Configurar e verificar o DHCP em uma estrutura VxLAN para o Nexus 9000 com NX-OS e Windows Server 2022

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 Solicitação em LEAF-2-vPC

 Solicitação recebida no Servidor DHCP

 Envio ACK pelo servidor DHCP

 ACK em LEAF-2-vPC

 ACK na COLUNA

 ACK na LEAF-1

 ACK no HOST-1

Introdução

Este documento descreve como configurar e solucionar problemas de DHCP em uma estrutura VxLAN com switches Nexus 9000.

Pré-requisitos

Requisitos

A Cisco recomenda que você tenha conhecimento destes tópicos:

- Software NX-OS Nexus.
- Virtual Port Channel (vPC).
- VxLAN BGP L2VPN EVPN
- BGP address-family IPv4
- OSPF
- PIM multicast (modo escasso)
- DHCP

Componentes Utilizados

As informações neste documento são baseadas nestas versões de software e hardware:

- Cisco Nexus 9000 com Cisco NX-OS.
 - N9K-C93180YC-EX
 - N9K-C93180YC-FX
 - NX-OS 10.3(4a)
- Data center do Windows Server 2022

As informações neste documento foram criadas a partir de dispositivos em um ambiente de laboratório específico. Todos os dispositivos utilizados neste documento foram iniciados com uma configuração (padrão) inicial. Se a rede estiver ativa, certifique-se de que você entenda o impacto potencial de qualquer comando.



Observação: qualquer dúvida sobre a configuração e a integrabilidade de software ou hardware de terceiros está fora do suporte da Cisco. O uso de ferramentas de terceiros é o melhor esforço para demonstrar sua configuração e operação com o equipamento da Cisco para o cliente.

Informações de Apoio

Configuração de Sobreposição e Sobreposição para VxLAN em Laboratório



Diagrama de estrutura VxLAN no laboratório

- COLUNA:
 - Esse switch Nexus envia pacotes DHCP (Discover, Offer, Request, Ack) sem ser desencapsulado nesse cenário. Somente o cabeçalho externo é usado.
 - Atua como os pontos de roteamento centrais na estrutura de rede.
 - Responsável por interconectar todos os switches LEAF e facilitar o fluxo de dados entre eles.
 - Participa do BGP para distribuir rotas EVPN aos switches LEAF.
 - Executa o roteamento IP e pode rotear o tráfego entre diferentes sub-redes ou segmentos VxLAN observando os cabeçalhos IP externos.
 - Separa a rede de sobreposição (VxLAN) da rede física subjacente.
 - Gerencia a subjacência com protocolos de roteamento IP tradicionais, enquanto a sobreposição é gerenciada por VxLAN com BGP EVPN, fornecendo uma arquitetura de rede escalável e flexível.
- FOLHA-1:
 - Os switches LEAF fornecem conectividade física para endpoints como servidores, dispositivos de armazenamento e outros dispositivos de rede.
 - Os switches LEAF atuam como VTEPs, o que significa que encapsulam e desencapsulam os pacotes VxLAN.
 - Neste cenário, o HOST 1 faz a solicitação de endereço IP.
 - A LEAF-1 é responsável por encapsular os pacotes DHCP dentro do cabeçalho VxLAN.
 - O HOST 1 recebe pacotes DHCP de forma transparente como Ethernet clássica.
- LEAF-1-vPC e LEAF-2-vPC:
 - Os switches LEAF participam do plano de controle EVPN executando o BGP e trocando informações de rota. Isso permite a distribuição de informações de endereço

MAC e IP, garantindo que o tráfego possa ser roteado eficientemente através da estrutura VxLAN.

- Neste cenário, o servidor DHCP é associado à VLAN 10 com 101010 VNI como é HOST#1. Isso significa que é apenas VxLAN Bridging.
- Se o servidor DHCP foi associado a um VNI diferente do HOST#1, então um L3VNI seria estritamente necessário para o roteamento. O VNI de origem e de destino deve ser criado.
- O servidor DHCP recebe pacotes DHCP de forma transparente como Ethernet clássica.
- O tráfego de BUM é recebido por ambos os switches Nexus no vPC, mas somente o switch Nexus operacionalmente primário no vPC envia o tráfego. O switch Nexus secundário interrompe o tráfego. Neste cenário, LEAF-1-vPC é operacionalmente primário.
- O uso de infra-vlans é obrigatório porque se a interface em LEAF-2-vPC para SPINE cair, os pacotes DHCP não poderão ser enviados. Para enviar o tráfego encapsulado de VxLAN para LEAF-1-vPC, essa VLAN de backup é necessária. Dessa forma, LEAF-1-vPC poderia enviar pacotes DHCP para SPINE.
- N9K-ACCESS
 - Esse switch Nexus fornece conectividade apenas para ambos os Leafs usando um canal de porta vPC para fins de redundância em relação ao HOST 2

COLUNA

```
nv overlay evpn
feature ospf
feature bgp
feature pim
feature netconf
feature nv overlay
ip pim rp-address 192.168.11.11 group-list 224.10.10.0/24
ip pim ssm range 232.0.0/8
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
```

FOLHA-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 232.0.0/8 vlan 1,10,20,300 vlan 10 vn-segment 101010 vlan 20 vn-segment 202020 vlan 300 vn-segment 303030 spanning-tree vlan 10 priority 4096 ip prefix-list host_subnets seq 5 permit 10.10.10.0/24 le 32 ip prefix-list host_subnets seq 10 permit 192.168.20.0/24 le 32 ip prefix-list host_subnets seq 15 permit 172.16.10.8/32 route-map direct_routes_tenant-a permit 10 match ip address prefix-list host_subnets vrf context tenant-a vni 303030 rd auto address-family ipv4 unicast route-target both auto route-target both auto evpn interface Vlan10 no shutdown vrf member tenant-a no ip redirects ip address 10.10.10.1/24 no ipv6 redirects fabric forwarding mode anycast-gateway ip dhcp relay address 10.10.10.150 ip dhcp relay source-interface loopback100 interface Vlan20 no shutdown vrf member tenant-a no ip redirects ip address 192.168.20.1/24 no ipv6 redirects fabric forwarding mode anycast-gateway interface Vlan300 no shutdown vrf member tenant-a no ip redirects ip forward no ipv6 redirects interface nve1 no shutdown host-reachability protocol bgp source-interface loopback0 member vni 101010 suppress-arp mcast-group 224.10.10.10 member vni 202020

```
suppress-arp
    mcast-group 224.10.10.10
 member vni 303030 associate-vrf
interface Ethernet1/1
 ip address 10.104.11.2/30
 ip ospf network point-to-point
 ip router ospf 1 area 0.0.0.0
 ip pim sparse-mode
 no shutdown
interface loopback0
 description UNDERLAY-VERIFICATION
 ip address 192.168.5.5/32
 ip router ospf 1 area 0.0.0.0
 ip pim sparse-mode
interface loopback100
 vrf member tenant-a
 ip address 172.16.10.8/32
router ospf 1
router bgp 65000
 address-family ipv4 unicast
 neighbor 192.168.0.11
    remote-as 65000
    update-source loopback0
    address-family 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

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

```
ip pim rp-address 192.168.11.11 group-list 224.10.10.0/24
ip pim ssm range 232.0.0/8
vlan 1,10,300,777
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
```

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

```
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 nvel
 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

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
 no shutdown

Configuração DHCP em switches Nexus

FOLHA-1

Etapa 1. Ative o recurso DHCP.

LEAF-1(config)# feature dhcp



Observação: o servidor DHCP e o comando do agente de retransmissão service dhcp, ip dhcp relay e ipv6 dhcp relay estão habilitados por padrão desde o NX-OS 7.x.

Etapa 2. Aplique o comando ip dhcp relay information option.

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



Observação: esse comando permite que o agente de retransmissão DHCP insira e remova informações da Opção 82 nos pacotes encaminhados.

Etapa 3. Aplique o comando ip dhcp relay information option vpn.

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



Observação: esse comando ativa as solicitações de retransmissão de DHCP que chegam em VRF diferentes, ao qual o servidor DHCP pertence.

Etapa 4. Aplique o comando "ip dhcp relay address [ip address of DCHP server]".



Observação: neste exemplo, o endereço IP do servidor DHCP é 10.10.10.150.

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

Etapa 5. Aplique o comando "ip dhcp relay source-interface [unique loopback]".



Observação: esse comando configura o endereço IP de origem para que o agente de retransmissão DHCP manipule Discover, Offer, Request e ACK, para comunicação unicast que o agente de retransmissão DHCP usa o endereço IP do SVI como endereço IP de origem para o agente de retransmissão DHCP. Isso não é desejado porque esse endereço IP é compartilhado por vários VTEPs e pode ocorrer o buraco negro de pacotes DHCP. Para evitar isso, um endereço IP exclusivo (usando uma interface de loopback) é necessário para diferenciar cada VTEP.

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

Etapa 6. No locatário correspondente do VRF dentro do BGP, redistribuição de rota direta com uma lista de prefixos e um mapa de rota que inclui o endereço IP da interface de loopback.



Observação: essa interface de loopback pertence ao espaço do 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
```

Passo 7. Verifique se o endereço IP da interface de loopback é anunciado no BGP L2VPN EVPN para os Spines com o comando: show 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

Etapa 8. Verifique se o endereço IP da interface de loopback foi injetado no BGP L2VPN EVPN onde o servidor DHCP está localizado.



Observação: se houver switches Nexus no vPC, verifique se ambos aprendem o endereço IP da interface de loopback no BGP L2VPN EVPN.

```
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

Route Distinguisher: 192.168.3.3:4 (L3VNI 303030) BGP routing table entry for [5]:[0]:[0]:[32]:[172.16.10.8]/224, version 761 Paths: (1 available, best #1) Flags: (0x000002) (high32 00000000) on xmit-list, is not in l2rib/evpn, is not in HW Advertised path-id 1 Path type: internal, path is valid, is best path, no labeled nexthop Imported from 192.168.5.5:4:[5]:[0]:[0]:[32]:[172.16.10.8]/224 Gateway IP: 0.0.0.0 AS-Path: NONE, path sourced internal to AS 192.168.5.5 (metric 45) from 192.168.0.11 (192.168.0.11) Origin incomplete, MED 0, localpref 100, weight 0 Received label 303030 Extcommunity: RT:65000:303030 ENCAP:8 Router MAC:707d.b9b8.4daf Originator: 192.168.5.5 Cluster list: 192.168.0.11

Path-id 1 not advertised to any peer

Etapa 9. Verifique se há uma rota para o servidor DHCP no locatário de origem com o comando show ip route [DHCP server IP] vrf [tenant vrf].



Observação: a entrada de rota a ser usada deve ser do VxLAN para o VRF padrão. Se não houver rota disponível, verifique se o VTEP localmente sabe o endereço IP do servidor DHCP.

```
LEAF-1# show running-config interface vlan 10
interface Vlan10
no shutdown
vrf member tenant-a <<<< source tenant
no ip redirects
ip address 10.10.10.1/24
no ipv6 redirects
fabric forwarding mode anycast-gateway
ip dhcp relay address 10.10.10.150 <<<< DHCP server
ip dhcp relay source-interface loopback100
LEAF-1# show ip route 10.10.10.150 vrf tenant-a
10.10.150/32, ubest/mbest: 1/0
    *via 192.168.13.254%default, [200/0], 2w0d, bgp-65000, internal, tag 65000, segid: 303030 tunnelid:</pre>
```

Etapa 10. Verifique se o IP do servidor DHCP pode ser alcançado usando a interface de loopback e o VRF correspondente como uma origem VRF com o comando ping [DHCP server IP] sourceinterface 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

Etapa 11. Verifique o status do agente de retransmissão DHCP.

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

Etapa 12. Verifique a opção 82, como a opção vpn e o endereço IP de retransmissão correto no agente de retransmissão.

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>

Etapa 13. Verifique as estatísticas dos pacotes processados e encaminhados.

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

Etapa 14. Verifique as estatísticas dos pacotes de retransmissão.

