

# Configuration et vérification de DHCP dans un fabric VxLAN pour Nexus 9000 avec NX-OS et Windows Server 2022

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## Introduction

Ce document décrit comment configurer et dépanner DHCP dans un fabric VxLAN avec des commutateurs Nexus 9000.

## Conditions préalables

### Exigences

Cisco vous recommande de prendre connaissance des rubriques suivantes :

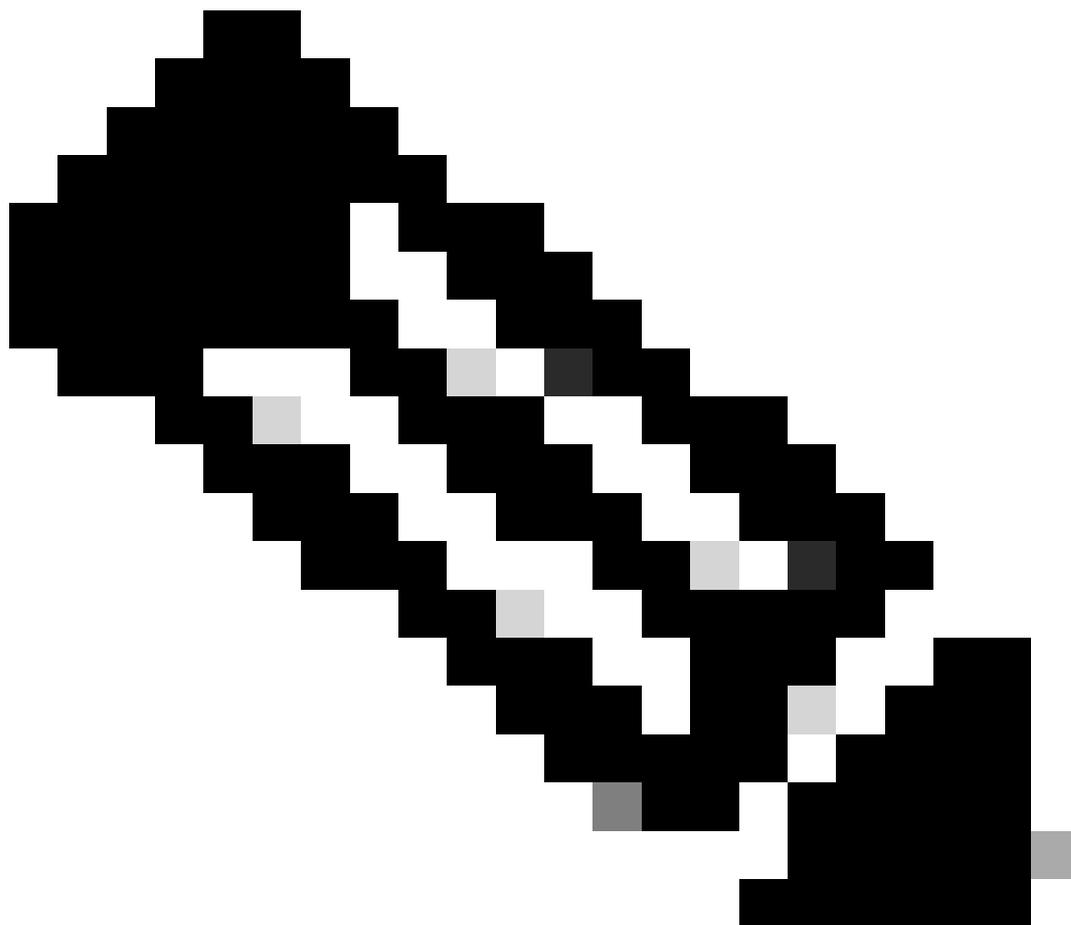
- Logiciel Nexus NX-OS.
- Virtual Port Channel (vPC).
- VxLAN BGP L2VPN EVPN
- BGP address-family IPv4
- OSPF
- PIM multidiffusion (mode intermédiaire)
- DHCP

### Composants utilisés

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

- Cisco Nexus 9000 avec Cisco NX-OS.
  - N9K-C93180YC-EX
  - N9K-C93180YC-FX
  - NX-OS 10.3(4a)
- Centre de données Windows Server 2022

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. Si votre réseau est en ligne, assurez-vous de bien comprendre l'incidence possible des commandes.



Remarque : Toute question relative à la configuration et à l'intégrabilité de logiciels ou de matériels tiers n'est pas prise en charge par Cisco. L'utilisation d'outils tiers est le meilleur moyen de démontrer votre configuration et votre fonctionnement avec les équipements Cisco au client.

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## Informations générales

### Configuration de sous-couche et de superposition pour VxLAN en laboratoire

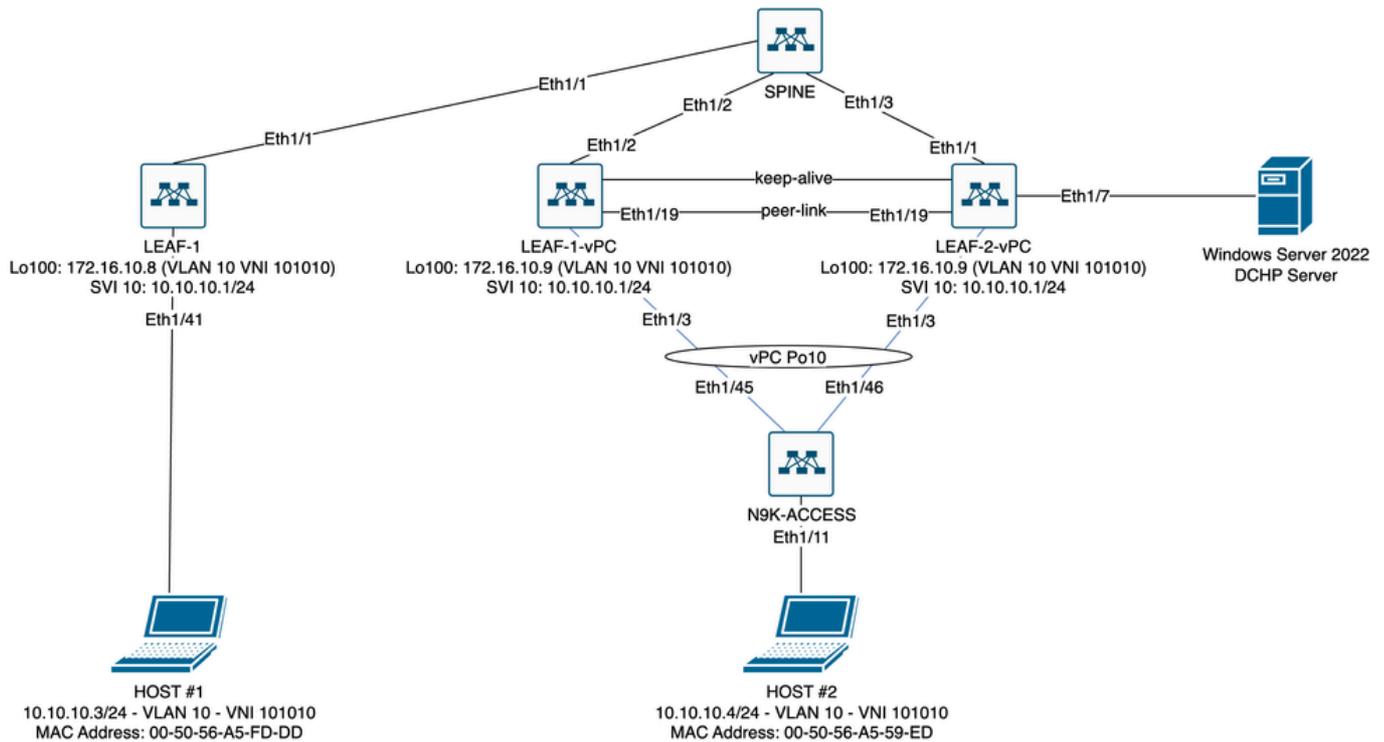


Schéma de fabric VxLAN en laboratoire

- COLONNE VERTÉBRALE :
  - Ce commutateur Nexus envoie des paquets DHCP (Discover, Offer, Request, Ack) sans être décapsulé dans ce scénario. Seul l'en-tête externe est utilisé.
  - Sert de points de routage centraux dans la structure du réseau.
  - Responsable de l'interconnexion de tous les commutateurs LEAF et de la facilitation du flux de données entre eux.
  - Participe au protocole BGP pour distribuer des routes EVPN aux commutateurs LEAF.
  - Effectue le routage IP et peut acheminer le trafic entre différents sous-réseaux ou segments VxLAN en examinant les en-têtes IP externes.
  - Sépare le réseau de superposition (VxLAN) du réseau physique sous-jacent.
  - Gère le sous-réseau avec les protocoles de routage IP traditionnels, tandis que le sous-réseau est géré par VxLAN avec BGP EVPN, fournissant une architecture réseau évolutive et flexible.
- LEAF-1 :
  - Les commutateurs LEAF fournissent une connectivité physique pour les terminaux tels que les serveurs, les périphériques de stockage et d'autres appareils réseau.
  - Les commutateurs LEAF agissent comme des VTEP, ce qui signifie qu'ils encapsulent et désencapsulent les paquets VxLAN.
  - Dans ce scénario, HOST#1 effectue la requête d'adresse IP.
  - LEAF-1 est responsable de l'encapsulation des paquets DHCP dans l'en-tête VxLAN.
  - L'HÔTE 1 reçoit des paquets DHCP de manière transparente en tant qu'Ethernet classique.
- LEAF-1-vPC et LEAF-2-vPC :
  - Les commutateurs LEAF participent au plan de contrôle EVPN en exécutant le protocole BGP et en échangeant des informations de route. Cela permet la distribution

des informations d'adresses MAC et IP, garantissant que le trafic peut être acheminé efficacement à travers le fabric VxLAN.

- Dans ce scénario, le serveur DHCP est associé au VLAN 10 avec le VNI 101010 comme l'est l'HÔTE 1. Cela signifie qu'il s'agit uniquement du pontage VxLAN.
  - Si le serveur DHCP était associé à un VNI autre que l'hôte 1, un L3VNI serait strictement nécessaire pour le routage. Le VNI source et de destination doit être créé.
  - Le serveur DHCP reçoit des paquets DHCP de manière transparente en tant qu'Ethernet classique.
  - Le trafic du module BUM est reçu par les deux commutateurs Nexus dans vPC, mais seul le commutateur Nexus principal opérationnel dans vPC envoie le trafic. Le commutateur Nexus secondaire abandonne le trafic. Dans ce scénario, LEAF-1-vPC est le principal système opérationnel.
  - L'utilisation d'infra-VLAN est obligatoire, car si l'interface de LEAF-2-vPC vers SPINE tombe en panne, les paquets DHCP ne peuvent pas être envoyés. Pour envoyer du trafic encapsulé par VxLAN à LEAF-1-vPC, ce VLAN de sauvegarde est requis. De cette façon, LEAF-1-vPC pouvait envoyer des paquets DHCP à SPINE.
- N9K-ACCESS :
    - Ce commutateur Nexus fournit uniquement la connectivité aux deux leafs à l'aide d'un port-channel vPC à des fins de redondance vers HOST#2

## DOS

```
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
```

## LEAF-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
```

## ACCÈS N9K

```
feature l2cp

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
```

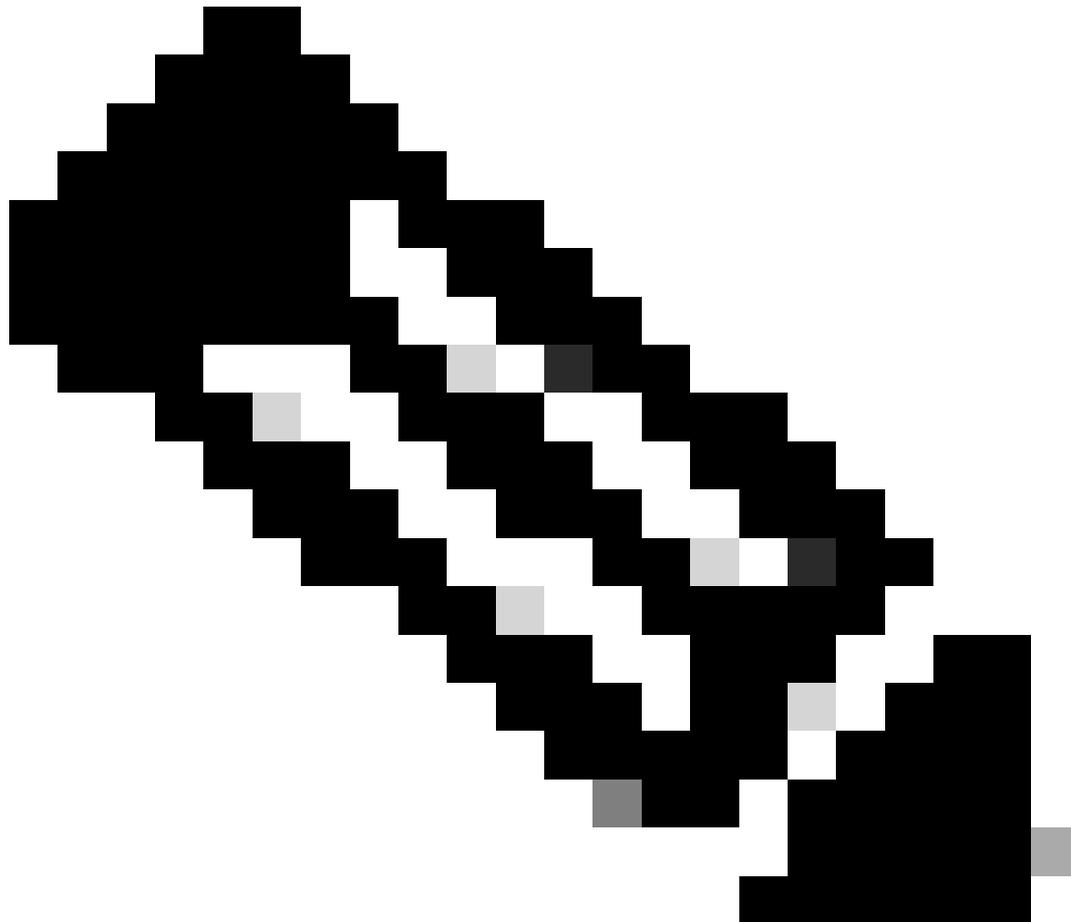
## Configuration DHCP sur les commutateurs Nexus

### LEAF-1

Étape 1 : activation de la fonctionnalité DHCP

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

---



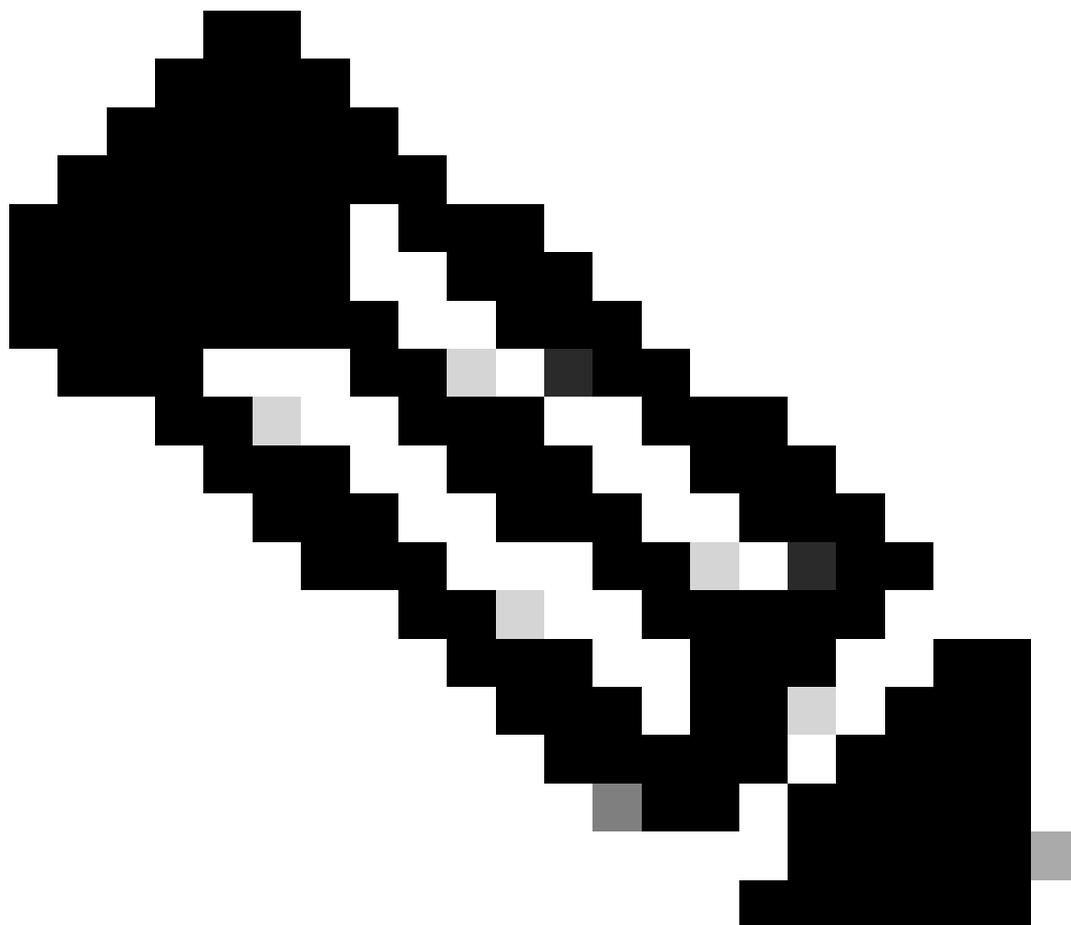
Remarque : Le serveur DHCP et la commande `service dhcp`, `ip dhcp relay` et `ipv6 dhcp relay` de l'agent de relais sont activés par défaut depuis NX-OS 7.x.

---

Étape 2 : application de la commande ip dhcp relay information option.

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

---

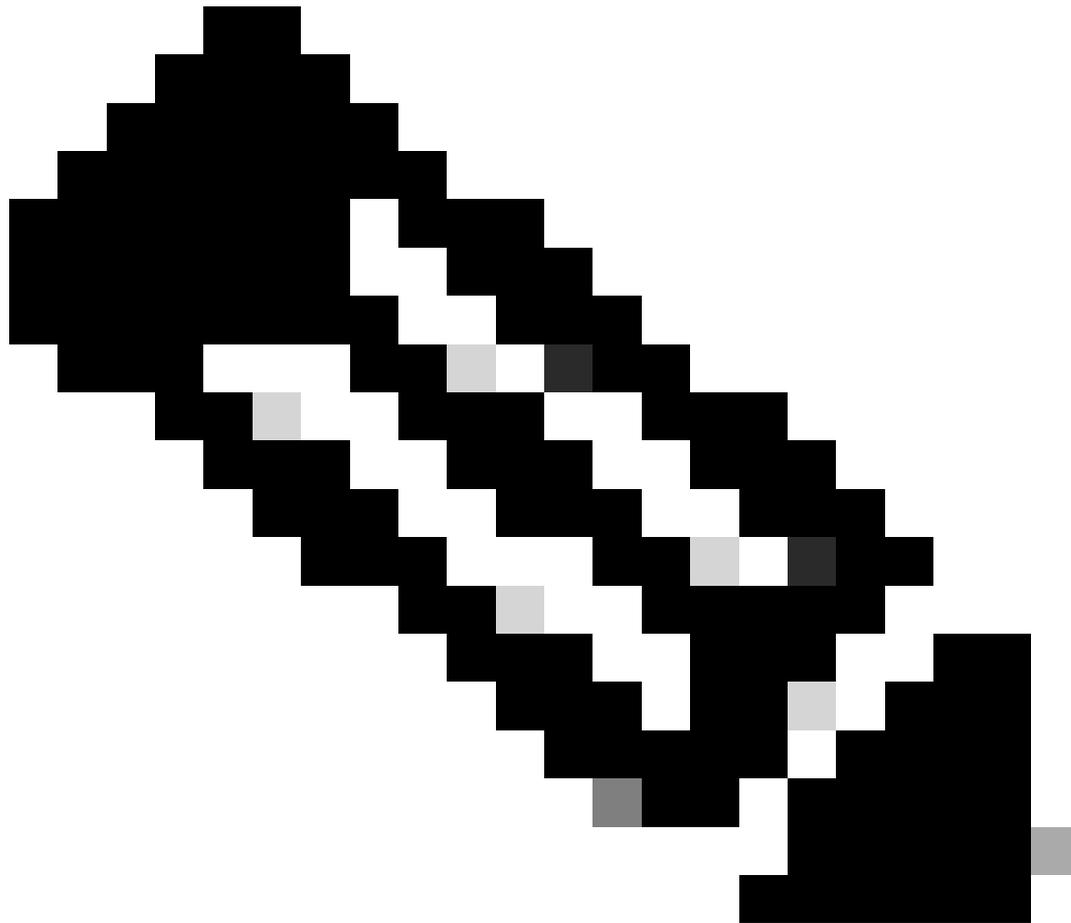


Remarque : Cette commande permet à l'agent de relais DHCP d'insérer et de supprimer des informations de l'option 82 sur les paquets qui sont transférés.

---

Étape 3. Application de la commande ip dhcp relay information option vpn.

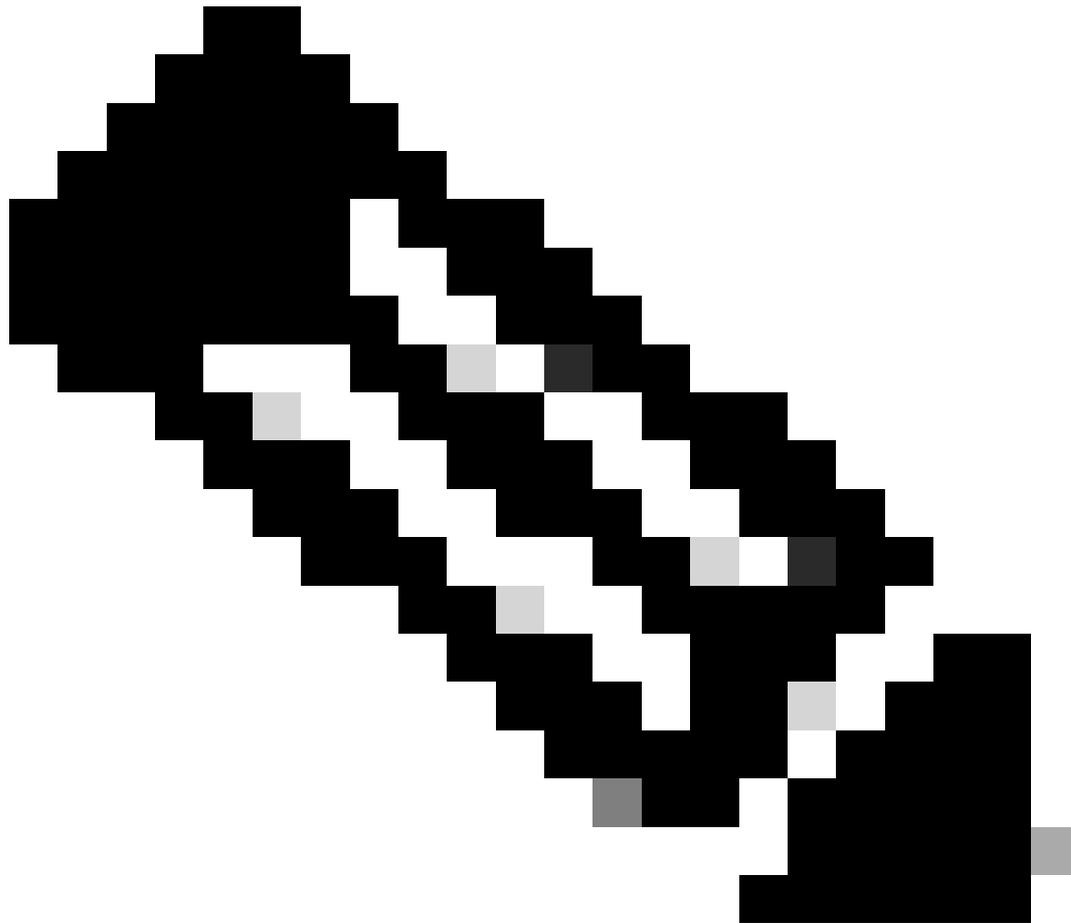
```
LEAF-1(config)# ip dhcp relay information option vpn
```



Remarque : Cette commande active les requêtes de relais DHCP qui arrivent sur un VRF différent auquel appartient le serveur DHCP.

---

Étape 4 : application de la commande « ip dhcp relay address [adresse ip du serveur DHCP] »

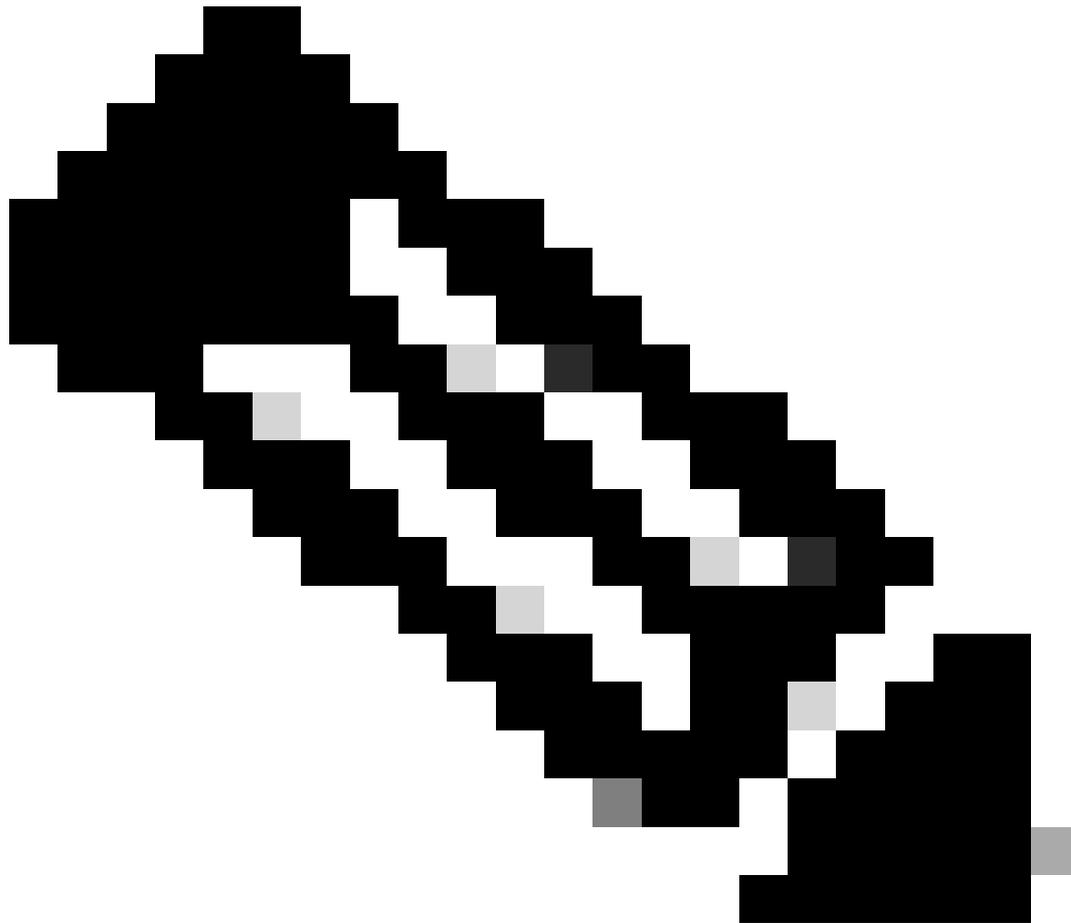


Remarque : Dans cet exemple, l'adresse IP du serveur DHCP est 10.10.10.150.

---

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

Étape 5 : application de la commande « ip dhcp relay source-interface [unique loopback] »



Remarque : Cette commande configure l'adresse IP source de l'agent de relais DHCP pour qu'elle gère les commandes Discover, Offer, Request et ACK pour les communications monodiffusion, l'agent de relais DHCP utilisant l'adresse IP de l'interface SVI comme adresse IP source de l'agent de relais DHCP. Cela n'est pas souhaitable, car cette adresse IP est partagée par plusieurs VTEP et un trou noir des paquets DHCP peut se produire. Pour éviter cela, une adresse IP unique (à l'aide d'une interface de bouclage) est nécessaire pour différencier chaque VTEP.

---

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

Étape 6. Dans le locataire correspondant VRF dans BGP, redistribuez directement la route avec une liste de préfixes et une route-map qui inclut l'adresse IP de l'interface de bouclage.

---

Remarque : Cette interface de bouclage appartient au locataire 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
```

