

# Nexus 7000 FAQ

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## Related Information

# Introduction

This document addresses the most frequently asked questions (FAQ) associated with Cisco Nexus 7000 Series Switches.

Refer to Cisco Technical Tips Conventions for more information on document conventions.

## Q. What is the command is used to verify the "HSRP Active State" on a Nexus 7000 Series Switch?

A. The command is **show hsrp active** or **show hsrp brief** .

```
Nexus_7K# show hsrp br
                P indicates configured to preempt.
                |
Interface Grp Prio P State   Active addr   Standby addr   Group addr
Vlan132   32  90  P Standby  10.101.32.253 local           10.101.32.254 (conf)
Vlan194   94  90  P Standby  10.101.94.253 local           10.101.94.254 (conf)
Vlan2061  61  110 P Active   local         10.100.101.253 10.100.101.254 (conf)
```

```
Nexus_7K# show hsrp standb br
                P indicates configured to preempt.
                |
Interface Grp Prio P State   Active addr   Standby addr   Group addr
Vlan132   32  90  P Standby  10.101.32.253 local           10.101.32.254 (conf)
Vlan194   94  90  P Standby  10.101.94.253 local           10.101.94.254 (conf)
Vlan196   96  90  P Standby  10.101.96.253 local           10.101.96.254 (conf)
```

## Q. On a Nexus 7018, when trying to perform a 'no shut' on Ethernet 1/3, the ERROR: Ethernet1/3: Config not allowed, as first port in the port-grp is dedicated error message is received.

A. The device thinks that the first port in the port-grp is in dedicated mode instead of shared mode. When the first port of a port-grp is in dedicated mode, the other ports of the port-grp cannot be used.

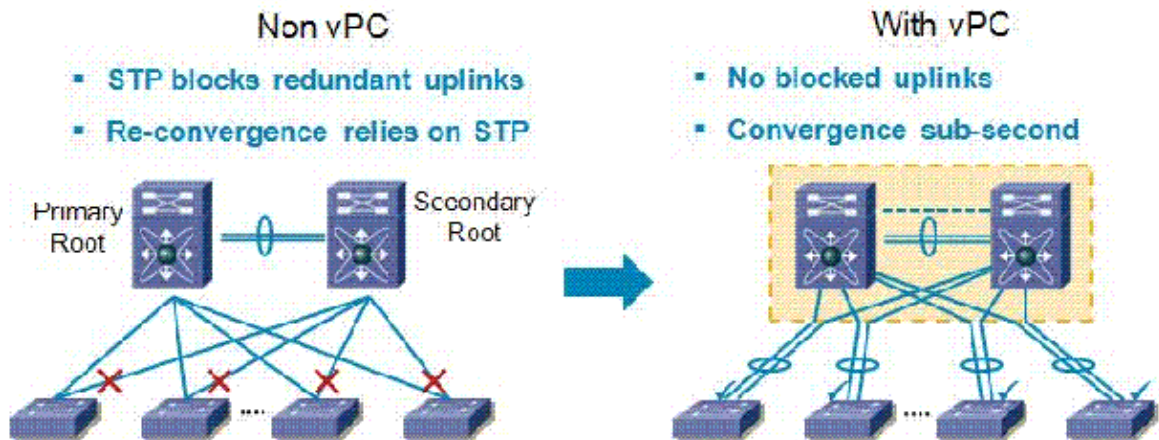
## Q. What is vPC and what are its benefits?

A. Virtual PortChannel (vPC) is a port-channeling concept that extends link aggregation to two separate physical switches.

Benefits of vPC include:

- ◆ Utilizes all available uplink bandwidth
- ◆ Allows the creation of resilient Layer 2 topologies based on link aggregation
- ◆ Eliminates the dependence of Spanning Tree Protocol in Layer 2 access distribution layer(s)
- ◆ Enables transparent server mobility and server high availability (HA) clusters
- ◆ Scales available Layer 2 bandwidth
- ◆ Simplifies network design

- ◆ Dual-homed servers can operate in active-active mode
- ◆ Faster convergence upon link failure
- ◆ Improves convergence time when a single device fails
- ◆ Reduces capex and opex



### Q. Why does vPC not block either of the vPC uplinks?

A. Nexus 7000 has a loop prevention method that drops traffic traversing the peer link (destined for a vPC peer link) when there are no failed vPC ports or links. The rule is simple: if the packet crosses the vPC peer link, it may not go out any port in a vPC even if that vPC does not have the original VLAN.