Message Type	Rx	Тх		Drops	
Discover	260521	260520		0	
Offer	289330	289330		0	
Request(*)	267162	267161		0	
Ack	8322	8322		0	
Release(*)	181121	181121		0	
Decline	1	1		0	
Inform(*)	0	0		0	
Nack	289280	289280		0	
Total	1295737	1295735		0	
DHCP 13 FWD:					
Total Packets	Received		:	0	
Total Packets	Forwarded		:	0	
Total Packets	Dropped		:	0	
Non DHCP:					
Total Packets	Received		:	0	
Total Packets	Forwarded		:	0	

LEAF-1# show ip dhcp relay statistics

Total Packets Dropped DROP:	:	0
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	n switch	
receives DHCP request packet with destination ip address. If request is unicast it will be HW swit	as broadca ched	ast

LEAF-1-vPC DHCP

Etapa 1. Ative o recurso DHCP.

LEAF-1-VPC(config)#feature dhcp



Observação: o servidor DHCP e o comando do agente de retransmissão service dhcp, ip dhcp relay e ipv6 dhcp relay estão habilitados por padrão desde o NX-OS 7.x.

Etapa 2. Aplique o comando ip dhcp relay information option.

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



Observação: esse comando permite que o agente de retransmissão DHCP insira e remova informações da Opção 82 nos pacotes encaminhados.

Etapa 3. Aplique o comando "ip dhcp relay information option vpn".

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



Observação: esse comando ativa as solicitações de retransmissão de DHCP que chegam em VRF diferentes, ao qual o servidor DHCP pertence.

Etapa 4. Aplique o comando ip dhcp relay address [ip address of DCHP server].



Observação: neste exemplo, o endereço IP do servidor DHCP é 10.10.10.150.

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

Etapa 5. Aplique o comando "ip dhcp relay source-interface [unique loopback]".



Observação: esse comando configura o endereço IP de origem para que o agente de retransmissão DHCP manipule Discover, Offer, Request e ACK, para comunicação unicast que o agente de retransmissão DHCP usa o endereço IP do SVI como endereço IP de origem para o agente de retransmissão DHCP. Isso não é desejado porque esse endereço IP é compartilhado por vários VTEPs e pode ocorrer o buraco negro de pacotes DHCP. Para evitar isso, um endereço IP exclusivo (usando uma interface de loopback) é necessário para diferenciar cada VTEP.

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

Etapa 6. No locatário correspondente do VRF dentro do BGP, redistribuição de rota direta com uma lista de prefixos e um mapa de rota que inclui o endereço IP da interface de loopback.



Observação: essa interface de loopback pertence ao espaço do SVI.

```
LEAF-1-VPC(config)# show running-config interface loopback 100
interface loopback100
vrf member tenant-a
ip address 172.16.10.9/32
LEAF-1-VPC(config)# ip prefix-list host_subnets seq 15 permit 172.16.10.9/32
LEAF-1-VPC(config)# route-map direct_routes_tenant-a permit 10
LEAF-1-VPC(config-route-map)# match ip address prefix-list host_subnets
LEAF-1-VPC(config-route-map)# router bgp 65000
LEAF-1-VPC(config-router)# vrf tenant-a
LEAF-1-VPC(config-router-vrf)# address-family ipv4 unicast
LEAF-1-VPC(config-router-vrf-af)# redistribute direct route-map direct_routes_tenant-a
```

Passo 7. Verifique se o endereço IP da interface de loopback é anunciado no BGP L2VPN EVPN para os Spines com o comando: show bgp l2vpn evpn [loopback IP] vrf [tenant vrf].

LEAF-1-VPC# show bgp l2vpn evpn 172.16.10.9 vrf tenant-a BGP routing table information for VRF default, address family L2VPN EVPN Route Distinguisher: 192.168.3.3:4 (L3VNI 303030) BGP routing table entry for [5]:[0]:[32]:[172.16.10.9]/224, version 637 Paths: (1 available, best #1) Flags: (0x000002) (high32 0000000) on xmit-list, is not in l2rib/evpn Advertised path-id 1 Path type: local, path is valid, is best path, no labeled nexthop Gateway IP: 0.0.0.0 AS-Path: NONE, path locally originated 192.168.13.1 (metric 0) from 0.0.0.0 (192.168.3.3) Origin incomplete, MED 0, localpref 100, weight 32768 Received label 303030 Extcommunity: RT:65000:303030 ENCAP:8 Router MAC:6026.aa85.9887 Path-id 1 advertised to peers: 192.168.0.11

Etapa 8. Verifique se o endereço IP da interface de loopback foi injetado no BGP L2VPN EVPN onde o servidor DHCP está localizado.



Observação: se houver switches Nexus no vPC, verifique se ambos aprendem o endereço IP da interface de loopback no BGP L2VPN EVPN.

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

Etapa 9. Verifique se há uma rota para o servidor DHCP no locatário de origem com o comando show ip route [DHCP server IP] vrf[tenant vrf].



Observação: a entrada de rota a ser usada deve ser do VxLAN para o VRF padrão. Se não houver rota disponível, verifique se o VTEP localmente sabe o endereço IP do servidor DHCP.

LEAF-1-VPC# show running-config interface vlan 10 interface Vlan10 no shutdown vrf member tenant-a <<<< source tenant no ip redirects ip address 10.10.10.1/24 no ipv6 redirects fabric forwarding mode anycast-gateway ip dhcp relay address 10.10.10.150 ip dhcp relay source-interface loopback100
LEAF-1-VPC# show ip route 10.10.10.150 vrf tenant-a 10.10.10.150/32, ubest/mbest: 1/0, attached *via 10.10.10.150, Vlan10, [190/0], 6d07h, hmm

Etapa 10. Verifique se o IP do servidor DHCP pode ser alcançado usando a interface de loopback e o VRF correspondente como uma origem VRF com o comando ping [DHCP server IP] source-interface loopback [x] vrf [tenvrf].

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

--- 10.10.10.150 ping statistics ---

Etapa 11. Verifique o status do agente de retransmissão DHCP.

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

Etapa 12. Verifique a opção 82, como a opção vpn e o endereço IP de retransmissão correto no agente de retransmissão.

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>

Etapa 13. Verifique as estatísticas dos pacotes processados e encaminhados.

```
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
```

Etapa 14. Verifique as estatísticas dos pacotes de retransmissão.

	1 1 9			
Message Type	Rx	Tx	Drops	
Discover	8	7	0	
Offer	29304	29304	0	
Request(*)	5029	5029	0	
Ack	6535	6535	0	
Release(*)	191482	191482	0	
Decline	0	0	0	
Inform(*)	3	3	0	
Nack	29281	29281	0	
Total	261642	261641	0	

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 broad	cast
address. If request is unicast it will be HW swi	tched	

DHCP LEAF-2-vPC

Etapa 1. Ative o recurso DHCP.

LEAF-2-VPC(config)# feature dhcp



Observação: o servidor DHCP e o comando do agente de retransmissão service dhcp, ip dhcp relay e ipv6 dhcp relay estão habilitados por padrão desde o NX-OS 7.x.

Etapa 2. Aplique o comando "ip dhcp relay information option".

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



Observação: esse comando permite que o agente de retransmissão DHCP insira e remova informações da Opção 82 nos pacotes encaminhados.

Etapa 3. Aplique o comando "ip dhcp relay information option vpn".

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



Observação: esse comando ativa as solicitações de retransmissão de DHCP que chegam em VRF diferentes, ao qual o servidor DHCP pertence.

Etapa 4. Aplique o comando "ip dhcp relay address [ip address of DCHP server]".



Observação: neste exemplo, o endereço IP do servidor DHCP é 10.10.10.150.

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

Etapa 5. Aplique o comando "ip dhcp relay source-interface [unique loopback]".



Observação: esse comando configura o endereço IP de origem para que o agente de retransmissão DHCP manipule Discover, Offer, Request e ACK, para comunicação unicast que o agente de retransmissão DHCP usa o endereço IP do SVI como endereço IP de origem para o agente de retransmissão DHCP. Isso não é desejado porque esse endereço IP é compartilhado por vários VTEPs e pode ocorrer o buraco negro de pacotes DHCP. Para evitar isso, um endereço IP exclusivo (usando uma interface de loopback) é necessário para diferenciar cada VTEP.

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

Etapa 6. No locatário correspondente do VRF dentro do BGP, redistribuição de rota direta com uma lista de prefixos e um mapa de rota que inclui o endereço IP da interface de loopback.



Observação: essa interface de loopback pertence ao espaço do SVI.

```
LEAF-2-VPC(config-if)# show running-config interface loopback 100
interface loopback100
vrf member tenant-a
ip address 172.16.10.10/32
LEAF-2-VPC(config)# ip prefix-list host_subnets seq 15 permit 172.16.10.10/32
LEAF-2-VPC(config)# route-map direct_routes_tenant-a permit 10
LEAF-2-VPC(config-route-map)# match ip address prefix-list host_subnets
LEAF-2-VPC(config-route-map)# router bgp 65000
LEAF-2-VPC(config-router)# vrf tenant-a
LEAF-2-VPC(config-router-vrf)# address-family ipv4 unicast
LEAF-2-VPC(config-router-vrf-af)# redistribute direct route-map direct_routes_tenant-a
```

Passo 7. Verifique se o endereço IP da interface de loopback é anunciado no BGP L2VPN EVPN para os Spines com o comando: show bgp l2vpn evpn [loopback IP] vrf [tenant vrf].

LEAF-2-VPC(config-if)# show bgp l2vpn evpn 172.16.10.10 vrf tenant-a BGP routing table information for VRF default, address family L2VPN EVPN Route Distinguisher: 192.168.4.4:4 (L3VNI 303030) BGP routing table entry for [5]:[0]:[32]:[172.16.10.10]/224, version 49 5 Paths: (1 available, best #1) Flags: (0x000002) (high32 0000000) on xmit-list, is not in l2rib/evpn Advertised path-id 1 Path type: local, path is valid, is best path, no labeled nexthop Gateway IP: 0.0.0.0 AS-Path: NONE, path locally originated 192.168.13.2 (metric 0) from 0.0.0.0 (192.168.4.4) Origin incomplete, MED 0, localpref 100, weight 32768 Received label 303030 Extcommunity: RT:65000:303030 ENCAP:8 Router MAC:6026.aa85.9587 Path-id 1 advertised to peers: 192.168.0.11 <<<<< Spine

Etapa 8. Verifique se o endereço IP da interface de loopback foi injetado no BGP L2VPN EVPN onde o servidor DHCP está localizado.



Observação: se houver switches Nexus no vPC, verifique se ambos aprendem o endereço IP da interface de loopback no BGP L2VPN EVPN.

LEAF-2-VPC(config-if)# show bgp l2vpn evpn 172.16.10.10 BGP routing table information for VRF default, address family L2VPN EVPN Route Distinguisher: 192.168.4.4:4 (L3VNI 303030) BGP routing table entry for [5]:[0]:[0]:[32]:[172.16.10.10]/224, version 49 5 Paths: (1 available, best #1) Flags: (0x000002) (high32 00000000) on xmit-list, is not in l2rib/evpn Advertised path-id 1 Path type: local, path is valid, is best path, no labeled nexthop Gateway IP: 0.0.0.0 AS-Path: NONE, path locally originated 192.168.13.2 (metric 0) from 0.0.0.0 (192.168.4.4) Origin incomplete, MED 0, localpref 100, weight 32768 Received label 303030 Extcommunity: RT:65000:303030 ENCAP:8 Router MAC:6026.aa85.9587

Path-id 1 advertised to peers:

Etapa 9. Verifique se há uma rota para o servidor DHCP no locatário de origem com o comando show ip route [DHCP server IP] vrf[tenvrf].



Observação: a entrada de rota a ser usada deve ser do VxLAN para o VRF padrão. Se não houver rota disponível, verifique se o VTEP localmente sabe o endereço IP do servidor DHCP.

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

ip dhcp relay source-interface loopback100

Etapa 10. Verifique se o IP do servidor DHCP pode ser alcançado usando a interface de loopback e o VRF correspondente como uma origem VRF com o comando ping [DHCP server IP] sourceinterface 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 ---

Etapa 11. Verifique o status do agente de retransmissão DHCP.

