Cisco IoT Operations Dashboard

Accelerate industrial digitization with tools for Operations and IT

Contents

Overview

Cisco® IoT Operations Dashboard is a cloud-based dashboard that empowers both operations teams and IT support staff to securely deploy, monitor, and gain insights from networking devices and industrial assets at massive scale. With one comprehensive view of all their connected industrial assets, operations teams can uncover valuable insights that help them streamline operations and provide continuity.

Figure 1.
Cisco IoT Operations Dashboard services

Cisco IoT Operations Dashboard services

The dashboard enables four key services: (1) deployment and monitoring of industrial networking devices, (2) Secure access to equipment deployed in remote locations, (3) monitoring of assets and facilities using Cisco industrial sensors, and (4) enabling edge to multi-cloud data orchestration. See the descriptions below.

1. **Deploy and manage industrial networking devices**

Cisco IoT Operations Dashboard enables connectivity for industrial assets using Cisco industrial networking devices, including the Cisco IR1101, IR1800, IR829, IR809, and IR807 industrial routers, and wireless gateways for LoRaWAN with Industrial Asset Vision. Cisco offers a portfolio of industrial edge routers and gateways supporting any use case with the flexibility, security, and scalability needed to unite your edge. With Zero-Touch Provisioning (ZTP) and resilient remote management of Cisco devices, the cloud-based IoT Operations Dashboard enables faster setup of IoT networks.

Cisco IoT Operations Dashboard is well suited to deploying IoT assets in scenarios such as:

- Remote and mobile asset connectivity and tracking
- Industrial asset monitoring and troubleshooting
- Extended office (field hotspot)

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

Table 1. Cisco IoT Operations Dashboard essential capabilities for establishing connectivity

Simplicity	Scalability	Security
• Real-time network device visibility, insights, and location tracking • Intuitive map-based monitoring dashboard and troubleshooting • UI based Cisco validated configurations to enable network deployment for IoT use cases. Deployment scenarios supported include dual LTE, cellular offloading using workgroup bridge, VPN to datacenter, IP assignment and WiFi 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	• Zero Touch Provisioning (ZTP) 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. • Cisco Control Center integration for cellular SIM connectivity information • Role-based notification via email or SMS for security and device firmware updates from Cisco and network device delete requests from operators	• 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 • Audit trail of user-initiated actions across network devices and dashboard • Encrypted user and device traffic to and from the cloud dashboard • Certificate-based authentication between network device and cloud dashboard • Multitenancy to separate users and devices in different suborganizations

