



# Deploying Cisco Nexus Data Broker Embedded for OpenFlow

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## Obtaining the Cisco Nexus Data Broker Embedded Software for OpenFlow

To obtain the Cisco Nexus Data Broker Embedded Software for OpenFlow, complete the following steps:



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**Attention**

Starting with Cisco NXOS Release 7.0(3)I5(1), Openflow is supported in Embedded deployment.

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**Note**

This procedure is applicable for the following Cisco Nexus 3000, Nexus 9000 platforms:

- Cisco Nexus 9000 Series switches (excluding EX, FX, and 9500 models) running NXOS version I4 or lower.
  - Cisco Nexus 3000 and 3100 Series switches running NXOS version I4 or lower.
  - Cisco Nexus 3548 switches running version 6.0(2)A6 or 6.0(2)A8.
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## Procedure

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- Step 1** In a web browser, navigate to [Cisco.com](http://Cisco.com).
- Step 2** Under **Support**, click **All Downloads**.
- Step 3** In the center pane, click **Cloud and Systems Management**.
- Step 4** If prompted, enter your Cisco.com username and password to log in.
- Step 5** In the right pane, click **Network Controllers and Applications**, and then click **Cisco Nexus Data Broker**.
- Step 6** Download and unzip the **Cisco Nexus Data Broker Release 3.7.1** application bundle zip file. For more information regarding the NDB zip file name, see [Cisco Nexus Data Broker Software Release Filename Matrix](#).
- Step 7** Download the activator script. The Python activator script needed to activate the NDB is available at: <https://github.com/datacenter/nexus-data-broker>. For more information regarding the Python activator script file name, see [Cisco Nexus Data Broker Software Release Filename Matrix](#).
- Step 8** Unzip the application bundle to extract the two files:
- ndb1000-sw-app-emb-k9-3.7.1.ova – NDB application OVA
  - ofa\_mmemb-2.1.4-r2-nxos-SPA-k9.ova (N9K switches) OR ofa\_mmemb-1.1.5-r3-n3000-SPA-k9.ova (N3K and N3548 switches) – Openflow Plugin OVA
- Step 9** Copy the OpenFlow Plugin OVA to bootflash of the switch.
- Example:**  
copy ftp://user@10.10.10.1/download\_dir/ndb1000-sw-app-emb-k9-3.7.1.ova bootflash: vrf management
- Step 10** Copy the NDB application OVA to bootflash of the switch.
- Example:**  
copy ftp://user@10.10.10.1/download\_dir/ofa\_mmemb-2.1.4-r2-nxos-SPA-k9.ova bootflash: vrf management
- Example:**  
copy ftp://user@10.10.10.1/download\_dir/ofa\_mmemb-1.1.5-r3-n3000-SPA-k9.ova bootflash: vrf management
- Step 11** Copy the Python activator script to switch.
- Example:**  
copy ftp://user@10.10.10.1/download\_dir/NDBActivator2.0\_A6\_A8\_Plus.py bootflash:NDBActivator.py  
vrf management
- Example:**  
copy ftp://user@10.10.10.1/download\_dir/NDBActivator2.0\_I3\_I4.py bootflash:NDBActivator.py  
management
- 

## What to do next

Install the software on a Cisco Nexus 3000, 3100, 3200, 3500, or 9000 Series switch.

# Installing and Activating the Cisco Nexus Data Broker Embedded Software for OpenFlow

To install and activate Cisco Nexus Data Broker (NDB) for OpenFlow, you need two OVA files for deployment, one file for OpenFlow plugin and other for NDB Application.

## Before you begin



**Note** You cannot install a new version of the Cisco Nexus Data Broker Embedded if you already have an existing Cisco Monitor Manager Embedded application installed and active.

Before you begin installing a new version of the Cisco Nexus Data Broker Embedded, you must:

- Deactivate your current Cisco Monitor Manager Embedded OVA file.
- Uninstall the Cisco Monitor Manager Embedded OVA file.



