Exemple de configuration d'IPsec dynamique entre un ASA à adressage statique et un routeur IOS à adressage dynamique avec NAT

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Introduction

Ce document fournit un exemple de configuration pour la façon d'activer l'Appliance de sécurité adaptatif (ASA) afin d'accepter des connexions IPsec dynamiques à partir du routeur IOS.

Conditions préalables

Exigences

Avant d'essayer cette configuration, assurez-vous que l'ASA et le routeur disposent d'une connectivité Internet pour établir le tunnel IPsec.

Ce document suppose que vous avez déjà attribué les adresses IP sur les interfaces publiques et privées et que vous pouvez envoyer une requête ping à l'adresse IP du périphérique VPN distant.

Composants utilisés

Les informations contenues dans ce document sont basées sur les versions de matériel et de logiciel suivantes :

- Routeur Cisco 2900 avec logiciel Cisco IOS version 15.2(4)M3
- Logiciel Cisco Adaptive Security Appliance version 9.4(1)

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.

Conventions

Référez-vous à Conventions relatives aux conseils techniques Cisco pour plus d'informations sur les conventions relatives aux documents.

Informations générales

Le routeur à distance exécute la Traduction d'adresses de réseau (NAT) si le réseau privé 10.1.1.x accède à l'Internet. Le trafic de 10.1.1.x vers le réseau privé 10.2.2.x derrière l'ASA est exclu du processus NAT. Le tunnel IPsec établit seulement si le trafic (10.1.1.x) initie la connexion du routeur avec l'ASA qui a un réseau distant (10.2.2.x). Le routeur peut initier des connexions à l'ASA, mais l'ASA ne peut pas initier de connexions au routeur.

Cette configuration permet à l'ASA de créer un tunnel dynamique IPsec LAN à LAN (L2L) avec un routeur VPN distant. Ce routeur reçoit dynamiquement son adresse IP publique externe de son fournisseur d'accès Internet. Le protocole DHCP (Dynamic Host Configuration Protocol) fournit ce mécanisme afin d'allouer des adresses IP dynamiquement à partir du fournisseur. Cela permet de réutiliser les adresses IP lorsque les hôtes n’en ont plus besoin.

Sur l'ASA, vous pouvez configurer une NAT manuelle pour vous assurer que le trafic qui passe par le tunnel n'est pas traduit. Dans cet exemple, si vous êtes sur le réseau 10.2.2.0 et que vous allez sur le réseau 10.1.1.0, la NAT manuelle est utilisée pour permettre au trafic réseau 10.1.1.0 d'être chiffré sans être traduit vers l'adresse IP de l'interface externe. Sur le routeur, les commandes route-map et access-list sont utilisées pour permettre au trafic réseau 10.1.1.0 d'être chiffré sans NAT. Cependant, lorsque vous vous rendez ailleurs (comme sur Internet), vous êtes traduit vers l'adresse IP de l'interface externe par le biais de la traduction d'adresses de port (PAT).

Remarque : Référez-vous à Application de NAT pour plus d'informations sur NAT

Il s'agit des commandes de configuration requises sur l'ASA afin que le trafic ne passe pas par PAT sur le tunnel, et le trafic vers Internet pour passer par PAT

```
object network LOCAL
 subnet 10.2.2.0 255.255.255.0
```

```
object network REMOTE
 subnet 10.1.1.0 255.255.255.0



nat (inside,outside) source static LOCAL LOCAL destination static REMOTE REMOTE



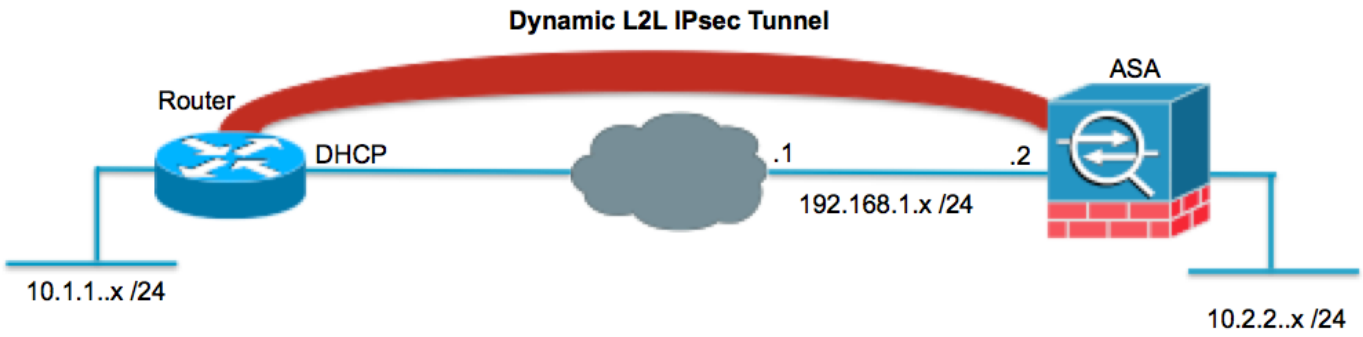
object network LOCAL
 nat (inside,outside) dynamic interface
```

Configurer

Dans cette section, vous trouverez les informations nécessaires à la configuration des fonctionnalités décrites dans ce document.

Diagramme du réseau

Ce document utilise la configuration réseau suivante :



Configurations

Ce document utilise ces configurations :

