Cisco Programmable Fabric with VXLAN BGP EVPN Command Reference

First Published: 2016-04-25

Last Modified: 2016-04-25

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Preface

The Preface contains the following sections:

Audience

This publication is for experienced network administrators who configure and maintain Cisco Programmable Fabric.

Document Conventions

Command descriptions use the following conventions:

Note   As part of our constant endeavor to remodel our documents to meet our customers' requirements, we have modified the manner in which we document configuration tasks. As a result of this, you may find a deviation in the style used to describe these tasks, with the newly included sections of the document following the new format.

Convention	Description
bold	Bold text indicates the commands and keywords that you enter literally as shown.
Italic	Italic text indicates arguments for which the user supplies the values.
[x]	Square brackets enclose an optional element (keyword or argument).
[x | y]	Square brackets enclosing keywords or arguments separated by a vertical bar indicate an optional choice.

Convention	Description
{x	y}	Braces enclosing keywords or arguments separated by a vertical bar indicate a required choice.
[x {y	z}]	Nested set of square brackets or braces indicate optional or required choices within optional or required elements. Braces and a vertical bar within square brackets indicate a required choice within an optional element.
variable	Indicates a variable for which you supply values, in context where italics cannot be used.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.

Examples use the following conventions:

Convention	Description
screen font	Terminal sessions and information the switch displays are in screen font.
boldface screen font	Information you must enter is in boldface screen font.
italic screen font	Arguments for which you supply values are in italic screen font.
< >	Nonprinting characters, such as passwords, are in angle brackets.
[ ]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

This document uses the following conventions:

Note Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the manual.

Caution Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Related Documentation for Cisco Programmable Fabric

Software Downloads, Release, and General Information

Cisco Programmable Fabric Release Notes:

http://www.cisco.com/c/en/us/td/docs/switches/datacenter/pf/release_notes/programmable_fabric_rel_notes.html

Cisco DCNM Release Notes, Release 10:

http://www.cisco.com/c/en/us/td/docs/switches/datacenter/sw/10_0_x/release_notes/b_dcnm_release_notes_10_0.html

Install and Upgrade Guides

Cisco DCNM 10 Installation Guide:

http://www.cisco.com/c/en/us/td/docs/switches/datacenter/sw/10_0_x/installation/DCNM_Installation_Guide_10_0_x.html

Configuration Guides

Cisco Programmable Fabric Configuration Guide:

http://www.cisco.com/c/en/us/td/docs/switches/datacenter/pf/configuration/guide/b-pf-configuration.html

Cisco DCNM 10 Fundamentals Guide:

http://www.cisco.com/c/en/us/td/docs/switches/datacenter/sw/10_0_x/fundamentals/DCNM_Fundamentals_10.html

Cisco Nexus 1000V VDP Configuration Guide, Release 5.x:

http://www.cisco.com/c/en/us/support/switches/nexus-1000v-switch-vmware-vsphere/products-installation-and-configuration-guides-list.html

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation*, at: http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html.

Subscribe to *What's New in Cisco Product Documentation*, which lists all new and revised Cisco technical documentation, as an RSS feed and deliver content directly to your desktop using a reader application. The RSS feeds are a free service.

A through M

aaa group server radius

To create a RADIUS server group and enter RADIUS server group configuration mode, use the **aaa group server radius** command in global configuration mode. To delete a RADIUS server group, use the **no** form of this command.

aaa group server radius *group-name*
no   aaa group server radius *group-name*

Syntax Description	*group-name*	RADIUS server group name. The name is alphanumeric and case-sensitive. The maximum length is 64 characters.

Command Default   A RADIUS server group is not configured.

Command Modes   Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 4.0(1)	This command was introduced.
Cisco NX-OS 6.1(2)I2(2)	This command was integrated.
Cisco NX-OS 7.0(0)N1(1)	

Example

The following example shows how to create a RADIUS server group and enter RADIUS server configuration mode:

```
Device# configure terminal
Device(config)# aaa group server radius RadServer
Device(config-radius)#
```

The following example shows how to delete a RADIUS server group:

```
Device# configure terminal
Device(config)# no aaa group server radius RadServer
```

address-family l2vpn evpn

To configure Layer-2 VPN EVPN parameters in the VXLAN EVPN fabric, use the **address-family l2vpn evpn**command in router configuration mode. To disable Layer-2 VPN EVPN configuration, use the **no** form of the command.

address-family l2vpn evpn

no address-family l2vpn evpn

Syntax Description	This command has no arguments or keywords.

Command Modes	Router configuration (config-router)

Command History

Release	Modification
Cisco NX-OS 6.1(2)I2(2)	This command was introduced.
Cisco NX-OS 7.3(0)D1(1)	This command was integrated.
Cisco NX-OS 7.3(0)N1(1)	

Usage Guidelines

Use the ? option to view the various functions available under the L2VPN EVPN address family. A sample is given below:

```
switch(config-router)# address-family l2vpn evpn
switch(config-router-af)# ?

  advertise-pip  Advertise physical ip for type-5 route
  dampening      Configure route flap dampening
  nexthop        Nexthop tracking
  retain         Retain the routes based on Target VPN Extended Communities
```

Example

The following example shows how to enable configuration of L2VPN EVPN parameters:

```
switch(config)# router bgp 100
switch(config-router)# address-family l2vpn evpn
switch(config-router-af)#
```

advertise-gw-ip

To advertise EVPN Type-5 routes with the gateway IP set, use the **advertise-gw-ip** command. However, legacy peers running on NX-OS versions older than Cisco NX-OS Release 8.3(1) cannot process the gateway IP which may lead to unexpected behavior. To prevent this scenario from occurring, use the **no advertise-gw-ip** command to disable the Proportional Multipath for VNF feature for a legacy peer.

advertise-gw-ip
no advertise-gw-ip

Syntax Description	This command has no arguments or keywords.
Command Default	This command is enabled by default.
Command Modes	Router Neighbor Address Family configuration (config-router-neighbor-af)

Command History

Release	Modification
8.3(1)	This command was introduced.

Usage Guidelines

If the **no advertise-gw-ip** command is used to disable the Proportional Multipath for VNF feature for a legacy peer, BGP will set the gateway IP field of the Type-5 NLRI to zero even if the path being advertised has a valid gateway IP. The **no advertise-gw-ip** command flaps the specified peer session as gracefully as possible. The remote peer triggers graceful restart if the peer supports this capability. When the session is reestablished, the local peer will advertise EVPN Type-5 routes with the gateway IP set or with the gateway IP as zero depending on whether the **advertise-gw-ip** command has been used or not. By default, this knob is enabled and the gateway IP field is populated with the appropriate next hop value.

This command does not require a license.

Example

The following example disables the Proportional Multipath for VNF feature for a legacy peer and enables BGP to set the gateway IP field of the Type-5 NLRI to zero even if the path being advertised has a valid gateway IP:

```
switch(config)# router bgp 500000
switch(config-router)# neighbor 102.102.102.102
switch(config-router-neighbor)# remote-as 2000000
switch(config-router-neighbor)# address-family l2vpn vpn
switch(config-router-neighbor-af)# no advertise-gw-ip
```

advertise l2vpn evpn

To advertise (L2VPN) EVPN routes within a tenant VRF in a VXLAN EVPN fabric, use the **advertise l2vpn evpn** command in VRF address family configuration mode. To disable this feature, use the **no** form of the command.

advertise l2vpn evpn

no advertise l2vpn evpn

Syntax Description	This command has no arguments or keywords.

Command Default	L2VPN EVPN routes are not advertised within a tenant VRF.

Command Modes	VRF address family configuration mode (config-router-vrf-af)

Command History	Release	Modification
	Cisco NX-OS 7.3(0)D1(1)	This command was introduced.
	Cisco NX-OS 7.3(0)N1(1)	

Example

The following example shows how to advertise (L2VPN) EVPN routes within a tenant VRF in a VXLAN EVPN fabric:

```
switch(config)# router bgp 100
switch(config-router)# vrf vni-3000
switch(config-router-vrf)# address-family ipv4 unicast
switch(config-router-vrf-af)# advertise l2vpn evpn
```

advertise-pip

To advertise route type 5 routes using the primary IP address of the VTEP interface as the next hop address in the VXLAN EVPN fabric, use the **advertise-pip** command in the address family router configuration mode. To disable the function, use the **no** form of the command.

advertise-pip

no advertise-pip

Syntax Description	This command has no arguments or keywords.

Command Default	This function is disabled by default.

Command Modes	Address family router configuration (config-router-af)

Command History

Release	Modification
Cisco NX-OS 7.3(0)D1(1)	This command was introduced.
Cisco NX-OS 7.3(0)N1(1)	

Usage Guidelines

Enable this command on the ToR/leaf switch if the switch is part of a vPC setup and falls in one of the following scenarios:

- The vPC leaf switch and its peer have asymmetric external Layer-3 connections and some IP prefix routes are only reachable from one of the leaf switches, and not both. For example, a pair of border leaf switches that run in vPC mode, and are connected to DCI switches asymmetrically. A symmetric topology can become asymmetric due to link failure.

- A DHCP or DHCPv6 relay is configured on the leaf switch and the DHCP server is in the non default, non management, VRF.

- When you need to run traffic between the leaf switch and a remote host. An example of this is to initiate a ping from the leaf switch's loopback address in a non default VRF to a remote host.

When **advertise-pip** is configured, the route type 5 update will advertise the next hop using the primary IP address (as the source IP address). It is required that previously a route type 2 update with virtual IP address as next hop is present. If no route type 2 is present, the configuration of a static MAC on a VXLAN enabled VLAN would satisfy this requirement. A sample configuration is given below.

Cisco Nexus 5600 Series switches

```
vlan 3000
  vn-segment 1003000


 interface nve 1
  member vni 1003000 mcast-group 239.1.1.1


evpn
```

```
    vni 1003000 l2
      rd auto
      route-target import auto
      route-target export auto


mac address-table static 0200.e111.1111 vlan 3000 interface port-channel 1
```

Other than the **mac address-table static** command which needs to be enabled on the switch where **advertise-pip** is enabled, the rest of the commands mentioned above need to be added in all the leaf switches that needs to communicate with the switch. In the above configuration, the VLAN value (*3000*) and the VNI value (*1003000*) needs to be unused in the fabric. The multicast group value needs to be picked from the range of multicast group addresses supported in the fabric underlay. The MAC address used is a dummy MAC address not used by any host or switch. To avoid conflict, set the universal or local bit (the second least significant bit of the most significant byte) of the MAC address to 1, to indicate that it is a locally administered MAC address. The interface should be one of the server facing ports or a port channel that is *up*.

On the leaf switches that **advertise-pip** is enabled, the VTEP interface should be shut down on both the vPC switches to avoid a potential out of sync between the two switches.

Cisco Nexus 7000 Series switches

```
vni 1003000


bridge domain 200
 member vni 1003000


encapsulation profile vni cisco
  dot1q 100 vni 1003000


 interface nve 1
  member vni 1003000 mcast-group 239.1.1.1


evpn
  vni 1003000 l2
     rd auto
     route-target import auto
     route-target export auto


mac address-table static 0200.e111.1111 vlan 100 interface port-channel 1
```

Example

The following example shows how to advertise (L2VPN) EVPN routes within a tenant VRF in a VXLAN EVPN fabric:

```
switch(config)# router bgp 100
switch(config-router)# address-family l2vpn evpn
switch(config-router-af)# advertise-pip
```

aggregate-address

To create a summary address in a Border Gateway Protocol (BGP) routing table, use the **aggregate-address** command. To remove the summary address, use the **no** form of this command.

aggregate-address *address/length* [**advertise-map** *map-name*] [**as-set**] [**attribute-map** *map-name*] [**summary-only**] [**suppress-map** *map-name*]
no aggregate-address *address/length* [**advertise-map** *map-name*] [**as-set**] [**attribute-map** *map-name*] [**summary-only**] [**suppress-map** *map-name*]

Syntax Description		
address/length	Specifies aggregate IP address and mask length. Valid values for length are as follows: • IPv4 addresses from1 to 32 • IPv6 addresses from 1 to 128	
advertise-map *map-name*	(Optional) Specifies the name of the route map used to select attribute information from specific routes.	
as-set	(Optional) Generates the autonomous system set path information and community information from the contributing paths.	
attribute-map *map-name*	(Optional) Specifies the name of the route map used to set the attribute information for specific routes. The map-name is an alphanumeric string up to 63 characters.	
summary-only	(Optional) Filters all more-specific routes from updates.	
suppress-map *map-name*	(Optional) Specifies the name of the route map used to conditionally filter more specific routes. The map-name is an alphanumeric string up to 63 characters.	

Command Default

The atomic aggregate attribute is set automatically when an aggregate route is created with this command unless the **as-set** keyword is specified.

Command Modes

Address-family configuration mode

Neighbor address-family configuration mode

Router BGP configuration mode

Command History

Release	Modification
Cisco NX-OS 5.0(3)N1(1)	This command was introduced in an earlier Cisco NX-OS release.
Cisco NX-OS 6.1(2)I2(2)	This command was integrated.

Usage Guidelines

You can implement aggregate routing in BGP and mBGP either by redistributing an aggregate route into BGP or mBGP, or by using the conditional aggregate routing feature.

Using the **aggregate-address** command with no keywords will create an aggregate entry in the BGP or mBGP routing table if any more-specific BGP or mBGP routes are available that fall within the specified range. (A

longer prefix which matches the aggregate must exist in the RIB.) The aggregate route will be advertised as coming from your autonomous system and will have the atomic aggregate attribute set to show that information might be missing. (By default, the atomic aggregate attribute is set unless you specify the **as-set** keyword.)

Using the **as-set** keyword creates an aggregate entry using the same rules that the command follows without this keyword, but the path advertised for this route will be an AS_SET consisting of all elements contained in all paths that are being summarized. Do not use this form of the **aggregate-address** command when aggregating many paths, because this route must be continually withdrawn and updated as autonomous system path reachability information for the summarized routes changes.

Using the **summary-only** keyword not only creates the aggregate route (for example, 192.*.*.*) but also suppresses advertisements of more-specific routes to all neighbors. If you want to suppress only advertisements to certain neighbors, you may use the **neighbor distribute-list** command, with caution. If a more-specific route leaks out, all BGP or mBGP routers will prefer that route over the less-specific aggregate you are generating (using longest-match routing).

Using the **suppress-map** keyword creates the aggregate route but suppresses advertisement of specified routes. You can use the match clauses of route maps to selectively suppress some more-specific routes of the aggregate and leave others unsuppressed. IP access lists and autonomous system path access lists match clauses are supported.

Using the **advertise-map** keyword selects specific routes that will be used to build different components of the aggregate route, such as AS_SET or community. This form of the **aggregate-address** command is useful when the components of an aggregate are in separate autonomous systems and you want to create an aggregate with AS_SET, and advertise it back to some of the same autonomous systems. You must remember to omit the specific autonomous system numbers from the AS_SET to prevent the aggregate from being dropped by the BGP loop detection mechanism at the receiving router. IP access lists and autonomous system path access lists match clauses are supported.

Using the **attribute-map** keyword allows attributes of the aggregate route to be changed. This form of the **aggregate-address** command is useful when one of the routes forming the AS_SET is configured with an attribute such as the community no-export attribute, which would prevent the aggregate route from being exported. An attribute map route map can be created to change the aggregate attributes.

This command requires the Enterprise Services license.

Examples

AS-Set Example

In This example, an aggregate BGP address is created in router configuration mode. The path advertised for this route will be an AS_SET consisting of all elements contained in all paths that are being summarized.

```
Device(config)# router bgp 64496
Device(config-router)# aggregate-address 10.0.0.0 255.0.0.0 as-set
```

Summary-Only Example

In This example, an aggregate BGP address is created in address family configuration mode and applied to the multicast database (SAFI) under the IP Version 4 address family. Because the **summary-only** keyword is configured, more-specific routes are filtered from updates.

```
Device(config)# router bgp 64496
Device(config-router)# address-family ipv4 multicast
Device(config-router-af)# aggregate-address 10.0.0.0 255.0.0.0 summary-only
```

Conditional Aggregation Example

In This example, a route map called MAP-ONE is created to match on an as-path access list. The path advertised for this route will be an AS_SET consisting of elements contained in paths that are matched in the route map.

```
Device(config)# ip as-path access-list 1 deny ^1234_
Device(config)# ip as-path access-list 1 permit .*
Device(config)# !
Device(config)# route-map MAP-ONE
Device(config-route-map)# match ip as-path 1
Device(config-route-map)# exit
Device(config)# router bgp 64496
Device(config-router)# address-family ipv4
Device(config-router-af)# aggregate-address 10.0.0.0 255.0.0.0 as-set advertise-map MAP-ONE
Device(config-router-af)# end
```

apply profile

To apply a configuration profile to configure hosts, use the **apply profile** command in global configuration mode. To remove the configuration profile use the **no** form of this command.

apply profile *profile-name* [{**include-instance** *include-instance*}] [{**param-instance** *instance-name*}]
no apply profile *profile-name* [{**include-instance** *include-instance*}] [{**param-instance** *instance-name*}]

Syntax Description

profile-name	Name of the profile that is created using the **configure profile** command.
include-instance *include-instance*	(Optional) Specifies the include instance name.
param-instance *instance-name*	(Optional) Specifies the parameter instance name.

Command Default The port profile is not applied.

Command Modes Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines Configuration profiles provide an infrastructure to configure hosts based on a set of user-defined templates. You can define different templates for different types of hosts and enable them appropriately based on an event, such as host discovery. You can apply different profiles to different hosts and apply different values for the configuration for different hosts.

Use the **apply profile** command to apply a configuration profile on a host.

Use the **configure profile** command to create a configuration profile and add a parameter list and a parameter-list instance. You can either create one parameterized profile for each host or create one profile with parameterized argument and apply it with host-specific arguments. The parameter-list instance provides the actual values that are added in the configuration profile before the profile is applied. The parameter name in the instance must match the parameter name in the profile.

Example

The following example shows how to create a configuration profile and apply it to a host instance, named HOST-1, to expand the profile and configure a new host:

```
Device(config)# configure profile sample
Device(conf-profile)# vlan $vlanId
Device(conf-profile-vlan)# vn-segment $segmentId
Device(conf-profile-vlan)# interface vlan $vlanId
Device(conf-profile-if-verify)# ip address $ipv4addr/$netmask1
Device(conf-profile-if-verify)# ipv6 address $ipv6addr/$netmask2
Device(conf-profile-if-verify)# ip access-group $aclnum out
Device(conf-profile-if-verify)# configure terminal
```

```
Device(config)# apply profile sample param-instance HOST-1
Device(config)# end
```

autodiscovery bgp signaling ldp

To enable autodiscovery using Label Distribution Protocol (LDP) in a Layer 2 virtual forwarding interface (VFI), use the **autodiscovery bgp signaling ldp** command in L2 VFI configuration mode. To disable autodiscovery, use the **no** form of this command.

autodiscovery bgp signaling ldp
no autodiscovery bgp signaling ldp

This command has no arguments or keywords.

| Command Default | Layer 2 VFI autodiscovery is disabled. |

| Command Modes | L2 VFI configuration (config-vfi) |

Command History

Release	Modification
- -	This command was introduced in an earlier Cisco NX-OS release.

Examples

The following example shows how to enable Layer 2 VFI as having BGP autodiscovered pseudowire members and specify that LDP signaling should be used for autodiscovery:

```
Device(config)# l2vpn vfi context vfi1
Device(config-vfi)# vpn id 100
Device(config-vfi)# autodiscovery bgp signaling ldp
Device(config-vfi-autodiscovery)#
```

boot poap

To reboot a device and apply the changes after you configure the device or install a new image, use the **boot poap** command in global configuration mode. To avoid rebooting the device, use the **no** form of this command.

boot poap [**enable**]
no boot poap

Syntax Description	**enable**	(Optional) Enables the boot POAP (Power On Auto Provisioning) functionality.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.

Usage Guidelines

Rebooting the device is required in the following situations:

- If the configuration is supported only on the new image.
- If you configure the device after rebooting it.

You can avoid rebooting the device in the following situations:

- If there is no change in the image or in the configuration of device.
- If you want to apply only specific configuration updates on the device.

Examples

This example shows how to reboot a device after configuring the device or installing a new image:

```
Device# configure terminal
Device(config)# boot poap enable
```

bridge-domain

To enter bridge-domain configuration mode and configure a bridge domain, use the **bridge-domain** command. To remove the bridge-domain configurations, use the **no** form of this command.

bridge-domain *domain-id*
no bridge-domain *domain-id*

Syntax Description	*domain-id*	Specifies the Bridge-domain ID. The range is defined by the system-bridge-domain configuration.

Command Default   None

Command Modes   Global configuration mode

Command History

Release	Modification
Cisco NX-OS 6.2.2	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines   Removing the bridge-domain configuration does not remove the underlying VLAN. If a VLAN is associated with a bridge domain, you cannot remove the VLAN without first removing the bridge domain. To remove the underlying VLAN, use the no vlan command after you remove the bridge domain. This command requires the MPLS Services license.

Examples

This example shows how to enter bridge-domain configuration mode and configure a bridge domain:

```
Device# configure terminal
Device(config)# bridge-domain 200
```

checkpoint

To configure the rollback checkpoint, use the **checkpoint** command. To delete the checkpoint, use the **no** form of this command.

checkpoint {*name* | **description** *description* | **file** *name*}
no checkpoint

Syntax Description

name	Specifies the checkpoint name that is used in the checkpoint database. The name can contain any alphanumeric string up to 80 characters, without any spaces.
description *description*	Specifies the checkpoint description. The description can contain up to 80 alphanumeric characters, including space.
file *name*	Specifies the filename that is used to save the checkpoint.

Command Modes

Any command mode

Supported User Roles

network-admin

network-operator

vdc-admin

vdc-operator

Command History

Release	Modification
Cisco NX-OS 4.0(1)	This command was introduced.
Cisco NX-OS 6.1(2)I2(2)	This command was integrated.

Usage Guidelines

If you use the **checkpoint** command without a name, Cisco NX-OS software creates the file with the name auto-x, where x is a decimal number that increments each time you create an unnamed checkpoint file.

This command does not require a license.

Examples

This example shows how to configure the rollback checkpoint:

```
Device# checkpoint stable
```

This example shows how to delete the checkpoint file:

```
Device# no checkpoint
```

clear evb

To clear information associated with Edge Virtual Bridging (EVB), use the **clear evb** command in global configuration mode.

clear evb {**hosts**|**vsi**} **[force-standby]** [**interface ethernet** *slot-number*] [**ip** *ipv4-address*] [**ipv6** *ipv6-address*] [**mac** *mac-address*] [**vlan** *vlan-id*] [**vni** *vni-id*]

Syntax Description		
hosts	Clears information about hosts in an EVB session.
vsi	Clears information about the Virtual Station Interface (VSI) in an EVB session.
force-standby	(Optional) Forces to clear standby entries in an EVB session.
interface ethernet *slot-number*	(Optional) Clears hosts or VSI entries by filtering interface.
ip *ipv4-address*	(Optional) Clears information about hosts or the VSI by filtering the IPv4 address.
ipv6 *ipv6-address*	(Optional) Clears information about hosts or the VSI by filtering the IPv6 address.
mac *mac-address*	(Optional) Clears information about hosts or the VSI by filtering the MAC address.
vlan *vlan-id*	(Optional) Clears information about hosts or the VSI by filtering the VLAN.
vni *vni-id*	(Optional) Clears information about hosts or the VSI by filtering the Virtual Network Identifier (VNI).

Command Default None

Command Modes Global configuration (config)

Command History

Release	Modification
7.0(0)N1(1)	This command was introduced.
7.2(0)D1(1)	This command was integrated.

Usage Guidelines Use the **feature evb** command to enable the EVB session.

Examples

This example shows how to clear information associated with an EVB session:

```
Device(config)# feature evb
Device(config)# clear evb hosts ip 192.0.2.1
```

clear evb statistics

To clear Edge Virtual Bridge (EVB) statistic counters, use the **clear evb statistics** command in global configuration mode.

clear evb statistics

Syntax Description   This command has no arguments or keywords.

Command Default   None

Command Modes   Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines   Use the **feature evb** command to enable the EVB session. This command does not require a license.

Example

This example shows how to clear an EVB statistic counter:

```
Device(config)# feature evb
Device(config)# clear evb statistics
```

clear fabric database dci

To clear the connectivity outside fabric from a Border Leaf to an Edge Router on a tenant, use the **clear fabric database dci** command.

clear fabric database dci **vrf** *vrf-name* **node-id** *ipaddr* **peer-id** *ipaddr*

Syntax Description	**vrf** *vrf-name*	Deletes the VRF from the node identified by node ID and associated interface and BGP configurations, which were created by the auto-pull command.
	node-id *ipaddr*	Identifies the node ID (usually management IP address) of the node on which the command is issued.
	peer-id *ipaddr*	Identifies the peer ID of the node specified by node ID.

Command Modes Global configuration (config)

Command History	Release	Modification
	Cisco NX-OS 7.1(0)N1(1)	This command was introduced.
	Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Example

The following sample shows how to clear connectivity outside fabric using the **clear fabric database dci** command:

```
Device(config)# clear fabric database dci vrf VRF1 node-id 1.1.1.1 peer-id 2.2.2.2
```

clear fabric database host

To clear a certain Cisco Programmable Fabric host from a Cisco Nexus switch that is configured as a tenant switch, use the **clear fabric database host** command in privileged EXEC mode.

clear fabric database host {**dot1q** *dot1q_id*|**vni** *vni_id*}

Syntax Description	**dot1q***dot1q-id*	Specifies that the IEEE 802.1Q (dot1q) tag identifier of the Cisco Programmable Fabric host be removed from the tenant configuration
	vni*vni-id*	Specifies that virtual network identifier (vni) of the Cisco Programmable Fabric host be removed from the tenant configuration on a Cisco Nexus 5500 Series switch.
		The range of the *vni-id* argument is from 4096 to 16773119.
		Note This **keyword** and *argument* is not supported on the Cisco Nexus 5500 Series switches.

