

Cisco Edge Device Manager

Cisco Edge Device Manager is a cloud-based service that empowers operations teams to securely connect and manage Cisco Industrial Routers at scale.

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1. Product overview

Cisco offers a portfolio of industrial edge routers which supports a broad range of industry verticals and use cases with the flexibility, security, and scalability needed to effectively manage the industrial edge. Edge Device Manager (EDM) is a cloud-based service that provides zero-touch deployment and remote management of Cisco industrial routers.

In addition to device management of industrial routers, Edge Device Manager also supports the deployment and lifecycle management of applications hosted on these industrial routers using the Cisco Application Hosting IOx framework.

2. Industrial Router Management with Edge Device Manager

Edge Device Manager provides basic, simplified, and secure management for industrial assets using Cisco IR1101, IR1800 series and IR800 series industrial routers.

Edge Device Manager is well suited to supporting connectivity and management of industrial and IoT assets in use cases such as:

- Industrial assets such as traffic signal controllers and signage at roadways and intersections
- Mass transit vehicles for example buses, first responder vehicles
- Renewable energy assets, such as solar panels and wind turbines
- Connected machines, enabling vendors and providers to deliver services to ensure machines are up and running on customer sites, and scheduling preventive maintenance
- Connected assets such as ATMs, kiosks, vending machines and electric vehicle charging stations.
- Extended office (field hotspot)

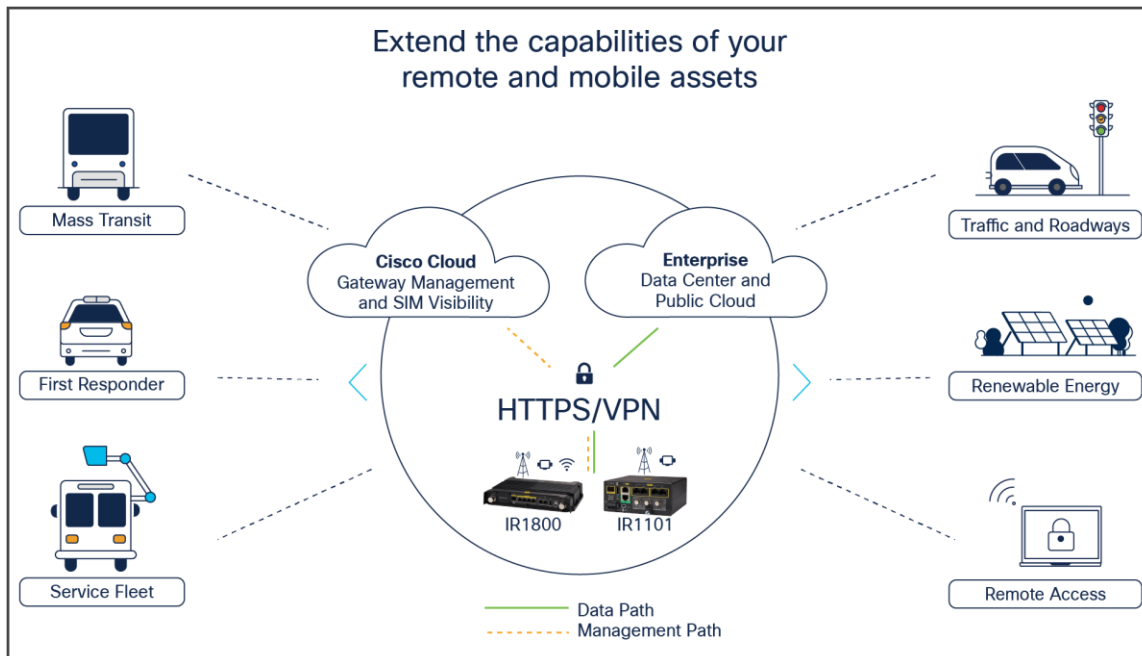


Figure 1.
Examples of IoT use cases supported by Cisco Edge Device Manager

Cisco Edge Device Manager is easy to use, scalable, and enables secure operations for both centralized and distributed operations support teams. It provides the capabilities listed in Table 1.

Table 1. Cisco Edge Device Manager capabilities for establishing connectivity.

