

OCS for Developers

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Agenda

- OSIssoft Cloud Services (OCS) Features
- OCS Components
- Demos

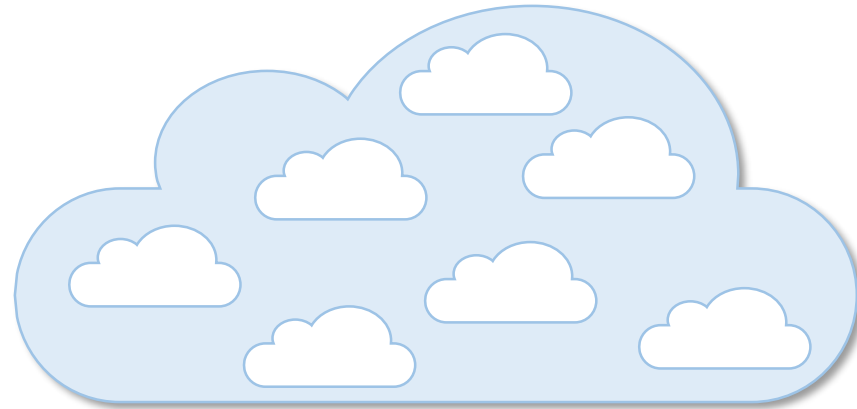
- Interrupt us!

Glossary

- **OCS:** OSIsoft Cloud Services
- **EDS:** Edge Data Store
- **SDS:** Sequential Data Store, the streaming data storage technology behind OCS and EDS
- **OMF:** OSIsoft Message Format, a data ingress specification supported by PI, EDS, and OCS
- **Authentication:** the act of securing the identity of the calling user or application
- **Authorization:** the act of checking if the calling identity has permission to access the specified resource
- **Cluster:** a group of computers working together to accomplish some task
- **API:** Application Programming Interface

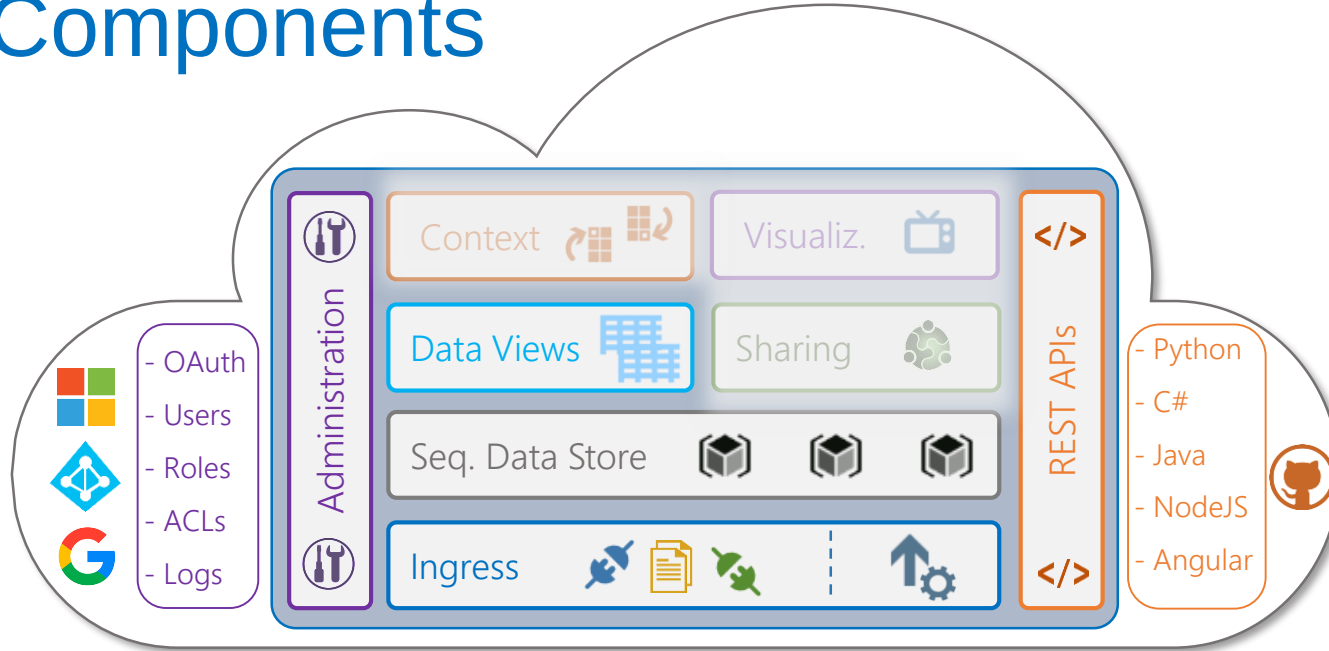
OSIssoft Cloud Services Features

- Managed, secure, multi-tenant data platform
- Operated & maintained by  **OSIssoft.**
- High speed, scalable, elastic data ingress
- Flexible, resilient, data storage
- Modern, secure REST APIs
- Built and deployed on  **Microsoft Azure**