Étape 7. Vérifiez que l'adresse IP de l'interface de bouclage est annoncée dans BGP L2VPN EVPN aux spines avec la commande : `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
```

Étape 8 : vérification de l'injection de l'adresse IP de l'interface de bouclage dans l'EVPN L2VPN BGP où se trouve le serveur DHCP

---

Remarque : S'il y a des commutateurs Nexus dans vPC, vérifiez qu'ils apprennent tous les deux l'adresse IP de l'interface de bouclage dans 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

Étape 9. Vérifiez qu'il existe une route pour le serveur DHCP sur le locataire source avec la commande `show ip route [DHCP server IP] vrf [tenant vrf]`.

---

Remarque : L'entrée de route à utiliser doit être de VxLAN à VRF par défaut. Si aucune route n'est disponible, vérifiez si le VTEP connaît localement l'adresse IP du serveur 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:
```

Étape 10. Vérifiez que l'adresse IP du serveur DHCP est accessible à l'aide de l'interface de bouclage et du VRF correspondant en tant que source VRF avec la commande 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
```

Étape 11. Vérification de l'état de l'agent de relais 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
```

Étape 12. Vérifiez l'option82, telle que l'option vpn et l'adresse IP de relais correcte sous l'agent de relais.

```
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	<<<<<<<<<

### Étape 13. Vérification des statistiques des paquets traités et transférés

```
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
```

### Étape 14. Vérification des statistiques des paquets de relais

```
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:

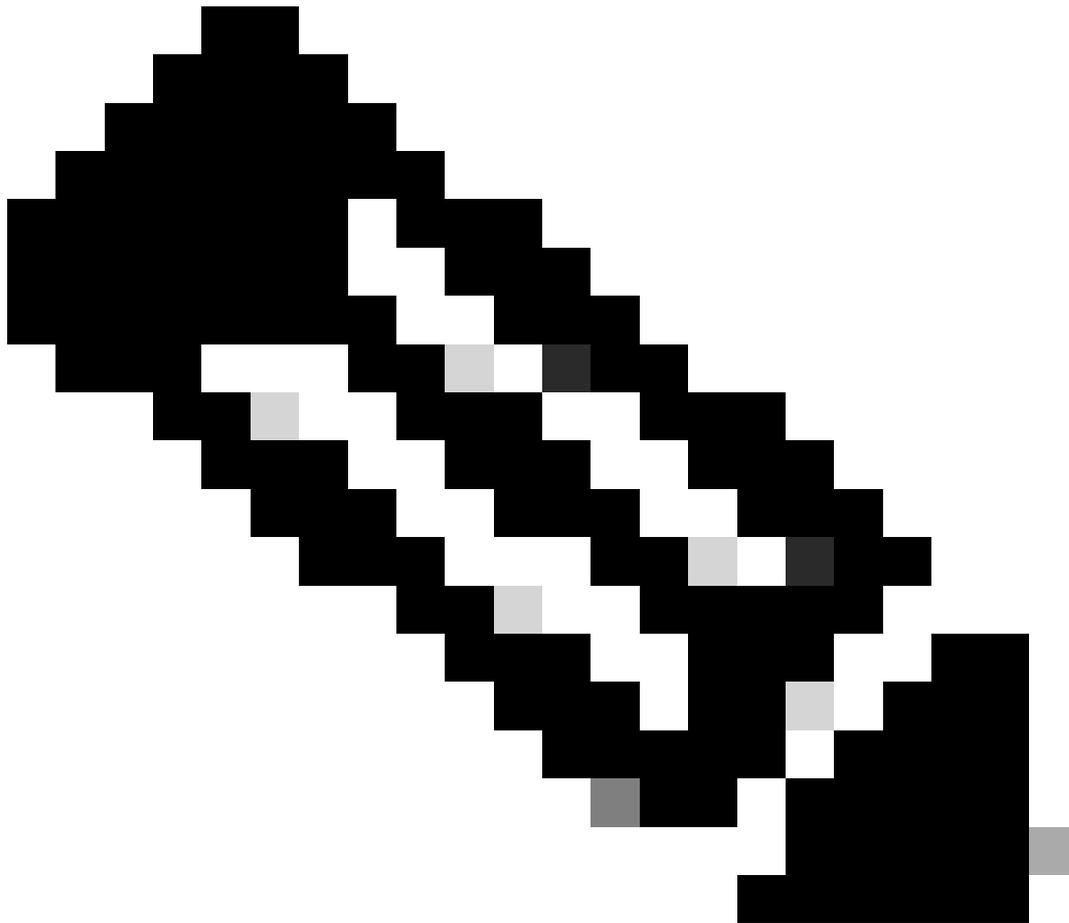
Total Packets Received	:	0
Total Packets Forwarded	:	0
Total Packets Dropped	:	0
Non DHCP:		
Total Packets Received	:	0
Total Packets Forwarded	:	0

```
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 LEAF-1-vPC

Étape 1 : activation de la fonctionnalité DHCP

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

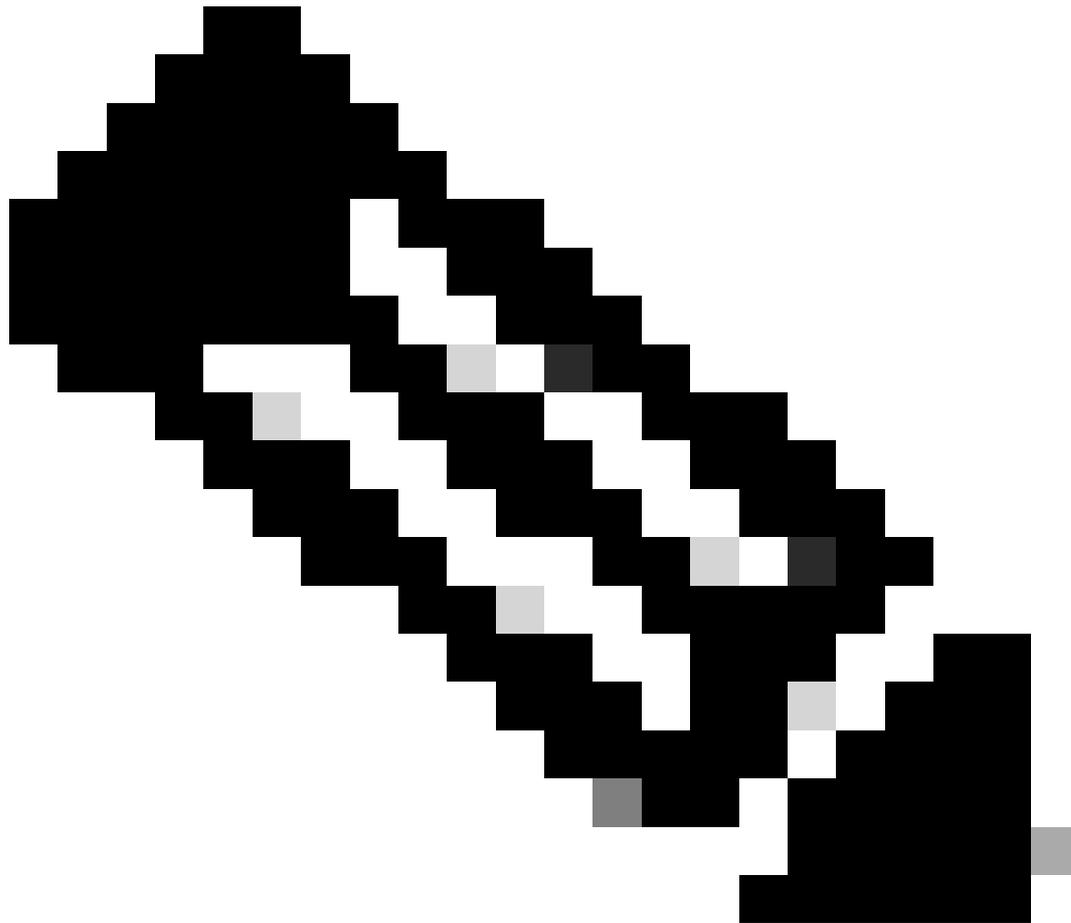


Remarque : Le serveur DHCP et la commande service dhcp, ip dhcp relay et ipv6 dhcp relay de l'agent de relais sont activés par défaut depuis NX-OS 7.x.

---

Étape 2 : application de la commande ip dhcp relay information option.

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

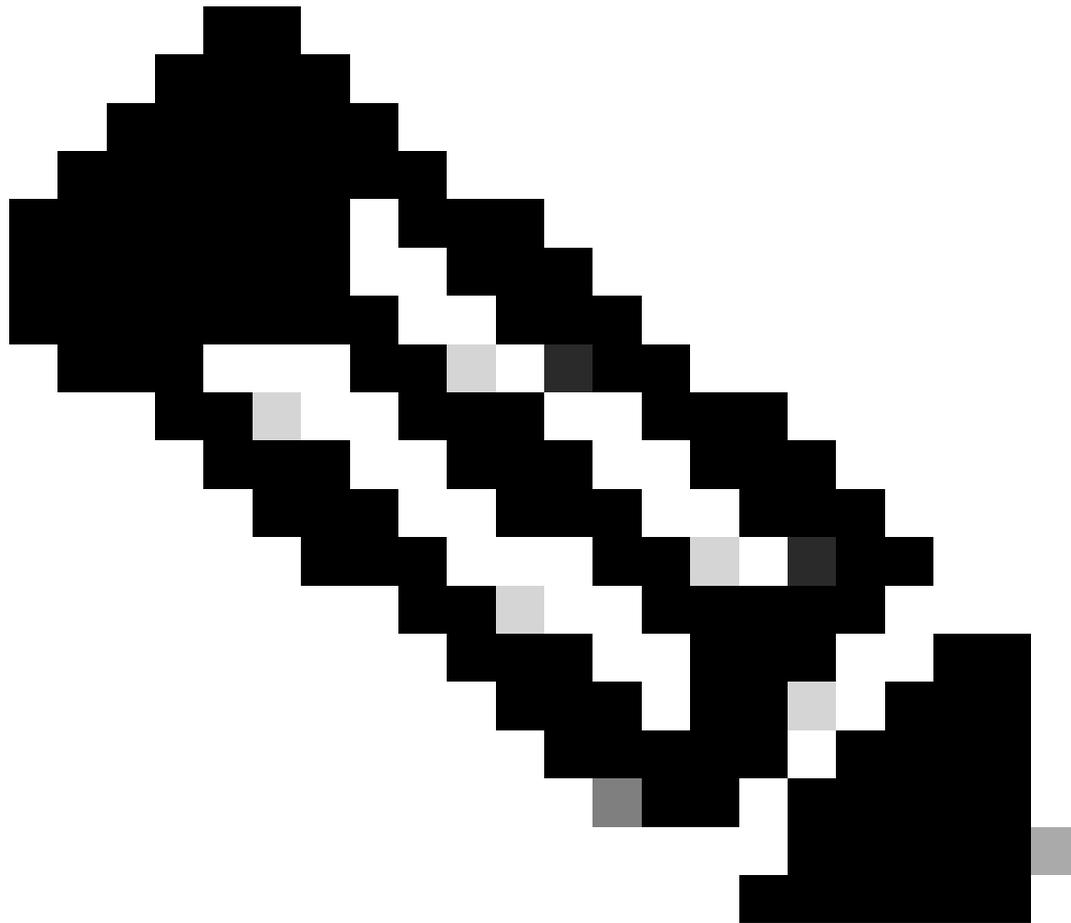


Remarque : Cette commande permet à l'agent de relais DHCP d'insérer et de supprimer des informations de l'option 82 sur les paquets qui sont transférés.

---

Étape 3 : application de la commande « ip dhcp relay information option vpn »

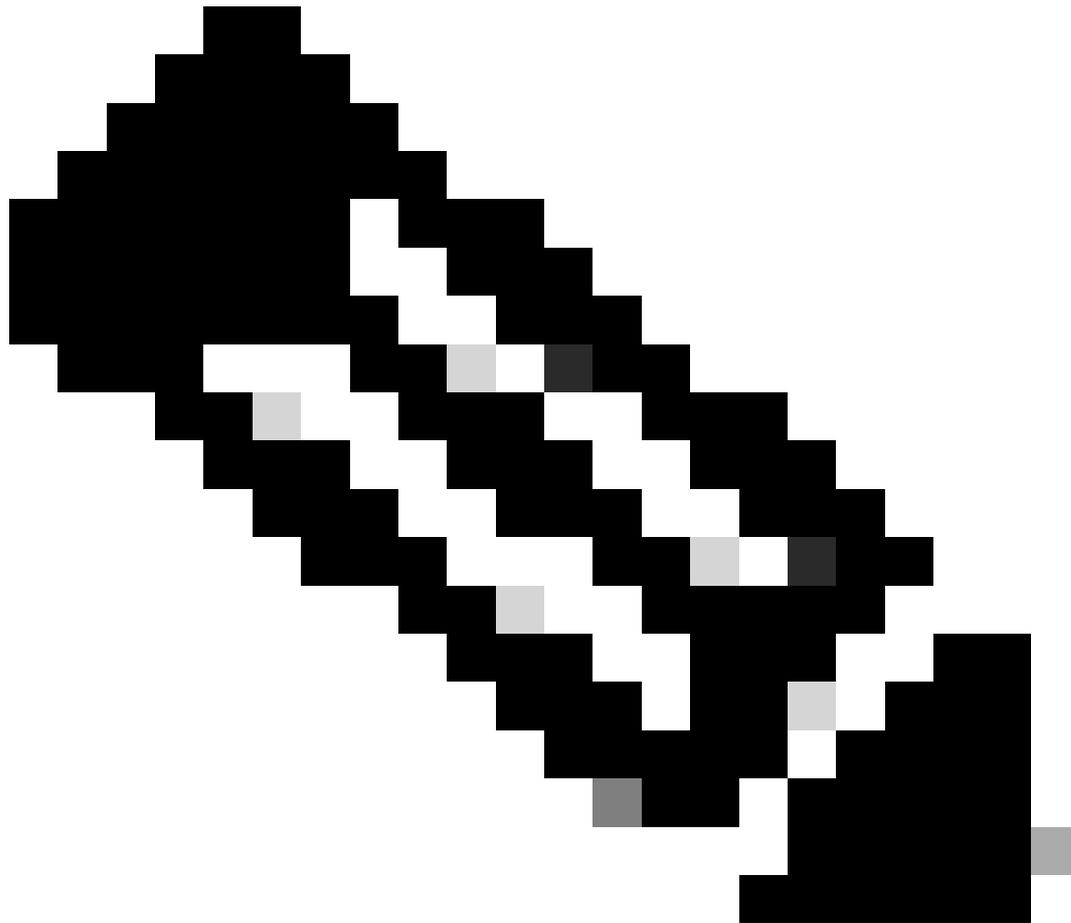
```
LEAF-1-VPC(config)# ip dhcp relay information option vpn
```



Remarque : Cette commande active les requêtes de relais DHCP qui arrivent sur un VRF différent auquel appartient le serveur DHCP.

---

Étape 4. Appliquez la commande `ip dhcp relay address [adresse ip du serveur DHCP]`.

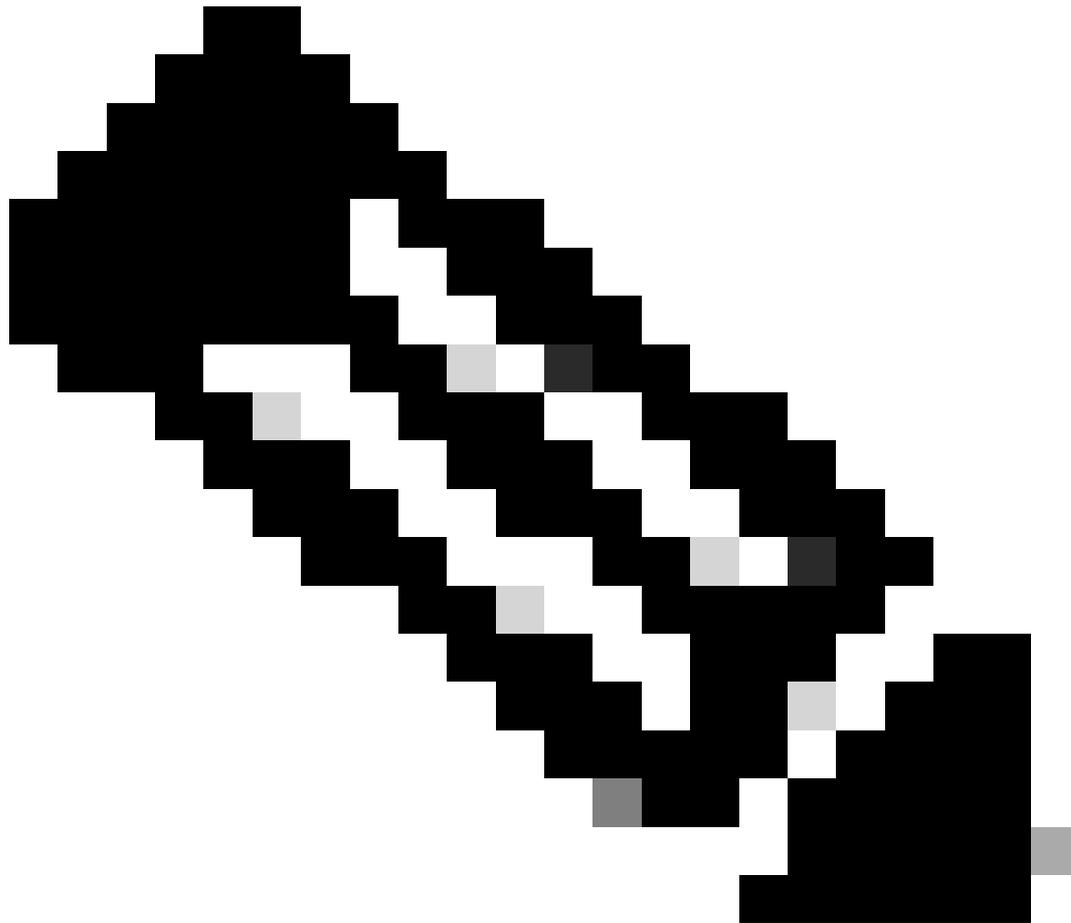


Remarque : Dans cet exemple, l'adresse IP du serveur DHCP est 10.10.10.150.

---

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

Étape 5 : application de la commande « ip dhcp relay source-interface [unique loopback] »



Remarque : Cette commande configure l'adresse IP source de l'agent de relais DHCP pour qu'elle gère les commandes Discover, Offer, Request et ACK pour les communications monodiffusion, l'agent de relais DHCP utilisant l'adresse IP de l'interface SVI comme adresse IP source de l'agent de relais DHCP. Cela n'est pas souhaitable, car cette adresse IP est partagée par plusieurs VTEP et un trou noir des paquets DHCP peut se produire. Pour éviter cela, une adresse IP unique (à l'aide d'une interface de bouclage) est nécessaire pour différencier chaque VTEP.

---

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

Étape 6. Dans le locataire correspondant VRF dans BGP, redistribuez directement la route avec une liste de préfixes et une route-map qui inclut l'adresse IP de l'interface de bouclage.

---

Remarque : Cette interface de bouclage appartient au locataire 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
```