Routeur

```
Router#show running-config
Current configuration : 1354 bytes
!
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname Router
```

```
!
boot-start-marker
boot-end-marker
!
!
no aaa new-model
!
resource policy
!
ip cef


!--- Configuration for IKE policies.
!--- Enables the IKE policy configuration (config-isakmp)
!--- command mode, where you can specify the parameters that
!--- are used during an IKE negotiation.


crypto isakmp policy 1
 encryption aes 256
 hash sha
 authentication pre-share
 group 2


!--- Specifies the preshared key "cisco123" which should
!--- be identical at both peers. This is a global
!--- configuration mode command.


crypto isakmp key cisco123 address 192.168.1.2
!
!

!--- Configuration for IPsec policies.
!--- Enables the crypto transform configuration mode,
!--- where you can specify the transform sets that are used
!--- during an IPsec negotiation.


crypto ipsec transform-set myset esp-aes 256 esp-sha-hmac


!--- Indicates that IKE is used to establish
!--- the IPsec Security Association for protecting the
!--- traffic specified by this crypto map entry.


crypto map mymap 10 ipsec-isakmp


!--- Sets the IP address of the remote end.


 set peer 192.168.1.2


!--- Configures IPsec to use the transform-set
!--- "myset" defined earlier in this configuration.


 set transform-set myset
```

```
!--- Specifies the interesting traffic to be encrypted.


 match address 101
!
!
!
!
interface FastEthernet0/0

!--- The interface dynamically learns its IP address
!--- from the service provider.


 ip address DHCP

 ip virtual-reassembly
 half-duplex

!--- Configures the interface to use the
!--- crypto map "mymap" for IPsec.

 crypto map mymap
!
interface FastEthernet1/0
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface Serial2/0
 ip address 10.1.1.2 255.255.255.0
 ip nat inside
 ip virtual-reassembly
 no fair-queue
!
interface Serial2/1
 no ip address
 shutdown
!
interface Serial2/2
 no ip address
 shutdown
!
interface Serial2/3
 no ip address
 shutdown
!
ip http server
no ip http secure-server
!
ip route 0.0.0.0 0.0.0.0 FastEthernet0/0
!
ip nat inside source route-map nonat interface FastEthernet0/0 overload
!

!--- This crypto ACL 101 -permit identifies the
!--- matching traffic flows to be protected via encryption.
```

```
access-list 101 permit ip 10.1.1.0 0.0.0.255 10.2.2.0 0.0.0.255


!--- This ACL 110 identifies the traffic flows using route map and
!--- are PATed via outside interface (Ethernet0/0).


access-list 110 deny ip 10.1.1.0 0.0.0.255 10.2.2.0 0.0.0.255
access-list 110 permit ip 10.1.1.0 0.0.0.255 any


!
route-map nonat permit 10
 match ip address 110
!
!
control-plane
!

!
line con 0
line aux 0
line vty 0 4
!
!
end
```

ASA

```
ASA#show running-config
ASA Version 9.4(1)
!
hostname ASA
enable password 8Ry2YjIyt7RRXU24 encrypted
names
!

!--- Configure the outside and inside interfaces.

interface GigabitEthernet0/0
 nameif outside
 security-level 0
 ip address 192.168.1.2 255.255.255.0
!
interface GigabitEthernet0/1
 nameif inside
 security-level 100
 ip address 10.2.2.1 255.255.255.0
!
!


!--- Output is suppressed.


!
passwd 2KFQnbNIdI.2KYOU encrypted
ftp mode passive
```

```
!--- Manual NAT prevents NAT for networks specified in the statement - nonat.
!--- The Object NAT 1 command specifies PAT using
!--- the outside interface for all other traffic.

object network LOCAL
 subnet 10.2.2.0 255.255.255.0
object network REMOTE
 subnet 10.1.1.0 255.255.255.0


pager lines 24
mtu outside 1500
mtu inside 1500
no failover
no asdm history enable
arp timeout 14400



!--- Manual NAT prevents NAT for networks specified in the statement - nonat.
!--- The Object NAT 1 command specifies PAT using
!--- the outside interface for all other traffic.



nat (inside,outside) source static LOCAL LOCAL destination static REMOTE REMOTE
!
object network LOCAL
 nat (inside,outside) dynamic interface

route outside 0.0.0.0 0.0.0.0 192.168.1.1 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
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 ikev1 transform-set myset esp-aes-256 esp-sha-hmac


!--- Defines a dynamic crypto map with
!--- the specified encryption settings.


crypto dynamic-map cisco 1 set ikev1 transform-set myset


!--- Binds the dynamic map to the IPsec/ISAKMP process.


crypto map dyn-map 10 ipsec-isakmp dynamic cisco
```

```
!--- Specifies the interface to be used with
!--- the settings defined in this configuration.


crypto map dyn-map interface outside


!--- PHASE 1 CONFIGURATION ---!

!--- This configuration uses isakmp policy 10.
!--- The configuration commands here define the Phase
!--- 1 policy parameters that are used.

crypto ikev1 enable outside
crypto isakmp policy 10
 authentication pre-share
 encryption aes-256
 hash sha
 group 2
 lifetime 86400

!--- The security appliance provides the default tunnel groups
!--- for Lan to Lan access (DefaultL2LGroup) and configure the preshared key
!--- (cisco123) to authenticate the remote router.


tunnel-group DefaultL2LGroup ipsec-attributes
 pre-shared-key cisco123

telnet timeout 5
ssh timeout 5
console timeout 0
!
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
prompt hostname context
Cryptochecksum:6ed4a7bce392a439d0a16e86743e2663
```

```
: end
```

Effacer les associations de sécurité

En mode privilégié de l'ASA, utilisez ces commandes :

- clear crypto ipsec sa : supprime les SA IPsec actives. Le mot clé crypto est facultatif.
- clear crypto isakmp sa : supprime les SA IKE actives. Le mot clé crypto est facultatif.

Vérifier

Référez-vous à cette section pour vous assurer du bon fonctionnement de votre configuration.

Certaines commandes d'affichage (« show ») sont offertes par l'outil « Cisco CLI Analyzer » réservé aux clients inscrits. Utilisez cet outil pour obtenir une analyse des rapports produits par ces commandes.

Appliance de sécurité ASA - Commandes show

- show crypto isakmp sa : affiche toutes les associations de sécurité IKE actuelles sur un homologue.

```
<#root>

ASA#

show crypto isakmp sa


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

1   IKE Peer: 172.16.1.3
    Type    : L2L             Role    : responder
    Rekey   : no              State   : MM_ACTIVE
```

- show crypto ipsec sa : affiche toutes les SA IPsec actuelles sur un homologue.

```
<#root>

ASA#

show crypto ipsec sa

            interface: outside
    Crypto map tag: cisco, seq num: 1, local addr: 192.168.1.2
```

```
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: 172.16.1.3


 #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.: 192.168.1.2, remote crypto endpt.: 172.16.1.3


      path mtu 1500, ipsec overhead 58, media mtu 1500
      current outbound spi: 28C8C1BD

    inbound esp sas:
      spi: 0x33785672 (863524466)
         transform: esp-3des esp-md5-hmac
         in use settings ={L2L, Tunnel, }
         slot: 0, conn_id: 6, crypto-map: cisco
         sa timing: remaining key lifetime (kB/sec): (4274999/3564)
         IV size: 8 bytes
         replay detection support: Y
    outbound esp sas:
      spi: 0x28C8C1BD (684245437)
         transform: esp-3des esp-md5-hmac
         in use settings ={L2L, Tunnel, }
         slot: 0, conn_id: 6, crypto-map: cisco
         sa timing: remaining key lifetime (kB/sec): (4274999/3562)
         IV size: 8 bytes
         replay detection support: Y
```

Routeur IOS distant - Commandes show

- show crypto isakmp sa : affiche toutes les associations de sécurité IKE actuelles sur un homologue.

