

Configuración y verificación de DHCP en un fabric VxLAN para Nexus 9000 con NX-OS y Windows Server 2022

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Introducción

Este documento describe cómo configurar y resolver problemas de DHCP en un entramado VxLAN con switches Nexus 9000.

Prerequisites

Requirements

Cisco recomienda que tenga conocimiento sobre estos temas:

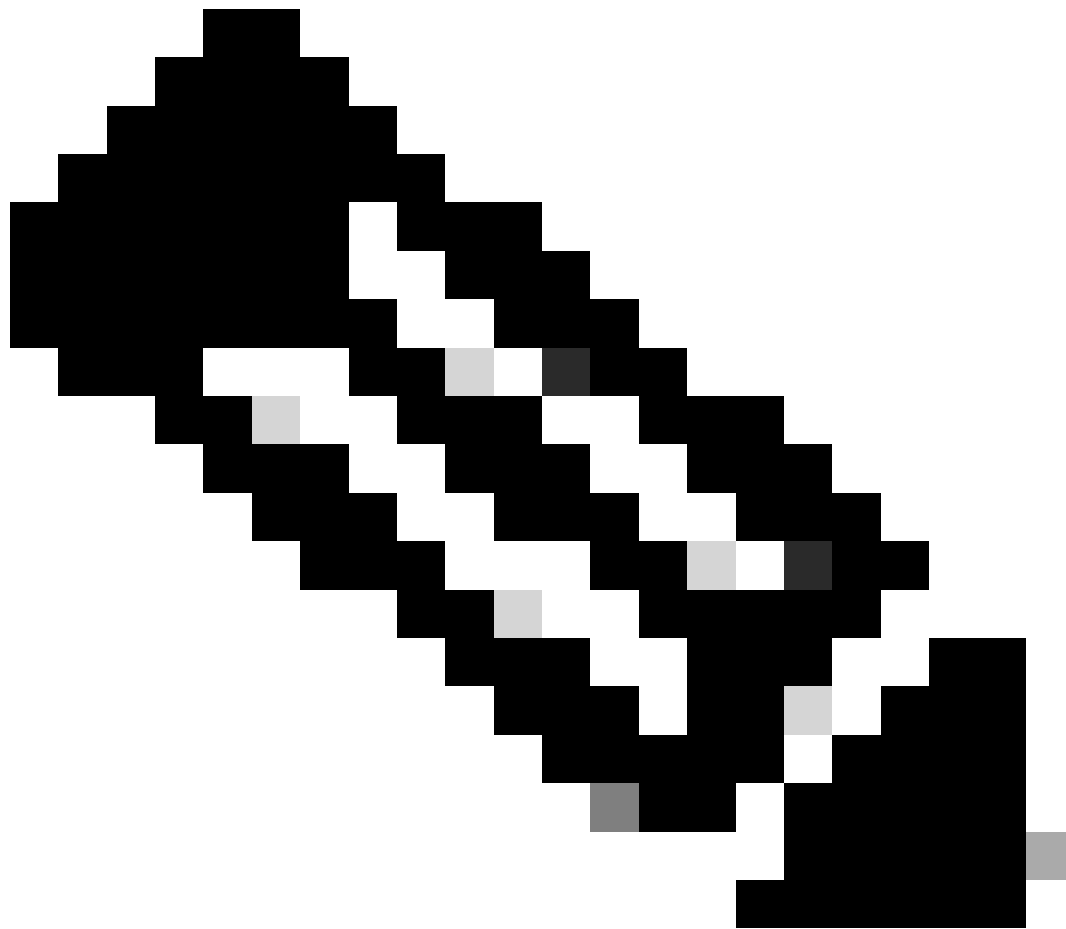
- Software Nexus NX-OS.
- Canal de puerto virtual (vPC).
- EVPN L2VPN BGP VxLAN
- IPv4 de la familia de direcciones BGP
- OSPF
- PIM multidifusión (modo disperso)
- DHCP

Componentes Utilizados

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

- Cisco Nexus 9000 con Cisco NX-OS.
 - N9K-C93180YC-EX
 - N9K-C93180YC-FX
 - NX-OS 10.3(4a)
- Centro de datos de Windows Server 2022

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 tiene una red en vivo, asegúrese de entender el posible impacto de cualquier comando.



Nota: cualquier pregunta sobre la configuración y la integrabilidad del software o hardware de terceros queda fuera del soporte de Cisco. El uso de herramientas de terceros es un esfuerzo para demostrar al cliente su configuración y funcionamiento con los equipos de Cisco.

Antecedentes

Configuración subyacente y superpuesta para VxLAN en laboratorio

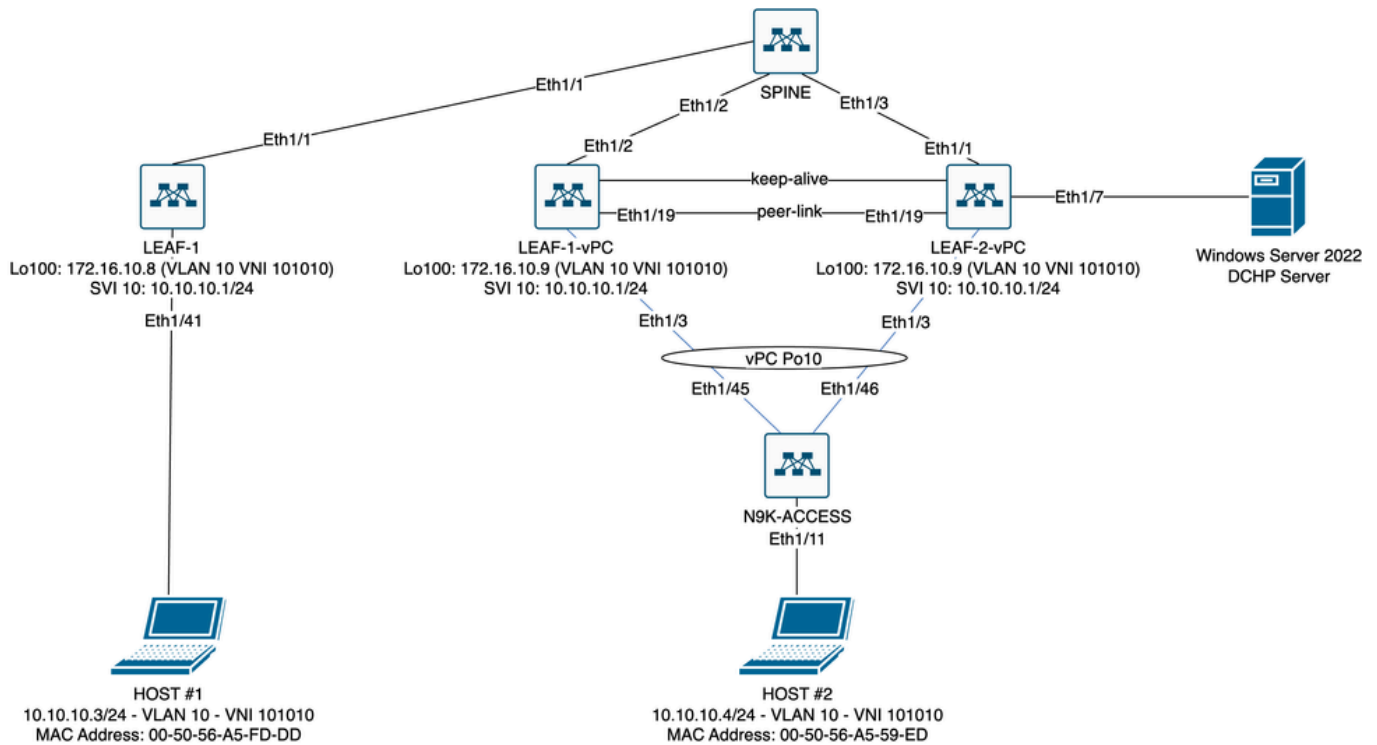


Diagrama de fabric de VxLAN en laboratorio

- **COLUMNA:**

- Este switch Nexus envía paquetes DHCP (Discover, Offer, Request, Ack) sin ser desencapsulado en esta situación. Sólo se utiliza el encabezado externo.
- Actúa como puntos de routing centrales en el fabric de red.
- Responsable de interconectar todos los switches LEAF y facilitar el flujo de datos entre ellos.
- Participa en BGP para distribuir rutas EVPN a los switches LEAF.
- Realiza el ruteo IP y puede rutear tráfico entre diferentes subredes o segmentos VxLAN observando los encabezados IP externos.
- Separa la red superpuesta (VxLAN) de la red física subyacente.
- Administra la capa subyacente con los protocolos de routing IP tradicionales, mientras que la capa la administra VxLAN con EVPN BGP, lo que proporciona una arquitectura de red escalable y flexible.

- **HOJA-1:**

- Los switches LEAF proporcionan conectividad física para terminales como servidores, dispositivos de almacenamiento y otros dispositivos de red.
- Los switches LEAF actúan como VTEP, lo que significa que encapsulan y desencapsulan los paquetes VxLAN.
- En este escenario, el HOST#1 realiza la solicitud de dirección IP.
- LEAF-1 es responsable de encapsular los paquetes DHCP dentro del encabezado VxLAN.
- HOST#1 recibe los paquetes DHCP de forma transparente como Ethernet clásico.

- **LEAF-1-vPC y LEAF-2-vPC:**

- Los switches LEAF participan en el plano de control EVPN ejecutando BGP e intercambiando información de ruta. Esto permite la distribución de la información de

direcciones IP y MAC, lo que garantiza que el tráfico se pueda enrutar de forma eficaz a través del fabric VxLAN.

- En este escenario, el servidor DHCP se asocia con VLAN 10 con VNI 101010, al igual que HOST#1. Esto significa que es solamente el bridging VxLAN.
 - Si el servidor DHCP se asoció con un VNI distinto de HOST#1, entonces un L3VNI sería estrictamente necesario para el ruteo. Se deben crear el VNI de origen y de destino.
 - El servidor DHCP recibe los paquetes DHCP de forma transparente como Ethernet clásico.
 - El tráfico BUM lo reciben ambos switches Nexus en vPC, pero solo el switch Nexus principal operativo en vPC envía el tráfico. El switch Nexus secundario interrumpe el tráfico. En esta situación, LEAF-1-vPC es operativamente principal.
 - El uso de infra-vlan es obligatorio porque si la interfaz de LEAF-2-vPC a SPINE deja de funcionar, no se pueden enviar paquetes DHCP. Para enviar tráfico encapsulado en VxLAN a LEAF-1-vPC, se requiere esta VLAN de respaldo. De esta manera, LEAF-1-vPC podría enviar paquetes DHCP a la COLUMNA VERTEBRAL.
- N9K-ACCESS:
 - Este switch Nexus solo proporciona conectividad a ambas Hojas mediante un canal de puerto vPC con fines de redundancia hacia el HOST nº 2

COLUMNA VERTEBRAL

```
nv overlay evpn
feature ospf
feature bgp
feature pim
feature netconf
feature nv overlay
```

```
ip pim rp-address 192.168.11.11 group-list 224.10.10.0/24
ip pim ssm range 232.0.0.0/8
ip pim anycast-rp 192.168.11.11 192.168.0.11
```

```
ip prefix-list direct_routes seq 5 permit 10.104.11.0/30 le 32
route-map redistribution permit 10
  match ip address prefix-list direct_routes
```

```
interface Ethernet1/1
  speed 1000
  ip address 10.104.11.1/30
  ip ospf network point-to-point
  ip router ospf 1 area 0.0.0.0
  ip pim sparse-mode
  no shutdown
```

```
interface Ethernet1/2
  ip address 10.102.11.1/30
  ip ospf network point-to-point
  ip router ospf 1 area 0.0.0.0
  ip pim sparse-mode
  no shutdown
```

```
interface Ethernet1/3
  speed 1000
  ip address 10.103.11.1/30
  ip ospf network point-to-point
  ip router ospf 1 area 0.0.0.0
  ip pim sparse-mode
  no shutdown

interface loopback0
  description ANYCAST-RP
  ip address 192.168.0.11/32
  ip router ospf 1 area 0.0.0.0
  ip pim sparse-mode

interface loopback1
  description ANYCAST-RP-CANDIDATE
  ip address 192.168.11.11/32
  ip router ospf 1 area 0.0.0.0
  ip pim sparse-mode

router ospf 1

router bgp 65000
  neighbor 192.168.3.3
    remote-as 65000
    update-source loopback0
    address-family 12vpn evpn
      send-community
      send-community extended
      route-reflector-client
  neighbor 192.168.4.4
    remote-as 65000
    update-source loopback0
    address-family 12vpn evpn
      send-community
      send-community extended
      route-reflector-client
  neighbor 192.168.5.5
    remote-as 65000
    update-source loopback0
    address-family 12vpn evpn
      send-community
      send-community extended
      route-reflector-client
```

HOJA-1

```
nv overlay evpn
feature ospf
feature bgp
feature pim
feature interface-vlan
feature vn-segment-vlan-based
feature dhcp
feature nv overlay
```

```
fabric forwarding anycast-gateway-mac 0000.0a0a.0a0a
```

```
ip pim rp-address 192.168.11.11 group-list 224.10.10.0/24
ip pim ssm range 232.0.0.0/8

vlan 1,10,20,300
vlan 10
    vn-segment 101010
vlan 20
    vn-segment 202020
vlan 300
    vn-segment 303030

spanning-tree vlan 10 priority 4096

ip prefix-list host_subnets seq 5 permit 10.10.10.0/24 le 32
ip prefix-list host_subnets seq 10 permit 192.168.20.0/24 le 32
ip prefix-list host_subnets seq 15 permit 172.16.10.8/32
route-map direct_routes_tenant-a permit 10
    match ip address prefix-list host_subnets

vrf context tenant-a
    vni 303030
    rd auto
    address-family ipv4 unicast
        route-target both auto
        route-target both auto evpn

interface Vlan10
    no shutdown
    vrf member tenant-a
    no ip redirects
    ip address 10.10.10.1/24
    no ipv6 redirects
    fabric forwarding mode anycast-gateway
    ip dhcp relay address 10.10.10.150
    ip dhcp relay source-interface loopback100

interface Vlan20
    no shutdown
    vrf member tenant-a
    no ip redirects
    ip address 192.168.20.1/24
    no ipv6 redirects
    fabric forwarding mode anycast-gateway

interface Vlan300
    no shutdown
    vrf member tenant-a
    no ip redirects
    ip forward
    no ipv6 redirects

interface nve1
    no shutdown
    host-reachability protocol bgp
    source-interface loopback0
    member vni 101010
        suppress-arp
        mcast-group 224.10.10.10
    member vni 202020
        suppress-arp
        mcast-group 224.10.10.10
```

```
member vni 303030 associate-vrf

interface Ethernet1/1
 ip address 10.104.11.2/30
 ip ospf network point-to-point
 ip router ospf 1 area 0.0.0.0
 ip pim sparse-mode
 no shutdown

interface loopback0
 description UNDERLAY-VERIFICATION
 ip address 192.168.5.5/32
 ip router ospf 1 area 0.0.0.0
 ip pim sparse-mode

interface loopback100
 vrf member tenant-a
 ip address 172.16.10.8/32

router ospf 1

router bgp 65000
 address-family ipv4 unicast
 neighbor 192.168.0.11
 remote-as 65000
 update-source loopback0
 address-family l2vpn evpn
 send-community
 send-community extended
 vrf tenant-a
 address-family ipv4 unicast
 redistribute direct route-map direct_routes_tenant-a
 evpn
 vni 101010 l2
 rd auto
 route-target import auto
 route-target export auto
 vni 202020 l2
 rd auto
 route-target import auto
 route-target export auto
```

LEAF-1-vPC

```
nv overlay evpn
feature ospf
feature bgp
feature pim
feature interface-vlan
feature vn-segment-vlan-based
feature lacp
feature dhcp
feature vpc
feature nv overlay

fabric forwarding anycast-gateway-mac 0000.0a0a.0a0a
```



```
ip pim rp-address 192.168.11.11 group-list 224.10.10.0/24
ip pim ssm range 232.0.0.0/8

vlan 1,10,300,777
vlan 10
  vn-segment 101010
vlan 300
  vn-segment 303030
vlan 777
  name BACKUP_VLAN_ROUTING_NVE_INFRA
spanning-tree vlan 1,10,300 hello-time 4

ip prefix-list host_subnets seq 5 permit 10.10.10.0/24 le 32
ip prefix-list host_subnets seq 15 permit 172.16.10.9/32
route-map direct_routes_tenant-a permit 10
  match ip address prefix-list host_subnets

vrf context tenant-a
  vni 303030
  rd auto
  address-family ipv4 unicast
    route-target both auto
    route-target both auto evpn
system nve infra-vlans 777

vpc domain 1
  peer-switch
  peer-keepalive destination 10.88.238.195
  peer-gateway
  layer3 peer-router
  ip arp synchronize

interface Ethernet1/3
  switchport
  switchport mode trunk
  switchport trunk allowed vlan 1,10,20
  channel-group 10 mode active
  no shutdown

interface Ethernet1/19
  switchport
  switchport mode trunk
  channel-group 1 mode active
  no shutdown

interface port-channel1
  switchport
  switchport mode trunk
  spanning-tree port type network
  vpc peer-link

interface port-channel10
  switchport
  switchport mode trunk
  switchport trunk allowed vlan 1,10
  vpc 10

interface mgmt0
  vrf member management
  ip address 10.88.238.194/29

interface loopback0
```

```
description UNDERLAY-VERIFICATION
ip address 192.168.3.3/32
ip router ospf 1 area 0.0.0.0
ip pim sparse-mode

interface loopback1
description OVERLAY-NVE
ip address 192.168.13.1/32
ip address 192.168.13.254/32 secondary
ip router ospf 1 area 0.0.0.0
ip pim sparse-mode

interface loopback10
vrf member tenant-a
ip address 172.16.10.1/32

interface loopback100
vrf member tenant-a
ip address 172.16.10.9/32

interface Vlan10
no shutdown
vrf member tenant-a
no ip redirects
ip address 10.10.10.1/24
no ipv6 redirects
fabric forwarding mode anycast-gateway
ip dhcp relay address 10.10.10.150
ip dhcp relay source-interface loopback100

interface Vlan300
no shutdown
vrf member tenant-a
no ip redirects
ip forward
no ipv6 redirects

interface Vlan777
description BACKUP_UNDERLAY_INFRA-VLAN
no shutdown
no ip redirects
ip address 10.255.77.1/30
no ipv6 redirects
ip ospf network point-to-point
ip router ospf 1 area 0.0.0.0
ip pim sparse-mode

interface Ethernet1/2
ip address 10.102.11.2/30
ip ospf network point-to-point
ip router ospf 1 area 0.0.0.0
ip pim sparse-mode
no shutdown

interface nve1
no shutdown
host-reachability protocol bgp
advertise virtual-rmac
source-interface loopback1
member vni 101010
suppress-arp
mcast-group 224.10.10.10
```

```

member vni 303030 associate-vrf

router ospf 1

router bgp 65000
  address-family ipv4 unicast
  address-family l2vpn evpn
  advertise-pip
  neighbor 192.168.0.11
  remote-as 65000
  update-source loopback0
  address-family l2vpn evpn
  send-community
  send-community extended
  neighbor 192.168.88.2
  remote-as 65000
  description OVERLAY_BACKUP
  update-source Vlan888
  address-family l2vpn evpn
  send-community
  send-community extended
  vrf tenant-a
  address-family ipv4 unicast
  redistribute direct route-map direct_routes_tenant-a
evpn
vni 101010 l2
  rd auto
  route-target import auto
  route-target export auto
vni 202020 l2
  rd auto
  route-target import auto
  route-target export auto

```

LEAF-2-vPC

```

nv overlay evpn
feature ospf
feature bgp
feature pim
feature interface-vlan
feature vn-segment-vlan-based
feature lacp
feature dhcp
feature vpc
feature nv overlay

fabric forwarding anycast-gateway-mac 0000.0a0a.0a0a

ip pim rp-address 192.168.11.11 group-list 224.10.10.0/24
ip pim ssm range 232.0.0.0/8

vlan 1,10,20,300,777
vlan 10
  vn-segment 101010
vlan 20
  vn-segment 202020

```

```
vlan 300
  vn-segment 303030
vlan 777
  name BACKUP_VLAN_ROUTING_NVE_INFRA

spanning-tree vlan 1,10,20,300 hello-time 4

ip prefix-list host_subnets seq 5 permit 10.10.10.0/24 le 32
ip prefix-list host_subnets seq 10 permit 192.168.20.0/24 le 32
ip prefix-list host_subnets seq 15 permit 172.16.10.10/32
route-map direct_routes_tenant-a permit 10
  match ip address prefix-list host_subnets

vrf context tenant-a
  vni 303030
  rd auto
  address-family ipv4 unicast
    route-target both auto
    route-target both auto evpn

system nve infra-vlans 777

vpc domain 1
  peer-switch
  peer-keepalive destination 10.88.238.194
  peer-gateway
  layer3 peer-router
  ip arp synchronize

interface Ethernet1/1
  ip address 10.103.11.2/30
  ip ospf network point-to-point
  ip router ospf 1 area 0.0.0.0
  ip pim sparse-mode
  no shutdown

interface Ethernet1/19
  switchport
  switchport mode trunk
  channel-group 1 mode active
  no shutdown
interface port-channel1
  switchport
  switchport mode trunk
  spanning-tree port type network
  vpc peer-link

interface port-channel10
  switchport
  switchport mode trunk
  switchport trunk allowed vlan 1,10,20
  vpc 10

interface mgmt0
  vrf member management
  ip address 10.88.238.195/29

interface loopback0
  description UNDERLAY-VERIFICATION
  ip address 192.168.4.4/32
  ip router ospf 1 area 0.0.0.0
  ip pim sparse-mode
```

```
interface loopback1
  description OVERLAY-NVE
  ip address 192.168.13.2/32
  ip address 192.168.13.254/32 secondary
  ip router ospf 1 area 0.0.0.0
  ip pim sparse-mode

interface loopback10
  vrf member tenant-a
  ip address 172.16.10.2/32

interface loopback100
  vrf member tenant-a
  ip address 172.16.10.10/32

interface Vlan10
  no shutdown
  vrf member tenant-a
  no ip redirects
  ip address 10.10.10.1/24
  no ipv6 redirects
  fabric forwarding mode anycast-gateway
  ip dhcp relay address 10.10.10.150
  ip dhcp relay source-interface loopback100

interface Vlan20
  no shutdown
  vrf member tenant-a
  no ip redirects
  ip address 192.168.20.1/24
  no ipv6 redirects
  fabric forwarding mode anycast-gateway

interface Vlan300
  no shutdown
  vrf member tenant-a
  no ip redirects
  ip forward
  no ipv6 redirects

interface Vlan777
  description BACKUP_UNDERLAY_INFRA-VLAN
  no shutdown
  no ip redirects
  ip address 10.255.77.2/30
  no ipv6 redirects
  ip ospf network point-to-point
  ip router ospf 1 area 0.0.0.0
  ip pim sparse-mode

interface nve1
  no shutdown
  host-reachability protocol bgp
  advertise virtual-rmac
  source-interface loopback1
  member vni 101010
    suppress-arp
    mcast-group 224.10.10.10
  member vni 202020
    suppress-arp
    mcast-group 224.10.10.10
```

```

member vni 303030 associate-vrf

router ospf 1

router bgp 65000
  address-family ipv4 unicast
  address-family l2vpn evpn
  advertise-pip
  neighbor 192.168.0.11
  remote-as 65000
  update-source loopback0
  address-family l2vpn evpn
  send-community
  send-community extended
  neighbor 192.168.88.1
  remote-as 65000
  description OVERLAY_BACKUP
  update-source Vlan888
  address-family l2vpn evpn
  send-community
  send-community extended
  vrf tenant-a
  address-family ipv4 unicast
  redistribute direct route-map direct_routes_tenant-a
evpn
vni 101010 l2
  rd auto
  route-target import auto
  route-target export auto
vni 202020 l2
  rd auto
  route-target import auto
  route-target export auto

```

N9K-ACCESS

```

feature lACP

vlan 1,10

interface port-channel10
  switchport
  switchport mode trunk

interface Ethernet1/11
  switchport
  switchport access vlan 10
  no shutdown

interface Ethernet1/45
  switchport
  switchport mode trunk
  channel-group 10 mode active
  no shutdown

interface Ethernet1/46
  switchport

```

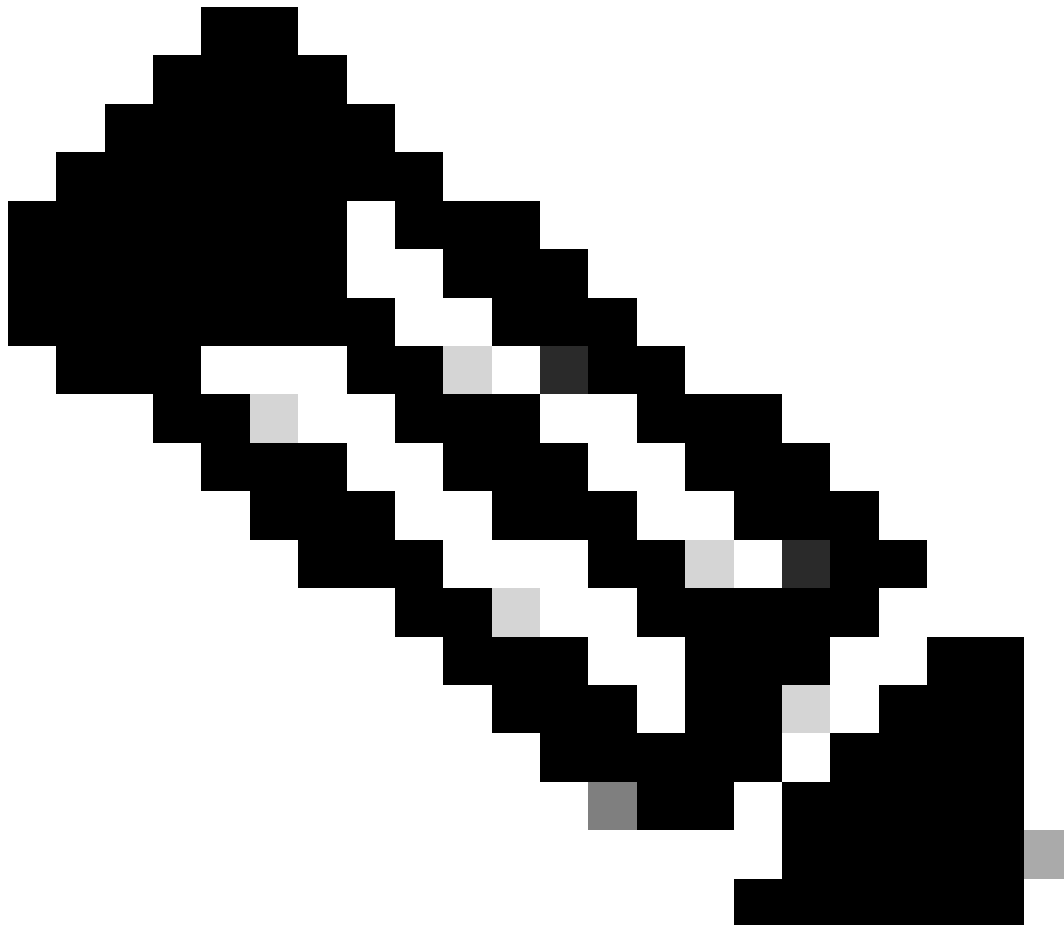
```
switchport mode trunk
channel-group 10 mode active
no shutdown
```

Configuración DHCP en switches Nexus

HOJA-1

Paso 1. Active la función DHCP.

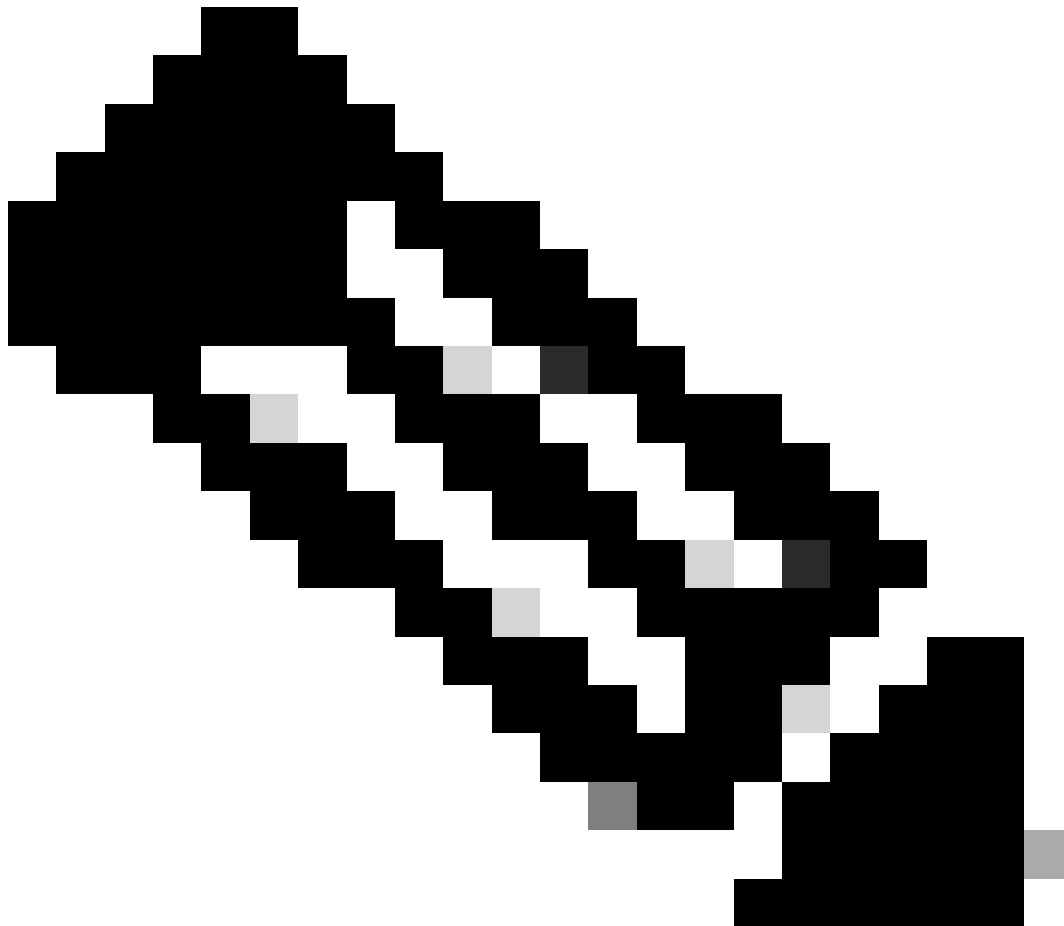
```
LEAF-1(config)# feature dhcp
```



Nota: El servidor DHCP y el servicio de comandos relay agent dhcp, ip dhcp relay e ipv6 dhcp relay están activados de forma predeterminada desde NX-OS 7.x.

