



# Out-of-Band PnP in Campus VXLAN EVPN Fabrics, Release 12.1.3

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# New and Changed Information

The following table provides an overview of the significant changes up to this current release. The table does not provide an exhaustive list of all changes or of the new features up to this release.

Release Version	Feature	Description
NDFC release 12.1.3	Reorganized content	Content within this document was originally provided in the <i>Cisco NDFC-Fabric Controller Configuration Guide</i> or the <i>Cisco NDFC-SAN Controller Configuration Guide</i> . Beginning with release 12.1.3, this content is now provided solely in this document and is no longer provided in those documents.

# About Out-of-Band PnP in Campus VXLAN EVPN Fabrics

From Release 12.1.3, NDFC provides support for Out-of-Band (OOB) Plug and Play (PnP) feature which simplifies the process of onboarding new devices with a zero-touch deployment experience. PnP automates the day-zero provisioning of Cisco Catalyst 9000 Series switches using NDFC. With OOB connectivity, the switch provides a separate dedicated network for management traffic over GigabitEthernet 0/0 interface which is always placed in mgmt-vrf.

When a Cisco Catalyst switch powers up and does not find the startup configuration, the device enters PnP mode and sends out a DHCP request, which is served by a DHCP server. The DHCP offer contains the PnP server address and other required configuration for the PnP client. The PnP client on the switch uses this information to connect to the appropriate PnP sever to finish the configuration of the switch. This is a multi-step process, and to provide additional security, the system prompts you to approve the addition of this switch to the fabric. The device then downloads a configuration script and installs the appropriate software image and configuration file.

# Enabling Out-of-Band PnP

*Before you begin:*

- You can use a local or external DHCP Server for IP address assignment.
- This release only supports DHCP for IPv4.
- This feature is supported only on Campus VXLAN EVPN fabric.

To enable Out-of-Band PnP in a fabric:

1. When creating a Campus VXLAN EVPN fabric, navigate to the **Bootstrap** tab of the **Create Fabric** window.
2. Check the **Enable Bootstrap** and **Enable Local DHCP Server** check boxes.
3. Enter the domain name of the DHCP server in the **Domain name** field.
4. Enter the start address and the end address of your subnet in the **DHCP Scope Start Address** and **DHCP Scope End Address** fields.
5. Enter the default gateway for the management VRF on the switch in the **Switch Mgmt Default Gateway** field.
6. Enter the prefix for the management interface on the switch in the **Switch Mgmt IP Subnet Prefix** field.

The prefix should be between 8 and 30. The system assigns 24, by default.

7. Enter any other additional configuration CLIs in the **Bootstrap Freeform Config** field, as required and click **Save**.

# Importing Switches using Bootstrap Method

*Before you begin:*

Ensure you have uploaded the required SSL certificates for the switches. You can use CA-signed certificates or self-signed certificates. Cisco Nexus Dashboard Fabric Controller does not mandate the signing; however, the security guidelines suggest you use the CA-signed certificates.

1. On the **Fabric Overview** window, choose **Actions > Add Switches**.
2. In the **Switch Addition Mechanism** area, click the **Bootstrap** radio button.
3. Enter the Admin password in the **Admin Password** field.

The **Switches to Bootstrap** table lists all the discovered switches.

4. Select the switches you want to add to the fabric and click **Import Selected Switches**.

# Enabling DHCP for PnP

If you are using an external DHCP server and not the NDFC DHCP Server, ensure you perform the following steps on the DHCP server to facilitate PnP server discovery using DHCP.

1. Define the following two DHCP options:
  - pnpserver code 43
  - vrf code 194
2. Define option vendor-class-identifier to use the value "ciscopnp".
3. Assign values to option 43 and option 194.
4. Assign option pnpserver "5A1D;K4;B2;I<EXT-IP-NDFC>;J9666";

For <EXT-IP-NDFC>, enter the external POAP IP address on NDFC.

5. Assign option vrf to use the value "Mgmt-vrf".

The following example shows a sample configuration.

```
option pnpserver code 43 = text;

option vrf code 194 = text;

class "ciscopnp" {

match if option vendor-class-identifier = "ciscopnp";

option vendor-class-identifier "ciscopnp";

option pnpserver "5A1D; K4; B2; I<EXT-IP-NDFC>; J9666";

option vrf "Mgmt-vrf";

option domain-name "cisco.com";

}
```

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