DHCP configureren en controleren in een VxLAN-fabric voor Nexus 9000 met NX-OS en Windows Server 2022

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 ACK op LEAF-2-vPC

 ACK op RUGGENGRAAT

 ACK op LEAF-1

 ACK op HOST-1

Inleiding

Dit document beschrijft hoe u DHCP kunt configureren en oplossen in een VLAN-fabric met Nexus 9000 switches.

Voorwaarden

Vereisten

Cisco raadt kennis van de volgende onderwerpen aan:

- Nexus NX-OS-software.
- Virtual-poortkanaal (vPC).
- VxLAN BGP L2VPN-VPN VPN
- BGP-adresfamilie voor IPv4
- OSPF
- Multicast PIM (sparse-mode)
- DHCP

Gebruikte componenten

De informatie in dit document is gebaseerd op de volgende software- en hardware-versies:

- Cisco Nexus 9000 met Cisco NX-OS.
 - N9K-C93180YC-EX
 - N9K-C93180YC-FX switch
 - NX-OS 10.3(4a)
- Windows Server 2022-datacenter

De informatie in dit document is gebaseerd op de apparaten in een specifieke laboratoriumomgeving. Alle apparaten die in dit document worden beschreven, hadden een opgeschoonde (standaard)configuratie. Als uw netwerk live is, moet u zorgen dat u de potentiële impact van elke opdracht begrijpt.



N.B.: Vragen over de configuratie en integriteit van software of hardware van derden vallen buiten de ondersteuning van Cisco. Het gebruik van tools van derden is de beste poging om uw configuratie en werking met Cisco-apparatuur aan de klant aan te tonen.

Achtergrondinformatie

Configuratie van onderlay en overlay voor VxLAN in laboratorium



VXLAN Fabric Diagram in laboratorium

- RUGGENGRAAT:
 - Deze Nexus switch verstuurt DHCP-pakketten (Discover, Offer, Verzoek, Ack) zonder dat deze in dit scenario worden gedecapsuleerd. Alleen de kop buiten wordt gebruikt.
 - Handelt als centrale routeringspunten in de netwerkstof.
 - Verantwoordelijk voor het onderling verbinden van alle LEAF-switches en het faciliteren van de gegevensstroom tussen hen.
 - Neemt deel aan BGP om EVPN-routes naar de LEAF-switches te distribueren.
 - Voert IP-routing uit en kan verkeer tussen verschillende subnetten of VxLANsegmenten routeren door naar de buitenste IP-headers te kijken.
 - Scheidt het overlay-netwerk (VxLAN) van het fysieke netwerk onder de afdekking.
 - Beheert de onderlaag met traditionele IP-routingprotocollen, terwijl de overlay wordt beheerd door VxLAN met BGP EVPN, waardoor een schaalbare en flexibele netwerkarchitectuur wordt geboden.
- BLADZIJDE 1:
 - LEAF-switches bieden fysieke connectiviteit voor endpoints zoals servers, opslagapparaten en andere netwerkapparaten.
 - LEAF-switches fungeren als VTEP's, wat betekent dat ze de VxLAN-pakketten inkapselen en deencapsuleren.
 - In dit scenario doet HOST#1 het IP-adresverzoek.
 - LEAF-1 is verantwoordelijk voor het inkapselen van de DCHP-pakketten binnen VxLAN-header.
 - HOST#1 ontvangt DCHP-pakketten transparant als klassieke Ethernet.
- LEAF-1-vPC en LEAF-2-vPC:
 - LEAF-switches nemen deel aan het EVPN-besturingsplane door BGP te runnen en routegegevens uit te wisselen. Dit maakt de distributie van MAC- en IP-adresinformatie

mogelijk, waardoor verkeer efficiënt over de VxLAN-structuur kan worden gerouteerd.

- In dit scenario wordt de DHCP-server geassocieerd met VLAN 10 met VNI 101010
 zoals HOST#1 is. Dit betekent dat het alleen VxLAN-overbrugging is.
- Als de DHCP-server was gekoppeld aan een VNI anders dan HOST#1, dan zou een L3VNI strikt noodzakelijk zijn voor routing. Het bron- en doelbestand VNI moet worden gemaakt.
- DCHP-server ontvangt DCHP-pakketten transparant als klassieke Ethernet.
- Het BUM-verkeer wordt door beide Nexus-switches in vPC ontvangen, maar alleen de operationeel primaire Nexus-switch in vPC stuurt het verkeer. De tweede Nexus switch laat het verkeer vallen. In dit scenario is LEAF-1-vPC operationeel primair.
- Het gebruik van infra-vlans is verplicht omdat als de interface op LEAF-2-vPC naar SPINE daalt, DCHP-pakketten niet kunnen worden verzonden. Om VxLAN-ingesloten verkeer naar LEAF-1-vPC te verzenden, is deze back-up van VLAN vereist. Op deze manier kan LEAF-1-vPC DCHP-pakketten naar de ruggengraat sturen.
- N9K-ACCESS:
 - Deze Nexus switch biedt alleen connectiviteit met beide blades met behulp van een vPC-poortkanaal voor redundantiedoeleinden naar HOST#2

RUGGENGRAAT

nv overlay evpn feature ospf feature bop 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 232.0.0/8 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
```

BLAD-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 nvel
 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 12vpn evpn
      send-community
      send-community extended
 vrf tenant-a
    address-family ipv4 unicast
      redistribute direct route-map direct_routes_tenant-a
evpn
 vni 101010 12
    rd auto
    route-target import auto
    route-target export auto
 vni 202020 12
    rd auto
    route-target import auto
    route-target export auto
```

LEAF-1-vPC-software

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 12vpn evpn advertise-pip neighbor 192.168.0.11 remote-as 65000 update-source loopback0 address-family 12vpn evpn send-community send-community extended neighbor 192.168.88.2 remote-as 65000 description OVERLAY_BACKUP update-source Vlan888 address-family 12vpn evpn send-community send-community extended vrf tenant-a address-family ipv4 unicast redistribute direct route-map direct_routes_tenant-a evpn vni 101010 12 rd auto route-target import auto route-target export auto vni 202020 12 rd auto route-target import auto route-target export auto

LEAF-2-vPC-software

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 232.0.0/8 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 12vpn evpn advertise-pip neighbor 192.168.0.11 remote-as 65000 update-source loopback0 address-family 12vpn evpn send-community send-community extended neighbor 192.168.88.1 remote-as 65000 description OVERLAY_BACKUP update-source Vlan888 address-family 12vpn evpn send-community send-community extended vrf tenant-a address-family ipv4 unicast redistribute direct route-map direct_routes_tenant-a evpn vni 101010 12 rd auto route-target import auto route-target export auto vni 202020 12 rd auto route-target import auto route-target export auto

N9K-ACCESS

feature lacp vlan 1,10 interface port-channel10 switchport switchport mode trunk interface Ethernet1/11 switchport switchport access vlan 10 no shutdown interface Ethernet1/45 switchport switchport mode trunk channel-group 10 mode active no shutdown interface Ethernet1/46 switchport switchport mode trunk channel-group 10 mode active

DHCP-configuratie op Nexus-switches

BLAD-1

Stap 1. Schakel de functie DCHP in.

LEAF-1(config)# feature dhcp



Opmerking: de DHCP-server en de Relay Agent Command Service DHCP, ip DHCP Relay en ipv6 DHCP Relay zijn standaard ingeschakeld sinds NX-OS 7.x. Stap 2. Pas de optie van de bevelip DHCP relay informatie toe.

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



Opmerking: met deze opdracht kan de DHCP Relay-agent optie 82-informatie invoegen en verwijderen over de pakketten die worden doorgestuurd.

Stap 3. Pas de optieoptie VPN toe op opdrachtip DHCP Relay.

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



Opmerking: deze opdracht maakt de DHCP Relay-verzoeken mogelijk die worden ontvangen op verschillende VRF-locaties waar de DHCP-server thuishoort.

Stap 4. Pas het commando "ip dhcp relay address [ip adres van DCHP server]" toe.



Opmerking: in dit voorbeeld is het IP-adres voor DCHP-server 10.10.10.150.

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

Stap 5. Pas de opdracht "ip DHCP Relay bron-interface [unieke loopback]"toe.



Opmerking: met deze opdracht wordt het IP-bronadres van de DHCP Relay-agent geconfigureerd voor de verwerking van Discover, offer, request en ACK voor unicastcommunicatie, die de DHCP Relay-agent het IP-adres van SVI gebruikt als IP-bronadres voor DHCP Relay-agent. Dit is niet gewenst omdat dit IP-adres wordt gedeeld door meerdere VTEP's en zwart-vasthouden van DHCP-pakketten kan gebeuren. Om dit te voorkomen, is een uniek IP-adres (met behulp van een loopback-interface) nodig om elke VTEP te onderscheiden.

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

Stap 6. In de VRF corresponderende huurder binnen BGP, directe routeherdistributie met een prefix-lijst en route-kaart die het IP-adres van de loopback-interface omvat.



Opmerking: deze loopback interface behoort tot de huurder van 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
```

Stap 7. Controleer dat het IP-adres van de loopback-interface in BGP L2VPN EVPN naar de Spines wordt geadverteerd met de opdracht: toon bgp l2vpn evpn [loopback IP] vrf [tenant vrf].

LEAF-1(config)# show bgp 12vpn 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]:[32]:[172.16.10.8]/224, version 421 Paths: (1 available, best #1) Flags: (0x000002) (high32 0000000) on xmit-list, is not in 12rib/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

Stap 8. Controleer dat het IP-adres van de loopback-interface is ingespoten in BGP L2VPN EVPN waar DHCP-server is gevestigd.



Opmerking: Als er Nexus-switches in vPC zijn, controleer dan of zij beiden het IP-adres van de loopback-interface in BGP L2VPN EVPN leren.

```
LEAF-1# show bgp 12vpn 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]:[32]:[172.16.10.8]/224, version 754
Paths: (1 available, best #1)
Flags: (0x000002) (high32 0000000) 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

Path-id 1 not advertised to any peer

Stap 9. Controleer dat er een route is voor de DHCP-server op de bronhuurder met de opdracht toon ip route [DHCP server IP] vrf [tenant vrf].



Opmerking: de route die moet worden gebruikt, moet van VxLAN tot standaard VRF lopen. Als er geen route beschikbaar is, controleer dan of de VTEP het IP-adres van de DCHP-server lokaal kent.

```
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
10.10.150/32, ubest/mbest: 1/0
    *via 192.168.13.254%default, [200/0], 2w0d, bgp-65000, internal, tag 65000, segid: 303030 tunnelid:</pre>
```

Stap 10. Controleer dat de DCHP server IP bereikbaar is met de loopback-interface en de corresponderende VRF als een VRF-bron met de opdracht ping [DHCP server IP] bron-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

Stap 11. Controleer de status van de DHCP-relay-agent.

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

Stap 12. Controleer optie 82, zoals de VPN-optie en het juiste IP-adres van de relay onder de relay-agent.

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:InterfaceRelay AddressVRF Name------------------Vlan1010.10.10.150<<<<<<<<<>><<<<>><<<<>><</td>

Stap 13. Controleer de statistieken van de verwerkte en verzonden pakketten.

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

Stap 14. Controleer de statistieken van relay-pakketten.

LEAF-1# show ip dhcp relay statistics

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	ı switch	
receives DHCP request packet with destination ip	as broadca	ast
address. If request is unicast it will be \ensuremath{HW} swit	ched	

LEAF-1-vPC DHCP

Stap 1. Schakel de functie DCHP in.

LEAF-1-VPC(config)#feature dhcp



Opmerking: de DHCP-server en de Relay Agent Command Service DHCP, ip DHCP Relay en ipv6 DHCP Relay zijn standaard ingeschakeld sinds NX-OS 7.x.

Stap 2. Pas de optie van de bevelip DHCP relay informatie toe.

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



Opmerking: met deze opdracht kan de DHCP Relay-agent optie 82-informatie invoegen en verwijderen over de pakketten die worden doorgestuurd.

Stap 3. Pas de opdracht "ip DHCP Relay information option vpn" toe.

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



Opmerking: deze opdracht maakt de DHCP Relay-verzoeken mogelijk die worden ontvangen op verschillende VRF-locaties waar de DHCP-server thuishoort.

Stap 4. Pas het commando ip dhcp relay adres [ip adres van DCHP server].



Opmerking: in dit voorbeeld is het IP-adres voor DCHP-server 10.10.10.150.

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

Stap 5. Pas de opdracht "ip DHCP Relay bron-interface [unieke loopback]"toe.



Opmerking: met deze opdracht wordt het IP-bronadres van de DHCP Relay-agent geconfigureerd voor de verwerking van Discover, offer, request en ACK voor unicastcommunicatie, die de DHCP Relay-agent het IP-adres van SVI gebruikt als IP-bronadres voor DHCP Relay-agent. Dit is niet gewenst omdat dit IP-adres wordt gedeeld door meerdere VTEP's en zwart-vasthouden van DHCP-pakketten kan gebeuren. Om dit te voorkomen, is een uniek IP-adres (met behulp van een loopback-interface) nodig om elke VTEP te onderscheiden.

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

Stap 6. In de VRF corresponderende huurder binnen BGP, directe routeherdistributie met een prefix-lijst en route-kaart die het IP-adres van de loopback-interface omvat.



