

Pervasive Data Collection

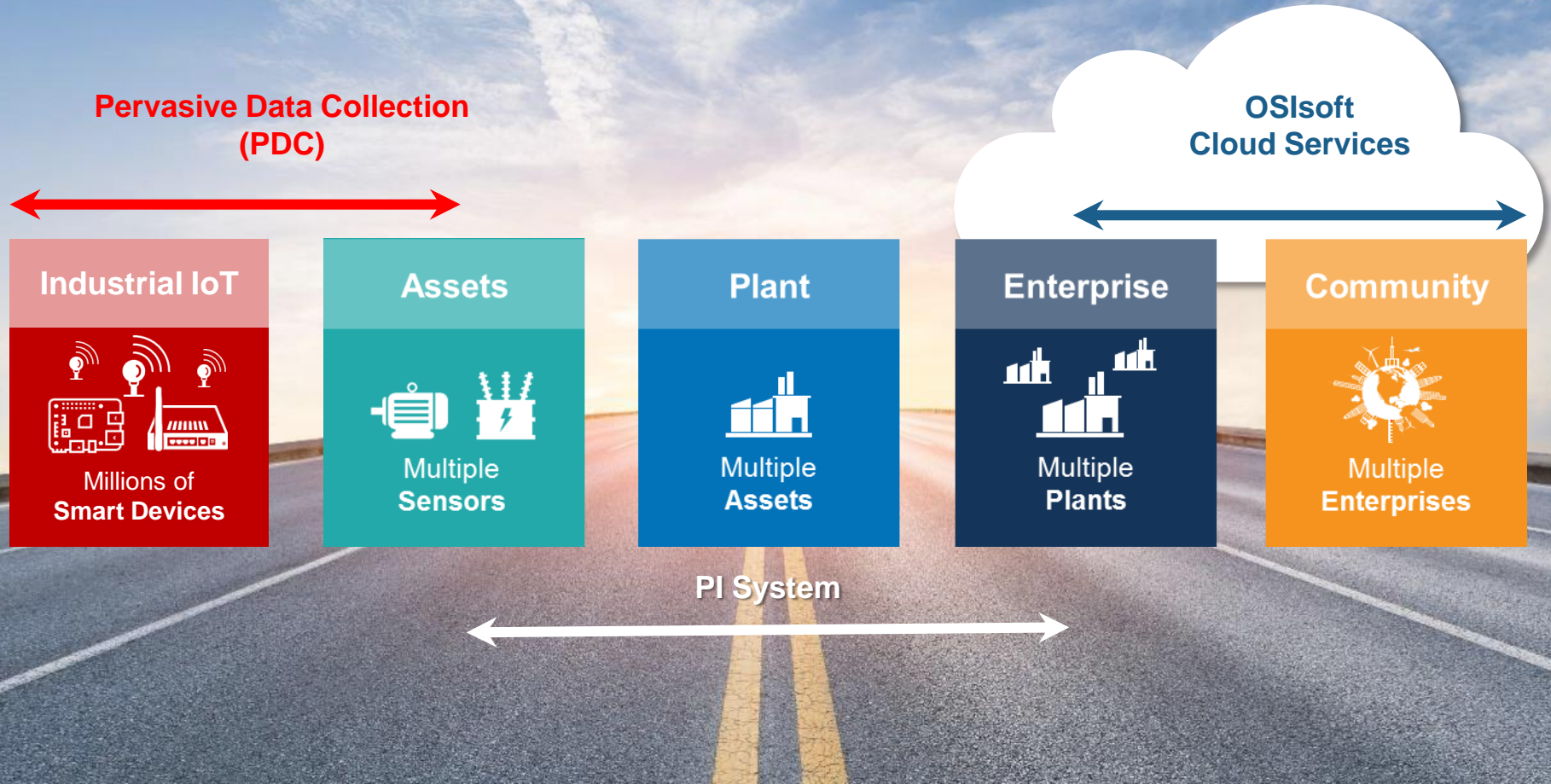
Abbas Saboowala, Product Manager, OSIsoft
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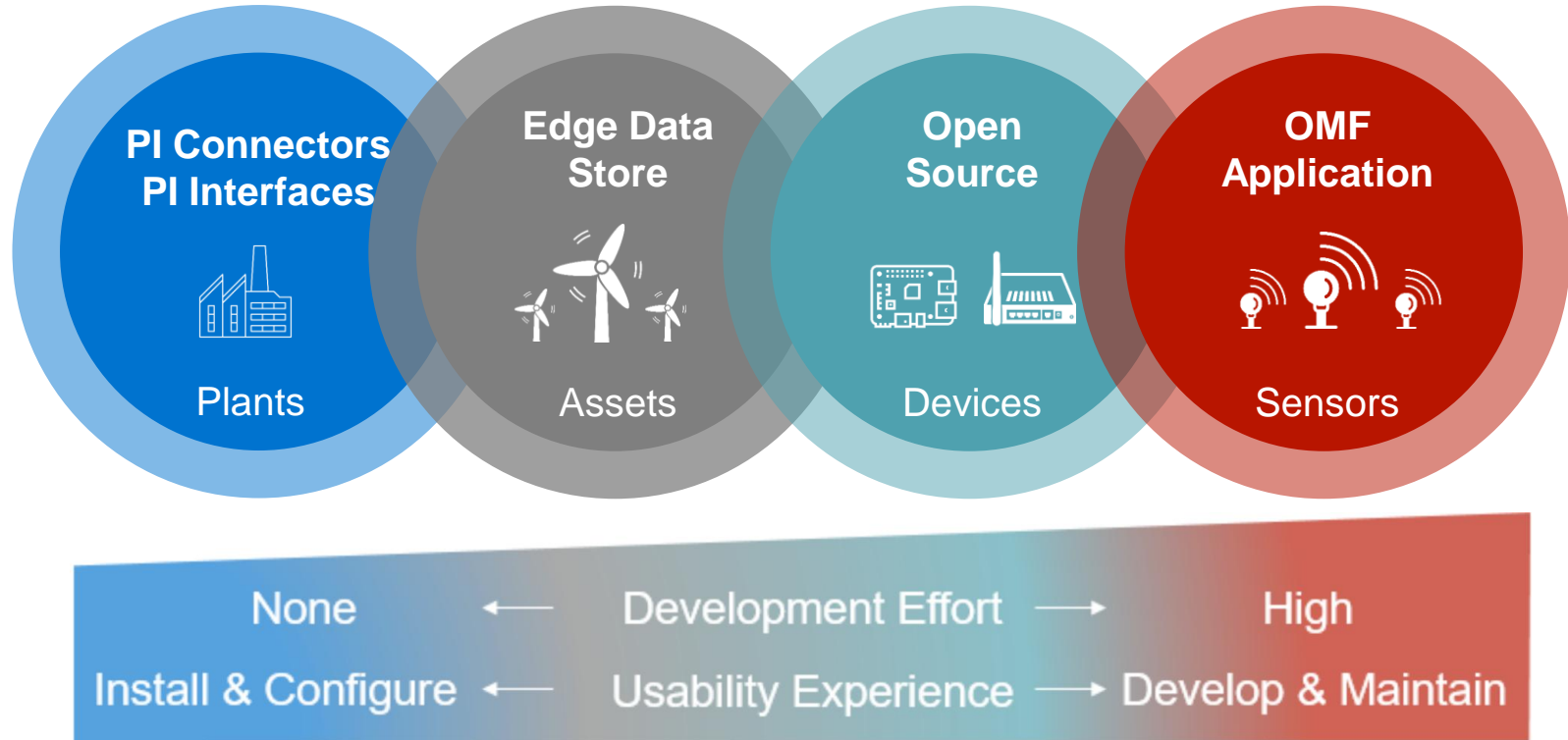
Pervasive Data Collection



