

# OSIssoft Cloud Services

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# Agenda

Overview

Scenarios

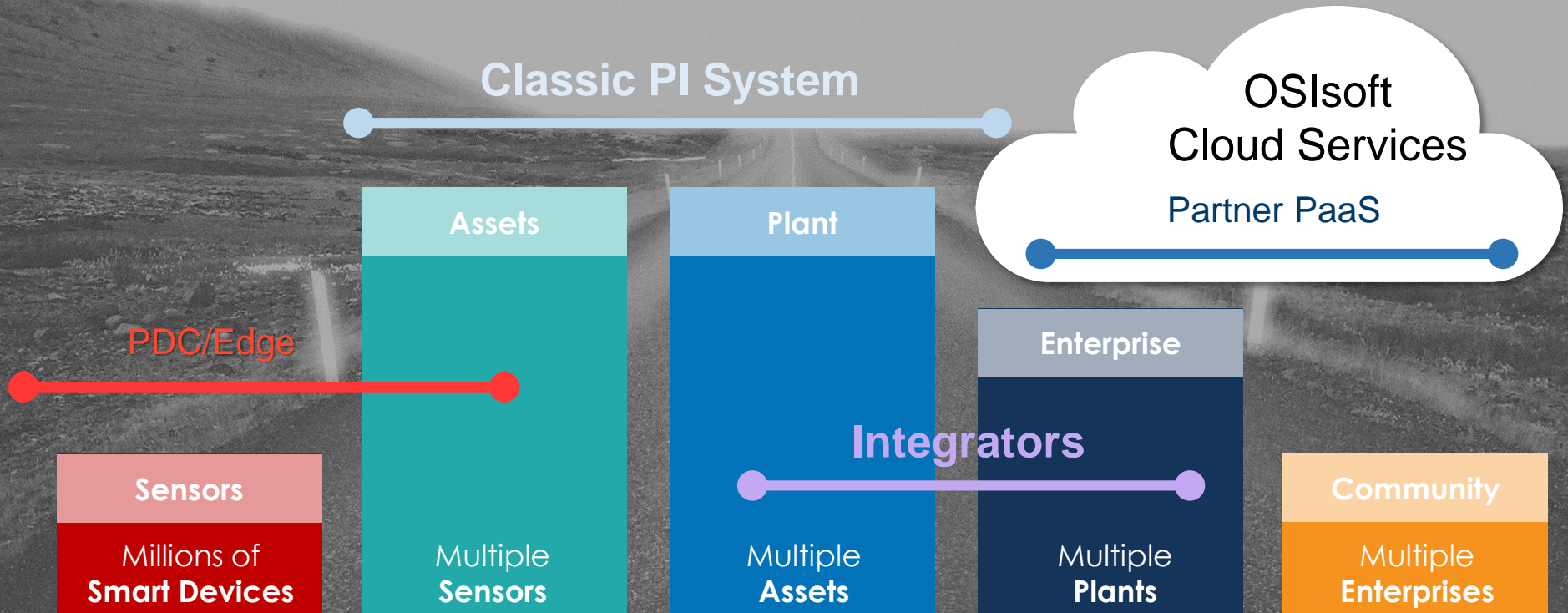
Go To Market

Demo

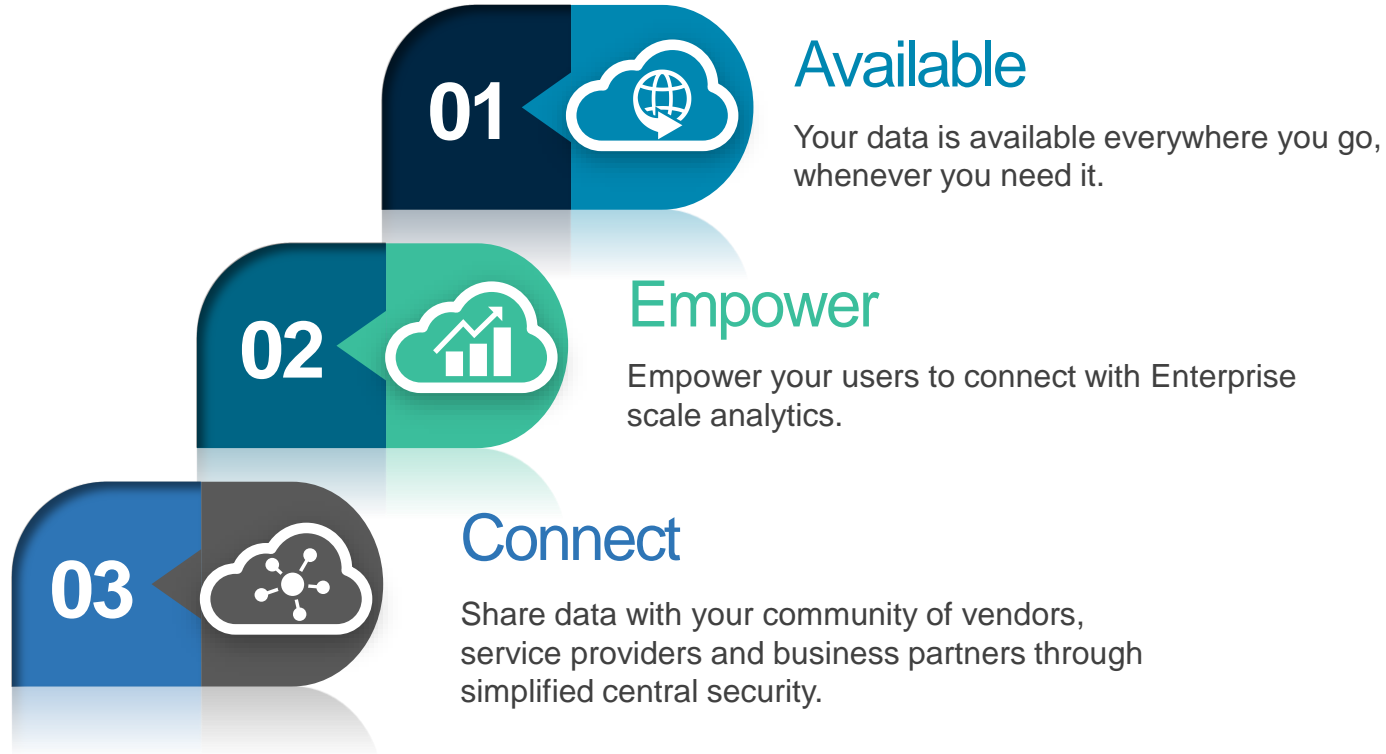
More Demo

Roadmap

# OCS Overview



# Why OSIsoft Cloud Services?



# OSIsoft Cloud Services Design



PI System



[cloud.osisoft.com](https://cloud.osisoft.com)

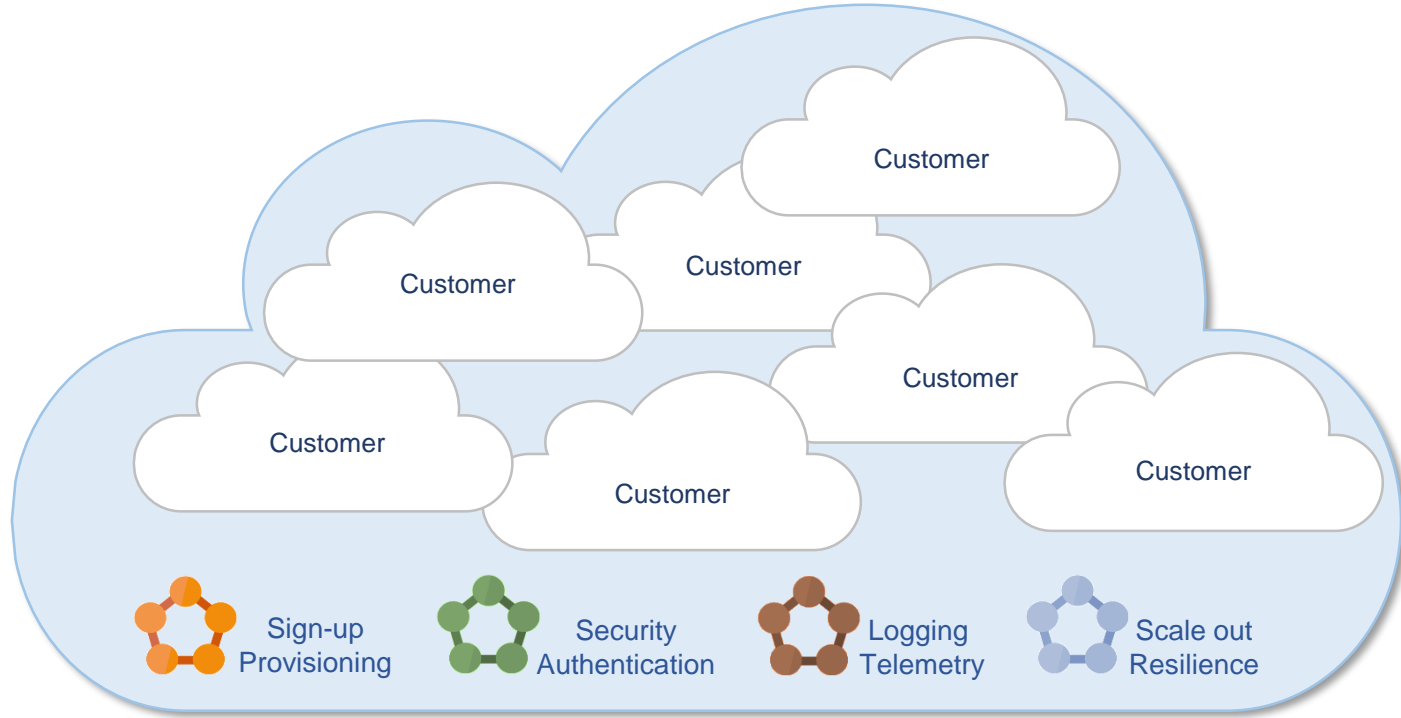
OSIsoft Cloud Services is a newly developed, cloud native platform, built for real time operational data.

# OSIssoft Cloud Services are complementary



Operational data is transferred between PI Systems and OCS  
... and also between Edge components and OCS.