Opmerking: deze loopback interface behoort tot de huurder van 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 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
```

Stap 7. Controleer dat het IP-adres van de loopback-interface in BGP L2VPN EVPN naar de Spines wordt geadverteerd met de opdracht: toon bgp l2vpn evpn [loopback IP] vrf [tenant vrf].

LEAF-1-VPC# show bgp 12vpn 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]:[32]:[172.16.10.9]/224, version 637 Paths: (1 available, best #1) Flags: (0x000002) (high32 00000000) on xmit-list, is not in 12rib/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

Stap 8. Controleer dat het IP-adres van de loopback-interface is ingespoten in BGP L2VPN EVPN waar DHCP-server is gevestigd.



Opmerking: Als er Nexus-switches in vPC zijn, controleer dan of zij beiden het IP-adres van de loopback-interface in BGP L2VPN EVPN leren.

LEAF-1-VPC# show bgp 12vpn 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]:[32]:[172.16.10.9]/224, version 637 Paths: (1 available, best #1) Flags: (0x000002) (high32 0000000) on xmit-list, is not in 12rib/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

Stap 9. Controleer dat er een route is voor de DHCP-server op de bronhuurder met de opdracht toon ip route [DHCP server IP] vrf[tenant vrf].



Opmerking: de route die moet worden gebruikt, moet van VxLAN tot standaard VRF lopen. Als er geen route beschikbaar is, controleer dan of de VTEP het IP-adres van de DCHP-server lokaal kent.

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

Stap 10. Controleer of de DCHP server IP bereikbaar is met de loopback-interface en de corresponderende VRF als een VRF-bron met de opdracht ping [DHCP server IP] bron-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 ---

Stap 11. Controleer de status van de DHCP-relay-agent.

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

Stap 12. Controleer optie 82, zoals de VPN-optie en het juiste IP-adres van de relay onder de relay-agent.

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:InterfaceRelay AddressVRF Name------------------Vlan1010.10.10.150<<<<<<<</td>

Stap 13. Controleer de statistieken van verwerkte en verzonden pakketten.

```
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 O
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
```

Stap 14. Controleer de statistieken van relay-pakketten.

Message Type	Rx	Тх	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	

LEAF-1-VPC# show ip dhcp relay statistics

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 whe	n switch	
receives DHCP request packet with destination ip	as broade	cast
address. If request is unicast it will be HW swi	tched	

LEAF-2-vPC DHCP

Stap 1. Schakel de functie DCHP in.

LEAF-2-VPC(config)# feature dhcp



Opmerking: de DHCP-server en de Relay Agent Command service DHCP, ip DHCP Relay en ipv6 DHCP Relay zijn standaard ingeschakeld sinds NX-OS 7.x.

Stap 2. Pas de opdracht "ip DHCP Relay Information Option" toe.

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



Opmerking: met deze opdracht kan de DHCP Relay-agent optie 82-informatie invoegen en verwijderen over de pakketten die worden doorgestuurd.

Stap 3. Pas de opdracht "ip DHCP Relay information option vpn" toe.

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



Opmerking: deze opdracht maakt de DHCP Relay-verzoeken mogelijk die worden ontvangen op verschillende VRF-locaties waar de DHCP-server thuishoort.

Stap 4. Pas het commando "ip dhcp relay address [ip adres van DCHP server]" toe.



Opmerking: in dit voorbeeld is het IP-adres voor DCHP-server 10.10.10.150.

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

Stap 5. Pas de opdracht "ip DHCP Relay bron-interface [unieke loopback]"toe.



Opmerking: met deze opdracht wordt het IP-bronadres van de DHCP Relay-agent geconfigureerd voor de verwerking van Discover, offer, request en ACK voor unicastcommunicatie, die de DHCP Relay-agent het IP-adres van SVI gebruikt als IP-bronadres voor DHCP Relay-agent. Dit is niet gewenst omdat dit IP-adres wordt gedeeld door meerdere VTEP's en zwart-vasthouden van DHCP-pakketten kan gebeuren. Om dit te voorkomen, is een uniek IP-adres (met behulp van een loopback-interface) nodig om elke VTEP te onderscheiden.

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

Stap 6. In de VRF corresponderende huurder binnen BGP, directe routeherdistributie met een prefix-lijst en route-kaart die het IP-adres van de loopback-interface omvat.



Opmerking: deze loopback interface behoort tot de huurder van 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 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
```

Stap 7. Controleer dat het IP-adres van de loopback-interface in BGP L2VPN EVPN naar de Spines wordt geadverteerd met de opdracht: toon bgp l2vpn evpn [loopback IP] vrf [tenant vrf].

LEAF-2-VPC(config-if)# show bgp 12vpn 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]:[32]:[172.16.10.10]/224, version 49 5 Paths: (1 available, best #1) Flags: (0x000002) (high32 0000000) on xmit-list, is not in 12rib/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

Stap 8. Controleer dat het IP-adres van de loopback-interface is ingespoten in BGP L2VPN EVPN waar DHCP-server is gevestigd.



Opmerking: Als er Nexus-switches in vPC zijn, controleer dan of zij beiden het IP-adres van de loopback-interface in BGP L2VPN EVPN leren.

LEAF-2-VPC(config-if)# show bgp 12vpn 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]:[32]:[172.16.10.10]/224, version 49 5 Paths: (1 available, best #1) Flags: (0x000002) (high32 0000000) on xmit-list, is not in 12rib/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:

Stap 9. Controleer dat er een route is voor de DHCP-server op de bronhuurder met de opdracht toon ip route [DHCP server IP] vrf[tenvrf].



Opmerking: de route die moet worden gebruikt, moet van VxLAN tot standaard VRF lopen. Als er geen route beschikbaar is, controleer dan of de VTEP het IP-adres van de DCHP-server lokaal kent.

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

Stap 10. Controleer dat de DCHP server IP bereikbaar is met de loopback-interface en de corresponderende VRF als een VRF-bron met de opdracht ping [DHCP server IP] bron-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 ---

Stap 11. Controleer de status van de DHCP-relay-agent.

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

Stap 12. Controleer optie 82, zoals de VPN-optie en het juiste IP-adres van de relay onder de relay-agent.

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:InterfaceRelay AddressVRF Name------------------Vlan1010.10.10.150 <<<</td>

Stap 13. Controleer de statistieken van verwerkte en verzonden pakketten.

```
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 O
Packets dropped due to interface error/no interface 0
Packets dropped due to max hops exceeded 0
Packets dropped due to Queue full 0
```

Stap 14. Controleer de statistieken van relay-pakketten.

Rx	Тх	Drops	
29312	29311	0	
300001	300001	0	
29324	29324	0	
1574	1574	0	
191493	191493	0	
0	0	0	
1540	1540	0	
472890	472890	0	
1026134	1026133	0	
	Rx 29312 300001 29324 1574 191493 0 1540 472890 1026134	RxTx2931229311300001300001293242932415741574191493191493001540154047289047289010261341026133	RxTxDrops2931229311030000130000102932429324015741574019149319149300001540154004728904728900102613410261330

LEAF-2-VPC# show ip dhcp relay statistics

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 whe 	n switch	
receives DHCP request packet with destination ip	as broadca	ast
address. If request is unicast it will be HW swi	tched	

DHCP-serverconfiguratie op Windows Server 2022

IP-adresseringstoepassingsconfiguratie voor hosts.

Stap 1. Open Server Manager en bevestig dat er geen alarmen op DCHP Server in het Dashboard zijn.



Dashboard van Server Manager op Windows Server 2022



Tip: het beeld wordt vergroot door te dubbelklikken.

Stap 2. Open DHCP-servertoepassing.

Tea Attor View Hole Image: Control of DHCP Image: Control of DHCP<

DHCP-server op Windows Server 2022

UHCP

Stap 3. Klik met de rechtermuisknop op IPv4 en klik op Nieuw bereik.



Stap 4. Klik op Next (Volgende).

New Scope Wizard	
	Welcome to the New Scope Wizard
	This wizard helps you set up a scope for distributing IP addresses to computers on your network.
	To continue, click Next.
	(Rady Next > Canad
	< Dack IVext > Cancel

Stap 5. Schrijf een naam en een beschrijving. In dit voorbeeld is de naam het subnet dat tot VLAN 10 behoort en de beschrijving is L2VNI als L2VNI vermeld aan VLAN 10.

New Scope Wizard		
Scope Name You have to pro a description.	rovide an identifying scope name. You also have the option of providing	J.
Type a name an how the scope i	ind description for this scope. This information helps you quickly identify is to be used on your network.	<i>(</i>
Name:	10.10.10/24	
Description:	L2VNI 101010	
		a
	< Back Next >	Cancel

Stap 6. Configureer het IP-adresbereik. Dit is het zwembad voor gastheren.

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: 10 . 10 . 1
End IP address: 10 . 10 . 254
Configuration settings that propagate to DHCP Client
Length: 24
Subnet mask: 255 . 255 . 0
< Back Next > Cancel

Stap 6. Sluit het gedeelde IP-adres uit van de SVI-configuratie in de VTEP's. In dit voorbeeld heeft interface VLAN 10 adres IP.10.10.1/24.



Waarschuwing: het niet uitsluiten van het IP-adres van de SVI (of de standaardgateway) kan leiden tot duplicatie van IP-adressen en de levering van verkeersgegevens beïnvloeden.

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

New Scope Wizard	
Add Exclusions and Delay Exclusions are addresses or a range of addresses that are not distributed by the server. A delay is the time duration by which the server will delay the transmission of a DHCPOFFER message.	D
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: I I I I I I	
Excluded address range: Address 10.10.10.1 Remove	
Subnet delay in milli second:	
< Back Next > Cancel	

Stap 7. Configureer de leaseduur van IP-adres. Dit verwijst naar de hoeveelheid tijd die een host kan gebruiken het toegewezen IP-adres voordat het wordt verlengd.

New Scope Wizard	
Lease Duration The lease duration specifies how long a client can use an IP address from this scope.	Ţ
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 > Canc	el

Stap 8. Selecteer Ja, ik wil deze opties nu configureren.

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

Stap 9. Configureer het standaard-gateway IP-adres.

New Scope Wizard	
Router (Default Gateway) You can specify the routers	s, or default gateways, to be distributed by this scope.
To add an IP address for a r	router used by clients, enter the address below.
IP address:	
	Add
10.10.10.1	Remove
	Up
	Down
	< Back Next > Cancel

Stap 10. Domeinnaam en DNS-server configureren.

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: cisco.com				
To configure scope clients to use DNS servers servers.	on your network, enter the IP add	resses for those		
Server name:	IP address:			
google.com	142 . 250 . 114 . 102	Add		
Resolve		Remove		
		Up		
		Down		
	< Back Next >	Cancel		

Stap 11. Configureer de WINS-server indien van toepassing. Dit kan worden overgeslagen als de informatie niet bekend is.

w Scope Wizard WINS Servers Computers running Windows can use WINS servers to convert NetBIOS computer			
names to IP address	ses.		
Entering server IP a	ddresses here enables W	Indows clients to query W	INS before they use
broadcasts to regist	er and resolve NetBIOS r	ames.	,
Server name:		IP address:	
		1	Add
	Resolve		Remove
			Llo
			00
			Down
To change this beh Type, in Scope Opti	avior for Windows DHCP ons.	clients modify option 046.	WINS/NBT Node

Stap 12. Selecteer Ja, ik wil deze scope nu activeren.

New Scope Wizard	
Activate Scope Clients can obtain address leases only if a scope is activated.	9
Do you want to activate this scope now? Tes, I want to activate this scope now No, I will activate this scope later	
< Back Next > 0	Cancel

Het instellen van de scope voor unieke IP-adressen van loopbacks in SVI als DCHP relay agent.

Stap 1. Klik met de rechtermuisknop op IPv4 en selecteer IPv4Scope.



Nieuw toepassingsgebied in DCHP

Stap 2. Schrijf een naam en een beschrijving. In dit voorbeeld, is de naam het subnetnet dat voor Subnet met loopbackadres wordt gebruikt.



IPte: Een loopback wordt gebruikt loopbackunique IP-adres in de VxLAN-structuur voor VxLAN-huurder. Dit moet worden geadverteerd in BGP L2VPN EVPN-routeherverdeling in BGP binnen de VRF van de bijbehorende huurder in de IPv4-adresfax IPv4

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

· · · · · · · · · · · · · · · · · · ·		
New Scope Wizard		
Scope Name You have to private to private the scription.	ovide an identifying scope name. You also have the option of providing	J.
Type a name ar how the scope	nd description for this scope. This information helps you quickly identify is to be used on your network.	
Name:	172.16.10.0/24	
Description:	Unique IP Gateway Address (SVI)	
	< Back Next > Cancel	

Stap 3. Configureer het IP-adresbereikIP. Dit is het zwembad voor loopbacks.

New Scope Wizard
IP Address Range You define the scope address range by identifying a set of consecutive IP addresses.
Configuration settings for DHCP Server
Enter the range of addresses that the scope distributes.
Start IP address: 172 . 16 . 10 . 1
End IP address: 172 . 16 . 10 . 254
Configuration settings that propagate to DHCP Client
Length: 24 -
Subnet mask: 255 . 255 . 0
< Back Next > Cancel

Stap 4. Configureer uitsluitingen (optioneel omdat de DHCP-server IP-adressen die tot dit subnetnummer behoren, niet leaset).

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 DHCPOFFER 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: Image: I
Excluded address range: Remove
Subnet delay in mili second:
< Back Next > Cancel

Stap 5. Sla de leaseduur over en klik op Volgende.

New Scope Wizard	
Lease Duration The lease duration specifies how long a client can use an IP address from this scope.	Ţ
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: 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
< Back Next > Canc	cel

Stap 6. Selecteer Nee, ik configureer deze opties later.

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?
C Yes, I want to configure these options now
No, I will configure these options later
< Back Next > Cancel

Stap 7. Klik op Finish (Voltooien).