**Note** To add a device to NDB in embedded mode, use the device IP address. Currently, NDB embedded mode does not support hostname for adding a device.



**Important** Ensure that you have at least 1 GB of available space in the bootflash. For example, the **ofa\_mmemb-2.1.4-r2-nxos-SPA-k9.ova** and **ndb1000-sw-app-emb-k9-3.3.ova** file require a total of 850 MB of space in the bootflash for the decompression and installation processes. For more information regarding the NDB zip file name, see [Cisco Nexus Data Broker Software Release Filename Matrix](#).

## Procedure

- Step 1** switch# **copy ftp://source\_Server ofa\_mmemb-2.1.4-r2-nxos-SPA-k9.ova bootflash:vrf management OR download\_dir ofa\_mmemb-1.1.5-r3-n3000-SPA-k9.ova bootflash:vrf management**
- Copies the Cisco Plug-in for OpenFlow package from the directory where you downloaded it to the switch. You can download the file from different sources such as HTTP, FTP, or SSH.
- Step 2** switch# **copy ftp://source\_Server ndb1000-sw-app-emb-k9-3.3.ova bootflash:vrf management**
- Copies the Cisco Nexus Data Broker Embedded package from the directory where you downloaded it to the switch. You can download the file from different sources such as HTTP, FTP, or SSH.
- Step 3** switch# **show virtual-service list**
- Monitors the status of the copy processes.

**Step 4** switch# **virtual-service install name ofa\_ndbemb package bootflash:ofa\_mmemb-2.1.4-r2-nxos-SPA-k9.ova** OR switch# **virtual-service install name ofa\_ndbemb package bootflash:ofa\_mmemb-2.1.4-r2-nxos-SPA-k9.ova**

Installs the Cisco Plug-in for OpenFlow package on the switch.

**Step 5** switch# **virtual-service install name ndb\_emb package bootflash:ndb1000-sw-app-emb-k9-3.3.ova**

Installs the Cisco Nexus Data Broker Embedded package on the switch.

**Step 6** switch# **show virtual-service list**

Monitors the status of the installations.

**Note** Do not continue until both OVA files have been successfully installed.

**Step 7** switch# **configure terminal**

Enters global configuration mode on the switch.

**Step 8** switch (config)# **virtual-service ndb virtual service name**

Starts the virtual service for the Cisco Plug-in for OpenFlow package and enters virtual service configuration mode on the switch.

**Step 9** switch(config-virt-serv)# **activate**

Activates the Cisco Plug-in for OpenFlow package.

**Step 10** switch(config-virt-serv)# **exit**

Returns to global configuration mode.

**Step 11** switch(config)# **virtual-service ndb virtual service name**

Starts the virtual service for the Cisco Nexus Data Broker Embedded package and enters virtual service configuration mode on the switch.

**Step 12** switch(config-virt-serv)# **activate**

Activates the Cisco Nexus Data Broker Embedded package.

**Step 13** switch(config-virt-serv)# **exit**

Exits virtual service configuration mode on the switch.

**Step 14** switch(config)# **show virtual-service list**

Monitors the status of the package activations.

**Example:**

```
N9k(config-virt-serv)# show virtual-service list
Virtual Service List:
Name                               Status           Package Name
-----
ndb                                Activated        ndb1000-sw-app-emb-k9-3.1.0.ova
ofa                                Activated        ofa_mmemb-2.1.4-r2-nxos-SPA-k9.ova
```

**Step 15** **python bootflash:<python NDB activator script> -v ndb .**

Creates `/embndb/interface` file with management interface details using the NDB Python activator script:

- if version is 2.x.x, the following error message is displayed, "Not supported version, please upgrade to the newer version"
- if version is 3.0.0 or 3.1.0, the `/xnclite/launcher.sh` file is updated.
- If version is 3.2.0, `/xnclite/launcher.sh` is not updated.

