DMVPN y Easy VPN Server con el ejemplo de configuración de los perfiles ISAKMP

Contenido

Introducción

Este documento describe cómo configurar Dynamic Multipoint VPN (DMVPN) y Easy VPN con Xauth en el mismo router. Esta configuración ofrece spokes DMVPN que se atienden dinámicamente. ISAKMP (Internet Security Association and Key Management Protocol) proporciona la capacidad de separar los métodos de autentificación de spokes atendidos DMVPN dinámicamente de Easy VPN Clients.

prerrequisitos

Requisitos

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.

- Cisco 2691 y 3725 Router que funcionan con los Software Release 12.3(3) y 12.3(3)a de Cisco IOS®

La información que contiene este documento se creó a partir de los dispositivos en un ambiente de laboratorio específico. Todos los dispositivos que se utilizan en este documento se pusieron en funcionamiento con una configuración verificada (predeterminada). Si la red está funcionando, asegúrese de haber comprendido el impacto que puede tener cualquier comando.

Convenciones

Consulte Convenciones de Consejos TécnicosCisco para obtener más información sobre las convenciones del documento.

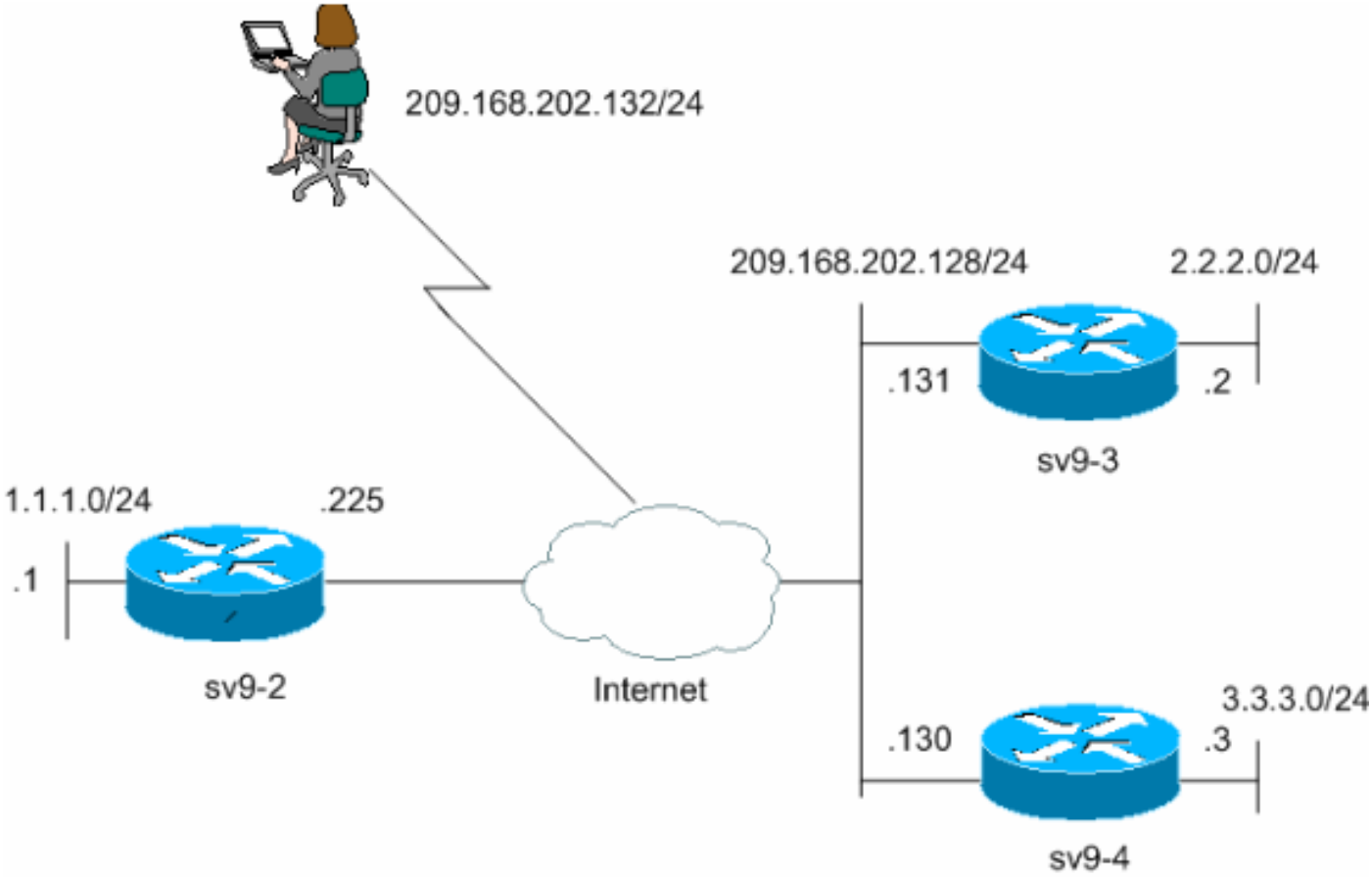
Configurar

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

Nota: Use la herramienta Command Lookup Tool (clientes registrados solamente) para encontrar más información sobre los comandos usados en este documento.

Diagrama de la red

Este documento utiliza esta configuración de red:



Configuraciones

Este documento usa estas configuraciones.

- Configuración del eje de conexión sv9-2
- Configuración radial sv9-3
- Configuración de Spoke sv9-4

Configuración del eje de conexión sv9-2

```
sv9-2#show run
Building configuration...

Current configuration : 2876 bytes
!
version 12.3
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname sv9-2
!
boot-start-marker
boot-end-marker
!
enable password cisco
!
username cisco password 0 cisco
aaa new-model
!
!
!--- Xauth is configured for local authentication. aaa
authentication login userauthen local
aaa authorization network hw-client-groupname local
aaa session-id common
ip subnet-zero
!
!
no ip domain lookup
!
ip audit notify log
ip audit po max-events 100
ip ssh break-string
no ftp-server write-enable
!
!

!--- Keyring that defines the wildcard pre-shared key.
crypto keyring dmvpnspokes
pre-shared-key address 0.0.0.0 0.0.0.0 key cisco123
!



!--- Create an ISAKMP policy for Phase 1 negotiations.
!--- This policy is for DMVPN spokes. crypto isakmp
policy 10
hash md5
authentication pre-share
!

!--- Create an ISAKMP policy for Phase 1 negotiations.
!--- This policy is for Easy VPN Clients. crypto isakmp
policy 20
hash md5
authentication pre-share
group 2

!

!--- VPN Client configuration for group "hw-client-
groupname" !--- (this name is configured in the VPN
```

```
Client). crypto isakmp client configuration group hw-
client-groupname
key hw-client-password
