



IOT2148BU

# Introducing VMware Pulse IoT Center

## Take Control of All Your Things and Edge Systems

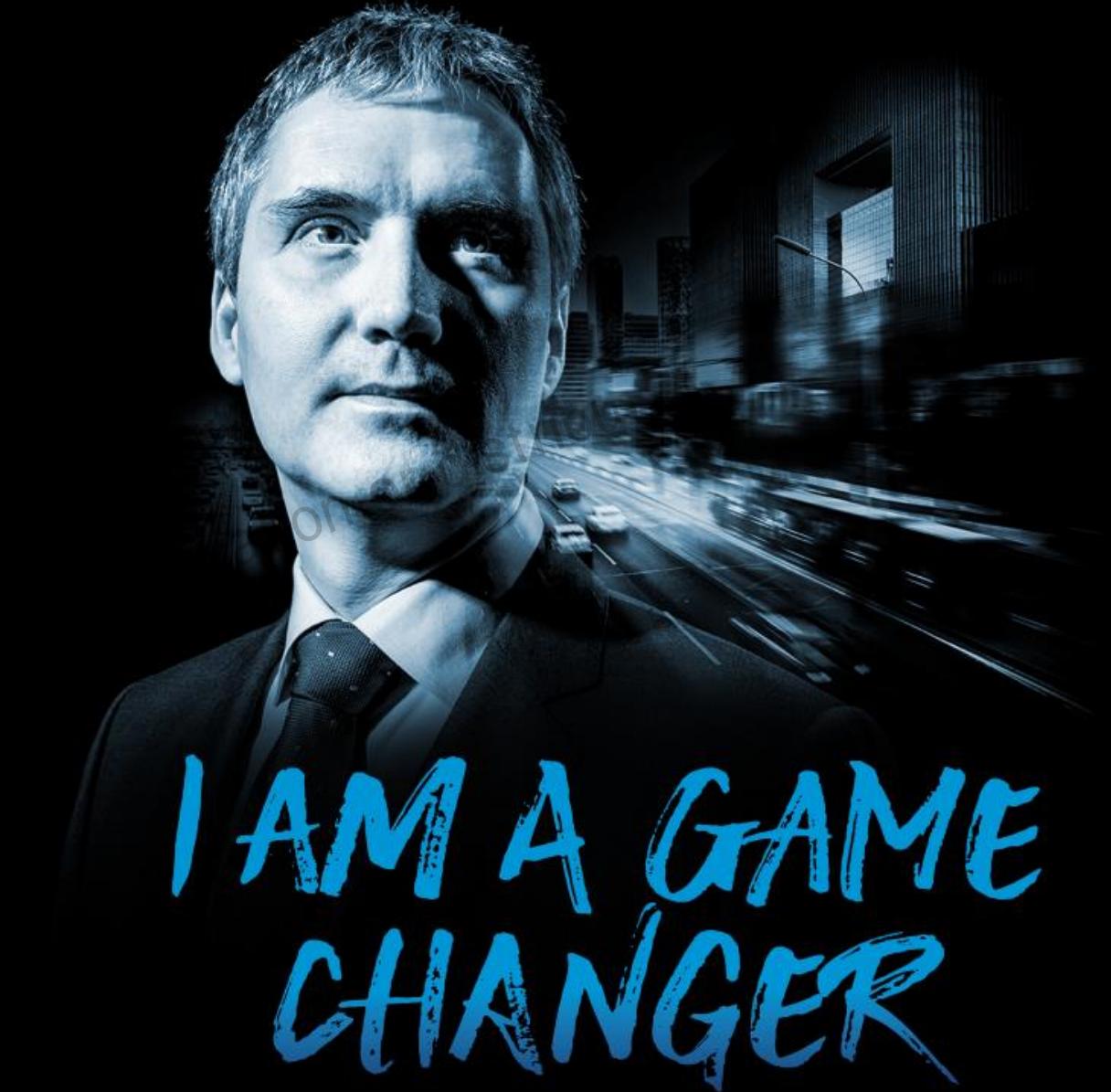
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- This overview of new technology represents no commitment from VMware to deliver these features in any generally available product.
- Features are subject to change, and must not be included in contracts, purchase orders, or sales agreements of any kind.
- Technical feasibility and market demand will affect final delivery.
- Pricing and packaging for any new technologies or features discussed or presented have not been determined.



