Configuración de TACACS+ y de la autenticación extendida de RADIUS con VPN Client

Contenido

Introducción

Este documento muestra configuraciones de ejemplo para la autenticación extendida (Xauth) de TACACS+ y RADIUS Internet Engineering Task Force (IETF). Xauth le permite implementar la seguridad IP (IPSec) en redes privadas virtuales (VPN) mediante TACACS+ o RADIUS como método de autenticación de usuario dentro del protocolo de intercambio de claves de Internet (IKE). Esta función proporciona autenticación a un usuario que tiene instalado CiscoSecure VPN Client 1.1 en su PC, solicitando al usuario un nombre de usuario y una contraseña, y luego los verifica con la información almacenada en el servidor de autenticación, autorización y contabilidad (AAA), la base de datos TACACS+ o RADIUS. La autenticación se produce entre la fase IKE 1 y la fase IKE 2. Si el usuario se autentica correctamente, se establece una asociación de seguridad (SA) de fase 2 después de la cual se pueden enviar datos de forma segura a la red protegida.

Xauth incluye *solamente autenticación*, no *autorización* (donde los usuarios pueden ir una vez que se establece la conexión). *La contabilidad* (a donde fueron los usuarios) no se implementa.

La configuración debe funcionar sin Xauth antes de implementar Xauth. En nuestro ejemplo se muestra la configuración de modo (configuración de modo) y la traducción de direcciones de red (NAT) además de Xauth, pero se supone que la conectividad IPSec está presente antes de agregar los comandos Xauth.

Asegúrese de que Xauth local (nombre de usuario/contraseña en el router) funcione antes de

intentar con TACACS+ o RADIUS Xauth.

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.

- VPN Client versión 1.1 (o posterior)
- Cisco IOS® versiones 12.1.2.2.T, 12.1.2.2.P (o posterior)
- La autenticación RADIUS se probó con Cisco 3640 que ejecuta c3640-jo3s56i-mz.121-2.3.T

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.