dns 1.1.11.10 1.1.11.11
wins 1.1.11.12 1.1.11.13
domain cisco.com
pool dynpool


!--- Profile for VPN Client connections, matches the !--
- "hw-client-group" group and defines the XAuth
properties. crypto isakmp profile VPNclient
match identity group hw-client-groupname
client authentication list userauthen
isakmp authorization list hw-client-groupname
client configuration address respond


!--- Profile for LAN-to-LAN connection, references !---
the wildcard pre-shared key and a wildcard !--- identity
(this is what is broken in !--- Cisco bug ID CSCea77140)
!--- and no XAuth. crypto isakmp profile DMVPN
keyring dmvpnspokes
match identity address 0.0.0.0
!
!

!--- Create the Phase 2 policy for actual data
encryption. crypto ipsec transform-set strong esp-3des
esp-md5-hmac
mode transport
!

!--- Create an IPsec profile to be applied dynamically
to the !--- generic routing encapsulation (GRE) over
IPsec tunnels. crypto ipsec profile cisco
set security-association lifetime seconds 120
set transform-set strong
set isakmp-profile DMVPN
!
!

!--- This dynamic crypto map references the ISAKMP !---
Profile VPN Client above. !--- Reverse route injection
is used to provide the !--- DMVPN networks access to any
Easy VPN Client networks. crypto dynamic-map dynmap 10
set isakmp-profile VPNclient
reverse-route
set transform-set strong
!
!

!--- Crypto map only references the dynamic crypto map
above. crypto map dynmap 1 ipsec-isakmp dynamic dynmap
!
!
!
!
!
!
!
!
!
!
```

```
no voice hpi capture buffer
no voice hpi capture destination
!
!
!
!
!
!

!--- Create a GRE tunnel template which is applied to !--
-- all the dynamically created GRE tunnels. interface
Tunnel0
ip address 192.168.1.1 255.255.255.0
no ip redirects
ip mtu 1440
ip nhrp authentication cisco123
ip nhrp map multicast dynamic
ip nhrp network-id 1
ip nhrp holdtime 300
no ip split-horizon eigrp 90
tunnel source FastEthernet0/0
tunnel mode gre multipoint
tunnel key 0
tunnel protection ipsec profile cisco
!
interface FastEthernet0/0
ip address 209.168.202.225 255.255.255.0
duplex auto
speed auto
crypto map dynmap
!
interface FastEthernet0/1
ip address 1.1.1.1 255.255.255.0
duplex auto
speed auto
!
interface BRI1/0
no ip address
shutdown
!
interface BRI1/1
no ip address
shutdown
!
interface BRI1/2
no ip address
shutdown
!
interface BRI1/3
no ip address
shutdown
!

!--- Enable a routing protocol to send and receive !---
dynamic updates about the private networks. router eigrp
90
redistribute static
network 1.1.1.0 0.0.0.255
network 192.168.1.0
no auto-summary
!
ip local pool dynpool 1.1.11.60 1.1.11.80
ip http server
no ip http secure-server
```

```
ip classless
!
!
!
!
!
!
!
!
!
!
!
line con 0
exec-timeout 0 0
transport preferred all
transport output all
escape-character 27
line aux 0
transport preferred all
transport output all
line vty 0 4
password cisco
transport preferred all
transport input all
transport output all
!
!
end
```

