

# Cisco IOS XR Release 6.0.0 for Cisco NCS 5000 Series Routers

PB734310

## Product Overview

The Cisco® NCS 5000 Series is an extension to Cisco’s routing platform portfolio, enabling service providers and Multiprotocol Label Switching (MPLS)–enabled data center architectures to offer elastic networks with improved business agility and simplified operations to deliver high-bandwidth mobile, video, and cloud services. It can also operate as an extension shelf of Cisco ASR 9000 Series Aggregation Services Routers using network virtualization technology, consolidating multiple layers in the network and dramatically reducing operational costs.

The Cisco NCS 5001 and NCS 5002 are small form-factor, dense Gigabit Ethernet (GE)/10GE aggregation systems. Powered by industry-leading routing operation system Cisco IOS® XR Software, the system also offers rich functions such as third-party application hosting, machine-to-machine interface, telemetry, and flexible package delivery.

## New Hardware

Table 1 lists the hardware support in Cisco IOS XR Software 6.0.0.

**Table 1.** Features of Cisco NCS 5001 and NCS 5002 in Cisco IOS XR Software 6.0.0

Part Number	Description
NCS-5001	40 ports of 1/10 GE and 4 ports of 100GE
NCS-5002	80 ports of 1/10 GE and 4 ports of 100GE

## New Software Features

Table 2 lists new software features in Cisco IOS XR Software Release 6.0.0 supported on Cisco NCS 5000 Series Routers.

**Table 2.** New Software Features Supported on Cisco NCS 5000 Series Routers in Cisco IOS XR Software Release 6.0.0

Feature	Description
Layer 2	<ul style="list-style-type: none"> <li>• Layer 2 switch ports</li> <li>• IEEE 802.1Q VLAN encapsulation/Q-in-Q encapsulation</li> <li>• IEEE 802.1ad</li> <li>• Cisco bundle Ethernet technology (up to 32 ports per Ethernet bundle)</li> <li>• Link Aggregation Control Protocol (LACP): IEEE 802.3ad</li> <li>• Jumbo frames on all ports (up to 9216 bytes)</li> <li>• L2 ingress access control list (ACL)</li> <li>• L2 AC-AC cross-connect</li> </ul>

Feature	Description
<b>Layer 3</b>	<ul style="list-style-type: none"> <li>Layer 3 interfaces: physical and subinterfaces</li> <li>Routing protocols: static, Open Shortest Path First (OSPFv2), OSPFv3, Intermediate System to Intermediate System (ISIS), and Border Gateway Protocol (BGP)</li> <li>32-way equal-cost multipath (ECMP)</li> <li>L3 ingress IPv4 ACL</li> <li>IPv6 unicast</li> <li>Cisco bundle Ethernet technology (up to 32 ports per Ethernet bundle)</li> <li>LACP: IEEE 802.3ad</li> <li>Jumbo frame support (up to 9216 bytes)</li> </ul>
<b>MPLS</b>	<ul style="list-style-type: none"> <li>Label switching</li> <li>LDP</li> </ul>
<b>Segment routing</b>	<ul style="list-style-type: none"> <li>Segment routing-based transport</li> <li>ISIS extensions to segment routing</li> <li>OSPF extensions to segment routing</li> </ul>
<b>Quality of service (QoS)</b>	<ul style="list-style-type: none"> <li>Classification can be based on class of service (L2), IP differentiated services code point (L3), IP ACL (L3/L4), IP precedence (type of service) (L3), IP Real-Time Transport Protocol (L4 user data protocol ports)</li> <li>DSCP marking</li> <li>8 number of queues for user traffic</li> <li>Support for priority queuing</li> </ul>
<b>Automation</b>	<ul style="list-style-type: none"> <li>Zero-touch provisioning (ZTP), iPXE</li> <li>Configuration management</li> <li>Network Configuration Protocol (NETCONG/YANG)</li> </ul>
<b>Security</b>	<ul style="list-style-type: none"> <li>Provides comprehensive network security features, including ACLs; control-plane protection; management plane protection; routing authentications; authentication, authorization, and accounting (AAA) and Terminal Access Controller Access-Control System Plus (TACACS+); Secure Shell (SSH) Protocol; SNMPv3; and RPL support</li> <li>Layer 2 ingress ACLs</li> <li>Layer 3 ingress ACLs</li> </ul>
<b>Management</b>	<ul style="list-style-type: none"> <li>MIB, XML, JSON, GPB, and SNMP</li> <li>MPLS OAM (label switched path [LSP]) ping, LSP traceroute</li> </ul>

## Ordering Information

Table 3 lists ordering information for Cisco IOS XR Software Release 6.0.0 for Cisco NCS 5000 Series routers.