<#root>

Router#

show crypto isakmp sa

```
   dst             src           state          conn-id slot status
192.168.1.2     172.16.1.3
```

QM_IDLE

```
              1    0
ACTIVE
```

- show crypto ipsec sa : affiche toutes les SA IPsec actuelles sur un homologue.

<#root>

```
Router#
show crypto ipsec sa

        interface: Ethernet0/0
    Crypto map tag: pix, local addr 172.16.1.3

   protected vrf: (none)


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 192.168.1.2 port 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 not decompressed: 0, #pkts decompress failed: 0
    #send errors 62, #recv errors 0



local crypto endpt.: 172.16.1.3, remote crypto endpt.: 192.168.1.2

     path mtu 1500, ip mtu 1500, ip mtu idb Ethernet0/0
     current outbound spi: 0x33785672(863524466)

     inbound esp sas:
      spi: 0x28C8C1BD(684245437)
        transform: esp-3des esp-md5-hmac ,
        in use settings ={Tunnel, }
        conn id: 2002, flow_id: SW:2, crypto map: pix
        sa timing: remaining key lifetime (k/sec): (4431817/3288)
        IV size: 8 bytes
        replay detection support: Y
        Status: ACTIVE

     inbound ah sas:

     inbound pcp sas:

     outbound esp sas:
      spi: 0x33785672(863524466)
        transform: esp-3des esp-md5-hmac ,
        in use settings ={Tunnel, }
        conn id: 2001, flow_id: SW:1, crypto map: pix
        sa timing: remaining key lifetime (k/sec): (4431817/3286)
```

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

        outbound ah sas:

        outbound pcp sas:
```

Dépannage

Cette section fournit des informations que vous pouvez utiliser pour dépanner votre configuration.

Certaines commandes d'affichage (« show ») sont offertes par l'outil « Cisco CLI Analyzer » réservé aux clients inscrits. Utilisez cet outil pour obtenir une analyse des rapports produits par ces commandes.

Remarque : Référez-vous à Informations importantes sur les commandes de débogage et au Dépannage de la sécurité IP - Compréhension et utilisation des commandes de débogage avant d'utiliser les commandes de débogage.

- Adaptive Security Appliance - résultats du débogage

  debug crypto ipsec 7 : affiche les négociations IPsec de la phase 2.

  debug crypto isakmp 7 : affiche les négociations ISAKMP de la phase 1.

- Routeur IOS distant - Sorties de débogage

  debug crypto ipsec : affiche les négociations IPsec de la phase 2.

  debug crypto isakmp : affiche les négociations ISAKMP de la phase 1.

ASA - sorties de débogage

<#root>

```
ASA#

debug crypto isakmp 7

Jan 01 21:42:13 [IKEv1]: IP = 172.16.1.3, IKE_DECODE RECEIVED Messa
ge (msgid=0) with payloads : HDR + SA (1) + VENDOR (13) + VENDOR (13) + VENDOR (
13) + NONE (0) total length : 144
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, processing SA payload
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, Oakley proposal is acceptable
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, processing VID payload
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, processing VID payload
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, Received NAT-Traversal ver 03 VID
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, processing VID payload
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, Received NAT-Traversal ver 02 VID
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, processing IKE SA payload
```

```
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, IKE SA Proposal # 1, Transform #
 1 acceptable  Matches global IKE entry # 3
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, constructing ISAKMP SA payload
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, constructing Fragmentation VID +
 extended capabilities payload
Jan 01 21:42:13 [IKEv1]: IP = 172.16.1.3, IKE_DECODE SENDING Message (msgid=0) w
ith payloads : HDR + SA (1) + VENDOR (13) + NONE (0) total length : 108
Jan 01 21:42:13 [IKEv1]: IP = 172.16.1.3, IKE_DECODE RECEIVED Message (msgid=0)
with payloads : HDR + KE (4) + NONCE (10) + VENDOR (13) + VENDOR (13) + VENDOR (
13) + VENDOR (13) + NONE (0) total length : 256
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, processing ke payload
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, processing ISA_KE payload
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, processing nonce payload
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, processing VID payload
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, Received Cisco Unity client VID
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, processing VID payload
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, Received DPD VID
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, processing VID payload
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, Processing IOS/PIX Vendor ID pay
load (version: 1.0.0, capabilities: 0000077f)
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, processing VID payload
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, Received xauth V6 VID
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, constructing ke payload
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, constructing nonce payload
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, constructing Cisco Unity VID payload
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, constructing xauth V6 VID payload
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, Send IOS VID
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, Constructing ASA spoofing IOS Ve
ndor ID payload (version: 1.0.0, capabilities: 20000001)
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, constructing VID payload
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, Send Altiga/Cisco
VPN3000/CiscoASA GW VID
Jan 01 21:42:13 [IKEv1]: IP = 172.16.1.3, Connection landed on tunnel_group
DefaultL2LGroup
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3, Generat
ing keys for Responder...
Jan 01 21:42:13 [IKEv1]: IP = 172.16.1.3, IKE_DECODE SENDING Message (msgid=0) w
ith payloads : HDR + KE (4) + NONCE (10) + VENDOR (13) + VENDOR (13) + VENDOR (1
3) + VENDOR (13) + NONE (0) total length : 256
Jan 01 21:42:13 [IKEv1]: IP = 172.16.1.3, IKE_DECODE RECEIVED Message (msgid=0)
with payloads : HDR + ID (5) + HASH (8) + NOTIFY (11) + NONE (0) total length :88
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
processing ID payload
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
processing hash payload
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
Computing hash for ISAKMP
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
processing notify payload
Jan 01 21:42:13 [IKEv1]: IP = 172.16.1.3, Connection landed on tunnel_group
DefaultL2LGroup
Jan 01 21:42:13 [IKEv1]: Group = DefaultL2LGroup, IP = 172.16.1.3, Freeing
previously allocated memory for authorization-dn-attributes
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
constructing ID payload
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
constructing hash payload
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
Computing hash for ISAKMP
Jan 01 21:42:13 [IKEv1 DEBUG]: IP = 172.16.1.3, Constructing IOS keep alive
payload: proposal=32767/32767 sec.
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
```