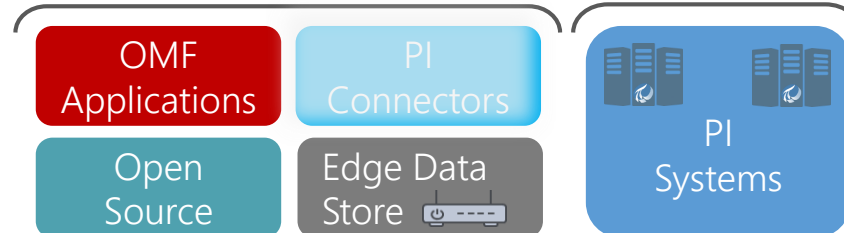
cloud.osissoft.com

OCS Components



OSIsoft Messaging Format

Native



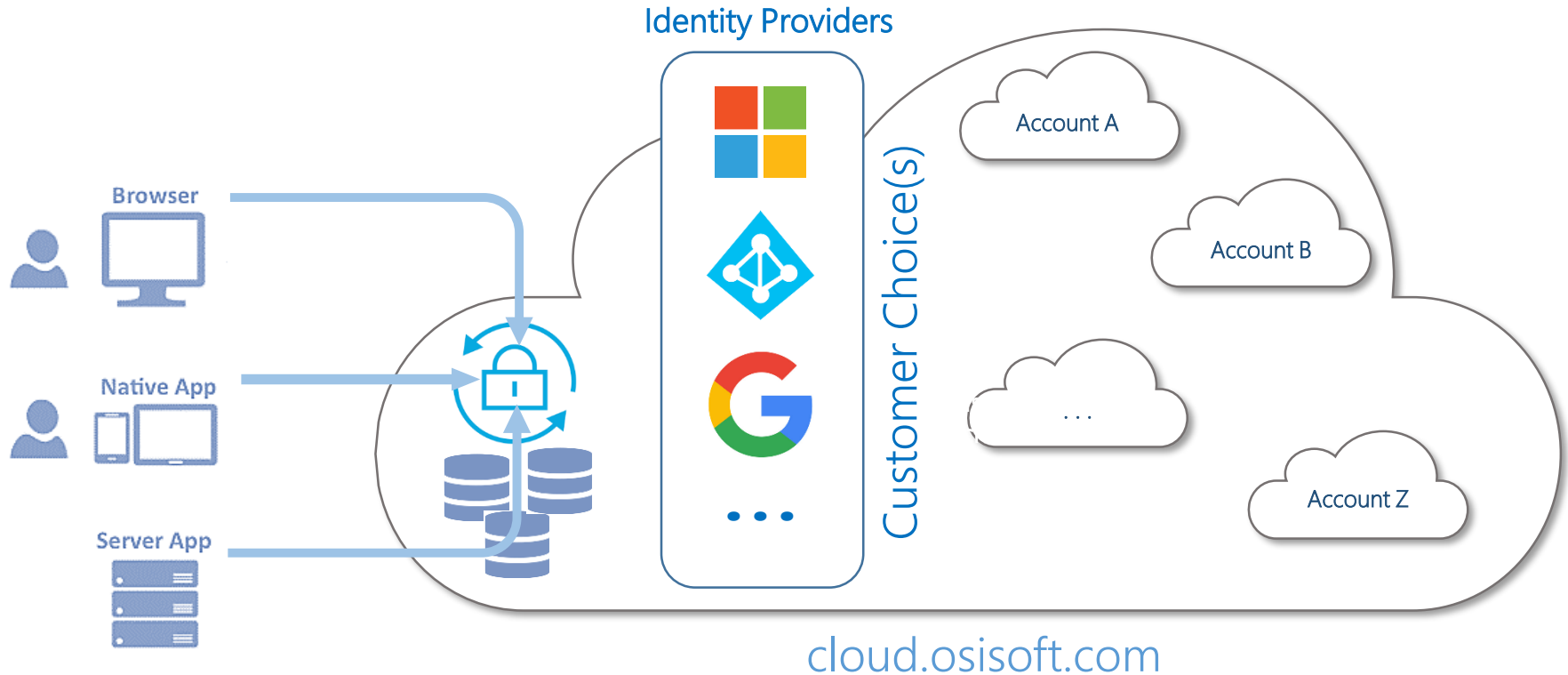
Talking Points & Demos

- Sign in & Authentication
- SDS Types & Streams
- PI to OCS
- SDS Storage Explorer
- API Console
- UOMs
- SDS Streams metadata & tags
- Data Views
- Access Control
- OMF Connections
 - OMF Message validation
- Client Libraries
 - OCS
 - OMF
- Hyperscale demo
- Q&A