OSIsoft's Software and Services Direction



Pervasive Data Collection Products & Technologies



PI Interfaces & PI Connectors

PI Interface
PI Connectors



Plants



Ready Off-The-Shelf



Secure Architecture



High Performance

- Flexible Deployment
- Cross Platform (Windows, Linux) *
- Robust data collection (Data Buffering)
- Intelligent Data Selection and Data Transfer *
- Developed, Sold, and Supported by OSIsoft

PI Interfaces

- Majority of data collection today
- Strongly supported
- 30+ releases per year
- Hundreds available



Popular ones: OPC DA, OPC HDA, PI-to-PI, UFL, MODBUS and RDBMS

New development PI Interfaces	Market
Rockwell Pharmasuite MES	Pharmaceuticals
Landis+Gyr HES	AMI – Electrical Distribution

PI Connectors



Streamlined Configuration

Auto create PI Points with rules-based data selection.

Auto discover data, now and later

PI Connectors monitor the source so you don't have to.

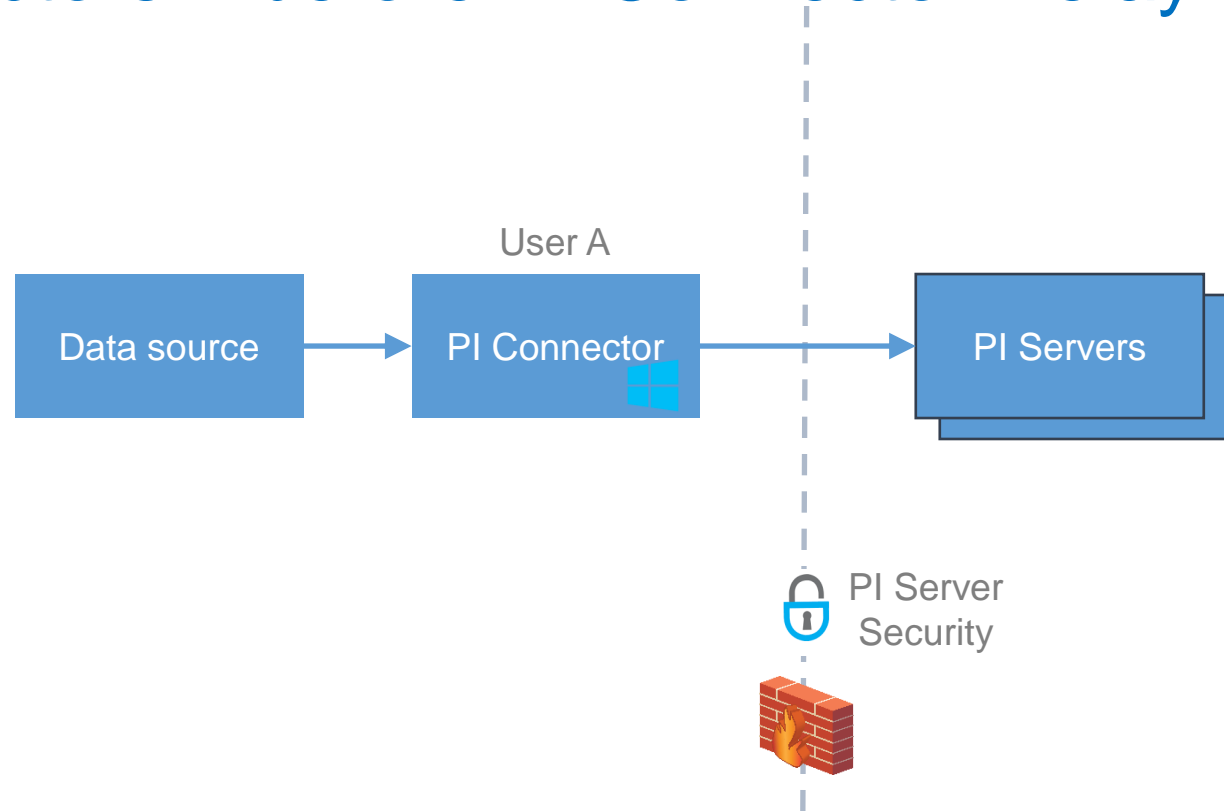
Unified Admin Experience

A one-stop shop to manage data collection across your sources.