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

Etapa 12. Verifique a opção 82, como a opção vpn e o endereço IP de retransmissão correto no agente de retransmissão.

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>

Etapa 13. Verifique as estatísticas dos pacotes processados e encaminhados.

```
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
```

Etapa 14. Verifique as estatísticas dos pacotes de retransmissão.

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

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

Configuração do servidor DHCP no Windows Server 2022

Configuração de escopo de endereçamento IP para hosts.

Etapa 1. Abra o Gerenciador do Servidor e confirme se não há alarmes no Servidor DHCP no Painel.



Painel do Gerenciador de Servidores no Windows Server 2022







The Attion Vise Hole Image: Second Second

Servidor DHCP no Windows Server 2022

UHCP

Etapa 3. Clique com o botão direito do mouse em IPv4 e clique em Novo escopo.



Etapa 4. Clique em Next.

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.		
	< Back Next > Cancel		

Etapa 5. Escreva um Nome e uma Descrição. Neste exemplo, o nome é a sub-rede que pertence à VLAN 10 e a descrição é o L2VNI como L2VNI listado na VLAN 10.

New Scope Wizard	
Scope Name You have to private a description.	ovide an identifying scope name. You also have the option of providing
Type a name an how the scope	nd description for this scope. This information helps you quickly identify is to be used on your network.
Name:	10.10.10/24
Description:	L2VNI 101010
	< Rack Next > Cancel
	Cancel Venue Cancel

Etapa 6. Configure o intervalo de endereços IP. Este é o pool para hosts.

New Scope Wizard
IP Address Range You define the scope address range by identifying a set of consecutive IP addresses.
Configuration settings for DHCP Server
Enter the range of addresses that the scope distributes.
Start IP address: 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

Etapa 6. Exclua o endereço IP compartilhado da configuração do SVI nos VTEPs. Neste exemplo, a interface VLAN 10 tem o endereço IP.10.10.1/24.



Aviso: a falha em excluir o endereço IP do SVI (ou gateway padrão) pode causar a duplicação de endereços IP e afetar a entrega do tráfego.

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.
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

Passo 7. Configure a duração da concessão do endereço IP. Refere-se à quantidade de tempo que um host pode usar o endereço IP atribuído antes de renová-lo.

New Scope Wizard
Lease Duration The lease duration specifies how long a client can use an IP address from this scope.
Lease durations should typically be equal to the average time the computer is connected to the same physical network. For mobile networks that consist mainly of portable computers or dial-up clients, shorter lease durations can be useful. Likewise, for a stable network that consists mainly of desktop computers at fixed locations, longer lease durations are more appropriate.
Set the duration for scope leases when distributed by this server.
Limited to:
Days: Hours: Minutes:
< Back Next > Cancel

Etapa 8. Selecione Yes, I want to configure these options now.

New Scope Wizard
Configure DHCP Options You have to configure the most common DHCP options before clients can use the scope.
When clients obtain an address, they are given DHCP options such as the IP addresses of routers (default gateways), DNS servers, and WINS settings for that scope.
The settings you select here are for this scope and override settings configured in the Server Options folder for this server.
Do you want to configure the DHCP options for this scope now?
Yes. I want to configure these options now
 No, I will configure these options later
< Back Next > Cancel

Etapa 9. Configure o endereço IP do gateway padrão.

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	router used by clients, enter the address below.
IP address:	Add Remove Up Down
	< Rack Next > Cancel

Etapa 10. Configure o nome de domínio e o servidor DNS.

New Scope Wizard			
Domain Name and DNS Servers The Domain Name System (DNS) maps and translates domain names used by clients on your network.			
You can specify the parent domain you want the DNS name resolution. Parent domain: cisco.com	e client computers on your networ	k to use for	
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	

Etapa 11. Configure o servidor WINS, se aplicável. Isso pode ser ignorado se a informação não for conhecida.

New Scope Wizard		
WINS Servers Computers running Windows can use WINS s names to IP addresses.	ervers to convert NetBIOS computer	
Entering server IP addresses here enables Windows clients to query WINS before they use broadcasts to register and resolve NetBIOS names.		
Server name:	IP address:	
	Add	
Resolve	Remove	
	Up	
	Down	
To change this behavior for Windows DHCP o Type, in Scope Options.	lients modify option 046, WINS/NBT Node	
	< Back Next > Cancel	

Etapa 12. Selecione Yes, I want to ativate this scope now.

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

Configurando o escopo para endereços IP exclusivos de loopbacks no SVI como agente de retransmissão DHCP.

Etapa 1. Clique com o botão direito do mouse em IPv4 e selecione IPv4Scope.



Novo escopo no DHCP

Etapa 2. Escreva um Nome e uma Descrição. Neste exemplo, o nome é a sub-rede usada para a sub-rede com endereço de loopback.



IPte: Um loopback é usado como endereço IP exclusivo de loopback em toda a estrutura VxLAN para o locatário VxLAN. Isso deve ser anunciado na redistribuição de rota BGP L2VPN EVPN no BGP dentro do VRF do locatário correspondente no endereço IPv4 address-famIPv4

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

C	
New Scope Wizard	
Scope Name You have to pro a description.	vvide an identifying scope name. You also have the option of providing
Type a name an how the scope i	id 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

Etapa 3. Configure o intervalo de endereços IPip. Esse é o pool para loopbacks.

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

Etapa 4. Configure exclusões (opcional porque o servidor DHCP aluga endereços IP que pertencem a esta sub-rede).

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 milli second:
< Back Next > Cancel

Etapa 5. Ignore a duração do aluguel e clique em Avançar.

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

Etapa 6. Selecione Não, configurarei essas opções mais tarde.

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.
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

Passo 7. Clique em Finish.



Etapa 8. Clique com o botão direito do mouse no escopo criado e selecione ativar.
File Action View H	felp	
Þ 🔿 🖄 📷 😽 🕯	🗊 🖻 🗟	
 DHCP cxlabs-win2k22dc lPv4 Scope [172 Scope] Server Policie: Filters IPv6 	.16.10.0] 172.16.10.0/24 Display Statistics Advanced Configure Failover Reconcile Activate	Contents of Scope Address Pool Address Leases Reservations Scope Options > Policies
	View Delete Refresh Export List Properties Help	>

Configurando superescopo para estrutura VxLAN.

Etapa 1. Clique com o botão direito do mouse em IPv4 e selecione Novo superescopo.

Etapa 2. Clique em Next.

New Superscope Wizard		
	Welcome 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 Next.	
< <u>B</u> ack <u>N</u> ext > Cancel		

Etapa 3. Escreva o nome do superescopo.

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

Etapa 4. Selecione todos os escopos que pertencem ao VxLAN Fabric.

New Superscope Wizard				
Select Scopes You create a superscope by building a collection of scopes.				
Select one or more scopes from the list to add to the superscope. Available scopes:				
[10.10.10.0] 10.10.10.0/24 [172.16.10.0] 172.16.10.0/24				
< <u>B</u> ack <u>N</u> ext > Cancel				

Etapa 5. Selecione todos os escopos que pertencem ao VxLAN Fabric.

New Superscope Wizard				
Select Scopes You create a superscope by building a collection of scopes.				
Select one or more scopes from the list to add to the superscope. Available scopes:				
[10.10.10.0] 10.10.10.0/24 [172.16.10.0] 172.16.10.0/24				
< <u>B</u> ack <u>N</u> ext > Cancel				

Etapa 6. Verifique se todos os superescopos de estrutura VxLAN estão no lugar e clique em Finish.

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			

Configure a Opção 82 em escopos de host.

Etapa 1. Clique com o botão direito do mouse em Policies (last option) dentro do escopo para o host e clique em New Policy.

Action View Help							
* + 2 m 2 F 1 m							
DHCP Colabs-win2b22dc Ph4 Superscope Scop Scope (30.50 Address I Address I Address I Reservati Scope Op Policie Scope (12 Server Option Policies Scope (12 Server Option Scope (12 Server Option Scope (12 Server Option Scope (12 Server Option Scope (12 Server Option Server Option Scope (12 Server Option Server Option Scope (12 Server Option Scope (12 Scope (12 Scop	pes for Vol.AN Falar 10.03 10.10.10.0724 Pool excess ptions New Policy Deactivate View Refresh Export List Help	ic (with Opt 82)	Policy Name	Description	Processin	Level There are no	Address Range Rems to show in this view.

Etapa 2. Escreva um nome e uma descrição e clique em Avançar.



Observação: neste exemplo, a política é criada para selecionar o endereço IP paIP, especialmente para hosts em Leaf-1 para VNI 101010 basedVNI Remote-ID (parâmetro da Opção 82).

DHCP Policy Configu	aration Wizard
Policy based IP /	Address and Option Assignment
This feature allows clients based on c	s you to distribute configurable settings (IP address, DHCP options) to ertain conditions (e.g. vendor class, user class, MAC address, etc.).
This wizard will gui Configuration Polic 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

Etapa 3. Clique em Add. Em Critérios, selecione Informações do Agente de Retransmissão. Em Operador, selecione Iguais. Em seguida, selecione ID remota do agente e digite o valor. Clique em OK e em Avançar.



Observação: o ID remoto é obtido do endereço MAC do SVI ao qual o SVII está associado.



Dica: uma política pode ser aplicada a várias IDs remotas (ou VTEPs) adicionando mais condições e selecionando OU em vez de E.

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		

Etapa 4. Configure o endereçamento IP que o IP existente pode usar no(s) VTEP(s) selecionado(s) pelo ID e clique em Avançar.



Observação: neste exemplo, há apenas uma máquina virtual conectada à Leaf-1, portanto, apenas um endereço IP requer IPd. Aqui um segundo endereço IP é adicionadoIP caso outro host se conecte.

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

Etapa 5. Selecione a caixa à esquerda de 003 Router (Roteador 003) em DCHP Standard Option. Em seguida, escreva o endereço IP do gateway padrão para os hosts que pertencem a essa política e pressione Adicionar. Clique em Next.



Cuidado: Você pode selecionar mais de uma opção, mas se não tiver certeza de qual valor informar, não o faça. Configuração inconsistente ou incorreta pode causar comportamento inesperado.

DHCP Policy Configuration Wizard				
Configure settings for the policy If the conditions specified in the policy match a client request, the settings will be applied.				
Vendor class:	DHCP Standard Op	otions		
Available Options		Description ^		
002 Time Offset		UTC offset in seconds		
003 Router		Array of router addresses order		
 004 Time Server 		Array of time server addresses, ~		
Data entry				
Server name:				
		Resolve		
IP address:				
1	Add			
10.10.10.1	Remove			
	Up			
	Down			
		< Back Next > Cancel		

Etapa 6. Verifique as condições da política e clique em Finish.

2 DHCP							- 0	×
File Action View Help								
							_	
2 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		
✓ 10 IPv4		, , , , , , , , , , , , , , , , , , , ,					_	
 Superscope Scopes for VxLAN Fabric (with Opt 82) 						More Actions		
Scope [10.10.10.0] L2VNI 101010								
Address Pool								
Address Leases								
12 Reservations								
Scope Options								
Policies								
Scope [172.16.10.0] 172.16.10.0/24								
Address Pool								
Address Leases								
Scene Ontions								
Scope Options								
Secure Ontions								
Doliziar								
Elbare								
E ID.6								

Pacote de caminho do DCHP do início ao fim em VxLAN Fabric.

