CHAPTER 9

Configuring ECMP for Host Routes

This chapter describes how to configure the equal-cost multipathing (ECMP) protocol for host routes on the Cisco NX-OS switch.

This chapter includes the following sections:

- Information About ECMP for Host Routes, page 9-1
- and High Availability while the standby supervisor becomes activeLicensing Requirements for ECMP for Host Routes, page 9-2
- Prerequisites for ECMP for Host Routes, page 9-2
- Default Settings, page 9-2
- Configuring ECMP for Host Routes, page 9-2
- Verifying the ECMP for Host Routes Configuration, page 9-4
- Configuration Examples for ECMP for Host Routes, page 9-4
- Additional References, page 9-5
- Feature History for ECMP for Host Routes, page 9-5

Information About ECMP for Host Routes

When you enable ECMP support for host routes, all unicast host routes are programmed into the longest-prefix match algorithm (LPM) table. ECMP for host routes is provided in the switch hardware. You configure this feature in the CLI using the **hardware profile unicast enable-host-ecmp** command.

You can configure ECMP for only IPv4 host routes, only IPv6 host routes, or both IPv4 and IPv6 host routes.

Note Host entries are stored in the LPM routing table instead of the host table when ECMP is configured.

BFD

This feature supports bidirectional forwarding detection (BFD). BFD is a detection protocol designed to provide fast forwarding-path failure detection times. BFD provides subsecond failure detection between two adjacent devices and can be less CPU-intensive than protocol hello messages because some of the BFD load can be distributed onto the data plane on supported modules. See the *Cisco Nexus 7000 Series NX-OS Interfaces Configuration Guide, Release 5.x* for more information.

and High Availability while the standby supervisor becomes activeLicensing Requirements for ECMP for Host Routes

The following table shows the licensing requirements for this feature:

Product	License Requirement
Cisco NX-OS	ECMP for host routes requires no license. Any feature not included in a license package is bundled with the Cisco NX-OS system images and is provided at no extra charge to you. For a complete explanation of the Cisco NX-OS licensing scheme, see the *Cisco NX-OS Licensing Guide*.

Prerequisites for ECMP for Host Routes

ECMP for host routes has the following prerequisites:

- Before you use this command, we recommend that you disable Unicast Reverse Path Forwarding (URPF) globally on the switch using the **system urpf disable** command, and then save the configuration and reload the switch. Disabling URPF globally extends the LPM table size.
- If you configure VDCs, install the Advanced Services license and enter the desired VDC (see the *Cisco Nexus 7000 Series NX-OS Virtual Device Context Configuration Guide, Release 5.x*).

Default Settings

ECMP for host routes is disabled by default.

Configuring ECMP for Host Routes

This section includes the following topics:

- Enabling the EMCP for Host Routes Feature, page 9-2

Enabling the EMCP for Host Routes Feature

You can enable the ECMP for host routes feature.

BEFORE YOU BEGIN

Ensure that you are in the correct VDC (or use the **switchto vdc** command).

SUMMARY STEPS

1. **configure terminal**
2. (Optional) **system urpf disable**
3. **hardware profile unicast enable-host-ecmp** [**ipv4** | **ipv6**]

4. **copy running-config startup-config**

DETAILED STEPS

	Command	Purpose
Step 1	**configure terminal** **Example:** switch# configure terminal switch(config)#	Enters configuration mode.
Step 2	**system urpf disable** **Example:** switch(config)# system urpf disable	(Optional) Disables URPF globally on the switch.
Step 3	**hardware profile unicast enable-host-ecmp** [**ipv4** | **ipv6**] **Example:** switch(config)# hardware profile unicast enable-host-ecmp	Enables ECMP for both IPv4 and IPv6 host routes globally on the switch. You can specify to enable ECMP for only IPv4 or IPv6 host routes using these optional arguments: • **ipv4**—Specifies to enable ECMP for only the IPv4 host routes. • **ipv6**—Specifies to enable ECMP for only the IPv6 routes. **Note** If ECMP is enabled for both the IPv4 and IPv6 host routes using two separate commands, the configuration shows only the **hardware profile uinicast enable-host-ecmp** command. This configuration indicates that ECMP is enabled for both the IPv4 and IPv6 host routes.
Step 4	**copy running-config startup-config** **Example:** switch(config)# copy running-config startup-config	Saves this configuration change.

Disabling the EMCP for Host Routes Feature

You can disable the ECMP for host routes feature.

BEFORE YOU BEGIN

Ensure that you are in the correct VDC (or use the **switchto vdc** command).

SUMMARY STEPS

1. **configure terminal**
2. **no hardware profile unicast enable-host-ecmp** [**ipv4** | **ipv6**]
3. **copy running-config startup-config**

DETAILED STEPS

	Command	Purpose
Step 1	**configure terminal** **Example:** switch# configure terminal switch(config)#	Enters configuration mode.
Step 2	**no hardware profile unicast enable-host-ecmp** [**ipv4** | **ipv6**] **Example:** switch(config)# no hardware profile unicast enable-host-ecmp	Disables ECMP for both IPv4 and IPv6 host routes globally on the switch and removes all associated configuration. You can specify to disable ECMP for only IPv4 or IPv6 host routes using these optional arguments: • **ipv4**—Specifies to disable ECMP for only the IPv4 host routes. • **ipv6**—Specifies to disable ECMP for only the IPv6 routes.
Step 3	**copy running-config startup-config** **Example:** switch(config)# copy running-config startup-config	Saves this configuration change.

Verifying the ECMP for Host Routes Configuration

To display the ECMP for host routes configuration information, perform one of the following tasks:

Command	Purpose
show hardware profile status	Displays the unicast and multicast routing entries in hardware tables.
show running-config	Displays the running system configuration.

Configuration Examples for ECMP for Host Routes

This example shows how to disable URPF and configure ECMP for host routes:

```
switch# configure terminal
switch(config)# system urpf disable
switch(config)# hardware profile unicast enable-host-ecmp
switch(config)# copy running-config startup-config
```

This example shows how to disable URPF and configure ECMP for only IPv6 host routes:

```
switch# configure terminal
switch(config)# system urpf disable
switch(config)# hardware profile unicast enable-host-ecmp ipv6
switch(config)# copy running-config startup-config
```

This example show how to disable ECMP for host routes:

```
switch# configure terminal
switch(config)# no hardware profile unicast enable-host-ecmp
switch(config)# copy running-config startup-config
```

This example show how to disable ECMP for only IPv6 host routes:

```
switch# configure terminal
switch(config)# no hardware profile unicast enable-host-ecmp ipv6
switch(config)# copy running-config startup-config
```

Additional References

For additional information related to implementing ECMP for host routes, see the following sections:

- Related Documents, page 9-5
- Feature History for ECMP for Host Routes, page 9-5

Related Documents

Related Topic	Document Title
ECMP for host routes CLI commands	*Cisco Nexus 3000 Series Command Reference,*
VDCs and VRFs	*Cisco Nexus 7000 Series NX-OS Virtual Device Context Configuration Guide, Release 5.x*

Feature History for ECMP for Host Routes

Table 9-1 lists the release history for this feature.

Table 9-1 Feature History for ECMP for Host Routes

Feature Name	Releases	Feature Information
BFD		
ECMP for Host Routes	5.0(3)U1(2)	This feature was introduced.
ECMP for Host Routes	5.0(3)U5(1d)	Added the ability to enable or disable ECMP separately for IPv4 host routes or IPv6 host routes.