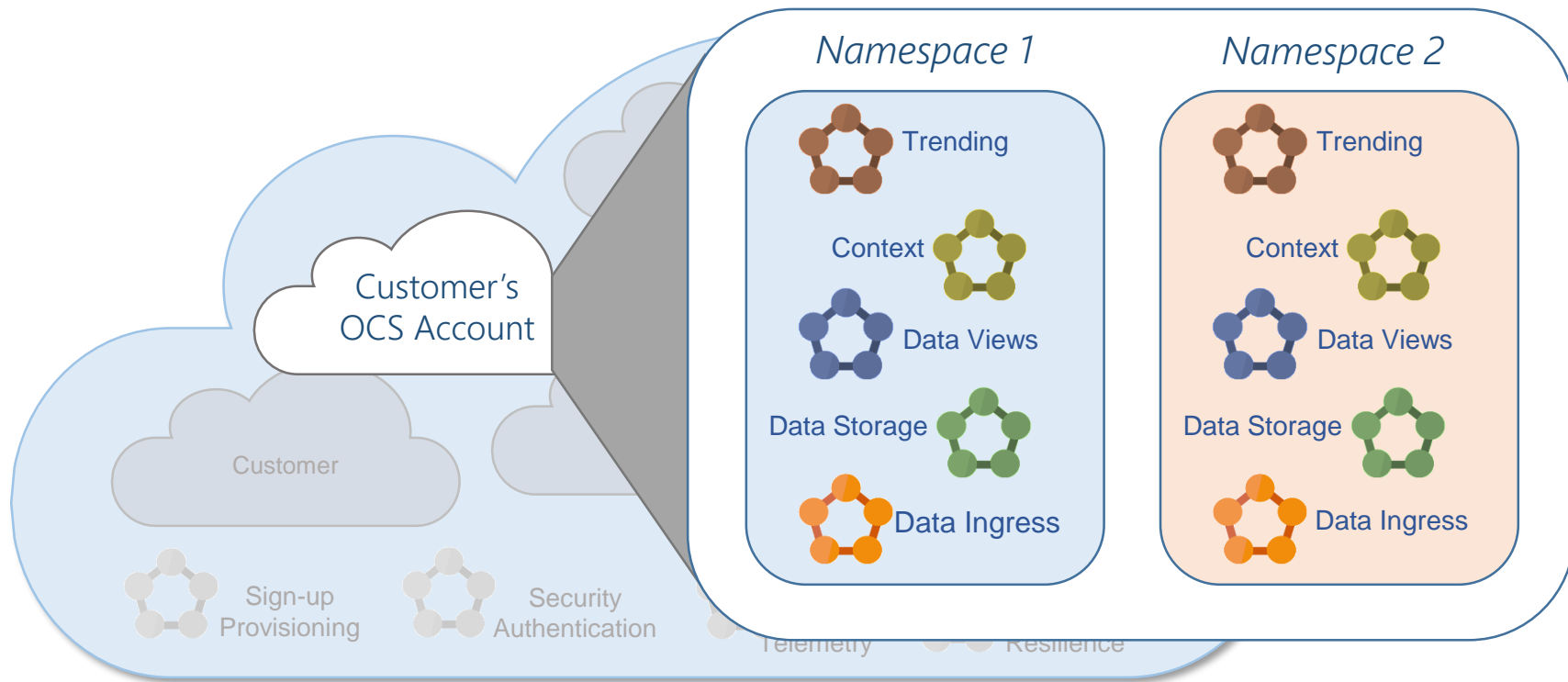
# OCS Infrastructure – Components



Cloud Services Infrastructure

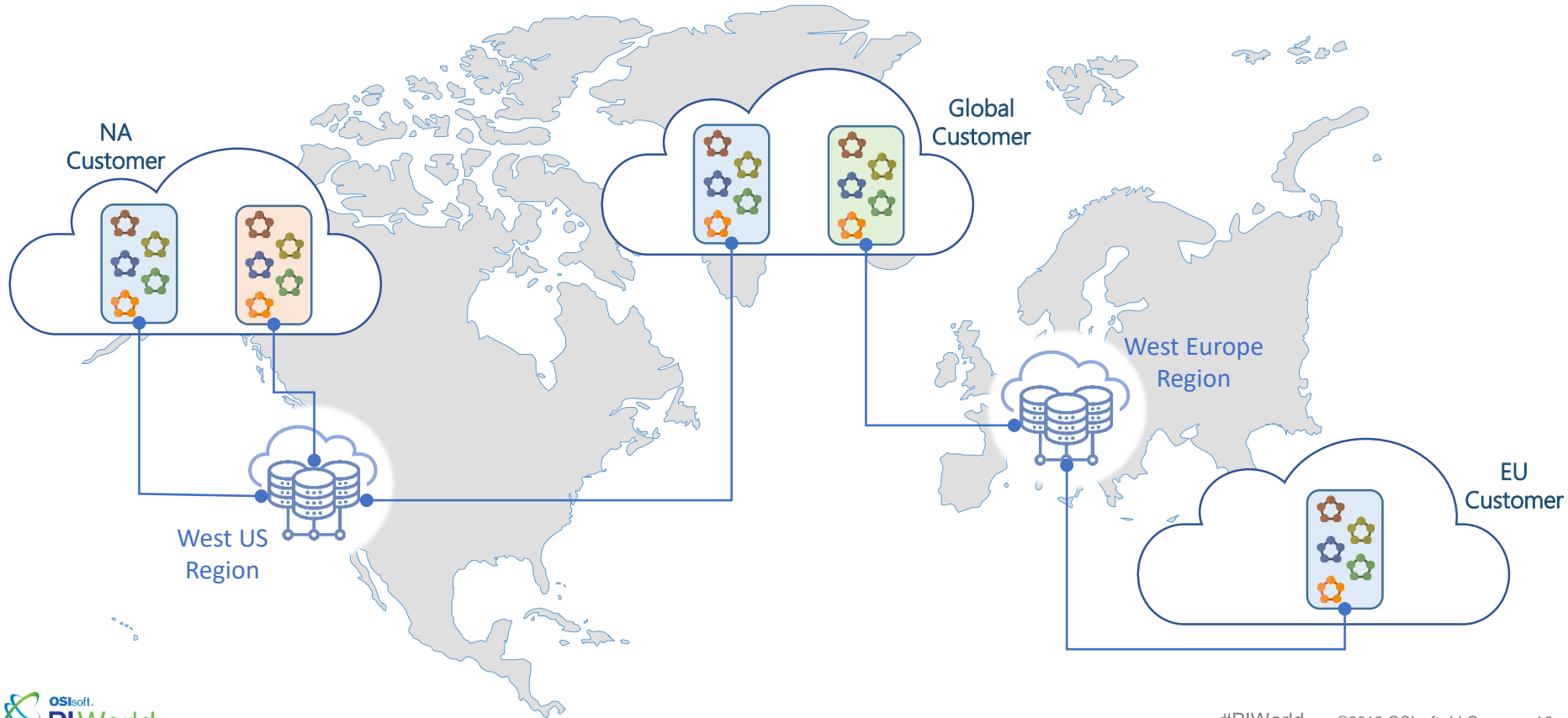


# OCS Accounts – Data Services



Cloud Services Infrastructure

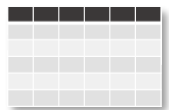
# OCS Accounts – Deployments



# Data Science at OSIssoft



Data View

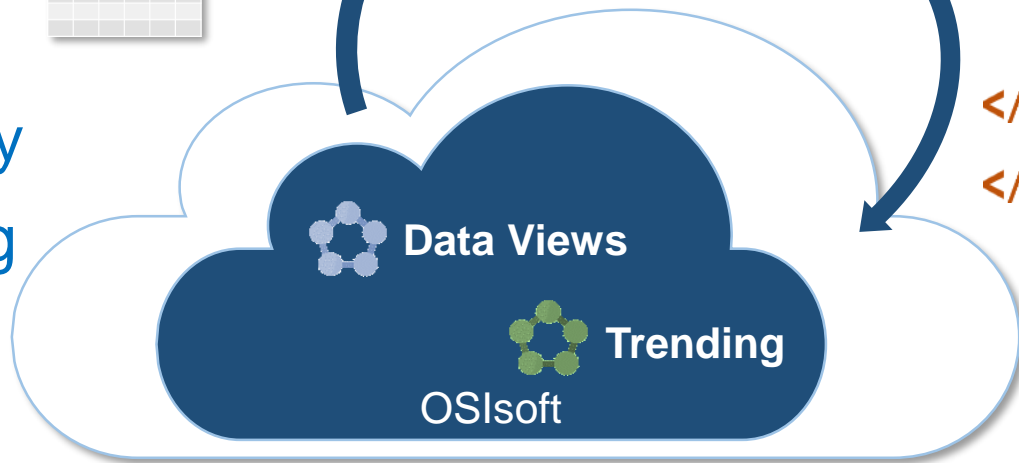


Azure AutoML



Predicted Data

Can we accurately predict the cooling unit performance at OSIssoft?

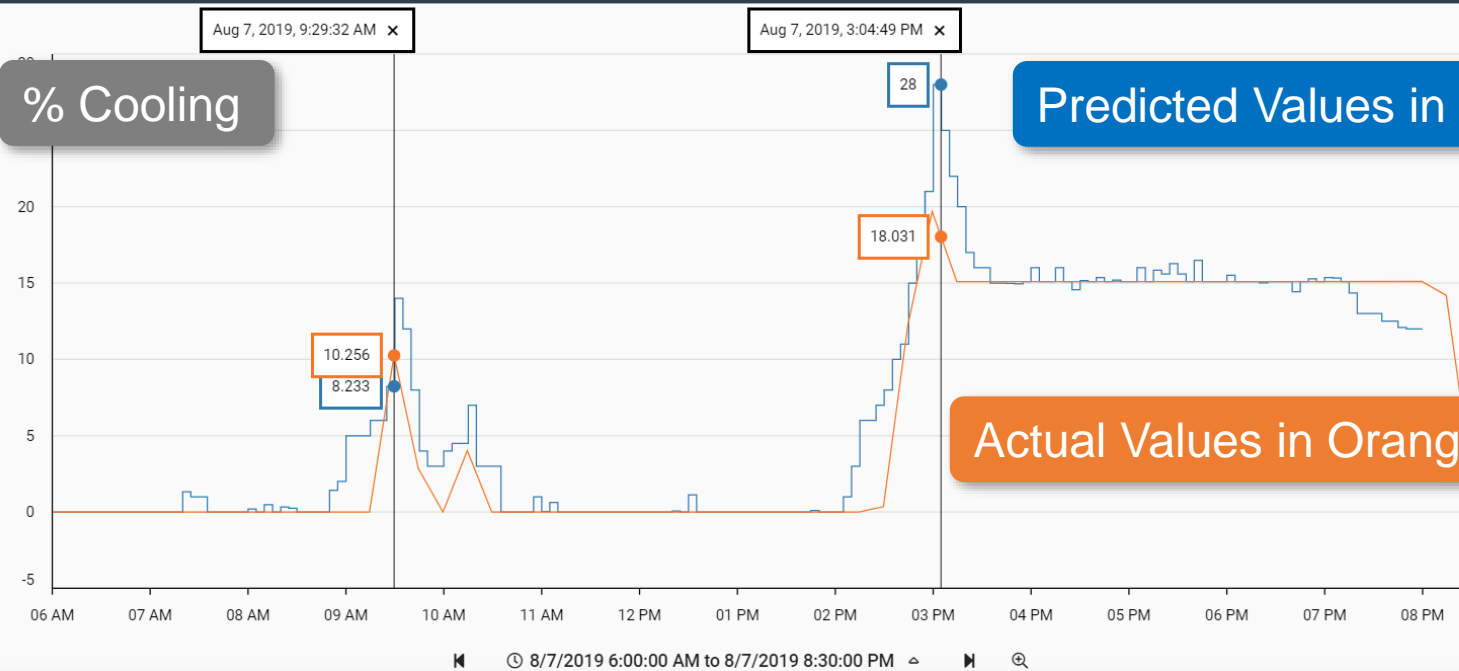


PltoOCS

PltoOCS



OSIssoft Headquarters



Add Stream Property

- 101201 PercentCooling Forecast | Value  
<Description Not Found> +
- BACnet Connector.Building\_101201.AnalogValu...  
<Description Not Found> +
- BACnet Connector.Building\_101201.AnalogValu...  
<Description Not Found> +

| ✓ | Name                                      | Description | Type       | Timestamp           | Value  |   |
|---|-------------------------------------------|-------------|------------|---------------------|--------|---|
| ✓ | 101201 PercentCooling Forecast   Value    |             | SimpleType | 8/7/2019 8:00:00 PM | 12.000 | 🗑 |
| ✓ | BACnet Connector.Building_101201.Analo... |             | PI-Float32 | 8/7/2019 8:29:30 PM | 2.756  | 🗑 |

# DEMO

[1 Find Streams](#) [2 Configure Data View](#)

## Configure Data View

Enter a **Start Time**, **End Time** and valid **Interpolation Interval**, then click **Generate Preview** to preview the data view. To configure data grouping rules click **Group Rules**. To map columns click **Column Mappings**.

Name:

Description:

Start Time:

2019 - 08 - 01



7 : 00

PM

End Time:

2019 - 08 - 02



7 : 00

PM

Interpolation Interval:

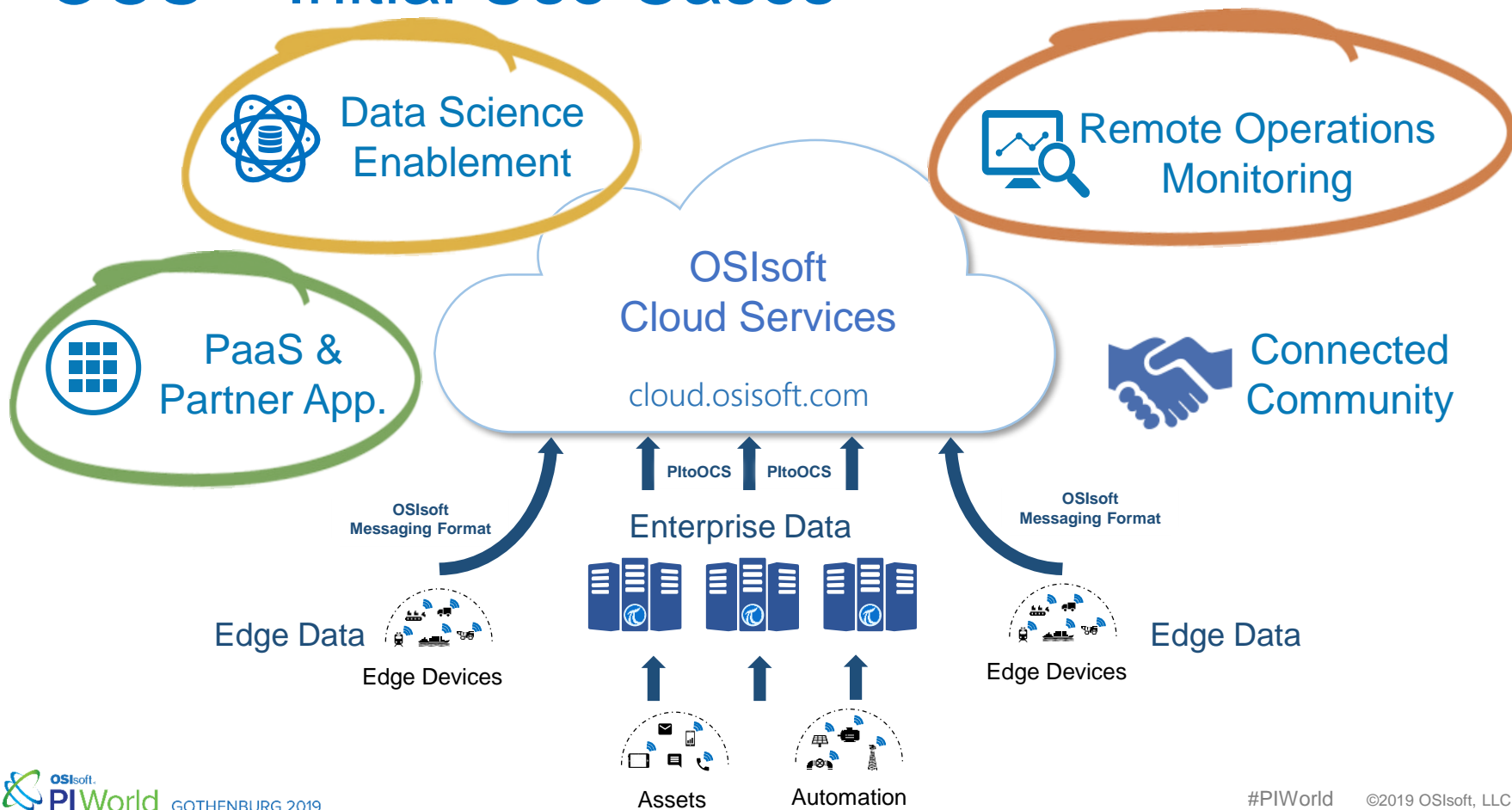
[Generate Preview](#)[Group Rules](#)[Column Mappings](#)

