ASA/PIX 7.x y posterior: Ejemplo de Configuración de Túneles IPsec de LAN a LAN y EasyVPN Terminan en la Misma Interfaz

Contenido

Introducción

Este documento proporciona un ejemplo de configuración que muestra cómo habilitar el HUB ASA para que acepte Túnel Sitio a Sitio y Conexiones VPN IPSec Fáciles a la misma interfaz. El IPSec entre un Cisco ASA 5520 y Cisco Adaptive Security Appliance (ASA) 5505 utiliza VPN Fácil con Network Extension Mode (NEM).

Prerequisites

Requirements

No hay requisitos específicos para este documento.

Componentes Utilizados

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

- ASA serie 5500 que ejecuta la versión 7.x y posteriores (Hub)**Nota:** La configuración de HUB ASA también se puede utilizar con PIX Security Appliance 515, 515E, 525 y 535 que ejecuta la versión 7.x y posteriores
- Easy VPN ASA 5505 que ejecuta la versión 7.x y posteriores

- PIX Security Appliance 515, 515E, 525 y 535 que ejecuta la versión 7.x y posteriores

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Convenciones

Consulte Convenciones de Consejos Técnicos de Cisco para obtener más información sobre las convenciones sobre documentos.

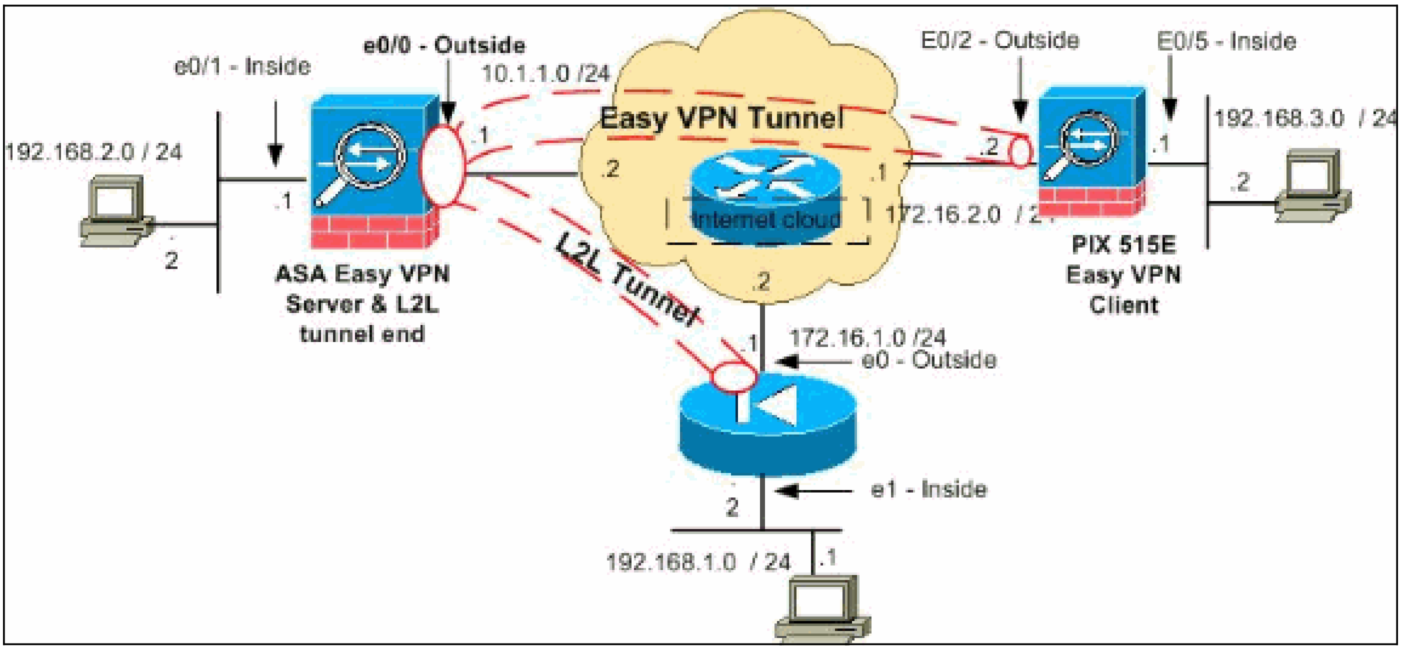
Configurar

Esta sección le presenta la información que puede utilizar para configurar las características que describe este documento.