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# Agenda

- ▶ **The Internet of Things is Here**
- ▶ **VMware Pulse IoT Center**
- ▶ **Examples and Momentum to Date**
- ▶ **Technical Deep Dive**
- ▶ **Demo**

# EDGES OF THE BUSINESS

# Why VMware



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# The Internet of Things is here



**279 Million**

Connected Vehicles  
by 2021



**\$12.9B**

Spend on IoT  
By 2020



**30%**

Medical Devices Lost  
Every Year



**7-8TB**

Per day



Manufacturing  
1PB/factory per  
day

SECURITY

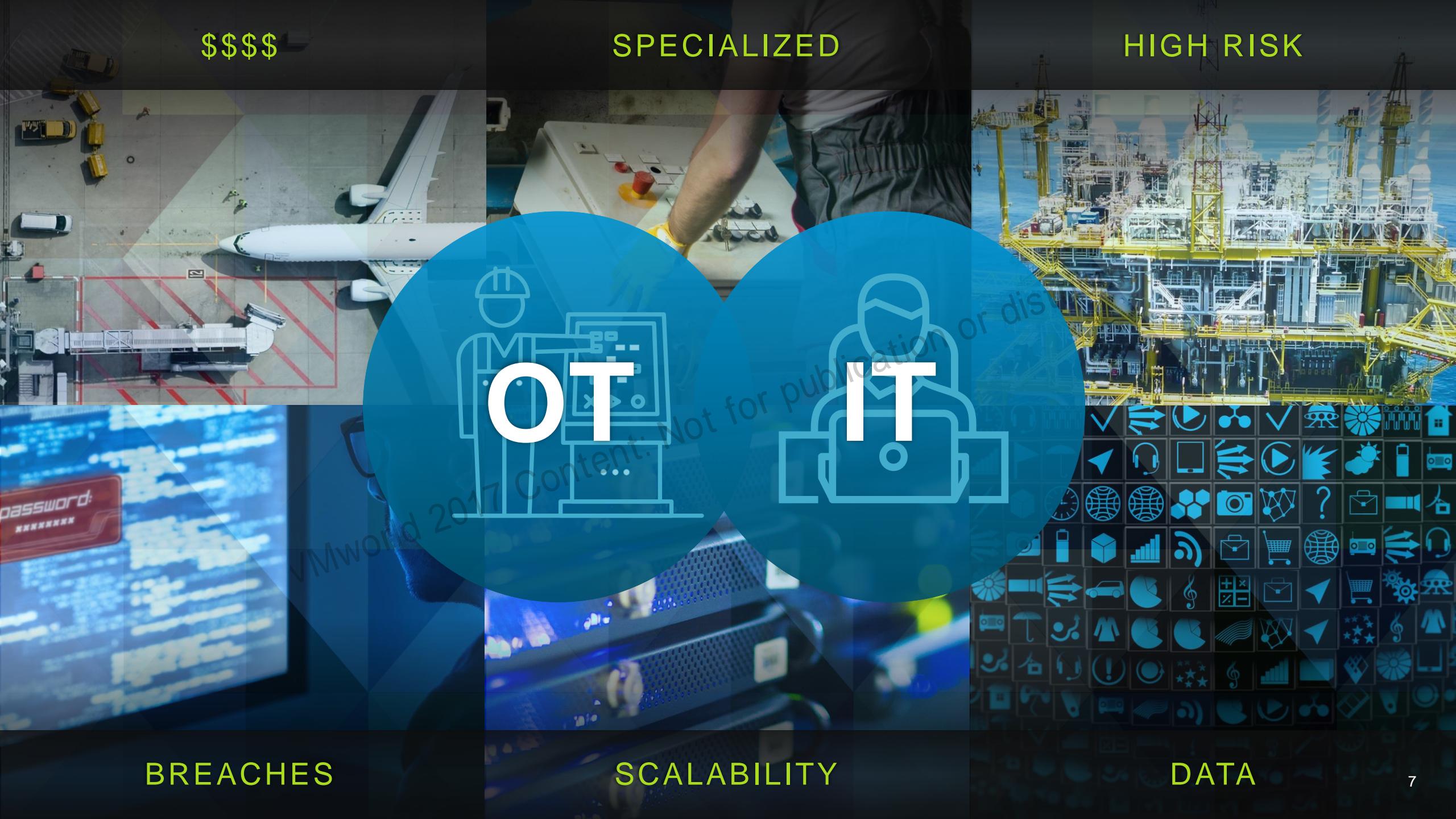
MANAGEMENT

SCALE

\$\$\$\$

SPECIALIZED

HIGH RISK



BREACHES

SCALABILITY

DATA

# APPLICATION PLANE

PREDICTIVE  
MAINTENANCE



SUPPLY CHAIN  
AUTOMATION



NEW CUSTOMER  
EXPERIENCE



# CONTROL PLANE

SET-UP



ONBOARD



MONITOR



MANAGE



SECURE



## ONE IoT INFRASTRUCTURE



# Take Control of the Edge with **VMware Pulse**

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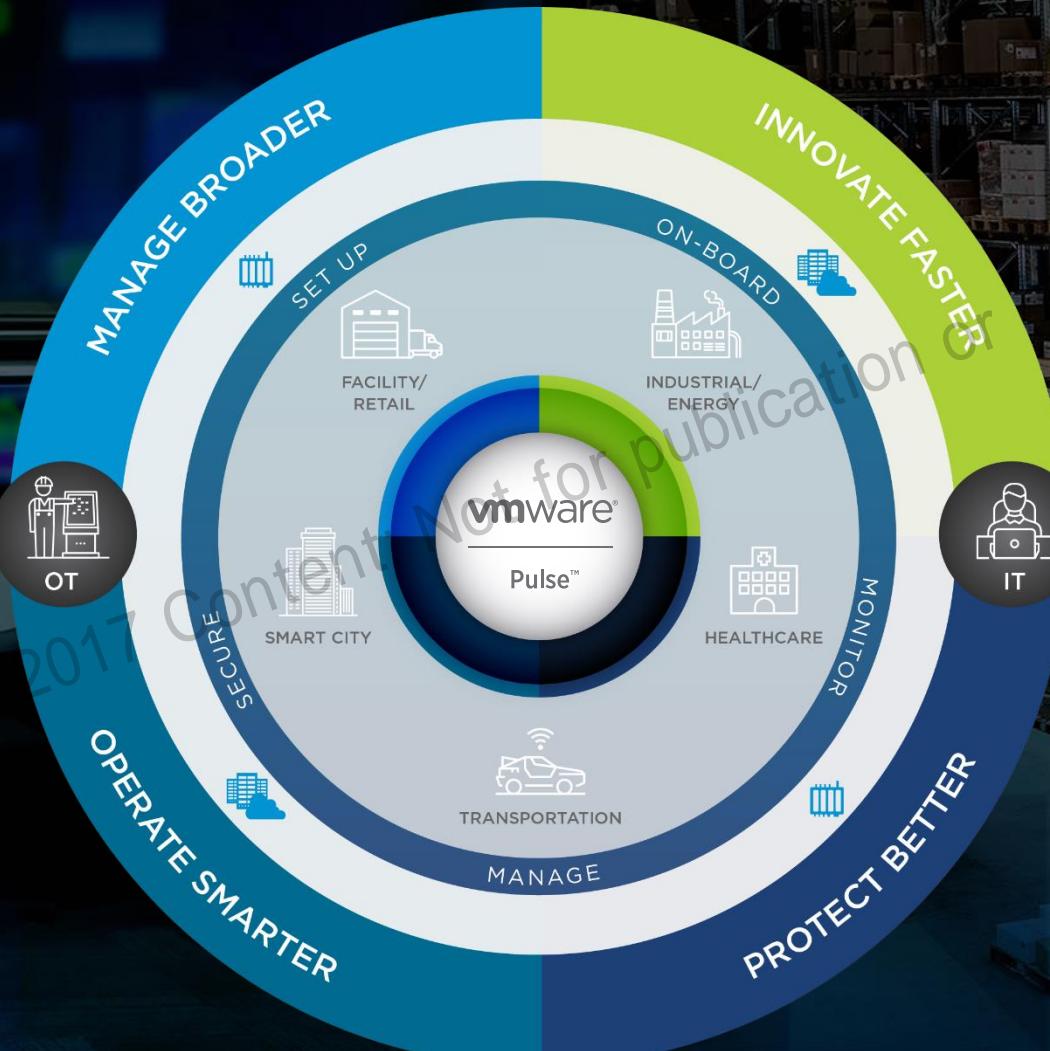
# Take Control of IoT

