# 在使用NX-OS的vPC中,在Nexus交换机上安装 升级

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## 简介

本文档介绍在使用Cisco NX-OS的vPC中Cisco Nexus 9000交换机的升级过程。

## 先决条件

### 要求

Cisco 建议您了解以下主题:

- Nexus NX-OS 软件。
- 虚拟端口通道(vPC)。
- 使用Cisco Nexus交换机上的设备文件系统、目录和文件。
- 登录<u>软件下载</u>。
- Cisco建议安排维护窗口,因为此过程具有破坏性。

### 使用的组件

本文档中的信息基于以下软件和硬件版本:

• Cisco Nexus 9000和Cisco NX-OS。

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原 始(默认)配置。如果您的网络处于活动状态,请确保您了解所有命令的潜在影响。



注意:Cisco Nexus 7000交换机的升级过程可基于本文档,但命令和输出会有所不同。有 关详情,请参阅特定于Cisco Nexus交换机的官方思科指南。

配置

网络图



网络图

## 背景信息

- 假设您是数据中心的网络管理员,其中有两台N9K-C93180YC-FX-24。
- N9K-1和N9K-2使用NX-OS 9.3(11)。
- 服务器A和B正在发送生产流量。
- 目标是将两台Nexus交换机升级到NX-OS 10.2(5)。



注意:从主交换机开始升级,或者从交换机没有任何功能区别。但是,启动主交换机可以 保证两台设备恢复其初始配置的主要和辅助角色。 尽管了解Nexus作为vPC中的主要运营 功能非常重要。

### vPC运行的主要任务

- 即使使用FHRP也应答ARP请求。
- 处理网桥协议数据单元(BPDU)。
- 转发PIM组播流量。
- IGMP的控制平面数据包。
- 对等链路关闭时vPC成员端口不关闭。

## 升级方法

步骤1:开放式Cisco Nexus 9000和3000 ISSU支持表

### 1. 洗择当前版本。

2. 选择Target release。

## allalla CISCO.

## Cisco Nexus 9000 and 3000 ISSU Support Matrix

This form provides information for In-Service Software Upgrade (ISSU) support for Cisco NX-OS software on Nexus 9000 Series and 3000 Series Switches based on your current and target release. The upgrade releases have been tested and validated by Cisco, Cisco partners, or both. Use this form as a reference for supported software.

For feedback on this tool, send email to nexus9k-docfeedback@cisco.com.

NOTE: ISSU is not supported for software downgrades. If you want to downgrade your software, follow the disruptive downgrade procedure described in the Upgrade and Downgrade Guide for your target release. For NXOS software strategy and lifecycle, see the Cisco NX-OS Software Strategy and Lifecycle Guide.

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Current release 9.3(10) 2.1 Target release

10.2(5)M

Current release: 9.3(11)

Target release: 10.2(5)M

Recommended path: Direct path from Current Release. [Show Alternate Paths]

Cisco Nexus 9000和3000 ISSU支持表



注意:Cisco TAC建议始终使用中断性(重新加载)升级选项和建议的路径。



注意:建议的路径可以显示多个跳跃。对于每一跳,必须重复第2步至第11步,直到两台 Cisco Nexus交换机均具有目标NX-OS版本。

第二步:根据您的Cisco Nexus交换机线卡,下载推荐路径中所述的所有Cisco NX-OS文件。

- 1. 登录<u>软件下载</u>
- 2. 导航到下载和升级部分并打开访问下载。
- 3. 点击Browse all > Cisco IOS and NX-OS Software > NX-OS NX-OS Software > Switches > Data Center Switches > Select your Nexus series > Select your linecard > NX-OS System Software > Select NX-OS version to download。
- 4. 将光标移到文件名上方以显示文件详细信息,复制MD5校验和值并下载NX-OS文件。