Étape 7. Vérifiez que l'adresse IP de l'interface de bouclage est annoncée dans BGP L2VPN EVPN aux spines avec la commande : `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
```

Étape 8 : vérification de l'injection de l'adresse IP de l'interface de bouclage dans l'EVPN L2VPN BGP où se trouve le serveur DHCP

---

Remarque : S'il y a des commutateurs Nexus dans vPC, vérifiez qu'ils apprennent tous les deux l'adresse IP de l'interface de bouclage dans BGP L2VPN EVPN.

---

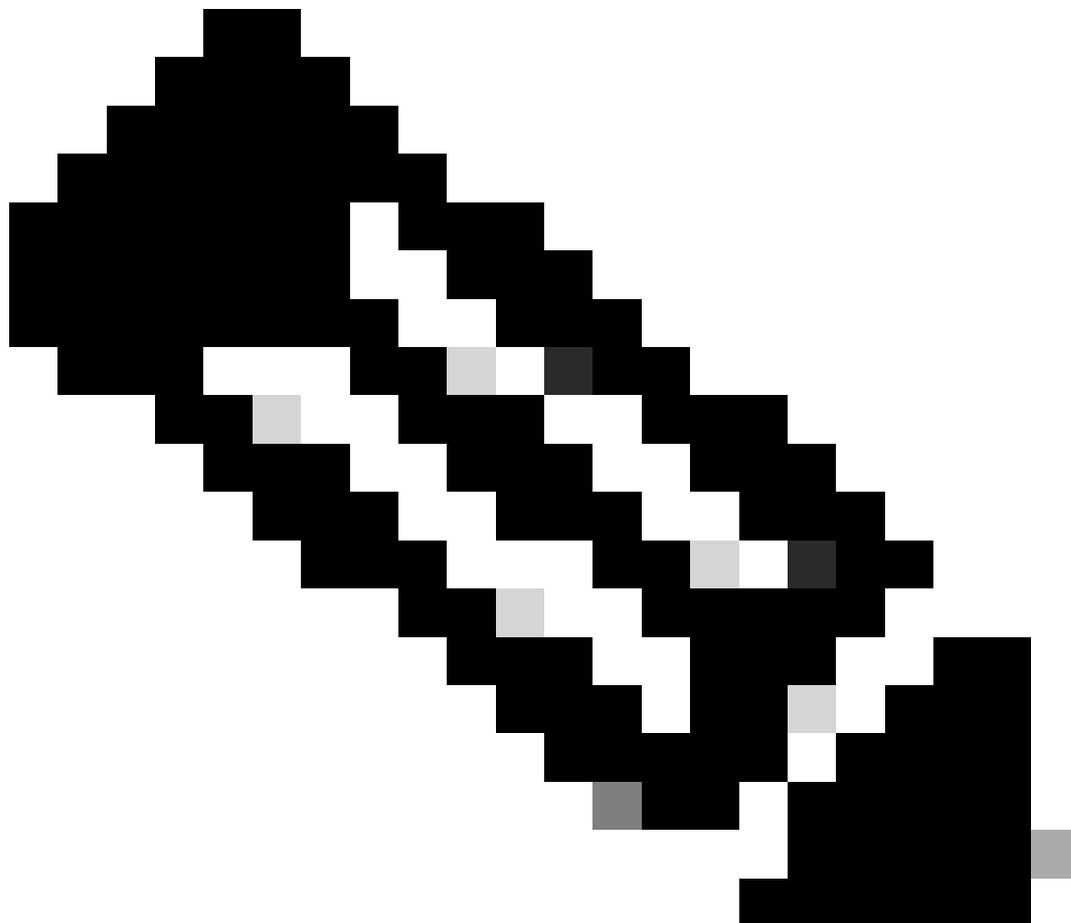
```
LEAF-1-VPC# show bgp l2vpn evpn 172.16.10.9
BGP routing table information for VRF default, address family L2VPN EVPN
Route Distinguisher: 192.168.3.3:4 (L3VNI 303030)
BGP routing table entry for [5]:[0]:[0]:[32]:[172.16.10.9]/224, version 637
Paths: (1 available, best #1)
Flags: (0x000002) (high32 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
```

Étape 9. Vérifiez qu'il existe une route pour le serveur DHCP sur le locataire source à l'aide de la commande `show ip route [DHCP server IP] vrf[tenant vrf]`.

---



Remarque : L'entrée de route à utiliser doit être de VxLAN à VRF par défaut. Si aucune route n'est disponible, vérifiez si le VTEP connaît localement l'adresse IP du serveur 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
```

Étape 10. Vérifiez que l'adresse IP du serveur DHCP est accessible à l'aide de l'interface de bouclage et du VRF correspondant en tant que source VRF à l'aide de la commande 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 ---
```

Étape 11. Vérification de l'état de l'agent de relais 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
```

Étape 12. Vérifiez l'option82, telle que l'option vpn et l'adresse IP de relais correcte sous l'agent de relais.

```
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	<<<<<<<<<

### Étape 13. Vérification des statistiques des paquets traités et transférés

```
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
```

### Étape 14. Vérification des statistiques des paquets de relais

```
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

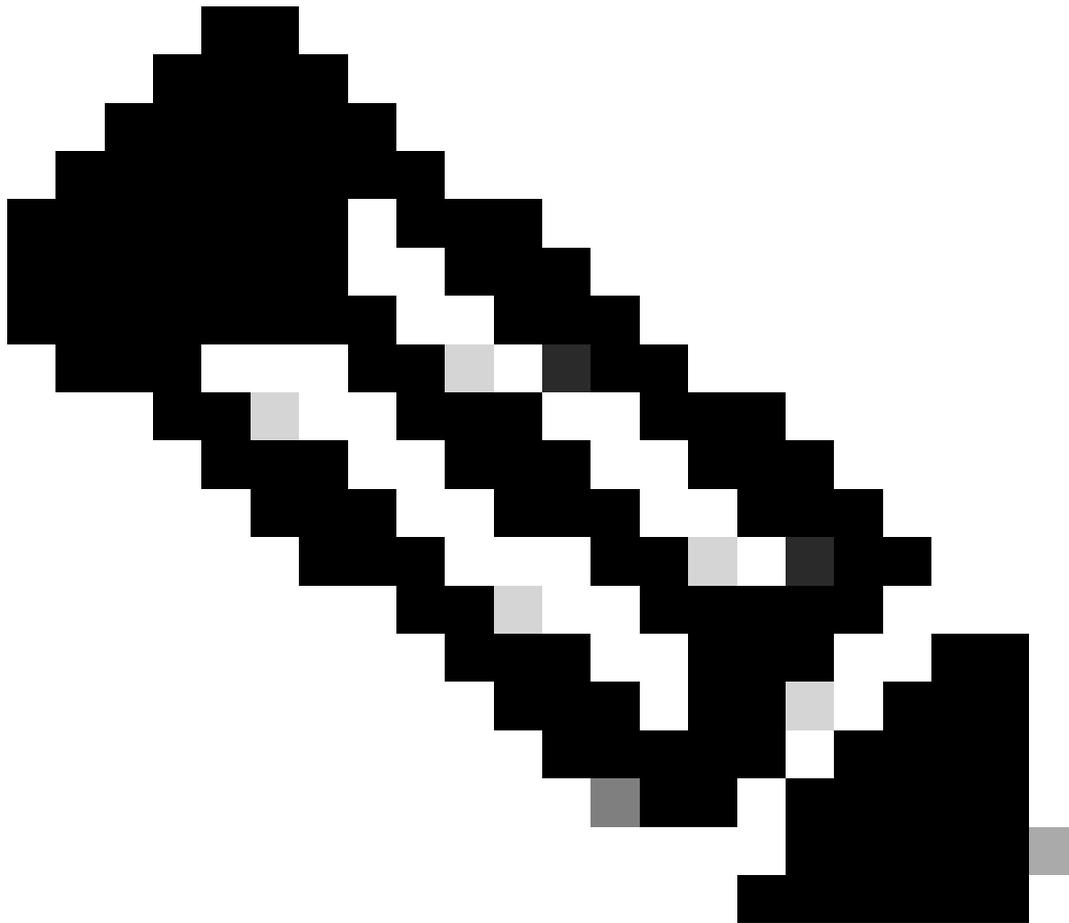
```
DHCP L3 FWD:
Total Packets Received : 0
```

```
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 LEAF-2-vPC

### Étape 1 : activation de la fonctionnalité DHCP

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

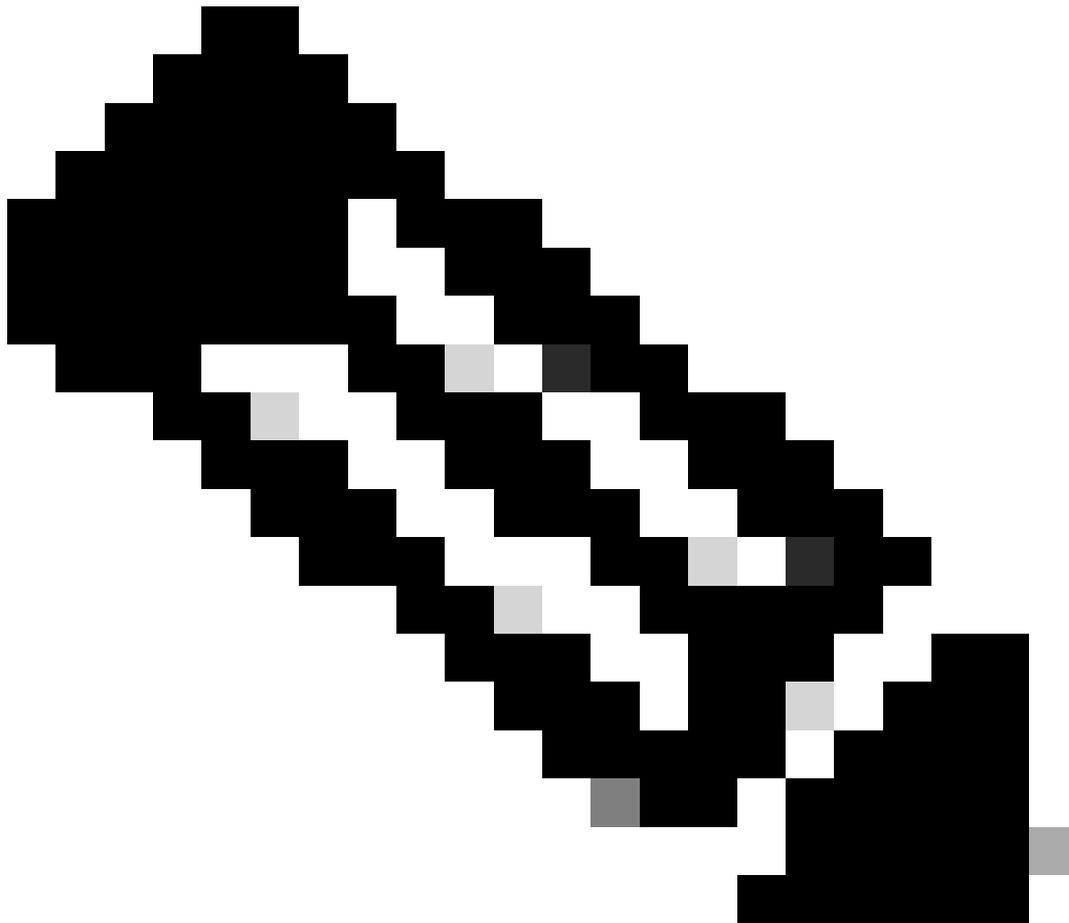


Remarque : Le serveur DHCP et la commande de l'agent de relais service dhcp, ip dhcp relay et ipv6 dhcp relay sont activés par défaut depuis NX-OS 7.x.

---

Étape 2 : application de la commande « ip dhcp relay information option »

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

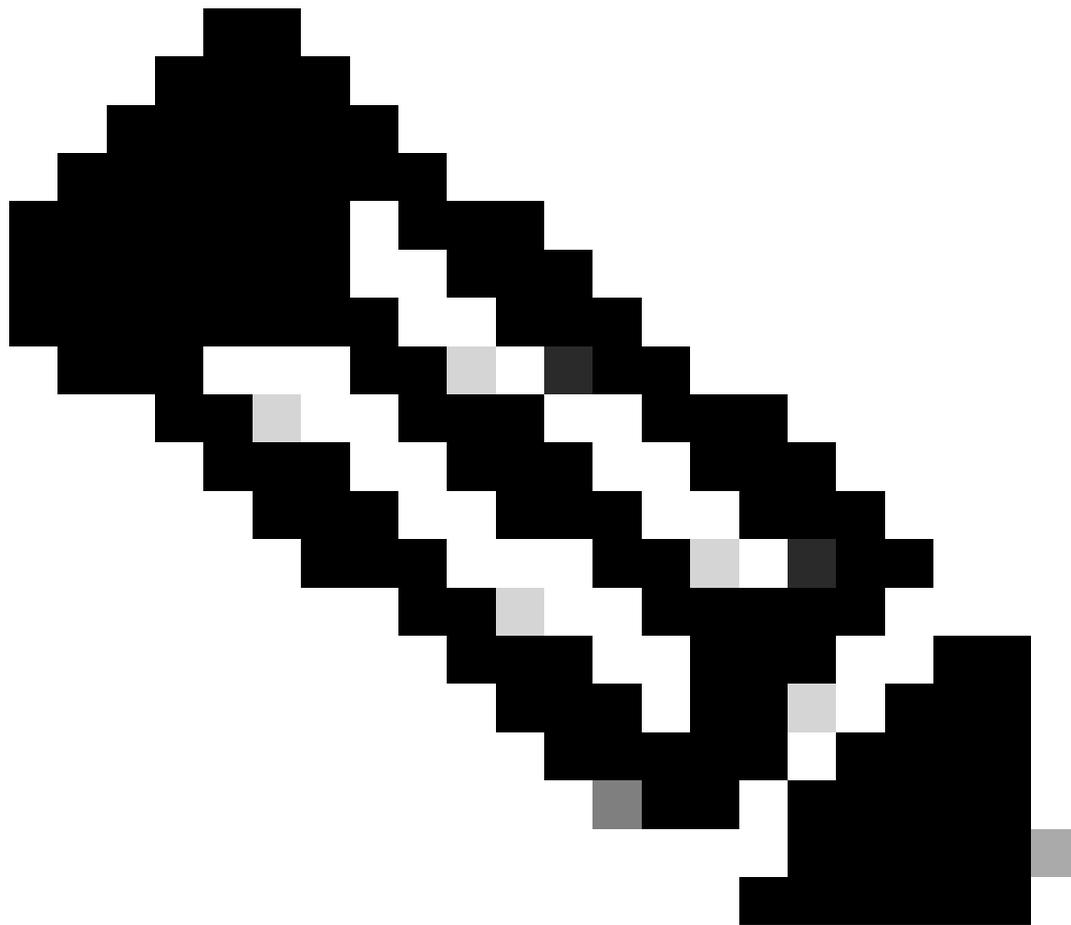


Remarque : Cette commande permet à l'agent de relais DHCP d'insérer et de supprimer des informations de l'option 82 sur les paquets qui sont transférés.

---

Étape 3 : application de la commande « ip dhcp relay information option vpn »

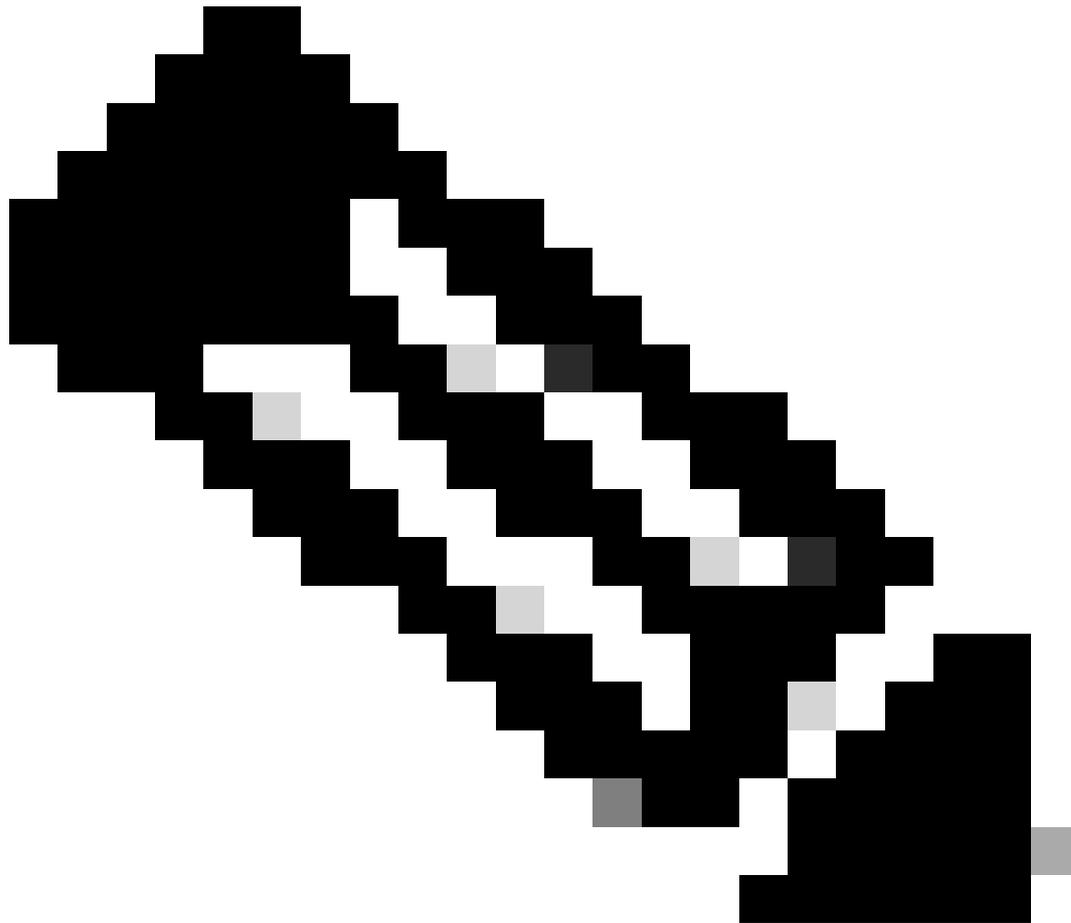
```
LEAF-2-VPC(config)# ip dhcp relay information option vpn
```



Remarque : Cette commande active les requêtes de relais DHCP qui arrivent sur un VRF différent auquel appartient le serveur DHCP.

---

Étape 4 : application de la commande « ip dhcp relay address [adresse ip du serveur DHCP] »

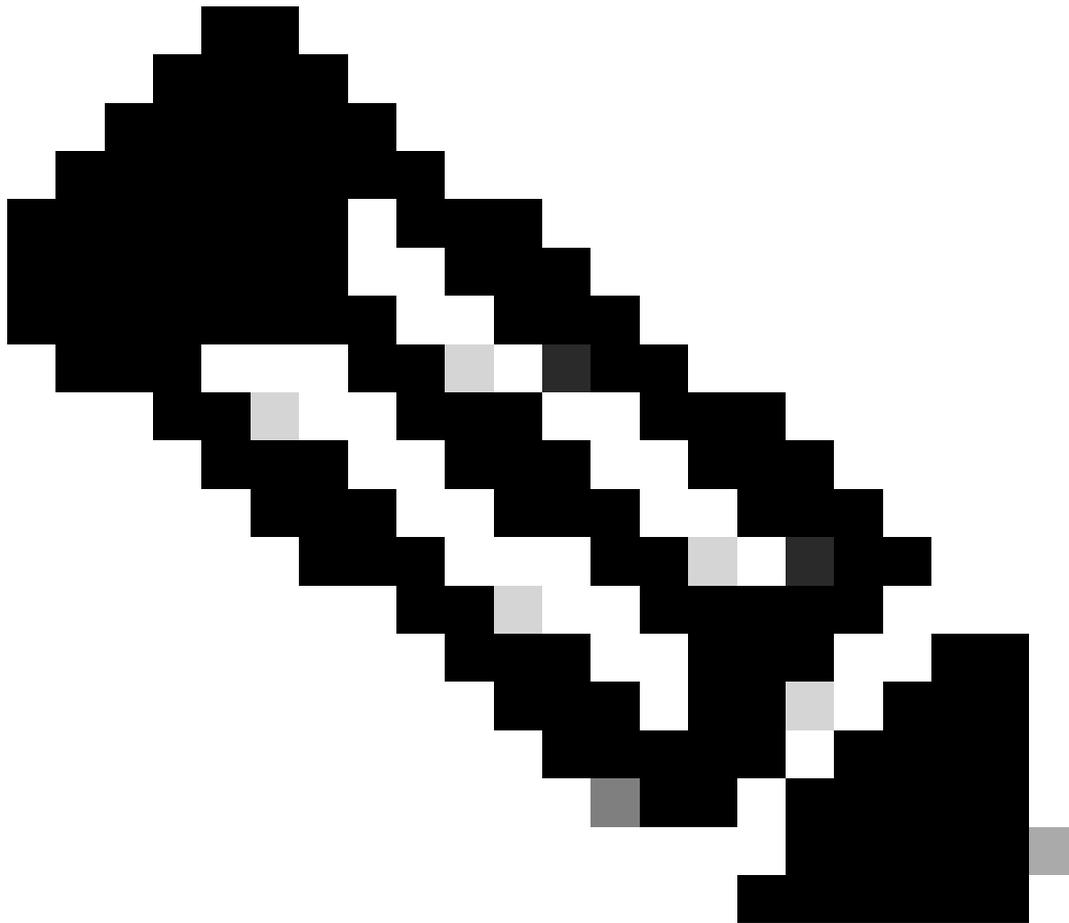


Remarque : Dans cet exemple, l'adresse IP du serveur DHCP est 10.10.10.150.

---

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

Étape 5 : application de la commande « ip dhcp relay source-interface [unique loopback] »



Remarque : Cette commande configure l'adresse IP source de l'agent de relais DHCP pour qu'elle gère les commandes Discover, Offer, Request et ACK pour les communications monodiffusion, l'agent de relais DHCP utilisant l'adresse IP de l'interface SVI comme adresse IP source de l'agent de relais DHCP. Cela n'est pas souhaitable, car cette adresse IP est partagée par plusieurs VTEP et un trou noir des paquets DHCP peut se produire. Pour éviter cela, une adresse IP unique (à l'aide d'une interface de bouclage) est nécessaire pour différencier chaque VTEP.

---

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

Étape 6. Dans le locataire correspondant VRF dans BGP, redistribuez directement la route avec une liste de préfixes et une route-map qui inclut l'adresse IP de l'interface de bouclage.

---

Remarque : Cette interface de bouclage appartient au locataire 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
```

Étape 7. Vérifiez que l'adresse IP de l'interface de bouclage est annoncée dans BGP L2VPN EVPN aux spines avec la commande : `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
```

Étape 8 : vérification de l'injection de l'adresse IP de l'interface de bouclage dans l'EVPN L2VPN BGP où se trouve le serveur DHCP

---

Remarque : S'il y a des commutateurs Nexus dans vPC, vérifiez qu'ils apprennent tous les deux l'adresse IP de l'interface de bouclage dans 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

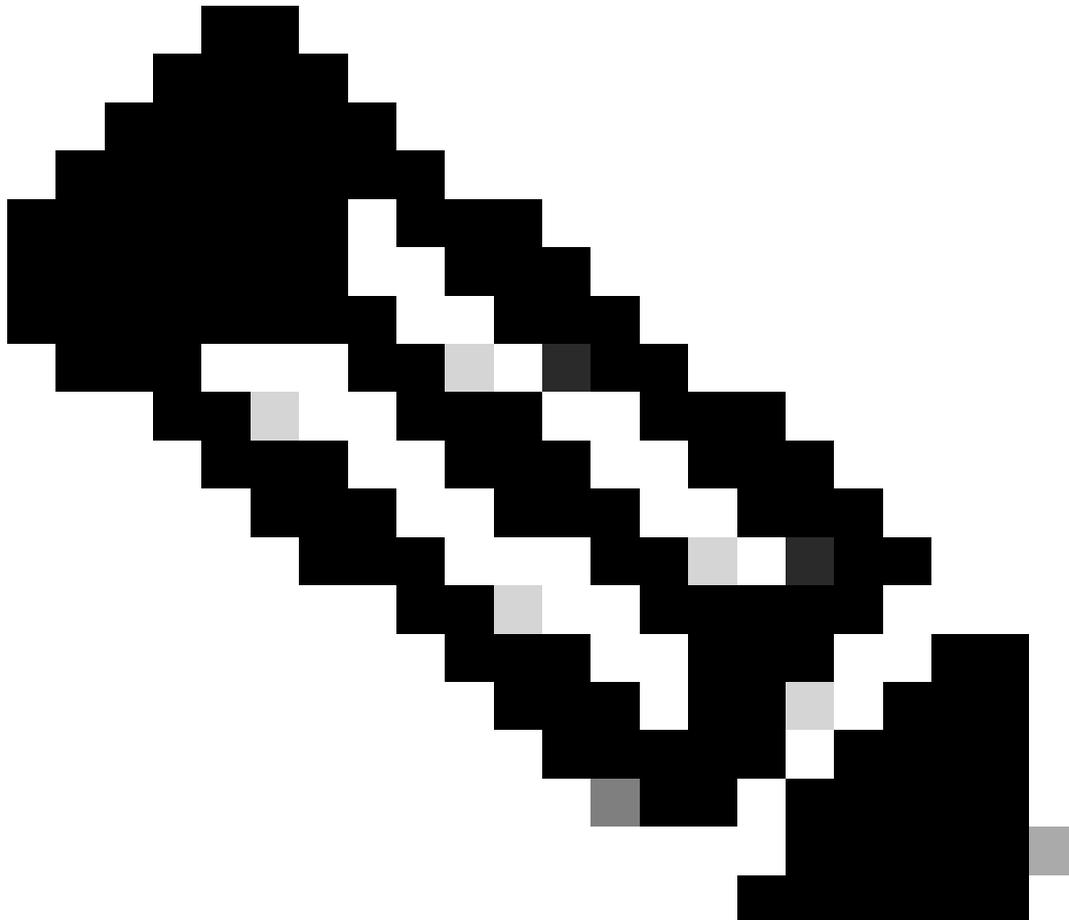
Advertised path-id 1
Path type: local, path is valid, is best path, no labeled nexthop
Gateway IP: 0.0.0.0
AS-Path: NONE, path locally originated
 192.168.13.2 (metric 0) from 0.0.0.0 (192.168.4.4)
  Origin incomplete, MED 0, localpref 100, weight 32768
  Received label 303030
  Extcommunity: RT:65000:303030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

Path-id 1 advertised to peers:
```

192.168.0.11

Étape 9. Vérifiez qu'il existe une route pour le serveur DHCP sur le locataire source avec la commande `show ip route [DHCP server IP] vrf[tenvrf]`.