Nota: Use el Command Lookup Tool (únicamente clientes registrados) para obtener más información sobre los comandos que se utilizan en esta sección.

Diagrama de la red

En este documento, se utiliza esta configuración de red:



Nota: Los esquemas de direccionamiento IP utilizados en esta configuración no son legalmente enrutables en Internet. Son direcciones RFC 1918 que se utilizan en un entorno de laboratorio.

Configuraciones

En este documento, se utilizan estas configuraciones:

- HUB ASA
- Cliente Easy VPN ASA 5505
- PIX

HUB ASA

```
ASA Version 8.0(2)
!
hostname ciscoasa
enable password 8Ry2YjIyt7RRXU24 encrypted
names
!
interface Ethernet0/0
 nameif outside
 security-level 0
 ip address 10.1.1.1 255.255.255.0
!
interface Ethernet0/1
 nameif inside
 security-level 100
 ip address 192.168.2.1 255.255.255.0
!
!--- Output Suppressed. !--- Access-list for interesting
traffic (Site to Site) to be !--- encrypted between hub
ASA and spoke (PIX) networks. access-list
outside_cryptomap_20 extended permit ip 192.168.2.0
255.255.255.0 192.168.1.0 255.255.255.0 !--- Access-list
for interesting traffic to be !--- encrypted between hub
ASA and spoke easy vpn client ASA networks. access-list
ezvpn1 extended permit ip 192.168.2.0 255.255.255.0
192.168.3.0 255.255.255.0 !--- Access-list for traffic
to bypass the network address !--- translation (NAT)
process. access-list nonat extended permit ip
192.168.2.0 255.255.255.0 192.168.1.0 255.255.255.0
access-list nonat extended permit ip 192.168.2.0
255.255.255.0 192.168.3.0 255.255.255.0 !--- Output
Suppressed. !--- 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. nat-control global (outside) 1
interface nat (inside) 0 access-list nonat nat (inside)
1 0.0.0.0 0.0.0.0 route outside 0.0.0.0 0.0.0.0 10.1.1.2
1 !--- Output Suppressed. !--- Configuration of IPsec
Phase 2 crypto ipsec transform-set myset esp-3des esp-
sha-hmac !--- IPsec configuration for the dynamic LAN-
to-LAN tunnel crypto dynamic-map ezvpn 30 set transform-
set myset !--- IPsec configuration for the static LAN-
to-LAN tunnel crypto map outside_map 20 match address
outside_cryptomap_20 crypto map outside_map 20 set peer
172.16.1.1 crypto map outside_map 20 set transform-set
myset !--- IPsec configuration that binds dynamic map to
crypto map crypto map outside_map 65535 ipsec-isakmp
dynamic ezvpn !--- Crypto map applied to the outside
interface of the ASA crypto map outside_map interface
outside isakmp enable outside !--- PHASE 1 CONFIGURATION
---! !--- This configuration uses isakmp policy 1. !---
These configuration commands !--- define the Phase 1
policies that are used. crypto isakmp policy 10
authentication pre-share encryption 3des hash sha group
2 lifetime 86400 !--- Output Suppressed. !--- This
defines the group policy you use with Easy VPN. !---
Specify the networks that can pass through !--- the
tunnel and that you want to !--- use network extension
mode. group-policy tunnel internal group-policy tunnel
attributes nem enable !--- The username and password
associated with !--- this VPN connection are defined
here. You !--- can also use AAA for this function.
```

```
username cisco password ffIRPGpDSOJh9YLq encrypted
tunnel-group 172.16.1.1 type ipsec-l2l tunnel-group
172.16.1.1 ipsec-attributes pre-shared-key * !--- The
tunnel-group commands bind the configurations !---
defined in this configuration to the tunnel that is !---
used for Easy VPN. This tunnel name is the one !---
specified on the remote side. tunnel-group mytunnel type
remote-access tunnel-group mytunnel general-attributes
default-group-policy tunnel !--- Defines the pre-shared
key used for !--- IKE authentication for the dynamic
tunnel. tunnel-group mytunnel ipsec-attributes pre-
shared-key * prompt hostname context
Cryptochecksum:e148bf43d04906f5db41fc6f90c52d34 : end
```