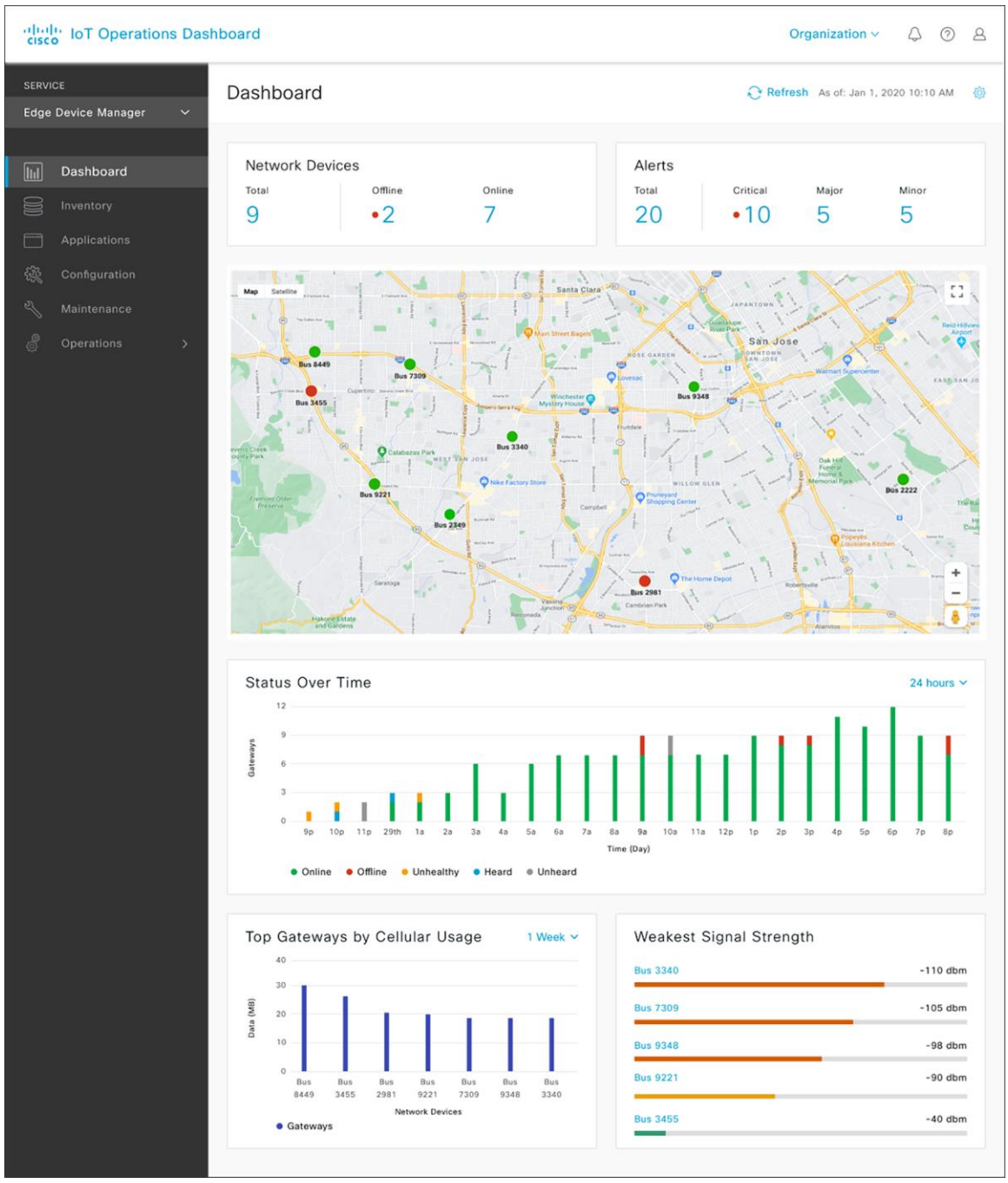

Figure 2.
Illustrates Cisco IoT Operations Dashboard operator view of network devices and device status across location and time.