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

Stap 8. Klik met de rechtermuisknop op de gedefinieerde scope en selecteer Activeren.
File Action View	Help	
🦛 🔿 📩 🔀	Image: Section of the section of	
DHCP Comparison of the second seco	dc T2.16.10.0] 172.16.10.0/24 Display Statistics Advanced Configure Failover Reconcile Reconcile View Delete Refresh Export List Properties Help	Contents of Scope Address Pool Address Leases Reservations Scope Options > Policies

Superscope voor VxLAN-fabric configureren.

Stap 1. Klik met de rechtermuisknop in IPv4 en selecteer Nieuwe superscope.



Stap 2. Klik op Next (Volgende).

New Superscope Wizard	
	Weisere to the New Superscope which expands the number of IP network addresses that you can use in a network. A superscope allows several distinct scopes to be logically grouped under a single name. To continue, click Nest.
	< Back Next > Cancel

Stap 3. Schrijf de superscope naam.

New Supersco	pe Wizard
Superscop You hav	e Name re to provide an identifying superscope name.
Name:	Scopes for VxLAN Fabric (with Opt 82)
	< <u>B</u> ack <u>N</u> ext > Cancel

Stap 4. Selecteer alle scènes die bij VxLAN Fabric horen.

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
< <u>B</u> ack <u>N</u> ext > Cancel

Stap 5. Selecteer alle scènes die bij VxLAN Fabric horen.

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:
[10.10.0] 10.10.10.0/24 [172.16.10.0] 172.16.10.0/24
< <u>B</u> ack <u>N</u> ext > Cancel

Stap 6. Controleer of alle VxLAN-fabric superscope aanwezig is en klik op Voltooien.

New Superscope Wizard	
	Completing the New Superscope Wizard
	You have successfully completed the New Superscope wizard.
	The following superscope will be created:
	Name: Scopes for VxLAN Fabric (with Opt 82)
	Scopes included in this superscope:
	[10.10.10.0] 10.10.10.0/24 [172.16.10.0] 172.16.10.0/24
	To close this wizard, click Finish.
	< Back Finish Cancel

Configureer optie 82 in hostscopen.

Stap 1. Klik met de rechtermuisknop op Beleid (laatste optie) binnen het bereik voor host en klik op Nieuw beleid.

PHCP 0HCP							
File Action View Help							
💠 🔶 🙇 📷 🖄 📾 🗎							
DHCP Soperscope Scop Po4 Soperscope Scop Scope (10.10 Address I Address I Scope (12 Scope (pes for VicLAN Fabri 10.03 10.10.10.0/24 Pool Leases priors New Policy Deactivate View Refresh Export List Help	c (with Opt 12)	Pelicy Name	Description	Processin	Level There are no its	Address Range ems to show in this view.

Stap 2. Schrijf een naam en een beschrijving en klik op Volgende.



Opmerking: in dit voorbeeld wordt het beleid gemaakt om IP-adressering per IPicularly te selecteren voor hosts in Leaf-1 voor VNI 101010-gebaseerdeVNI Remote-ID (parameter van optie 82).

DHCP Policy Configu	uration Wizard
Policy based IP	Address and Option Assignment
This feature allow clients based on o	s you to distribute configurable settings (IP address, DHCP options) to sertain conditions (e.g. vendor class, user class, MAC address, etc.).
This wizard will gu Configuration Polio policy.	ide you setting up a new policy. Provide a name (e.g. VoIP Phone cy) and description (e.g. NTP Server option for VoIP Phones) for your
Policy Name:	VNI 101010
Description:	Policy to select scope for Leaf-1 using Remote-ID
	< Back Next > Cancel

Stap 3. Klik op Add (Toevoegen). Selecteer in Criteria de optie Relay Agent Information. Selecteer in Operator de optie Gelijken. Selecteer vervolgens Agent Remote ID en typ de waarde. Klik op OK en vervolgens op Volgende.



Opmerking: De Remote ID wordt verkregen van het MAC-adres van de SVI waaraan de SVII is gekoppeld.



Tip: Een beleid kan worden toegepast op meerdere Remote-ID's (of VTEP's) door meer voorwaarden toe te voegen en OF te selecteren in plaats van EN.

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

DHCP Policy Configuration Wizard			
Cor Add/Edit Condition	?	×	577
Specify a condition for the policy being configured. Select a criteria.	operator		A h
Criteria: Relay Agent Information			
Value (in hex) C Relay Agent Information: C Agent Circuit ID: Agent Remote ID: 707db9b84daf Subscriber ID: Prefix wildcard(*) Append wildcard(*)			
Ok Ca	ncel		
< Back Next >		Cano	el

Stap 4. Configureer de IP-adressering die bestaande IP kan gebruiken op de VPN's die door de ID zijn geselecteerd en klik vervolgens op Volgende.



Opmerking: in dit voorbeeld is er slechts één virtuele machine aangesloten op Leaf-1, dus slechts één IP-adres is IPd nodig. Hier wordt een tweede IP-adres toegevoegdIPn geval een andere host verbinding maakt.

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:
Start IP address: 10 . 10 . 10 . 2 End IP address: 10 . 10 . 10 . 3 Percentage of IP address range: 0.8
< Back Next > Cancel

Stap 5. Selecteer het vakje links van 003 router onder DCHP Standard Option. Schrijf vervolgens het IP-adres van de standaardgateway voor de hosts die tot dit beleid behoren en druk op Add. Klik op Next (Volgende).



Waarschuwing: u kunt meerdere opties selecteren, maar als u niet zeker weet welke waarde u moet invoeren, doet u dit niet. Een inconsistente of onjuiste configuratie kan onverwacht gedrag veroorzaken.

DHCP Policy Configurat	ion Wizard		
Configure settings for If the conditions spe applied.	or the policy cified in the policy mate	ch a client request, the settings	will be
Vendor class:	DHCP Standard Op	tions	•
Available Options		Description	^
002 Time Offset		UTC offset in seco	onds
003 Router		Array of router add	resses order
004 Time Server <		Array of time serve	r addresses, ¥
Data entry			
Server name:			
		Resolve	
IP address:			
	Add		
10.10.10.1	Remove		
	Up		
	Down		
		< Back Next >	Cancel

Stap 6. Controleer de beleidsvoorwaarden en klik op Voltooien.

2 DHCP								- c	s ×
File Action View Help									
🗢 🔶 🙍 💽 🔒 📓 🖬									
P DHCP	Policy Name	Description	Processin	Level	Address Range	State	Actions		
CXLabs-WIN2K22DC	UNI 101010	Policy to select scope for Leaf-1 using Remote-ID	1	Scope	10.10.10.2 - 10.10.10.3	Enabled	Policies		
 IPv4 Superscope Scopes for VxLAN Fabric (with Opt 82) Scope [10.10.10.0] L2VNI 101010 Address Pool Address Pool Scope Options Policies Scope Options Scope Options Server Options Server Options Policies Filters Filters 							More Actions		,

DCHP-pakketwandeling van begin tot eind in VxLAN Fabric.

Detectie verzenden via 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 (Discover)

    Message type: Boot Request (1)
    Hardware type: Ethernet (0x01)
    Hardware address length: 6
    Hops: 0
    Transaction ID: 0xe9e35087
    Seconds elapsed: 0

    Bootp flags: 0x8000, Broadcast flag (Broadcast)