Cliente Easy VPN - ASA 5505

```

ASA Version 7.2(2)
!
hostname ciscoasa
domain-name default.domain.invalid
enable password 8Ry2YjIyt7RRXU24 encrypted
names
!
interface Vlan1
 nameif outside
 security-level 0
 ip address 172.16.2.2 255.255.255.0
!
interface Vlan2
 nameif inside
 security-level 100
 ip address 192.168.3.1 255.255.255.0
!
interface Ethernet0/0
!
interface Ethernet0/1
 shutdown
!
interface Ethernet0/2
!
interface Ethernet0/3
!
interface Ethernet0/4
 switchport access vlan 2

!--- Output Suppressed. ! route outside 0.0.0.0 0.0.0.0
172.16.2.1 1 !--- Output Suppressed. !--- Easy VPN
Client Configuration ---! !--- Specify the IP address of
the VPN server. vpnclient server 10.1.1.1 !--- This
example uses network extension mode. vpnclient mode
network-extension-mode !--- Specify the group name and
the pre-shared key. vpnclient vpngroup mytunnel password
******** !--- Specify the authentication username and
password. vpnclient username cisco password ******** !--
- In order to enable the device as hardware vpnclient,
use this command. vpnclient enable ! !--- Output
Suppressed.
Cryptochecksum:0458ce7a08e6b7f9417b17bc254eb4e2 : end
```

PIX

```

PIX Version 8.0(2)
!
```

```
hostname pixfirewall
enable password 8Ry2YjIyt7RRXU24 encrypted
names
!
interface Ethernet0
 nameif outside
 security-level 0
 ip address 172.16.1.1 255.255.255.0
!
interface Ethernet1
 nameif inside
 security-level 100
 ip address 192.168.1.2 255.255.255.0
!
passwd 2KFQnbNIdI.2KYOU encrypted
ftp mode passive
!--- This access list (inside_nat0_outbound) is used
with the nat zero command. !--- This prevents traffic
which matches the access list from undergoing !---
network address translation (NAT). access-list
inside_nat0_outbound extended permit ip 192.168.1.0
255.255.255.0 192.168.2.0 255.255.255.0 !--- The traffic
specified by this ACL is !--- traffic that is to be
encrypted and !--- sent across the VPN tunnel. This ACL
is intentionally !--- the same as
(inside_nat0_outbound). !--- Two separate access lists
must always be used in this configuration. access-list
outside_cryptomap_20 extended permit ip 192.168.1.0
255.255.255.0 192.168.2.0 255.255.255.0 !--- NAT 0
prevents NAT for networks specified in the ACL
inside_nat0_outbound. nat (inside) 0 access-list
inside_nat0_outbound !--- Output Suppressed. route
outside 0.0.0.0 0.0.0.0 172.16.1.2 1 !--- Output
Suppressed. !--- PHASE 2 CONFIGURATION ---! !--- The
encryption types for Phase 2 are defined here. !---
Define the transform set for Phase 2. crypto ipsec
transform-set myset esp-3des esp-sha-hmac !--- Define
which traffic can be sent to the IPsec peer. crypto map
outside_map 20 match address outside_cryptomap_20 !---
Sets the IPsec peer. crypto map outside_map 20 set peer
10.1.1.1 !--- Sets the IPsec transform set "myset" !---
to be used with the crypto map entry "outside_map".
crypto map outside_map 20 set transform-set myset !---
Specifies the interface to be used with !--- the
settings defined in this configuration. crypto map
outside_map interface outside !--- PHASE 1 CONFIGURATION
---! !--- This configuration uses isakmp policy 10. !---
Policy 65535 is included in the config by default. !---
The configuration commands here define the Phase !--- 1
policy parameters that are used. crypto isakmp enable
outside crypto isakmp policy 10 authentication pre-share
encryption 3des hash sha group 2 lifetime 86400 crypto
isakmp policy 65535 authentication pre-share encryption
3des hash sha group 2 lifetime 86400 !--- Output
Suppressed. !--- 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 10.1.1.1
type ipsec-l2l !--- Enter the pre-shared-key in order to
configure the authentication method. tunnel-group
10.1.1.1 ipsec-attributes pre-shared-key * prompt
hostname context
```

```
Cryptochecksum:4a2c70f2102113315de795f13f25c2aa : end
```