Command Default The host remains in the tenant configuration.

Command Modes Privileged EXEC (#)

Command History	**Release**	**Modification**
	Cisco NX-OS 7.0(2)N1(1)	Support for this command was added for the Cisco Nexus 5500 Series switches.
	Cisco NX-OS 7.0(0)N1(1)	This command was introduced.

Usage Guidelines In a vPC setup, it is recommended to execute the **clear fabric database host** command on both the vPC peers.

Example

The following example shows how to clear the host ID from the tenant switch:

```
switch# clear fabric database host dot1q 1000
switch# clear fabric database host vni 110000
```

clear fabric database statistics

To clear the external database statistics such as number of messages sent or received, pending requests, access errors, and access timeouts, use the **clear fabric database statistics** command in privileged EXEC mode.

clear fabric database statistics [**type** {**network|profile**} [**server-proto** {**ldap**} {**host** *hostname* |**ip** *ip-address*} [**port** *port-number*]]]

Syntax Description	

type	(Optional) Specifies the type of database.
network	(Optional) Specifies a network database.
profile	(Optional) Specifies a port or switch profile database.
server-proto	(Optional) Specifies a database protocol.
ldap	(Optional) Specifies the use of Lightweight Directory Access Protocol (LDAP).
host *hostname*	(Optional) Specifies the hostname of the server.
ip *ip-address*	(Optional) Specifies the IP address of the server.
port *port-number*	(Optional) Specifies the port number of the server.

Command Default None

Command Modes Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines The **clear fabric database statistics** command is used to reset the database statistics counters to zero. But this command does not delete existing statistics memory. You can use the **show fabric database statistics** command to display per-server statistics including number of messages sent or received, pending requests, access errors, and timeouts.

Example

The following example shows how to clear the database statistics of ldap server:

```
Device# clear fabric database statistics type network server-proto ldap host host1
```

clear ngoam loopback

To clear the background NGOAM loopback session, use the **clear ngoam loopback** command in privileged EXEC mode.

clear ngoam loopback [**session** *session-handle* | **statistics** {**session** *session-handle* | **all**} | **summary**]

Syntax Description	**session** *session-handle*	(Optional) Clears information about the NGOAM loopback for a specific session.
	statistics	(Optional) Clears information about the NGOAM loopback statistics.
	all	Clears stats for all ping sessions.
	summary	(Optional) Clears summary information about the NGOAM loopback statistics.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.3(0)D1(1)	This command was introduced.
Cisco NX-OS 7.3(0)N1(1)	

Example

The following is sample output from the **clear ngoam loopback session 10** command.

```
switch# clear ngoam loopback session 10
```

The following is sample output from the **clear ngoam loopback statistics session 10** command.

```
switch# clear ngoam loopback statistics session 10
```

The following is sample output from the **clear ngoam loopback statistics session all** command.

```
switch# clear ngoam loopback statistics session all
```

The following is sample output from the **clear ngoam loopback statistics summary** command.

```
switch# clear ngoam loopback statistics summary
```

configure profile

To configure a profile, use the **configure profile** command in privileged EXEC mode. To remove a configured profile, use the **no** form of this command.

configure profile *profile-name*
no configure profile *profile-name*

Syntax Description	*profile-name* Name of the profile to be configured.

Command Default   A profile is not configured.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 6.0(2)N3(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines   You can specify a maximum of 80 characters for the *profile-name* argument. Once you configure a profile name, this profile is available in the list of profiles that can be used to configure profile parameters. Use the **show running-config** command to display all configured profiles and their parameters.

When you configure a profile, the command mode changes to configuration profile mode. You can configure profile parameters into a template in the configuration profile mode.

Use the **show config-profile** command to view the list of configured profiles.

Examples   The following example shows how to configure a profile named pname:

```
Device# configure profile pname
Device(config-profile)#
```

The following example shows how to configure profile parameters in the configuration profile mode:

```
Device# configure profile sample
Device(config-profile)# vrf context sample-vrf
Device(config-profile-vrf)# end
```

copy scheduled-config

To configure a file containing CLI commands that you want to apply on the next reboot of the device, use the **copy scheduled-config** command in any command mode.

copy *filename* **scheduled-config**

Syntax Description	*filename*	Name of the configuration file .
	scheduled-config	Specifies the schedule of the configuration at the specified source to apply on the next reboot of the device.

Command Default	None

Command Modes

Any command mode

Supported User Roles

network-admin

vdc-admin

Command History

Syntax Description

Release	Modification
Cisco NX-OS 6.1(2)	This command was introduced.

Usage Guidelines

The **copy scheduled-config** command specifies the schedule of the configuration at the specified source to apply on the next reboot of the device. This command must be called explicitly within the POAP (Power On Auto Provisioning) script to allow the POAP boot process to continue at the next reboot. When PowerOn Auto Provisioning (POAP) is in progress, any important information or errors are displayed over the serial console, aiding the administrator to troubleshoot in case of problems.

This command does not require a license.

Note This command is used in POAP script.

Examples

This example shows how to specify that the abc file to be applied to the running configuration when the device next reloads:

```
Device(config)# copy abc scheduled-config
```

db-security

To configure a database security, use the **db-security** command in fabric database server configuration mode.

db-table user *username* **password** *password* [{**shared-secret** *name*}]
no db-table user *username* **password** *password* [{**shared-secret** *name*}]

Syntax Description	**user** *username*	User ID.
	password *password*	Password.
	shared-secret *name*	Shared secret.

Command Default The database security is not configured.

Command Modes Fabric database server configuration (config-fabric-db-server)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines You can specify the database security mechanism by using the **db-security** command.

Example

```
device# configure
device(config)# fabric database type network
device(config-fabric-db)# server protocol ldap host host1
device(config-fabric-db-server)# db-table ou=networks,dc=host,dc=com key-type 1
device(config-fabric-db-server)# db-security user cn=admin,dc=cisco,dc=com password cisco123
```

db-table

To configure a database table using Lightweight Directory Access Protocol (LDAP), use the **db-table** command in fabric database server configuration mode. To remove the database table, use the **no** form of this command.

db-table *table-name* [**key-type** *key-type-value*]
no **db-table** *table-name* [**key-type** *key-type-value*]

Syntax Description		
	table-name	Name of the database table.
	key-type *key-type-value*	(Optional) Specifies the key type for the database queries. The valid value is 1.

Command Default

The database table is not configured.

Command Modes

Fabric database server configuration (config-fabric-db-server)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines

You can specify the database table name to which the database manager sends search queries by using the **db-table** command.

Example

The following example shows how to configure a database table using LDAP:

```
Device# configure terminal
Device(config)# fabric database type network
Device(config-fabric-db)# server protocol ldap host host1
Device(config-fabric-db-server)# db-table ou=networks,dc=host,dc=com key-type 1
```

default-information originate (BGP)

To configure a Border Gateway Protocol (BGP) routing process to distribute a user-defined default route, use the **default-information originate** command. To disable the advertisement of a default route, use the **no** form of this command.

default-information originate always rd *rd-value* **route-target** *rt*
no default-information originate always rd *rd-value* **route-target** *rt*

Syntax Description

always	Generates the default route if the route is not in the BGP routing information base (RIB).
rd *rd-value*	Specifies a value for the route distinguisher (RD). The format of the *rd-value* argument is one of the following formats: • *16-bit autonomous-system-number***:***arbitrary 32-bit number*, such as 101:3. • *32-bit IPaddress***:***arbitrary16-bit number*, such as 192.02.0.15:1. The colon (:) is required.
route-target *rt-value*	Specifies a value for the route target (RT). The format of the *rt-value* argument is one of the following formats: • *16-bit autonomous-system-number***:***arbitrary 32-bit number*, such as 101:3. • *IPaddress***:***arbitrary16-bit number*, such as 192.02.0.15:1. The colon (:) is required.

Command Modes

VPN address family configuration (config-router-af)

Command History

Release	Modification
Cisco NX-OS 4.0(1)	This command was introduced.
Cisco NX-OS 6.1(2)I2(2)	This command was integrated.
Cisco NX-OS 7.0(0)N1(1)	

Usage Guidelines

This command is used to configure a BGP routing process to advertise a default route with a user-specified route distinguisher (RD) and export route target (RT). This route is only advertised to fabric-internal peers. Because no Multiprotocol Label Switching (MPLS) label is allocated for this route, it does not get advertised to fabric-external peers.

This command does not require a license.

Example

The following example shows how to originate and redistribute a default route in BGP for a border leaf switch:

```
router bgp 100
  address-family ipv4 unicast
    default-information originate always rd 192.02.0.15:1 route-target 192.02.0.15:1
  address-family ipv6 unicast
    default-information originate always rd 192.02.0.15:1 route-target 192.02.0.15:1
```

To enable a leaf switch to import the configured default route into a leaf-switch VRF, you must use the **route-target import** command in the VRF address family configuration mode to configure a matching import RT. The following example shows how to redistribute a default route in BGP for a leaf switch:

```
vrf context foo
  address-family ipv4 unicast
    route-target import 192.02.0.15:1
```

define

To create user-defined parameters for a parameter list, use the **define** command in parameter list configuration mode. To remove user-defined parameters from a parameter list, use the **no** form of this command.

define *parameter-name* [**integer** | **ipaddr** | **ipv6addr** | **mac-addr** | **string**] [*value*]
no define *parameter-name* [**integer** | **ipaddr** | **ipv6addr** | **mac-addr** | **string**] [*value*]

Syntax Description		
	parameter-name	Parameter name.
	integer	(Optional) Specifies the data type as an integer.
	ipaddr	(Optional) Specifies the address as an IPv4 address.
	ipv6addr	(Optional) Specifies the address as an IPv6 address.
	mac-addr	(Optional) Specifies the address as a MAC address.
	string	(Optional) Specifies the data type as a string.
	value	(Optional) Parameter data type or address type value or parameter description. • Use the *value* argument with the parameter name to describe the parameter. • Use the *value* argument with a data type or address type to assign a value.

Command Default   User-defined parameters are not created.

Command Modes   Parameter list configuration (config-param-list)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines   User-defined parameters that you create using the **define** command are associated with a parameter list. A parameter list can be created using the **param-list** command.

You can use existing user-defined parameters and associate values (such as integer, IP address, and MAC address) to them.

Examples   The following example shows how to create a user-defined parameter param1 within the specified parameter list List1:

```
Device# configure terminal
Device(config)# param-list List1
Device(config-param-list)# define param1 integer 100
Device(config-param-list)# exit
```

encapsulation dot1Q

To enable IEEE 802.1Q encapsulation of traffic on a specified subinterface in a virtual LAN (VLAN), use the **encapsulation dot1q** command. To disable encapsulation, use the **no** form of this command.

encapsulation dot1Q *vlan-id*
no encapsulation dot1Q *vlan-id*

Syntax Description	*vlan-id*	Specifies the VLAN to set when the interface is in access mode. The range is from 1 to 4094 except for the VLANs reserved for internal switch use.

Command Default   No encapsulation

Command Modes   Subinterface configuration mode

Command History

Release	Modification
Cisco NX-OS 4.0	This command was introduced.
Cisco NX-OS 6.1(2)I2(2)	This command was integrated.

Usage Guidelines   IEEE 802.1Q encapsulation is configurable on Ethernet interfaces. IEEE 802.1Q is a standard protocol for interconnecting multiple switches and routers and for defining VLAN topologies.

Use the **encapsulation dot1q** command in subinterface range configuration mode to apply a VLAN ID to the subinterface.

This command does not require a license.

Examples

This example shows how to enable dot1Q encapsulation on a subinterface for VLAN 30:

```
Device(config-if)# interface fastethernet 4/1.100
Device(config-subif)# encapsulation dot1q 30
```

encapsulation dynamic

To enable the auto-configuration trigger on the interface for dot1q, vdp, lldp or vmtracker, use the **encapsulation dynamic** command in subinterface configuration mode. To disable the configuration, use the **no** form of this command.

encapsulation dynamic {**dot1q** | **vdp** | **lldp** | **vmtracker**}

no encapsulation dynamic {**dot1q** | **vdp** | **lldp** | **vmtracker**}

Syntax Description

dot1q	Enable do1q encapsulation.
vdp	Enable vdp encapsulation.
lldp	Enable lldp encapsulation.
vmtracker	Enable vmtracker encapsulation.

Command Default No encapsulation

Command Modes Subinterface configuration mode

Command History

Release	Modification
Cisco NX-OS 7.2(0)D1(1)	This command was introduced.
Cisco NX-OS 7.3(0)N1(1)	This command was integrated.

Usage Guidelines Auto-configuration trigger is not enabled on the interface by default. The auto-configuration trigger must be explicitly configured on the interface and only one auto-configuration trigger can be configured per interface. To change the trigger from one interface to another, ensure to disable the previous interface configuration.

Example

The following example shows how to enable dot1Q encapsulation on a subinterface:

```
switch(config-if)# interface fastethernet 4/1.100
switch(config-subif)# encapsulation dynamic dot1q 30
```

errdisable detect cause

To enable error-disable (errdisable) detection for an application, use the **errdisable detect cause** command in global configuration mode. To disable error-disable detection, use the **no** form of this command.

errdisable detect cause   {**acl-exception|all|link-flap|loopback**}
no errdisable detect cause   {**acl-exception|all|link-flap|loopback**}

Syntax Description		
	acl-exception	Enables error-disabled detection for access-list installation failures.
	all	Enables error-disabled detection for all causes.
	link-flap	Enables error-disabled detection on link-state flapping.
	loopback	Enables error-disabled detection on loopback detected by unidirectional link detection (UDLD).

Command Default   Error-disable detection is enabled.

Command Modes   Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 4.0	This command was introduced.
Cisco NX-OS 6.1(2)I2(2)	This command was integrated.
Cisco NX-OS 7.0(0)N1(1)	This command was modified.

Example

The following example shows how to enable the err-disabled detection on linkstate-flapping:

```
Device# configure terminal
Device(config)# errdisable detect cause link-flap
```

errdisable recovery cause

To enable automatic recovery of an application from an error-disabled (errdisable) state, use the **errdisable recovery cause** command in global configuration mode. To return to the default setting, use the **no** form of this command.

errdisable recovery cause {**all** | **bpduguard** | **failed-port-state** | **link-flap** | **loopback** | **psecure-violation** | **security-violation** | **storm-control** | **udld** | **vpc-peerlink**}
errdisable recovery cause {**all** | **bpduguard** | **failed-port-state** | **link-flap** | **loopback** | **psecure-violation** | **security-violation** | **storm-control** | **udld** | **vpc-peerlink**}

Syntax Description

all	Enables the timer to recover from all causes.
bpduguard	Enables the timer to recover from the bridge protocol data unit (BPDU) guard error disable state.
failed-port-state	Enables the timer to recover from the Spanning Tree Protocol (STP) set port state failure.
link-flap	Enables the timer to recover from link-state flapping.
loopback	Enables timer to recover from the loopback error disabled state detected by Unidirectional Link Detection (UDLD).
psecure-violation	Enables the timer to recover from the psecure-violation disable state.
security-violation	Enables the timer to recover from the 802.1x violation disable state.
storm-control	Enables the timer to recover from the storm control error-disabled state.
udld	Enables the timer to recover from the UDLD error-disabled state.
vpc-peerlink	Enables the timer to recover from an inconsistent virtual port channel (vPC) peer-link error-disabled state.

Command Default

Automatic recovery of any application from an error-disabled state is disabled.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 4.0	This command was introduced.
Cisco NX-OS 7.0(0)N1(1)	This command was modified.

Usage Guidelines

Use the **errdisable recovery cause** command to enable an automatic recovery of an application on the interface from an error-disabled state. This command tries to bring the interface out of the error-disabled state once all the causes have timed out. The interface automatically tries to come up again after 300 seconds. To change this interval, use the **errdisable recovery interval** command.

This command does not require a license.

Example

This example shows how to enable error disable recovery from linkstate-flapping:

```
Device# configure terminal
Device(config)# errdisable recovery cause link-flap
```

errdisable recovery interval

To configure the error disable recovery timer, use the **errdisable recovery interval** in global configuration mode. To remove this configuration, use the **no** form of this command.

errdisable recovery interval *interval*
no errdisable recovery interval

Syntax Description

interval	Timer interval in seconds. The range is from 30 to 65535.

Command Default

The default is 300 seconds.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 4.0	This command was introduced.

Usage Guidelines

Use the **errdisable recovery interval** command to configure the recovery timer. This command does not require a license.

Example

This example shows how to configure the recovery timer:

```
Device# configure terminal
Device(config)# errdisable recovery interval 32
```

evb mac

To configure the Virtual Station Interface (VSI) Discovery and Configuration Protocol (VDP) multicast MAC address for the Edge Virtual Bridge (EVB) feature on a device, use the **evb mac** command in global configuration mode. To return to the default, use the **no** form of this command.

evb mac *mac-address*
no evb mac *mac-address*

Syntax Description	*mac-address*	VDP multicast MAC address.

Command Default The VDP multicast MAC address for EVB is not configured.

Command Modes Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines To configure the device to use a VDP multicast MAC address, the EVB feature needs to be enabled globally on the device using the **feature evb** command.

Example

This example shows how to configure a VDP multicast MAC address:

```
Device(config)# feature evb
Device(config)# evb mac 01-23-45-67-89-ab
```

evb reinit-keep-alive

To configure the Virtual Station Interface (VSI) Discovery and Configuration protocol (VDP) keepalive parameter for the Edge Virtual Bridging (EVB) feature on a device, use the **evb reinit-keep-alive** command in global configuration mode. To return to the default, use the **no** form of this command.

evb reinit-keep-alive *timer*
no evb reinit-keep-alive *timer*

Syntax Description

| *timer* | Timer exponent to calculate the keepalive time in seconds. The range is from 22 to 31. |

Command Default

The default reinit-keep-alive timer exponent is 25.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines

Use the **feature evb** command to enable the EVB feature globally on the device before configuring the keepalive parameter. After a VDP request is successful, a refresh request is expected within the keep-alive time. If the refresh request is not received within the keepalive time, device revokes the configuration changes. You must configure the correct reinit-keepalive EVB parameter to align with the network scale as each virtual machine contributes a refresh message as per the keepalive time.

Example

The following examples shows how to configure the keepalive parameter for EVB:

```
Device(config)# feature evb
Device(config)# evb reinit-keep-alive 22
```

evb resource-wait-delay

To configure the Virtual Station Interface (VSI) Discovery and Configuration protocol (VDP) resource wait delay parameter for the Edge Virtual Bridge (EVB) feature on a device, use the **evb resource-wait-delay** command in global configuration mode. To return to the default, use the **no** form of this command.

evb resource-wait-delay *timer*
no evb resource-wait-delay *timer*

Syntax Description	*timer*	Timer exponent to calculate the actual delay in seconds. The range is from 22 to 31.

Command Default

The default resource wait delay timer exponent is 25.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines

Use the **feature evb** command to enable the EVB feature globally on the device before configuring the resource wait delay parameter.

When a VDP request is received, a series of configuration changes are triggered on the device. The resource-wait-delay parameter indicates the maximum waiting time for a device to complete the configuration change. If the change is not completed within the wait delay parameter, then the VDP request fails. You can configure the resource-wait-delay EVB parameter to align with specific configuration scale and requirement.

Example

The following example shows how to configure the VDP resource wait delay parameter:

```
Device(config)# feature evb
Device(config)# evb resource-wait-delay 22
```

evpn

To create an EVPN instance for a Layer-2 VNI on a leaf switch and configure a route distinguisher and route targets (for the switch-VNI combination), use the **evpn** command in global configuration mode. To disable this feature, use the **no** form of the command.

evpn

no evpn

Syntax Description	This command has no arguments or keywords.
Command Default	An EVPN instance is not available unless you create it manually or through auto-configuration.
Command Modes	Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.3(0)N1(1)	This command was introduced.
Cisco NX-OS 7.3(0)D1(1)	

Usage Guidelines

This command enables you to enter the *config-evpn* mode. Then (using the **vni l2** command), you need to specify the Layer-2 VNI for which RDs and RTs are to be created, and create the RDs/RTs. This is required to advertise the MAC addresses in EVPN route type 2.

Example

The following example shows how to enable a Layer-2 VNI EVPN instance on a leaf switch:

```
switch(config)# evpn
switch(config-evpn)# vni 6001 l2
switch(config-evpn-evi)# rd auto
switch(config-evpn-evi)# route-target import auto
switch(config-evpn-evi)# route-target export auto
```

export-gateway-ip

To enable BGP to advertise the gateway IP in the EVPN Type-5 routes, use the **export-gateway-ip** command. To disable this feature, use the **no** form of this command.

export-gateway-ip
no export-gateway-ip

Syntax Description	This command has no arguments or keywords.
Command Default	None
Command Modes	Router VRF Address Family configuration (config-router-vrf-af)

Command History

Release	Modification
8.3(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Example

The following example enables BGP to advertise the gateway IP in EVPN Type-5 routes:

```
switch(config)# router bgp 500000
switch(config-router)# vrf cust_1
switch(config-router-vrf)# address-family ipv4 unicast
switch(config-router-vrf-af)# export-gateway-ip
```

Example

The following example disables this feature:

```
switch(config-router-vrf-af)# no export-gateway-ip
```

fabric database auto-pull

To auto provision the network and tenant configuration on supported Cisco Nexus switches in a Cisco Programmable Fabric deployment, use the **fabric database auto-pull** command in privileged EXEC mode.

fabric database auto-pull {**dot1q** *dot1q_id*|**vni** *vni_id*} **interface** *interface-id*

Syntax Description		
dot1q *dot1q-id*	Specifies that the tenant be provisioned based on the IEEE 802.1Q (dot1q) tag identifier of the Cisco Programmable Fabric host.	
	Note	**dot1q** *dot1q-id* requires the fabric database mobility domain to be defined first.
vni *vni-id*	Specifies that the tenant be provisioned based on the virtual network identifier (VNI) of the Cisco Programmable Fabric host.	
	The range is from 4096 to 16773119.	
	Note	This **keyword** and *argument* combination is not supported on the Cisco Nexus 5500 Platform Switches.
interface *interface-id*	Specifies the interface to which the host is associated. The allowed interfaces are Ethernet and port channel.	

Command Modes   Privileged EXEC (#)

Command History	Release	Modification
	Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
	Cisco NX-OS 7.0(2)N1(1)	This command was supported in Cisco Nexus 5500 Platform Switches.
	Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines   Use this command if auto configuration triggers such as data plane or VDP are not available for a Cisco Nexus 5500 Platform Switch, or provisioning is proactive, that is, before the host comes online.

Note   This command determines the recovery and clear timers.

Use the **fabric database auto-pull** command to trigger the command-line interface-based auto configuration, and preprovision the switch configurations for the specified IEEE 802.1Q (dot1q) or virtual network identifier (VNI) of the host.

Command-line interface-based auto configuration is the only supported configuration option for Cisco Nexus 55xx switches with Cisco NX-OS Release 7.0(2)N1(1) and later releases. Before Cisco NX-OS Release 7.0(2)N1(1), you had to manually provision the tenant switches.

The **fabric database auto-pull** command must be executed on all the switches where auto configuration is required, including both the switches in a virtual port channel+ (vPC+) topology.

If you are using a script to issue this command, make sure that the configuration has successfully completed before starting the next request.

This command is a part of configuration profiles, and will only appear in a running configuration if the **show running-config expand-port-profile** command is used.

To save the auto configuration, use the **copy running start** command on all the switches, including both the switches in a vPC+ topology.

Use the **interface** *interface-id* keyword and argument to allow for a per-interface profile map.

Note   Only switchport interfaces are permitted.

Examples

The following example shows how to configure the **fabric database auto-pull** command:

```
switch# fabric database auto-pull dot1q 1000 interface e1/1
switch# fabric database auto-pull vni 110000 interface e1/1
```

   • In the following example, if interface ethernet 2/4 is specified, then profile map 100 will be used. If ethernet 2/5 is specified, profile map 200 will be used:

```
fabric database profile-map 100
  ethernet-tag encapsulation dot1q 50 dynamic
fabric database profile-map 200
  ethernet-tag encapsulation dot1q 50 static tenant-tmpl
!
interface Ethernet2/4
  fabric database inherit-profile-map 100
!
interface Ethernet2/5
  fabric database inherit-profile-map 200
```

fabric database auto-pull dci

To trigger the Node to extract an entry from LDAP, use the **fabric database auto-pull dci** command in global configuration mode. You must configure the **feature-set fabric** and **feature fabric forwarding** commands before you can configure the **fabric database dci** command.

fabric database auto-pull dci vrf *vrf-name* **node-id** *ipaddr* **peer-id** *ipaddr*

Syntax Description

vrf *vrf-name*	Deploys the VRF at this node. It is one of the three primary keys to the LDAP entry.
node-id *ipaddr*	Specifies the IP address to be used to identify this switch (it is applicable to both border and dc edge router) in LDAP.
	The value of *ipaddr* must match the IP address that you configured in the Cisco Prime Data Center Network Manager (DCNM) when you set up your topology.
peer-id *ipaddr*	Specifies the node ID of the peer node in VRF-lite. The value for *ipaddr* is as follows:
	• For a VRF-lite or CE-PE, the value is the IP address of the separate Edge Router device that pairs with the border leaf switch.