## Simplify the Complexity

Manage millions of things as easily as managing one

## Improve Reliability

Provide accurate and real-time visibility of 'thing' health and act on anomalies as they arise



## Accelerate ROI

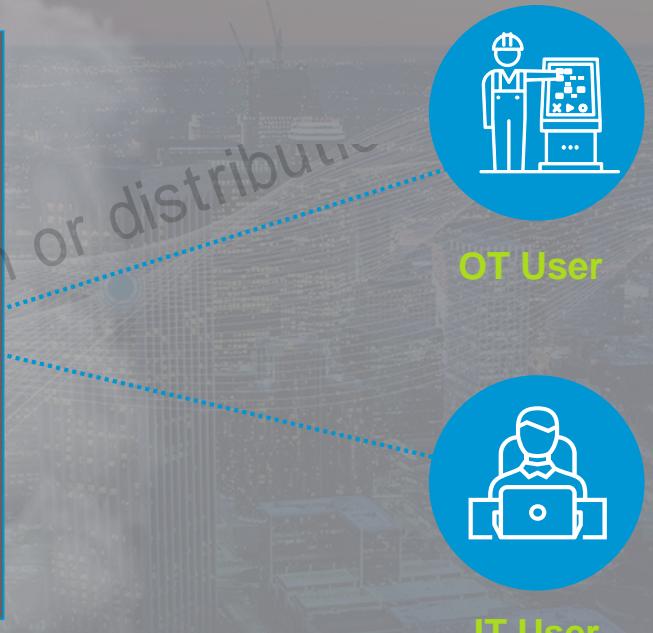
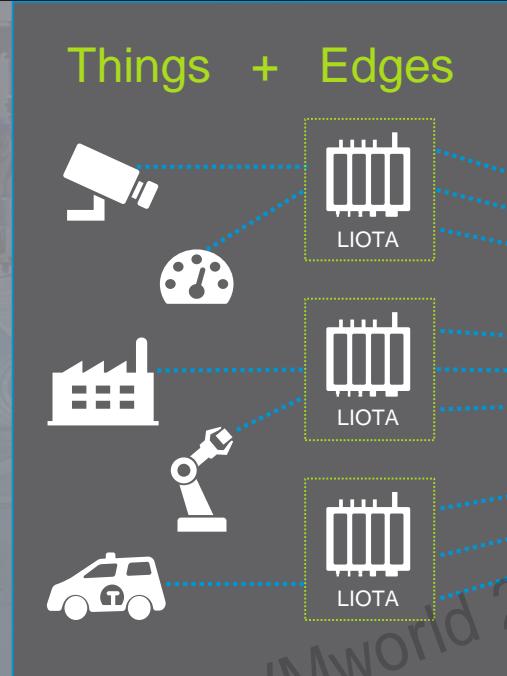
Streamline and accelerate how IoT gets deployed and scaled

## Provide Peace of Mind

Secure IoT infrastructure across things, edge, network, and applications

# VMware Pulse IoT Center

## APPLICATION PLANE



### ONBOARD

- Liota Agent on edge systems to enable data orchestration
- Automatically detect edge systems and onboard and provision over the air
- Map edge systems to connected devices

### MONITOR

- Collect telemetry data about infrastructure health
- Detect anomalies in real-time with high accuracy
- Set rules to automatically fix OTA when possible

### MANAGE

- Manage software OTA of any edge type and connected end points
- Set rules to automatically upgrade/fix in flexible package combination
- Set rules to automatically fix OTA when possible

### SECURE

- Secure across IoT use case – things, network, data, people
- Create segmented data flows with network virtualization
- Have complete visibility of all things

FUJITSU



TOYOTA

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Pulse™

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Software update  
is available