The script is available in the `ndb` directory in the GitHub repository at <https://github.com/datacenter/nexus9000/blob/master/nexusdatabroker/>.

**Note** The NDB activator script is different for the different Cisco NXOS versions:

- `NDBActivator2.0_A6_A8.py`: For Cisco NXOS versions A6 and A8.
- `NDBActivator2.0_I3_I4.py`: For Cisco NXOS versions I3 and I4.

**Step 16** Deactivate the NDB virtual service and activate it.

Updates the configuration changes.

**Example:**

```
device# configure terminal
device(config)# virtual-service <virtual-services-name>
device(config)# no activate
device(config)# show virtual-service list (Wait until deactivated complete)
device(config)# activate
device(config)# show virtual-service list (Wait until activated complete)
device(config)# end
device(config)# copy running-config startup-config
```

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## Installing and Activating the Cisco Nexus Data Broker Embedded Software for OpenFlow Mode for NXOS Versions in 7.0(3)I7(2) or Later

Cisco NDB is not installed as OVA, it is installed in the Guestshell. You can now install NDB directly on a device in embedded mode on NXOS 7.0(3)I7(2) or later release on the Guestshell. To install Cisco Nexus Data Broker Embedded software on NXOS 7.0(3)I7(2) or later release, use the NDB activator script, `NDBActivator2.0_I5_Plus.py`. After you install NDB, you need to enable it. To enable NDB, use the **guestshell enable** command. To disable NDB, use **guestshell disable** command.

The activator script performs the following functions:

- Resizes the Guestshell resources.
- Unzips and places the XNC folder into the Guestshell home directory.
- Configures the Guestshell to management VRF.

## Before you begin



**Note** By default, you cannot install a new version of the Cisco Nexus Data Broker Embedded if you already have an existing Cisco Nexus Data Broker Embedded application installed and active. You can forcefully run the activator script even if it is already activated using **python bootflash** command with **--force** attribute. For example:

```
Syntax: python <file path>NDBActivator3.0_I5_Plus.py -v guestshell+ <zip file path> --force
```

```
Example: python bootflash:NDBActivator3.0_I5_Plus.py -v guestshell+
/bootflash/ndb1000-sw-app-emb-i6-plus-k9-3.7.1.zip -force
```



**Note** If you are using Cisco NXOS version I4.7 in embedded mode, you need to uninstall the NDB OVA and OpenFlow agent OVA and then upgrade the device to NXOS version I7.2.



**Note** Before you begin installing a new version of the Cisco Nexus Data Broker in Embedded mode, you must download and copy NDBActivator3.0\_I5\_Plus.py and ndb1000-sw-app-emb-i6-plus-k9-3.7.1.zip files to device.



**Note** If an instance of NDB exists in the guestshell and you need to install a new NDB instance, you need to destroy the existing Guestshell and re-install the Guestshell and the NDB. To uninstall NDB application, destroy the Guestshell using the command, **guestshell destroy**.

```
N9K-switch# guestshell destroy
```



**Important** Ensure that you have sufficient space available in the bootflash. The **ndb1000-sw-app-emb-i6-plus-k9-3.7.1.zip** file require a total of ~600 MB of space in the bootflash (/volatile folder) for the decompression processes. The script runs only on NXOS platform, version 7.0(3)I5(1) or later, with memory greater than 8GB.

## Procedure

- Step 1** switch# **copy ftp://10.10.10.1 NDBActivator3.0\_I5\_Plus.py bootflash: vrf management**
- Copies the NDBActivator3.0\_I5\_Plus.py from the directory where you downloaded it to the switch. You can download the file from different sources such as HTTP, FTP, or SSH.
- Step 2** switch# **copy ftp://10.10.10.1 ndb1000-sw-app-emb-i6-plus-k9-3.7.1.zip bootflash: vrf management**
- Copies the Cisco Nexus Data Broker Embedded package from the directory where you downloaded it to the switch. You can download the file from different sources such as HTTP, FTP, or SSH.

