Konfigurieren des EVPN VXLAN IPV6-Overlay-Konfigurationsbeispiels

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Einleitung

In diesem Dokument wird die Bereitstellung von L2 Ethernet VPN (EVPN) Virtual Extensible LAN (VXLAN) IPv6 Overlay auf dem Nexus 9000 beschrieben.

Voraussetzungen

Anforderungen

Cisco empfiehlt, dass Sie über Kenntnisse in folgenden Bereichen verfügen:

- Border Gateway Protocol (BGP)
- Open Shortest Path First (OSPF)
- EVPN
- IPV6

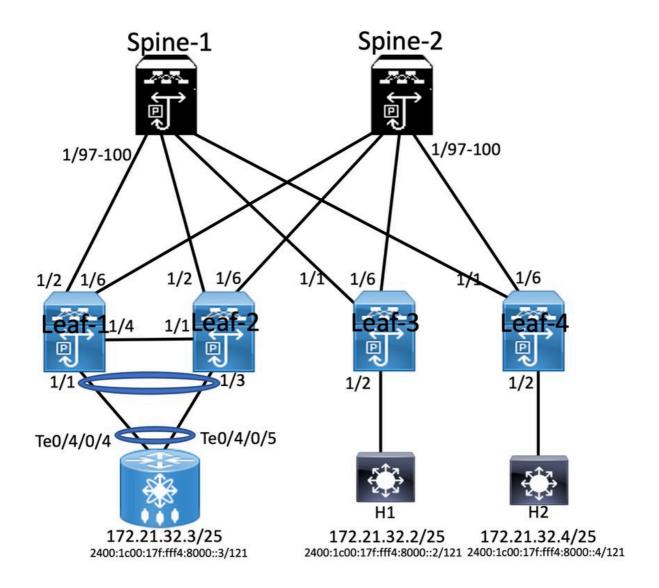
Verwendete Komponenten

Die Informationen in diesem Dokument basierend auf folgenden Software- und Hardware-Versionen:

- Cisco N9K-C93180YC-FX mit Version 9.3.(9)
- Cisco N9K-C93216TC-FX2 mit Version 9.3(7)
- Cisco Aggregation Service Router (ASR) mit End-Host zur Unterstützung von IPv4 und IPv6
- Cisco N9K-C93180YC-EX mit Version 9.3(8)

Die Informationen in diesem Dokument beziehen sich auf Geräte in einer speziell eingerichteten Testumgebung. Alle Geräte, die in diesem Dokument benutzt wurden, begannen mit einer gelöschten (Nichterfüllungs) Konfiguration. Wenn Ihr Netzwerk in Betrieb ist, stellen Sie sicher, dass Sie die möglichen Auswirkungen aller Befehle verstehen.

Netzwerkdiagramm



Allgemeine Konfiguration

- 1. Funktionen installieren
- 2. IP-Adresse konfigurieren Underlay
- 3. Konfiguration von IGP OSPF
- 4. Konfigurieren von MP BGP
- 5. VLAN und EVPN-Overlay konfigurieren
- 6. e-BGP zwischen Hosts und LEAFs konfigurieren

Konfiguration

	Leaf-1			
Enabling Features	Interface Configuration	BGP/EVPN Configuration	VPC Configuration	VTEP Configuration
			vpc domain 10	
			peer-switch	
			peer-keepalive destination 10.122.163.140 source 10.122.176.45	
ny overlay eypn	Interface loopback0	router bgp 6500	peer-gateway	interface vlan100
feature ospf	ip address 10.1.1.1/32	router-id 10.1.1.1	ipv6 nd synchronize	vrf member SGI_IAC
feature bgp	ip address 10.10.10.10/32 secondary	address-family ipv4 unicast	ip arp synchronize	no ip redirects
feature pim	ip router ospf 100 area 0.0.0.0	address-family jpv6 unicast	interface port-channel10	ip forward
feature fabric forwarding	ip pim spare-mode	address-family I2vpn evpn	switchport	no ipv6 redirects
feature interface-plan	icam monitor scale	advertise-pip	switchport mode trunk	110 19 10 100 1000
feature vn-segment-vlan-based	The state of the s	neighbour 10.3.1.1	spanning-tree port type network	interface vlan511
feature lacp	interface ethernet1/2	remote-as 6500	vpc peer-link	vrf member SGI IAC
feature vpc	mtu 9216	update-source loopback0	interface ethernet 1/4	no ip redirects
feature ny overlay	ip address 192.168.0.1/24	address-family (2ypn eypn	switchport	ip address 172.21.32.6/25
fabric forwarding anycast-gateway-mac 0000.2222.3333	ip router ospf 100 area 0.0.0.0	send-community	switchport mode trunk	ipv6 address 2400:1c00:17f:fff4:8000::4/121
ip pim rp-address 10.3.1.1 group-list 224.0.0.0/4	ip pim sparse-mode	send-community extended	channel-group 10 mode trunk	no ipv6 redirects
ip pim ssm range 232.0.0.0/8			interface port-channel 20	fabric forwarding mode any cast-gateway
vlan 1,10,20,100,511-513,708-709,711,1179,1664-1665,1667-1668,1894	vrf context SGI_IAC	wrf SGI_IAC	switchport	
vian 100	vni 10100	Address-family ipv4 unicast	switchport mode trunk	interface nve1
vn-segment 10100	rd auto		switchport trunk allowed vlan 511	advertise virtual-rmac
vian 511	address-family ipv4 unicast	evpn	vpc 10	host-reachability protocol bgp
vn-segment 10511	route-target both auto	vni 10511 I2	interface ethernet1/1	source-interface loopback0
	route-target both auto evpn	rd auto	switchport	member vni 10100 associate-vhf
route-map PERMIT-ALL permit 10	address-family ipv6 unicast	route-target import auto	switchport mode trunk	member vni 10511
router ospf 100	route-target both auto	route-target export auto	switchport trunk allowed vlan 511	suppress-arp
router-id 10.1.1.1	route-target auto evpn		channel-group 20	mcast-group 239.1.1.1

