

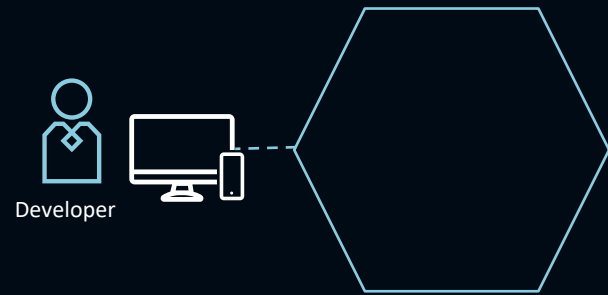
# Enabling Innovation at the Edge

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CTO, IoT/Edge  
Office of the CTO



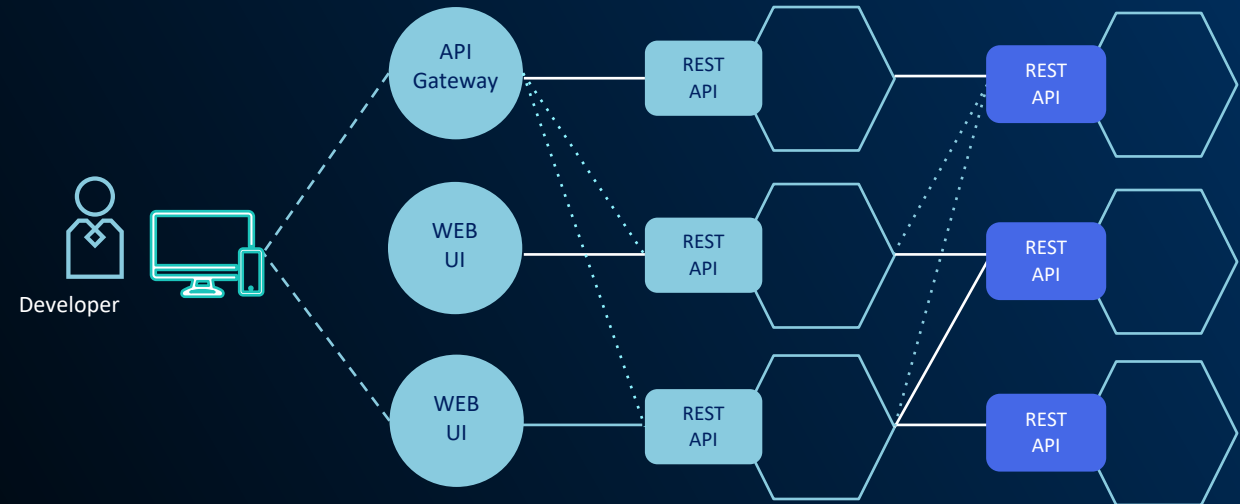
# Customers Are Changing How they Build Applications

## From Monolith to Microservices



### Monoliths

- Single, large code base
- Slower to update, scale
- Runs in VMs or containers



### Microservices

- Small, modular code base
- Easier to update, scale
- Runs in containers



# VMware Vision

The Essential, Ubiquitous Digital Foundation

Any Device



Any Application



Traditional



Cloud Native



SaaS

Any Cloud



Private



Edge

Hybrid



Telco



Public





# Multi-Cloud

Diverse  
Infrastructure

---

Consistent  
Operations

Consistent  
Infrastructure

Consistent  
Operations



# VMware Tanzu

Build

Modern Applications

Traditional | Open Source | Cloud Native

Run

**Enterprise Kubernetes**

On-premises | Public Cloud | Edge

Manage

Kubernetes for  
Developers and IT

Multi-cloud  
Multi-cluster  
Multi-team

*“VMware is now the second-largest contributor to the Kubernetes container orchestration project at the Cloud Native Computing Foundation.” — Pat Gelsinger, VMware CEO*





# The Edge

(noun)

1. Where the physical and digital worlds intersect.
2. Distributed, low-latency infrastructure located close to where data is created, processed, protected, and/or consumed.