---



Remarque : L'entrée de route à utiliser doit être de VxLAN à VRF par défaut. Si aucune route n'est disponible, vérifiez si le VTEP connaît localement l'adresse IP du serveur 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
```

Étape 10. Vérifiez que l'adresse IP du serveur DHCP est accessible à l'aide de l'interface de bouclage et du VRF correspondant en tant que source VRF avec la commande 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 ---
```

Étape 11. Vérification de l'état de l'agent de relais 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
```

Étape 12. Vérifiez l'option82, telle que l'option vpn et l'adresse IP de relais correcte sous l'agent de relais.

```
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	<<<<

### Étape 13. Vérification des statistiques des paquets traités et transférés

```
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
```

### Étape 14. Vérification des statistiques des paquets de relais

```
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

```

## Configuration du serveur DHCP sous Windows Server 2022

Configuration de l'étendue d'adressage IP pour les hôtes.

Étape 1. Ouvrez le Gestionnaire de serveur et vérifiez qu'aucune alarme n'est présente sur le serveur DHCP dans le tableau de bord.

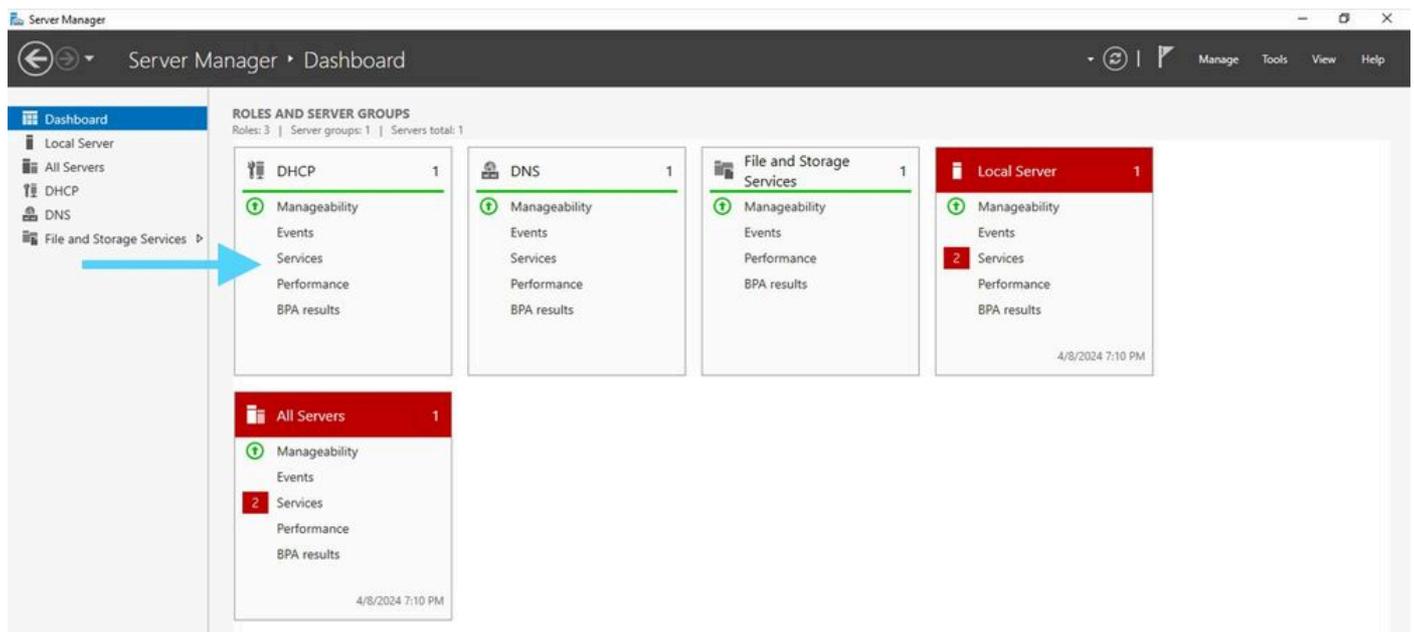
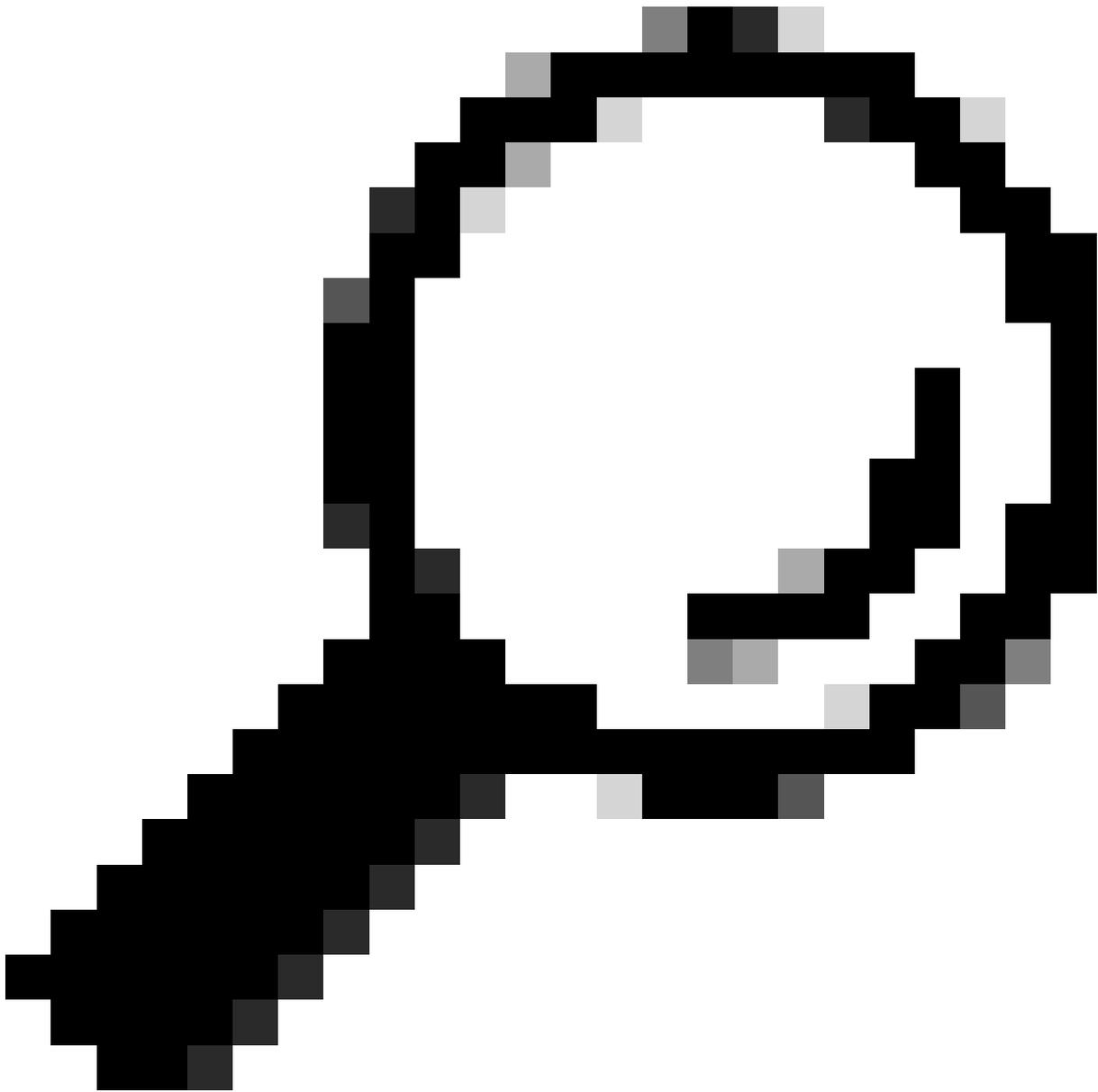


Tableau de bord du Gestionnaire de serveur sur Windows Server 2022



Conseil : L'image s'agrandit lorsque vous double-cliquez.

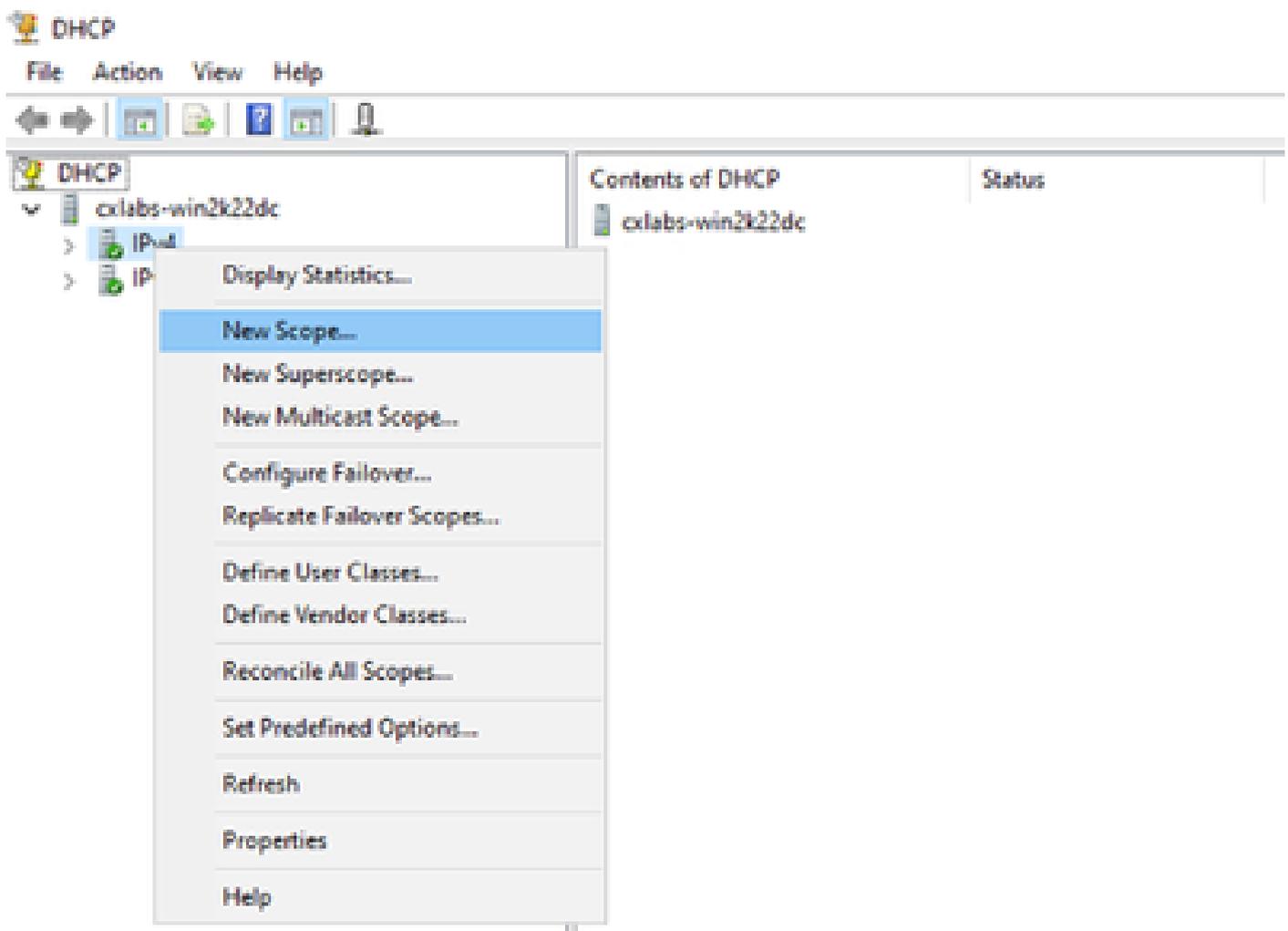
---

Étape 2. Ouvrez l'application DHCP Server.

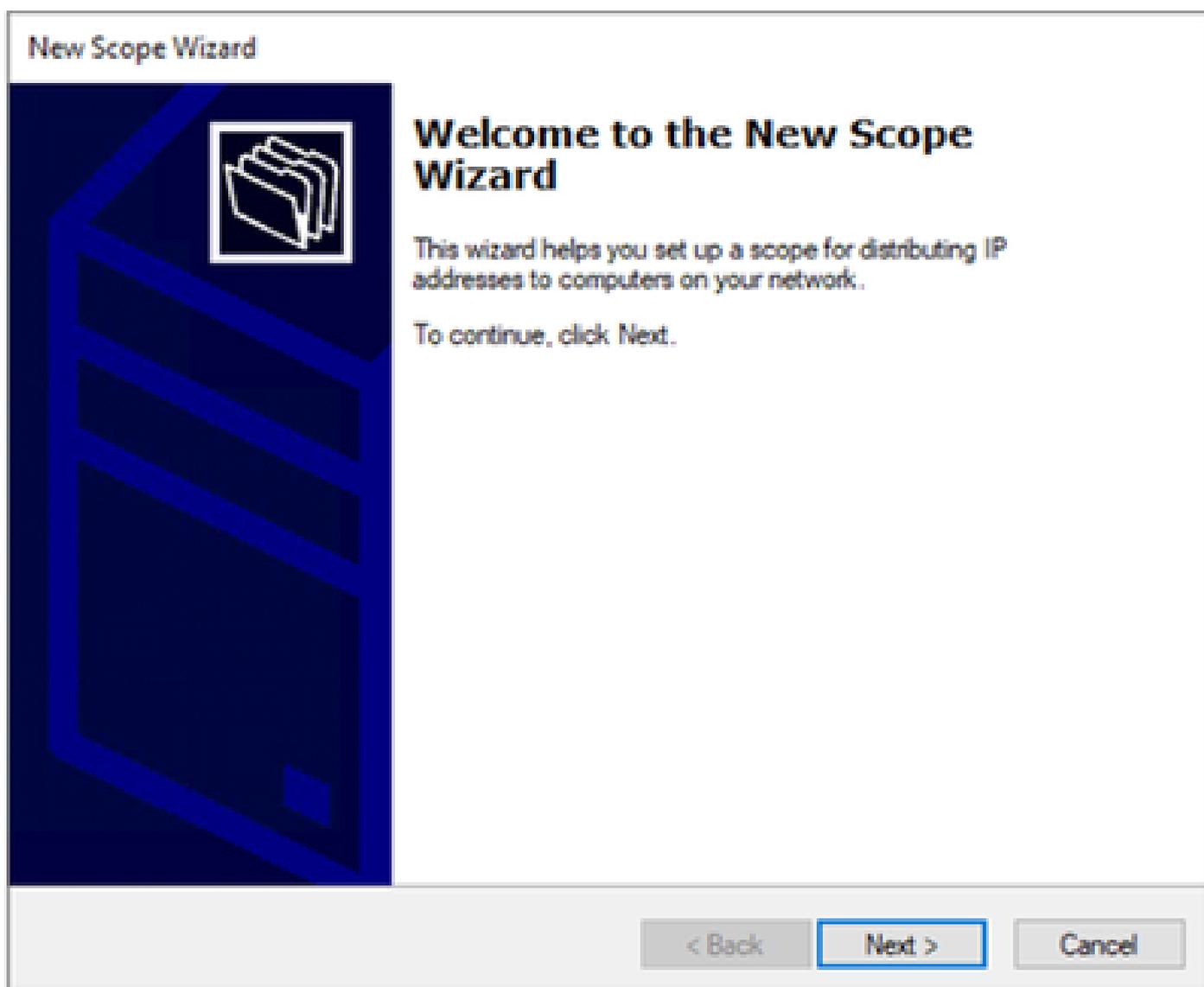


Serveur DHCP sur Windows Server 2022

Étape 3. Cliquez avec le bouton droit sur IPv4, puis cliquez sur New Scope.



Étape 4. Cliquez sur Next.



Étape 5. Écrivez un nom et une description. Dans cet exemple, le nom est le sous-réseau qui appartient au VLAN 10 et la description est L2VNI comme L2VNI répertorié au 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:

Étape 6 : configuration de la plage d'adresses IP Il s'agit du pool d'hôtes.

## 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

Étape 6. Excluez l'adresse IP partagée de la configuration SVI dans les VTEP. Dans cet exemple, l'interface VLAN 10 a l'adresse IP.10.10.1/24.



Avertissement : Si vous n'excluez pas l'adresse IP de l'interface SVI (ou passerelle par défaut), vous risquez de dupliquer les adresses IP et d'affecter la livraison du trafic.

---

```
LEAF-1# 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
```

## 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

Étape 7 : configuration de la durée du bail de l'adresse IP Il s'agit de la durée pendant laquelle un hôte peut utiliser l'adresse IP attribuée avant de la renouveler.

## 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

Étape 8. Sélectionnez Yes, I want to configure these options now.

## 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

Étape 9 : configuration de l'adresse IP de la passerelle par défaut

## 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

Étape 10 : configuration du nom de domaine et du serveur 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:

Étape 11 : configuration du serveur WINS, le cas échéant Cette opération peut être ignorée si les informations ne sont pas connues.

## 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:

Resolve

IP address:

Add

Remove

Up

Down

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

< Back

Next >

Cancel

Étape 12. Sélectionnez Oui, je souhaite activer cette étendue maintenant.

New Scope Wizard

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



Do you want to activate this scope now?

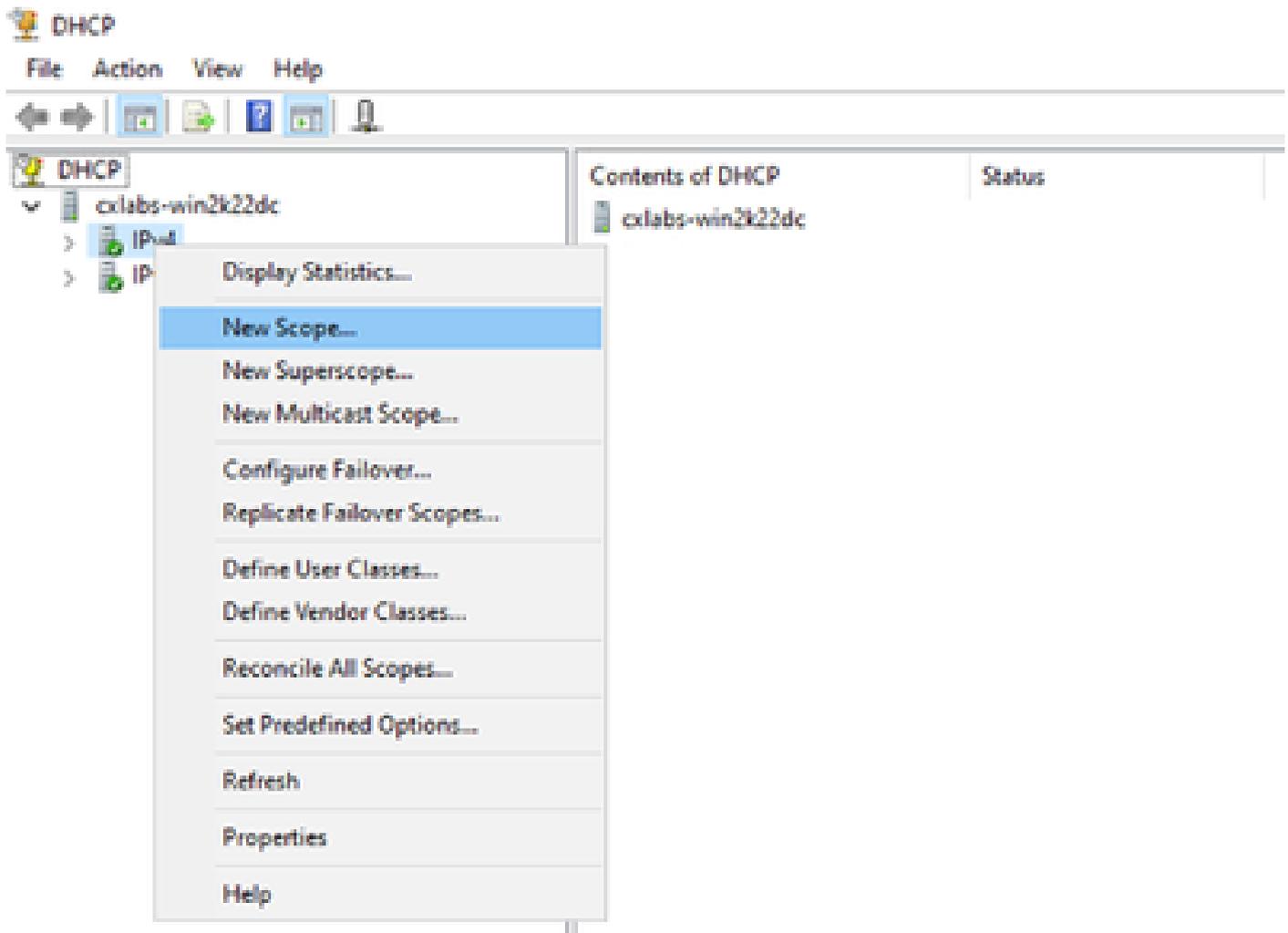
Yes, I want to activate this scope now

No, I will activate this scope later

< Back   Next >   Cancel

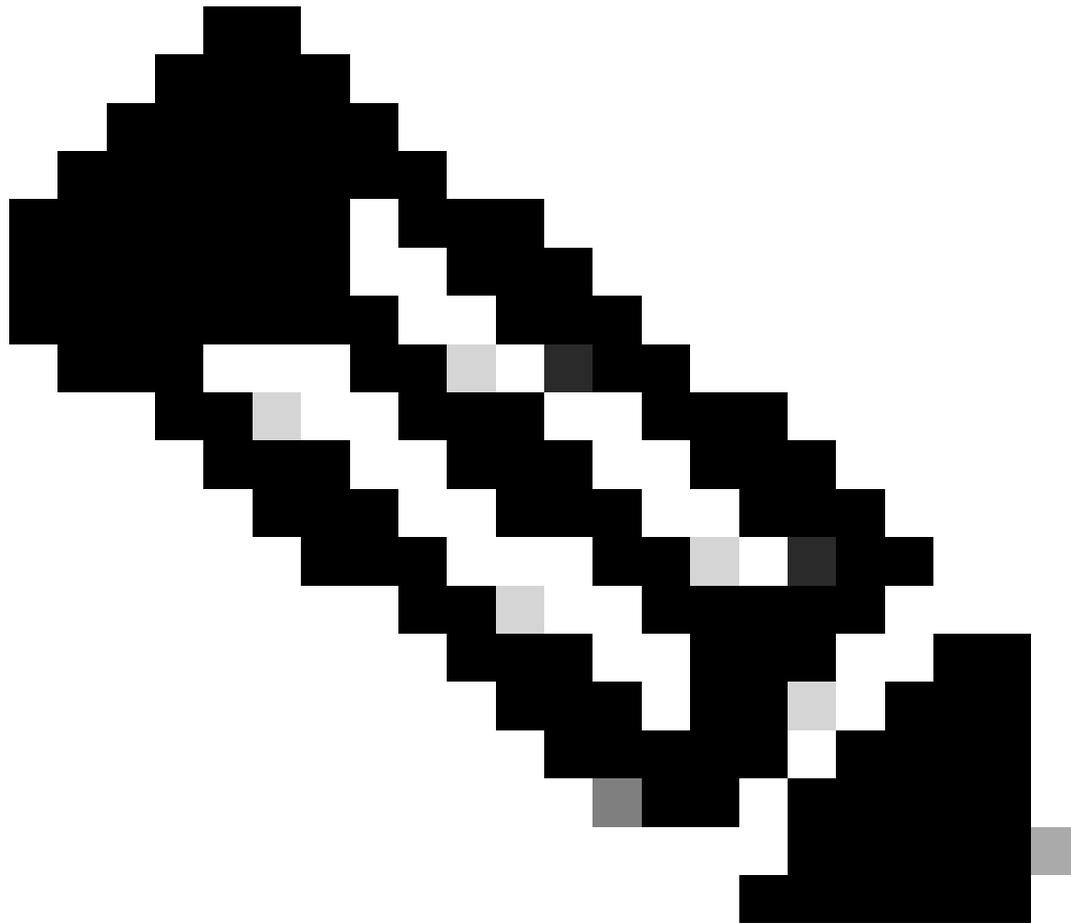
Configuration de l'étendue pour les adresses IP uniques des boucles dans SVI en tant qu'agent de relais DHCP.

