map, seq = 20 is a successful match
 Jan 19 13:39:49 [IKEv1]: Group = 192.168.1.1, IP = 192.168.1.1, IKE Remote Peer
                                      configured for crypto map: outside_map
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, processing
                                                        IPSec SA payload
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, IPSec SA P
       roposal # 1, Transform # 1 acceptable  Matches global IPSec SA entry # 20
 Jan 19 13:39:49 [IKEv1]: Group = 192.168.1.1, IP = 192.168.1.1, IKE: requesting
                                                                      !SPI
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, IKE got SP
                                      I from key engine: SPI = 0x826ff027
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, oakley con
                                                    stucting quick mode
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, constructi
                                                      ng blank hash payload
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, constructi
                                                      ng IPSec SA payload
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, constructi
                                                    ng IPSec nonce payload
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, constructi
                                                          ng proxy ID
Jan 19 13:39:49 [IKEv1 DEBUG]: Group = 192.168.1.1, IP = 192.168.1.1, Transmitti
```

- **debug crypto ipSec sa *<debug level>*** —debugs IPsec SA تفاوض.

```
                                    ASA5505(config)#debug crypto ipsec 7
                  ,ASA5505(config)# IPSEC: New embryonic SA created @ 0xD4E56E18
                                                        ,SCB: 0xD4E56CF8
                                                   Direction: inbound
                                                SPI      : 0x8030618F
                                               Session ID: 0x00006000
                                               VPIF num  : 0x00000001
                                                     Tunnel type: l2l
                                                     Protocol   : esp
                                              Lifetime   : 240 seconds
                             ,IPSEC: New embryonic SA created @ 0xD4E57AD8
                                                        ,SCB: 0xD4DAE608
                                                  Direction: outbound
                                                SPI      : 0x0D6CDEEB
                                               Session ID: 0x00006000
                                               VPIF num  : 0x00000001
                                                     Tunnel type: l2l
                                                     Protocol   : esp
                                              Lifetime   : 240 seconds
                          IPSEC: Completed host OBSA update, SPI 0x0D6CDEEB
                        IPSEC: Creating outbound VPN context, SPI 0x0D6CDEEB
                                                     Flags: 0x00000005
                                                     SA   : 0xD4E57AD8
                                                     SPI  : 0x0D6CDEEB
                                                     MTU  : 1500 bytes
                                                     VCID : 0x00000000
                                                     Peer : 0x00000000
                                                     SCB  : 0x015E69CB
                                                   Channel: 0xD3D60A98
                      IPSEC: Completed outbound VPN context, SPI 0x0D6CDEEB
                                                VPN handle: 0x0005633C
                          IPSEC: New outbound encrypt rule, SPI 0x0D6CDEEB
                                                     Src addr: 10.2.2.0
                                                Src mask: 255.255.255.0
                                                     Dst addr: 10.1.1.0
                                                Dst mask: 255.255.255.0
                                                           Src ports
```

```
                                                  Upper: 0
                                                  Lower: 0
                                               Op   : ignore
                                                Dst ports
                                                  Upper: 0
                                                  Lower: 0
                                               Op   : ignore
                                                Protocol: 0
                                           Use protocol: false
                                               SPI: 0x00000000
                                                Use SPI: false
                  IPSEC: Completed outbound encrypt rule, SPI 0x0D6CDEEB
                                           Rule ID: 0xD4DA4348
                        IPSEC: New outbound permit rule, SPI 0x0D6CDEEB
                                        Src addr: 172.16.1.1
                                    Src mask: 255.255.255.255
                                    Dst addr: 192.168.1.1
                                    Dst mask: 255.255.255.255
                                                 Src ports
                                                  Upper: 0
                                                  Lower: 0
                                               Op   : ignore
                                                Dst ports
                                                  Upper: 0
                                                  Lower: 0
                                               Op   : ignore
                                                  Protocol: 50
                                           Use protocol: true
                                               SPI: 0x0D6CDEEB
                                                 Use SPI: true
                   IPSEC: Completed outbound permit rule, SPI 0x0D6CDEEB
                                           Rule ID: 0xD4DAE7A8
                       IPSEC: Completed host IBSA update, SPI 0x8030618F
                     IPSEC: Creating inbound VPN context, SPI 0x8030618F
                                           Flags: 0x00000006
                                           SA   : 0xD4E56E18
                                           SPI  : 0x8030618F
                                              MTU  : 0 bytes
                                           VCID : 0x00000000
                                           Peer : 0x0005633C
                                           SCB  : 0x015DD135
                                          Channel: 0xD3D60A98
                    IPSEC: Completed inbound VPN context, SPI 0x8030618F
                                         VPN handle: 0x00058FBC
IPSEC: Updating outbound VPN context 0x0005633C, SPI 0x0D6CDEEB
                                           Flags: 0x00000005
                                           SA   : 0xD4E57AD8
                                           SPI  : 0x0D6CDEEB
                                           MTU  : 1500 bytes
                                           VCID : 0x00000000
                                           Peer : 0x00058FBC
                                           SCB  : 0x015E69CB
                                          Channel: 0xD3D60A98
                   IPSEC: Completed outbound VPN context, SPI 0x0D6CDEEB
                                         VPN handle: 0x0005633C
                    IPSEC: Completed outbound inner rule, SPI 0x0D6CDEEB
                                           Rule ID: 0xD4DA4348
                 IPSEC: Completed outbound outer SPD rule, SPI 0x0D6CDEEB
                                           Rule ID: 0xD4DAE7A8
                     IPSEC: New inbound tunnel flow rule, SPI 0x8030618F
                                            Src addr: 10.1.1.0
                                        Src mask: 255.255.255.0
                                            Dst addr: 10.2.2.0
                                        Dst mask: 255.255.255.0
```

```
                                                  Src ports
                                                 Upper: 0
                                                 Lower: 0
                                               Op   : ignore
                                                  Dst ports
                                                 Upper: 0
                                                 Lower: 0
                                               Op   : ignore
                                                Protocol: 0
                                            Use protocol: false
                                                SPI: 0x00000000
                                                 Use SPI: false
IPSEC: Completed inbound tunnel flow rule, SPI 0x8030618F
                                                Rule ID: 0xD4DAE1F0
          IPSEC: New inbound decrypt rule, SPI 0x8030618F
                                           Src addr: 192.168.1.1
                                        Src mask: 255.255.255.255
                                           Dst addr: 172.16.1.1
                                        Dst mask: 255.255.255.255
                                                  Src ports
                                                 Upper: 0
                                                 Lower: 0
                                               Op   : ignore
                                                  Dst ports
                                                 Upper: 0
                                                 Lower: 0
                                               Op   : ignore
                                                Protocol: 50
                                            Use protocol: true
                                                SPI: 0x8030618F
                                                 Use SPI: true
IPSEC: Completed inbound decrypt rule, SPI 0x8030618F
                                                Rule ID: 0xD4E56A18
          IPSEC: New inbound permit rule, SPI 0x8030618F
                                           Src addr: 192.168.1.1
```

معلومات ذات صلة

- صفحة دعم أجهزة الأمان القابلة للتكيف ASA 5500 Series من Cisco
- صفحة دعم أجهزة الأمان Cisco PIX 500 Series Security Appliances
- حلول أستكشاف أخطاء الشبكة الخاصة الظاهرية (VPN) عبر بروتوكول IPsec للوصول عن بعد و L2L الأكثر شيوعا
- صفحة دعم مفاوضة IPSec/بروتوكولات IKE

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).