Paso 2. Aplique el comando ip dhcp relay information option.

```
LEAF-1(config)# ip dhcp relay information option
```



Nota: Este comando permite al agente de retransmisión DHCP insertar y quitar información de la opción 82 en los paquetes que se reenvían.

Paso 3. Aplique el comando ip dhcp relay information option vpn.

```
LEAF-1(config)# ip dhcp relay information option vpn
```




Nota: Este comando habilita las solicitudes de retransmisión DHCP que llegan a diferentes VRF a los que pertenece el servidor DHCP.

Paso 4. Aplique el comando "ip dhcp relay address [ip address of DHCP server]".



Nota: En este ejemplo, la dirección IP del servidor DHCP es 10.10.10.150.

```
LEAF-1(config)# interface v1an 10  
LEAF-1(config-if)# ip dhcp relay address 10.10.10.150
```

Paso 5. Aplique el comando "ip dhcp relay source-interface [unique loopback]".



Nota: Este comando configura la dirección IP de origen para que el agente de retransmisión DHCP administre Discover, Offer, Request y ACK, para la comunicación de unidifusión que el agente de retransmisión DHCP utiliza la dirección IP de SVI como dirección IP de origen para el agente de retransmisión DHCP. Esto no es deseado porque esta dirección IP es compartida por varios VTEPs y puede ocurrir el agujereo negro de paquetes DHCP. Para evitar esto, es necesaria una dirección IP única (que utilice una interfaz de loopback) para diferenciar cada VTEP.

```
LEAF-1(config)# interface vlan 10
LEAF-1(config-if)# ip dhcp relay source-interface loopback100
```

Paso 6. En el arrendatario correspondiente VRF dentro de BGP, redistribución de ruta directa con una lista de prefijos y un route-map que incluye la dirección IP de la interfaz de loopback.

Nota: Esta interfaz de loopback pertenece al arrendatario de SVI.

```
LEAF-1(config)# show running-config interface loopback 100
interface loopback100
  vrf member tenant-a
  ip address 172.16.10.8/32

LEAF-1(config)# ip prefix-list host_subnets seq 15 permit 172.16.10.8/32
LEAF-1(config)# route-map direct_routes_tenant-a permit 10
LEAF-1(config-route-map)# match ip address prefix-list host_subnets
LEAF-1(config-route-map)# router bgp 65000
LEAF-1(config-router)# vrf tenant-a
LEAF-1(config-router-vrf)# address-family ipv4 unicast
LEAF-1(config-router-vrf-af)# redistribute direct route-map direct_routes_tenant-a
```

Paso 7. Verifique que la dirección IP de la interfaz de loopback se anuncie en BGP L2VPN EVPN a los Spines con el comando: `show bgp l2vpn evpn [loopback IP] vrf [tenant vrf]`.

```
LEAF-1(config)# show bgp l2vpn evpn 172.16.10.8 vrf tenant-a
BGP routing table information for VRF default, address family L2VPN EVPN
Route Distinguisher: 192.168.5.5:4 (L3VNI 303030)
BGP routing table entry for [5]:[0]:[0]:[32]:[172.16.10.8]/224, version 421
Paths: (1 available, best #1)
Flags: (0x000002) (high32 00000000) on xmit-list, is not in l2rib/evpn
```

```
Advertised path-id 1
Path type: local, path is valid, is best path, no labeled nexthop
Gateway IP: 0.0.0.0
AS-Path: NONE, path locally originated
 192.168.5.5 (metric 0) from 0.0.0.0 (192.168.5.5)
   Origin incomplete, MED 0, localpref 100, weight 32768
   Received label 303030
   Extcommunity: RT:65000:303030 ENCAP:8 Router MAC:707d.b9b8.4daf
```

```
Path-id 1 advertised to peers:
 192.168.0.11 <<<< Spine
```

Paso 8. Verifique que la dirección IP de la interfaz de loopback esté insertada en BGP L2VPN EVPN donde se encuentra el servidor DHCP.

Nota: Si hay switches Nexus en vPC, verifique que ambos aprendan la dirección IP de la interfaz de loopback en BGP L2VPN EVPN.

```
LEAF-1# show bgp l2vpn evpn 172.16.10.8
BGP routing table information for VRF default, address family L2VPN EVPN
Route Distinguisher: 192.168.5.5:4
BGP routing table entry for [5]:[0]:[0]:[32]:[172.16.10.8]/224, version 754
Paths: (1 available, best #1)
Flags: (0x000002) (high32 00000000) on xmit-list, is not in l2rib/evpn, is not in HW

  Advertised path-id 1
  Path type: internal, path is valid, is best path, no labeled nexthop
    Imported to 2 destination(s)
    Imported paths list: tenant-a L3-303030
  Gateway IP: 0.0.0.0
  AS-Path: NONE, path sourced internal to AS
    192.168.5.5 (metric 45) from 192.168.0.11 (192.168.0.11)
      Origin incomplete, MED 0, localpref 100, weight 0
      Received label 303030
      Extcommunity: RT:65000:303030 ENCAP:8 Router MAC:707d.b9b8.4daf
      Originator: 192.168.5.5 Cluster list: 192.168.0.11
```

Path-id 1 not advertised to any peer

Route Distinguisher: 192.168.3.3:4 (L3VNI 303030)
BGP routing table entry for [5]:[0]:[0]:[32]:[172.16.10.8]/224, version 761
Paths: (1 available, best #1)
Flags: (0x000002) (high32 00000000) on xmit-list, is not in l2rib/evpn, is not in HW

Advertised path-id 1

Path type: internal, path is valid, is best path, no labeled nexthop
Imported from 192.168.5.5:4:[5]:[0]:[0]:[32]:[172.16.10.8]/224

Gateway IP: 0.0.0.0

AS-Path: NONE, path sourced internal to AS

192.168.5.5 (metric 45) from 192.168.0.11 (192.168.0.11)

Origin incomplete, MED 0, localpref 100, weight 0

Received label 303030

Extcommunity: RT:65000:303030 ENCAP:8 Router MAC:707d.b9b8.4daf

Originator: 192.168.5.5 Cluster list: 192.168.0.11

Path-id 1 not advertised to any peer

Paso 9. Verifique que haya una ruta para el servidor DHCP en el arrendatario de origen con el comando show ip route [DHCP server IP] vrf [tenant vrf].

Nota: La entrada de ruta a utilizar debe ser de VxLAN a VRF predeterminado. Si no hay ninguna ruta disponible, verifique si VTEP conoce localmente la dirección IP del servidor DHCP.

```
LEAF-1# show running-config interface vlan 10
interface Vlan10
  no shutdown
  vrf member tenant-a <<<< source tenant
  no ip redirects
  ip address 10.10.10.1/24
  no ipv6 redirects
  fabric forwarding mode anycast-gateway
  ip dhcp relay address 10.10.10.150 <<<< DHCP server
  ip dhcp relay source-interface loopback100
```

```
LEAF-1# show ip route 10.10.10.150 vrf tenant-a
10.10.10.150/32, ubest/mbest: 1/0
  *via 192.168.13.254%default, [200/0], 2w0d, bgp-65000, internal, tag 65000, segid: 303030 tunnelid:
```


Paso 10. Verifique que la IP del servidor DHCP sea accesible usando la interfaz de loopback y el VRF correspondiente como un origen VRF con el comando ping [DHCP server IP] source-interface loopback [x] vrf [tenant vrf].

```
LEAF-1# ping 10.10.10.150 source-interface loopback 100 vrf tenant-a
PING 10.10.10.150 (10.10.10.150): 56 data bytes
64 bytes from 10.10.10.150: icmp_seq=0 ttl=126 time=1.262 ms
64 bytes from 10.10.10.150: icmp_seq=1 ttl=126 time=0.833 ms
64 bytes from 10.10.10.150: icmp_seq=2 ttl=126 time=0.808 ms
64 bytes from 10.10.10.150: icmp_seq=3 ttl=126 time=0.795 ms
64 bytes from 10.10.10.150: icmp_seq=4 ttl=126 time=0.78 ms

--- 10.10.10.150 ping statistics ---
5 packets transmitted, 5 packets received, 0.00% packet loss
```

Paso 11. Verifique el estado del agente de retransmisión DHCP.

```
LEAF-1# show ip dhcp status
Current CLI Operation: show ip dhcp status
Last CLI Operation: DME: ip dhcp relay information option enable
Last CLI Operation Status: SUCCESS
```

Paso 12. Verifique la opción 82, como la opción vpn y la dirección IP de retransmisión correcta bajo el agente de retransmisión.

```
LEAF-1# show ip dhcp relay
DHCP relay service is enabled <<<<<<
Insertion of option 82 is enabled <<<<<<
Insertion of option 82 customize circuitid is disabled
TLV format in CircuitId and RemoteId suboptions is enabled
Insertion of VPN suboptions is enabled <<<<<<<
Insertion of cisco suboptions is disabled
Global smart-relay is disabled
Relay Trusted functionality is disabled
Relay Trusted Port is Globally disabled
V4 Relay Source Address HSRP is Globally disabled
Server-ID-override-disable is disabled
```

Smart-relay is enabled on the following interfaces:

Subnet-broadcast is enabled on the following interfaces:

Relay Trusted Port is enabled on the following interfaces:

Relay Source Address HSRP is enabled on the following interfaces:

Helper addresses are configured on the following interfaces:

Interface	Relay Address	VRF Name
Vlan10	10.10.10.150	<<<<<<<<<

Paso 13. Verifique las estadísticas de los paquetes procesados y reenviados.

```
LEAF-1# show ip dhcp global statistics
Packets processed 1297177
Packets received through cfsoe 0
Packets forwarded 1297175
Packets forwarded on cfsoe 0
Total packets dropped 0
Packets dropped from untrusted ports 0
Packets dropped due to MAC address check failure 0
Packets dropped due to Option 82 insertion failure 0
Packets dropped due to o/p intf unknown 0
Packets dropped which were unknown 0
Packets dropped due to no trusted ports 0
Packets dropped due to dhcp relay not enabled 0
Packets dropped due to no binding entry 0
Packets dropped due to interface error/no interface 0
Packets dropped due to max hops exceeded 0
Packets dropped due to Queue full 0
```

Paso 14. Verifique las estadísticas de los paquetes de retransmisión.

```
LEAF-1# show ip dhcp relay statistics
```

```
-----
Message Type           Rx           Tx           Drops
-----
Discover                260521       260520         0
Offer                   289330       289330         0
Request(*)              267162       267161         0
Ack                     8322         8322           0
Release(*)              181121       181121         0
Decline                  1            1              0
Inform(*)                0            0              0
Nack                    289280       289280         0
-----
Total                   1295737     1295735         0
-----
```

DHCP L3 FWD:

```
Total Packets Received      :      0
Total Packets Forwarded     :      0
Total Packets Dropped       :      0
Non DHCP:
Total Packets Received      :      0
Total Packets Forwarded     :      0
```

```
Total Packets Dropped          :          0
DROP:
DHCP Relay not enabled         :          0
Invalid DHCP message type      :          0
Interface error                 :          0
Tx failure towards server      :          0
Tx failure towards client      :          0
Unknown output interface       :          0
Unknown vrf or interface for server :          0
Max hops exceeded              :          0
Option 82 validation failed    :          0
Packet Malformed               :          0
DHCP Request dropped on MCT    :          0
Relay Trusted port not configured :          0
* - These counters will show correct value when switch
receives DHCP request packet with destination ip as broadcast
address. If request is unicast it will be HW switched
```

DHCP de LEAF-1-vPC

Paso 1. Active la función DHCP.

```
LEAF-1-VPC(config)#feature dhcp
```



Nota: El servidor DHCP y el servicio de comandos relay agent dhcp, ip dhcp relay e ipv6 dhcp relay están activados de forma predeterminada desde NX-OS 7.x.

Paso 2. Aplique el comando ip dhcp relay information option.

```
LEAF-1-VPC(config)#ip dhcp relay information option
```



Nota: Este comando permite al agente de retransmisión DHCP insertar y quitar información de la opción 82 en los paquetes que se reenvían.

Paso 3. Aplique el comando "ip dhcp relay information option vpn".

```
LEAF-1-VPC(config)# ip dhcp relay information option vpn
```



Nota: Este comando habilita las solicitudes de retransmisión DHCP que llegan a diferentes VRF a los que pertenece el servidor DHCP.

Paso 4. Aplique el comando `ip dhcp relay address [ip address of DHCP server]`.



Nota: En este ejemplo, la dirección IP del servidor DHCP es 10.10.10.150.

```
LEAF-1-VPC(config)#interface vlan 10
LEAF-1-VPC(config-if)#ip dhcp relay address 10.10.10.150
```

Paso 5. Aplique el comando "ip dhcp relay source-interface [unique loopback]".



Nota: Este comando configura la dirección IP de origen para que el agente de retransmisión DHCP administre Discover, Offer, Request y ACK, para la comunicación de unidifusión que el agente de retransmisión DHCP utiliza la dirección IP de SVI como dirección IP de origen para el agente de retransmisión DHCP. Esto no es deseado porque esta dirección IP es compartida por varios VTEPs y puede ocurrir el agujereo negro de paquetes DHCP. Para evitar esto, es necesaria una dirección IP única (que utilice una interfaz de loopback) para diferenciar cada VTEP.

```
LEAF-1-VPC(config)#interface vlan 10
LEAF-1-VPC(config-if)# ip dhcp relay source-interface loopback100
```

Paso 6. En el arrendatario correspondiente VRF dentro de BGP, redistribución de ruta directa con una lista de prefijos y un route-map que incluye la dirección IP de la interfaz de loopback.

Nota: Esta interfaz de loopback pertenece al arrendatario de SVI.

```
LEAF-1-VPC(config)# show running-config interface loopback 100
interface loopback100
  vrf member tenant-a
  ip address 172.16.10.9/32

LEAF-1-VPC(config)# ip prefix-list host_subnets seq 15 permit 172.16.10.9/32
LEAF-1-VPC(config)# route-map direct_routes_tenant-a permit 10
LEAF-1-VPC(config-route-map)# match ip address prefix-list host_subnets
LEAF-1-VPC(config-route-map)# router bgp 65000
LEAF-1-VPC(config-router)# vrf tenant-a
LEAF-1-VPC(config-router-vrf)# address-family ipv4 unicast
LEAF-1-VPC(config-router-vrf-af)# redistribute direct route-map direct_routes_tenant-a
```

Paso 7. Verifique que la dirección IP de la interfaz de loopback se anuncie en BGP L2VPN EVPN a los Spines con el comando: `show bgp l2vpn evpn [loopback IP] vrf [tenant vrf]`.

```
LEAF-1-VPC# show bgp l2vpn evpn 172.16.10.9 vrf tenant-a
BGP routing table information for VRF default, address family L2VPN EVPN
Route Distinguisher: 192.168.3.3:4 (L3VNI 303030)
BGP routing table entry for [5]:[0]:[0]:[32]:[172.16.10.9]/224, version 637
Paths: (1 available, best #1)
Flags: (0x000002) (high32 00000000) on xmit-list, is not in l2rib/evpn
```

```
Advertised path-id 1
Path type: local, path is valid, is best path, no labeled nexthop
Gateway IP: 0.0.0.0
AS-Path: NONE, path locally originated
 192.168.13.1 (metric 0) from 0.0.0.0 (192.168.3.3)
  Origin incomplete, MED 0, localpref 100, weight 32768
  Received label 303030
  Extcommunity: RT:65000:303030 ENCAP:8 Router MAC:6026.aa85.9887
```

```
Path-id 1 advertised to peers:
 192.168.0.11
```

Paso 8. Verifique que la dirección IP de la interfaz de loopback esté insertada en BGP L2VPN EVPN donde se encuentra el servidor DHCP.

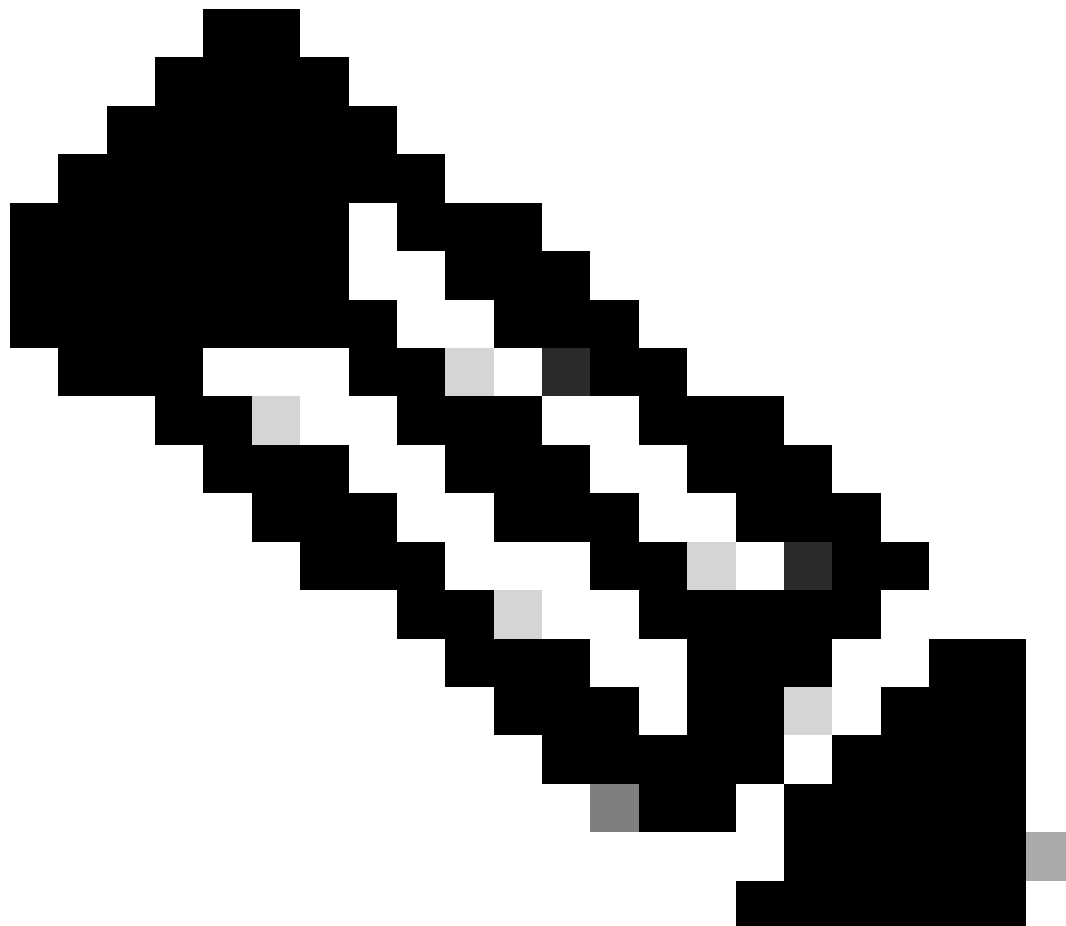
Nota: Si hay switches Nexus en vPC, verifique que ambos aprendan la dirección IP de la interfaz de loopback en BGP L2VPN EVPN.

```
LEAF-1-VPC# show bgp l2vpn evpn 172.16.10.9
BGP routing table information for VRF default, address family L2VPN EVPN
Route Distinguisher: 192.168.3.3:4 (L3VNI 303030)
BGP routing table entry for [5]:[0]:[0]:[32]:[172.16.10.9]/224, version 637
Paths: (1 available, best #1)
Flags: (0x000002) (high32 00000000) on xmit-list, is not in l2rib/evpn
```

```
Advertised path-id 1
Path type: local, path is valid, is best path, no labeled nexthop
Gateway IP: 0.0.0.0
AS-Path: NONE, path locally originated
 192.168.13.1 (metric 0) from 0.0.0.0 (192.168.3.3)
  Origin incomplete, MED 0, localpref 100, weight 32768
  Received label 303030
  Extcommunity: RT:65000:303030 ENCAP:8 Router MAC:6026.aa85.9887
```

```
Path-id 1 advertised to peers:
 192.168.0.11
```

Paso 9. Verifique que haya una ruta para el servidor DHCP en el arrendatario de origen con el comando `show ip route [DHCP server IP] vrf[tenant vrf]`.



Nota: La entrada de ruta a utilizar debe ser de VxLAN a VRF predeterminado. Si no hay ninguna ruta disponible, verifique si VTEP conoce localmente la dirección IP del servidor DHCP.

```
LEAF-1-VPC# show running-config interface vlan 10
interface Vlan10
  no shutdown
  vrf member tenant-a <<<< source tenant
  no ip redirects
  ip address 10.10.10.1/24
  no ipv6 redirects
  fabric forwarding mode anycast-gateway
  ip dhcp relay address 10.10.10.150
  ip dhcp relay source-interface loopback100
```

```
LEAF-1-VPC# show ip route 10.10.10.150 vrf tenant-a
10.10.10.150/32, ubest/mbest: 1/0, attached
    *via 10.10.10.150, Vlan10, [190/0], 6d07h, hmm
```

Paso 10. Verifique que la IP del servidor DHCP sea alcanzable usando la interfaz de loopback y el VRF correspondiente como un origen VRF con el comando ping [DHCP server IP] source-interface loopback [x] vrf [tenvrf].

```
LEAF-1-VPC# ping 10.10.10.150 source-interface loopback 100 vrf tenant-a
PING 10.10.10.150 (10.10.10.150): 56 data bytes
64 bytes from 10.10.10.150: icmp_seq=0 ttl=126 time=0.965 ms
64 bytes from 10.10.10.150: icmp_seq=1 ttl=126 time=0.57 ms
64 bytes from 10.10.10.150: icmp_seq=2 ttl=126 time=0.488 ms
64 bytes from 10.10.10.150: icmp_seq=3 ttl=126 time=0.524 ms
64 bytes from 10.10.10.150: icmp_seq=4 ttl=126 time=0.502 ms

--- 10.10.10.150 ping statistics ---
```

Paso 11. Verifique el estado del agente de retransmisión DHCP.

```
LEAF-1-VPC# show ip dhcp status
Current CLI Operation: show ip dhcp status
Last CLI Operation: DME: ip dhcp relay information option vpn enable
Last CLI Operation Status: SUCCESS
```

Paso 12. Verifique la opción 82, como la opción vpn y la dirección IP de retransmisión correcta bajo el agente de retransmisión.

```
LEAF-1-VPC# show ip dhcp relay
DHCP relay service is enabled <<<<<<
Insertion of option 82 is enabled <<<<<<<
Insertion of option 82 customize circuitid is disabled
TLV format in CircuitId and RemoteId suboptions is enabled
Insertion of VPN suboptions is enabled <<<<<<<
Insertion of cisco suboptions is disabled
Global smart-relay is disabled
Relay Trusted functionality is disabled
Relay Trusted Port is Globally disabled
V4 Relay Source Address HSRP is Globally disabled
Server-ID-override-disable is disabled
```

Smart-relay is enabled on the following interfaces:

Subnet-broadcast is enabled on the following interfaces:

Relay Trusted Port is enabled on the following interfaces:

Relay Source Address HSRP is enabled on the following interfaces:

Helper addresses are configured on the following interfaces:

Interface	Relay Address	VRF Name
Vlan10	10.10.10.150	<<<<<<<<<

Paso 13. Verifique las estadísticas de los paquetes procesados y reenviados.

```
LEAF-1-VPC# show ip dhcp global statistics
Packets processed 263162
Packets received through cfsoe 0
Packets forwarded 263161
Packets forwarded on cfsoe 0
Total packets dropped 0
Packets dropped from untrusted ports 0
Packets dropped due to MAC address check failure 0
Packets dropped due to Option 82 insertion failure 0
Packets dropped due to o/p intf unknown 0
Packets dropped which were unknown 0
Packets dropped due to no trusted ports 0
Packets dropped due to dhcp relay not enabled 0
Packets dropped due to no binding entry 0
Packets dropped due to interface error/no interface 0
Packets dropped due to max hops exceeded 0
Packets dropped due to Queue full 0
```

Paso 14. Verifique las estadísticas de los paquetes de retransmisión.

```
LEAF-1-VPC# show ip dhcp relay statistics
```

Message Type	Rx	Tx	Drops
Discover	8	7	0
Offer	29304	29304	0
Request(*)	5029	5029	0
Ack	6535	6535	0
Release(*)	191482	191482	0
Decline	0	0	0
Inform(*)	3	3	0
Nack	29281	29281	0
Total	261642	261641	0

```
DHCP L3 FWD:
Total Packets Received : 0
```

```

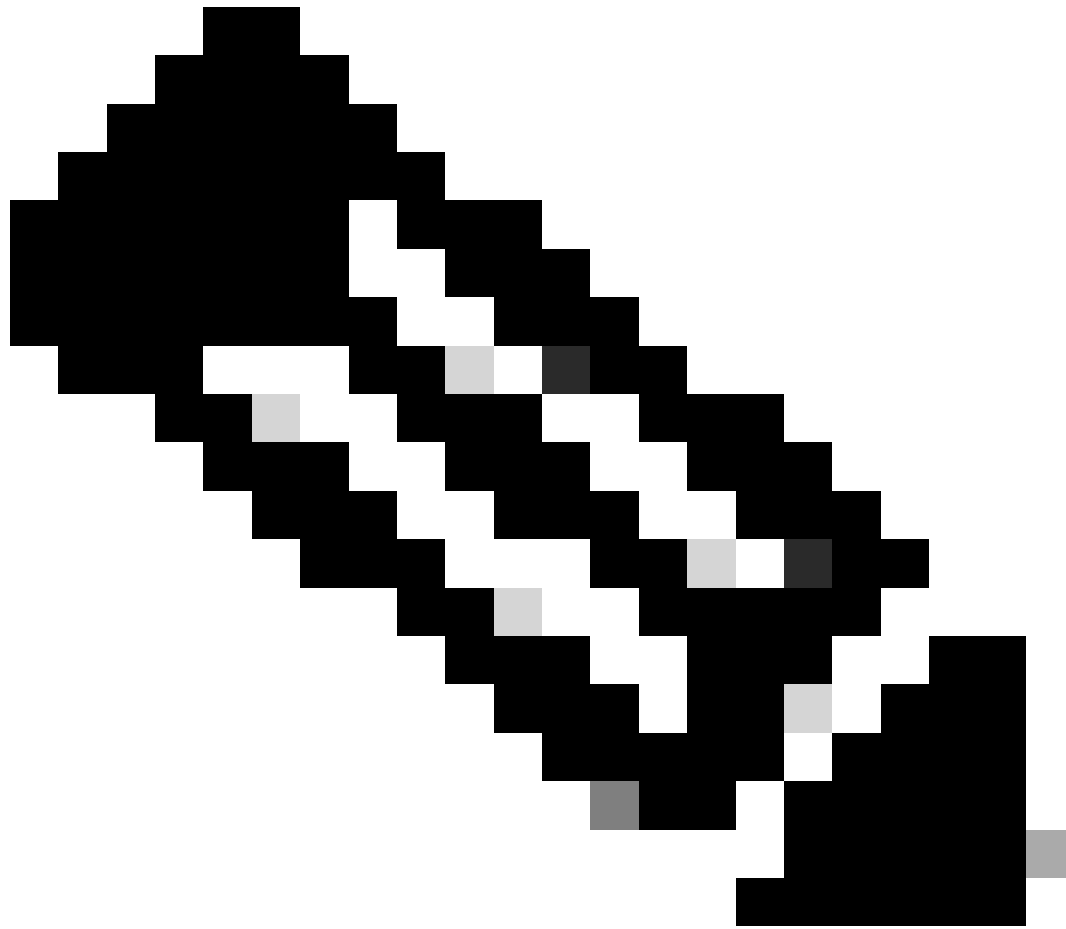
Total Packets Forwarded      :      0
Total Packets Dropped        :      0
Non DHCP:
Total Packets Received       :      0
Total Packets Forwarded     :      0
Total Packets Dropped        :      0
DROP:
DHCP Relay not enabled      :      0
Invalid DHCP message type   :      0
Interface error              :      0
Tx failure towards server    :      0
Tx failure towards client    :      0
Unknown output interface    :      0
Unknown vrf or interface for server :      0
Max hops exceeded           :      0
Option 82 validation failed  :      0
Packet Malformed            :      0
DHCP Request dropped on MCT  :      0
Relay Trusted port not configured :      0
* - These counters will show correct value when switch
receives DHCP request packet with destination ip as broadcast
address. If request is unicast it will be HW switched

```

DHCP de LEAF-2-vPC

Paso 1. Active la función DHCP.

```
LEAF-2-VPC(config)# feature dhcp
```



Nota: El servidor DHCP y el servicio de comandos relay agent dhcp, ip dhcp relay e ipv6 dhcp relay están habilitados de forma predeterminada desde NX-OS 7.x.

Paso 2. Aplique el comando "ip dhcp relay information option".

```
LEAF-2-VPC(config)# ip dhcp relay information option
```




Nota: Este comando permite al agente de retransmisión DHCP insertar y quitar información de la opción 82 en los paquetes que se reenvían.

Paso 3. Aplique el comando "ip dhcp relay information option vpn".

```
LEAF-2-VPC(config)# ip dhcp relay information option vpn
```



Nota: Este comando habilita las solicitudes de retransmisión DHCP que llegan a diferentes VRF a los que pertenece el servidor DHCP.

Paso 4. Aplique el comando "ip dhcp relay address [ip address of DHCP server]".



Nota: En este ejemplo, la dirección IP del servidor DHCP es 10.10.10.150.

```
LEAF-2-VPC(config)# interface vlan 10  
LEAF-2-VPC(config-if)# ip dhcp relay address 10.10.10.150
```

Paso 5. Aplique el comando "ip dhcp relay source-interface [unique loopback]".



Nota: Este comando configura la dirección IP de origen para que el agente de retransmisión DHCP administre Discover, Offer, Request y ACK, para la comunicación de unidifusión que el agente de retransmisión DHCP utiliza la dirección IP de SVI como dirección IP de origen para el agente de retransmisión DHCP. Esto no es deseado porque esta dirección IP es compartida por varios VTEPs y puede ocurrir el agujero negro de paquetes DHCP. Para evitar esto, es necesaria una dirección IP única (que utilice una interfaz de loopback) para diferenciar cada VTEP.

```
LEAF-2-VPC(config)# interface vlan 10
LEAF-2-VPC(config-if)# ip dhcp relay source-interface loopback 100
```

Paso 6. En el arrendatario correspondiente VRF dentro de BGP, redistribución de ruta directa con una lista de prefijos y un route-map que incluye la dirección IP de la interfaz de loopback.