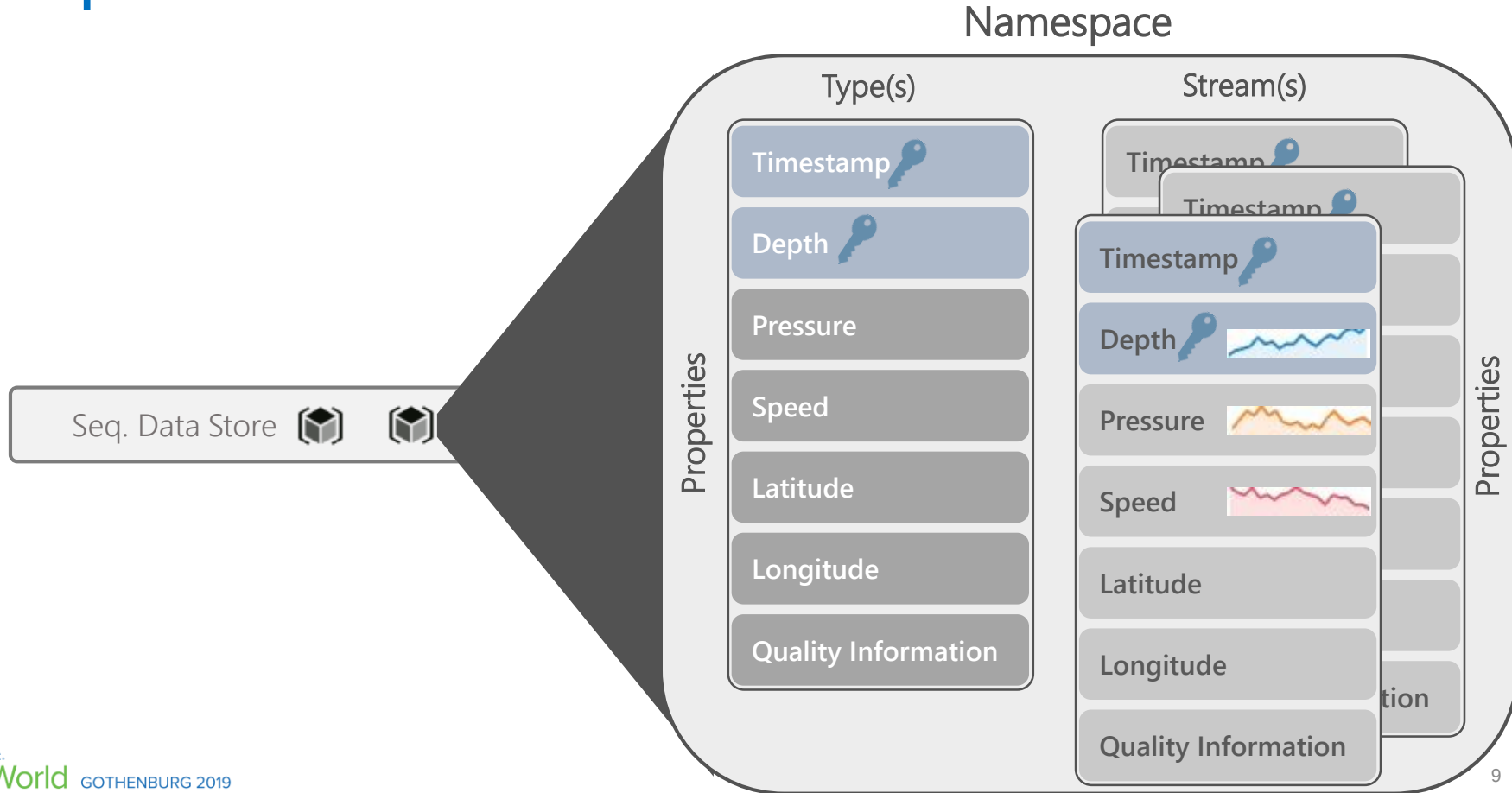
Sign In & Authentication

- Identity Providers
- Sign in the OCS Customer Portal
- Users management

OCS Authentication



Sequential Data Store - SDS



SDS Types & Streams

- Simple Types
- Complex types

Complex and Non-Time Index Data Type Example

Simple Data Type Indexed by Time

{ "Latitude": "29.7817",
 "Timestamp": "2017-12-01" }

{ "Longitude": "-95.6112",
 "Timestamp": "2017-12-01" }

{ "Heading": "42",
 "Timestamp": "2017-12-01" }

{ "Heart-rate": "143",