```
constructing dpd vid payload
Jan 01 21:42:13 [IKEv1]: IP = 172.16.1.3, IKE_DECODE SENDING Message (msgid=0)
with payloads : HDR + ID (5) + HASH (8) + IOS KEEPALIVE (128) + VENDOR (13) +
NONE (0) total length : 92
Jan 01 21:42:13 [IKEv1]: Group = DefaultL2LGroup, IP = 172.16.1.3,
```

PHASE 1 COMPLETED

```
Jan 01 21:42:13 [IKEv1]: IP = 172.16.1.3, Keep-alive type for this connection: DPD
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3, Starting
P1 rekey timer: 82080 seconds.
Jan 01 21:42:13 [IKEv1]: IP = 172.16.1.3, IKE_DECODE RECEIVED Message (msgid=4bc
07a70) with payloads : HDR + HASH (8) + SA (1) + NONCE (10) + ID (5) + ID (5) +
NONE (0) total length : 164
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
processing hash payload
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
processing SA payload
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
processing nonce payload
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
processing ID payload
Jan 01 21:42:13 [IKEv1]: Group = DefaultL2LGroup, IP = 172.16.1.3,
Received remote IP Proxy Subnet data in ID Payload:
Address 10.1.1.0, Mask 255.255.255.0, Protocol 0, Port 0
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
processing ID payload
Jan 01 21:42:13 [IKEv1]: Group = DefaultL2LGroup, IP = 172.16.1.3,
Received local IP Proxy Subnet data in ID Payload:
Address 10.2.2.0, Mask 255.255.255.0, Protocol 0, Port 0
Jan 01 21:42:13 [IKEv1]: Group = DefaultL2LGroup, IP = 172.16.1.3,
QM IsRekeyedold sa not found by addr
Jan 01 21:42:13 [IKEv1]: Group = DefaultL2LGroup, IP = 172.16.1.3,
IKE Remote Peer configured for crypto map: cisco
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
processing IPSec SA payload
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3, IPSec S
A Proposal # 1, Transform # 1 acceptable  Matches global IPSec SA entry # 1
Jan 01 21:42:13 [IKEv1]: Group = DefaultL2LGroup, IP = 172.16.1.3, IKE:
requesting SPI!
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
IKE got SPI from key engine: SPI = 0xc3fe4fb0
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
oakleyconstucting quick mode
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
constructing blank hash payload
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
constructing IPSec SA payload
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
constructing IPSec nonce payload
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
constructing proxy ID
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
Transmitting Proxy Id:
```

Remote subnet: 10.1.1.0 Mask 255.255.255.0 Protocol 0 Port 0
** Local subnet: 10.2.2.0 mask 255.255.255.0 Protocol 0 Port 0**

```
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
constructing qm hash payload
Jan 01 21:42:13 [IKEv1]: IP = 172.16.1.3, IKE_DECODE SENDING Message (msgid=4bc0
7a70) with payloads : HDR + HASH (8) + SA (1) + NONCE (10) + ID (5) + ID (5) + N
```

```
ONE (0) total length : 164
Jan 01 21:42:13 [IKEv1]: IP = 172.16.1.3, IKE_DECODE RECEIVED Message (msgid=4bc
07a70) with payloads : HDR + HASH (8) + NONE (0) total length : 48
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
processing hash payload
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
loading all IPSEC SAs
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
Generating Quick Mode Key!
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
Generating Quick Mode Key!
Jan 01 21:42:13 [IKEv1]: Group = DefaultL2LGroup, IP = 172.16.1.3, Security nego
tiation complete for LAN-to-LAN Group (DefaultL2LGroup)  Responder,
Inbound SPI= 0xc3fe4fb0, Outbound SPI = 0x9ac1e72c
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
IKE got a KEY_ADD msg for SA: SPI = 0x9ac1e72c
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
Pitcher: received KEY_UPDATE, spi 0xc3fe4fb0
Jan 01 21:42:13 [IKEv1 DEBUG]: Group = DefaultL2LGroup, IP = 172.16.1.3,
Starting P2 rekey timer: 3420 seconds.
Jan 01 21:42:13 [IKEv1]: Group = DefaultL2LGroup, IP = 172.16.1.3,
```

PHASE 2 COMPL
ETED

```
 (msgid=4bc07a70)


pixfirewall#
```

debug crypto ipsec 7

```
pixfirewall# IPSEC: New embryonic SA created @ 0x028B6EE0,
    SCB: 0x028B6E50,
    Direction: inbound
    SPI      : 0x97550AC8
    Session ID: 0x00000009
    VPIF num  : 0x00000001
    Tunnel type: l2l
    Protocol   : esp
    Lifetime   : 240 seconds
IPSEC: New embryonic SA created @ 0x028B75E8,
    SCB: 0x028B7528,
    Direction: outbound
    SPI      : 0xB857E226
    Session ID: 0x00000009
    VPIF num  : 0x00000001
    Tunnel type: l2l
    Protocol   : esp
    Lifetime   : 240 seconds
IPSEC: Completed host OBSA update, SPI 0xB857E226
IPSEC: Creating outbound VPN context, SPI 0xB857E226
    Flags: 0x00000005
    SA   : 0x028B75E8
    SPI  : 0xB857E226
    MTU  : 1500 bytes
    VCID : 0x00000000
    Peer : 0x00000000
    SCB  : 0x028B7528
    Channel: 0x01693F28
IPSEC: Completed outbound VPN context, SPI 0xB857E226
    VPN handle: 0x0002524C
IPSEC: New outbound encrypt rule, SPI 0xB857E226
```