- Step 3**      switch# **show virtual-service list**  
Monitors the status of the copy processes.
- Step 4**      switch# **guestshell enable**  
Enables the guestshell.
- Step 5**      switch# **python bootflash:NDBActivator3.0\_I5\_Plus.py -v guestshell+  
/bootflash/ndb1000-sw-app-emb-i6-plus-k9-3.7.1.zip**  
Installs the Cisco Nexus Data Broker Embedded package on the switch.
- Step 6**      switch# **show virtual-service list**  
Monitors the status of the installations.
- Note**      Do not continue until both the OVA files are installed successfully.
- Step 7**      switch# **show processes cpu sort | grep java**  
**Example:**  
switch# show processes cpu sort | grep java  
19587 3 6 551 0.00% java  
switch#  
Verify whether NDB installed and initiated successfully. Stop the NDB using **guestshell disable** command and then enable it using the **guestshell enable** command.
- Step 8**      switch# **guestshell disable**  
Disables the NDB.
- Step 9**      switch# **guestshell enable**  
Enables the NDB.
- Step 10**     Log in to the NDB application using the credentials.
- Step 11**     Configure the OpenFlow switch, see [Configuring the Cisco Plug-in for OpenFlow](#).
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## Installing, Activating and upgrading the Cisco Nexus Data Broker for OpenFlow Mode for NXOS Version 7.0(3)I7(2) or Later on Low Memory Devices

Complete the following steps to upgrade Nexus 3K Switches (Nexus 3548P and 3548X) with low memory (less than 4 Gb). This procedure is applicable when you are upgrading devices with NXOS version 6.0(2)A6(x) and 6.0(2)A8(x) to NXOS version 7.0(3)I7(X) or 9.2(x).

## Before you begin



**Note** By default, you cannot install a new version of the Cisco Nexus Data Broker Embedded if you already have an existing Cisco Nexus Data Broker Embedded application installed and active. You can forcefully run the activator script even if it is already activated using **python bootflash** command with **--force** attribute. For example:

```
Syntax: python <file path>NDBActivator3.0_I5_Plus.py -v guestshell+ <zip file path> --force
```

```
Example: python bootflash:NDBActivator3.0_I5_Plus.py -v guestshell+
/bootflash/ndb1000-sw-app-emb-i6-plus-k9-3.8.0.zip -force
```



**Note** If you are using Cisco NXOS version I4.7 in embedded mode, you need to uninstall the NDB OVA and OpenFlow agent OVA and then upgrade the device to NXOS version I7.2.

## Procedure

- Step 1** Log into the current NDB instance.
- Step 2** Navigate to **ADMINISTRATION > Devices > NODES LEARNED** tab.
- Step 3** Note the Node ID (also known as Data Path ID (DPID)) value for the switch listed on the **NODES LEARNED** tab.
- Step 4** Click **Save** to save the NDB configuration for NDB release 3.1 and earlier.
  - Note** Ensure that you save the NDB configuration because configuration in NDB releases 3.1 and earlier are not saved automatically.
- Step 5** Navigate to **ADMINISTRATION > System**.
- Step 6** Click **Download Configuration** to download the current configuration on the NDB.
- Step 7** Remove the OVA files (ndb and ofa virtual services) from the switch. For example:

### Example:

```
N3K-130(config)# conf t
N3K-130(config)# virtual-service ndb
N3K-130(config-virt-serv)# no activate
N3K-130(config-virt-serv)# sh virtual-service list
Virtual Service List:
```

Name	Status	Package Name
ndb	Deactivating	ndb1000-sw-app-emb-k9-3.8.0.ova
ofa	Activated	ofa_mmemb-1.1.5-r3-n3000-SPA-k9.ova

```
N3K-130(config-virt-serv)# sh virtual-service list
```

```
Virtual Service List:
```

