Configuration Example of Dynamic IPsec Between a Statically Addressed ASA and a Dynamically Addressed IOS Router with NAT

Contents

Introduction

This document provides a sample configuration for how to enable the Adaptive Security Appliance (ASA) in order to accept dynamic IPsec connections from the IOS Router.

Prerequisites

Requirements

Before you attempt this configuration, ensure that both the ASA and Router have Internet connectivity for establishing the IPsec tunnel.

This document assumes that you have already assigned the IP addresses on both the public and private interfaces and that you are able to ping the IP address of the remote VPN device.

Components Used

The information in this document is based on these software and hardware versions:

- Cisco 2900 Router with Cisco IOS Software Release 15.2(4)M3
- Cisco Adaptive Security Appliance Software 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

Refer to the Cisco Technical Tips Conventions for more information on document conventions.

Background Information

The remote router performs Network Address Translation (NAT) if private network 10.1.1.x accesses the Internet. Traffic from 10.1.1.x to private network 10.2.2.x behind the ASA is excluded from the NAT process. The IPsec tunnel establishes only if the traffic (10.1.1.x) initates the connection from the router with the ASA that has a remote network (10.2.2.x). The router can initiate connections to the ASA, but the ASA cannot initiate connections to the router.

This configuration enables the ASA to create a dynamic IPsec LAN-to-LAN (L2L) tunnel with a remote VPN router. This Router dynamically recieves its outside public IP address from its Internet service provider. Dynamic Host Configuration Protocol (DHCP) provides this mechanism in order to allocate IP addresses dynamically from the provider. This allows IP addresses to be reused when hosts no longer need them.

On the ASA you can configure a Manual NAT to ensure the traffic that goes through the tunnel does not get translated. In this example, if you are on the 10.2.2.0 network and go to the 10.1.1.0 network, the **Manual NAT**is used to permit the 10.1.1.0 network traffic to be encrypted without being translated to the outside interface IP address. On the router, the **route-map** and **access-list** commands are used to permit the 10.1.1.0 network traffic to be encrypted without NAT. However, when you go anywhere else (like the Internet), you are translated to the outside interface IP address through Port Address Translation (PAT).

> **Note**: Refer to Applying NAT for more information on NAT

These are the configuration commands required on the ASA in order for traffic *not* to run through PAT over the tunnel, and traffic to the Internet to run through PAT

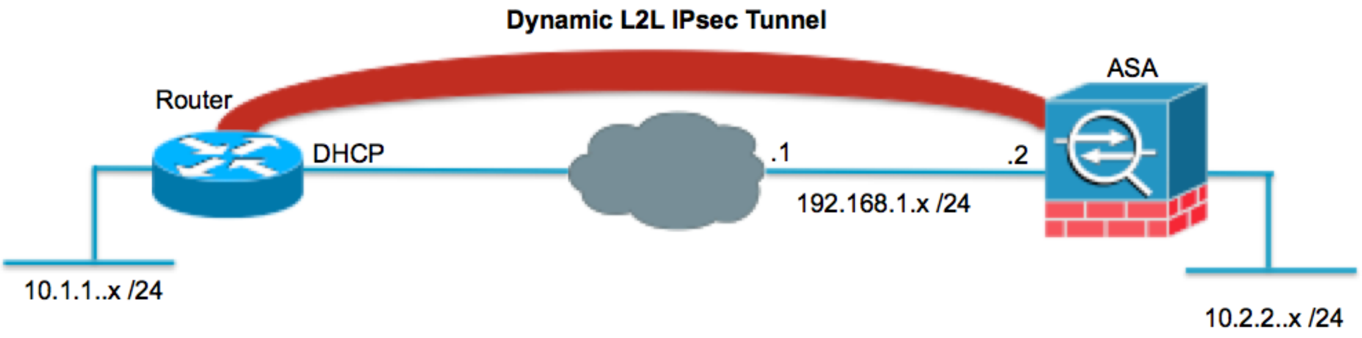
```
object network LOCAL
 subnet 10.2.2.0 255.255.255.0
object network REMOTE
 subnet 10.1.1.0 255.255.255.0nat (inside,outside) source static LOCAL LOCAL destination static
REMOTE REMOTEobject network LOCAL
 nat (inside,outside) dynamic interface
```

Configure

In this section, you are presented with the information to configure the features described in this document.

Network Diagram

This document uses this network setup:



Configurations

This document uses these configurations:

Router

```
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
```

Clear Security Associations (SAs)

In the priviledge mode of the ASA, use these commands:

- **clear crypto ipsec sa**—Deletes the active IPsec SAs. The keyword crypto is optional.
- **clear crypto isakmp sa**—Deletes the active IKE SAs. The keyword crypto is optional.

Verify

Use this section to confirm that your configuration works properly.

The Cisco CLI Analyzer (registered customers only) supports certain **show** commands. Use the Cisco CLI Analyzer in order to view an analysis of **show** command output.

ASA Security Appliance - show Commands

- **show crypto isakmp sa**—Shows all current IKE SAs at a peer.

  ```
  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**—Shows all current IPsec SAs at a peer.

  ```
  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
  ```

Remote IOS Router - show Commands

- **show crypto isakmp sa**—Shows all current IKE SAs at a peer.
  ```
  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**—Shows all current IPsec SAs at a peer.
  ```
  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:
  ```

Troubleshoot

This section provides information you can use to troubleshoot your configuration.

The Cisco CLI Analyzer (registered customers only) supports certain **show** commands. Use the Cisco CLI Analyzer in order to view an analysis of **show** command output.

> **Note**: Refer to Important Information on Debug Commands and IP Security Troubleshooting - Understanding and Using debug Commands before you use **debug** commands.

- Adaptive Security Appliance - debug Outputs**debug crypto ipsec 7**—Displays the IPsec negotiations of phase 2.**debug crypto isakmp 7**—Displays the ISAKMP negotiations of phase 1.
- Remote IOS Router - debug Outputs**debug crypto ipsec**—Displays the IPsec negotiations of phase 2.**debug crypto isakmp**—Displays the ISAKMP negotiations of phase 1.

ASA - debug outputs

```
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
```

Remote IOS Router - debug outputs

```
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
```

```
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= 0x97550AC8(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= 0x97550AC8(2538932936), sa_trans=
esp-3des esp-md5-hmac , sa_conn_id= 2002
```

Related Information

- **Cisco ASA 5500-X Series Next-Generation Firewalls**

- **Cisco ASA Command References**
- **IPSec Negotiation/IKE Protocols Support Page**
- **Requests for Comments (RFCs)**
- **Technical Support & Documentation - Cisco Systems**