Nota: Esta interfaz de loopback pertenece al arrendatario de SVI.

```
LEAF-2-VPC(config-if)# show running-config interface loopback 100
interface loopback100
  vrf member tenant-a
  ip address 172.16.10.10/32

LEAF-2-VPC(config)# ip prefix-list host_subnets seq 15 permit 172.16.10.10/32
LEAF-2-VPC(config)# route-map direct_routes_tenant-a permit 10
LEAF-2-VPC(config-route-map)# match ip address prefix-list host_subnets
LEAF-2-VPC(config-route-map)# router bgp 65000
LEAF-2-VPC(config-router)# vrf tenant-a
LEAF-2-VPC(config-router-vrf)# address-family ipv4 unicast
LEAF-2-VPC(config-router-vrf-af)# redistribute direct route-map direct_routes_tenant-a
```

Paso 7. Verifique que la dirección IP de la interfaz de loopback se anuncie en BGP L2VPN EVPN a los Spines con el comando: `show bgp l2vpn evpn [loopback IP] vrf [tenant vrf]`.

```
LEAF-2-VPC(config-if)# show bgp l2vpn evpn 172.16.10.10 vrf tenant-a
BGP routing table information for VRF default, address family L2VPN EVPN
Route Distinguisher: 192.168.4.4:4 (L3VNI 303030)
BGP routing table entry for [5]:[0]:[0]:[32]:[172.16.10.10]/224, version 49
5
Paths: (1 available, best #1)
Flags: (0x000002) (high32 00000000) on xmit-list, is not in l2rib/evpn

Advertised path-id 1
Path type: local, path is valid, is best path, no labeled nexthop
Gateway IP: 0.0.0.0
AS-Path: NONE, path locally originated
 192.168.13.2 (metric 0) from 0.0.0.0 (192.168.4.4)
  Origin incomplete, MED 0, localpref 100, weight 32768
  Received label 303030
  Extcommunity: RT:65000:303030 ENCAP:8 Router MAC:6026.aa85.9587

Path-id 1 advertised to peers:
 192.168.0.11 <<<<< Spine
```

Paso 8. Verifique que la dirección IP de la interfaz de loopback esté insertada en BGP L2VPN EVPN donde se encuentra el servidor DHCP.

Nota: Si hay switches Nexus en vPC, verifique que ambos aprendan la dirección IP de la interfaz de loopback en BGP L2VPN EVPN.

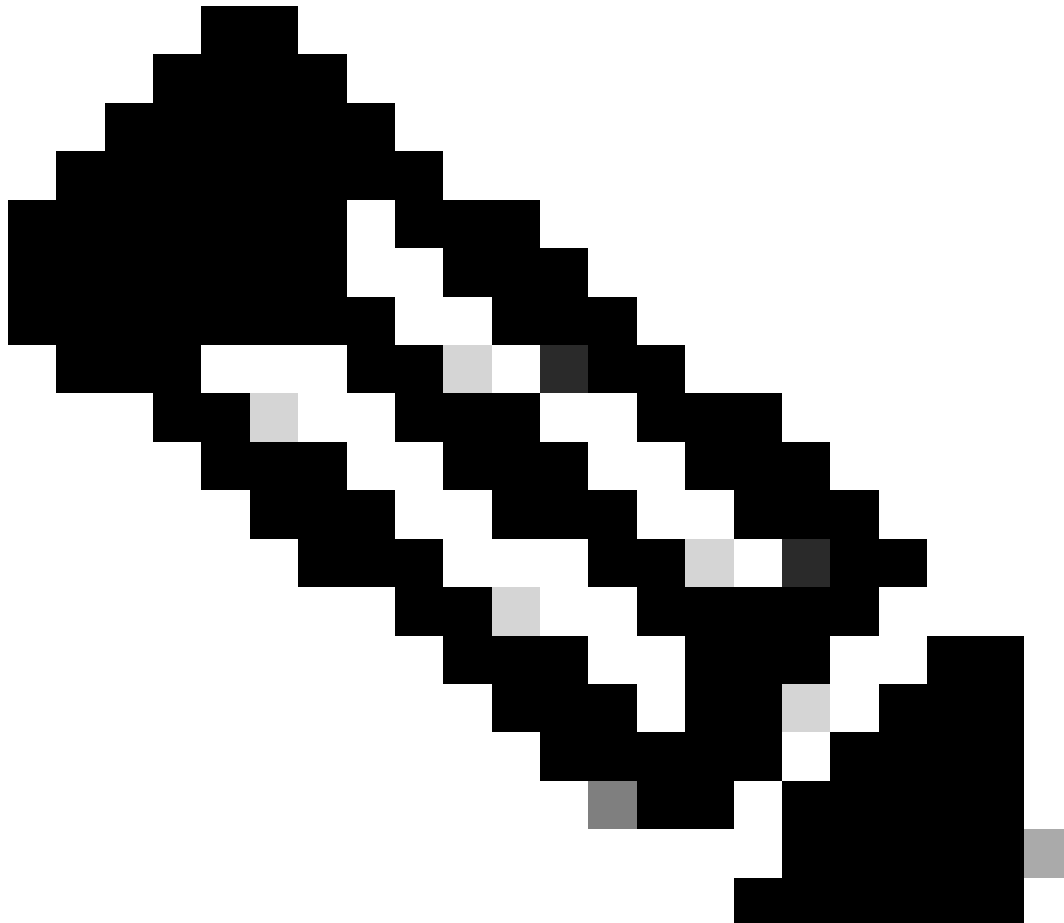
```
LEAF-2-VPC(config-if)# show bgp l2vpn evpn 172.16.10.10
BGP routing table information for VRF default, address family L2VPN EVPN
Route Distinguisher: 192.168.4.4:4 (L3VNI 303030)
BGP routing table entry for [5]:[0]:[0]:[32]:[172.16.10.10]/224, version 49
5
Paths: (1 available, best #1)
Flags: (0x000002) (high32 00000000) on xmit-list, is not in l2rib/evpn

Advertised path-id 1
Path type: local, path is valid, is best path, no labeled nexthop
Gateway IP: 0.0.0.0
AS-Path: NONE, path locally originated
 192.168.13.2 (metric 0) from 0.0.0.0 (192.168.4.4)
  Origin incomplete, MED 0, localpref 100, weight 32768
  Received label 303030
  Extcommunity: RT:65000:303030 ENCAP:8 Router MAC:6026.aa85.9587

Path-id 1 advertised to peers:
```

192.168.0.11

Paso 9. Verifique que haya una ruta para el servidor DHCP en el arrendatario de origen con el comando `show ip route [DHCP server IP] vrf[tenvrf]`.



Nota: La entrada de ruta a utilizar debe ser de VxLAN a VRF predeterminado. Si no hay ninguna ruta disponible, verifique si VTEP conoce localmente la dirección IP del servidor DHCP.

```
LEAF-2-VPC(config-if)# show running-config interface vlan 10
interface Vlan10
  no shutdown
  vrf member tenant-a
  no ip redirects
  ip address 10.10.10.1/24
  no ipv6 redirects
  fabric forwarding mode anycast-gateway
  ip dhcp relay address 10.10.10.150
```



```
ip dhcp relay source-interface loopback100
```

```
LEAF-2-VPC(config-if)# show ip route 10.10.10.150 vrf tenant-a  
10.10.10.150/32, ubest/mbest: 1/0, attached  
*via 10.10.10.150, Vlan10, [190/0], 01:01:28, hmm
```

Paso 10. Verifique que la IP del servidor DHCP sea accesible usando la interfaz de loopback y el VRF correspondiente como un origen VRF con el comando ping [DHCP server IP] source-interface loopback [x] vrf [tenant vrf].

```
LEAF-2-VPC(config-if)# ping 10.10.10.150 source-interface loopback 100 vrf tenant-a  
PING 10.10.10.150 (10.10.10.150): 56 data bytes  
64 bytes from 10.10.10.150: icmp_seq=0 ttl=127 time=0.928 ms  
64 bytes from 10.10.10.150: icmp_seq=1 ttl=127 time=0.475 ms  
64 bytes from 10.10.10.150: icmp_seq=2 ttl=127 time=0.455 ms  
64 bytes from 10.10.10.150: icmp_seq=3 ttl=127 time=0.409 ms  
64 bytes from 10.10.10.150: icmp_seq=4 ttl=127 time=0.465 ms  
  
--- 10.10.10.150 ping statistics ---
```

Paso 11. Verifique el estado del agente de retransmisión DHCP.

```
LEAF-2-VPC(config)# show ip dhcp status  
Current CLI Operation: show ip dhcp status  
Last CLI Operation: DME: ip dhcp relay information option vpn enable  
Last CLI Operation Status: SUCCESS
```

Paso 12. Verifique la opción 82, como la opción vpn y la dirección IP de retransmisión correcta bajo el agente de retransmisión.

```
LEAF-2-VPC(config)# show ip dhcp relay  
DHCP relay service is enabled <<<<<<<<  
Insertion of option 82 is enabled <<<<<<<<<<<<  
Insertion of option 82 customize circuitid is disabled  
TLV format in CircuitId and RemoteId suboptions is enabled  
Insertion of VPN suboptions is enabled <<<<<<<<  
Insertion of cisco suboptions is disabled  
Global smart-relay is disabled  
Relay Trusted functionality is disabled  
Relay Trusted Port is Globally disabled  
V4 Relay Source Address HSRP is Globally disabled  
Server-ID-override-disable is disabled
```

```
Smart-relay is enabled on the following interfaces:
```

```
-----
```

```
Subnet-broadcast is enabled on the following interfaces:
```

Relay Trusted Port is enabled on the following interfaces:

Relay Source Address HSRP is enabled on the following interfaces:

Helper addresses are configured on the following interfaces:

Interface	Relay Address	VRF Name
Vlan10	10.10.10.150	<<<<

Paso 13. Verifique las estadísticas de los paquetes procesados y reenviados.

```
LEAF-2-VPC(config)# show ip dhcp global statistics
Packets processed 103030
Packets received through cfsoe 0
Packets forwarded 103030
Packets forwarded on cfsoe 0
Total packets dropped 0
Packets dropped from untrusted ports 0
Packets dropped due to MAC address check failure 0
Packets dropped due to Option 82 insertion failure 0
Packets dropped due to o/p intf unknown 0
Packets dropped which were unknown 0
Packets dropped due to no trusted ports 0
Packets dropped due to dhcp relay not enabled 0
Packets dropped due to no binding entry 0
Packets dropped due to interface error/no interface 0
Packets dropped due to max hops exceeded 0
Packets dropped due to Queue full 0
```

Paso 14. Verifique las estadísticas de los paquetes de retransmisión.

```
LEAF-2-VPC# show ip dhcp relay statistics
```

Message Type	Rx	Tx	Drops
Discover	29312	29311	0
Offer	300001	300001	0
Request(*)	29324	29324	0
Ack	1574	1574	0
Release(*)	191493	191493	0
Decline	0	0	0
Inform(*)	1540	1540	0
Nack	472890	472890	0
Total	1026134	1026133	0

```

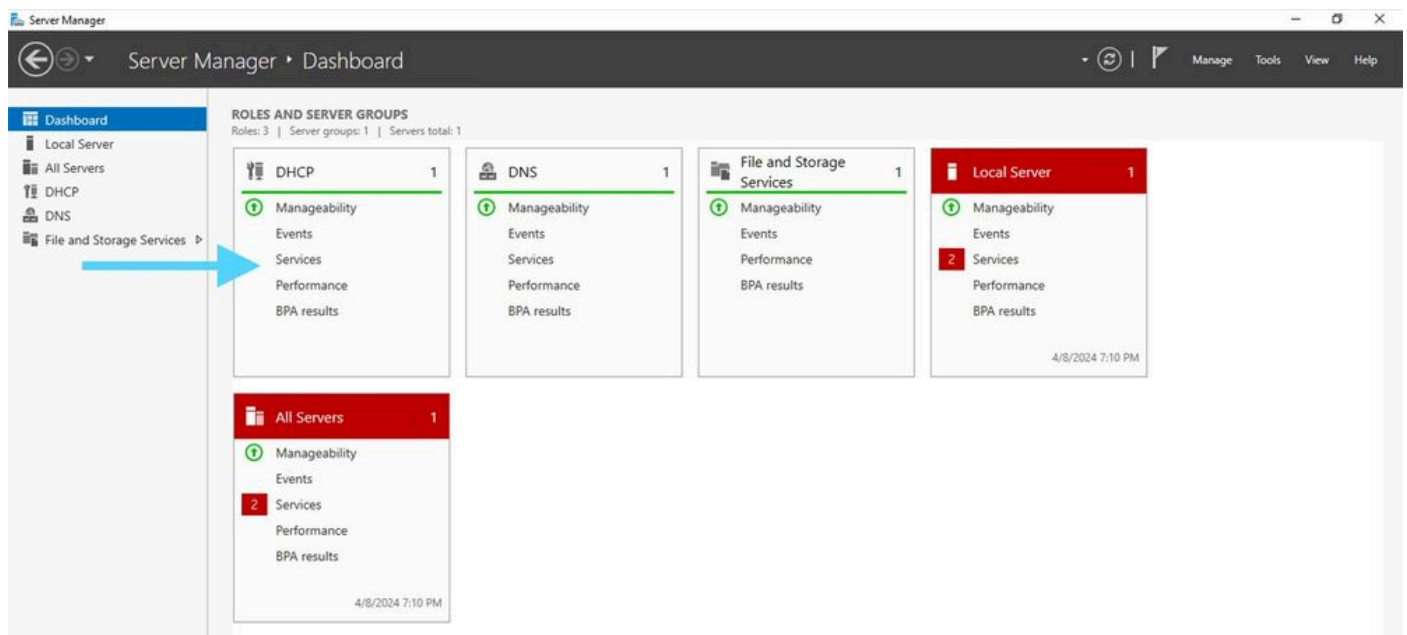
DHCP L3 FWD:
Total Packets Received      :      0
Total Packets Forwarded    :      0
Total Packets Dropped      :      0
Non DHCP:
Total Packets Received      :      0
Total Packets Forwarded    :      0
Total Packets Dropped      :      0
DROP:
DHCP Relay not enabled     :      0
Invalid DHCP message type  :      0
Interface error            :      0
Tx failure towards server  :      0
Tx failure towards client  :      0
Unknown output interface  :      0
Unknown vrf or interface for server :      0
Max hops exceeded         :      0
Option 82 validation failed :      0
Packet Malformed          :      0
DHCP Request dropped on MCT :      0
Relay Trusted port not configured :      0
* - These counters will show correct value when switch
receives DHCP request packet with destination ip as broadcast
address. If request is unicast it will be HW switched

```

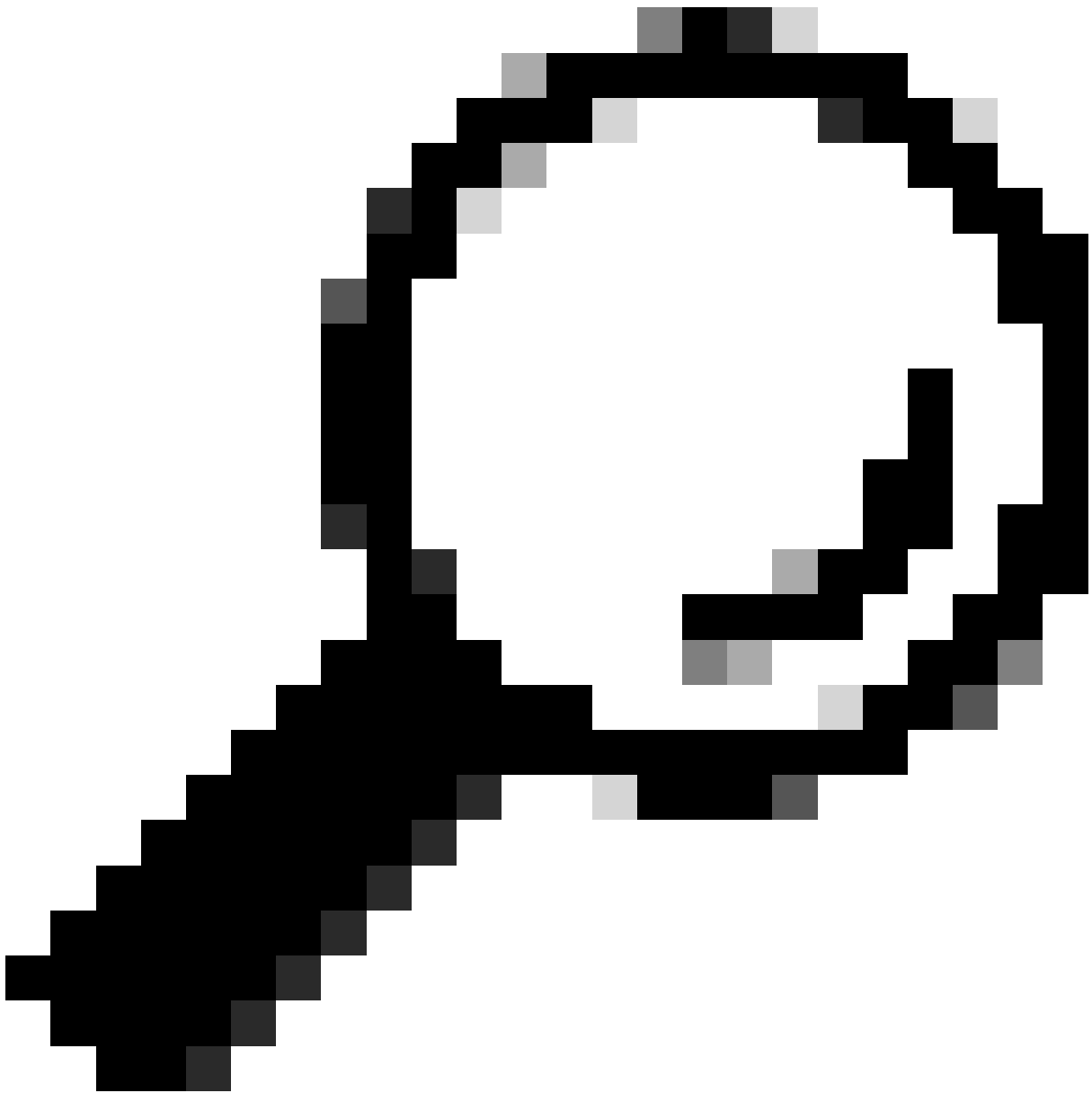
Configuración del servidor DHCP en Windows Server 2022

Configuración de alcance de direccionamiento IP para hosts.

Paso 1. Abra el Administrador del servidor y compruebe que no hay alarmas en el servidor DHCP en el Panel.



Panel del Administrador del servidor en Windows Server 2022



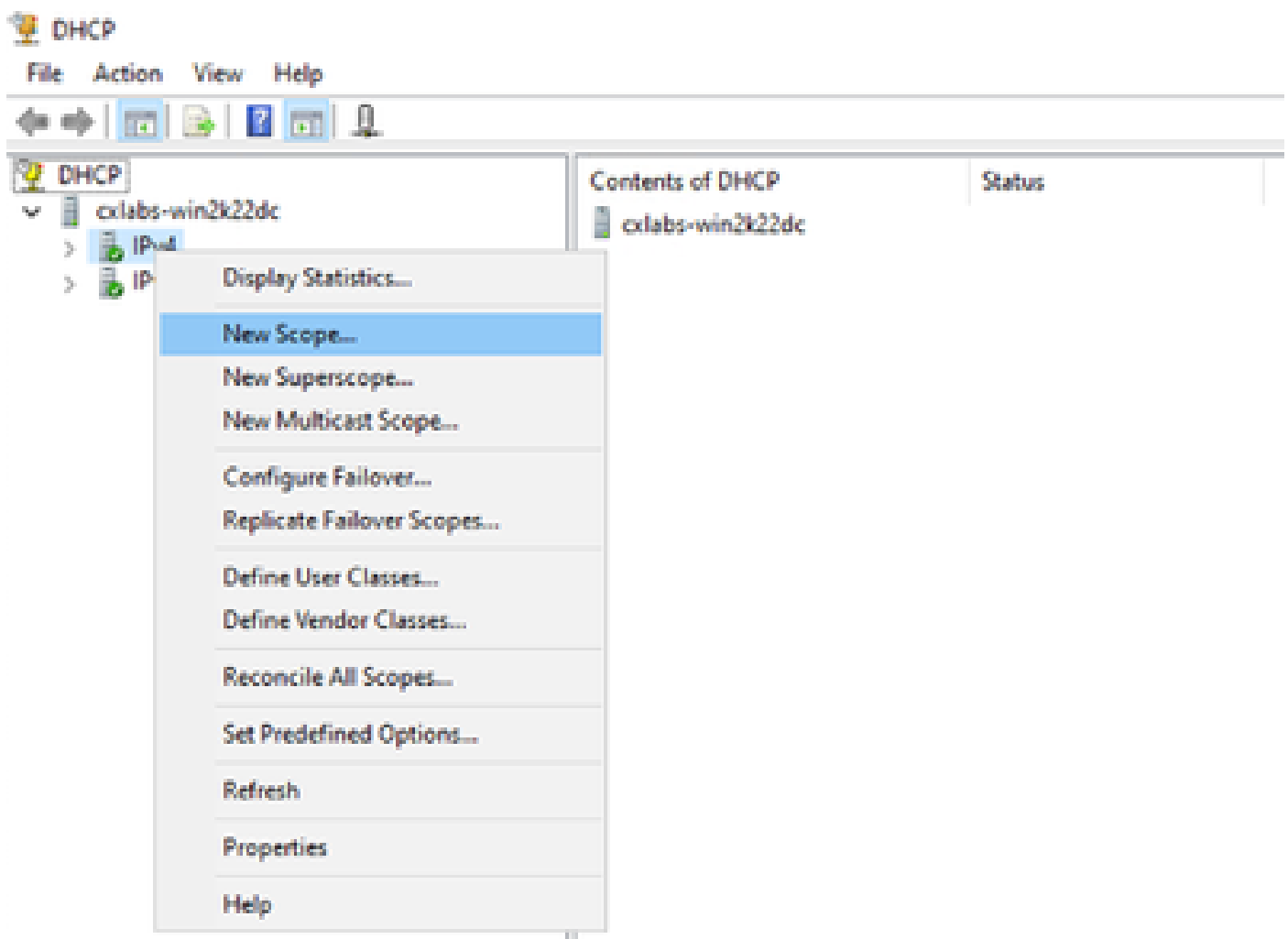
Sugerencia: la imagen se amplía al hacer doble clic.

Paso 2. Abra la aplicación Servidor DHCP.

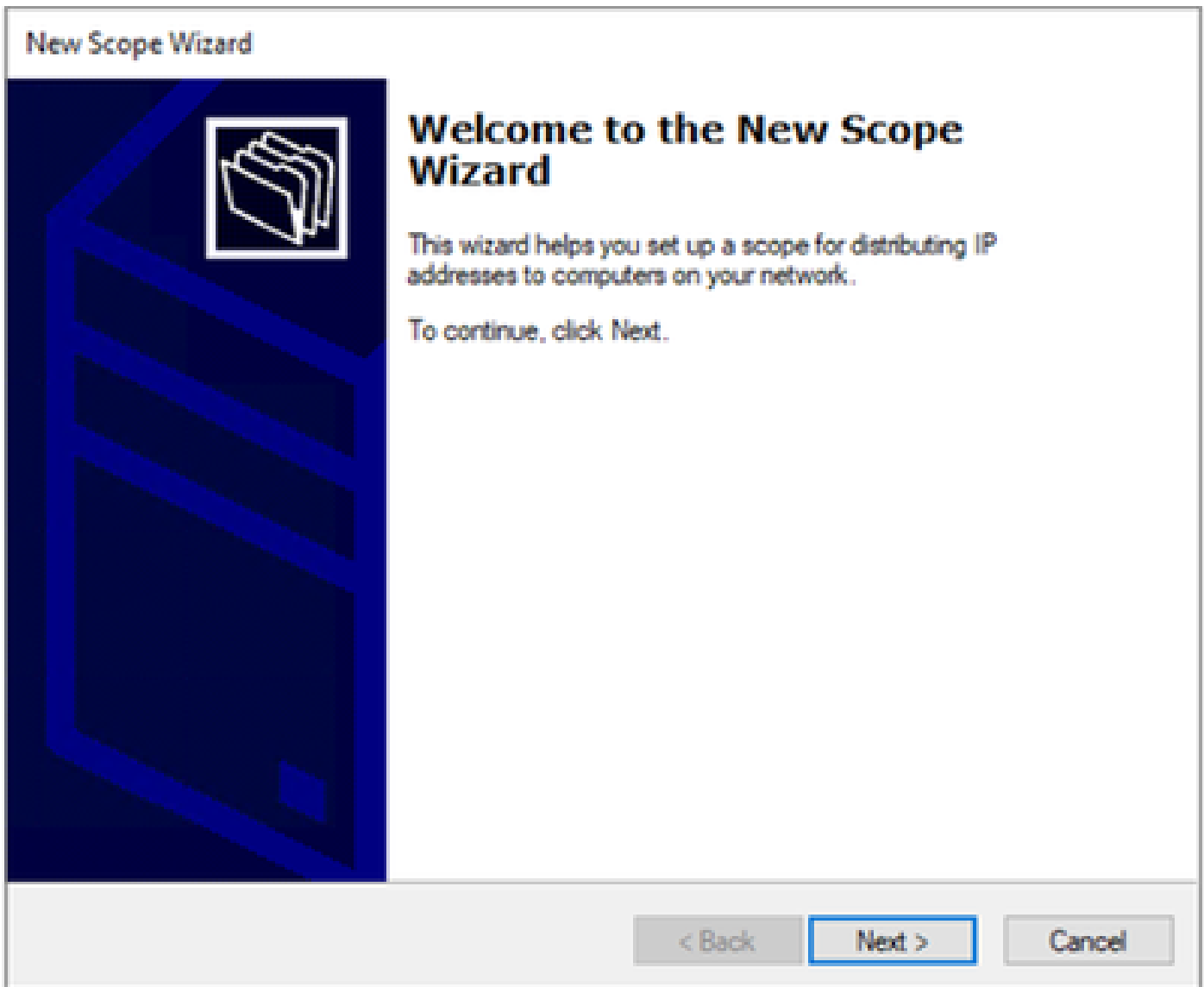


Servidor DHCP en Windows Server 2022

Paso 3. Haga clic con el botón derecho del ratón en IPv4 y haga clic en Nuevo ámbito.



Paso 4. Haga clic en Next (Siguiete).



Paso 5. Escriba un nombre y una descripción. En este ejemplo, el nombre es la subred que pertenece a la VLAN 10 y la descripción es el L2VNI como L2VNI enumerado en la VLAN 10.

New Scope Wizard

Scope Name

You have to provide an identifying scope name. You also have the option of providing a description.



Type a name and description for this scope. This information helps you quickly identify how the scope is to be used on your network.

Name:

Description:

Paso 6. Configure el intervalo de direcciones IP. Este es el conjunto para hosts.

New Scope Wizard

IP Address Range

You define the scope address range by identifying a set of consecutive IP addresses.



Configuration settings for DHCP Server

Enter the range of addresses that the scope distributes.

Start IP address:

End IP address:

Configuration settings that propagate to DHCP Client

Length:

Subnet mask:

< Back

Next >

Cancel

Paso 6. Excluya la dirección IP compartida de la configuración de SVI en los VTEP. En este ejemplo, la interfaz VLAN 10 tiene la dirección IP.10.10.1/24.



Advertencia: si no se excluye la dirección IP de la SVI (o del gateway predeterminado), puede producirse una duplicación de las direcciones IP y afectar a la entrega del tráfico.

```
LEAF-1# show running-config interface vlan 10
<snip>
interface Vlan10
  no shutdown
  vrf member tenant-a
  no ip redirects
  ip address 10.10.10.1/24
  no ipv6 redirects
  fabric forwarding mode anycast-gateway
  ip dhcp relay address 10.10.10.150
  ip dhcp relay source-interface loopback100
```

New Scope Wizard

Add Exclusions and Delay

Exclusions are addresses or a range of addresses that are not distributed by the server. A delay is the time duration by which the server will delay the transmission of a DHCP OFFER message.



Type the IP address range that you want to exclude. If you want to exclude a single address, type an address in Start IP address only.

Start IP address:

End IP address:

Add

Excluded address range:

Address 10.10.10.1

Remove

Subnet delay in milli second:

< Back

Next >

Cancel

Paso 7. Configurar la duración de concesión de la dirección IP. Esto se refiere a la cantidad de tiempo que un host puede utilizar la dirección IP asignada antes de renovarla.

New Scope Wizard

Lease Duration

The lease duration specifies how long a client can use an IP address from this scope.



Lease durations should typically be equal to the average time the computer is connected to the same physical network. For mobile networks that consist mainly of portable computers or dial-up clients, shorter lease durations can be useful. Likewise, for a stable network that consists mainly of desktop computers at fixed locations, longer lease durations are more appropriate.

Set the duration for scope leases when distributed by this server.

Limited to:

Days:

Hours:

Minutes:

< Back

Next >

Cancel

Paso 8. Seleccione Sí, deseo configurar estas opciones ahora.

New Scope Wizard

Configure DHCP Options

You have to configure the most common DHCP options before clients can use the scope.



When clients obtain an address, they are given DHCP options such as the IP addresses of routers (default gateways), DNS servers, and WINS settings for that scope.

The settings you select here are for this scope and override settings configured in the Server Options folder for this server.

Do you want to configure the DHCP options for this scope now?

- Yes, I want to configure these options now
- No, I will configure these options later

< Back

Next >

Cancel

Paso 9. Configure la dirección IP del gateway predeterminado.

New Scope Wizard

Router (Default Gateway)

You can specify the routers, or default gateways, to be distributed by this scope.



To add an IP address for a router used by clients, enter the address below.

IP address:

Add

Remove

Up

Down

< Back

Next >

Cancel

Paso 10. Configure el nombre de dominio y el servidor DNS.

New Scope Wizard

Domain Name and DNS Servers

The Domain Name System (DNS) maps and translates domain names used by clients on your network.



You can specify the parent domain you want the client computers on your network to use for DNS name resolution.

Parent domain:

To configure scope clients to use DNS servers on your network, enter the IP addresses for those servers.

Server name:

IP address:

Paso 11. Configure el servidor WINS si corresponde. Esto se puede omitir si no se conoce la información.

New Scope Wizard

WINS Servers

Computers running Windows can use WINS servers to convert NetBIOS computer names to IP addresses.



Entering server IP addresses here enables Windows clients to query WINS before they use broadcasts to register and resolve NetBIOS names.

Server name:

IP address:

Add

Resolve

Remove

Up

Down

To change this behavior for Windows DHCP clients modify option 046, WINS/NBT Node Type, in Scope Options.

< Back


Next >

Cancel

Paso 12. Seleccione Sí, deseo activar este ámbito ahora.

New Scope Wizard

Activate Scope
Clients can obtain address leases only if a scope is activated.



Do you want to activate this scope now?