Name	Status	Package Name
ndb	Deactivated	ndb1000-sw-app-emb-k9-3.8.0.ova
ofa	Activated	ofa_mmemb-1.1.5-r3-n3000-SPA-k9.ova



```

N3K-130(config-virt-serv)# no virtual-service ndb
N3K-130(config)# ex
N3K-130# virtual-service uninstall name ndb
N3K-130# sh virtual-service list

Virtual Service List:

Name                Status              Package Name
-----
ofa                  Activated           ofa_mmemb-1.1.5-r3-n3000-SPA-k9.ova

N3K-130# conf t
Enter configuration commands, one per line.  End with CNTL/Z.
N3K-130(config)# virtual-service ofa
N3K-130(config-virt-serv)# no activate
N3K-130(config-virt-serv)# sh virtual-service list

Virtual Service List:

Name                Status              Package Name
-----
ofa                  Deactivating       ofa_mmemb-1.1.5-r3-n3000-SPA-k9.ova

N3K-130(config-virt-serv)# sh virtual-service list

Virtual Service List:

Name                Status              Package Name
-----
ofa                  Deactivating       ofa_mmemb-1.1.5-r3-n3000-SPA-k9.ova

N3K-130(config-virt-serv)# sh virtual-service list

Virtual Service List:

Name                Status              Package Name
-----
ofa                  Deactivated        ofa_mmemb-1.1.5-r3-n3000-SPA-k9.ova

N3K-130(config-virt-serv)# no virtual-service ofa
N3K-130(config)# ex
N3K-130# virtual-service uninstall name ofa
N3K-130#
N3K-130# sh virtual-service list

Virtual Service List:

```

**Step 8**

Copy the latest NXOS image to your local server and use the compact option to generate a compact NXOS image while copying the image to the switch bootflash. For example:

**Important** Starting with Cisco NXOS Release 7.0(3)I5(2), you can compact the image while copying the image to the switch bootflash or USB drive using compact option in the **copy** command. Download and keep the non-compact image in any server. The compact option in the **copy** command overrides the bootflash space limitation as the image is compacted at the time of transferring the image to the switch bootflash or USB drive.

```

Syntax: switch# copy scp :source image name bootflash :image name compact vrf vrf name

copy
scp://vm-ubuntu-1604@10.16.206.136//home/vm-ubuntu-1604/praba/nxos_img/nxos.7.0.3.I7.5A.bin
bootflash: compact vrf management

```

**Note** The compact option with **copy** command is allowed only with SCP protocol.

- Step 9** Upgrade the switch to the downloaded compact image. Refer to [Cisco NX-OS Upgrade guide](#).
- Step 10** Download the guestshell.ova from [NX-OS software](#) download page. If the guestshell.ova is not available on the download page, you need to extract it from the downloaded NXOS image. Refer to [Extracting Guestshell](#) section for more information.
- Step 11** Install the guestshell on the low memory switch using the guestshell enable package command.

```
N3K-130# guestshell enable package bootflash:guestshell.ova
N3K-130#
N3K-130# show virtual-service list
Virtual Service List:
-----
Name                               Status           Package Name
-----
guestshell+                         Activated        guestshell.ova
```

- Step 12** Install and activate the NDB for OpenFlow mode . For detailed information, see [Installing and Activating the Cisco Nexus Data Broker Embedded Software for OpenFlow Mode for NXOS Versions in 7.0\(3\)I7\(2\) or Later for more information](#).
- Step 13** Configure the Cisco Plugin. For more information, see the [Configuring the Cisco Plug-in for OpenFlow](#) section.
- Step 14** Use the show openflow switch command to check the current DPID in the switch after upgrading to Cisco NX-OS Release I7(5A)

```
N3K-130# show openflow switch 1 | grep DPID
DPID: 0x0001a44c116a7620
```

