

Cisco Crosswork Infrastructure 4.1 Release Notes

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This document provides an overview of Cisco Crosswork Infrastructure, new functionalities, compatibility information, usage guidelines and any limitations for this release.

Overview

Cisco Crosswork Infrastructure is a microservices-based platform and is the foundation required for running Crosswork on-premise applications. It employs a cluster architecture to be extensible, scalable, and highly available.



Note Henceforth, Cisco Crosswork Infrastructure is referred to as "Cisco Crosswork" in this document.

For installation, configuration and administration procedures, refer the following documents:

- [Cisco Crosswork Infrastructure and Applications Installation Guide](#)
- [Cisco Crosswork Infrastructure and Applications Administration Guide](#)

Supported Components

Cisco Crosswork 4.1 supports the following Cisco products:

Product	Version	Description
Cisco Crosswork Data Gateway (CDG)	3.0	A secure, common collection platform for gathering network data from multi-vendor devices that supports multiple data collection protocols including MDT, SNMP, CLI, standards-based gNMI (dial-in), and syslog.
Cisco Crosswork Network Controller	3.0	An integrated solution that enables proactive management of end-to-end networks, and provides intent-based and closed-loop automation solutions to ensure faster innovation, optimal user experience, and operational excellence. It provides a unified user interface for device and service inventory, topology visualization, and service provisioning.
Cisco Crosswork Service Health (Automated Assurance)	1.0	Provides a service level view of the environment and makes it easier for operators to monitor the health of services (for example, L2/L3 VPN) based on the rules established by the operator.

Product	Version	Description
Cisco Crosswork Optimization Engine	3.0	Provides closed-loop tracking of the network state and real-time network optimization in response to changes in network state, allowing operators to effectively maximize network capacity utilization, as well as increase service velocity.
Cisco Network Services Orchestrator	5.5.2.12	Functions as the provider for Cisco Crosswork to configure the devices according to their expected functions, including configuring model-driven telemetry (MDT) sensor paths, if any, for data collection.
Cisco Segment Routing Path Computation Element (SR-PCE)	7.3.2	An IOS-XR multi-domain stateful PCE supporting both segment routing (SR) and Resource Reservation Protocol (RSVP). Cisco Crosswork uses the combination of telemetry and data collected from the Cisco SR-PCE to analyze and compute optimal TE tunnels.
Cisco Crosswork Health Insights	4.1	A network health application that performs real-time Key Performance Indicator (KPI) monitoring, alerting, and troubleshooting. It builds dynamic detection and analytics modules that allow operators to monitor and alert on network events based on user-defined logic.
Cisco Crosswork Change Automation	4.1	Automates the process of deploying changes to the network.
Cisco Crosswork Zero-Touch Provisioning	3.0	Automatic onboarding of IOS-XR and IOS-XE devices, and provisioning of Day0 configuration, resulting in faster deployment of new hardware at a lower operating cost.

What's New in Cisco Crosswork Infrastructure 4.1

- Support provided for upgrading Cisco Crosswork from version 4.0 to version 4.1.
- Support provided for TL1 and Netconf collection.
- Support provided for filtered output from syslog data collection.
- Support for Cisco Crosswork solution on Hypervisor ESXi 7.0.
- Added ability to access Cisco Crosswork UI using the DNS name.
- Added ability for administrator to cross launch Cisco NSO from the Cisco Crosswork UI if NSO has been added as a provider for Crosswork.
- Support provided for NSO device RPC integration in Crosswork device management, when applicable.
- Added ability for user to customize login banner for Cisco Crosswork.
- Added ability to gracefully shut down the Cisco Crosswork clusters using the new maintenance mode.

- Support provided for including multiple SNMP get requests in a single **getbulkrequest** in Crosswork Data Gateway.
- Support provided for repeating jobs with cadence of 10 to 15 seconds.
- Support provided for SNMP ifType filtering.
- Supported degraded for secure syslog and secure ZTP with IOS XR versions 7.3.2 and 7.4.1 (applicable to Cisco Crosswork Infrastructure 4.1, Crosswork Data Gateway 3.0 and Crosswork Network Controller 3.0 combination).