Configuración radial sv9-3

```
sv9-3#show run
Building configuration...

Current configuration : 2052 bytes
!
version 12.3
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname sv9-3
!
boot-start-marker
boot system flash:c3725-ik9o3s-mz.123-3.bin
boot-end-marker
!
!
no aaa new-model
ip subnet-zero
!
!
no ip domain lookup
!
ip audit notify log
ip audit po max-events 100
ip ssh break-string
no ftp-server write-enable
!
!
!
!--- Create an ISAKMP policy for Phase 1 negotiations.
crypto isakmp policy 10
```

```
hash md5
authentication pre-share
!--- Add dynamic pre-shared keys for all remote VPN
routers. crypto isakmp key cisco123 address 0.0.0.0
0.0.0.0
!
!
!--- Create the Phase 2 policy for actual data
encryption. crypto ipsec transform-set strong esp-3des
esp-md5-hmac
mode transport
!
!--- Create an IPsec profile to be applied dynamically
to the !--- GRE over IPsec tunnels. crypto ipsec profile
cisco
set security-association lifetime seconds 120
set transform-set strong
!
!
no voice hpi capture buffer
no voice hpi capture destination
!
!
!--- Create a GRE tunnel template which is applied to !-
-- all the dynamically created GRE tunnels. interface
Tunnel0
ip address 192.168.1.3 255.255.255.0
no ip redirects
ip mtu 1440
ip nhrp authentication cisco123
ip nhrp map multicast dynamic
ip nhrp map 192.168.1.1 209.168.202.225
ip nhrp map multicast 209.168.202.225
ip nhrp network-id 1
ip nhrp holdtime 300
ip nhrp nhs 192.168.1.1
no ip split-horizon eigrp 90
tunnel source FastEthernet0/0
tunnel mode gre multipoint
tunnel key 0
tunnel protection ipsec profile cisco
!
interface FastEthernet0/0
ip address 209.168.202.130 255.255.255.0
duplex auto
speed auto
!
interface FastEthernet0/1
ip address 3.3.3.3 255.255.255.0
duplex auto
speed auto
!
interface BRI1/0
no ip address
shutdown
!
interface BRI1/1
no ip address
shutdown
!
interface BRI1/2
no ip address
shutdown
!
```

```
interface BRI1/3
no ip address
shutdown
!
!--- Enable a routing protocol to send and receive !---
dynamic updates about the private networks. router eigrp
90
network 3.3.3.0 0.0.0.255
network 192.168.1.0
no auto-summary
!
ip http server
no ip http secure-server
ip classless
ip route 0.0.0.0 0.0.0.0 209.168.202.225
ip route 2.2.2.0 255.255.255.0 Tunnel0
!
!
line con 0
exec-timeout 0 0
transport preferred all
transport output all
escape-character 27
line aux 0
transport preferred all
transport output all
line vty 0 4
login
transport preferred all
transport input all
transport output all
!
!
end
```