Simplicity	Scalability	Security
<ul style="list-style-type: none"> • Real-time network device visibility, insights, and location tracking. • Intuitive map-based monitoring dashboard and troubleshooting. • Form-based Cisco validated configurations to enable network deployment for IoT use cases. Deployment scenarios supported include LTE uplinks, Wi-Fi offloading using workgroup bridge, VPN to data center, IP assignment and Wi-Fi authentication to subtended IoT devices, custom firewall rules, port forwarding rules, interface failover rules. • Integration with Cisco Meraki video MV cameras and dashboard for alerts on vehicle counting, people counting, and motion detection. • IoT-specific alerts to help in proactive and reactive remote troubleshooting of field IoT devices. • Ability to receive email or SMS-based notifications on specific groups of devices or alert categories. 	<ul style="list-style-type: none"> • Zero-touch deployment of IoT network devices using cellular or Ethernet connection. • Ability to schedule firmware upgrades over the air or via a wired connection for Cisco network devices. • Operations user centric form-based UI workflow to onboard network devices for mass field deployment. • Resilient edge network management from the cloud with capabilities to monitor and configure Cisco network devices when uplink cellular signal strength can become weak, due to mobile or remote deployment. • Role-based notification via email or SMS for security. Device firmware updates from Cisco and network device delete requests from operators. 	<ul style="list-style-type: none"> • Custom Role-Based Access Control (RBAC) for different user workflows, such as adding devices, troubleshooting, upgrading firmware, and working with configurations. • SAML 2.0-based single sign-on and RBAC authorization for user login using existing organization-wide identity service (eg Microsoft Active Directory). • Single-Sign-On (SSO) integration with Cisco Platform Suite • Audit trail of user-initiated actions across network devices and dashboard. • Encrypted user and device traffic to and from the cloud dashboard. • Virtual Private Network (VPN) and Private APN data transport capabilities, with data paths that are independent of the Cisco cloud. • Certificate-based authentication between network device and cloud dashboard. • Multi-tenancy to separate users and devices in different organizations.