### Q. How do I create a peer link for VDC and a keepalive link for each VDC?

#### A. Configure the vPC Keepalive Link and Messages

This example demonstrates how to configure the destination, source IP address, and VRF for the vPC-peer-keepalive link:

```
switch# configure terminal
switch(config)# feature vpc
switch(config)# vpc domain 100
switch(config-vpc-domain)# peer-keepalive destination 172.168.1.2 source
172.168.1.1 vrf vpc-keepalive
```

#### Create the vPC Peer Link

This example demonstrates how to configure a vPC peer link:

```
switch# configure terminal
switch(config)# interface port-channel 20
switch(config-if)# vpc peer-link
switch(config-vpc-domain)#
```

### Q. What does the %EEM\_ACTION-6-INFORM: Packets dropped due to IDS check length consistent on module message mean?

A. Cisco NX-OS supports Intrusion Detection System (IDS) checks that validate IP packets to ensure proper formatting. This is an enhancement beginning in 5.x. The EEM message is being logged because a packet is received by the switch where the Ethernet frame size is shorter than the expected length to include the IP packet length plus the Ethernet header. The

packet is dropped by the hardware due to this condition.

In order to verify that the IDS drops occurred since the last switch reboot, issue the **show hardware forwarding ip verify module [#]** ".

## Q. How do I verify the features enabled on Nexus 7000 Series Switch with NX-OS 4.2?

A. Issue the **show feature** command in order to verify.

```
switch-N7K# show feature
Feature Name          Instance  State
-----
tacacs                1        enabled
scheduler             1        enabled
isis                  2        disabled
isis                  3        disabled
isis                  4        disabled
ospf                  1        enabled
ospf                  2        disabled
ospf                  3        disabled
```

```
switch-N7K# show run | I feature
feature vrrp
feature tacacs+
feature scheduler
feature ospf
feature bgp
feature pim
feature pim6
feature eigrp
feature pbr
feature private-vlan
feature udd
feature interface-vlan
feature netflow
feature hsrp
feature lacp
feature dhcp
feature tunnel
```

## Q. Is there a tool available for configuration conversion on Cisco 6500 series to the Nexus platform?

A. Cisco has developed the IOS-NXOS Migration Tool for quick configuration conversion on Cisco 6500 series to the Nexus series OS.

## Q. How many syslog servers can be added to a Nexus 7000 Series Switch?

A. The maximum number of syslog servers configured is 3.

## Q. Is Nexus 7010vPC feature (LACP enabled) compatible with the Cisco ASA etherchannel feature and with ACE 4710 etherchannel?

A. With respect to vPC, any device that runs the LACP (which is a standard), is compatible with the Nexus 7000, including ASA/ACE.

## Q. What are orphan ports?

A. Orphan ports are single attached devices that are not connected via a vPC, but still carry vPC VLANs. In the instance of a peer-link shut or restoration, an orphan port's connectivity may be bound to the vPC failure or restoration process. Issue the **show vpc orphan-ports** command in order to identify the impacted VLANs.

## Q. How many OSPF processes can be run in a virtual device context (VDC)?

A. There can be up to four (4) instances of OSPFv2 in a VDC.

## Q. Which Nexus 7000 modules support Fibre Channel over Ethernet (FCoE)?

A. The Cisco Nexus 7000 Series 32-Port 1 and 10 Gigabit Ethernet Module support FCoE. The part number of the product is N7K-F132XP-15.

## Q. What is the minimum NX-OS release required to support FCoE in the Nexus 7000 Series Switches?

A. FCoE is supported on Cisco Nexus 7000 Series systems running Cisco NX-OS Release 5.2 or later.

## Q. On a Nexus, is the metric-type keyword not available in the "default-information originate" command?

A. On a Nexus, use a **route-map** command with a set clause of **metric-type type- [1/2]** in order to have the same functionality as in IOS using the **default-information originate always metric-type [1/2]** command.