# Evolution to Edge Computing

Distributed Clouds, Lower Latency Apps

Enterprise Edge  
(Device, Network,  
Compute)



Industrial Edge  
(IoT)



Telco Edge  
(MEC)



Increase in App Demands and Compute Capacity



# Industrial Edge Touches Many Solution Areas



# Pulse IoT Center

## Enabling an Industrial Edge Framework

Future Proof IoT Architecture by creating an abstraction layer between IoT hardware and edge management



Build standard blueprints for IoT devices - define metrics, security config and remote control commands

Build a catalog of device templates to support growing list of IoT end-points

Enforce compliance and security while allowing LOBs to bring their own devices

# Empower IT to run IoT

Pulse IoT Center is a vendor-neutral edge management infrastructure  
**platform**



Manage Any Device, Any  
App, Any Cloud



Operationalize IoT



Accelerate IoT  
Deployments to scale

# Manage Any Device, Any App, Any Cloud



Centralize management of **any device** across enterprise IoT use cases



Deploy and manage **any containerized app** on any device



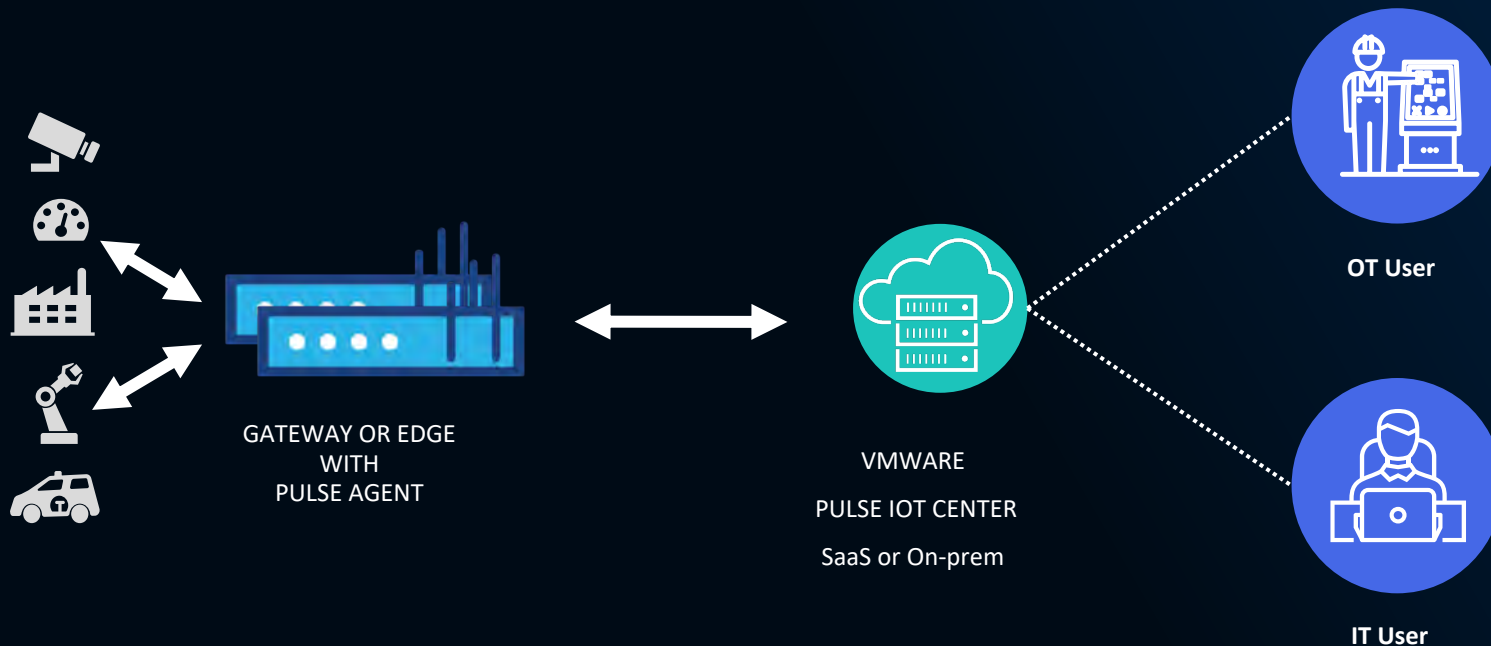
Enable flexible deployment options in **any cloud (public, private)**





