Changing the Scope

This chapter includes the following sections:

Supported Scopes

NXDB supports two scopes:

- Base scope—You can enter configuration and **show** commands in this scope in order to configure the switch and view the configurations. This scope is the default scope and the normal operating mode of the switch. When you enter **show** commands in this scope, you are viewing configurations that are owned by the switch.

- External controller scope—You can enter **show** commands in this scope in order to see the configurations that have been pushed down from the external controller. You cannot enter configuration commands in this scope. When you enter **show** commands in this scope, you are viewing configurations that are owned by the external controller.

Changing the Scope

You can change the scope to view configurations that have been pushed down from the external controller.

Step 1 **switch-scope controller l2-vxlan** *number*

```
switch# switch-scope controller l2-vxlan 1
switch%%ctrlr-1#
```

Changes from the base scope to the external controller scope.

Step 2 (Optional) **end**

```
switch%%ctrlr-1# end
switch#
```

Exits the external controller scope and returns to the base scope.

Determining the Scope

You can determine whether you are in the base scope or the external controller scope by viewing the switch prompt or by entering the **where** command.

- When you enter the **switch-scope controller** command to change to the controller scope, the switch prompt changes to "switch%%ctrlr-1" to indicate the scope in which the **show** commands are being executed.

```
switch# switch-scope controller l2-vxlan 1
switch%%ctrlr-1#
```

- You can enter the **where** command to see the scope in which the **show** commands are being executed. The output varies depending on whether you enter the command in the base scope or the external controller scope.

  This example shows the **where** command entered in the base scope:

```
switch# where
    admin@switch%default
switch#
```

  This example shows the **where** command entered in the external controller scope:

```
switch# switch-scope controller l2-vxlan 1
switch%%ctrlr-1# where
    admin@switch%default%l2-vxlan-1
switch%%ctrlr-1#
```

Viewing Configurations from the External Controller

You can enter **show** commands in the external controller scope to view the configurations pushed down from the external controller.

Note The **show run** command shows all of the configurations that have been configured using the CLI. The **show run controller** command shows all of the configurations that have been pushed down from the controller.

This example shows how the output of the **show port-channel summary** command varies depending on whether you are in the base scope or the external controller scope, if you have assigned the switch resources for the external controller as follows:

```
controller type l2-vxlan identifier 1
assign vlan 1001-1256 dedicated
assign interface ethernet 1/2-3 shared
```

```
assign interface port-channel 1-10 shared
controller description ctrlr-1
```

The following output displays when you enter the **show port-channel summary** command in the base scope:

```
switch# show port-channel summary
Flags: D - Down P - Up in port-channel (members)
I - Individual  H - Hot-standby (LACP only)
s - Suspended   r - Module-removed
S - Switched    R - Routed
U - Up (port-channel)
M - Not in use. Min-links not met
--------------------------------------------------------------------------------
Group Port-      Type Protocol Member Ports
      Channel
--------------------------------------------------------------------------------
1     Po1(SU)    Eth  LACP     Eth1/5(P)   Eth1/6(P)
2     Po2(SU)    Eth  LACP     Eth1/7(P)   Eth1/8(P)
3     Po3(SU)    Eth  LACP     Eth1/9(P)   Eth1/10(P)
4     Po4(SU)    Eth  LACP     Eth1/11(P)  Eth1/12(P)
5     Po5(SU)    Eth  LACP     Eth1/13(P)  Eth1/14(P)
6     Po6(SU)    Eth  LACP     Eth1/15(P)  Eth1/16(P)
7     Po7(SU)    Eth  LACP     Eth1/17(P)  Eth1/18(P)
8     Po8(SU)    Eth  LACP     Eth1/19(P)  Eth1/20(P)
9     Po9(SU)    Eth  LACP     Eth1/21(P)  Eth1/22(P)
10    Po10(SU)   Eth  LACP     Eth1/23(P)  Eth1/24(P)
101   Po101(SD)  Eth  NONE     --
102   Po102(SD)  Eth  NONE     --
103   Po103(SD)  Eth  NONE     --
104   Po104(SD)  Eth  NONE     --
1001  Po1001(SU) Eth  LACP     Eth1/35(P)  Eth1/36(P)
```