Command Default

The new partition (VRF) is not configured on a tenant.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.1(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines

Cisco Programmable Fabric communicates to other Cisco Programmable Fabric devices and to the external networks through one or more border leaf switches. If a border leaf does not support Edge Router functionalities, such as Multi Protocol Label Switching or virtual private network, Virtual Private LAN Service (VPLS), or Overlay Transport Virtualization (OTV), a separate Edge Router device pairs with the border leaf switch to enable Layer 3 connectivity to the end points in the same VRF in another fabric. This is called a VRF-lite or CE-PE.

The **fabric database auto-pull dci** command creates an Edge Router VRF-specific auto configuration on the border leafs or the Edge Router devices or both, and enables Layer 3 connectivity to end points in the same VRF in another fabric or to the outside world (WAN), whether the other fabric is geographically collocated or not.

This command is supported on the border leaf switch in a Edge Router in a VRF-lite or CE-PE solution.

Note   EL2 license is required for fabric forwarding. For GW and auto-config, L3 Base and LAN Enterprise licenses are required with no grace-period for L3 Base.

Examples

The following sample shows how to create connectivity outside fabric using the **fabric database auto-pull dci** command:

```
switch(config)# fabric database auto-pull dci vrf VRF1 node-id 1.1.1.1 peer-id 2.2.2.2
```

fabric database mobility-domain

To configure the mobility domain name, use the **fabric database mobility-domain** command in global configuration mode. To remove the mobility domain name, use the **no** form of this command.

fabric database mobility-domain *domain-name*
no fabric database mobility-domain *domain-name*

Syntax Description

domain-name	Mobility domain name up to 128 characters.

Command Default

The mobility domain name is not configured.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines

Use the **fabric database mobility-domain** command to configure the mobility domain name that is used to retrieve the profile name and parameters, if the profiles are stored remotely. Profiles stored remotely are indexed by the mobility domain and VLAN pair.

Mobility domain uses only data plane MAC learning as the network auto-configuration trigger.

The specified *domain-name* must match the *mobility domain ID* specified in the Cisco Prime DCNM as part of the workload-automation settings. If they do not match, the auto-configuration profile will not be populated with the appropriate parameters (for example, segment-IP or subnet).

Mobility domain requires either 802.1Q trunk header transport or, if an access-port is used, a trunk with a native VLAN and matching allowed VLAN between the host (server) and the leaf switch.

Example

The following example shows how to configure the mobility domain name:

```
switch(config)# feature-set fabric
switch(config)# feature fabric forwarding
switch(config)# fabric database mobility-domain mymobilitydomain
```

fabric database override-profile

To configure fabric database override network profile name, use the **fabric database override-profile** command in global configuration mode. To remove the override profile name, use the **no** form of this command.

fabric database override-profile *ProfileName*

no fabric database override-profile *ProfileName*

Syntax Description	*ProfileName* Name of the network profile to be changed.

Command Default
The profile returned from the Lightweight Directory Access Protocol (LDAP) is honored as part of the auto-configuration trigger.

Command Modes
Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.1(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines
An example use-case for this command is the usage on a Cisco Nexus 5500 Platform Switch that does not support segment ID. Consequently, the Cisco Nexus 5500 Platform Switch can only be a Layer-2 leaf. This command-line interface will force Cisco Nexus 5500 Platform Switches to always use a specified profile regardless of the profile associated with the network entry in the LDAP database.

Examples

The following example shows how to override a profile name using the **fabric database override-profile** command:

```
Device(config)# fabric database override-profile Profile1
```

The following example shows how to auto configure Cisco Nexus 5500 series switches using the **fabric database override-profile** command:

```
Device(config)# fabric database override-profile defaultNetworkL2GblVlanProfile
```

fabric database override-vrf-profile

When a particular switch needs to use a different include profile for tenant, than what is specified in the tenant profile, use the **fabric database override-vrf-profile** command in global configuration mode. To disable the overridden profile name, use the **no** form of this command.

fabric database override-vrf-profile *vrfProfileName*
no fabric database override-vrf-profile *vrfProfileName*

Syntax Description

vrfProfileName	Name of the network profile to be changed.

Command Default

The profile returned from the Lightweight Directory Access Protocol (LDAP) is honored as part of the auto-configuration trigger.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.1(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines

When you configure a different include profile name for a tenant, it works by substituting the profile specified in the LDAP database locally at the switch in which this command is configured.

Examples

The following example shows how the border leaf can use the **fabric database override-vrf-profile** command to specify a border leaf specific version of an include profile name:

```
Device(config)# fabric database override-vrf-profile vrf-common-universal-bl
```

fabric database profile-map

To configure a fabric database profile map, use the **fabric database profile-map** command in global configuration mode. To disable a fabric database profile map, use the **no** form of this command.

fabric database profile-map {**global***id*}

no fabric database profile-map {**global***id*}

Syntax Description	**global**	Displays the global profile applicable to all the interfaces.
	id	Profile map ID.

Command Default A profile map is not assigned.

Command Modes Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.1(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Examples

The following example shows how to configure Leaf map by using the **fabric database profile-map** command:

```
Device(config)# fabric database profile-map global
Device(config-profile-map-global)# ethernet-tag encapsulation dot1q default dynamic
Device(config-profile-map-global)# ethernet-tag encapsulation vni default dynamic
Device(config-profile-map-global)# vdp vni default dynamic
Device(config-profile-map-global)# vdp dot1q default dynamic
```

The following sample shows how to configure Border Leaf map by using the **fabric database profile-map** command:

```
Device(config)# fabric database profile-map global
Device(config-profile-map-global)# vrf default dynamic
```

fabric database refresh

To refresh the database, use the **fabric database refresh** command in privileged EXEC mode.

fabric database refresh {**dot1q|include-vrf|vni**}

Syntax Description		
	dot1q	Displays the dot1q encapsulation.
	include-vrf	Displays the include vrf name.
	vni	Displays the Virtual Network Identifier (VNI).

Command Modes Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.1(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines In the virtual port channel (vPC) setup, the **fabric database refresh** command is supported only on the vPC primary switch. Also this command requires a matching vni or dot1q hosts. You can use the **show fabric database host** command to list active vni or dot1q hosts.

Example

The following example shows how to refresh dot1q by using the **fabric database refresh** command:

```
Device# fabric database refresh dot1q 50
```

fabric database server primary

To configure which Lightweight Directory Access Protocol (LDAP) server is the primary LDAP server, use the **fabric database server primary** command in global configuration mode.

To disable the primary LDAP server, use the no form of this command.

fabric database server primary {**host** *server--host* | **ip** *server-ip* }

no fabric database server primary {**host** *server--host* | **ip** *server-ip* }

Syntax Description		
host *server--host*		Specifies the hostname of the server.
server *server-ip*		Specifies the IP address of the server.

Command Modes   Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.3(0)N1(1)	This command was introduced.
Cisco NX-OS 7.3(0)D1(1)	

Usage Guidelines   If the active LDAP server used is not the primary server, then the switch would poll the primary LDAP server and will switch to the primary server once the communication with the primary server is successful. This command is optional and it should be configured in addition to the LDAP server configuration (**fabric database type**) command.

✎

Note   The host or IP configuration of this command must match with the host or IP configuration of LDAP server configuration (**fabric database type**) command.

Example

The following example shows how to configure the primary LDAP server, using the **fabric database server primary** command.

```
switch(config)# fabric database server primary host ldapserver-dcnm.cisco.com vrf management
```

fabric database timer re-add

To configure the fabric database timers, use the **fabric database timer** command in global configuration mode. To disable fabric database timers, use the **no** form of this command.

fabric database timer re-add *{timeout}*
no fabric database timer re-add *{timeout}*

Syntax Description	*timeout* Displays the delay, in minutes. The range is from 0 to 1440. The default is 2.

Command Default	The default database timer is applicable.

Command Modes	Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.2(0)D1(1)	This command was introduced.
Cisco NX-OS 7.3(0)N1(1)	This command was modified.

Examples

The following example shows how to configure database timer value, in minutes, by using the **fabric database timer** command:

```
switch(config)# fabric database timer re-add 5
```

fabric database type

To configure the external database, use the **fabric database type** command in global configuration mode. To remove this configuration, use the **no** form of this command

fabric database type {**network|profile**}
no fabric database type {**network|profile**}

Syntax Description		
	network	Configures the network database.
	profile	Configures the config-profile database.

Command Default   The external database is not configured.

Command Modes   Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Example

The following example shows how to configure a database type:

```
Device# configure terminal
Device(config)# fabric database type network
Device(config)# fabric database type profile
```

fabric forwarding anycast-gateway-mac

To specify the MAC address of the server facing ports across all leaf nodes, use the **fabric forwarding anycast-gateway-mac** command in global configuration mode. To disable the anycast gateway MAC address, use the **no** form of this command.

fabric forwarding anycast-gateway-mac *mac-address*
no fabric forwarding anycast-gateway-mac *mac-address*

Syntax Description

| *mac-address* | Anycast gateway MAC address of the switch. |

Command Default

The anycast gateway MAC address is not configured.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines

The anycast gateway MAC address is used per interface; hence, it is replicated across all the switch virtual interfaces (SVI) that are supporting proxy gateway or anycast gateway.

Example

The following example shows how to configure the anycast gateway MAC address:

```
Device> enable
Device# configure terminal
Device(config)# install feature-set fabric
Device(config)# feature-set fabric
Device(config)# fabric forwarding anycast-gateway-mac EE:EE:EE:EE:EE:EE
```

fabric forwarding limit-vlan-mac

To configure the maximum number of IPs per MAC in any VLAN or segment or bridge-domain, use the **fabric forwarding limit-vlan-mac** command in global configuration mode.

fabric forwarding limit-vlan-mac *<value>*

Syntax Description	*value* Maximum number of end hosts that are allowed to have the same mapping (VLAN or MAC) in a virtual routing and forwarding (VRF). The range is from 5 to 2048.

Command Default   None

Command Modes   Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.1(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Examples

The following example shows how to configure the maximum number of end hosts allowed to have the same mapping (VLAN or MAC) in a given VRF by using the **fabric forwarding limit-vlan-mac** command:

```
Device(config)# fabric forwarding limit-vlan-mac 7
```

fabric forwarding mode anycast-gateway

To enable the distributed anycast-gateway function on a leaf/ToR switch in a VXLAN EVPN fabric, use the **fabric forwarding mode anycast-gateway** command in interface configuration mode. To disable the distributed anycast-gateway, use the **no** form of the command.

fabric forwarding mode anycast-gateway

no fabric forwarding mode anycast-gateway

Syntax Description	This command has no arguments or keywords.

Command Default	Distributed anycast-gateway is not enabled on the leaf/ToR switch in a VXLAN EVPN fabric.

Command Modes	Interface configuration (config-if)

Command History

Release	Modification
Cisco NX-OS 7.2(0)D1(1)	This command was introduced.
Cisco NX-OS 7.3(0)N1(1)	This command was integrated.

Example

The following example shows how to enable distributed anycast-gateway on the leaf/ToR switch in a VXLAN EVPN fabric:

```
switch(config)# interface vlan 10
switch(config-if)# fabric forwarding mode anycast-gateway
```

fabric forwarding port-l2dci

To configure on the layer-2 trunk port connected out from the border-leaf, use the **fabric forwarding port-l2dci** command in interface configuration mode. To disable this configuration, use the **no** form of this command.

fabric forwarding port-l2dci
no fabric forwarding port-l2dci

Syntax Description   This command has no arguments or keywords.

Command Default   Port configuration to DCI remains disabled.

Command Modes   Interface configuration (config-if)

Command History

Release	Modification
Cisco NX-OS 7.1(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines   For layer-2 extension across data center fabrics, various common technologies such as VPLS, OTV, and so on are employed. When a tenant subnet spans across data center fabrics, ARP (Address Resolution Protocol) and IPv6 ND (Neighbor Discovery) packets received on a border leaf from hosts connected to other data centers should NOT be treated as if coming from local hosts (also known as the directly attached ones).

When you configure this command, clients are notified that the corresponding port is connected for layer 2 data center interconnection. After this notification, the ARP and Neighbor Discovery process will ignore ARP and Neighbor Discovery packets ingress on the port and HMM is not triggered. to add the route to ARP and Neighbor Discovery.

Examples

The following example shows how to configure a port connection:

```
Device(config)# interface port-channel 43
Device(config-if)# fabric forwarding port-l2dci
```

fabric forwarding switch-role

To specify the role of a device in the Cisco Programmable Fabric network, use the **fabric forwarding switch-role** command in global configuration mode. To disable the role specified for a device, use the **no** form of the command.

fabric forwarding switch-role {**border** [**leaf** | **spine** | **dci-node**] | **leaf** [**border**] | **spine** [**border**] | **dci-node** [**border**] }
no fabric forwarding switch-role

Syntax Description		
border	(Optional) Specifies that the device is a border switch.	
leaf	(Optional) Specifies that the device functions as a leaf switch.	
spine	(Optional) Specifies that the device functions as a spine switch.	
dci-node	(Optional) Specifies that the device is a Cisco Data Center Interconnect (DCI) node.	
	Use this keyword with the **border** keyword to specify that the device is both a Cisco Programmable Fabric border-leaf switch and a DCI node.	

Command Default

The device is configured as a Cisco Programmable Fabric leaf switch.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.1(0)N1(1)	This command was modified. The **dci-node** keyword was added.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines

You can configure a switch to act like a border (leaf or spine), spine, or leaf switch. A device sends notifications to registered components whenever there is a change in the role of a device. You can specify a combination of a border and a leaf or a spine on a device. Both Border Gateway Protocol (BGP) and Intermediate System-to-Intermediate System (ISIS) protocol restart when the role of a device changes.

When the role of a node is changed to spine, the FabricPath IS-IS root priority of that node is updated to 128. (The default root priority is 64.) The role of spine introduces a change in the FabricPath root priority for the MDT-Root.

Note   You can manually configure the FabricPath IS-IS root priority of any node.

This command is supported only on Layer-3 Cisco Programmable Fabric leaf switches (Cisco Nexus 5600/6000 series switches); it is not supported on Layer-2 Cisco Programmable Fabric switches. The command is not supported on the Cisco Nexus 5500 Platform.

Examples

The following example shows how to specify a device to be a border-spine switch:

Note The release Cisco NX-OS 7.1(0)N1(1) does not allow switch-role change, which was applicable in the previous release Cisco NX-OS 7.0(0)N1(1). You must execute the write erase command to perform a switch-role, else the switch-role command gets rejected.

```
switch# configure terminal
switch(config)# install feature-set fabric
switch(config)# feature-set fabric
switch(config)# feature fabric forwarding
switch(config)# fabric forwarding switch-role border spine
```

The following example shows how to specify a device to be a border-leaf switch:

```
switch# configure terminal
switch(config)# install feature-set fabric
switch(config)# feature-set fabric
switch(config)# feature fabric forwarding
switch(config)# fabric forwarding switch-role border leaf
```

feature evb

To enable the Edge Virtual Bridging (EVB) feature on a device, use the **feature evb** command in global configuration mode. To disable EVB feature, use the **no** form of this command.

feature evb
no feature evb

Syntax Description   This command has no arguments or keywords.

Command Default   EVB is disabled.

Command Modes   Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines   You can enable or disable EVB globally on a device. You must use the **feature evb** command to enable and configure the EVB parameters.

Example

This example shows how to enable the EVB feature on a device:

```
Device(config)# feature evb
```

feature ngoam

To enable the VXLAN operations, administration, and maintenance (OAM) feature on the Cisco Nexus device, use the **feature ngoam** command in global configuration mode.

To disable VXLAN OAM feature, use the no form of this command.

feature ngoam

no feature ngoam

Syntax Description	This command has no arguments or keywords.

Command Modes   Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.3(0)N1(1)	This command was introduced.
Cisco NX-OS 7.3(0)D1(1)	

Example

The following example shows how to configure VXLAN OAM feature using the **feature ngoam** command.

```
switch# feature ngoam
```

feature nv overlay

To enable the VXLAN functionality globally on the switch, use the **feature nv overlay** command in global configuration mode. To disable this feature, use the **no** form of the command.

feature nv overlay

no feature nv overlay

Syntax Description	This command has no arguments or keywords.

Command Default	VXLAN functionality is not enabled.

Command Modes	Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 6.1(2)I2(2)	This command was introduced.
Cisco NX-OS 7.3(0)N1(1)	This command was integrated.
Cisco NX-OS 7.3(0)D1(1)	

Example

The following example shows how to enable the VXLAN functionality globally on the switch:

```
switch(config)# feature nv overlay
```

feature plb

To enable the pervasive load balancing function, use the **feature plb** command in global configuration mode. To disable the function, use the **no** form of the command.

feature plb

no feature plb

Syntax Description	This command has no arguments or keywords.
Command Default	The pervasive load balancing (PLB) function is not enabled by default.
Command Modes	Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 8.0(1)	This command was introduced.

Usage Guidelines   None.

Example

This example shows how to configure the pervasive load balancing function:

```
switch(config)# feature plb
```

Related Commands

Command	Description
plb	Creates a PLB service instance and parameters for it.
plb l3-device-group	Creates a PLB device group for balancing server or appliance loads.
show plb statistics	Displays PLB statistics.

feature vmtracker

To enable VM Tracker auto configuration trigger you must enable VM Tracker feature, use the **feature vmtracker** command in global configuration mode. To disable the VM Tracker feature, use the **no** form of this command.

feature vmtracker

no feature vmtracker

Syntax Description	This command has no arguments or keywords.

Command Modes	Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.1(0)N1(1a)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Example

The following example shows how to enable VM Tracker feature:

```
Switch(config)# feature vmtracker
Switch(config)# vmtracker fabric auto-config
```

feature vn-segment-vlan-based

To enable the (VLAN)-based virtual network (VN) segment feature on a device, use the **feature vn-segment-vlan-based** command in global configuration mode. To disable VLAN-based VN segment feature, use the **no** form of this command.

feature vn-segment-vlan-based
no feature vn-segment-vlan-based

Syntax Description	This command has no arguments or keywords.
Command Default	The VLAN-based virtual network segment is disabled.
Command Modes	Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 6.1(2)I2(2)	This command was introduced.
Cisco NX-OS 7.0(0)N1(1)	This command was integrated.

Usage Guidelines You can enable or disable the VLAN-based VN segment feature globally on a device. The VLAN-based VN segment feature is enabled only if the feature-set fabricpath is enabled on the device.

Example

This example shows how to enable the VLAN-based VN segment feature on a device:

```
Device(config)# feature vn-segment-vlan-based
```

feature-set fabric

To enable configuring host mobility-specific commands, use the **feature-set fabric** command in global configuration mode.

feature-set fabric

Syntax Description   This command has no arguments or keywords.

Command Modes   Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 5.1(1)	This command was introduced.
Cisco NX-OS 7.0(0)N1(1)	This command was integrated.

Usage Guidelines   This command must be configured before configuring host mobility-specific commands.

Example

The following example shows how to enable configuring host mobility-specific commands:

```
switch(config)# feature-set fabric
```

host-reachability protocol bgp

To enable BGP reachability for a leaf switch (or VTEP) interface in a VXLAN EVPN fabric, use the **host-reachability protocol bgp** command in NVE interface configuration mode. To disable this feature, use the **no** form of the command.

host-reachability protocol bgp

no host-reachability protocol bgp

| Syntax Description | This command has no arguments or keywords. |

Command Default   This function is disabled.

Command Modes   NVE interface configuration mode (config-if-nve).

Command History

Release	Modification
Cisco NX-OS 7.3(0)N1(1)	This command was introduced.
Cisco NX-OS 7.3(0)D1(1)	

Usage Guidelines   Enabling this command ensures that the leaf switch or VTEP interface is reachable through BGP, which is essential for communication with the BGP EVPN control plane.

Example

The following example shows how to enable BGP reachability for a leaf switch or VTEP interface in a VXLAN EVPN fabric:

```
switch(config)# interface nve 1
switch(config-if-nve)# host-reachability protocol bgp
```

import l2vpn evpn reoriginate

To enable importing of routes in the BGP EVPN control plane to the border leaf or border spine switch in a VXLAN setup, use the **import l2vpn evpn reoriginate**command in the neighbor vpnv4 unicast address family configuration mode. To disable this feature, use the **no** form of the command.

import l2vpn evpn reoriginate

no import l2vpn evpn reoriginate

Syntax Description	This command has no arguments or keywords.

Command Default	None

Command Modes	Neighbor vpnv4 unicast address family (config-router-neighbor-af)

Command History

Release	Modification
Cisco NX-OS 7.3(0)N1(1)	This command was introduced.
Cisco NX-OS 7.3(0)D1(1)	

Usage Guidelines

The **import l2vpn evpn reoriginate** command is used for the DCI function. Using this command, you can import routes within the VXLAN EVPN fabric to the border leaf/spine switch. This enables forwarding of L2VPN routes towards the WAN edge device. This way, networks/devices outside the VXLAN fabric (WAN, a remote data center, etc), can communicate with entities within the data center fabric.

Example

This example shows how to enable importing of routes in the BGP EVPN control plane to the border leaf or border spine switch in a VXLAN setup.

```
switch(config)# router bgp 100
switch(config-router)# neighbor 1.1.1.1 remote-as 200
switch(config-router-neighbor)# address-family vpnv4 unicast
switch(config-router-neighbor-af)# import l2vpn evpn reoriginate
```

import vpn unicast reoriginate

To enable importing of VPNv4 and VPNv6 routes from the WAN edge device to the border leaf or border spine switch of a VXLAN setup, use the **import vpn unicast reoriginate** command in the neighbor l2vpn evpn address family configuration mode. To disable this feature, use the **no** form of the command.

import vpn unicast reoriginate

noimport vpn unicast reoriginate

Syntax Description	This command has no arguments or keywords.

Command Default	None

Command Modes	Neighbor l2vpn evpn address family (config-router-neighbor-af)

Command History	**Release**	**Modification**
	Cisco NX-OS 7.3(0)N1(1)	This command was introduced
	Cisco NX-OS 7.3(0)D1(1)	

Usage Guidelines	The **import vpn unicast reoriginate** command is used for the DCI function. Using this command, you can import VPN routes coming in from the WAN edge device on the border leaf/spine switch into the VXLAN EVPN fabric. This command enables forwarding of VPN routes into devices within the VXLAN fabric. This way, leaf switches (VTEPs) in the VXLAN data center fabric can communicate with devices that are outside the data center network (a remote data center, Classical Ethernet pod, etc).

Example

This example shows how to enable importing of VPNv4 and VPNv6 routes from the WAN edge device to the border leaf or border spine switch of a VXLAN setup.

```
switch(config)# router bgp 100
switch(config-router-neighbor)# neighbor 2.2.2.1 remote-as 100
switch(config-router-neighbor)# address-family l2vpn evpn
switch(config-router-neighbor-af)# import vpn unicast reoriginate
```

include profile

To configure a set of VLAN profile instances to refer to a common virtual routing and forwarding (VRF) instance, use the **include profile** command in profile configuration mode. To remove the reference to a common VRF instance, use the **no** form of this command.

include profile *profile-name*
no include profile *profile-name*

Syntax Description	*profile-name*	Name of the profile. The maximum number of characters allowed is 80.

Command Default   VLAN profile instances do not refer to a common VRF instance.

Command Modes   Profile configuration (config-profile)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines   Use the **include profile** command to configure a set of VRF profile instances to refer to a common VRF instance. For example, a set of VLANs can refer to the same VLAN VRF instance. Any configuration after you configure the first VLAN VRF instance will increment the reference count of the include instance. The configuration related to the VRF stays until the last instance referring to the VRF is present.

Example

The following example shows how to configure a set of VLAN profile instances to refer to a common VRF instance:

```
Device> enable
Device# configure profile p1
Device(config-profile)# configure profile p2
Device(config-profile)# include profile p1
```

install feature-set fabric

To enable configuring host mobility-specific commands, use the **install feature-set fabric** command in global configuration mode.

install feature-set fabric

Syntax Description This command has no arguments or keywords.

Command Modes Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 5.1(1)	This command was introduced.
Cisco NX-OS 7.0(0)N1(1)	This command was integrated.

Usage Guidelines This command needs to be configured before configuring host mobility-specific commands.

Example

The following example shows how to enable configuring host mobility-specific commands:

```
switch(config)# install feature-set fabric
```

instance

To create an instance of a user-defined parameter list, use the **instance** command in parameter list configuration mode. To remove an instance of a user-defined parameter list, use the **no** form of this command.

instance *instance-name*
no instance *instance-name*

Syntax Description	*instance-name*	Parameter-list instance name.

Command Default   A user-defined parameter-list instance is not created.

Command Modes   Parameter list configuration (config-param-list)

Command History

Release	Modification
Cisco NX-OS 5.0(1.13)	This command was introduced.
Cisco NX-OS 6.1(2)I2(2)	This command was integrated.
Cisco NX-OS 7.0(0)N1(1)	

Usage Guidelines   You can create instances of a parameter list for different hosts with various values. When you create an instance of a parameter list using the **instance** command, the device enters parameter instance configuration (config-param-inst) mode. The following options are available in this mode:

- set - Sets the parameter value.
- this - Displays information about the instance.
- verify - Verifies the instance with the specified device-profile.
- end - Exits parameter instance configuration mode and returns to EXEC mode.
- exit - Exits parameter instance configuration mode and returns to parameter list configuration mode.
- pop - Pops the mode from the stack or restores it from the specified name.
- push - Pushes the current mode to the stack or saves it with the specified name.
- where - Displays instance-related details (such as parameter-list name, instance name, and so on).

