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Oracle Cloud Infrastructure IoT Connector

Product preview, not generally available



Secure. Resilient. Enterprise-ready IoT edge for OCI and customer environments

Oracle Cloud Infrastructure IoT Connector (OCI IoT Connector)[1] is intended to become Oracle's purpose-built, fully managed, Internet of Things (IoT) appliance for securely connecting physical devices, processing data locally, and extending cloud management closer to operations. It gives OCI customers, Oracle partners, and Oracle products a common edge foundation for connecting sensors, gateways, cameras, and equipment while preserving enterprise security, operational resilience, and centralized lifecycle management.

Supporting modern edge deployments

Many edge environments often operate with intermittent cloud connectivity and require enterprise-grade hardware and software. OCI IoT Connector is intended to help connect devices and edge systems to OCI, supporting secure device communication and integration with Oracle, partner, and customer-built architectures. Resilient local operation and remote lifecycle management are delivered through the broader edge solution.

The IoT appliance is intended to be especially well suited for scenarios where data originates in the physical world and must be addressed quickly. Examples include local alerting, protocol conversion, temporary WAN isolation, policy-driven routing, and in-field execution of containerized or specialized edge services.

OCI IoT Connector at a glance, as planned

- Secure by design with hardware root of trust, secure boot, device identity, and policy enforcement.
- Cloud connected and managed with OCI-native services for enrollment, monitoring, configuration, and updates.
- Edge resilient with local processing and data buffering to continue operating during network disruption.
- Flexible and extensible for OCI customers, Oracle partners, and Oracle products across multiple industries.
- Design is expected to support enterprise use cases, such as device connectivity, environmental sensing, AI inference, and remote observation.

Managed as a cloud native edge fleet

OCI IoT Connector is anticipated to manage centrally rather than treated as an isolated appliance. OCI-native fleet management services provide a common operating model for device enrollment, configuration, device health monitoring, policy application, and software or firmware updates at scale. This reduces the operational burden of deploying edge assets across clinics, buildings, industrial sites, retail locations, or partner-managed environments.

From OCI, administrators can onboard new devices, apply configuration baselines, observe fleet health, investigate faults, and coordinate lifecycle actions without sending staff onsite. At the edge, OCI IoT Connector is anticipated to continue processing and buffering data locally, so critical workflows can continue during intermittent WAN conditions.

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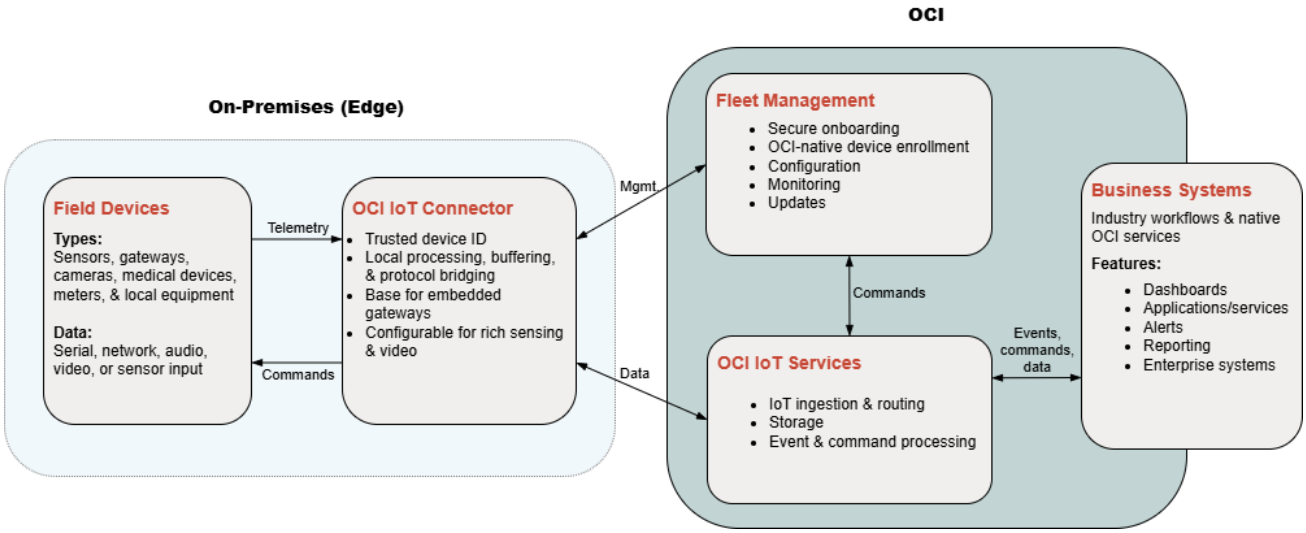
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How OCI IoT Connector connects to OCI

OCI IoT Connector is intended to sit between edge systems and OCI-hosted services. It is anticipated that it can ingest data locally, normalize and buffer it at the edge, and then forward telemetry, events, and commands through secure cloud channels. This pattern reduces latency for local actions while maintaining centralized visibility and fleet management.