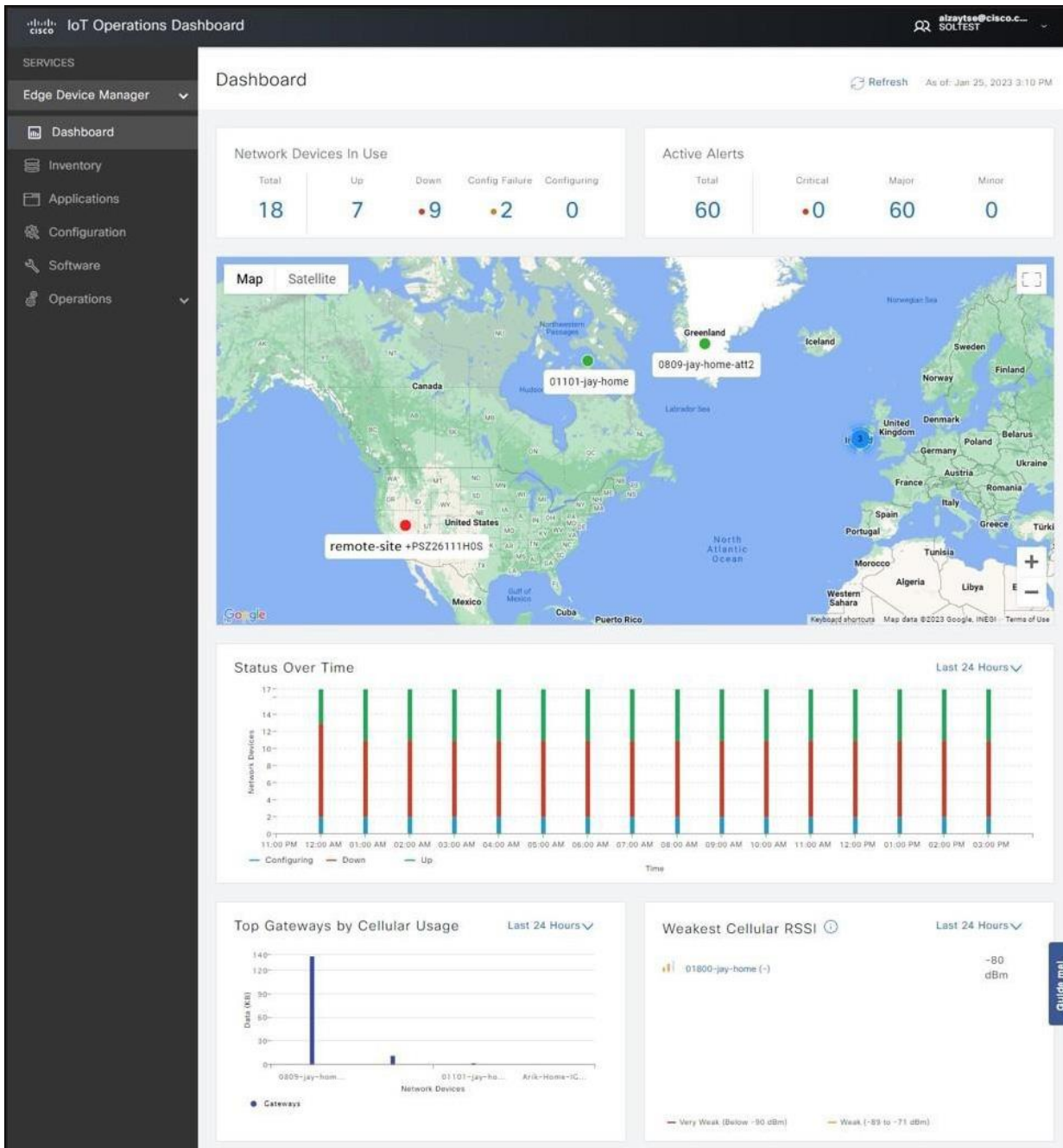


Figure 2. Cisco Edge Device Manager operator view of network devices and device status

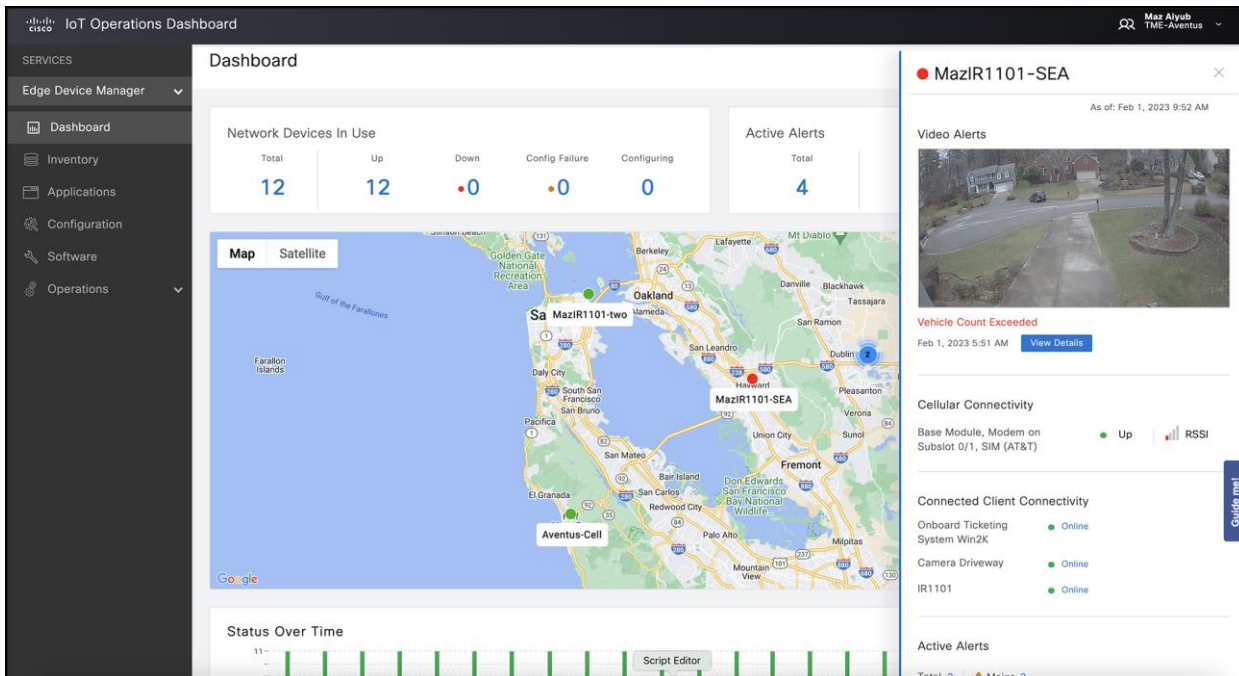


Figure 3. Cisco Edge Device Manager operator view of industrial equipment connected to a Cisco network device

3. Application Management with Edge Device Manager

IoT edge applications offer customers and ecosystem partners the ability to leverage IoT data and perform control functions within the distributed network infrastructure. With the support of IOx applications on Cisco Industrial Routers managed by Edge Device Manager the distributed IoT network functions provide an extended compute environment for edge applications.