# Centralized Management of any device

Silo-less management across enterprise IoT use cases



Manage



**Simple and Secure enrollment** of any IoT device running Pulse Agent



**Over-the-air configuration** for push-based, instant delivery of policies, apps and updates



**Real-time monitoring** of device health metrics to drive corrective action via alerts/notifications



**Remote management** of edge container apps, OTA updates and automated campaigns



**Enterprise-grade security** for enrollment, access and data protection

# Container Management at the Edge

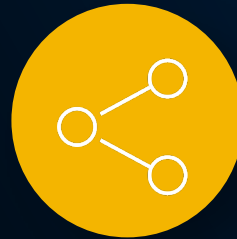
Many IoT applications run on containers at the Edge



Lightweight footprint



Shorter time to  
execute



Greater modularity



**Quickly capitalize** on intelligent edge



**Centralize** distribution, monitoring and management of containers at the edge



**Monitor** container health and metrics

- # of downloaded images
- # of running containers
- # of containers
- CPU
- Memory

# Industrial Edge Customer Momentum

## Edge and Data Center Management



البنك السعودي للاستثمار  
The Saudi Investment Bank

Edge and Data Center Management  
Improve customer experience

## Smart Manufacturing



“Cows to cloud” initiative  
Manage Smart Farm infrastructure  
Greater automation and analytics

## Smart City

**MÉTROPOLE**  
**NICE CÔTE D'AZUR**

Smart buildings, environment, mobility  
and risk management  
Holistic view of critical smart city  
infrastructure