Étape 1. Cliquez avec le bouton droit sur IPv4 et sélectionnez IPv4Scope.



Nouvelle étendue dans DCHP

Étape 2. Écrivez un nom et une description. Dans cet exemple, name est le sous-réseau utilisé pour le sous-réseau avec adresse de bouclage.



IPte : Un bouclage est utilisé avec une adresse IP unique dans le fabric VxLAN pour le locataire VxLAN. Ceci doit être annoncé dans la redistribution de route EVPN L2VPN BGP dans BGP dans le VRF du locataire correspondant dans l'adresse IPv4-famIPv4

---

```
LEAF-1# show running-config interface loopback 100
```

```
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:

< Back

Next >

Cancel

Étape 3 : configuration de la plage d'adresses IP IP Il s'agit du pool pour les boucles.

## 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

Étape 4 : configuration des exclusions (facultatif car le serveur DHCP loue des adresses IP appartenant à ce sous-réseau)

## 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

Étape 5. Ignorez la durée du bail et cliquez sur 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

Étape 6. Sélectionnez Non, je configurerai ces options ultérieurement.

## 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

Étape 7. Cliquez sur Terminer.

## 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*.

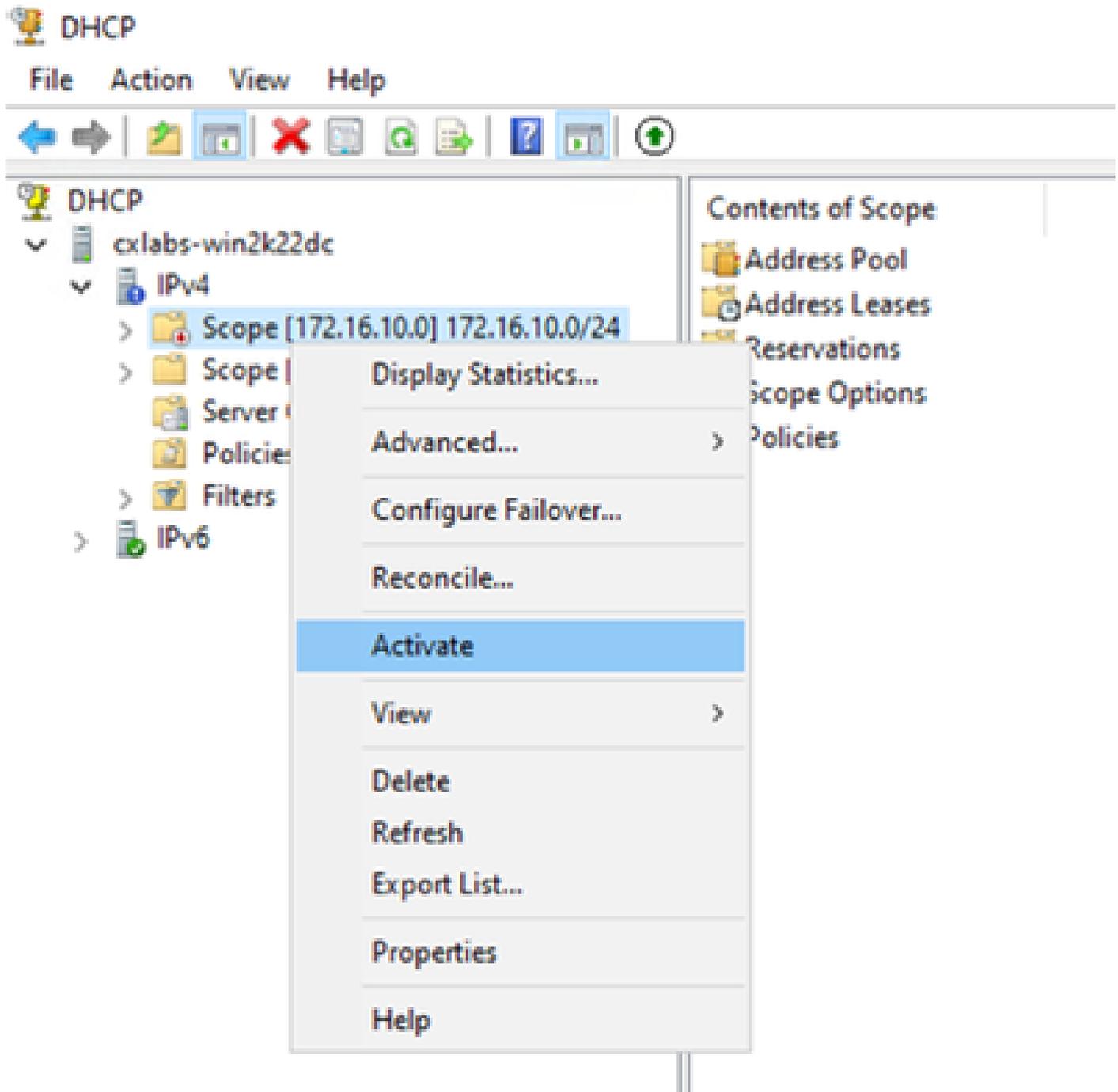
To close this wizard, click *Finish*.

< Back

Finish

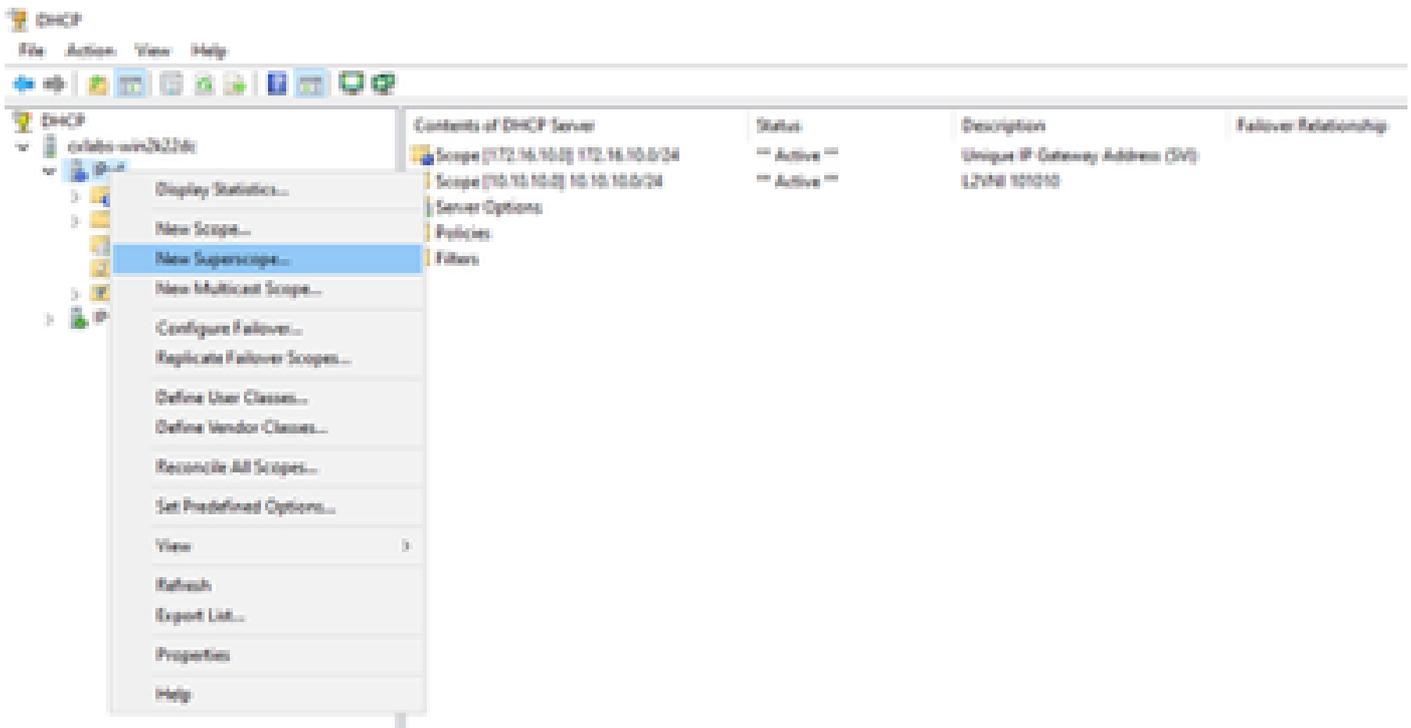
Cancel

Étape 8. Cliquez avec le bouton droit sur l'étendue créée et sélectionnez Activer.

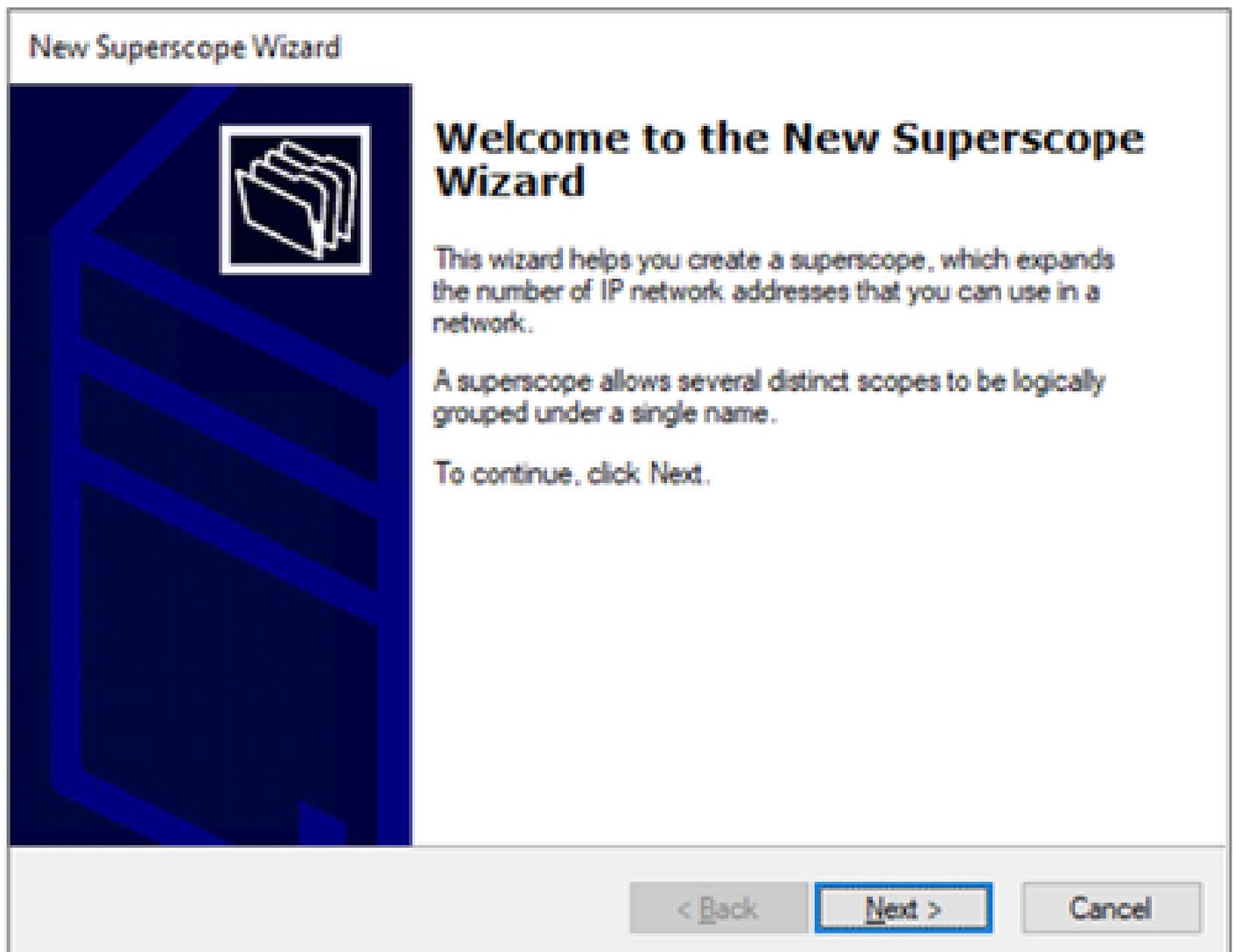


Configuration de la super-étendue pour le fabric VxLAN.

Étape 1. Cliquez avec le bouton droit dans IPv4 et sélectionnez Nouvelle étendue globale.



Étape 2. Cliquez sur Next.



Étape 3. Écrivez le nom de l'étendue globale.

New Superscope Wizard

**Superscope Name**  
You have to provide an identifying superscope name.



Name:

< Back   Next >   Cancel

Étape 4. Sélectionnez toutes les étendues qui appartiennent au fabric VxLAN.

## 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

Étape 5. Sélectionnez toutes les étendues qui appartiennent au fabric VxLAN.

## 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:

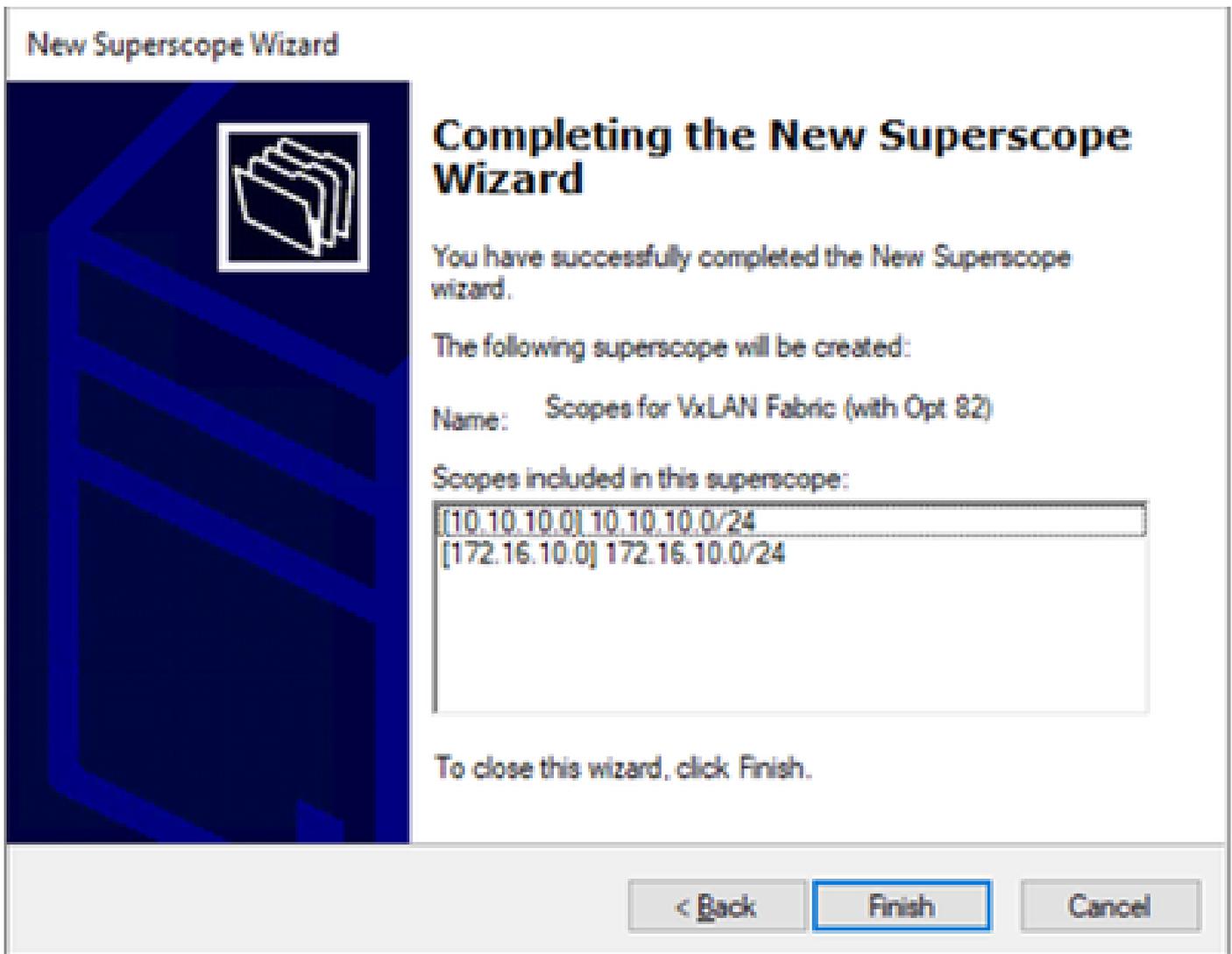
[10.10.10.0] 10.10.10.0/24  
[172.16.10.0] 172.16.10.0/24

< Back

Next >

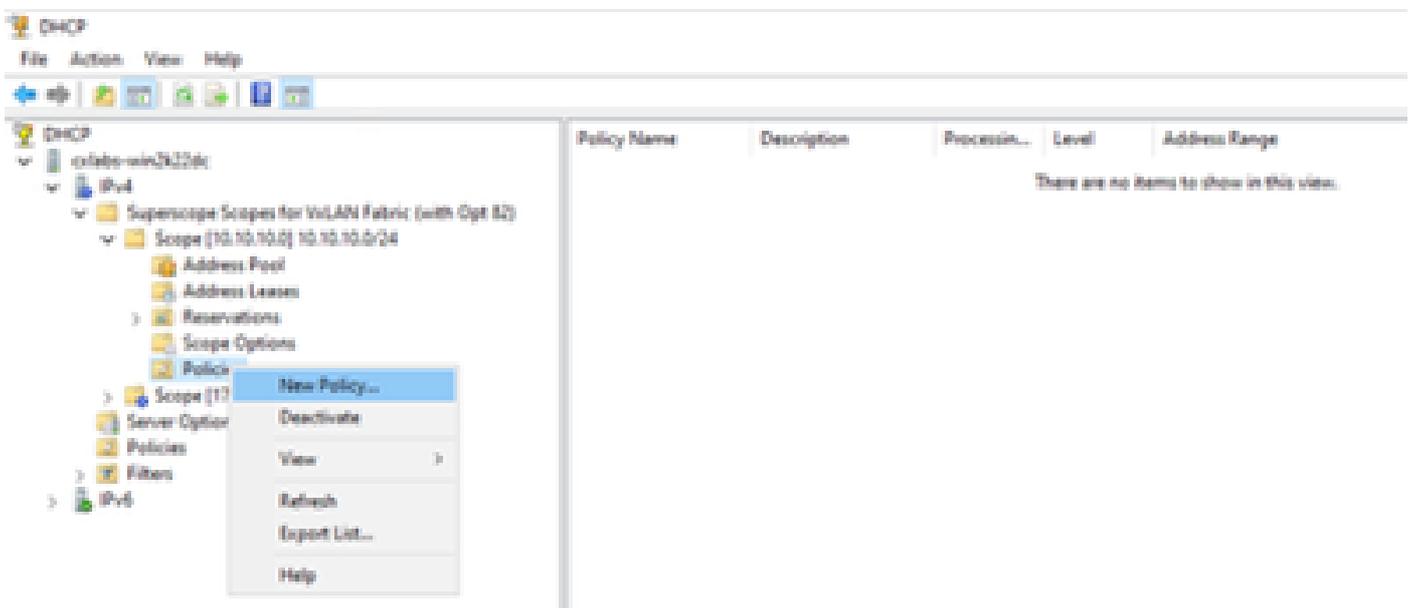
Cancel

Étape 6. Vérifiez que toutes les étendues globales de fabric VxLAN sont en place et cliquez sur Finish.



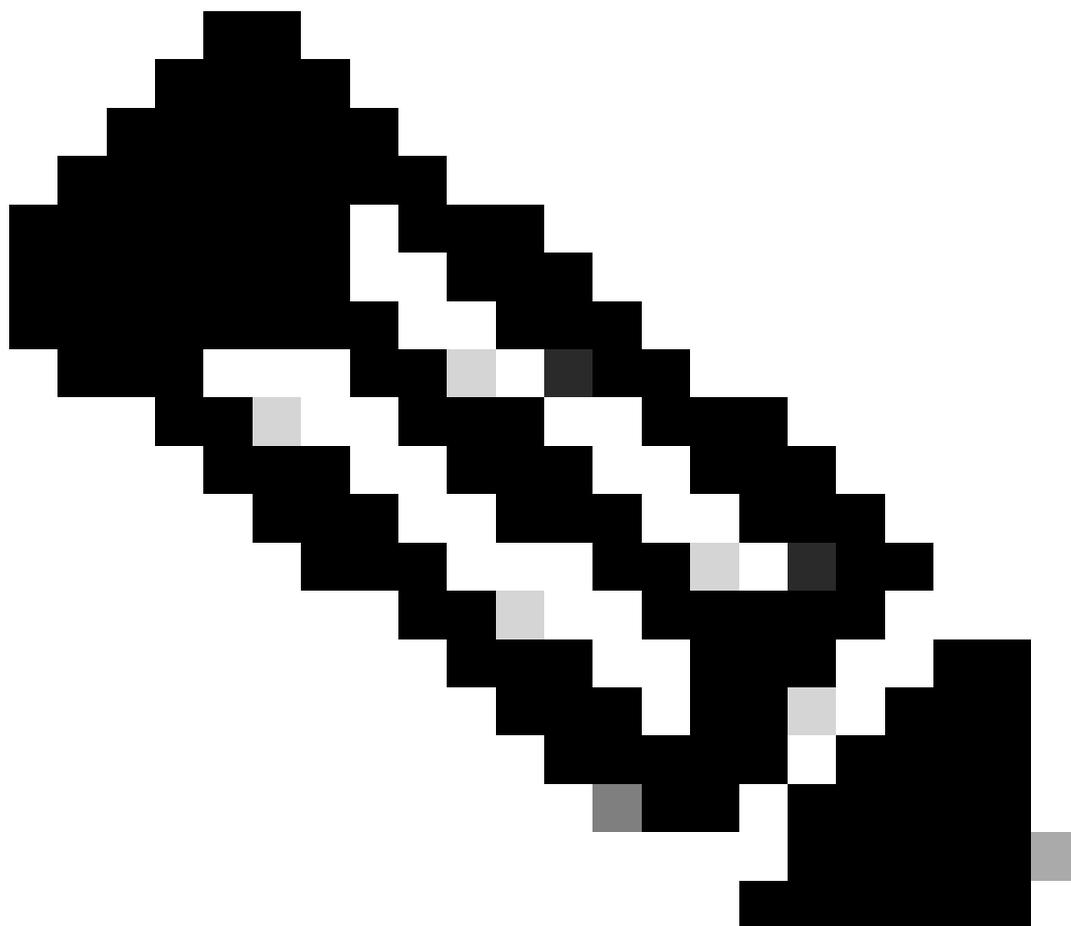
Configurez l'option 82 dans les étendues d'hôte.

Étape 1. Cliquez avec le bouton droit sur Stratégies (dernière option) dans l'étendue de l'hôte et cliquez sur Nouvelle stratégie.



Étape 2. Écrivez un nom et une description, puis cliquez sur Suivant.

---



Remarque : Dans cet exemple, la stratégie est créée pour sélectionner l'adressage IP particulièrement pour les hôtes dans Leaf-1 pour VNI 101010 basé sur VNI Remote-ID (paramètre de l'option 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:

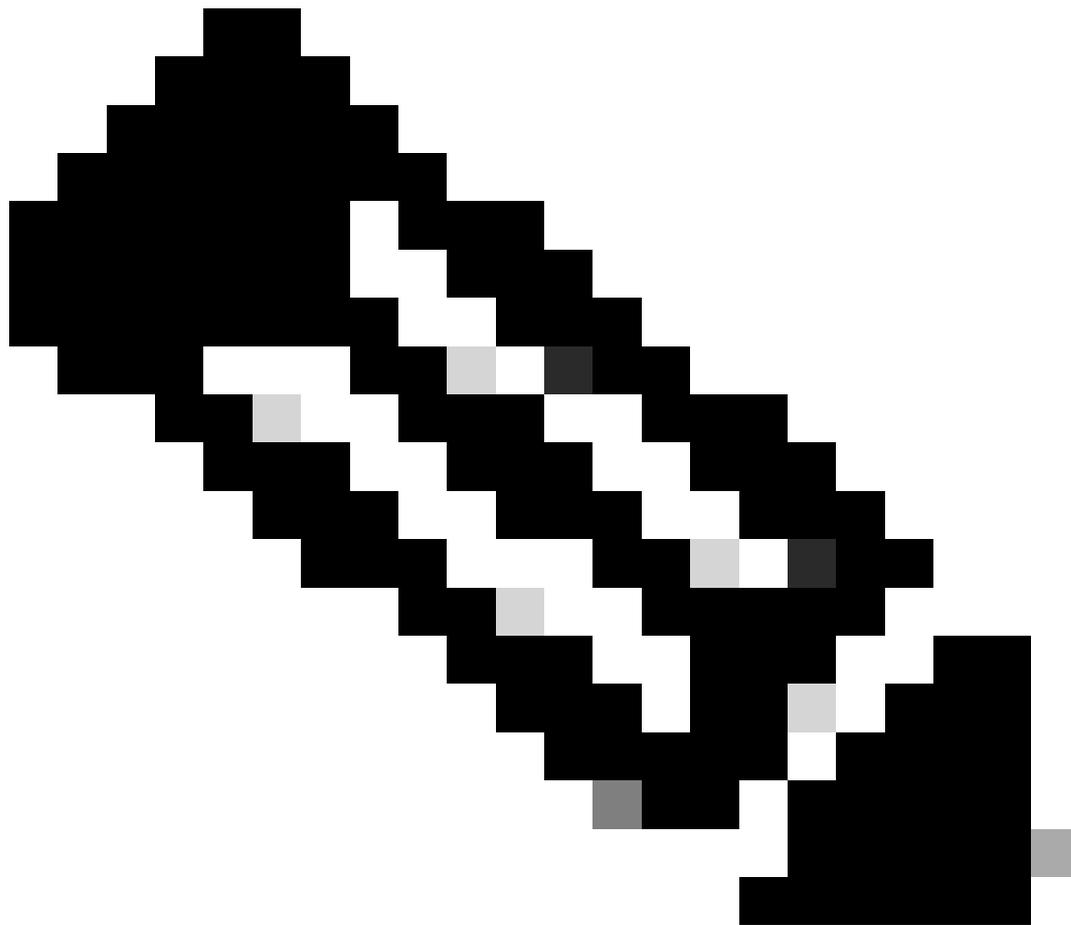
Description:

< Back

Next >

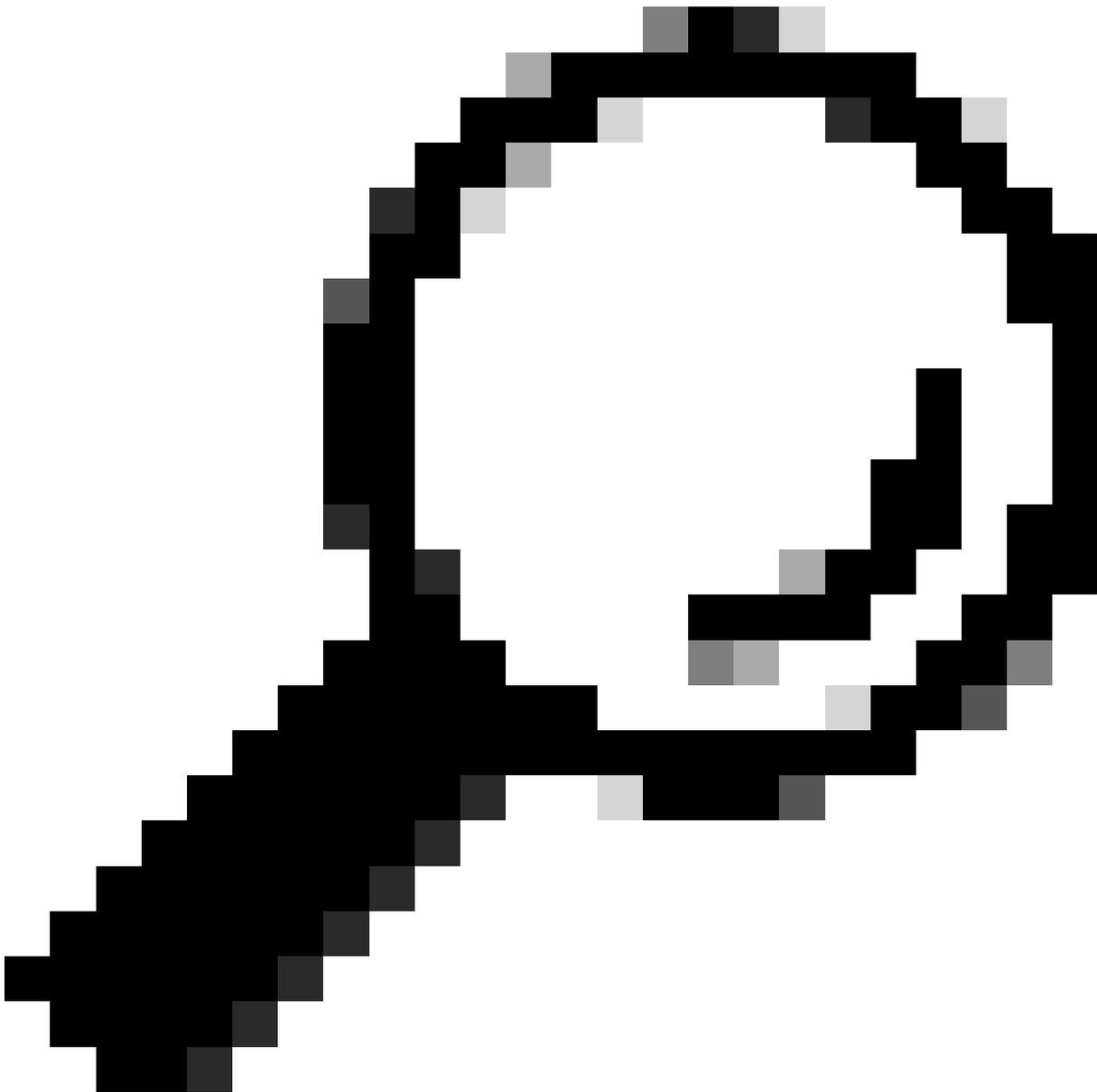
Cancel

Étape 3. Cliquez sur Add (ajouter). Dans Critères, sélectionnez Informations sur l'agent relais. Dans Opérateur, sélectionnez Égal à. Sélectionnez ensuite Agent Remote ID et saisissez la valeur. Cliquez sur OK, puis sur Suivant.



Remarque : L'ID distant est obtenu à partir de l'adresse MAC de l'interface SVI à laquelle l'interface SVII est associée.

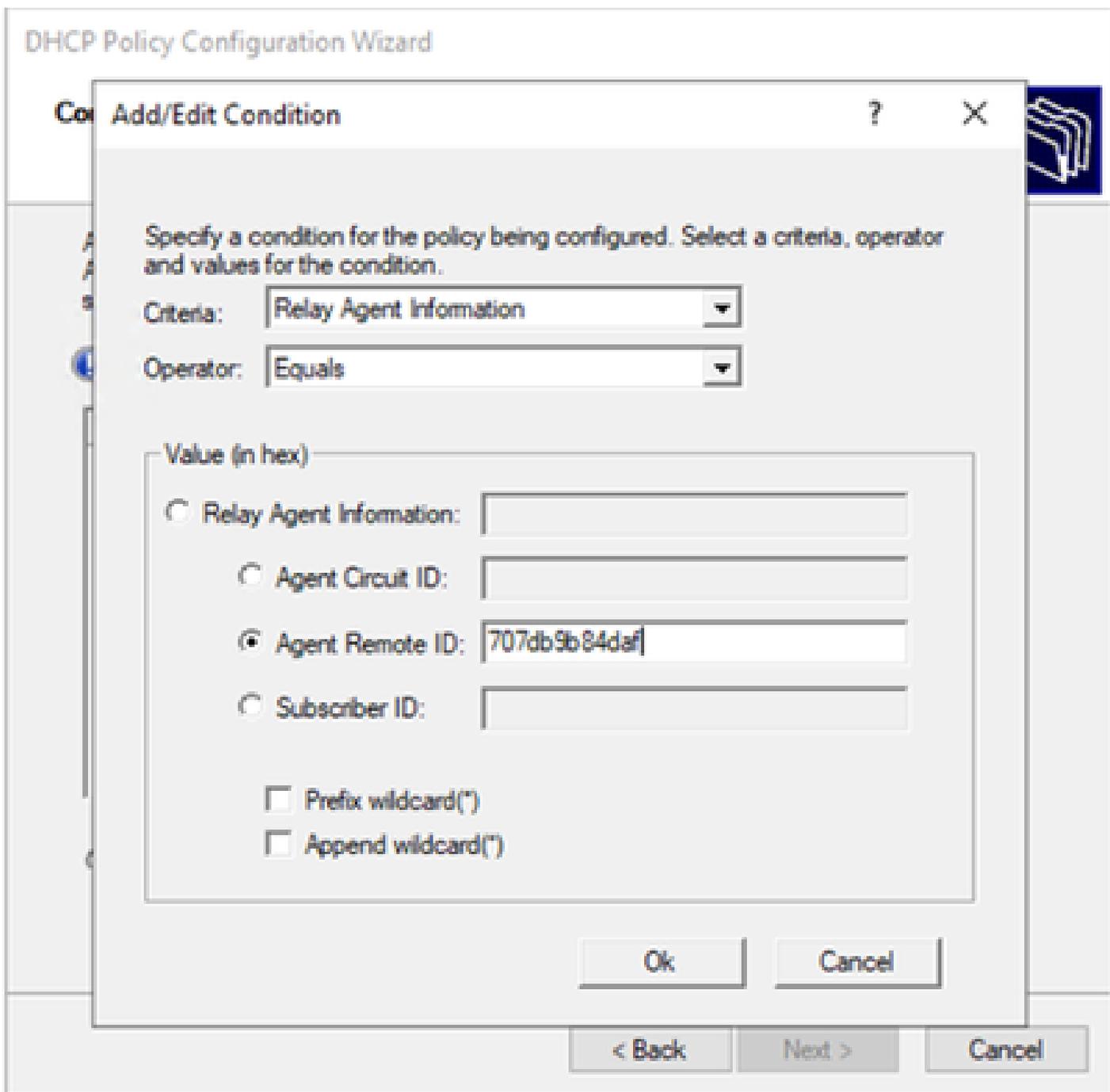
---



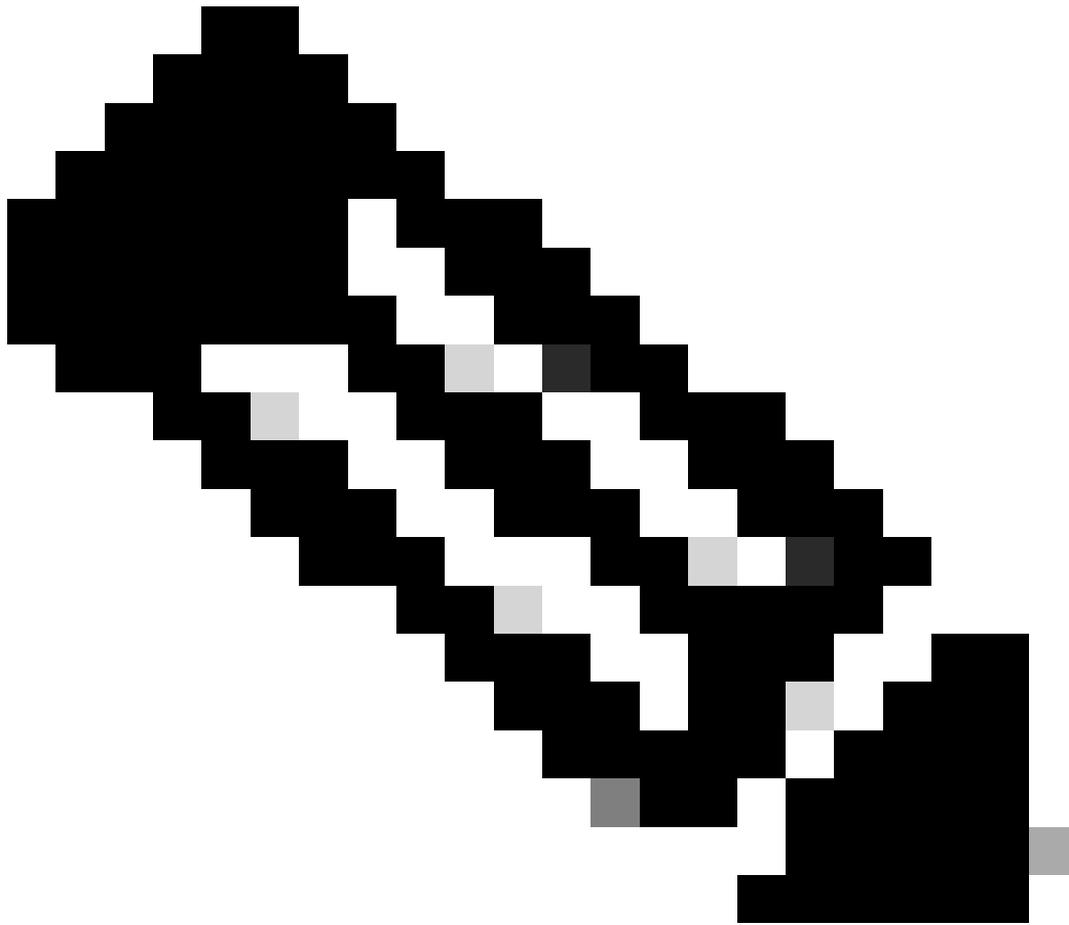
Conseil : Une stratégie peut être appliquée à plusieurs ID distants (ou VTEP) en ajoutant d'autres conditions et en sélectionnant OU au lieu de ET.

---

