



# Cisco IOS Release 15.6(3)M0a - Release Notes for the Cisco IR800 Industrial Integrated Services Routers

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The following release notes support Cisco IOS Releases 15.6(3)M0a and higher releases. These release notes are updated to describe new features, limitations, troubleshooting, recommended configurations, caveats, and how to obtain support and documentation.

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## Image Information and Supported Platforms



**Note**

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

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Cisco IOS Release 15.6(3)M0a includes the following Cisco IOS images:

- ir800-universalk9-bundle.SSA.156-3.M0a.bin
- ir800-universalk9\_npe-bundle.SPA.156-3.M0a.bin

This bundle contains the following components:

- Hypervisor: 2.55



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- Guest Operating System: Cisco-GOS,version-1.1.0.4
- IOS: final version 15.6(3)M0a

The latest image file for the IR809 and IR829 can be found at:

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



**Note**

The `ir800-universalk9-bundle.SPA.156-3.M0a.bin` bundle must be copied via Trivial File Transfer Protocol (TFTP) to the IR800, and then installed using the `bundle install flash:<image name>` command. The `ir800-universalk9-bundle.SPA.156-3.M0a.bin` file can NOT be directly booted using the `boot system flash:/image_name`. Detailed instructions are found in the Cisco IR829 and IR809 Integrated Services Router Hardware Installation Guides.



**Note**

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.

## Known Limitations

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

Caveat CSCvf76265 crosses over several different IOS software releases, and is a platform driver code issue. It is included here as a known limitation with the IR800 and CGR Industrial Routers.

On both the CGR1000 and IR800, the core dump fails to write into the local flash. The IOS is running as a virtual machine and then hypervisor is running underneath. The local flash is provided by the hypervisor as a virtual disk. When a crash occurs, this virtual disk is no longer available therefore copying to flash will fail. The workaround is to use an ftp server to copy the core dump to.

## Major Enhancements

This release includes the following enhancements to the IR800 series:

- Support has been added for the Sierra Wireless MC7430 series modems.

## Related Documentation

The following documentation is available:

- Cisco IOS 15.6(3)M cross-platform release notes:  
[http://www.cisco.com/c/en/us/td/docs/ios/15\\_6m\\_and\\_t/release/notes/15\\_6m\\_and\\_t.html](http://www.cisco.com/c/en/us/td/docs/ios/15_6m_and_t/release/notes/15_6m_and_t.html)
- All of the Cisco IR800 Industrial Integrated Services Router documentation can be found here:  
<http://www.cisco.com/c/en/us/support/routers/800-series-industrial-routers/tsd-products-support-series-home.html>

## Known Limitations

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

- The IR800 series is feature equivalent to the C8xx series, however, support for this initial release has not implemented or validated for all features.

For example:

C8xx supports the following features under Ge0:

```
c819(config)#int gigabitEthernet 0
c819(config-if)#ethernet ?
  cfm      Ethernet CFM interface commands
  dot1ad   dot1ad port
  lmi      Ethernet LMI interface commands
  loopback Ethernet Dataplane Loopback
  oam      Operations, Administration and Maintenance
  uni      Configure Ether UNI
  vlan     Configure Ethernet vlan
```

IR8xx supports the following:

```
IR800_2(config)#int gigabitEthernet 0
IR800_2(config-if)#ethernet ?
  cfm  Ethernet CFM interface commands
  lmi  Ethernet LMI interface commands
```

- Show led command has a lag from the actual LEDs at first, then it stabilizes.
- Changing the default Guest OS CPU allocation may affect the router performance. Detailed instructions are found in the Cisco IR829 Integrated Services Router Hardware Installation Guide and the Cisco IR809 Integrated Services Router Hardware Installation Guide.

All of the Cisco IR800 Industrial Integrated Services Router documentation can be found here:

<http://www.cisco.com/c/en/us/support/routers/800-series-industrial-routers/tsd-products-support-series-home.html>

## 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 closed (resolved).



### Note

You must have a Cisco.com account to log in and access the Cisco Bug Search Tool. If you do not have one, you can [register for an account](#).