Compatibility Information

The following table lists hardware and software versions that have been tested and are known to be compatible with Cisco Crosswork Infrastructure. For complete installation requirements, see the [Cisco Crosswork Infrastructure and Applications Installation Guide](#).

Hardware/Software	Supported Version
Cisco Network Services Orchestrator (Cisco NSO)	<ul style="list-style-type: none"> • 5.5.2.12
	Cisco Network Element Driver (NED) <ul style="list-style-type: none"> • Cisco IOS XR: <ul style="list-style-type: none"> • CLI: 7.33.12 • NETCONF: 6.6.3, 7.3, 7.315, 7.4.1 • Cisco IOS: <ul style="list-style-type: none"> • CLI: 6.74.8
Hypervisor and vCenter	<ul style="list-style-type: none"> • VMware vSphere 6.7 or above. • VMware vCenter Server 7.0 and ESXi 7.0. • VMware vCenter Server 6.7 (Update 3g or later) and ESXi 6.7 (Update 1).
Software platform	<ul style="list-style-type: none"> • Cisco IOS XR 6.4.1, 6.5.3, 6.6.3, 7.0.2, 7.1.2, 7.2.1, 7.3.1, or later • Cisco IOS XE 16.10, 17.4.1, or later • Cisco NX-OS (N7K - 8.4(1), N9K - 7.0(3) I7(2))
Cisco WAN Automation Engine (Cisco WAE)	Version 7.21 or 7.4.0
Cisco Crosswork Data Gateway	Version 3.0
Browsers	<ul style="list-style-type: none"> • Google Chrome—70 or later • Mozilla Firefox—60 or later

Guidelines

- It is recommended to deploy Cisco Crosswork on a highly available cluster (vSphere HA) with shared storage.
- When manually installing the cluster nodes, use VMware vCenter and vSphere Web Client (flash mode) for OVA deployment.
- Managed devices, VM host and the VMs should use the same NTP source to avoid time synchronization issues.
- Confirm that the DNS and NTP servers are properly configured.
- Use Terminal Access-Control System Plus (TACACS+), Lightweight Directory Access Protocol (LDAP) or Role-Based Access Control (RBAC) for auditing purposes.
- During configuration, note the Cisco Crosswork UI and CLI user names and passwords. Due to added security, the only way to recover the administrator password is to re-install the software.
- In situations where it is expected to work with SR-PCE (for L3 topology discovery), we recommend the use of dual SR-PCEs.
- Use CSV files to quickly import and onboard device, credential, and provider information.

Known Issues and Limitations

Upgrade

- The number of nodes installed in Cisco Crosswork 4.1 must be equal or more than the number of nodes in Cisco Crosswork 4.0.
- Third-party device configuration in Device Management and Cisco NSO is not migrated and needs to be re-applied on the new version post migration.
- Custom user roles (Read-Write/Read) created in Cisco Crosswork 4.0 are not migrated and need to be updated manually on the new version post migration.
- Crosswork Health Insights KPI alert history is not retrieved as part of the migration.

UI

- Sometimes, NETCONF reachability times out for IOS XE devices. To recover, try increasing the NETCONF reachability timer to a higher timeout value (for example, 120 seconds).
- While retrieving device inventory via API from Cisco Crosswork, use page size of 200.
- In rare cases, after the successful registration, the License Authorization Status in the Smart Licensing page is not changed and will continue to display as being in EVALUATION mode. As a consequence, the evaluation timer will be started and incorrect messages will be displayed to the user. As a workaround, please de-register and register the product again.
- If you restart microservices for a Crosswork application, the microservice may appear removed upon restart, but the application will continue to show a healthy status.

