

# Cisco Crosswork Zero Touch Provisioning 3.0 Release Notes

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## Cisco Crosswork Zero Touch Provisioning 3.0 Release Notes

This document provides an overview of Cisco Crosswork Zero Touch Provisioning, its new features, and limitations for this release.

### Overview of Cisco Crosswork Zero Touch Provisioning

Cisco customer businesses are growing, and their network footprint is expanding at very fast rates. This puts an increasing strain on customer deployment teams as they run into an ever-increasing backlog of work to keep up with all the activity.

A key customer request has been to automate the onboarding of new devices into their network, reducing the need to send deployment teams on site for provisioning and onboarding and increasing the speed at which the equipment becomes available for use. Cisco Crosswork Zero-Touch Provisioning (ZTP) allows customers to provision and onboard new Cisco® IOS-XR devices automatically. Using a common GUI and API via the Crosswork Infrastructure, the network administrator can define policies for the provisioning of new devices. The result is a simplified onboarding process translating to significant time and cost savings by automating the process across many devices.

The Cisco Crosswork ZTP app provides an integrated turnkey solution to onboard a range of XR devices and enable faster time to deploy new hardware at a lower operating cost.

When a new device is powered-up, ZTP provides the automated ability to download and apply the initial software load and configuration to complete the provisioning of this device. After applying the configuration, the app allows for downloading and executing additional scripts on the device. These scripts enable the operator to fetch additional RPMs (linux binary packages) from the controller ZTP simplifies the process of deploying a new device with Day 0 configuration and bringing it up to the desired state in an automated manner.

The fully integrated solution combines core capabilities from multiple innovative, industry-leading products—Cisco Network Services Orchestrator (NSO), Cisco Prime Network Registrar, and the Cisco Crosswork suite of applications—with common API and integrates with a common UI, providing control via a single pane of glass.

With the Cisco Crosswork ZTP application, customers can realize these outcomes:

- Bring up the device with customer-certified software or image and obtain its IP address from a DHCP server such as Cisco Prime Network Registrar.
- Download and apply an initial configuration.
- Download and execute a shell script.
- Manage the device family profile, device config, image, and scripts so that they are applied to the onboarded equipment in a unified manner based on customer preference.

- Automatically onboard the new devices to Crosswork Device Lifecycle Manager for Day 1 operation.
- Provide a turnkey automation solution to offer faster deployment of new devices, yielding ever-improving mean time to use as the savings compound across larger numbers of devices over time.

The result? Increased profitability through faster deployment, optimized investments, and better OpEx utilization.

## What's New in Cisco Crosswork Zero Touch Provisioning 3.0

This section lists new features and changes delivered in this release of Cisco Crosswork Zero Touch Provisioning. For compatibility information, see the [Cisco Crosswork Infrastructure 4.1 and Applications Installation Guide](#).

### Cisco Plug and Play (PnP) ZTP Implementation

Cisco Crosswork ZTP Release 3.0 introduces PnP ZTP, implementing a secure method for onboarding IOS-XE devices compatible with the Cisco Plug and Play protocol. When PnP ZTP is enabled, all onboarding artifacts are provided by a Crosswork-embedded PnP Server to the device's PnP Agent over a secure HTTPS channel.

Support for PnP ZTP is provided in addition to the Classic ZTP mode provided in release 1.0 and the Secure ZTP mode provided in release 3.0.

### Platform Support

Cisco Crosswork Zero Touch Provisioning platform support varies with the type of ZTP processing the user chooses, as shown in the tables below.

**Table 1: PnP ZTP Platform Support**

| Product family                          | Platforms supported | IOS-XE images (feature sets) supported   |
|---|---------------------|--|
| Cisco Network Convergence Systems (NCS) | 520                 | Cisco IOS-XE version 16.12 and 17.4.1. Version 16.12.5 is the recommended version for customers. |
| Cisco Aggregation Services Router (ASR) | 903, 907, 920       |  |

**Table 2: Secure ZTP Platform Support**

| Product family                          | Platforms supported   | IOS-XR images (feature sets) supported |
|---|---|--|
| Cisco Network Convergence Systems (NCS) | 8000, 5001, 5002, 5501, 5502, 5504, 5508, 5516, 55A1, 55A2, 540 | IOS-XR 7.3.1 or higher                 |
| Cisco 8000 Series                       | 8800 Fixed Mode supports both Secure ZTP and Classic ZTP        |  |
| DDI                                     | Solution tested using the PNR DHCP server from Cisco            | Version 10.1 or higher                 |

**Table 3: Classic ZTP Platform Support**

| Product family                          | Platforms supported                                  | IOS-XR images (feature sets) supported   |
|---|--|--|
| Cisco Aggregation Services Router (ASR) | 9001, 9901, 9904, 9906, 9912, 9922                   | XR 6.6.3, 7.0.1, 7.0.2, 7.0.12 or higher |
| Cisco 8000 Series                       | 8800 distributed mode only supports Classic ZTP      |  |
| DDI                                     | Solution tested using the PNR DHCP server from Cisco | Version 10.1 or higher                   |

## Installation

Cisco Crosswork Zero Touch Provisioning is installed as an application on top of the Cisco Crosswork platform. Cisco Crosswork is a microservices-based platform that employs a cluster architecture to be extensible, scalable, and highly available. It retrieves real-time information from the network, analyzes the data, and provides both template-driven and automated tools to apply changes to the network. For more information, see the [Cisco Crosswork Infrastructure 4.1 and Applications Installation Guide](#).