# Industrial Edge Challenges



**Heterogenous  
Hardware**



**Legacy & proprietary  
apps**



**Fragmented Data**



**Network Reliability**



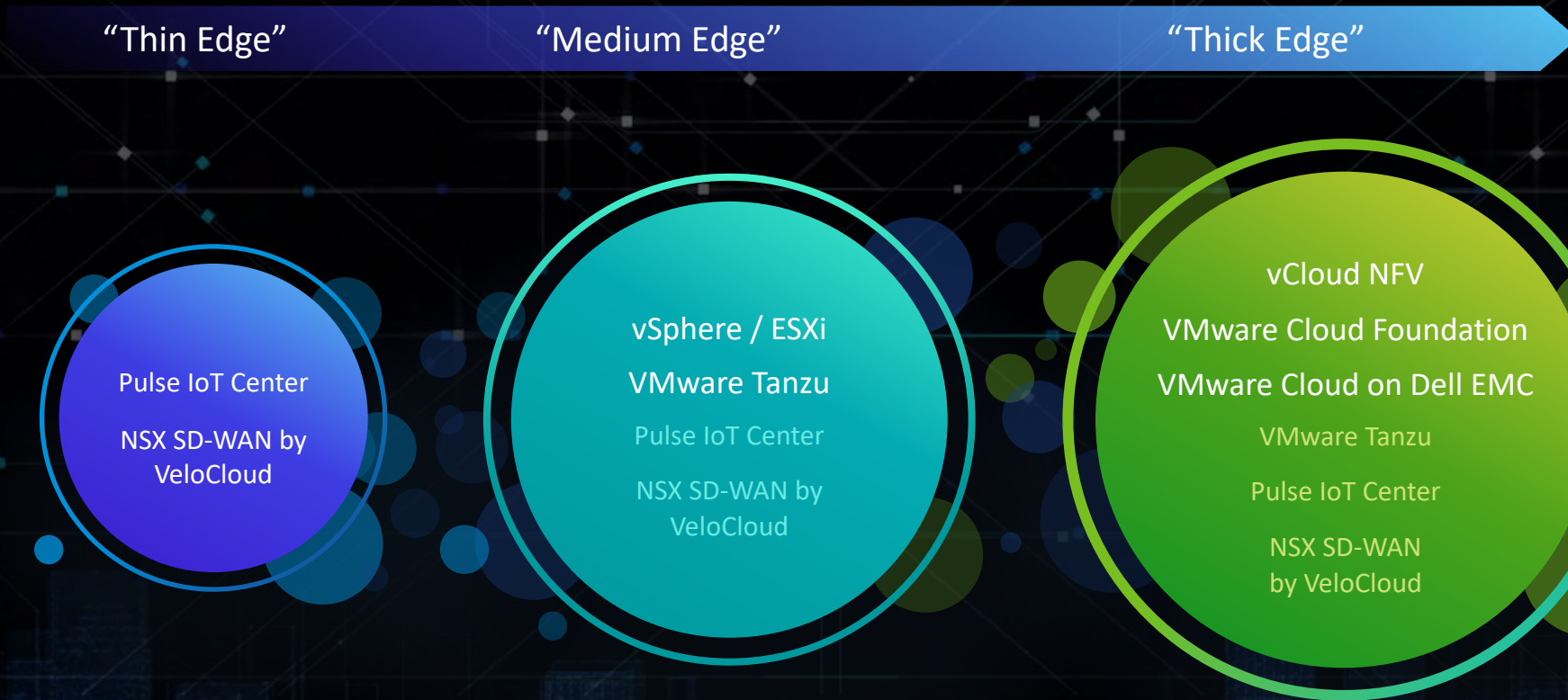
