Configure Nexus 9000 Unicast NLB

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Introduction

This document describes the configuration that must be enabled on the server in order to ensure Unicast Microsoft Network Load Balancing (NLB) mode operates correctly on Nexus 9000 Series switches. Per the Nexus 9000 Series NX-OS Multicast Routing Configuration Guide, multicast mode NLB is not supported on this platform when the device is responsible for routing traffic into the NLB cluster VLAN until NX-OS Software Release 9.2(1).

Prerequisites

In order to ensure a successful configuration:

- Unicast NLB mode must be configured on the server appropriately.
- The virtual Port-channel (vPC) configuration on the switches must be in place if this configuration is deployed in the same manner as depicted in the Network Diagram section of this configuration example.
- The appropriate VLANs and Layer 3 (L3) interfaces must be present.

Requirements

Cisco recommends that you have knowledge of these topics:

- Nexus Operating System (NX-OS)
- Microsoft NLB
- Routing
- Switching
- vPC

Components Used

The information in this document is based on these software and hardware versions:

- Nexus 9000-C9396PX
- Cisco NX-OS Version 7.0(3)I1(1a)

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

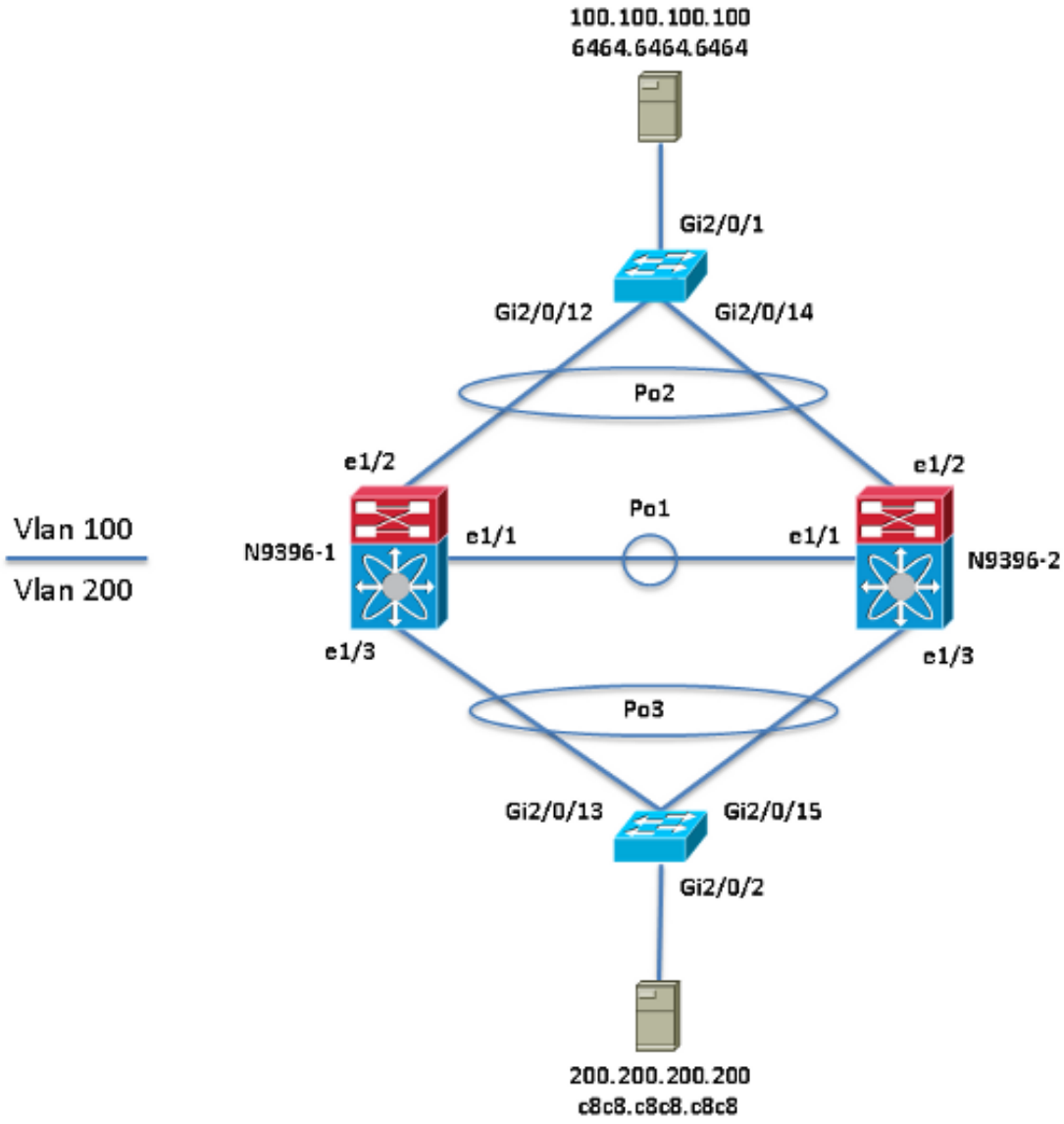
Guidelines and Limitations

The use of a static MAC address table entry for the NLB Virtual MAC Address is required on all Nexus 9000 Series switches.

Configure

Network Diagram

This network diagram shows NLB deployed in unicast mode. The NLB virtual IP (VIP) is 200.200.200.200 and virtual MAC (VMAC) is c8c8.c8c8.c8c8.



N9396-1 Configuration Example

```
interface Vlan200
ip arp 200.200.200.200 C8C8.C8C8.C8C8

mac address-table static c8c8.c8c8.c8c8 vlan 200 interface port-channel3
```

N9396-2 Configuration Example

```
interface Vlan200
ip arp 200.200.200.200 C8C8.C8C8.C8C8

mac address-table static c8c8.c8c8.c8c8 vlan 200 interface port-channel3
```

Verify

Use this section in order to confirm that your configuration works properly.

