

Release Notes for Cisco IOS XRd, IOS XR Release 7.10.1

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XRd is a powerful IOS XR virtual platform that supports a wide variety of technology roles such as virtual route reflector (vRR), virtual cell-site router (vCSR), and virtual provider-edge (vPE). It is available in a containerized form-factor enabling both standalone and Kubernetes-based containerized network deployments.

Cisco IOS XRd Overview

XRd is the latest virtual platform from Cisco that brings the highly scalable, feature-rich, and reliable IOS-XR operating system to containerized network deployments. With XR control plane capabilities derived from the powerful XRv9000 enables control plane use cases such as virtual route-reflector (vRR) and virtual provider edge (vPE).

The Cisco IOS XR Release 7.10.1 exclusively supports XRd Control Plane.

Cisco IOS XRd Licensing Model

The Cisco IOS XRd platform offers two types of licensing schemes. The Cisco IOS XR Software Release 7.10.1 supports only control plane variant. This table lists details of Cisco IOS XRd Router's software licenses or entitlements, arranged according to licensing PIDs.

The Cisco IOS XRd instances are pre-loaded with an evaluation license valid for 90 days. For licenses post the evaluation period, you can purchase the XRd licenses using [Cisco Smart Licensing](#).

Table 1: Cisco IOS XRd Licensing PIDs

| PIDs | Description |
|-----------|-------------------|
| XRd-VR-CP | XRd Control Plane |

What's New in Cisco IOS XR Release 7.10.1

For the complete list of features supported on Cisco IOS XRd until Cisco IOS XR Release 7.10.1, see:

- [Release Notes for Cisco IOS XRd, IOS XR Release 7.9.2](#)
- [Release Notes for Cisco IOS XRd, IOS XR Release 7.9.1](#)
- [Release Notes for Cisco IOS XRd, IOS XR Release 7.8.2](#)
- [Release Notes for Cisco IOS XRd, IOS XR Release 7.8.1](#)
- [Release Notes for Cisco IOS XRd, IOS XR Release 7.7.1](#)

For more details on the Cisco IOS XR release model and associated support, see [Software Lifecycle Support Statement - IOS XR](#).

Software Features Enhanced and Introduced

| Feature | Description |
|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General Administration on Cisco ASR 9000 Series Routers, Cisco IOS XR Releases | |
| Auto-Save and Copy Router Configuration Using Public Key Authentication | <p>You can now experience passwordless authentication while automatically saving running configurations and securely copying them on the router. The feature uses public key-based authentication, a secure logging method using a secure shell (SSH), which provides increased data security. This feature offers automatic authentication and single sign-on benefits, which also aids in a secure automation process.</p> <p>This feature modifies configuration commit auto-save and copy command to support password-less authentication.</p> |
| Segment Routing | |
| SR-Mcast: Tree-SID Label Range Validation in NB API | <p>The SR-PCE provides a north-bound HTTP-based API to allow communication between the SR-PCE and the Cisco Crosswork Optimization Engine.</p> <p>This release adds support for the following:</p> <ul style="list-style-type: none"> • This feature allows the router to allocate the label automatically from the configured label range. The operators can hence provision without passing the Label via North Bound API. <p>Note that the label range configuration is mandatory for this feature to work.</p> <ul style="list-style-type: none"> • If the label is not valid, an error message is returned to the application. • If the label is valid, the PCE computes, then program the Tree-SID multicast on the network nodes. <p>For more information, refer to the Cisco Crosswork Optimization Engine User Guides.</p> |

Host Requirements

This section details the host requirements for XRd Control Plane :

Table 2: XRd Control Plane

| Parameter | Requirement |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------|
| XRd Control Plane Host | |
| CPU | x86-64 CPU with at least 2 cores |
| RAM | 4 GB |
| Linux kernel | Version 4 and above Note The Linux kernel must install the <i>dummy</i> and <i>nf_tables</i> modules. |
| Linux cgroups | Version 1 Note Support for unified hierarchy cgroups is not available. |

| Parameter | Requirement |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| XRd Control Plane instance on the host | |
| CPU | 1 core |
| RAM | 2 GB |
| Inotify user instances and watches | 4000 |
| XRd Control Plane on AWS EC2 instance | |
| Instance Type | m5.2xlarge |
| Number of threads per processor core | 1 |
| Minimum Disk Size | 8 GB Note A XRd instance requires the minimum disk size of 8 GB, but there may be demand for additional disk space depending on how the node handles core files. |
| Operating System | Amazon Linux 2 with EKS Optimizations |
| Kernel Settings | 4000 inotify user instances and watches per XRd instance |



Note For using Docker to run the containers, you need Docker version 18 or above with permission to run Docker containers.

Caveats

There are no caveats in this release.

Behavior Changes

Starting with Cisco IOS XR Software Release 7.10.1, you must configure a name server for Smart Licensing deployment options that use HTTPS for communication with Cisco Smart Software Manager (CSSM). If the system cannot validate that the Common Name (CN) in the X.509 server certificate is a Fully Qualified Domain Name (FQDN), communication with CSSM results in an **Error during SSL communication**. See the *Smart Licensing Chapter* in the *System Management Configuration Guide for Cisco IOS XRd* for more information and options to bypass the name server configuration.

Other Important Information

Upgrading Cisco IOS XRd Software

Cisco IOS XRd software is a containerized form-factor deployment that follows the container pattern regarding software upgrades and does not support standard IOS-XR install or upgrade operations. To use the latest XRd software, you can create a new XRd instance with the latest software in place of the previous XRd instance and attach the necessary persistent state to the new XRd

instance. The new XRd software may be a different version of IOS-XR or the existing version of IOS-XR with new or bugfix RPMs applied (or a combination of the two). An XRd container image containing new or bugfix RPMs is created from an existing XRd container image using standard container build tools (such as **docker build** or **buildah**) to install the new software packages to the existing **base** image. The **apply-bugfixes** script within the **xrd-tools** repository (<https://github.com/ios-xr/xrd-tools>) is available to achieve this using **docker build**, and you can use it as a template for other container build tools.

Related Documentation

The most current Cisco IOS XRd documentation is located at the following URL:

<https://www.cisco.com/c/en/us/support/routers/ios-xrd/series.html>

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