High-Level IoT Connector Architecture for OCI

Oracle Cloud Infrastructure Connected Devices is a cloud-hosted device lifecycle management system that connects to the OCI IoT Connector on-premises. Field devices connect securely to OCI Connected Devices through the OCI IoT Connector enabling device management with local services.



Deployment models

The current OCI IoT Connector product direction contemplates three potential deployment models:

- An embedded board for custom device manufacturing
- A compact base IoT appliance for integrated deployments
- A configurable IoT appliance for richer edge sensing and interaction

Deployment model	Description
OCI IoT Connector—Embedded 	The embedded core module is for enterprise-grade security and fleet management. Ideal for complex device configurations that need standard OCI IoT Connector core features while retaining freedom for custom manufacturing, industry-specific appliances, OEM integration, and purpose-built intelligent systems.
OCI IoT Connector—Base 	A compact compute module for seamless integration with partner products, customer enclosures, kiosks, asset gateways, or purpose-built field solutions. It provides a secure, manageable edge foundation when deployment requires a fixed form factor and curated interfaces.
OCI IoT Connector—Pro 	For advanced use cases that need cameras, audio, additional sensors, or attachable peripherals while preserving the same secure management, enterprise policy, and OCI connectivity model as the base IoT appliance.

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OCI Connected Devices example

OCI Connected Devices provides a practical example of how the OCI IoT Connector is anticipated to enable cloud-hosted, cross-platform device lifecycle management, monitoring, and analytics across multipartner environments. In this model, OCI IoT Connector is intended to act as the local edge node that connects devices over serial or network links; secures data exchange; bridges protocols, such as MQTTS or HTTPS; and forwards telemetry to OCI hosted control, routing, and analytics services. The following are anticipated use cases that further describe how the OCI IoT Connector is intended to fulfill this example.

Use cases for OCI IoT Connector—Embedded

- **Custom medical and clinical devices**
  Embedded within medical devices and clinical systems that require secure connectivity, local processing, and centralized management.
- **Industrial, smart infrastructure, and utility systems**
  Supports custom industrial, utility, and infrastructure devices that require resilient edge operation, secure connectivity, and cloud integration.
- **Retail and hospitality appliances**
  Enables secure, remotely managed retail and hospitality devices, such as kiosks, signage, and self-service systems.
- **Transportation and fleet solutions**
  Delivers embedded intelligence and connectivity for fleet, logistics, and transportation management platforms.
- **Agriculture and environmental monitoring systems**
  Powers custom agricultural and environmental monitoring solutions with local analytics and cloud connected operations.

Use cases for OCI IoT Connector—Base

- **Secure edge gateway for connected devices**
  Connects medical, industrial, and building devices that need secure cloud onboarding and telemetry routing.
- **Integrated edge module**
  Integration partners that want Oracle-managed connectivity bundled with their own enclosure or branded solution.
- **Asset and equipment monitoring**
  Used where local buffering, health telemetry, and resilient sync are more important than rich peripherals.
- **Access control, safety, and site monitoring**
  Localized scenarios that need secure identity, policy enforcement, and reliable cloud reachback.

Use cases for OCI IoT Connector—Pro

- **Video surveillance**
  Facilitates deployments that require camera integration, local processing, and secure streaming or event forwarding to OCI.
- **Patient observation solutions**
  Enables local video or audio workflows that benefit from low-latency processing and resilient cloud synchronization.
- **Voice assistant and room assistant**
  Delivers experiences that combine microphones, speakers, and device management under an enterprise security model.
- **Air quality and environmental sensing**
  Provides solutions that combine multiple sensors, local analytics, and policy-based reporting to cloud services.