Products &	& Services Supp	oort How to Buy Training & Events	Partners			Q 🖵 Đ	00
Software	Downloa	d					
ownloads Home / IOS and VX-OS System Software	d NX-OS Software / N	X-OS / NX-OS Software / Switches / Data Center S	witches / Nexus 9000 Serie	s Switches / Nexus 931	80YC-FX-24 Switch		
Q. Search	Description : Release :	Cisco Nexus 9000/3000 Standalone Switch 10.2(6)	L Switch				
Expand All	Release Date : FileName :	01-Sep-2023 nxos64-cs.10.2.6.M.bin		Related Links	and Documentation		
Latest Release	Min Memory : Size :	DRAM 0 Flash 0 1890.07 MB ( 1981878272 bytes)		Release Notes for 1	0.2(6) N3K		
10.2(6)(M)	MD5 Checksum : SHA512 Checksum :	a7ab27345fb90f654a943d1765df8142 💼 4da019c09645bdf06ab78657a46c95db 💼					
10.4(1)(F)	Release Notes for 10	0.2(6) N3K Release Notes for 10.2(6) N9K Advisories		Release Date	Size		
10.3(99x)(F)		nxos64-cs.10.2.6.M.bin		01-Sep-2023	1890.07 MB		÷∵
9.3(12) All Release	~	Advisories Ґ					
10	>						
9	>						

软件下载

5. 通过SCP、SFTP、TFTP或USB将NX-OS文件传输到vPC中的两台Cisco Nexus交换机上的 bootflash。 如果选择了前三个选项之一,请通过指定预期的VRF来验证是否对服务器执行 ping操作。在本例中,SFTP服务器可通过虚拟路由转发(VRF)管理访问IP地址192.168.9.9。

N9K-1(config)# ping 192.168.9.9 vrf management

N9K-1(config)# copy sftp: bootflash: Enter source filename: nxos64-cs.10.2.5.M.bin Enter vrf (If no input, current vrf 'default' is considered): management Enter hostname for the sftp server: 192.168.9.9 Enter username: admin The authenticity of host '192.168.9.9 (192.168.9.9)' can't be established. RSA key fingerprint is SHA256:ABCDEFGHIJK. Are you sure you want to continue connecting (yes/no/[fingerprint])? yes Warning: Permanently added '192.168.9.9' (RSA) to the list of known hosts. Inbound-ReKey for 192.168.9.9 User Access Verification Password: cisco

6. 文件传输完成后,请使用dir命令验证NX-OS文件是否位于bootflash中。

7. 使用show file bootflash命令从NX-OS文件获取MD5校验和。

8. 将此值与从<u>软件下载</u>复制的值进行比较。 两个值必须匹配,否则NX-OS文件已损坏或不合法 。

N9K-1(config)# dir | include nxos 1978203648 Mar 31 01:36:06 2023 nxos.9.3.11.bin 1943380992 Mar 17 09:54:16 2023 nxos64-cs.10.2.5.M.bin Usage for bootflash:// 20548902912 bytes used 96040308736 bytes free 116589211648 bytes total 第三步:确定每个Cisco Nexus交换机在vPC中的操作角色。

1. 使用命令show vpc role。

N9K-1(config)# show vpc role

vPC Role status	
vPC role	: primary
Dual Active Detection Status	: 0
vPC system-mac	: 00:23:04:ee:be:01
vPC system-priority	: 32667
vPC local system-mac	: 44:b6:be:11:17:67
vPC local role-priority	: 32667
vPC local config role-priority	: 32667
vPC peer system-mac	: f8:a7:3a:4e:40:07
vPC peer role-priority	: 32667
vPC peer config role-priority	: 32667

N9K-2(config)# show vpc role

vPC Role status	
vPC role	: secondary
Dual Active Detection Status	: 0
vPC system-mac	: 00:23:04:ee:be:01
vPC system-priority	: 32667
vPC local system-mac	: f8:a7:3a:4e:40:07
vPC local role-priority	: 32667
vPC local config role-priority	: 32667
vPC peer system-mac	: 44:b6:be:11:17:67
vPC peer role-priority	: 32667
vPC peer config role-priority	: 32667

第四步:验证vPC中两台Cisco Nexus交换机上的Cisco NX-OS不兼容。

1. 使用命令show incompatibility-all nxos bootflash。

N9K-1(config)# show incompatibility-all nxos bootflash:nxos64-cs.10.2.5.M.bin Checking incompatible configuration(s) for vdc 'N9K-1':

No incompatible configurations

Checking dynamic incompatibilities:

第五步:验证vPC中两台Cisco Nexus交换机对Cisco NX-OS的影响。

1. 使用命令show install all impact nxos bootflash。这将执行初步诊断,以验证Cisco NX-OS版本是否兼容且可以完成安装。

