

Configure NPV on Cisco NEXUS Switches

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Configuring NPV

Enabling NPV

When you enable NPV, the system configuration is erased and the switch reboots.



Note We recommend that you save your current configuration either in boot flash memory or to a TFTP server before you enable NPV.

To enable NPV, perform this task:

	Command	Purpose
Step 1	switch# configure terminal switch(config)#	Enters configuration mode.
Step 2	switch(config)# npv enable	Enables NPV mode. The switch reboots, and it comes back up in NPV mode. Note A write-erase is performed during the initialization.
Step 3	switch(config-npv)# no npv enable switch(config)#	Disables NPV mode, which results in a reload of the switch.

Configuring NPV Interfaces

After you enable NPV, you should configure the NP uplink interfaces and the server interfaces. To configure an NP uplink interface, perform this task:

	Command	Purpose
Step 1	switch# configure terminal switch(config)#	Enters configuration mode.
Step 2	switch(config)# interface fc slot/port	Selects an interface that will be connected to the core NPV switch.
Step 3	switch(config-if)# switchport mode NP switch(config-if)# no shutdown	Configures the interface as an NP port.Bring up the interface.

To configure a server interface, perform this task:

	Command	Purpose
Step 1	switch# configure terminal switch(config)#	Enters configuration mode.
Step 2	switch(config)# interface {fc slot/port vfc vfc-id}	Selects a server interface.
Step 3	switch(config-if)# switchport mode F switch(config-if)# no shutdown	Configures the interface as an F port.Bring up the interface.

Configuring NPV Traffic Management

After the interfaces are configured in NPV mode, you can configure NPV traffic management.

Configuring NPV Traffic Maps

An NPV traffic map associates one or more NP uplink interfaces with a server interface. The switch associates the server interface with one of these NP uplinks.



Note If a server interface is already mapped to an NP uplink, you should include this mapping in the traffic map configuration.

To configure a traffic map, perform this task:

	Command	Purpose
Step 1	switch# config t switch(config)#	Enters configuration mode on the NPV.
Step 2	switch(config)# npv traffic-map server-interface {fc slot/port vfc vfc-id} external-interface fc slot/port switch (config)#	Configures a mapping between a server interface (or range of server interfaces) and an NP uplink interface (or range of NP uplink interfaces).
	switch(config)# no npv traffic-map server-interface {fc slot/port vfc vfc-id} external-interface fc slot/port switch (config)#	Removes the mapping between the specified server interfaces and NP uplink interfaces.



Note The traffic map configuration only takes effect after you reinitialize each of the server interfaces specified in the map.

Enabling Disruptive Load Balancing

If you configure additional NP uplinks, you can enable the disruptive load-balancing feature to distribute the server traffic load evenly among all the NP uplinks.

To enable disruptive load balancing, perform this task:

	Command	Purpose
Step 1	switch# configure terminal switch(config)#	Enters configuration mode on the NPV.
Step 2	switch(config)# npv auto-load-balance disruptive switch (config)#	Enables disruptive load balancing on the switch.
Step 3	switch (config)# no npv auto-load-balance disruptive	Disables disruptive load balancing on the switch.



Note Enabling disruptive load balancing may force reinitialization of one or more server interfaces. This action causes traffic disruption to the attached devices.

Verifying NPV

To display information about NPV, perform the following task:

Command	Purpose
switch# show npv flogi-table [all]	Displays the NPV configuration.

To display a list of devices on a server interface and their assigned NP uplinks, enter the **show npv flogi-table** command on the Cisco Nexus 5000 Series switch:

```
switch# show npv flogi-table

-----

SERVER                                                    EXTERNAL
INTERFACE VSAN FCID          PORT NAME          NODE NAME          INTERFACE
-----
vfc3/1      1      0xee0008 10:00:00:00:c9:60:e4:9a 20:00:00:00:c9:60:e4:9a fc2/1
vfc3/1      1      0xee0009 20:00:00:00:0a:00:00:01 20:00:00:00:c9:60:e4:9a fc2/2
vfc3/1      1      0xee000a 20:00:00:00:0a:00:00:02 20:00:00:00:c9:60:e4:9a fc2/3
vfc3/1      1      0xee000b 33:33:33:33:33:33:33:33 20:00:00:00:c9:60:e4:9a fc2/4

Total number of flogi = 4
```



Note For each server interface, the External Interface value displays the assigned NP uplink.

To display the status of the server interfaces and the NP uplink interfaces, enter the **show npv status** command:

```
switch# show npv status

npiv is enabled

External Interfaces:
```

=====

Interface: fc2/1, VSAN: 1, FCID: 0x1c0000, State: Up

Interface: fc2/2, VSAN: 1, FCID: 0x040000, State: Up

Interface: fc2/3, VSAN: 1, FCID: 0x260000, State: Up

Interface: fc2/4, VSAN: 1, FCID: 0x1a0000, State: Up

Number of External Interfaces: 4

Server Interfaces:

=====

Interface: vfc3/1, VSAN: 1, NPIV: No, State: Up

Number of Server Interfaces: 1



Note To view fcns database entries for NPV edge switches, you must enter the **show fcns database** command on the core switch.

To view all the NPV edge switches, enter the **show fcns database** command on the core switch:

```
core-switch# show fcns database
```

For additional details (such as IP addresses, switch names, interface names) about the NPV edge switches that you see in the **show fcns database** output, enter the **show fcns database detail** command on the core switch:

```
core-switch# show fcns database detail
```

Verifying NPV Traffic Management

To display the NPV traffic map, enter the **show npv traffic-map** command.

NPV Traffic Map Information:

Server-If	External-If(s)
-----------	----------------

fc1/3	fc1/10,fc1/11
-------	---------------

fc1/5	fc1/1,fc1/2
-------	-------------

To display the NPV internal traffic details, enter the **show npv internal info traffic-map** command.

To display the disruptive load-balancing status, enter the **show npv status** command:

```
switch# show npv status
```

```
npiv is enabled
```

```
disruptive load balancing is enabled
```

External Interfaces:

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