| Timestamp                | VAV Unit   | Floor | Side | Room    | OccupiedStatus | PercentHeating | PercentCooling | RoomTemp |
|--------------------------|------------|-------|------|---------|----------------|----------------|----------------|----------|
| Aug 1, 2019, 7:00:00 PM  | VAVRH 2-01 | 2     | East | Rm. 231 | 1              | 0              | 0              | 74       |
| Aug 1, 2019, 8:00:00 PM  | VAVRH 2-01 | 2     | East | Rm. 231 | 1              | 0              | 0              | 74       |
| Aug 1, 2019, 9:00:00 PM  | VAVRH 2-01 | 2     | East | Rm. 231 | 1              | 0              | 0              | 74       |
| Aug 1, 2019, 10:00:00 PM | VAVRH 2-01 | 2     | East | Rm. 231 | 0              | 0              | 0              | 75       |
| Aug 1, 2019, 11:00:00 PM | VAVRH 2-01 | 2     | East | Rm. 231 | 0              | 0              | 0              | 74.5     |
| Aug 2, 2019, 12:00:00 AM | VAVRH 2-01 | 2     | East | Rm. 231 | 0              | 0              | 0              | 74.21561 |
| Aug 2, 2019, 1:00:00 AM  | VAVRH 2-01 | 2     | East | Rm. 231 | 0              | 0              | 0              | 74       |
| Aug 2, 2019, 2:00:00 AM  | VAVRH 2-01 | 2     | East | Rm. 231 | 0              | 0              | 0              | 74       |
| Aug 2, 2019, 3:00:00 AM  | VAVRH 2-01 | 2     | East | Rm. 231 | 0              | 0              | 0              | 73.71571 |
| Aug 2, 2019, 4:00:00 AM  | VAVRH 2-01 | 2     | East | Rm. 231 | 0              | 0              | 0              | 73.5     |
| Aug 2, 2019, 5:00:00 AM  | VAVRH 2-01 | 2     | East | Rm. 231 | 0              | 0              | 0              | 73.5     |
| Aug 2, 2019, 6:00:00 AM  | VAVRH 2-01 | 2     | East | Rm. 231 | 0              | 0              | 6.27901173     | 73.5     |
| Aug 2, 2019, 7:00:00 AM  | VAVRH 2-01 | 2     | East | Rm. 231 | 1              | 0              | 0              | 73.5     |

[Back](#)[Save](#)[Cancel](#)

