

Cisco IOS Release 15.9(3)M9 - Release Notes for Cisco IR800 Industrial Integrated Services Routers and Cisco CGR1000 Series Connected Grid Routers

First Published: 2024-02-09

Last Modified: 2024-02-15

Introduction

The following release notes support the Cisco IOS 15.9(3)M9 release. These release notes are updated to describe new features, limitations, troubleshooting, recommended configurations, caveats, and provide information on how to obtain support and documentation.

PSIRT ADVISORY

IMPORTANT INFORMATION - PLEASE READ!

FPGA and BIOS have been signed and updated to new versions.

For the 15.9 Release Train, this image (15.9-3.M) is considered as the baseline. Downgrade is **STRICTLY UNSUPPORTED** and bundle install to previous releases (158-3.M2a/157-3.M4b/156-3.M6b) will cause an error and fail if attempted. Any manual downgrade [non bundle operations] will impair router functionality thereafter.



Note After upgrading to this release, make sure to delete any old image files that may still be in the flash: filesystem. This will prevent an unintended IOS downgrade.

For additional information on the PSIRT see the following:

<https://tools.cisco.com/security/center/content/CiscoSecurityAdvisory/cisco-sa-20190513-secureboot>

Image Information and Supported Platforms



Note You must have a Cisco.com account to download the software.

Cisco IOS Release 15.9(3)M9 includes the following Cisco IOS images:

IR8x9

System Bundled Image: ir800-universalk9-bundle.SPA.159-3.M9

This bundle contains the following components:

- IOS: ir800-universalk9-mz.SPA.159-3.M9
- Guest Operating System: ir800-ref-gos.img.1.15.0.8.gz
- Hypervisor: ir800-hv.srp.SPA.3.1.36
- FPGA: 2.B.0
- BIOS: 29
- MCU Application: 53

IR807

IOS Image: ir800l-universalk9-mz.SPA.159-3-M9

CGR1K

System Bundled image: cgr1000-universalk9-bundle.SPA.159-3-M9

This bundle contains the following components:

- IOS Version: cgr1000-universalk9-mz.SPA.159-3-M9
- Guest Operating System: cgr1000-ref-gos.img.1.8.2.22.gz
- Hypervisor: cgr1000-hv.srp.SPA.3.0.70
- FPGA: 2.E.0
- BIOS: 18

Important Note Regarding 159-3.M9

CG-OS to IOS Migration:



Note When migrating from CG-OS to IOS on the CGR1K, Cisco recommends to upgrading from the Golden image to the required IOS image. Refer to the following example:

CG-OS -> 15.8(3)M3b -> <latest version>

Software Downloads

This section contains the following:

IR800 Series

The latest image files for the IR800 product family can be found here:

<https://software.cisco.com/download/navigator.html?mdfid=286287045&flowid=75322>

Click on the 807, 809 or 829 link to take you to the specific software you are looking for.



Important

MANUAL [non-bundle] DOWNGRADE IS STRICTLY PROHIBITED. For newer releases with the PSIRT fix - while bundle downgrade to 158-3.M2a/157-3.M4b/156-3.M6b is supported, manual downgrade is unsupported.



Note

On the IR8x9 devices, the IR800 bundle image can be copied via Trivial File Transfer Protocol (TFTP) or SCP to the IR800, and then installed using the bundle install flash:<image name> command. The IR800 <image>.bin file can NOT be directly booted using the boot system flash:/image_name. Detailed instructions are found in the [Cisco IR800 Integrated Services Router Software Configuration Guide](#).



Note

On the IR8x9 devices, the cipher **dhe-aes-256-cbc-sha** (which is used with the commands **ip http client secure-ciphersuite** and **ip http secure-ciphersuite**) is no longer available in IOS 15.6(3)M and later as part of the weak cipher removal process. This cipher was flagged as a security vulnerability.

IR807

The IR807 link shows the following entries:

- ir800l-universalk9-mz.SPA.<version> .bin
- ir800l-universalk9_npe-mz.SPA.<version> .bin

IR809

The IR809 link shows the following entries:

- IOS Software
 - ir800-universalk9-bundle.<version> .bin
 - ir800-universalk9_npe-bundle.<version> .bin
- IOx Cartridges
 - Yocto 1.7.2 Base Rootfs (ir800_yocto-1.7.2.tar)
 - Python 2.7.3 Language Runtime (ir800_yocto-1.7.2_python-2.7.3.tar)
 - Azul Java 1.7 EJRE (ir800_yocto-1.7.2_zre1.7.0_65.7.6.0.7.tar)
 - Azul Java 1.8 Compact Profile 3 (ir800_yocto-1.7.2_zre1.8.0_65.8.10.0.1.tar)

IR829

The IR829 link shows the following entries:

Software on Chassis

- IOS Software
 - ir800-universalk9-bundle.<version> .bin
 - ir800-universalk9_npe-bundle.<version> .bin
- IOx Cartridges
 - Yocto 1.7.2 Base Rootfs (ir800_yocto-1.7.2.tar)
 - Python 2.7.3 Language Runtime (ir800_yocto-1.7.2_python-2.7.3.tar)
 - Azul Java 1.7 EJRE (ir800_yocto-1.7.2_zre1.7.0_65.7.6.0.7.tar)
 - Azul Java 1.8 Compact Profile 3 (ir800_yocto-1.7.2_zre1.8.0_65.8.10.0.1.tar)