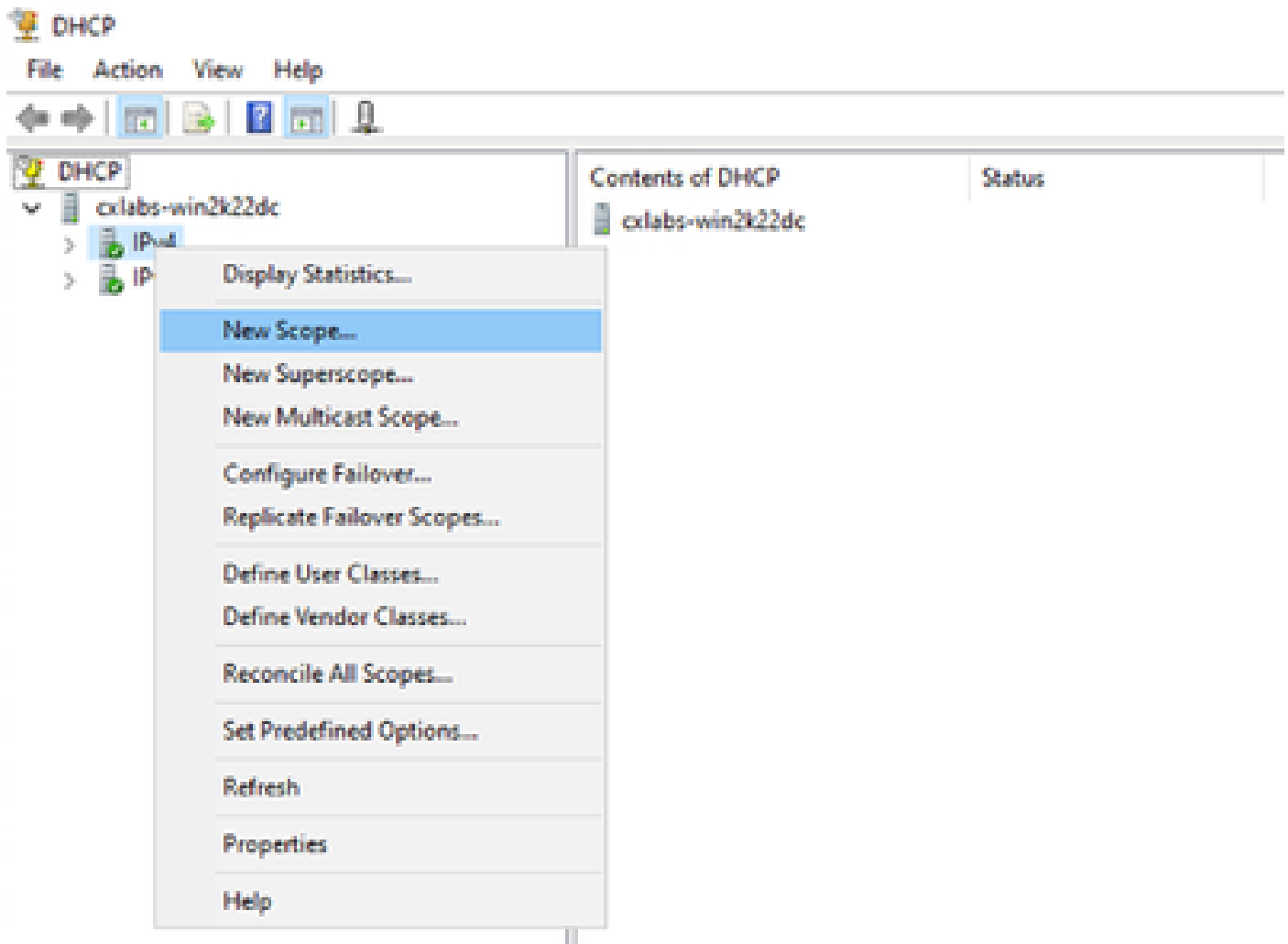
Yes, I want to activate this scope now

No, I will activate this scope later

< Back Next > Cancel

Configuración del alcance para direcciones IP únicas de loopbacks en SVI como agente relay DHCP.

Paso 1. Haga clic con el botón derecho del ratón en IPv4 y seleccione IPv4Scope.



Nuevo ámbito en DHCP

Paso 2. Escriba un nombre y una descripción. En este ejemplo, name es la subred utilizada para la subred con dirección de loopbacks.



IPte: se utiliza un bucle invertido con una dirección IP única en todo el fabric VxLAN para arrendatarios VxLAN. Esto se debe anunciar en la redistribución de rutas BGP L2VPN EVPN en BGP dentro del VRF del arrendatario correspondiente en la dirección IPv4-famIPv4

```
LEAF-1# show running-config interface loopback 100
<snip>
interface loopback100
  vrf member tenant-a
  ip address 172.16.10.8/32
```

New Scope Wizard

Scope Name

You have to provide an identifying scope name. You also have the option of providing a description.



Type a name and description for this scope. This information helps you quickly identify how the scope is to be used on your network.

Name:

Description:

Paso 3. Configure el rango de direcciones IPIP. Este es el conjunto para loopbacks.

New Scope Wizard

IP Address Range

You define the scope address range by identifying a set of consecutive IP addresses.



Configuration settings for DHCP Server

Enter the range of addresses that the scope distributes.

Start IP address:

End IP address:

Configuration settings that propagate to DHCP Client

Length:

Subnet mask:

< Back

Next >

Cancel

Paso 4. Configure las exclusiones (opcional porque el servidor DHCP no concede direcciones IP que pertenezcan a esta subred).

New Scope Wizard

Add Exclusions and Delay

Exclusions are addresses or a range of addresses that are not distributed by the server. A delay is the time duration by which the server will delay the transmission of a DHCP OFFER message.



Type the IP address range that you want to exclude. If you want to exclude a single address, type an address in Start IP address only.

Start IP address:

End IP address:

Add

Excluded address range:

Remove

Subnet delay in milli second:

< Back

Next >

Cancel

Paso 5. Omita la duración de la concesión y haga clic en Next.

New Scope Wizard

Lease Duration

The lease duration specifies how long a client can use an IP address from this scope.



Lease durations should typically be equal to the average time the computer is connected to the same physical network. For mobile networks that consist mainly of portable computers or dial-up clients, shorter lease durations can be useful. Likewise, for a stable network that consists mainly of desktop computers at fixed locations, longer lease durations are more appropriate.

Set the duration for scope leases when distributed by this server.

Limited to:

Days:

Hours:

Minutes:

< Back

Next >

Cancel

Paso 6. Seleccione No, configuraré estas opciones más adelante.

New Scope Wizard

Configure DHCP Options

You have to configure the most common DHCP options before clients can use the scope.



When clients obtain an address, they are given DHCP options such as the IP addresses of routers (default gateways), DNS servers, and WINS settings for that scope.

The settings you select here are for this scope and override settings configured in the Server Options folder for this server.

Do you want to configure the DHCP options for this scope now?

- Yes, I want to configure these options now
- No, I will configure these options later

< Back

Next >

Cancel

Paso 7. Haga clic en Finish (Finalizar).

New Scope Wizard



Completing the New Scope Wizard

You have successfully completed the *New Scope* wizard.

Before clients can receive addresses you need to do the following:

1. Add any scope specific options (optional).
2. Activate the scope.

To provide high availability for this scope, configure failover for the newly added scope by right clicking on the scope and clicking on *configure failover*.

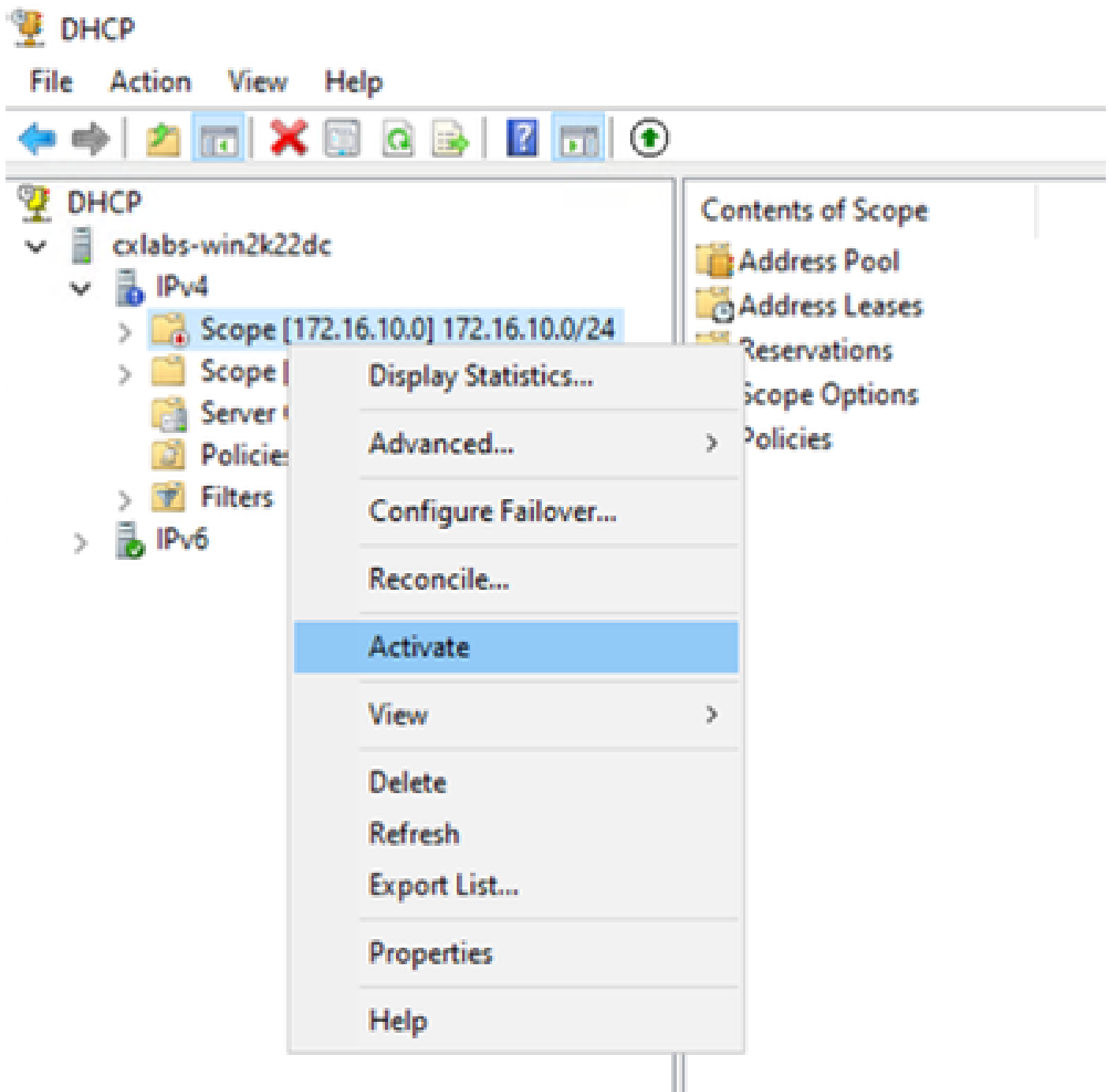
To close this wizard, click *Finish*.

< Back

Finish

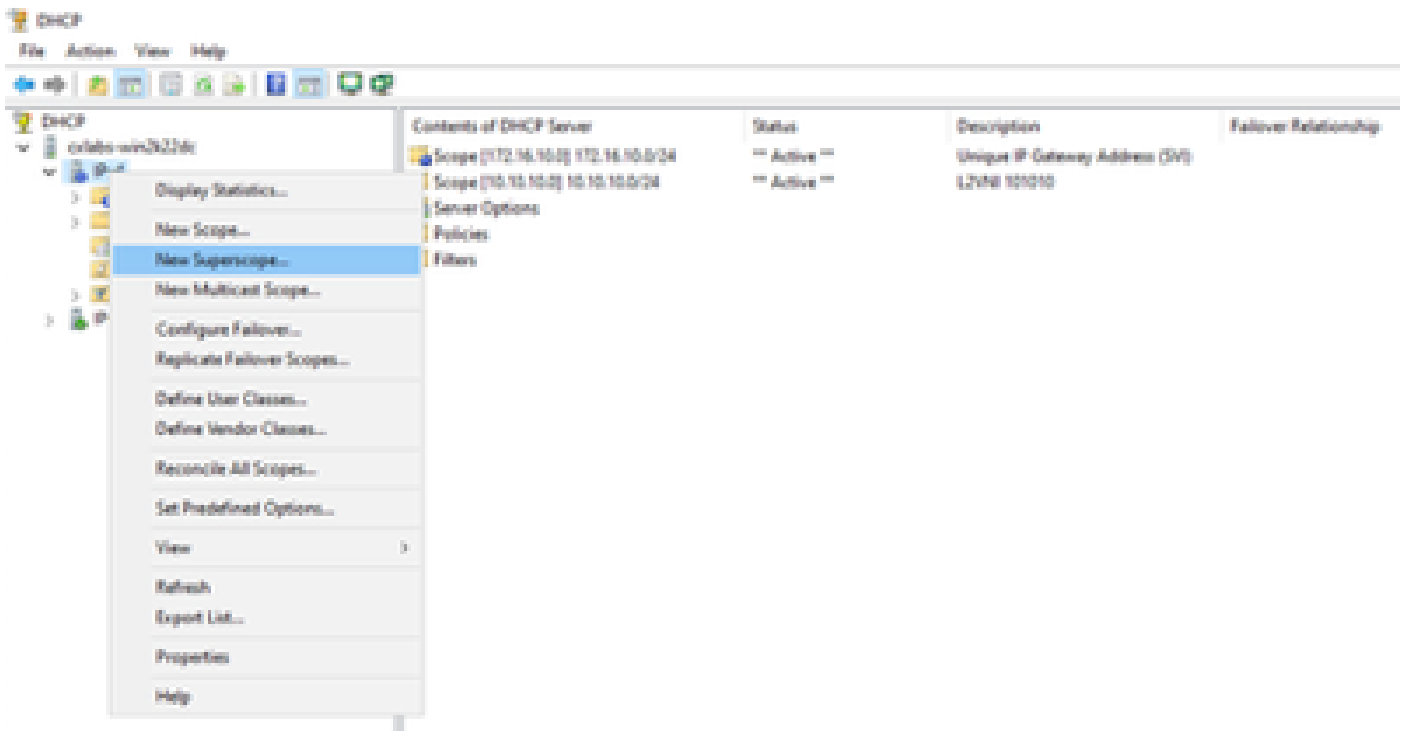
Cancel

Paso 8. Haga clic con el botón derecho del ratón en el ámbito creado y seleccione activar.

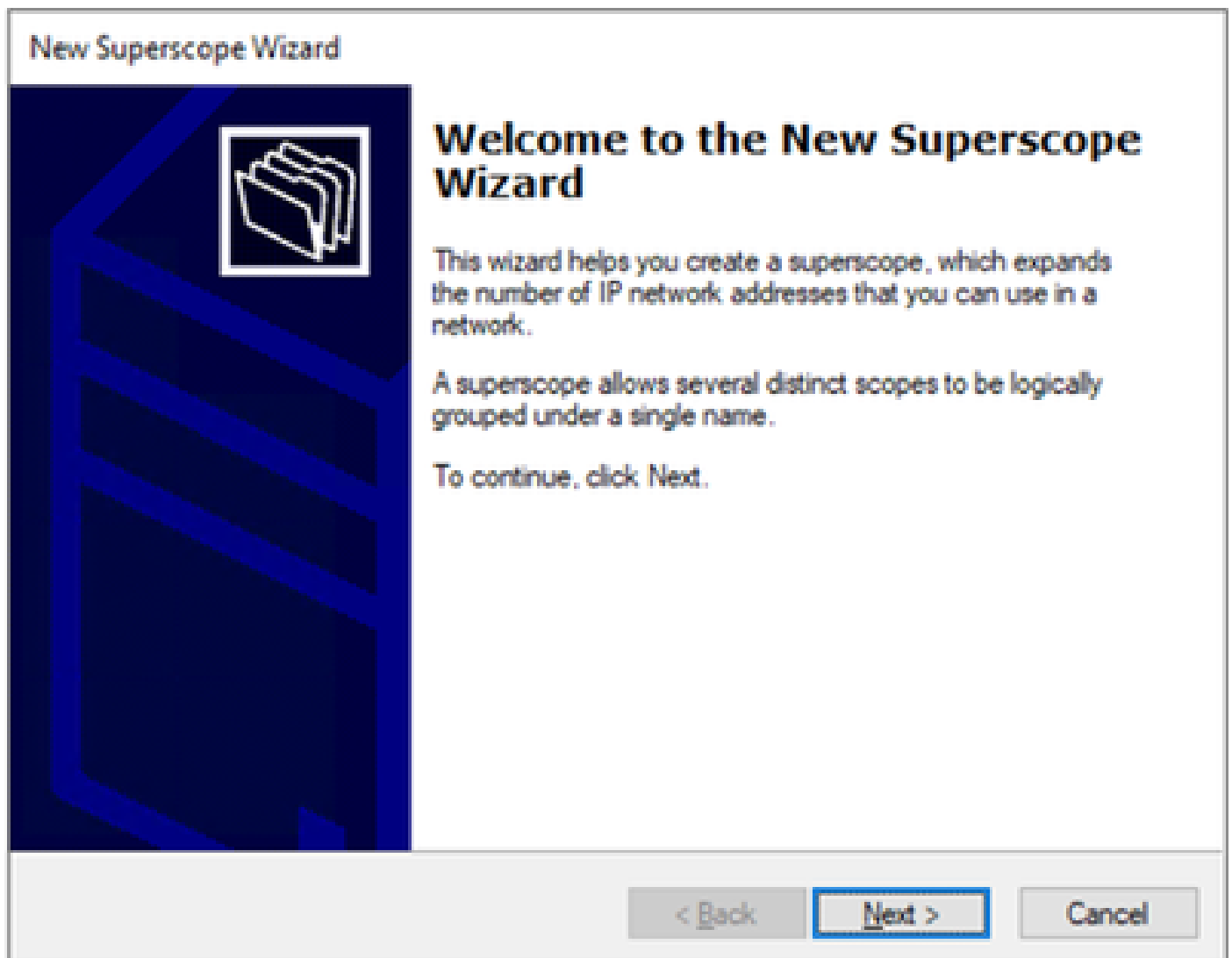


Configuración del superámbito para el fabric VxLAN.

Paso 1. Haga clic con el botón derecho del ratón en IPv4 y seleccione Nuevo superámbito.



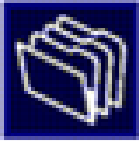
Paso 2. Haga clic en Next (Siguiente).



Paso 3. Escriba el nombre del superámbito.

New Superscope Wizard

Superscope Name
You have to provide an identifying superscope name.



Name:

< Back **Next >** Cancel

Paso 4. Seleccione todos los ámbitos que pertenezcan a VxLAN Fabric.

New Superscope Wizard

Select Scopes

You create a superscope by building a collection of scopes.



Select one or more scopes from the list to add to the superscope.

Available scopes:

[10.10.10.0] 10.10.10.0/24
[172.16.10.0] 172.16.10.0/24

< Back

Next >

Cancel

Paso 5. Seleccione todos los ámbitos que pertenezcan a VxLAN Fabric.

New Superscope Wizard

Select Scopes

You create a superscope by building a collection of scopes.



Select one or more scopes from the list to add to the superscope.

Available scopes:

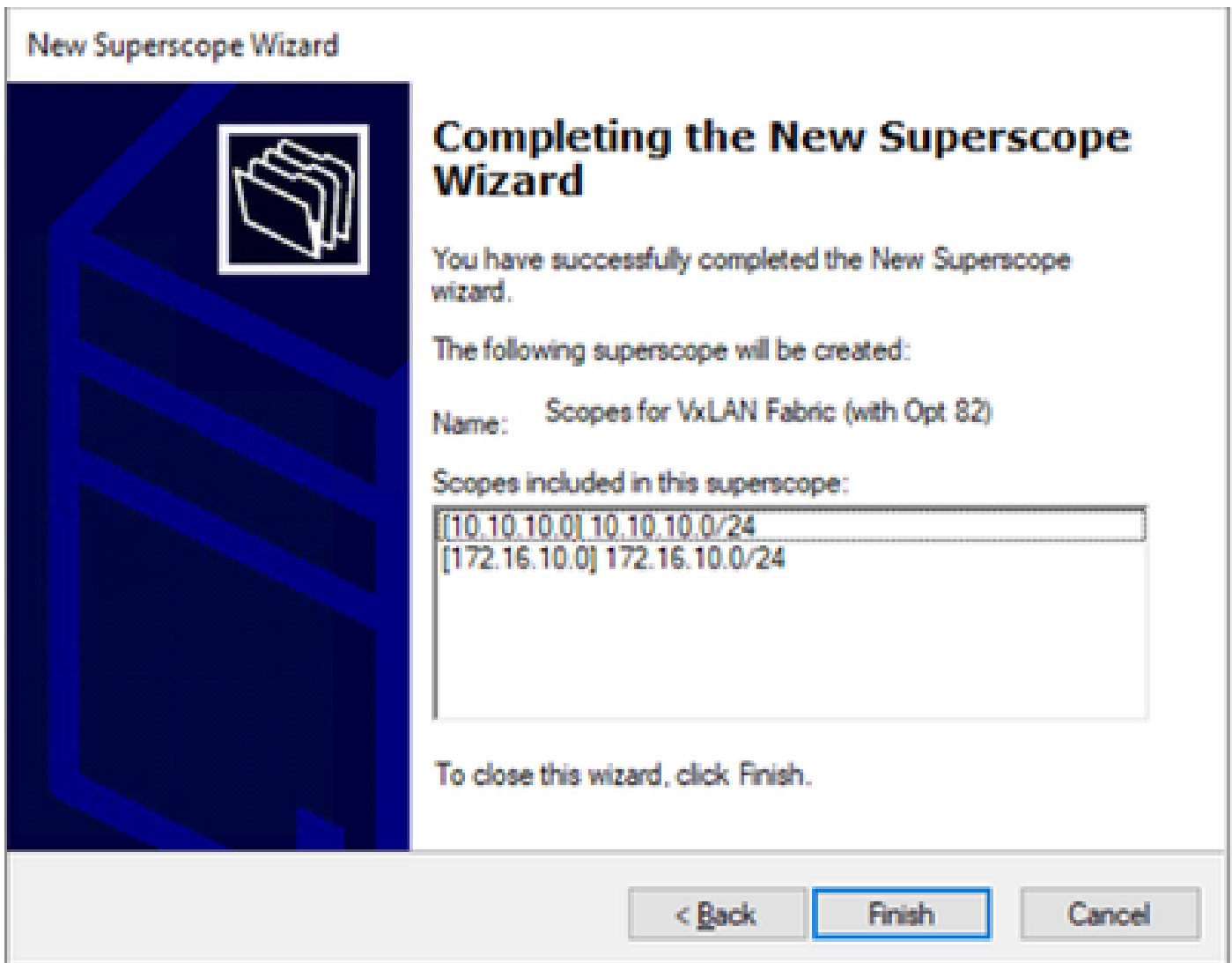
[10.10.10.0] 10.10.10.0/24
[172.16.10.0] 172.16.10.0/24

< Back

Next >

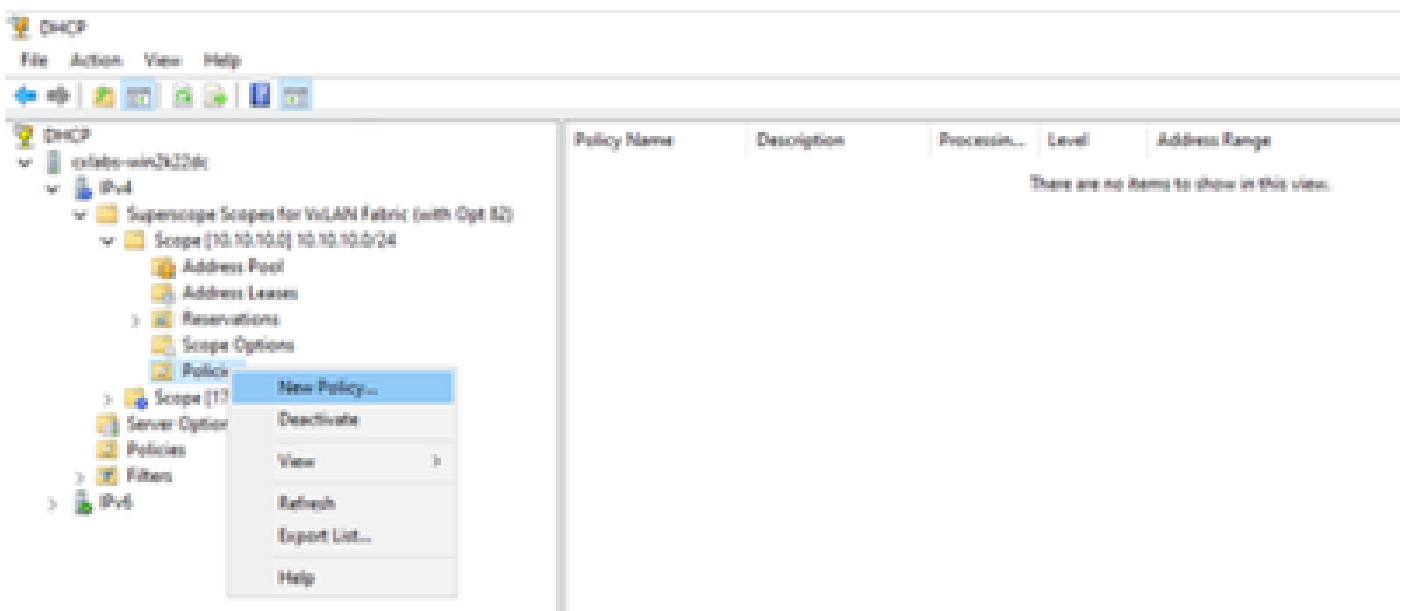
Cancel

Paso 6. Verifique que todo el superámbito del fabric VxLAN esté colocado y haga clic en Finish.

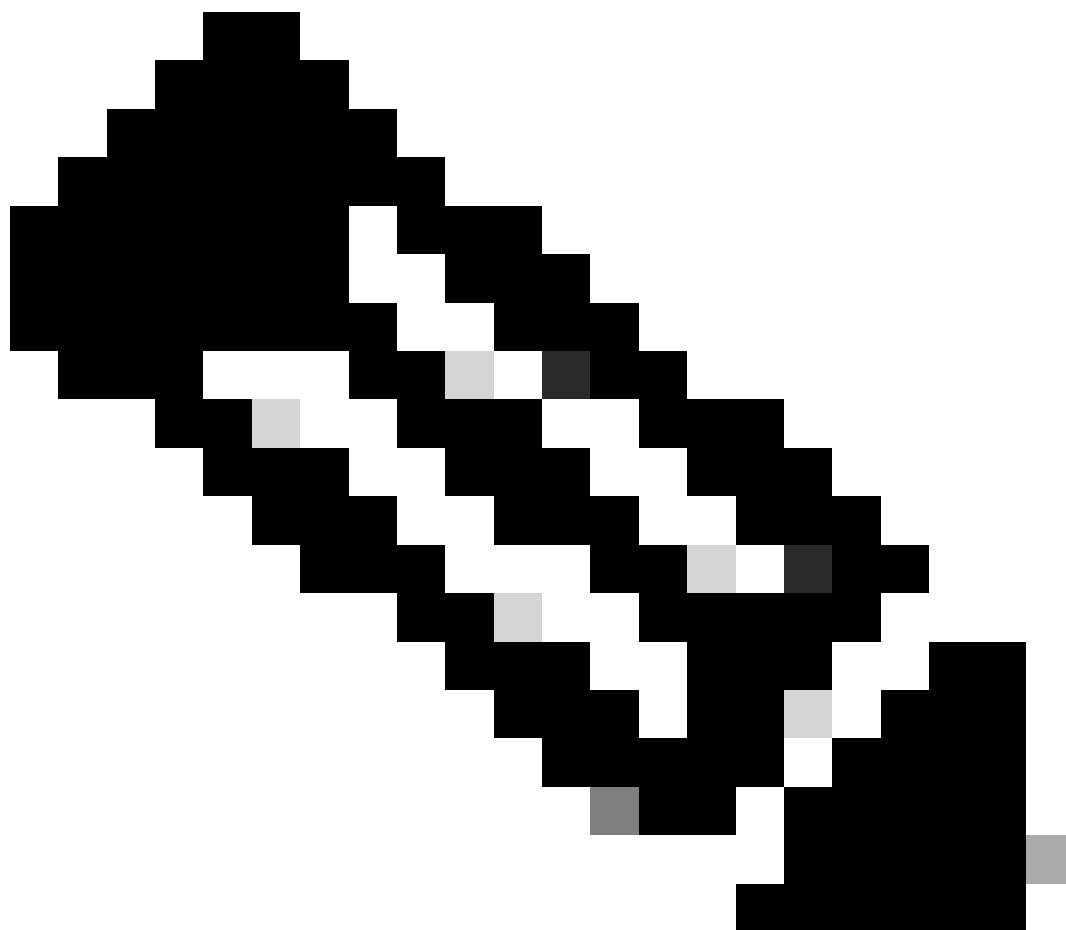


Configure la opción 82 en los ámbitos de host.

Paso 1. Haga clic con el botón derecho del ratón en Directivas (última opción) dentro del alcance del host y haga clic en Nueva directiva.



Paso 2. Escriba un nombre y una descripción y haga clic en Next.



Nota: En este ejemplo, la política se crea para seleccionar IPpIPicularly de direccionamiento IP para hosts en Leaf-1 para VNI 101010 basedVNI Remote-ID (parámetro de la opción 82).

DHCP Policy Configuration Wizard

Policy based IP Address and Option Assignment



This feature allows you to distribute configurable settings (IP address, DHCP options) to clients based on certain conditions (e.g. vendor class, user class, MAC address, etc.).

This wizard will guide you setting up a new policy. Provide a name (e.g. VoIP Phone Configuration Policy) and description (e.g. NTP Server option for VoIP Phones) for your policy.

