



# Release Notes for Cisco IOx Release 1.10.0 and 2.0

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These release notes provide information for Cisco IOx Releases 1.10.0.

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## Documentation Links

- [DevNet](#)  
<https://developer.cisco.com/docs/iox/>
- [Cisco IOx Data Sheet](#)  
<https://www.cisco.com/c/en/us/products/collateral/cloud-systems-management/iox/datasheet-c78-736767.html>
- [Cisco Fog Director](#)  
<https://www.cisco.com/c/en/us/support/cloud-systems-management/fog-director/tsd-products-support-series-home.html>
- [Cisco IOx Local Manager Reference Guide](#)  
<https://www.cisco.com/c/en/us/support/cloud-systems-management/iox/products-technical-reference-list.html>

# Edge Computing with Cisco IOx

Learn how to develop, deploy, and manage applications at the network edge with Cisco IOx:

<https://learninglabs.cisco.com/tracks/Cisco-IOx>

## Overview

Cisco IOx provides uniform and consistent hosting capabilities for various types of apps across Cisco platforms. This platform brings together Cisco IOS, the industry-leading networking operating system, and Linux, the leading open source platform. Linux-based applications can run on Cisco devices in the Cisco IOx framework, so using this platform, you can bring custom applications and interfaces to the network.

With Cisco IOx, developers can create a wide variety of IoT apps, such as data aggregation system and control systems.

## New Features in this Release

This release provides new features, including the following:

- Cisco Fog Director
  - Amber app signed status icon—This new icon indicates that an app is signed but the signature verification with a developer certificate and the developer certificate verification with a Certificate Authority will occur during installation of the app on a device.
  - TCP port mapping—Configuration fields that display depend on the package.yaml file for an app, and can include fields for configuring a single port and a range of ports.
  - UDP port mapping—Configuration fields that display depend on the package.yaml file for an app, and can include fields for configuring a single port and a range of ports.
  - Mirroring—You can enable port mirroring for an app if supported by the app and device.
  - VLAN ID—You can configure a VLAN on which an internal network operates.
  - Dynamic addition/removal of network interfaces—You can add network interfaces during app install or edit workflow. The total number of interfaces can be a maximum of three unless the package.yaml file for the app asks for more than three interfaces, in which case you can configure as many as that file asks for. You can also remove the dynamically added network interfaces but not the interfaces asked by the package.yaml.
- Cisco Local Manager
  - Mirroring—You can enable port mirroring for an app if supported by the app and host system.
  - VLAN ID—You can configure a VLAN on which an internal network operate.

## Supported Platforms

Cisco IOx Release is supported on the following platforms:

- IR809 (supported for release 1.10.0)
- IR829 (supported for release 1.10.0)
- IR1101 (supported for release 1.10.0)
- ESR6300 (supported for release 1.10.0)

- IE3400/IE3400H (supported for release 1.10.0)
- ESS3300 (supported for release 1.10.0)
- CGR 1000 Compute Module (supported for release 1.10.0)
- IC3k (supported for release 2.0)

## Image Information

Download the Cisco IOx images from the following DevNet page:

<https://developer.cisco.com/docs/iox/#!iox-resource-downloads>

**Note:** IOx Fog Node images cannot be randomly loaded with any IOS images. Please do not make any changes without the guidance of a Cisco Technical Support representative.

Table 1 provides information about the available Cisco IOx images.

**Table 1** Cisco IOx Images

Image	Description
cisco_iox_fogdirector-1.10.0.ova	Cisco IOx Fog Director software.
ioxclient_1.10.1.0_darwin_386.zip	IOxClient, which is a command line tool provided as part of the Cisco IOx SDK and which is meant primarily to assist with app development for Cisco IOx platforms.  IOxClient is available for Linux 32/64 bit, MAC OS 32/64bit, and Microsoft Windows 32/64bit platforms.
ioxclient_1.10.1.0_darwin_amd64.zip	
ioxclient_1.10.1.0_linux_386.tar.gz	
ioxclient_1.10.1.0_linux_amd64.tar.gz	
ioxclient_1.10.1.0_windows_386.zip	
ioxclient_1.10.1.0_windows_amd64.zip	

Table 2 provides support information for Cisco Fog Director and CAF in the IOx releases.

**Table 2** Cisco Fog Director and CAF Support Matrix

	CAF 1.10	CAF 1.9	CAF 1.8	CAF 1.7	CAF 1.6	CAF 1.5
<b>Fog Director 1.10</b>	Yes	Yes	Yes	No	No	No
<b>Fog Director 1.9</b>	No	Yes	Yes	Yes	No	No
<b>Fog Director 1.8</b>	No	No	Yes	Yes	Yes	No
<b>Fog Director 1.7</b>	No	No	No	Yes	Yes	No

**Note:** App files that should persist when the app container reboots should be uploaded to the /data directory for that app. You can use Cisco Local Manager, Cisco Fog Director, or an SSH connection to upload the files.

## Limitations and Restrictions

- Upgrades of platform images must be performed from  $n-1$ ' to  $n$  release only ( $n$  = the latest release).
- If CAF crashes abruptly, CAF comes back up with limited functionality. If app management services are down you can download the tech support logs and verify the reason from the CAF logs or in syslog files. An example for app management going down is a CAF abrupt crash.

The workaround is to reboot the device. If the app management services are down after the device reboots, collect the tech support logs from the device before contacting the support team.

- App asking for multiple USB ports and devices is not supported. This restriction applies only to FD.
- USB device hot swap-out and swap-in are not supported. You must plug in the USB device before installation the application on the IOx device.

## Caveats

You can use the Bug Search Tool to find information about caveats, including a description of the problems and available workarounds. The Bug Search Tool lists both open and resolved caveats.

To use the Bug Search Tool:

1. Go to <https://tools.cisco.com/bugsearch/>.
2. Log in with your Cisco.com user ID and password.
3. Enter information in the Search For, Product, and Releases field as needed, then press **Enter**.

For more information about the Bug Search Tool, click **Help** on the main Bug Search Tool page.

## Open Caveat

**Table 3** Open Caveat in IOx Release 1.10.0

ID	Description
CSCvr62782	Smart Licensing feature is disabled on the IR829 device.

## Cisco Support

Use the following resources if you have any questions or require assistance with Cisco IOx:

- Go to DevNet Developer Support:  
<https://developer.cisco.com/site/devnet/support/>
- Go to Cisco Support:  
<https://www.cisco.com/c/en/us/support/index.html>
- Email Cisco Support at [tac@cisco.com](mailto:tac@cisco.com).
- Call Cisco Support at 1.408.526.7209 or 1.800.553.2447.

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