



Securely Transforming Manufacturing and Factory Automation Systems Towards Industry 4.0

The Challenges

The current labor-intensive, time consuming, expensive and complex do-it-yourself approach for deployment and management of IIoT poses significant challenges to manufacturing organizations towards realizing the promise of Industry 4.0.

This approach also introduces security vulnerabilities and is difficult to scale to meet the demands of large global manufacturing organizations to:

- Securely connect factory automation systems and machines to analytics applications running in their private data center/cloud for continuous monitoring to achieve better performance.
- Remotely deploy and manage protocol translators, edge analytics, machine learning, AI, DPI and other custom applications at scale across all machines and manufacturing facilities without the need for expensive repeated truck rolls.
- Provision, authenticate, manage and audit secure third party remote access for multiple technicians from multiple vendors to securely access their respective control systems across all manufacturing assets.

IoTium Solution

IoTium's zero-touch provisioned and cloud-managed converged infrastructure offered as-a-service abstracts out the deployment complexities and addresses security vulnerabilities. This enables large scale secure IIoT deployments at significantly reduced OPEX and rapid time to market while future-proofing the IIoT deployments.

- IoTium OT-Net - provides a seamless plug & play scalable network infrastructure as-a-Service to enable secure connectivity for manufacturing and factory automation systems.
- IoTium OT-Access - offers a fully managed cloud-based secure remote access infrastructure solution that provides a single pane of glass to provision, authenticate, manage and audit which technician from which vendor.



- IoTium's OT-Edge - provides one-click deployment capability to push applications from the cloud; and manage, update or upgrade them across the entire manufacturing assets portfolio with a single click.

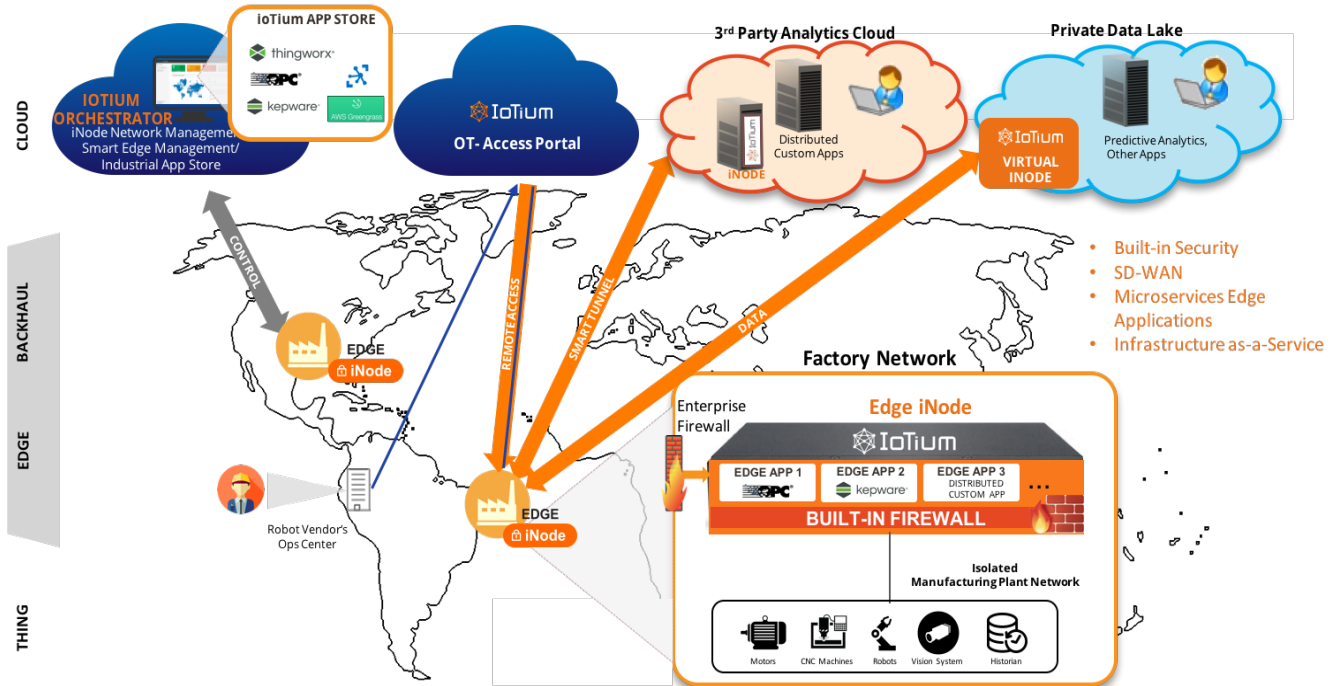


Figure 1: IoTium Edge-Cloud Infrastructure Offered as-a-Service

IoTium solution comprises the following key components:

- 1) **iNode**, which resides both at the data source (an iNode gateway at the manufacturing facility network) and the data sink (a Virtual iNode in the cloud or private data center).
- 2) **Orchestrator**, which is a cloud-based fully managed multi-tenanted service that enables customers to manage secure connectivity to machine networks as well as, deploy and manage edge application services, to manufacturing assets.

Benefits

<p>Zero-Touch Provisioned & Managed</p> <ul style="list-style-type: none"> • No truck rolls • No need for onsite IT resources • No CLI • No usernames & passwords <p>No changes to the plants' security/firewall posture</p>	<p>Secure by Design</p> <ul style="list-style-type: none"> • Secures data • Shields assets from exposure to public Internet • Isolates OT traffic from IT traffic on the same network • Provides runtime assessment of each app and ensures app isolation 	<p>Scalable</p> <ul style="list-style-type: none"> • Centrally managed from a single pane of glass • No manual configuration of protocol software adapters • No new software downloads or install by technicians or vendors for secure remote access • No on-site installation, update or upgrade of edge analytics, AI, ML, DPI and other apps
<p>Low TCO</p> <ul style="list-style-type: none"> • Device consolidation eliminating additional APN/VPN hardware and management overhead • Secure deployment of containerized apps on the same hardware in isolation from each other • No truck rolls 	<p>Faster Time to Market</p> <ul style="list-style-type: none"> • Drop-ship plug and go architecture • Zero-touch, cloud-managed policy-based provisioning and management that reduces time to market from days to minutes 	<p>No Vendor Lock-in</p> <ul style="list-style-type: none"> • Enables flexibility to move to any cloud • Enables flexibility to move to any application at the edge • Eliminates the need for fixed-function edge device

ABOUT IOTIUM

IoTium is the first commercially deployed Software-Defined Converged Infrastructure company for the IIoT. Headquartered in Silicon Valley and funded by GE Ventures, Honeywell Ventures, Juniper Ventures, J2 Ventures, Hanna Ventures, March Capital Partners and the Fabric, IoTium is the company of choice for Fortune 500 organizations looking to enable secure, scalable IIoT deployment today. IoTium bridges the legacy brown-field world with the new cloud-enabled world. The company's offerings have been deployed in leading building automation, energy, oil and gas, and manufacturing organizations. IoTium solutions include the groundbreaking IoTium OT-Net; IoTium OT-Access; and the IoTium OT-Edge converged infrastructure solution. The company's solutions ensure that machines and control systems can be instantly, seamlessly and securely connected to applications residing in public/private cloud or data center through any network infrastructure and operator; while eliminating deployment complexity issues and minimizing network security risks. For more information, visit: <http://www.iotium.io>.