



# Release Notes for Cisco IOS XE 3S Releases

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The Cisco IOS XE Release 3S is supported for both the Cisco ASR 903 Series Aggregation Services Router and the Cisco ASR 1000 Series Aggregation Services Routers.

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- [Cisco ASR 1000 Series Aggregation Services Routers, page 1](#)

## Cisco ASR 903 Series Aggregation Services Router

The Cisco ASR 903 Series Aggregation Services Router is a Cisco aggregation router product. This router uses an innovative and powerful forwarding technology known as the Cisco Carrier Ethernet ASIC.

The Cisco ASR 903 Series Router is a 6-Interface Module (IM), 3-RU, hardware-redundant chassis with two Route Switch Processor (RSP) slots, and six IM slots. It supports fully redundant RSPs that allow for full RSP hardware redundancy, NSF, ISSU, and future RSP service upgrades. The Cisco ASR 903 Series Router runs the Cisco IOS XE software and is supported since Cisco IOS XE Release 3.5S.

## Cisco ASR 1000 Series Aggregation Services Routers

The Cisco ASR 1000 Series Aggregation Services Routers are Cisco midrange router products. These routers use an innovative and powerful hardware processor technology known as the Cisco QuantumFlow Processor.

In July 2010, the Cisco IOS XE software moved from Cisco IOS XE Release 2.6 to Cisco IOS XE Release 3.1S to introduce new hardware (ASR1000-ESP40, ASR1000-SIP40, and Cisco ASR 1013 Router) and an enhanced Cisco IOS Release 15.0(1)S software that runs on improved componentized code for Cisco IOS features.

The Cisco IOS XE release numbering scheme is modified by the addition of the suffix “S” to the release number to denote the release branch that will differentiate the different products using Cisco IOS XE release.



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The underlying Cisco IOS software numbering scheme for the Cisco ASR 1000 Series Routers changes from the current numbering of 12.2(33)XNx to 15.0(1)S. This change will define simpler numbering for new feature releases (the number in parenthesis) and rebuilds. Cisco IOS Release 15S aggregates feature inheritance from the Cisco IOS Release 12.2SR. The 15.x(x)Sx releases will continue to be time-based and time-synchronized with Cisco IOS XE releases.

[Table 1](#) lists the mappings between Cisco IOS XE 3S versions and their associated Cisco IOS versions.

**Table 1** *Cisco IOS XE 3S to Cisco IOS Version Number Mapping*

Cisco IOS XE 3S Version	Cisco IOS Version
3.1.0S	15.0(1)S
3.1.1S	15.0(1)S1
3.1.2S	15.0(1)S2
3.1.3S	15.0(1)S3
3.1.4S	15.0(1)S4
3.1.4aS	15.0(1)S4a
3.2.0S	15.1(1)S
3.2.1S	15.1(1)S1
3.2.2S	15.1(1)S2
3.3.0S	15.1(2)S
3.3.1S	15.1(2)S1
3.3.2S	15.1(2)S2
3.4.0S	15.1(3)S
3.4.0aS	15.1(3)S0a
3.4.1S	15.1(3)S1
3.4.2S	15.1(3)S2
3.4.3S	15.1(3)S3
3.4.4S	15.1(3)S4
3.4.5S	15.1(3)S5
3.4.6S	15.1(3)S6
3.5.0S	15.2(1)S
3.5.1S	15.2(1)S1
3.5.2S	15.2(1)S2

Cisco IOS XE 3S releases inherit all Cisco IOS XE Release 2 features that were released prior to the introduction of the Cisco IOS XE Release 3.1.0S, with a few exceptions. For information about inherited features, see [Release Notes for Cisco ASR 1000 Series Aggregation Services Routers for Cisco IOS XE Release 2](#).

The Cisco ASR 1000 Series consists of the following routers:

- The Cisco ASR 1001 Router is a small form factor router targeted for high-end branch offices needing integrated services including voice and security with high-speed connectivity (2.5 Gbps w/optional SW license for 5 Gbps). Designed with integrated Cisco ASR1000-RP, Cisco

ASR1000-SIP, Cisco ASR1000-ESP with Nitrox running Cisco IOS XE Release 3.2S. Input/output options include Half-height SPA, 4x1GE built-in ports, factory-installed integrated daughtercard (IDC) with different options.

- The Cisco ASR 1002 Router is a 3-SPA, 2-rack-unit (RU) chassis with one Embedded Services Processor (ESP) slot that comes with the Route Processor (RP), Cisco ASR 1000 Series Shared Port Adapter Interface Processor (SIP), and four Gigabit Ethernet ports built in.
- The Cisco ASR 1002-F Router supports the same features and components as the Cisco ASR 1002 Router. In addition, the Cisco ASR 1002-F Router has an integrated 4xGE SPA interface, 2.5 GB of fixed system bandwidth, and 4 GB of DRAM.
- The Cisco ASR 1004 Router is an 8-SPA, 4-RU chassis with one ESP slot, one RP slot, and two SIP slots.
- The Cisco ASR 1006 Router is a 12-SPA, 6-RU, hardware-redundant chassis with two ESP slots, two Route Processor (RP) slots, and three SIP slots.
- The Cisco ASR 1013 Router is a 24-SPA, 3-RU, hardware-redundant chassis with two ESP slots, two RP slots, and six SIP slots that allows for full RP hardware redundancy, Nonstop Forwarding (NSF), In-Service Software Upgrade (ISSU), and future RP service upgrades.

For the single-route-processor Cisco ASR 1000 platforms, the Cisco ASR 1002 and Cisco ASR 1004, the RP has a dual Cisco IOS software option that allows these routers to use Cisco IOS software redundancy, Cisco high-availability features, NSF, and ISSUs. This option requires the Cisco ASR 1000 Series RP to have 4 GB of DRAM memory.

The Cisco ASR 1006 Router supports fully redundant RPs that allow for full RP hardware redundancy, NSF, ISSU, and future RP service upgrades.

The Cisco ASR 1013 Router extends the Cisco ASR 1000 Series Routers to a chassis that can hold six SIPs and provides superslots (more height and power) for the Cisco ASR1000-RPs (route processor) and the ASR1000-ESPs (forwarding processor).

The Cisco ASR 1000 Series Routers run the Cisco IOS XE software and introduce a distributed software architecture that moves many operating system responsibilities out of the IOS process. In this architecture, Cisco IOS, which previously was responsible for almost all of the internal software processes, now runs as one of many Cisco IOS XE processes while allowing other Cisco IOS XE processes to share responsibility for running the router.

One of the key features of the Cisco IOS XE 3.1S software is support for dual Cisco IOS software consolidated packages in a single RP for software redundancy in the 2-RU and 4-RU chassis systems. These dual Cisco IOS consolidated packages can consist of the same software consolidated packages for backup or different software consolidated packages for resilient upgrade.



**Note**

Software redundancy is not supported on the Cisco ASR 1006 Router and the Cisco ASR 1013 Router.