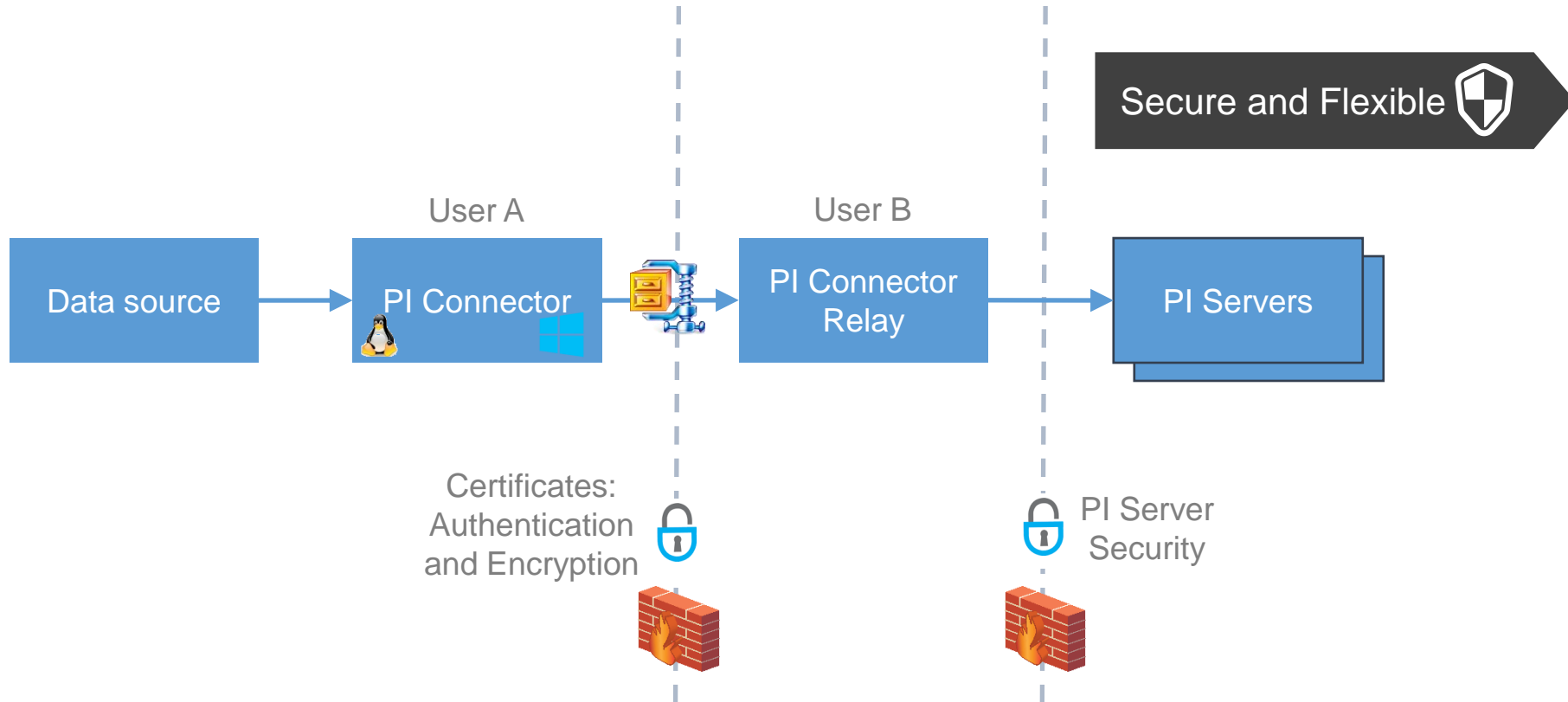
Secure & Flexible Architectures

Send data securely across diverse networks to multiple destinations.

PI Connectors – before PI Connector Relay






PI Connectors with PI Connector Relay



PI Connectors Available today

→ Uses PI Connector Relay and PI Data Collection Manager

 Currently in Beta

PI Connector	Market	PI Connector	Market
BACnet	Facilities	→ WITSML 	Upstream, drilling
CygNet	Upstream Oil & Gas	OPC UA	Many
DC Systems RTscada	T&D	Ping	IT infrastructure
EtherNet/IP	High-speed PLC data	→ PI System Connector	Many
→ FANUC Focas	Discrete	PI System Health	IT infrastructure
HART-IP	Wireless sensors	→ Redfish	Data centers
IEC 60870-5-104	T&D Substations	→ Siemens SINUMERIK	Discrete
→ IEC 61850 	T&D Substations	Siemens SIMATIC PCS 7	Many
IPMI	Datacenters	UFL	Many
→ MTConnect	Discrete	Wonderware Historian	Many

New PI Connectors in development

PI Connector	Market	Status
GE e-terra 	T&D	Beta
Honeywell PHD 	Many	Beta
Modbus for Cisco IOx	All	UAT
MQTT Sparkplug 	All	Beta
Siemens Spectrum 7	T&D	Development
Tridium 	Facilities	Beta
WITSML PASON 	O&G	Beta
61850 with Relay 	T&D	Beta

What else is new in PI Connectors?

- **PI Connector for OPC UA ver 1.3.x.x** – Released Jan, 2019
 - Certified by OPC Foundation
- **PI Connector for WonderWare Historian** – improved store forward logic handling
 - Enhanced support for Tier 2 servers
- **PI Connector for IEC 61850 with Relay** – Beta available
 - Evolution of the standalone connector to incorporate Relay support
- **PI Connector for MQTT Sparkplug with Relay** – Closed Beta
 - Support for Sparkplug B format
- **Improved handling of items in Data Collection Manager**
 - Significant improvement when handling discovery and selection of large data sets
- **User Controlled Tag Naming**
 - Provide users control over tag names before creating them automatically
- More!

Connectivity - Roadmap

Manageable System
Seamless Infrastructure
Increased Value & Scope of Data



Developing Now

Expand Data Connectivity

Several more data ingress options including MQTT Sparkplug, Honeywell PHD, WITSML PASON, etc.