- Each time the job list (located on the left side) is refreshed in the the Collection Jobs window, the corresponding job details pane (located on the right side) must be manually refreshed to update the Last Eval Status of the job.

Alerting

- Alarms, faults, errors, or any status indications for Cisco Crosswork Data Gateway will not be reflected on the VM node or its operational state.
- Alerting service can become unresponsive during stress testing. Alerts related to Crosswork applications may not be generated during this time. If this happens, Cisco Crosswork will recover the alerting by automatically restarting the service.
- If the node containing the Cisco Crosswork orchestrator is restarted, it might take up to 10 minutes before the health of the cluster can be viewed.

Topology

- L2 links are discovered utilizing either point-to-point Cisco Discovery Protocol (CDP) or Link Layer Discovery Protocol (LLDP).
- PCE is required for L3 link topology mapping.
- Enable traps on routers to receive L2 link down and up status changes quickly. Otherwise, it may take one SNMP poll cadence (default is 5 minutes) to see the L2 link status change.

High Availability

Cisco Crosswork will not allow you to power off two hybrid nodes at the same time. If a system loses a hybrid node due to any faults, it must be replaced as soon as possible.

Related Documentation

The following table lists the documents provided for the current release of Cisco Crosswork.

Documentation Title	What is included
<i>Cisco Crosswork Infrastructure 4.1 Release Notes</i>	This document
Cisco Crosswork Infrastructure and Applications Installation Guide	Shared installation guide for all the Cisco Crosswork applications and their common infrastructure. Covers: <ul style="list-style-type: none"> • System requirements • Installation prerequisites • Installation instructions • Upgrade instructions

Documentation Title	What is included
Cisco Crosswork Infrastructure and Applications Administration Guide	<p>Shared administration guide for all the Cisco Crosswork applications and their common infrastructure. Covers:</p> <ul style="list-style-type: none"> • Managing clusters and data gateway • Data collection • High availability • Backup and restore • Onboard and manage devices • Zero touch provisioning • Set up maps • Managing users, access and security • Maintain system health
Open Source Software used in Cisco Crosswork Infrastructure	Lists of licenses and notices for open source software used in Cisco Crosswork Infrastructure.

Additional Related Documentation

This section provides links to documentation for products related to Cisco Crosswork Infrastructure:

- [Cisco Crosswork Data Gateway 3.0](#)
- [Cisco Network Services Orchestrator 5.5.2.12](#)

You can access documentation for all Cisco Crosswork products at [Cisco Crosswork Network Automation Documentation](#).

Cisco Crosswork API Documentation

Advanced users can extend Cisco Crosswork product functions by using the product APIs. For more about the product APIs, see the [Cisco Crosswork Network Automation API Documentation on Cisco DevNet](#).

Open Bugs in Cisco Crosswork

If you encounter problems while working with Cisco Crosswork, please check this [list of open bugs](#). Each bug ID in the list links to a more detailed description and workaround.

You can use the Cisco Bug Search Tool to search for a specific bug.

1. Go to the [Cisco Bug Search Tool](#).
2. Enter your registered Cisco.com username and password, and click **Log In**.

The **Bug Search** page opens.



Note If you do not have a Cisco.com username and password, you can [register here](#).

3. To search for a specific bug, enter the bug ID in the **Search For** field.

Open Source

A list of open source software used in Cisco Crosswork can be found in [Open Source Software Used in Cisco Crosswork Infrastructure](#).

Accessibility Features

All product documents are accessible except for images, graphics and some charts. If you would like to receive the product documentation in audio format, braille, or large print, contact the [Cisco Accessibility Team](#) on the Web or send email to accessibility@cisco.com.

If any product document could not be converted to the accessible formats, please contact the Cisco Customer Experience team.

Obtain Documentation and Submit 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](#).

To receive new and revised Cisco technical content directly to your desktop, you can subscribe to the What's New in [Cisco Product Documentation RSS feed](#). The RSS feeds are a free service.