```
    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 0xB857E226
    Rule ID: 0x028A9988
IPSEC: New outbound permit rule, SPI 0xB857E226
    Src addr: 192.168.1.2
    Src mask: 255.255.255.255
    Dst addr: 172.16.1.3
    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: 0xB857E226
    Use SPI: true
IPSEC: Completed outbound permit rule, SPI 0xB857E226
    Rule ID: 0x028B5D90
IPSEC: Completed host IBSA update, SPI 0x97550AC8
IPSEC: Creating inbound VPN context, SPI 0x97550AC8
    Flags: 0x00000006
    SA   : 0x028B6EE0
    SPI  : 0x97550AC8
    MTU  : 0 bytes
    VCID : 0x00000000
    Peer : 0x0002524C
    SCB  : 0x028B6E50
    Channel: 0x01693F28
IPSEC: Completed inbound VPN context, SPI 0x97550AC8
    VPN handle: 0x0002B344
IPSEC: Updating outbound VPN context 0x0002524C, SPI 0xB857E226
    Flags: 0x00000005
    SA   : 0x028B75E8
    SPI  : 0xB857E226
    MTU  : 1500 bytes
    VCID : 0x00000000
    Peer : 0x0002B344
    SCB  : 0x028B7528
    Channel: 0x01693F28
IPSEC: Completed outbound VPN context, SPI 0xB857E226
    VPN handle: 0x0002524C
IPSEC: Completed outbound inner rule, SPI 0xB857E226
    Rule ID: 0x028A9988
```

```
IPSEC: Completed outbound outer SPD rule, SPI 0xB857E226
    Rule ID: 0x028B5D90
IPSEC: New inbound tunnel flow rule, SPI 0x97550AC8
    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 0x97550AC8
    Rule ID: 0x027FF7F8
IPSEC: New inbound decrypt rule, SPI 0x97550AC8
    Src addr: 172.16.1.3
    Src mask: 255.255.255.255
    Dst addr: 192.168.1.2
    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: 0x97550AC8
    Use SPI: true
IPSEC: Completed inbound decrypt rule, SPI 0x97550AC8
    Rule ID: 0x028BB318
IPSEC: New inbound permit rule, SPI 0x97550AC8
    Src addr: 172.16.1.3
    Src mask: 255.255.255.255
    Dst addr: 192.168.1.2
    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: 0x97550AC8
    Use SPI: true
IPSEC: Completed inbound permit rule, SPI 0x97550AC8
    Rule ID: 0x028A7460
```

Routeur IOS distant - sorties de débogage

<#root>

```
Router#

debug crypto isakmp

*Dec 31 01:18:51.830: ISAKMP: received ke message (1/1)
*Dec 31 01:18:51.830: ISAKMP:(0:0:N/A:0): SA request profile is (NULL)
*Dec 31 01:18:51.830: ISAKMP:

Created a peer struct for 192.168.1.2, peer port 500

*Dec 31 01:18:51.830: ISAKMP: New peer created peer = 0x64DC2CB4 peer_handle = 0
x80000022
*Dec 31 01:18:51.834: ISAKMP: Locking peer struct 0x64DC2CB4, IKE refcount 1 for
 isakmp_initiator
*Dec 31 01:18:51.834: ISAKMP: local port 500, remote port 500
*Dec 31 01:18:51.834: ISAKMP: set new node 0 to QM_IDLE
*Dec 31 01:18:51.834: insert sa successfully sa = 640D2660
*Dec 31 01:18:51.834: ISAKMP:(0:0:N/A:0):Can not start Aggressive mode,
trying Main mode.
*Dec 31 01:18:51.834: ISAKMP:(0:0:N/A:0):found peer pre-shared key
matching 192.168.1.2
*Dec 31 01:18:51.838: ISAKMP:(0:0:N/A:0): constructed NAT-T vendor-07 ID
*Dec 31 01:18:51.838: ISAKMP:(0:0:N/A:0): constructed NAT-T vendor-03 ID
*Dec 31 01:18:51.838: ISAKMP:(0:0:N/A:0): constructed NAT-T vendor-02 ID
*Dec 31 01:18:51.838: ISAKMP:(0:0:N/A:0):Input = IKE_MESG_FROM_IPSEC, IKE_SA_REQ_MM
*Dec 31 01:18:51.838: ISAKMP:(0:0:N/A:0):Old State = IKE_READY  New State = IKE_I_MM1

*Dec 31 01:18:51.838: ISAKMP:(0:0:N/A:0):

beginning Main Mode exchange

*Dec 31 01:18:51.842: ISAKMP:(0:0:N/A:0): sending packet to 192.168.1.2 my_port
500 peer_port 500 (I) MM_NO_STATE
*Dec 31 01:18:51.846: ISAKMP (0:0): received packet from 192.168.1.2 dport 500 s
port 500 Global (I) MM_NO_STATE
*Dec 31 01:18:51.850: ISAKMP:(0:0:N/A:0):Input = IKE_MESG_FROM_PEER, IKE_MM_EXCH
*Dec 31 01:18:51.850: ISAKMP:(0:0:N/A:0):Old State = IKE_I_MM1  New State = IKE_I_MM2

*Dec 31 01:18:51.850: ISAKMP:(0:0:N/A:0): processing SA payload. message ID = 0
*Dec 31 01:18:51.850: ISAKMP:(0:0:N/A:0): processing vendor id payload
*Dec 31 01:18:51.850: ISAKMP:(0:0:N/A:0): vendor ID seems Unity/DPD but
major 194 mismatch
*Dec 31 01:18:51.850: ISAKMP:(0:0:N/A:0):

found peer pre-shared key
matching 192.168.1.2

*Dec 31 01:18:51.854: ISAKMP:(0:0:N/A:0): local preshared key found
*Dec 31 01:18:51.854: ISAKMP : Scanning profiles for xauth ...
*Dec 31 01:18:51.854: ISAKMP:(0:0:N/A:0):Checking ISAKMP transform 1
against priority 1 policy
*Dec 31 01:18:51.854: ISAKMP:      encryption 3DES-CBC
*Dec 31 01:18:51.854: ISAKMP:      hash MD5
*Dec 31 01:18:51.854: ISAKMP:      default group 2
*Dec 31 01:18:51.854: ISAKMP:      auth pre-share
*Dec 31 01:18:51.854: ISAKMP:      life type in seconds
*Dec 31 01:18:51.854: ISAKMP:      life duration (VPI) of  0x0 0x1 0x51 0x80
*Dec 31 01:18:51.858: ISAKMP:(0:0:N/A:0):atts are acceptable. Next payload is 0
```