BETA

Tag (Stream) Naming Control

Ability to control tag naming convention

Tag (Stream) Mapping Control

Ability to migrate from Interfaces to Connectors and use existing tags

Flexible Deployment

Continue to enhance customer experience by delivering flexibility when deploying connectivity



Considering Next

Multiplatform Compatibility

Enable customers to run OSIsoft developed connectivity cross-platform

Lightweight and Higher Performant

Reduce installation footprint and optimize resource consumption

Edge to Cloud

Support use cases that require sending data to OCS from EDGE and IoT devices



Researching Future

Remote Operations Monitoring

Enable insights into the operations and health of remote assets

Manageability and Deployment

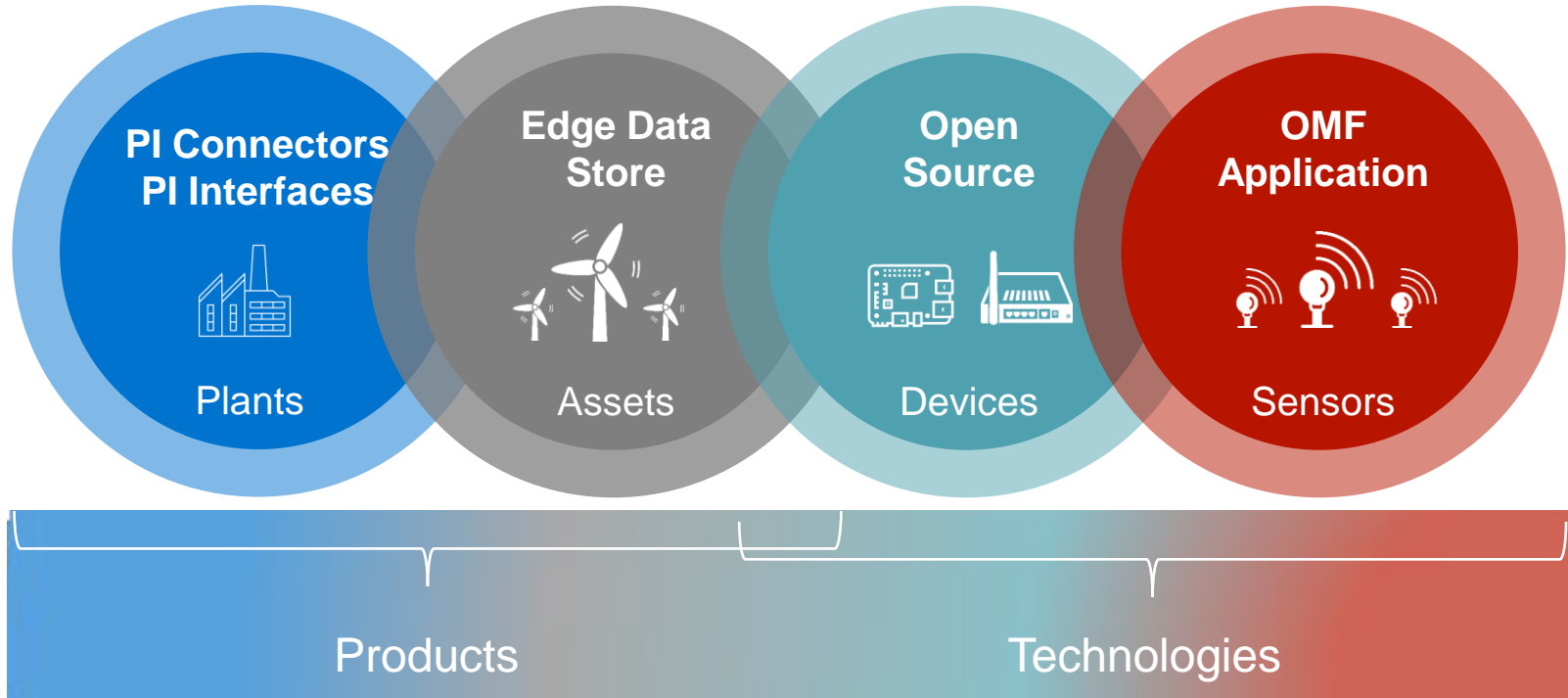
Optimize the experience around deploying and managing multiple connectivity solutions



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Last Updated: 2019-04

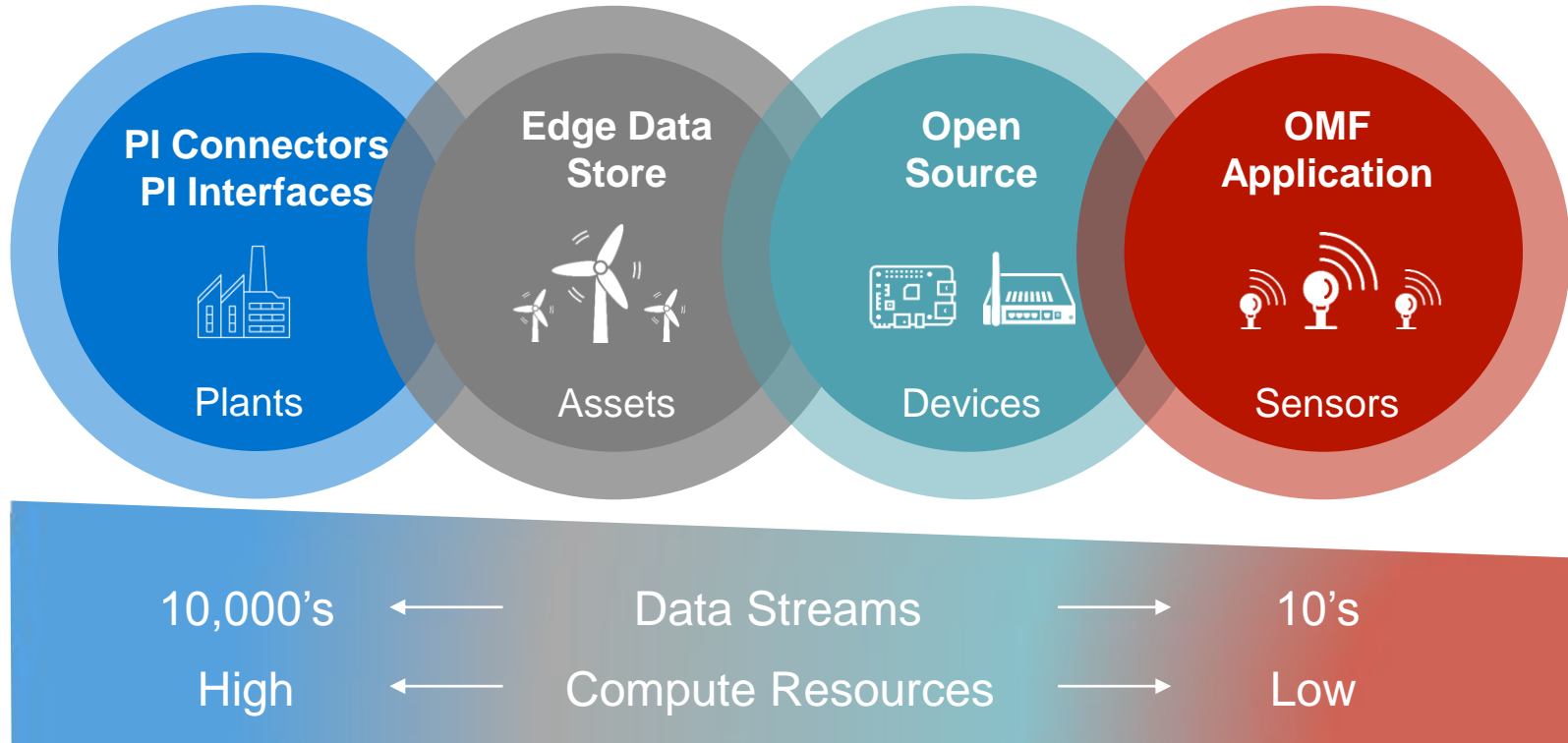
Pervasive Data Collection Products & Technologies



