

Cisco Ultra Services Platform

New Capabilities for the Internet of Things (IoT)



Benefits

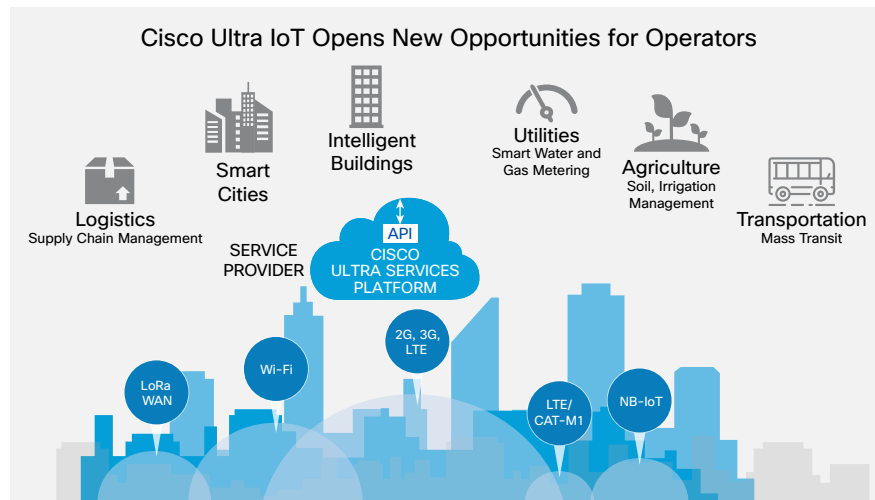
- Grow revenues by securely connecting IoT devices and sensors over a multiaccess core with unified policy, charging, and service capabilities
- Monetize network intelligence and services by enhancing capabilities of IoT applications
- Meet the scaling requirements of Massive IoT with a fully virtualized 5G-ready mobile core solution

Multi-access, Cloud-Scale Mobile Core for IoT

Companies, cities, and organizations are embracing the Internet of Things (IoT) to digitize and transform their businesses and operations. In many cases, the first step is to deploy sensors on machines, devices, vehicles, and so on to convert measurement of the physical environment into electrical signals that an IoT network can understand. This data can be used for new product development, preventive and predictive maintenance, optimized marketing, upselling, and more.

For Service Providers, the immediate opportunity is to provide secure connection for IoT devices, sensors, and solutions. Beyond existing 2G, 3G, LTE, and Wi-Fi network access, Low Power Wide Area (LPWA) technologies are emerging that are very suitable to IoT device connectivity. The 3GPP CAT-M1 and NB-IoT standards for licensed LPWA networks will support devices requiring low power consumption, long range, low cost, and security.

For the emerging IoT markets and technologies, Cisco has evolved the Cisco® Ultra Services Platform, a fully virtualized, 5G-ready services core. Specifically, Cisco Ultra IoT evolves the Cisco Ultra Services Platform to support the 3GPP Cellular IoT (CIoT) architecture and a wide range of IoT solutions across vertical markets. Cisco Ultra IoT includes core network support for all wireless IoT connectivity, including NB-IoT and CAT-M1. Of course 2G, 3G, and LTE are supported, as are unlicensed networks such as Wi-Fi.



Monetize and Optimize IoT Services and Applications

Cisco Ultra IoT delivers fully-virtualized mobile core functions that bring unique benefits to Service Providers:

- Simplifies and automates services provisioning with Cisco's industry-leading orchestration solutions
- Provide end-to-end 5G network slicing, which uses powerful provisioning and management capabilities to enable each enterprise customer or IoT Service to get its own secure, highly reliable, dedicated virtualized mobile core
- Separates the user plane from the control plane with a distributed architecture using SDN, allowing traffic to go directly to the Internet without costly backhaul

Additionally, Cisco Ultra IoT implements elements of the ClOT architecture, namely:

- Cisco ClOT Serving Gateway Node (CSGN), built on Cisco's Ultra Packet Core, which terminates multiple access types with uniform identity, authentication, and security, while providing dynamic scalability and deployment flexibility in delivering IoT optimizations.
- Cisco enhanced Service Capability Exposure Function (eSCEF), built on the Cisco Ultra Policy Platform, which enables based on the OneM2M framework service capabilities exposure, secure application onboarding, and real-time interactions. The Cisco eSCEF associates endpoints with applications and exposes network capabilities and data to applications through an open API.

Call to Action

Cisco Ultra IoT enables Service Providers to deliver integrated IoT solutions that support different classes of service aligned with specific pricing models across unlicensed (Wi-Fi) and licensed (2G/3G/LTE and now NB-IoT and CAT-M1) radio access as demanded by the IoT application. Learn more about Cisco Ultra Services Platform at www.cisco.com/go/ultra.