N9K-1(config)# show install all impact nxos bootflash:nxos64-cs.10.2.5.M.bin Installer will perform impact only check. Please wait. Verifying image bootflash:/nxos64-cs.10.2.5.M.bin for boot variable "nxos". [####################### 100% -- SUCCESS Verifying image type. Preparing "nxos" version info using image bootflash:/nxos64-cs.10.2.5.M.bin. [#################### 100% -- SUCCESS Preparing "bios" version info using image bootflash:/nxos64-cs.10.2.5.M.bin. [#################### 100% -- SUCCESS Performing module support checks. [#####################] 100% -- SUCCESS Notifying services about system upgrade. [###################### 100% -- SUCCESS Compatibility check is done: Module bootable Impact Install-type Reason \_\_\_\_\_ \_\_\_\_\_ yes disruptive reset default upgrade is not hitless 1 Images will be upgraded according to following table: Module Image Running-Version(pri:alt) New-Version Upg-Required \_\_\_\_\_ \_\_\_\_\_ 1 9.3(11) 10.2(5)nxos bios v05.47(04/28/2022):v05.43(11/22/2020) v05.47(04/28/2022) 1 no Additional info for this installation:

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Service "vpc" in vdc 1: Vpc is enabled, Please make sure both Vpc peer switches have same boot mode usi

第6步(可选):从vPC中的两台Cisco Nexus交换机导出运行配置的备份。

N9K-1(config)# copy running-config sftp:running-config-backup Enter vrf (If no input, current vrf 'default' is considered): default Enter hostname for the sftp server: 192.168.9.9 Enter username: admin

The authenticity of host '192.168.9.9 (192.168.9.9)' can't be established.

RSA key fingerprint is SHA256:ABDCEFGHI. Are you sure you want to continue connecting (yes/no/[fingerprint])? yes Warning: Permanently added '192.168.9.9' (RSA) to the list of known hosts. Inbound-ReKey for 192.168.9.9:22 User Access Verification Password: Connected to 192.168.9.9.

#### 步骤 7.在具有vPC主要角色的Nexus交换机上安装NX-OS。

1. 使用命令install all nxos bootflash。

N9K-1(config)# install all nxos bootflash:nxos64-cs.10.2.5.M.bin Installer will perform compatibility check first. Please wait. Installer is forced disruptive Verifying image bootflash:/nxos64-cs.10.2.5.M.bin for boot variable "nxos". Verifying image type. [###################### ] 100% -- SUCCESS Preparing "nxos" version info using image bootflash:/nxos64-cs.10.2.5.M.bin. [####################### 100% -- SUCCESS Preparing "bios" version info using image bootflash:/nxos64-cs.10.2.5.M.bin. [###################### 100% -- SUCCESS Performing module support checks. [###################### 100% -- SUCCESS Notifying services about system upgrade. Compatibility check is done: Module bootable Impact Install-type Reason ----- ------\_\_\_\_\_ yes disruptive 1 reset default upgrade is not hitless

Images Module	will be upgraded Image	according to following table: Running-Version(pri:alt)	New-Version	Upg-Required
 1 1	nxos bios v	9.3(11) 705.47(04/28/2022):v05.43(11/22/2020)	v05.47(04/28/2022)	10.2(5) no

Additional info for this installation:

Service "vpc" in vdc 1: Vpc is enabled, Please make sure both Vpc peer switches have same boot mode usin

Switch will be reloaded for disruptive upgrade. Do you want to continue with the installation (y/n)? [n] y



注意:您必须阅读成功且没有任何错误。之后,Cisco Nexus交换机重新启动,安装过程可 能需要几分钟。每个Cisco Nexus交换机的配置可能不同。

步骤 8等待Cisco Nexus交换机上的状态变为活动状态。

1. 使用命令show module。

N9K-	<pre>i9K-1(config)# show module</pre>								
Mod	Ports			Mo	odı	le-Type		Model	Status
 1	 54	 24x10	 /25G	/ 32G	 +	6x40/100G	Ethernet/FC	N9K-C93180YC-FX-24	active *
Mod	Sw					Hw	Slot		

Mod	MAC-Address(es)	Serial-Num
1	44-b6-aa-aa-aa to 44-b6-be-bb-bb-bb	ABCDEFGHIJK
Mod	Online Diag Status	
1	Pass	