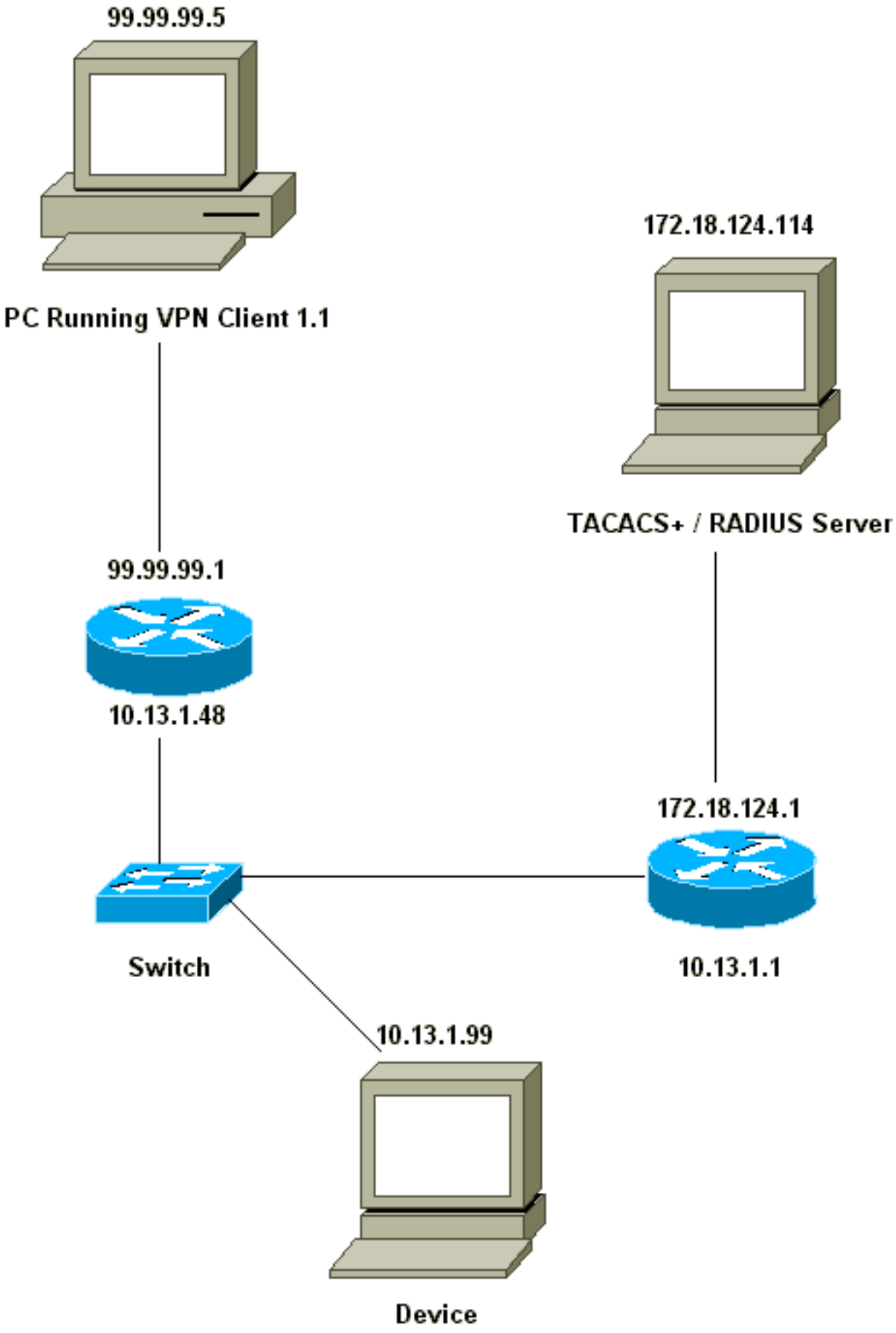
Configurar

En esta sección encontrará la información para configurar las funciones descritas en este documento.

Nota: Utilice la herramienta Command Lookup (sólo para clientes registrados) para obtener más información sobre los comandos utilizados en esta sección.

Diagrama de la red

En este documento, se utiliza esta configuración de red:



[Configuración de cliente VPN 1.1]

```
Network Security policy:
 1- Myconn
         My Identity = ip address
                 Connection security: Secure
                 Remote Party Identity and addressing
                         ID Type: IP subnet
                         10.13.1.0 (range of inside network)
                         Port all Protocol all

                 Connect using secure tunnel
                         ID Type: IP address
                         99.99.99.1
                         Pre-shared key = cisco1234

         Authentication (Phase 1)
         Proposal 1
                 Authentication method: pre-shared key
                 Encryp Alg: DES
                 Hash Alg: MD5
                 SA life: Unspecified
                 Key Group: DH 1

         Key exchange (Phase 2)
         Proposal 1
                 Encapsulation ESP
                 Encrypt Alg: DES
                 Hash Alg: MD5
                 Encap: tunnel
                 SA life: Unspecified
                 no AH

 2- Other Connections
             Connection security: Non-secure
             Local Network Interface
                 Name: Any
                 IP Addr: Any
                 Port: All
```

Con Xauth habilitado en el router, cuando el usuario intenta conectarse a un dispositivo dentro del router (aquí hicimos un ping -t #.#.#.#), aparece una pantalla gris:

```
User Authentication for 3660
Username:
Password:
```

Configuraciones

Configuración del servidor

La autenticación Xauth puede ser realizada por TACACS+ o por RADIUS. Queríamos estar seguros de que a los usuarios de Xauth se les permitía hacer Xauth, pero no se les permitía telnet al router, así que agregamos el comando **aaa authorization exec**. Le dimos a los usuarios de RADIUS "reply-attribute Service-Type=Outbound=5" (en lugar de Administrative o Login). En CiscoSecure UNIX, esto es "Saliente"; en CiscoSecure NT, se trata de "Maralout Framed" (Marcado de salida enmarcado). Si estos fueran usuarios de TACACS+, no les daríamos permisos de shell/exec.