Verificación

Esta sección proporciona información que puede utilizar para confirmar que su configuración funciona correctamente.

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

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

Esta sección muestra ejemplos de configuraciones de verificación para:

- HUB ASA
- Cliente Easy VPN ASA 5505
- PIX

HUB ASA

```
ciscoasa #show crypto isakmp sa

   Active SA: 2
    Rekey SA: 0 (A tunnel will report 1 Active and 1
Rekey SA during rekey)
Total IKE SA: 2
!--- Dynamic LAN-to-LAN tunnel establishment 1 IKE Peer:
172.16.2.2 Type : user Role : responder Rekey : no State
: AM_ACTIVE !--- Static LAN-to-LAN tunnel establishment
2 IKE Peer: 172.16.1.1 Type : L2L Role : initiator Rekey
: no State : MM_ACTIVE ciscoasa #show crypto ipsec sa
ciscoasa(config)#sh crypto ipsec sa
interface: outside
    Crypto map tag: outside_map, seq num: 20, local
addr: 10.1.1.1


      access-list outside_cryptomap_20 permit ip
192.168.2.0 255.255.255.0
 192.168.1.0 255.255.255.0
      local ident (addr/mask/prot/port):
(192.168.2.0/255.255.255.0/0/0)
      remote ident (addr/mask/prot/port):
(192.168.1.0/255.255.255.0/0/0)
      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.: 10.1.1.1, remote crypto
endpt.: 172.16.1.1

      path mtu 1500, ipsec overhead 58, media mtu 1500
      current outbound spi: E4312E13

    inbound esp sas:
      spi: 0x9ABAC3DD (2595931101)
         transform: esp-3des esp-sha-hmac none
         in use settings ={L2L, Tunnel, }
         slot: 0, conn_id: 741376, crypto-map:
outside_map
         sa timing: remaining key lifetime (kB/sec):
(4274999/28783)
         IV size: 8 bytes
         replay detection support: Y
    outbound esp sas:
      spi: 0xE4312E13 (3828428307)
         transform: esp-3des esp-sha-hmac none
         in use settings ={L2L, Tunnel, }
         slot: 0, conn_id: 741376, crypto-map:
outside_map
         sa timing: remaining key lifetime (kB/sec):
(4274999/28783)
         IV size: 8 bytes
         replay detection support: Y

   Crypto map tag: ezvpn, seq num: 30, local addr:
10.1.1.1

     local ident (addr/mask/prot/port):
(10.1.1.1/255.255.255.255/0/0)
      remote ident (addr/mask/prot/port):
(172.16.2.2/255.255.255.255/0/0)
      current_peer: 172.16.2.2, username: cisco
      dynamic allocated peer ip: 0.0.0.0

      #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 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.: 10.1.1.1, remote crypto
endpt.: 172.16.2.2

      path mtu 1500, ipsec overhead 58, media mtu 1500
      current outbound spi: 2647B59C

    inbound esp sas:
      spi: 0x21685AF8 (560487160)
         transform: esp-3des esp-sha-hmac none
         in use settings ={RA, Tunnel, }
         slot: 0, conn_id: 737280, crypto-map: ezvpn
         sa timing: remaining key lifetime (sec): 28146
         IV size: 8 bytes