      1... .... = Broadcast flag: Broadcast
      .000 0000 0000 0000 = Reserved flags: 0x0000
    Client IP address: 0.0.0.0
    Your (client) IP address: 0.0.0.0
    Next server IP address: 0.0.0.0
    Relay agent IP address: 0.0.0.0
    Client MAC address: 00:50:56:a5:fd:dd
    Client hardware address padding: 0000000000000000000
    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
  v 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
    Padding: 000000000000000000
```

Detectie op LEAF-1

Ontvangen ontdekking op LEAF-1	Detectie verzenden via LEAF-1
	 Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: 10:b3:d6:a4:85:97 Internet Protocol Version 4, Src: 5.5.5, Dst: 13.13.13.254 User Datagram Protocol, Src Port: 65233, Dst Port: 4789 Virtual extensible Local Area Network
	> Flags: 0x0800, VXLAN Network ID (VNI)
> Ethernet II, Src: 00:50:56:a5:fd:dd, Dst: ff:ff:ff:ff:ff:ff	VXLAN Network Identifier (WNI): 303030
> Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255	Reserved: 0 > Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: 02:00:0d:0d:0d:fe
> User Datagram Protocol, Src Port: 68, DSt Port: 67	Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.10.150
Message type: Boot Request (1)	 Dynamic Host Configuration Protocol (Discover)
Hardware type: Ethernet (0x01)	Message type: Boot Request (1) Hardware type: Ethernet (0x01)
Hardware address length: 6	Hardware address length: 6 Hons: 1
Transaction ID: 0xe9e35087	Transaction ID: 0xe9e35087
Seconds elapsed: 0	> Bootp flags: 0x8000, Broadcast flag (Broadcast)
 Bootp flags: 0x8000, Broadcast flag (Broadcast) 	Client IP address: 0.0.0.0 Your (client) IP address: 0.0.0.0
.000 0000 0000 0000 = Reserved flags: 0x0000	Next server IP address: 0.0.0.0
Client IP address: 0.0.0.0	Client MAC address: 1/2.16.10.8 Client MAC address: 00:50:56:a5:fd:dd
Your (client) IP address: 0.0.0.0	Client hardware address padding: 000000000000000000000000000000000000
Next server IP address: 0.0.0	Boot file name not given
Client MAC address: 00:50:56:a5:fd:dd	v Option: (53) DHCP Message Type (Discover)
Client hardware address padding: 00000000000000000000	Length: 1 <value: 01=""></value:>
Server host name not given	DHCP: Discover (1)
Boot file name not given	Length: 7
 Option: (53) DHCP Message Type (Discover) 	<value: 01005056a5fddd=""> Hardware type: Ethernet (0x01)</value:>
Length: 1	Client MAC address: 00:50:56:a5:fd:dd
<value: 01=""></value:>	Length: 10
DHLP: Discover (1)	<value: 43584c6162732d573130=""> Host Name: CXLabs-W10</value:>
Length: 7	Option: (60) Vendor class identifier
<value: 01005056a5fddd=""></value:>	<value: 4d53465420352e30=""></value:>
Hardware type: Ethernet (0x01)	Vendor class identifier: MSFT 5.0 v Option: (55) Parameter Request List
 Option: (12) Host Name 	Length: 14
Length: 10	Parameter Request List Item: (1) Subnet Mask
<value: 43584c6162732d573130=""></value:>	Parameter Request List Item: (3) Router Parameter Request List Item: (6) Domain Name Server
HOST Name: CXLaDS-W10	Parameter Request List Item: (15) Domain Name
Length: 8	Parameter Request List Item: (33) Static Route
<value: 4d53465420352e30=""></value:>	Parameter Request List Item: (43) Vendor-Specific Information Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server
Vendor class identifier: MSFT 5.0	Parameter Request List Item: (46) NetBIOS over TCP/IP Node Type Parameter Request List Item: (47) NetBIOS over TCP/IP Scope
Length: 14	Parameter Request List Item: (119) Domain Search
<value: 0103060f1f212b2c2e2f7779f9fc=""></value:>	Parameter Request List Item: (121) Classiess Static Route Parameter Request List Item: (249) Private/Classless Static Route (Microsoft)
Parameter Request List Item: (1) Subnet Mask	Parameter Request List Item: (252) Private/Proxy autodiscovery
Parameter Request List Item: (3) Router Parameter Request List Item: (6) Domain Name Server	
Parameter Request List Item: (15) Domain Name	 Value: 0100010000000010392003000000000000000000
Parameter Request List Item: (31) Perform Router Discover	Length: 14 <value: 0108000600018a9200a00000000=""></value:>
Parameter Request List Item: (33) Static Route	Agent Circuit ID: 0108000600018a9200a00000000
Parameter Request List Item: (43) Vehiou-Specific Information Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server	Length: 6
Parameter Request List Item: (46) NetBIOS over TCP/IP Node Type	<value: 707db9b84daf=""> Agent Remote ID: 707db9b84daf</value:>
Parameter Request List Item: (47) NetBIOS over TCP/IP Scope	Option 82 Suboption: (151) VRF name/VPN ID Length: 9
Parameter Request List Item: (119) Domain Search Parameter Request List Item: (121) Classless Static Route	<value: 0074656e616e742d61=""></value:>
Parameter Request List Item: (249) Private/Classless Static Route (Microsoft)	<pre>> VMF name: > [Expert Info (Warning/Undecoded): Trailing stray characters]</pre>
Parameter Request List Item: (252) Private/Proxy autodiscovery	 Option 82 Suboption: (11) Server ID Override (10.10.10.1) Length: 4
> Uption: (255) End Padding: 0000000000000000	<value: 0a0a0a01=""></value:>
	<pre>> Option 82 Suboption: (5) Link selection (10.10.10.0)</pre>
	Length: 4 <value: 0a0a0a00=""></value:>
	Link selection: 10.10.10.0
	Padding: 0000000000000000



Tip: het beeld wordt vergroot door te dubbelklikken.

Detectie op RUGGENGRAAT

Ontvangen ontdekking op RUGGENGRAAT	Detectie verzenden via SPINE
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<pre>Ithermet II, Src: 20/2010/08/6404, DKI 14:03/064408/07 Intermet Protocol, Sr Part: 03/20, DK Part: 4/200 User Bategrame Protocol, Sr Part: 03/20, DK Part: 10, DK Part: 4/200 User Bategrame Protocol, Sr Part: 04/200 User Bategrame Protocol, Bategrame Protocol, Dr. Part: 04/200 User Bategrame Protocol, Dr. Part: 04/200 User Bategrame Protocol, Dr. Part: 04</pre>	<pre>Starter II, Src: MEMBERGAND, DIT (22010)550007 User Datagram Protocol, Src Pert: 2023, Spt Pert: 4789 User Datagram Protocol, Src Pert: 2020, Spt Pert: 4789 User Datagram Protocol, Src Pert: 202, Distribution Datagram Protocol, Src Pert: 2020 User Datagram Protocol, Src Pert: 202, Distribution Datagram Protocol, Src Pert: 2020 User Datagram Protocol, Src Pert: 202, Distribution Datagram Protocol, Src Pert: 2020 User Datagram Protocol, Src Pert: 202, Distribution Datagram Protocol, Src Pert: 2020 User Datagram Protocol, Src Pert: 202, Distribution Datagram Protocol, Src Pert: 2020 User Datagram Protocol, Src Pert: 202, Distribution Datagram Protocol, Src Pert: 2020 User Datagram Protocol, Src Pert:</pre>

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Detectie op LEAF-1-vPC

Detectie ontvangen op LEAF-1-vPC	Detectie verzenden via LEAF-1-vPC
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Ethernet II, Src: 10:D3:06:84:85:97, Dst: 60:26:88:85:98:87	> Ethernet II, Src: 60:26:aa:85:98:87, Dst: 00:50:56:a5:dc:ca
> Internet Protocol Version 4, Src: 5.5.5.5, Dst: 13.13.13.254	Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.10.150
User Datagram Protocol, Src Port: 65233, Dst Port: 4789	liser Datagram Protocol Src Port: 67 Dat Port: 67
Vietnal avtancibla Local Area Naturak	user batagram Frotocot, Stc Port: 07
Virtual extensione Local AFEA NECKOTK	Uynamic Host Configuration Protocol (Discover)
> Flags: 0x0800, VXLAN Network ID (VNI)	Message type: Boot Request (1)
Group Policy ID: 0	Hardware type: Ethernet (0x01)
VXLAN Network Identifier (VNI): 303030	Ward are address leads 6
Presented A	hardware address length: 6
Reserved: 0	Hops: 1
> Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: 02:00:0d:0d:0d:fe	Transaction ID: 0xe9e35087
Internet Protocol Version 4, Src: 172, 16, 10, 8, Dst: 10, 10, 10, 150	Forende al anno 100000000
- Internet (Fordet (Fisien 4) Ster All Die Die 1 (11) (11) (11)	seconds etapsed: 0
User Datagram Protocol, Src Port: 67, Dst Port: 67	 Bootp flags: 0x8000, Broadcast flag (Broadcast)
V Dynamic Host Configuration Protocol (Discover)	1 = Broadcast flag: Broadcast
Message type: Boot Request (1)	200,0000,0000,0000 = December 1 2 and 1 2 an
	.000 0000 0000 = Reserved rtags: 0x0000
hardware type: Ethernet (0x01)	Client IP address: 0.0.0.0
Hardware address length: 6	Your (client) IP address: 0.0.0.0
Hops: 1	Next conver TD address 0.0.0.0
Transaction TD: 0ve0e3E007	Next Server 1P address: 0.0.0.0
Transaction iD: 0xe9e35067	Relay agent IP address: 172.16.10.8
Seconds elapsed: 0	Client MAC address: 00:50:56:a5:fd:dd
Booto flags: 0x8000, Broadcast flag (Broadcast)	
Client ID address, 0.0.0.0	ctient hardware address padding: 0000000000000000000
CLEAR IF ADDRESS: 0.0.0.0	Server host name not given
Your (client) IP address: 0.0.0.0	Boot file name not given
Next server IP address: 0.0.0.0	Manie cookie: DHCP
Relay agent TP address: 172 16 18 8	hagit cookie. Dhep
Client MAC address An Co. Co. C. Advad	 option; (55) DRCP Message Type (Discover)
CTTGUT NWC 900(L622: 00:20:20:30:40:00	Length: 1
Client hardware address padding: 00000000000000000000	<value: 01=""></value:>
Server host name not given	DUCD. Discourse (1)
Boot file some not given	UNCP: DISCOVER (1)
DOOL LILE NAME HOL GIVEN	 Option: (61) Client identifier
Magic cookie: DHCP	Length: 7
 Option: (53) DHCP Message Type (Discover) 	-151.000 0100505555fddd
Length: 1	//d/nc: araabababinngs
Long the A	Hardware type: Ethernet (0x01)
<value: 01=""></value:>	Client MAC address: 00:50:56:a5:fd:dd
DHCP: Discover (1)	Ontion: (12) Host Name
Option: (61) Client identifier	option: (12) Host Name
- vyskavni (vaz) eskent avelltilter	Length: 10
Length: 7	<value: 43584c6162732d573130=""></value:>
<value: 01005056a5fddd=""></value:>	Host Name: CVI abs-W10
Hardware type: Ethernet (0x01)	TOST Malle. CALabs-MID
	Option: (60) Vendor class identifier
Client MAC address: 00:50:56:a5:Td:dd	Length: 8
 Option: (12) Host Name 	<value: 4d53d65420352e30=""></value:>
Length: 10	
Value: 42594c6162722d573120-	Vendor class identifier: HSFI 5.0
<value: 31362<="" 3203="" 43364c0102="" td=""><td>v Option: (55) Parameter Request List</td></value:>	v Option: (55) Parameter Request List
Host Name: CXLabs-W10	length: 14
 Option: (60) Vendor class identifier 	
length: 8	<value: 010300011121202c2221="" 9191c=""></value:>
	Parameter Request List Item: (1) Subnet Mask
<value: 4053465420352e30=""></value:>	Parameter Request List Item: (3) Router
Vendor class identifier: MSFT 5.0	Parameter Pequert Lift Item: (6) Demain Name Server
Option: (55) Parameter Request List	Parameter Request List item: (6) Domain Name Server
i anatis 14	Parameter Request List Item: (15) Domain Name
Length: 14	Parameter Request List Item: (31) Perform Router Discover
<value: 0103060f1f212b2c2e2f7779f9fc=""></value:>	Parameter Request List Item (22) Static Reute
Parameter Request List Item: (1) Subnet Mask	Parameter Request List item: (33) Static Route
Descretes Descret List Them, (2) Dester	Parameter Request List Item: (43) Vendor-Specific Information
Parameter Request List Item: (3) Router	Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server
Parameter Request List Item: (6) Domain Name Server	Parameter Request List Item; (46) NetBIOS over TCP/ID Node Type
Parameter Request List Item: (15) Domain Name	Parameter Request List item. (40) Netbros over iter/ir noue type
Parameter Pequest List Item: (21) Perform Pouter Discover	Parameter Request List Item: (47) NetBIOS over TCP/IP Scope
Parameter Request List Item. (51) Perform Router Discover	Parameter Request List Item: (119) Domain Search
Parameter Request List Item: (33) Static Route	Parameter Request List Item: (121) Classless Static Route
Parameter Request List Item: (43) Vendor-Specific Information	Fordineter Request List item. (122) classics static Route
Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server	Parameter Request List Item: (249) Private/Classless Static Route (Microsoft)
Parameter negative Light Ltem: (44) Netblog Ver Ltr/ir Home Scive	Parameter Request List Item: (252) Private/Proxy autodiscovery
Parameter Request List Item: (46) NetBIDS over ILP/IP Node Type	Antion: (82) Agent Information Ontion
Parameter Request List Item: (47) NetBIOS over TCP/IP Scope	length a
Parameter Reguest List Item: (119) Domain Search	Length: 4/
December Dequest List Team, (121) Classifier Static Poute	<value: 010e0108000600018a9200a000000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00=""></value:>
Forameter nequest List item; (iii) tidsstess static Koute	 Option 82 Suboption: (1) Agent Circuit ID
Parameter Request List Item: (249) Private/Classless Static Route (Microsoft)	Landby 14
Parameter Request List Item: (252) Private/Proxy autodiscovery	Lengths 14
Option: (82) Agent Information Option	<value: 0108000600018a9200a00000000=""></value:>
Longhi 47	Agent Circuit ID: 0108000600018a9200a00000000
Length: 4/	 Ontion 82 Subortion: (2) Agent Remote TD
<value: 010e0108000500018a9200a00000000000205707db9b84daf97090074655e616e742d610b040a0a0a0105040a0a0a00=""></value:>	Landth 6
 Option 82 Suboption: (1) Agent Circuit ID 	rendru: o
length: 14	<value: 707db9b84daf=""></value:>
Legin at	Agent Remote ID: 707db9b84daf
<a9 010200000189370090000000="" nd:=""></a9>	Option 82 Subortion: (151) VPE page/VPN TD
Agent Circuit ID: 0108000600018a9200a00000000	- opcion of Subprion: (151) VKr name/VFW 10
Option 82 Subortion: (2) Agent Remote ID	Length: 9
Longth: 6	<value: 0074656e616e742d61=""></value:>
	VRF name:
<value: d="" db9b84dat=""></value:>	[Event Toto (Warning/Undecoded): Trailing stress sharestern]
Agent Remote ID: 707db9b84da1	<pre>> [cxpert into (warning/undecoded): frailing stray characters]</pre>
Option 82 Subortion: (151) VRF name/VPN TD	[Trailing stray characters]
Least of Subjectory (151) the Hame/ the Lo	<pre><message: characters="" stray="" trailing=""></message:></pre>
Length: 9	[Severity level Marging]
<value: 0074656e616e742d61=""></value:>	(severity tevet; warning)
VRF name:	[Group: Undecoded]
[Evpert Info (Warping/Undecoded): Trailing stray characters]	Option 82 Suboption: (11) Server ID Override (10.10.10.1)
Compare and the final formation and the second seco	Length: 4
 option az suboption: (11) Server ID Override (10.10.10.1) 	
Length: 4	Synthe: popopopt/
<value: 0a0a0a01=""></value:>	Server ID Override: 10.10.1
<value: 0a0a0a01=""> Server ID Override: 10 10 10</value:>	Server ID Override: 10.10.10.1 • Option 82 Suboption: (5) Link selection (10.10.10.0)
<value: 0a0a0a01=""> Server ID Override: 10.10.10.1</value:>	Server ID Override: 10.10.10.1 • Option 82 Suboption: (5) Link selection (10.10.10.0) i enoth 4
 <value: 0a0a0a0j=""></value:> Server 1D Override: 10.10.10.1 Option 82 Suboption: (5) Link selection (10.10.10.0) 	Server ID Override: 10.10.10.1 ∽ Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4
 <value: 00000001<="" li=""> Server ID 0verride: 10.10.10.1 > Option 82 Suboption: (5) Link selection (10.10.00) Length: 4 </value:>	Server ID Override: 10.10.10.1 ∨ Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <value: 0a0a0a00=""></value:>
 <value: 0a0a0a0j=""></value:> Server 1D Override: 10.10.10.1 Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <value: 0a0a0a0b=""></value:> 	Server ID Override: 10.10.10.1 ∽ Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <value: 0a0080005<br="">Link selection: 10.10.10.0</value:>
 <value: 00000001<="" li=""> Server ID Override: 10.10.10.1 > Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <value: 00000000-<br="">Link celection: 10.10.10.0</value:> </value:>	Server ID Override: 10.10.10.1 Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <value: 0a0a0a000=""> Link selection: 10.10.10.0</value:> Votion: (255) End
- <value: 0@a@a@ad=""> Server ID Override: 10.10.10.1 Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 - <value: 0@a@a@a@a.<br="">Link selection: 10.10.10.0</value:></value:>	Server ID Override: 10.10.10.1 ~ Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 ~ Value: 0a0080000> Link selection: 10.10.10.0 ~ Option: (255) End
<pre> Server ID Override: 10.10.10.1 > Option 02 Suboption: (5) Link selection (10.10.10.0) Length: 4 Link selection: 10.10.10.0 > Option: (255) End</pre>	Server ID Override: 10.10.10.1 ~ Option & Suboption: (5) Link selection (10.10.10.0) Length: 4 ~ value: 08003008> Link selection: 10.10.10.0 ~ Option: (255) End Option End: 255
<pre> Server ID Override: 10.10.10.1 </pre> Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 Link selection: 10.10.10.0 Option: (255) End Padding: 0000000000000000	Server ID Override: 10.10.10.1 <pre> Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <value: 0a080808=""> Link selection: 10.10.10.0 </value:></pre> <pre> Option: (255) End Option End: 255 </pre> Padding: 080000000000000
<pre> Server ID Override: 10.10.10.1 > Option 02 Suboption: (5) Link selection (10.10.10.0) Length: 4 Link selection: 10.10.10.0 > Option: (255) End Padding: 000000000000000</pre>	Server ID Override: 10.10.10.1 ∽ Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <value: 0a808080<br="">Link selection: 10.10.10.0 ∽ Option: (255) End Option End: 255 Padding: 00000000000000</value:>



Opmerking: LEAF-2-vPC ontvangt het Discovery-pakket maar dit wordt alleen geschakeld. Het adres van MAC van de bestemming behoort tot de server van DHCP.

Detectie ontvangen op DCHP-server

```
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: 0000000000000000000
  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: 010e0108000600018a9200a0000000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00>

    Option 82 Suboption: (1) Agent Circuit ID

      Length: 14
      <Value: 0108000600018a9200a00000000>
      Agent Circuit ID: 0108000600018a9200a00000000

    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: 000000000000000000
```

DCHP-aanbieding verzenden via DCHP Server

