Cisco Extensible Network Controller Release Notes, Release 1.0

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This document describes the features, system requirements, resolved caveats, open caveats, and limitations for the Cisco Extensible Network Controller (XNC), Release 1.0.

Contents

This document includes the following sections:

Revision History

Table 1 shows the revision history:

Table 1 Online Change History

Part Number	Revision	Release	Date	Description
OL-30571-01	A0	1.0	October 7, 2013	Created release notes for Cisco Extensible Network Controller, Release 1.0.

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Introduction

The Cisco XNC provides automation and orchestration of the network fabric, and allows dynamic, application-based configuration of networks and services. Cisco XNC enables programmability of the network using the Software Defined Networking (SDN) approach.

Cisco XNC is based on OpenDaylight and is built for extensibility using the Java Open Services Gateway initiative (OSGi) framework. This framework provides the flexibility needed for Cisco and Cisco partners and customers to extend the functions of the controller based on business needs. Cisco XNC also provides northbound Representational State Transfer (REST) APIs for business applications to access and program policies.

Cisco XNC has the capability to support multiple protocols to communicate with the devices. In Release 1.0, Cisco XNC supports OpenFlow version 1.0.

Scale Information

Table 2 lists the scale limits for Cisco XNC:

Table 2 Scale Limits

Description	Small	Medium	Large
Number of Devices	100	300	500
Number of TIF Policies	400	2000	4000
Number of Slices	25	100	200
Number of Proactive Flows	10,000	50,000	100,000

System Requirements

Table 3 lists the system requirements for Cisco XNC:

Table 3 System Requirements per Deployment Size

Description	Small	Medium	Large
CPUs (virtual or physical)	6-core	12-core	18-core
Memory	8 GB RAM	16 GB RAM	24 GB RAM
Hard disk	Minimum of 40 GB of free space available on the partition on which the Cisco XNC software is installed.		
Operating System	A recent 64-bit Linux distribution that supports Java, preferably Ubuntu, Fedora, or Red Hat.		
Other	Java Virtual Machine 1.7 or later. Python 2.7.3 to support the backup and restore script.		

Supported Web Browsers

The following web browsers are supported for Cisco XNC:

- Firefox 18.x and later versions
- Chrome 24.x and later versions

Note Javascript 1.5 or a later version must be enabled in your browser.

New Software Features in Release 1.0

Release 1.0 supports the following software features:

- Extensible, modular architecture—modules can be added, updated, or deleted without restarting the Cisco XNC application. The architecture allows Cisco XNC functions to be extended using Java. The Service Abstraction Layer (SAL) enables extensible southbound interface support beyond OpenFlow.
- Multiple access methods and controls—management access is available through the built-in GUI or through Java APIs or REST APIs. Security features include role-based access control (RBAC), integration with enterprise authentication, authorization, and accounting (AAA), and secure control protocols.
- Network visibility and troubleshooting—there are functions to support network topology discovery, network device management and forwarding rules programming, and access to detailed network statistics. Troubleshooting tools provide flow-level visibility for each device.
- High availability through clustering—multiple instances can be deployed in an active-active model. The active-active deployment model makes the controller both highly available and scalable. Synchronization of information and state across all controllers is provided in real time, which helps prevent loss of information in the event of a failure.
- Multiprotocol support—multiprotocol interface support allows OpenFlow 1.0 to communicate with devices. This support enables business applications to extend their use cases transparently across a multivendor network.

Release 1.0 provides the following applications:

- Monitor Manager application—applies the SDN approach to provide visibility into the network traffic.
- Network Slicing application—provides the capability to partition the network based on physical or logical (flow) criteria.
- Topology Independent Forwarding (TIF) application—provides the capability to define the forwarding path in the network based on application requirements.

Resolved Caveats

There are no resolved caveats for Release 1.0.

Open Caveats

The following caveats are open in Release 1.0:

Table 4 Open Caveats in Release 1.0

Defect ID	Symptom	Workaround
CSCuj66859	The Cisco XNC backup script outputs the incorrect filename to the console when it is run. The actual file output is **xnc-***yy-mm-dd_time***.tar**, but the script displays *yy-mm-dd_time***.tar**.	When you run the restore script, prepend the prefix **xnc-** before the filename.
CSCuj64658	Metrics configured using a northbound API for a custom property template of type 'string' are not visible in the Cisco XNC GUI.	In the **Network Properties** tab, click the custom property template, then click **Add Metric** to create a metric.
CSCuf56767	Existing flows and rules cannot be edited.	Delete the flow or rule you want to change and create a new one.
CSCuj42461	A user with the network administrator role cannot modify the password of another network administrator.	Run the **adminpasswordreset.sh** script to restore the network administrator password to the factory default.
CSCuj55054	If there is only one OpenFlow port on a supported Cisco Nexus 3000 switch, which is used as either an input or output port, and that port is changed to a non-OpenFlow port or is administratively shutdown, all rules are removed from the port, but the flows are reinstalled after the port is brought back up or changed back to an OpenFlow port. If there are additional ports on the flow used as output ports, however, the flow is uninstalled when the first port is shutdown or changed to a non-OpenFlow port.	This issue has no known workaround.
CSCug87845	You cannot configure rules if the switch does not have enough space to program and install the rule. The **Apply Filter** tab on the Cisco XNC GUI does not display that the rules are pending and not installed.	This issue has no known workaround. Do not program rules that exceed the switch capacity.
CSCuj54980	After a Linux user with administrative or superuser privileges starts or stops Cisco XNC, any user with lesser privileges is not able to start or stop the controller.	Navigate to the configuration folder, delete the **org.eclipse.osgi** subfolder, and then restart the controller.

Known Limitations and Behaviors

There are no known limitations and behaviors for Release 1.0.

Related Documentation

For more information, see the related documents at the following link:

http://www.cisco.com/en/US/products/ps13400/tsd_products_support_series_home.html

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation* at: http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html.

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This document is to be used in conjunction with the documents listed in the "Related Documentation" section.