



Release Notes for Cisco IOS XRd, IOS XR Release 7.7.1

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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 pedigree shared with the likes of Cisco 8000 and data plane capabilities that are derived from the powerful XRv9000, XRd brings the best of both worlds - enabling high scale control plane use cases such as virtual route-reflector (vRR) and high throughput requirements in virtual provider edge (vPE) use cases.

XRd is available in two formats:

- XRd Control Plane
- XRd vRouter

Cisco IOS XRd Licensing Model

The Cisco IOS XRd platform offers two types of licensing schemes. 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
<ul style="list-style-type: none">• XRD-VR-CP-DP-ESS• XRD-VR-CP-DP-ADN• XRD-VR-CP-DP-ADV	XRd vRouter

What's New in Cisco IOS XR Release 7.7.1

Software Features Introduced

The following user scenarios are supported with this release:

User Scenarios	Deployment
vPE	<ul style="list-style-type: none"> • Standalone Docker • OpenShift based K8s
vRR	<ul style="list-style-type: none"> • Standalone Docker • OpenShift based K8s
vCSR	VMware Tanzu based K8s
Simulation	<ul style="list-style-type: none"> • Manual Testing • Automation • CI/CD Workflows

Cisco is continuously enhancing the product with every release and this section lists key features. It also includes links to detailed documentation, where available.

Cisco IOS XRd supports majority of the Cisco IOS XR technologies. The following sections detail the feature set per user scenarios:

vPE

Feature	See the Following Documentation
L3VPN	L3VPN Configuration Guide for Cisco 8000 Series Routers
HSRP	Implement HSRP
VRRP	Implement VRRP
LDP	Implementing MPLS Label Distribution Protocol
RSVP	Implementing RSVP for MPLS-TE
MPLS TE	Implementing MPLS Traffic Engineering
MPLS OAM	Implementing MPLS OAM
MPLS SR	Segment Routing Configuration Guide for Cisco 8000 Series Routers

vCSR

Feature	See the Following Documentation
L3VPN	L3VPN Configuration Guide for Cisco 8000 Series Routers
HSRP	Implement HSRP
VRRP	Implement VRRP
LDP	Implementing MPLS Label Distribution Protocol
RSVP	Implementing RSVP for MPLS-TE

Feature	See the Following Documentation
MPLS TE	Implementing MPLS Traffic Engineering
MPLS OAM	Implementing MPLS OAM
MPLS SR	Segment Routing Configuration Guide for Cisco 8000 Series Routers
EVPN-VPWS	EVPN Virtual Private Wire Service (VPWS)

vRR

- ORR for IPv6 Unicast AF for the single ISIS topology case

XRd: Generic features

Feature	See the Following Documentation
SSH	Implementing Secure Shell
NETCONF	Use NETCONF Protocol to Define Network Operations with Data Models
gNMI	Use gRPC Protocol to Define Network Operations with Data Models
Telemetry	Telemetry Configuration Guide for Cisco 8000 Series Routers
Syslog	Implementing System Logging
SNMP	Configuring Simple Network Management Protocol
<ul style="list-style-type: none"> • AAA • TACACS+ 	Configuring AAA Services
Flex-CLI	Configuring Flexible Command Line Interface
ZTP	Upgrade the Current Active Version of Cisco IOS XR Software
ACLs	Implementing Access Lists
Call Home	Configuring Call Home
Smart Licensing	Configuring Smart Licensing
BGP	BGP Configuration Guide for Cisco 8000 Series Routers
RPL	Implementing Routing Policy
IS-IS	Implementing IS-IS
OSPF	Implementing OSPF
PCE	Configure Segment Routing Path Computation Element
BMP	Overview of BGP Monitoring Protocol

Host Requirements

This section details the host requirements for both XRd Control Plane and XRd vRouter:

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.
XRd Control Plane instance on the host	
CPU	1 core
RAM	2 GB
Inotify user instances and watches	2000

Table 3: XRd vRouter

Parameter	Requirement
XRd vRouter Host	
CPU	x86-64 CPU with at least 4 cores
CPU instruction set	<ul style="list-style-type: none"> • ssse3 • sse4.1 • sse4.2
Linux kernel	Version 4 and above Note The Linux kernel must install the <i>dummy</i> , <i>vfiopci</i> or <i>igb_uio</i> , and <i>nf_tables</i> modules.
Linux cgroups	version 1 Note Support for unified hierarchy cgroups is not available.
XRd vRouter instance on the host	

Parameter	Requirement
CPU	2 isolated
RAM	5 GB
Hugepages	3 GB Note The XRd vRouter instance must enable Hugepage support with 1GB hugepage size.
Inotify user instances and watches	2000



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

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