Configuración del router para TACACS+ o RADIUS Xauth

```
Current configuration:
!
version 12.1
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname carter
!
!--- Enable AAA and define authentication and
authorization parameters aaa new-model
aaa authentication login default group radius|tacacs+
none
aaa authentication login xauth_list group radius|tacacs+
aaa authorization exec default group radius|tacacs+ none
enable secret 5 $1$VY18$uO2CRnqUzugV0NYtd14Gg0
enable password ww
!
username john password 0 doe
!
ip subnet-zero
ip audit notify log
ip audit po max-events 100
cns event-service server
!
crypto isakmp policy 10
hash md5
authentication pre-share
crypto isakmp key cisco1234 address 0.0.0.0 0.0.0.0
crypto isakmp client configuration address-pool local
ourpool
!
crypto ipsec transform-set mypolicy esp-des esp-md5-hmac
!
crypto dynamic-map dyna 10
set transform-set mypolicy
!
crypto map test client authentication list xauth_list
crypto map test client configuration address initiate
crypto map test client configuration address respond
crypto map test 5 ipsec-isakmp dynamic dyna
!
interface Ethernet0/0
ip address 10.13.1.48 255.255.255.0
ip nat inside
no ip route-cache
no ip mroute-cache
no mop enabled
!
interface TokenRing0/0
no ip address
shutdown
ring-speed 16
!
interface Ethernet2/0
ip address 99.99.99.1 255.255.255.0
ip nat outside
no ip route-cache
no ip mroute-cache
no mop enabled
crypto map test
!
```

```
interface TokenRing2/0
no ip address
shutdown
ring-speed 16
!
ip local pool ourpool 10.2.1.1 10.2.1.254
ip nat pool outsidepool 99.99.99.50 99.99.99.60 netmask
255.255.255.0
ip nat inside source route-map nonat pool outsidepool
ip classless
ip route 0.0.0.0 0.0.0.0 10.13.1.1
no ip http server
!
access-list 101 deny ip 10.13.1.0 0.0.0.255 10.2.1.0
0.0.0.255
access-list 101 permit ip 10.13.1.0 0.0.0.255 any
dialer-list 1 protocol ip permit
dialer-list 1 protocol ipx permit
route-map nonat permit 10
match ip address 101
!
!--- Define TACACS server host and key parameters
tacacs-server host 172.18.124.114
tacacs-server key cisco
radius-server host 172.18.124.114 auth-port 1645 acct-
port 1646
radius-server retransmit 3
radius-server key cisco
!
line con 0
transport input none
line aux 0
line vty 0 4
password WW
!
end
```

Verificación

Actualmente, no hay un procedimiento de verificación disponible para esta configuración.

Troubleshoot

En esta sección encontrará información que puede utilizar para solucionar problemas de configuración.

Comandos para resolución de problemas

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.

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

- **debug aaa authentication — Muestra información sobre autenticación de AAA/TACACS+.**
- **debug crypto isakmp — Muestra mensajes acerca de eventos IKE.**

- **debug crypto ipsec — Muestra eventos de IPSec.**
- **debug crypto key-exchange**: muestra los mensajes de intercambio de claves públicas de Digital Signature Standard (DSS).
- **debug radius**: muestra información asociada con RADIUS.
- **debug tacacs**—Muestra información asociada con el TACACS.
- **clear crypto isakmp**—Especifica qué conexión se borrará.
- **clear crypto sa**: elimina las asociaciones de seguridad IPSec.

