



Overview

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About Cisco Extensible Network Controller

Cisco Extensible Network Controller (Cisco XNC) is a software platform that serves as an interface between the network elements in one direction (southbound) and third-party applications (northbound). Cisco XNC is a JVM-based application that runs on a Java Virtual Machine (JVM). Cisco XNC is based on a highly available, scalable, and extensible architecture that supports a network. Cisco XNC is built for extensibility using the Open Services Gateway initiative (OSGi) framework, which allows new functionality to be added.

Cisco XNC can support multiple protocol plugins in the southbound direction. In the current release, OpenFlow version 1.0 is available.

Cisco XNC provides the following:

- Multiprotocol capability with OpenFlow version 1.0 available in this release.
- Functionality to support network visibility and programmability, such as network topology discovery, network device management, forwarding rules programming, and access to detailed network statistics.
- A Service Abstraction Layer (SAL) that enables modular southbound interface support, such as OpenFlow.
- Consistent management access through the GUI or through Java or Representational State Transfer (REST) northbound APIs.
- Security features, such as role-based access control (RBAC), and integration with an external Active Directory using RADIUS or TACACS for authentication, authorization, and accounting (AAA) functions.
- Troubleshooting tools, such as analytics gathering and diagnostic packet injection.
- Cisco advanced features such as Topology Independent Forwarding (TIF), which enables the administrator to customize the path a data flow takes through the network.

- Cisco network applications such as Network Slicing that allows logical partitioning of the network using flow specification.
- High-availability clustering to provide scalability and high availability.

Cisco XNC GUI Overview

The Cisco XNC GUI contains the following areas and panes:

- A menu bar across the top of the window that provides access to the main categories of information in Cisco XNC.
- A topology map on the right that displays a visual representation of your network.
- Several panes with additional views and information on the selected category.

The menu bar contains the following items:

- The **Devices** tab—Provides access to the Cisco XNC network elements.
- The **Flows** tab—Provides access to flow entries and flow details.
- The **Troubleshoot** tab—Provides information about flows, ports, and policies for troubleshooting purposes.
- The **TIF Manager** tab—Provides access to paths and policies for Topology Independent Forwarding (TIF).
- The **Network Properties** tab—Provides access to property templates.
- The Slicing list—Provides access to different slices, and lists the current slice you are in. If no slices are created, or you have not selected a slice, the **default** drop-down list is displayed.



Note You must have an administrative role and the Network Slicing application to view this list.

- The Online help button—Provides access to the online help for the current page.
- The administrative management list—Provides access to different administrative tasks, such as saving or managing users.



Note The drop-down list displays the username that you used when you logged into Cisco XNC. In this documentation, this will be referred to as the **Admin** drop-down list.



Note Depending on the Cisco XNC applications that you have installed, the items on the menu bar may vary.

Using the Topology Diagram

The topology diagram displays a graphical view of your network. Once a device or link has been recognized by Cisco XNC, it is visible in the topology diagram. On all tabs in Cisco XNC, you can perform the following tasks:

- Hover over a switch to view the node name, the source ports, and the destination ports.
- Hover over a link to view the source and destination port of that link.
- Use the + and - keys to change the zoom level.
- Click and drag a switch to move it to a different location.
- Click and drag the background to move the entire topology to a different location.

Certain tabs also allow advanced tasks.

Saving Configuration Changes

You should periodically save the configuration changes that you make in Cisco XNC.

**Note**

Any unsaved configuration changes will be lost if you stop the Cisco XNC application.

Step 1 On the Cisco XNC menu bar, click the **Admin** drop-down list.

Step 2 Choose **Save**.