 "timestamp": "2017-12-01" }

{ "Temperature": "98.6",
 "Timestamp": "2017-12-01" }

{ "StepCount": "10,000",
 "Timestamp": "2017-12-01" }



Complex Data Type Indexed by Time & StepCount

{ "Latitude": "29.7817",

"Longitude": "-95.6112",

"Heading": "42",

"Heart-rate": "143",

"Temperature": "98.6",

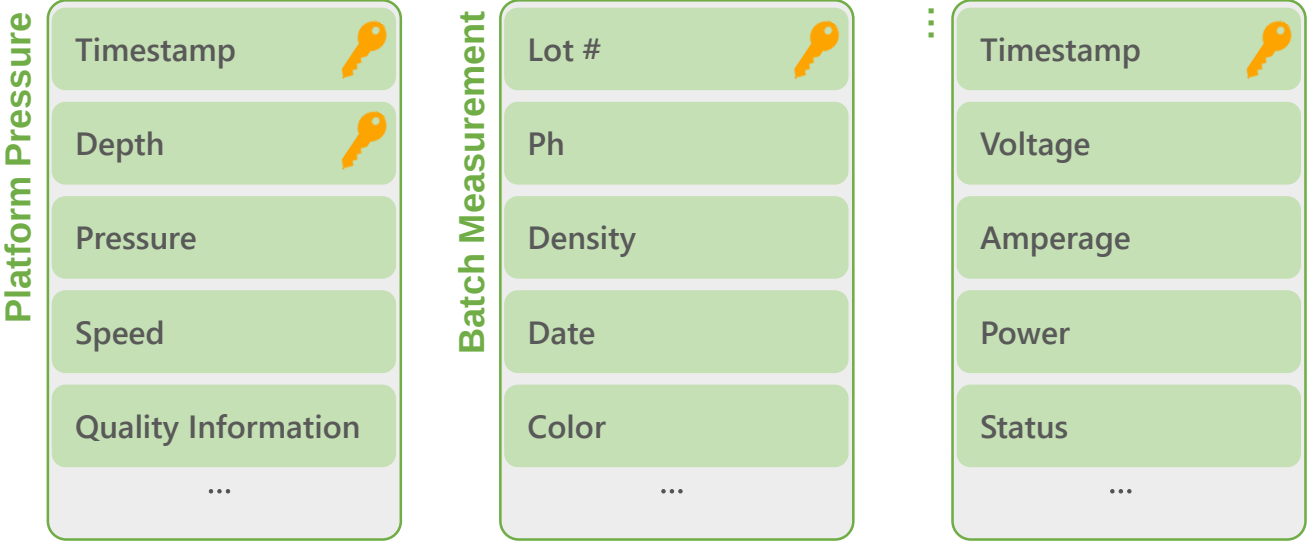
"Timestamp": "2017-12-01",

"StepCount": "10,000" }

Simple Type

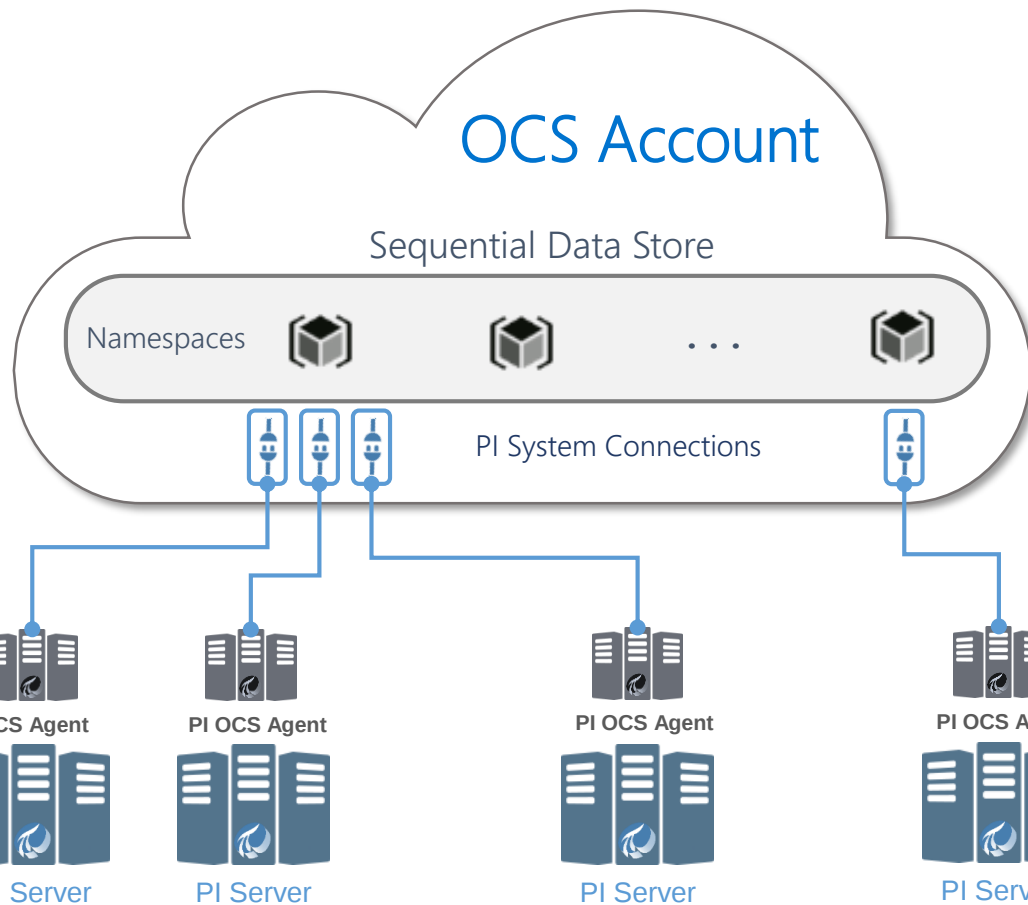


Complex Type



PI to OCS

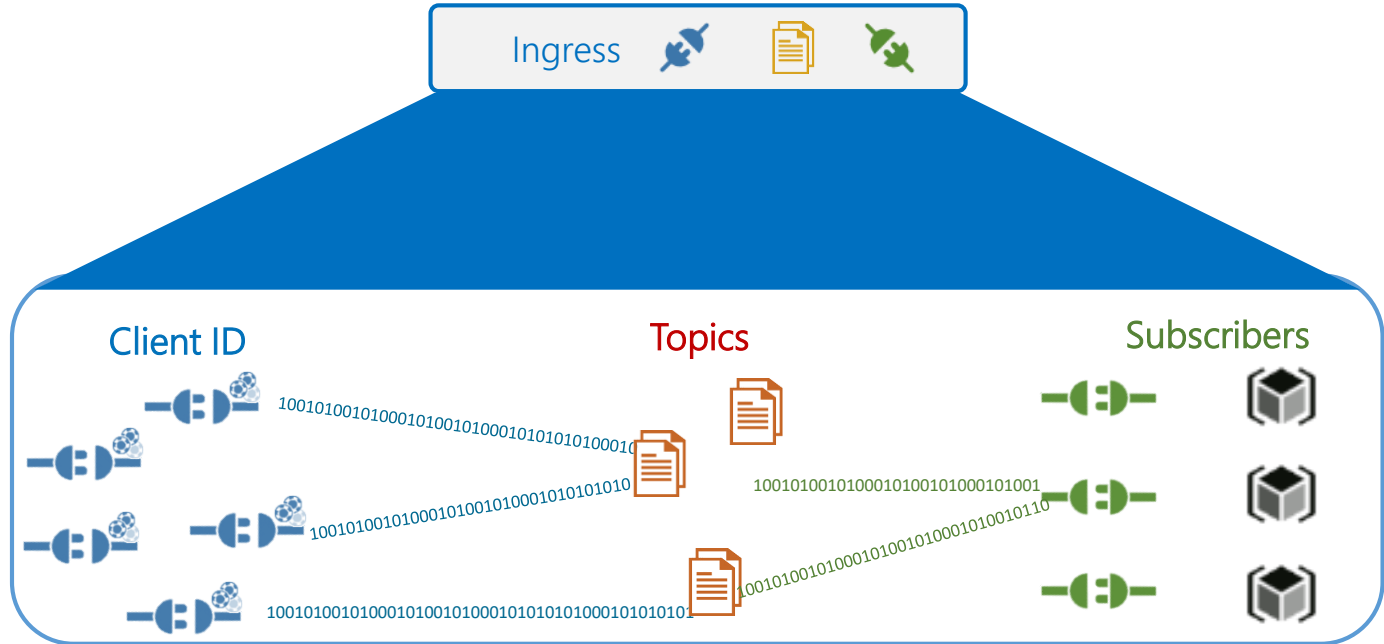
- Overview