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

## Cisco IOS Release 15.6(3)M0a

The following sections list caveats for Cisco IOS Release 15.6(3)M0a:

## Open Caveats

- **CSCva66036**

After upgrading the modem on a CGR1240, the modem needed to be power-cycled in order to bring it up.

**Workaround:**

None
- **CSCva32006**

When executing a series of show and configuration commands quickly on an ISR-G2, via an SSH session, an SSH Process Thrash message is generated.

**Workaround:**

When executing multiple commands, wait a few seconds between each command.
- **CSCuu49331**

LED status report for PoE is inconsistent across different commands.

**Workaround:**

None
- **CSCuy79750**

After completion of a bundle installation, the Guest OS might not function.

**Conditions:**

Perform a bundle installation with the Guest OS running. After the bundle installation is completed with Guest OS updated, the device needs to be reloaded.

**Workaround:**

It is recommended to shutdown the Guest OS before performing a bundle install. After the bundle installation is completed, the device needs to be reloaded.
- **CSCut75469**

IR829 is not getting GPS data after router bootup

**Conditions:**

After router bootup, sometimes the modem is up but does not get GPS data.

**Workaround:**

Power cycle the modem.
- **CSCuz40849**

Cisco IOS cannot decode certificate lifetime past the year 2099

**Conditions:**

The validity end-time for either CA certificate or certificates must be 2099 or earlier. Cisco IOS cannot decode dates past 2099. BER/DER decoding failure will be generated during authentication and enrollment phases.

**Workaround:**

None
- **CSCuz51085**

Registration on the CGR1K, IR800, and C819 will always fail after a flash format or folder deletion.

**Conditions:**

Once a device has been tunnel-provisioned (including those that have been registered to FND), any attempt to format its flash partition or delete the managed folder on the flash will cause any future registration (e.g. after a router reload, or a fresh ZTD operation) to fail.

**Sample Registration Failure:**

```
java.io.IOException: Failed to retrieve inventory from device. Reason: [invalid cli command] Sent
[[show iox host list detail | format flash:/managed/odm/cg-nms.odm, show iox application list |
format flash:/managed/odm/cg-nms.odm]]
```

**Workaround:**

Access the FND's Oracle database and delete the MD5 checksum of the updated odm file for these eid's from the database.

- **CSCuz66824**

The alarm contact configuration command syntax changed in 15.6(3)M.

**Conditions:**

In the 15.6(3)M or later releases, there is a slight change in the command syntax for the alarm contact configuration. If alarm contact is configured in IOS images prior to 15.6(3)M, and the device is upgraded to 15.6(3)M, the alarm contact will need to be reconfigured using the new command syntax. Otherwise, the alarm contact setting will be lost.

**Command Syntax Difference:**

Pre-15.6(3)M with hyphen between alarm and contact:

```
hostname(config)#alarm-contact ?
  <1-2> Alarm contact number
  all   Configure all alarm contacts
```

Post-15.6(3)M with no hyphen between alarm and contact:

```
hostname(config)#alarm contact ?
  <1-2> Alarm contact number
  all   Configure all alarm contacts
```

**Workaround:**

Reconfigure the alarm contact after upgrading to 15.6(3)M.

- **CSCuu49331**

LED status report is inconsistent across different commands

**Conditions:** PoE LED will go back and forth between yellow and green when there is a PoE device in deny power state. Typing `show platform led` or `show platform led summary` will sometimes show yellow, sometimes shows green.

**Workaround:** Remove the device that has been denied for power allocation

- **CSCuu60617**

Media-type rs485 is configurable under IR800 serial port 0 interface (async1), however the serial port 1 (async1) interface does not support media-type rs485.