```
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: 0000000000000000000
  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: 010e0108000600018a9200a0000000000206707db9b84da197090074656e616e742d610b040a0a0a0105040a0a0a00>

    Option 82 Suboption: (1) Agent Circuit ID

      Length: 14
       <Value: 0108000600018a9200a00000000>
      Agent Circuit ID: 0108000600018a9200a00000000
  · 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: 00000000000000000
```

DCHP-aanbieding op LEAF-2-vPC

Aanbieding ontvangen op LEAF-2-vPC	Aanbieding verzenden via LEAF-2-vPC
<pre>Ethernet 11, 5rc: 00:50:56:a5:dc:ca, Dst: 00:00:0a:0a:0a:0a Intermet Protocol Version 4, 5rc: 10.10.10.150, Dst: 172.16.10.0 User Datagram Protocol, 5rc Port: 67, Dst Port: 67, Dst Pymake Host Carlsmaration Protocol (Offer) Hardware address length: 6 Hops: 0 Transaction ID: 0x:0e:05007 Seconds elapsed: 0 Boots flags: 0x:000, Dst Boots flags: 0x:00, Dst Boot flags: 0x:00, Dst Boots flags: 0x:00, Dst Boot flags: 0x:00, Dst Boots flags: 0x</pre>	<pre>Internet Protocol Version 4, Src: 13.13.12.24, Ust: 5.5.5.5 User Datagram Protocol, Src Port: 65316, Ost Port: 4789 *Virtual extensible Local Area Metwork Flag: Dobde, VLA Metwork 10 (W1) vLAN Metwork Identifier (W1): 303030 Reserved 0 Ethernet II, Src: 02:00:06:00:10:0.15,05, Dst: 72:16.10.8 User Datagram Protocol, Src Port: 67, Dst Port: 67 Dymaic Most Configuration Protocol (Offer) Message type: Boot Reply (2) Hardware address Length: 6 Hops: 6 Transaction 1D: 0xeMes3087 Seconds elapted: 8 Fransaction 1D: 0xeMes3087 Fransaction 1D: 0xeMes3087 Fr</pre>
 <value: 010800600013a32200a000000000<="" li=""> > Agent Circuit ID: 01800060001a32200a0000000000 > Option 82 Suboption: (2) Agent Remote ID Length: 6 </value:>	Length: 47 -voluc: 81ee0188000600018a9200a00000000206707db9b84daf970900746556e516e742d610b040a0a0a0105040a0a000> - Option 82 Suboption: (1) Agent Circuit ID - Length: 14
<pre><value: 70704b984daf=""> Agent Remote ID: 2707d9984daf < Option 82 Suboption: (151) VRF name/VPN ID</value:></pre>	<pre><value: 0108000650013832200a00000000-<br="">Agent (ircuit ID: 0108000660001832000a00000000 > Option 02 Suboption: (2) Agent Remote ID</value:></pre>
Lengin: 9 <value: 00746566616e742d61=""> VRF name:</value:>	Length: 6 <value: 707db9b84daf≻<br="">Agent Remote ID: 707db9b84daf</value:>
 [Expert Info (Warning/Undecoded): Trailing stray characters] [Trailing stray characters] cMessane: Trailing stray characters> 	Option 82 Suboption: (151) VRF name/VPN ID Length: 9 defection: 000000000000000000000000000000000000
[Severity level: Warning] [Group: Undecoded]	VRF name: VExpert Info (Warning/Undecoded): Trailing stray characters)
 Option 82 Suboption: (11) Server ID Override (10.10.10.1) Length: 4 	[Trailing stray characters] ≪Message: Trailing stray characters>
<value: 0a0a0a01=""> Server ID Override: 10.10.10.1</value:>	[Severity level: Warning] [Group: Undecoded]
Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4	 Option 82 Suboption: (11) Server ID Override (10.10.10.1) Length: 4
<value: 0a0a0a00=""> Link selection: 10.10.10.0</value:>	<value: 0a0a0a01=""> Server ID Override: 10.10.10.1</value:>
Option: (255) End Option End: 255	Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4
	<value: 0a0a0a00=""> Link election: 10.10.10.0</value:>
	Option: (255) End Option: Frid: 255
	aptan mat ESP

DHCP-aanbieding vPC SPINE

Aanbieding ontvangen op SPINE

Aanbieding verzenden via SPINE

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	
Suser Datagram Protocol, Src Port: 55518, Dst Port: 4/89	
Virtual extensione Local area Network	
Group Policy ID: A	
VXLAN Network Identifier (VNI): 303030	> Ethernet II, Src: 10:b3:d6:a4:85:97, Dst: 70:7d:b9:b8:4d:af
Reserved: 0	Internet Protocol Version 4, Src: 13.13.13.254, Dst: 5.5.5.5
Ethernet II, Src: 02:00:0d:0d:0d:0d:fe, Dst: 70:7d:b9:b8:4d:af	> User Datagram Protocol, Src Port: 65518, Dst Port: 4789
> Internet Protocol Version 4, Src: 10.10.10.150, Dst: 172.16.10.8	Virtual eXtensible Local Area Network
> User Datagram Protocol, Src Port: 67, Dst Port: 67	> Flags: 0x0800, VXLAN Network ID (VNI)
 Dynamic Host Configuration Protocol (Offer) 	Group Policy ID: 0
Message type: Boot Reply (2)	VXLAN Network Identifier (VNI): 303030
Hardware type: Ethernet (0x01)	Reserved: 0 Ethernet II Src: 02:00:0d:0d:0d:0d:fe Dct: 70:7d:b0:b8:dd:af
Hardware address length: 6	Internet Protocol Version 4 Str: 10 10 10 50 pst: 172 16 10 8
Hops: 0	liser Datagram Protocol. Src Port: 67. Dist Port: 67
Transaction 1D: 0xe9e35087	Dynamic Host Configuration Protocol (Offer)
Seconds elapsed: 0	Message type: Boot Reply (2)
 boutp riags: example, broadcast riag (broadcast) = Broadcast flag; Broadcast 	Hardware type: Ethernet (0x01)
. ARA ARAA ARAA = Reserved flass ArAARAA	Hardware address length: 6
Client IP address: 0.0.0.0	Hops: 0
Your (client) IP address: 10.10.10.3	Transaction ID: 0xe9e35087
Next server IP address: 10.10.10.150	Seconds elapsed: 0
Relay agent IP address: 172.16.10.8	> Bootp flags: 0x8000, Broadcast flag (Broadcast)
Client MAC address: 00:50:56:a5:fd:dd	Client IP address: 0.0.0
Client hardware address padding: 000000000000000000000000000000000000	Your (client) IP address: 10.10.10.3
Server host name not given	Relay agent TP address: 10:10:10:10
Boot Tile name not given	Client MAC address: 00:50:56:a5:fd:dd
nagic counte: UNLY	Client hardware address padding: 00000000000000000000
- options (op) unit message type (Utter)	Server host name not given
<02>	Boot file name not given
DHCP: Offer (2)	Magic cookie: DHCP
Option: (1) Subnet Mask (255,255,26)	 Option: (53) DHCP Message Type (Offer)
Length: 4	Length: 1
<value: fffff00=""></value:>	<value: 02=""></value:>
Subnet Mask: 255.255.255.0	DHCP: Offer (2)
 Option: (58) Renewal Time Value 	 Option: (1) Subnet Mask (255.255.2)
Length: 4	Length: 4
<value: 0000a8c0=""></value:>	<value: ttttt00=""> Subat Mack: 255 255 25 0</value:>
Renewal Time Value: 12 hours (43200)	oution: (58) Renewal Time Value
 Option: (59) Rebinding Time Value 	Length: 4
Length: 4	<value: 0000a8c0=""></value:>
<value: 0001="" s0=""> Rebinding Time Value: 21 hours (75600)</value:>	Renewal Time Value: 12 hours (43200)
Recinging Time value: 21 nours (7500)	 Option: (59) Rebinding Time Value
lenth 4	Length: 4
<value: 00015180=""></value:>	<value: 00012750=""></value:>
IP Address Lease Time: 1 day (86400)	Rebinding Time Value: 21 hours (75600)
 Option: (54) DHCP Server Identifier (10.10.10.1) 	 Option: (51) IP Address Lease Time
Length: 4	Length: 4
<value: 0a0a0a01=""></value:>	<value: 00015180=""></value:>
DHCP Server Identifier: 10.10.10.1	IP Address Lease Time: 1 day (86400)
 Option: (3) Router 	option: (54) buck Server Identifier (10.10.10.1)
Length: 4	chaine (adagadi)
<value: 08080801=""></value:>	DHCP Server Identifier: 10.10.10.1
KOUTET: 10.10.10.1	 Option: (15) Domain Name
option: (15) bonain wame	Length: 10
<value: 636973636f2e636f6d00=""></value:>	<value: 636973636f2e636f6d00=""></value:>
Domain Name: cisco.com	Domain Name: cisco.com
< Option: (82) Agent Information Option	Option: (82) Agent Information Option
Length: 47	Length: 47
<value: 010e0108000600018a9200a0000000000206707db9b84da197090074656e616e742d610b040a0a0a0105040a0aa0a00=""></value:>	 <vature: 1393="" <<="" li="" recomposition="" stans="" steasetademonosometary="" stera=""> </vature:>
Option 82 Suboption: (1) Agent Circuit ID	Length: 14
Length: 14	<value: 0108000600018a9200a00000000=""></value:>
<value: 0108000600018a9200a0000000=""></value:>	Agent Circuit ID: 0108000600018a9200a00000000
Agent tirtuit ID: 01000000000183/2003000000000	 Option 82 Suboption: (2) Agent Remote ID
 option of subprise, (2) Agent Renote 10 length 6 	Length: 6
cvalue 707db0h8ddafs	<value: 707db9b84daf=""></value:>
Agent Remote 10: 707db9b84daf	Agent Remote ID: 707db9b84daf
 Option 82 Suboption: (151) VRF name/VPN ID 	 Option 82 Suboption: (151) VRF name/VPN ID
Length: 9	Lengtri: 9 «Value: 00/465666166742/d61>
<value: 0074656e616e742d61=""></value:>	> VRF name:
VRF name:	 Option 82 Suboption: (11) Server ID Override (10.10.10.1)
V [Expert Info (Warning/Undecoded): Trailing stray characters]	Length: 4
[raling stray characters]	<value: 0a0a0a01=""></value:>
<pre><message: characters="" realing="" stray=""> </message:></pre>	Server ID Override: 10.10.10.1
(Group: Underedad)	 Option 82 Suboption: (5) Link selection (10.10.10.0)
 Option 22 Subantion: (11) Server ID Override (10.10.10.1) 	Length: 4
Lenoth: 4	<value: 0a0a0a00=""></value:>
<value: 0a0a0a01=""></value:>	Link Selection: 10.10.10.0
Server ID Override: 10.10.10.1	✓ Uption: (25) End Option End: 255
 Option 82 Suboption: (5) Link selection (10.10.10.0) 	upran Liu, 233
Length: 4	
<value: 0a0a0a00=""></value:>	
Link selection: 10.10.10.0	
V Uption: (255) End Option End: 255	
option that 233	

DHCP-aanbieding op LEAF-1

Aanbieding ontvangen op LEAF-1	Aanbieding verzenden op LEAF-1
--------------------------------	--------------------------------

	<pre>> Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: ff:ff:ff:ff:ff:ff</pre>
	> Internet Protocol Version 4, Src: 10.10.10.1, Dst: 255.255.255.255
> 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: 67, Dst Port: 68
User Datagram Protocol, Src Port: 65518, Dst Port: 4789	 Dvnamic Host Configuration Protocol (Offer)
Virtual eXtensible Local Area Network	Message type: Boot Reply (2)
Group Policy ID: 0	Hardware type: Ethernet (0x01)
VXLAN Network Identifier (VNI): 303030	Hardware cype. Etherhet (0.01)
Reserved: 0 Ethernet II, Src: 02:00:0d:0d:0d:0d:fe, Dst: 70:7d:b9:b8:4d:af	Hardware address length: 6
Internet Protocol Version 4, Src: 10.10.10.150, Dst: 172.16.10.8	Hops: 0
> User Datagram Protocol, Src Port: 67, Dst Port: 67	Transaction ID: 0xe9e35087
Message type: Boot Reply (2)	Seconds elapsed: 0
Hardware type: Ethernet (0x01)	> Bootp flags: 0x8000, Broadcast flag (Broadcast)
Hardware address length: 6 Hops: 0	Client IP address: 0.0.0.0
Transaction ID: 0xe9e35087	Your (client) IP address: 10 10 10 3
Seconds elapsed: 0 > Booto flaos: 0x8000, Broadcast flao (Broadcast)	Next center TP address: 10.10.10.5
Client IP address: 0.0.0.0	Next Server 1P address. 10.10.10.10
Your (client) IP address: 10.10.10.3	Relay agent IP address: 10.10.1
Relay agent IP address: 172.16.10.8	Client MAC address: 00:50:56:a5:fd:dd
Client MAC address: 00:50:56:a5:fd:dd	Client hardware address padding: 0000000000000000000
Server host name not given	Server host name not given
Boot file name not given	Boot file name not given
Magic cookie: DHCP v Option: (53) DHCP Message Type (Offer)	Magic cookie: DHCP
Length: 1	<pre>v Ontion: (53) DHCP Message Type (Offer)</pre>
<value: 02=""> DHCP: Offer (2)</value:>	Length: 1
<pre>> Option: (1) Subnet Mask (255.255.0)</pre>	
Length: 4	
Subnet Mask: 255.255.0	DHCP: Uffer (2)
Option: (58) Renewal Time Value	Option: (1) Subnet Mask (255.255.255.0)
<value: 0000a8c0=""></value:>	Length: 4
Renewal Time Value: 12 hours (43200)	<value: ffffff00=""></value:>
Length: 4	Subnet Mask: 255.255.255.0
<value: 00012750=""></value:>	v Option: (58) Renewal Time Value
 Option: (51) IP Address Lease Time 	Length: 4
Length: 4	<value: 0000a8c0=""></value:>
<value: 00015180=""> IP Address Lease Time: 1 day (86400)</value:>	Renewal Time Value: 12 hours (43200)
Option: (54) DHCP Server Identifier (10.10.10.1)	Ontion: (59) Rehinding Time Value
<pre></pre>	Length: 4
DHCP Server Identifier: 10.10.10.1	
Option: (15) Domain Name Length: 10	<value: 00012="" 30=""></value:>
<value: 636973636f2e636f6d00=""></value:>	Rebinding Time value: 21 hours (75600)
Domain Name: cisco.com	<pre>v Option: (51) IP Address Lease Time</pre>
Length: 47	Length: 4
<pre><value: 01000108000600018a9200a0000000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00=""></value:></pre>	<value: 00015180=""></value:>
Length: 14	IP Address Lease Time: 1 day (86400)
<value: 0108000600018a9200a00000000=""></value:>	Option: (54) DHCP Server Identifier (10.10.10.1)
 Option 82 Suboption: (2) Agent Remote ID 	Length: 4
Length: 6	<value: 0a0a0a01=""></value:>
Agent Remote ID: 707db9b84daf	DHCP Server Identifier: 10.10.10.1
 Option 82 Suboption: (151) VRF name/VPN ID 	v Ontion: (3) Router
<value: 0074656e616e742d61=""></value:>	length: 4
VRF name: Option 82 Subortion: (11) Server TD Override (18,18,18,1)	
Length: 4	Value: Valuation
<value: 0a0a0a01=""></value:>	Router: 10.10.10.1
 Option 82 Suboption: (5) Link selection (10.10.10.0) 	Option: (15) Domain Name
Length: 4	Length: 10
<value: 00000000=""> Link selection: 10.10.10.0</value:>	<value: 636973636f2e636f6d00=""></value:>
<pre>> Option: (255) End</pre>	Domain Name: cisco.com
Uption End: 255	Option: (255) End
	Option End: 255

DHCP-aanbieding ontvangen op 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: 0000000000000000000
    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: ffffff00>
      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)
 v Option: (51) IP Address Lease Time
      Length: 4
      <Value: 00015180>
      IP Address Lease Time: 1 day (86400)
 v 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
```