**Note** If DPID is different from the DPID in Step 1, you need to configure DPID described in the next step.

- Step 15** Enable the Openflow feature and add controller configuration along with DPID value to the switch.

```
N3K-130(config)# feature openflow
N3K-130(config)# openflow
N3K-130(config-ofa)# switch 1 pipeline 203
N3K-130(config-ofa-switch)# controller ipv4 10.16.206.130 port 6653 vrf management security none
N3K-130(config-ofa-switch)# datapath-id ?
<0-18446744073709551615> 64-bit hex value [0x1-0xffffffffffffffff]
N3K-130(config-ofa-switch)# datapath-id 0x001a44c116a7620
N3K-130(config-ofa-switch)# of-port interface ethernet 1/1-48
```

**Note** Data Path ID should be the same as mentioned in Step1. Any change in the Data Path ID will result in upgrade failure.

## Extracting Guestshell

Complete these steps to extract the guestshell from the downloaded NX-OS image.

### Before you begin

Ensure that guestshell extraction is performed on a switch with more than 4 Gb disk space and 1 Gb of memory. Load the regular non-compact I7(5) image the switch.



**Note** After extracting the guestshell.ova file, you can delete both isanboot and guestshell.ova. You can also disable bash-shell feature on this switch

## Upgrading to Release 3.7.1

This process involves using the GUI to download the configuration, perform the upgrade, and then upload the configuration.



**Note** For detailed information about upgrading Cisco Nexus OS from I4(6) to I6(1), see *Cisco Nexus 9000 Series NX-OS Software Upgrade and Downgrade Guide, Release 7.x*.



**Note** This procedure is applicable for the following Cisco Nexus 3000, Nexus 9000 platforms:

- Cisco Nexus 9000 Series switches (excluding EX, FX, and 9500 models) running NXOS version I4 or lower.
- Cisco Nexus 3000 and 3100 Series switches running NXOS version I4 or lower.
- Cisco Nexus 3548 switches running version 6.0(2)A6 or 6.0(2)A8.

### Procedure

**Step 1** Navigate to the **System** tab under **Administration**.

The **System Administration** window is displayed.

**Step 2** Click **Download Configuration**.

It downloads the configuration in a zip file format. The name of the zip file is **configuration\_startup.zip**.

OR

Navigate to the **System** tab under **Administration** > **Backup/Restore** tab. Click **Backup and Backup Locally** to download the configuration in zip file format.

**Step 3** Download the configuration in Cisco NDB version 3.7.1.

**Step 4** Deactivate and uninstall Cisco NDB. For example:

**Example:**

```
configure terminal
virtual-service ndb
no activate
no virtual-service ndb
end
virtual-service uninstall name ndb
copy running-config startup-config
```

**Step 5** Install and activate Cisco NDB 3.7.1 using the following steps:

- a) **virtual-service install name <virtual-services-name> package bootflash: ndb1000-sw-app-emb-k9-3.7.1.ova**
- b) **show virtual-service list**

Use the show command to check the status of the virtual service installation. After the status of the virtual service becomes listed as **Installed**, run the following commands to activate the service.

- c) **configure terminal**
- d) device-3548(config)# **virtual-service <virtual-services-name>**
- e) device-3548(config)# **activate**
- f) device-3548(config)# **end**
- g) device-3548(config)# **copy running-config startup-config**

**Note** Verify that the OpenFlow plugin is present in the **show virtual-service list**. If it is present, continue with the next step. If it is not listed, follow Step 2 in [Installing and Activating the Cisco Nexus Data Broker Embedded Software for OpenFlow](#).

**Step 6** Run the **<python activator script>** in the bash shell **python bootflash:<python activator script> -v <ndbvirtual service name>** command. The script deactivates and activates the NDB OVA automatically. If the NDB OVA is not activated automatically, you need to activate is manually.

**Note** For NXOS devices with A6/A8 version, run the activator script in root user. Copy the activator script in the bootflash of the device and complete the following steps:

**Note** Starting with Cisco NXOS, Release 7.0(3)I5(1), only NXAPI embedded is supported, OpenFlow embedded is not supported.