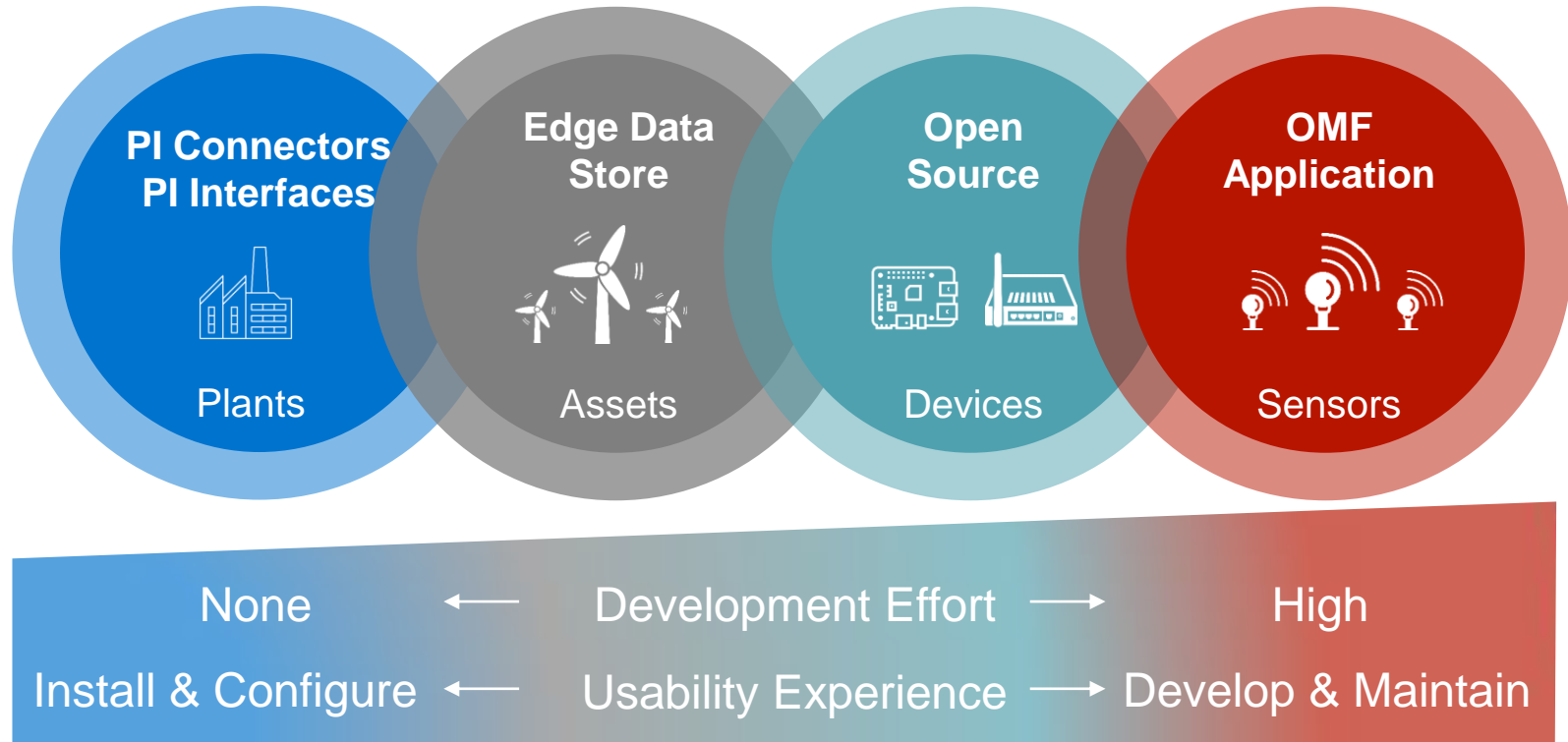
Many “Edges”



