The Internet of Things (IoT) is rapidly transforming traditional business models and operational processes to boost innovation and growth. Organizations in all industries are looking to leverage data originating at the edge combined with machine learning, analytics and artificial intelligences to help improve operations, become more agile, and to capture next-generation business opportunities. As a tidal wave of IoT use cases reaches your organization, your Information Technology (IT) and Operational Technology (OT) departments may struggle to keep up and will require an infrastructure foundation that spans across all IoT use cases. VMware can help organizations achieve IoT infrastructure excellence and deliver successful business outcomes by helping to simplify IoT complexity, secure edge infrastructure and IoT devices at scale, and accelerate innovation with a digital edge to cloud foundation.

What is Pulse IoT Center?

**VMware Pulse™ IoT Center™** is a secure, enterprise-grade, edge infrastructure and IoT device lifecycle management solution that provides complete visibility and control over all IoT use cases. It helps companies to onboard, configure, monitor, manage and secure IoT devices and infrastructure. Pulse IoT Center helps to operationalize IoT use cases quickly with device on-boarding and automated metrics collection and reduces complexity by managing all your edge and IoT systems in one place. Pulse IoT Center is available as Software-as-a-Service (SaaS) and on-premise.

VMware Pulse IoT Center

A secure, enterprise grade, edge infrastructure and IoT device management solution that creates a digital foundation for supporting any IoT use case.

**AT A GLANCE**

VMware Pulse IoT Center is a secure, enterprise-grade, end-to-end edge infrastructure and IoT device lifecycle management solution that creates a digital foundation for deploying any IoT use case.

**KEY BENEFITS**

- **Manage Broader**: Streamline management at scale with a consistent management and monitoring framework for heterogeneous IoT devices and applications that scales to millions of devices.
- **Scale Faster**: Simplify getting started and scaling IoT with standardized device registration, connectivity and bulk onboarding, and automate metrics collection to streamline operations.
- **Protect Better**: Extend IT security standards to the edge and IoT infrastructure with granular visibility and control for all connected devices, applications and networking.
- **Operate Smarter**: Operationalize IoT into your daily business by streamlining data collection and orchestration across any device, any application and any cloud.

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**Figure 1: Device Lifecycle Management enabled by VMware Pulse IoT Center**

![Figure 1: Device Lifecycle Management enabled by VMware Pulse IoT Center](image-url)
**Key Features**

- **Edge device lifecycle management**: Monitor and manage heterogeneous gateways, connected devices and things with different hardware, operating systems, and communication protocols.

- **Single console**: Eliminate management silos with one console and lens across IoT infrastructure at scale for both IT and OT users – scales to manage millions of devices.

- **Device health monitoring**: Detect anomalies by monitoring configurable device metric thresholds and initiate remediation actions with rule-based alerts and API based integrations with 3rd party tools.

- **Over-the Air (OTA) updates**: Rapidly configure and deploy software updates with wizard based set up and granular control over OTA update approvals, scheduling, activation, and installation progress.

- **Secure remote troubleshooting**: Issue commands and actions to gateways. Syslog upload to Pulse IoT Center.

- **Secure device enrollment**: Register and connect devices with unique device token IDs or certificates. Effortless enrollment with easy on-boarding and device templates reduce the time and complexity for getting started with IoT.

- **Bridge the IT – OT gap**: Support OT operations with robust monitoring and alerting across all IoT devices and support IT requirements for security and control with a single management platform.

- **SaaS and On-premises support**: Offered as SaaS or as an on-premises solution for deployment flexibility and security; choose the deployment appropriate for your needs and use cases.

- **Data orchestration**: Collect and orchestrate data from edge and IoT devices, move data to any application and any cloud, and change data flows as business changes.

- **Enterprise integrations**: Integrate with 3rd party systems and tools with RESTful APIs for all Pulse IoT Center functionalities, C based agent SDK, and Python based Liota SDK to enable custom integrations of agent functionality.

- **Built in security**: Enable Role-based user access and SaaS multi-tenancy instances with isolation. Pulse IoT Center agent runs with least privilege execution, and all communications/connections are secured.
Key Components

Pulse IoT Center (Figure 2) is composed of two primary components:

- **Management software and console** – includes the following set of services:
  - Admin Console with metrics dashboard
  - OTA campaigns – software and device lifecycle management c/w scheduling, approvals, activation, installation progress, rapidly configure and deploy updates with wizard based set up
  - APIs covering all Pulse IoT Center functionality for enterprise integrations and extensibility with 3rd party monitoring, alerting, and support tools
  - Infrastructure and device monitoring module
    - Collecting, searching and managing device telemetry data
    - Setting symptom configuration, alerts and notifications, and issuing command to devices
  - Managing role – based access
  - Audit logging and trouble shooting

- **Pulse Agent (client-side)** that is deployed to IoT gateways and compatible edge devices – includes the following features:
  - An agent that delivers data from devices to the server
  - Receives packages, such as configuration changes and firmware software updates from Pulse IoT Center
  - An open-source SDK that can be customized to interface with and ingest telemetry from any edge systems or connected device