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Anticipated workload split

Category	OCI IoT Connector—Embedded	OCI IoT Connector—Base	OCI IoT Connector—Pro
Ideal deployment	Embedded into custom OEM products and purpose-built devices	Integrated module, compact gateway, partner enclosure	Stand-alone intelligent edge node with modular peripherals
Primary workload	Custom edge applications and industry-specific processing	Secure connectivity, protocol bridging, lightweight edge services	Advanced sensing, AI-assisted observation, video or audio workloads
Expansion model	Fully customizable hardware, I/O, and peripherals	Fixed interfaces and controlled BOM	Adaptable peripherals, sensors, and solution-specific modules
Best fit	OEMs and solution providers building differentiated products	Scalable repeatable deployments with minimal local customization	Use cases needing richer I/O, capture, or advanced edge interaction

OCI IoT Connector capabilities

OCI IoT Connector is intended to be defined across a set of IoT appliance capabilities that remain consistent across the Embedded, Base, and Pro deployment models. The table below captures the anticipated product-level capabilities that anchor the OCI IoT Connector.

Planned Capability Area	Description of anticipated capabilities
Security architecture	Hardware root of trust, secure boot, embedded security, device identity, end-to-end encryption, and policy enforcement.
Management plane	Managed with OCI-native Fleet Management Service for enrollment, configuration, monitoring, troubleshooting, and updating workflows.
Edge resiliency	Local processing and data buffering help maintain operations during WAN interruption and reduce cloud dependency for time-sensitive tasks.
Connectivity model	Connects devices and sensors at the edge, then forwards data securely to OCI using cloud connected messaging and web protocols, such as MQTTS and HTTPS.
Extensibility	OCI IoT Connector—Embedded: supports custom manufacturing deployments OCI IoT Connector—Base: supports integrated Oracle or partner deployments OCI IoT Connector—Pro: supports modular peripherals for video, audio, and sensing workloads
Target environments	OCI customers, Oracle partners, and Oracle products needing secure edge connectivity, local service execution, and centralized fleet control.
Compliance posture	Designed for enterprise deployment and aligned to certification pathways, including UL 60601, RCM, RoHS, and additional regional requirements as applicable.

OCI IoT Connector specifications *- Subject to change*

Key feature	Specification
AI/edge compute	Qualcomm QCS6490 ARM platform
Memory and storage	Up to 32 GB LPDDR5x memory and 1 TB UFS 3.x storage
Input and output	5 Powered USB-C 3.2 (2 - Display Port & Data, 3 - Data only)
Connectivity*	Dual Gigabit Ethernet, Wi-Fi 7, BT 6/BLE, LR-WPAN (IEEE 802.15.4), 5G (RedCap)
Industrial readiness and power	IP54-rated enclosure with PoE+ (30W) and USB-C (50W) power options
Enterprise security	Embedded Secure Element (eSE) with Java Card VM
Environmental monitoring*	Temperature, humidity, ambient light, and air quality sensing
ID, RTLS, and positioning*	RFID/NFC, UWB (with Radar and Ranging), Ultrasonic (sensing by Sonitor), BLE-based location services, Global Navigation Satellite System positioning
Audio and intelligence*	4-microphone array with 5W speaker optimized for speech recognition and noise suppression
Vision system*	Dual 12 MP cameras with wide-angle viewing and night vision
Physical details	Dimensions : Embedded: W = 135mm, L = 75mm, H = 10mm Base: W = 145mm, L = 85mm, H = 25mm Pro: W = 200mm, L = 150mm, H = 50mm Mounting: VESA 50 x 50mm

* 5G; humidity, ambient light, air quality sensing; ID, RTLS, and positioning; audio and intelligence; and vision systems will be available only in the OCI IoT Connector—Pro model.

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Summary

OCI IoT Connector is intended to provide a common, secure edge IoT appliance that can be deployed across a spectrum of embedded and intelligent edge solutions. The planned OCI IoT Connector—Embedded model is intended to enable OCI customers, Oracle partners, and OEM manufacturers to integrate OCI IoT Connector directly into custom hardware platforms while preserving enterprise security, OCI-native fleet management, and lifecycle consistency. This approach is expected to accelerate development of industry-specific products without building and maintaining an individual edge infrastructure stack.

For the planned OCI IoT Connector—Base deployments, the IoT appliance is intended to deliver a compact and repeatable foundation for secure device connectivity, protocol translation, local processing, and cloud managed operations. OCI IoT Connector—Pro is intended to extend those capabilities with support for advanced sensing, video, audio, positioning, and AI-assisted edge workloads.

Together, the three contemplated deployment models provide a unified architecture that supports OCI and Oracle industry customers and partner ecosystems across healthcare, manufacturing, retail, hospitality, utilities, transportation, smart infrastructure, and emerging edge computing environments. By standardizing security, device identity, fleet management, and OCI integration across all deployment options, OCI IoT Connector is intended to enable organizations to build, deploy, and operate intelligent connected systems at scale while reducing operational complexity and accelerating time to value.

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