For example:

```
switch(config)#route-map STAT-OSPF, permit, sequence 10
switch(config-route-map)#match interface ethernet 1/2
switch(config-route-map)#set metric-type {external | internal | type-1 | type-2}
```

## Q. How do I redistribute connected routes into an OSPF instance on a Nexus 7010 with a defined metric?

A. In NX-OS, a **route-map** is always required when redistributing routes into an OSPF instance, and you will also use this route-map to set the metric. Further, subnet redistribution is by default, so you do not have to add the **subnets** keyword.

For example:

```
switch(config)#access-list 101 permit ip <connected network> <wildcard> any
switch(config)#access-list 101 permit ip <connected network> <wildcard> any
switch(config)#access-list 101 permit ip <connected network> <wildcard> any
switch(config)#access-list 101 deny any
!
Router(config)# route-map direct2ospf permit 10
Router(config-route-map)# match ip address 101
```

```
Router(config-route-map)# set metric <100>

Router(config-route-map)# set metric-type type-1
!
switch(config)#router ospf 1
switch(config-router)#redistribute direct route-map direct2ospf
```

**Q. What is the equivalent NX-OS command for the "ip multicast-routing" IOS command, and does the Nexus 7000 support PIM-Sparse mode?**

**A.** The command is **feature pim**. In NX-OS, multicast is enabled only after enabling the PIM or PIM6 feature on each router and then enabling PIM or PIM6 sparse mode on each interface that you want to participate in multicast.

For example:

```
switch(config)#feature pim
switch(config)#interface Vlan[536]
switch(config-if)#ip pim sparse-mode
```

See Cisco Nexus 7000 Series NX-OS Multicast Routing Configuration Guide, Release 5.x for a complete configuration guide.

**Q. When I issue the "show ip route bgp" command, I see my routes being learned via OSPF and BGP. How can I verify on the NX-OS which one will always be used and which one is a backup?**

**A.** Here is what is received:

```
Nexus_7010#show ip route bgp
IP Route Table for VRF "default"
'*' denotes best ucast next-hop
'***' denotes best mcast next-hop
'[x/y]' denotes [preference/metric]

172.20.62.0/23, ubest/mbest: 1/0
  *via 10.194.160.2, [20/0], 18:53:35, bgp-[AS-Number], internal, tag [Number]
  via 10.194.16.5, Vlan116, [110/1043], 18:43:51, ospf-1, intra
172.20.122.0/23, ubest/mbest: 1/0
  *via 10.194.160.2, [20/0], 18:53:35, bgp-[AS-Number], internal, tag [Number]
  via 10.194.16.5, Vlan116, [110/1041], 18:43:51, ospf-1, intra
```

By default, BGP selects only a single best path and does not perform load balancing. As a result, the route marked with the \* will always be used, unless it goes down, at which point any remaining routes will become the preferred path.

**Q. How do I avoid receiving the "Failed to process kickstart image. Pre-Upgrade check failed" error message when upgrading the image on a Nexus 7000 Series Switch?**

**A.** One potential reason for receiving this error message is if the file name specified is not correct.

For example:

```
switch#install all kickstart bootflash:n7000-s1-kickstart.5.1.1a.bin system
bootflash:n7000-s1-dk9.5.1.1a.bin
```

In this example, the file name contains "s1" (lowercase letter l) instead of "s1" (number 1).

## Q. How can I avoid receiving the "Configuration does not match the port capability" error message when enabling "switchport mode fex-fabric"?

A. This error message is generated because the port is not FEX capable:

```
N7K-2(config)#interface ethernet 9/5
N7K-2(config-if)#switchport mode fex-fabric
ERROR: Ethernet9/5: Configuration does not match the port capability
```

In order to resolve this problem, check the port capabilities by using the **show interface ethernet** command.