Vyc Configuration
yper domain 10
peer switch
peer seepalive destination 10.122.176.45 source 10.122.163.140
peer speepalive destination 10.122.176.45 source 10.122.163.140
peer speepalive destination 10.122.176.45 source 10.122.163.140
peer gateway
ipsé de dyndronize
ips arp synthemical
interface port-channel10
switchport mode trunk
spanning-tree port type network
vyc peer-link
interface ethernet 1/4 router bgp 6500 router-id 10.2.1.1 ip router ospf 100 area 0.0.0.0 audress-family l2vpn evp. advertise-pip neighbour 10.3.1.1 remote-as 6500 update-source loopback0 address-family l2vpn evps send-community interface vian511
vrf member SGi_MC
no ip redirects
jp address 172.21.32.6/25
jpv6 address 2400.1c00.17ffff4.8000:4/121
no juys redirects
fabric forwarding mode any cast-gateway terface ethernet1/2 mtu 9216 ip address 192.168.3.2/24 ip router ospf 100 area 0.0.0.0 ip pim sparse-mode rface ethernet 1/4 up prm ssm range 232.0.0.0/8 vlan 1,10,20,100,511-513,708-709,711,1179,1664-1665,1667-1668,1894 vlan 100 vn-segment 10100 vlan 5111 vn-segment 10511 vrf context SGI_IAC
vni 10100
rd auto
address-family jpv4 unicast
route-target both auto
route-target auto evpn
acceptations auto switchport switchport mode trunk switchport trunk allowed vlan 511 vpc 10 interface ethernet1/1 evpn vni 10511 l2 member vni 10100 associate-vhf member vni 10511 oute-map PERMIT-ALL permit 10 outer ospf 100 outer-id 10.2.1.1 uppress-arp ncast-group 239.1.1.1 Spine-1 Configuration **BGP/EVPN Configuration Enabling Features** Interface Configuration router bgp 6500 interface Ethernet1/97 nv overlay evpn address-family ipv4 unicast mtu 9216 address-family ipv6 unicast feature ospf ip address 172.168.0.2/24 address-family I2vpn evpn feature bgp ip router ospf 100 area 0.0.0.0 feature pim neighbour 10.1.1.1 feature fabric forwarding ip pim sparse-mode remote-as 6500 feature interface-plan update-source loopback0 address-family l2vpn evpn feature vn-segment-vlan-based interface Ethernet1/98 feature lacp send-community mtu 9216 feature nv overlay send-community extended ip address 172.168.2.2/24 route-reflector-client ip router ospf 100 area 0.0.0.0 ip pim rp-address 10.3.1.1 group-list 224.0.0.0/4 neighbour 10.2.1.1 ip pim sparse-mode ip pim ssm range 232.0.0.0/8 remote-as 6500 vlan 1,10,20,100,511-513,708-709,711,1179,1664-1665,1667-1668,1894 update-source loopback0 interface Ethernet1/99 address-family I2vpn evpn mtu 9216 Interface loopback0 send-community ip address 192.168.1.2/24 IP address 1.1.1.1/32 send-community extended ip router ospf 100 area 0.0.0.0 Ip router ospf 100 are 0.0.0.0 route-reflector-client ip pim sparse-mode Ip pim sparse-mode neighbour 10.4.1.1 Icam monitor scale remote-as 6500 interface Ethernet1/100 update-source loopback0 mtu 9216 Router ospf 100 address-family I2vpn evpn ip address 172.168.3.1/24 Router-id 10.3.1.1 send-community ip router ospf 100 area 0.0.0.0 Router bgp 6500 send-community extended Router-id 10.3.1.1 ip pim sparse-mode route-reflector-client Interface Configuration VTEP Configuration interface vlan100 interface loopback0 router bgp 6500 vrf member SGi_IAC nv overlay evpr feature ospi feature bgp ip address 10.4.1.1/32 router-id 10.4.1.1 no ip redirects ip router ospf 100 area 0.0.0.0 address-family ipv4 unicast feature pim ip pim spare-mode address-family ipv6 unicast no ipv6 redirects feature fabric forwarding feature interface-plan address-family I2vpn evpn neighbour 10.3.1.1 interface vlan511 feature vn-segment-vlan-based interface ethernet 1/1 remote-as 6500 vrf member SGi_IAC no ip redirects feature lacp update-source loopback0 ip address 172.21.32.6/25 ip address 192.168.1.1/24 address-family I2vpn evpn ip router ospf 100 area 0.0.0.0 ipv6 address 2400:1c00:17f:fff4:8000::4/121 fabric forwarding anycast-gateway-mac 0000.2222.3333 send-community extended ip pim sparse-mode no ipv6 redirects ip pim rp-address 10.3.1.1 group-list 224.0.0.0/4 ip pim ssm range 232.0.0.0/8 fabric forwarding mode any cast-gateway vrf SGi_IAC vrf context SGi_IAC vlan 1,10,20,100,511-513,708-709,711,1179,1664-1665,1667-1668,1894 vni 10100 address-family ipv4 unicast interface nve1 vlan 100 no shutdown host-reachability protocol bgp address-family ipv6 unicast vn-segment 10100 address-family ipv4 unicast route-target both auto source-interface loopback0 evpn vni 10511 l2 vn-segment 10511 route-target both auto evpn member vni 10100 associate-vhf route-map PERMIT-ALL permit 10 address-family ipv6 unicast rd auto member vni 10511 route-target both auto route-target import auto mcast-group 239.1.1.1 router-id 10.4.1.1 route-target auto evpn route-target export auto