Envio de descoberta por HOST-1

```
Ethernet II, Src: 00:50:56:a5:fd:dd, Dst: ff:ff:ff:ff:ff:ff
> Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255
> User Datagram Protocol, Src Port: 68, Dst Port: 67

    Dynamic Host Configuration Protocol (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
```

Descoberta no LEAF-1

Descoberta recebida no LEAF-1	Envio de descoberta por 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 eKensible Local Area Network
	> Flags: 0x0800, VXLAN Network ID (VNI) Group Policy ID: 0
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	VXLAN Network Identifier (VNI): 303030 Reserved: 0
 > User Datagram Protocol, Src Port: 68, Dst Port: 67 > Dynamic Host Configuration Protocol (Discover) 	Ethernet II, Src: 70:7d19b:08:4d:af, Dst: 02:00:0d100id0:d0d:fe Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.150 User Datagram Protocol, Src Port: 67, Dst Port: 67
Message type: Boot Request (1) Hardware type: Ethernet (0x01)	• Dynamic Host Configuration Protocol (Discover) Message type: Boot Request (1)
Hardware address length: 6	Hardware type: Ethernet (0x01) Hardware address length: 6
Hops: 0 Transaction TD: 0xe9e35087	Hops: 1 Transaction ID: 0xe9e35087
Seconds elapsed: 0	Seconds elapsed: 0 > Bootp flags: 0x8000, Broadcast flag (Broadcast)
 Bootp flags: 0x8000, Broadcast flag (Broadcast) 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 Relay agent IP address: 172.16.10.8
Client IP address: 0.0.0.0	Client MAC address: 00:50:56:a5:fd:dd
Your (client) IP address: 0.0.0.0	Server host name not given
Relay agent IP address: 0.0.0	Magic cookie: DHCP
Client MAC address: 00:50:56:a5:fd:dd	 Option: (53) DHCP Message Type (Discover) Length: 1
Server host name not given	<value: 01=""> DHCP: Discover (1)</value:>
Boot file name not given	 Option: (61) Client identifier Length: 7
Magic cookie: DHCP	<pre> </pre>
Length: 1	Client MAC address: 00:50:56:a5:fd:dd
<value: 01=""></value:>	<pre>> Option: (12) Host Name Length: 10</pre>
DHCP: Discover (1) <pre>> Option: (61) Client identifier</pre>	<value: 43584c6162732d573130=""> Host Name: CXLabs-W10</value:>
Length: 7	 Option: (60) Vendor class identifier Length: 8
<value: 01005056a5fddd=""></value:>	<pre><value: 4d53465420352e30=""> Vados class identifiat: MEET 5 0</value:></pre>
Client MAC address: 00:50:56:a5:fd:dd	 Option: (55) Parameter Request List
Option: (12) Host Name	Length: 14 <value: 0103060f1f212b2c2e2f7779f9fc=""></value:>
Length: 10	Parameter Request List Item: (1) Subnet Mask Parameter Request List Item: (3) Router
Host Name: CXLabs-W10	Parameter Request List Item: (6) Domain Name Server Parameter Request List Item: (15) Domain Name
 Option: (60) Vendor class identifier 	Parameter Request List Item: (31) Perform Router Discover
<value: 4d53465420352e30=""></value:>	Parameter Request List Item: (43) Vendor-Specific Information
Vendor class identifier: MSFT 5.0	Parameter Request List Item: (44) Metalos over TCP/IP Walle Server
 Option: (55) Parameter Request List Length: 14 	Parameter Request List Item: (47) NetBIOS over TCP/IP Scope Parameter Request List Item: (119) Domain Search
<value: 0103060f1f212b2c2e2f7779f9fc=""></value:>	Parameter Request List Item: (121) Classless 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	Length: 47
Parameter Request List Item: (15) Domain Name	• Option 82 Suboption: (1) Agent Circuit ID
Parameter Request List Item: (31) Perform Router Discover	<pre></pre>
Parameter Request List Item: (43) Vendor-Specific Information	Agent Circuit ID: 0108000600018a9200a000000000 - Option 82 Suboption: (2) Agent Remote ID
Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server	Length: 6 <value: 707db9b84daf=""></value:>
Parameter Request List Item: (46) NetBLOS over TCP/IP Node Type Parameter Request List Item: (47) NetBLOS over TCP/IP Scope	Agent Remote ID: 707db9b84daf <pre>> Option 82 Suboption: (151) VRF name/VPN ID</pre>
Parameter Request List Item: (119) Domain Search	Length: 9
Parameter Request List Item: (22) Classless Static Route	VRF name:
Parameter Request List Item: (252) Private/Proxy autodiscovery	 Option 82 Suboption: (11) Server ID Override (10.10.10.1)
> Option: (255) End	Lengtn: 4 <value: 0a0a0a01=""></value:>
Padding: 00000000000000000	Server ID Override: 10.10.10.1 v Option 82 Suboption: (5) Link selection (10.10.10.0)
	Length: 4 <value: 0a0a0a00=""></value:>
	Link selection: 10.10.10.0
	Padding: 0000000000000000



Dica: a imagem é ampliada quando você clica duas vezes.

Descoberta na SPINE

Descoberta recebida em SPINE Envio de descoberta por SPINE	
--	--

<pre>Ethermet II, Src: 7877429208346347, Dat: 189830463488997 Internet Protocol Version 4, Src: 5.5.5, fat: 18.10.12.24 Virtual Stemible Local Area Network 'I lag: needed, Area Network 'I la</pre>	<pre>: Ethermet II, Src: 18.83.067.04.85.97. Dat: 68.24.88.85.98.87 Unread: Tradgeme Protocol, Src Port: 6023, Dat: Port: 4789 Unread: Ethermic II (1997) Tradge Datageme Protocol, Src Port: 6023, Dat: Port: 4789 Unread: Ethermic II (1997) Unread: Ethermic II (1997) Unread: Ethermic II (1997) Ethermic II (1997) Ether</pre>

Descoberta no LEAF-1-vPC

Descoberta recebida no LEAF-1-vPC	Envio de descoberta por LEAF-1-vPC
-----------------------------------	------------------------------------

Ethernet II, Src: 10:b3:d6:a4:85:97, Dst: 60:26:aa: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	Thernet Protocol Version 4, Src: 172,16,10.8, Dst: 10,10,10,150
liser Datagram Protocol, Src Port: 65233, Dst Port: 4789	Her Debarrow Brokenes) Fre Dark, 67 Det Dark, 67
Vistual events i and i and i and intervents	voser batagram Protocol, Src Port: 67
VILLUAL CALCHSIDIC LUGAL AFCA WOLWOFK	Uynamic Most configuration Protocol (Discover)
> Flags: 0x0800, VXLAN Network ID (VNI)	Message type: Boot Request (1)
Group Policy ID: 0	Hardware type: Ethernet (8x81)
VXLAN Network Identifier (VNI): 303030	Hardware system length: 6
Decement a	naruware auuress length; b
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 anotation a
Heer Datagene Brotocol - Car Dout, 67 Dat Dart, 67	Seconds etapsed. e
User Datagram Protocol, Src Port: 67, Dst Port: 67	 Bootp flags: 0x8000, Broadcast flag (Broadcast)
 Dynamic Host Configuration Protocol (Discover) 	1 = Broadcast flag: Broadcast
Message type: Boot Request (1)	999 9999 9099 9090 = Reserved flags: $9x9999$
Hardware type: Ethernet (0x01)	
Understand and the second seco	ctient iP address: 0.0.0.0
nardware address length: 6	Your (client) IP address: 0.0.0.0
Hops: 1	Next server IP address: 0.0.0.0
Transaction ID: 0xe9e35087	Pelay agent TP address: 172 16 10 8
Seconds elanced: 0	Netay agent in address. 17210.10.0
December (1) and (1) a	CLIENT MAC address: 00:50:50:35:Td:dd
booth reads: exceed, broadcast read (broadcast)	Client hardware address padding: 0000000000000000000
Client IP address: 0.0.0.0	Server host name not given
Your (client) IP address: 0.0.0.0	Root file name not given
Next conver TP address: 0.0.0.0	boot file hund hot given
	Magic cookie: DHCP
netay agent ir autress. 172.10.10.0	 Option: (53) DHCP Message Type (Discover)
Client MAC address: 00:50:56:a5:fd:dd	Length: 1
Client hardware address padding: 0000000000000000000	dalue: 015
Server host name not given	DUCD, DATE (1)
Boster file same 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) 	d/alue, 0100505555tddds
length: 1	And the standard standary
deligner a	Hardware type: Ethernet (0x01)
svalue: DI>	Client MAC address: 00:50:56:a5:fd:dd
DHCP: Discover (1)	v Option: (12) Host Name
Option: (61) Client identifier	Length: 10
Length: 7	Length. 10
No. 1. A TRADE OF A CALL	<value: 43584c6162732d573130=""></value:>
<value: 01005056a51000=""></value:>	Host Name: CXLabs-W10
Hardware type: Ethernet (0x01)	 Option: (60) Vendor class identifier
Client MAC address: 00:50:56:a5:fd:dd	- option (ov) vendor etabs identifier
Ontion: (12) Host Name	Length: 8
Looth 12 Hor Hunc	<value: 4d53465420352e30=""></value:>
Length: 10	Vendor class identifier: MSFT 5.0
<value: 43584c6162732d573130=""></value:>	 Option: (55) Parameter Request List
Host Name: CXLabs-W10	Length: 14
 Option: (60) Vendor class identifier 	- 1/3/1/a 0102060#1#2120202#7770#0##~
Length: 8	
	Parameter Request List Item: (1) Subnet Mask
Vorder elses (dortificer, MCET 5.0	Parameter Request List Item: (3) Router
Vendor Class Identifier: HSFI 5.0	Parameter Request List Item: (6) Domain Name Server
 Option: (55) Parameter Request List 	Parameter Request List Item: (15) Domain Name
Length: 14	Deserved request list Them (21) Desfers Deutes Discover
<value: 0103060f1f212b2c2e2f7779f9fc=""></value:>	Parameter Request List item: (ii) Perform Router Discover
Decementar Deguart List Tram. (1) Subnat Mack	Parameter Request List Item: (33) Static Route
Parameter Request List Item, (1) Subject Hask	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	Desentes Dequest List Tem; (46) NetBTOC over TCD/ID Node Type
Parameter Request List Item: (15) Domain Name	Parameter Request List Term, (47) Netbros over TC/TF Note Type
Parameter Request List Item: (31) Perform Router Discover	Parameter Request List Item: (47) Netbios over ICP/IP Scope
Parameter Request List Item; (22) Statis Pouts	Parameter Request List Item: (119) Domain Search
Parameter request List item. (3) static route	Parameter Request List Item: (121) Classless Static Route
Parameter Request List Item: (43) Vendor-Specific Information	Parameter Request List Item: (249) Private/Classless Static Route (Microsoft)
Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server	Descent Request List Them (252) Private (Recurs autodisconse)
Parameter Request List Item: (46) NetBIOS over TCP/IP Node Type	Parameter Request List item: (252) Private/Proxy autodiscovery
Parameter Request List Item: (47) NetRIOS over TCP/ID Scope	Option: (82) Agent Information Option
Promoter neguest List Item; (4/) NetBLOS Ver ILF/IF Stupe	Lenath: 47
Parameter Request List Item: (119) Domain Search	Value: 010e0102000600012s0200.0000000000206707db0b2ddsf07000074656e616e742d610e040s0s0s0105040s0s0.0
Parameter Request List Item: (121) Classless Static Route	Starter, arecenteredatedastedabedebedebedebedebedebedebedebedebedeb
Parameter Request List Item: (249) Private/Classless Static Route (Microsoft)	v uption of suboption: (1) Agent Circuit ID
Parameter Request List Item: (252) Private/Proxy autodiscovery	Length: 14
Ontion: (82) Ament Information Ontion	<value: 0108000600018a9200a00000000=""></value:>
Speaker (ar, agent antoinotaon option	Agent Circuit ID: 0108000600018a9200a00000000
Length: 4/	 Ontion 82 Subortion: (2) Agent Remote TD
<value: 010c0108000b00018a9200a000000000020b707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00=""></value:>	Langth 6
 Option 82 Suboption: (1) Agent Circuit ID 	Jung un v
Length: 14	<value: 0="" db9b84daf=""></value:>
Value: 0108000500018392003000000005	Agent Remote ID: 707db9b84daf
	 Option 82 Suboption: (151) VRF name/VPN ID
When CTUCALL IN: ALABABADADAATSATAAAAAAAAAAAAAAAAAAAAAAAAAA	Length: 9
Option 82 Suboption: (2) Agent Remote ID	
Length: 6	 value: 00/40000000/42001>
<value: 707db9b84daf=""></value:>	VRF name:
Agent Remote ID: 787db9b84daf	[Expert Info (Warning/Undecoded): Trailing stray characters]
Agent Remote 10, Fordo Joordan	[Trailing stray characters]
- Opision of Suboption: (151) AVE Hame/AFM ID	Message: Trailing stray characters>
Length: 9	[Soverity local: Warning]
<value: 0074656e616e742d61=""></value:>	Loeverity tevet: warning)
VRF name:	[Group: Undecoded]
Expert Info (Warning/Undecoded): Trailing stray characters!	 Option 82 Suboption: (11) Server ID Override (10.10.10.1)
Portion 97 Subaptions (11) Service TO Preside (10 10 10 10)	Length: 4
option of suboption: (11) Server 10 Override (10.10.10.1)	101ue 0.000
Length: 4	
<value: 0a0a0a01=""></value:>	Server ID Override: 10.10.10.1
Server ID Override: 10.10.10.1	 Option 82 Suboption: (5) Link selection (10.10.10.0)
Option 82 Subortion: (5) Link colection (10 10 10 0)	Length: 4
- option of Subortion. (3) LINK Selection (10.10.10.0)	<value: 0a0a0a00=""></value:>
Length: 4	Link calention: 10 10 10 0
<value: 0a0a0a00=""></value:>	LINK Selection: 10.10.00
Link selection: 10.10.10.0	v Option: (255) End
Option: (255) End	
	Option End: 255
Padding: 000000000000000	Option End: 255 Padding: 000000000000000
Padding: 000000000000000	Option End: 255 Padding: 000000000000000



Observação: LEAF-2-vPC recebe o pacote Discovert, mas isso só é comutado. O endereço MAC de destino pertence ao servidor DHCP.