Verzoek verzenden door 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: 0000000000000000000
   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
```

Verzoek op LEAF-1

Verzoek ontvangen op LEAF-1	Verzoek verzenden via LEAF-1
<pre>Ethernet II, Src: 00:50:56:a5:fd:dd, Dst: ff:ff:ff:ff:ff:ff Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255 User Datagram Protocol, Src Port: 68, Dst Port: 67 Opnamic Host Configuration Protocol (Request) Message type: Boot Request (1) Hardware type: Ethernet (0x01) Hardware address length: 6</pre>	Internet Protocol Version and Stat About State (State 1977) User Datagram Protocol, Src Port: 51730, Dst Port: 4789 Virtual Extensible Local Area Network Flags: 0x0000 yULAN Network ID (VNI) Group Policy ID: 0 VILAN Network Identifier (VNI): 303030 Reserved: 0 Ethernet II, Src: 70:7d:D9:D8:4d:af, Dst: 02:00:0d:0d:0d:fe
Hops: 0 Transaction ID: 0xe9e35087 Seconds elapsed: 0 - Bootp flass: 0x8000. Broadcast flag (Broadcast)	Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.16.150 User Datagram Protocol, Src Port: 67, Dst Port: 67 Dynamic Most Configuration Protocol (Request) Message type: Boot Request (1) Hardware type: Ethernet (0x01) Hardware address length: 6
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	Hops: 1 Transaction ID: 0xe9e35007 Seconds elapsed: 0 > Bootp flags: 0x80000, Broadcast flag (Broadcast) 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: 000000000000000000000 Server bost name ont given	Nott Server IP address: 0.0.0 Relay agent IP address: 172.16.10.8 Client MacKaddress: 0059056:asi/add Client hardware address padding: 00000000000000000 Server host name not given
Boot file name not given Magic cookie: DHCP ~ Option: (53) DHCP Message Type (Request) Length: 1	Boot file name not given Magic cookie: DHCP © Option: (53) DHCP Message Type (Request) Length: 1 - <value: 03=""> DHCP: Request (3)</value:>
<pre> OHCP: Request (3) Option: (61) Client identifier Length: 7 <p< td=""><td><pre>> Option: (61) Client identifier Length: 7 -<value: 010056a5fddb=""> Hardware type: Ethernet (0x01) Client MAC address: 000:505ca3:fd:dd • Option: (50) Requested IP Address (10.10.10.3)</value:></pre></td></p<></pre>	<pre>> Option: (61) Client identifier Length: 7 -<value: 010056a5fddb=""> Hardware type: Ethernet (0x01) Client MAC address: 000:505ca3:fd:dd • Option: (50) Requested IP Address (10.10.10.3)</value:></pre>
Hardware type: Ethernet (0x01) Client MAC address: 00:50:56:a5:fd:dd ~ Option: (50) Requested IP Address (10.10.10.3) Length: 4	Length: 4 <välut: 80040043=""> Requested IP Address: 10.10.10.3 ○ Option: (54) DMCP Server Identifier (10.10.100) Length: 4 <välut: 8004095=""></välut:></välut:>
<value: 8a0a0a03=""> Requested IP Address: 10.10.10.3 <∨ Option: (54) DHCP Server Identifier (10.10.10.1) Length: 4 <value: 8a0a9a01=""></value:></value:>	DHCP Server Identifier: 10.10.10.50 • Option: (12) Host Name Length: 10 • value: 43584c616273c4753138> Host Name: CLubs-H10 • Option: (81) Cluet Fully Qualified Domain Name
DHCP Server Identifier: 10.10.10.1 <pre>> Option: (12) Host Name Length: 10 <value: 43584c6162732d573130=""></value:></pre>	Longth: 13 <value: 0000043584c6162732d573130=""> > Flags: 0x00 A-RF: result: 0 PTR-RF: result: 0 Client: name: CXLabs-w10</value:>
Host Name: CXLabs-W10 Option: (81) Client Fully Qualified Domain Name Length: 13 <value: 00000043584c6162732d573130=""></value:> Flace: 0x00 	<pre>v Option: (60) Vendor class identifier Length: 8 <value: 445345420352e3b-<br="">Wendor class identifier: MSFT 5.0 V Option: (55) Parameter Request List</value:></pre>
0000 = Reserved flags: 0x0 0 = Server DDNS: Some server updates 0 = Encoding: ASCII encoding 0. = Server overrides: No override	chagua = 10 <pre></pre>
0 = Server: Client A-RR result: 0 PTR-RR result: 0 Client name: CXLabs-W10 Cntient (60) Vendor class identifier	Parameter Request List Item: (31) Perform Modifer Discover Parameter Request List Item: (33) Static Router Discover Parameter Request List Item: (43) Vendor-Specific Information Parameter Request List Item: (44) NetBIOS over TCP/IP Made Server Parameter Request List Item: (46) NetBIOS over TCP/IP Made Type Parameter Request List Item: (47) NetBIOS over TCP/IP Made Type
Length: 8 <value: 4d53465420352e30=""> Vendor class identifier: MSFT 5.0 Option: (55) Parameter Request List</value:>	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 Lengit: 47
Length: 14 <value: 0103060f1f212b2c2e2f7779f9fc=""> Parameter Request List Item: (1) Subnet Mask Parameter Request List Item: (3) Router Parameter Request List Item: (3) Domain Name Server</value:>	<pre></pre>
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	Length: 6 <value: 7070b9b84daf=""> Agent Remote ID: 7070b9b84daf (Option 82 Subpotion: (151) VRF name/VPM ID Length: 9 <value: 007465665166742d65=""></value:></value:>
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: (119) Classing Static Pourte	<pre>VMF name: > [Expert Info (Warning/Undecoded): Trailing stray characters] Option 82 Suboption: (11) Server ID Override (10.10.10) Length: 4 <value: 80080081=""> Server ID Override: 10.10.10.1</value:></pre>
Parameter Request List Item: (249) Private/Classless Static Route (Microsoft) Parameter Request List Item: (252) Private/Proxy autodiscovery > Option: (255) End Option End: 255	 ○ Option 82 Suboption: (5) Link selection (10.10.0) Length: 4 <

Verzoek op SPINE

Aanvraag ontvangen op SPINE

Aanvraag verzenden via SPINE

Ethernet II, Src: 70:7d:D9:b8:4d:af, Dst: 10:b3:d6:a4:85:97 Internet Protocol Version 4, Src: 5.5.5, Dst: 13.13.13.254 User Datagram Protocol, Src Port: 51730, Dst Port: 4789 Virtual eXtensible Local Area Network - Flags: 0x0000, VXLNN Network ID (WI) Group Policy ID: 0 VXLNN Network Identifier (WI): 303030 Reserved: 0 VALWW RETWOR A USERVATURE 1111 AND A CONSTRUCTION OF A CONSTRUCTIO Hops: 1 Seconds elapsed: 0 Bootp flags: 0x8800, Broadcast flag (Broadcast) Client IP address: 0.0.0.0 Next server IP address: 0.0.0.0 Relay agent IP address: 0.0.0.0 Relay agent IP address: 102.16.10.8 Client Mc address: 005:05:163:16;1dd Seconds elapsed: 0 Client MAC address: 00:50:56:65:66:d0 Client hardware address padding: 0000000000000000000 Server host name not given Boot file name not given Magic cookie: DHKP Option: (53) DHCP Message Type (Request) Length: 1 <Value: 03-> DHCP: Remust (3) DHCP: Request (3) Option: (61) Client identifier Length: 7 <Value: 010050056a5fddd> Hardware type: Ethernet (0x01) Client M& address: 00:50:56:a5:fd:dd Option: (50) Requested IP Address (10.10.10.3) ption: (50) Requested IP Address (10.10.10.3) Length: 4 <Value: 0000003> Requested IP Address: 10.10.10.3 ption: (54) DHCP Server Identifier (10.10.10.150) Length: 4 <Value: 0000005> DHCP Server Identifier: 10.10.10.150 Option: (12) Host Name Value: 43584c6162732d573138> Host Name: CXLabs-W10 Option: (81) Client Fully Qualified Domain Name Length: 13 <Value: 00000043584c6162732d573130> <Value: 00000043584c6162732d573130>
Flags: 0x00
A-RR result: 0
PTR-RR result: 0
Client name: CXLabs-W10
Option: (60) Vendor class identifier
Length: 8
<Value: 4d53465420352438>
Vendor Usi densitien WFFF E 0 Vendor class identifier: MSFT 5.0 Option: (55) Parameter Request List Tomor Coss Jackson Cossenses List Length: 14 «Value: 803860f1f212b2c2e2f7779f9fc> «Value: 803860f1f212b2c2e2f7779f9fc> Parameter Request List Item: (3) Bouter Parameter Request List Item: (3) Bouter Parameter Request List Item: (3) Bouter Parameter Request List Item: (3) Derform Router Discover Parameter Request List Item: (3) Derform Router Discover Parameter Request List Item: (3) Perform Router Discover Parameter Request List Item: (3) Perform Router Discover Parameter Request List Item: (3) Vendor-Specific Information Parameter Request List Item: (4) NetBIOS over TCP/IP Name Server Parameter Request List Item: (4) NetBIOS over TCP/IP Name Server Parameter Request List Item: (4) NetBIOS over TCP/IP Name Server Parameter Request List Item: (12) Itensless Static Route Parameter Request List Item: (12) Itensless Static Route (Microsoft) Parameter Request List Item: (22) Private/Classless Static Route (Microsoft) Parameter Request List Item: (22) Private/Classless Static Route (Microsoft) Parameter Request List Item: (22) Private/Proxy autodiscovery point: 47 «Value: 816e0188080660818a9208a8080000080286707db9b84daf97090074656e616e742d61 Lengtm: 47 <Value: 010e01080006600018a9200a000000000206707db9b84daf97090074656e616e742d610b640a0a0a0105040a0a0a00 Option 82 Suboption: (1) Agent Circuit ID uption 82 Suboption: (1) Agent Circuit II Length: 1080006000183220000000000 Agent Circuit ID: 018000600018320000 Option 82 Suboption: (2) Agent Remote ID Length: 6 <Value: 707db9b04daf> 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)
 ption 82 Suboption: (11) Server ID Override (10.10. Length: 4 <Value: 000000> Server ID Override: 10.10.10.1 ption 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <Value: 0000000> Length: 4 <Value: 0a0a0a01> Link selection: 10.10.10.0 Optio Option: (255) End Option End: 255

Ethernet II, Src: 10:b3:d6:a4:85:97, Dst: 60:26:aa:85:95:87 Internet Protocol Version 4, Src: 5.5.5.5, Dst: 13.13.13.254 User Datagram Protocol, Src Port: 13/30, Dst Port: 4789 Virual eXtensible Local Area Network - Flags: 0x0806, VXLAN Network ID (VMI) Group Policy ID: 0 VXLAN Network Identifier (VMI): 303030 Reserved: 0 VXLAN Network Identifier (VMI): 303030 Reserved: 0 Ethernet II, Src: 70:7d;0b;0b;4d;ar, Dst: 02:00:0d:0d:0d;0d;1fe Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.150 User Datagram Protocol, Src: Port: 67, Dst Port: 67 Dymaic Host Configuration Protocol (Request) Message type: Boo Request (1) Hardware type: Ethernet (0x01) Hardware address length: 6 Hoos: 1 Transaction ID: 0xe9e35087 Transaction ID: 0x9953087 Seconds elapsed: 0 Bootp flags: 0x8080, Broadcast flag (Broadcast) Client IP address: 0.0.0 Next server IP address: 0.0.0 Next server IP address: 0.0.0 Relay agent IP address: 00:0056:a5fdrdd Client MAC address: 00:0056:a5fdrdd Client MAC address: 00:50:50:50:10:00 Client hardware address padding: 00000000 Server host name not given Boot file name not given Magic cookie: DHCP Option: (53) DHCP Message Type (Request) Length: 1 <Value: 03> DHCP. Remoter (3) <Value: 03>
DHCP: Request (3)
Option: (61) Client identifier
Length: 7
<Value: 01005056a5fddd>
Hardware type: Ethernet (0x01)
Client MAC address: 00185563a5fddd
Option: (50) Requested IP Address (10.10.10.3)