```
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
```



Étape 4. Configurez l'adressage IP que l'adresse IP existante peut utiliser sur le ou les VTEP sélectionnés par l'ID, puis cliquez sur Next.



Remarque : Dans cet exemple, il n'y a qu'une seule machine virtuelle connectée à Leaf-1, donc une seule adresse IP est requise IPd. Ici, une deuxième adresse IP est ajoutée IPn si un autre hôte se connecte.

---

## 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:

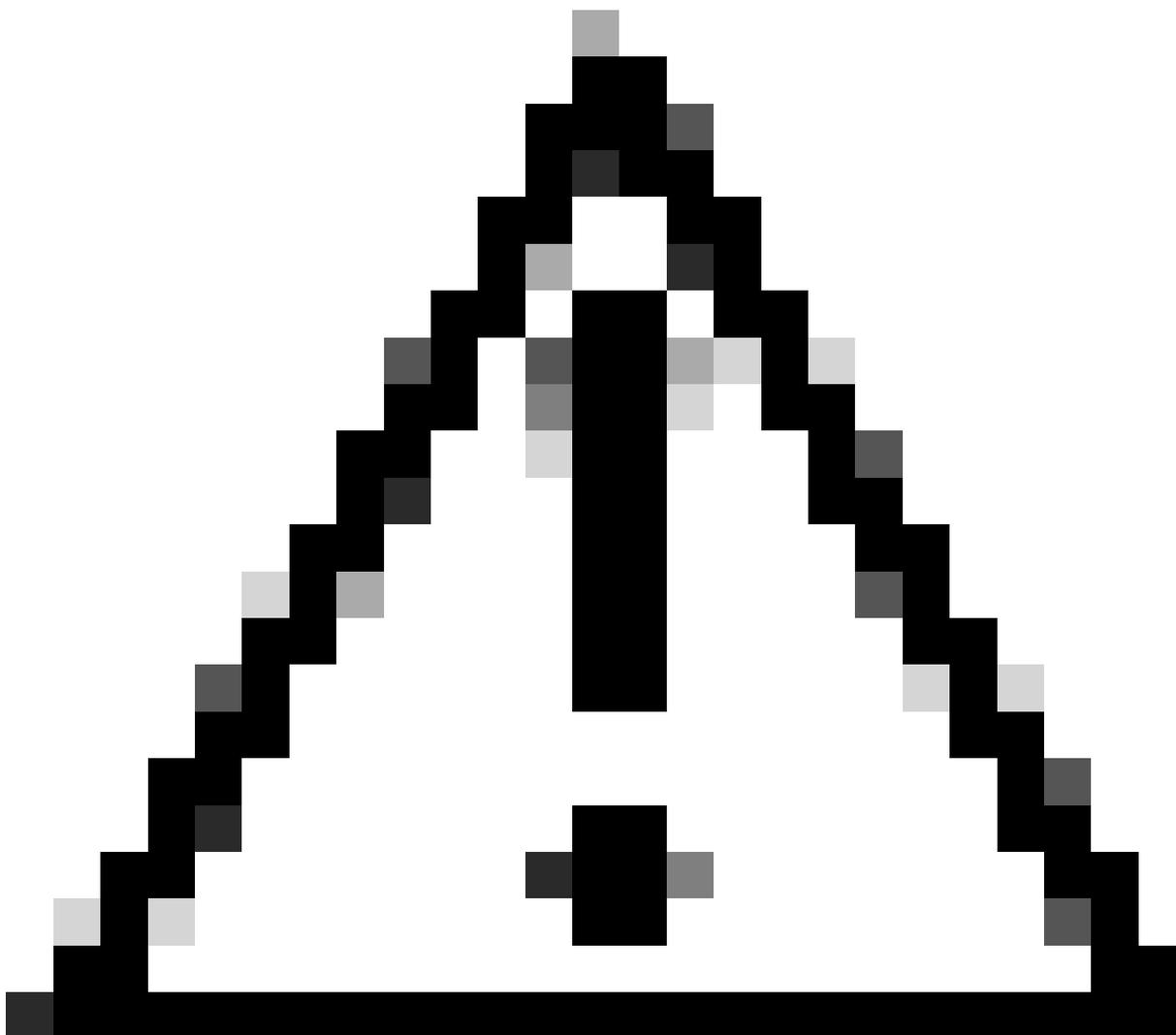
Percentage of IP address range: 0.8

< Back

Next >

Cancel

Étape 5. Cochez la case située à gauche de 003 Router sous DHCP Standard Option. Ensuite, écrivez l'adresse IP de la passerelle par défaut pour les hôtes qui appartiennent à cette stratégie et appuyez sur Add. Cliquez sur Next (Suivant).



Mise en garde : Vous pouvez sélectionner plusieurs options, mais si vous ne savez pas quelle valeur entrer, ne le faites pas. Une configuration incohérente ou erronée peut provoquer un comportement inattendu.

---

## 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

Étape 6. Vérifiez les conditions de la stratégie et cliquez sur Finish.

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	More Actions

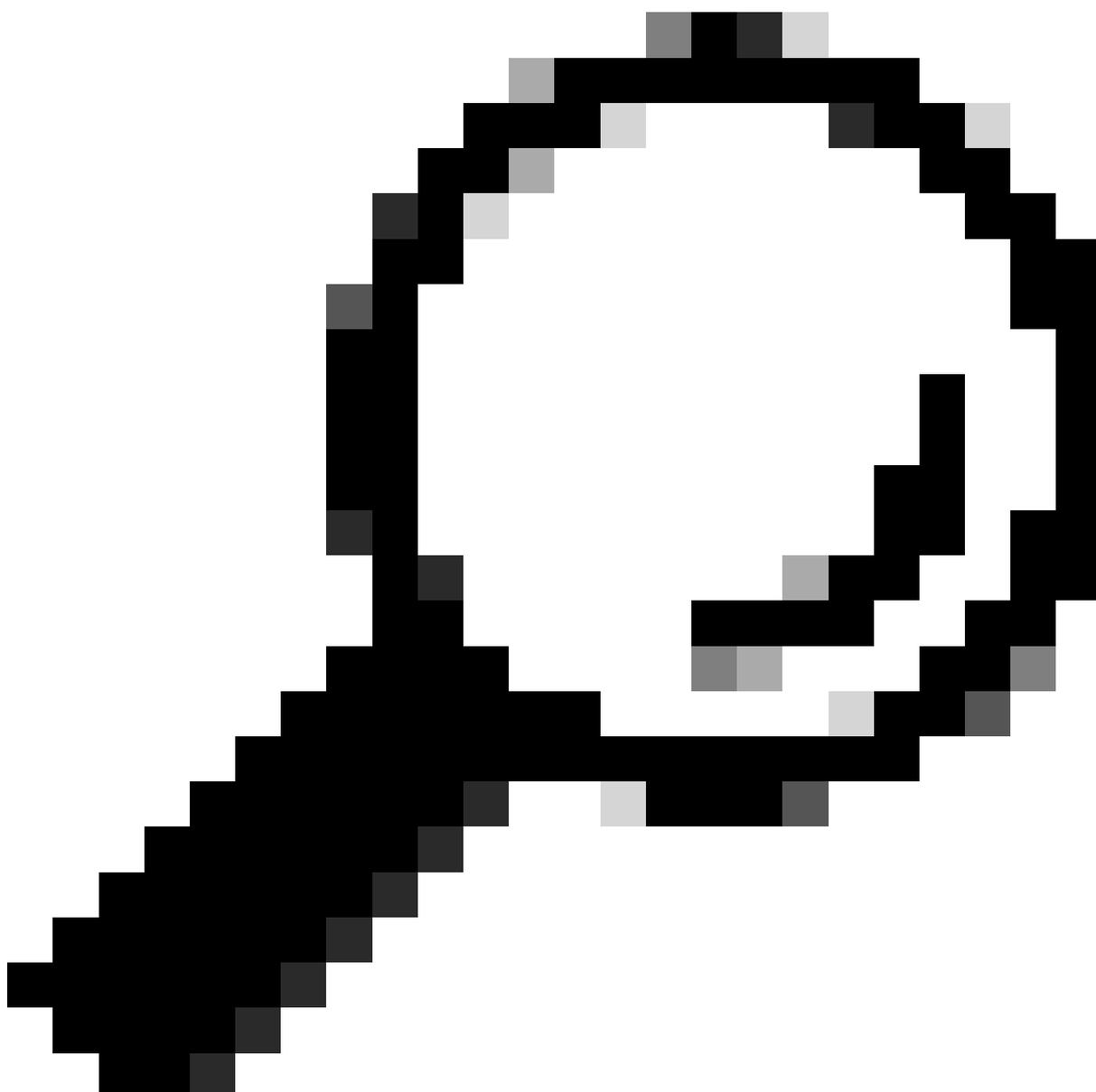
DCHP packet-walk du début à la fin dans le fabric VxLAN.

Détection envoyée par 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
```