# OCS Targeted Scenarios

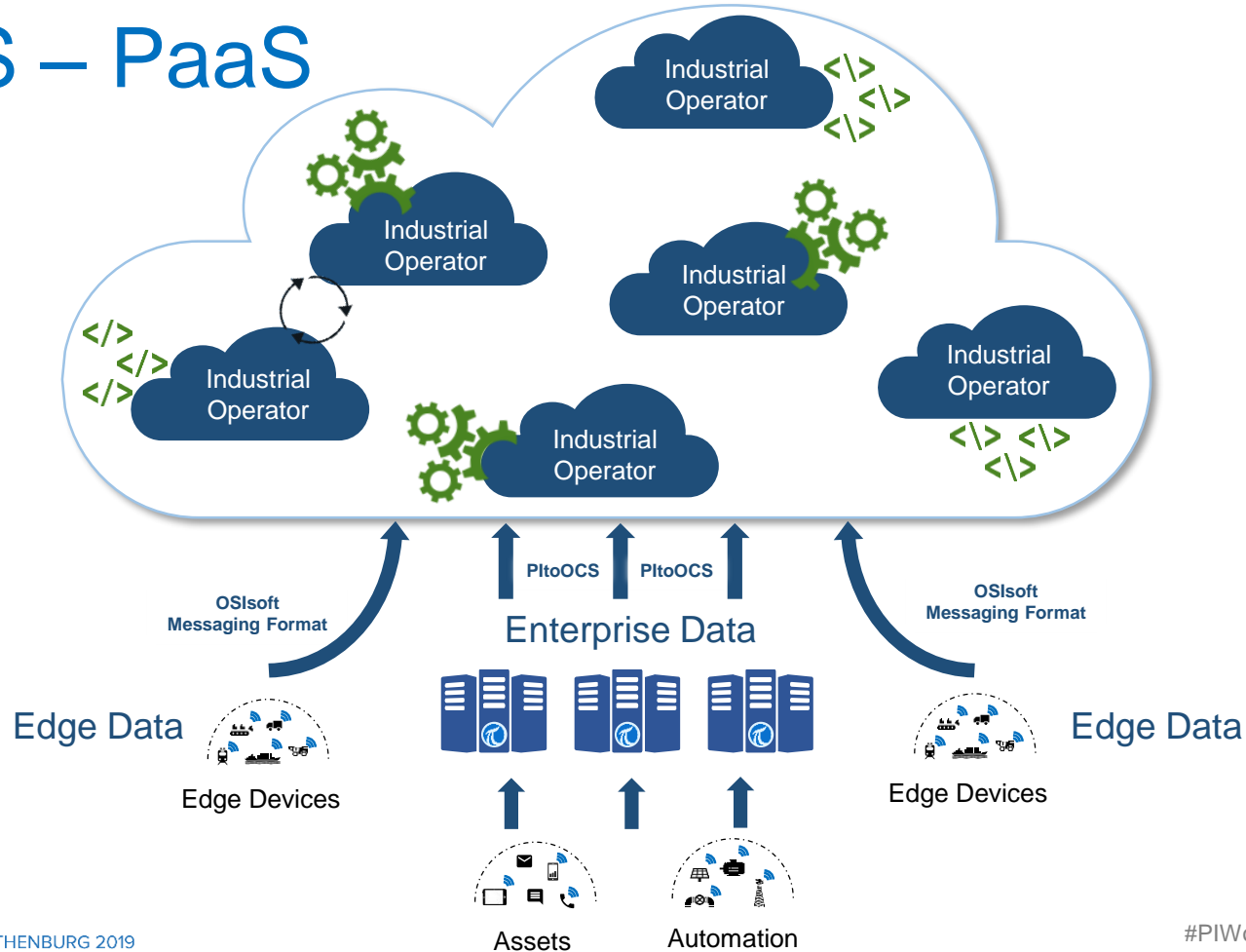
# OCS – Initial Use Cases





# OCS PaaS & Partner Apps

# OCS – PaaS



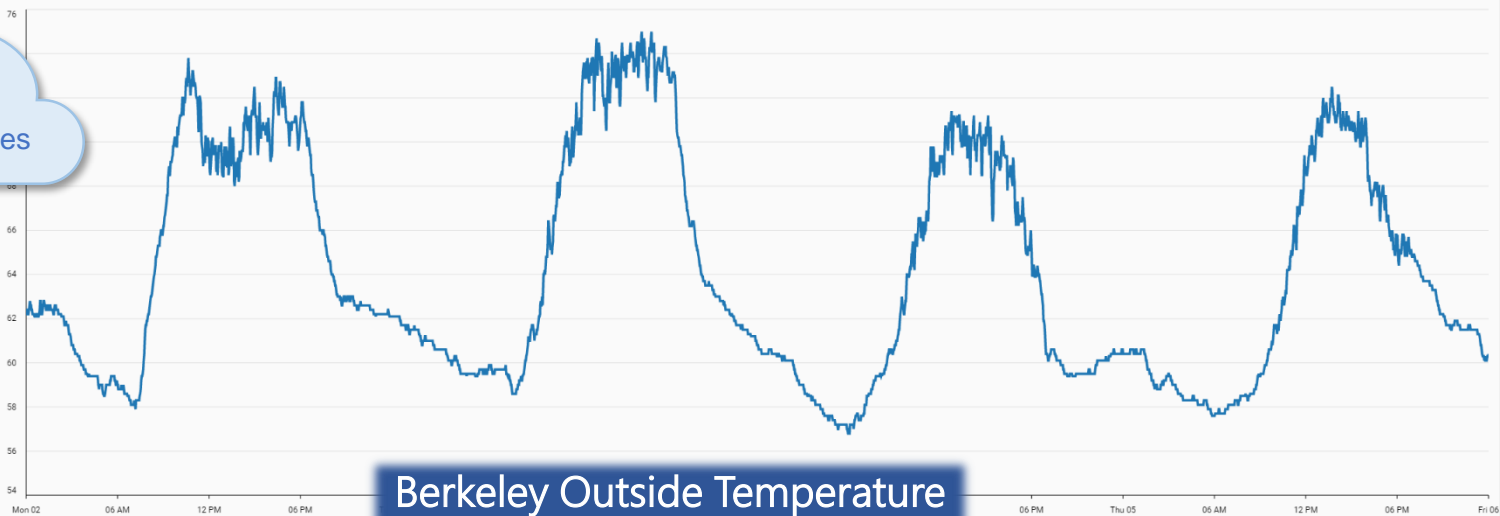


Ambient  
Weather Station 2902A

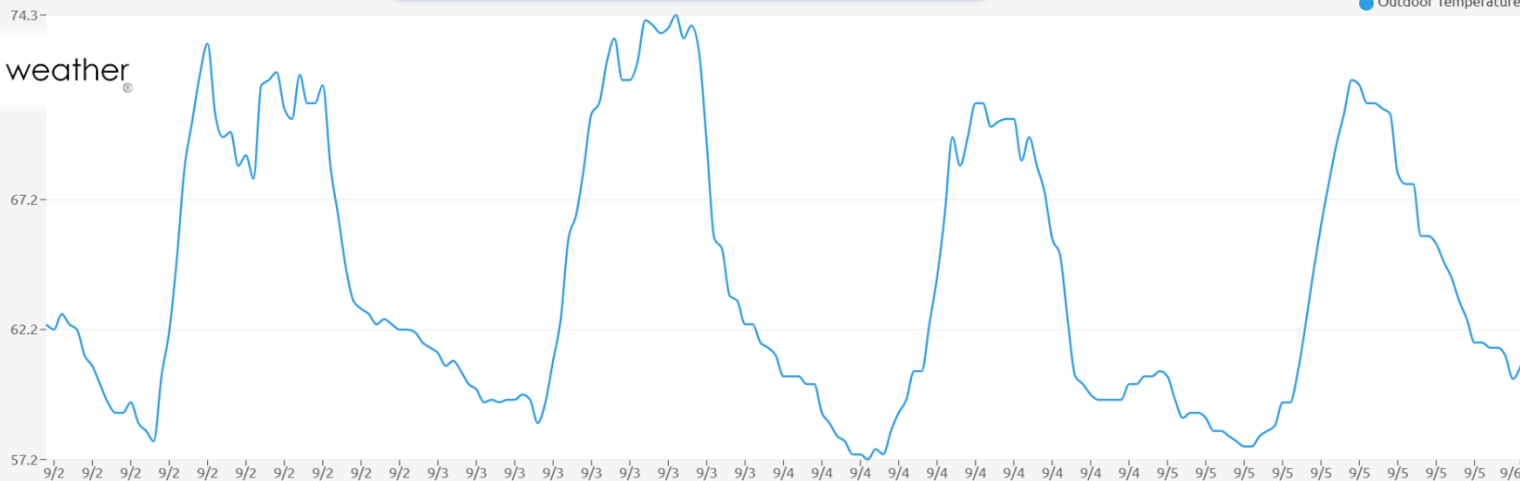


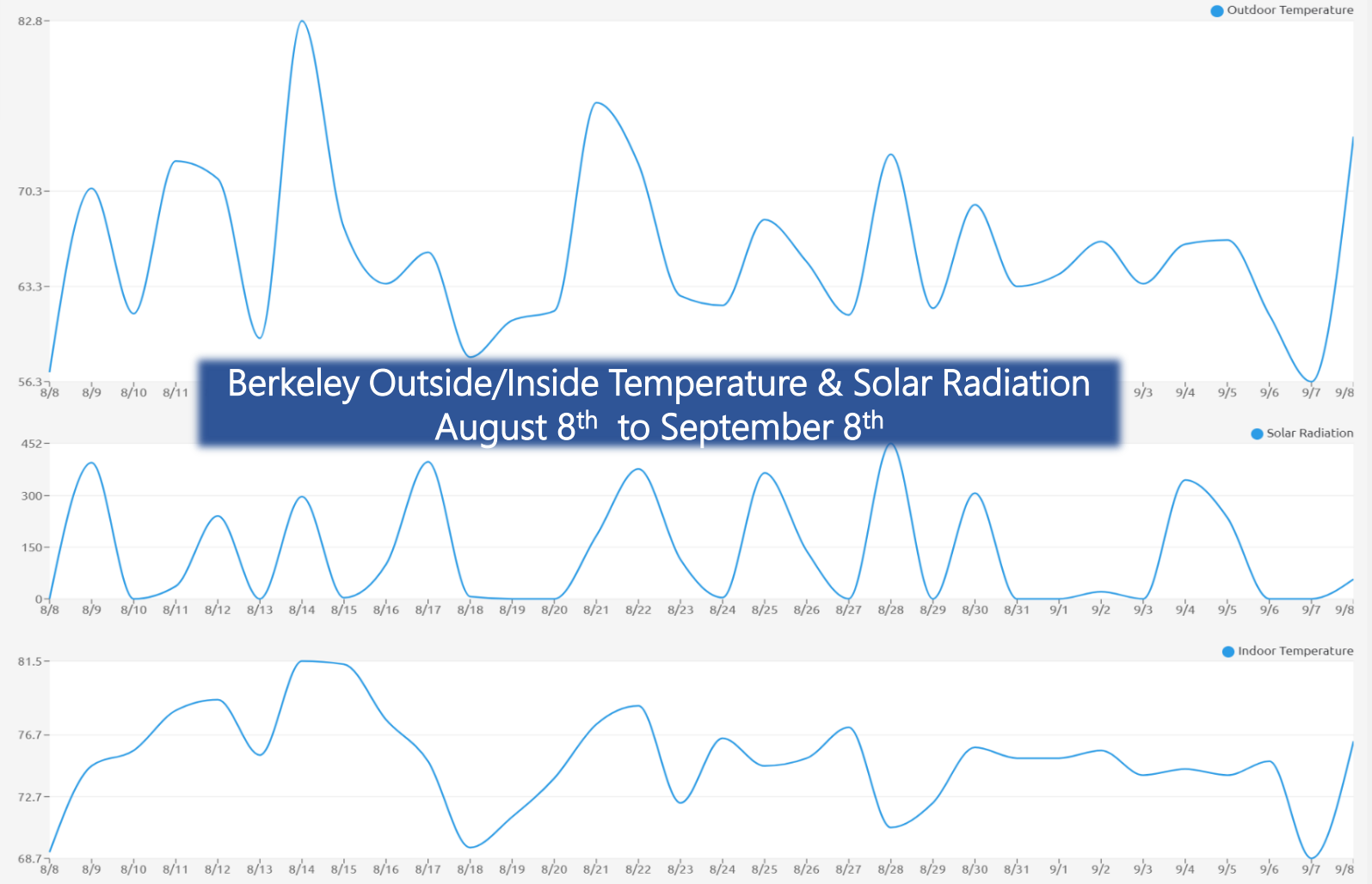
```
WeatherStationDataConnection[] connections = new WeatherStationDataConnection[]  
    new WeatherStationDataConnection{ StreamId = "WeatherData-Scottsdale",  
        StreamName = "Scottsdale Weather Station",  
        ApiKey = "xxx",  
        AppKey = "xxx"
```

```
OCSCConnection[] ocsCnxs = new OCSCConnection[]  
    new OCSCConnection{ AccountId = "xxx",  
        Resource = "https://dat-b.osisoft.com",  
        ClientId = "xxx",  
        ClientSecret = "xxx",  
        NamespaceId = "Development"
```



Berkeley Outside Temperature  
September 2<sup>nd</sup> to 6<sup>th</sup>

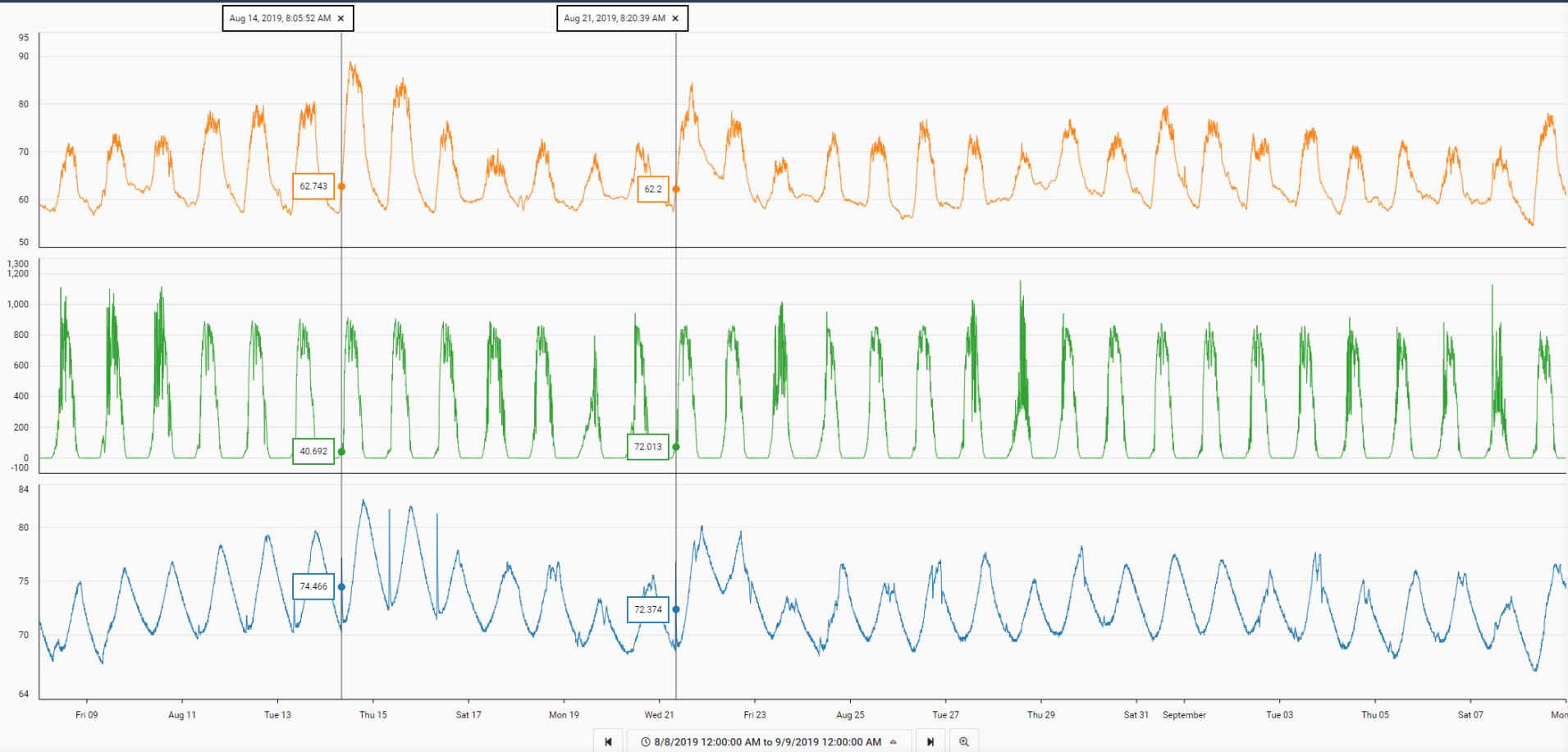




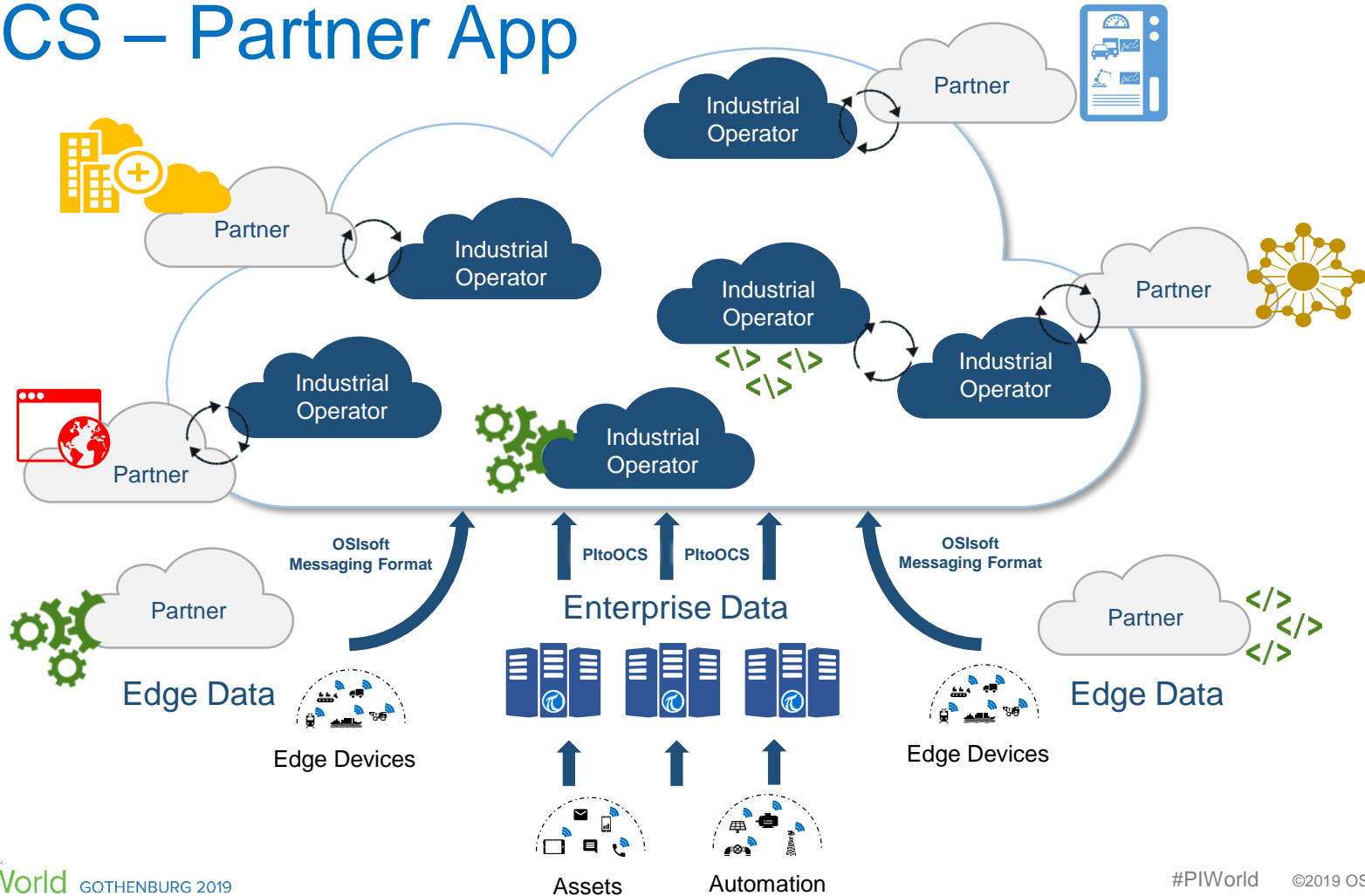
# Berkeley Outside/Inside Temperature & Solar Radiation

## August 8<sup>th</sup> to September 8<sup>th</sup>

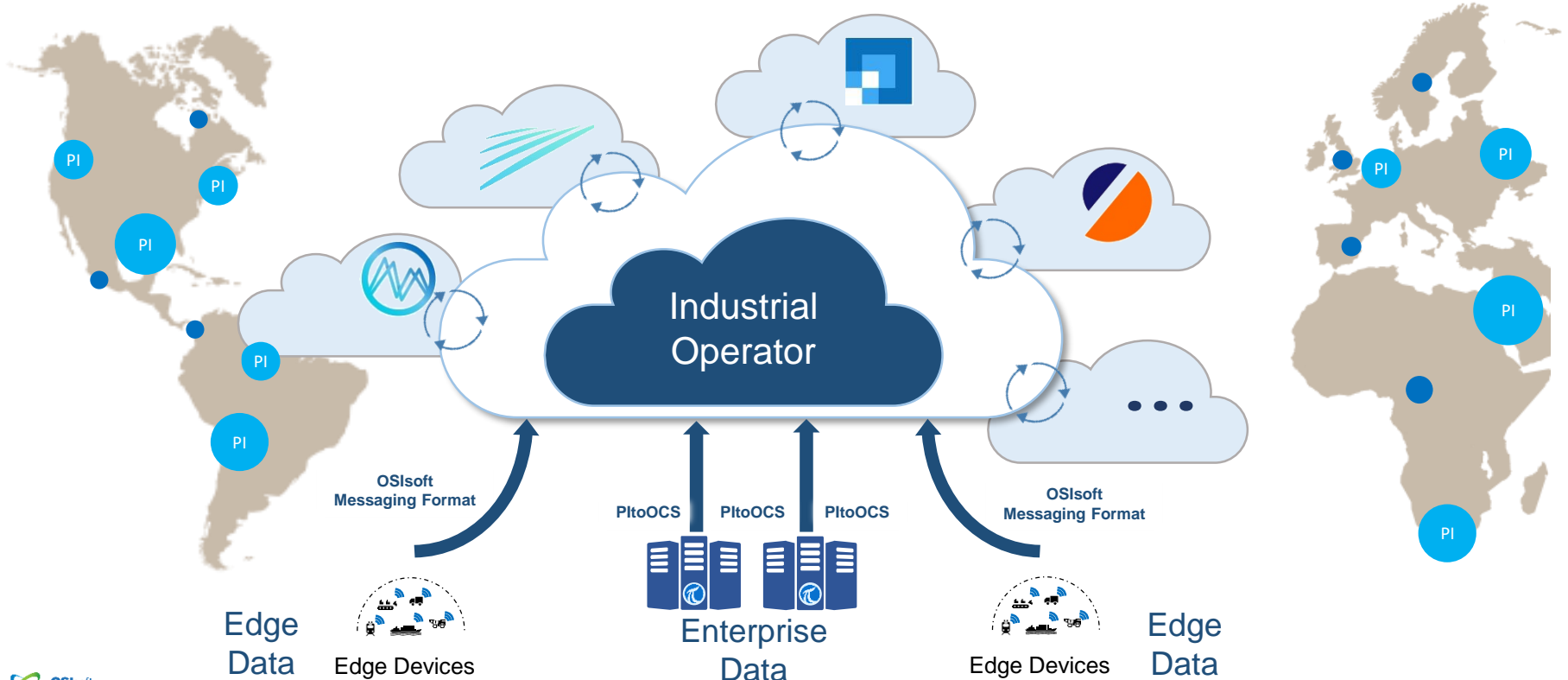
OSIsoft Cloud Services Visualization [PREVIEW](#)