Update Now





USE CASE

# Improve Patients Outcome



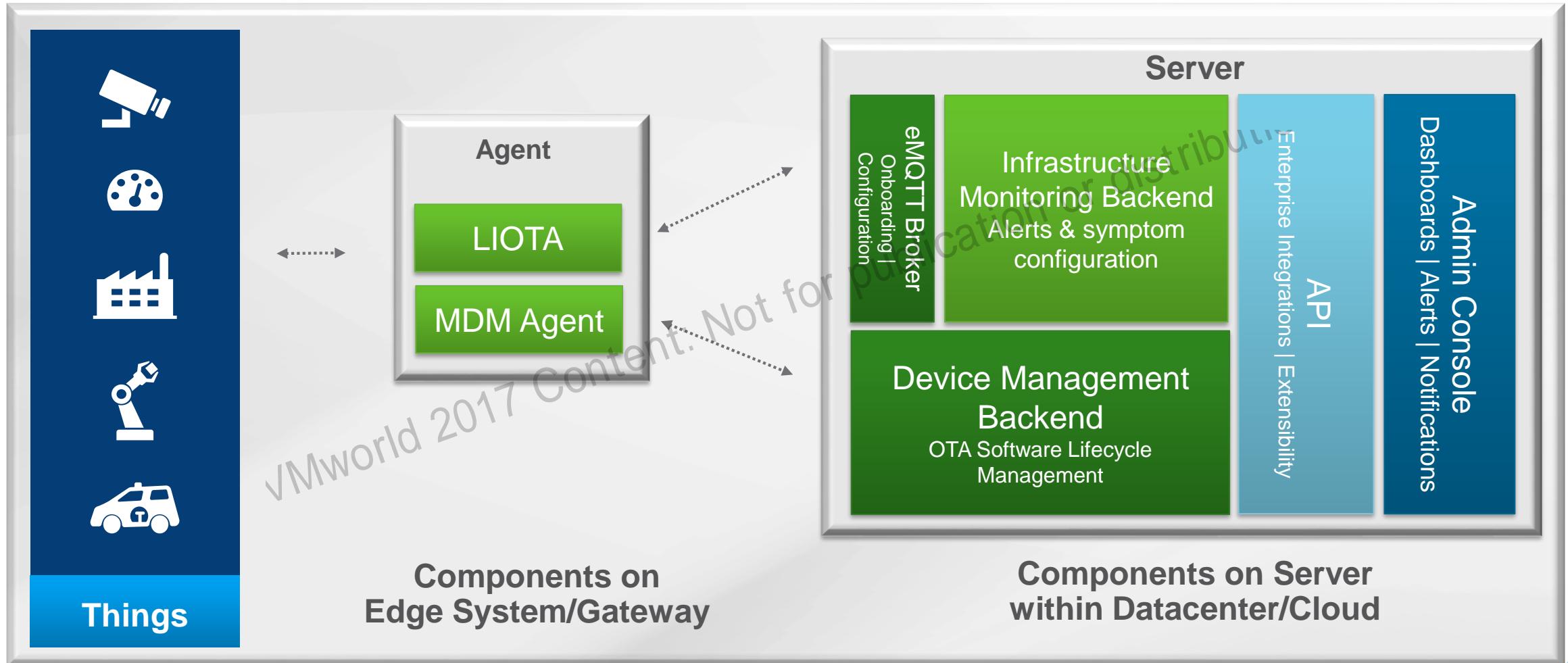
USE CASE

# Create a Safer World

# Technical Deep Dive

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# Pulse IoT Center Architecture



# The Little IoT Agent (liota)

- Liota is a SDK/Framework for writing portable, modular, dynamic IoT gateway data orchestration apps
- Liota applications can be written to collect telemetry from any "things" connected to edge systems, regardless of manufacturer, device type or communication protocol.
- Liota runs on gateways and is open source
- BSD 2-Clause license



# Rich Feature Set

## Setup/ onboard

- **On Prem support** – Offered as an on-prem solution for deployment flexibility and security. Future versions will also be offered as cloud-hosted
- **Easy Enterprise Integrations** - Quick and easy integration with existing server-side monitoring and alerting capability through REST APIs and flexible client-side integration through Python based SDK.

## Manage

- **Edge Device Management** – Ability to support heterogeneous things and gateways with different hardware, operating systems, and communication protocols.
- **Smart Data Orchestration**- Deliver relevant data where and when it is needed across the edge and in the cloud by integrating into enterprise systems
- **Single point console**- A Single point of monitoring and management for IoT infrastructure (across private networks comprising of edge systems and connected devices) for both IT and OT users

## Secure

- **OTA updates** – Ability to provide policy driven over-the-air updates to connected edge systems and devices and granularly define what, when and under what conditions things are updated.
- **Security Across IoT Value Chain**- Provide security at thing, network and user level with software updates and VMware Identity Manager integration.