Example

The following example shows to create an instance inst1 under the user-defined parameter list List1:

```
Device# configure terminal
Device(config)# param-list List1
Device(config-param-list)# instance inst1
Device(config-param-list)# exit
```

ip igmp snooping

To disable a NVE static router port interface, use the command, use the **ip igmp snooping disable-nve-static-router-port** command in global configuration mode.

ip igmp snooping disable-nve-static-router-port

Syntax Description	This command has no arguments or keywords.

Command Modes	Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 6.1(2)I2(2)	This command was introduced.

Usage Guidelines

When IGMP snooping is globally enabled, use **ip igmp snooping** command, IGMP snooping is enabled on all existing VLAN interfaces. When IGMP snooping is globally disabled, IGMP snooping is disabled on all existing VLAN interfaces. A sample is given below:

Example

The following example shows how to disable NVE static router port interface:

```
switch(config)# ip igmp snooping
switch(config)# ip igmp snooping disable-nve-static-router-port
```

lldp fabric auto-config

To enable the Link Layer Discovery Protocol (LLDP) auto-configuration feature, use the **lldp fabric auto-config** command in global configuration mode. To disable the LLDP feature, use the **no** form of this command.

lldp fabric auto-config

no lldp fabric auto-config

Syntax Description	This command has no arguments or keywords.

Command Modes	Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.3(0)N1(1)	This command was introduced.
Cisco NX-OS 7.3(0)D1(1)	

Example

The following example shows how to enable LLDP feature:

```
Switch(config)# lldp fabric auto-config
```

logging level evb

To enable the system log (syslog) filter level for an Edge Virtual Bridging (EVB) session, use the **logging level evb** command in global configuration mode. To disable the syslog filter level for EVB, use the **no** form of this command.

logging level evb *log-level*

no logging level evb *log-level*

Syntax Description	*log-level*	Sets the severity for the syslog filter level. The level values ranges from 0 to 7. The severity associated with the values are:
		• 0-emerg—Sets severity levels for emergencies.
		• 1-alert—Sets severity levels for alerts.
		• 2-crit—Sets severity levels for critical issues.
		• 3-err—Sets severity levels for errors.
		• 4-warn—Sets severity levels for warnings.
		• 5-notif—Sets severity levels for notifications.
		• 6-inform—Sets severity levels for session information.
		• 7-debug—Sets severity levels for debugs.

Command Default   Syslog filter level with severity value 5 is enabled.

Command Modes   Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 4.0(1)	This command was introduced.
Cisco NX-OS 7.0(0)N1(1)	This command was integrated.

Usage Guidelines   Use the **feature evb** command to enable the EVB session. This, in turn, enables the **evb** keyword in the **logging level** command on the device.

Examples

The following example shows how to set a syslog filter level of 4 for an EVB session:

```
Device# configure terminal
Device(config)# feature evb
Device(config)# logging level evb 4
Device(config)# end
```

The following example displays the default severity level and the user-defined syslog filter level for an EVB session:

```
Device# show logging level evb
```

```
Facility          Default Severity     Current Session Severity
--------          ----------------     ------------------------
evb               5                    4

0(emergencies)    1(alerts)       2(critical)
3(errors)         4(warnings)     5(notifications)
6(information)    7(debugging)
```

match (EVPN NLRI)

To filter traffic for a route map based on EVPN NLRI attributes, use the **match** command in route-map configuration mode. To remove a **match** command from a route map, use the **no** form of this command.

match { **evpn route-type** | **mac-list** | **ip address prefix-list** } *name*
no match { **evpn route-type** | **mac-list** | **ip address prefix-list** } *name*

Syntax Description		
evpn route-type *name*	Specifies that the routes of the specified route-type be allowed or restricted.	
	You can enter the route-types 1 to 6, or enter all for all the route-types.	
mac-list *name*	Specifies that the MAC routes of the specified mac-list be allowed or restricted.	
ip address prefix-list*name*	Specifies that the IP addresses of the specified IP prefix be allowed or restricted.	

Command Default None.

Command Modes Route-map configuration (config-route-map)

Command History

Release	Modification
Cisco NX-OS 7.0(3)I1	This command was introduced.

Usage Guidelines The **match** command filters the EVPN attributes for a specific route-map. You can enable filtering of different attributes for different route-maps, allowing you to filter network traffic as desired.

Example

This example shows how to allow or restrict routes in the **evpn-test** route-map. EVPN route-type **5** is permitted, **host-route** IP prefix-list is permitted, and **tenant-mac** mac-list is denied.

```
switch(config)# route-map evpn-test permit 10
switch(config-route-map)# match evpn route-type 5

switch(config)# route-map evpn-test permit 20
switch(config-route-map)# match ip address prefix-list host-route

switch(config)# route-map evpn-test deny 10
switch(config-route-map)# match mac-list tenant-mac
```

match (VLAN access-map)

To specify an access control list (ACL) for traffic filtering in a VLAN access map, use the **match** command in VLAN access-map configuration mode. To remove a **match** command from a VLAN access map, use the **no** form of this command.

match {ip | ipv6 | mac} address *access-list-name*
no   match {ip | ipv6 | mac} address *access-list-name*

Syntax Description

ip	Specifies that the ACL is an IPv4 ACL.
ipv6	Specifies that the ACL is an IPv6 ACL.
mac	Specifies that the ACL is a MAC ACL.
access-list-name	Specifies the ACL by name, which can be up to 64 alphanumeric, case-sensitive characters.

Command Default   None

Command Modes   VLAN access-map configuration

Command History

Release	Modification
Cisco NX-OS 5.2(1)	This command was introduced.
Cisco NX-OS 6.1(2)I2(2)	This command was integrated.
Cisco NX-OS 7.0(0)N1(1)	

Usage Guidelines   You can specify one or more **match** commands per entry in a VLAN access map.

By default, the device classifies traffic and applies IPv4 ACLs to IPv4 traffic, IPv6 ACLs to IPv6 traffic, and MAC ACLs to all other traffic.

This command does not require a license.

Example

This example shows how to create a VLAN access map named vlan-map-01 and add two entries that each have two **match** commands and one **action** command:

```
Device(config-access-map)# vlan access-map vlan-map-01
Device(config-access-map)# match ip address ip-acl-01
switch(config-access-map)# action forward
switch(config-access-map)# match mac address mac-acl-00f
switch(config-access-map)# vlan access-map vlan-map-01
switch(config-access-map)# match ip address ip-acl-320
switch(config-access-map)# match mac address mac-acl-00e
switch(config-access-map)# action drop
switch(config-access-map)# show vlan access-map
Vlan access-map vlan-map-01 10
```

```
        match ip: ip-acl-01
        match mac: mac-acl-00f
        action: forward
Vlan access-map vlan-map-01 20
        match ip: ip-acl-320
        match mac: mac-acl-00e
        action: drop
```

maximum paths mixed

Use the **maximum-paths mixed** command to enable BGP and the Unicast Routing Information Base (URIB) to consider the following paths as Equal Cost Multi Path (ECMP):

- iBGP paths

- eBGP paths

- Paths from other protocols (such as static) that are redistributed or injected into BGP.

This command specifies the number of parallel multipaths. To disable this feature, use the **no**no form of this command.

maximum-paths mixed *number-of-paths*
no maximum-paths mixed *number-of-paths*

Syntax Description	*number-of-paths*	Specifies the number of parallel multipaths.

Command Default None

Command Modes Router Address Family configuration (config-router-af)

Router VRF Address Family configuration (config-router-vrf-af)

Command History

Release	Modification
Cisco NX-OS Release 8.3(1)	This command was introduced.

Usage Guidelines The paths can be either local to the device (static, iBGP or eBGP) or remote (eBGP or iBGP learnt over BGP-EVPN). This overrides the default route selection behavior in which local routes are preferred over remote routes. URIB downloads all NHs of the route, including locally learnt and user-configured routes, to the Unicast FIB Distribution Module (uFDM)/Forwarding Information Base (FIB).

This command does not require a license.

The following example enables BGP and the Unicast Routing Information Base (URIB) to consider paths as Equal Cost Multi Path (ECMP):

```
switch(config)# router bgp 500000
switch(config-router)# address-family l2vpn evpn
switch(config-router-af)# maximum-paths mixed 32
```

The following example shows how to disable this feature:

```
switch(config-router-af)# no maximum-paths mixed 32
```

member vni associate-vrf

To associate a Layer-3 VNI to a tenant VRF (for routing between Layer-2 tenant networks), use the **member vni associate-vrf** command in NVE configuration mode. To disable this feature, use the **no** form of the command.

member vni *Id* **associate-vrf**

no member vni *Id* **associate-vrf**

Syntax Description

Id	Layer-3 VNI that is being associated with the tenant VRF.

Command Default

The Layer-3 VNI is not associated with the tenant VRF.

Command Modes

NVE configuration mode (config-if-nve)

Command History

Release	Modification
Cisco NX-OS 6.1(2)I2(2)	This command was introduced.
Cisco NX-OS 6.2.2	This command was integrated.
Cisco NX-OS 7.3(0)N1(1)	

Usage Guidelines

When you associate a Layer-3 VNI to a VRF, end hosts in the VXLAN EVPN fabric use this VNI to communicate to end hosts in other (Layer-2) tenant networks. Typically, a single Layer-3 VNI is created for a tenant VRF. The VRF and VNI specified with this command must match the VRF and VNI configured for the tenant earlier.

Example

The following example shows how to associate a Layer-3 VNI to a tenant VRF in a VXLAN EVPN fabric:

```
switch(config-if-nve)# interface nve 1
switch(config-if-nve)# member vni 50000 associate-vrf
```

N through Z

ngoam install acl

To install NGOAM access control list, use the **ngoam install acl** command in NGOAM profile configuration mode.

ngoam install acl

Syntax Description	This command has no arguments or keywords.

Command Modes	NGOAM profile configuration (config-ng-oam-profile)

Command History

Release	Modification
Cisco NX-OS 7.3(0)N1(1)	This command was introduced.
Cisco NX-OS 7.3(0)D1(1)	

Usage Guidelines

The access control list (ACL) matches the VXLAN OAM packets and sends the packets to the NGOAM module, else the ACL packets will be dropped by hardware.

Note ACL is only required for leaf nodes to handle the packets.

Example

The following example shows how to install NGOAM access control list using the **ngoam install acl** command.

```
switch(config-ng-oam-profile)# ngoam install acl
```

ngoam profile

To create VXLAN operations, administration, and maintenance (OAM) profile, use the **ngoam profile** command in global configuration mode.

To disable VXLAN OAM profile, use the no form of this command.

ngoam profile *profile-id*

no ngoam profile *profile-id*

Syntax Description	*profile-id*	Enter the profile ID. The range is from 1 to 1023. There is no default value.

Command Modes   Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.3(0)N1(1)	This command was introduced.
Cisco NX-OS 7.3(0)D1(1)	

Usage Guidelines   The NGOAM profiles provide a way to bundle the common NGOAM command parameters instead of specifying all the parameters in separate commands. For example, **ping nve** command. You can create these NGOAM profiles to store all the common parameters and specify the profile id instead of providing all the parameters in the command line.

Example

The following example shows how to create a VXLAN OAM profile using the **ngoam profile** command.

```
ngoam profile 2
  oam-channel 2
  sport 12345, 54321
  payload pad 0x2
  flow forward
    ip source 209.165.201.1
    ip destination 209.165.201.11
```

nv overlay evpn

To enable the BGP EVPN control plane for VXLAN fabric, use the **nv overlay evpn** command in global configuration mode. To disable this feature, use the **no** form of the command.

nv overlay evpn

no nv overlay evpn

Syntax Description	This command has no arguments or keywords.

Command Default	BGP EVPN control plane is not enabled.

Command Modes	Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.3(0)N1(1)	This command was introduced.
Cisco NX-OS 7.3(0)D1(1)	

Usage Guidelines

Use the **feature nv overlay** command to globally enable the VXLAN functionality, the default mode of operation for the switch is VXLAN flood and learn. The command **nv overlay evpn** changes the global operating mode to VXLAN EVPN, where the EVPN is used to distribute host-reachability across the fabric via MP-BGP.

Example

The following example shows how to enable a BGP EVPN control plane for VXLAN fabric and the relevant protocols:

```
switch(config)# nv overlay evpn
switch(config)# feature bgp
switch(config)# feature pim
switch(config)# feature interface-vlan
switch(config)# feature vn-segment-vlan-based
switch(config)# feature lldp
switch(config)# feature nv overlay
```

param-list

To create a user-defined parameter list or to configure parameters and parameter list instances for an existing parameter list, use the **param-list** command in global configuration mode. To delete a user-defined parameter list, use the **no** form of this command.

param-list *parameter-list-name*
no **param-list** *parameter-list-name*

Syntax Description	*parameter-list-name*	Name of the parameter list.
		Note The *parameter-list-name* argument can be used to create a new parameter list or configure parameters and parameter list instances for an existing parameter list. To view existing parameter lists, type **param-list ?** in global configuration mode.

Command Default   No parameter lists are predefined.

Command Modes   Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines   When you create a parameter list using the **param-list** command, the device enters parameter list configuration mode (config-param-list). In parameter list configuration mode, you can:

- Create parameters for the specified parameter list using the **define** option.
- Create an instance of a parameter list using the **instance** option.

Note   To view the **define** and **instance** options, type **?** in parameter list configuration mode.

To configure parameters and parameter list instances for an existing parameter list, use the **param-list** *parameter-list-name* command, where *parameter-list-name* corresponds to an existing parameter list.

Examples   The following example shows how to create a user-defined parameter list named List1 and create a parameter named param1 within the list:

```
Device# configure terminal
Device(config)# param-list List1
Device(config-param-list)# define param1 integer 100
Device(config-param-list)# exit
```

The following examples shows how to view existing parameter lists:

```
Device# configure terminal
Device(config)# param-list ?


WORD                  Enter the name of the parameter list (Max Size 80)
List2 (no abbrev)
List3 (no abbrev)
```

In the above example, List2 and List3 are the existing parameter lists. The following example shows how to add a parameter named param2 to List2:

```
Device(config)# param-list List2
Device(config-param-list)# define param2 integer 100
Device(config-param-list)# exit
```

password secure-mode

To configure a password for the user, use the **password secure-mode** command in global configuration mode. To disable the password configuration, use the **no** form of this command.

password   secure-mode
no   password   secure-mode

Syntax Description	This command has no arguments or keywords.
Command Default	No password is configured.
Command Modes	Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 6.1.4	This command was introduced.
Cisco NX-OS 6.1(2)I2(2)	
Cisco NX-OS 7.0(0)N1(1)	This command was integrated.

Example

This example shows how to enable secure mode while changing the password:

```
Device# configure terminal
Device(config)# password secure-mode
Device(config)# exit
```

pathtrace nve

To discover network virtualization endpoint's route, use the **pathtrace nve** command in privileged EXEC mode.

pathtrace nve {**ip** *ip-adddress* | **mac** *mac-adddress*} **profile** *id* [**vrf** | **vni count** *number*]

Syntax Description		
ip *ip-adddress*	IP address of the destination host.
mac *mac-adddress*	MAC address of the destination host.
profile *id*	Name of the profile.
vrf	The tenant VRF, where this tenant IP-address reside.
vni	The valid VNI present in the VTEP.
count *number*	Value of the count.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.3(0)N1(1)	This command was introduced.
Cisco NX-OS 7.3(0)D1(1)	

Example

The following example shows how to track the path in overlay and underlay traffic.

```
switch# pathtrace nve ip unknown vrf Org1:vrf1 payload ip 192.1.1.15 30.1.1.14 payload-end
 verbose

Path trace Request to peer ip 192.2.2.200 source ip 192.4.4.100
Sender handle: 106

Hop   Code   ReplyIP   IngressI/f  EgressI/f   State
======================================================
  1 !Reply from 192.40.40.2, Po2       Eth1/1    UP / UP
  3 !Reply from 192.70.70.2, Eth1/1  Eth2/1     UP/UP
  2 !Reply from 192.2.2.200, Eth2/1  Unknown    UP / DOWN
```

ping nve

To ping to the destination IP address, use the **ping nve** command in privileged EXEC mode.

ping nve {**ip** *ip-adddress* | **mac** *mac-adddress*} **profile** *id* [**vrf** | **vni count** *number*]

Syntax Description		
ip *ip-adddress*	IP address of the destination host.
mac *mac-adddress*	MAC address of the destination host.
profile *id*	Name of the profile.
vrf	The tenant VRF, where this tenant IP-address reside.
vni	The valid VNI present in the VTEP.
count *number*	Value of the count.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.2(0)D1(1)	This command was introduced.
Cisco NX-OS 7.3(0)N1(1)	This command was integrated.

Example

The following example shows how to ping the destination and verify the paths.

```
switch# ping nve ip 192.0.2.0

Codes: '!' - success, 'Q' - request not sent, '.' - timeout,
'D' - Destination Unreachable, 'X' - unknown return code,
'm' - malformed request(parameter problem),
'c' - Corrupted Data/Test
Sender handle: 5
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 4/8/15 ms
Total time elapsed 55 ms


switch# ping nve ip 192.0.1.1 profile 1 vni 31000 verbose
Codes: '!' - success, 'Q' - request not sent, '.' - timeout,
'D' - Destination Unreachable, 'X' - unknown return code,
'm' - malformed request(parameter problem),
'c' - Corrupted Data/Test
Sender handle: 4
! sport 47594 size 90,Reply from 12.0.1.1,time = 8 ms
! sport 47594 size 90,Reply from 12.0.1.1,time = 2 ms
! sport 47594 size 90,Reply from 12.0.1.1,time = 2 ms
! sport 47594 size 90,Reply from 12.0.1.1,time = 1 ms
! sport 47594 size 90,Reply from 12.0.1.1,time = 8 ms
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/4/8 ms
Total time elapsed 46 ms


switch# ping nve ip 192.2.2.200 profile 3 vni 30000 verbose count 100000 asynchronous
Initiated 2 loopback asynchronous sessions with id from 76 to 77
76    Asynchronous            Running(No Error)
77    Asynchronous            Running(No Error)


switch# ping nve mac 74a2.e6e8.08d7 240 eth 1/27 profile 1 egress ethernet 1/21 vni 31000
count 2

Codes: '!' - success, 'Q' - request not sent, '.' - timeout,
'D' - Destination Unreachable, 'X' - unknown return code,
'm' - malformed request(parameter problem),
'c' - Corrupted Data/Test

Sender handle: 2
!!

Success rate is 100 percent (2/2), round-trip min/avg/max = 2/2/3 ms
Total time elapsed 13 ms
```

platform fabric database dot1q

To enable or disable data packet based auto detection for auto-config, use the **platform fabric database dot1q** command in global configuration mode.

platform fabric database dot1q [**enable** | **disable**]

Syntax Description		
	enable	Enables dot1q auto detection.
	disable	Disables dot1q auto detection.

Command Default

By default, data packet based auto-configuration is enabled to keep it backward compatible and consistent with the earlier releases.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.1(0)N1(1)	This command was introduced.

Examples

The following example shows how to override the default behavior by disabling data packet based auto-configuration using the **platform fabric database dot1q** command:

```
Device(config)# platform fabric database dot1q disable
```

plb

To create a PLB service instance and parameters for it, use the **plb** command in global configuration mode. To remove a PLB service instance, use the **no** form of the command.

plb *service-instance*

no plb *service-instance*

Syntax Description	*service-instance*	PLB service instance.

Command Default A pervasive load balancing (PLB) service instance is not enabled by default.

Command Modes Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 8.0(1)	This command was introduced.

Usage Guidelines After creating a PLB service instance, the following associations should be made with it:

—A virtual IP address (VIP) should be created for load balancing server traffic for the service. Client packets contain the VIP as the destination IP address, and not the server IP address.

—The shadow BDI should be assigned for the device group.

—A load balancing mask should be applied to identify the correct bucket for load balancing.

The **plb** option is also used in other command forms such as **plb l3-device-group** (used for creating a PLB device group) and **plb statistics**. For better usability, the options have been documented as separate commands

Example

This example shows how to create a PLB service instance and parameters for the service instance:

```
switch (config) # plb srv200
switch (config-plb) # l3-device-group dg200
switch (config-plb) # virtual ip 200.200.200.200 255.255.255.255
switch (config-plb) # ingress interface Bdi1810
switch (config-plb) # load-balance buckets 4 mask-position 10
switch (config-plb) # no shutdown
```

The **ingress interface** option is used for creating the shadow BDI.

Related Commands

Command	Description
plb l3-device-group	Creates a PLB device group for balancing server or appliance loads.
plb statistics	Enables PLB statistics function.

plb

Command	Description
show plb statistics	Displays PLB statistics.

plb l3-device-group

To create a PLB device group for balancing server or appliance loads, use the **plb l3-device-group** command in global configuration mode. To disable the device group, use the **no** form of the command.

plb l3-device-group *name*

no plb l3-device-group *name*

Syntax Description

name	PLB device group name.

Command Default

A pervasive load balancing (PLB) device group is not enabled by default.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 8.0(1)	This command was introduced.

Usage Guidelines

The PLB device group consists of Layer-3 load balancing server or appliance nodes. After you create the device group, use the **node ip** *IP-address* command form to add IP addresses of the servers/appliances that you want to add to the group.

Example

This example shows how to create a PLB device group and associate servers/appliances to it:

```
switch (config) # plb l3-device-group dg200
switch (config-device-group) # node ip 10.10.10.120
switch (config-device-group) # node ip 10.10.10.121
```

weight option—After specifying a node and its IP address, you can specify a proportionate weight for the node for weighted traffic distribution.

Since device groups are also formed for a group of servers that cater to a service, you can use the service as the device group name (for example, DNS).

Related Commands

Command	Description
plb	Creates a PLB service instance and parameters for it.
show plb statistics	Displays PLB statistics.

plb statistics

To enable PLB statistics function, use the **plb statistics** command in global configuration mode. To disable PLB statistics function, use the **no** form of the command.

plb statistics *service-instance*

no plb statistics *service-instance*

Syntax Description	*service-instance* PLB service instance.

Command Default PLB service instance statistics is not available for users by default.

Command Modes Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 8.0(1)	This command was introduced.

Usage Guidelines The statistics include the service instance, the device group that is tied to the service, the VIP that represents the device group (of servers and appliances) across the fabric, etc.

Example

This example shows how to enable PLB service instance statistics for the service instance:

```
switch (config) # plb statistics srv200
```

Related Commands

Command	Description
plb	Creates a PLB service instance and parameters for it.
plb l3-device-group	Creates a PLB device group for balancing server or appliance loads.
show plb statistics	Displays PLB statistics.

rd auto

To automatically generate a route distinguisher (RD) for a virtual routing and forwarding (VRF) instance, use the **rd auto** command. To remove the route distinguisher, use the **no** form of this command.

rd auto

no rd auto

Syntax Description	This command has no arguments or keywords.
Command Default	No auto-generated RD is created.
Command Modes	VRF configuration (config-vrf)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines

A route distinguisher (RD) creates routing and forwarding tables and specifies the default RD for a virtual private network (VPN). The RD is added to the beginning of your IPv4 prefixes to change them into globally unique VPN IPv4 prefixes.

This command automatically generates a type-1 route distinguisher (RD) for the VRF that is being configured. The value of the generated RD is *router-id*:*vrf-id*. If either, or both, the router-ID or VRF-ID is invalid, automatic generation of the RD fails.

No license is required for this command.

Example

The following example shows how to configure a generated RD for the VRF instance "vpn1:"

```
vrf context vpn1
    rd auto
```

reply mode out-of-band

To configure the fabricpath OAM out-of-band service reply mode, use the **reply mode out-of-band** command in fabricpath OAM profile configuration mode. To remove the out-of-band service reply mode, use the **no** form of this command.

reply mode out-of-band {**ipv4**|**ipv6**} *ip-address port-number*
no reply mode out-of-band

Syntax Description		
	ipv4	Specifies the IPv4 address.
	ipv6	Specifies the IPv6 address.
	ip-address	IPv4 or IPv6 address.
	port-number	Port number. The range is from 0 to 65535.

Command Default
An out-of-band service reply mode is not configured.

Command Modes
Fabricpath OAM profile configuration (config-fp-oam-profile)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.

Usage Guidelines
Use the **reply mode out-of-band** command to configure reply mode information.

Example

```
Device(#) configure terminal
Device(config)# fabricpath oam profile 100
Devie(config-fp-oam-profile)# reply mode out-of-band ipv6 10.1.1.7 500
```

route-target

To export or import, or export and import, tenant VRF routes from a switch, use the **route-target** command in VRF address family configuration mode. To disable export, import or both operations, use the **no** form of the command.

route-target {**both** {**auto** | *route-target-ext-community*} | [**import** | **export**] *route-target-ext-community*}

no route-target {**both** {**auto** | *route-target-ext-community*} | [**import** | **export**] *route-target-ext-community*}

Syntax Description	export	Exports routing information to the target VPN extended community.
	import	Imports routing information from the target VPN extended community.
	both	Imports both import and export routing information to the target VPN extended community.
	route-target-ext-community	The route-target extended community attributes to be added to the VRF's list of import, export, or both (import and export) route-target extended communities.

Command Default No route-target extended community attributes associated with VRF.

Command Modes VRF address family configuration mode (config-vrf-af)

Command History	Release	Modification
	Cisco NX-OS 5.2(1)	This command was introduced.
	Cisco NX-OS 6.1(2)I2(2)	This command was integrated.
	Cisco NX-OS 7.3(0)N1(1)	

Usage Guidelines In a VXLAN EVPN fabric, a tenant VRF (represented by a Layer-3 VNI) contains routes on different leaf switches (VTEPs). This command (along with the appropriate **route-target** command) ensures that all routes within a VRF are available with all the relevant VTEPs in the fabric.