Ejemplo de resultado del comando debug

Nota: La depuración TACACS+ sería muy similar. Utilice el comando **debug tacacs+** en lugar del comando **debug radius**.

```
Carter#show debug
General OS:
  AAA Authentication debugging is on
Radius protocol debugging is on
Cryptographic Subsystem:
  Crypto ISAKMP debugging is on
  Crypto Engine debugging is on
  Crypto IPSEC debugging is on
Carter#term mon
03:12:54: ISAKMP (0:0): received packet from 99.99.99.5 (N) NEW SA
03:12:54: ISAKMP: local port 500, remote port 500
03:12:54: ISAKMP (0:1): Setting client config settings 6269C36C
03:12:54: ISAKMP (0:1): (Re)Setting client xauth list xauth_list
   and state
03:12:54: ISAKMP: Created a peer node for 99.99.99.5
03:12:54: ISAKMP: Locking struct 6269C36C from
   crypto_ikmp_config_initialize_sa
03:12:54: ISAKMP (0:1): processing SA payload. message ID = 0
03:12:54: ISAKMP (0:1): found peer pre-shared key matching 99.99.99.5
03:12:54: ISAKMP (0:1): Checking ISAKMP transform 1 against
   priority 10 policy
03:12:54: ISAKMP:      encryption DES-CBC
03:12:54: ISAKMP:      hash MD5
03:12:54: ISAKMP:      default group 1
03:12:54: ISAKMP:      auth pre-share
03:12:54: ISAKMP (0:1): atts are acceptable. Next payload is 0
03:12:54: CryptoEngine0: generate alg parameter
03:12:54: CRYPTO_ENGINE: Dh phase 1 status: 0
03:12:54: CRYPTO_ENGINE: DH phase 1 status: 0
03:12:54: ISAKMP (0:1): SA is doing pre-shared key authentication using
   id type ID_IPV4_ADDR
03:12:54: ISAKMP (0:1): sending packet to 99.99.99.5 (R) MM_SA_SETUP
03:12:54: ISAKMP (0:1): received packet from 99.99.99.5 (R) MM_SA_SETUP
03:12:54: ISAKMP (0:1): processing KE payload. Message ID = 0
03:12:54: CryptoEngine0: generate alg parameter
03:12:54: ISAKMP (0:1): processing NONCE payload. Message ID = 0
03:12:54: ISAKMP (0:1): found peer pre-shared key matching 99.99.99.5
03:12:54: CryptoEngine0: create ISAKMP SKEYID for conn id 1
03:12:54: ISAKMP (0:1): SKEYID state generated
03:12:54: ISAKMP (0:1): processing vendor id payload
03:12:54: ISAKMP (0:1): processing vendor id payload
03:12:54: ISAKMP (0:1): sending packet to 99.99.99.5 (R) MM_KEY_EXCH
03:12:55: ISAKMP (0:1): received packet from 99.99.99.5 (R) MM_KEY_EXCH
03:12:55: ISAKMP (0:1): processing ID payload. Message ID = 0
03:12:55: ISAKMP (0:1): processing HASH payload. Message ID = 0
```

```
03:12:55: CryptoEngine0: generate hmac context for conn id 1
03:12:55: ISAKMP (0:1): processing NOTIFY INITIAL_CONTACT protocol 1
        spi 0, message ID = 0
03:12:55: ISAKMP (0:1): SA has been authenticated with 99.99.99.5
03:12:55: ISAKMP (1): ID payload
        next-payload : 8
        type         : 1
        protocol     : 17
        port         : 500
        length       : 8
03:12:55: ISAKMP (1): Total payload length: 12
03:12:55: CryptoEngine0: generate hmac context for conn id 1
03:12:55: CryptoEngine0: clear DH number for conn id 1