Descoberta recebida no Servidor DHCP

```
Ethernet II, Src: 60:26:aa:85:98:87, Dst: 00:50:56:a5:dc:ca
Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.10.150
User Datagram Protocol, Src Port: 67, Dst Port: 67
Dynamic Host Configuration Protocol (Discover)
  Message type: Boot Request (1)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 1
  Transaction ID: 0xe9e35087
  Seconds elapsed: 0
 Bootp flags: 0x8000, Broadcast flag (Broadcast)
    1... .... = Broadcast flag: Broadcast
    .000 0000 0000 0000 = Reserved flags: 0x0000
  Client IP address: 0.0.0.0
  Your (client) IP address: 0.0.0.0
  Next server IP address: 0.0.0.0
  Relay agent IP address: 172.16.10.8
  Client MAC address: 00:50:56:a5:fd:dd
  Client hardware address padding: 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
```

Oferta DCHP enviada pelo servidor DCHP

```
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
```

Oferta DCHP em LEAF-2-vPC

Oferta recebida em LEAF-2-vPC	Oferta enviada por LEAF-2-vPC
<pre>bithermet II, Src: 00:50:56:a5:dc:ca, Dst: 00:00:0a:0a:0a Intermet Protocol, Version 4, Src: 10.10:10, 1050, Dst: 172.16.10.8 User Datagram Protocol, Src Port: 67, Dst Port: 67 Dymain: Host Configuration Protocol (Offer) Message type: Boot Reply (2) Hardware type: Boot R</pre>	<pre>Intermet is also UverSup & Sec 19 33:12 240 Det 5 35:3 User Datagram Protocol, Sec Port: 65318 Det Port: 4789 * Virtual extensible Local Area Metwork > Flags: EveReB, VLAN Metwork ID (VLI) Group Policy ID: 0 VLAN Metwork Identifier (VLI): 38330 Reserved: 0 Centermet II, Sec 02:000:0004006/06/FR, Dit: 72:76:76:0010; Dymaaic Meter Configuration Protocol (Offer) Metsage type: Boot Reply (2) Mardware address length: 6 Mossi D Transaction ID: BxeHe3807 Seconds Elength: 1 Most Seconds Elength: 0 Mossi Seconds Elength: 0 Mossi Seconds Elength: 0 Mossi Seconds Elength: 0 Seconds Elength: 1 Mardware Address ID: 10.10 Mossi Seconds Elength: 0 Seconds Elength: 1 Mossi Seconds Elength: 1 Mossi Seconds Elength: 1 Mossi Seconds Elength: 1 Mossi Seconds Elength: 2 Mossi Seconds Elength: 1 Mossi Seconds Elength: 1 Mossi Seconds Elength: 2 Mossi Se</pre>
Length: 9 <value: 00746566616e742d61=""> < VRF name:</value:>	Length: 6 <value: 707db9b84daf=""> Agent Remote ID: 707db9b84daf</value:>
 [Expert Info (Warning/Undecoded): Trailing stray characters] [Trailing stray characters] 	 Option 82 Suboption: (151) VRF name/VPN ID Length: 9
<pre><message: characters="" stray="" trailing=""> [Severity level; Warning] [Growne Hedgended]</message:></pre>	<value: 0074656e616e742d61=""> VRF name:</value:>
[Group: Undecoded] • Option & 2 Suboption: (11) Server ID Override (10.10.10.1) Length: 4 • <value: 8a8a9a81=""> Server ID Override: 10.10.10.10 • Option & 2 Suboption: (5) Link selection (10.10.10.0) Length: 4 • <value: 8a8a9a80=""> Link selection: 10.10.10.0 • Option: (255) End Option End: 255</value:></value:>	<pre>~ [Expert Info (Warning/Undecoded): Trailing stray characters] [Trailing stray characters] dtessage: Trailing stray characters> [Severity level: Warning] [Group: Undecoded] Option 82 Suboption: (11) Server ID Override (10.10.10.1) Length: 4 <vlaue: baabaabal=""> Server ID Override: 10.10.10.1 Length: 4 <vlaue: baabaabal=""> Link selection: (10.10.10.10.10.10.10.10.10.10.10.10.10.1</vlaue:></vlaue:></pre>

Oferta DHCP vPC SPINE

Oferta recebida em SPINE Oferta enviada por 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 	
Internet Protocol Version 4, Src: 13.13.13.254, Dst: 5.5.5.5	
Hear Datagram Protocol Src Port, 65519 Det Port, 4790	
User batagram Protocot, Sit Port. 05516, DSt Port. 4765	
 Virtual extensible Local Area Network 	
> Flags: 0x0800, VXLAN Network ID (VNI)	
Group Policy ID: 0	
Note to the state of the state of the second	Ethernet II. Src: 10:b3:d6:a4:85:97. Dst: 70:7d:b9:b8:4d:af
VALAN Network identifier (VNI): 303030	Teternet Brotecel Version 4, Src: 12 12 12 12 Det E E E E
Reserved: 0	7 Internet Protocol Version 4, Src. 13.13.234, DSt. 5.5.5.5
Fthernet TT Src. 02.00.0d.0d.0d.0d.fe Dct. 70.7d.b9.b8.4d.af	> User Datagram Protocol, Src Port: 65518, Dst Port: 4789
	Virtual extensible Local Area Network
Internet Protocol Version 4, Src: 10.10.100, Dst: 172.16.10.8	Second State Stat
> User Datagram Protocol, Src Port: 67, Dst Port: 67	/ Flags: 0x0000, VALAN NELWORK ID (VNI)
Dynamic Host Configuration Protocol (Offer)	Group Policy ID: 0
by hand contragent action in the occur (other)	VXIAN Network Identifier (VNI): 303030
Message type: Boot Reply (2)	Presented a
Hardware type: Ethernet (0x01)	Reserved: 0
Hardware address length: 6	> Ethernet II, Src: 02:00:0d:0d:0d:fe, Dst: 70:7d:b9:b8:4d:af
Hardware avoress tengen, o	> Internet Protocol Version 4, Src: 10.10.10.150, Dst: 172.16.10.8
Hops: 0	Her Dataram Brotocol Src Port: 67 Det Port: 67
Transaction ID: 0xe9e35087	> User Datagram Protocol, Src Port: 67, Dst Port: 67
Seconds elansed: 0	Dynamic Host Configuration Protocol (Offer)
Scond discussion and the (Bredent)	Message type: Boot Reply (2)
Bootp flags: example, broadcast flag (broadcast)	Hand one trees (August
1 = Broadcast flag: Broadcast	hardware type. Ethernet (6x61)
.000 0000 0000 = Reserved flags: 0x0000	Hardware address length: 6
	Hops: 0
Ctient IP address: 0.0.0.0	Tenerstion The Avena25007
Your (client) IP address: 10.10.10.3	Transaction ib: 0xe9e55087
Next server IP address: 10.10.10.150	Seconds elapsed: 0
Delaw seet 70 address 172 16 10 0	> Bootp flags: 0x8000, Broadcast flag (Broadcast)
Relay agent in address: 1/2.10.10.0	Client TP address: A A A A
Client MAC address: 00:50:56:a5:fd:dd	ctient if address: 0.0.0.0
Client hardware address padding: 00000000000000000000	Your (Client) 1P address: 10.10.10.3
Server bost name not given	Next server IP address: 10.10.10.150
astres mare more fibe garen	Relay agent TP address: 172.16.10.8
BOOT TILE name not given	Client MAC address 00.55.5.5.5 didd
Magic cookie: DHCP	CLIERL HAC douress: 00:50:50:30:T0:00
Ontion: (53) DHCP Message Type (Offer)	Client hardware address padding: 000000000000000000000
optaon (or nessage type (offer)	Server host name not given
Length: 1	Post file pare st siver
<value: 02=""></value:>	BOOT LITE name not Given
DHCP: Offer (2)	Magic cookie: DHCP
Antipart (1) Cubert Mark (DEE DEE DE D)	 Option: (53) DHCP Message Type (Offer)
v uption: (1) subnet Mask (255.255.0)	Looth 1
Length: 4	Length I
12100 + ++++++00-	<value: 02=""></value:>
	DHCP: Offer (2)
Subnet Mask: 255.255.255.0	
 Option: (58) Renewal Time Value 	<pre>> Option: (1) Subnet Mask (255.255.2)</pre>
length: 4	Length: 4
Length. 4	<value: ffffff0=""></value:>
<value: 0000a8c0=""></value:>	Cubact Marks JEE JEE A
Renewal Time Value: 12 hours (43200)	Sublet Hask: 255.255.0
Option: (59) Rebinding Time Value	v Option: (58) Renewal Time Value
option (D) hotnoing the forde	Length: 4
Length: 4	dialust 0000-00-0
<value: 00012750=""></value:>	value. obodacto
Rebinding Time Value: 21 hours (75600)	Renewal Time Value: 12 hours (43200)
	 Option: (59) Rebinding Time Value
 Option: (51) IP Address Lease Time 	Longth: 4
Length: 4	Length: 4
-Value: 000151805	<value: 00012750=""></value:>
To Address Lance Times 1 day (06400)	Rebinding Time Value: 21 hours (75600)
IP Address Lease Time: 1 day (86400)	Options (51) TD Address Lease Time
 Option: (54) DHCP Server Identifier (10.10.10.1) 	· option: (51) if Address lease time
Length: 4	Length: 4
Length: 4	
	<value: 00015180=""></value:>
<value: 0a0a0a01=""></value:>	<value: 00015180=""></value:>
<value: 0a0a0a01=""> DHCP Server Identifier: 10.10.10.1</value:>	<value: 00015180=""> IP Address Lease Time: 1 day (86400)</value:>
<value: 0a0a0a01=""> DHCP Server Identifier: 10.10.10.1</value:>	<value: 00015100=""> IP Address Lease Time: 1 day (86400) • Option: (54) DHCP Server Identifier (10.10.10.1)</value:>
-Vulue: 0000001> DHCP Server Identifier: 10.10.10.1 ∵ Option: (3) Router	<value: 00015108=""> IP Adress Lease Time: 1 day (86400) • Option: (54) DHCP Server Identifier (10.10.10.1) Lenott: 4</value:>
<value: 0a0a0a01=""> DHCP Server Identifier: 10.10.10.1 Option: (3) Router Length: 4</value:>	<value: 00015100=""> IP Address Lease Time: 1 day (86400) Option: (54) DHCP Server Identifier (10.10.10.1) Length: 4</value:>
 <value: 0a0a0a01=""></value:> DHCP Server Identifier: 10.10.10 Option: (3) Router Length: 4 <value: 0a0a0a01=""></value:> 	<value: 00015100=""> IP Address Lease Time: 1 day (86400) ∨ Option: (54) DHCP Server Identifier (10.10.10.1) Length: 4 <value: 0000001=""></value:></value:>
<pre>-Value: 0000001> DHCP Server Identifier: 10.10.10.1 > Option: (3) Router Length: 4 -Value: 0000001> Router: 10.10.1 </pre>	<value: 00015108=""> IP Adress Lease Time: 1 day (86400) • Option: (54) DHCP Server Identifier (10.10.10.1) Lenght: 4 <value: 0a080801=""> DHCP Server Identifier: 10.10.10.1</value:></value:>
<value: 0a0a0a0l=""> DHCP Server Identifier: 10.10.10.1 Option: (3) Router Length: 4 <value: 0a0a0a0l=""> Router: 10.10.10.1</value:></value:>	<pre><value: 00015108=""> IP Address Lease Time: 1 day (86400) Option: (54) DHCP Server Identifier (10.10.10.1) Length: 4 <value: 000000000000000000000000000000000000<="" td=""></value:></value:></pre>
 <value: 0000001=""></value:> DHCP Server Identifier: 10.10.10.1 ✓ Option: (3) Router Length: 4 <value: 0000001=""></value:> Router: 10.10.1 ✓ Option: (15) Domain Name 	<pre><value: 00015108=""> IP Address Lease Time: 1 day (86400) Option: (54) DHCP Server Identifier (10.10.10.1) Length: 4 <value: 0a003001=""> DHCP Server Identifier: 10.10.10.1 Option: (15) Domain Name</value:></value:></pre>
<pre><value: 0a0a0a0l=""> DHCP Server Identifier: 10.10.10.1 Option: (3) Router Length: 4 <value: 0a0a0a0l=""> Router: 10.10.10.1 Option: (15) Domain Name Length: 10</value:></value:></pre>	<pre><value: 00015108=""> IP Address Lease Time: 1 day (86400) Option: (54) DHCP Server Identifier (10.10.10.1) Length: 4 <value: 000000000000000000000000000000000000<="" td=""></value:></value:></pre>
-Value: 00000015 DHCP Server Identifier: 10.10.10 • Option: (3) Router Length: 4 - Value: 00000015 Router: 10.10.10 • Option: (15) Domain Name Length: 10 - Value: 53007367/26%5ffd0005	<pre> IP Address Lease Time: 1 day (86400) 0 option: (54) DHCP Server Identifier (10.10.10.1) Length: 4 </pre>
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<pre>'value: 000000000000000000000000000000000000</pre>	<pre></pre>
<pre>value: 00000010 DPCP Server Identifier: 10.10.10.10 + Option: (3) Router Length: 4 <pre>value: 00000010</pre> %outer: 10.10.1 • Option: (15) Domain Name Length: 10 <value: 000000000000000000000000000000000000<="" td=""><td><pre>vValue: 00015108> IP Address Lease Time: 1 day (86400) 0ption: (54) DHCP Server Identifier (10.10.10.1) Length: 4</pre></td></value:></pre>	<pre>vValue: 00015108> IP Address Lease Time: 1 day (86400) 0ption: (54) DHCP Server Identifier (10.10.10.1) Length: 4</pre>
<pre>'value: 00000010 DPCP Server Identifier: 10.10.10.10 'Option: (3) Router Length: 4 'value: 00000010 Router: 10.10.10.1 'Option: (15) Domain Name Length: 10 'value: 0100000000000000000000000000000000000</pre>	<pre>vValue: 00015108> IP Address Lease Time: 1 day (86400) 0 option: (54) DHCP Server Identifier (10.10.10.1) Length: 4 <value: 0a080801=""> DHCP Server Identifier: 10.10.10.1 0 option: (15) Domain Name Length: 10 <value: 0309765057263076030<br="">Domain Name: clsco.com 0 option: (82) Agent Information Option Length: 47 <value: 010800600012a0220000000000<br="">0 option 22 Suboption: (1) Agent Circuit ID Length: 14 <value: 010800600012a0220000000000<br="">Agent Circuit ID: 010800000000 0 option 22 Suboption: (2) Agent Remote ID Length: 6 <value: 7070100540401=""> Agent Remote ID: 7070400540401 0 option 82 Suboption: (151) VRF name/VPN ID Length: 9 <value: 824656616e742261=""> Verride: 10.10.10.10 Length: 4 <value: (10.10.10.1)<br="" (11)="" 82="" id="" override="" server="" suboption:="">Length: 4 <value: 8040801=""> Server ID Override: 10.10.10.10 Length: 4 <value: 8040804=""> Link selection: 10.10.10.0 Using 4 <value: 8040804=""> Link selection: 10.10.10.0 Option F2 Siboption: (2) Link selection (10.10.10.0) Length: 4 <value: 8040804=""> Link selection: 10.10.10.0 Option F2 Siboption: (2) Link selection (10.10.10.0) Length: 4 <value: 8040804=""> Link selection: 10.10.10.0 Option Fd: 255 End Option End: 255</value:></value:></value:></value:></value:></value:></value:></value:></value:></value:></value:></value:></pre>
<pre>value: 8080801> DPCP Server Identifier: 10.10.10.1 * Option: (3) Router Length: 4</pre>	<pre></pre>
<pre>value: 8000001; DFCP Server Identifier: 10.10.10.10.10.10.10.10.10.10.10.10.10.1</pre>	<pre></pre>