Route-targets are used for enforcing appropriate policy with MP-BGP. Specifically, with explicit route-targets values attached to the prefixes from a given VRF, it is possible to control whether those prefixes should or should not be imported into the routing table of a remote leaf. Using the "route-target both auto evpn" command, route-target values are auto-generated for a given VRF, in the Cisco Programmable Fabric, using the autonomous sequence number and the Layer-3 VNI. The same route-target values for a VRF are shared by all the leaf nodes. In this way, all route prefixes in a given VRF are automatically imported/exported into/out of the routing tables of all the leaf nodes within the fabric.

Example

The following example shows how to import and export tenant VRF routes from a switch:

```
switch(config-router)# VRF context vni-31000
switch(config-vrf)# vni 31000
switch(config-vrf)# rd auto
switch(config-vrf)# address-family ipv4 unicast
switch(config-vrf-af-ipv4)# route-target import 100:31000 evpn
switch(config-vrf-af-ipv4)# route-target export 100:31000 evpn
```

server protocol

To configure Lightweight Directory Access Protocol (LDAP) for a server group, use the **server protocol** command in fabric database configuration mode. To disable the configuration, use the **no** form of this command.

server protocol ldap {**ip** *ip-address*|**host** *hostname*} [{**port** *port-number*}] [{**vrf** *vrf-name*}]
no server protocol ldap {**ip** *ip-address*|**host** *hostname*} [{**port** *port-number*}] [{**vrf** *vrf-name*}]

Syntax Description		
	ldap	Specifies that LDAP is configured.
	ip *ip-address*	Specifies the IP address of the server.
	host *hostname*	Specifies the hostname and DNS names of the server.
	port *port-number*	(Optional) Specifies the TCP or UDP port number on the server.
	vrf *vrf-name*	(Optional) Specifies the virtual routing and forwarding context to use to connect to the server.

Command Default The protocol for a server group is not configured.

Command Modes Fabric database configuration (config-fabric-db)

Command History

Release	Modification
Cisco NX-OS 6.1(2)I2(2)	This command was introduced.
Cisco NX-OS 7.0(0)N1(1)	This command was integrated.
Cisco NX-OS 7.2(0)D1(1)	

Usage Guidelines Use this command along with the **fabric database type** command to configure an external database.

Examples

The following example shows how to configure a profile database using LDAP:

```
Device(config)# fabric database type bl-dci
Device(config-fabric-db)# server protocol ldap ip 10.0.0.1
Device(config-fabric-db-server)# db-table ou=bl-dcis,dc=cisco,dc=com

Device(config)# fabric database type partition
Device(config-fabric-db)# server protocol ldap ip 10.0.0.1
Device(config-fabric-db-server)# db-table ou=partitions,dc=cisco,dc=com

Device(config)# fabric database type profile
Device(config-fabric-db)# server protocol ldap ip 10.0.0.1
Device(config-fabric-db-server)# db-table ou=profiles,dc=cisco,dc=com
```

Related Commands

Command	Description
fabric database type	Configures the external database.

set

To specify a value for a configured parameter, use the **set** command in parameter instance configuration mode.

set *param-name* *param-value*

Syntax Description	*param-name*	The name of the parameter.
		• The maximum number of characters is 80.
	param-value	The value of the parameter.
		• The maximum number of characters is 80.

Command Default   No value is specified for the configured parameter.

Command Modes   Parameter instance configuration (config-param-inst)

Command History	Release	Modification
	Cisco NX-OS 4.0(1)	This command was introduced.
	Cisco NX-OS 6.1(2)I2(2)	This command was integrated.
	Cisco NX-OS 7.0(0)N1(1)	

Example

The following example shows how to specify a value for a configured parameter:

```
Device> enable
Device# configure terminal
Device(config)# param-list param-prof1-list
Device(config-param-list)# define ipaddr ipaddr
Device(config-param-list)# define prog1 string
Device(config-param-list)# define segid integer
Device(config-param-list)# define vlan_num integer
Device(config-param-list)# instance param-prof1-inst1
Device(config-param-inst)# set ipaddr 192.0.2.1/24
Device(config-param-inst)# set prog1 vrf-300
Device(config-param-inst)# set segid 6300
Device(config-param-inst)# set vlan_num 300
Device(config-param-inst)# end
```

source-interface hold-down-time

To suppress advertisement of the Network Virtualization End-point (NVE) loopback address until the overlay has converged, use the **source-interface hold-down-time** command in the NVE configuration mode.

Note The default value is 300 seconds. We recommend users to configure the hold-down-time as 420 seconds for fast convergence during Virtual Port Channel (VPC) peer reload, for paired VPC devices with scaled configuration.

source-interface hold-down-time *value*

Syntax Description

value	Specifies the hold-down-time in seconds. The range for the hold-down-time is 0 - 2147483647 seconds.

Command Default 300 seconds

Command Modes NVE configuration mode

Command History

Release	Modification
7.3(1)N1(1)	This command was introduced.

Usage Guidelines Use the **show nve interface nve** *1* **detail** command to display the configured time and remaining time when the hold-down timer is running.

Examples This example shows how to configure a source interface hold-down time of 100 seconds:

```
switch(config)# interface nve 1
switch(config-if-nve)# source-interface hold-down-time 100
```

Related Commands

Command	Description
show nve vni interface nve 1	Displays information about the Virtual Network Identifiers (VNIs) that are assigned to the specified NVE interface.

show bgp l2vpn evpn

To display Border Gateway Protocol (BGP) information for Layer-2 Virtual Private Network (L2VPN) Ethernet Virtual Private Network (EVPN) address family, use the **show bgp l2vpn evpn** command in privileged EXEC mode.

show bgp l2vpn evpn

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 4.0(1)	This command was introduced.
Cisco NX-OS 6.1(2)I2(2)	This command was integrated.
Cisco NX-OS 7.3(0)N1(1)	This command was modified.

Example

The following is sample output from the **show bgp l2vpn evpn** command.

```
Switch# show bgp l2vpn evpn

BGP routing table information for VRF default, address family L2VPN EVPN
BGP table version is 198, local router ID is 10.1.1.54
Status: s-suppressed, x-deleted, S-stale, d-dampened, h-history, *-valid, >-best
Path type: i-internal, e-external, c-confed, l-local, a-aggregate, r-redist, I-injected
Origin codes: i - IGP, e - EGP, ? - incomplete, | - multipath, & - backup

   Network          Next Hop          Metric    LocPrf     Weight Path
Route Distinguisher: 10.1.1.54:32967    (L2VNI 30000)
*>l[2]:[0]:[0]:[48]:[2010.0000.0010]:[0]:[0.0.0.0]/216
                   10.1.1.54                        100      32768 i
*>i[2]:[0]:[0]:[48]:[2010.0000.0011]:[0]:[0.0.0.0]/216
                   10.1.1.56                        100          0 I

Route Distinguisher: 10.1.1.54:3        (L3VNI 50000)
*>i[2]:[0]:[0]:[48]:[2010.0000.0011]:[32]:[209.165.202.144]/272
                   10.1.1.56                        100          0 i
*>i[2]:[0]:[0]:[48]:[2010.0000.0012]:[32]:[209.165.202.141]/272
                   10.1.1.74                        100          0 i
*>i[2]:[0]:[0]:[48]:[2010.0000.0013]:[32]:[209.165.202.143]/272
                   10.1.1.56                        100          0 i
*>l[5]:[0]:[0]:[24]:[209.165.202.130]:[0.0.0.0]/224
                   10.1.1.54              0         100      32768 ?
* i                10.1.1.56              0         100          0 ?
```

The table below describes the significant fields shown in the example.

Table 1: show bgp l2vpn evpn all Field Descriptions

Field	Description
Next Hop	IP address of the next system that is used when forwarding a packet to the destination network. An entry of 0.0.0.0 indicates that the device has some non-BGP routes to this network.
Metric	If shown, the value of the interautonomous system metric.
LocPrf	Local preference value as set with the set local-preference route-map configuration command. The default value is 100.
Weight	Weight of the route as set via autonomous system filters.
Path	Autonomous system paths to the destination network. There can be one entry in this field for each autonomous system in the path.
Route Distinguisher	Route distinguisher that identifies a set of routing and forwarding tables used in virtual private networks.
[5]:[0]:[0]:[24]:[209.165.202.130]:[0.0.0.0]	• [5]: Route type: 5 - IP prefix • [0]: Ethernet segment identifier • [0]: Ethernet tag identifier • [24]: IP prefix length • [209.165.202.130]: IP prefix • [0.0.0.0]: Gateway IP address

show bridge-domain

To display information about the bridge-domain details configured on a switch, use the **show bridge-domain** command in privileged EXEC mode.

show bridge-domain

Syntax Description   This command has no arguments or keywords.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 6.2.2	This command was introduced.

Examples

The following example shows how to display information about the bridge-domain details configured on a switch, using the **show bridge-domain** command.

```
Device# show bridge-domain

Bridge-domain 2   (1 ports in all)
Name:: Bridge-Domain2
 Administrative State: UP            Operational State: UP
      vni5000
      Eth4/7

Bridge-domain 10   (3 ports in all)
Name:: Bridge-Domain10
 Administrative State: UP            Operational State: UP
      VSI-Eth4/8.4040
      vni10010
      VSI-Eth4/6.3968
      Eth4/7

Bridge-domain 11   (3 ports in all)
Name:: Bridge-Domain11
 Administrative State: UP            Operational State: UP
      VSI-Eth4/8.4040
      vni10011
      VSI-Eth4/6.3968
      Eth4/7
```

show config-profile

To display details of created and applied profiles, use the **show config-profile** in privileged EXEC mode.

show   config-profile

Syntax Description	This command has no arguments or keywords.
Command Modes	Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines

Use the **configure profile** command to create profiles and to assign a list of commands to the profile in the device. Once a profile is created with a valid parameter list and parameter instances, apply the profile using the **apply profile** command. Use > to redirect the configuration profile to a file and >> to redirect it to a file in append mode.

The following sample output from the **show config-profile** command displays details of the param-prof1 profile:

```
Device(config)# show config-profile GoldP

config-profile GoldP
  vlan $vlan
   vn-segment $segment
include profile any
applied: <i1, v1-a(vrf-prof)>
applied: <i2, v1-a(vrf-prof)>
```

show evb

To display information associated with Edge Virtual Bridging (EVB), use the **show evb** command in privileged EXEC mode.

show evb [{[{**hosts**|**vsi**}] [{**detail**|**summary**}] [**interface ethernet** *slot-number*] [**ip** *ipv4-address*] [**ipv6** *ipv6-address*] [**mac** *mac-address*] [**vlan** *vlan-id*] [**vni** *vni-id*]}]

Syntax Description		
hosts	(Optional) Displays information about hosts in an EVB session.	
vsi	(Optional) Displays information about Virtual Station Interface (VSI) in an EVB session.	
detail	(Optional) Displays detailed information about hosts or VSI in an EVB session.	
summary	(Optional) Displays summarized information about hosts or VSI in an EVB session.	
interface	(Optional) Displays information about hosts or VSI by the interface in an EVB session.	
ethernet *slot-number*	(Optional) Specifies information about the Ethernet IEEE 802.3z interface.	
ip *ipv4-address*	(Optional) Displays information about hosts or VSI by the IPv4 address in an EVB session.	
ipv6 *ipv6-address*	(Optional) Displays information about hosts or VSI by the IPv6 address in an EVB session.	
mac *mac-address*	(Optional) Displays information about hosts or VSI by the MAC address in an EVB session.	
vlan *vlan-id*	(Optional) Displays information about hosts or VSI by the VLAN in an EVB session.	
vni *vni-id*	(Optional) Displays information about hosts or VSI by the Virtual Network Identifier (VNI) in an EVB session.	

Command Default   None

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines   Use the **feature evb** command to enable the EVB session. This, in turn, enables the **evb** keyword in the **show** command on the device.

Examples

The following is sample output from the **show evb** command:

```
Device# show evb

EVB (Edge Virtual Bridge)

Role                          : VDP bridge
VDP MAC address               : 0180.c200.0000 (Nearest Bridge)
                                0123.4567.89ab (User)
Resource wait init            : 21 (~ 20 sec)
Keep-alive init               : 21 (~ 20 sec)
No. received vdpdu            : 0
No. dropped  vdpdu            : 0
No. received tlv              : 0
No. received mgr tlv          : 0
No. received assoc tlv        : 0
No. received cmd              : 0
```

show fabric database dci

To display information about all, some, or a specified virtual routing and forwarding (VRF) that is auto configured via Cisco Data Center Interconnect (DCI) auto configuration, use the **show fabric database dci** command in privileged EXEC mode.

show fabric database dci [*vrf <vrf-name>*]

Syntax Description

vrf-name	(Optional) Name of the VRF that is extended on the Edge Router.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.1(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines

Use this command to display the following information about all, some, or a specified VRF auto configuration:

- Number of VRFs on each Edge Router
- Errors, if any
- Time of instantiation
- Configuration parameters

No license is required for this command.

Examples

The following is sample output from the **show fabric database dci** command.

```
Device#show fabric database dci

Active DCI Entries
flags: L - Locally inserted, R - Recovered
VRF NAME            STATE            FLAGS PROFILE(INSTANCE)
Org1:vrf3           Profile Active   L
bl_ipv4_and_ipv6_two_box(instance_dci_Org1:vrf3_10.1.1.11_0.0.0.0_1)Key:
```

show fabric database host

To show the current status of all the auto-configured profiles, use the **show fabric database host** command in privileged EXEC mode.

show fabric database host

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.1(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines

After the profile is applied and acknowledged by the clients, the state becomes active.

Examples

The following is sample output from the **show fabric database host** command:

```
Device# show fabric database host

Active Host Entries
flags: L - Locally inserted, V - vPC+ inserted, R - Recovered
VNI      VLAN  STATE          FLAGS PROFILE(INSTANCE)
31230    3000  Profile Active  L     defaultNetworkIpv4EfProfile(instance_vni_31230_2)
Active Host Entries
flags: L - Locally inserted, V - vPC+ inserted, R - Recovered
VLAN  VNI      STATE          FLAGS PROFILE(INSTANCE)
77    30077    Profile Active  L     defaultNetworkIpv4EfProfile(instance_def_77_1)
```

Table 2: Description of flags for **show fabric database host** *Command*

Flags	Description
L - Locally inserted	Profile was locally learned via a host trigger or inserted via DCNM.
V - vPC+ inserted	Profile was synced from the vPC peer.
R - Recovered	Profile was recovered after a reload/process restart.
X - xlated Vlan	Source VLAN was translated before Profile application.

show fabric database host detail

To display fabric database host details, use the **show fabric database host detail** command in privileged EXEC mode.

show fabric database host detail

Syntax Description   This command has no arguments or keywords.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.1(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Examples

The following is sample output from the **show fabric database host detail** command. The fields in the example are self-explanatory.

```
Device# show fabric database host detail

Active Host Entries
flags: L - Locally inserted, V - vPC+ inserted, R - Recovered
VNI     VLAN  STATE          FLAGS PROFILE(INSTANCE)
31230   3000  Profile Active  L    defaultNetworkIpv4EfProfile(instance_vni_31230_2)
Displaying VDP hosts
Interface      Encap     Flags State         VSI-ID
Eth101/1/2     3000       L     Profile Active  00000000000000079FE005056B77983

aActive Host Entries
flags: L - Locally inserted, V - vPC+ inserted, R - Recovered
VLAN  VNI       STATE          FLAGS PROFILE(INSTANCE)
77    30077     Profile Active  L    defaultNetworkIpv4EfProfile(instance_def_77_1)
Displaying Data Snooping Ports
Interface      Encap     Flags State
Eth101/1/1     77         L     Profile Active
```

Table 3: Description of flags for **show fabric database host detail** *command*

Flags	Description
L - Locally inserted	Profile was locally learned via a host trigger or inserted via DCNM.
V - vPC+ inserted	Profile was synced from the vPC peer.
R - Recovered	Profile was recovered after a reload/process restart.

Flags	Description
X - xlated Vlan	Source VLAN was translated before Profile application.

show fabric database host dot1q

To display Address Resolution Protocol (ARP), DHCP, and Neighbor Discovery-triggered information, use the **show fabric database host dot1q** command in privileged EXEC mode. This command is used for "VLAN" instantiated hosts.

show fabric database host dot1q
vlan-id

Syntax Description	*vlan-id* The VLAN ID. The range is from 2 to 4095, except for the VLANs reserved for internal switch use.

Command Modes Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.1(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Examples

The following is sample output from the **show fabric database host dot1q** command. The fields in the example are self-explanatory.

```
Device# show fabric database host dot1q 23

Got Local originated vlan type trigger at 17:02:32
Number of associated interfaces: 1
Sent to Database Manager at 17:02:32
Received Parameters from Database Manager at 17:02:32
Displaying parameters for profile defaultNetworkIpv4EfProfile and instance instance_def_77_1
parameter 0: $gatewayIpAddress=10.1.1.1
parameter 1: $netMaskLength=24
parameter 2: $vlanId=77
parameter 3: $segmentId=30077
parameter 4: $vrfName=DCNM-ORG:RED
parameter 5: $gatewayIpAddress=10.1.1.1
parameter 6: $netMaskLength=24
parameter 7: $dhcpServerAddr=12.0.100.40
parameter 8: $include_vrfSegmentId=50000
parameter 9: $vlanId=77
parameter 10: $asn=65000
Sent Apply to Configuration Manager at 17:02:32
Completed executing all commands at 17:02:33
Displaying Data Snooping Ports
Interface      Encap      Flags State
Eth101/1/1     77         L     Profile Active
```

show fabric database host statistics

To display fabric database host statistics, use the **show fabric database host statistics** command in privileged EXEC mode.

show fabric database host statistics

Syntax Description   This command has no arguments or keywords.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.1(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Examples

The following is sample output from the **show fabric database host statistics** command, where statistics for all the databases are displayed. The fields in the example are self-explanatory.

```
Device# show fabric database host statistics

Data Snoop Triggers          6
Data Snoop Deletes           2
VDP Association Requests      9
VDP DeAssociation Requests    8
Duplicate add: Existing Host  3
Existing Profile: New Host    11
Profile Apply from vPC peer   4
Profile Un-apply from vPC peer 3
Host Apply from vPC peer      10
Host Un-apply from vPC peer   8
ADBM Requests                4
ADBM Responses               3
ADBM Error Responses         1
Profile Apply Received       3
Profile vPC Queued           0
Profile Local Apply Queued   0
Profile Local UnApply Queued 0
Profile Apply Sent           2
Profile Apply Responses      38
Profile Apply Success        2
Profile UnApply Success      2
Profile Commands             20
Profile UnApply Sent         2
Profile Top Queue adds       1
Profile High Queue adds      2
Profile Low Queue adds       2
Outstanding vlan requests    0
Outstanding adbm requests    0
Outstanding Profile Applies  0
Outstanding vPC Profile Applies 0
Device#
```

show fabric database host summary

To display the relevant auto-configuration timers along with the number of Virtual Station Interface (VSI) Discovery and Configuration Protocol (VDP) hosts and auto-configuration tenants that are instantiated, use the **show fabric database host summary** command in privileged EXEC mode.

show fabric database host summary

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.0(1)N1(1)	This command was introduced.
Cisco NX-OS 7.2(1)D1(1)	This command was integrated.

Usage Guidelines

Use this command to display information such as the number of instances, VDP hosts, and timer values.

Examples

The following is sample output from the **show fabric database host summary** command. The fields in the example are self-explanatory.

```
Device# show fabric database host summary

Number of instances applied :    6
Number of VDP hosts          :    4
Recovery Timeout Value       :    30 minutes
Cleanup Timeout Value        :    15 minutes
VDP Add Suppression Timeout :    3 minutes
Profiles checked for aging   :    30 minutes
```

Related Commands

Command	Description
fabric database timer	Configures fabric database timers.

show fabric database host vni

To display fabric database host virtual network identifier (VNI) information, use the **show fabric database host vni** command in privileged EXEC mode.

show fabric database host vni
vni-id

Syntax Description	*vni-id* Information about hosts or virtual network ID for virtual routing and forwarding (VRF). The range is from 4096 to 16777215.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.1(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Examples

The following is sample output from the **show fabric database host vni** command. The fields in the example are self-explanatory.

```
Device# show fabric database host vni 31230

Got Local originated vdp type trigger at 17:09:57
Number of VDP Hosts: 1
Sent to Database Manager at 17:09:57
Received Parameters from Database Manager at 17:09:57
Displaying parameters for profile defaultNetworkIpv4EfProfile and instance
instance_vni_31230_2
parameter 0: $gatewayIpAddress=10.10.99.254
parameter 1: $netMaskLength=24
parameter 2: $vlanId=
parameter 3: $segmentId=31230
parameter 4: $vrfName=DCNM-ORG:RED
parameter 5: $gatewayIpAddress=10.10.99.254
parameter 6: $netMaskLength=24
parameter 7: $dhcpServerAddr=192.168.100.254
parameter 8: $include_vrfSegmentId=50000
parameter 9: $segmentId=31230
parameter 10: $vlanId=3000
parameter 11: $asn=65000
Got VLAN allocated from vlan manager at 17:09:57
Sent Apply to Configuration Manager at 17:09:57
Completed executing all commands at 17:09:58
Displaying VDP hosts
Interface      Encap     Flags State          VSI-ID
Eth101/1/2     3000      L     Profile Active  00000000000000000079FE005056B77983
```

show fabric database profile-map global

To display profile mapping details, use the **show fabric database profile-map global** command in privileged EXEC mode.

show fabric database profile-map global

Syntax Description   This command has no arguments or keywords.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.1(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Examples   The following is sample output from the **show fabric database profile-map global** command. The fields in the example are self-explanatory.

```
Device# show fabric database profile-map global

Flags: ? - Static profile not configured

Global Profile Map
(apply to all interfaces)

Map        Proto      VNI        DOT1Q     Flags  Profile Name
--------   ----------  ---------  ---------  ------  -------------------
global     ether-tag  default                       (dynamic)
global     ether-tag             default            (dynamic)
global     vdp        22222                          Static-22222
global     vdp        22223                          Static-22223
global     vdp        33333                          Static-33333
global     vdp        default                        (dynamic)
global     vdp                   222                 static-222
global     vdp                   333                 static-333
```

Related Commands

Command	Description
fabric database profile-map	Configures the fabric database profile map.

show fabric database statistics

To display fabric database statistics, use the **show fabric database statistics** command in privileged EXEC mode.

show fabric database statistics [{**type** |{**network**|**profile**}}]

Syntax Description

type	(Optional) Defines the type of statistics to display.
network	(Optional) Displays statistics of network databases.
profile	(Optional) Displays statistics of profile databases.