Configuración de Spoke sv9-4

```
sv9-4#show run
Building configuration...

Current configuration : 1992 bytes
!
version 12.3
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname sv9-4
!
boot-start-marker
boot system flash:c2691-jk9o3s-mz.123-3a.bin
boot-end-marker
!
enable password cisco
!
no aaa new-model
ip subnet-zero
!
!
no ip domain lookup
!
ip audit notify log
ip audit po max-events 100
```

```
ip ssh break-string
no ftp-server write-enable
!
!
!
!--- Create an ISAKMP policy for Phase 1 negotiations.
crypto isakmp policy 10
hash md5
authentication pre-share
!--- Add dynamic pre-shared keys for all remote VPN
routers. crypto isakmp key cisco123 address 0.0.0.0
0.0.0.0
!
!
!--- Create the Phase 2 policy for actual data
encryption. crypto ipsec transform-set strong esp-3des
esp-md5-hmac
mode transport
!
!--- Create an IPsec profile apply dynamically to the !-
-- GRE over IPsec tunnels. crypto ipsec profile cisco
set security-association lifetime seconds 120
set transform-set strong
!
!
no voice hpi capture buffer
no voice hpi capture destination
!
!
!--- Create a GRE tunnel template which is applied to !-
-- all the dynamically created GRE tunnels. interface
Tunnel0
ip address 192.168.1.2 255.255.255.0
no ip redirects
ip mtu 1440
ip nhrp authentication cisco123
ip nhrp map multicast dynamic
ip nhrp map 192.168.1.1 209.168.202.225
ip nhrp map multicast 209.168.202.225
ip nhrp network-id 1
ip nhrp holdtime 300
ip nhrp nhs 192.168.1.1
no ip split-horizon eigrp 90
tunnel source FastEthernet0/0
tunnel mode gre multipoint
tunnel key 0
tunnel protection ipsec profile cisco
!
interface FastEthernet0/0
ip address 209.168.202.131 255.255.255.0
duplex auto
speed auto
!
interface FastEthernet0/1
ip address 2.2.2.2 255.255.255.0
duplex auto
speed auto
!
!--- Enable a routing protocol to send and receive !---
dynamic updates about the private networks. router eigrp
90
network 2.2.2.0 0.0.0.255
network 192.168.1.0
no auto-summary
```

```
!
ip http server
no ip http secure-server
ip classless
ip route 0.0.0.0 0.0.0.0 209.168.202.225
!
!
dial-peer cor custom
!
!
line con 0
exec-timeout 0 0
transport output lat pad v120 lapb-ta mop telnet rlogin
udptn ssh
escape-character 27
line aux 0
transport output lat pad v120 lapb-ta mop telnet rlogin
udptn ssh
line vty 0 4
login
transport input lat pad v120 lapb-ta mop telnet rlogin
udptn ssh
transport output lat pad v120 lapb-ta mop telnet rlogin
udptn ssh
!
!
end
```

Verificación

En esta sección encontrará información que puede utilizar para comprobar que su configuración funcione correctamente.