**Table 3.** Ordering Information for NCS 5001 and NCS 5002

Part Number	Product Name
<b>NCS-5001</b>	Cisco NCS 5001 Routing System
<b>NCS-5002</b>	Cisco NCS 5002 Routing System
<b>XR-NC50-P-06.00</b> <b>XR-NC50-PK9-06.00</b>	Cisco NCS 5001 and 5002 Routing System Cisco IOS XR Software (6.0.0)
<b>NC5001-L2VPN-LIC</b> <b>NC5002-L2VPN-LIC</b>	NCS 5001 Basic L2VPN System License NCS 5002 Basic L2VPN System License
<b>NC5001-L3VPN-LIC</b> <b>NC5002-L3VPN-LIC</b>	NCS 5001 Basic L3VPN System License NCS 5002 Basic L3VPN System License
<b>NC5001-MBL-LIC</b> <b>NC5002-MBL-LIC</b>	NCS 5001 Basic Mobile System License NCS 5002 Basic Mobile System License

## Cisco IOS XR Software Release 6.0.0 Lifecycle

The Cisco IOS XR Software release strategy is time based, with a fixed release date and lifecycle, rather than being a feature-based release strategy with a variable release date. Table 4 lists the major milestones of Cisco IOS XR Software Release 6.0.0.

**Table 4.** Major Milestones for Cisco IOS XR Software Release 6.0.0

Milestone	Definition	Date
<b>Availability date</b>	The date that Cisco IOS XR Software Release 6.0.0 information is published on Cisco.com and becomes available to the general public.	December 23, 2015
<b>End-of-life announcement date</b>	The date when official end-of-life documents announcing the end of sale and end of life of Cisco IOS XR Software 6.0.0 (and later versions of 6.0.0) are distributed to the general public.	June 23, 2015
<b>End-of-sale date</b>	The last date to order Cisco IOS XR Software 6.0.0 through Cisco point-of-sale mechanisms. (The product is no longer for sale after this date.)	June 23, 2016
<b>End of software maintenance (standard maintenance release)</b>	The last date that Cisco Engineering may release any final software maintenance releases or bug fixes. (After this date, Cisco Engineering will no longer develop, repair, maintain, or test the product software.) Applies to standard rebuilds only. Refer to Cisco IOS XR Software policy guideline bulletin for more details ( <a href="http://www.cisco.com/c/en/us/products/collateral/ios-nx-os-software/ios-xr-software/product_bulletin_c25-478699.html">http://www.cisco.com/c/en/us/products/collateral/ios-nx-os-software/ios-xr-software/product_bulletin_c25-478699.html</a> ).	December 23, 2017
<b>End of software maintenance (extended maintenance release)</b>	The last date that Cisco Engineering may release any final software maintenance releases or bug fixes. (After this date, Cisco Engineering will no longer develop, repair, maintain, or test the product software.) Applies to standard rebuilds only. Refer to Cisco IOS XR Software policy guideline bulletin for more details ( <a href="http://www.cisco.com/c/en/us/products/collateral/ios-nx-os-software/ios-xr-software/product_bulletin_c25-478699.html">http://www.cisco.com/c/en/us/products/collateral/ios-nx-os-software/ios-xr-software/product_bulletin_c25-478699.html</a> ).	December 23, 2018
<b>End of software maintenance for Product Security Incident Response Team (PSIRT)</b>	The last date that Cisco Engineering may release any final software maintenance releases or bug fixes for PSIRTs through software maintenance unit to Release 6.0.0 (Beyond this date, PSIRT bugs become candidates for following feature releases.)	December 23, 2019
<b>Last date of support</b>	The last date to receive applicable service and support for the product, as entitled by active service contracts or by warranty terms and conditions. (After this date, all support services for the product are unavailable, and the product becomes obsolete.)	June 23, 2021

## For More Information

For more information regarding this release, visit:

- Cisco NCS 5000 Series Release Notes:  
<http://www.cisco.com/c/en/us/td/docs/iosxr/ncs5000/general/release/notes/reln-ncs5001.html>
- For official end-of-life and end-of-sale announcements for Cisco IOS XR Software, visit [http://www.cisco.com/en/US/products/ps5845/prod\\_eol\\_notices\\_list.html](http://www.cisco.com/en/US/products/ps5845/prod_eol_notices_list.html) or contact your local Cisco account representative.
- For additional information about the Cisco NCS 5000 Series or Cisco IOS XR Software, visit <http://www.cisco.com/c/en/us/products/routers/network-convergence-system-5000-series/index.html> or contact your local Cisco account representative.



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