For example:

```
N7K-2#show interface ethernet 9/5 capabilities
Ethernet9/5
Model: N7K-M132XP-12
Type (SFP capable): 10Gbase-(unknown)
Speed: 10000
Duplex: full
Trunk encap. type: 802.1Q
Channel: yes
Broadcast suppression: percentage(0-100)
Flowcontrol: rx-(off/on),tx-(off/on)
Rate mode: shared
QOS scheduling: rx-(8q2t),tx-(1p7q4t)
CoS rewrite: yes
ToS rewrite: yes
SPAN: yes
UDLD: yes
Link Debounce: yes
Link Debounce Time: yes
MDIX: no
Pvlan Trunk capable: no
Port Group Members: 1,3,5,7
TDR capable: no
FabricPath capable: no
Port mode: Routed,Switched
FEX Fabric: no
dot1Q-tunnel mode: yes
```

From this output of the **show interface ethernet 9/5 capabilities** command, you can see **FEX Fabric: no**. This verifies that the port is not FEX capable. In order to resolve this problem, upgrade the EPLD images to Cisco NX-OS Release 5.1(1) or later.

## Q. When I issue the "show interface counters errors" command, I see that one of the interfaces is consistently posting errors. What are the FCS-Err and Rcv-Err in the output of the "show interface counters errors" command?

A. Here is what is received:

```
Nexus-7000#show interface counters errors
```

Port	Align-Err	FCS-Err	Xmit-Err	Rcv-Err	UnderSize	OutDiscards
Eth1/1	0	26	0	26	0	0

With FCS-Err and Rcv-Err, it is usually an indication that you are receiving corrupt packets.

## Q. How do I enable/disable logging link status per port basis on a Nexus 7000 Series Switch?

A. All interface link status (up/down) messages are logged by default. **Link status events** can be configured globally or per interface. The **interface** command enables link status logging messages for a specific interface.

For example:

```
N7k(config)#interface ethernet x/x
N7k(config-if)#logging event port link-status
```

## Q. On a Nexus 7000 running NX-OS 5.1(3), can the DecNet be bridged on a VLAN?

A. All of the Nexus platforms support passing DecNet frames through the device from a layer-2 perspective. However, there is no support for routing DecNet on the Nexus.

## Q. How do I check the Network Time Protocol (NTP) status on a Nexus 7000 Series Switch?

A. In order to display the status of the NTP peers, issue the **show ntp peer-status** command:

```
switch#show ntp peer-status

Total peers : 1

* - selected for sync, + - peer mode(active),
- - peer mode(passive), = - polled in client mode

      remote                local                st    poll    reach delay    vrf
-----
*10.1.10.5                0.0.0.0                1    64    377    0.00134 default
```

## Q. How do I capture the output of the show tech-support details?

A. Issue the **tac-pac bootflash://<filename>** command in order to redirect the output of the **show tech** command to a file, and then gzip the file.

For example:

```
switch#tac-pac bootflash://showtech.switch1
```

Issue the **copy bootflash://showtech.switch1 tftp://<server IP/<path>** command in order to copy the file from bootflash to the TFTP server.



For example:

```
switch#copy bootflash://showtech.switch1 tftp://<server IP/<path>
```

## **Q. Can a Nexus 7000 be a DHCP server and can it relay DHCP requests to different DHCP servers per VLAN?**

**A.** The Nexus 7000 does not support a DHCP server, but it does support DHCP relay. For relay, use the `ip dhcp relay address x.x.x.x` interface command.

See **Cisco Nexus 7000 Series NX-OS Security Configuration Guide, Release 5.x** for more information on Dynamic Host Configuration Protocol (DHCP) on a Cisco NX-OS device.

## **Q. How do I verify if XL mode is enabled on a Nexus 7000 device?**

**A.** The Scalable Feature License is the new Nexus 7000 system license that enables the incremental table sizes supported on the M-Series L Modules. Without the license, the system will run in standard mode, meaning none of the larger table sizes will be accessible. Having non-XL and XL modules in a system is supported, but for the system to run in XL mode all modules need to be XL capable, and the Scalable Feature license needs to be installed. Mixing modules is supported, with the system running in the non-XL mode. If the modules are in the same system, the entire system falls back to the common smallest value. If the XL and non-XL are isolated using VDCs, then each VDC is considered a separate system and can be run in different modes.

In order to confirm whether the Nexus 7000 has the XL option enabled, you first need to check if the Scalable Feature License is installed. Also, having non-XL and XL modules in a system is supported, but in order for the system to run in XL mode, all modules need to be XL capable.