**Massive Scalability**





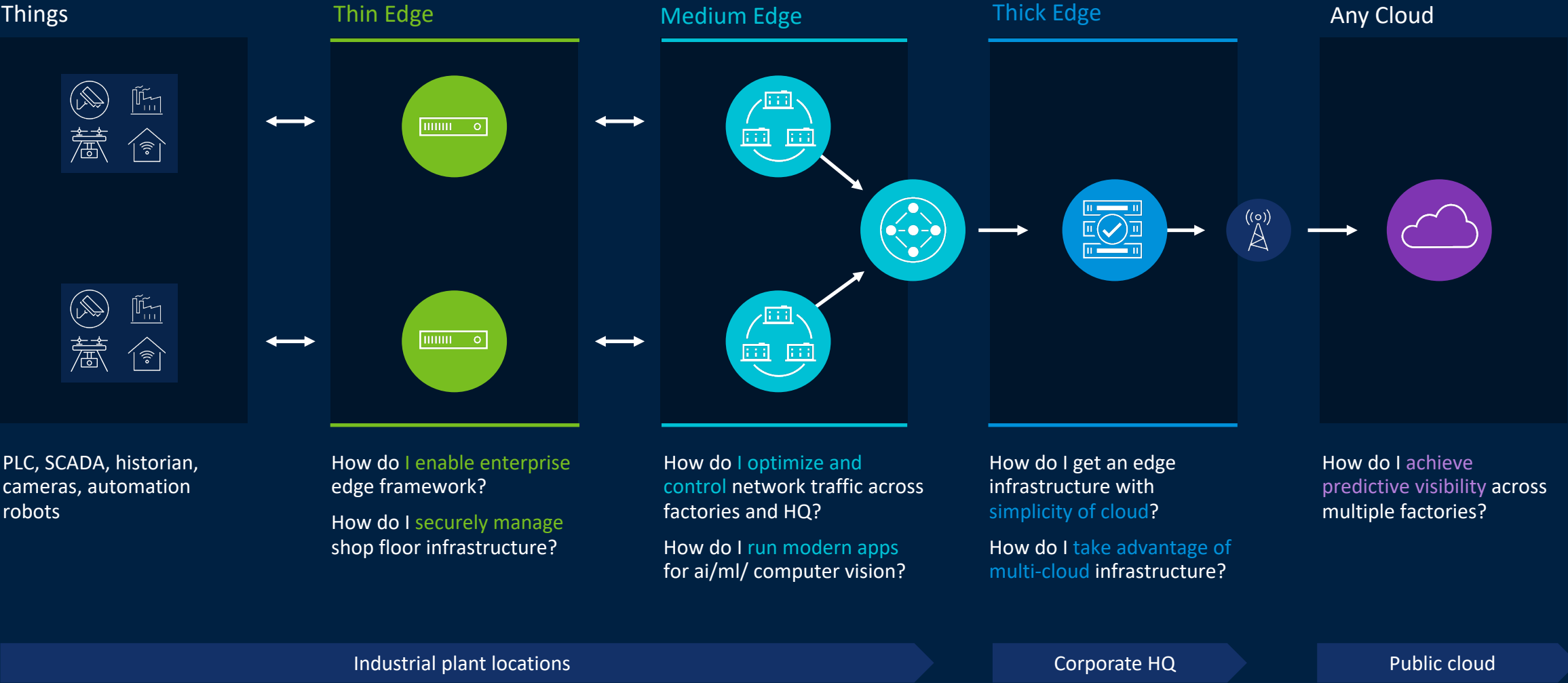
# A Broad Portfolio of Edge Solutions

Consistency that scales for a range of app and resource demands

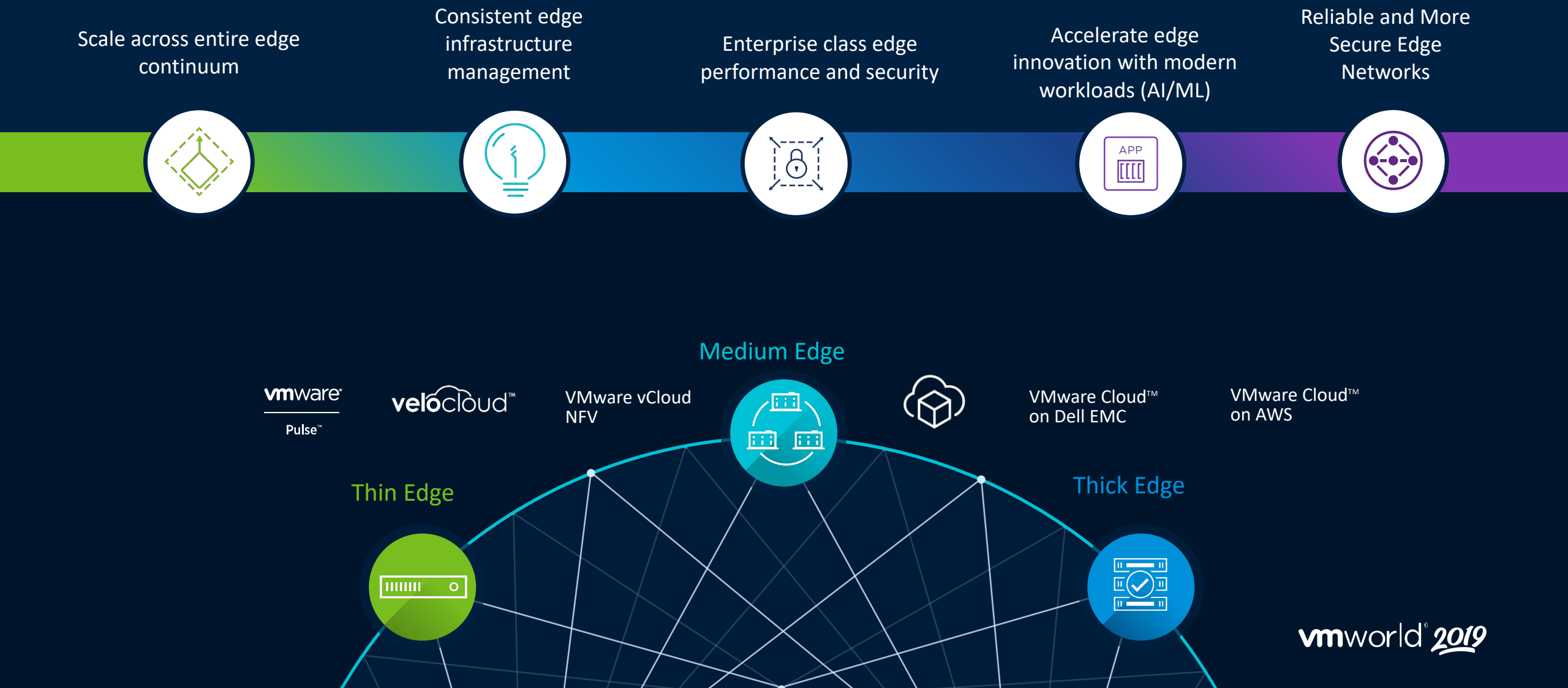