# OCS – Partner App

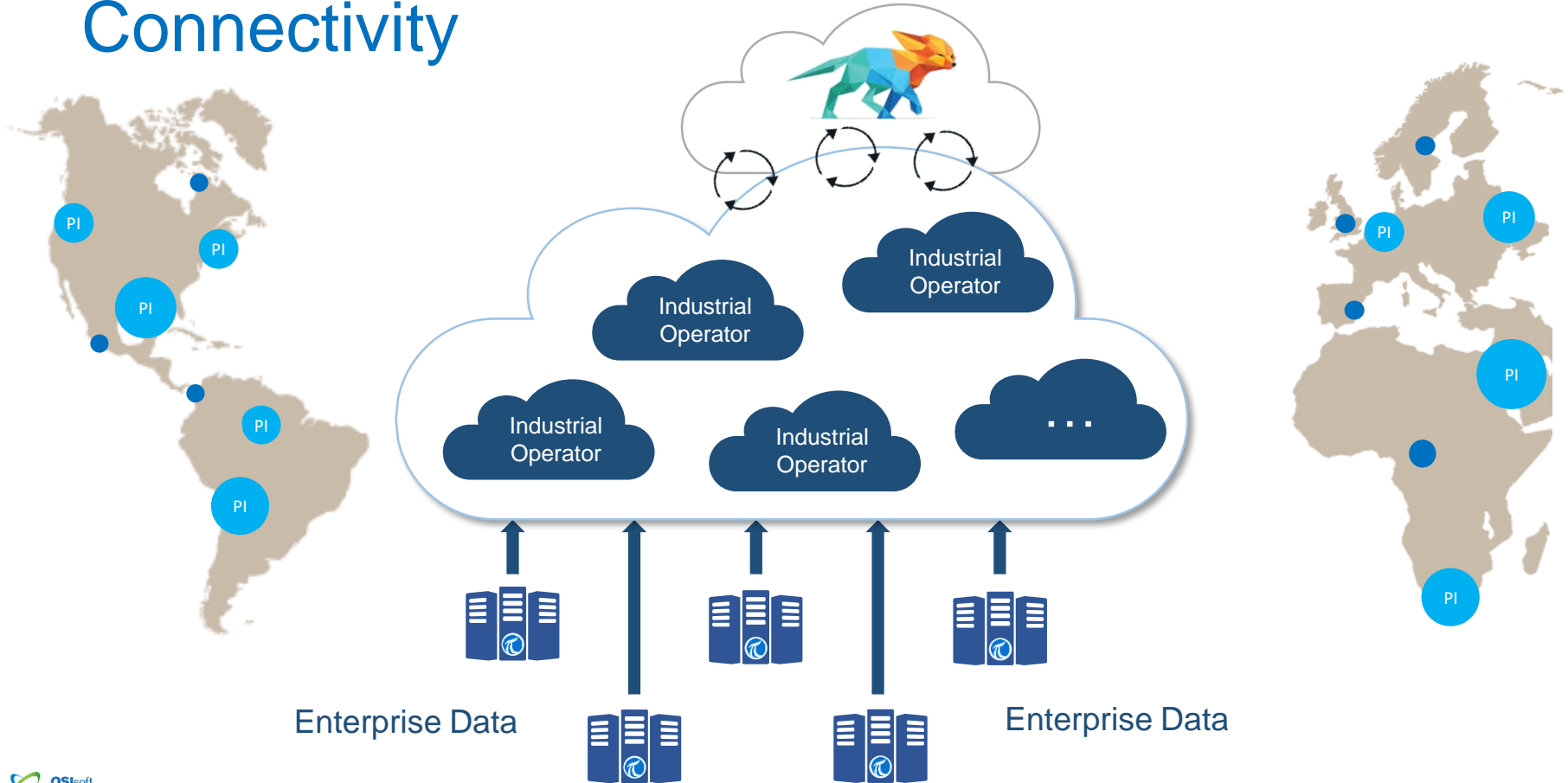


# Industrial Operator – Every App Everywhere for Everyone





# Partner – Unlimited & Centralized Ops Data Connectivity



# OCS – Partners



# Data Science Enablement

# Data Science Enablement



Condition  
Monitoring



Predictive  
Maintenance



Process  
Optimization



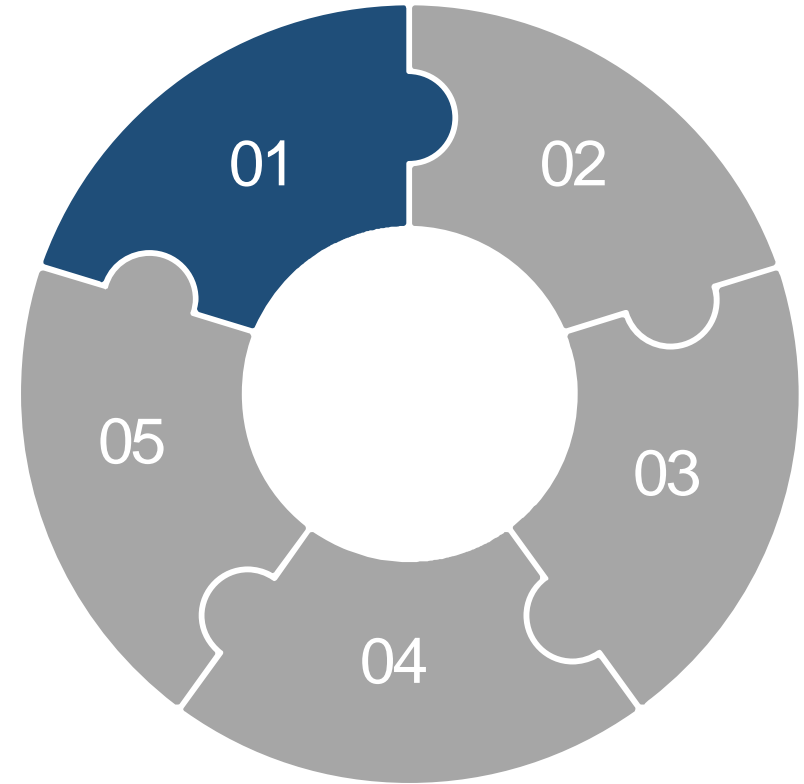
Demand  
Forecasting



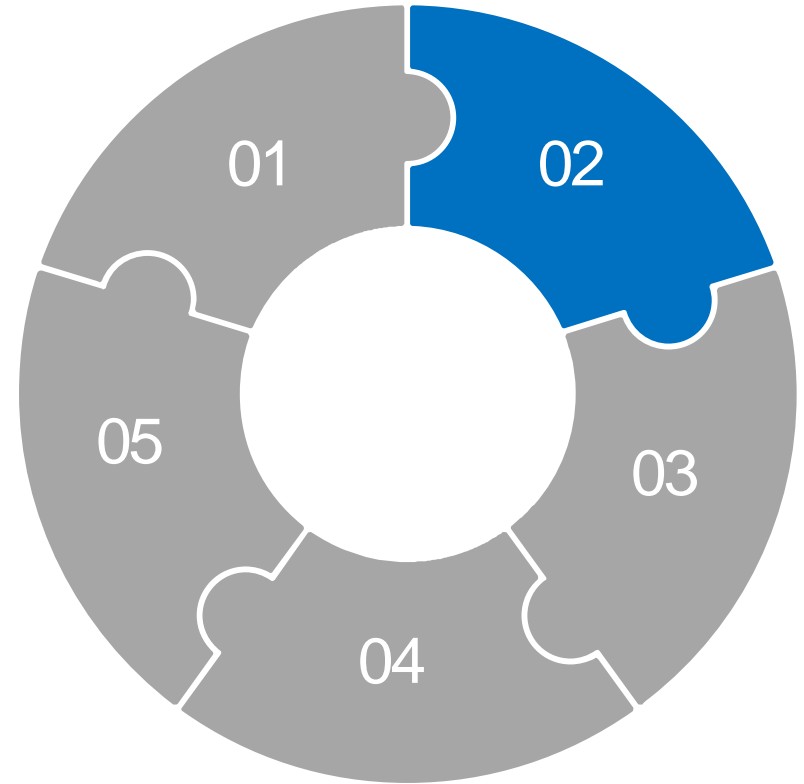
Energy  
Management

*Enable cloud-based data science for Industrial Operating companies that want to tap into unrealized value within their PI System & IoT operational data for data science & advanced analytics.*

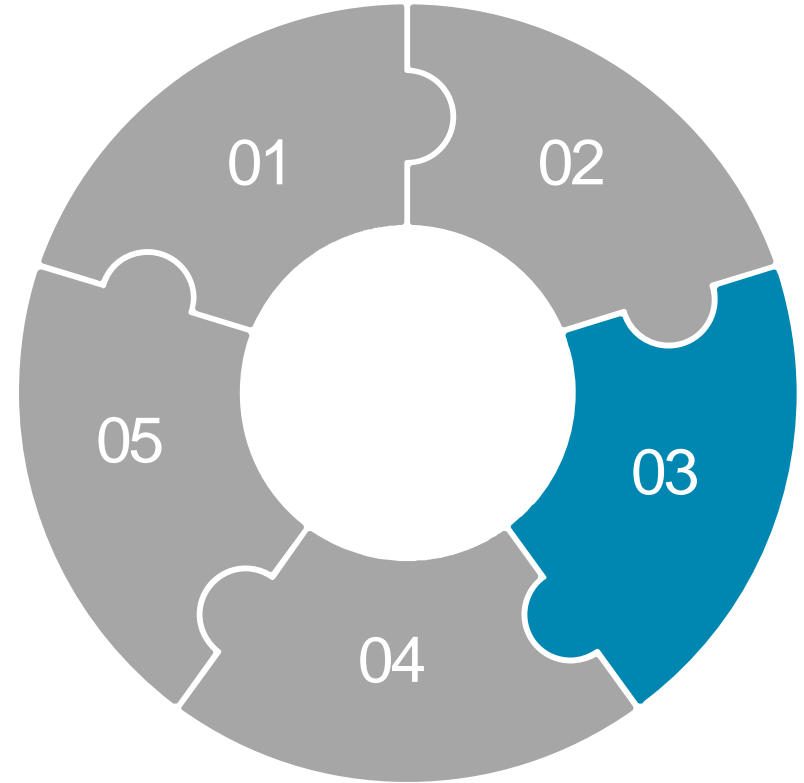
Trustworthy operations  
data ensuring users and  
applications access  
**one version of the truth**



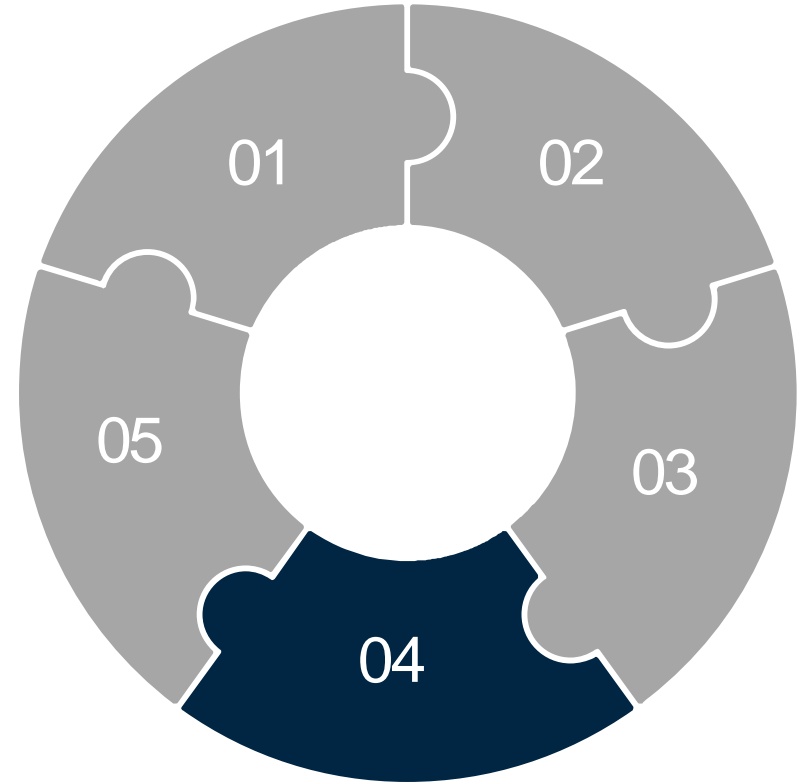
# Integration with your choice of advanced analytics platforms and tools