Policy Name:

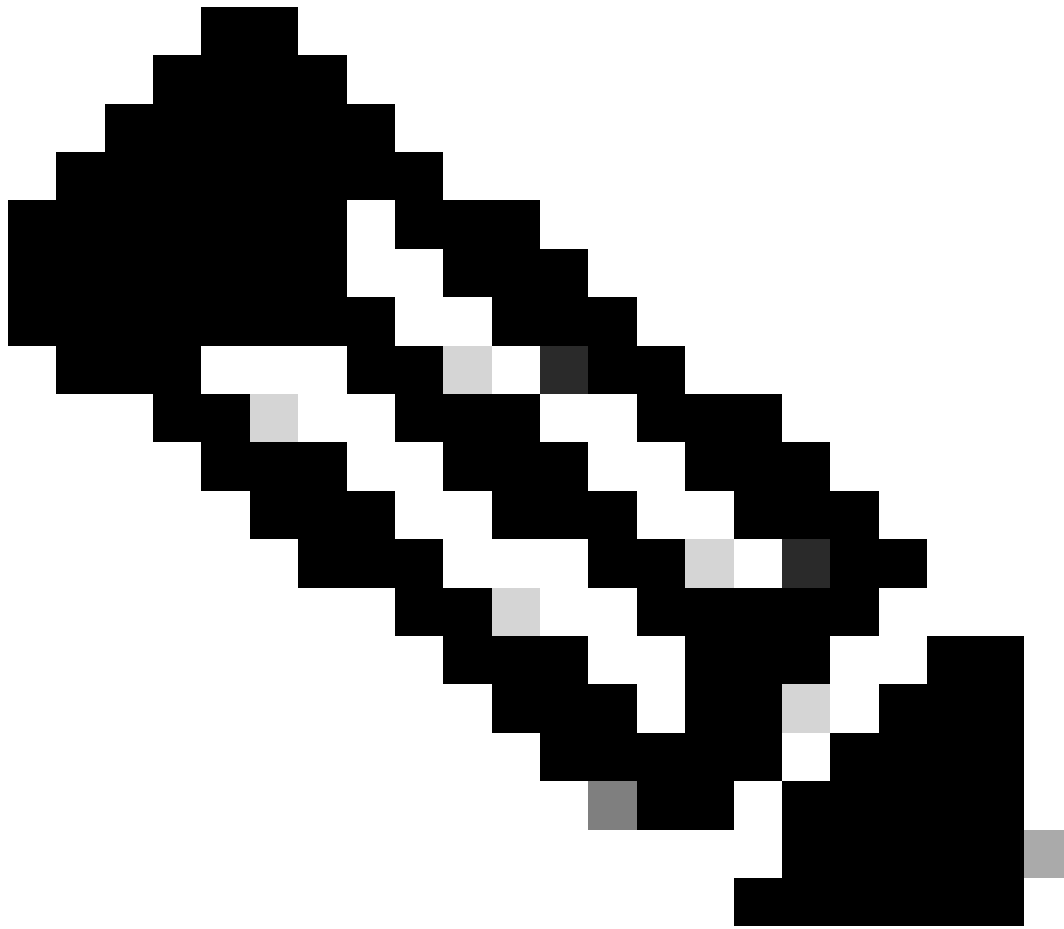
Description:

< Back

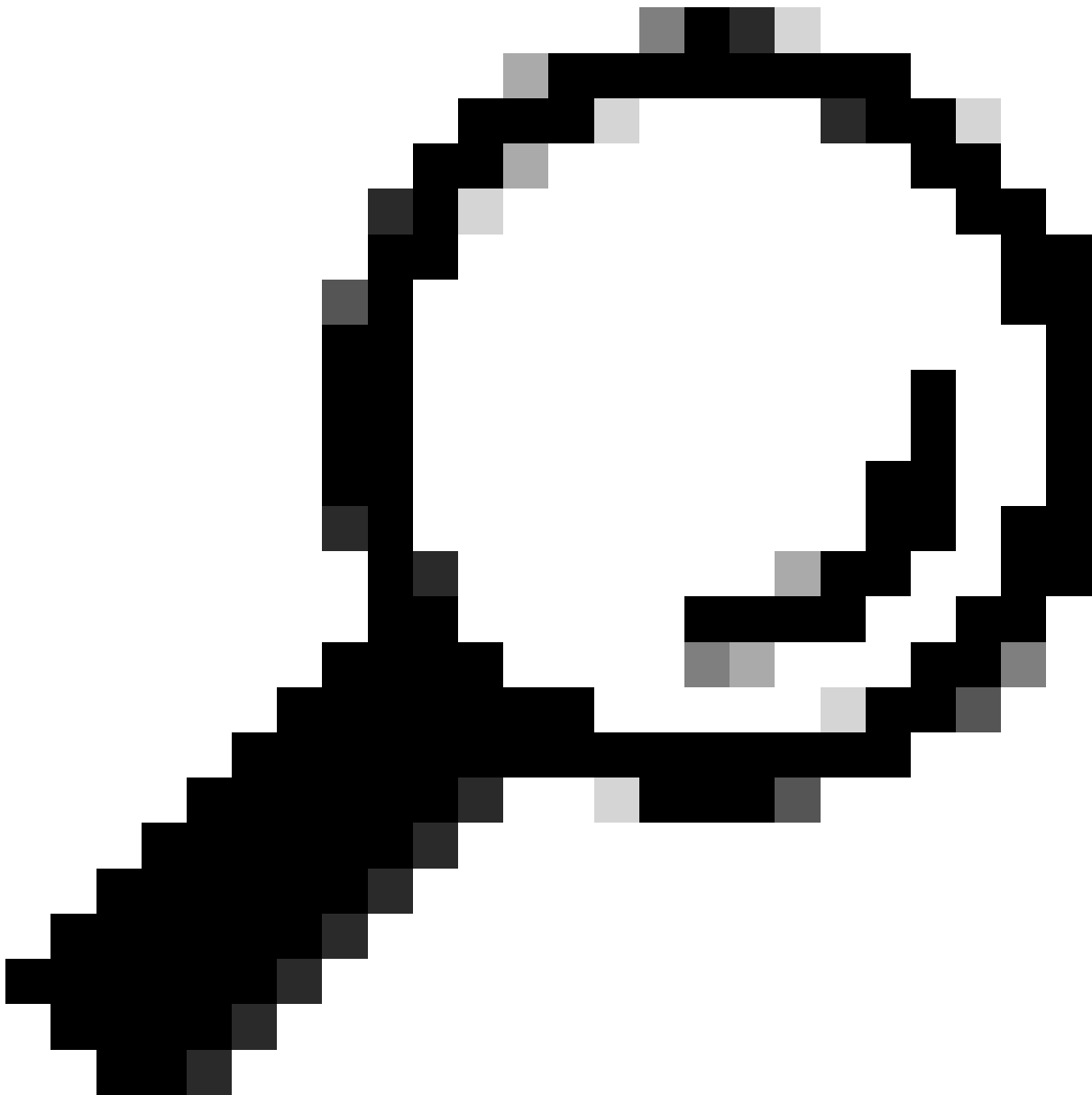
Next >

Cancel

Paso 3. Haga clic en Add (Agregar). En Criterios, seleccione Información del agente de retransmisión. En Operador, seleccione Igual a. A continuación, seleccione Agent Remote ID y escriba el valor. Haga clic en Aceptar y, a continuación, en Siguiente.



Nota: El ID remoto se obtiene de la dirección MAC de la SVI a la que está asociado el SVII.



Sugerencia: se puede aplicar una política a varios ID remotos (o VTEP) agregando más condiciones y seleccionando OR en lugar de AND.

```
LEAF-1# show interface vlan 10
Vlan10 is up, line protocol is up, autostate enabled
  Hardware is EtherSVI, address is 707d.b9b8.4daf <<<<
  Internet Address is 10.10.10.1/24
<snip>
```

DHCP Policy Configuration Wizard

Add/Edit Condition

Specify a condition for the policy being configured. Select a criteria, operator and values for the condition.

Criteria: Relay Agent Information

Operator: Equals

Value (in hex)

Relay Agent Information:

Agent Circuit ID:

Agent Remote ID: 707db9b84daf

Subscriber ID:

Prefix wildcard(*)

Append wildcard(*)

Ok

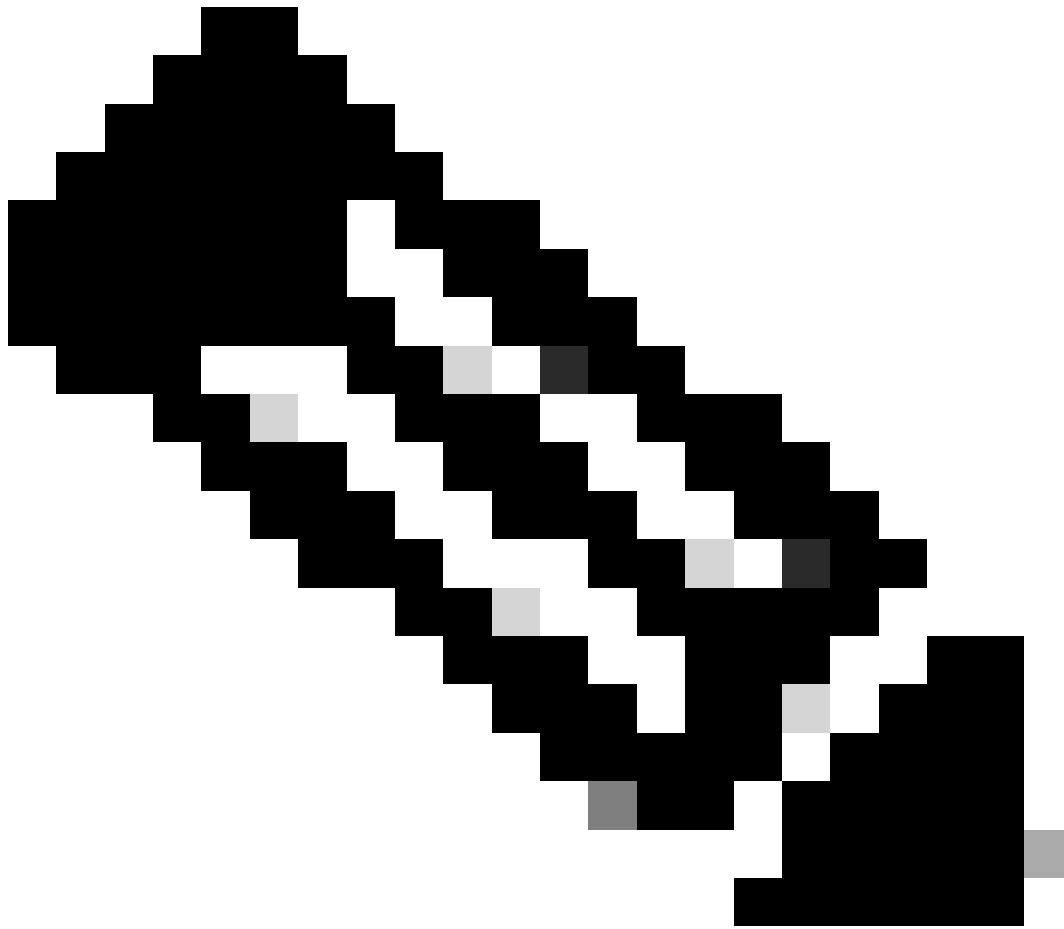
Cancel

< Back

Next >

Cancel

Paso 4. Configure el direccionamiento IP que el IP existente puede utilizar en los VTEP seleccionados por el ID y, a continuación, haga clic en Siguiente.



Nota: En este ejemplo, sólo hay una máquina virtual conectada a Leaf-1, por lo que sólo se requiere una dirección IP. Aquí se agrega una segunda dirección IPn caso de que se conecte otro host.

DHCP Policy Configuration Wizard

Configure settings for the policy

If the conditions specified in the policy match a client request, the settings will be applied.



A scope can be subdivided into multiple IP address ranges. Clients that match the conditions defined in a policy will be issued an IP Address from the specified range.

Configure the start and end IP address for the range. The start and end IP addresses for the range must be within the start and end IP addresses of the scope.

The current scope IP address range is 10.10.10.1 - 10.10.10.254

If an IP address range is not configured for the policy, policy clients will be issued an IP address from the scope range.

Do you want to configure an IP address range for the policy: Yes No

Start IP address:

End IP address:

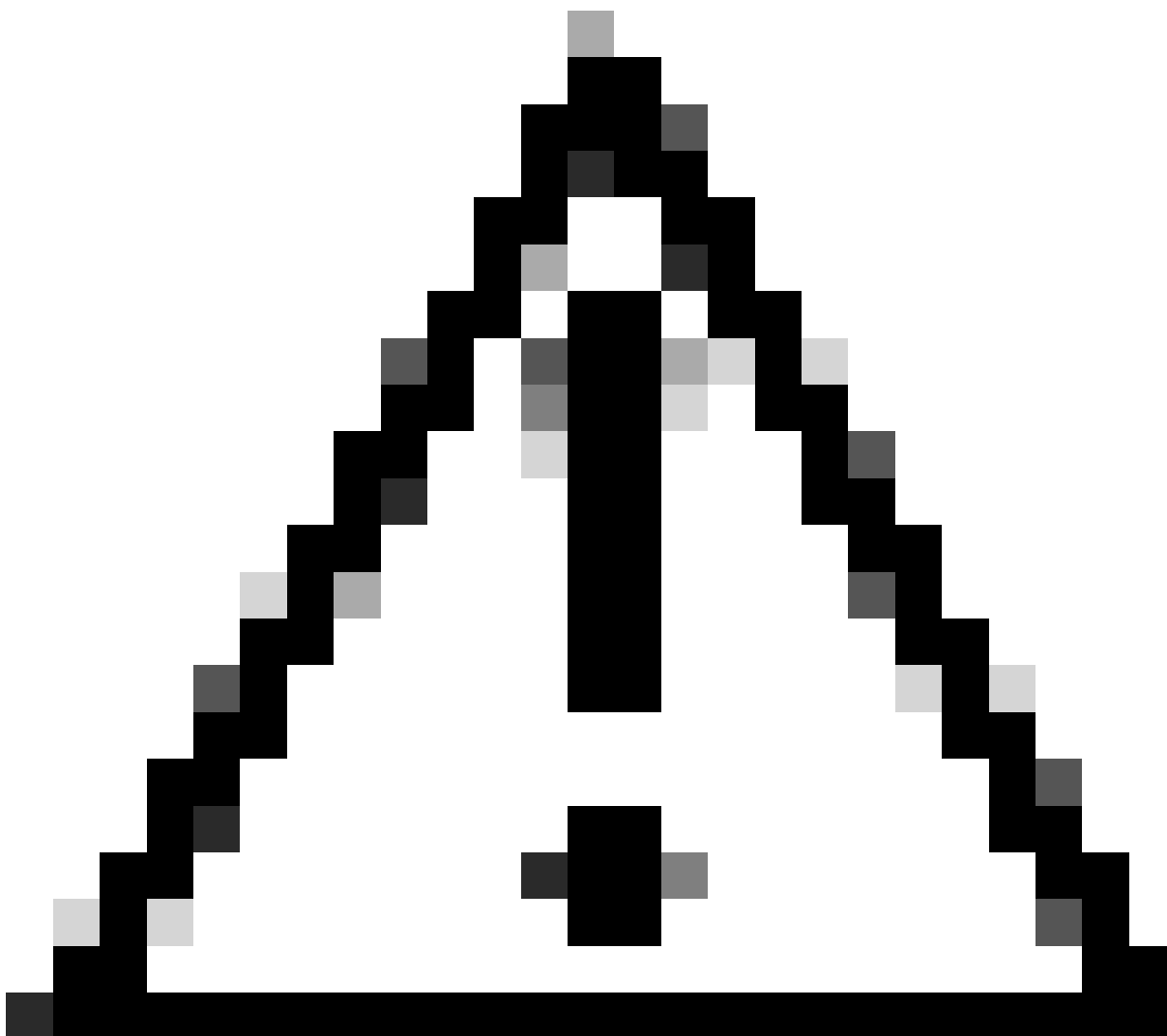
Percentage of IP address range: 0.8

< Back

Next >

Cancel

Paso 5. Seleccione la casilla a la izquierda de 003 Router en DHCP Standard Option. A continuación, escriba la dirección IP del gateway predeterminado para los hosts que pertenecen a esta política y pulse Agregar. Haga clic en Next (Siguiente).

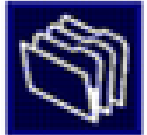


Precaución: Puede seleccionar más de una opción, pero si no está seguro del valor que debe introducir, no lo haga. Una configuración incoherente o errónea puede provocar un comportamiento inesperado.

DHCP Policy Configuration Wizard

Configure settings for the policy

If the conditions specified in the policy match a client request, the settings will be applied.



Vendor class: DHCP Standard Options

Available Options	Description
<input type="checkbox"/> 002 Time Offset	UTC offset in seconds
<input checked="" type="checkbox"/> 003 Router	Array of router addresses order
<input type="checkbox"/> 004 Time Server	Array of time server addresses.

Data entry

Server name:

Resolve

IP address:

Add

10.10.10.1

Remove

Up

Down

< Back

Next >

Cancel

Paso 6. Compruebe las condiciones de la directiva y haga clic en Finalizar.

The screenshot shows the DHCP console interface. On the left is a tree view showing the hierarchy: DHCP > CXLabs-WIN2K22DC > IPv4 > Superscope Scopes for VxLAN Fabric (with Opt 82) > Scope [10.10.10.0] L2VNI 101010 > Policies. The main area displays a table of policy configurations:

Policy Name	Description	Processin...	Level	Address Range	State	Actions
VNI 101010	Policy to select scope for Leaf-1 using Remote-ID	1	Scope	10.10.10.2 - 10.10.10.3	Enabled	Policies More Actions

Caminata de paquetes DHCP de principio a fin en VxLAN Fabric.

Detección enviada por HOST-1


```
> Ethernet II, Src: 00:50:56:a5:fd:dd, Dst: ff:ff:ff:ff:ff:ff
> Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255
> User Datagram Protocol, Src Port: 68, Dst Port: 67
v Dynamic Host Configuration Protocol (Discover)
  Message type: Boot Request (1)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 0
  Transaction ID: 0xe9e35087
  Seconds elapsed: 0
v Bootp flags: 0x8000, Broadcast flag (Broadcast)
  1... .... .... .... = Broadcast flag: Broadcast
  .000 0000 0000 0000 = Reserved flags: 0x0000
  Client IP address: 0.0.0.0
  Your (client) IP address: 0.0.0.0
  Next server IP address: 0.0.0.0
  Relay agent IP address: 0.0.0.0
  Client MAC address: 00:50:56:a5:fd:dd
  Client hardware address padding: 00000000000000000000
  Server host name not given
  Boot file name not given
  Magic cookie: DHCP
v Option: (53) DHCP Message Type (Discover)
  Length: 1
  <Value: 01>
  DHCP: Discover (1)
v Option: (61) Client identifier
  Length: 7
  <Value: 01005056a5fddd>
  Hardware type: Ethernet (0x01)
  Client MAC address: 00:50:56:a5:fd:dd
v Option: (12) Host Name
  Length: 10
  <Value: 43584c6162732d573130>
  Host Name: CXLabs-W10
v Option: (60) Vendor class identifier
  Length: 8
  <Value: 4d53465420352e30>
  Vendor class identifier: MSFT 5.0
v Option: (55) Parameter Request List
  Length: 14
  <Value: 0103060f1f212b2c2e2f7779f9fc>
  Parameter Request List Item: (1) Subnet Mask
  Parameter Request List Item: (3) Router
  Parameter Request List Item: (6) Domain Name Server
  Parameter Request List Item: (15) Domain Name
  Parameter Request List Item: (31) Perform Router Discover
  Parameter Request List Item: (33) Static Route
  Parameter Request List Item: (43) Vendor-Specific Information
  Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server
  Parameter Request List Item: (46) NetBIOS over TCP/IP Node Type
  Parameter Request List Item: (47) NetBIOS over TCP/IP Scope
  Parameter Request List Item: (119) Domain Search
  Parameter Request List Item: (121) Classless Static Route
  Parameter Request List Item: (249) Private/Classless Static Route (Microsoft)
  Parameter Request List Item: (252) Private/Proxy autodiscovery
v Option: (255) End
  Option End: 255
  Padding: 00000000000000000000
```

Detección en LEAF-1

Detección recibida en LEAF-1	Detección enviada por LEAF-1
<pre> > Ethernet II, Src: 00:50:56:a5:fd:dd, Dst: ff:ff:ff:ff:ff:ff > Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255 > User Datagram Protocol, Src Port: 68, Dst Port: 67 > Dynamic Host Configuration Protocol (Discover) Message type: Boot Request (1) Hardware type: Ethernet (0x01) Hardware address length: 6 Hops: 0 Transaction ID: 0xe9e35087 Seconds elapsed: 0 > Bootp flags: 0x8000, Broadcast flag (Broadcast) 1... = Broadcast flag: Broadcast .000 0000 0000 0000 = Reserved flags: 0x0000 Client IP address: 0.0.0.0 Your (client) IP address: 0.0.0.0 Next server IP address: 0.0.0.0 Relay agent IP address: 0.0.0.0 Client MAC address: 00:50:56:a5:fd:dd Client hardware address padding: 00000000000000000000 Server host name not given Boot file name not given Magic cookie: DHCP > Option: (53) DHCP Message Type (Discover) Length: 1 <Value: 01> DHCP: Discover (1) > Option: (61) Client identifier Length: 7 <Value: 01005056a5fddd> Hardware type: Ethernet (0x01) Client MAC address: 00:50:56:a5:fd:dd > Option: (12) Host Name Length: 10 <Value: 43584c6162732d573130> Host Name: CXLabs-W10 > Option: (60) Vendor class identifier Length: 8 <Value: 4d53465420352e30> Vendor class identifier: MSFT 5.0 > Option: (55) Parameter Request List Length: 14 <Value: 0103060f1f212b2c2e2f779f9fc> Parameter Request List Item: (1) Subnet Mask Parameter Request List Item: (3) Router Parameter Request List Item: (6) Domain Name Server Parameter Request List Item: (15) Domain Name Parameter Request List Item: (31) Perform Router Discover Parameter Request List Item: (33) Static Route Parameter Request List Item: (43) Vendor-Specific Information Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server Parameter Request List Item: (46) NetBIOS over TCP/IP Node Type Parameter Request List Item: (47) NetBIOS over TCP/IP Scope Parameter Request List Item: (119) Domain Search Parameter Request List Item: (121) Classless Static Route Parameter Request List Item: (249) Private/Classless Static Route (Microsoft) Parameter Request List Item: (252) Private/Proxy autodiscovery > Option: (255) End Padding: 000000000000000000 </pre>	<pre> > Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: 10:b3:d6:a4:85:97 > Internet Protocol Version 4, Src: 5.5.5.5, Dst: 13.13.13.254 > User Datagram Protocol, Src Port: 65233, Dst Port: 4789 > Virtual Extensible Local Area Network > Flags: 0x8000, VXLAN Network ID (VNI) Group Policy ID: 0 VXLAN Network Identifier (VNI): 303030 Reserved: 0 > Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: 02:00:0d:0d:0d:fe > Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.10.150 > User Datagram Protocol, Src Port: 67, Dst Port: 67 > Dynamic Host Configuration Protocol (Discover) Message type: Boot Request (1) Hardware type: Ethernet (0x01) Hardware address length: 6 Hops: 1 Transaction ID: 0xe9e35087 Seconds elapsed: 0 > Bootp flags: 0x8000, Broadcast flag (Broadcast) Client IP address: 0.0.0.0 Your (client) IP address: 0.0.0.0 Next server IP address: 0.0.0.0 Relay agent IP address: 172.16.10.8 Client MAC address: 00:50:56:a5:fd:dd Client hardware address padding: 00000000000000000000 Server host name not given Boot file name not given Magic cookie: DHCP > Option: (53) DHCP Message Type (Discover) Length: 1 <Value: 01> DHCP: Discover (1) > Option: (61) Client identifier Length: 7 <Value: 01005056a5fddd> Hardware type: Ethernet (0x01) Client MAC address: 00:50:56:a5:fd:dd > Option: (12) Host Name Length: 10 <Value: 43584c6162732d573130> Host Name: CXLabs-W10 > Option: (60) Vendor class identifier Length: 8 <Value: 4d53465420352e30> Vendor class identifier: MSFT 5.0 > Option: (55) Parameter Request List Length: 14 <Value: 0103060f1f212b2c2e2f779f9fc> Parameter Request List Item: (1) Subnet Mask Parameter Request List Item: (3) Router Parameter Request List Item: (6) Domain Name Server Parameter Request List Item: (15) Domain Name Parameter Request List Item: (31) Perform Router Discover Parameter Request List Item: (33) Static Route Parameter Request List Item: (43) Vendor-Specific Information Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server Parameter Request List Item: (46) NetBIOS over TCP/IP Node Type Parameter Request List Item: (47) NetBIOS over TCP/IP Scope Parameter Request List Item: (119) Domain Search Parameter Request List Item: (121) Classless Static Route Parameter Request List Item: (249) Private/Classless Static Route (Microsoft) Parameter Request List Item: (252) Private/Proxy autodiscovery > Option: (82) Agent Information Option Length: 47 <Value: 010e0108000600018a920aa00000000206707db9b84daf97090074656e616e742d610b040a0a0105040a0a0a0> > Option 82 Suboption: (1) Agent Circuit ID Length: 14 <Value: 0180000600018a920aa000000000> Agent Circuit ID: 0180000600018a920aa000000000 > Option 82 Suboption: (2) Agent Remote ID Length: 6 <Value: 707db9b84daf> Agent Remote ID: 707db9b84daf > Option 82 Suboption: (151) VRF name/VPN ID Length: 9 <Value: 0074656e616e742d61> VRF name: [Expert Info (Warning/Undecoded): Trailing stray characters] > Option 82 Suboption: (11) Server ID Override (10.10.10.1) Length: 4 <Value: 0a0a0a01> Server ID Override: 10.10.10.1 > Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <Value: 0a0a0a00> Link selection: 10.10.10.0 > Option: (255) End Padding: 000000000000000000 </pre>



Sugerencia: la imagen se amplía al hacer doble clic.

Detección en COLUMNA VERTEBRAL

Descubrimiento recibido en COLUMNA	Detección enviada por SPINE
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```

> Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: 10:b3:d6:a4:85:97
> Internet Protocol Version 4, Src: 5.5.5.5, Dst: 13.13.13.254
> User Datagram Protocol, Src Port: 65233, Dst Port: 4789
> Virtual eXtensible Local Area Network
  > Flags: 0x0000, VXLAN Network ID (VNI)
    Group Policy ID: 0
    VXLAN Network Identifier (VNI): 303030
    Reserved: 0
> Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: 02:00:0d:00:0d:fe
> Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.10.150
> User Datagram Protocol, Src Port: 67, Dst Port: 67
> Dynamic Host Configuration Protocol (Discover)
  Message type: Boot Request (1)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 1
  Transaction ID: 0xe9e35087
  Seconds elapsed: 0
  > Bootp flags: 0x0000, Broadcast flag (Broadcast)
  Client IP address: 0.0.0.0
  Your (client) IP address: 0.0.0.0
  Next server IP address: 0.0.0.0
  Relay agent IP address: 172.16.10.8
  Client MAC address: 00:50:56:a5:fd:dd
  Client hardware address padding: 00000000000000000000
  Server host name not given
  Boot file name not given
  Magic cookie: DHCP
  > Option: (53) DHCP Message Type (Discover)
    Length: 1
    <Value: 01>
    DHCP: Discover (1)
  > Option: (61) Client identifier
    Length: 7
    <Value: 01005056a5fd>
    Hardware type: Ethernet (0x01)
    Client MAC address: 00:50:56:a5:fd:dd
  > Option: (12) Host Name
    Length: 10
    <Value: 43584c6162732d573130>
    Host Name: CXLabs-W10
  > Option: (60) Vendor class identifier
    Length: 8
    <Value: 4d53465420352e30>
    Vendor class identifier: MSFT 5.0
  > Option: (55) Parameter Request List
    Length: 14
    <Value: 0103060f1f212b2c2e2f7779f9fc>
    Parameter Request List Item: (1) Subnet Mask
    Parameter Request List Item: (3) Router
    Parameter Request List Item: (6) Domain Name Server
    Parameter Request List Item: (15) Domain Name
    Parameter Request List Item: (31) Perform Router Discover
    Parameter Request List Item: (33) Static Route
    Parameter Request List Item: (43) Vendor-Specific Information
    Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server
    Parameter Request List Item: (46) NetBIOS over TCP/IP Node Type
    Parameter Request List Item: (47) NetBIOS over TCP/IP Scope
    Parameter Request List Item: (119) Domain Search
    Parameter Request List Item: (121) Classless Static Route
    Parameter Request List Item: (249) Private/Classless Static Route (Microsoft)
    Parameter Request List Item: (252) Private/Proxy autodiscovery
  > Option: (82) Agent Information Option
    Length: 47
    <Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00>
  > Option 82 Suboption: (1) Agent Circuit ID
    Length: 14
    <Value: 0108000600018a9200a000000000>
    Agent Circuit ID: 0108000600018a9200a000000000
  > Option 82 Suboption: (2) Agent Remote ID
    Length: 6
    <Value: 707db9b84daf>
    Agent Remote ID: 707db9b84daf
  > Option 82 Suboption: (151) VRF name/VPN ID
    Length: 9
    <Value: 0074656e616e742d61>
    VRF name:
    [Expert Info (Warning/Undecoded): Trailing stray characters]
  > Option 82 Suboption: (11) Server ID Override (10.10.10.1)
    Length: 4
    <Value: 0a0a0a01>
    Server ID Override: 10.10.10.1
  > Option 82 Suboption: (5) Link selection (10.10.10.0)
    Length: 4
    <Value: 0a0a0a00>
    Link selection: 10.10.10.0
  > Option: (255) End
    Option End: 255
    Padding: 00000000000000000000

```

```

> Ethernet II, Src: 10:b3:d6:a4:85:97, Dst: 00:26:aa:85:98:87
> Internet Protocol Version 4, Src: 5.5.5.5, Dst: 13.13.13.254
> User Datagram Protocol, Src Port: 65233, Dst Port: 4789
> Virtual eXtensible Local Area Network
  > Flags: 0x0000, VXLAN Network ID (VNI)
    Group Policy ID: 0
    VXLAN Network Identifier (VNI): 303030
    Reserved: 0
> Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: 02:00:0d:00:0d:fe
> Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.10.150
> User Datagram Protocol, Src Port: 67, Dst Port: 67
> Dynamic Host Configuration Protocol (Discover)
  Message type: Boot Request (1)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 1
  Transaction ID: 0xe9e35087
  Seconds elapsed: 0
  > Bootp flags: 0x0000, Broadcast flag (Broadcast)
  Client IP address: 0.0.0.0
  Your (client) IP address: 0.0.0.0
  Next server IP address: 0.0.0.0
  Relay agent IP address: 172.16.10.8
  Client MAC address: 00:50:56:a5:fd:dd
  Client hardware address padding: 00000000000000000000
  Server host name not given
  Boot file name not given
  Magic cookie: DHCP
  > Option: (53) DHCP Message Type (Discover)
    Length: 1
    <Value: 01>
    DHCP: Discover (1)
  > Option: (61) Client identifier
    Length: 7
    <Value: 01005056a5fd>
    Hardware type: Ethernet (0x01)
    Client MAC address: 00:50:56:a5:fd:dd
  > Option: (12) Host Name
    Length: 10
    <Value: 43584c6162732d573130>
    Host Name: CXLabs-W10
  > Option: (60) Vendor class identifier
    Length: 8
    <Value: 4d53465420352e30>
    Vendor class identifier: MSFT 5.0
  > Option: (55) Parameter Request List
    Length: 14
    <Value: 0103060f1f212b2c2e2f7779f9fc>
    Parameter Request List Item: (1) Subnet Mask
    Parameter Request List Item: (3) Router
    Parameter Request List Item: (6) Domain Name Server
    Parameter Request List Item: (15) Domain Name
    Parameter Request List Item: (31) Perform Router Discover
    Parameter Request List Item: (33) Static Route
    Parameter Request List Item: (43) Vendor-Specific Information
    Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server
    Parameter Request List Item: (46) NetBIOS over TCP/IP Node Type
    Parameter Request List Item: (47) NetBIOS over TCP/IP Scope
    Parameter Request List Item: (119) Domain Search
    Parameter Request List Item: (121) Classless Static Route
    Parameter Request List Item: (249) Private/Classless Static Route (Microsoft)
    Parameter Request List Item: (252) Private/Proxy autodiscovery
  > Option: (82) Agent Information Option
    Length: 47
    <Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00>
  > Option 82 Suboption: (1) Agent Circuit ID
    Length: 14
    <Value: 0108000600018a9200a000000000>
    Agent Circuit ID: 0108000600018a9200a000000000
  > Option 82 Suboption: (2) Agent Remote ID
    Length: 6
    <Value: 707db9b84daf>
    Agent Remote ID: 707db9b84daf
  > Option 82 Suboption: (151) VRF name/VPN ID
    Length: 9
    <Value: 0074656e616e742d61>
    VRF name:
    [Expert Info (Warning/Undecoded): Trailing stray characters]
  > Option 82 Suboption: (11) Server ID Override (10.10.10.1)
    Length: 4
    <Value: 0a0a0a01>
    Server ID Override: 10.10.10.1
  > Option 82 Suboption: (5) Link selection (10.10.10.0)
    Length: 4
    <Value: 0a0a0a00>
    Link selection: 10.10.10.0
  > Option: (255) End
    Option End: 255
    Padding: 00000000000000000000

```

Detección en LEAF-1-vPC

Detección recibida en LEAF-1-vPC	Detección enviada por LEAF-1-vPC
----------------------------------	----------------------------------