03:12:55: ISAKMP (0:1): sending packet to 99.99.99.5 (R) CONF_XAUTH
03:12:55: ISAKMP (0:1): received packet from 99.99.99.5 (R) CONF_XAUTH
03:12:55: ISAKMP (0:1): (Re)Setting client xauth list
   xauth_list and state
03:12:55: ISAKMP (0:1): Need XAUTH
03:12:55: AAA: parse name=ISAKMP idb type=-1 tty=-1
03:12:55: AAA/MEMORY: create_user (0x6269AD80) user='' ruser=''
   port='ISAKMP' rem_addr='99.99.99.5' authen_type=ASCII
   service=LOGIN priv=0
03:12:55: AAA/AUTHEN/START (2289801324): port='ISAKMP'
   list='xauth_list' action=LOGIN service=LOGIN
03:12:55: AAA/AUTHEN/START (2289801324): found list xauth_list
03:12:55: AAA/AUTHEN/START (2289801324): Method=radius (radius)
03:12:55: AAA/AUTHEN (2289801324): status = GETUSER
03:12:55: ISAKMP: got callback 1
03:12:55: ISAKMP/xauth: request attribute XAUTH_TYPE
03:12:55: ISAKMP/xauth: request attribute XAUTH_MESSAGE
03:12:55: ISAKMP/xauth: request attribute XAUTH_USER_NAME
03:12:55: ISAKMP/xauth: request attribute XAUTH_USER_PASSWORD
03:12:55: CryptoEngine0: generate hmac context for conn id 1
03:12:55: ISAKMP (0:1): initiating peer config to 99.99.99.5.
   ID = -280774539
03:12:55: ISAKMP (0:1): sending packet to 99.99.99.5 (R) CONF_XAUTH
03:13:00: ISAKMP (0:1): retransmitting phase 2 CONF_XAUTH
    -280774539 ...
03:13:00: ISAKMP (0:1): incrementing error counter on sa:
   retransmit phase 2
03:13:00: ISAKMP (0:1): incrementing error counter on sa:
   retransmit phase 2
03:13:00: ISAKMP (0:1): retransmitting phase 2 -280774539 CONF_XAUTH
03:13:00: ISAKMP (0:1): sending packet to 99.99.99.5 (R) CONF_XAUTH
03:13:02: ISAKMP (0:1): received packet from 99.99.99.5 (R) CONF_XAUTH
03:13:02: ISAKMP (0:1): processing transaction payload from
   99.99.99.5. Message ID = -280774539
03:13:02: CryptoEngine0: generate hmac context for conn id 1
03:13:02: ISAKMP: Config payload REPLY
03:13:02: ISAKMP/xauth: reply attribute XAUTH_TYPE
03:13:02: ISAKMP/xauth: reply attribute XAUTH_USER_NAME
03:13:02: ISAKMP/xauth: reply attribute XAUTH_USER_PASSWORD
03:13:02: AAA/AUTHEN/CONT (2289801324): continue_login (user='(undef)')
03:13:02: AAA/AUTHEN (2289801324): status = GETUSER
03:13:02: AAA/AUTHEN (2289801324): Method=radius (radius)
03:13:02: AAA/AUTHEN (2289801324): status = GETPASS
03:13:02: AAA/AUTHEN/CONT (2289801324): continue_login (user='zeke')
03:13:02: AAA/AUTHEN (2289801324): status = GETPASS
03:13:02: AAA/AUTHEN (2289801324): Method=radius (radius)
03:13:02: RADIUS: ustruct sharecount=2
03:13:02: RADIUS: Initial Transmit ISAKMP id 29 172.18.124.114:1645,
   Access-Request, len 68
03:13:02:         Attribute 4 6 0A0D0130
03:13:02:         Attribute 61 6 00000000
```

```
03:13:02:         Attribute 1 6 7A656B65
03:13:02:         Attribute 31 12 39392E39
03:13:02:         Attribute 2 18 D687A79D
03:13:02: RADIUS: Received from id 29 172.18.124.114:1645,
   Access-Accept, Len 26
03:13:02:         Attribute 6 6 00000005