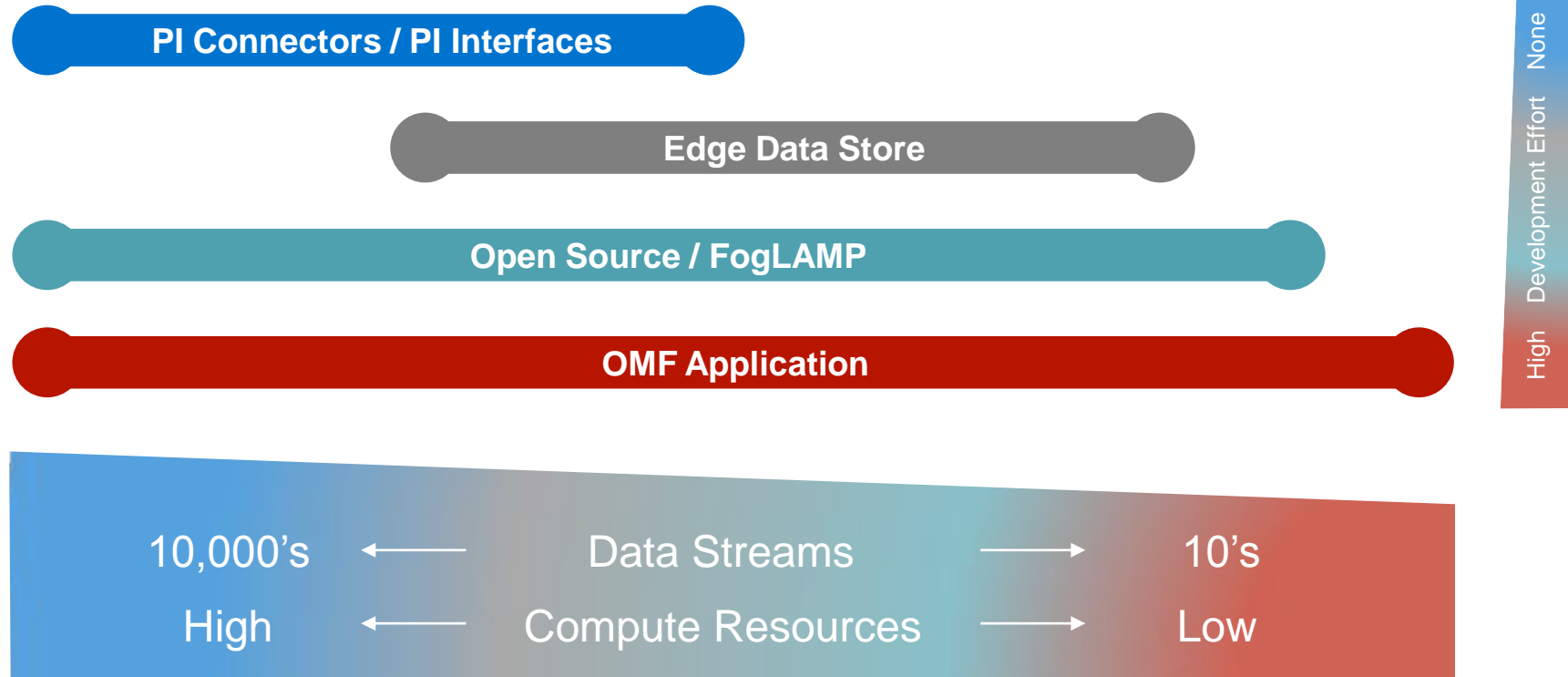
Data Streams & Compute Resources Comparison



Data Connectivity Application Development Effort & Usability Experience Comparison



Pervasive Data Collection Coverage

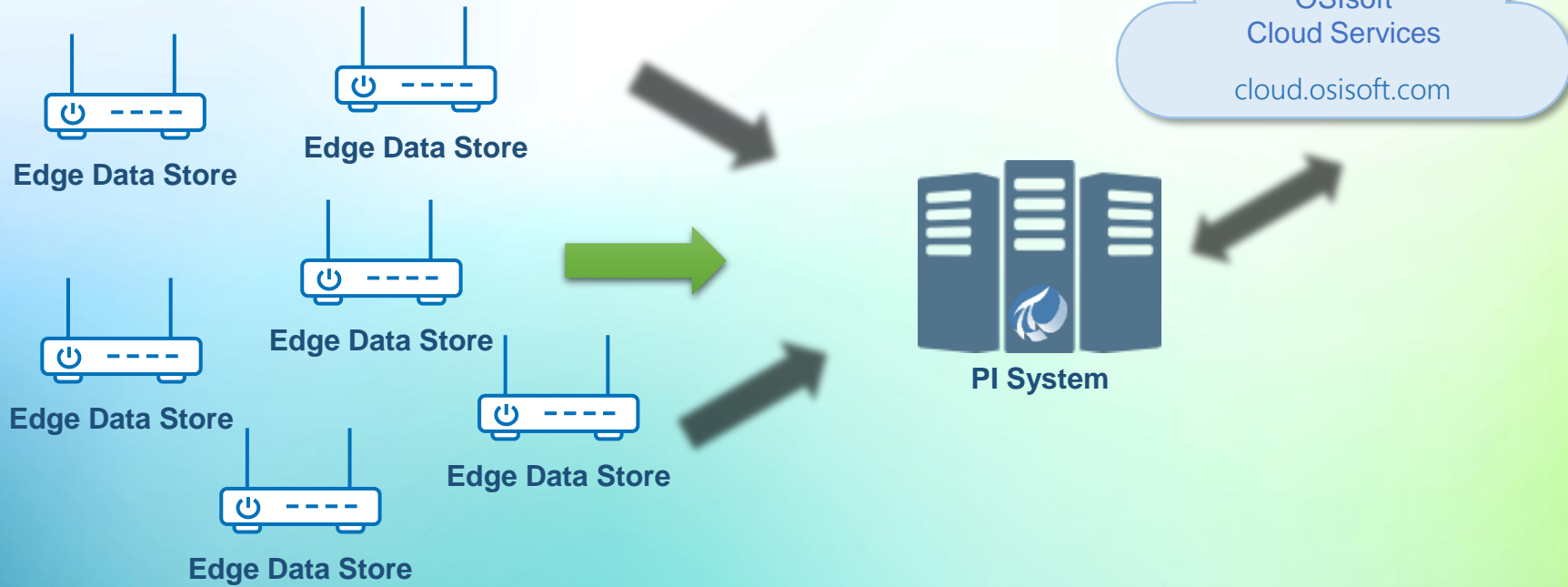


Edge Data Store Design



The Edge Data Store is a newly developed set of data collection, storage, access and transfer technologies, built to run on lightweight devices and interoperate with real-time, operational data sources.

Edge Data Store is Complementary



Operational data is sent between Edge Data Stores and PI Systems
... and also between PI Systems and OCS.

Edge Data Store - Roadmap

Manageable System
Seamless Infrastructure
Increased Value & Scope of Data



Developing Now

Data Connectivity

Several data ingress options including Modbus TCP, OPC UA, OMF and EDS API.

BETA

Data Storage

Data collected through the various connectivity options is persisted at the edge.

BETA

Application Platform

Partner and customer developed trending, analytics and other applications interact with the Edge System via a Restful API.

BETA

PI System Integration

Stored data is transferred to the PI Server using configurable egress rules.

BETA



Considering Next

OCS Integration

Stored data is transferred to OCS using configurable egress rules.

Remote Management

Edge System is configured and administered from a remote, centralized location.