```
Ethernet II, Src: 10:b3:06:a4:85:97, Dst: 60:26:aa:85:98:87
Internet Protocol Version 4, Src: 5.5.5.5, Dst: 13.13.13.254
User Datagram Protocol, Src Port: 65233, Dst Port: 4789
Virtual Extensible Local Area Network
  Flags: 0x0000, VXLAN Network ID (VNI)
  Group Policy ID: 0
  VXLAN Network Identifier (VNI): 303030
  Reserved: 0
Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: 02:00:0d:0d:0d:fe
Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.10.150
User Datagram Protocol, Src Port: 67, Dst Port: 67
Dynamic Host Configuration Protocol (Discover)
  Message type: Boot Request (1)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 1
  Transaction ID: 0xe9e35087
  Seconds elapsed: 0
  Bootp flags: 0x8000, Broadcast flag (Broadcast)
  Client IP address: 0.0.0.0
  Your (client) IP address: 0.0.0.0
  Next server IP address: 0.0.0.0
  Relay agent IP address: 172.16.10.8
  Client MAC address: 00:50:56:a5:fd:dd
  Client hardware address padding: 00000000000000000000
  Server host name not given
  Boot file name not given
  Magic cookie: DHCP
  Option: (53) DHCP Message Type (Discover)
    Length: 1
    <Value: 01>
    DHCP: Discover (1)
  Option: (61) Client identifier
    Length: 7
    <Value: 01005056a5fd>
    Hardware type: Ethernet (0x01)
    Client MAC address: 00:50:56:a5:fd:dd
  Option: (12) Host Name
    Length: 10
    <Value: 43584c6162732d573130>
    Host Name: CXLabs-W10
  Option: (60) Vendor class identifier
    Length: 8
    <Value: 4d53465420352e30>
    Vendor class identifier: MSFT 5.0
  Option: (55) Parameter Request List
    Length: 14
    <Value: 0103060f1f212b2c2e2f779f9f>
    Parameter Request List Item: (1) Subnet Mask
    Parameter Request List Item: (3) Router
    Parameter Request List Item: (6) Domain Name Server
    Parameter Request List Item: (15) Domain Name
    Parameter Request List Item: (31) Perform Router Discover
    Parameter Request List Item: (33) Static Route
    Parameter Request List Item: (43) Vendor-Specific Information
    Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server
    Parameter Request List Item: (46) NetBIOS over TCP/IP Node Type
    Parameter Request List Item: (47) NetBIOS over TCP/IP Scope
    Parameter Request List Item: (119) Domain Search
    Parameter Request List Item: (121) Classless Static Route
    Parameter Request List Item: (249) Private/Classless Static Route (Microsoft)
    Parameter Request List Item: (252) Private/Proxy autodiscovery
  Option: (82) Agent Information Option
    Length: 47
    <Value: 010e0108000600018a9200a000000000206707db9b84daf97090074656e16e742d610b040a0a0a0105040a0a00>
  Option 82 Suboption: (1) Agent Circuit ID
    Length: 14
    <Value: 0108000600018a9200a000000000>
    Agent Circuit ID: 0108000600018a9200a000000000
  Option 82 Suboption: (2) Agent Remote ID
    Length: 6
    <Value: 707db9b84daf>
    Agent Remote ID: 707db9b84daf
  Option 82 Suboption: (151) VRF name/VPN ID
    Length: 9
    <Value: 0074656e16e742d61>
    VRF name:
    [Expert Info (Warning/Undecoded): Trailing stray characters]
    [Trailing stray characters]
    <Message: Trailing stray characters>
    [Severity level: Warning]
    [Group: Undecoded]
  Option 82 Suboption: (11) Server ID Override (10.10.10.1)
    Length: 4
    <Value: 0a0a0a01>
    Server ID Override: 10.10.10.1
  Option 82 Suboption: (5) Link selection (10.10.10.0)
    Length: 4
    <Value: 0a0a0a00>
    Link selection: 10.10.10.0
  Option: (255) End
  Padding: 00000000000000000000

Ethernet II, Src: 60:26:aa:85:98:87, Dst: 00:50:56:a5:dc:ca
Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.10.150
User Datagram Protocol, Src Port: 67, Dst Port: 67
Dynamic Host Configuration Protocol (Discover)
  Message type: Boot Request (1)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 1
  Transaction ID: 0xe9e35087
  Seconds elapsed: 0
  Bootp flags: 0x8000, Broadcast flag (Broadcast)
  1... .. = Broadcast flag: Broadcast
  .000 0000 0000 0000 = Reserved flags: 0x0000
  Client IP address: 0.0.0.0
  Your (client) IP address: 0.0.0.0
  Next server IP address: 0.0.0.0
  Relay agent IP address: 172.16.10.8
  Client MAC address: 00:50:56:a5:fd:dd
  Client hardware address padding: 00000000000000000000
  Server host name not given
  Boot file name not given
  Magic cookie: DHCP
  Option: (53) DHCP Message Type (Discover)
    Length: 1
    <Value: 01>
    DHCP: Discover (1)
  Option: (61) Client identifier
    Length: 7
    <Value: 01005056a5fd>
    Hardware type: Ethernet (0x01)
    Client MAC address: 00:50:56:a5:fd:dd
  Option: (12) Host Name
    Length: 10
    <Value: 43584c6162732d573130>
    Host Name: CXLabs-W10
  Option: (60) Vendor class identifier
    Length: 8
    <Value: 4d53465420352e30>
    Vendor class identifier: MSFT 5.0
  Option: (55) Parameter Request List
    Length: 14
    <Value: 0103060f1f212b2c2e2f779f9f>
    Parameter Request List Item: (1) Subnet Mask
    Parameter Request List Item: (3) Router
    Parameter Request List Item: (6) Domain Name Server
    Parameter Request List Item: (15) Domain Name
    Parameter Request List Item: (31) Perform Router Discover
    Parameter Request List Item: (33) Static Route
    Parameter Request List Item: (43) Vendor-Specific Information
    Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server
    Parameter Request List Item: (46) NetBIOS over TCP/IP Node Type
    Parameter Request List Item: (47) NetBIOS over TCP/IP Scope
    Parameter Request List Item: (119) Domain Search
    Parameter Request List Item: (121) Classless Static Route
    Parameter Request List Item: (249) Private/Classless Static Route (Microsoft)
    Parameter Request List Item: (252) Private/Proxy autodiscovery
  Option: (82) Agent Information Option
    Length: 47
    <Value: 010e0108000600018a9200a000000000206707db9b84daf97090074656e16e742d610b040a0a0a0105040a0a00>
  Option 82 Suboption: (1) Agent Circuit ID
    Length: 14
    <Value: 0108000600018a9200a000000000>
    Agent Circuit ID: 0108000600018a9200a000000000
  Option 82 Suboption: (2) Agent Remote ID
    Length: 6
    <Value: 707db9b84daf>
    Agent Remote ID: 707db9b84daf
  Option 82 Suboption: (151) VRF name/VPN ID
    Length: 9
    <Value: 0074656e16e742d61>
    VRF name:
    [Expert Info (Warning/Undecoded): Trailing stray characters]
    [Trailing stray characters]
    <Message: Trailing stray characters>
    [Severity level: Warning]
    [Group: Undecoded]
  Option 82 Suboption: (11) Server ID Override (10.10.10.1)
    Length: 4
    <Value: 0a0a0a01>
    Server ID Override: 10.10.10.1
  Option 82 Suboption: (5) Link selection (10.10.10.0)
    Length: 4
    <Value: 0a0a0a00>
    Link selection: 10.10.10.0
  Option: (255) End
  Padding: 00000000000000000000
```



Nota: LEAF-2-vPC recibe el paquete Discover, pero sólo se conmuta. La dirección MAC de destino pertenece al servidor DHCP.

Detección recibida en el servidor DHCP

```

Ethernet II, Src: 60:26:aa:85:98:87, Dst: 00:50:56:a5:dc:ca
> Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.10.150
> User Datagram Protocol, Src Port: 67, Dst Port: 67
- Dynamic Host Configuration Protocol (Discover)
  Message type: Boot Request (1)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 1
  Transaction ID: 0xe9e35087
  Seconds elapsed: 0
  - Bootp flags: 0x8000, Broadcast flag (Broadcast)
    1... .... .... .... = Broadcast flag: Broadcast
    .000 0000 0000 0000 = Reserved flags: 0x0000
  Client IP address: 0.0.0.0
  Your (client) IP address: 0.0.0.0
  Next server IP address: 0.0.0.0
  Relay agent IP address: 172.16.10.8
  Client MAC address: 00:50:56:a5:fd:dd
  Client hardware address padding: 00000000000000000000
  Server host name not given
  Boot file name not given
  Magic cookie: DHCP
  - Option: (53) DHCP Message Type (Discover)
    Length: 1
    <Value: 01>
    DHCP: Discover (1)
  - Option: (61) Client identifier
    Length: 7
    <Value: 01005056a5fddd>
    Hardware type: Ethernet (0x01)
    Client MAC address: 00:50:56:a5:fd:dd
  - Option: (12) Host Name
    Length: 10
    <Value: 43584c6162732d573130>
    Host Name: CXLabs-W10
  - Option: (60) Vendor class identifier
    Length: 8
    <Value: 4d53465420352e30>
    Vendor class identifier: MSFT 5.0
  - Option: (55) Parameter Request List
    Length: 14
    <Value: 0103060f1f212b2c2e2f7779f9fc>
    Parameter Request List Item: (1) Subnet Mask
    Parameter Request List Item: (3) Router
    Parameter Request List Item: (6) Domain Name Server
    Parameter Request List Item: (15) Domain Name
    Parameter Request List Item: (31) Perform Router Discover
    Parameter Request List Item: (33) Static Route
    Parameter Request List Item: (43) Vendor-Specific Information
    Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server
    Parameter Request List Item: (46) NetBIOS over TCP/IP Node Type
    Parameter Request List Item: (47) NetBIOS over TCP/IP Scope
    Parameter Request List Item: (119) Domain Search
    Parameter Request List Item: (121) Classless Static Route
    Parameter Request List Item: (249) Private/Classless Static Route (Microsoft)
    Parameter Request List Item: (252) Private/Proxy autodiscovery
  - Option: (82) Agent Information Option
    Length: 47
    <Value: 010e0108000600018a9200a000000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00>
  - Option 82 Suboption: (1) Agent Circuit ID
    Length: 14
    <Value: 0108000600018a9200a000000000>
    Agent Circuit ID: 0108000600018a9200a000000000
  - Option 82 Suboption: (2) Agent Remote ID
    Length: 6
    <Value: 707db9b84daf>
    Agent Remote ID: 707db9b84daf
  - Option 82 Suboption: (151) VRF name/VPN ID
    Length: 9
    <Value: 0074656e616e742d61>
  - VRF name:
    - [Expert Info (Warning/Undecoded): Trailing stray characters]
      [Trailing stray characters]
      <Message: Trailing stray characters>
      [Severity level: Warning]
      [Group: Undecoded]
  - Option 82 Suboption: (11) Server ID Override (10.10.10.1)
    Length: 4
    <Value: 0a0a0a01>
    Server ID Override: 10.10.10.1
  - Option 82 Suboption: (5) Link selection (10.10.10.0)
    Length: 4
    <Value: 0a0a0a00>
    Link selection: 10.10.10.0
  - Option: (255) End
    Option End: 255
    Padding: 00000000000000000000

```

Oferta de DHCP enviada por servidor DHCP


```

Ethernet II, Src: 60:26:aa:85:98:87, Dst: 00:50:56:a5:dc:ca
Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.10.150
User Datagram Protocol, Src Port: 67, Dst Port: 67
Dynamic Host Configuration Protocol (Discover)
  Message type: Boot Request (1)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 1
  Transaction ID: 0xe9e35087
  Seconds elapsed: 0
  Bootp flags: 0x8000, Broadcast flag (Broadcast)
    1... .... .... .... = Broadcast flag: Broadcast
    .000 0000 0000 0000 = Reserved flags: 0x0000
  Client IP address: 0.0.0.0
  Your (client) IP address: 0.0.0.0
  Next server IP address: 0.0.0.0
  Relay agent IP address: 172.16.10.8
  Client MAC address: 00:50:56:a5:fd:dd
  Client hardware address padding: 00000000000000000000
  Server host name not given
  Boot file name not given
  Magic cookie: DHCP
  Option: (53) DHCP Message Type (Discover)
    Length: 1
    <Value: 01>
    DHCP: Discover (1)
  Option: (61) Client identifier
    Length: 7
    <Value: 01005056a5fd<dd>
    Hardware type: Ethernet (0x01)
    Client MAC address: 00:50:56:a5:fd:dd
  Option: (12) Host Name
    Length: 10
    <Value: 43584c6162732d573130>
    Host Name: CXLabs-W10
  Option: (60) Vendor class identifier
    Length: 8
    <Value: 4d53465420352e30>
    Vendor class identifier: MSFT 5.0
  Option: (55) Parameter Request List
    Length: 14
    <Value: 0103060f1f212b2c2e2f7779f9fc>
    Parameter Request List Item: (1) Subnet Mask
    Parameter Request List Item: (3) Router
    Parameter Request List Item: (6) Domain Name Server
    Parameter Request List Item: (15) Domain Name
    Parameter Request List Item: (31) Perform Router Discover
    Parameter Request List Item: (33) Static Route
    Parameter Request List Item: (43) Vendor-Specific Information
    Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server
    Parameter Request List Item: (46) NetBIOS over TCP/IP Node Type
    Parameter Request List Item: (47) NetBIOS over TCP/IP Scope
    Parameter Request List Item: (119) Domain Search
    Parameter Request List Item: (121) Classless Static Route
    Parameter Request List Item: (249) Private/Classless Static Route (Microsoft)
    Parameter Request List Item: (252) Private/Proxy autodiscovery
  Option: (82) Agent Information Option
    Length: 47
    <Value: 010e0108000600018a9200a000000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00>
  Option 82 Suboption: (1) Agent Circuit ID
    Length: 14
    <Value: 0108000600018a9200a000000000>
    Agent Circuit ID: 0108000600018a9200a000000000
  Option 82 Suboption: (2) Agent Remote ID
    Length: 6
    <Value: 707db9b84daf>
    Agent Remote ID: 707db9b84daf
  Option 82 Suboption: (151) VRF name/VPN ID
    Length: 9
    <Value: 0074656e616e742d61>
  VRF name:
  [Expert Info (Warning/Undecoded): Trailing stray characters]
  [Trailing stray characters]
  <Message: Trailing stray characters>
  [Severity level: Warning]
  [Group: Undecoded]
  Option 82 Suboption: (11) Server ID Override (10.10.10.1)
    Length: 4
    <Value: 0a0a0a01>
    Server ID Override: 10.10.10.1
  Option 82 Suboption: (5) Link selection (10.10.10.0)
    Length: 4
    <Value: 0a0a0a00>
    Link selection: 10.10.10.0
  Option: (255) End
    Option End: 255
    Padding: 00000000000000000000

```

Oferta de DHCP en LEAF-2-vPC

Oferta recibida en LEAF-2-vPC	Oferta enviada por LEAF-2-vPC
<pre> Ethernet II, Src: 00:50:56:a5:d5:c4, Dst: 00:00:0a:0a:0a:0a Internet Protocol Version 4, Src: 10.10.10.150, Dst: 172.16.10.8 User Datagram Protocol, Src Port: 67, Dst Port: 67 Dynamic Host Configuration Protocol (Offer) Message type: Boot Reply (2) Hardware type: Ethernet (0x01) Hardware address length: 6 Hops: 0 Transaction ID: 0xe9e35087 Seconds elapsed: 0 Bootp flags: 0x0000, Broadcast flag (Broadcast) 1... .. = Broadcast flag: Broadcast .000 0000 0000 0000 = Reserved flags: 0x0000 Client IP address: 0.0.0.0 Your (client) IP address: 10.10.10.3 Next server IP address: 10.10.10.150 Relay agent IP address: 172.16.10.8 Client MAC address: 00:50:56:a5:fd:dd Client hardware address padding: 00000000000000000000 Server host name not given Boot file name not given Magic cookie: DHCP Option: (53) DHCP Message Type (Offer) Length: 1 <Value: 02> DHCP: Offer (2) Option: (1) Subnet Mask (255.255.255.0) Length: 4 <Value: ffffffff> Subnet Mask: 255.255.255.0 Option: (58) Renewal Time Value Length: 4 <Value: 0000a0c0> Renewal Time Value: 12 hours (43200) Option: (59) Rebinding Time Value Length: 4 <Value: 00012750> Rebinding Time Value: 21 hours (75600) Option: (51) IP Address Lease Time Length: 4 <Value: 00015180> IP Address Lease Time: 1 day (86400) Option: (54) DHCP Server Identifier (10.10.10.1) Length: 4 <Value: 0a0a0a01> DHCP Server Identifier: 10.10.10.1 Option: (3) Router Length: 4 <Value: 0a0a0a01> Router: 10.10.10.1 Option: (15) Domain Name Length: 10 <Value: 636973636f2e636f6d00> Domain Name: cisco.com Option: (82) Agent Information Option Length: 47 <Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0105040a0a00> Option 82 Suboption: (1) Agent Circuit ID Length: 14 <Value: 0108000600018a9200a000000000> Agent Circuit ID: 0108000600018a9200a000000000 Option 82 Suboption: (2) Agent Remote ID Length: 6 <Value: 707db9b84daf> Agent Remote ID: 707db9b84daf Option 82 Suboption: (151) VRF name/VPN ID Length: 9 <Value: 0074656e616e742d61> VRF name: [Expert Info (Warning/Undecoded): Trailing stray characters] [Trailing stray characters] <Message: Trailing stray characters> [Severity level: Warning] [Group: Undecoded] Option 82 Suboption: (11) Server ID Override (10.10.10.1) Length: 4 <Value: 0a0a0a01> Server ID Override: 10.10.10.1 Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <Value: 0a0a0a00> Link selection: 10.10.10.0 Option: (255) End Option End: 255 </pre>	<pre> Ethernet II, Src: 00:26:aa:85:95:87, Dst: 10:b3:d6:a4:85:97 Internet Protocol Version 4, Src: 13.13.13.254, Dst: 5.5.5.5 User Datagram Protocol, Src Port: 65518, Dst Port: 4789 Virtual eXtensible Local Area Network Flags: 0x0000, VXLAN Network ID (VNI) Group Policy ID: 0 VXLAN Network Identifier (VNI): 303030 Reserved: 0 Ethernet II, Src: 02:00:0d:0d:0d:fe, Dst: 70:7d:b9:b8:4d:af Internet Protocol Version 4, Src: 10.10.10.150, Dst: 172.16.10.8 User Datagram Protocol, Src Port: 67, Dst Port: 67 Dynamic Host Configuration Protocol (Offer) Message type: Boot Reply (2) Hardware type: Ethernet (0x01) Hardware address length: 6 Hops: 0 Transaction ID: 0xe9e35087 Seconds elapsed: 0 Bootp flags: 0x0000, Broadcast flag (Broadcast) 1... .. = Broadcast flag: Broadcast .000 0000 0000 0000 = Reserved flags: 0x0000 Client IP address: 0.0.0.0 Your (client) IP address: 10.10.10.3 Next server IP address: 10.10.10.150 Relay agent IP address: 172.16.10.8 Client MAC address: 00:50:56:a5:fd:dd Client hardware address padding: 00000000000000000000 Server host name not given Boot file name not given Magic cookie: DHCP Option: (53) DHCP Message Type (Offer) Length: 1 <Value: 02> DHCP: Offer (2) Option: (1) Subnet Mask (255.255.255.0) Length: 4 <Value: ffffffff> Subnet Mask: 255.255.255.0 Option: (58) Renewal Time Value Length: 4 <Value: 0000a0c0> Renewal Time Value: 12 hours (43200) Option: (59) Rebinding Time Value Length: 4 <Value: 00012750> Rebinding Time Value: 21 hours (75600) Option: (51) IP Address Lease Time Length: 4 <Value: 00015180> IP Address Lease Time: 1 day (86400) Option: (54) DHCP Server Identifier (10.10.10.1) Length: 4 <Value: 0a0a0a01> DHCP Server Identifier: 10.10.10.1 Option: (3) Router Length: 4 <Value: 0a0a0a01> Router: 10.10.10.1 Option: (15) Domain Name Length: 10 <Value: 636973636f2e636f6d00> Domain Name: cisco.com Option: (82) Agent Information Option Length: 47 <Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0105040a0a00> Option 82 Suboption: (1) Agent Circuit ID Length: 14 <Value: 0108000600018a9200a000000000> Agent Circuit ID: 0108000600018a9200a000000000 Option 82 Suboption: (2) Agent Remote ID Length: 6 <Value: 707db9b84daf> Agent Remote ID: 707db9b84daf Option 82 Suboption: (151) VRF name/VPN ID Length: 9 <Value: 0074656e616e742d61> VRF name: [Expert Info (Warning/Undecoded): Trailing stray characters] [Trailing stray characters] <Message: Trailing stray characters> [Severity level: Warning] [Group: Undecoded] Option 82 Suboption: (11) Server ID Override (10.10.10.1) Length: 4 <Value: 0a0a0a01> Server ID Override: 10.10.10.1 Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <Value: 0a0a0a00> Link selection: 10.10.10.0 Option: (255) End Option End: 255 </pre>

Oferta DHCP vPC SPINE

Oferta recibida en SPINE	Oferta enviada por SPINE
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<pre> Ethernet II, Src: 60:26:aa:85:95:87, Dst: 10:b3:d6:a4:85:97 Internet Protocol Version 4, Src: 13.13.13.254, Dst: 5.5.5.5 User Datagram Protocol, Src Port: 65518, Dst Port: 4789 Virtual eXtensible Local Area Network Flags: 0x0000, VXLAN Network ID (VNI) Group Policy ID: 0 VXLAN Network Identifier (VNI): 303030 Reserved: 0 Ethernet II, Src: 02:00:0d:0d:0d:fe, Dst: 70:7d:b9:b8:4d:af Internet Protocol Version 4, Src: 10.10.10.150, Dst: 172.16.10.8 User Datagram Protocol, Src Port: 67, Dst Port: 67 Dynamic Host Configuration Protocol (Offer) Message type: Boot Reply (2) Hardware type: Ethernet (0x01) Hardware address length: 6 Hops: 0 Transaction ID: 0xe9e35087 Seconds elapsed: 0 Bootp flags: 0x0000, Broadcast flag (Broadcast) 1... = Broadcast flag: Broadcast .000 0000 0000 0000 = Reserved flags: 0x0000 Client IP address: 0.0.0.0 Your (client) IP address: 10.10.10.3 Next server IP address: 10.10.10.150 Relay agent IP address: 172.16.10.8 Client MAC address: 00:50:56:a5:fd:dd Client hardware address padding: 00000000000000000000 Server host name not given Boot file name not given Magic cookie: DHCP Option: (53) DHCP Message Type (Offer) Length: 1 <Value: 02> DHCP: Offer (2) Option: (1) Subnet Mask (255.255.255.0) Length: 4 <Value: ffffffff> Subnet Mask: 255.255.255.0 Option: (58) Renewal Time Value Length: 4 <Value: 0000a8c0> Renewal Time Value: 12 hours (43200) Option: (59) Rebinding Time Value Length: 4 <Value: 00012750> Rebinding Time Value: 21 hours (75600) Option: (51) IP Address Lease Time Length: 4 <Value: 00015180> IP Address Lease Time: 1 day (86400) Option: (54) DHCP Server Identifier (10.10.10.1) Length: 4 <Value: 0a0a0a01> DHCP Server Identifier: 10.10.10.1 Option: (3) Router Length: 4 <Value: 0a0a0a01> Router: 10.10.10.1 Option: (15) Domain Name Length: 10 <Value: 636973636f2e636f6d00> Domain Name: cisco.com Option: (82) Agent Information Option Length: 47 <Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00> Option 82 Suboption: (1) Agent Circuit ID Length: 14 <Value: 0108000600018a9200a000000000> Agent Circuit ID: 0108000600018a9200a000000000 Option 82 Suboption: (2) Agent Remote ID Length: 6 <Value: 707db9b84daf> Agent Remote ID: 707db9b84daf Option 82 Suboption: (151) VRF name/VPN ID Length: 9 <Value: 0074656e616e742d61> VRF name: [Expert Info (Warning/Undecoded): Trailing stray characters] [Trailing stray characters] <Message: Trailing stray characters> [Severity level: Warning] [Group: Undecoded] Option 82 Suboption: (11) Server ID Override (10.10.10.1) Length: 4 <Value: 0a0a0a01> Server ID Override: 10.10.10.1 Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <Value: 0a0a0a00> Link selection: 10.10.10.0 Option: (255) End Option End: 255 </pre>	<pre> Ethernet II, Src: 10:b3:d6:a4:85:97, Dst: 70:7d:b9:b8:4d:af Internet Protocol Version 4, Src: 13.13.13.254, Dst: 5.5.5.5 User Datagram Protocol, Src Port: 65518, Dst Port: 4789 Virtual eXtensible Local Area Network Flags: 0x0000, VXLAN Network ID (VNI) Group Policy ID: 0 VXLAN Network Identifier (VNI): 303030 Reserved: 0 Ethernet II, Src: 02:00:0d:0d:0d:fe, Dst: 70:7d:b9:b8:4d:af Internet Protocol Version 4, Src: 10.10.10.150, Dst: 172.16.10.8 User Datagram Protocol, Src Port: 67, Dst Port: 67 Dynamic Host Configuration Protocol (Offer) Message type: Boot Reply (2) Hardware type: Ethernet (0x01) Hardware address length: 6 Hops: 0 Transaction ID: 0xe9e35087 Seconds elapsed: 0 Bootp flags: 0x0000, Broadcast flag (Broadcast) Client IP address: 0.0.0.0 Your (client) IP address: 10.10.10.3 Next server IP address: 10.10.10.150 Relay agent IP address: 172.16.10.8 Client MAC address: 00:50:56:a5:fd:dd Client hardware address padding: 00000000000000000000 Server host name not given Boot file name not given Magic cookie: DHCP Option: (53) DHCP Message Type (Offer) Length: 1 <Value: 02> DHCP: Offer (2) Option: (1) Subnet Mask (255.255.255.0) Length: 4 <Value: ffffffff> Subnet Mask: 255.255.255.0 Option: (58) Renewal Time Value Length: 4 <Value: 0000a8c0> Renewal Time Value: 12 hours (43200) Option: (59) Rebinding Time Value Length: 4 <Value: 00012750> Rebinding Time Value: 21 hours (75600) Option: (51) IP Address Lease Time Length: 4 <Value: 00015180> IP Address Lease Time: 1 day (86400) Option: (54) DHCP Server Identifier (10.10.10.1) Length: 4 <Value: 0a0a0a01> DHCP Server Identifier: 10.10.10.1 Option: (15) Domain Name Length: 10 <Value: 636973636f2e636f6d00> Domain Name: cisco.com Option: (82) Agent Information Option Length: 47 <Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00> Option 82 Suboption: (1) Agent Circuit ID Length: 14 <Value: 0108000600018a9200a000000000> Agent Circuit ID: 0108000600018a9200a000000000 Option 82 Suboption: (2) Agent Remote ID Length: 6 <Value: 707db9b84daf> Agent Remote ID: 707db9b84daf Option 82 Suboption: (151) VRF name/VPN ID Length: 9 <Value: 0074656e616e742d61> VRF name: Option 82 Suboption: (11) Server ID Override (10.10.10.1) Length: 4 <Value: 0a0a0a01> Server ID Override: 10.10.10.1 Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <Value: 0a0a0a00> Link selection: 10.10.10.0 Option: (255) End Option End: 255 </pre>
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Oferta de DHCP en LEAF-1

Oferta recibida en LEAF-1	Envío de oferta en LEAF-1
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<pre> > Ethernet II, Src: 18:b3:d6:44:85:97, Dst: 70:7d:b9:b8:4d:af > Internet Protocol Version 4, Src: 13.13.13.254, Dst: 5.5.5.5 > User Datagram Protocol, Src Port: 65518, Dst Port: 4789 > Virtual eXtensible Local Area Network > Flags: 0x8000, VXLAN Network ID (VNI) Group Policy ID: 0 VXLAN Network Identifier (VNI): 383038 Reserved: 0 > Ethernet II, Src: 02:00:0d:0d:0d:fe, Dst: 70:7d:b9:b8:4d:af > Internet Protocol Version 4, Src: 10.10.10.150, Dst: 172.16.10.8 > User Datagram Protocol, Src Port: 67, Dst Port: 67 > Dynamic Host Configuration Protocol (Offer) Message type: Boot Reply (2) Hardware type: Ethernet (0x01) Hardware address length: 6 Hops: 0 Transaction ID: 0xe9e35087 Seconds elapsed: 0 > Bootp flags: 0x8000, Broadcast flag (Broadcast) Client IP address: 0.0.0.0 Your (client) IP address: 10.10.10.3 Next server IP address: 10.10.10.150 Relay agent IP address: 172.16.10.8 Client MAC address: 00:50:56:a5:fd:dd Client hardware address padding: 00000000000000000000 Server host name not given Boot file name not given Magic cookie: DHCP > Option: (53) DHCP Message Type (Offer) Length: 1 <Value: 02> DHCP: Offer (2) > Option: (1) Subnet Mask (255.255.255.0) Length: 4 <Value: ffffffff> Subnet Mask: 255.255.255.0 > Option: (58) Renewal Time Value Length: 4 <Value: 0000a8c0> Renewal Time Value: 12 hours (43200) > Option: (59) Rebinding Time Value Length: 4 <Value: 00012750> Rebinding Time Value: 21 hours (75600) > Option: (51) IP Address Lease Time Length: 4 <Value: 00015180> IP Address Lease Time: 1 day (86400) > Option: (54) DHCP Server Identifier (10.10.10.1) Length: 4 <Value: 0a0a0a01> DHCP Server Identifier: 10.10.10.1 > Option: (15) Domain Name Length: 10 <Value: 636973636f2e636f6d00> Domain Name: cisco.com > Option: (82) Agent Information Option Length: 47 <Value: 010e0108000600018a9200a000000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a00> > Option 82 Suboption: (1) Agent Circuit ID Length: 14 <Value: 0108000600018a9200a000000000> Agent Circuit ID: 0108000600018a9200a000000000 > Option 82 Suboption: (2) Agent Remote ID Length: 6 <Value: 707db9b84daf> Agent Remote ID: 707db9b84daf > Option 82 Suboption: (151) VRF name/VPN ID Length: 9 <Value: 0074656e616e742d61> VRF name: > Option 82 Suboption: (11) Server ID Override (10.10.10.1) Length: 4 <Value: 0a0a0a01> Server ID Override: 10.10.10.1 > Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <Value: 0a0a0a00> Link selection: 10.10.10.0 > Option: (255) End Option End: 255 </pre>	<pre> > Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: ff:ff:ff:ff:ff:ff > Internet Protocol Version 4, Src: 10.10.10.1, Dst: 255.255.255.255 > User Datagram Protocol, Src Port: 67, Dst Port: 68 > Dynamic Host Configuration Protocol (Offer) Message type: Boot Reply (2) Hardware type: Ethernet (0x01) Hardware address length: 6 Hops: 0 Transaction ID: 0xe9e35087 Seconds elapsed: 0 > Bootp flags: 0x8000, Broadcast flag (Broadcast) Client IP address: 0.0.0.0 Your (client) IP address: 10.10.10.3 Next server IP address: 10.10.10.150 Relay agent IP address: 10.10.10.1 Client MAC address: 00:50:56:a5:fd:dd Client hardware address padding: 00000000000000000000 Server host name not given Boot file name not given Magic cookie: DHCP > Option: (53) DHCP Message Type (Offer) Length: 1 <Value: 02> DHCP: Offer (2) > Option: (1) Subnet Mask (255.255.255.0) Length: 4 <Value: ffffffff> Subnet Mask: 255.255.255.0 > Option: (58) Renewal Time Value Length: 4 <Value: 0000a8c0> Renewal Time Value: 12 hours (43200) > Option: (59) Rebinding Time Value Length: 4 <Value: 00012750> Rebinding Time Value: 21 hours (75600) > Option: (51) IP Address Lease Time Length: 4 <Value: 00015180> IP Address Lease Time: 1 day (86400) > Option: (54) DHCP Server Identifier (10.10.10.1) Length: 4 <Value: 0a0a0a01> DHCP Server Identifier: 10.10.10.1 > Option: (3) Router Length: 4 <Value: 0a0a0a01> Router: 10.10.10.1 > Option: (15) Domain Name Length: 10 <Value: 636973636f2e636f6d00> Domain Name: cisco.com > Option: (255) End Option End: 255 </pre>
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Oferta DHCP recibida en HOST-1

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> Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: ff:ff:ff:ff:ff:ff
> Internet Protocol Version 4, Src: 10.10.10.1, Dst: 255.255.255.255
> User Datagram Protocol, Src Port: 67, Dst Port: 68
> Dynamic Host Configuration Protocol (Offer)
  Message type: Boot Reply (2)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 0
  Transaction ID: 0xe9e35087
  Seconds elapsed: 0
  > Bootp flags: 0x8000, Broadcast flag (Broadcast)
  Client IP address: 0.0.0.0
  Your (client) IP address: 10.10.10.3
  Next server IP address: 10.10.10.150
  Relay agent IP address: 10.10.10.1
  Client MAC address: 00:50:56:a5:fd:dd
  Client hardware address padding: 000000000000000000000000
  Server host name not given
  Boot file name not given
  Magic cookie: DHCP
  > Option: (53) DHCP Message Type (Offer)
    Length: 1
    <Value: 02>
    DHCP: Offer (2)
  > Option: (1) Subnet Mask (255.255.255.0)
    Length: 4
    <Value: ffffffff00>
    Subnet Mask: 255.255.255.0
  > Option: (58) Renewal Time Value
    Length: 4
    <Value: 0000a8c0>
    Renewal Time Value: 12 hours (43200)
  > Option: (59) Rebinding Time Value
    Length: 4
    <Value: 00012750>
    Rebinding Time Value: 21 hours (75600)
  > Option: (51) IP Address Lease Time
    Length: 4
    <Value: 00015180>
    IP Address Lease Time: 1 day (86400)
  > Option: (54) DHCP Server Identifier (10.10.10.1)
    Length: 4
    <Value: 0a0a0a01>
    DHCP Server Identifier: 10.10.10.1
  > Option: (3) Router
    Length: 4
    <Value: 0a0a0a01>
    Router: 10.10.10.1
  > Option: (15) Domain Name
    Length: 10
    <Value: 636973636f2e636f6d00>
    Domain Name: cisco.com
  > Option: (255) End
    Option End: 255
```