## Monitor

- **Real Time Infrastructure analytics** - Ability to identify anomalies with real- time monitoring and perform infrastructure analytics.
- **Sophisticated & Flexible Rules Engine**- Ability to granularly define what, where and when things are updated
- **Visualize thing –gateway relationships**- Provides pictorial representation of the topology of the IoT infrastructure- 2 tier or 3 tier - in a parent child relationship diagram

# DEMO

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# Meeting At The Edge

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## DECISION MAKING

### DEEP LEARNING



REAL TIME



MILLIONS OF DEVICES

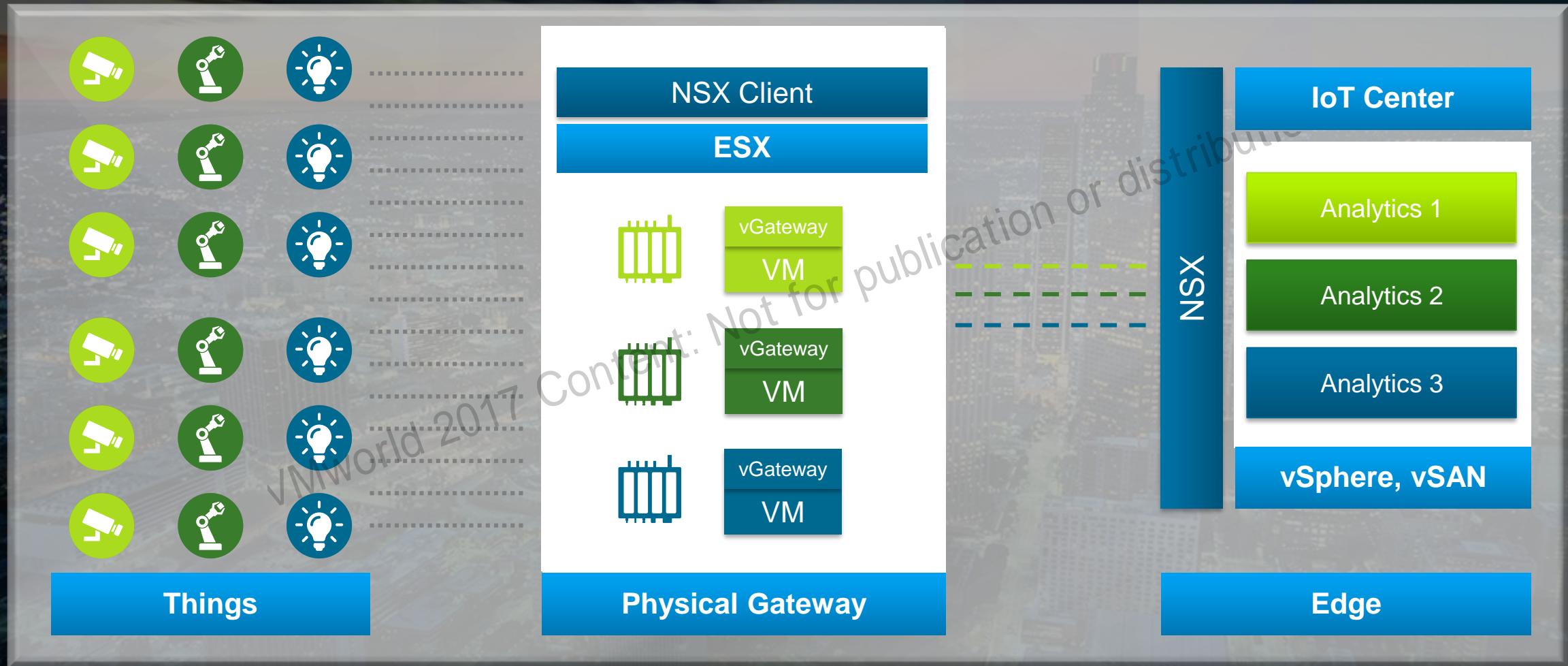
DATA CENTER/CLOUD



HUNDREDS OF DEVICES



# Future IoT Edge Architecture



# Take Aways



VMware is entering IoT Space and leveraging core expertise in infrastructure to IoT devices



VMware's goal is to partner with IoT Ecosystem to deliver end to end solutions



VMware's goal is to deliver new types of on-prem compute needs for IoT closer to the edge

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