Host 1 Configuration ASR Router Host 2 Configuration

interface Bundle-Ether1.511 description JE-PCN01-PC-UP-SGi_IAC vrf SGi_IAC ipv4 address 172.21.32.2 255.255.255.128 ipv6 address 2400:1c00:17f.fff4:8000::2/121 encapsulation dot1q511 interface Bundle-Ether1.511 description JE-PCN01-PC-UP-SGi_IAC vrf SGi_IAC ipv4 address 172.21.32.3 255.255.255.128 ipv6 address 2400:1c00:17f:fff4:8000::3/121 encapsulation dot1d511 interface Bundle-Ether1.511 description JE-PCN01-PC-UP-SGi_IAC vrf SGi_IAC ipv4 address 172.21.32.4 255.255.255.128 ipv6 address 2400:1c00:17f:fff4:8000::5/121 encapsulation dot1d511

Überprüfung

Verwenden Sie diesen Abschnitt, um zu überprüfen, ob Ihre Konfiguration ordnungsgemäß funktioniert.

RP/0/RSP1/CPU0:ASR-9906-A#ping vrf SGi_IAC 172.21.32.2

Tue Jul 12 03:35:33.528 UTC

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 172.21.32.2, timeout is 2 seconds:

11111

Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/3 ms

RP/0/RSP1/CPU0:ASR-9906-

A#ping vrf SGi_IAC 2400:1c00:17f:fff4:8000::2

Tue Jul 12 03:35:36.536 UTC

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 2400:1c00:17f:fff4:8000::2, timeout is 2 seconds:

!!!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/1 ms

H1#ping 172.21.32.3

Tue Jul 12 03:36:00.993 UTC

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.21.32.3, timeout is 2 seconds:

.....

Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/1 ms

H1#ping vrf SGi_IAC 2400:1c00:17f:fff4:8000::3

Tue Jul 12 03:36:03.789 UTC

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 2400:1c00:17f:fff4:8000::3, timeout is 2 seconds:

111111

Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/3 ms

Fehlerbehebung

In diesem Abschnitt finden Sie Informationen zur Behebung von Fehlern in Ihrer Konfiguration.

Verwenden Sie die folgenden Befehle zur Fehlerbehebung bei der Konfiguration:

#show bgp I2vpn evpn

#show nve peer

#show nve vni

show ip arp <> >> On host side

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