Solicitud enviada por HOST-1

```

> Ethernet II, Src: 00:50:56:a5:fd:dd, Dst: ff:ff:ff:ff:ff:ff
> Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255
> User Datagram Protocol, Src Port: 68, Dst Port: 67
> Dynamic Host Configuration Protocol (Request)
  Message type: Boot Request (1)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 0
  Transaction ID: 0xe9e35087
  Seconds elapsed: 0
  Bootp flags: 0x8000, Broadcast flag (Broadcast)
    1... .... .... .... = Broadcast flag: Broadcast
    .000 0000 0000 0000 = Reserved flags: 0x0000
  Client IP address: 0.0.0.0
  Your (client) IP address: 0.0.0.0
  Next server IP address: 0.0.0.0
  Relay agent IP address: 0.0.0.0
  Client MAC address: 00:50:56:a5:fd:dd
  Client hardware address padding: 00000000000000000000
  Server host name not given
  Boot file name not given
  Magic cookie: DHCP
  Option: (53) DHCP Message Type (Request)
    Length: 1
    <Value: 03>
    DHCP: Request (3)
  Option: (61) Client identifier
    Length: 7
    <Value: 01005056a5fddd>
    Hardware type: Ethernet (0x01)
    Client MAC address: 00:50:56:a5:fd:dd
  Option: (50) Requested IP Address (10.10.10.3)
    Length: 4
    <Value: 0a0a0a03>
    Requested IP Address: 10.10.10.3
  Option: (54) DHCP Server Identifier (10.10.10.1)
    Length: 4
    <Value: 0a0a0a01>
    DHCP Server Identifier: 10.10.10.1
  Option: (12) Host Name
    Length: 10
    <Value: 43584c6162732d573130>
    Host Name: CXLabs-W10
  Option: (81) Client Fully Qualified Domain Name
    Length: 13
    <Value: 00000043584c6162732d573130>
  Flags: 0x00
    0000 .... = Reserved flags: 0x0
    .... 0... = Server DDNS: Some server updates
    .... .0.. = Encoding: ASCII encoding
    .... ..0. = Server overrides: No override
    .... ...0 = Server: Client
  A-RR result: 0
  PTR-RR result: 0
  Client name: CXLabs-W10
  Option: (60) Vendor class identifier
    Length: 8
    <Value: 4d53465420352e30>
    Vendor class identifier: MSFT 5.0
  Option: (55) Parameter Request List
    Length: 14
    <Value: 0103060f1f212b2c2e2f7779f9fc>
    Parameter Request List Item: (1) Subnet Mask
    Parameter Request List Item: (3) Router
    Parameter Request List Item: (6) Domain Name Server
    Parameter Request List Item: (15) Domain Name
    Parameter Request List Item: (31) Perform Router Discover
    Parameter Request List Item: (33) Static Route
    Parameter Request List Item: (43) Vendor-Specific Information
    Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server
    Parameter Request List Item: (46) NetBIOS over TCP/IP Node Type
    Parameter Request List Item: (47) NetBIOS over TCP/IP Scope
    Parameter Request List Item: (119) Domain Search
    Parameter Request List Item: (121) Classless Static Route
    Parameter Request List Item: (249) Private/Classless Static Route (Microsoft)
    Parameter Request List Item: (252) Private/Proxy autodiscovery
  Option: (255) End
  Option End: 255

```

Solicitud en LEAF-1

Solicitud recibida en LEAF-1	Solicitud enviada por LEAF-1
<pre> > Ethernet II, Src: 00:50:56:a5:fd:dd, Dst: ff:ff:ff:ff:ff:ff > Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255 > User Datagram Protocol, Src Port: 68, Dst Port: 67 > Dynamic Host Configuration Protocol (Request) Message type: Boot Request (1) Hardware type: Ethernet (0x01) Hardware address length: 6 Hops: 0 Transaction ID: 0xe9e35087 Seconds elapsed: 0 > Bootp flags: 0x0000, Broadcast flag (Broadcast) 1... = Broadcast flag: Broadcast .000 0000 0000 0000 = Reserved flags: 0x0000 Client IP address: 0.0.0.0 Your (client) IP address: 0.0.0.0 Next server IP address: 0.0.0.0 Relay agent IP address: 0.0.0.0 Client MAC address: 00:50:56:a5:fd:dd Client hardware address padding: 00000000000000000000 Server host name not given Boot file name not given Magic cookie: DHCP > Option: (53) DHCP Message Type (Request) Length: 1 <Value: 03> DHCP: Request (3) > Option: (61) Client identifier Length: 7 <Value: 01005056a5fddd> Hardware type: Ethernet (0x01) Client MAC address: 00:50:56:a5:fd:dd > Option: (50) Requested IP Address (10.10.10.3) Length: 4 <Value: 0a0a0a03> Requested IP Address: 10.10.10.3 > Option: (54) DHCP Server Identifier (10.10.10.1) Length: 4 <Value: 0a0a0a01> DHCP Server Identifier: 10.10.10.1 > Option: (12) Host Name Length: 10 <Value: 43584c6162732d573130> Host Name: CXLabs-W10 > Option: (81) Client Fully Qualified Domain Name Length: 13 <Value: 00000043584c6162732d573130> > Flags: 0x00 0000 = Reserved flags: 0x0 0... = Server DDNS: Some server updates 0.. = Encoding: ASCII encoding 0. = Server overrides: No override 0 = Server: Client A-RR result: 0 PTR-RR result: 0 Client name: CXLabs-W10 > Option: (60) Vendor class identifier Length: 8 <Value: 4d53465420352e30> Vendor class identifier: MSFT 5.0 > Option: (55) Parameter Request List Length: 14 <Value: 0103060f1f212b2c2e2f779f9fc> Parameter Request List Item: (1) Subnet Mask Parameter Request List Item: (3) Router Parameter Request List Item: (6) Domain Name Server Parameter Request List Item: (15) Domain Name Parameter Request List Item: (31) Perform Router Discover Parameter Request List Item: (33) Static Route Parameter Request List Item: (43) Vendor-Specific Information Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server Parameter Request List Item: (46) NetBIOS over TCP/IP Node Type Parameter Request List Item: (47) NetBIOS over TCP/IP Scope Parameter Request List Item: (119) Domain Search Parameter Request List Item: (121) Classless Static Route Parameter Request List Item: (249) Private/Classless Static Route (Microsoft) Parameter Request List Item: (252) Private/Proxy autodiscovery > Option: (255) End Option End: 255 </pre>	<pre> > Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: 10:b3:d6:a4:85:97 > Internet Protocol Version 4, Src: 5.5.5.5, Dst: 13.13.13.254 > User Datagram Protocol, Src Port: 51730, Dst Port: 4789 > Virtual eXtensible Local Area Network > Flags: 0x0000, VXLAN Network ID (VNI) Group Policy ID: 0 VXLAN Network Identifier (VNI): 303030 Reserved: 0 > Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: 02:00:0d:0d:0d:fe > Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.10.150 > User Datagram Protocol, Src Port: 67, Dst Port: 67 > Dynamic Host Configuration Protocol (Request) Message type: Boot Request (1) Hardware type: Ethernet (0x01) Hardware address length: 6 Hops: 1 Transaction ID: 0xe9e35087 Seconds elapsed: 0 > Bootp flags: 0x0000, Broadcast flag (Broadcast) Client IP address: 0.0.0.0 Your (client) IP address: 0.0.0.0 Next server IP address: 0.0.0.0 Relay agent IP address: 172.16.10.8 Client MAC address: 00:50:56:a5:fd:dd Client hardware address padding: 00000000000000000000 Server host name not given Boot file name not given Magic cookie: DHCP > Option: (53) DHCP Message Type (Request) Length: 1 <Value: 03> DHCP: Request (3) > Option: (61) Client identifier Length: 7 <Value: 01005056a5fddd> Hardware type: Ethernet (0x01) Client MAC address: 00:50:56:a5:fd:dd > Option: (50) Requested IP Address (10.10.10.3) Length: 4 <Value: 0a0a0a03> Requested IP Address: 10.10.10.3 > Option: (54) DHCP Server Identifier (10.10.10.150) Length: 4 <Value: 0a0a0a96> DHCP Server Identifier: 10.10.10.150 > Option: (12) Host Name Length: 10 <Value: 43584c6162732d573130> Host Name: CXLabs-W10 > Option: (81) Client Fully Qualified Domain Name Length: 13 <Value: 00000043584c6162732d573130> > Flags: 0x00 A-RR result: 0 PTR-RR result: 0 Client name: CXLabs-W10 > Option: (60) Vendor class identifier Length: 8 <Value: 4d53465420352e30> Vendor class identifier: MSFT 5.0 > Option: (55) Parameter Request List Length: 14 <Value: 0103060f1f212b2c2e2f779f9fc> Parameter Request List Item: (1) Subnet Mask Parameter Request List Item: (3) Router Parameter Request List Item: (6) Domain Name Server Parameter Request List Item: (15) Domain Name Parameter Request List Item: (31) Perform Router Discover Parameter Request List Item: (33) Static Route Parameter Request List Item: (43) Vendor-Specific Information Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server Parameter Request List Item: (46) NetBIOS over TCP/IP Node Type Parameter Request List Item: (47) NetBIOS over TCP/IP Scope Parameter Request List Item: (119) Domain Search Parameter Request List Item: (121) Classless Static Route Parameter Request List Item: (249) Private/Classless Static Route (Microsoft) Parameter Request List Item: (252) Private/Proxy autodiscovery > Option: (82) Agent Information Option Length: 47 <Value: 010e010800060018a9200a000000000206707db9b84daf97090074656e16e742d610b040a0a0105040a0a00> > Option 82 Suboption: (1) Agent Circuit ID Length: 14 <Value: 0108000600018a9200a000000000> Agent Circuit ID: 0108000600018a9200a000000000 > Option 82 Suboption: (2) Agent Remote ID Length: 6 <Value: 707db9b84daf> Agent Remote ID: 707db9b84daf > Option 82 Suboption: (151) VRF name/VPN ID Length: 9 <Value: 0074656e16e742d61> > VRF name: [Expert Info (Warning/Undecoded): Trailing stray characters] > Option 82 Suboption: (11) Server ID Override (10.10.10.1) Length: 4 <Value: 0a0a0a01> Server ID Override: 10.10.10.1 > Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <Value: 0a0a0a00> Link selection: 10.10.10.0 > Option: (255) End Option End: 255 </pre>

Solicitud en COLUMNA

Solicitud recibida en SPINE	Solicitud de envío por SPINE
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Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: 10:b3:d6:a4:85:97
Internet Protocol Version 4, Src: 5.5.5.5, Dst: 13.13.13.254
User Datagram Protocol, Src Port: 51730, Dst Port: 4789
Virtual Extensible Local Area Network
Flags: 0x8000, VLAN Network ID (VNI)
Group Policy ID: 0
VLAN Network Identifier (VNI): 303030
Reserved: 0

Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: 02:00:0d:0d:0d:fe
Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.10.150
User Datagram Protocol, Src Port: 67, Dst Port: 67

Dynamic Host Configuration Protocol (Request)

Message type: Boot Request (1)
Hardware type: Ethernet (0x01)
Hardware address length: 6
Hops: 1
Transaction ID: 0xe9e35087
Seconds elapsed: 0
Bootp flags: 0x8000, Broadcast flag (Broadcast)
Client IP address: 0.0.0.0
Your (client) IP address: 0.0.0.0
Next server IP address: 0.0.0.0
Relay agent IP address: 172.16.10.8
Client MAC address: 00:50:56:a5:fd:dd
Client hardware address padding: 00000000000000000000
Server host name not given
Boot file name not given
Magic cookie: DHCP
Option: (53) DHCP Message Type (Request)
Length: 1
<Value: 03>
DHCP: Request (3)
Option: (61) Client Identifier
Length: 7
<Value: 01005056a5fddd>
Hardware type: Ethernet (0x01)
Client MAC address: 00:50:56:a5:fd:dd
Option: (50) Requested IP Address (10.10.10.3)
Length: 4
<Value: 0a0a0a03>
Requested IP Address: 10.10.10.3
Option: (54) DHCP Server Identifier (10.10.10.150)
Length: 4
<Value: 0a0a0a96>
DHCP Server Identifier: 10.10.10.150
Option: (12) Host Name
Length: 10
<Value: 43584c6162732d573130>
Host Name: CXLabs-W10
Option: (81) Client Fully Qualified Domain Name
Length: 13
<Value: 00000043584c6162732d573130>
Flags: 0x00
A-RR result: 0
PTR-RR result: 0
Client name: CXLabs-W10
Option: (60) Vendor class identifier
Length: 8
<Value: 4d53465420352e30>
Vendor class identifier: MSFT 5.0
Option: (55) Parameter Request List
Length: 14
<Value: 0103060f1f212b2c2e2f7779f9fc>
Parameter Request List Item: (1) Subnet Mask
Parameter Request List Item: (3) Router
Parameter Request List Item: (6) Domain Name Server
Parameter Request List Item: (15) Domain Name
Parameter Request List Item: (31) Perform Router Discover
Parameter Request List Item: (33) Static Route
Parameter Request List Item: (43) Vendor-Specific Information
Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server
Parameter Request List Item: (46) NetBIOS over TCP/IP Node Type
Parameter Request List Item: (47) NetBIOS over TCP/IP Scope
Parameter Request List Item: (119) Domain Search
Parameter Request List Item: (121) Classless Static Route
Parameter Request List Item: (249) Private/Classless Static Route (Microsoft)
Parameter Request List Item: (252) Private/Proxy autodiscovery
Option: (82) Agent Information Option
Length: 47
<Value: 010e018000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0105040a0a0a00>
Option 82 Suboption: (1) Agent Circuit ID
Length: 14
<Value: 0108000600018a9200a000000000>
Agent Circuit ID: 0108000600018a9200a000000000
Option 82 Suboption: (2) Agent Remote ID
Length: 6
<Value: 707db9b84daf>
Agent Remote ID: 707db9b84daf
Option 82 Suboption: (151) VRF name/VPN ID
Length: 9
<Value: 0074656e616e742d61>
VRF name:
[Expert Info (Warning/Undecoded): Trailing stray characters]
Option 82 Suboption: (11) Server ID Override (10.10.10.1)
Length: 4
<Value: 0a0a0a01>
Server ID Override: 10.10.10.1
Option 82 Suboption: (5) Link selection (10.10.10.0)
Length: 4
<Value: 0a0a0a00>
Link selection: 10.10.10.0
Option: (255) End
Option End: 255

Ethernet II, Src: 10:b3:d6:a4:85:97, Dst: 00:26:aa:85:95:87
Internet Protocol Version 4, Src: 5.5.5.5, Dst: 13.13.13.254
User Datagram Protocol, Src Port: 51730, Dst Port: 4789
Virtual Extensible Local Area Network
Flags: 0x8000, VLAN Network ID (VNI)
Group Policy ID: 0
VLAN Network Identifier (VNI): 303030
Reserved: 0

Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: 02:00:0d:0d:0d:fe
Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.10.150
User Datagram Protocol, Src Port: 67, Dst Port: 67

Dynamic Host Configuration Protocol (Request)

Message type: Boot Request (1)
Hardware type: Ethernet (0x01)
Hardware address length: 6
Hops: 1
Transaction ID: 0xe9e35087
Seconds elapsed: 0
Bootp flags: 0x8000, Broadcast flag (Broadcast)
Client IP address: 0.0.0.0
Your (client) IP address: 0.0.0.0
Next server IP address: 0.0.0.0
Relay agent IP address: 172.16.10.8
Client MAC address: 00:50:56:a5:fd:dd
Client hardware address padding: 00000000000000000000
Server host name not given
Boot file name not given
Magic cookie: DHCP
Option: (53) DHCP Message Type (Request)
Length: 1
<Value: 03>
DHCP: Request (3)
Option: (61) Client identifier
Length: 7
<Value: 01005056a5fddd>
Hardware type: Ethernet (0x01)
Client MAC address: 00:50:56:a5:fd:dd
Option: (50) Requested IP Address (10.10.10.3)
Length: 4
<Value: 0a0a0a03>
Requested IP Address: 10.10.10.3
Option: (54) DHCP Server Identifier (10.10.10.150)
Length: 4
<Value: 0a0a0a96>
DHCP Server Identifier: 10.10.10.150
Option: (12) Host Name
Length: 10
<Value: 43584c6162732d573130>
Host Name: CXLabs-W10
Option: (81) Client Fully Qualified Domain Name
Length: 13
<Value: 00000043584c6162732d573130>
Flags: 0x00
A-RR result: 0
PTR-RR result: 0
Client name: CXLabs-W10
Option: (60) Vendor class identifier
Length: 8
<Value: 4d53465420352e30>
Vendor class identifier: MSFT 5.0
Option: (55) Parameter Request List
Length: 14
<Value: 0103060f1f212b2c2e2f7779f9fc>
Parameter Request List Item: (1) Subnet Mask
Parameter Request List Item: (3) Router
Parameter Request List Item: (6) Domain Name Server
Parameter Request List Item: (15) Domain Name
Parameter Request List Item: (31) Perform Router Discover
Parameter Request List Item: (33) Static Route
Parameter Request List Item: (43) Vendor-Specific Information
Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server
Parameter Request List Item: (46) NetBIOS over TCP/IP Node Type
Parameter Request List Item: (47) NetBIOS over TCP/IP Scope
Parameter Request List Item: (119) Domain Search
Parameter Request List Item: (121) Classless Static Route
Parameter Request List Item: (249) Private/Classless Static Route (Microsoft)
Parameter Request List Item: (252) Private/Proxy autodiscovery
Option: (82) Agent Information Option
Length: 47
<Value: 010e018000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0105040a0a0a00>
Option 82 Suboption: (1) Agent Circuit ID
Length: 14
<Value: 0108000600018a9200a000000000>
Agent Circuit ID: 0108000600018a9200a000000000
Option 82 Suboption: (2) Agent Remote ID
Length: 6
<Value: 707db9b84daf>
Agent Remote ID: 707db9b84daf
Option 82 Suboption: (151) VRF name/VPN ID
Length: 9
<Value: 0074656e616e742d61>
VRF name:
Option 82 Suboption: (11) Server ID Override (10.10.10.1)
Length: 4
<Value: 0a0a0a01>
Server ID Override: 10.10.10.1
Option 82 Suboption: (5) Link selection (10.10.10.0)
Length: 4
<Value: 0a0a0a00>
Link selection: 10.10.10.0
Option: (255) End
Option End: 255

Solicitud en LEAF-2-vPC

Solicitar recevpC en LEAF-2-vPC	Solicitud de envío por vPCAF-2-vPC
<pre> Ethernet II, Src: 10:b3:d6:a4:85:97, Dst: 00:26:aa:85:95:87 Internet Protocol Version 4, Src: 5.5.5.5, Dst: 13.13.13.254 User Datagram Protocol, Src Port: 51730, Dst Port: 4789 Virtual extensible Local Area Network Flags: 0x0000, VXLAN Network ID (VNI) Group Policy ID: 0 VXLAN Network Identifier (VNI): 303030 Reserved: 0 Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: 02:00:0d:0d:0d:fe Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.10.150 User Datagram Protocol, Src Port: 67, Dst Port: 67 Dynamic Host Configuration Protocol (Request) Message type: Boot Request (1) Hardware type: Ethernet (0x01) Hardware address length: 6 Hops: 1 Transaction ID: 0xe9e35087 Seconds elapsed: 0 Bootp flags: 0x0000, Broadcast flag (Broadcast) Client IP address: 0.0.0.0 Your (client) IP address: 0.0.0.0 Next server IP address: 0.0.0.0 Relay agent IP address: 172.16.10.8 Client MAC address: 00:50:56:a5:fd:dd Client hardware address padding: 00000000000000000000 Server host name not given Boot file name not given Magic cookie: DHCP Option (53) DHCP Message Type (Request) Length: 1 <Value: 03> DHCP: Request (3) Option (61) Client identifier Length: 7 <Value: 01005056a5fddd> Hardware type: Ethernet (0x01) Client MAC address: 00:50:56:a5:fd:dd Option (50) Requested IP Address (10.10.10.3) Length: 4 <Value: 0a0a0a03> Requested IP Address: 10.10.10.3 Option (54) DHCP Server Identifier (10.10.10.150) Length: 4 <Value: 0a0a0a96> DHCP Server Identifier: 10.10.10.150 Option (12) Host Name Length: 10 <Value: 43584c6162732d573130> Host Name: CXLabs-W10 Option (81) Client Fully Qualified Domain Name Length: 13 <Value: 00000043584c6162732d573130> Flags: 0x00 A-RR result: 0 PTR-RR result: 0 Client name: CXLabs-W10 Option (60) Vendor class identifier Length: 8 <Value: 4d53465428352e30> Vendor class identifier: MSFT 5.0 Option (55) Parameter Request List Length: 14 <Value: 0103060f1f212b2c2e2f779f9fc> Parameter Request List Item: (1) Subnet Mask Parameter Request List Item: (3) Router Parameter Request List Item: (6) Domain Name Server Parameter Request List Item: (15) Domain Name Parameter Request List Item: (31) Perform Router Discover Parameter Request List Item: (33) Static Route Parameter Request List Item: (43) Vendor-Specific Information Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server Parameter Request List Item: (46) NetBIOS over TCP/IP Node Type Parameter Request List Item: (47) NetBIOS over TCP/IP Scope Parameter Request List Item: (119) Domain Search Parameter Request List Item: (121) Classless Static Route Parameter Request List Item: (249) Private/Classless Static Route (Microsoft) Parameter Request List Item: (252) Private/Proxy autodiscovery Option (82) Agent Information Option Length: 47 <Value: 010e0108000600018a920a000000000206707db9b84daf97090074656e16e742d610b040a0a0a0105040a0a0a00> Option 82 Suboption: (1) Agent Circuit ID Length: 14 <Value: 0108000600018a920a0000000000> Agent Circuit ID: 0108000600018a920a0000000000 Option 82 Suboption: (2) Agent Remote ID Length: 6 <Value: 707db9b84daf> Agent Remote ID: 707db9b84daf Option 82 Suboption: (151) VRF name/VPN ID Length: 9 <Value: 0074656e16e742d61> VRF name: Option 82 Suboption: (11) Server ID Override (10.10.10.1) Length: 4 <Value: 0a0a0a01> Server ID Override: 10.10.10.1 Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <Value: 0a0a0a00> Link selection: 10.10.10.0 Option (255) End Option End: 255 </pre>	<pre> Ethernet II, Src: 00:26:aa:85:95:87, Dst: 00:50:56:a5:dc:ca Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.10.150 User Datagram Protocol, Src Port: 67, Dst Port: 67 Dynamic Host Configuration Protocol (Request) Message type: Boot Request (1) Hardware type: Ethernet (0x01) Hardware address length: 6 Hops: 1 Transaction ID: 0xe9e35087 Seconds elapsed: 0 Bootp flags: 0x0000, Broadcast flag (Broadcast) Client IP address: 0.0.0.0 Your (client) IP address: 0.0.0.0 Next server IP address: 0.0.0.0 Relay agent IP address: 172.16.10.8 Client MAC address: 00:50:56:a5:fd:dd Client hardware address padding: 00000000000000000000 Server host name not given Boot file name not given Magic cookie: DHCP Option (53) DHCP Message Type (Request) Length: 1 <Value: 03> DHCP: Request (3) Option (61) Client identifier Length: 7 <Value: 01005056a5fddd> Hardware type: Ethernet (0x01) Client MAC address: 00:50:56:a5:fd:dd Option (50) Requested IP Address (10.10.10.3) Length: 4 <Value: 0a0a0a03> Requested IP Address: 10.10.10.3 Option (54) DHCP Server Identifier (10.10.10.150) Length: 4 <Value: 0a0a0a96> DHCP Server Identifier: 10.10.10.150 Option (12) Host Name Length: 10 <Value: 43584c6162732d573130> Host Name: CXLabs-W10 Option (81) Client Fully Qualified Domain Name Length: 13 <Value: 00000043584c6162732d573130> Flags: 0x00 A-RR result: 0 PTR-RR result: 0 Client name: CXLabs-W10 Option (60) Vendor class identifier Length: 8 <Value: 4d53465428352e30> Vendor class identifier: MSFT 5.0 Option (55) Parameter Request List Length: 14 <Value: 0103060f1f212b2c2e2f779f9fc> Parameter Request List Item: (1) Subnet Mask Parameter Request List Item: (3) Router Parameter Request List Item: (6) Domain Name Server Parameter Request List Item: (15) Domain Name Parameter Request List Item: (31) Perform Router Discover Parameter Request List Item: (33) Static Route Parameter Request List Item: (43) Vendor-Specific Information Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server Parameter Request List Item: (46) NetBIOS over TCP/IP Node Type Parameter Request List Item: (47) NetBIOS over TCP/IP Scope Parameter Request List Item: (119) Domain Search Parameter Request List Item: (121) Classless Static Route Parameter Request List Item: (249) Private/Classless Static Route (Microsoft) Parameter Request List Item: (252) Private/Proxy autodiscovery Option (82) Agent Information Option Length: 47 <Value: 010e0108000600018a920a000000000206707db9b84daf97090074656e16e742d610b040a0a0a0105040a0a0a00> Option 82 Suboption: (1) Agent Circuit ID Length: 14 <Value: 0108000600018a920a0000000000> Agent Circuit ID: 0108000600018a920a0000000000 Option 82 Suboption: (2) Agent Remote ID Length: 6 <Value: 707db9b84daf> Agent Remote ID: 707db9b84daf Option 82 Suboption: (151) VRF name/VPN ID Length: 9 <Value: 0074656e16e742d61> VRF name: Option 82 Suboption: (11) Server ID Override (10.10.10.1) Length: 4 <Value: 0a0a0a01> Server ID Override: 10.10.10.1 Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <Value: 0a0a0a00> Link selection: 10.10.10.0 Option (255) End Option End: 255 </pre>