```
*Dec 31 01:18:51.998: ISAKMP:(0:1:SW:1): processing vendor id payload
*Dec 31 01:18:51.998: ISAKMP:(0:1:SW:1): vendor ID seems Unity/DPD but
major 194 mismatch
*Dec 31 01:18:51.998: ISAKMP:(0:1:SW:1):Input = IKE_MESG_INTERNAL,
IKE_PROCESS_MAIN_MODE
*Dec 31 01:18:51.998: ISAKMP:(0:1:SW:1):Old State = IKE_I_MM2  New State = IKE_I_MM2
*Dec 31 01:18:52.002: ISAKMP:(0:1:SW:1): sending packet to 192.168.1.2 my_port 5
00 peer_port 500 (I) MM_SA_SETUP
*Dec 31 01:18:52.006: ISAKMP:(0:1:SW:1):Input = IKE_MESG_INTERNAL,
```

IKE_PROCESS_COMPLETE

```
*Dec 31 01:18:52.006: ISAKMP:(0:1:SW:1):Old State = IKE_I_MM2  New State = IKE_I_MM3
*Dec 31 01:18:52.066: ISAKMP (0:134217729): received packet from 192.168.1.2 dpo
rt 500 sport 500 Global (I) MM_SA_SETUP
*Dec 31 01:18:52.066: ISAKMP:(0:1:SW:1):Input = IKE_MESG_FROM_PEER, IKE_MM_EXCH
*Dec 31 01:18:52.066: ISAKMP:(0:1:SW:1):Old State = IKE_I_MM3  New State = IKE_I_MM4
*Dec 31 01:18:52.070: ISAKMP:(0:1:SW:1): processing KE payload. message ID = 0
*Dec 31 01:18:52.246: ISAKMP:(0:1:SW:1): processing NONCE payload. message ID =0
*Dec 31 01:18:52.246: ISAKMP:(0:1:SW:1):found peer pre-shared key matching 192.168.1.2
*Dec 31 01:18:52.250: ISAKMP:(0:1:SW:1):SKEYID state generated
*Dec 31 01:18:52.250: ISAKMP:(0:1:SW:1): processing vendor id payload
*Dec 31 01:18:52.250: ISAKMP:(0:1:SW:1): vendor ID is Unity
*Dec 31 01:18:52.250: ISAKMP:(0:1:SW:1): processing vendor id payload
*Dec 31 01:18:52.250: ISAKMP:(0:1:SW:1): vendor ID seems Unity/DPD but
major 227 mismatch
*Dec 31 01:18:52.250: ISAKMP:(0:1:SW:1): vendor ID is XAUTH
*Dec 31 01:18:52.250: ISAKMP:(0:1:SW:1): processing vendor id payload
*Dec 31 01:18:52.254: ISAKMP:(0:1:SW:1): speaking to another IOS box!
*Dec 31 01:18:52.254: ISAKMP:(0:1:SW:1): processing vendor id payload
*Dec 31 01:18:52.254: ISAKMP:(0:1:SW:1):vendor ID seems Unity/DPD but hash mismatch
*Dec 31 01:18:52.254: ISAKMP:(0:1:SW:1):Input = IKE_MESG_INTERNAL,
IKE_PROCESS_MAIN_MODE
*Dec 31 01:18:52.254: ISAKMP:(0:1:SW:1):Old State = IKE_I_MM4  New State = IKE_I_MM4
*Dec 31 01:18:52.262: ISAKMP:(0:1:SW:1):Send initial contact
*Dec 31 01:18:52.262: ISAKMP:(0:1:SW:1):
```

SA is doing pre-shared key
authentication using id type ID_IPV4_ADDR

```
*Dec 31 01:18:52.266: ISAKMP (0:134217729): ID payload
        next-payload : 8
        type         : 1
        address      : 172.16.1.3
        protocol     : 17
        port         : 500
        length       : 12
*Dec 31 01:18:52.266: ISAKMP:(0:1:SW:1):Total payload length: 12
*Dec 31 01:18:52.266: ISAKMP:(0:1:SW:1): sending packet to 192.168.1.2 my_port 5
00 peer_port 500 (I) MM_KEY_EXCH
*Dec 31 01:18:52.270: ISAKMP:(0:1:SW:1):Input = IKE_MESG_INTERNAL, IKE_PROCESS_COMPLETE
*Dec 31 01:18:52.270: ISAKMP:(0:1:SW:1):Old State = IKE_I_MM4  New State = IKE_I_MM5
*Dec 31 01:18:52.342: ISAKMP (0:134217729):
```

received packet from 192.168.1.2 dpo
rt 500 sport 500 Global (I) MM_KEY_EXCH

```
*Dec 31 01:18:52.342: ISAKMP:(0:1:SW:1): processing ID payload. message ID = 0
*Dec 31 01:18:52.342: ISAKMP (0:134217729): ID payload
        next-payload : 8
        type         : 1
        address      : 192.168.1.2
        protocol     : 17
        port         : 500
```