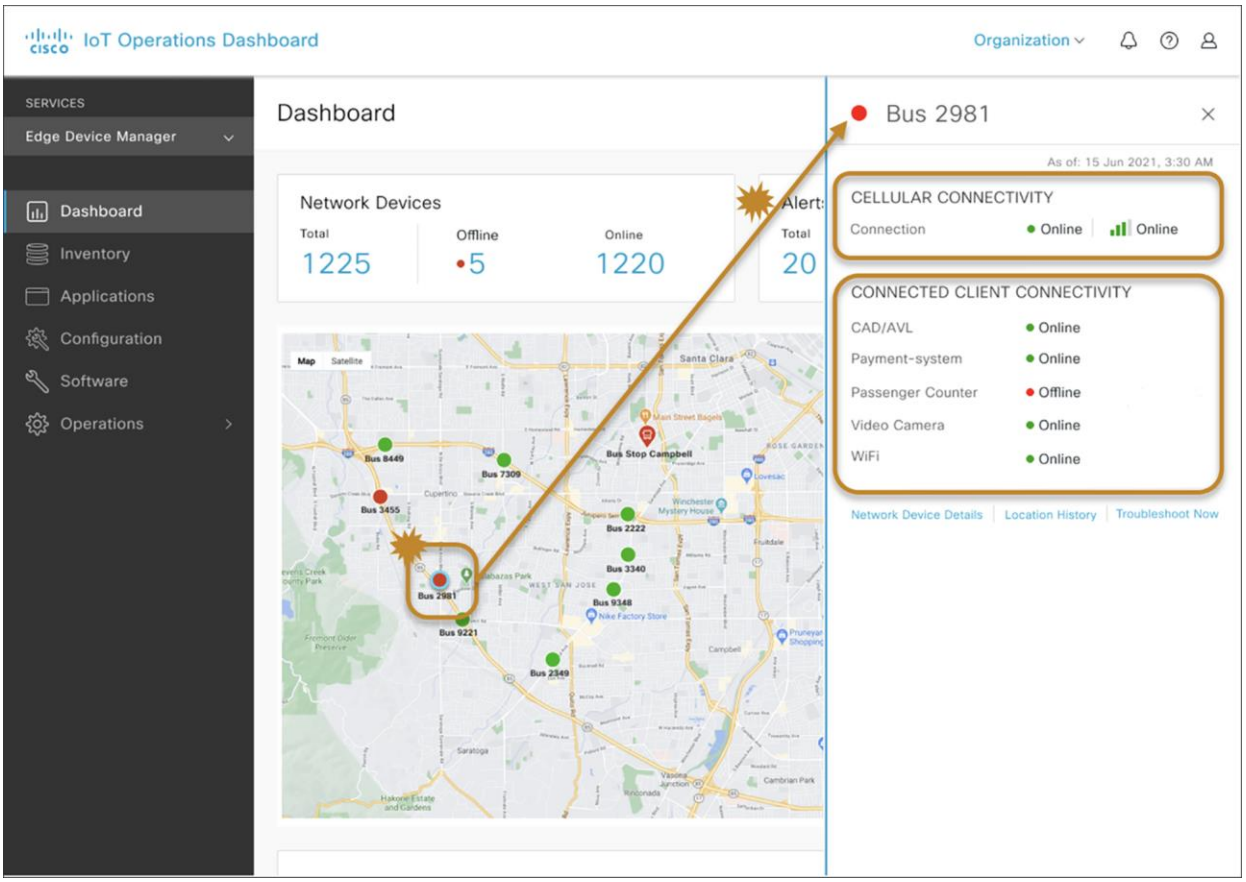

Figure 3.
Illustrates a Cisco IoT Operations Dashboard operator view of connected clients and devices behind a Cisco network device.