## User Interface (UI)

The following updates have been made in the UI:

- The Cisco Crosswork UI and navigation menus have been updated.
- The ZTP Configuration Files pages now allows users to preview of the contents of any configuration file by clicking on the configuration file name. The preview is color coded to highlight code syntax. For more information, see "[Zero Touch Provisioning](#)" in the [Cisco Crosswork Infrastructure 4.0 and Applications Administration Guide](#).

## APIs

The following updates have been made in the Cisco Crosswork Zero Touch Provisioning APIs:

- A new set of ZTP configuration file management APIs, allowing users to count, query, get, delete, update, and download configuration files in the Crosswork repository.
- A new dynamic ZTP configuration service API that allows users to query configuration attributes.
- A new set of ZTP serial number and ownership voucher APIs, which allow users to import, export, delete, query, manage and update device serial number and ownership voucher information in the Crosswork repository.
- Updates to the existing ZTP device, image and profile service APIs

For more information, see the [Cisco Crosswork API documentation on DevNet](#). For licensing and ordering information, see the Cisco Crosswork Zero Touch Provisioning product page (accessible to Cisco Partners) or contact your Cisco Sales representative.

## Open Bugs in Cisco Crosswork Zero Touch Provisioning

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 or to search for all bugs in a release.

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.

## Known Issues and Limitations

The table below shows known issues and limitations that should be taken into account before starting to work with Cisco Crosswork Zero Touch Provisioning 3.0.

*Table 4: Known Issues and Limitations*

| Issue/Limitation   | Context within ZTP |
|--|--------------------|
| When provisioning ASR 920 routers running IOS-XE 17.4.1 or 17.5.1 using the Crosswork ZTP Plug and Play (PnP) server, image installs or upgrades will fail due to a reported defect (CSCvz33731). This defect is resolved and the fix is available on IOS-XE 17.6.1 and later. But for IOS-XE versions 17.4.1 and 17.5.1, and only for ASR 920 routers, the limitation is still present. While users cannot use PnP ZTP to upgrade the image on ASR 920 devices running versions 17.4.1 and 17.5.1, they can still use it to perform a day zero configuration update successfully. | PnP ZTP            |

## Cisco Crosswork Zero Touch Provisioning Documentation

The following table lists the guides that Cisco provides for Cisco Crosswork Zero Touch Provisioning 2.0. You can access all Cisco Crosswork end user documentation at <https://www.cisco.com/c/en/us/support/cloud-systems-management/crosswork-network-automation/series.html#~tab-documents>.

| Documentation Title   | What is Included |
|---|------------------|
| <a href="#">Cisco Crosswork Zero Touch Provisioning 3.0 Release Notes</a> | This document    |

| Documentation Title   | What is Included  |
|---|---|
| <a href="#">Cisco Crosswork Infrastructure 4.1 and Applications Installation Guide</a>                                      | <p>Shared installation guide for all of the Cisco Crosswork applications and their common infrastructure.</p> <p>In addition to information on how to install the Zero Touch Provisioning application, the guide covers:</p> <ul style="list-style-type: none"> <li>• System requirements</li> <li>• Installation prerequisites</li> <li>• Installation instructions</li> <li>• Upgrade instructions</li> </ul>   |
| <a href="#">Cisco Crosswork Infrastructure 4.01 and Applications Administrator Guide, chapter "Zero Touch Provisioning"</a> | <p>Shared administration guide for all the Cisco Crosswork applications and their common infrastructure.</p> <p>In addition to the chapter covering Zero Touch Provisioning, the guide covers:</p> <ul style="list-style-type: none"> <li>• Managing clusters and data gateway</li> <li>• Data collection</li> <li>• High availability</li> <li>• Backup and restore</li> <li>• Onboarding and managing devices</li> <li>• Setting up maps</li> <li>• Managing users, access and security</li> <li>• Maintaining system health</li> </ul> |
| <a href="#">Open Source Used in Cisco Crosswork Infrastructure 4.1</a>  | <p>Lists of licenses and notices for open source software used in Cisco Crosswork, including Zero Touch Provisioning.</p>   |

## Additional Related Documentation

This section provides links to documentation for Cisco Crosswork applications of interest to users of Cisco Crosswork Zero Touch Provisioning 3.0:

- [Cisco Crosswork Change Automation and Health Insights 4.1](#)
- [Cisco Crosswork Optimization Engine 3.0](#)
- [Cisco Crosswork Network Controller 3.0](#)
- [Cisco Network Services Orchestrator 4.1](#)

You can access documentation for all Cisco Crosswork products at

<https://www.cisco.com/c/en/us/support/cloud-systems-management/crosswork-network-automation/tsd-products-support-series-home.html>

## Cisco Crosswork Network Automation API Documentation

Advanced users can integrate other Cisco Crosswork applications and third-party applications with Crosswork Zero Touch Provisioning functions by using application programming interfaces (APIs), delivering new capabilities into their network operations.

For more information, see the [Cisco Crosswork Network Automation API Documentation on Cisco DevNet](#).

## Accessibility Features

For a list of accessibility features in Cisco Crosswork Zero Touch Provisioning, visit <https://www.cisco.com/c/en/us/about/accessibility/voluntary-product-accessibility-templates.html> (VPAT) website, or contact [accessibility@cisco.com](mailto:accessibility@cisco.com).

All product documents except for some images, graphics, and charts are accessible. If you would like to receive the product documentation in audio format, braille, or large print, contact [accessibility@cisco.com](mailto:accessibility@cisco.com).

