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Cisco Crosswork Change Automation and Health Insights 4.4 Release Notes

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

Product Overview

The Cisco Crosswork Infrastructure with Cisco Crosswork Change Automation and Health Insights enables service providers to quickly deploy intent-driven, closed-loop operations.

Cisco Crosswork Change Automation and Health Insights provides a ready-to-use solution supporting the following use cases:

- Monitor Key Performance Indicators (KPIs) and notify of any anomalies.

- Prepare network changes triggered by changes in KPIs and roll out these changes.

- Automate change-impact and remediation.

Functionality added in Cisco Crosswork Change Automation and Health Insights 4.4

This section lists the new functionalities delivered in Cisco Crosswork Change Automation and Health Insights 4.4.

Cisco Crosswork Change Automation

- Through Cisco Crosswork Network Controller version 3.0, Change Automation used Cisco Software Manager (CSM) for package installations. Starting with Cisco Crosswork Network Controller 4.0, Software Image Management (SWIM) replaces CSM. SWIM supports the following functionalities:

  - Import software images from external server, local file, or a managed device into the SWIM repository.

  - Distribution of software image from SWIM repository to the device.

  - Activation of software images.

  - Additional platform-specific functionality, such as committing active images on IOS-XR devices.

- This release of Change Automation introduces support for Cisco Network Services Orchestrator (NSO) and its Layered Service Architecture (LSA).

Cisco Crosswork Health Insights

- Enhanced the scalability in Cisco Crosswork Network Controller 4.0 to 4.1.

- Added the ability to enable KPI on selected interfaces.

- Added the ability to trigger Playbooks based on different Alert levels.

Compatibility Information

The following table lists hardware and software versions that have been tested and are known to be compatible with Cisco Crosswork Change Automation and Health Insights. For *complete* installation requirements, see the *Cisco Crosswork Infrastructure 4.4 and Applications Installation Guide*.

Hardware/Software	Supported Version
Cisco Network Services Orchestrator (Cisco NSO)	- 5.7.6

	Cisco Network Element Driver (NED)
	
	 - Cisco IOS XR:
	
	    - CLI: 7.40.1
	
	    - NETCONF: 6.6.3, 7.3, 7.315, 7.4.1, 7.5.2, 7.6, 7.7.1
	
	 - Cisco IOS:
	
	    - CLI: 6.77.9

Software platform	- Cisco IOS-XR 7.5.2, 7.7.1, or later - Cisco IOS-XE 17.7.1a and 17.6.1 - Cisco NX-OS 10.2 (3)
Cisco WAN Automation Engine (Cisco WAE)	Version 7.5 or 7.6

Cisco Crosswork Application, Function Pack, and Browser Support

The following table lists software versions that have been tested and are known to be compatible with Cisco Crosswork Change Automation and Health Insights. For *complete* installation requirements, see the *Cisco Crosswork Infrastructure 4.4 and Applications Installation Guide*.

Hardware/Software	Supported Version
Cisco Crosswork Infrastructure	Version 4.4

Hardware/Software	Supported Version
Cisco Crosswork Data Gateway	Version 4.1
Function Packs	• Cisco Crosswork Change Automation NSO Function Pack 4.4.0 Installation Guide • Cisco Crosswork NSO Telemetry Traffic Collector Function Pack 4.4.0 Installation Guide • Cisco Network Services Orchestrator DLM Service Pack 4.4.0 Installation Guide • Cisco NSO Transport SDN Function Pack Bundle 4.1.0 Installation Guide • Cisco NSO Transport SDN Function Pack Bundle 4.1.0 User Guide
Browsers	• Google Chrome—100 or later • Mozilla Firefox—100 or later

Usage Guidelines and Important Notes

This section provides guidelines and important notes to consider when using Cisco Crosswork Change Automation and Health Insights.

Cisco Crosswork Change Automation

For information on how to use Cisco Crosswork Change Automation see the "Automate Network Changes" chapter in the *Cisco Crosswork Change Automation and Health Insights User Guide*.

- For information about using flexible Playbook development tools, see Custom Playbooks tutorial in Cisco Crosswork Change Automation Developer Guide on Cisco DevNet (https://developer.cisco.com/).