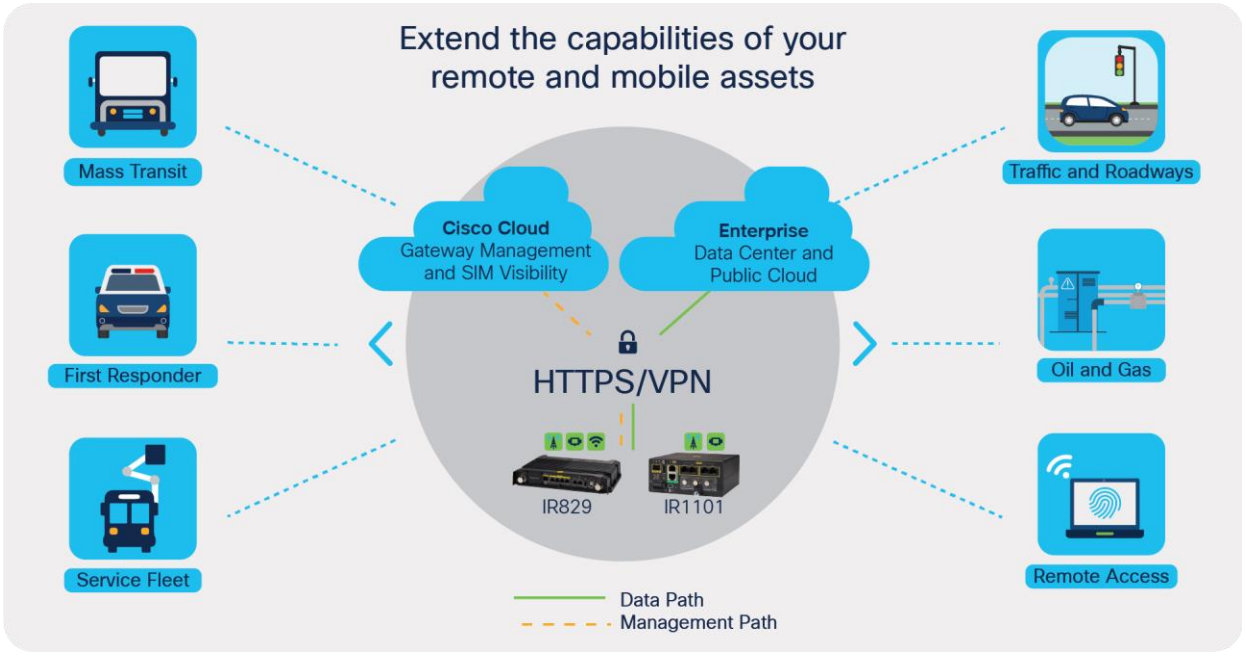

Figure 4.
Cisco IoT Operations Dashboard traffic flow for IoT deployments

Licensing

The Cisco IoT Operations Dashboard license needed for Cisco IR1800, IR1101 and IR829 network device deployment and monitoring is sold as a subscription based on the number of network devices under management. Subscription pricing is offered for 1, 3, or 5 year periods. Billing can be monthly, annually, or prepaid. Customers can order the Cisco IoT Operations Dashboard as part of a hardware bundle with IR1800, IR1101 or IR829 routers to get the essential capabilities listed in Table 1 needed to deploy and monitor Cisco network devices. The product IDs are listed in Table 2.

Table 2. Bundle product IDs for Cisco IoT Operations Dashboard with Cisco network device(s) for essential deployment and monitoring capabilities

Product ID	Product description
IR1800-IOTOC	IR1800 with Cisco IoT Operations Dashboard
IR1101-IOTOC	IR1101 with Cisco IoT Operations Dashboard
IR829-IOTOC*	IR829 with Cisco IoT Operations Dashboard

To ensure you are selecting the right hardware with wireless radio for your region we have regional bundles for IR829. For US specific hardware use PID IR829-IOTOC-US, for Europe use PID IR829-IOTOC-EU and for Australia use PID IR829-IOTOC-AUS. For regions not covered in these regional PIDs you can use IR829-IOTOC and select the right hardware.

If there is a need to purchase IoT Operations Dashboard license separately without the hardware bundle for existing gateways, customers can purchase using the product ID IOTOC-CLOUD.

Table 3. List of firmware versions required on Cisco hardware device when using IoT Operations Dashboard.

Cisco Industrial network device	Minimum firmware version (Cisco IOS)	Recommended firmware version (Cisco IOS)
IR807, IR809, and IR829 Single LTE	15.8(3)M2a	15.9(3)M3
IR829 Dual LTE	15.9(3)M3	15.9(3)M3
IR1101	17.01.01 **(Note: 17.02.01 is not supported)**	17.05.01
IR 1800*	17.05.01	17.05.01

*Firmware upgrades using Cisco IoT Operations Dashboard is currently not supported with IR1800.

2. **Cisco Secure Equipment Access:** Simplified access for operations teams to remote equipment via the cloud.

Cisco Secure Equipment Access provides operations teams the ability to access equipment such as traffic signal controllers, in-vehicle dispatch systems, cameras and other systems deployed in the field and connected using Cisco Industrial Routers. The user can access the equipment simply using a browser without needing to install any additional software on their laptop. The remote equipment can be accessed using either GUI or CLI based methods. Currently supported protocols to the equipment are HTTP/S, SSH, RDP for Windows based systems, and VNC. Secure Equipment Access has granular access controls that makes it suitable for limiting access only to certain devices for in-house operations teams as well as external 3rd party technicians.