# Découverte sur LEAF-1

Détection reçue sur LEAF-1	Détection envoyée par LEAF-1
<pre> &gt; Ethernet II, Src: 00:50:56:a5:fd:dd, Dst: ff:ff:ff:ff:ff:ff &gt; Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255 &gt; User Datagram Protocol, Src Port: 68, Dst Port: 67 &gt; 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   &gt; 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   &gt; Option: (53) DHCP Message Type (Discover)     Length: 1     &lt;Value: 01&gt;     DHCP: Discover (1)   &gt; Option: (61) Client identifier     Length: 7     &lt;Value: 01005056a5fddd&gt;     Hardware type: Ethernet (0x01)     Client MAC address: 00:50:56:a5:fd:dd   &gt; Option: (12) Host Name     Length: 10     &lt;Value: 43584c6162732d573130&gt;     Host Name: CXLabs-W10   &gt; Option: (60) Vendor class identifier     Length: 8     &lt;Value: 4d53465420352e30&gt;     Vendor class identifier: MSFT 5.0   &gt; Option: (55) Parameter Request List     Length: 14     &lt;Value: 0103060f1f212b2c2e2f779f9fc&gt;     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   &gt; Option: (255) End   Padding: 000000000000000000 </pre>	<pre> &gt; Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: 10:b3:d6:a4:85:97 &gt; Internet Protocol Version 4, Src: 5.5.5.5, Dst: 13.13.13.254 &gt; User Datagram Protocol, Src Port: 65233, Dst Port: 4789 &gt; Virtual Extensible Local Area Network   &gt; Flags: 0x8000, VXLAN Network ID (VNI)     Group Policy ID: 0     VXLAN Network Identifier (VNI): 303030     Reserved: 0   &gt; Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: 02:00:0d:0d:0d:fe   &gt; Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.10.150   &gt; User Datagram Protocol, Src Port: 67, Dst Port: 67   &gt; 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   &gt; 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   &gt; Option: (53) DHCP Message Type (Discover)     Length: 1     &lt;Value: 01&gt;     DHCP: Discover (1)   &gt; Option: (61) Client identifier     Length: 7     &lt;Value: 01005056a5fddd&gt;     Hardware type: Ethernet (0x01)     Client MAC address: 00:50:56:a5:fd:dd   &gt; Option: (12) Host Name     Length: 10     &lt;Value: 43584c6162732d573130&gt;     Host Name: CXLabs-W10   &gt; Option: (60) Vendor class identifier     Length: 8     &lt;Value: 4d53465420352e30&gt;     Vendor class identifier: MSFT 5.0   &gt; Option: (55) Parameter Request List     Length: 14     &lt;Value: 0103060f1f212b2c2e2f779f9fc&gt;     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   &gt; Option: (82) Agent Information Option     Length: 47     &lt;Value: 010e0108000600018a920aa00000000206707db9b84daf97090074656e616e742d610b040a0a0105040a0a0a0&gt;   &gt; Option 82 Suboption: (1) Agent Circuit ID     Length: 14     &lt;Value: 0180000600018a920aa000000000&gt;     Agent Circuit ID: 0180000600018a920aa000000000   &gt; Option 82 Suboption: (2) Agent Remote ID     Length: 6     &lt;Value: 707db9b84daf&gt;     Agent Remote ID: 707db9b84daf   &gt; Option 82 Suboption: (151) VRF name/VPN ID     Length: 9     &lt;Value: 0074656e616e742d61&gt;     VRF name:     [Expert Info (Warning/Undecoded): Trailing stray characters]   &gt; Option 82 Suboption: (11) Server ID Override (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     Server ID Override: 10.10.10.1   &gt; Option 82 Suboption: (5) Link selection (10.10.10.0)     Length: 4     &lt;Value: 0a0a0a00&gt;     Link selection: 10.10.10.0   &gt; Option: (255) End   Padding: 000000000000000000 </pre>



Conseil : L'image s'agrandit lorsque vous double-cliquez.

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## Détection sur SPINE

Détection reçue sur SPINE	Détection envoyée par SPINE
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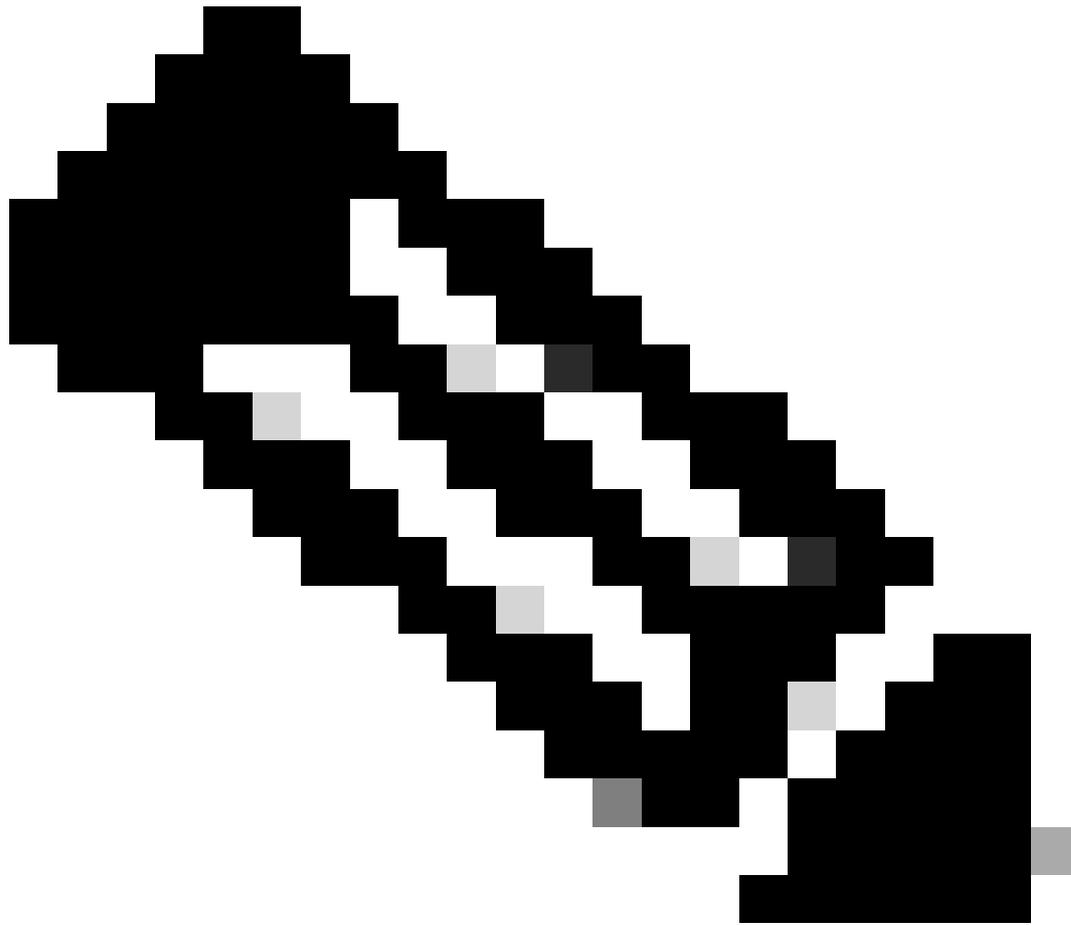
<pre> Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: 10:b3:d6:a4:85:97 Internet Protocol Version 4, Src: 5.5.5.5, Dst: 13.13.13.254 User Datagram Protocol, Src Port: 65233, Dst Port: 4789 Virtual eXtensible Local Area Network   Flags: 0x0000, VXLAN Network ID (VNI)   Group Policy ID: 0   VXLAN Network Identifier (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: 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   &lt;Value: 01&gt;   DHCP: Discover (1) Option: (61) Client identifier   Length: 7   &lt;Value: 01005056a5fd&lt;   Hardware type: Ethernet (0x01)   Client MAC address: 00:50:56:a5:fd:dd Option: (12) Host Name   Length: 10   &lt;Value: 43584c6162732d573130&gt;   Host Name: CXLabs-W10 Option: (60) Vendor class identifier   Length: 8   &lt;Value: 4d53465420352e30&gt;   Vendor class identifier: MSFT 5.0 Option: (55) Parameter Request List   Length: 14   &lt;Value: 0103060f1f212b2c2e2f7779f9fc&gt;   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   &lt;Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00&gt; Option 82 Suboption: (1) Agent Circuit ID   Length: 14   &lt;Value: 0108000600018a9200a000000000&gt;   Agent Circuit ID: 0108000600018a9200a000000000 Option 82 Suboption: (2) Agent Remote ID   Length: 6   &lt;Value: 707db9b84daf&gt;   Agent Remote ID: 707db9b84daf Option 82 Suboption: (151) VRF name/VPN ID   Length: 9   &lt;Value: 0074656e616e742d61&gt;   VRF name:   [Expert Info (Warning/Undecoded): Trailing stray characters] Option 82 Suboption: (11) Server ID Override (10.10.10.1)   Length: 4   &lt;Value: 0a0a0a01&gt;   Server ID Override: 10.10.10.1 Option 82 Suboption: (5) Link selection (10.10.10.0)   Length: 4   &lt;Value: 0a0a0a00&gt;   Link selection: 10.10.10.0 Option: (255) End   Option End: 255   Padding: 00000000000000000000 </pre>	<pre> Ethernet II, Src: 10:b3:d6: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: 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   &lt;Value: 01&gt;   DHCP: Discover (1) Option: (61) Client identifier   Length: 7   &lt;Value: 01005056a5fd&lt;   Hardware type: Ethernet (0x01)   Client MAC address: 00:50:56:a5:fd:dd Option: (12) Host Name   Length: 10   &lt;Value: 43584c6162732d573130&gt;   Host Name: CXLabs-W10 Option: (60) Vendor class identifier   Length: 8   &lt;Value: 4d53465420352e30&gt;   Vendor class identifier: MSFT 5.0 Option: (55) Parameter Request List   Length: 14   &lt;Value: 0103060f1f212b2c2e2f7779f9fc&gt;   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   &lt;Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00&gt; Option 82 Suboption: (1) Agent Circuit ID   Length: 14   &lt;Value: 0108000600018a9200a000000000&gt;   Agent Circuit ID: 0108000600018a9200a000000000 Option 82 Suboption: (2) Agent Remote ID   Length: 6   &lt;Value: 707db9b84daf&gt;   Agent Remote ID: 707db9b84daf Option 82 Suboption: (151) VRF name/VPN ID   Length: 9   &lt;Value: 0074656e616e742d61&gt;   VRF name:   [Expert Info (Warning/Undecoded): Trailing stray characters] Option 82 Suboption: (11) Server ID Override (10.10.10.1)   Length: 4   &lt;Value: 0a0a0a01&gt;   Server ID Override: 10.10.10.1 Option 82 Suboption: (5) Link selection (10.10.10.0)   Length: 4   &lt;Value: 0a0a0a00&gt;   Link selection: 10.10.10.0 Option: (255) End   Option End: 255   Padding: 00000000000000000000 </pre>
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## Découverte sur LEAF-1-vPC

Détection reçue sur LEAF-1-vPC	Détection envoyée par LEAF-1-vPC
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```
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: (111) 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)
  . . . . . = 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: (111) 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
```



Remarque : LEAF-2-vPC reçoit le paquet Discover, mais uniquement commuté.  
L'adresse MAC de destination appartient au serveur DHCP.

---

Détection reçue sur le serveur 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

```

Offre DHCP envoyée par le serveur 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

```

# Offre DHCP sur LEAF-2-vPC

Offre reçue sur LEAF-2-vPC	Offre envoyée par 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     &lt;Value: 02&gt;     DHCP: Offer (2)   Option: (1) Subnet Mask (255.255.255.0)     Length: 4     &lt;Value: ffffffff&gt;     Subnet Mask: 255.255.255.0   Option: (58) Renewal Time Value     Length: 4     &lt;Value: 0000a8c0&gt;     Renewal Time Value: 12 hours (43200)   Option: (59) Rebinding Time Value     Length: 4     &lt;Value: 00012750&gt;     Rebinding Time Value: 21 hours (75600)   Option: (51) IP Address Lease Time     Length: 4     &lt;Value: 00015180&gt;     IP Address Lease Time: 1 day (86400)   Option: (54) DHCP Server Identifier (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     DHCP Server Identifier: 10.10.10.1   Option: (3) Router     Length: 4     &lt;Value: 0a0a0a01&gt;     Router: 10.10.10.1   Option: (15) Domain Name     Length: 10     &lt;Value: 636973636f2e636f6d00&gt;     Domain Name: cisco.com   Option: (82) Agent Information Option     Length: 47     &lt;Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00&gt;   Option 82 Suboption: (1) Agent Circuit ID     Length: 14     &lt;Value: 0108000600018a9200a000000000&gt;     Agent Circuit ID: 0108000600018a9200a000000000   Option 82 Suboption: (2) Agent Remote ID     Length: 6     &lt;Value: 707db9b84daf&gt;     Agent Remote ID: 707db9b84daf   Option 82 Suboption: (151) VRF name/VPN ID     Length: 9     &lt;Value: 0074656e616e742d61&gt;     VRF name:     [Expert Info (Warning/Undecoded): Trailing stray characters]     [Trailing stray characters]     &lt;Message: Trailing stray characters&gt;     [Severity level: Warning]     [Group: Undecoded]   Option 82 Suboption: (11) Server ID Override (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     Server ID Override: 10.10.10.1   Option 82 Suboption: (5) Link selection (10.10.10.0)     Length: 4     &lt;Value: 0a0a0a00&gt;     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     &lt;Value: 02&gt;     DHCP: Offer (2)   Option: (1) Subnet Mask (255.255.255.0)     Length: 4     &lt;Value: ffffffff&gt;     Subnet Mask: 255.255.255.0   Option: (58) Renewal Time Value     Length: 4     &lt;Value: 0000a8c0&gt;     Renewal Time Value: 12 hours (43200)   Option: (59) Rebinding Time Value     Length: 4     &lt;Value: 00012750&gt;     Rebinding Time Value: 21 hours (75600)   Option: (51) IP Address Lease Time     Length: 4     &lt;Value: 00015180&gt;     IP Address Lease Time: 1 day (86400)   Option: (54) DHCP Server Identifier (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     DHCP Server Identifier: 10.10.10.1   Option: (3) Router     Length: 4     &lt;Value: 0a0a0a01&gt;     Router: 10.10.10.1   Option: (15) Domain Name     Length: 10     &lt;Value: 636973636f2e636f6d00&gt;     Domain Name: cisco.com   Option: (82) Agent Information Option     Length: 47     &lt;Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00&gt;   Option 82 Suboption: (1) Agent Circuit ID     Length: 14     &lt;Value: 0108000600018a9200a000000000&gt;     Agent Circuit ID: 0108000600018a9200a000000000   Option 82 Suboption: (2) Agent Remote ID     Length: 6     &lt;Value: 707db9b84daf&gt;     Agent Remote ID: 707db9b84daf   Option 82 Suboption: (151) VRF name/VPN ID     Length: 9     &lt;Value: 0074656e616e742d61&gt;     VRF name:     [Expert Info (Warning/Undecoded): Trailing stray characters]     [Trailing stray characters]     &lt;Message: Trailing stray characters&gt;     [Severity level: Warning]     [Group: Undecoded]   Option 82 Suboption: (11) Server ID Override (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     Server ID Override: 10.10.10.1   Option 82 Suboption: (5) Link selection (10.10.10.0)     Length: 4     &lt;Value: 0a0a0a00&gt;     Link selection: 10.10.10.0   Option: (255) End     Option End: 255           </pre>

# Offre DHCP vPC SPINE

Offre reçue sur SPINE	Offre envoyée par 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     &lt;Value: 02&gt;     DHCP: Offer (2)   Option: (1) Subnet Mask (255.255.255.0)     Length: 4     &lt;Value: ffffffff&gt;     Subnet Mask: 255.255.255.0   Option: (58) Renewal Time Value     Length: 4     &lt;Value: 0000a8c0&gt;     Renewal Time Value: 12 hours (43200)   Option: (59) Rebinding Time Value     Length: 4     &lt;Value: 00012750&gt;     Rebinding Time Value: 21 hours (75600)   Option: (51) IP Address Lease Time     Length: 4     &lt;Value: 00015180&gt;     IP Address Lease Time: 1 day (86400)   Option: (54) DHCP Server Identifier (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     DHCP Server Identifier: 10.10.10.1   Option: (3) Router     Length: 4     &lt;Value: 0a0a0a01&gt;     Router: 10.10.10.1   Option: (15) Domain Name     Length: 10     &lt;Value: 636973636f2e636f6d00&gt;     Domain Name: cisco.com   Option: (82) Agent Information Option     Length: 47     &lt;Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00&gt;   Option 82 Suboption: (1) Agent Circuit ID     Length: 14     &lt;Value: 0108000600018a9200a000000000&gt;     Agent Circuit ID: 0108000600018a9200a000000000   Option 82 Suboption: (2) Agent Remote ID     Length: 6     &lt;Value: 707db9b84daf&gt;     Agent Remote ID: 707db9b84daf   Option 82 Suboption: (151) VRF name/VPN ID     Length: 9     &lt;Value: 0074656e616e742d61&gt;     VRF name:     [Expert Info (Warning/Undecoded): Trailing stray characters]     [Trailing stray characters]     &lt;Message: Trailing stray characters&gt;     [Severity level: Warning]     [Group: Undecoded]   Option 82 Suboption: (11) Server ID Override (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     Server ID Override: 10.10.10.1   Option 82 Suboption: (5) Link selection (10.10.10.0)     Length: 4     &lt;Value: 0a0a0a00&gt;     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     &lt;Value: 02&gt;     DHCP: Offer (2)   Option: (1) Subnet Mask (255.255.255.0)     Length: 4     &lt;Value: ffffffff&gt;     Subnet Mask: 255.255.255.0   Option: (58) Renewal Time Value     Length: 4     &lt;Value: 0000a8c0&gt;     Renewal Time Value: 12 hours (43200)   Option: (59) Rebinding Time Value     Length: 4     &lt;Value: 00012750&gt;     Rebinding Time Value: 21 hours (75600)   Option: (51) IP Address Lease Time     Length: 4     &lt;Value: 00015180&gt;     IP Address Lease Time: 1 day (86400)   Option: (54) DHCP Server Identifier (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     DHCP Server Identifier: 10.10.10.1   Option: (15) Domain Name     Length: 10     &lt;Value: 636973636f2e636f6d00&gt;     Domain Name: cisco.com   Option: (82) Agent Information Option     Length: 47     &lt;Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00&gt;   Option 82 Suboption: (1) Agent Circuit ID     Length: 14     &lt;Value: 0108000600018a9200a000000000&gt;     Agent Circuit ID: 0108000600018a9200a000000000   Option 82 Suboption: (2) Agent Remote ID     Length: 6     &lt;Value: 707db9b84daf&gt;     Agent Remote ID: 707db9b84daf   Option 82 Suboption: (151) VRF name/VPN ID     Length: 9     &lt;Value: 0074656e616e742d61&gt;     VRF name:   Option 82 Suboption: (11) Server ID Override (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     Server ID Override: 10.10.10.1   Option 82 Suboption: (5) Link selection (10.10.10.0)     Length: 4     &lt;Value: 0a0a0a00&gt;     Link selection: 10.10.10.0   Option: (255) End     Option End: 255 </pre>
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## Offre DHCP sur LEAF-1

Offre reçue sur LEAF-1	Offre envoyée sur LEAF-1
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<pre> &gt; Ethernet II, Src: 18:b3:d6:44:85:97, Dst: 70:7d:b9:b8:4d:af &gt; Internet Protocol Version 4, Src: 13.13.13.254, Dst: 5.5.5.5 &gt; User Datagram Protocol, Src Port: 65518, Dst Port: 4789 &gt; Virtual eXtensible Local Area Network   &gt; Flags: 0x8000, VXLAN Network ID (VNI)     Group Policy ID: 0     VXLAN Network Identifier (VNI): 383038     Reserved: 0   &gt; Ethernet II, Src: 02:00:0d:0d:0d:fe, Dst: 70:7d:b9:b8:4d:af   &gt; Internet Protocol Version 4, Src: 10.10.10.150, Dst: 172.16.10.8   &gt; User Datagram Protocol, Src Port: 67, Dst Port: 67   &gt; 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   &gt; 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   &gt; Option: (53) DHCP Message Type (Offer)     Length: 1     &lt;Value: 02&gt;     DHCP: Offer (2)   &gt; Option: (1) Subnet Mask (255.255.255.0)     Length: 4     &lt;Value: ffffffff&gt;     Subnet Mask: 255.255.255.0   &gt; Option: (58) Renewal Time Value     Length: 4     &lt;Value: 0000a8c0&gt;     Renewal Time Value: 12 hours (43200)   &gt; Option: (59) Rebinding Time Value     Length: 4     &lt;Value: 00012750&gt;     Rebinding Time Value: 21 hours (75600)   &gt; Option: (51) IP Address Lease Time     Length: 4     &lt;Value: 00015180&gt;     IP Address Lease Time: 1 day (86400)   &gt; Option: (54) DHCP Server Identifier (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     DHCP Server Identifier: 10.10.10.1   &gt; Option: (15) Domain Name     Length: 10     &lt;Value: 636973636f2e636f6d00&gt;     Domain Name: cisco.com   &gt; Option: (82) Agent Information Option     Length: 47     &lt;Value: 010e0108000600018a9200a000000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a00&gt;   &gt; Option 82 Suboption: (1) Agent Circuit ID     Length: 14     &lt;Value: 0108000600018a9200a000000000&gt;     Agent Circuit ID: 0108000600018a9200a000000000   &gt; Option 82 Suboption: (2) Agent Remote ID     Length: 6     &lt;Value: 707db9b84daf&gt;     Agent Remote ID: 707db9b84daf   &gt; Option 82 Suboption: (151) VRF name/VPN ID     Length: 9     &lt;Value: 0074656e616e742d61&gt;     VRF name:   &gt; Option 82 Suboption: (11) Server ID Override (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     Server ID Override: 10.10.10.1   &gt; Option 82 Suboption: (5) Link selection (10.10.10.0)     Length: 4     &lt;Value: 0a0a0a00&gt;     Link selection: 10.10.10.0   &gt; Option: (255) End     Option End: 255 </pre>	<pre> &gt; Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: ff:ff:ff:ff:ff:ff &gt; Internet Protocol Version 4, Src: 10.10.10.1, Dst: 255.255.255.255 &gt; User Datagram Protocol, Src Port: 67, Dst Port: 68 &gt; 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   &gt; 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   &gt; Option: (53) DHCP Message Type (Offer)     Length: 1     &lt;Value: 02&gt;     DHCP: Offer (2)   &gt; Option: (1) Subnet Mask (255.255.255.0)     Length: 4     &lt;Value: ffffffff&gt;     Subnet Mask: 255.255.255.0   &gt; Option: (58) Renewal Time Value     Length: 4     &lt;Value: 0000a8c0&gt;     Renewal Time Value: 12 hours (43200)   &gt; Option: (59) Rebinding Time Value     Length: 4     &lt;Value: 00012750&gt;     Rebinding Time Value: 21 hours (75600)   &gt; Option: (51) IP Address Lease Time     Length: 4     &lt;Value: 00015180&gt;     IP Address Lease Time: 1 day (86400)   &gt; Option: (54) DHCP Server Identifier (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     DHCP Server Identifier: 10.10.10.1   &gt; Option: (3) Router     Length: 4     &lt;Value: 0a0a0a01&gt;     Router: 10.10.10.1   &gt; Option: (15) Domain Name     Length: 10     &lt;Value: 636973636f2e636f6d00&gt;     Domain Name: cisco.com   &gt; Option: (255) End     Option End: 255 </pre>
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Offre DHCP reçue sur HOST-1