Command Default   Displays statistics of all databases.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Example

The following is sample output from the **show fabric database statistics** command where statistics for all databases are displayed. The fields are self-explanatory.

```
Device# show fabric database statistics
Global Stats:
DB-Type         Requests   Dispatched  Not dispatched  Re-dispatched
-------------------------------------------------------------------
Network             3           1            2              0
Profile             1           1            0              0
-------------------------------------------------------------------
TOTAL               4           2            2              0

Per Database stats:
T Prot Server/DB                        Reqs    OK  NoRes    Err  TmOut  Pend
-----------------------------------------------------------------------------
N LDAP host91                             1     0     1      0      0     0
      ou=segments,dc=cisco,dc=com
P LDAP host91                             1     1     0      0      0     0
      ou=profiles,dc=cisco,dc=com
Legend:
  T-Type (N-Network, P-Profile)
```

show fabric forwarding

To display information about the host databases and configuration of the host mobility manager (HMM) component, use the **show fabric forwarding** command in privileged EXEC mode.

show fabric forwarding {**host-db** {**vrf** [**all** | **default**] } | **internal** {**af** | **buffers** | **clients** | **debug** | **event-history** {**auto-config** | **errors** | **events** | **msgs** | **packets** | **periodic** | **trace**} | **intf** {**local-host-db** | **remote-host-db**} | **mac-bd local-host-db** | **mem-stats** | **migration-vips** | **state** | **svi-info** | **work-info**} | {**ip** | **ipv6**} {**aggregate-subnet-prefix** | **local-host-db** | **remote-host-db**} {**vrf** [**all** | **default**] [*v4-prefix* | *v6-prefix*] } }

Syntax Description		
host-db		Displays host database information.
internal		Displays internal HMM information.
af		Displays address family information.
buffers		Displays the internal buffer state maintained by HMM.
clients		Displays RPM clients.
debug		Displays internal debug information maintained by HMM.
event-history		Displays HMM event logs.
auto-config		Displays auto-configuration events of the HMM process.
errors		Displays HMM error logs.
events		Displays HMM process events.
msgs		Displays HMM message logs.
packets		Displays HMM process packet events.
periodic		Displays HMM process periodic events.
trace		Displays processing logs of HMM commands.
intf		Displays interface on which local host is learnt.
local-host-db		Displays HMM local host database information.
remote-host-db		Displays HMM remote host database information.
mac-bd		Displays MAC-Bridge Domain information.
mem-stats		Displays dynamic memory statistics.
migration-vips		Displays HMM VIPs database for migration.
state		Displays internal state information maintained by HMM.
svi-info		Displays switched virtual interface (SVI) information.

work-info	Displays internal HMM worker thread information.
ip	Displays IP information.
ipv6	Displays IPv6 information.
aggregate-subnet-prefix	Displays HMM aggregate subnet prefix information.
vrf	Displays virtual routing and forwarding (VRF) information of HMM component.
all	Displays information pertaining to all VRFs.
default	Displays the default VRF name.
v4-prefix	IPv4 address.
v6-prefix	IPv6 address.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Examples

The following command shows how to display host database information:

```
Device# show fabric forwarding host-db
```

The following command shows how to display host database VRF information:

```
Device# show fabric forwarding host-db vrf all
```

The following command shows how to display address family information:

```
Device# show fabric forwarding internal af
Number of URIB buffers in use/xid   : 0/0
Number of U6RIB buffers in use/xid  : 0/0
Number of VRFs in Update RIB List   : 0
Update RIB event signalled count    : 0
Update RIB thread wake up count     : 0
```

The following command shows how to display the internal buffer state maintained by HMM:

```
Device# show fabric forwarding internal buffers
HMM buffers information
```

The following command shows how to display RPM clients:

```
Device# show fabric forwarding internal clients
Name            Uuid        Sap       Flags        Stats(R/A/N/F)
mrib            0x113       256       0x40         1/1/0/0
arp             0x10c       279       0xce80       1/1/0/0
adjmgr          0x108       252       0x680        1/1/0/0
fwm             0x28c       602       0x7aa2       1/1/0/0
```

```
ISIS_L2MP        0x118       432         0x1ff0     1/1/0/0
IP               0x221       263         0xc3a0     1/1/0/0
ICMPv6           0x10e       282         0xcec0     1/1/0/0
```

The following command shows how to display internal debug information maintained by HMM:

```
Device# show fabric forwarding internal debug
HMM Debug information
Debug Flags                    : Off
Debug-filters                  : Off
```

The following command shows how to display auto-configuration events of the HMM process:

```
Device# show fabric forwarding internal event-history auto-config
Process auto-config logs of HMM
1) Event:E_DEBUG, length:65, at 382460 usecs after Mon Dec 23 10:53:29 2013
    [126] [10937]: Decrement outstanding PPM request (1/10) -> (0/10)

2) Event:E_DEBUG, length:65, at 376938 usecs after Mon Dec 23 10:53:29 2013
    [126] [10937]: Decrement outstanding PPM request (2/10) -> (1/10)

3) Event:E_DEBUG, length:65, at 375093 usecs after Mon Dec 23 10:53:29 2013
    [126] [10937]: Decrement outstanding PPM request (3/10) -> (2/10)

4) Event:E_DEBUG, length:65, at 373241 usecs after Mon Dec 23 10:53:29 2013
    [126] [10937]: Decrement outstanding PPM request (4/10) -> (3/10)
...
```

The following command shows how to display HMM error logs:

```
Device# show fabric forwarding internal event-history errors
Error events for HMM Process
```

The following command shows how to display HMM process events:

```
Device# show fabric forwarding internal event-history events
Process Event logs of HMM
1) Event:E_DEBUG, length:58, at 788428 usecs after Sun Jan 12 09:44:36 2014
    [117] [10937]: Received L3_PROTOCOL_STATE change msg, num 1
2) Event:E_DEBUG, length:58, at 786919 usecs after Sun Jan 12 09:44:36 2014
    [117] [10937]: Received L3_PROTOCOL_STATE change msg, num 1
3) Event:E_DEBUG, length:58, at 784142 usecs after Sun Jan 12 09:44:36 2014
    [117] [10937]: Received L3_PROTOCOL_STATE change msg, num 1
4) Event:E_DEBUG, length:51, at 777076 usecs after Sun Jan 12 09:44:36 2014
    [117] [10937]: Received IF_CREATED change msg, num 1
...
```

The following command shows how to display HMM message logs:

```
Device# show fabric forwarding internal event-history msgs
Msg events for HMM Process
1) Event:E_DEBUG, length:45, at 602003 usecs after Mon Jan 13 05:14:48 2014
    [100] [32706]: nvdb: transient thread created

2) Event:E_DEBUG, length:83, at 601402 usecs after Mon Jan 13 05:14:48 2014
    [100] [10944]: comp-mts-rx opc - from sap 27057 cmd hmm_show_internal_event_
hist_cmd
3) Event:E_DEBUG, length:42, at 918941 usecs after Mon Jan 13 05:14:15 2014
    [100] [32699]: nvdb: terminate transaction

4) Event:E_DEBUG, length:45, at 896918 usecs after Mon Jan 13 05:14:15 2014
    [100] [32699]: nvdb: transient thread created
...
```

The following command shows how to display HMM process packet events:

```
Device# show fabric forwarding internal event-history packets
Process packet logs of HMM
```

The following command shows how to display HMM process periodic events:

```
Device# show fabric forwarding internal event-history periodic
Process periodic event logs of HMM
1) Event:E_DEBUG, length:44, at 786068 usecs after Mon Jan 13 05:16:01 2014
    [123] [10942]: HMM cleanup thread in progress
2) Event:E_DEBUG, length:44, at 785935 usecs after Mon Jan 13 05:15:56 2014
    [123] [10942]: HMM cleanup thread in progress
3) Event:E_DEBUG, length:43, at 62257 usecs after Mon Jan 13 05:15:55 2014
    [123] [10936]: Invoke profile bookkeeping...
4) Event:E_DEBUG, length:44, at 785801 usecs after Mon Jan 13 05:15:51 2014
    [123] [10942]: HMM cleanup thread in progress
...
```

The following command shows how to display processing logs of HMM commands:

```
Device# show fabric forwarding internal event-history trace
Trace logs of HMM
1) Event:E_DEBUG, length:58, at 210400 usecs after Mon Dec 23 10:53:29 2013
    [119] [10935]: mts data queue bind success dynamic_sap=3137
```

The following command shows how to display HMM local host database information:

```
Device# show fabric forwarding internal intf local-host-db
```

The following command shows how to display HMM remote host database information:

```
Device# show fabric forwarding internal intf remote-host-db
```

The following command shows how to display MAC-BD information:

```
Device# show fabric forwarding internal mac-bd local-host-db
```

The following command shows how to display dynamic memory statistics:

```
Device# show fabric forwarding internal mem-stats
Mem stats for HMM Process

Private Mem stats for UUID : Malloc track Library(103) Max types: 5
--------------------------------------------------------------------------------
Curr alloc: 1728 Curr alloc bytes: 120844(118k)


Private Mem stats for UUID : Non mtrack users(0) Max types: 161
--------------------------------------------------------------------------------
Curr alloc: 740 Curr alloc bytes: 75035(73k)


Private Mem stats for UUID : libsdwrap(115) Max types: 22
--------------------------------------------------------------------------------
Curr alloc: 34 Curr alloc bytes: 2441304(2384k)


Private Mem stats for UUID : Associative_db library(175) Max types: 14
--------------------------------------------------------------------------------
Curr alloc: 156 Curr alloc bytes: 4400(4k)


Private Mem stats for UUID : Event sequence library(158) Max types: 4
--------------------------------------------------------------------------------
Curr alloc: 0 Curr alloc bytes: 0(0k)

...
```

The following command shows how to display the HMM VIPs database for migration:

```
Device# show fabric forwarding internal migration-vips
```

The following command shows how to display internal state information maintained by HMM:

```
Device# show fabric forwarding internal state
HMM Internal Global State

Start reason               : configuration
Sup state                  : Active
Restart type               : Stateless
All core components up      : Yes
     Comp      Uuid     Up         Dynamic    Init
     clis      261      True       False      True
     ifmgr     318      True       False      True
     adjmgr    264      True       False      True
     arp       268      True       False      True
     icmpv6    270      True       False      True
     netstack  545      True       False      True
     l3vm      445      True       False      True
     urib      273      True       False      True
     u6rib     274      True       False      True
     unknown   652      True       False      True
     rpm       305      True       False      True
     unknown   593      False      True       False
     bgp       283      False      True       False
     unknown   406      False      True       False
     unknown   68       False      True       False
     pktmgr    263      True       False      True
     unknown   1210     True       True       True
     unknown   704      True       True       True
Libraries registered       : IP IPv6
HMM thread                 : 0x68b2cb90
Debug Flags                : Off
```

The following command shows how to display SVI information:

```
Device# show fabric forwarding internal svi-info
HMM Global config information
Fabric id                    : 0
Conversational Learning      : False
Urib/U6rib Conv Aging Timeout : 1800/1800 (secs)
Switch role                  : leaf
Anycast Gateway mac          : 0000.0000.0000
Fabric control segment/Notify : -/False
Migration count              : 0
Migration                    : False
Port tracking                : -


HMM SVI information
AM thread halted/count       : No/0
#RARP on Mgmt intf           : 407
#Recvd non Ether pkts        : 0
#Recvd non RARP pkts         : 0
#Hosts with same mac-bd      : 0
```

The following command shows how to display internal HMM worker thread information:

```
Device# show fabric forwarding internal work-info
HMM Worker information

Work in Progress                        : False
Remote Hosts cleanup pending/progress   : False/False
Fabric ID change pending/progress       : False/False
```

```
#Worker walk                          : 0
#No work                              : 0
#Signal worker thread                 : 0
```

The following command shows how to display IP HMM aggregate subnet prefix information:

Device# **show fabric forwarding ip aggregate-subnet-prefix**

The following command shows how to display IP HMM local host database information:

Device# **show fabric forwarding ip local-host-db**

The following command shows how to display IP HMM local host database VRF information:

Device# **show fabric forwarding ip local-host-db vrf all**

The following command shows how to display IP HMM remote host database information:

Device# **show fabric forwarding ip remote-host-db**

The following command shows how to display IP HMM remote host database VRF information:

Device# **show fabric forwarding ip remote-host-db vrf all**

The following command shows how to display IPv6 HMM aggregate subnet prefix VRF information:

Device# **show fabric forwarding ip aggregate-subnet-prefix vrf all**

The following command shows how to display IPv6 HMM aggregate subnet prefix information:

Device# **show fabric forwarding ipv6 aggregate-subnet-prefix**

The following command shows how to display IPv6 HMM local host database information:

Device# **show fabric forwarding ipv6 local-host-db**

The following command shows how to display IPv6 HMM local host database VRF information:

Device# **show fabric forwarding ipv6 local-host-db vrf all**

The following command shows how to display IPv6 HMM remote host database information:

Device# **show fabric forwarding ipv6 remote-host-db**

show fabric oam traceroute

To display information about FabricPath Operation, Administration, and Maintenance (OAM), use the **show fabricpath oam traceroute** command in privileged EXEC mode.

show fabricpath oam traceroute {**database** [**session** *session-handle*]|**statistics** [{**summary**}]}

Syntax Description		
database		Displays information about FabricPath OAM traceroute database.
session *session-handle*		(Optional) Displays information about for FabricPath OAM traceroute for a specific session.
statistics		Displays information about FabricPath OAM traceroute statistics.
summary		(Optional) Displays FabricPath OAM traceroute statistics summary.

Command Modes Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines When a **traceroute** command returns errors and the details are not available in the command output, you can use the **show fabricpath OAM traceroute database** command to see the details.

A session is an auto-generated identifier for a proactive traceroute request.

Example

The following is sample output from the **show fabricpath OAM traceroute statistics** command.

```
Device# show fabricpath OAM traceroute statistics

Last Clear of Statistics: Never
Traceroute Reply/notification return code distribution
    V - VLAN nonexistent (0)                  - 0
    v - VLAN in suspended state  (1)          - 0
    C - Cross Connect Error (2)               - 0
    U - Unknown RBridge nickname (3)          - 0
    n - Not AF (4)                            - 0
    M - MTU mismatch (5)                      - 0
    I - Interface not in forwarding state  (6) - 0
    S - Service Tag nonexistent (7)           - 0
    s - Service Tag in suspended state (8)    - 0
    ! - success                               - 5
  m - malformed request                       - 0
  Q - request not sent                        - 0
```

```
     . - timeout                                  - 0
   D - Destination unreachable                    - 0
   X - Unknown return code                        - 0
Path Trace Requests: sent (5)/received (0)/timedout (0)/unsent (0)
Path Trace Replies: sent (0)/received (5)/unsent (0)
```

The following is sample output from the **show fabricpath OAM traceroute statistics summary** command.

```
Device# show fabricpath OAM traceroute statistics summary

Path Trace Requests: sent (5)/received (0)/timeout (0)/unsent (0)
Path Trace Replies: sent (0)/received (5)/unsent (0)
```

The following is sample output from the **show fabricpath OAM traceroute database** command.

```
Device# show fabricpath OAM traceroute database

Sender handle: 2
Path Trace Request from switch-id 10

Id: sent: 5 timeout: 0 unsent: 0 Interface: NA
Hop limit: 2 Flags: 0 switch-id: 10
Forward Flow Entropy: Default
Reverse Flow Entropy: NA
Service Tag: NA Vlan: 10 out of band: No
Reverse Path Req(ecmp/nickname): NA
Control Plane Verification Req(ecmp/nickname):NA
Reply: received (5)
Reverse Resp (ecmp cnt: 1, (ecmp id: 0xFFFF, ifindex: 32, slot:0, port:0, state:10,
state:fwd))
Forward Resp (ecmp cnt: 1, (ecmp id: 0xFFFF, ifindex: 32, slot:0, port:0, state:10,
state:fwd))
```

show interface status err-disabled

To display the error disabled state of interfaces, use the **show interface status err-disabled** command in privileged EXEC mode.

show interface status err-disabled

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 4.0	This command was introduced.
Cisco NX-OS 6.0(2)N3(1)	This command was integrated.
Cisco NX-OS 6.1(2)I2(2)	

Usage Guidelines

Interfaces in error-disabled state, prevent all traffic from leaving these interfaces. Error disabling is one way of bringing down an interface via software.

Examples

The following example shows how to display the error disabled state of interfaces:

```
Device# show interface status err-disabled


--------------------------------------------------------------------
Port Name     Status Reason
--------------------------------------------------------------------
Eth114/1/27 -- down BPDUGuard errDisable
Eth114/1/28 -- down BPDUGuard errDisable
Eth114/1/29 -- down BPDUGuard errDisable
```

show ip arp statistics

To view Address Resolution Protocol (ARP) statistics, use the **show ip arp statistics** command in privileged EXEC mode.

show ip arp statistics [**ethernet** *interface-number* [**.***sub-interface-number*] | **loopback** *interface-number* | **mgmt** *management-interface-number*] [**interface-all**] [**vrf** {*vrf-name* | **all** | **default** | **management**}]

Syntax Description		
ethernet *interface-number*	(Optional) Displays ARP statistics for the specified ethernet interface.	
.*sub-interface-number*	(Optional) Subinterface number for which ARP statistics will be displayed.	
	Note	The period (.) needs to precede the *sub-interface-number* argument value.
loopback *interface-number*	(Optional) Displays ARP statistics for the specified loopback interface.	
mgmt *management-interface-number*	(Optional) Displays ARP statistics for the specified management interface.	
interface-all	(Optional) Displays ARP statistics for all interfaces.	
vrf *vrf-name*	(Optional) Displays ARP statistics for the specified VRF instance.	
vrf all	(Optional) Displays ARP statistics for all VRF instances.	
vrf default	(Optional) Displays ARP statistics for the default VRF instance.	
vrf management	(Optional) Displays ARP statistics for the management VRF instance.	

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 6.1(2)I2(2)	This command was introduced.
Cisco NX-OS 7.0(0)N1(1)	This command was integrated.

Examples   The following sample output shows ARP statistics for an Ethernet subinterface:

```
Device# show ip arp statistics ethernet 2/1.1

 ARP packet statistics for interface: Ethernet2/1.1

 Sent:

  Total 0, Requests 0, Replies 0, Requests on L2 0, Replies on L2 0,

  Gratuitous 0, Tunneled 0, Dropped 0 from Server Port 0, from Fabric
```

```
Port 0,

    fixup core 0, fixup server 0, fixup rarp 0, modified anycast glean 0

    Send packet drops details:

        MBUF operation failed : 0

        Context not yet created : 0

        Invalid context : 0

        Invalid ifindex : 0

        Invalid SRC IP : 0

        Invalid DEST IP : 0

        Destination is our own IP : 0

        Unattached IP : 0

        Adjacency Couldn't be added : 0

        Null Source IP : 0

        Null Source MAC : 0

        Client Enqueue Failed : 0

        Dest. not reachable for proxy arp : 0

        Dest. unreachable for enhanced proxy: 0

        Dest. on L2 port being tracked : 0

        Invalid Local proxy arp : 0

        Invalid proxy arp : 0

        VIP is not active : 0


    Received:

      Total 0, Requests 0, Replies 0, Requests on L2 0, Replies on L2 0

      Proxy arp 0, Local-Proxy arp 0, Enhanced Proxy arp 0, Anycast proxy
Proxy arp 0,  L2 Port-track Proxy arp 0,  Tunneled 0,
      Fastpath 0, Snooped 0, Dropped 0, on Server Port 0
```

```
Received packet drops details:

    Appeared on a wrong interface : 0

    Incorrect length : 0

    Invalid protocol packet : 0

    Invalid context : 0

    Context not yet created : 0

    Invalid layer 2 address length : 0

    Invalid layer 3 address length : 0

    Invalid source IP address : 0

    Source IP address is our own : 0

    No mem to create per intf structure : 0

    Source address mismatch with subnet : 0

    Directed broadcast source : 0

    Invalid destination IP address : 0

    Non-local destination IP address : 0

    Non-active FHRP dest IP address. Learn and drop : 0

    Invalid source MAC address : 0

    Source MAC address is our own : 0

    Received before arp initialization : 0
```

show ip arp suppression-cache

To display ARP suppression cache information, use the **show ip arp suppression-cache** command in privileged EXEC mode.

show ip arp suppression-cache [**detail** | **local** | **remote** | **statistics** | **summary** | **vlan** *vlan-id*]

Syntax Description		
detail	Displays detailed ARP suppression cache information.
local	Displays local entries.
remote	Displays remote entries.
statistics	Displays ARP suppression cache statistics information.
summary	Displays ARP suppression cache summary information.
vlan *vlan-id*	Displays ARP suppression cache information for the specified VLAN . The VLAN ID range is from 1 to 3967 and 4050 to 4093.

Command Modes Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 6.1(2)I2(2)	This command was introduced.
Cisco NX-OS 7.3(0)N1(1)	This command was integrated.
Cisco NX-OS 7.3(0)D1(1)	

Example

The following is sample output from the **show ip arp suppression-cache detail** command.

```
Device# show ip arp suppression-cache detail

Flags: + - Adjacencies synced via CFSoE/vPC peer
       R - Remote Adjacency
       L2 - Learnt over L2 interface

Total number of entries: 2

Address     Age        MAC Address     Vlan     Physical Interface     Flags

172.16.0.1  00:01:02   0026.980c.1ec2  100      Ethernet2/6
172.16.0.2  00:01:03   0026.980c.1ec3  100                             R
```

The following is sample output from the **show ip arp suppression-cache local** command.

```
Device# show ip arp suppression-cache local

Flags: + - Adjacencies synced via CFSoE
       L - Local Adjacency
       R - Remote Adjacency
```

```
        L2 - Learnt over L2 interface

Ip Address      Age      Mac Address       Vlan Physical-ifindex     Flags
172.16.0.1      00:01:02  0026.980c.1ec2    100  Ethernet2/6
172.16.0.2      00:01:03  0026.980c.1ec3    100                          R
```

The following is sample output from the **show ip arp suppression-cache remote** command.

```
Device# show ip arp suppression-cache remote

Flags: + - Adjacencies synced via CFSoE
       L - Local Adjacency
       R - Remote Adjacency
       L2 - Learnt over L2 interface

Ip Address      Age      Mac Address       Vlan    Physical-ifindex     Flags
172.16.0.1      00:01:02  0026.980c.1ec2  100     Ethernet2/6
172.16.0.2      00:01:03  0026.980c.1ec3  100                              R
```

The following is sample output from the **show ip arp suppression-cache summary** command.

```
Device# show ip arp suppression-cache summary

IP ARP suppression-cache Summary

  Remote            : 1
  Synced via vpc peer : 0
  Local             : 1
  Total             : 2
```

The following is sample output from the **show ip arp suppression-cache statistics** command.

```
Device# show ip arp suppression-cache statistics

ARP packet statistics for suppression-cache

Supressed:
Total 0, Requests 0, Replies 0, Requests on L2 0, Replies on L2 0,
Request on core port 0, Reply on core port 0, Gratuitous 0

Sent:
 Total 7, Requests 4, Replies 1, Requests on L2 0, Replies on L2 0,
 Request on core port 0, Reply on core port 0, Gratuitous 2,

Dropped 0
 Send packet drops details:
     MBUF operation failed             : 0
     Invalid ifindex                   : 0
     Invalid SRC IP                    : 0
     Invalid DEST IP                   : 0
     Destination is our own IP         : 0
     Unattached IP                     : 0
     Cache add failed                  : 0

Received:
 Total 3, Requests 1, Replies 2, Requests on L2 0, Replies on L2 0,
 Reply on core port 0, Request on core port 0, Dropped 0
 Received packet drops details:
     Incorrect length                  : 0
     Invalid protocol packet           : 0
     Invalid layer 2 address length    : 0
     Invalid layer 3 address length    : 0
     Invalid source IP address         : 0
```

```
        No mem to create per intf structure : 0
        No mem to create cache entry        : 0
        Source address mismatch with subnet : 0
        Directed broadcast source           : 0
        Invalid destination IP address      : 0
        L2RIB add failed                    : 0

ARP suppression-cache entry statistics

 Adds 1, Deletes 0, Timeouts 0
```

The following is sample output from the **show ip arp suppression-cache vlan** *vlan-id* command.

```
Device# show ip arp suppression-cache vlan 100

Flags: + - Adjacencies synced via CFSoE/vPC peer
       R - Remote Adjacency
       L2 - Learnt over L2 interface
Total number of entries: 1

Address         Age       MAC Address     Vlan        Physical Interface   Flags
172.16.0.1      00:01:02  0026.980c.1ec2  100         Ethernet2/6          R
```

show lldp fabric auto-config

To display the lldp fabric auto-configuration information, use the **show lldp fabric auto-config** command in privileged EXEC mode.

show lldp fabric auto-config

Syntax Description	This command has no arguments or keywords.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.3(0)N1(1)	This command was introduced.
Cisco NX-OS 7.3(0)D1(1)	

Example

The following is sample output from the **show lldp fabric auto-config** command. The fields in the example are self-explanatory.

```
switch# show lldp fabric auto-config

Interface    PORT-CHANNEL   Mac-Address    VNI    VLAN   Port-Mode  Status
-------------------------------------------------------------------------------
Ethernet1/30 Po100          8478.ac1b.70c4 40000  200    native     ADD SUCCESS
Ethernet1/29 NA             8478.ac1b.70c1 -      100    native     ADD SUCCESS
```

show logging level evb

To display the system log (syslog) filter level for an Edge Virtual Bridging (EVB) session, use the **show logging level evb** command in privileged EXEC mode.

show logging level evb

Command Default	None

Command Modes	Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 4.0(1)	This command was introduced.
Cisco NX-OS 6.1(2)I2(2)	This command was integrated.
Cisco NX-OS 7.0(0)N1(1)	

Usage Guidelines

Use the **feature evb** command to enable the EVB session. This, in turn, enables the **evb** keyword in the **logging level** command and the **show logging level** command on the device. Use the **show logging level evb** command to identify the default and the current severity levels of the EVB session.