Table 4. Summary of Cisco Secure Equipment Access software service capabilities

Simplicity	Scalability	Security
Browser based access to equipment for all supported protocols: HTTP/S, SSH, RDP, VNC. No additional software is required on the user laptop to access equipment. Secure equipment access can be enabled as part of Cisco Industrial Routers IR1101, IR829, IR809 managed by IoT Operations Dashboard. No additional hardware in the field is required to enable secure equipment access.	Specific users within in-house operations teams and external 3rd parties can be assigned access to a group of equipment. Up to 4 simultaneous user sessions per router are permitted. Support up to 1Mbps throughput for equipment access to or from the cloud. Up to 500 MB equipment access traffic to or from the cloud per month per router.	Separate roles for System administrator to setup equipment access configurations, Operator administrator to define users who can access equipment, Operator users who can access the equipment. SAML 2.0-based single sign-on authentication to access equipment can be enabled using existing organization-wide identity service. For third party access outside of organization, email and password based authentication can be enabled. User activity logs on equipment access start time and end time are available to administrators.

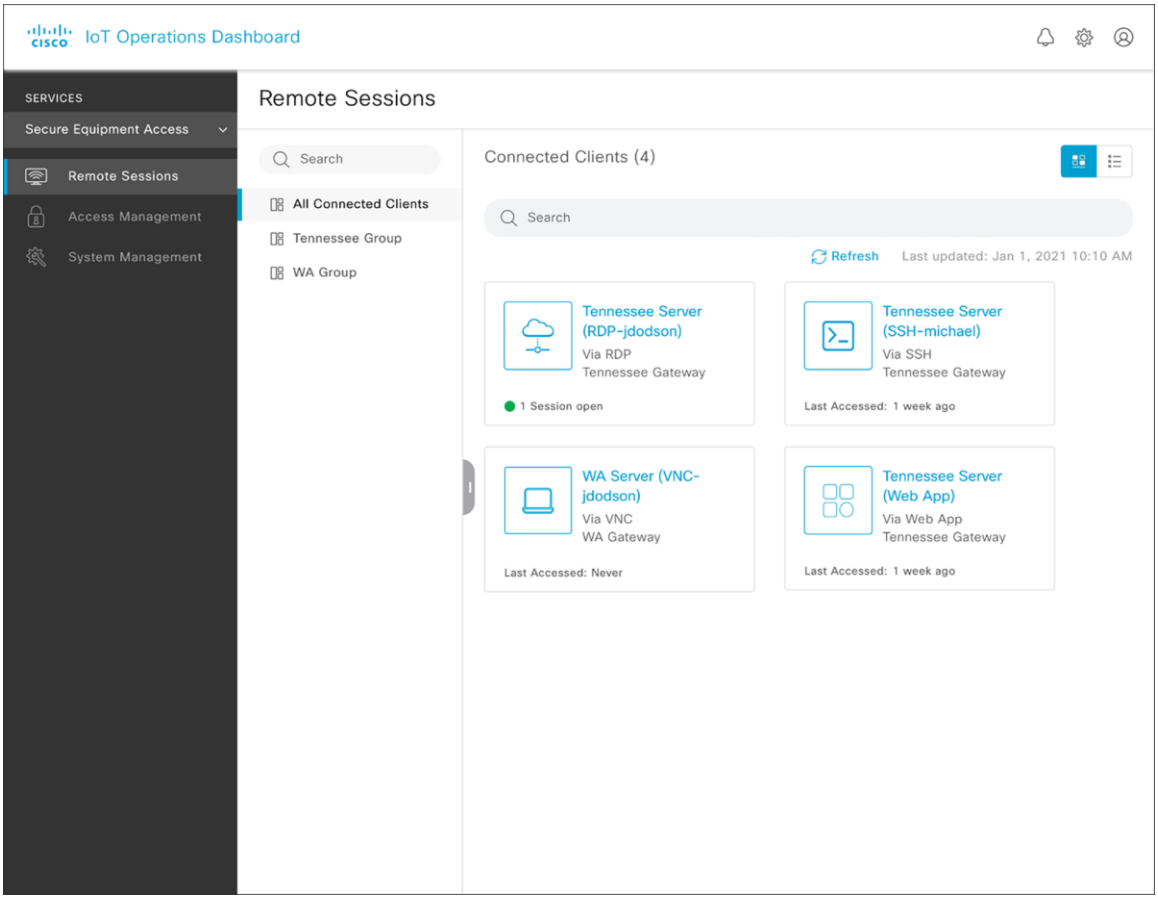

Figure 5.
Operator view showing list of remote sessions to equipment allowed to be launched.