Cisco IOx brings together Cisco IOS software, the industry-leading networking operating system, and Linux, the leading open-source platform. With Cisco IOx, developers benefit from familiar processes and open-source tools available with Linux and being able to generate applications that execute on Cisco IoT network infrastructure.

Customers can create IOx applications and host them on industrial network devices to leverage the value of data that is available from equipment connected at the edge. These applications can help customers optimize their own business processes, or provide value added services to their own customers. For example, an application might provide a dashboard indicating hours of usage and downtime for connected equipment. Application Management enables users to manage the life cycle of IOx applications installed on Cisco industrial network devices managed by Edge Device Manager.

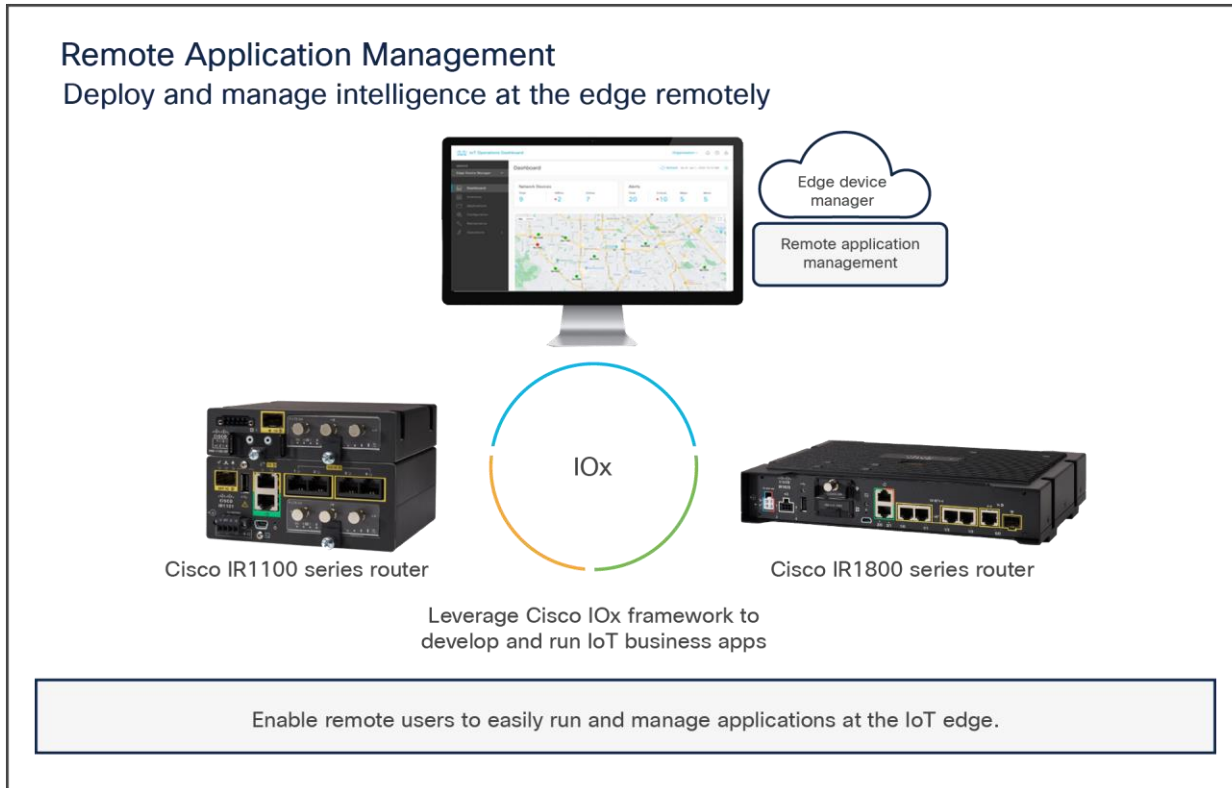


Figure 4.
Application Management

OT and IT users can use Edge Device Manager to manage the entire lifecycle of the applications with ease. For example, it enables users to install apps onto edge devices, and then update, uninstall, monitor and troubleshoot them.

Applications life cycle management on Edge Device Manager includes the following options for access:

- A. Directly in EDM user interface
- B. Via APIs

All management options are available for

1. 3d party (customer made) loX applications.

Cisco Application Management is a premium feature and requires an EDM Advantage license. The feature is available on Cisco Catalyst industrial routers only – IR1101, IR1800, IR800.