```
        length       : 12
*Dec 31 01:18:52.342: ISAKMP:(0:1:SW:1):: peer matches *none* of the profiles
*Dec 31 01:18:52.346: ISAKMP:(0:1:SW:1): processing HASH payload. message ID = 0
*Dec 31 01:18:52.346: ISAKMP:received payload type 17
*Dec 31 01:18:52.346: ISAKMP:(0:1:SW:1): processing vendor id payload
*Dec 31 01:18:52.346: ISAKMP:(0:1:SW:1): vendor ID is DPD
*Dec 31 01:18:52.346: ISAKMP:(0:1:SW:1):SA authentication status: authenticated
*Dec 31 01:18:52.346: ISAKMP:(0:1:SW:1):SA has been authenticated with 192.168.1.2
*Dec 31 01:18:52.346: ISAKMP: Trying to insert a peer 172.16.1.3/192.168.1.2/500
/,  and inserted successfully 64DC2CB4.
*Dec 31 01:18:52.346: ISAKMP:(0:1:SW:1):Input = IKE_MESG_FROM_PEER, IKE_MM_EXCH
*Dec 31 01:18:52.350: ISAKMP:(0:1:SW:1):Old State = IKE_I_MM5  New State =
IKE_I_MM6
*Dec 31 01:18:52.350: ISAKMP:(0:1:SW:1):Input = IKE_MESG_INTERNAL,
IKE_PROCESS_MAIN_MODE
*Dec 31 01:18:52.350: ISAKMP:(0:1:SW:1):Old State = IKE_I_MM6  New State = IKE_I_MM6
*Dec 31 01:18:52.354: ISAKMP:(0:1:SW:1):Input = IKE_MESG_INTERNAL,
IKE_PROCESS_COMPLETE
*Dec 31 01:18:52.354: ISAKMP:(0:1:SW:1):Old State = IKE_I_MM6  New State =
IKE_P1_COMPLETE
*Dec 31 01:18:52.358: ISAKMP:(0:1:SW:1):beginning Quick Mode exchange, M-ID
of 1270905456
*Dec 31 01:18:52.362: ISAKMP:(0:1:SW:1): sending packet to 192.168.1.2 my_port 5
00 peer_port 500 (I) QM_IDLE
*Dec 31 01:18:52.362: ISAKMP:(0:1:SW:1):Node 1270905456, Input =
IKE_MESG_INTERNAL, IKE_INIT_QM
*Dec 31 01:18:52.362: ISAKMP:(0:1:SW:1):Old State = IKE_QM_READY
New State = IKE_QM_I_QM1
*Dec 31 01:18:52.362: ISAKMP:(0:1:SW:1):Input = IKE_MESG_INTERNAL,
IKE_PHASE1_COMPLETE
*Dec 31 01:18:52.366: ISAKMP:(0:1:SW:1):Old State = IKE_P1_COMPLETE
New State =
```

IKE_P1_COMPLETE

```
*Dec 31 01:18:52.374: ISAKMP (0:134217729): received packet from 192.168.1.2 dpo
rt 500 sport 500 Global (I)
```

QM_IDLE

```
*Dec 31 01:18:52.378: ISAKMP:(0:1:SW:1): processing HASH payload.
message ID = 1270905456
*Dec 31 01:18:52.378: ISAKMP:(0:1:SW:1): processing SA payload.
message ID = 1270905456
*Dec 31 01:18:52.378: ISAKMP:(0:1:SW:1):Checking IPSec proposal 1
*Dec 31 01:18:52.378: ISAKMP: transform 1, ESP_3DES
*Dec 31 01:18:52.378: ISAKMP:   attributes in transform:
*Dec 31 01:18:52.378: ISAKMP:      SA life type in seconds
*Dec 31 01:18:52.378: ISAKMP:      SA life duration (basic) of 3600
*Dec 31 01:18:52.378: ISAKMP:      SA life type in kilobytes
*Dec 31 01:18:52.378: ISAKMP:      SA life duration (VPI) of  0x0 0x46 0x50 0x0
*Dec 31 01:18:52.378: ISAKMP:      encaps is 1 (Tunnel)
*Dec 31 01:18:52.382: ISAKMP:      authenticator is HMAC-MD5
*Dec 31 01:18:52.382: ISAKMP:(0:1:SW:1):atts are acceptable.
*Dec 31 01:18:52.382: ISAKMP:(0:1:SW:1): processing NONCE payload.
message ID =1270905456
*Dec 31 01:18:52.382: ISAKMP:(0:1:SW:1): processing ID payload.
message ID = 1270905456
*Dec 31 01:18:52.382: ISAKMP:(0:1:SW:1): processing ID payload.
message ID = 1270905456
*Dec 31 01:18:52.386: ISAKMP: Locking peer struct 0x64DC2CB4,
IPSEC refcount 1 for for stuff_ke
```

```
*Dec 31 01:18:52.390: ISAKMP:(0:1:SW:1): Creating IPSec SAs
*Dec 31 01:18:52.390:         inbound SA from 192.168.1.2 to 172.16.1.3 (f/i)  0
/ 0
        (proxy 10.2.2.0 to 10.1.1.0)
*Dec 31 01:18:52.390:         has spi 0x9AC1E72C and conn_id 0 and flags 2
*Dec 31 01:18:52.390:         lifetime of 3600 seconds
*Dec 31 01:18:52.390:         lifetime of 4608000 kilobytes
*Dec 31 01:18:52.390:         has client flags 0x0
*Dec 31 01:18:52.390:         outbound SA from 172.16.1.3 to 192.168.1.2 (f/i) 0
/0
        (proxy 10.1.1.0 to 10.2.2.0)
*Dec 31 01:18:52.394:         has spi -1006743632 and conn_id 0 and flags A
*Dec 31 01:18:52.394:         lifetime of 3600 seconds
*Dec 31 01:18:52.394:         lifetime of 4608000 kilobytes
*Dec 31 01:18:52.394:         has client flags 0x0
*Dec 31 01:18:52.394: ISAKMP:(0:1:SW:1): sending packet to 192.168.1.2 my_port 5
00 peer_port 500 (I) QM_IDLE
*Dec 31 01:18:52.398: ISAKMP:(0:1:SW:1):deleting node 1270905456 error
FALSE reason "No Error"
*Dec 31 01:18:52.398: ISAKMP:(0:1:SW:1):Node 1270905456, Input =
IKE_MESG_FROM_PEER, IKE_QM_EXCH
*Dec 31 01:18:52.398: ISAKMP:(0:1:SW:1):Old State = IKE_QM_I_QM1
New State = IKE_QM_PHASE2_COMPLETE
*Dec 31 01:18:52.402: ISAKMP: Locking peer struct 0x64DC2CB4, IPSEC
refcount 2 for from create_transforms
*Dec 31 01:18:52.402: ISAKMP: Unlocking IPSEC struct 0x64DC2CB4 from
create_transforms, count 1
*Dec 31 01:19:06.130: ISAKMP (0:134217729): received packet from 192.168.1.2 dpo
rt 500 sport 500 Global (I) QM_IDLE
*Dec 31 01:19:06.130: ISAKMP: set new node 372376968 to QM_IDLE
*Dec 31 01:19:06.130: ISAKMP:(0:1:SW:1): processing HASH payload.
message ID = 372376968
*Dec 31 01:19:06.134: ISAKMP:(0:1:SW:1): processing NOTIFY DPD/R_U_THERE protocol 1
        spi 0, message ID = 372376968, sa = 640D2660
*Dec 31 01:19:06.134: ISAKMP:(0:1:SW:1):deleting node 372376968 error
FALSE reason "Informational (in) state 1"
*Dec 31 01:19:06.134: ISAKMP:(0:1:SW:1):Input = IKE_MESG_FROM_PEER,
IKE_INFO_NOTIFY
*Dec 31 01:19:06.134: ISAKMP:(0:1:SW:1):Old State = IKE_P1_COMPLETE
New State = IKE_P1_COMPLETE

