MODERN INFRASTRUCTURE AND MULTICLOUD

Edge Empowered: Transforming Industrial IT for the Future

What Is Edge Management in Manufacturing?

Edge management refers to real-time, local data processing on the factory floor—across smart sensors, industrial PCs, edge gateways, and ruggedized devices. It shifts compute power closer to where data is generated, enabling faster decision-making and operational agility.

- Content Delivery Network (CDN) origins to real-time analytics on the factory floor
- Shift from centralized cloud to decentralized edge
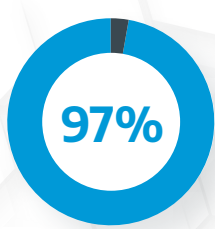- Explosion of data and need for local processing
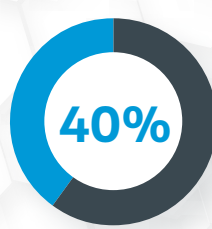
The Data Overload

Manufacturers face a mountain of unstructured data without clear policies for retention for backup or recovery and visibility to critical information is lost
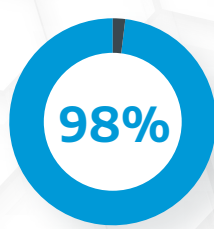
98%
of Manufacturers Face Data Challenges[1]

97%
Experience Collaboration and Productivity Issues Due to Data Woes[1]

40%
of Manufacturers Are Automation Laggards, Risking Competitive Disadvantage[2]

Security Snapshot

Security remains a top concern for edge environments

Security Is the Top Barrier to Edge Adoption[3]

60% of Breaches Involve Human Error[4]

47% of Attacks Were the Result of Unpatched Software Vulnerabilities[3]

Maintenance Without the Headache
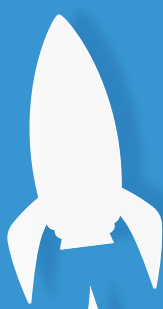
- Centralized firmware and patch management
- Real-time performance monitoring
- Automated anomaly detection and alerting
- Secure de-provisioning and image restoration

Deployment Made Simple

Zero-Touch Provisioning (ZTP) enables seamless deployment:

- » Devices pre-registered with central server
- » Auto-configuration via DHCP/DNS
- » Eliminates manual errors and saves time

How Edge Management Supports Manufacturing IT

Manufacturing environments present unique challenges when deploying and managing edge infrastructure. Below are some common issues and practical solutions tailored to the factory floor:

CHALLENGE	SOLUTION
Fragmented data across disconnected machines	Implement centralized policy control and device management platforms to unify data streams.
Security vulnerabilities due to delayed patching	Use automated patching systems and vulnerability remediation tools to maintain security posture.
Limited visibility into device performance and logs	Deploy AI-driven monitoring systems for real-time threat detection and operational insights.
Resource constraints and limited IT staffing	Utilize unified dashboards and remote management tools to streamline oversight.
Connectivity issues on the factory floor	Upgrade network infrastructure and use ruggedized edge devices with reliable wireless protocols.
Vendor-specific ZTP limitations	Choose platforms that support heterogenous environments to ensure compatibility across devices.

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