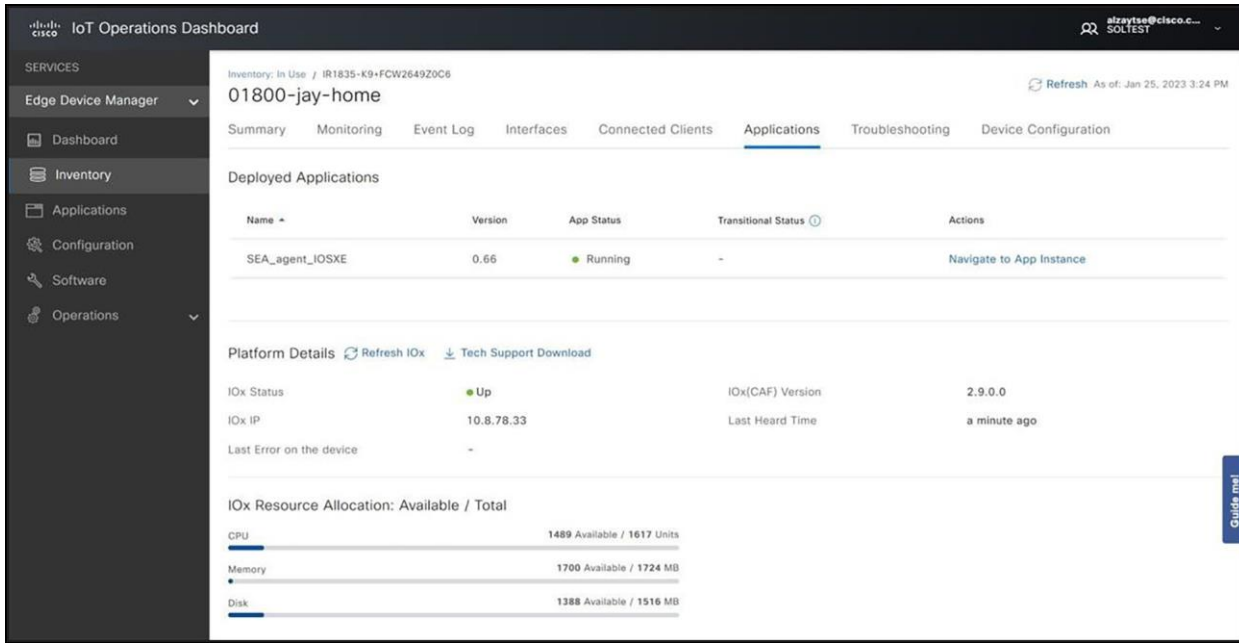


Figure 5. Applications running on the device and system information.

4. Supported firmware versions.

Table 2 lists the Cisco IOS and Cisco IOS XE firmware versions supported with Edge Device Manager and the various supported hardware device platforms.

Table 2. Required firmware versions.

Hardware	Description	Edge Device Manager subscriptions	Minimal firmware version(Cisco IOS version)	Recommended firmware version (Cisco IOS version)
IR807, IR809, and IR829 Single LTE	Cisco IR800 Industrial Routers	For Industrial Routers (IR): IOTOD-IR-E	15.8(3)M2a	15.9(3)M8
IR829 AP	Cisco IR829 Access Point	IOTOD-IR-E-3Y	15.3(3)JK	15.3(3)JK9
IR829 Dual LTE	Cisco IR829 Industrial Router - Dual LTE	IOTOD-IR-E-5Y IOTOD-IR-E-7Y	15.9(3)M2a	15.9(3)M8
IR1101	Cisco Catalyst IR1100 Rugged Series Router	IOTOD-IR-A IOTOD-IR-A-3Y	17.04.01	17.12.1a, 17.9.3
IR1800	Cisco Catalyst IR1800 Rugged Series Router	IOTOD-IR-A-5Y IOTOD-IR-A-7Y	17.08.01	17.12.1a, 17.9.3

5. Purchasing

A Cisco Edge Device Manager subscription is required for Cisco IR-series device management. The Edge Device Manager licensing structure consists of two tiers:

- An Essentials subscription offers a core feature set.
- An Advantage subscription offers an advanced feature set, including all Essentials subscription features.

The licenses are available as a subscription based on the number of network devices under management. Subscription pricing is offered for standard 3-, 5-, or 7-year periods, or any number of months in between (ie 36 to 84 months). Billing can be monthly, quarterly, annually, or prepaid. We recommend that customers order Edge Device Manager as part of their device hardware order with an IR1101 or IR18xx, as this can greatly simplify subsequent device onboarding to EDM. The subscriptions needed to manage Cisco network devices are listed in Table 3. The product IDs are listed in Table 3.