*Dec 31 01:19:06.134: ISAKMP:(0:1:SW:1):DPD/R_U_THERE received from
peer 192.168.1.2, sequence 0x7E805468
*Dec 31 01:19:06.138: ISAKMP: set new node 2096423279 to QM_IDLE
*Dec 31 01:19:06.138: ISAKMP:(0:1:SW:1):Sending NOTIFY DPD/R_U_THERE_ACK protocol 1
        spi 1689358936, message ID = 2096423279
*Dec 31 01:19:06.138: ISAKMP:(0:1:SW:1): seq. no 0x7E805468
*Dec 31 01:19:06.138: ISAKMP:(0:1:SW:1): sending packet to 192.168.1.2 my_port 5
00 peer_port 500 (I) QM_IDLE
*Dec 31 01:19:06.142: ISAKMP:(0:1:SW:1):purging node 2096423279
*Dec 31 01:19:06.142: ISAKMP:(0:1:SW:1):Input = IKE_MESG_FROM_PEER,
```

IKE_MESG_KEEP_ALIVE

```
*Dec 31 01:19:06.142: ISAKMP:(0:1:SW:1):Old State = IKE_P1_COMPLETE
New State = IKE_P1_COMPLETE
```

<#root>

Router#

debug crypto ipsec

```
*Dec 31 01:29:05.402: IPSEC(sa_request): ,
  (key eng. msg.) OUTBOUND local= 172.16.1.3, remote= 192.168.1.2,
    local_proxy= 10.1.1.0/255.255.255.0/0/0 (type=4),
    remote_proxy= 10.2.2.0/255.255.255.0/0/0 (type=4),
    protocol= ESP, transform= esp-3des esp-md5-hmac  (Tunnel),
    lifedur= 3600s and 4608000kb,
    spi= 0xB857E226(3092767270), conn_id= 0, keysize= 0, flags= 0x400A
*Dec 31 01:29:05.774: IPSEC(validate_proposal_request): proposal part #1,
  (key eng. msg.) INBOUND local= 172.16.1.3, remote= 192.168.1.2,
    local_proxy= 10.1.1.0/255.255.255.0/0/0 (type=4),
    remote_proxy= 10.2.2.0/255.255.255.0/0/0 (type=4),
    protocol= ESP, transform= esp-3des esp-md5-hmac  (Tunnel),
    lifedur= 0s and 0kb,
    spi= 0x0(0), conn_id= 0, keysize= 0, flags= 0x2
*Dec 31 01:29:05.778: Crypto mapdb : proxy_match
        src addr     : 10.1.1.0
        dst addr     : 10.2.2.0
        protocol     : 0
        src port     : 0
        dst port     : 0
*Dec 31 01:29:05.782: IPSEC(key_engine): got a queue event with 2 kei messages
*Dec 31 01:29:05.782: IPSEC(initialize_sas): ,
  (key eng. msg.) INBOUND local= 172.16.1.3, remote= 192.168.1.2,
    local_proxy= 10.1.1.0/255.255.255.0/0/0 (type=4),
    remote_proxy= 10.2.2.0/255.255.255.0/0/0 (type=4),
    protocol= ESP, transform= esp-3des esp-md5-hmac  (Tunnel),
    lifedur= 3600s and 4608000kb,
    spi= 0xB857E226(3092767270), conn_id= 0, keysize= 0, flags= 0x2
*Dec 31 01:29:05.786: IPSEC(initialize_sas): ,
  (key eng. msg.) OUTBOUND local= 172.16.1.3, remote= 192.168.1.2,
    local_proxy= 10.1.1.0/255.255.255.0/0/0 (type=4),
    remote_proxy= 10.2.2.0/255.255.255.0/0/0 (type=4),
    protocol= ESP, transform= esp-3des esp-md5-hmac  (Tunnel),
    lifedur= 3600s and 4608000kb,
    spi= 0x9755OAC8(2538932936), conn_id= 0, keysize= 0, flags= 0xA
*Dec 31 01:29:05.786:
```

Crypto mapdb : proxy_match
src addr : 10.1.1.0
dst addr : 10.2.2.0
protocol : 0
src port : 0
dst port : 0

```
*Dec 31 01:29:05.786: IPSEC(crypto_ipsec_sa_find_ident_head): reconnecting with
the same proxies and 192.168.1.2
*Dec 31 01:29:05.786: IPSec: Flow_switching Allocated flow for sibling 80000006
*Dec 31 01:29:05.786: IPSEC(policy_db_add_ident): src 10.1.1.0, dest 10.2.2.0, d
est_port 0

*Dec 31 01:29:05.790: IPSEC(create_sa): sa created,
  (sa) sa_dest= 172.16.1.3, sa_proto= 50,
    sa_spi= 0xB857E226(3092767270),
    sa_trans= esp-3des esp-md5-hmac , sa_conn_id= 2001
*Dec 31 01:29:05.790: IPSEC(create_sa): sa created,
  (sa) sa_dest= 192.168.1.2, sa_proto= 50,
    sa_spi= 0x9755OAC8(2538932936),
    sa_trans= esp-3des esp-md5-hmac , sa_conn_id= 2002
```

Informations connexes

- Pare-feu de nouvelle génération Cisco ASA 5500-X
- Références des commandes Cisco ASA
- Page d'assistance Négociation IPSec/Protocoles IKE
- Demandes de commentaires (RFC)
- Assistance et documentation techniques - Cisco Systems

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