Examples

The following is sample output from the **show logging level evb** command in which, for an EVB session, the default severity level is 5 and the user-defined syslog filter level is 4:

```
Device# show logging level evb

Facility        Default Severity        Current Session Severity
--------        ----------------        ------------------------
evb                   5                           4

0(emergencies)          1(alerts)       2(critical)
3(errors)               4(warnings)     5(notifications)
6(information)          7(debugging)
```

show l2route evpn mac

To view MAC and IP address information learnt by the switch in the EVPN control plane, use the **show l2route evpn mac** command in privileged EXEC mode.

show l2route evpn mac [**all** | **evi** *vlan-id*]

Syntax Description	

all	Displays all routes information without filtering.
evi *vlan-id*	Displays route information learnt for a specific EVPN instance by the switch in the EVPN control plane,
	The VLAN ID range is from 2 to 4096.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.3(0)N1(1)	This command was introduced.
Cisco NX-OS 7.3(0)D1(1)	

Example

The following is sample output from the **show l2route evpn mac all** command.

```
Device# show l2route evpn mac all
Topology ID Mac Address    Producer (ID) Next Hop(s) Label    Seq Number
----------- -------------- ------------- ---------- -------  ----------
 10         a.a.a          Local   (003) 1.1.1.1     N/A       0
 10         b.b.b          BGP     (005) 5.5.5.5     N/A       20
 20         c.c.c          Local   (003) 0.0.0.0     N/A       0
 20         d.d.d          Local   (003) 0.0.0.0     N/A       0
```

The following is sample output from the **show l2route evpn mac evi 10** command.

```
Device# show l2route evpn evi 10
Topology ID Mac Address    Producer (ID) Next Hop(s) Label    Seq Number
----------- -------------- ------------- ---------- -------  ----------
 10         a.a.a          Local   (003) 1.1.1.1     N/A       0
 10         b.b.b          BGP     (005) 5.5.5.5     N/A       20
```

show l2route topology

To display Layer-2 route topology information, use the **show l2route topology** command in privileged EXEC mode.

show l2route topology [**detail**]

Syntax Description

detail	Displays detailed Layer-2 route topology information.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.3(0)N1(1)	This command was introduced.
Cisco NX-OS 7.3(0)D1(1)	

Example

The following is sample output from the **show l2route topology** command.

```
Device# show l2route topology
Topology ID    Topology Name    Attributes
-----------    -------------    ----------
2              Vxlan-100002     VNI
3              Vxlan-100003     VNI
6              Vxlan-100006     VNI
23             Vxlan-100023     VNI
26             Vxlan-100026     VNI
```

The following is sample output from the **show l2route topology detail** command.

```
Device# show l2route topology detail
Topology ID    Topology Name    Attributes
-----------    -------------    ----------
2              Vxlan-100002     VNI: 100002
                                Encap:0 IOD:0 IfHdl:1224736769
                                VTEP IP: 172.0.0.18
                                Emulated 172.0.0.23
                                TX-ID: 8 (Rcvd Ack: 0)
                                RMAC: 0000.0000.0000, VRFID: 0
                                Flags: 0x1, Prev_Flags: 0x0
3              Vxlan-100003     VNI: 100003
                                Encap:0 IOD:0 IfHdl:1224736769
                                VTEP IP: 172.0.0.19
                                Emulated IP: 172.0.0.24
                                TX-ID: 9 (Rcvd Ack: 0)
                                RMAC: 0000.0000.0000, VRFID: 0
                                Flags: 0x1, Prev_Flags: 0x0
```

show ngoam loopback

To display information about the NGOAM loopback information, use the **show ngoam loopback** command in Privileged EXEC mode.

show ngoam loopback {**statistics** {**session** {*session-handle* | **all**} | **summary**} | **status** {**session** {*session-handle* | **all**}}

Syntax Description		
statistics		Displays NGOAM loopback statistics.
session *session-handle*		(Optional) Displays information about NGOAM loopback for a specific session. The range is from 1 to 65535.
session *all*		(Optional) Displays results for all ping/loopback sessions.
summary		(Optional) Displays NGOAM loopback statistics summary.
status		Displays NGOAM loopback status.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.3(0)N1(1)	This command was introduced.
Cisco NX-OS 7.3(0)D1(1)	

Example

The following is sample output from the **show ngoam loopback statistics** command.

```
switch# show ngoam loopback statistics session 10

Sender Handle: 10
Last Clear of Statistics: Never
Loopback Reply/notification return code distribution:
    C - Cross Connect Error (2)                              - 0
    ! - success                                              - 5
    m - malformed request                                    - 0
    Q - request not sent                                     - 0
    . - timeout                                              - 0
    D - Destination unreachable                              - 0
    X - Unknown return code                                  - 0
Loopback Requests: sent (5)/ timedout (0)/unsent (0)
Loopback Replies: received (5)
Summary
Loopback Requests: sent (5)/received (0)/timeout (0)/unsent (0)
Loopback Replies: sent (0)/received (5)/unsent (0)
```

The following is sample output from the **show ngoam loopback statistics summary** command.

```
switch# show ngoam loopback statistics summary
```

```
Loopback Requests: sent (5)/received (0)/timeout (0)/unsent (0)
Loopback Replies: sent (0)/received (5)/unsent (0)
```

show ngoam pathtrace

To display the NGOAM path trace information, use the **show ngoam pathtrace** command in privileged EXEC mode.

show ngoam pathtrace {**database session** {*session-handle* | **all**} [**detail**] | **statistics** {**session** {*session-handle* | **all**} | **summary**}}

Syntax Description		
database	Displays information about the NGOAM loopback database.	
statistics	Displays NGOAM loopback statistics.	
session *session-handle*	(Optional) Displays information about NGOAM loopback for a specific session.	
	The range is from 1 to 65535.	
session *all*	(Optional) Displays results for all ping/loopback sessions.	
summary	(Optional) Displays NGOAM loopback statistics summary.	
status	Displays NGOAM loopback status.	

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.3(0)N1(1)	This command was introduced.
Cisco NX-OS 7.3(0)D1(1)	

Example

The following is sample output from the **show ngoam pathtrace statistics** command.

```
switch# show ngoam pathtrace statistics session 4

Sender Handle: 4
Last Clear of Statistics: Never
! - success                              : 2
c - Corrupted Data/Test                  : 0
* - Success, Optional Tlv incomplete     : 0
I - Interface not in forwarding state    : 0
m - malformed request                    : 0
Q - request not sent                     : 0
. - timeout                              : 0
D - Destination unreachable              : 0
X - Unknown return code                  : 0
```

The following is sample output from the **show ngoam pathtrace statistics summary** command.

```
switch# show ngoam traceroute statistics summary

Last Clear of Summary Statistics: Never
Pathtrace Requests: sent (2)/received (2)/timeout (0)/unsent (0)
```

```
Pathtrace Replies: sent (2)/received (2)/unsent (0)
```

show plb

To view the current state of a PLB service instance, use the **show plb** command in Privileged EXEC mode.

show plb [*service-instance*]

Syntax Description

service-instance	(Optional) PLB service instance.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 8.0(1)	This command was introduced.

Usage Guidelines

None.

Example

This example shows how to view the current state of a PLB service:

```
switch# show plb srv200

Legend:

ST(Status): ST-Standby,LF-Link Failed,PF-Probe Failed,PD-Peer Down,IA-Inactive

Name       LB Scheme        Status       Buckets      Reason
srv200     src-ip           ACTIVE       4

Exclude ACL

Device Group                Probe                    Port                Original Node
         #Packets
dg200

Pool               Interface      Status      Track_id
srv200_plb_pool      Bdi1810      UP          1

Virtual IP                         Netmask/Prefix Protocol       Port
200.200.200.200 / 255.255.255.2    IP                            0

Node    IP             Cfg-S  WGT  Probe  Port  Probe-IP  STS  Trk#  Sla_id  Bucket List
1       10.10.10.120   Active 1                           OK
srv200_plb_vip_1_bucket_1
```

—In the above example, the **Reason** field will be populated if the Status is INACTIVE.

—Device group, VIP, server, and service instance bucket information is displayed in the above command output.

Related Commands

Command	Description
plb	Creates a PLB service instance and parameters for the service instance.

show plb statistics

To view PLB statistics for a service instance, use the **show plb statistics** command in Privileged EXEC mode.

show plb *service-instance* **statistics** [**brief**]

<table>
<tr><td>**Syntax Description**</td><td>*service-instance*</td><td>PLB service instance.</td></tr>
<tr><td></td><td>**brief**</td><td>(Optional). Displays PLB service instance statistics, in brief.</td></tr>
</table>

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 8.0(1)	This command was introduced.

Usage Guidelines   To view PLB statistics, you should enable the option first. Use the **plb statistics** command in global configuration mode to be able to view PLB statistics.

Example

This example shows how to view PLB statistics for a service instance:

```
switch# show plb srv200 statistics

Service              Device Group       VIP/mask                         #Packets

srv200               dg200              200.200.200.200 / 255.255.255.25  8704 (100.00%)

Traffic Bucket            Assigned to            Mode             Original
Node          #Packets
srv200_plb_vip_1_bucket_1  10.10.10.120           Redirect         10.10.10.120
             4352 (50.00%)

Traffic Bucket            Assigned to            Mode             Original
Node          #Packets
srv200_plb_vip_1_bucket_2  10.10.10.121           Redirect         10.10.10.121
             4352 (50.00%)
```

—The service instance, device group, VIP and corresponding packet information is displayed in the first row.

—The various service instance buckets are recorded separately.

Related Commands

Command	Description
plb statistics	Enables PLB statistics function.

show ngoam traceroute

To display information about the NGOAM trace route, use the **show ngoam traceroute** command in Privileged EXEC mode.

show ngoam traceroute statistics ｛**session** ｛*session-handle* ｜ **all**｝ ｜**summary**｝

Syntax Description		
statistics	Displays NGOAM loopback statistics.	
session *session-handle*	(Optional) Displays information about NGOAM loopback for a specific session. The range is from 1 to 65535.	
session *all*	(Optional) Displays results for all ping/loopback sessions.	
summary	(Optional) Displays NGOAM loopback statistics summary.	

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco Nexus 7.3(0)N1(1)	This command was introduced.
Cisco Nexus 7.3(0)D1(1)	

Example

The following is sample output from the **show ngoam traceroute statistics** command.

```
switch# show ngoam traceroute statistics session 6

Sender Handle: 6
Last Clear of Statistics: Never
! - success                             : 3
c - Corrupted Data/Test                 : 0
* - Success, Optional Tlv incomplete    : 0
I - Interface not in forwarding state   : 0
m - malformed request                   : 0
Q - request not sent                    : 0
. - timeout                             : 0
D - Destination unreachable             : 0
X - Unknown return code                 : 0
```

The following is sample output from the **show ngoam traceroute statistics summary** command.

```
switch# show ngoam traceroute statistics summary

Last Clear of Summary Statistics: Never
Traceroute Requests: sent (3)/received (0)/timeout (0)/unsent (0)
Traceroute Replies: sent (0)/received (3)/unsent (0)
```

show nve peers

To display information about the network virtualization endpoint (NVE) peers configured on the Cisco Nexus device, use the **show nve peers** command in privileged EXEC mode.

show nve peers [**control-plane** [**detail**] | **control-plane-vni** [**peer-ip** *ip-address* | **VNI** *ID*] | **data-plane** [**detail**] | **detail** | **interface nve** *number* [**detail**] | **peer-ip** *ip-address*]]

Syntax Description

control-plane	(Optional) Displays details about NVE peers that are learned through the control plane.
control-plane detail	(Optional) Displays detailed information about NVE peers that are learned through the control plane.
control-plane-vni peer-ip *ip-address*	(Optional) Displays information about specific peer.
control-plane-vni VNI *ID*	(Optional) VNI that is mapped to an NVE interface. The range is from 4096 to 16777215.
data-plane	(Optional) Displays NVE peers that are learned through the data plane.
data-plane detail	(Optional) Displays details about NVE peers that are learned through the data plane.
detail	(Optional) Displays detailed information about NVE peers.
interface nve *number*	(Optional) Displays information about NVE interface.
peer-ip *ip-address*	(Optional) Displays information about specific peer.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 6.1(2)I2(2)	This command was introduced.
Cisco NX-OS 7.1(0)N1(1)	This command was integrated.
Cisco NX-OS 7.2(0)D1(1)	

Example

The following is sample output from the **show nve peers data-plane** command:

```
switch# show nve peers data-plane
Interface Peer-IP         State LearnType Uptime   Router-Mac
--------- --------------- ----- --------- -------- -----------------
nve1      172.16.0.2      Up    CP        1w0d     n/a
```

The following is sample output from the **show nve peers data-plane detail** command:

```
switch# show nve peers data-plane detail
Details of nve Peers:
----------------------------------------
Peer-Ip: 172.16.0.2
    NVE Interface       : nve1
    Peer State          : Up
    Learn Type          : CP
    Peer Uptime         : 1w0d
    Router-Mac          : n/a
    Peer First VNI      : 0
    Time since Create   : 1w0d
    Configured VNIs     : 30000-30001,50000
    Provision State     : add-complete
    Route-Update        : Yes
    Peer Flags          : None
    Learn Src           : VPC
    Learnt CP VNIs      : --
    Peer-ifindex-resp   : Yes
----------------------------------------
```

The following is sample output from the **show nve peers interface nve 1** command:

```
switch# show nve peers interface nve 1
Interface Peer-IP         State LearnType Uptime   Router-Mac
--------- --------------- ----- --------- -------- ----------------
nve1      172.16.0.2      Up    CP        1w0d     n/a
```

The following is sample output from the **show nve peers peer-ip 172.16.0.2** command:

```
switch# show nve peers peer-ip 172.16.0.2
Interface Peer-IP         State LearnType Uptime   Router-Mac
--------- --------------- ----- --------- -------- ----------------
nve1      172.16.0.2      Up    CP        1w0d     n/a
```

show nve vni

To display information about one or all of the network virtualization endpoint (NVE) VNIs configured on the switch, use the **show nve vni** command in privileged EXEC mode.

show nve vni [**control-plane** | **data-plane** | **interface** {**nve** *number*} | **summary**]

Syntax Description

control-plane	(Optional) Displays only the NVE VNIs that are learned through the control plane.
data-plane	(Optional) Displays only the NVE VNIs that are learned through the data plane.
interface nve *number*	(Optional) Displays information about the VNIs that are assigned to the specified NVE interface. The value of the number *argument* is the unique identifier for the NVE interface that you configured by using the **interface nve** command.
summary	(Optional) Displays summarized information about NVE VNI.

Command Modes Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 6.1(2)I2(2)	This command was introduced.
Cisco NX-OS 7.1(0)N1(1)	This command was integrated.
Cisco NX-OS 7.2(0)D1(1)	

Example

The following is sample output from the **show nve nvi** command.

```
switch# show nve vni
Codes: CP - Control Plane        DP - Data Plane
       UC - Unconfigured         SA - Suppress ARP
       SU - Suppress Unknown Unicast

Interface VNI      Multicast-group   State Mode Type [BD/VRF]      Flags
--------- -------- ----------------- ----- ---- ----------------- -----
nve1      13201    n/a               Up    CP   L3 [vpn1]
nve1      13221    n/a               Up    CP   L3 [vpn2]
nve1      13231    n/a               Up    CP   L3 [vpn3]
nve1      13241    n/a               Up    CP   L3 [vpn4]
```

The following is sample output from the **show nve nvi control-plane** command.

```
switch# show nve vni control-plane
Codes: CP - Control Plane        DP - Data Plane
       UC - Unconfigured         SA - Suppress ARP
       SU - Suppress Unknown Unicast

Interface VNI      Multicast-group   State Mode Type [BD/VRF]      Flags
```

```
--------- -------- ----------------- ----- ---- ----------------- -----
nve1      13201    n/a               Up    CP   L3 [vpn1]
nve1      13221    n/a               Up    CP   L3 [vpn2]
nve1      13231    n/a               Up    CP   L3 [vpn3]
nve1      13241    n/a               Up    CP   L3 [vpn4]
```

The following is sample output from the **show nve nvi data-plane** command.

```
switch# show nve vni data-plane
Codes: CP - Control Plane        DP - Data Plane
       UC - Unconfigured         SA - Suppress ARP
       SU - Suppress Unknown Unicast

Interface VNI      Multicast-group   State Mode Type [BD/VRF]      Flags
--------- -------- ----------------- ----- ---- ----------------- -----
nve1      13201    n/a               Up    CP   L3 [vpn1]
nve1      13221    n/a               Up    CP   L3 [vpn2]
nve1      13231    n/a               Up    CP   L3 [vpn3]
nve1      13241    n/a               Up    CP   L3 [vpn4]
```

The following is sample output from the **show nve nvi interface nve 1** command.

```
switch# show nve vni interface nve 1
Codes: CP - Control Plane        DP - Data Plane
       UC - Unconfigured         SA - Suppress ARP
       SU - Suppress Unknown Unicast

Interface VNI      Multicast-group   State Mode Type [BD/VRF]      Flags
--------- -------- ----------------- ----- ---- ----------------- -----
nve1      100056   230.0.0.1         Up    CP   L2 [56]
nve1      100053   230.0.0.1         Up    CP   L2 [53]
nve1      100046   230.0.0.1         Up    CP   L2 [46]
nve1      100043   230.0.0.1         Up    CP   L2 [43]
```

The following is sample output from the **show nve vni summary** command.

```
switch# show nve vni summary
Total CP VNIs: 16   [Up: 16, Down: 0]
Total DP VNIs: 0    [Up: 0, Down: 0]
Total UC VNIs: 0
```

show nve vrf

To display Virtual Routing and Forwarding (VRF) instances and their Virtual Network Identifier (VNI) associations, use the **show nve vrf** command in privileged EXEC mode.

show nve vrf

Syntax Description   This command has no arguments or keywords.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.1(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Example

The following is the sample output from the **show nve vrf** command.

```
switch# show nve vrf
VRF-Name     VNI        Interface Gateway-MAC
------------ ---------- --------- -----------------
vpn1         13201      nve1      002a.6ab2.0781
vpn2         13221      nve1      002a.6ab2.0781
vpn3         13231      nve1      002a.6ab2.0781
```

show param-list

To display all user-defined parameter lists configured in a device, use the **show param-list** command in privileged EXEC mode.

show param-list [**param-list-name** *list-name*] **[show-instance]**

Syntax Description

param-list-name *list-name*	(Optional) Displays details of a specific user-defined parameter.
show-instance	(Optional) Displays details of instances created for user-defined parameters.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines

The **show param-list** command displays all parameter lists configured in the device. To view the instances of all the parameter lists, use the **show param-list show-instance** command. To view the instances of a specific user-defined parameter list, use the **show param-list param-list-name** *list-name* **show-instance** command.

The following sample output from the **show param-list** command displays all parameter lists configured in the device:

```
Device(config)# show param-list

Param List Name : param-prof1-list
        Name : ipaddr   Type : ipaddr
        Name : prog1    Type : string
        Name : segid    Type : integer
        Name : vlan_num Type : integer
Param List Name : param-prof2-list
        Name : l2-segid Type : integer
        Name : l3-segid Type : integer
        Name : ipv4addr Type : ipaddr
        Name : ipv6addr Type : ipaddr
```

The following sample output from the **show param-list show-instance** command displays instances of all parameter lists available in the device:

```
Device(config)# show param-list show-instance

Param List Name : param-prof1-list
        Name : ipaddr   Type : ipaddr
        Name : prog1    Type : string
        Name : segid    Type : integer
        Name : vlan_num Type : integer
        Param Instance Name : param-prof1-inst1
        Name : ipaddr   Value : 192.0.2.12
        Name : prog1    Value : vrf-300
        Name : segid    Value : 6300
        Name : vlan_num Value : 300
```

```
         Param Instance Name : param-prof1-inst2
         Name : ipaddr   Value : 192.0.2.10
         Name : prog1    Value : 330-vrf-2
         Name : segid    Value : 6301
         Name : vlan_num Value : 301
Param List Name : param-prof2-list
         Name : l2-segid Type : integer
         Name : l3-segid Type : integer
         Name : ipv4addr Type : ipaddr
         Name : ipv6addr Type : ipaddr
         Param Instance Name : param-prof2-inst1
         Name : l2-segid Value : 6305
         Name : l3-segid Value : 6306
         Name : ipv4addr Value : 192.0.2.5
         Name : ipv6addr Value : 2001:DB8::1
         Param Instance Name : param-prof2-inst2
         Name : l2-segid Value : 6307
         Name : l3-segid Value : 6308
         Name : ipv4addr Value : 192.0.2.8
         Name : ipv6addr Value : 2001:DB8::1
```

The following sample output from the **show param-list param-list-name** *list-name* **show-instance**
command displays instances of the param-prof1-list parameter list:

```
Device(config)# show param-list param-list-name param-prof1-list show-instance

Param List Name : param-prof1-list
         Name : ipaddr   Type : ipaddr
         Name : prog1    Type : string
         Name : segid    Type : integer
         Name : vlan_num Type : integer
         Param Instance Name : param-prof1-inst1
         Name : ipaddr   Value : 192.0.2.12
         Name : prog1    Value : vrf-300
         Name : segid    Value : 6300
         Name : vlan_num Value : 300
         Param Instance Name : param-prof1-inst2
         Name : ipaddr   Value : 192.0.2.10
         Name : prog1    Value : 330-vrf-2
         Name : segid    Value : 6301
         Name : vlan_num Value : 301
```

show running-config bfd

To display the currently running configuration of Bidirectional Forwarding Detection (BFD), use the **show running-config bfd** command in privileged EXEC mode.

show running-config bfd

Syntax Description   This command has no arguments or keywords.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 6.0(2)N1(1)	This command was introduced.
Cisco NX-OS 6.1(2)I2(2)	This command was integrated.
Cisco NX-OS 7.2(0)D1(1)	

Examples

The following is sample output from the **show running-config bfd** command. The fields in the example are self-explanatory.

```
Device# show running-config bfd

!Command: show running-config bfd
!Time: Thu Dec  4 03:16:11 2014

version 7.1(0)N1(1)
feature bfd

bfd fabricpath interval 50 min_rx 50 multiplier 3
bfd fabricpath slow-timer 2000

interface port-channel56
  bfd fabricpath interval 50 min_rx 50 multiplier 3
  bfd fabricpath authentication Keyed-SHA1 key-id 1 hex-key 636973636F313233
  fabricpath isis bfd
fabricpath domain default
  bfd
```

show running-config evb

To display the currently running configuration of an Edge Virtual Bridging (EVB) session, use the **show running-config evb** command in privileged EXEC mode.

show running-config evb [**all**]

Syntax Description

all	(Optional) Displays the currently running configuration of an EVB session including all defaults.

Command Default

Displays the current configuration of the EVB session without any defaults.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines

Use the **feature evb** command to enable the EVB session. This, in turn, enables the **evb** keyword in the **show running-config** command on the device.

Examples

The following is sample output from the **show running-config evb** command in an EVB session:

```
Device# show running-config evb

!Command: show running-config evb
!Time: Thu Oct 10 20:26:42 2013

version 6.2(1)
feature evb

logging level evb 6

evb reinit-keep-alive 21
evb resource-wait-delay 21
evb mac 0123.4567.89AB
```

show running-config param-list

To display the configurations of a parameter list saved to the running configuration file of a configured parameter list, use the **show running-config param-list** command in privileged EXEC mode.

show running-config param-list [*param-list-name*]

Syntax Description

param-list-name	(Optional) The name of the parameter list.
	• The maximum number of characters is 80.

Command Modes Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines Use this command to display configured commands in the running configuration of a parameter list.

Example

The following is sample output from the **show running-config param-list** command after configuring a parameter list:

```
! Configuring a Parameter list
Device> enable
Device# configure terminal
Device(config)# param-list param-prof1-list
Device(config-param-list)# define ipaddr ipaddr
Device(config-param-list)# define prog1 string
Device(config-param-list)# define segid integer
Device(config-param-list)# define vlan_num integer
Device(config-param-list)# instance param-prof1-inst1
Device(config-param-inst)# set ipaddr 192.0.2.1/24
Device(config-param-inst)# set prog1 vrf-300
Device(config-param-inst)# set segid 6300
Device(config-param-inst)# set vlan_num 300
Device(config-param-inst)# instance param-prof1-inst2
Device(config-param-inst)# set ipaddr 192.0.2.2/24
Device(config-param-inst)# set prog1 330-vrf-2
Device(config-param-inst)# set segid 6301
Device(config-param-inst)# set vlan_num 301
Device(config-param-inst)# exit
Device(config-param-list)# exit

! Displaying the running configuration of a parameter list
Device(config)# show running-config param-list param-prof1-list

!Command: show running-config param-list param-prof1-list
!Time: Thu Nov 28 00:37:25 2013
```

```
version 6.2(1)
param-list param-prof1-list
  define ipaddr ipaddr
  define prog1 string
  define segid integer
  define vlan_num integer
  instance param-prof1-inst1
    set ipaddr 192.0.2.1/24
    set prog1 vrf-300
    set segid 6300
    set vlan_num 300
  instance param-prof1-inst2
    set ipaddr 192.0.2.2/24
    set prog1 330-vrf-2
    set segid 6301
    set vlan_num 301


Device(config)# end
```

show running-config plb-services

To view the running configuration of all PLB services on a VDC or switch, use the **show running-config plb-services** command in Privileged EXEC mode.

show running-config plb-services

Syntax Description	This command has no arguments or keywords.
Command Modes	Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 8.0(1)	This command was introduced.

Usage Guidelines None.

Example

This example shows how to view the running configuration of all pervasive load balancing (PLB) services on a VDC or switch:

```
switch# show running-config plb-services

!Command: show running-config plb-services
!Time: Mon Sep 10 14:31:38 2001

version 8.3(0)CV(1)
feature plb

plb l3-device-group dg200
  node ip 10.10.10.120
  node ip 10.10.10.121

plb l3-device-group srv1

plb srv200
  l3-device-group dg200
  virtual ip 200.200.200.200 255.255.255.255
  ingress interface Vlan10
  ingress interface Vlan11
  ingress interface Vlan12
  ingress interface Vlan13
  load-balance buckets 4 mask-position 10
  no shut
```

Related Commands

Command	Description
plb	Creates a PLB service instance and parameters for the service instance.

show startup-config evb

To display the configuration of an Edge Virtual Bridging (EVB) session stored in the NVRAM that will be used at the next device startup, use the **show startup-config evb** command in privileged EXEC mode.

show startup-config evb [**all**]

Syntax Description	all	(Optional) Displays the configuration of an EVB session from the NVRAM, including all defaults.

Command Default Displays the configuration of the EVB session from the NVRAM without any defaults.

Command Modes Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines Use the **feature evb** command to enable the EVB session. This, in turn, enables the **evb** keyword in the **show startup-config** command on the device.

Examples

The following is sample output from the **show startup-config evb** command in an EVB session:

```
Device# show startup-config evb

!Command: show startup-config evb
!Time: Thu Oct 10 20:28:36 2013
!Startup config saved at: Thu Oct 10 20:24:00 2013

version 6.2(1)
feature evb

logging level evb 6

evb reinit-keep-alive 21
evb resource-wait-delay 21
evb mac 0123.4567.89AB
```

show startup-config param-list

To display the configurations of a parameter list saved to the startup configuration file of a configured parameter list, use the **show startup-config param-list** command in privileged EXEC mode.

show startup-config param-list [*param-list-name*]

Syntax Description

param-list-name	(Optional) The name of the parameter list.
	• The maximum number of characters is 80.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.
Cisco NX-OS 7.2(0)D1(1)	This command was integrated.

Usage Guidelines

Use this command to display configured parameters saved to the startup configuration of a parameter list.