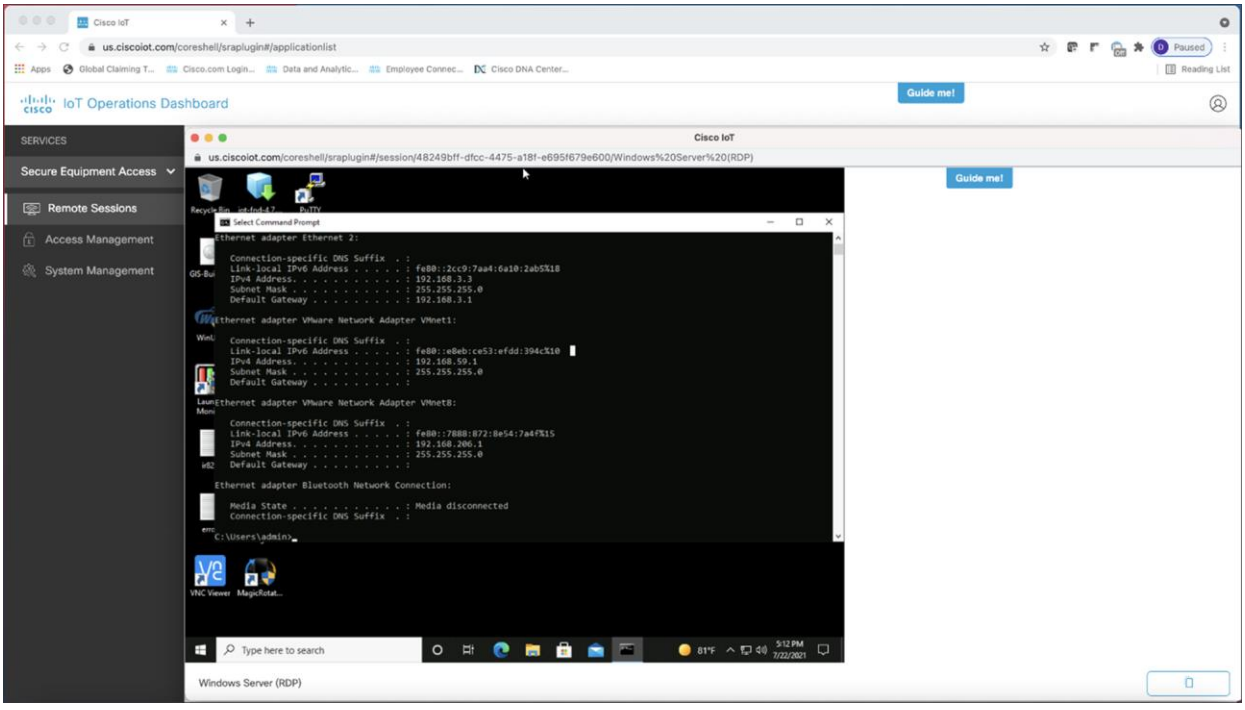

Figure 6.
A remote RDP session to an equipment is launched on the browser by an operator.

Licensing

The new Secure Equipment Access and IOx Application Management capabilities are premium features which are subject to a future incremental subscription. Until December 2021 we are offering a free trail promotion for these features, included with the purchase of standard IoT Operations Dashboard subscriptions. This provides free access to these features until December 31, 2022, subject to Section 2.3 of the EULA. Please read and understand this section of the EULA before using this feature.

3. **Cisco Edge Intelligence:** Edge to multi-cloud data orchestration

Cisco Edge Intelligence is an edge to multi-cloud orchestrator that simplifies obtaining data from IoT assets and bringing specific data to IoT applications on-premises or in the cloud. Optionally Edge Intelligence can be enabled on IoT Operations Dashboard. Once Edge Intelligence is enabled within the IoT Operations Dashboard, operations teams and IT support staff can have a single view of IoT data and network connectivity. More product and ordering information on Cisco Edge Intelligence can be found here: https://www.cisco.com/c/en/us/solutions/internet-of-things/edge-intelligence.html.