         replay detection support: Y
    outbound esp sas:
      spi: 0x2647B59C (642233756)
         transform: esp-3des esp-sha-hmac none
         in use settings ={RA, Tunnel, }
         slot: 0, conn_id: 737280, crypto-map: ezvpn
         sa timing: remaining key lifetime (sec): 28146
         IV size: 8 bytes
         replay detection support: Y

    Crypto map tag: ezvpn, seq num: 30, local addr:
10.1.1.1

      local ident (addr/mask/prot/port):
(0.0.0.0/0.0.0.0/0/0)
      remote ident (addr/mask/prot/port):
(192.168.3.0/255.255.255.0/0/0)
      current_peer: 172.16.2.2, username: cisco
      dynamic allocated peer ip: 0.0.0.0

      #pkts encaps: 5, #pkts encrypt: 5, #pkts digest: 5
      #pkts decaps: 5, #pkts decrypt: 5, #pkts verify: 5
      #pkts compressed: 0, #pkts decompressed: 0
      #pkts not compressed: 5, #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.: 10.1.1.1, remote crypto
endpt.: 172.16.2.2

      path mtu 1500, ipsec overhead 58, media mtu 1500
      current outbound spi: 07997B21

    inbound esp sas:
      spi: 0xB5B6013D (3048603965)
         transform: esp-3des esp-sha-hmac none
         in use settings ={RA, Tunnel, }
         slot: 0, conn_id: 737280, crypto-map: ezvpn
         sa timing: remaining key lifetime (sec): 28145
         IV size: 8 bytes
         replay detection support: Y
    outbound esp sas:
      spi: 0x07997B21 (127499041)
         transform: esp-3des esp-sha-hmac none
         in use settings ={RA, Tunnel, }
         slot: 0, conn_id: 737280, crypto-map: ezvpn
         sa timing: remaining key lifetime (sec): 28145
         IV size: 8 bytes
         replay detection support: Y

    Crypto map tag: ezvpn, seq num: 30, local addr:
10.1.1.1

      local ident (addr/mask/prot/port):
(0.0.0.0/0.0.0.0/0/0)
      remote ident (addr/mask/prot/port):
(172.16.2.2/255.255.255.255/0/0)
      current_peer: 172.16.2.2, username: cisco
      dynamic allocated peer ip: 0.0.0.0

      #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 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.: 10.1.1.1, remote crypto
endpt.: 172.16.2.2

      path mtu 1500, ipsec overhead 58, media mtu 1500
      current outbound spi: 0F0B1A75

    inbound esp sas:
      spi: 0x68B0EA75 (1756424821)
         transform: esp-3des esp-sha-hmac none
         in use settings ={RA, Tunnel, }
         slot: 0, conn_id: 737280, crypto-map: ezvpn
         sa timing: remaining key lifetime (sec): 28143
         IV size: 8 bytes
         replay detection support: Y
    outbound esp sas:
      spi: 0x0F0B1A75 (252385909)
         transform: esp-3des esp-sha-hmac none
         in use settings ={RA, Tunnel, }
         slot: 0, conn_id: 737280, crypto-map: ezvpn
         sa timing: remaining key lifetime (sec): 28143
         IV size: 8 bytes
         replay detection support: Y
```