AP803 Access Point Module

- Autonomous AP IOS Software
 - WIRELESS LAN (ap1g3-k9w7-tar.153-3.JH1.tar)
- Lightweight AP IOS Software
 - WIRELESS LAN (ap1g3-k9w8-tar.153-3.JH1.tar)
 - WIRELESS LAN LWAPP RECOVERY (ap1g3-rcvk9w8-tar.153-3.JH1.tar)

CGR1K Series

The latest image file for the CGR 1000 Series Cisco IOS image is available here:

<https://software.cisco.com/download/navigator.html?mdfid=284165761&flowid=75122>

For details on the CGR1000 installation, please see the following:

<http://www.cisco.com/c/en/us/td/docs/routers/connectedgrid/cgr1000/ios/release/notes/OL-31148-05.html#pgfid-9>

Warning about Installing the Image



Note

The bundle can be copied via Trivial File Transfer Protocol (TFTP), or Secure Copy Protocol (SCP) to the device, and then installed using the bundle install flash:<image name> command. The bin file can NOT be directly booted using the boot system flash:/image_name.



Caution

MANUAL [non-bundle] DOWNGRADE IS STRICTLY PROHIBITED.

Known Limitations

This release has the following limitations or deviations from expected behavior:

Space Limitation

The device requires a minimum 30MB additional space in the flash: file system before attempting an upgrade, or a downgrade between releases. Otherwise, the FPGA/BIOS will not have enough space to store files and perform the upgrade. In these current releases, the bundle installation will not display a warning, but future releases from September 2019 going forward will have a warning.

CSCvq88011 - IR809, IR829

Bundle install should internally handle “firmware downgrade enable” check

Symptoms: If you manually downgrade hypervisor and IOS only from releases (159-3.M+, 158-3.M3+, 156-3.M7+, 157-3.M5+) to the releases (158-3.M2a, 157-3.M4b, 156-3.M6b), the router will be stuck in a boot loop.

Workaround: If you use the recommended 'bundle install' to downgrade, the process will run correctly.

CSCvs86301 - IR8x9

CSCvs86301 - Different DHCP client-identifiers are sent during and after PnP Discovery.

After the 159-3.M1 release, the format of DHCP client-identifier for the IR8x9 device may vary during the PNP onboarding process.

Workaround - Users must re-configure / add the newer client-identifier format on their DHCP server if it was configured with DHCP reservations using the older DHCP client-identifier format.

Example:

Older Format: 004a.4146.3136.3033.414e.5450

Newer Format: 0063.6973.636f.2d30.3032.322e.6264.6535.2e66.6636.322d.4769.322f.32

Major Enhancements

The following are the Major Enhancements for the 15.9(3)M9 release.

Firmware Auto-Upgrade support for New Batteries - CGR1240 Platform

15.9(3)M9 will support automatic firmware upgrade for units containing Battery Backup Units. IOS will detect the running firmware version of the batteries and will determine if an upgrade is needed. If so, it will automatically initiate a firmware upgrade process to install the latest firmware that has been bundled with the IOS image. This process typically takes ~ 3-4 minutes. This is an automatic process and thus will need no user intervention.

Optimizations in SIM and modem powers - IR829

The enhancement has been brought in for intermittent SIM read failures reported on 1 LTE IR829 platforms providing a reliable way to use the SIM and all the cellular features. Due to issues in powering sequences of

modem and SIM, the SIM is not read intermittently, and code changes are brought to overcome this issue so that the end user need not do any manual interventions.

Related Documentation

The following documentation is available:

- [Cisco IOS 15.9M cross-platform release notes](#)
- [All of the Cisco IR800 Industrial Integrated Services Router documentation](#)
- [All of the Cisco CGR 1000 Series Connected Grid Routers documentation](#)
- [IoT Field Network Director](#)
- [Cisco IOx Documentation](#)
- [Cisco IOx Developer information](#)

Caveats

Caveats describe unexpected behavior in Cisco IOS releases. Caveats listed as open in a prior release are carried forward to the next release as either open or resolved.

For more information about the Cisco Bug Search Tool, see the [Bug Search Tool Help & FAQ](#).

Open Caveats

The following table lists open caveats for Cisco IOS Release 15.9(3)M9:

Item	Platform	Description
CSCwi87376	CGR1000	CGR1k router not entering BBU mode after turning off AC mains Symptoms: Only in CGRs with BMZ units, after automatic upgrade of the battery to latest firmware (6273). In certain units, battery may not discharge if AC Power has been removed. As a result of which device shuts down when AC power is lost. Root Cause: The discharge bit is locked up post-upgrade, thus causing the discharging to be disabled. Workaround: Issuing either of the following commands after upgrade: battery enable or battery charge-discharge enable.

Resolved Caveats

There are no resolved caveats for Cisco IOS Release 15.9(3)M9.

Communications, Services, and Additional Information

- To receive timely, relevant information from Cisco, sign up at [Cisco Profile Manager](#).
- To get the business impact you're looking for with the technologies that matter, visit [Cisco Services](#).
- To submit a service request, visit [Cisco Support](#).
- To discover and browse secure, validated enterprise-class apps, products, solutions, and services, visit [Cisco DevNet](#).
- To obtain general networking, training, and certification titles, visit [Cisco Press](#).
- To find warranty information for a specific product or product family, access [Cisco Warranty Finder](#).

Cisco Bug Search Tool

[Cisco Bug Search Tool](#) (BST) is a gateway to the Cisco bug-tracking system, which maintains a comprehensive list of defects and vulnerabilities in Cisco products and software. The BST provides you with detailed defect information about your products and software.

Documentation Feedback

To provide feedback about Cisco technical documentation, use the feedback form available in the right pane of every online document.