Combining  
**people, process, and  
technology**  
with agile and iterative  
workflows

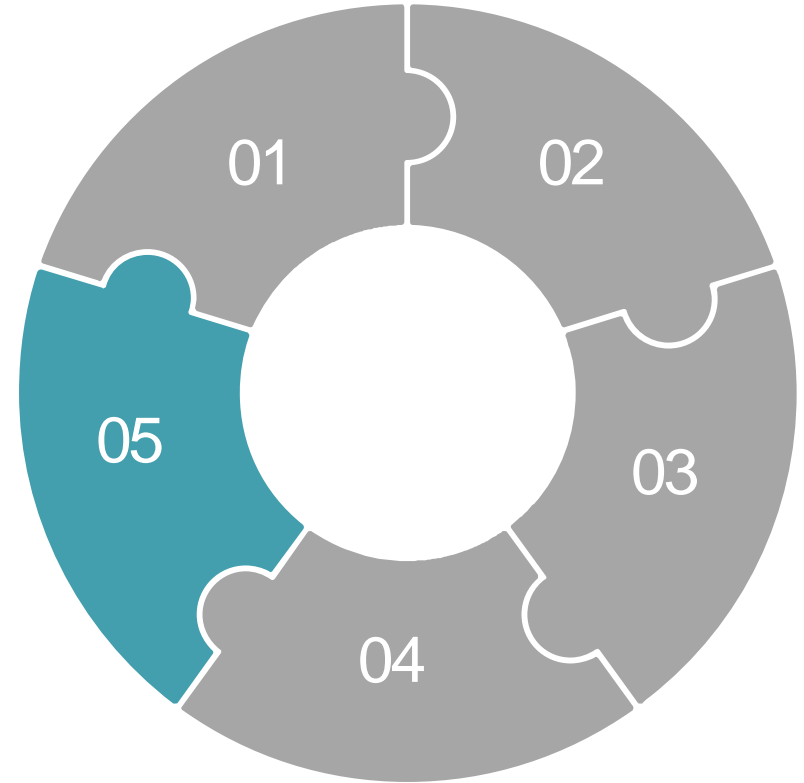


**Shaped, aligned, and  
contextualized datasets  
ready for analysis**





# Enterprise support with **scale and resiliency of cloud architecture**



# Keys to Successfully Enabling Data Science



One version of the truth.



Integration with your choice of analytics tools..



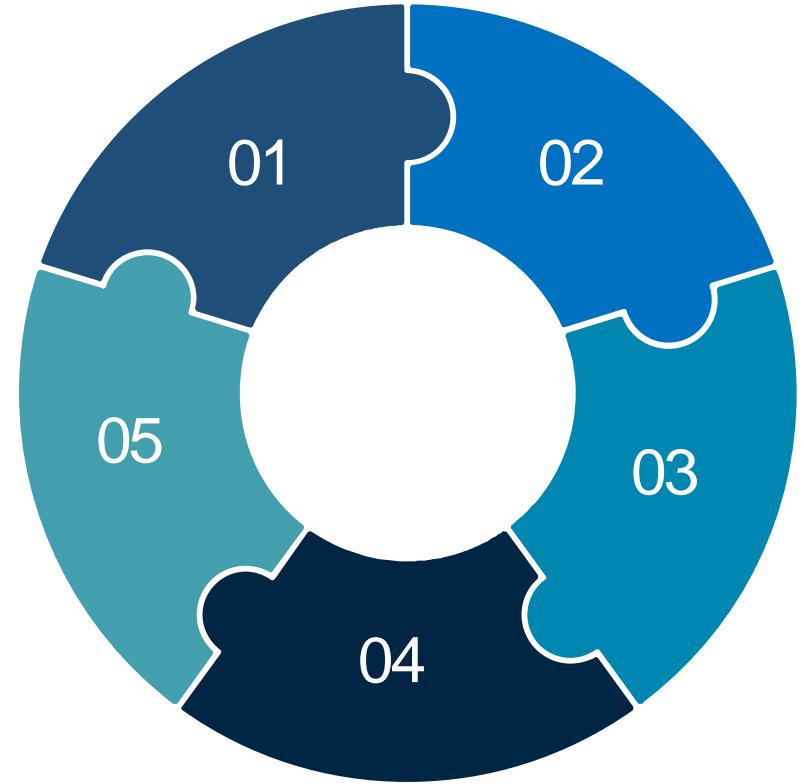
Combining people, process, and technology.



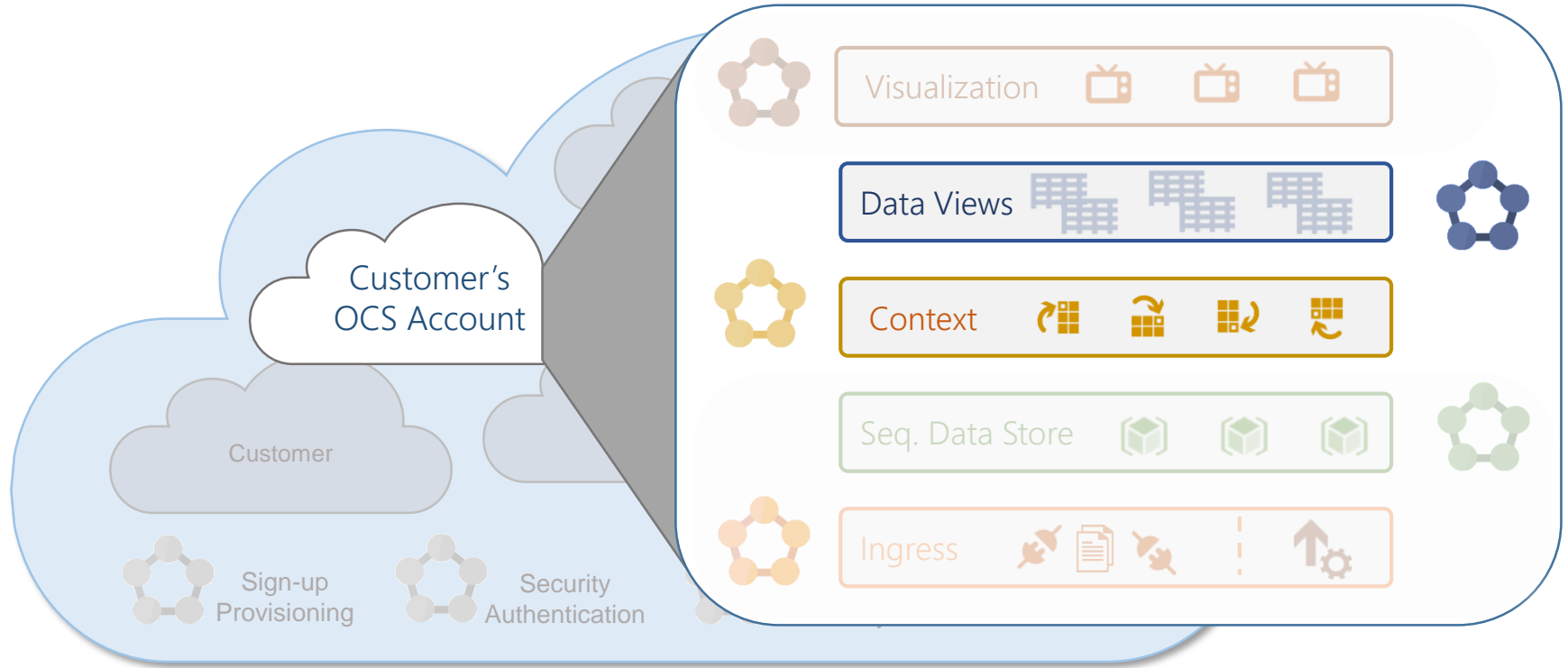
Shaped, aligned, and contextualized datasets.



Scale and resiliency of cloud architecture.



# OCS Accounts – Services



Cloud Services Infrastructure

# Stream Metadata provides organization to your data and makes it more understandable and valuable

Type of Equipment

**Equipment:** Turbine

**Pump:** Submersible Pump

Asset Identification

**DeviceID:** BAC67

**HeatEx:** RX1\_HX3

Location

**Plant:** US\_Houston

**ZipCode:** 19107

# Metadata Rules: Create and maintain valuable stream metadata in OCS

```
BACnet Connector.Building_101201.AnalogValue0.PresentValue  
BACnet Connector.Building_101201.AnalogValue0.StatusFlags  
BACnet Connector.Building_101201.AnalogValue100.PresentValue  
BACnet Connector.Building_101408.AnalogValue100.PresentValue
```

```
BACnet Connector.Building_{UnitID}.{Measurement}.*
```

# DEMO



## Metadata Rules

Namespace: Production ▾

Displaying 0 of 0 Metadata Rules

Filter Metadata Rules...

+ Add Metadata Rule

✎ Edit Metadata Rule

✕ Remove Metadata Rule

Name



Description

There are no Metadata Rules to display.

## Information

## SdsStream metadata

Sds stream metadata is represented as a dictionary of string keys and associated string values. It can be used to associate additional information with a stream. Stream metadata is also used as criteria in search query strings to return SdsStream results.

Some basic examples:

**GET /Namespaces/{namespaceId}/Streams/{streamId}/Metadata**

Returns the metadata dictionary for the specified stream.

**GET**

**/Namespaces/{namespaceId}/Streams/{streamId}/Metadata/{key}**

Returns the value for the specified key in the metadata dictionary of the specified stream.

**PUT**

**/Namespaces/{namespaceId}/Streams/{streamId}/Metadata**

Replaces the metadata for the specified stream with the metadata in the request body. Overwrites any existing metadata; does not merge.

**DELETE**

**/Namespaces/{namespaceId}/Streams/{streamId}/Metadata**

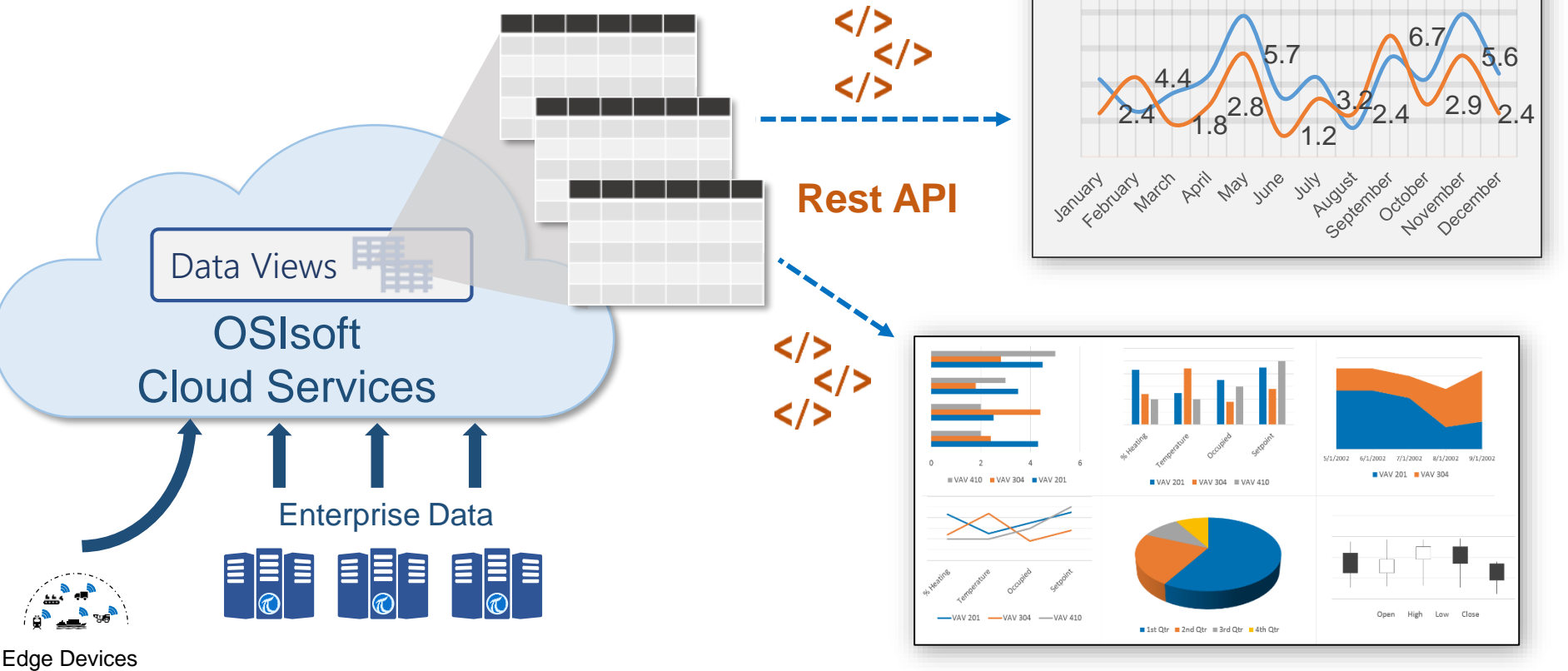
Deletes the metadata for the specified stream.