Length: 4 Option: (50) Requested IP Address (10.10.10.3) Length: 4 <Value: 0800808>> Requested IP Address: 10.10.10.3 Option: (54) DHCP Server Identifier (10.10.10.150) Length: 4 <Value: 08008096> DHCP Server Identifier: 10.10.10.150 Option: (12) Host Name Length: 0 Uption: 147 Length: 14 <Value: 43584c6162732d573130> Host Name: CXLabs=W10 Option: (81) Client Fully Qualified Domain Name Length: 13 <Value: 00000043584c6162732d573130> «Value: U0000043584cb102/32d3/31300 Flags: 00/00 A-RR result: 0 PTR-RR result: 0 Client name: CKLabs-W10 ption: (60) Vendor class identifier Length: 8 <Value: 4d53465420352e30> Vendor class identifier MEET 5 0 Vendor class identifier: MSFT 5.0 Option: (55) Parameter Request List 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) <Value: 0a0a0a01: Server ID Override: 10.10.10.1 Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <Value: 0a0a0a000-Link selection: 10.10.10.0 ption: (255) End

Verzoek op LEAF-2-vPC

RecevPCd aanvragen op LEAF-2-vPC	Aanvraag verzenden via vPCAF-2-vPC
Ethernet II, Src: 10:b3:d6:a4:85:97, Dst: 60:26:aa:85:95:87 Internet Protocol Version 4, Src: 5.5.5, Dst: 13.13.13.254 User Datagram Protocol, Src Port: S1730, Dst Port: 4789 Virtual eXtensible Local Area Network	
> Flags: 0x8000, VXLAN Network ID (VNI)	Ethernet II, Src: 60:26:aa:85:95:87, Dst: 00:50:56:a5:dc:ca
Group Policy ID: 0	Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.10.150
VXLAN Metwork Identifier (VNI): 303030	User Datagram Protocol, Src Port: 67, Dst Port: 67
Reserved: 0	Dynamic Host Configuration Protocol (Request)
Ethernet II, Src: 70:7d19910814d1ar, DSt: 02:00:001001001001e0	Message type: Boot Request (1)
Internet Protocol Version 4, Src: 172.166.10.8, Dst: 10.10.10.150	Hardware type: Ethernet (0x01)
User Datagram Protocol, Src Port: 67, Dst Port: 67	Hardware address length: 6
Dynamic Host Configuration Protocol (Request)	Hops: 1
nessage type: Book negues (1) Hardware address length: 6 Hops: 1 Transaction ID: 8x99835887	Fransaction ID: 0x2023007 Seconds elapsed: 0 > Bootp flags: 0x8000, Broadcast flag (Broadcast) Client IP address: 0.0.0.0 Your (client) IP address: 0.0.0.0
Seconds elapsed: 0	Next server IP address: 0.0.0.0
> Bootp flags: 0x8000, Broadcast flag (Broadcast)	Relay agent IP address: 172.16.10.8
Client IP address: 0.0.0.0	Client MAC address: 00:50:56:35:fd:dd
Your (client) IP address: 0.0.0.0	Client hardware address padding: 000000000000000000
Next server IP address: 0.0.0 Relay agent IP address: 172.16.10.8 Client MAC address: 00:50:56:a5:fd:dd Client hardware address padding: 000000000000000000 Server boat agen on Lien	Server host name not given Boot file name not given Magic cookie: DHCP © Option: (53) DHCP Message Type (Request)
Boot file name not given	<pre><daus: 03=""></daus:></pre>
Magic cookie: DHCP	DHCP: Request (3)
© Option: (53) DHCP Message Type (Request)	% Option: (61) Client identifier
Length: 1	Length; 7
<value: 03-<="" td=""><td><value: 01005056a5fddd=""></value:></td></value:>	<value: 01005056a5fddd=""></value:>
DHCP: Request (3)	Hardware type: Ethernet (0x01)
Option: (61) Ctient identifier	Client MAC address: 00:50:56:a5:fd:dd
Length: 7	~ Option: (50) Requested IP Address (10.10.10.3)
<pre><value: 01003050570d0=""> Hardware type: Ethernet (0x01) Client MAC address: 00:50:56:35:1d:dd </value:></pre> <pre>0 option: (50) Requested IP Address (10.10.10.3) Lenott: 4</pre>	Length: 4 <value: 00000003=""> Requested IP Address: 10.10.10.3 © Option: (54) DMCP Server Identifier (10.10.10.150) Length: 4</value:>
<value: 0a0a0a03=""></value:>	<value: 0a0a0a96=""></value:>
Requested IP Address: 10.10.10.3	DHCP Server Identifier: 10.10.10.150
Option: (54) DHCP Server Identifier (10.10.10.150)	© Option: (12) Host Name
Length: 4	Length: 10
<pre><value: 0808096=""> DHCP Server Identifier: 10.10.18.150 0 Option: (12) Host Name Length: 10 <value: 4580ec1623234523120=""></value:></value:></pre>	<pre><value: 4358466162732d573130=""> Host Name: CKLabs-WiD Qualified Domain Name Length: 13 </value:></pre>
<pre><stude:< td=""><td><pre>~raile: 000000000000000000000000000000000000</pre></td></stude:<></pre>	<pre>~raile: 000000000000000000000000000000000000</pre>
Flags: 0x00	○ Option: (60) Vendor class identifier
A-RR result: 0	Length: 8
PTR-RR result: 0	<value: 4d53465420352e30=""></value:>
Client name: CXLabs-W10	Vendor class identifier: MSFT 5.0
 Option: (60) Vendor class identifier	 Option: (55) Parameter Request List
Length: 8 <value: 4053465420352e30=""></value:> Vendor class identifier: NSFT 5.0 Option: (55) Parametre Demust 1 ist	Length: 14 <value: 0103060f1f212b2c2e2f7779f9fc=""></value:> Parameter Request List Item: (1) Subnet Mask Parameter Request List Item: (2) Request
Length: 14	Parameter Request List Item: (5) Domain Name Server
<value: 01836601f12b2c2c2f7779f9fc=""></value:>	Parameter Request List Item: (15) Domain Name
Parameter Request List Item: (1) Subnet Mask	Parameter Request List Item: (31) Perform Router Discover
Parameter Request List Item: (3) Router	Parameter Request List Item: (33) Static Route
Parameter Request List Item: (6) Domain Name Server	Parameter Request List Item: (43) Vendor-Specific Information
Parameter Request List Item: (15) Domain Name	Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server
Parameter Request List Item: (31) Perform Router Discover	Parameter Request List Item: (46) NetBIOS over TCP/IP Node Type
Parameter Request List Item: (33) Static Route	Parameter Request List Item: (47) NetBIOS over TCP/IP Scope
Parameter Request List Item: (43) Ven00-specific information	Parameter Request List Item: (119) Domain Search
Parameter Request List Item: (44) NetBIOS over TCP/IP Node Esver	Parameter Request List Item: (121) Classless Static Route
Parameter Request List Item: (47) NetBIOS over TCP/IP Node Type	Parameter Request List Item: (249) Private/Classless Static Route (Microsoft)
Parameter Request List Item: (47) NetBIOS over TCP/IP Scope	Parameter Request List Item: (252) Private/Proxy autodiscovery
Parameter Request List Item: (19) Domain Search	Option: (82) Ament Information Dotion
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 	Length: 47 <value: 01000108000600018a9200a000000000000000000000000000000000<="" td=""></value:>
Length: 47 Value: 0180e0108000600018a9200a00000000000206707db9b84daf970900746566616e742d610b040a0a0a0105040a0a000 Option 82 Suboption: (1) Agent Circuit ID Length: 14 <p< td=""><td><pre> </pre> <pre></pre> Agent Circuit ID: 018800660013a3200a00000000 Option 82 Suboption: (2) Agent Remote ID <pre>Length: 6</pre> <pre></pre> <pre>Length: 6</pre> </td></p<>	<pre> </pre> <pre></pre> Agent Circuit ID: 018800660013a3200a00000000 Option 82 Suboption: (2) Agent Remote ID <pre>Length: 6</pre> <pre></pre> <pre>Length: 6</pre>
Agent (ircuit ID: 01080000001635200000000000	Agent Renote ID: 707db9b84daf
∨ Option 82 Suboption: (2) Agent Remote ID	Option 82 Suboption: (151) VRF name/VPN ID
Length: 6	Length: 9
<value: 707db9b8ddaf=""></value:>	
Agent Renote ID: 707db9084daf	<pre>> VRF name:</pre>
• Option 82 Suboption: (151) VRF name/VPN ID	> Option 82 Suboption: (11) Server ID Override (10.10.10.1)
Length: 9	Length: 4
<value: 0074656e616e742d61=""></value:>	<value: 8a8a8a01=""></value:>
<pre>> yww name:</pre>	Server ID Override: 10.10.10.1
> Option 82 Suboption: (11) Server ID Override (10.10.10.1)	~ Option 82 Suboption: (5) Link selection (10.10.10.0)
Length: 4	Length: 4
<value: 0800801=""></value:>	<value: 003003080=""></value:>
Server ID Override: 10.10.10.1	Link selection: 10.10.10.0
 ○ Option 82 Suboption: (5) Link selection (10.10.0)	<pre>> Option: (255) End</pre>
Length: 4 <	Option End: 255
Option End: 255	

Aanvraag ontvangen op DCHP-server

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 Hons: 1 Transaction ID: 0xe9e35087 Seconds elapsed: 0 Bootp flags: 0x8000, Broadcast flag (Broadcast) Client IP address: 0.0.0.0 Your (client) IP address: 0.0.0.0 Next server IP address: 0.0.0.0 Relay agent IP address: 172.16.10.8 Client MAC address: 00:50:56:a5:fd:dd Client hardware address padding: 00000000000000000000 Server host name not given Boot file name not given Magic cookie: DHCP Option: (53) DHCP Message Type (Request) Length: 1 <Value: 03> DHCP: Request (3) Option: (61) Client identifier Length: 7 <Value: 01005056a5fddd> Hardware type: Ethernet (0x01) Client MAC address: 00:50:56:a5:fd:dd - Option: (50) Requested IP Address (10.10.10.3) Length: 4 <Value: 0a0a0a03> Requested IP Address: 10.10.10.3 · Option: (54) DHCP Server Identifier (10.10.10.150) Length: 4 <Value: 0a0a0a96> DHCP Server Identifier: 10.10.10.150 Option: (12) Host Name Length: 10 <Value: 43584c6162732d573130> Host Name: CXLabs-W10 Option: (81) Client Fully Qualified Domain Name Length: 13 <Value: 00000043584c6162732d573130> > Flags: 0x00 A-RR result: 0 PTR-RR result: 0 Client name: CXLabs-W10 Option: (60) Vendor class identifier Length: 8 <Value: 4d53465420352e30> Vendor class identifier: MSFT 5.0 Option: (55) Parameter Request List Length: 14 <Value: 0103060f1f212b2c2e2f7779f9fc> Parameter Request List Item: (1) Subnet Mask Parameter Request List Item: (3) Router Parameter Request List Item: (6) Domain Name Server Parameter Request List Item: (15) Domain Name Parameter Request List Item: (31) Perform Router Discover Parameter Request List Item: (33) Static Route Parameter Request List Item: (43) Vendor-Specific Information Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server Parameter Request List Item: (46) NetBIOS over TCP/IP Node Type Parameter Request List Item: (47) NetBIOS over TCP/IP Scope Parameter Request List Item: (119) Domain Search Parameter Request List Item: (121) Classless Static Route Parameter Request List Item: (249) Private/Classless Static Route (Microsoft) Parameter Request List Item: (252) Private/Proxy autodiscovery Option: (82) Agent Information Option Length: 47 <Value: 010e0108000600018a9200a000000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00> Option 82 Suboption: (1) Agent Circuit ID Length: 14 <Value: 0108000600018a9200a00000000> Agent Circuit ID: 0108000600018a9200a00000000 Option 82 Suboption: (2) Agent Remote ID Length: 6 <Value: 707db9b84daf> Agent Remote ID: 707db9b84daf Option 82 Suboption: (151) VRF name/VPN ID Length: 9 <Value: 0074656e616e742d61> VRF name: Option 82 Suboption: (11) Server ID Override (10.10.10.1) Length: 4 <Value: 0a0a0a01> Server ID Override: 10.10.10.1 Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4 <Value: 0a0a0a00> Link selection: 10.10.10.0 Option: (255) End Option End: 255

ACK verzenden via DCHP Server
```
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: ffffff00>
    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: 010e0108000600018a9200a00000000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00>