**Note** Cisco Nexus 3548 switches, running NXOS A6/A8 version, need **root** user privileges to run the activator script. Ensure that activator script is downloaded and copied to bootflash with the name NDBActivator.py as mentioned in the previous section.

```
device-3548# run bash
bash-3.7.1$ sudo su
Password:      #(Enter the password for the "admin" user).
bash-3.7.1# cd /bootflash/
bash-3.7.1# python NDBActivator.py -v ndb
2017-05zx-27 09:08:05,923 - __main__ - INFO - Successfully created /embndb/interface file
with management interface details
bash-3.7.1#
```

**Example:**

```
device# configure terminal
device-3548(config)# virtual-service <virtual-services-name>
device-3548(config)# no activate
device-3548(config)# show virtual-service list (Wait until deactivated complete)
device-3548(config)# activate
device-3548(config)# show virtual-service list (Wait until activated complete)
device-3548(config)# end
device-3548(config)# copy running-config startup-config
```

**Step 7** Upload Cisco NDB configuration that you downloaded earlier in the Cisco NDB User Interface (UI). Navigate to **Administration > System > BACKUP/RESTORE** tab, click **Restore locally** and follow the prompts to upload the configuration zip file.

# Upgrading to Release 3.7.1 for Cisco NXOS Releases 7.0(3)I7(2) or Later

This process involves downloading, upgrading, and finally uploading the configuration using the GUI.



**Note** For detailed information about upgrading Cisco Nexus OS from I4(6) to I6(1), see *Cisco Nexus 9000 Series NX-OS Software Upgrade and Downgrade Guide, Release 7.x*.



**Note** While upgrading NDB embedded, after configuration upload from NDB, wait for at least 60 seconds before restarting the guestshell.

## Procedure

**Step 1** For embedded NDB release 3.3 or earlier, navigate to the **System** tab under **Administration** and click **System Administration** to open the **System Administration** window. Click **Download Configuration**. For embedded NDB release 3.6 or later, navigate to the **System** tab under **Administration** -> **Backup/Restore** tab. Click **Backup and Backup locally**.

It downloads the configuration in a zip file format. The name of the zip file is **configuration\_startup.zip**

**Note** For Cisco NXOS I4 or earlier versions, uninstall both the NDB OVA and Embedded OVA and then upgrade the NXOS version to I7.2.

**Note** For Cisco NXOS I5 and later versions, disable and destroy the guestshell and then upgrade the NXOS version to I7.2.

**Step 2** Copy the NDBActivator3.0\_I5\_Plus.py from the directory where you downloaded it to the switch. You can download the file from different sources such as HTTP, FTP, or SSH.

**Example:**

```
switch# copy scp://10.10.10.1 NDBActivator3.0_I5_Plus.py bootflash:vrf management
```

**Step 3** Copy the Cisco Nexus Data Broker Embedded package from the directory where you downloaded it to the switch. You can download the file from different sources such as HTTP, FTP, or SSH.

**Example:**

```
switch# copy scp://10.10.10.1 ndb1000-sw-app-emb-i6-plus-k9-3.7.1.zip bootflash:vrf management
```

**Step 4** Monitor the status of the copy processes.

**Example:**

```
switch# show virtual-service list
```

**Step 5** Enable the guestshell.

**Example:**

- Step 6** switch# guestshell enable  
Install the Cisco Nexus Data Broker Embedded package on the switch.
- Example:**  
switch# python bootflash:NDBActivator3.0\_I5\_Plus.py -v guestshell+  
/bootflash/ndb1000-sw-app-emb-i6-plus-k9-3.7.1.zip
- Step 7** Monitor the status of the installations.
- Example:**  
switch# show virtual-service list
- Note** Do not continue until installation completes successfully. NDB application starts after it is installed successfully. Auto discovery for embedded Nexus devices is not available, you need to manually add a device using the Web GUI.
- Step 8** Verify whether NDB installed and initiated successfully.
- Example:**  
switch# show processes cpu sort | grep java  
19587 3 6 551 0.00% java
- Step 9** Log in to the NDB application using the credentials.
- Step 10** Upload Cisco NDB 3.x configuration that you downloaded in step 1 in the Cisco NDB user interface (UI). After uploading you need to disable and enable the guestshell to apply the uploaded configuration.