# Manufacturing

## Fragmentation along edge continuum

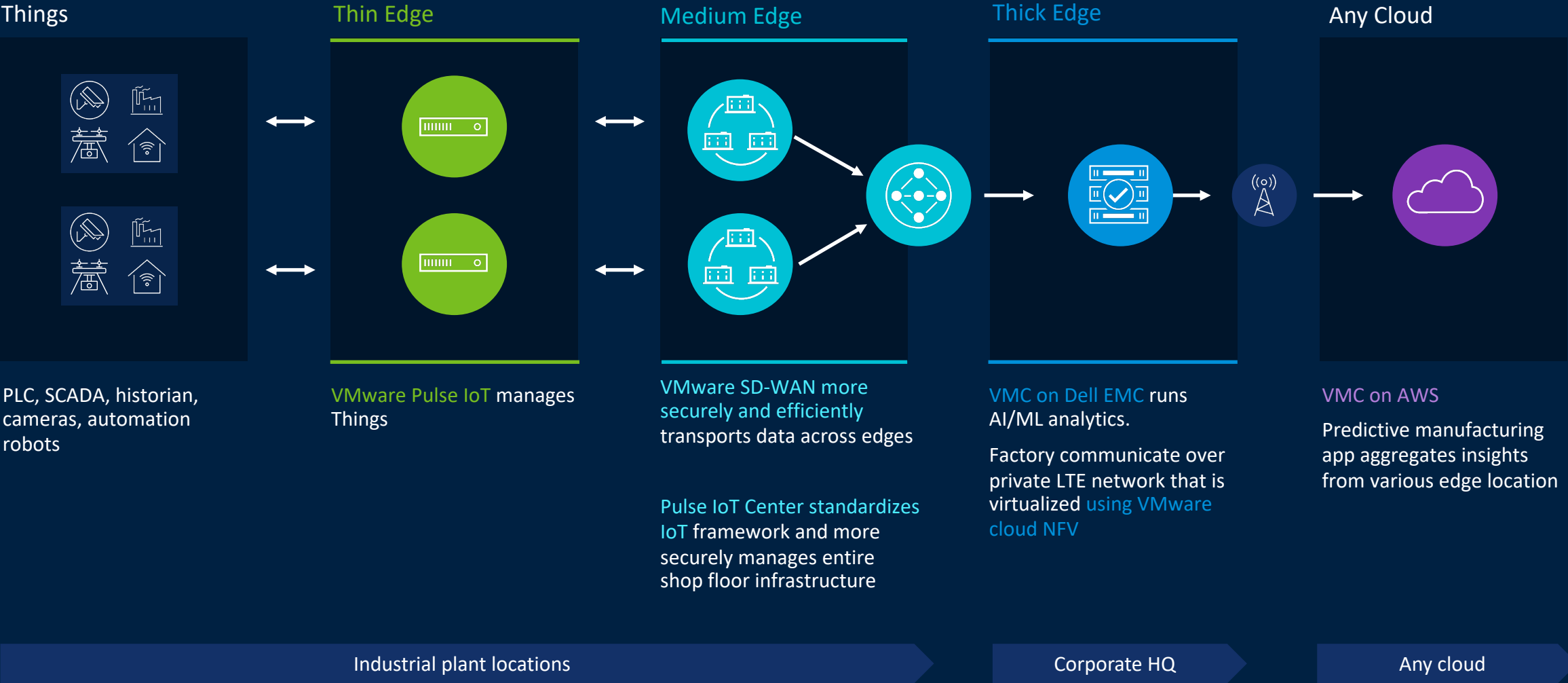


# Innovate with VMware Edge and IoT



# IIOT Infrastructure for Manufacturing

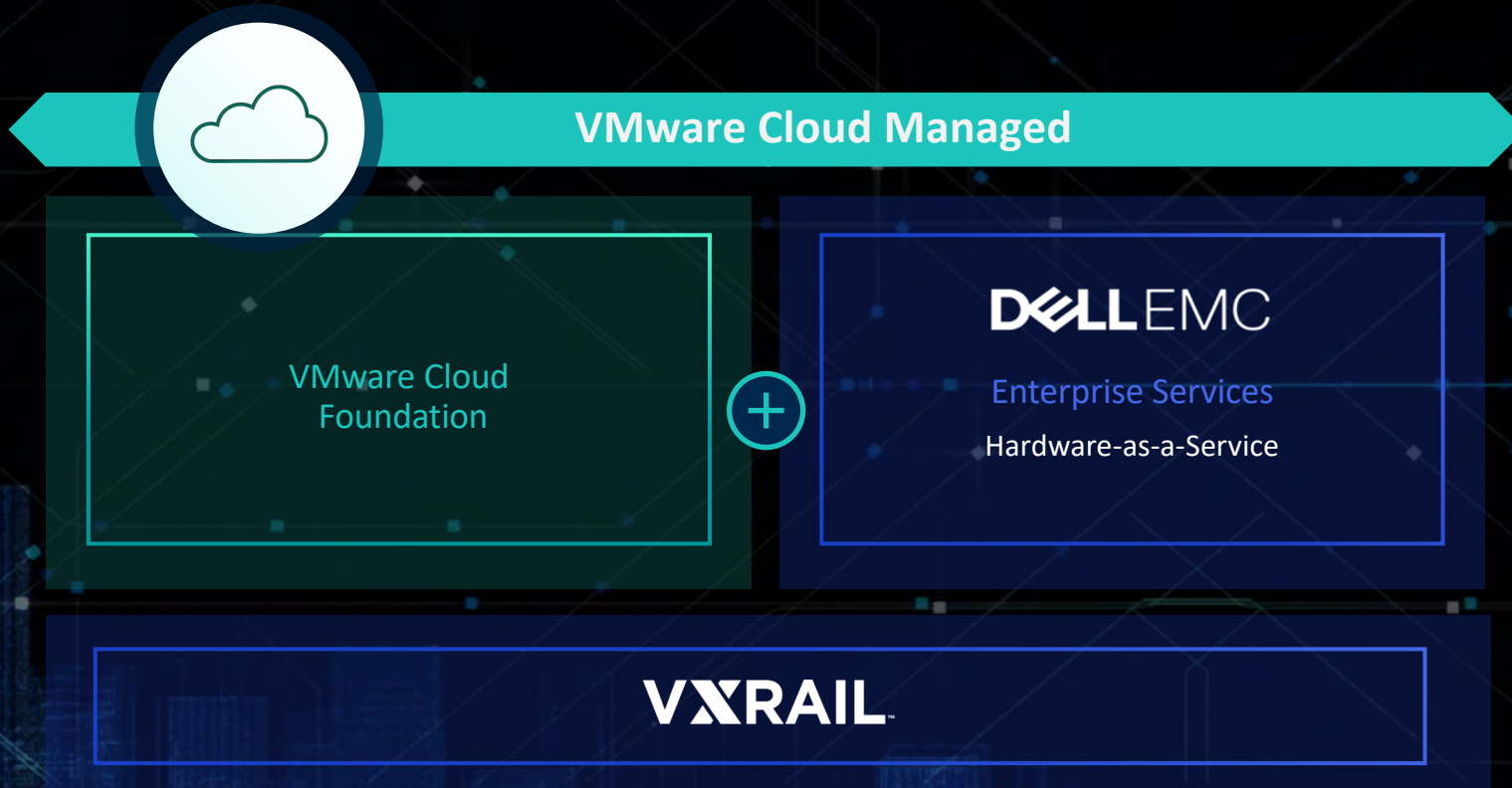
Powered by VMware Edge Solution Portfolio





Now Available

# VMware Cloud on Dell EMC



Data Center-  
as-a-Service

Simplicity

Scalability

Security

Thank You!

Make  
Your  
mark