- **show ip arp [NLB_VIP]**
- **show mac address-table address [NLB_VMAC]**

N9396-1

```
N9396-1# show ip arp 200.200.200.200

Flags: * - Adjacencies learnt on non-active FHRP router
+ - Adjacencies synced via CFSoE
# - Adjacencies Throttled for Glean
D - Static Adjacencies attached to down interface


IP ARP Table
Total number of entries: 1
Address Age MAC Address Interface
200.200.200.200 - c8c8.c8c8.c8c8 Vlan200

N9396-1# show mac address-table address c8c8.c8c8.c8c8
Legend:
* - primary entry, G - Gateway MAC, (R) - Routed MAC, O - Overlay MAC
age - seconds since last seen,+ - primary entry using vPC Peer-Link,
(T) - True, (F) - False
VLAN MAC Address Type age Secure NTFY Ports
---------+-----------------+--------+---------+------+----+------------------
* 200 c8c8.c8c8.c8c8 static - F F Po3
```

N9396-2

```
N9396-2# show ip arp 200.200.200.200

Flags: * - Adjacencies learnt on non-active FHRP router
+ - Adjacencies synced via CFSoE
# - Adjacencies Throttled for Glean
D - Static Adjacencies attached to down interface

IP ARP Table
Total number of entries: 1
Address Age MAC Address Interface
200.200.200.200 - c8c8.c8c8.c8c8 Vlan200

N9396-2# show mac address-table address c8c8.c8c8.c8c8
Legend:
* - primary entry, G - Gateway MAC, (R) - Routed MAC, O - Overlay MAC
age - seconds since last seen,+ - primary entry using vPC Peer-Link,
(T) - True, (F) - False
VLAN MAC Address Type age Secure NTFY Ports
---------+-----------------+--------+---------+------+----+------------------
* 200 c8c8.c8c8.c8c8 static - F F Po3
```

Troubleshoot

There is currently no specific troubleshooting information available for this configuration.

Design Considerations

With the static ARP and MAC address entries in place, you must account for these design considerations:

- All NLB cluster members must be reachable via the same port-channel/physical interface from the perspective of the Nexus 9000.

- The ability to adapt to a change in the physical location of the NLB cluster members, due to vMotion, is not possible without an appropriate design.