## Configuring the Cisco Plug-in for OpenFlow

The Cisco Plug-in for OpenFlow needs to be connected to the Cisco Nexus Data Broker locally running on the Cisco Nexus 3000, 3100, 3200, 3500, or 9000 Series switch.



**Note** This procedure is applicable if you are installing the Cisco NDB with Openflow for the first time.



**Note** The flow can have only up to 16 output actions.

### Before you begin

Configure the pre-requisite profile, **hardware profile openflow** for the Cisco Nexus 3000, 3100, 3200, and hardware access-list tcam region openflow <tcam> double-wide (optional) for the Nexus 9000 Series switches. For Cisco Nexus 3500 Series switches, configure the pre-requisite profile **hardware profile forwarding-mode openflow-hybrid** for the Cisco Nexus 3500 Series switches. Use the **copy running-config startup-config** to save the configuration and reload the switch.

## Procedure

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**Step 1** Enter the configuration mode on the switch.

**configure terminal**

**Step 2** Enter the Cisco Plug-in for OpenFlow configuration mode on the switch.

switch(config)# **openflow**

**Step 3** Choose the switch to which you want to connect.

switch(config-ofa)# **switch** *switch\_num*

**Caution** Set the *switch\_num* to **1**. This is the default value.

**Step 4** Choose the pipeline to which you want to connect.

switch(config-ofa-switch)# **pipeline** *pipeline\_num*

**Caution** Set the *pipeline\_num* to **201** for Cisco Nexus 3000, 3100, 3200, and 9300 Series switches. This is the default value. Only expert users should set the *pipeline\_num* number to any value other than 201.

Set the *pipeline\_num* to **203** for Cisco Nexus 3500 Series Switch This is the default value. Only expert users should set the *pipeline\_num* number to any value other than 203.

Starting with NXOS version I6(1), you must configure the switch and pipeline in a single command.

**Step 5** Configure the controller address using vrf management.

switch(config-ofa-switch)# **controller ipv4** *management\_interface\_address* **port** *port\_num* **vrf management security none**

- Note**
- The controller ipv4 address should match the management interface (mgmt0) address.
  - By default, the Cisco Plug-in for OpenFlow listens on port 6653.

**Step 6** Assign ports to the Cisco Plug-in for OpenFlow.

switch(config-ofa-switch)# **of-port interface** *ethernet\_port\_num*

**Example:**

switch(config-ofa-switch)# **of-port interface** ethernet1/10

**Step 7** Exit from the current configuration command mode and return to EXEC mode.

switch(config-ofa-switch)# **end**

**Step 8** Verify that the Cisco Plug-in for OpenFlow is connected to the Cisco Nexus Data Broker.

switch# **show openflow switch** *switch\_num* **controllers**

See the [Cisco Plug-in for OpenFlow Configuration Guide 1.3](#)

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# Logging in to the Cisco Nexus Data Broker GUI

The default HTTPS web link for the Cisco Nexus Data Broker GUI is  
`https://Nexus_Switch_Management_IP:8443/monitor`



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**Note** You must manually specify the `https://` protocol in your web browser. The controller must also be configured for HTTPS.

---

## Procedure

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- Step 1** In your web browser, enter the Cisco Nexus Data Broker web link, for example, `https://Nexus_Switch_Management_IP:8443/monitor`.
- Step 2** On the launch page, do the following:
- Enter your username and password.  
The default username and password is admin/admin.
  - Click **Log In**.
- 

## What to do next

See the *Cisco Nexus Data Broker Configuration Guide* for the procedures that you need to configure Cisco Nexus Data Broker.