    Option 82 Suboption: (1) Agent Circuit ID

      Length: 14
       <Value: 0108000600018a9200a00000000>
      Agent Circuit ID: 0108000600018a9200a00000000

    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 op LEAF-2-vPC

ACK ontvangen op LEAF-2-vPC	ACK verzenden via LEAF-2-vPC
<pre>CHARGE ONLY ONLY AND A CONTRACTORY OF A CONTRACT OF A</pre>	ACK verzenden via LEAF-2-vPC
	<pre> Link selection: 10.10.10.0 Option: (255) End Option End: 255 </pre>

ACK op RUGGENGRAAT

ACK ontvangen op RUGGENGRAAT	ACK verzenden via SPINE
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: 65:318, Dst Port: 4789	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: 65:518, Dst Port: 4780
 Virtual eXtensible Local Area Network Flags: 0x0800, VXLAN Network ID (VNI) 	Virtual eXtensible Local Area Network Elans: 8V8888. VXIAN Network TD (UNIT)
Group Policy ID: 8	Group Policy ID: 0
Reserved T	Reserved: 0
District 11, Src: 02:00:00:00:00:00:00:00:00:00:00:00:00:0	 Ethernet II, Src: 02:00:0d:0d:0d:7e, 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) 	 User Datagram Protocol, Src Port: 67, Dst Port: 67 Dynamic Host Configuration Protocol (ACK)
Message type: Boot Reply (2) Hardware type: Ethernet (0x01)	Message type: Boot Reply (2)
Hardware address length: 6	Hardware address length: 6
Transaction ID: 0xe9e35087	Hops: 0 Transaction ID: 0xe9e35087
Seconds elapsed: 0 > Bootp flags: 0x8000, Broadcast flag (Broadcast)	Seconds elapsed: 0 ~ Booto flags: 0x8000, Broadcast flag (Broadcast)
1 Broadcast flag: Broadcast	1 Broadcast flag: Broadcast
Client IP address: 0.0.0	Client IP address: 0.0.0
Next server 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	Relay agent IP address: 172.16.10.8 Client MAC address: 00:50:56:a5:fd:dd
Client hardware address padding: 000000000000000000000000000000000000	Client hardware address padding: 0000000000000000000
Boot file name not given	Boot file name not given
Magic cookie: DHCP v Option: (53) DHCP Message Type (ACK)	Magic cookie: DHCP - Option: (53) DHCP Message Type (ACK)
Length: 1 «Value: 85»	Length: 1
DHCP: ACK (5)	DHCP: ACK (5)
Length: 4	Length: 4
<value: 0000a8c0=""> Renewal Time Value: 12 hours (43200)</value:>	<value: 0000a8c0=""> Renewal Time Value: 12 hours (43200)</value:>
 Option: (59) Rebinding Time Value 	 Option: (59) Rebinding Time Value
<value: 00012750=""></value:>	<value: 00012750=""></value:>
Rebinding Time Value: 21 hours (75600) V Option: (51) IP Address Lease Time	Rebinding Time Value: 21 hours (75600) • Option: (51) IP Address Lease Time
Length: 4 <value: 00015180=""></value:>	Length: 4 <value: 00015180=""></value:>
IP Address Lease Time: 1 day (86400)	IP Address Lease Time: 1 day (86400)
Length: 4	Length: 4
<value: 0a0a0a01=""> DMCP Server Identifier: 10.10.10.1</value:>	<value: 0a0a0a01=""> DHCP Server Identifier: 10.10.10.1</value:>
 Option: (1) Subnet Mask (255.255.255.0) Length: 4 	Option: (1) Subnet Mask (255.255.255.0) Length: 4
<value: ffffff00=""></value:>	<value: ffffff00=""></value:>
Subnet Mask: 255.255.255.0 Option: (81) Client Fully Qualified Domain Name	 Option: (81) Client Fully Qualified Domain Name
Length: 3 <value: 00ffff=""></value:>	Length: 3 <value: 00ffff=""></value:>
- Flags: 0x00 0000 - Reserved flags: 0x0	Flags: 0x00 0000 = Reserved flags: 0x0
0 = Server DDNS: Some server updates	0 = Server DDNS: Some server updates
0. = Server overrides: No override	
0 = Server: Client A-RR result: 255	A-RR result: 255
PTR-RR result: 255	PTR-RR result: 255
Length: 4	Length: 4
<value: 0a0a0a01=""> Router: 10.10.10.1</value:>	<value: 0a0a0a01=""> Router: 10.10.10.1</value:>
Option: (15) Domain Name Length: 10	 Option: (15) Domain Name Length: 10
<value: 636973636f2e636f6d00=""></value:>	<value: 636973636f2e636f6d00=""></value:>
 Option: (82) Agent Information Option 	Option: (82) Agent Information Option
Length: 47 <value: 010e0108000600018a9200a000000000000000000000000000000000<="" td=""><td><value: 010e0108000600018a9200a00000000000206707db9b84da197090074656e616e742d610b040a0a0a0105040a0a0a00=""></value:></td></value:>	<value: 010e0108000600018a9200a00000000000206707db9b84da197090074656e616e742d610b040a0a0a0105040a0a0a00=""></value:>
 Option 82 Suboption: (1) Agent Circuit ID Length: 14 	 Option 82 Suboption: (1) Agent Circuit ID Length: 14
<value: 0108000600018a9200a000000000<="" td=""><td><value: 0108000600018a9200a00000000=""> Agent Circuit ID: 0108000600018a9200a0000000</value:></td></value:>	<value: 0108000600018a9200a00000000=""> Agent Circuit ID: 0108000600018a9200a0000000</value:>
 Option 82 Suboption: (2) Agent Remote ID 	• Option 82 Suboption: (2) Agent Remote ID
Length: 6 <value: 707db9b84daf=""></value:>	<value: 707db9b84daf=""></value:>
Agent Remote ID: 707db9b84daf	Agent Remote ID: 787db9b84daf V Option 82 Suboption: (151) VRF name/VPN ID
Length: 9	Length: 9 <value: 0074656e616e742d61=""></value:>
<value: 00="" 405060162="" 42001=""> VRF name:</value:>	VRF name:
 [Expert Info (Warning/Undecoded): Trailing stray characters] [Trailing stray characters] 	[Trailing stray characters]
<pre>Message: Trailing stray characters> [Severity level: Warning]</pre>	<pre><pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre></pre>
[Group: Undecoded]	[Group: Undecoded]
v uption 82 suboption: (11) Server ID Override (18.10.10.1) Length: 4	Length: 4
<value: 0a0a0a01=""> Server ID Override: 10.10.10.1</value:>	<value: in="" sec<="" second="" td="" the="" valuatation=""></value:>
• Option 82 Suboption: (5) Link selection (10.10.10.0)	 Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4
<value: 0a0a0a00=""></value:>	<value: 0a0a0a00=""> Link selection: 10.10.0</value:>
Link selection: 10.10.10.0 v Option: (255) End	· Option: (255) End
Option End: 255	uption Eng: 255

ACK op LEAF-1

ACK ontvangen op LEAF-1	ACK versturen met LEAF-1
-------------------------	--------------------------

	> Ethernet II, Src: 70:7d:b9:b8:4d:at, Dst: ff:ff:ff:ff:ff:ff
Ethernet II, Src: 10:b3:d6:a4:85:97, Dst: 70:7d:b9:b8:4d:af	> Internet Protocol Version 4, Src: 10.10.10.1, Dst: 255.255.255.255
Internet Protocol Version 4, Src: 13.13.13.254, Dst: 5.5.5.5	> User Datagram Protocol, Src Port: 67, Dst Port: 68
Virtual extensible Local Area Network	> Dynamic Host Configuration Protocol (ACK)
> Flags: 0x0800, VXLAN Network ID (VNI)	Message type: Boot Reply (2)
Group Policy ID: 0	Hardware type: Ethernet (0x01)
Reserved: 0	Hardware address longth 6
Ethernet II, Src: 02:00:0d:0d:0d:fe, Dst: 70:7d:b9:b8:4d:af	hardware address tength; o
Internet Protocol Version 4, Src: 10.10.10.150, Dst: 172.16.10.8 User Datagram Protocol. Src Port: 67. Dst Port: 67.	Hops: 0
Dynamic Host Configuration Protocol (ACK)	Transaction ID: 0xe9e35087
Message type: Boot Reply (2)	Seconds elapsed: 0
Hardware address length: 6	 Bootp flags: 0x8000, Broadcast flag (Broadcast)
Hops: 0	1 = Broadcast flag: Broadcast
Transaction ID: 0xe9e35087	and and and an - Decented flags, brancist
Securus etapseu: 0 - Bootp flags: 0x8000, Broadcast flag (Broadcast)	.000 0000 0000 = Reserved Trags: 0x0000
1 = Broadcast flag: Broadcast	Client IP address: 0.0.0.0
.000 0000 0000 0000 = Reserved flags: 0x0000 Client TP address: 0.0.0.0	Your (client) IP address: 10.10.10.3
Your (client) IP address: 10.10.10.3	Next server IP address: 0.0.0.0
Next server IP address: 0.0.0.0	Relay agent IP address: 10.10.10.1
Nelay agent 17 adoress: 1/2.10.10.8 Client MAC address: 00:50:56:65:35:fd:dd	Client MAC address: 00:50:56:a5:fd:dd
Client hardware address padding: 000000000000000000000000000000000000	
Server host name not given	Ctient hardware address padding: 00000000000000000
Magic cookie: DHCP	Server host name not given
 Option: (53) DHCP Message Type (ACK) 	Boot file name not given
Length: 1	Magic cookie: DHCP
DHCP: ACK (5)	 Option: (53) DHCP Message Type (ACK)
 Option: (58) Renewal Time Value 	Length: 1
Length: 4	
Renewal Time Value: 12 hours (43200)	
Option: (59) Rebinding Time Value Length: 4	DHCP: ACK (5)
<value: 00012750=""></value:>	 Option: (58) Renewal Time Value
Rebinding Time Value: 21 hours (75600)	Length: 4
Length: 4	<value: 0000a8c0=""></value:>
<value: 00015180=""></value:>	Renewal Time Value: 12 hours (43200)
<pre>/ Option: (54) DHCP Server Identifier (10.10.10.1)</pre>	 Option: (59) Rebinding Time Value
Length: 4	length: 4
<value: 0a0a0001=""> DHCP Server Identifier: 10.10.10.1</value:>	
 Option: (1) Subnet Mask (255.255.25.0) 	<value: 00012="" 30=""></value:>
Length: 4	Rebinding Time Value: 21 hours (75600)
Subnet Mask: 255.255.25.0	 Option: (51) IP Address Lease Time
 Option: (81) Client Fully Qualified Domain Name 	Length: 4
<value: 00ffff=""></value:>	<value: 00015180=""></value:>
> Flags: 0x00	IP Address Lease Time: 1 day (86400)
0000 = Reserved flags: 0x0	Option: (54) DHCP Server Identifier (10.10.10.1)
	length: 4
A-RR result: 255	
PTR-RR result: 255	DHCP Server Identifier: 10.10.10.1
Length: 4	 Option: (1) Subnet Mask (255.255.255.0)
<value: 0a0a0a01=""></value:>	Length: 4
Router: 10.10.10.1	<value: ffffff00=""></value:>
Length: 10	Subnet Mask: 255,255,255,0
<value: 63697363612e6361600=""></value:>	Ontion: (81) Client Fully Qualified Domain Name
Option: (82) Agent Information Option	Length: 3
Length: 47	
 Option 82 Suboption: (1) Agent Circuit ID 	
Length: 14	V Flags: 0x00
<value: 0100000000018392003000000000<br="">Agent Circuit ID: 0108000600018392003000000000</value:>	0000 = Reserved flags: 0x0
 Option 82 Suboption: (2) Agent Remote ID 	<pre> 0 = Server DDNS: Some server updates</pre>
Léngth: 6 eValue: 707db0b84dafs	
Agent Remote ID: 707db9b84daf	0. = Server overrides: No override
 Option 82 Suboption: (151) VRF name/VPN ID 	0 = Server: Client
<value: 0074656e616e742d61=""></value:>	A-RR result: 255
VRF name: [Separt Tota (Marsian (Madacaded): Taxilian stary characters]	PTR-PR result: 255
(Expert Into (Warningvoneeodeo): Frailing stray characters)	
<message: characters="" stray="" trailing=""></message:>	 Option: (3) Router
[Severity level: Warning]	Length: 4
Option 82 Suboption: (11) Server ID Override (10.10.10.1)	<value: 0a0a0a01=""></value:>
Length: 4	Router: 10.10.10.1
Server ID Override: 10.10.10.1	Option: (15) Domain Name
 Option 82 Suboption: (5) Link selection (10.10.10.0) 	Length: 10
<value: 0a0a0a00=""></value:>	<value: 636973636f2e636f6d00=""></value:>
Link selection: 10.10.10.0	Domain Name: cisco com
Option End: 255	Ontion: (255) End
all and a second and a	v uption: (255) End
	Uption End: 255

ACK op 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 (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: 0000000000000000000 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 updates0.. = Encoding: ASCII encoding0. = Server overrides: No override0 = 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

Gerelateerde informatie

VXLAN BGP EVPN configureren

VXLAN configureren

DHCP-gerelateerde problemen oplossen bij Nexus 9000

Cisco Nexus 9000 Series NX-OS VXLAN-configuratiehandleiding, release 10.4(x)

Over deze vertaling

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