For complete SDS streams documentation and examples, click [here](#).

See the online documentation about SDS [Stream Metadata and Tags](#).



# Data Views: Pre-configured data sets for algorithm and BI tool consumption





# DEMO

## Data Views

Namespace: Production

Displaying 10 of 10 Data Views

Filter Data Views...

+ Add Data View

Manage Permissions

Edit Data View

Remove Data View

| Id                                                 | Name              |
|----------------------------------------------------|-------------------|
| EAM2                                               | EAM2              |
| EAM1                                               | EAM1              |
| Combined_UnitPerf                                  | Combined_UnitPerf |
| CO2 Emissions-Preview                              | CO2 Emissions     |
| c19ddce8-9a2f-4ac3-8741-fb663dec1837-experiment-bp | EMgroupingissue   |
| c19ddce8-9a2f-4ac3-8741-fb663dec1837               | EMgroupingissue   |
| 777_UnitPerf                                       | 777_UnitPerf      |
| 6aff81c3-6900-4189-9f12-df887a70de31               | EAM3              |
| 1600_UnitPerf                                      | 1600_UnitPerf     |
| 090735db-371f-45c5-b366-7ccfecadf00e               | EAMunitgroup      |

## Details

## Information

## Data View Index Config Details

|              |                          |
|--------------|--------------------------|
| Start Index: | Dec 31, 2018, 7:00:00 PM |
| End Index:   | Jan 1, 2019, 7:00:00 PM  |
| Mode:        | interpolated             |
| Interval:    | 01:00:00                 |

## Data View Preview

Unable to generate a preview for the selected Data View. Mappings has more than one matching property in a single column. Review the data view definition and correct any errors.

If you would like to contact OSIsoft Support about this error, please provide the following OperationID:

e76aed2f-3727-4cd1-bdae-ebcefc0284

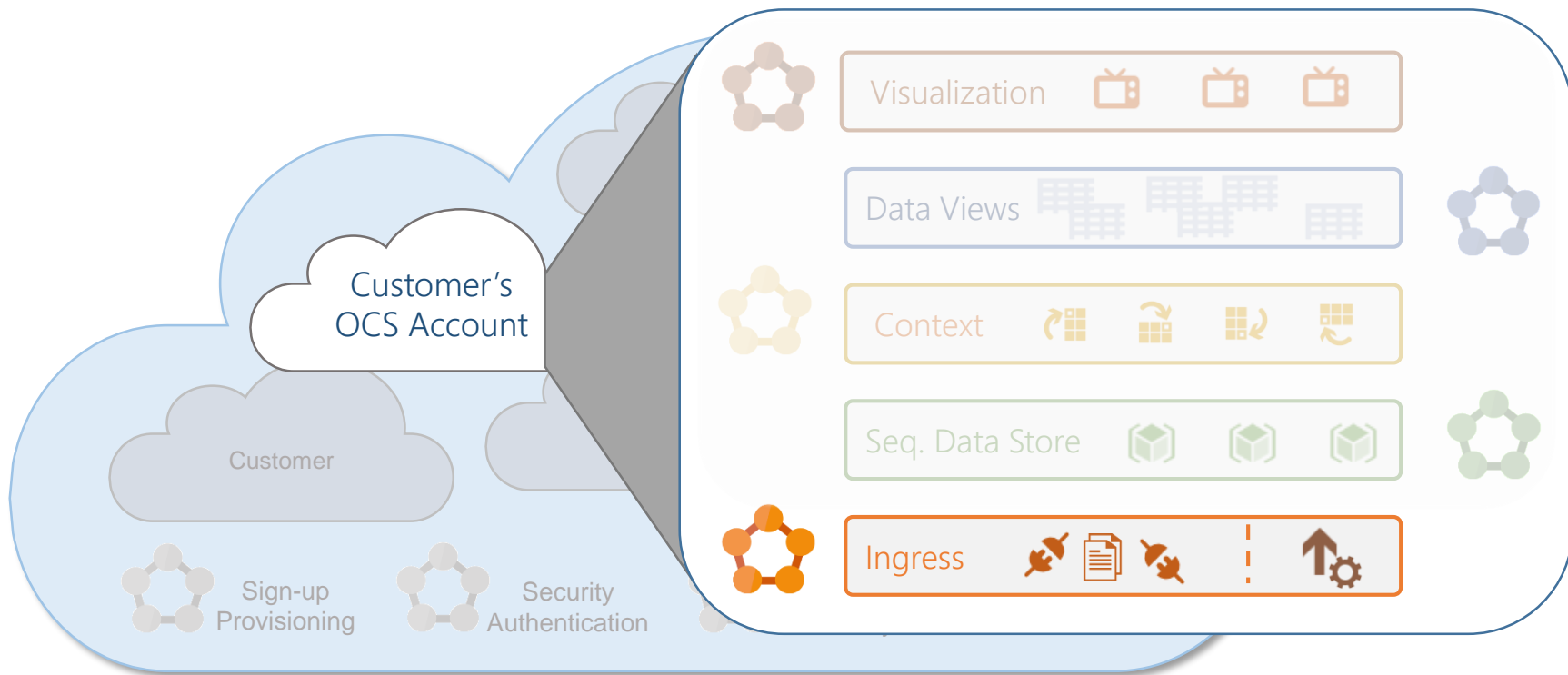


## Additional error information:

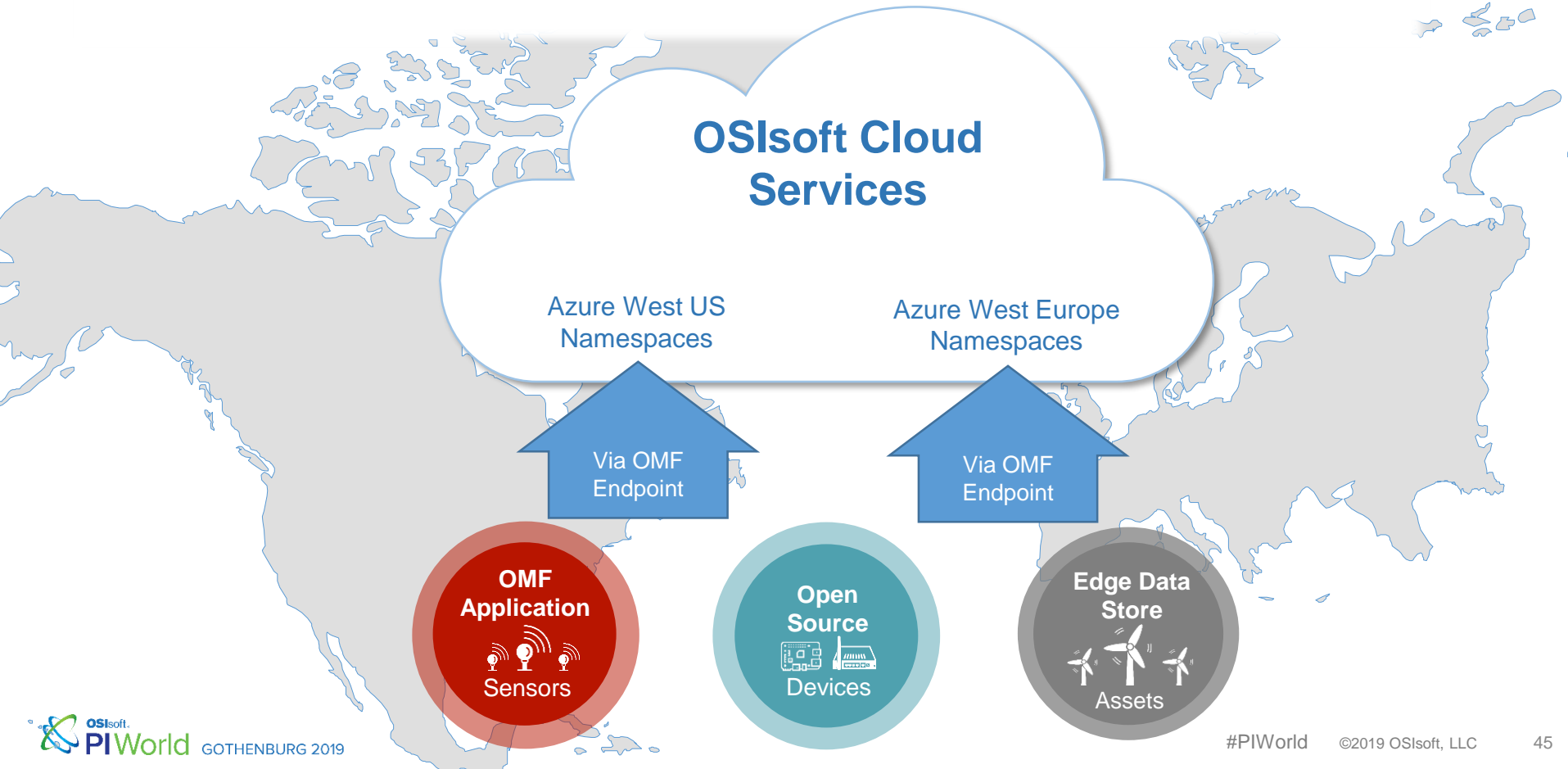
|                   |                        |
|-------------------|------------------------|
| DataViewId:       | EAM2                   |
| MappingsColumnId: | BinaryValue67.Occupied |

# OCS Features – Data Ingress

# OCS Data Ingress: Native and OMF



# OCS Data Ingress: OMF



# OCS Native Ingress: PI to OCS

Transfer PI Time Series Data to OCS: Central, Simple, Secure.



## Secure

Secure authentication in the cloud  
Windows accounts authenticate against on-Prem PI Server(s)



## Best of Breed

Moves time series data from On-Prem PI Server to OCS

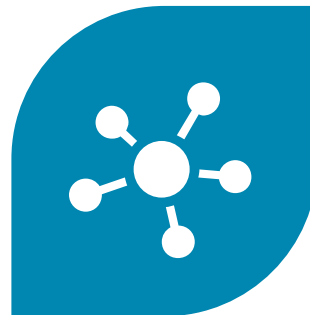
## Easy to Use

Simple to install  
Runs On-Prem  
Off the shelf software



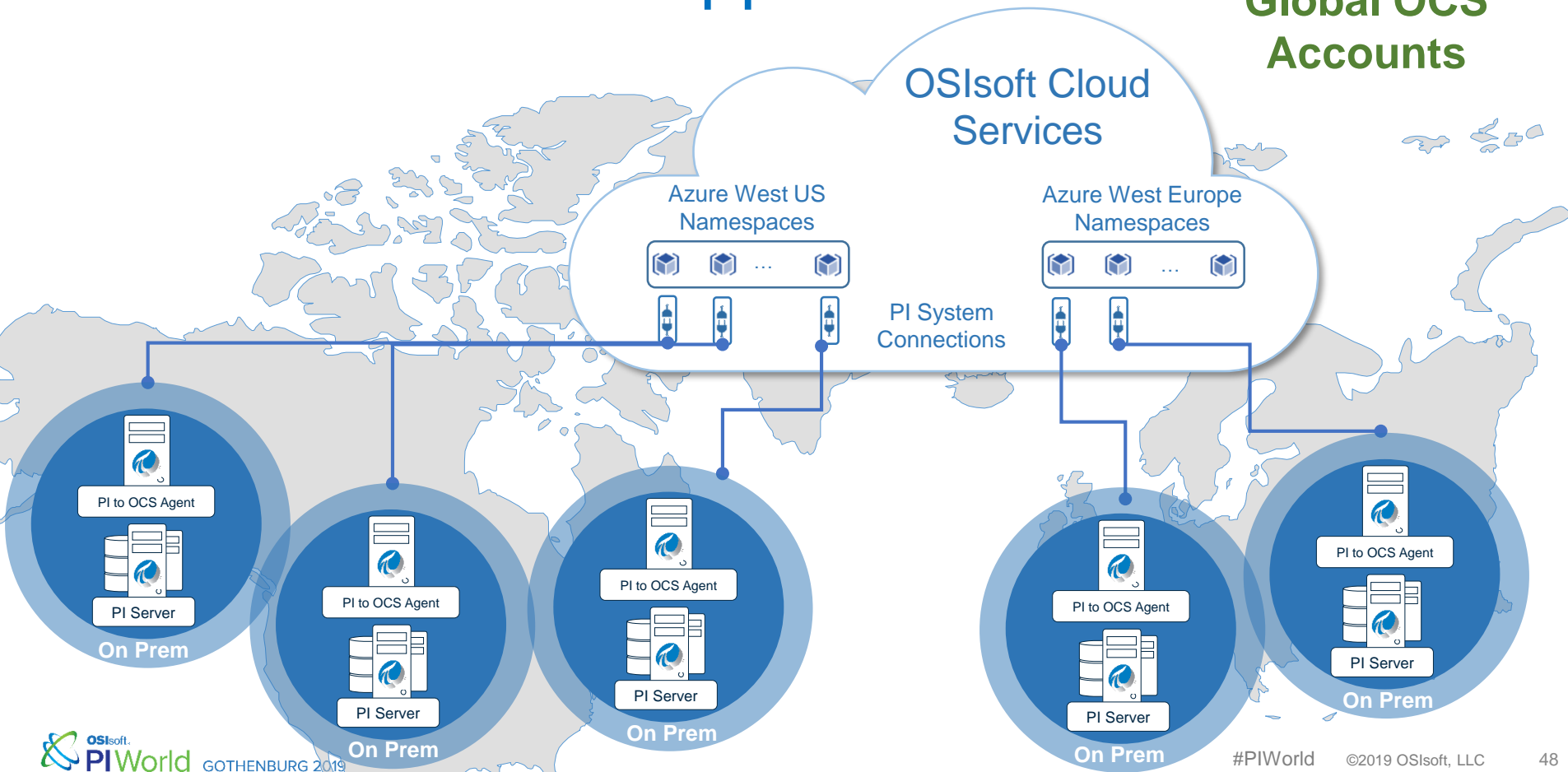
## Central Configuration

Configure and Manage connections, data transfers, and security from OCS Portal



# EU Data Center Support

Global OCS  
Accounts



# PI Data Archive to OCS Data Transfer

## What's Supported





# DEMO



# OCS Go To Market

# OCS – Go To Market

- Generally Available (GA) since June 1<sup>st</sup>, 2019
- Licensed/Priced by subscription
- Promotional offer (until year-end )
  - Pre commit 6 months term
  - Include a 30 days evaluation period
- Usage based on: data streams accessed / month