- When using dynamic tags to run a playbook on a set of devices, the playbook will be executed on groups of 20 devices at a time until the playbook has been run on all of the tagged devices.

Cisco Crosswork Health Insights

For information on how to use Cisco Crosswork Health Insights, see the "Monitor Network Health and KPIs" chapter in the *Cisco Crosswork Change Automation and Health Insights User Guide*.

- Group the KPIs within a KPI Profile for monitoring relevant device metrics. For best results, limit to 10 KPIs per KPI Profile. Maximum number of KPIs that can be supported within a KPI profile is 50.

Note The KPIs vary in the amount of data they collect. Although the system allows for up to 50 KPIs/KPI profiles, care must be taken to ensure that you have both license and Crosswork Data Gateway capacity in place before deploying the KPIs. For more information, see the section *Enable KPI Profile on Devices* in *Cisco Crosswork Change Automation and Health Insights User Guide*.

• For optimal performance, enable a KPI Profile in batches of no more than 100 devices.

Note When you are enabling KPI profiles on devices, ensure that sufficient capacity is available on Cisco Crosswork Data Gateway. If sufficient capacity is not available, it may cause overload and outage. For more information, see the section *Enable KPI Profile on Devices* in *Cisco Crosswork Change Automation and Health Insights User Guide*.

• For best system performance, use the default KPI cadence.

Note KPI cadence is set based on the nature of the KPI. Any decisions about using a lower cadence (for example, as low as 10 seconds) should be reviewed with Cisco Professional Services.

Known Issues and Limitations

The following are known issues, limitations, and workarounds in Cisco Crosswork Change Automation and Health Insights.

Cisco Crosswork Change Automation

• Sometimes, under certain load conditions, the execution of a Playbook times out.

  • If it continues to fail, try changing the time out for the job.

  • If it fails because of the device being locked, try changing the device state to DOWN and UP again.

• While scheduling playbooks across a dynamic group tag, the corresponding job set screen for the job in the Job History page will not display the relevant devices, until the job is scheduled for execution.

• Running a Playbook on multiple devices at the same time with different *collection_type* parameter values may result in failure. Re-executing the failed Playbook will resolve the issue.

• Under extreme load conditions, Cisco Crosswork Change Automation may fail to clean up the collection jobs that were created. These stale collections jobs can be deleted using API.

• With SWIM APIs, when you execute the remove flow, it deactivates the image and then removes it.

Cisco Crosswork Health Insights

- After a KPI Profile is enabled, editing the cadence and threshold parameter for any of the associated KPIs can be achieved using one of the three methods below:

  - Create a custom KPI with the required cadence and threshold parameters and associate it with the existing KPI Profile.

  - Create a new KPI Profile with the relevant KPIs associated. Update the cadence and alert parameters before enabling this new KPI Profile.

  - Disable the KPI Profile and perform the modifications on the relevant associated KPIs. Then re-enable the KPI Profile.

- For custom KPIs:

  - While creating a custom KPI that makes direct use of APIs, you must select the full sensor path to the leaf sensors (not a partial sensor path) up to a certain hierarchy (gather path).

  - All leaf sensor paths are reserved for that KPI's use only.

  - For more information on custom KPIs, see the chapter "Monitor Network Health and KPIs" in *Crosswork Change Automation and Health Insights User Guide*.

- Any Cisco Crosswork Health Insights job stuck in the processing state that does not complete within the stipulated time out of 60 minutes will be marked as "failed". After addressing any underlying issues (for example, device connectivity, credentials or NSO sync, and so on), the same job must be reapplied.

- Filtering is case sensitive for the **Manage KPIs** and **Enable-Disable KPI Profiles** pages.

- For using Cisco Crosswork Health Insights alert forwarding functionality, you must setup one Alert provider with the correct credentials.

- You can view KPI graphical data in the Cisco Crosswork UI for the last 72 hours only. To see this data, go to the Grafana dashboard (*https://<IPaddress:port>/robot-grafana/*) and select the desired KPI.