## **Q. How do I implement VTP in a Nexus 7000 Series Switch where VLANs are manually configured?**

**A.** Cisco does not recommend running VTP in data centers. If someone attaches a switch to the network with a higher revision number without changing the VTP mode from the server, it will override the VLAN configuration on the switch.

## **Q. Is there a best practice for port-channel load balancing between Nexus 1000V Series and Nexus 7000 Series Switches?**

**A.** There is no recommended best practice for load-balancing between the Nexus 1000V Series and Nexus 7000 Series Switches. You can choose either a flow-based or a source-based model depending on the network's requirement.

## **Q. During Nexus 7010 upgrade from 5.2.1 to 5.2.3 code, the X-bar module in slot 4 keeps powering off. The %MODULE-2-XBAR\_DIAG\_FAIL: Xbar 4 reported failure due to Module ASIC(s) reported sync loss (DevErr is LinkNum). Trying to Resync in device 88 (device error 0x0) error message is received.**

A. This error message corresponds to diagnostic failures on module 2. It could be a bad connection to the X-bar from the linecard, which results in the linecard being unable to sync. Typically with these errors, the first step is to reseat the module. If that does not resolve the problem, reseat the fabric as well as the module individually.

## Q. What does the %OC\_USD-SLOT18-2-RF\_CRC: OC2 received packets with CRC error from MOD 6 through XBAR slot 5/inst 1 error message mean?

A. These errors indicate that the octopus engine received frames that failed the CRC error checks. This can be caused by multiple reasons. For example:

- ◆ Hardware problems:

- ◇ Bad links
- ◇ Backplane issues
- ◇ Sync losses
- ◇ Seating problems

- ◆ Software problems:

- ◇ Old fpga
- ◇ Frames forwarded to LC that it is unable to understand

## Q. How do I verify packet drops on a Nexus 7000 Switch?

A. Verify the **Rx Pause** and **TailDrops** fields from the output of the **show interface {/}** and **show hardware internal errors module *module #*** commands for the module with these ports.

For example:

```
Nexus7K#show interface e7/25
Ethernet7/25 is up
```

```
!--- Output suppressed
```

```
input rate 1.54 Kbps, 2 pps; output rate 6.29 Mbps, 3.66 Kpps
RX
156464190 unicast packets  0 multicast packets  585 broadcast packets
156464775 input packets  11172338513 bytes
0 jumbo packets  0 storm suppression packets
0 runts  0 giants  0 CRC  0 no buffer
0 input error  0 short frame  0 overrun  0 underrun  0 ignored
0 watchdog  0 bad etype drop  0 bad proto drop  0 if down drop
0 input with dribble  0 input discard
7798999 Rx pause
TX
6365127464 unicast packets  6240536 multicast packets  2290164 broadcast packets
6373658164 output packets  8294188005962 bytes
0 jumbo packets
0 output error  0 collision  0 deferred  0 late collision
0 lost carrier  0 no carrier  0 babble
0 Tx pause
```

The pauses on e7/25 indicate that the server is having difficulty keeping up with the amount

of traffic sent to it.

```
Nexus7k#show hardware internal error module 2 | include
r2d2_tx_taildrop_drop_ctr_q3
37936 r2d2_tx_taildrop_drop_ctr_q3          0000000199022704    2 -
37938 r2d2_tx_taildrop_drop_ctr_q3          0000000199942292    4 -
37941 r2d2_tx_taildrop_drop_ctr_q3          0000000199002223    5 -
37941 r2d2_tx_taildrop_drop_ctr_q3          0000000174798985   17 -
```

This indicates that the amount of traffic sent to these device was too much for the interface itself to transmit. Since each interface was configured as a trunk allowing all VLANs and multicast/broadcast traffic counters were low, it appears there is a lot of unicast flooding that may be causing drops for these interfaces.

## Related Information

- [Cisco Nexus 7000 Series Switches: Support Page](#)
- [Fibre Channel over Ethernet \(FCoE\)](#)
- [Switches Product Support](#)
- [LAN Switching Technology Support](#)
- [Technical Support & Documentation – Cisco Systems](#)

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