Oferta DHCP no LEAF-1

Oferta recebida no LEAF-1	Oferta enviada no LEAF-1

	> Ethernet II, Src: 70:7d:b9:b8:4d:af, Dst: ff:ff:ff:ff:ff:ff
February TT Care 10,69,40,04,05,07 Date 70,74,60,60,44,04	> Internet Protocol Version 4, Src: 10.10.10.1, Dst: 255.255.255.255
> Enernet 11, Src: 10:03:00:04:85:97, Dst: 70:70:09:08:40:07	> User Datagram Protocol, Src Port: 67, Dst Port: 68
User Datagram Protocol, Src Port: 65518, Dst Port: 4789	 Dynamic Host Configuration Protocol (Offer)
> Flags: 0x0800, VXLAN Network ID (VNI)	Message type: Boot Reply (2)
Group Policy ID: 0	Hardware type: Ethernet (0x01)
Reserved: 0	Hardware address length: 6
Ethernet II, Src: 02:00:0d:0d:0d:fe, Dst: 70:7d:b9:b8:4d:af	Hons: 0
> Internet Protocol Version 4, Src: 10.10.10.150, Dst: 1/2.16.10.8 > User Datagram Protocol. Src Port: 67. Dst Port: 67	Transaction ID: 0xe0e35087
Dynamic Host Configuration Protocol (Offer)	Seconds elansed: 0
Message type: Boot Repty (2) Hardware type: Ethernet (0x01)	Beets flags: 0x2000 Breadcast flag (Breadcast)
Hardware address length: 6	Client TD addresses 0.0.0.0
Hops: 0 Transaction ID: 0xe9e35087	Client IP address: 0.0.0
Seconds elapsed: 0	Your (client) IP address: 10.10.10.3
Sootp flags: 0x8000, Broadcast flag (Broadcast) Client IP address: 0.0.0.0	Next server IP address: 10.10.10.150
Your (client) IP address: 10.10.10.3	Relay agent IP address: 10.10.10.1
Next server IP address: 10.10.10.100 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
<pre>> Option: (53) DHCP Message Type (Offer)</pre>	Magic cookie: DHCP
Length: 1	Option: (53) DHCP Message Type (Offer)
CValue: 02> DHCP: Offer (2)	Length: 1
<pre>> Option: (1) Subnet Mask (255.255.25.0) </pre>	<value: 02=""></value:>
<value: ffffff00=""></value:>	DHCP: Offer (2)
Subnet Mask: 255.255.255.0	<pre>v Ontion: (1) Subnet Mask (255,255,255,0)</pre>
Length: 4	length: 4
<value: 0000a8c0=""> Renewal Time Value: 12 hours (43200)</value:>	Alalue: ffffff00
· Option: (59) Rebinding Time Value	Subpot Mocky 255 255 0
Length: 4	Sublet Mask; 255,255,255,0
Rebinding Time Value: 21 hours (75600)	v option: (58) Kenewal Time value
Option: (51) IP Address Lease Time Length: 4	Length: 4
<value: 00015180=""></value:>	<value: 0000a8c0=""></value:>
IP Address Lease Time: 1 day (86400) v Option: (54) DHCP Server Identifier (10.10.10.1)	Renewal Time Value: 12 hours (43200)
Length: 4	v Option: (59) Rebinding Time Value
<value: 0a0a0a01=""> DHCP Server Identifier: 10.10.10.1</value:>	Length: 4
Option: (15) Domain Name	<value: 00012750=""></value:>
Length: 10 <value: 636973636f2e636f6d00=""></value:>	Rebinding Time Value: 21 hours (75600)
Domain Name: cisco.com	v Option: (51) IP Address Lease Time
Option: (82) Agent Information Option Length: 47	Length: 4
<pre><value: 010e0108000600018a9200a000000000206707db9b84daf97090074656e616e742d610b040a0a0a0105040a0a0a00=""></value:></pre>	<value: 00015180=""></value:>
<pre>v option oz suboption: (1) Agent Circuit 10 Length: 14</pre>	IP Address Lease Time: 1 day (86400)
<value: 0108000600018a9200a000000000=""></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 Length: 9	<pre>v Ontion: (3) Router</pre>
<value: 0074656e616e742d61=""></value:>	length: 4
VRF name: Option 82 Suboption: (11) Server TD Override (10 10 10 1)	
Length: 4	Poutor: 10 10 10 1
<value: 0a0a0a01=""> Server ID Override: 10.10.10.1</value:>	Ontion: (15) Domain Name
Option 82 Suboption: (5) Link selection (10.10.10.0)	v option: (15) Domain Name
Length: 4 <value: 0a0a0a00=""></value:>	
Link selection: 10.10.10.0	<value: 0509="" 3030t2e030t0000=""></value:>
<pre>v uption: (255) End Option End: 255</pre>	Domain Name: cisco.com
	<pre>v Uption: (255) End</pre>
	Option End: 255

Oferta DHCP recebida no 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
```

Solicitação enviada por HOST-1

```
Ethernet II, Src: 00:50:56:a5:fd:dd, Dst: ff:ff:ff:ff:ff:ff
 Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255
 User Datagram Protocol, Src Port: 68, Dst Port: 67

    Dynamic Host Configuration Protocol (Request)

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

    Bootp flags: 0x8000, Broadcast flag (Broadcast)