- After creating an interface KPI profile, the **KPI Monitoring Preferences** are set. If more than one KPI profile is created with the same KPI but different **KPI Monitoring Preferences**, and is linked to a device, the alerts are not segregated per interface or profile level in the **Alert Dashboard** page.

Related Documents

The following table lists the documents provided for the current release of Cisco Crosswork Change Automation and Health Insights. You can access all Cisco Crosswork Change Automation and Health Insights end user documentation at https://www.cisco.com/c/en/us/support/cloud-systems-management/crosswork-change-automation/model.html.

Documentation Title	What is included
Cisco Crosswork Change Automation and Health Insights 4.4 Release Notes	This document

Documentation Title	What is included
Cisco Crosswork Infrastructure 4.4 and Applications Installation Guide	Shared installation guide for all the Cisco Crosswork applications and their common infrastructure. Covers: • System requirements • Installation prerequisites • Installation instructions • Upgrade instructions
Cisco Crosswork Infrastructure 4.4 and Applications Administration Guide	Shared administration guide for all the Cisco Crosswork applications and their common infrastructure. Covers: • 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
Cisco Crosswork Change Automation and Health Insights 4.4 User Guide	• Getting started • Automating the process of deploying changes to the network • Monitoring network health • Performing real-time key performance indicator (KPI) monitoring, alerting, and troubleshooting • Collecting and managing telemetry data in a multivendor environment
Open Source used in Cisco Crosswork Change Automation and Health Insights	Lists of licenses and notices for open source software used in Cisco Crosswork Change Automation and Health Insights
API Documentation	Advanced users can extend Cisco Crosswork functionality using the APIs. API documentation is available on Cisco Devnet.

Additional Related Documentation

This section provides links to documentation for products related to Cisco Crosswork Change Automation and Health Insights:

- Cisco Crosswork Data Gateway 4.1
- Cisco Network Services Orchestrator 5.7.6 Documentation (nso-5.7.6.doc.tar.gz)
- Cisco Network Services Orchestrator DLM Service Pack 4.4.0 Installataion Guide
- Cisco Crosswork Change Automation NSO Function Pack 4.4.0 Installation Guide
- Cisco Crosswork NSO Telemetry Traffic Collector Function Pack 4.4.0 Installation Guide
- Cisco NSO Transport SDN Function Pack Bundle 4.1.0 Installation Guide
- Cisco NSO Transport SDN Function Pack Bundle 4.1.0 User Guide

You can access documentation for all Cisco Crosswork products at Cisco Crosswork Network Automation Documentation.

Open Bugs in Cisco Crosswork

You can use the Cisco Bug Search Tool to search for bugs.

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 all Cisco Crosswork bugs, from the Product list select **Cloud and Systems Management** > **Routing and Switching Management** > **Cisco Crosswork Network Automation** and enter additional criteria (such as bug ID, problem description, a feature, or a product name) in the Search For field. Examples: "Optimization Engine" or "CSCwc62479".

4. When the search results are displayed, use the filter tools to narrow the results. You can filter the bugs by status, severity, and so on.

   Tip To export the results to a spreadsheet, click **Export Results to Excel**.

Open Source

A list of open source software used in Cisco Crosswork can be found in *Open Source Used in Cisco Crosswork Change Automation and Health Insights*.

Security

Cisco takes great strides to ensure that all our products conform to the latest industry recommendations. We firmly believe that security is an end-to-end commitment and are here to help secure your entire environment. Please work with your Cisco account team to review the security profile of your network.

For details on how we validate our products, see Cisco Secure Products and Solutions and Cisco Security Advisories.

If you have questions or concerns regarding the security of any Cisco products, please open a case with the Cisco Customer Experience team and include details about the tool being used and any vulnerabilities it reports.

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 Accessiblity Team on the Web or send email to accessibility@cisco.com .

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.

Note For licensing related issues, check the Smart Licensing site. For more information, see Smart Software Manager Guide. To purchase new or additional licenses, contact your Cisco account representative (sales) or the partner from whom the product was purchased.

For non-service impacting issues, open support cases through the support portal and upload all relevant logs or screenshots.

For more urgent issues, open a service request and use appropriate keywords to get your request routed to proper team.

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