**Conditions:** When you configure 'media-type rs485' under the async1 interface, the configuration is acceptable.

**Workaround:** None

- **CSCux43383**

On the IR829 with a 4GModem, the modem can enter into an unknown state after several modem resets.

**Conditions:** After 100+ modem resets and attach to BSS, the modem enters into a state where it no longer displays modem info on IOS (`show cellular 0 all`). It neither attaches to the BSS or sends IP traffic. Modem seems to respond to the AT commands.

**Workaround:** None

- **CSCuy83574**

Enabling GPS on the CGR1000 3G/4G cellular controller will lock up the console.

**Conditions:** The regular GPS settings for 3G or 4G cellular controller in the CGR1000 routers must not be used. Cellular modem-based GPS in CGR1000 routers is not supported.

**Workaround:** Only a CONFIG RESET button recovery may help to restore the CGR1000 back to working condition.

- **CSCuy91636**

CGR1000 GOS image version is not matching the version in the filename.

**Conditions:** The version in the CGR1000 GOS file name "`cgr1000-ref-gos.img.1.30.gz`" is 1.30, but after a bundle install and restarting the IOX VM, the GOS version being retrieved from "`sh platform guest-os`" is 1.29.

**Workaround:** None

- **CSCuy91651**

Inconsistent version numbering for the Ref-GOS image name in the IR800 bundle image.

**Conditions:** In the IR800 bundle image, the REF GOS image name is: `ir800-ref-gos.img.2.3.gz`.

Installing the GOS image will produce this version string:

```
Installation: Cisco-GOS,version-1.0.0.2
```

Guest OS status:

```
Installation: Cisco-GOS,version-1.0.0.2
```

The IR800 GOS image is properly versioned in the form: `ir800-ioxvm-1.0.0.x`

**Workaround:** None

- **CSCvb15200**

On an IR829 running dual modems, you cannot collect crash dumps on both modems simultaneously.

**Conditions:** Cannot collect crash dump on the second modem if crash dump already collected on the first modem.

**Workaround:** Reload the router and then collect crash dump on the second modem

- **CSCuz50496**

After a firmware upgrade, the router has to be reloaded.

**Workaround:** There is no workaround.

- **CSCvb55487**

IR8x9 router reboots after setting up energy wise and executing `show energywise` command.

**Conditions:** Energy wise has to be set on the router. If it is not `show energywise` command returns information that it is disabled.

```

configure terminal
energywise domain iss-lab security shared-secret 0 energywiseseecret
end
show energywise

```

After last command router reboots itself.

**Workaround:** None

- **CSCvf75957**

**Problem Description:**

Bundle install failure/timeout, IOx failure

**Symptoms:**

1. ping to VDS fails:  

```
router#ping 127.1.3.1
```
2. bundle install times out
3. iox applications are not accessible anymore

**Conditions:**

Typically, when the router is left idle for many weeks and months, there is a possibility to observe this when upgrading to the next software image.

**Root Cause:**

Root cause was that dual modem logs in VDS were not rotating and size increased in time. Due to lack of memory, bundle install attempts failed. Reload the router before reattempting bundle install and image upgrade.

Issue is seen in all software images supporting dual modem [15.6(3)M and beyond]

**Workaround:**

Reload IOS and system will recover.

- **CSCvd41974**

**Problem Description:**

On IR829 and IR809 platform, there is a Wpan2 interface shown by default in 15.6(3)M2 and beyond software images.

**Condition:**

The show run command will by default show an additional interface, regardless of whether LoRa modem is attached or not.

```

router#show run int wpan 2
Building configuration...
Current configuration : 78 bytes
!
interface Wpan2
 no ip address
 ieee154 txpower 25
 no ieee154 fec-off
end

```

**Workaround:**

None

## Closed Caveats

- **CSCvb29204**

Benign Certain on IOS and IOS-XE

See the full details of this PSIRT here:

<https://bst.cloudapps.cisco.com/bugsearch/bug/CSCvb29204>

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