The following output displays when you enter the **show port-channel summary** command in the external controller scope:

```
switch%%ctrlr-1# show port-channel summary
Flags: D - Down P - Up in port-channel (members)
I - Individual  H - Hot-standby (LACP only)
s - Suspended   r - Module-removed
S - Switched    R - Routed
U - Up (port-channel)
M - Not in use. Min-links not met
--------------------------------------------------------------------------------
Group Port-      Type Protocol Member Ports
      Channel
--------------------------------------------------------------------------------
1     Po1(SU)    Eth  LACP     Eth1/5(P)   Eth1/6(P)
2     Po2(SU)    Eth  LACP     Eth1/7(P)   Eth1/8(P)
3     Po3(SU)    Eth  LACP     Eth1/9(P)   Eth1/10(P)
4     Po4(SU)    Eth  LACP     Eth1/11(P)  Eth1/12(P)
5     Po5(SU)    Eth  LACP     Eth1/13(P)  Eth1/14(P)
6     Po6(SU)    Eth  LACP     Eth1/15(P)  Eth1/16(P)
7     Po7(SU)    Eth  LACP     Eth1/17(P)  Eth1/18(P)
8     Po8(SU)    Eth  LACP     Eth1/19(P)  Eth1/20(P)
9     Po9(SU)    Eth  LACP     Eth1/21(P)  Eth1/22(P)
10    Po10(SU)   Eth  LACP     Eth1/23(P)  Eth1/24(P)
```

In the external controller scope, the **show port-channel summary** command displays only the external controller-exposed port-channel interfaces.

After you assign the interfaces to the external controller, no VLANs are assigned to them until the external controller pushes some associations down.

This example shows the output of the shared interfaces in different scopes if VLANs 10-1000 are configured on the switch but not assigned to the external controller:

Base scope:

```
interface ethernet 1/2
    switchport mode trunk
    switchport trunk allowed vlan 10-1000
```

External controller scope:

```
interface ethernet 1/2
    switchport mode trunk
    switchport trunk allowed vlan none
```

In the above example, no assigned VLANs are configured on the shared interface.

This example shows the output of the initial state (when the controller is not pushing the port VLAN association):

Base scope:

```
show running-config interface Ethernet 1/1
!Command: show running-config interface Ethernet1/1
!Time: Tue Mar  8 15:11:38 2017

version 7.0(3)I6(1)

interface Ethernet1/1
  switchport mode trunk
  switchport trunk allowed vlan 100-1000
  !controller type l2-vxlan identifier 1
```

External controller scope:

```
show running-config interface Ethernet 1/1
!Executed in context controller l2-vxlan 1

!Command: show running-config interface Ethernet1/1
!Time: Tue Mar  8 15:12:41 2017

version 7.0(3)I6(1)

interface Ethernet1/1
  switchport mode trunk
  switchport trunk allowed vlan none
  !controller type l2-vxlan identifier 1
```

This example shows the output when the controller is pushing the port VLAN association (Ethernet 1/1, 503):

Base scope:

```
show running-config interface Ethernet 1/1
!Command: show running-config interface Ethernet1/1
!Time: Tue Mar  8 15:11:38 2017

version 7.0(3)I6(1)

interface Ethernet1/1
  switchport mode trunk
  switchport trunk allowed vlan 100-1000
```

```
  !controller type l2-vxlan identifier 1
```

External controller scope:

```
show running-config interface Ethernet 1/1
!Executed in context controller l2-vxlan 1

!Command: show running-config interface Ethernet1/1
!Time: Tue Mar  8 15:12:41 2017

version 7.0(3)I6(1)

interface Ethernet1/1
  switchport mode trunk
  switchport trunk allowed vlan 503
  !controller type l2-vxlan identifier 1
```

Note   For a list of the **show** commands whose output varies by scope, see Show Command Outputs.

Saving the Configuration

When the configuration is pushed down from the external controller, it is not saved into the startup configuration. The external controller is responsible for restoring the configuration as soon as the switch comes up again. You can issue the **copy running-config startup-config** command in either the base scope or the external controller scope, but only the configurations that appear in the **show running-config** command in the base scope will be copied. The external controller scope configurations will not be copied to the startup configuration.

When the configuration is pushed from the switch CLI, Cisco NX-OS is responsible for restoring it. You can issue the **copy running-config startup-config** command to save the configuration that has been pushed from the switch CLI to the startup configuration.