Table 3. Bundle product IDs for Cisco Edge Device Manager with Cisco network device(s) for vital deployment and monitoring capabilities

Hardware product ID	Edge Device Manager subscription product ID
Order with Cisco Industrial Router (IR) devices	
IR1101-K9	1. Essentials: IOTOD-IR-E-3Y/5Y/7Y
IR1101-A-K9	2. Advantage: IOTOD-IR-A-3Y/5Y/7Y
IR1821-K9	1. Essentials: IOTOD-IR-E-3Y/5Y/7Y
IR1831-K9	2. Advantage: IOTOD-IR-A-3Y/5Y/7Y
IR1833-K9	
IR1835-K9	

Table 4. Summary of EDM Essentials and Advantage licenses

	System capabilities	Industrial Routers	
Advanced Services	Subscriptions and services for Edge Device Manager (EDM)	IoT OD Essentials	IoT OD Advantage
	3 rd Party IOx Application Management	x	✓
Basic Services	System Capabilities (SSO, Multi-tenancy, RBAC, Alerts/Events)	✓	✓
	Deploy Network Devices (IR1101, IR1800, IR8xx)	✓	✓
	Advanced configuration templates (CLI and Form-based)	✓	✓
	Monitor Network Devices (cellular, GPS, status, location)	✓	✓
	Connected Clients Monitoring	✓	✓

	System capabilities	Industrial Routers	
	Cisco Platform Suite integration	✓	✓
	Dashboard API Access	✓	✓

To purchase an EDM subscription separately from hardware please use product ID (PID) IOTOD-CLOUD. This can be used for existing routers or gateways, separately purchased devices, or for license renewals.

We recommend ordering Edge Device Manager as part of the hardware purchase, as this initiates the automatic creation of the Plug-and-Play (PnP) profile and association of the device serial number to the PnP profile. The PnP profile helps to onboard the supported device to the EDM from anywhere.

With simple integration between a customer-managed Smart Account (with Virtual Accounts) and the associated EDM Organization new devices can be automatically populated to the Edge Device Manager Organization.

Note: As of Oct 2023, Cisco Secure Equipment Access (SEA) is no longer part of EDM Advantage licenses (IOTOD-IR-A). Existing EDM customers with EDM Advantage licenses, can continue to use SEA, until the license term expires

6. Support

The Edge Device Manager subscription includes cloud software support from our award-winning Cisco Technical Assistance Center (TAC), 24 hours a day, 7 days a week. It also grants the customer access to Cisco.com with helpful technical and general information on Cisco products as well as access to Cisco's online Software Center library. Additional SMARTnet support can be purchased for the Cisco network device hardware alongside a Cisco EDM subscription.

More details on the Software Support Basic service offer can be found at:

https://www.cisco.com/c/dam/en_us/about/doing_business/docs/cisco-software-support-service.pdf.

For the duration of the subscription, all cloud software updates will be managed by Cisco. More details on our cloud operations terms can be found here:

https://www.cisco.com/c/dam/en_us/about/doing_business/legal/OfferDescriptions/iot-operations-dashboard.pdf.

Additional solution support can be purchased with Cisco Edge Device Manager. More details can be found here: https://www.cisco.com/c/m/en_us/customer-experience/support/solution-support.html.

Cisco Edge Device Manager product documentation can be found at: <https://developer.cisco.com/docs/iotod/>.

7. Cisco Capital

Flexible payment solutions to help you achieve your objectives.

Cisco Capital makes it easier to get the right technology to achieve your objectives, enable business transformation and help you stay competitive. We can help you reduce the total cost of ownership, conserve capital, and accelerate growth. In more than 100 countries, our flexible payment solutions can help you acquire hardware, software, services and complementary third-party equipment in easy, predictable payments. [Learn more](#).

8. Document history

New or Revised topic	Described in	Date
Application Management content change: benefits, added IOx value proposition, for IRs only, updated Remote Application Management with IoT OD image	Application Management Section	February, 2023
Secure Equipment Access content change: new SEA Plus capability.	SEA Section	February, 2023
Industrial Wireless Service content change: name change, added benefits, suite of tools description	Industrial Wireless Service Section	February, 2023
Replaced IoT OD images with the latest UI update	Full document	February, 2023
Removed information about Industrial Gateways	Full document	February, 2023
Removed information about Secure Equipment Access (SEA)	Full document	September, 2023

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