03:13:02: RADIUS: saved authorization data for user 6269AD80
   at 62634D0C
03:13:02: AAA/AUTHEN (2289801324): status = PASS
03:13:02: ISAKMP: got callback 1
03:13:02: CryptoEngine0: generate hmac context for conn id 1
03:13:02: ISAKMP (0:1): initiating peer config to 99.99.99.5.
   ID = -280774539
03:13:02: ISAKMP (0:1): sending packet to 99.99.99.5 (R) CONF_XAUTH
03:13:03: ISAKMP (0:1): received packet from 99.99.99.5 (R) CONF_XAUTH
03:13:03: ISAKMP (0:1): processing transaction payload from 99.99.99.5.
   Message ID = -280774539
03:13:03: CryptoEngine0: generate hmac context for conn id 1
03:13:03: ISAKMP: Config payload ACK
03:13:03: ISAKMP (0:1): deleting node -280774539 error FALSE
   reason "done with transaction"
03:13:03: ISAKMP (0:1): allocating address 10.2.1.2
03:13:03: CryptoEngine0: generate hmac context for conn id 1
03:13:03: ISAKMP (0:1): initiating peer config to 99.99.99.5.
   ID = 2130856112
03:13:03: ISAKMP (0:1): sending packet to 99.99.99.5 (R) CONF_ADDR
03:13:03: ISAKMP (0:1): received packet from 99.99.99.5 (R) CONF_ADDR
03:13:03: ISAKMP (0:1): processing transaction payload
   from 99.99.99.5. Message ID = 2130856112
03:13:03: CryptoEngine0: generate hmac context for conn id 1
03:13:03: ISAKMP: Config payload ACK
03:13:03: ISAKMP (0:1): peer accepted the address!
03:13:03: ISAKMP (0:1): adding static route for 10.2.1.2
03:13:03: ISAKMP (0:1): installing route 10.2.1.2 255.255.255.255
   99.99.99.5
03:13:03: ISAKMP (0:1): deleting node 2130856112 error FALSE
   reason "done with transaction"
03:13:03: ISAKMP (0:1): Delaying response to QM request.
03:13:04: ISAKMP (0:1): received packet from 99.99.99.5 (R) QM_IDLE
03:13:04: ISAKMP (0:1): (Re)Setting client xauth list xauth_list
   and state
03:13:04: CryptoEngine0: generate hmac context for conn id 1
03:13:04: ISAKMP (0:1): processing HASH payload. Message ID = -1651205463
03:13:04: ISAKMP (0:1): processing SA payload. Message ID = -1651205463
03:13:04: ISAKMP (0:1): Checking IPSec proposal 1
03:13:04: ISAKMP: transform 1, ESP_DES
03:13:04: ISAKMP:   attributes in transform:
03:13:04: ISAKMP:      authenticator is HMAC-MD5
03:13:04: ISAKMP:      encaps is 1
03:13:04: validate proposal 0
03:13:04: ISAKMP (0:1): atts are acceptable.
03:13:04: IPSEC(validate_proposal_request): proposal part #1,
  (key eng. msg.) dest= 99.99.99.1, src= 99.99.99.5,
    dest_proxy= 10.13.1.0/255.255.255.0/0/0 (type=4),
    src_proxy= 10.2.1.2/255.255.255.255/0/0 (type=1),
    protocol= ESP, transform= ESP-Des esp-md5-hmac ,
    lifedur= 0s and 0kb,
    spi= 0x0(0), conn_id= 0, keysize= 0, flags= 0x4
03:13:04: validate proposal request 0
03:13:04: ISAKMP (0:1): processing NONCE payload.
   Message ID = -1651205463
03:13:04: ISAKMP (0:1): processing ID payload.
   Message ID = -1651205463
03:13:04: ISAKMP (1): ID_IPV4_ADDR src 10.2.1.2 prot 0 port 0
```

```
03:13:04: ISAKMP (0:1): processing ID payload.