```
> 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: 0000000000000000000000
  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
```

Demande envoyée par 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

```

# Demande sur LEAF-1

Requête reçue sur LEAF-1	Demande envoyée par LEAF-1
<pre> &gt; Ethernet II, Src: 00:50:56:a5:fd:dd, Dst: ff:ff:ff:ff:ff:ff &gt; Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255 &gt; User Datagram Protocol, Src Port: 68, Dst Port: 67 &gt; 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   &gt; 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   &gt; Option: (53) DHCP Message Type (Request)     Length: 1     &lt;Value: 03&gt;     DHCP: Request (3)   &gt; Option: (61) Client identifier     Length: 7     &lt;Value: 01005056a5fddd&gt;     Hardware type: Ethernet (0x01)     Client MAC address: 00:50:56:a5:fd:dd   &gt; Option: (50) Requested IP Address (10.10.10.3)     Length: 4     &lt;Value: 0a0a0a03&gt;     Requested IP Address: 10.10.10.3   &gt; Option: (54) DHCP Server Identifier (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     DHCP Server Identifier: 10.10.10.1   &gt; Option: (12) Host Name     Length: 10     &lt;Value: 43584c6162732d573130&gt;     Host Name: CXLabs-W10   &gt; Option: (81) Client Fully Qualified Domain Name     Length: 13     &lt;Value: 00000043584c6162732d573130&gt;     &gt; 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   &gt; Option: (60) Vendor class identifier     Length: 8     &lt;Value: 4d53465420352e30&gt;     Vendor class identifier: MSFT 5.0   &gt; Option: (55) Parameter Request List     Length: 14     &lt;Value: 0103060f1f212b2c2e2f779f9fc&gt;     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: (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   &gt; Option: (255) End     Option End: 255 </pre>	<pre> &gt; Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: 10:b3:d6:a4:85:97 &gt; Internet Protocol Version 4, Src: 5.5.5.5, Dst: 13.13.13.254 &gt; User Datagram Protocol, Src Port: 51730, Dst Port: 4789 &gt; Virtual Extensible Local Area Network   &gt; Flags: 0x0000, VXLAN Network ID (VNI)     Group Policy ID: 0     VXLAN Network Identifier (VNI): 303030     Reserved: 0   &gt; Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: 02:00:0d:0d:0d:fe   &gt; Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.10.150   &gt; User Datagram Protocol, Src Port: 67, Dst Port: 67   &gt; 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     &gt; 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     &gt; Option: (53) DHCP Message Type (Request)       Length: 1       &lt;Value: 03&gt;       DHCP: Request (3)     &gt; Option: (61) Client identifier       Length: 7       &lt;Value: 01005056a5fddd&gt;       Hardware type: Ethernet (0x01)       Client MAC address: 00:50:56:a5:fd:dd     &gt; Option: (50) Requested IP Address (10.10.10.3)       Length: 4       &lt;Value: 0a0a0a03&gt;       Requested IP Address: 10.10.10.3     &gt; Option: (54) DHCP Server Identifier (10.10.10.150)       Length: 4       &lt;Value: 0a0a0a96&gt;       DHCP Server Identifier: 10.10.10.150     &gt; Option: (12) Host Name       Length: 10       &lt;Value: 43584c6162732d573130&gt;       Host Name: CXLabs-W10     &gt; Option: (81) Client Fully Qualified Domain Name       Length: 13       &lt;Value: 00000043584c6162732d573130&gt;       &gt; Flags: 0x00       A-RR result: 0       PTR-RR result: 0       Client name: CXLabs-W10     &gt; Option: (60) Vendor class identifier       Length: 8       &lt;Value: 4d53465420352e30&gt;       Vendor class identifier: MSFT 5.0     &gt; Option: (55) Parameter Request List       Length: 14       &lt;Value: 0103060f1f212b2c2e2f779f9fc&gt;       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     &gt; Option: (82) Agent Information Option       Length: 47       &lt;Value: 010e010800060018a9200a000000000206707db9b84daf97090074656e16e742d610b40a0a0a0105040a0a00&gt;       &gt; Option 82 Suboption: (1) Agent Circuit ID         Length: 14         &lt;Value: 010800060018a9200a0000000000&gt;         Agent Circuit ID: 010800060018a9200a0000000000       &gt; Option 82 Suboption: (2) Agent Remote ID         Length: 6         &lt;Value: 707db9b84daf&gt;         Agent Remote ID: 707db9b84daf       &gt; Option 82 Suboption: (151) VRF name/VPN ID         Length: 9         &lt;Value: 0074656e16e742d61&gt;         &gt; VRF name:           [Expert Info (Warning/Undecoded): Trailing stray characters]       &gt; Option 82 Suboption: (11) Server ID Override (10.10.10.1)         Length: 4         &lt;Value: 0a0a0a01&gt;         Server ID Override: 10.10.10.1       &gt; Option 82 Suboption: (5) Link selection (10.10.10.0)         Length: 4         &lt;Value: 0a0a0a00&gt;         Link selection: 10.10.10.0     &gt; Option: (255) End       Option End: 255 </pre>

# Demande sur SPINE

Requête reçue sur SPINE	Demande envoyée par 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: 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: 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: 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: 010e018000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00>
  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
```

# Requête sur LEAF-2-vPC

Requête PCd sur LEAF-2-vPC	Demande d'envoi par 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     &lt;Value: 03&gt;     DHCP: Request (3)   Option: (61) Client identifier     Length: 7     &lt;Value: 01005056a5fddd&gt;     Hardware type: Ethernet (0x01)     Client MAC address: 00:50:56:a5:fd:dd   Option: (50) Requested IP Address (10.10.10.3)     Length: 4     &lt;Value: 0a0a0a03&gt;     Requested IP Address: 10.10.10.3   Option: (54) DHCP Server Identifier (10.10.10.150)     Length: 4     &lt;Value: 0a0a0a96&gt;     DHCP Server Identifier: 10.10.10.150   Option: (12) Host Name     Length: 10     &lt;Value: 43584c6162732d573130&gt;     Host Name: CXLabs-W10   Option: (81) Client Fully Qualified Domain Name     Length: 13     &lt;Value: 00000043584c6162732d573130&gt;     Flags: 0x00     A-RR result: 0     PTR-RR result: 0     Client name: CXLabs-W10   Option: (60) Vendor class identifier     Length: 8     &lt;Value: 4d53465428352e30&gt;     Vendor class identifier: MSFT 5.0   Option: (55) Parameter Request List     Length: 14     &lt;Value: 0103060f1f212b2c2e2f779f9fc&gt;     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     &lt;Value: 010e010800600018a920a000000000206707db9b84daf97090074656e16e742d610b040a0a0a0105040a0a0a00&gt;   Option 82 Suboption: (1) Agent Circuit ID     Length: 14     &lt;Value: 010800600018a920a000000000&gt;     Agent Circuit ID: 010800600018a920a000000000   Option 82 Suboption: (2) Agent Remote ID     Length: 6     &lt;Value: 707db9b84daf&gt;     Agent Remote ID: 707db9b84daf   Option 82 Suboption: (151) VRF name/VPN ID     Length: 9     &lt;Value: 0074656e16e742d61&gt;     VRF name:   Option 82 Suboption: (11) Server ID Override (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     Server ID Override: 10.10.10.1   Option 82 Suboption: (5) Link selection (10.10.10.0)     Length: 4     &lt;Value: 0a0a0a00&gt;     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     &lt;Value: 03&gt;     DHCP: Request (3)   Option: (61) Client identifier     Length: 7     &lt;Value: 01005056a5fddd&gt;     Hardware type: Ethernet (0x01)     Client MAC address: 00:50:56:a5:fd:dd   Option: (50) Requested IP Address (10.10.10.3)     Length: 4     &lt;Value: 0a0a0a03&gt;     Requested IP Address: 10.10.10.3   Option: (54) DHCP Server Identifier (10.10.10.150)     Length: 4     &lt;Value: 0a0a0a96&gt;     DHCP Server Identifier: 10.10.10.150   Option: (12) Host Name     Length: 10     &lt;Value: 43584c6162732d573130&gt;     Host Name: CXLabs-W10   Option: (81) Client Fully Qualified Domain Name     Length: 13     &lt;Value: 00000043584c6162732d573130&gt;     Flags: 0x00     A-RR result: 0     PTR-RR result: 0     Client name: CXLabs-W10   Option: (60) Vendor class identifier     Length: 8     &lt;Value: 4d53465428352e30&gt;     Vendor class identifier: MSFT 5.0   Option: (55) Parameter Request List     Length: 14     &lt;Value: 0103060f1f212b2c2e2f779f9fc&gt;     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     &lt;Value: 010e010800600018a920a000000000206707db9b84daf97090074656e16e742d610b040a0a0a0105040a0a0a00&gt;   Option 82 Suboption: (1) Agent Circuit ID     Length: 14     &lt;Value: 010800600018a920a000000000&gt;     Agent Circuit ID: 010800600018a920a000000000   Option 82 Suboption: (2) Agent Remote ID     Length: 6     &lt;Value: 707db9b84daf&gt;     Agent Remote ID: 707db9b84daf   Option 82 Suboption: (151) VRF name/VPN ID     Length: 9     &lt;Value: 0074656e16e742d61&gt;     VRF name:   Option 82 Suboption: (11) Server ID Override (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     Server ID Override: 10.10.10.1   Option 82 Suboption: (5) Link selection (10.10.10.0)     Length: 4     &lt;Value: 0a0a0a00&gt;     Link selection: 10.10.10.0   Option: (255) End   Option End: 255 </pre>

# Requête reçue sur le serveur DHCP

```

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

```

Envoi ACK par le serveur 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: 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

```

# ACK sur LEAF-2-vPC

ACK reçu sur LEAF-2-vPC	ACK envoyé par 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     &lt;Value: 05&gt;     DHCP: ACK (5)   Option: (58) Renewal Time Value     Length: 4     &lt;Value: 0000a8c0&gt;     Renewal Time Value: 12 hours (43200)   Option: (59) Rebinding Time Value     Length: 4     &lt;Value: 00012750&gt;     Rebinding Time Value: 21 hours (75600)   Option: (51) IP Address Lease Time     Length: 4     &lt;Value: 00015180&gt;     IP Address Lease Time: 1 day (86400)   Option: (54) DHCP Server Identifier (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     DHCP Server Identifier: 10.10.10.1   Option: (1) Subnet Mask (255.255.255.0)     Length: 4     &lt;Value: ffffffff00&gt;     Subnet Mask: 255.255.255.0   Option: (81) Client Fully Qualified Domain Name     Length: 3     &lt;Value: 00ffff&gt;     Flags: 0x00     A-RR result: 255     PTR-RR result: 255   Option: (3) Router     Length: 4     &lt;Value: 0a0a0a01&gt;     Router: 10.10.10.1   Option: (15) Domain Name     Length: 10     &lt;Value: 636973636f2e636f6d00&gt;     Domain Name: cisco.com   Option: (82) Agent Information Option     Length: 47     &lt;Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00&gt;   Option 82 Suboption: (1) Agent Circuit ID     Length: 14     &lt;Value: 0108000600018a9200a000000000&gt;     Agent Circuit ID: 0108000600018a9200a000000000   Option 82 Suboption: (2) Agent Remote ID     Length: 6     &lt;Value: 707db9b84daf&gt;     Agent Remote ID: 707db9b84daf   Option 82 Suboption: (151) VRF name/VPN ID     Length: 9     &lt;Value: 0074656e616e742d61&gt;     VRF name:     [Expert Info (Warning/Undecoded): Trailing stray characters]     [Trailing stray characters]     &lt;Message: Trailing stray characters&gt;     [Severity level: Warning]     [Group: Undecoded]   Option 82 Suboption: (11) Server ID Override (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     Server ID Override: 10.10.10.1   Option 82 Suboption: (5) Link selection (10.10.10.0)     Length: 4     &lt;Value: 0a0a0a00&gt;     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     &lt;Value: 05&gt;     DHCP: ACK (5)   Option: (58) Renewal Time Value     Length: 4     &lt;Value: 0000a8c0&gt;     Renewal Time Value: 12 hours (43200)   Option: (59) Rebinding Time Value     Length: 4     &lt;Value: 00012750&gt;     Rebinding Time Value: 21 hours (75600)   Option: (51) IP Address Lease Time     Length: 4     &lt;Value: 00015180&gt;     IP Address Lease Time: 1 day (86400)   Option: (54) DHCP Server Identifier (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     DHCP Server Identifier: 10.10.10.1   Option: (1) Subnet Mask (255.255.255.0)     Length: 4     &lt;Value: ffffffff00&gt;     Subnet Mask: 255.255.255.0   Option: (81) Client Fully Qualified Domain Name     Length: 3     &lt;Value: 00ffff&gt;     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     &lt;Value: 0a0a0a01&gt;     Router: 10.10.10.1   Option: (15) Domain Name     Length: 10     &lt;Value: 636973636f2e636f6d00&gt;     Domain Name: cisco.com   Option: (82) Agent Information Option     Length: 47     &lt;Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00&gt;   Option 82 Suboption: (1) Agent Circuit ID     Length: 14     &lt;Value: 0108000600018a9200a000000000&gt;     Agent Circuit ID: 0108000600018a9200a000000000   Option 82 Suboption: (2) Agent Remote ID     Length: 6     &lt;Value: 707db9b84daf&gt;     Agent Remote ID: 707db9b84daf   Option 82 Suboption: (151) VRF name/VPN ID     Length: 9     &lt;Value: 0074656e616e742d61&gt;     VRF name:     [Expert Info (Warning/Undecoded): Trailing stray characters]     [Trailing stray characters]     &lt;Message: Trailing stray characters&gt;     [Severity level: Warning]     [Group: Undecoded]   Option 82 Suboption: (11) Server ID Override (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     Server ID Override: 10.10.10.1   Option 82 Suboption: (5) Link selection (10.10.10.0)     Length: 4     &lt;Value: 0a0a0a00&gt;     Link selection: 10.10.10.0   Option: (255) End   Option End: 255 </pre>

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## ACK sur SPINE

ACK reçu sur SPINE	ACK envoyé par SPINE
<pre> Ethernet II, Src: 00:126: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 (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     &lt;Value: 05&gt;     DHCP: ACK (5)   Option: (58) Renewal Time Value     Length: 4     &lt;Value: 0000a8c0&gt;     Renewal Time Value: 12 hours (43200)   Option: (59) Rebinding Time Value     Length: 4     &lt;Value: 00012750&gt;     Rebinding Time Value: 21 hours (75600)   Option: (51) IP Address Lease Time     Length: 4     &lt;Value: 00015180&gt;   Option: (54) DHCP Server Identifier (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     DHCP Server Identifier: 10.10.10.1   Option: (1) Subnet Mask (255.255.255.0)     Length: 4     &lt;Value: ffffffff00&gt;     Subnet Mask: 255.255.255.0   Option: (81) Client Fully Qualified Domain Name     Length: 3     &lt;Value: 00ffff&gt;     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     &lt;Value: 0a0a0a01&gt;     Router: 10.10.10.1   Option: (15) Domain Name     Length: 10     &lt;Value: 636973636f2e636f6000&gt;     Domain Name: cisco.com   Option: (82) Agent Information Option     Length: 47     &lt;Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0105040a0a0000&gt;   Option 82 Suboption: (1) Agent Circuit ID     Length: 14     &lt;Value: 0108000600018a9200a000000000&gt;     Agent Circuit ID: 0108000600018a9200a000000000   Option 82 Suboption: (2) Agent Remote ID     Length: 6     &lt;Value: 707db9b84daf&gt;     Agent Remote ID: 707db9b84daf   Option 82 Suboption: (151) VRF name/VPN ID     Length: 9     &lt;Value: 0074656e616e742d61&gt;     VRF name:       [Expert Info (Warning/Undecoded): Trailing stray characters]       [Trailing stray characters]       &lt;Message: Trailing stray characters&gt;       [Severity level: Warning]       [Group: Undecoded]   Option 82 Suboption: (11) Server ID Override (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     Server ID Override: 10.10.10.1   Option 82 Suboption: (5) Link selection (10.10.10.0)     Length: 4     &lt;Value: 0a0a0a00&gt;     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: 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     &lt;Value: 05&gt;     DHCP: ACK (5)   Option: (58) Renewal Time Value     Length: 4     &lt;Value: 0000a8c0&gt;     Renewal Time Value: 12 hours (43200)   Option: (59) Rebinding Time Value     Length: 4     &lt;Value: 00012750&gt;     Rebinding Time Value: 21 hours (75600)   Option: (51) IP Address Lease Time     Length: 4     &lt;Value: 00015180&gt;   Option: (54) DHCP Server Identifier (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     DHCP Server Identifier: 10.10.10.1   Option: (1) Subnet Mask (255.255.255.0)     Length: 4     &lt;Value: ffffffff00&gt;     Subnet Mask: 255.255.255.0   Option: (81) Client Fully Qualified Domain Name     Length: 3     &lt;Value: 00ffff&gt;     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     &lt;Value: 0a0a0a01&gt;     Router: 10.10.10.1   Option: (15) Domain Name     Length: 10     &lt;Value: 636973636f2e636f6000&gt;     Domain Name: cisco.com   Option: (82) Agent Information Option     Length: 47     &lt;Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d610b040a0a0105040a0a0000&gt;   Option 82 Suboption: (1) Agent Circuit ID     Length: 14     &lt;Value: 0108000600018a9200a000000000&gt;     Agent Circuit ID: 0108000600018a9200a000000000   Option 82 Suboption: (2) Agent Remote ID     Length: 6     &lt;Value: 707db9b84daf&gt;     Agent Remote ID: 707db9b84daf   Option 82 Suboption: (151) VRF name/VPN ID     Length: 9     &lt;Value: 0074656e616e742d61&gt;     VRF name:       [Expert Info (Warning/Undecoded): Trailing stray characters]       [Trailing stray characters]       &lt;Message: Trailing stray characters&gt;       [Severity level: Warning]       [Group: Undecoded]   Option 82 Suboption: (11) Server ID Override (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     Server ID Override: 10.10.10.1   Option 82 Suboption: (5) Link selection (10.10.10.0)     Length: 4     &lt;Value: 0a0a0a00&gt;     Link selection: 10.10.10.0   Option: (255) End     Option End: 255 </pre>

## ACK sur LEAF-1

ACK reçu sur LEAF-1	ACK envoyé par LEAF-1
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<pre> &gt; Ethernet II, Src: 10:b3:06:a4:85:97, Dst: 70:7d:b9:b8:4d:af &gt; Internet Protocol Version 4, Src: 13.13.13.254, Dst: 5.5.5.5 &gt; User Datagram Protocol, Src Port: 65518, Dst Port: 4789 &gt; Virtual eXtensible Local Area Network   &gt; Flags: 0x0000, VLAN Network ID (VNI)     Group Policy ID: 0     VLAN Network Identifier (VNI): 303030     Reserved: 0 &gt; Ethernet II, Src: 02:00:0d:0d:0d:fe, Dst: 70:7d:b9:b8:4d:af &gt; Internet Protocol Version 4, Src: 10.10.10.150, Dst: 172.16.10.8 &gt; User Datagram Protocol, Src Port: 67, Dst Port: 67 &gt; 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   &gt; 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   &gt; Option: (53) DHCP Message Type (ACK)     Length: 1     &lt;Value: 05&gt;     DHCP: ACK (5)   &gt; Option: (58) Renewal Time Value     Length: 4     &lt;Value: 0000a8c0&gt;     Renewal Time Value: 12 hours (43200)   &gt; Option: (59) Rebinding Time Value     Length: 4     &lt;Value: 00012750&gt;     Rebinding Time Value: 21 hours (75600)   &gt; Option: (51) IP Address Lease Time     Length: 4     &lt;Value: 00015180&gt;     IP Address Lease Time: 1 day (86400)   &gt; Option: (54) DHCP Server Identifier (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     DHCP Server Identifier: 10.10.10.1   &gt; Option: (1) Subnet Mask (255.255.255.0)     Length: 4     &lt;Value: ffffffff00&gt;     Subnet Mask: 255.255.255.0   &gt; Option: (81) Client Fully Qualified Domain Name     Length: 3     &lt;Value: 00ffff&gt;     &gt; 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   &gt; Option: (3) Router     Length: 4     &lt;Value: 0a0a0a01&gt;     Router: 10.10.10.1   &gt; Option: (15) Domain Name     Length: 10     &lt;Value: 636973636f2e636f6d00&gt;     Domain Name: cisco.com   &gt; Option: (82) Agent Information Option     Length: 47     &lt;Value: 010e0108000600018a9200a00000000206707db9b84daf97090074656e616e742d6100040a0a0105040a0a000&gt;   &gt; Option 82 Suboption: (1) Agent Circuit ID     Length: 14     &lt;Value: 0180000600018a9200a0000000000000&gt;     Agent Circuit ID: 0180000600018a9200a0000000000000   &gt; Option 82 Suboption: (2) Agent Remote ID     Length: 6     &lt;Value: 707db9b84daf&gt;     Agent Remote ID: 707db9b84daf   &gt; Option 82 Suboption: (151) VRF name/VPN ID     Length: 9     &lt;Value: 0074656e616e742d61&gt;     VRF name:   &gt; [Expert Info (Warning/Undecoded): Trailing stray characters]     [Trailing stray characters]     &lt;Message: Trailing stray characters&gt;     [Severity level: Warning]     [Group: Undecoded]   &gt; Option 82 Suboption: (11) Server ID Override (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     Server ID Override: 10.10.10.1   &gt; Option 82 Suboption: (5) Link selection (10.10.10.0)     Length: 4     &lt;Value: 0a0a0a00&gt;     Link selection: 10.10.10.0   &gt; Option: (255) End     Option End: 255 </pre>	<pre> &gt; Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: ff:ff:ff:ff:ff:ff &gt; Internet Protocol Version 4, Src: 10.10.10.1, Dst: 255.255.255.255 &gt; User Datagram Protocol, Src Port: 67, Dst Port: 68 &gt; 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   &gt; 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   &gt; Option: (53) DHCP Message Type (ACK)     Length: 1     &lt;Value: 05&gt;     DHCP: ACK (5)   &gt; Option: (58) Renewal Time Value     Length: 4     &lt;Value: 0000a8c0&gt;     Renewal Time Value: 12 hours (43200)   &gt; Option: (59) Rebinding Time Value     Length: 4     &lt;Value: 00012750&gt;     Rebinding Time Value: 21 hours (75600)   &gt; Option: (51) IP Address Lease Time     Length: 4     &lt;Value: 00015180&gt;     IP Address Lease Time: 1 day (86400)   &gt; Option: (54) DHCP Server Identifier (10.10.10.1)     Length: 4     &lt;Value: 0a0a0a01&gt;     DHCP Server Identifier: 10.10.10.1   &gt; Option: (1) Subnet Mask (255.255.255.0)     Length: 4     &lt;Value: ffffffff00&gt;     Subnet Mask: 255.255.255.0   &gt; Option: (81) Client Fully Qualified Domain Name     Length: 3     &lt;Value: 00ffff&gt;     &gt; 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   &gt; Option: (3) Router     Length: 4     &lt;Value: 0a0a0a01&gt;     Router: 10.10.10.1   &gt; Option: (15) Domain Name     Length: 10     &lt;Value: 636973636f2e636f6d00&gt;     Domain Name: cisco.com   &gt; Option: (255) End     Option End: 255 </pre>
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## ACK sur 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: 000000000000000000000000
  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

```

## Informations connexes

[Configuration de VXLAN BGP EVPN](#)

[Configuration de VXLAN](#)

[Résolution des problèmes liés à DHCP sur Nexus 9000](#)

[Guide de configuration VXLAN de la gamme Cisco Nexus 9000 NX-OS, version 10.4\(x\)](#)

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