Researching Future

Additional Data Connectivity

Calculations

Trending Experience

Last Updated: 2019-04



Extending the Data Infrastructure



CLOUD



PI System

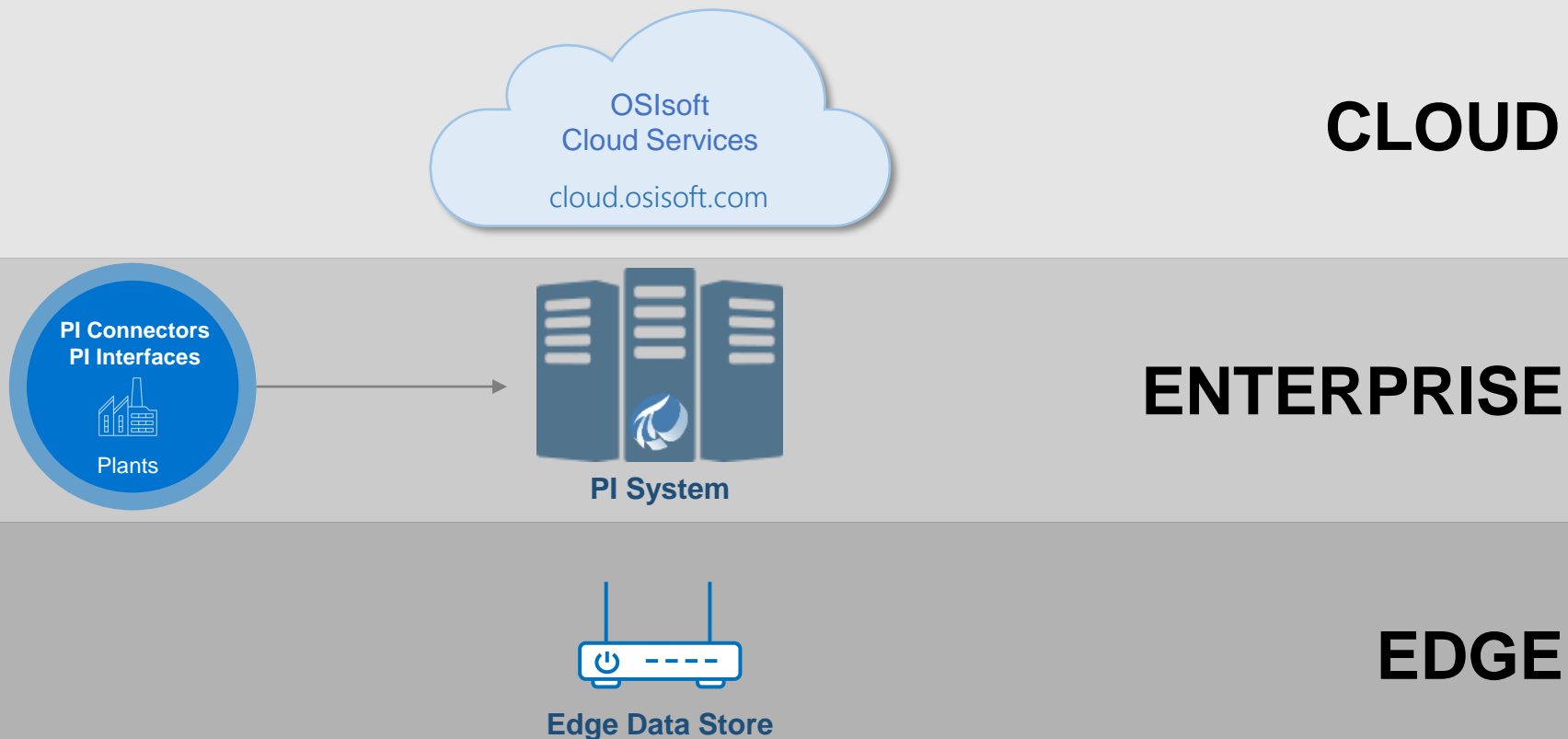
ENTERPRISE



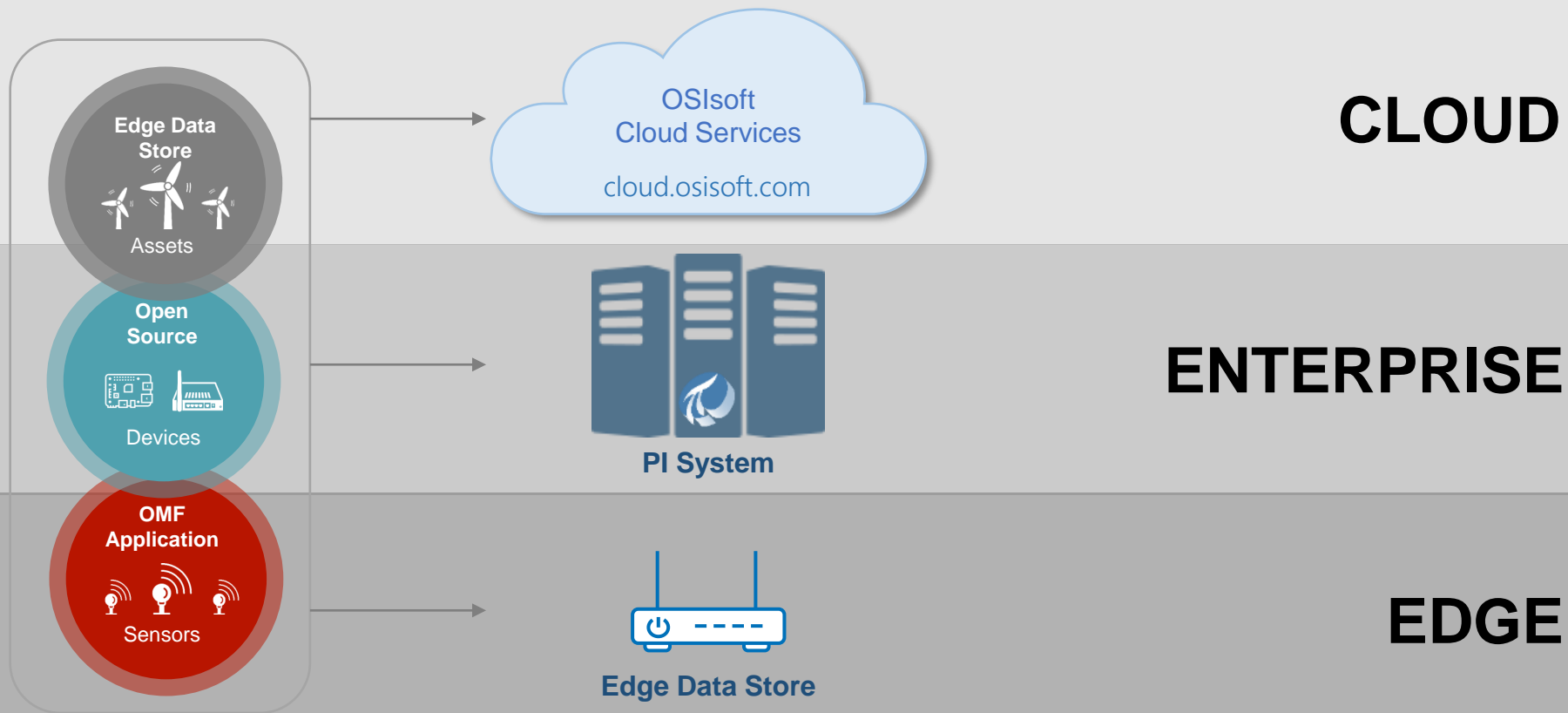
Edge Data Store

EDGE

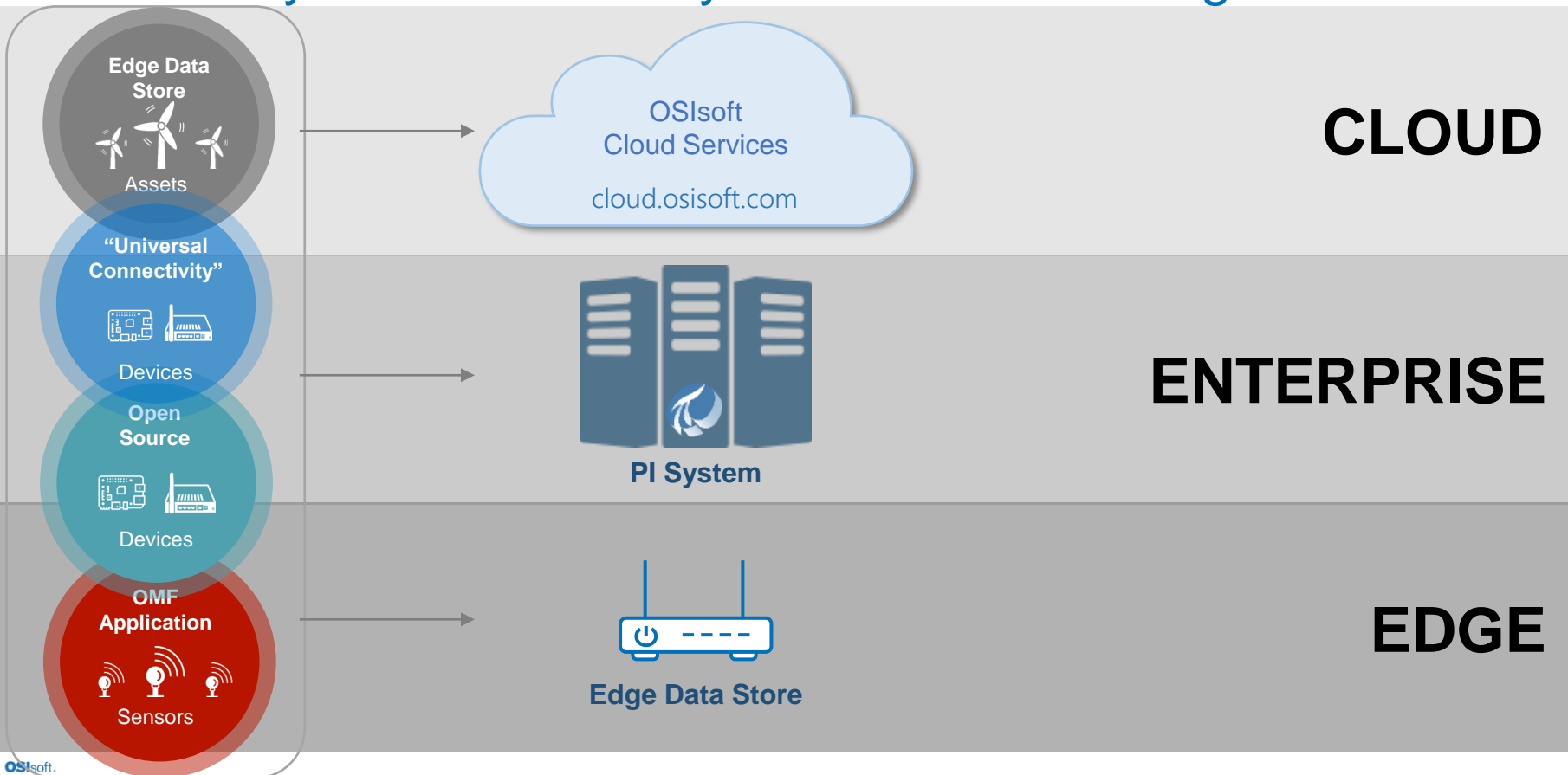
Connectivity to the PI System – Developing Now



Connectivity to All OSIsoft Systems – Developing Now



Connectivity to All OSIsoft Systems – Considering Next





➞ Product Booths

- Data Collection – Golden Gate
- Edge Technologies - Yosemite
- IIoT Demos – Yosemite
- Partner booths:
 - Dianomic (Golden Gate)
 - IPCOS (Yosemite)
 - Monico (Yosemite)
 - Transpara (Yosemite)

Product Expo – Hilton

➞ OSIsoft Talks

OSIsoft Cloud Services for
Developers

Thursday - 11:30am
– Parc 55, Mission I

Gather: Data Connectivity Options
for the PI Server and the Cloud

Thursday - 2:30pm
– Hilton, Grand Ballroom A

Edge Analytics with the PI System

Thursday - 3:30pm
– Hilton, Cyril Magnin I

➞ Partner Talks/Labs

Using FogLAMP to get your Dark
Data into PI

Thursday - 11:30am
– Hilton, Cyril Magnin I

Designing OMF into a Multi-function
Edge Device

Thursday - 3:30pm
– Hilton, Imperial Ballroom B

Code your way out of the stickiest data
connectivity requirements... (Lab)

Thursday - 3:30pm – Parc 55



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Communicate with OSIsoft Product Managers



<https://feedback.osisoft.com>

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If it is not shared on the feedback portal, it didn't happen!



Questions?

Please speak with us **after the presentation**

or

at the **Data Collection booth** in the Golden Gate Ballroom or the **Edge Technologies booth** in the Yosemite Ballroom

Please remember to...