   Message ID = -1651205463
03:13:04: ISAKMP (1): ID_IPV4_ADDR_SUBNET dst 10.13.1.0/255.255.255.0
   port 0 port 0
03:13:04: ISAKMP (0:1): asking for 1 spis from ipsec
03:13:04: IPSEC(key_engine): got a queue event...
03:13:04: IPSEC(spi_response): getting spi 570798685 for SA
        from 99.99.99.5      to 99.99.99.1      for prot 3
03:13:04: ISAKMP: received ke message (2/1)
03:13:04: CryptoEngine0: generate hmac context for conn id 1
03:13:04: ISAKMP (0:1): sending packet to 99.99.99.5 (R) QM_IDLE
03:13:04: ISAKMP (0:1): received packet from 99.99.99.5 (R) QM_IDLE
03:13:04: CryptoEngine0: generate hmac context for conn id 1
03:13:04: ipsec allocate flow 0
03:13:04: ipsec allocate flow 0
03:13:04: ISAKMP (0:1): Creating IPSec SAs
03:13:04:         inbound SA from 99.99.99.5 to 99.99.99.1
        (proxy 10.2.1.2 to 10.13.1.0)
03:13:04:         has spi 0x2205B25D and conn_id 2000 and flags 4
03:13:04:         outbound SA from 99.99.99.1 to 99.99.99.5
   (proxy 10.13.1.0 to 10.2.1.2)
03:13:04:         has spi -1338747879 and conn_id 2001 and flags 4
03:13:04: ISAKMP (0:1): deleting node -195511155 error FALSE
   reason "saved qm no longer needed"
03:13:04: ISAKMP (0:1): deleting node -1651205463 error FALSE
   reason "quick mode done (await()"
03:13:04: IPSEC(key_engine): got a queue event...
03:13:04: IPSEC(initialize_sas): ,
  (key eng. msg.) dest= 99.99.99.1, src= 99.99.99.5,
    dest_proxy= 10.13.1.0/255.255.255.0/0/0 (type=4),
    src_proxy= 10.2.1.2/0.0.0.0/0/0 (type=1),
    protocol= ESP, transform= esp-des esp-md5-hmac ,
    lifedur= 0s and 0kb,
    spi= 0x2205B25D(570798685), conn_id= 2000,
    keysize= 0, flags= 0x4
03:13:04: IPSEC(initialize_sas): ,
  (key eng. msg.) src= 99.99.99.1, dest= 99.99.99.5,
    src_proxy= 10.13.1.0/255.255.255.0/0/0 (type=4),
    dest_proxy= 10.2.1.2/0.0.0.0/0/0 (type=1),
    protocol= ESP, transform= esp-des esp-md5-hmac ,
    lifedur= 0s and 0kb,
    spi= 0xB0345419(2956219417), conn_id= 2001,
    keysize= 0, flags= 0x4
03:13:04: IPSEC(create_sa): sa created,
  (sa) sa_dest= 99.99.99.1, sa_prot= 50,
    sa_spi= 0x2205B25D(570798685),
    sa_trans= esp-des esp-md5-hmac , sa_conn_id= 2000
03:13:04: IPSEC(create_sa): sa created,
  (sa) sa_dest= 99.99.99.5, sa_prot= 50,
    sa_spi= 0xB0345419(2956219417),
    sa_trans= esp-des esp-md5-hmac , sa_conn_id= 2001
03:13:04: ISAKMP: received ke message (4/1)
03:13:04: ISAKMP: Locking struct 6269C36C for IPSEC
03:13:05: IPSEC(decapsulate): error in decapsulation
   crypto_ipsec_sa_exists
```

Información Relacionada

- Página de soporte para cliente Cisco VPN
- Página de Soporte de IPSec Negotiation/IKE Protocols
- Página de soporte del Sistema de control de acceso del controlador de acceso a terminales (TACACS+)

- Página de soporte del servicio de usuario de acceso telefónico de autenticación remota (RADIUS)
- Solicitud de comentarios
- Soporte Técnico y Documentación - Cisco Systems