Los comandos Debug que se ejecutan en el router de eje de conexión confirman que los parámetros correctos están correspondidos con para el spoke y las conexiones de cliente VPN. Funcione con estos **comandos debug**.

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 de Debug antes de usar un **comando debug**.

- debug crypto isakmp — Muestra mensajes acerca de eventos IKE.
- **IPSec del debug crypto** — Visualiza la información sobre los eventos del IPSec.

```
sv9-4#show run
Building configuration...

Current configuration : 1992 bytes
!
version 12.3
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname sv9-4
```

```
!
boot-start-marker
boot system flash:c2691-jk9o3s-mz.123-3a.bin
boot-end-marker
!
enable password cisco
!
no aaa new-model
ip subnet-zero
!
!
no ip domain lookup
!
ip audit notify log
ip audit po max-events 100
ip ssh break-string
no ftp-server write-enable
!
!
!
!--- Create an ISAKMP policy for Phase 1 negotiations. crypto isakmp policy 10
hash md5
authentication pre-share
!--- Add dynamic pre-shared keys for all remote VPN routers. crypto isakmp key cisco123 address
0.0.0.0 0.0.0.0
!
!
!--- Create the Phase 2 policy for actual data encryption. crypto ipsec transform-set strong
esp-3des esp-md5-hmac
mode transport
!
!--- Create an IPsec profile apply dynamically to the !--- GRE over IPsec tunnels. crypto ipsec
profile cisco
set security-association lifetime seconds 120
set transform-set strong
!
!
no voice hpi capture buffer
no voice hpi capture destination
!
!
!--- Create a GRE tunnel template which is applied to !--- all the dynamically created GRE
tunnels. interface Tunnel0
ip address 192.168.1.2 255.255.255.0
no ip redirects
ip mtu 1440
ip nhrp authentication cisco123
ip nhrp map multicast dynamic
ip nhrp map 192.168.1.1 209.168.202.225
ip nhrp map multicast 209.168.202.225
ip nhrp network-id 1
ip nhrp holdtime 300
ip nhrp nhs 192.168.1.1
no ip split-horizon eigrp 90
tunnel source FastEthernet0/0
tunnel mode gre multipoint
tunnel key 0
tunnel protection ipsec profile cisco
!
interface FastEthernet0/0
ip address 209.168.202.131 255.255.255.0
duplex auto
speed auto
!
```

```
interface FastEthernet0/1
ip address 2.2.2.2 255.255.255.0
duplex auto
speed auto
!
!--- Enable a routing protocol to send and receive !--- dynamic updates about the private
networks. router eigrp 90
network 2.2.2.0 0.0.0.255
network 192.168.1.0
no auto-summary
!
ip http server
no ip http secure-server
ip classless
ip route 0.0.0.0 0.0.0.0 209.168.202.225
!
!
dial-peer cor custom
!
!
line con 0
exec-timeout 0 0
transport output lat pad v120 lapb-ta mop telnet rlogin udptn ssh
escape-character 27
line aux 0
transport output lat pad v120 lapb-ta mop telnet rlogin udptn ssh
line vty 0 4
login
transport input lat pad v120 lapb-ta mop telnet rlogin udptn ssh
transport output lat pad v120 lapb-ta mop telnet rlogin udptn ssh
!
!
end
```

Troubleshooting

Para obtener información adicional sobre la solución de problemas, consulte Solución de problemas de seguridad IP - Comprensión y uso de los comandos debug.

Información Relacionada

- DMVPN y descripción del Cisco IOS Software
- Negociación IPSec/Protocolos IKE
- Soporte Técnico y Documentación - Cisco Systems