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

Solicitação em LEAF-1

Solicitação recebida no LEAF-1	Solicitação enviada por LEAF-1
<pre>> Ethernet II, Src: 00:50:56:a5:fd:dd, Dst: ff:ff:ff:ff:ff:ff > Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255 > User Datagram Protocol, Src Port: 68, Dst Port: 67 > Dynamic Host Configuration Protocol (Request) Message type: Boot Request (1) Hardware type: Ethernet (0x01) Hardware type: Ethernet (0x01) Hardware type: Ethernet (0x01) Or Transaction ID: 0x09035087 Seconds elapsed: 0 > Bootp flags: 0x8000, Broadcast flag (Broadcast) 1 Broadcast flag: Broadcast .000 0000 0000 = Reserved flags: 0x0000 Client IP address: 0.0.0 Next server IP address: 0.0.0 Relay agent IP address: 0.0.0 Relay agent IP address: 0.0.0 Client MAC address: 00.50:6ia5:fd:dd Client hardware address padding: 000000000000000000000000000000000000</pre>	<pre>Construction of the set of t</pre>
Magic cookie: DHCP Option: (53) DHCP Message Type (Request) Length: 1 <value: 03=""> DHCP: Request (3) Option: (61) Client identifier Length: 7</value:>	Magic cookie: DMCP Option: (S3) DMCP Message Type (Request) Length: 1 <value: 03=""> DMCP: Request (3) © Option: (61) Client identifier Length: 7 <value: 010956a5fdd=""></value:> Hardware type: Ethernet (0x01) Client MAC address: 00:50:56:a3:fd:dd Dation: (50) Rownerdd R. ddfors (18) 0 0 0 3)</value:>
<value: 01005055637ddd=""> 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=""></value:></value:>	Unit 10 ⁴ Length: 4 <value: 0808083=""> Requested IP Address: 10.10.10.3 ○ ption: (54) DMCP Server Identifier (10.10.10.150) Length: 4 <value: 080808965=""> DMCP Server Identifier: 10.10.10.150</value:></value:>
Requested IP Address: 10.10.10.3 <pre>> Option: (54) DHCP Server Identifier (10.10.10.1) Length: 4 <<alue: 0a00a0a0="">> DHCP Server Identifier: 10.10.10.1 <pre>> Option: (12) Host Name Length: 10</pre></alue:></pre>	 Option: (12) Host Name Length: 10 <l< td=""></l<>
<pre><value: 43584c6162732d573130=""> Host Name: CXLabs=W10 Option: (81) Client Fully Qualified Domain Name Length: 13 <value: 00000043584c6162732d573130=""> Flags: 0x00 </value:></value:></pre>	PTR-RR result: 0 Client name: CXLabs-WI0 Option: (60) Vendor class identifier Length: 8 <value: 4d53465428352e30=""> Vendor class identifier: MSFT 5.0 Option: (55) Parameter Request List Length: 14</value:>
<pre>0000 = Reserved Ttags: 0x0 0 = Server DNDS: 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: Cliabs=W10</pre>	Value:
<pre>> Option: (60) Vendor class identifier Length: 8 <value: 4d53465420352e30=""> Vendor class identifier: MSFT 5.0</value:></pre>	Parameter Request List Item: (47) MetBIOS 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: (55) Parameter Request List Length: 14 	<pre>>pytom: lear Agent Intermation uption Length: 47 <rul> <pre>cvalue: 010e01080000000000000000000000000000000</pre></rul></pre>

Solicitação em SPINE

Solicitação recebida em SPINE

Solicitação enviada por 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

Solicitação em LEAF-2-vPC

Solicitar ReceivPCd em LEAF-2-vPC	Solicitação enviada por 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: 13.13.13.24 User Datagram Protocol, Src Port: 51:730, Dst Port: 4789	
Virtual extensible Local Area Network Flags: 8x8880, VXLAN Network ID (WN) Group Reliew ID: 4	Ethernet II, Src: 60:26:30:85:95:87, Dst: 00:50:56:35:dc:ca
VXLAN Hetwork Identifier (WNI): 303030 Reserved: 0	User Datagram Protocol, Src Port: 67 Dynamic Host Configuration Protocol (Request)
Ethernet II, Src: 70:7d:09:08:4d:af, Dst: 02:00:0d:00:0d:0d:df	Message type: Boot Request (1)
Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.10.150	Hardware type: Ethernet (0x01)
User Datagram Protocol, Src Port: 67	Hardware address length: 6
Dynamic Host Configuration Protocol (Request) Message type: Boot Request (1) Message type: Boot Request (1)	Hops: 1 Transaction ID: 0xe9e35087
Hardware syde: schenker (oxor) Hardware address length: 6 Hops: 1	> Bootp flags: 0x8000, Broadcast flag (Broadcast) Client IP address: 0x8000, Broadcast flag (Broadcast)
Transaction ID: 0xe9e35087	Your (client) IP address: 0.0.0
Seconds elapsed: 0	Next server IP address: 0.0.0
Booto flage: 0x9000 Broadcast flag (Broadcast)	Pelaw aport IP address: 12.16.10 P
Client IP address: 0.0.0.0	Client MAC address: 00:50:56:35:fd:dd
Your (client) IP address: 0.0.0	Client hardware address padding: 000000000000000000
Next server IP address: 0.0.0.0	Server host name not given
Relay agent IP address: 172.16.10.8	Boot file name not given
Client MAC address: 0050556:a3:fd:dd	Magic cookie: DMCP
Client hardware address padding: 000000000000000000000000000000000000	<pre>Option: (53) DHCP Message Type (Request) Length: 1</pre>
Boot file name not given	<value: 03=""></value:>
Magic cookie: DHCP	DHCP: Request (3)
 Option: (53) DHCP Message Type (Request) 	• Option: (61) Client identifier
Length: 1	Length: 7
<value: 03=""></value:>	<value: 01005056a5fddd=""></value:>
DHCP: Request (3)	Hardware type: Ethernet (0x01)
~ Option: (61) Client identifier	Client MAC address: 00:50:56:a5:fd:dd
Lenoth: 7	Option: (50) Requested IP Address (10.10.10.3)
<value: 01005056a5fddd=""></value:>	Length: 4
Hardware type: Ethernet (0x01)	<value: 0a0a0a03=""></value:>
<pre>Client TAC address: 00:30:30:30:10:00</pre>	Requested 17 Address: 10.10.10.3
Option: (50) Requested IP Address (10.10.10.3)	© Option: (54) DHCP Server Identifier (10.10.10.150)
Length: 4	Length: 4
<value: 0a0a0a03=""></value:>	<value: 0a0a0a96=""></value:>
Requested IP Address: 10.10.10.3	DHCP Server Identifier: 10.10.16.150
Option: (51) DUFG Secure Identifier (10.10.10.10.10.10.10.10.10.10.10.10.10.1	Ontion: (3) Mach Mana
Length 4	Length: 10
<value: 0a0a0a96=""></value:>	<value: 43584c6162732d573130=""></value:>
DHCP Server Identifier: 10.10.10.150	Host Name: CXLabs-W10
• Option: (12) Host Name	© Option: (81) Client Fully Qualified Domain Name
Lenoth: 10	Lenoth: 13
<value: 43584c6162732d573130=""> Host Name: CXLabs-W10</value:>	<
 Option: (81) Client Fully Qualified Domain Name Length: 13 	A-RR result: 0 PTR-RR result: 0 Client name: CKLabs-W10
> Flags: 0x00 A-RR result: 0	Option: (60) Vendor class identifier Length: 8 Length: 8
Client name: CXLabs-W10 ~ Option: (60) Vendor class identifier	<pre><value: 40324054052c30=""> Vendor class identifier: MSFT 5.0 </value:></pre> Option: (55) Parameter Request List
Length: 8 <value: 4d53465420352e30=""> Mendre clare (deptifier: MSET 5 0</value:>	Length: 14 <value: 0103060f1f212b2c2e2f7779f9fc=""></value:>
<pre>verified class Judical let inst 3.0 option: (55) Parameter Request List Length: 14</pre>	Parameter Request List Item: (a) Router Parameter Request List Item: (6) Domain Name Server
<value: 0103060f1f212b2c2e2f7779f9fc=""></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) Pouter	Rarameter 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) Vendor-Specific Information	Parameter Request List Item: (19) Domain Search
Parameter Request List Item: (44) NetBIOS over TCP/IP Name Server	Parameter Request List Item: (121) Classless Static Route
Parameter Request List Item: (46) 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: (119) Domain Search	© Option: (82) Agent Information Option
Parameter Request List Item: (121) Classless Static Route	Lenoth: 47
Parameter Request List Item: (249) Private/Classless Static Route (Microsoft)	<value: 010e0108000600018a9200a00000000206707db9b84da197090074656e616e742d610b040a0a0a0105040a0a0a00=""></value:>
Parameter Request List Item: (252) Private/Proxy autodiscovery	Option 82 Suboption: (1) Agent Circuit ID
 Option: 162/ Agent information Option Length: 47 <li< td=""><td>Lengtn: 14 <value: 010800600018a9200a000000000<br="">Agent Circuit ID: 0108000600018a9200a00000000</value:></td></li<>	Lengtn: 14 <value: 010800600018a9200a000000000<br="">Agent Circuit ID: 0108000600018a9200a00000000</value:>
 Option 82 Suboption: (1) Agent Circuit ID	 Option 82 Suboption: (2) Agent Remote ID
Length: 14 cvalue: 018808650018x9200x0000000x	Length: 6
Agent Circuit ID: 010800006000180320000000000	Agent Remote ID: 787db9b84daf
~ Option 82 Suboption: (2) Agent Remote ID	Option 82 Suboption: (151) VRF name/VPN ID
Length: 6 <value: 7070bb084daf=""> Apent Remote ID: 7070b084daf</value:>	Length: 9 <value: 0074656e616e742d61=""></value:>
Option 82 Suboption: (151) VRF name/VPN ID	 Option 82 Suboption: (11) Server ID Override (10.10.10.1)
Length: 9	Length: 4
<value: 42061="" 4656616="" u0=""></value:>	<value: 00000000=""></value:>
> VRF name:	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 <value: 00000001=""> Server TD Durarida: 10 10 1</value:>	Length: 4 <value: 00000000=""></value:>
<pre>> Option 82 Suboption: (5) Link selection (10.10.10.0) Length: 4</pre>	 Option: (255) End Option End: 255
<value: 0a00a000=""> Link selection: 10.10.10.0</value:>	
Option End: 255	

Solicitação recebida no Servidor DHCP

Ethernet II, Src: 60:26:aa:85:95:87, Dst: 00:50:56:a5:dc:ca Internet Protocol Version 4, Src: 172.16.10.8, Dst: 10.10.10.150 User Datagram Protocol, Src Port: 67, Dst Port: 67 Dynamic Host Configuration Protocol (Request) Message type: Boot Request (1) Hardware type: Ethernet (0x01) Hardware address length: 6 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