Month

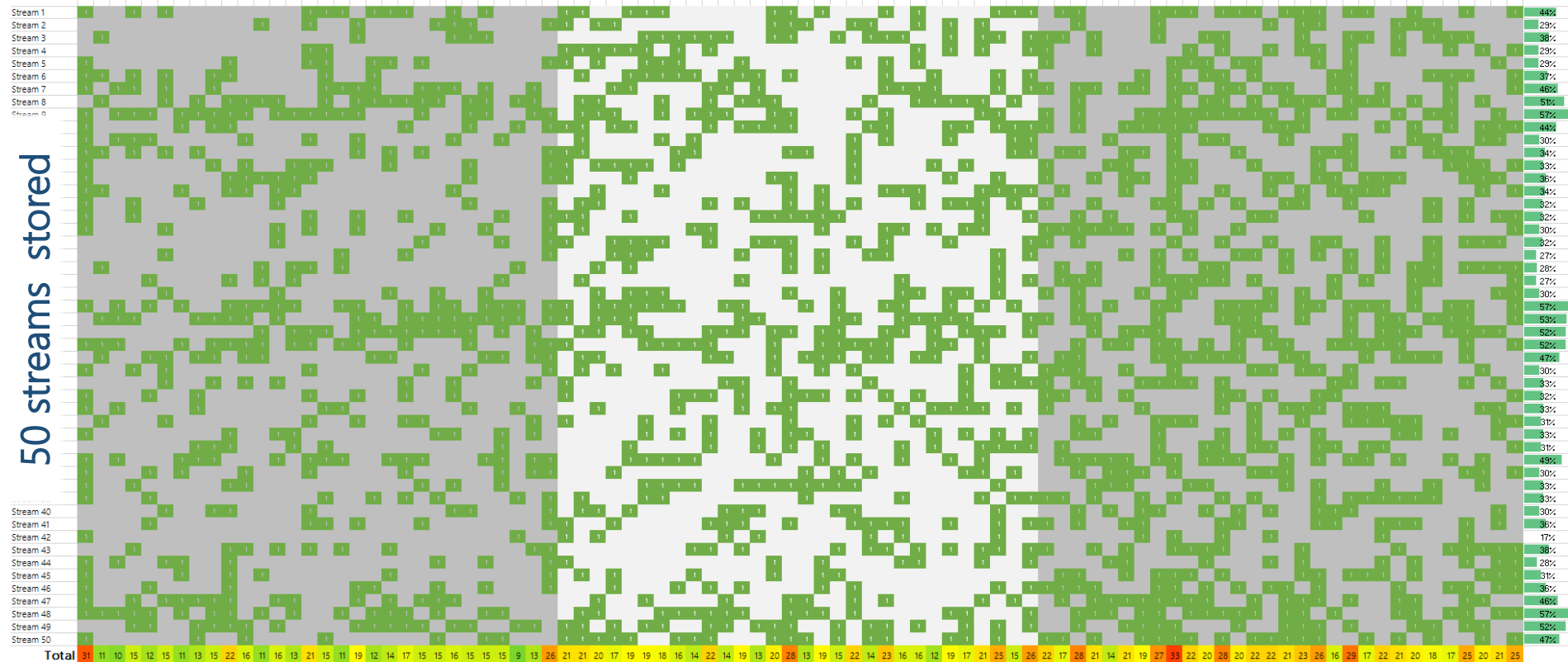
Month

Month

Days

Days

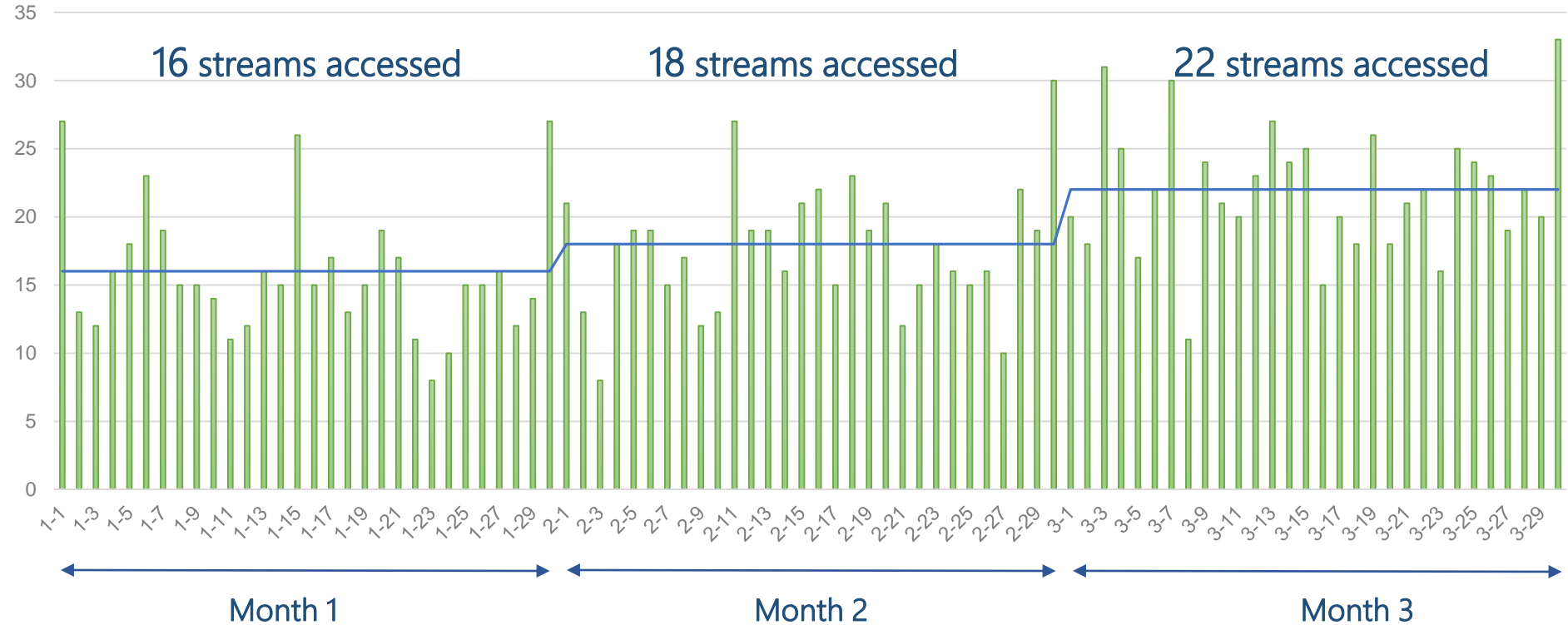
Days



... 13 20 28 13 19 ...

Total streams accessed / day

# OCS Usage – Monthly Average



# OCS Roadmap

# OSIsoft Cloud Services – Released



## Available Today

---

### Partner App Development

Enable developers, partners, and customers to leverage OCS as PaaS for their operational data applications.

### Data Ingress from Edge Devices

Securely send data to OCS via OMF for large numbers of data sources and devices.

### PI to OCS Data Transfer

Easily and efficiently transfer PI Systems time series data to OCS.

Last Updated: 2019-09



# OSIsoft Cloud Services – Roadmap



## Developing Now

### Data Views for Data Science

Define tabular datasets that are shaped, aligned, and formatted for data scientists

BETA

### Metadata Rules

Create and maintain stream metadata from patterns in stream names.

### Edge Data Store to OCS

Enable customers to transfer data from a remotely deployed Edge Data Store to OCS.

BETA

### EMEA Deployment

Support data storage and ingress to the Azure West Europe region.

BETA

### Trending Experience

Enable customers to trend stream data.

BETA



## Considering Next

### Data Sharing for Partnership

### Asset Context & Visualization



[feedback.osisoft.com](https://feedback.osisoft.com)



## Researching Future

### Visualization for Remote Operations Monitoring

### Community Data Sharing

### PI to OCS Enhancements

### Data View Enhancements

Roadmap themes: [Manageable Systems](#) | [Seamless Infrastructure](#) | [Increased Value & Scope of Data](#)

# Communicate with OSIsoft Product Managers



<https://feedback.osisoft.com>

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



## Product Booth

*Gothia Towers - Hall H*

- OSIssoft Cloud Services
  - PI to OCS
- Data Science Enablement in the Cloud
- Edge Technologies



## OSIssoft Talks

*OSIssoft Cloud Services Security  
Day 1 – G3, 2<sup>nd</sup> Floor*

*OSIssoft Cloud Services for  
Developers  
Day 3 – Congress Hall, K3*



## More Talks

*Outlier analysis for data  
cleansing & anomaly detection  
made easy with OCS  
Day 2 – G2, 2<sup>nd</sup> Floor*

*Cloud Self-service analytics  
powered by OSIssoft Cloud  
Services (OCS) and TrendMiner  
Day 3 – H1, 2<sup>nd</sup> Floor*

# Questions?

Please wait for  
the **microphone**

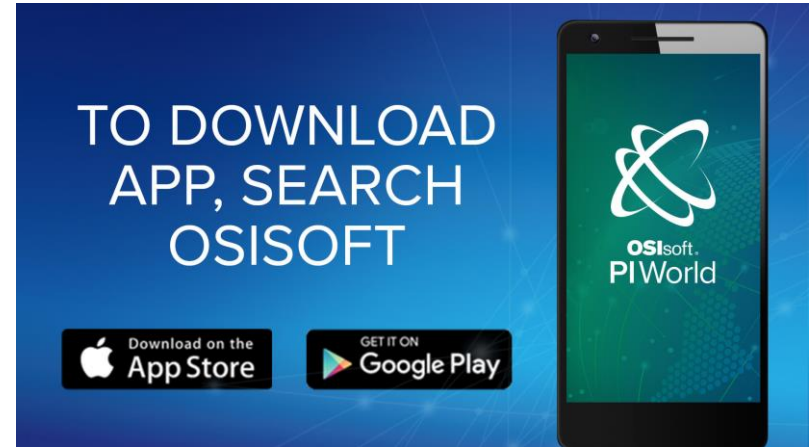
State your  
**name & company**



# Please remember to...

## Complete Survey!

Navigate to this session in  
mobile agenda for survey



# Contact us for more information



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- Strategic Product Manager
- OSIsoft, LLC

THANK YOU

OSIsoft.  
PIWorld

謝謝 KEA LEBONA  
TAPADH LEIBH 고맙습니다  
БАЯРЛАЛАА MISAOTRA ANAO  
DZIĘKUJĘ CI NGIYABONGA TEŞEKKÜR EDERIM GRACIES  
OBRIGADO شڪرا  
DANKON TANK TAPADH LEAT SALAMAT  
DANKIE TERIMA KASIH  
СПАСИБО  
KÖSZÖNÖM  
PAKMET CIZGE  
GO RAIBH MAITH AGAT  
БЛАГОДАРЯ GRACIAS  
ТИ БЛАГОДАРАМ  
MAHADSANID  
TAK DANKE  
RAHMAT  
MERCİ  
HATUR NUHUN  
CẢM ƠN BẠN  
WAZVIITA  
FALEMINDERIT  
DANK JE  
ΕΥΧΑΡΙΣΤΩ GRATIAS TIBI  
AČIŮ SALAMAT MAHALO IĀ 'OE TAKK SKALDU HA  
GRAZZI PAKKA PĒR  
PAXMAT CAĞA  
SIPAS JI WERE TERIMA KASIH  
UA TSAUG RAU KOJ  
ТИ БЛАГОДАРАМ  
СИПОС  
MULTUMESC  
FAAFETAİ  
ESKERRIK ASKO  
HVALA ХВАЛА ВАМ  
TEŞEKKÜR EDERIM  
HVALA  
DЗЯКУЙ  
DI OU MÈSI  
ĐAKUJEM  
MATUR NUWUN