Solicitud recibida en el servidor DHCP

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Ethernet II, Src: 60:26:aa:85:95:87, Dst: 00:50:56:a5:dc:ca
> Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.10.150
> User Datagram Protocol, Src Port: 67, Dst Port: 67
Dynamic Host Configuration Protocol (Request)
  Message type: Boot Request (1)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 1
  Transaction ID: 0xe9e35087
  Seconds elapsed: 0
  > Bootp flags: 0x8000, Broadcast flag (Broadcast)
  Client IP address: 0.0.0.0
  Your (client) IP address: 0.0.0.0
  Next server IP address: 0.0.0.0
  Relay agent IP address: 172.16.10.8
  Client MAC address: 00:50:56:a5:fd:dd
  Client hardware address padding: 00000000000000000000
  Server host name not given
  Boot file name not given
  Magic cookie: DHCP
  > Option: (53) DHCP Message Type (Request)
    Length: 1
    <Value: 03>
    DHCP: Request (3)
  > Option: (61) Client identifier
    Length: 7
    <Value: 01005056a5fd00>
    Hardware type: Ethernet (0x01)
    Client MAC address: 00:50:56:a5:fd:dd
  > Option: (50) Requested IP Address (10.10.10.3)
    Length: 4
    <Value: 0a0a0a03>
    Requested IP Address: 10.10.10.3
  > Option: (54) DHCP Server Identifier (10.10.10.150)
    Length: 4
    <Value: 0a0a0a96>
    DHCP Server Identifier: 10.10.10.150
  > Option: (12) Host Name
    Length: 10
    <Value: 43584c6162732d573130>
    Host Name: CXLabs-W10
  > Option: (81) Client Fully Qualified Domain Name
    Length: 13
    <Value: 00000043584c6162732d573130>
    > Flags: 0x00
    A-RR result: 0
    PTR-RR result: 0
    Client name: CXLabs-W10
  > Option: (60) Vendor class identifier
    Length: 8
    <Value: 4d53465420352e30>
    Vendor class identifier: MSFT 5.0
  > Option: (55) Parameter Request List
    Length: 14
    <Value: 0103060f1f212b2c2e2f7779f9fc>
    Parameter Request List Item: (1) Subnet Mask
    Parameter Request List Item: (3) Router
    Parameter Request List Item: (6) Domain Name Server
    Parameter Request List Item: (15) Domain Name
    Parameter Request List Item: (31) Perform Router Discover
    Parameter Request List Item: (33) Static Route
    Parameter Request List Item: (43) Vendor-Specific Information
    Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server
    Parameter Request List Item: (46) NetBIOS over TCP/IP Node Type
    Parameter Request List Item: (47) NetBIOS over TCP/IP Scope
    Parameter Request List Item: (119) Domain Search
    Parameter Request List Item: (121) Classless Static Route
    Parameter Request List Item: (249) Private/Classless Static Route (Microsoft)
    Parameter Request List Item: (252) Private/Proxy autodiscovery
  > Option: (82) Agent Information Option
    Length: 47
    <Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00>
  > Option 82 Suboption: (1) Agent Circuit ID
    Length: 14
    <Value: 0108000600018a9200a000000000>
    Agent Circuit ID: 0108000600018a9200a000000000
  > Option 82 Suboption: (2) Agent Remote ID
    Length: 6
    <Value: 707db9b84daf>
    Agent Remote ID: 707db9b84daf
  > Option 82 Suboption: (151) VRF name/VPN ID
    Length: 9
    <Value: 0074656e616e742d61>
    > VRF name:
  > Option 82 Suboption: (11) Server ID Override (10.10.10.1)
    Length: 4
    <Value: 0a0a0a01>
    Server ID Override: 10.10.10.1
  > Option 82 Suboption: (5) Link selection (10.10.10.0)
    Length: 4
    <Value: 0a0a0a00>
    Link selection: 10.10.10.0
  > Option: (255) End
    Option End: 255
```

ACK enviado por servidor DHCP

```

> Ethernet II, Src: 00:50:56:a5:dc:ca, Dst: 00:00:0a:0a:0a:0a
> Internet Protocol Version 4, Src: 10.10.10.150, Dst: 172.16.10.8
> User Datagram Protocol, Src Port: 67, Dst Port: 67
> Dynamic Host Configuration Protocol (ACK)
  Message type: Boot Reply (2)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 0
  Transaction ID: 0xe9e35087
  Seconds elapsed: 0
  > Bootp flags: 0x8000, Broadcast flag (Broadcast)
    1... .... .... .... = Broadcast flag: Broadcast
    .000 0000 0000 0000 = Reserved flags: 0x0000
  Client IP address: 0.0.0.0
  Your (client) IP address: 10.10.10.3
  Next server IP address: 0.0.0.0
  Relay agent IP address: 172.16.10.8
  Client MAC address: 00:50:56:a5:fd:dd
  Client hardware address padding: 00000000000000000000
  Server host name not given
  Boot file name not given
  Magic cookie: DHCP
  > Option: (53) DHCP Message Type (ACK)
    Length: 1
    <Value: 05>
    DHCP: ACK (5)
  > Option: (58) Renewal Time Value
    Length: 4
    <Value: 0000a8c0>
    Renewal Time Value: 12 hours (43200)
  > Option: (59) Rebinding Time Value
    Length: 4
    <Value: 00012750>
    Rebinding Time Value: 21 hours (75600)
  > Option: (51) IP Address Lease Time
    Length: 4
    <Value: 00015180>
    IP Address Lease Time: 1 day (86400)
  > Option: (54) DHCP Server Identifier (10.10.10.1)
    Length: 4
    <Value: 0a0a0a01>
    DHCP Server Identifier: 10.10.10.1
  > Option: (1) Subnet Mask (255.255.255.0)
    Length: 4
    <Value: ffffffff00>
    Subnet Mask: 255.255.255.0
  > Option: (81) Client Fully Qualified Domain Name
    Length: 3
    <Value: 00ffff>
    > Flags: 0x00
    A-RR result: 255
    PTR-RR result: 255
  > Option: (3) Router
    Length: 4
    <Value: 0a0a0a01>
    Router: 10.10.10.1
  > Option: (15) Domain Name
    Length: 10
    <Value: 636973636f2e636f6d00>
    Domain Name: cisco.com
  > Option: (82) Agent Information Option
    Length: 47
    <Value: 010e0108000600018a9200a000000000206707db9b84daf97090074656e616e742d610b040a0a0105040a0a0a00>
  > Option 82 Suboption: (1) Agent Circuit ID
    Length: 14
    <Value: 0108000600018a9200a000000000>
    Agent Circuit ID: 0108000600018a9200a000000000
  > Option 82 Suboption: (2) Agent Remote ID
    Length: 6
    <Value: 707db9b84daf>
    Agent Remote ID: 707db9b84daf
  > Option 82 Suboption: (151) VRF name/VPN ID
    Length: 9
    <Value: 0074656e616e742d61>
  > VRF name:
    > [Expert Info (Warning/Undecoded): Trailing stray characters]
      [Trailing stray characters]
      <Message: Trailing stray characters>
      [Severity level: Warning]
      [Group: Undecoded]
  > Option 82 Suboption: (11) Server ID Override (10.10.10.1)
    Length: 4
    <Value: 0a0a0a01>
    Server ID Override: 10.10.10.1
  > Option 82 Suboption: (5) Link selection (10.10.10.0)
    Length: 4
    <Value: 0a0a0a00>
    Link selection: 10.10.10.0
  > Option: (255) End
    Option End: 255

```

ACK en LEAF-2-vPC

ACK recibido en LEAF-2-vPC	ACK enviado por LEAF-2-vPC
<pre> Ethernet II, Src: 00:50:56:a5:dc:ca, Dst: 00:00:0a:0a:0a:0a Internet Protocol Version 4, Src: 10.10.10.150, Dst: 172.16.10.8 User Datagram Protocol, Src Port: 67, Dst Port: 67 Dynamic Host Configuration Protocol (ACK) Message type: Boot Reply (2) Hardware type: Ethernet (0x01) Hardware address length: 6 Hops: 0 Transaction ID: 0xe9e35087 Seconds elapsed: 0 Bootp flags: 0x0000, Broadcast flag (Broadcast) 1... = Broadcast flag: Broadcast .000 0000 0000 0000 = Reserved flags: 0x0000 Client IP address: 0.0.0.0 Your (client) IP address: 10.10.10.3 Next server IP address: 0.0.0.0 Relay agent IP address: 172.16.10.8 Client MAC address: 00:50:56:a5:fd:dd Client hardware address padding: 00000000000000000000 Server host name not given Boot file name not given Magic cookie: DHCP Option: (53) DHCP Message Type (ACK) Length: 1 <Value: 05> DHCP: ACK (5) Option: (58) Renewal Time Value Length: 4 <Value: 0000a8c0> Renewal Time Value: 12 hours (43200) Option: (59) Rebinding Time Value Length: 4 <Value: 00012750> Rebinding Time Value: 21 hours (75600) Option: (51) IP Address Lease Time Length: 4 <Value: 00015180> IP Address Lease Time: 1 day (86400) Option: (54) DHCP Server Identifier (10.10.10.1) Length: 4 <Value: 0a0a0a01> DHCP Server Identifier: 10.10.10.1 Option: (1) Subnet Mask (255.255.255.0) Length: 4 <Value: ffffffff00> Subnet Mask: 255.255.255.0 Option: (81) Client Fully Qualified Domain Name Length: 3 <Value: 00ffff> Flags: 0x00 A-RR result: 255 PTR-RR result: 255 Option: (3) Router Length: 4 <Value: 0a0a0a01> Router: 10.10.10.1 Option: (15) Domain Name Length: 10 <Value: 636973636f2e636f6d00> Domain Name: cisco.com Option: (82) Agent Information Option Length: 47 <Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00> Option 82 Suboption: (1) Agent Circuit ID Length: 14 <Value: 0108000600018a9200a000000000> Agent Circuit ID: 0108000600018a9200a000000000 Option 82 Suboption: (2) Agent Remote ID Length: 6 <Value: 707db9b84daf> Agent Remote ID: 707db9b84daf Option 82 Suboption: (151) VRF name/VPN ID Length: 9 <Value: 0074656e616e742d061> VRF name: [Expert Info (Warning/Undecoded): Trailing stray characters] [Trailing stray characters] <Message: Trailing stray characters> [Severity level: Warning] [Group: Undecoded] Option 82 Suboption: (11) Server ID Override (10.10.10.1) Length: 4 <Value: 0a0a0a01> Server ID Override: 10.10.10.1 Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <Value: 0a0a0a00> Link selection: 10.10.10.0 Option: (255) End Option End: 255 </pre>	<pre> Ethernet II, Src: 00:26:aa:85:95:07, Dst: 10:b3:d6:04:85:97 Internet Protocol Version 4, Src: 13.13.13.254, Dst: 5.5.5.5 User Datagram Protocol, Src Port: 65518, Dst Port: 4789 Virtual eXtensible Local Area Network Flags: 0x0000, VXLAN Network ID (VNI) Group Policy ID: 0 VXLAN Network Identifier (VNI): 303030 Reserved: 0 Ethernet II, Src: 02:00:0d:0d:0d:fe, Dst: 70:7d:b9:b8:4d:af Internet Protocol Version 4, Src: 10.10.10.150, Dst: 172.16.10.8 User Datagram Protocol, Src Port: 67, Dst Port: 67 Dynamic Host Configuration Protocol (ACK) Message type: Boot Reply (2) Hardware type: Ethernet (0x01) Hardware address length: 6 Hops: 0 Transaction ID: 0xe9e35087 Seconds elapsed: 0 Bootp flags: 0x0000, Broadcast flag (Broadcast) 1... = Broadcast flag: Broadcast .000 0000 0000 0000 = Reserved flags: 0x0000 Client IP address: 0.0.0.0 Your (client) IP address: 10.10.10.3 Next server IP address: 0.0.0.0 Relay agent IP address: 172.16.10.8 Client MAC address: 00:50:56:a5:fd:dd Client hardware address padding: 00000000000000000000 Server host name not given Boot file name not given Magic cookie: DHCP Option: (53) DHCP Message Type (ACK) Length: 1 <Value: 05> DHCP: ACK (5) Option: (58) Renewal Time Value Length: 4 <Value: 0000a8c0> Renewal Time Value: 12 hours (43200) Option: (59) Rebinding Time Value Length: 4 <Value: 00012750> Rebinding Time Value: 21 hours (75600) Option: (51) IP Address Lease Time Length: 4 <Value: 00015180> IP Address Lease Time: 1 day (86400) Option: (54) DHCP Server Identifier (10.10.10.1) Length: 4 <Value: 0a0a0a01> DHCP Server Identifier: 10.10.10.1 Option: (1) Subnet Mask (255.255.255.0) Length: 4 <Value: ffffffff00> Subnet Mask: 255.255.255.0 Option: (81) Client Fully Qualified Domain Name Length: 3 <Value: 00ffff> Flags: 0x00 .000 = Reserved flags: 0x0 ... 0... = Server DNS: Some server updates 0. = Encoding: ASCII encoding 0. = Server overrides: No override 0 = Server: Client A-RR result: 255 PTR-RR result: 255 Option: (3) Router Length: 4 <Value: 0a0a0a01> Router: 10.10.10.1 Option: (15) Domain Name Length: 10 <Value: 636973636f2e636f6d00> Domain Name: cisco.com Option: (82) Agent Information Option Length: 47 <Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00> Option 82 Suboption: (1) Agent Circuit ID Length: 14 <Value: 0108000600018a9200a000000000> Agent Circuit ID: 0108000600018a9200a000000000 Option 82 Suboption: (2) Agent Remote ID Length: 6 <Value: 707db9b84daf> Agent Remote ID: 707db9b84daf Option 82 Suboption: (151) VRF name/VPN ID Length: 9 <Value: 0074656e616e742d061> VRF name: [Expert Info (Warning/Undecoded): Trailing stray characters] [Trailing stray characters] <Message: Trailing stray characters> [Severity level: Warning] [Group: Undecoded] Option 82 Suboption: (11) Server ID Override (10.10.10.1) Length: 4 <Value: 0a0a0a01> Server ID Override: 10.10.10.1 Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <Value: 0a0a0a00> Link selection: 10.10.10.0 Option: (255) End Option End: 255 </pre>

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ACK en COLUMNA VERTEBRAL

ACK recibido en COLUMNA VERTEBRAL	ACK enviado por SPINE
<pre> Ethernet II, Src: 00:126:aa:85:95:87, Dst: 10:b3:06:a4:85:97 Internet Protocol Version 4, Src: 13.13.13.254, Dst: 5.5.5.5 User Datagram Protocol, Src Port: 65518, Dst Port: 4789 Virtual eXtensible Local Area Network Flags: 0x0000, VXLAN Network ID (VNI) Group Policy ID: 0 VXLAN Network Identifier (VNI): 303030 Reserved: 0 Ethernet II, Src: 02:00:0d:0d:0d:fe, Dst: 70:7d:b9:b8:4d:af Internet Protocol Version 4, Src: 10.10.10.150, Dst: 172.16.10.8 User Datagram Protocol, Src Port: 67, Dst Port: 67 Dynamic Host Configuration Protocol (ACK) Message type: Boot Reply (2) Hardware type: Ethernet (0x01) Hardware address length: 6 Hops: 0 Transaction ID: 0xe9e35087 Seconds elapsed: 0 Bootp flags: 0x0000, Broadcast flag (Broadcast) 1... .. = Broadcast flag: Broadcast .000 0000 0000 0000 = Reserved flags: 0x0000 Client IP address: 0.0.0.0 Your (client) IP address: 10.10.10.3 Next server IP address: 0.0.0.0 Relay agent IP address: 172.16.10.8 Client MAC address: 00:50:56:a5:fd:dd Client hardware address padding: 00000000000000000000 Server host name not given Boot file name not given Magic cookie: DHCP Option: (53) DHCP Message Type (ACK) Length: 1 <Value: 05> DHCP: ACK (5) Option: (58) Renewal Time Value Length: 4 <Value: 0000a8c0> Renewal Time Value: 12 hours (43200) Option: (59) Rebinding Time Value Length: 4 <Value: 00012750> Rebinding Time Value: 21 hours (75600) Option: (51) IP Address Lease Time Length: 4 <Value: 00015180> Option: (54) DHCP Server Identifier (10.10.10.1) Length: 4 <Value: 0a0a0a01> DHCP Server Identifier: 10.10.10.1 Option: (1) Subnet Mask (255.255.255.0) Length: 4 <Value: ffffffff00> Subnet Mask: 255.255.255.0 Option: (81) Client Fully Qualified Domain Name Length: 3 <Value: 00ffff> Flags: 0x00 0000 = Reserved flags: 0x0 ... 0... = Server DNS: Some server updates 0. = Encoding: ASCII encoding 0. = Server overrides: No override 0 = Server: Client A-RR result: 255 PTR-RR result: 255 Option: (3) Router Length: 4 <Value: 0a0a0a01> Router: 10.10.10.1 Option: (15) Domain Name Length: 10 <Value: 636973636f2e636f6000> Domain Name: cisco.com Option: (82) Agent Information Option Length: 47 <Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0105040a0a0000> Option 82 Suboption: (1) Agent Circuit ID Length: 14 <Value: 0108000600018a9200a00000000000> Agent Circuit ID: 0108000600018a9200a000000000 Option 82 Suboption: (2) Agent Remote ID Length: 6 <Value: 707db9b84daf> Agent Remote ID: 707db9b84daf Option 82 Suboption: (151) VRF name/VPN ID Length: 9 <Value: 0074656e616e742d61> VRF name: [Expert Info (Warning/Undecoded): Trailing stray characters] [Trailing stray characters] <Message: Trailing stray characters> [Severity level: Warning] [Group: Undecoded] Option 82 Suboption: (11) Server ID Override (10.10.10.1) Length: 4 <Value: 0a0a0a01> Server ID Override: 10.10.10.1 Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <Value: 0a0a0a00> Link selection: 10.10.10.0 Option: (255) End Option End: 255 </pre>	<pre> Ethernet II, Src: 10:b3:06:a4:85:97, Dst: 70:7d:b9:b8:4d:af Internet Protocol Version 4, Src: 10.10.10.150, Dst: 172.16.10.8 User Datagram Protocol, Src Port: 65518, Dst Port: 4789 Virtual eXtensible Local Area Network Flags: 0x0000, VXLAN Network ID (VNI) Group Policy ID: 0 VXLAN Network Identifier (VNI): 303030 Reserved: 0 Ethernet II, Src: 02:00:0d:0d:0d:fe, Dst: 70:7d:b9:b8:4d:af Internet Protocol Version 4, Src: 10.10.10.150, Dst: 172.16.10.8 User Datagram Protocol, Src Port: 67, Dst Port: 67 Dynamic Host Configuration Protocol (ACK) Message type: Boot Reply (2) Hardware type: Ethernet (0x01) Hardware address length: 6 Hops: 0 Transaction ID: 0xe9e35087 Seconds elapsed: 0 Bootp flags: 0x0000, Broadcast flag (Broadcast) 1... .. = Broadcast flag: Broadcast .000 0000 0000 0000 = Reserved flags: 0x0000 Client IP address: 0.0.0.0 Your (client) IP address: 10.10.10.3 Next server IP address: 0.0.0.0 Relay agent IP address: 172.16.10.8 Client MAC address: 00:50:56:a5:fd:dd Client hardware address padding: 00000000000000000000 Server host name not given Boot file name not given Magic cookie: DHCP Option: (53) DHCP Message Type (ACK) Length: 1 <Value: 05> DHCP: ACK (5) Option: (58) Renewal Time Value Length: 4 <Value: 0000a8c0> Renewal Time Value: 12 hours (43200) Option: (59) Rebinding Time Value Length: 4 <Value: 00012750> Rebinding Time Value: 21 hours (75600) Option: (51) IP Address Lease Time Length: 4 <Value: 00015180> Option: (54) DHCP Server Identifier (10.10.10.1) Length: 4 <Value: 0a0a0a01> DHCP Server Identifier: 10.10.10.1 Option: (1) Subnet Mask (255.255.255.0) Length: 4 <Value: ffffffff00> Subnet Mask: 255.255.255.0 Option: (81) Client Fully Qualified Domain Name Length: 3 <Value: 00ffff> Flags: 0x00 0000 = Reserved flags: 0x0 ... 0... = Server DNS: Some server updates 0. = Encoding: ASCII encoding 0. = Server overrides: No override 0 = Server: Client A-RR result: 255 PTR-RR result: 255 Option: (3) Router Length: 4 <Value: 0a0a0a01> Router: 10.10.10.1 Option: (15) Domain Name Length: 10 <Value: 636973636f2e636f6000> Domain Name: cisco.com Option: (82) Agent Information Option Length: 47 <Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0105040a0a0000> Option 82 Suboption: (1) Agent Circuit ID Length: 14 <Value: 0108000600018a9200a00000000000> Agent Circuit ID: 0108000600018a9200a000000000 Option 82 Suboption: (2) Agent Remote ID Length: 6 <Value: 707db9b84daf> Agent Remote ID: 707db9b84daf Option 82 Suboption: (151) VRF name/VPN ID Length: 9 <Value: 0074656e616e742d61> VRF name: [Expert Info (Warning/Undecoded): Trailing stray characters] [Trailing stray characters] <Message: Trailing stray characters> [Severity level: Warning] [Group: Undecoded] Option 82 Suboption: (11) Server ID Override (10.10.10.1) Length: 4 <Value: 0a0a0a01> Server ID Override: 10.10.10.1 Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <Value: 0a0a0a00> Link selection: 10.10.10.0 Option: (255) End Option End: 255 </pre>

ACK en LEAF-1

ACK recibido en LEAF-1	ACK enviado por LEAF-1
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<pre> > Ethernet II, Src: 10:b3:06:a4:85:97, Dst: 70:7d:b9:b8:4d:af > Internet Protocol Version 4, Src: 13.13.13.254, Dst: 5.5.5.5 > User Datagram Protocol, Src Port: 65518, Dst Port: 4789 > Virtual eXtensible Local Area Network > Flags: 0x0000, VLAN Network ID (VNI) Group Policy ID: 0 VLAN Network Identifier (VNI): 303030 Reserved: 0 > Ethernet II, Src: 02:00:0d:0d:0d:fe, Dst: 70:7d:b9:b8:4d:af > Internet Protocol Version 4, Src: 10.10.10.150, Dst: 172.16.10.8 > User Datagram Protocol, Src Port: 67, Dst Port: 67 > Dynamic Host Configuration Protocol (ACK) Message type: Boot Reply (2) Hardware type: Ethernet (0x01) Hardware address length: 6 Hops: 0 Transaction ID: 0xe9e35087 Seconds elapsed: 0 > Bootp flags: 0x0000, Broadcast flag (Broadcast) 1... = Broadcast flag: Broadcast .000 0000 0000 0000 = Reserved flags: 0x0000 Client IP address: 0.0.0.0 Your (client) IP address: 10.10.10.3 Next server IP address: 0.0.0.0 Relay agent IP address: 172.16.10.8 Client MAC address: 00:50:56:a5:fd:dd Client hardware address padding: 00000000000000000000 Server host name not given Boot file name not given Magic cookie: DHCP > Option: (53) DHCP Message Type (ACK) Length: 1 <Value: 05> DHCP: ACK (5) > Option: (58) Renewal Time Value Length: 4 <Value: 0000a8c0> Renewal Time Value: 12 hours (43200) > Option: (59) Rebinding Time Value Length: 4 <Value: 00012750> Rebinding Time Value: 21 hours (75600) > Option: (51) IP Address Lease Time Length: 4 <Value: 00015180> IP Address Lease Time: 1 day (86400) > Option: (54) DHCP Server Identifier (10.10.10.1) Length: 4 <Value: 0a0a0a01> DHCP Server Identifier: 10.10.10.1 > Option: (1) Subnet Mask (255.255.255.0) Length: 4 <Value: ffffffff00> Subnet Mask: 255.255.255.0 > Option: (81) Client Fully Qualified Domain Name Length: 3 <Value: 00ffff> > Flags: 0x00 0000 = Reserved flags: 0x0 0... = Server DNS: Some server updates 0.. = Encoding: ASCII encoding 0. = Server overrides: No override 0 = Server: Client A-RR result: 255 PTR-RR result: 255 > Option: (3) Router Length: 4 <Value: 0a0a0a01> Router: 10.10.10.1 > Option: (15) Domain Name Length: 10 <Value: 636973636f2e636f6d00> Domain Name: cisco.com > Option: (82) Agent Information Option Length: 47 <Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d6100040a0a0105040a0a000> > Option 82 Suboption: (1) Agent Circuit ID Length: 14 <Value: 0180000600018a9200a0000000000000> Agent Circuit ID: 0180000600018a9200a0000000000000 > Option 82 Suboption: (2) Agent Remote ID Length: 6 <Value: 707db9b84daf> Agent Remote ID: 707db9b84daf > Option 82 Suboption: (151) VRF name/VPN ID Length: 9 <Value: 0074656e616e742d61> > VRF name: > [Expert Info (Warning/Undecoded): Trailing stray characters] [Trailing stray characters] <Message: Trailing stray characters> [Severity level: Warning] [Group: Undecoded] > Option 82 Suboption: (11) Server ID Override (10.10.10.1) Length: 4 <Value: 0a0a0a01> Server ID Override: 10.10.10.1 > Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <Value: 0a0a0a00> Link selection: 10.10.10.0 > Option: (255) End Option End: 255 </pre>	<pre> > Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: ff:ff:ff:ff:ff:ff > Internet Protocol Version 4, Src: 10.10.10.1, Dst: 255.255.255.255 > User Datagram Protocol, Src Port: 67, Dst Port: 68 > Dynamic Host Configuration Protocol (ACK) Message type: Boot Reply (2) Hardware type: Ethernet (0x01) Hardware address length: 6 Hops: 0 Transaction ID: 0xe9e35087 Seconds elapsed: 0 > Bootp flags: 0x0000, Broadcast flag (Broadcast) 1... = Broadcast flag: Broadcast .000 0000 0000 0000 = Reserved flags: 0x0000 Client IP address: 0.0.0.0 Your (client) IP address: 10.10.10.3 Next server IP address: 0.0.0.0 Relay agent IP address: 10.10.10.1 Client MAC address: 00:50:56:a5:fd:dd Client hardware address padding: 00000000000000000000 Server host name not given Boot file name not given Magic cookie: DHCP > Option: (53) DHCP Message Type (ACK) Length: 1 <Value: 05> DHCP: ACK (5) > Option: (58) Renewal Time Value Length: 4 <Value: 0000a8c0> Renewal Time Value: 12 hours (43200) > Option: (59) Rebinding Time Value Length: 4 <Value: 00012750> Rebinding Time Value: 21 hours (75600) > Option: (51) IP Address Lease Time Length: 4 <Value: 00015180> IP Address Lease Time: 1 day (86400) > Option: (54) DHCP Server Identifier (10.10.10.1) Length: 4 <Value: 0a0a0a01> DHCP Server Identifier: 10.10.10.1 > Option: (1) Subnet Mask (255.255.255.0) Length: 4 <Value: ffffffff00> Subnet Mask: 255.255.255.0 > Option: (81) Client Fully Qualified Domain Name Length: 3 <Value: 00ffff> > Flags: 0x00 0000 = Reserved flags: 0x0 0... = Server DNS: Some server updates 0.. = Encoding: ASCII encoding 0. = Server overrides: No override 0 = Server: Client A-RR result: 255 PTR-RR result: 255 > Option: (3) Router Length: 4 <Value: 0a0a0a01> Router: 10.10.10.1 > Option: (15) Domain Name Length: 10 <Value: 636973636f2e636f6d00> Domain Name: cisco.com > Option: (255) End Option End: 255 </pre>
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ACK en HOST-1


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> Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: ff:ff:ff:ff:ff:ff
> Internet Protocol Version 4, Src: 10.10.10.1, Dst: 255.255.255.255
> User Datagram Protocol, Src Port: 67, Dst Port: 68
< Dynamic Host Configuration Protocol (ACK)
  Message type: Boot Reply (2)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 0
  Transaction ID: 0xe9e35087
  Seconds elapsed: 0
< Bootp flags: 0x8000, Broadcast flag (Broadcast)
  1... .... .... .... = Broadcast flag: Broadcast
  .000 0000 0000 0000 = Reserved flags: 0x0000
  Client IP address: 0.0.0.0
  Your (client) IP address: 10.10.10.3
  Next server IP address: 0.0.0.0
  Relay agent IP address: 10.10.10.1
  Client MAC address: 00:50:56:a5:fd:dd
  Client hardware address padding: 00000000000000000000
  Server host name not given
  Boot file name not given
  Magic cookie: DHCP
< Option: (53) DHCP Message Type (ACK)
  Length: 1
  <Value: 05>
  DHCP: ACK (5)
< Option: (58) Renewal Time Value
  Length: 4
  <Value: 0000a8c0>
  Renewal Time Value: 12 hours (43200)
< Option: (59) Rebinding Time Value
  Length: 4
  <Value: 00012750>
  Rebinding Time Value: 21 hours (75600)
< Option: (51) IP Address Lease Time
  Length: 4
  <Value: 00015180>
  IP Address Lease Time: 1 day (86400)
< Option: (54) DHCP Server Identifier (10.10.10.1)
  Length: 4
  <Value: 0a0a0a01>
  DHCP Server Identifier: 10.10.10.1
< Option: (1) Subnet Mask (255.255.255.0)
  Length: 4
  <Value: ffffff00>
  Subnet Mask: 255.255.255.0
< Option: (81) Client Fully Qualified Domain Name
  Length: 3
  <Value: 00ffff>
  < Flags: 0x00
    0000 .... = Reserved flags: 0x0
    .... 0... = Server DDNS: Some server updates
    .... .0.. = Encoding: ASCII encoding
    .... ..0. = Server overrides: No override
    .... ...0 = Server: Client
  A-RR result: 255
  PTR-RR result: 255
< Option: (3) Router
  Length: 4
  <Value: 0a0a0a01>
  Router: 10.10.10.1
< Option: (15) Domain Name
  Length: 10
  <Value: 636973636f2e636f6d00>
  Domain Name: cisco.com
< Option: (255) End
  Option End: 255

```

Información Relacionada

[Configuración de VXLAN BGP EVPN](#)

[Configuración de VXLAN](#)

[Solución de problemas relacionados con DHCP en Nexus 9000](#)

[Guía de configuración de VXLAN NX-OS para Cisco Nexus serie 9000, versión 10.4\(x\)](#)

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