1.0

NA

\* this terminal session

1

9.3(11)



注意:请注意,vPC保持连接和/或对等链路可能不能处于运行状态。这是预期结果,因为 vPC中的Cisco Nexus交换机具有不受支持的不同版本Cisco NX-OS。

步骤 9在vPC对等Cisco Nexus交换机上安装Cisco NX-OS。

Compatibility check is done:										
Module	bootable	Impact	Install-type	Reason						
1	yes	disruptive	reset	default upgrade	is not hitless					

Images	will be upgraded	according to following table:		
Module	Image	Running-Version(pri:alt)	New-Version	Upg-Required
1	nxos	9.3(11)		10.2(5)
1	bios v	v05.47(04/28/2022):v05.42(06/14/2020)	v05.47(04/28/2022)	no

Additional info for this installation:

-----

Service "vpc" in vdc 1: Vpc is enabled, Please make sure both Vpc peer switches have same boot mode usi

Switch will be reloaded for disruptive upgrade. Do you want to continue with the installation (y/n)? [n] y

### 步骤 10等待Cisco Nexus交换机上的状态变为活动状态。

### 1. 使用命令show module。

N9K-2(config)# show module Mod Ports Module-Type Model Status 1 54 24x10/25G/32G + 6x40/100G Ethernet/FC N9K-C93180YC-FX-24 active \* Mod Sw Hw Slot ---- ------ -----9.3(11) 1.0 NA 1 Mod MAC-Address(es) Serial-Num ----- -----\_\_\_ f8-a7-3a-nn-nn-nn to f8-a7-3a-n1-n1-n1 98765432109 1 Mod Online Diag Status ---\_\_\_\_\_ Pass 1 \* this terminal session

步骤 11验证keep-alive、peer-link和vPC端口通道是否处于UP状态。

1. 使用命令show vpc。

N9K-: Leger	1(config nd:	g)# show	vрс		c			
		(*)	- loca	I VPC 15 doi	vn, torwai	rding via v	PC peer-lin	K
vPC of Peer VPC I VPC I Number Dual Grace Auto Delay Opera Virtu	domain i status keep-ali iguratic vlan cor -2 consi role er of vF Gateway -active eful Cor -recover y-restor y-restor ational ual-peer Peer-lir	id ive statu nsistency istency cs conf v exclude nsistency ry statu re statu re statu re statu na SVI s Layer3 1 rlink mod	us stency s status igured d VLANs y Check s tatus Peer-roo de s	: 1 : p : p : status : s : s : s : s : p : 2 : E : c : c : T : T : T : T : uter : D	eer adjace eer is al uccess uccess rimary nabled isabled imer is or nabled isabled imer is or	ency formed ive ff.(timeout ff.(timeout	ok = 30s) = 10s)	
id	Port	Status	Active	vlans				
 1	 Po1	 up	1					-
vPC s	status							
Id	Port		Status	Consistenc	/ Reason		Active	vlans
 50	 Po50		 up	success	success		1	
60	Po60		up	success	success		1	

N9K-2(config)# show vpc Legend: (\*) - local vPC is down, forwarding via vPC peer-link

vPC domain id	• 1
Vrc domarn ru	. 1
Peer status	: peer adjacency formed ok
vPC keep-alive status	: peer is alive
Configuration consistency status	: success
Per-vlan consistency status	: success
Type-2 consistency status	: success
vPC role	: secondary
Number of vPCs configured	: 2
Peer Gateway	: Enabled
Dual-active excluded VLANs	: -
Graceful Consistency Check	: Enabled
Auto-recovery status	: Disabled
Delay-restore status	: Timer is off.(timeout = 30s)
Delay-restore SVI status	: Timer is off.(timeout = 10s)
Operational Layer3 Peer-router	: Enabled
Virtual-peerlink mode	: Disabled

vPC Peer-link status

\_\_\_\_\_ id Port Status Active vlans ----\_\_\_ Po1 up 1 1 vPC status

Id	Port	Status	Consistency	Reason	Active vlans
50	Po50	up	success	success	1
60	Po60	up	success	success	1

## 相关信息

• <u>思科技术支持和下载</u>

### 关于此翻译

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