Cliente Easy VPN ASA 5505

```
ciscoasa(config)# sh crypto isakmp sa

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

1   IKE Peer: 10.1.1.1
    Type    : user            Role    : initiator
    Rekey   : no              State   : AM_ACTIVE



ciscoasa(config)# sh crypto ipsec sa
interface: outside
    Crypto map tag: _vpnc_cm, seq num: 10, local addr:
172.16.2.2

      access-list _vpnc_acl permit ip host 172.16.2.2
host 10.1.1.1
      local ident (addr/mask/prot/port):
(172.16.2.2/255.255.255.255/0/0)
      remote ident (addr/mask/prot/port):
(10.1.1.1/255.255.255.255/0/0)
      current_peer: 10.1.1.1, username: 10.1.1.1
      dynamic allocated peer ip: 0.0.0.0
      #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 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.: 172.16.2.2, remote crypto
endpt.: 10.1.1.1

      path mtu 1500, ipsec overhead 58, media mtu 1500
      current outbound spi: 21685AF8

    inbound esp sas:
      spi: 0x2647B59C (642233756)
         transform: esp-3des esp-sha-hmac none
         in use settings ={RA, Tunnel, }
         slot: 0, conn_id: 178, crypto-map: _vpnc_cm
         sa timing: remaining key lifetime (sec): 28298
         IV size: 8 bytes
         replay detection support: Y
    outbound esp sas:
      spi: 0x21685AF8 (560487160)
         transform: esp-3des esp-sha-hmac none
         in use settings ={RA, Tunnel, }
         slot: 0, conn_id: 178, crypto-map: _vpnc_cm
         sa timing: remaining key lifetime (sec): 28298
         IV size: 8 bytes
         replay detection support: Y

    Crypto map tag: _vpnc_cm, seq num: 10, local addr:
172.16.2.2

      access-list _vpnc_acl permit ip host 172.16.2.2
any
      local ident (addr/mask/prot/port):
(172.16.2.2/255.255.255.255/0/0)
      remote ident (addr/mask/prot/port):
(0.0.0.0/0.0.0.0/0/0)
      current_peer: 10.1.1.1, username: 10.1.1.1
      dynamic allocated peer ip: 0.0.0.0

      #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 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.: 172.16.2.2, remote crypto
endpt.: 10.1.1.1

      path mtu 1500, ipsec overhead 58, media mtu 1500
      current outbound spi: 68B0EA75

    inbound esp sas:
      spi: 0x0F0B1A75 (252385909)
         transform: esp-3des esp-sha-hmac none
         in use settings ={RA, Tunnel, }
         slot: 0, conn_id: 178, crypto-map: _vpnc_cm
         sa timing: remaining key lifetime (sec): 28298
         IV size: 8 bytes
         replay detection support: Y
    outbound esp sas:
      spi: 0x68B0EA75 (1756424821)
         transform: esp-3des esp-sha-hmac none
         in use settings ={RA, Tunnel, }
         slot: 0, conn_id: 178, crypto-map: _vpnc_cm
         sa timing: remaining key lifetime (sec): 28298
         IV size: 8 bytes
         replay detection support: Y

    Crypto map tag: _vpnc_cm, seq num: 10, local addr:
172.16.2.2

      access-list _vpnc_acl permit ip 192.168.3.0
255.255.255.0 any
      local ident (addr/mask/prot/port):
(192.168.3.0/255.255.255.0/0/0)
      remote ident (addr/mask/prot/port):
(0.0.0.0/0.0.0.0/0/0)
      current_peer: 10.1.1.1, username: 10.1.1.1
      dynamic allocated peer ip: 0.0.0.0

      #pkts encaps: 5, #pkts encrypt: 5, #pkts digest: 5
      #pkts decaps: 5, #pkts decrypt: 5, #pkts verify: 5
      #pkts compressed: 0, #pkts decompressed: 0
      #pkts not compressed: 0, #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.: 172.16.2.2, remote crypto
endpt.: 10.1.1.1

      path mtu 1500, ipsec overhead 58, media mtu 1500
      current outbound spi: B5B6013D

    inbound esp sas:
      spi: 0x07997B21 (127499041)
         transform: esp-3des esp-sha-hmac none
         in use settings ={RA, Tunnel, }
         slot: 0, conn_id: 178, crypto-map: _vpnc_cm
         sa timing: remaining key lifetime (sec): 28294
         IV size: 8 bytes
         replay detection support: Y
    outbound esp sas:
      spi: 0xB5B6013D (3048603965)
         transform: esp-3des esp-sha-hmac none
         in use settings ={RA, Tunnel, }
         slot: 0, conn_id: 178, crypto-map: _vpnc_cm
         sa timing: remaining key lifetime (sec): 28294
         IV size: 8 bytes
         replay detection support: Y
```