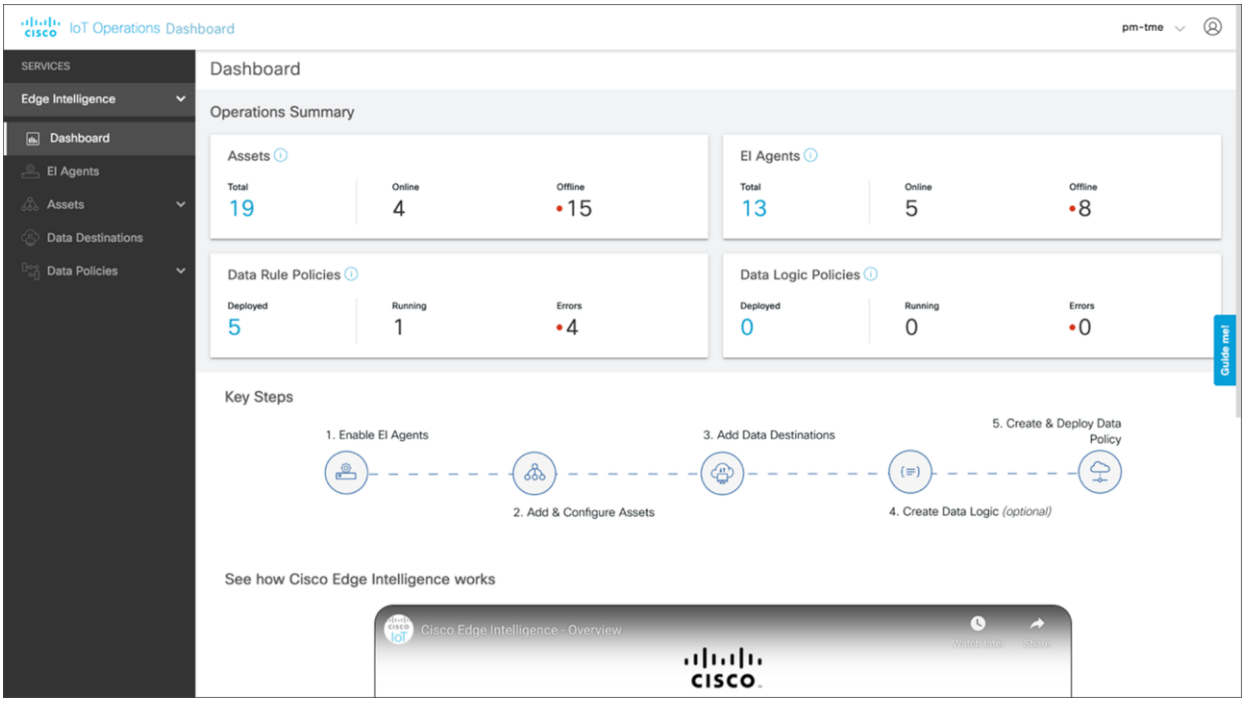

Figure 7.
Cisco Edge Intelligence summary view within IoT Operations Dashboard

4. **Cisco Industrial Asset Vision:** A full solution to monitor assets and facilities using Cisco ruggedized sensors

Cisco Industrial Asset Vision uses Cisco industrial sensors to provide simple and powerful visibility into your business-critical environments to keep your assets up and running efficiently – even in the harshest environments. Once Industrial Asset Vision is enabled within the IoT Operations Dashboard, operations teams and IT support staff can have a single view across Cisco industrial sensors and network connectivity. More product and licensing information on Cisco Industrial Asset Vision can be found here: https://www.cisco.com/c/en/us/products/collateral/cloud-systems-management/industrial-asset-vision/datasheet-c78-744368.html.