Example

The following is sample output from the **show startup-config param-list** command after configuring a parameter list:

```
! Configuring a Parameter list
Device> enable
Device# configure terminal
Device(config)# param-list param-prof1-list
Device(config-param-list)# define ipaddr ipaddr
Device(config-param-list)# define prog1 string
Device(config-param-list)# define segid integer
Device(config-param-list)# define vlan_num integer
Device(config-param-list)# instance param-prof1-inst1
Device(config-param-inst)# set ipaddr 192.0.2.1/24
Device(config-param-inst)# set prog1 vrf-300
Device(config-param-inst)# set segid 6300
Device(config-param-inst)# set vlan_num 300
Device(config-param-inst)# instance param-prof1-inst2
Device(config-param-inst)# set ipaddr 192.0.2.2/24
Device(config-param-inst)# set prog1 330-vrf-2
Device(config-param-inst)# set segid 6301
Device(config-param-inst)# set vlan_num 301
Device(config-param-inst)# exit
Device(config-param-list)# exit
Device(config)#  copy running-config startup-config
[#####################################] 100%
Copy complete.

! Displaying the startup configuration of a parameter list
Device(config)# show startup-config param-list param-prof1-list
```

```
!Command: show startup-config param-list param-prof1-list
!Time: Thu Nov 28 02:51:51 2013
!Startup config saved at: Thu Nov 28 02:51:30 2013

version 6.2(1)
param-list param-prof1-list
  define ipaddr ipaddr
  define prog1 string
  define segid integer
  define vlan_num integer
  instance param-prof1-inst1
    set ipaddr 192.0.2.1/24
    set prog1 vrf-300
    set segid 6300
    set vlan_num 300
  instance param-prof1-inst2
    set ipaddr 192.0.2.2/24
    set prog1 330-vrf-2
    set segid 6301
    set vlan_num 301

Device(config)# end
```

show tech-support plb

To view technical support information relating to the PLB function, use the **show tech-support plb** command in Privileged EXEC mode.

show tech-support plb [**detail**]

Syntax Description	**detail**	(Optional) Displays detailed technical support information.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 8.0(1)	This command was introduced.

Usage Guidelines   None.

Example

This example shows how to view technical support information relating to the pervasive load balancing (PLB) function:

```
switch# show tech-support plb
```

Related Commands

Command	Description
plb	Creates a PLB service instance and parameters for the service instance.

show vmtracker fabric auto-config

To display the VM Tracker auto-configuration information, use the **show vmtracker fabric auto-config** command in privileged EXEC mode.

show vmtracker fabric auto-config [**interface** | **status** | **vlan**]

Syntax Description

interface	Displays vmtracker interface information.
status	Displays auto-configuration status.
vlan	Displays VLAN Id information.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.3(0)N1(1)	This command was introduced.

Example

The following is sample output from the VM Tracker auto-configuration feature enabled. The fields in the example are self-explanatory.

```
switch# show vmtracker fabric auto-config

Fabric Auto Configuration is enabled
Auto Configure Retry Time left: 107 seconds
Switch Device: SAL1833YM0V
-------------------------------------------------------------------------
Port              Port-Channel          Vlan    Status
-------------------------------------------------------------------------
Ethernet1/3       port-channel13        50      Pending
Ethernet1/3       port-channel13        56      Pending
```

The following is sample output from the VM Tracker auto-configuration feature enabled on an interface. The fields in the example are self-explanatory.

```
switch# show vmtracker fabric auto-config interface e1/48

Fabric Auto Configuration is enabled
Auto Configure Retry Time left: 88 seconds
Switch Device: FOC1646R06F
-------------------------------------------------------------------------
Port              Port-Channel          Vlan    Status
-------------------------------------------------------------------------
Ethernet1/48      -                     50      Failure
```

The following is sample output from the VM Tracker auto-configuration feature enabled to check the **Failure**, **Pending**, **Skipped** or **Success** status. The fields in the example are self-explanatory.

```
switch# show vmtracker fabric auto-config status failure

Fabric Auto Configuration is enabled
```

```
Auto Configure Retry Time left: 77 seconds
Switch Device: FOC1646R07F
-------------------------------------------------------------------------
Port                Port-Channel             Vlan    Status
-------------------------------------------------------------------------
Ethernet1/50        -                        40      Failure
```

The following is sample output from the VM Tracker auto-configuration feature enabled to check the VLAN ID information. The fields in the example are self-explanatory.

```
switch# show vmtracker fabric auto-config vlan 30

Fabric Auto Configuration is enabled
Auto Configure Retry Time left: 66 seconds
Switch Device: FOC1646R05F
-------------------------------------------------------------------------
Port                Port-Channel             Vlan    Status
-------------------------------------------------------------------------
Ethernet1/47        -                        30      Success
```

show vni

To display information about the dynamic Virtual Station Interface (VSI) details configured on a switch, use the **show vni** command in privileged EXEC mode.

show vni

Syntax Description   This command has no arguments or keywords.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.2(0)D1(1)	This command was introduced.

Examples

The following example shows how to display information about the dynamic Virtual Station Interface (VSI) details configured on a switch, using the **show vni** command. The fields in the example are self-explanatory.

```
Device# show vni

VNI     Status   BD     VSI
-------------------------------------------
6000    Up       121    VSI-Ethernet2/3.4095
7000    Up       122    VSI-Ethernet2/4.4095, VSI-Ethernet2/3.4095
8000    Up       123    VSI-Ethernet2/2.4095
```

show vni dynamic

To display information about the deployment of dynamic Virtual Station Interface (VSI) details configured on a switch, use the **show vni dynamic** command in privileged EXEC mode.

show vni dynamic {**vdp|frame-snoop**} [**vni** *<vni>*] [**interface** *<intf-name>*]

Syntax Description	
vni *vni id*	(Optional) Displays the Virtual Network Identifier (VNI).
interface *interface name*	(Optional) Displays the name of the interface.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.2(0)D1(1)	This command was introduced.

Examples

The following example shows how to display information about the dynamic Virtual Station Interface (VSI) details configured on a switch, using the **show vni dynamic** command. The fields in the example are self-explanatory.

```
Device# show vni dynamic

  VSI-Ethernet2/2.4095
  =================
  Vni           dot1q tag
  ---------------------------
  7000          101
  8000          102

  VSI-Ethernet2/3.4095
  =================
  Vni           dot1q tag
  ---------------------------
  7000          200
  8000          201
  6200          300

Device# show vni dynamic vdp or frame-snoop vni 7000

  VSI-Ethernet2/2.4095
  =================
  Vni           dot1q tag
  ---------------------------
  7000          101


  VSI-Ethernet2/3.4095
  =================
  Vni           dot1q tag
  ---------------------------
```

```
  7000              200

Device# show vni dynamic vdp or frame-snoop vni 7000 interface eth2/2

  VSI-Ethernet2/2.4095
  ================
  Vni          dot1q tag
  --------------------------
  7000          101

Device# show vni dynamic vdp or frame-snoop interface eth2/2

  VSI-Ethernet2/2.4095
  ================
  Vni          dot1q tag
  --------------------------
  7000          101
  8000          102
```

suppress-arp

To suppress ARP requests at the leaf switch or ToR layer and minimize flooding in the VXLAN EVPN fabric, use the **suppress-arp** command in the NVE VNI interface configuration mode. To remove the ARP suppression function on a leaf switch, use the **no** form of the command.

suppress-arp

no suppress-arp

Syntax Description	This command has no arguments or keywords.
Command Default	ARP requests are not suppressed.
Command Modes	NVE VNI interface configuration (config-if-nve-vni)

Command History

Release	Modification
Cisco NX-OS 7.3(0)N1(1)	This command was introduced.
Cisco NX-OS 7.3(0)D1(1)	

Usage Guidelines

ARP suppression is an enhanced function configured under the layer-2 VNI using this command. Essentially, the IP-MACs learnt locally via ARP as well as those learnt over BGP-EVPN are stored in a local ARP suppression cache at each ToR. An ARP request sent from an end host is trapped at the source ToR. A lookup is performed in the ARP suppression cache with the destination IP as the key. If there is a HIT, then the ToR proxies on behalf of the destination with the destination MAC.

In case the lookup results in a MISS, when the destination is unknown or a silent end host, the ToR re-injects the ARP request received from the requesting end host and broadcasts it within the layer-2 VNI, across the fabric. Assuming that the destination is alive, the ARP request will reach the destination ToR, which in turn will send out an ARP response toward the sender. In addition, the destination IP/MAC is advertised over BGP-EVPN to all ToRs.

Example

The following example shows how to suppress ARP requests in a VXLAN EVPN fabric:

```
switch(config)# interface nve 1
switch(config-if-nve)# member vni 6001
switch(config-if-nve-vni)# suppress-arp
```

suppress-unknown-unicast

To restrict flooding of unknown unicast packets from an end host to other end host ports that are local to the attached ToR/leaf switch, and ensure that the packets are not flooded into the VXLAN fabric, use the **suppress-unknown-unicast** command in the NVE VNI interface configuration mode.

To remove the unknown unicast suppression function on the ToR switch, use the **no** form of the command.

suppress-unknown-unicast

no suppress-unknown-unicast

Syntax Description	This command has no arguments or keywords.
Command Default	Unknown unicast packets are not restricted from flooding the VXLAN EVPN fabric.
Command Modes	NVE VNI interface configuration (config-if-nve-vni)

Command History

Release	Modification
Cisco NX-OS 7.3(0)N1(1)	This command was introduced.
Cisco NX-OS 7.3(0)D1(1)	

Usage Guidelines

Unknown unicast traffic from an end host is by default flooded in the VLAN. To avoid the flooding of traffic to the overlay network without affecting the flooding of traffic on local host or on sever ports attached to the ToR switch, you must use the **suppress-unknown-unicast** command.

The suppress unknown unicast function allows flooding of traffic within the attached switch by including local host or server ports attached to the ToR switch in the output interface index flood list (OIFL) and excluding overlay Layer 3 ports in the hardware.

Example

The following example shows how to restrict flooding of unknown unicast packets to other end host ports that are local to the attached ToR/leaf switch:

```
switch(config)# interface nve 1
switch(config-if-nve)# member vni 6001
switch(config-if-nve-vni)# suppress-unknown-unicast
```

system fabric core-vlans

To define the core-facing set of dynamic allocatable VLANs for Cisco Programmable Fabric, use the **system fabric core-vlans** command in global configuration mode. To remove the VLAN reservation, use the **no** form of this command.

system fabric core-vlans {*vlan-idvlan-range*}
no system fabric core-vlans

Syntax Description

vlan-id	Unique identifier (ID) for a core VLAN. The range is from 1 to 4094.
vlan-range	Range of VLAN IDs for core VLANs.

The *vlan-range* argument can any of the following:

- A list of VLAN IDs separated by commas (,)

- A range of VLAN IDs separated by a hyphen (-), such as *vlan-id - vlan-id*

- A combination of VLAN IDs and VLAN ranges

Multiple entries must be separated by a comma (,).

Command Default
Range of core-facing dynamic VLANs for Cisco Programmable Fabric are undefined.

Command Modes
Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.

Usage Guidelines
The core-VLAN range is a subset of VLANs from the dynamic-VLAN range. Core VLANs are used by Cisco Programmable Fabric auto configuration to map the virtual network identifier (VNI) that is configured under virtual routing and forwarding (VRF). Cisco Programmable Fabric dynamically chooses a VLAN from the core-VLAN range to create the core- facing SVI for the tenant VRF. The VNI-to-VLAN mapping is one to one.

Use this command to identify the set of VLANs that are to be used for core-facing interfaces. The range must be large enough to accommodate the number of tenant VRFs that you expect to deploy.

This command must be configured on each Cisco Programmable Fabric Layer-3 leaf switch in your Cisco Programmable Fabric deployment.

The number of VLANs in the set of core VLANs can be modified (expanded or reduced) by using this command, and the **no** form of this command, as long as there are no active VLANs in the VLAN range being configured.

All VLANs that you specify by using this command must be a subset of the dynamic VLANs that you defined by using the **system fabric dynamic-vlans** command.

System-fabric core VLANs must never be used on host-facing switch ports and cannot be used for a mobility domain.

The **no** version of this command removes the reservation, not the VLANs. The **no system fabric core-vlans** command can remove the reservation only if there are no active VLANs in the range of VLANs. Delete all active VLANs that are in the VLAN range before removing the reservation.

Before using this command, you must first enable fabric network services on the device by using the **feature fabric forwarding** command.

This command is supported on Cisco Programmable Fabric Layer-3 leaf switches only. This command is not supported on Cisco Nexus 5500 Series switches configured as Cisco Programmable Fabric Layer-2-only leaf switches.

Example

The following example shows how to specify the dynamic core-VLAN range:

```
switch> enable
switch# configure terminal
switch(config)# install feature-set fabric
switch(config)# feature-set fabric
switch(config)# feature fabric forwarding
switch(config)# system fabric dynamic-vlans 2500-3500
switch(config)# system fabric core-vlans 2900-2999
```

system fabric dynamic-vlans

To define a global set of dynamic allocatable VLANs for Cisco Programmable Fabric, use the **system fabric dynamic-vlans** command in global configuration mode. To remove the reservation, use the **no** form of this command.

system fabric dynamic-vlans {*vlan-id*|*vlan-range*}
no system fabric dynamic-vlans

Syntax Description		
	vlan-id	Unique identifier (ID) for a dynamic VLAN. The range is from 1 to 4094.

vlan-range   Range of VLAN IDs for dynamic VLANs.

The *vlan-range* argument can any of the following:

- A list of VLAN IDs separated by commas (,)

- A range of VLAN IDs separated by a hyphen (-), such as *vlan-id* - *vlan-id*

- A combination of VLAN IDs and VLAN ranges

Multiple entries must be separated by a comma (,).

Note   The dynamic-VLAN range need not be contiguous, however, we recommend that it is.

Command Default   Range of dynamic VLANs for Cisco Programmable Fabric are undefined.

Command Modes   Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.0(0)N1(1)	This command was introduced.

Usage Guidelines   Cisco Programmable Fabric dynamically provisions server- and host-facing, and core-facing switch virtual interfaces (SVIs) for tenants. VSI Discovery and Configuration Protocol (VDP) dynamically-derived VLANs are used by Cisco Programmable Fabric for the server and core provisioning. The VLANs to be used for the SVIs must be specified. There are two VLAN ranges for Cisco Programmable Fabric:

- The dynamic-VLAN range is the global set of server, host, and core VLANs.

- The core-VLAN range is a subset of VLANs from the dynamic-VLAN range. The core VLANs are for the core SVIs. For information, see the **system fabric core-vlans**.

Use this command to identify the complete range of dynamic allocatable VLANs for Cisco Programmable Fabric, including server- and host-facing VLANs and core-facing VLANs.

Do not configure internal VLANs and active or already-created VLANs as dynamic VLANs.

VLANs used in a mobility domain cannot be part of the dynamic-VLAN range.

The number of VLANs in the set of dynamic VLANs can be modified (expanded or reduced) by using this command, and the **no** form of this command, as long as there are no active VLANs in the VLAN range being configured.

If you have already configured the **system fabric core-vlans** command, the range of VLANs that you configure by using this command must be a superset of the core-VLAN range.

The **no** version of this command removes the reservation, not the VLANs. The **no system fabric dynamic-vlans** command can remove the reservation only if there are no active VLANs in the range of VLANs. Delete all active VLANs that are in the VLAN range before removing the reservation.

Before using this command, you must first enable fabric network services on the device by using the **feature fabric forwarding** command.

This command is supported on Cisco Programmable Fabric Layer-3 leaf switches only. This command is not supported on Cisco Nexus 5500 Series switches configured as Cisco Programmable Fabric Layer-2-only leaf switches.

Example

The following example shows how to reserve a set of dynamic VLANs:

```
switch> enable
switch# configure terminal
switch(config)# install feature-set fabric
switch(config)# feature-set fabric
switch(config)# feature fabric forwarding
switch(config)# system fabric dynamic-vlans 2500-3500
```

traceroute nve

To discover the network virtualization endpoint's route, use the **traceroute nve** command in privileged EXEC mode.

traceroute nve {**ip** *ip-adddress* | **mac** *mac-adddress*} **profile** *id* [**vrf** | **vni count** *number*]

Syntax Description		
ip *ip-adddress*	IP address of the destination host.
mac *mac-adddress*	MAC address of the destination host.
profile *id*	Name of the profile.
vrf	The tenant VRF, where this tenant IP-address reside.
vni	The valid VNI present in the VTEP.
count *number*	Value of the count.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco NX-OS 7.3(0)N1(1)	This command was introduced.

Example

The following example shows how to trace the path to the host.

```
switch# traceroute nve 192.0.2.0 vrf vni-31000 verbose
Codes: '!' - success, 'Q' - request not sent, '.' - timeout,
'D' - Destination Unreachable, 'X' - unknown return code,
'm' - malformed request(parameter problem),
'c' - Corrupted Data/Test

Traceroute Request to peer ip 192.0.1.1 source ip 192.0.2.1
Sender handle: 8
  1 !Reply from 192.1.2.1,time = 1 ms
  2 !Reply from 192.0.1.1,time = 1 ms
  3 !Reply from 192.0.2.0,time = 1 ms
```

use-vrf

To specify a virtual routing and forwarding instance (VRF) name for a RADIUS, TACACS+, or LDAP server group, use the **use-vrf** command in the appropriate command mode. To remove the VRF name, use the **no** form of this command.

use-vrf *vrf-name*
no use-vrf *vrf-name*

Syntax Description

vrf-name	VRF name. The name is case sensitive.

Command Default   No VRF name is specified.

Command Modes   RADIUS server group configuration (config-radius)

TACACS+ server group configuration (config-tacacs+)

LDAP server group configuration (config-ldap)

Command History

Release	Modification
Cisco NX-OS 6.1(2)I2(2)	This command was introduced in an earlier Cisco NX-OS release.

Usage Guidelines   You can configure only one VRF instance for a server group.

Use the **aaa group server radius** command to enter RADIUS server group configuration mode, the **aaa group server tacacs+** command to enter TACACS+ server group configuration mode, or the **aaa group server ldap** command to enter LDAP server group configuration mode.

If the server is not found, use the **radius-server host** command, the **tacacs-server host** command, or the **ldap-server host** command to configure the server.

> **Note**   You must use the **feature tacacs+** command before you configure TACACS+ or the **feature ldap** command before you configure LDAP.

This command does not require a license.

Example

This example shows how to specify a VRF name for a RADIUS server group:

```
Device# configure terminal
Device(config)# aaa group server radius RadServer
Device(config-radius)# use-vrf vrf1
```

This example shows how to specify a VRF name for a TACACS+ server group:

```
Device(config)# feature tacacs+
Device(config)# aaa group server tacacs+ TacServer
Device(config-tacacs+)# use-vrf vrf2
```

This example shows how to remove the VRF name from a TACACS+ server group:

```
Device(config)# feature tacacs+
Device(config)# aaa group server tacacs+ TacServer
Device(config-tacacs+)# no use-vrf vrf2
```

This example shows how to specify a VRF name for an LDAP server group:

```
Device(config)# feature ldap
Device(config)# aaa group server ldap LdapServer
Device(config-ldap)# use-vrf vrf3
```

This example shows how to remove the VRF name from an LDAP server group:

```
Device(config)# feature ldap
Device(config)# aaa group server ldap LdapServer
Device(config-ldap)# no use-vrf vrf3
```

vdc switch

To create or specify a virtual device context (VDC) for a switch and enter VDC configuration mode, use the **vdc switch** command.

vdc switch [**id 1** | **type storage**]

Syntax Description	**id 1**	(Optional) Forces the VDC into a specific ID 1.
	type storage	(Optional) Specifies a VDC for storage.

Command Default   No VDC is specified.

Command Modes   Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 6.1(2)I2(2)	This command was introduced.
Cisco NX-OS 7.0(0)N1(1)	This command was integrated.

Usage Guidelines   You can use the **vdc switch** command only with the specific Virtual Device Context (VDC) identifier value of 1. The VDC type storage cannot be the default VDC, and it can be only one of the VDCs. You cannot have two type storage VDCs on the device. When you create or specify a VDC, the Cisco NX-OS software allocates the internal resources for the VDC. This process can take a few minutes to complete depending on the amount of internal resource you have requested for the VDC.

Examples

The following example shows how to specify a Virtual Device Context (VDC) for a switch:

```
Device> enable
Device# configure terminal
Device (config)# vdc switch
Device(config-vdc)# end
```

The following example shows how to force a VDC into a specific ID <1>:

```
Device> enable
Device# configure terminal
Device (config)#  vdc switch id 1
Device(config-vdc)# end
```

The following example shows how to force a VDC into a specific ID <1>:

```
Device> enable
Device# configure terminal
Device(config)# vdc switch type storage
Device(config)# end
```

verify profile

To verify a configured profile, use the **verify profile** command in parameter instance configuration mode.

verify **profile** *profile-name*

Syntax Description

profile-name	The name of the configured profile. • The maximum number of characters is 80.

Command Modes

Parameter instance configuration (config-param-inst)

Command History

Release	Modification
Cisco NX-OS 6.1(2)I2(2)	This command was introduced.
Cisco NX-OS 7.0(0)N1(1)	This command was integrated.
Cisco NX-OS 7.2(0)D1(1)	

Usage Guidelines

If the profile configurations are incorrect, the **verify profile** command displays an error.

Example

The following example shows how to verify a profile using the **verify profile** command after configuring a profile:

```
! Configuring a profile
Device> enable
Device# configure terminal
Device(config)# configure profile Profile1
Device(config-profile)# bridge-domain 10
Device(config-profile-bdomain)# vlan 1-5
Device(config-profile-vlan)# end

! Verifying a configured profile
Device# configure terminal
Device(config)# param-list Marksheet
Device(config-param-list)# instance Instance1
Device(config-param-inst)# verify profile Profile1
Device(config-param-inst)# end
```

vmtracker fabric auto-config

To enable VM Tracker auto configuration trigger, use the **vmtracker fabric auto-config** command in global configuration mode.

To disable the VM Tracker auto configuration trigger, use the no form of this command.

vmtracker fabric auto-config

no vmtracker fabric auto-config

Syntax Description	This command has no arguments or keywords.

Command Modes	Global configuration (config)

Command History

Release	Modification
Cisco NX-OS 7.3(0)N1(1)	This command was introduced.

Example

The following example shows how to enable VM Tracker auto configuration trigger:

```
Switch(config)# vmtracker fabric auto-config  //Enable vmtracker auto-config trigger//
switch(config)# vmtracker connection v229  //Enter vmtracker connection for the name
specified//
switch(config-vmt-conn)# remote ip address  209.165.200.229 port 80 vrf management //Configure
 remote ip parameters//
switch(config-vmt-conn)# username John password abc1234  //Verify credentials to connect
to vCenter//
switch(config-vmt-conn)# connect  //Connects to vCenter//
```

vni

To configure the virtual network identifier (VNI), use the **vni** command in global configuration or VRF configuration mode. To remove the VNI, use the **no** form of this command.

vni [{*vni-id* |[{-*vni-id*}]}]
no   vni [{*vni-id* |[{-*vni-id*}]}]

Syntax Description	*vni-id*	(Optional) Configures the unique identifier. The range is from 4096 to 16773119.
	- *vni-id*	(Optional) Configures the unique identifier range. The range is from 4096 to 16773119.
	Note	You can specify a single ID or a range. For example, 4099, 5000-5005.

Command Default Virtual network identifier is not configured.

Command Modes For spine devices—Global configuration (config)

For leaf devices—VRF configuration (config-vrf)

Command History

Release	Modification
Cisco NX-OS 6.1(2)I2(2)	This command was introduced.
Cisco NX-OS 6.2(6)	This command was modified. Support for this command on a Cisco Nexus 7000 Series switch as a Cisco Programmable Fabric spine switch was added.
Cisco NX-OS 7.0(0)N1(1)	This command was integrated.

Example

This example shows how to configure VNI on a spine device:

```
switch(config)# vni 4099
```

This example shows how to configure VNI on a leaf device:

```
switch(config)# vrf context testvrf
switch(config-vrf)# vni 5000
```

vni l2

To associate a Layer-2 VNI to an EVPN instance, use the **vni l2** command in EVPN configuration mode. To remove a Layer-2 VNI association with an EVPN instance, use the **no** form of the command.

vni *Id* **l2**

no vni *Id* **l2**

Syntax Description	*Id* Layer-2 VNI that is being associated with an EVPN instance.

Command Default	A Layer-2 VNI is not associated with an EVPN instance.

Command Modes	EVPN configuration (config-evpn)

Command History

Release	Modification
Cisco NX-OS 7.2(0)D1(1)	This command was introduced.
Cisco NX-OS 7.3(0)N1(1)	This command was integrated.

Example

The following example shows how to associate a Layer-2 VNI to an EVPN instance:

```
switch(config)# evpn
switch(config-evpn)# vni 6001 l2        //l2 refers to Layer-2//
switch(config-evpn-evi)# rd auto
switch(config-evpn-evi)# route-target import auto
switch(config-evpn-evi)# route-target export auto
```

vn-segment

To configure the virtual network (VN) segment ID of the virtual LAN (VLAN), use the **vn-segment** command in VLAN configuration mode. To remove a configured VN segment ID, use the **no** form of this command.

vn-segment *segment-id*
no vn-segment

Syntax Description	*segment-id*	Configures the VN segment identifier of the VLAN. The range is from 4096 to 16773119.

Command Default The virtual network segment identifier is not configured.

Command Modes VLAN configuration (config-vlan)

Command History

Release	Modification
Cisco NX-OS 6.1(2)I2(2)	This command was introduced.
Cisco NX-OS 7.0(0)N1(1)	This command was integrated.

Usage Guidelines You must enable feature-set fabricpath and VLAN-based VN segment features on the device before configuring the VN segment ID.

Example

This example shows how to configure the VN segment ID of the VLAN on a device:

```
Device(config)# feature-set fabricpath
Device(config)# feature vn-segment-vlan-based
Device(config)# vlan 10
Device(config-vlan)# vn-segment 4099
```