PIX

```
pixfirewall(config)# sh crypto isakmp sa

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

1   IKE Peer: 10.1.1.1
    Type    : L2L             Role    : responder
    Rekey   : no              State   : MM_ACTIVE



pixfirewall(config)# sh crypto ipsec sa
interface: outside
    Crypto map tag: outside_map, seq num: 20, local
addr: 172.16.1.1

     access-list outside_cryptomap_20 permit ip
192.168.1.0 255.255.255.0
    192.168.2.0 255.255.255.0
      local ident (addr/mask/prot/port):
(192.168.1.0/255.255.255.0/0/0)
      remote ident (addr/mask/prot/port):
(192.168.2.0/255.255.255.0/0/0)
      current_peer: 10.1.1.1

      #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: 0, #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.: 10.1.1.1

      path mtu 1500, ipsec overhead 58, media mtu 1500
      current outbound spi: 9ABAC3DD

    inbound esp sas:
      spi: 0xE4312E13 (3828428307)
         transform: esp-3des esp-sha-hmac none
         in use settings ={L2L, Tunnel, }
         slot: 0, conn_id: 12288, crypto-map:
outside_map
         sa timing: remaining key lifetime (kB/sec):
(3824999/28628)
         IV size: 8 bytes
         replay detection support: Y
    outbound esp sas:
      spi: 0x9ABAC3DD (2595931101)
         transform: esp-3des esp-sha-hmac none
         in use settings ={L2L, Tunnel, }
         slot: 0, conn_id: 12288, crypto-map:
outside_map
         sa timing: remaining key lifetime (kB/sec):
(3824999/28628)
```

```
          IV size: 8 bytes
          replay detection support: Y
```

Troubleshoot

En esta sección se brinda información que puede utilizar para resolver problemas en su configuración.

Comandos para resolución de problemas

La herramienta Output Interpreter (sólo para clientes registrados) permite utilizar algunos comandos “show” y ver un análisis del resultado de estos comandos.

Nota: Consulte Información Importante sobre Comandos Debug antes de ejecutar los comandos **debug**.

Ejecute los comandos PIX en el modo de configuración:

- **clear crypto isakmp sa**: borra las SA de la Fase 1
- **clear crypto ipsec sa** —Borra las SA de Fase 2

Los comandos **debug** para los túneles VPN:

- **debug crypto isakmp sa**—Depura las negociaciones ISAKMP SA
- **debug crypto ipsec sa**: Depura las negociaciones IPSec SA

Información Relacionada

- Dispositivos de seguridad de la serie Cisco PIX 500 - Introducción
- Soluciones a los Problemas más frecuentes de IPSec VPN L2L y de Acceso Remoto
- Dispositivos de seguridad adaptable Cisco ASA serie 5500 - Asistencia para productos
- Negociación IPSec/Protocolos IKE
- Soporte Técnico y Documentación - Cisco Systems