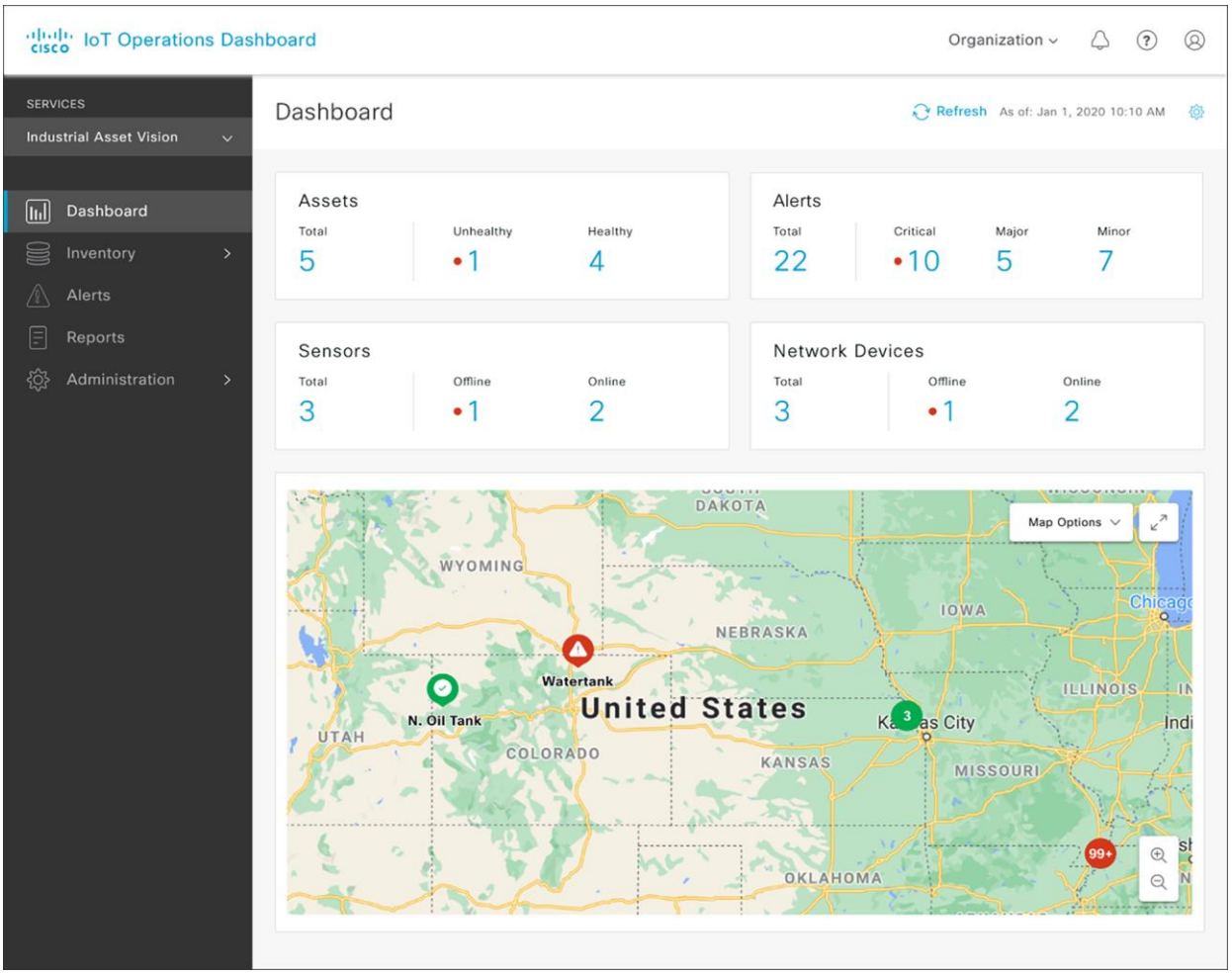

Figure 8.
Cisco Industrial Asset Vision summary view within IoT Operations Dashboard

Support

Cisco IoT Operations Dashboard 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 within Cisco IoT Operations Dashboard subscription bundle.

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-operation-center.pdf.

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

Cisco IoT Operations Dashboard product documentation can be found here https://developer.cisco.com/docs/iotod/

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Document history

Table 5. Document history

New or Revised Topic	Described In	Date
Initial version of Cisco IoT Operations Datasheet	Datasheet	March 25,2021
AC5 release based Datasheet update	Datasheet	Aug 17,2021

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at **https://www.cisco.com/go/offices**.

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