Envio ACK pelo servidor DHCP
```
Ethernet II, Src: 00:50:56:a5:dc:ca, Dst: 00:00:0a:0a:0a:0a
Internet Protocol Version 4, Src: 10.10.10.150, Dst: 172.16.10.8
User Datagram Protocol, Src Port: 67, Dst Port: 67
Dynamic Host Configuration Protocol (ACK)
  Message type: Boot Reply (2)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 0
  Transaction ID: 0xe9e35087
  Seconds elapsed: 0

    Bootp flags: 0x8000, Broadcast flag (Broadcast)

    1... .... = Broadcast flag: Broadcast
    .000 0000 0000 0000 = Reserved flags: 0x0000
  Client IP address: 0.0.0.0
  Your (client) IP address: 10.10.10.3
  Next server IP address: 0.0.0.0
  Relay agent IP address: 172.16.10.8
  Client MAC address: 00:50:56:a5:fd:dd
  Client hardware address padding: 00000000000000000000
  Server host name not given
  Boot file name not given
  Magic cookie: DHCP
  Option: (53) DHCP Message Type (ACK)
    Length: 1
    <Value: 05>
    DHCP: ACK (5)

    Option: (58) Renewal Time Value

    Length: 4
    <Value: 0000a8c0>
    Renewal Time Value: 12 hours (43200)

    Option: (59) Rebinding Time Value

    Length: 4
    <Value: 00012750>
    Rebinding Time Value: 21 hours (75600)
· Option: (51) IP Address Lease Time
    Length: 4
    <Value: 00015180>
    IP Address Lease Time: 1 day (86400)

    Option: (54) DHCP Server Identifier (10.10.10.1)

    Length: 4
    <Value: 0a0a0a01>
    DHCP Server Identifier: 10.10.10.1

    Option: (1) Subnet Mask (255.255.255.0)

    Length: 4
    <Value: 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 em LEAF-2-vPC

ACK na COLUNA

ACK recebido em SPINE	Envio ACK por 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: 65518, Dst Port: 4789 Virtual eXtensible Local Area Network	 Ethernet II, Src: 10:b3:d6:a4:85:97, Dst: 70:7d:b9:b8:4d:af Internet Protocol Version 4, Src: 13.13.13.254, Dst: 5.5.5.5 User Datagram Protocol, Src Port: 65518, Dst Port: 4789 Virtual 24:reshibe Ioral Area Methomy
Flags: 0x0800, VXLAN Network ID (VNI) Group Policy ID: 0 VXLAN Execution (NNI), 20000	> Flags: 048080, VXLAN Network ID (WI) Group Policy ID: 0
Reserved: 0 Ethernet II, Src: 02:00:0d:0d:0d:fe, Dst: 70:7d:b9:b8:4d:af	VXLAN Network Identifier (VNI): 303030 Reserved: 0 Ethernet II, Src: 02:00:0d:0d:0d:fe, Dst: 70:7d:b9:b8:4d:af
 Internet Protocol Version 4, Src: 10.10.150, Dst: 172.16.10.8 User Datagram Protocol, Src Port: 67, Dst Port: 67 Devenie Configuration Protocol (ACC) 	Internet Protocol Version 4, Src: 10.10.150, Dst: 172.16.10.8 User Datagram Protocol, Src Port: 67, Dst Port: 67
Message type: Boot Reply (2)	Message type: Bot Reply (2)
Hardware type: Ethernet (0x01)	Hardware type: Ethernet (0x01)
Hardware address length: 6	Hardware address length: 6
Hops: 0	Hops: 0
Transaction ID: 0xe9e35087	Transaction ID: 0xe0e35007
Seconds elapsed: 0	Seconds elapsed: 0
v Bootp flags: 0x8000, Broadcast flag (Broadcast)	-> Bootp flags: 0x8000, Broadcast flag (Broadcast)
.000 0000 0000 0000 = Reserved flags: 0x0000	.000 0000 0000 0000 = Reserved flags: 0x0000
Client IP address: 0.0.0	Client IP address: 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 appent IP address: 17.16.10.8	Polymoust 19. address: 13.10.10.8
Client MAC address: 00:50:56:a5:fd:dd Client hardware address padding: 00000000000000000000	Client hardware address padding: 000000000000000000
Server host name not given	Server host name not given
Boot file name not given	Boot file name not given
Magic cookie: DHCP	Madic cookie: DMCP
 Option: (53) DHCP Message Type (ACK) Length: 1 	Option: (53) DHCP Message Type (ACK) Length: 1
<pre>value: es></pre>	<value: 0="">></value:>
DHCP: ACK (5)	DHCP: ACK (5)
> Option: (58) Renewal Time Value	< Option: (58) Renewal Time Value
Length: 4	Length: 4
<value: 0000a8c0=""></value:>	<value: 0000a8c0=""></value:>
Renewal Time Value: 12 hours (43200)	Repeal Time Value: 12 hours (43200)
 Option: (59) Rebinding Time Value	 Option: (59) Rebinding Time Value
Length: 4	Length: 4
<vslue: boblz7507<="" td=""><td><pre><value: 00012="" 30=""></value:></pre></td></vslue:>	<pre><value: 00012="" 30=""></value:></pre>
Rebinding Time Value: 21 hours (75600)	Rebinding Time Value: 21 hours (75600)
	<pre>Option: (51) IP Address Lease Time</pre>
Length: 4	Length: 4
<value: 00015180=""></value:>	<value: 00015180=""></value:>
TP.Address Lase Time: 1 day (85600)	TR Address Lease Time: 1 day (86400)
Option: (54) DMCP Server Identifier (10.10.10.1)	<pre>option: (54) DHCP Server Identifier (10.10.10.1)</pre>
Length: 4	Length: 4
<value: 0a0a0a01=""></value:>	<value: 00000001<="" td=""></value:>
DHCP Server Identifier: 10.10.10.1	DHCP Server Identifier: 10.10.10.1
Option: (1) Subnet Mask (255.255.0)	Option: (1) Submet Mask (255.255.255.0)
Length: 4	Length: 4
<value: fffff@e=""></value:>	<value: fffff@e=""></value:>
<pre>> Option: (8) Client Fully Qualified Domain Name</pre>	<pre>Option: (81) Client Fully Qualified Domain Name</pre>
Length: 3	Length: 3
<value: 00fff=""></value:>	<value: 00ffff=""></value:>
→ Flags: 0x00	∨ Flags: 0x00
0000 # Reserved flags: 0x0	0000 = Reserved flaos: 0x0
0 = Server DDNS: Some server updates	0 = Server DDNS: Some server updates
0 = Encoding: ASCII encoding	0 = Encoding: ASCII encoding
PTR-RR result: 255 • Option: (3) Router	PTR-RR result: 255 • Option: (3) Router Leopth 4
Length: 4 <value 0a8a8a8l=""> Router: 10.10.10.1</value>	(value: 0a0a0a0)> Router: 10.10.10.1
Option: (15) Domain Name	○ Option: (15) Domain Name
Length: 10	Length: 10
<value: 636973636f2n636f6d08=""></value:>	<v3\ue: 636973636f2e636f6d00=""></v3\ue:>
Domain Name: cisco.com y Option: (82) Agent Information Option	Domain Name: cisco.com • Option: (82) Agent Information Option Lenoth 47
Length: 47	Lengun. %/
<value: 01000108000000018a9200a000000000000000000000000000007465666166742d610b040a0a0a0105040a0a000=""></value:>	≺Value: 010e0108000600018a9200a000000000206707db9b84daf97090074656c616e742d610b040a0a0105640a0a000≻
< Option 82 Suboption: (1) Agent Circuit ID	∨ Option 82 Suboption: (1) Agent Circuit ID
Length: 14	Length: 14
(Value: 0108000000018a9200a000000000>	<value: 010800600018a9200a000000000=""></value:>
Amout fire(it Th: 0108000000018a9200a0000000	Agent Circuit ID: 0108000600018a9200a00000000
 Option 82 Suboption: (2) Agent Remote ID	 Option 82 Suboption: (2) Agent Remote ID
Length: 6	Length: 6
<value: 707db9b84daf<br="">Agent Remote ID: 707db9b84daf Option 82 Subpotion: (151) VRF name/VPN ID</value:>	Agent Remote 10: 787/db9b84daf Option 82 Suboption: (151) VRF name/VPN ID
Length: 9 <value: 0074656e616e742d61=""></value:>	Length: 9 <value: 0074656e616e742d61=""> VBF name:</value:>
<pre>vmr neme: > [Expert Info (Warning/Undecoded): Trailing stray characters] [Trailing stray characters]</pre>	 [Expert Info (Warning/Undecoded): Trailing stray characters] [Trailing stray characters]
<pre><message: characters="" stray="" trailing=""> [Severity level: Warning] [Group: Hingengen]</message:></pre>	<pre>«Message: trailing stray characters> [Severity level: Warning] [Group: Undecoded]</pre>
 Option 82 Suboption: (11) Server ID Override (10.10.10.1) Length: 4 	<pre>> Option 82 Suboption: (11) Server ID Override (10.10.10.1) Length: 4 <value: 80808081=""></value:></pre>
<vaue: u0000001=""> Server ID Override: 10.10.10.1 < Option 82 Suboption: (5) Link selection (10.10.10.0)</vaue:>	Server ID Override: 10.10.10.1 Option 82 Suboption: (5) Link selection (10.10.10.0)
Length: 4	Lengtn: 4
	≪Value: 0a0a0a00≻
Link coloring: 10.10.10.0	Link selection: 10.10.0
Option: (255) End Option End: 255	 Option: (255) End Option End: 255

ACK na LEAF-1

ACK recebido no LEAF-1	Envio ACK por LEAF-1
------------------------	----------------------

	> Ethernet II, Src: 70:7d:b9:b8:4d:af, 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 Hear Datagram Protocol Src Part: 65518 Dst Part: 4780	> 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)
VXLAN Network Identifier (WII): 303030	Hardware type: Ethernet (0x01)
Reserved: 0	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 elansed: 0
Hardware type: Ethernet (0x01)	Resta flags: 0x2000 Preadcast flag (Preadcast)
Hardware address length: 6 Hops: 0	> bootp flags: 0x0000, broadcast flag, broadcast)
Transaction ID: 0xe9e35087	I = Broadcast flag: Broadcast
Seconds elapsed; 0 - Booto flads: 0x8000. Broadcast flad (Broadcast)	.000 0000 0000 0000 = Reserved flags: 0x0000
1 = Broadcast flag: Broadcast	Client IP address: 0.0.0.0
.000 0000 0000 = Reserved flags: 0x0000 Client IP 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: 172.16.10.8	Relay agent IP address: 10.10.10.1
Client MAC address: 00:50:56:a5:fd:dd	Client MAC address: 00:50:56:a5:fd:dd
Client hardware address padding: 000000000000000000000000000000000000	Client hardware address padding: 00000000000000000000
Boot file name not given	Server host name not given
Magic cookie: DHCP - Option: (53) DHCP Message Type (ACK)	Boot file name not given
Length: 1	Magic cookie: DHCP
<value: 05=""></value:>	Pagic COOKIE, DHCP Message Tune (ACK)
 Option: (58) Renewal Time Value 	- option, (55) DHCP Hessage Type (ACK)
Length: 4	Length: 1
Renewal Time Value: 12 hours (43200)	<value: 05=""></value:>
 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=""> IP Address Lease Time: 1 day (86480)</value:>	Renewal Time Value: 12 hours (43200)
· Option: (54) DHCP Server Identifier (10.10.10.1)	Option: (59) Rebinding Time Value
Length: 4	Length: 4
DHCP Server Identifier: 10.10.10.1	<value: 00012750=""></value:>
 Option: (1) Subnet Mask (255.255.255.0) Length: 4 	Rebinding Time Value: 21 hours (75600)
<value: ffffff00=""></value:>	Option: (51) IP Address Lease Time
Subnet Mask: 255.255.255.0 • Option: (81) Client Fully Qualified Domain Name	Length: 4
Length: 3	
<value: 00ffff=""></value:>	TP Address Lesse Time: 1 day (96400)
0000 = Reserved flags: 0x0	Option: (E4) DHCD Server Identifier (10 10 10 1)
0 = Server DDNS: Some server updates 0 = Encoding: ASCII encoding	v uption: (54) DHCP Server Identifier (10.10.10.1)
	Length: 4
A-RR result: 255	<value: 0a0a0a01=""></value:>
PTR-RR result: 255	DHCP Server Identifier: 10.10.10.1
<pre>> Option: (3) Router Length: 4</pre>	 Option: (1) Subnet Mask (255.255.255.0)
<value: 0a0a0a01=""></value:>	Length: 4
Router: 10.10.10.1 • Option: (15) Domain Name	<value: fffff00=""></value:>
Length: 10	Subnet Mask: 255.255.255.0
<pre>>value: 0309/303012003070000> Domain Name: cisco.com</pre>	Option: (81) Client Fully Qualified Domain Name
Option: (82) Agent Information Option Length: 47	Length: 3
<value: 010e0108000600018a9200a00000000000206707db9b84da197090074656e616e742d610b040a0a0a0105040a0a0a000=""></value:>	<value: 00ffff=""></value:>
 Option 82 Suboption: (1) Agent Circuit ID 	Flags: 0x00
<value: 0108000500018a9200a00000000=""></value:>	0000 = Reserved flags: 0x0
Agent Circuit ID: 0108000600018a9200a00000000	0 = Server DDNS: Some server undates
Length: 6	0 = Encoding: ASCII encoding
<value: 707db9b84daf=""></value:>	A = Server overrides: No override
Option 82 Suboption: (151) VRF name/VPN ID	A = Server Client
Length: 9 <value: 0074656e616e742d61=""></value:>	A DD result. 255
VRF name:	A-RK result: 255
 [Expert Info (Warning/Undecoded): Trailing stray characters] [Trailing stray characters] 	PIR-RK result: 255
<pre><message: characters="" stray="" trailing=""></message:></pre>	v uption: (3) Router
[Severity level: Warning] [Group: Undecoded]	Length: 4
 Option 82 Suboption: (11) Server ID Override (10.10.10.1) 	<value: 0a0a0a01=""></value:>
<pre>Lengtn: 4 <value: 0a0a0a01=""></value:></pre>	Router: 10.10.10.1
Server ID Override: 10.10.10.1	v Option: (15) Domain Name
v uption 82 suboption: (5) Link selection (10.10.10.0) Length: 4	Length: 10
	<value: 636973636f2e636f6d00=""></value:>
v Option: (255) End	Domain Name: cisco.com
Option End: 255	Option: (255) End
	Option End: 255

ACK no 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

Informações Relacionadas

Configurando o VXLAN BGP EVPN

Configurando VXLAN

Solucione problemas relacionados ao DHCP no Nexus 9000

Guia de configuração do Cisco Nexus 9000 Series NX-OS VXLAN, versão 10.4(x)

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