- Deployment



OMF Connections

- Create a new connection
- Get Client ID & Client Secret
- OMF Message validation
- OMF Generation library

OMF Ingress



SDS Storage Explorer

- Type designer
- Stream creation
- Access Control
- Data retrieval

API Console – Basics

- Creating a stream
- Writing data to the stream
- Querying stream data

API Console – Advanced

- Secondary indexes
- UoM conversion
- TableH Output Format

SDS Streams – Metadata

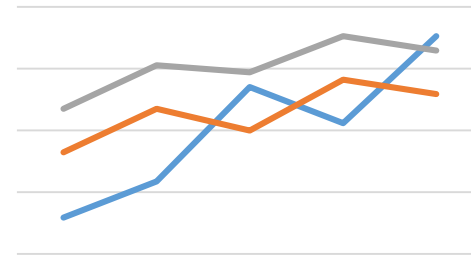
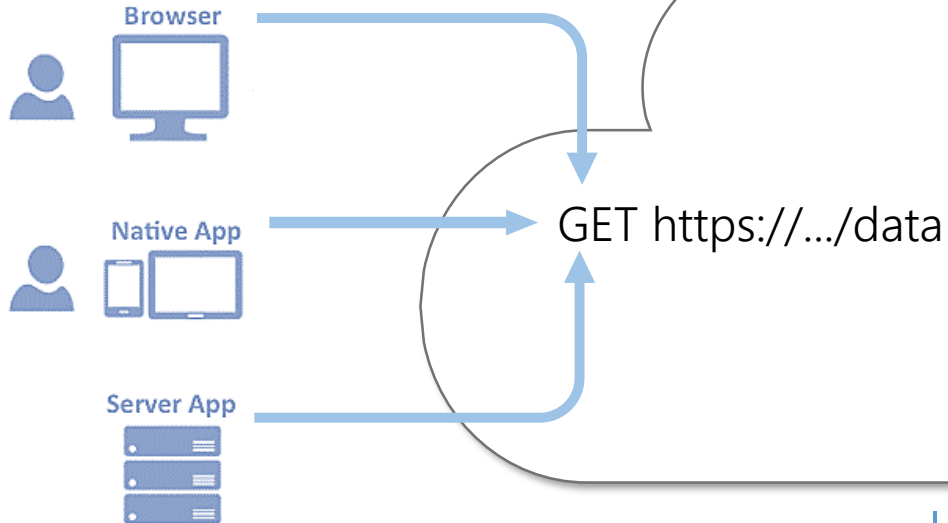
- PI to OCS generated metadata
- Create metadata
- Find streams by metadata
 - area:sltc1
 - tags:environmental
 - query=pointid:1

Authorization – Access Control

- Identities
- Roles
- ACLs
 - Namespaces
 - SDS Types
 - SDS Streams

OCS Authorization

Roles:
Engineer,
Display-Creator



Access Control:
Engineer : Read,
Admin: Full

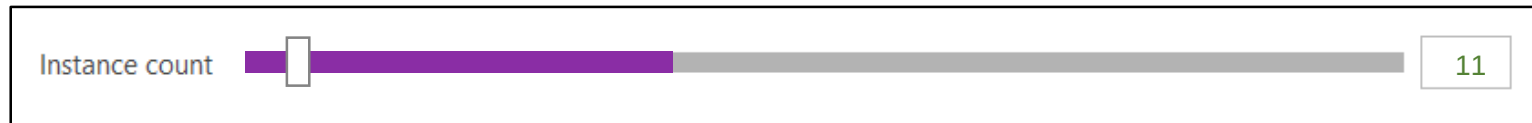
Code Samples

- Client Libraries on Nuget.org
- Sample Code on GitHub
- Console App

Hyperscale OCS Cluster

Smart Small...

OCS Scale Out*

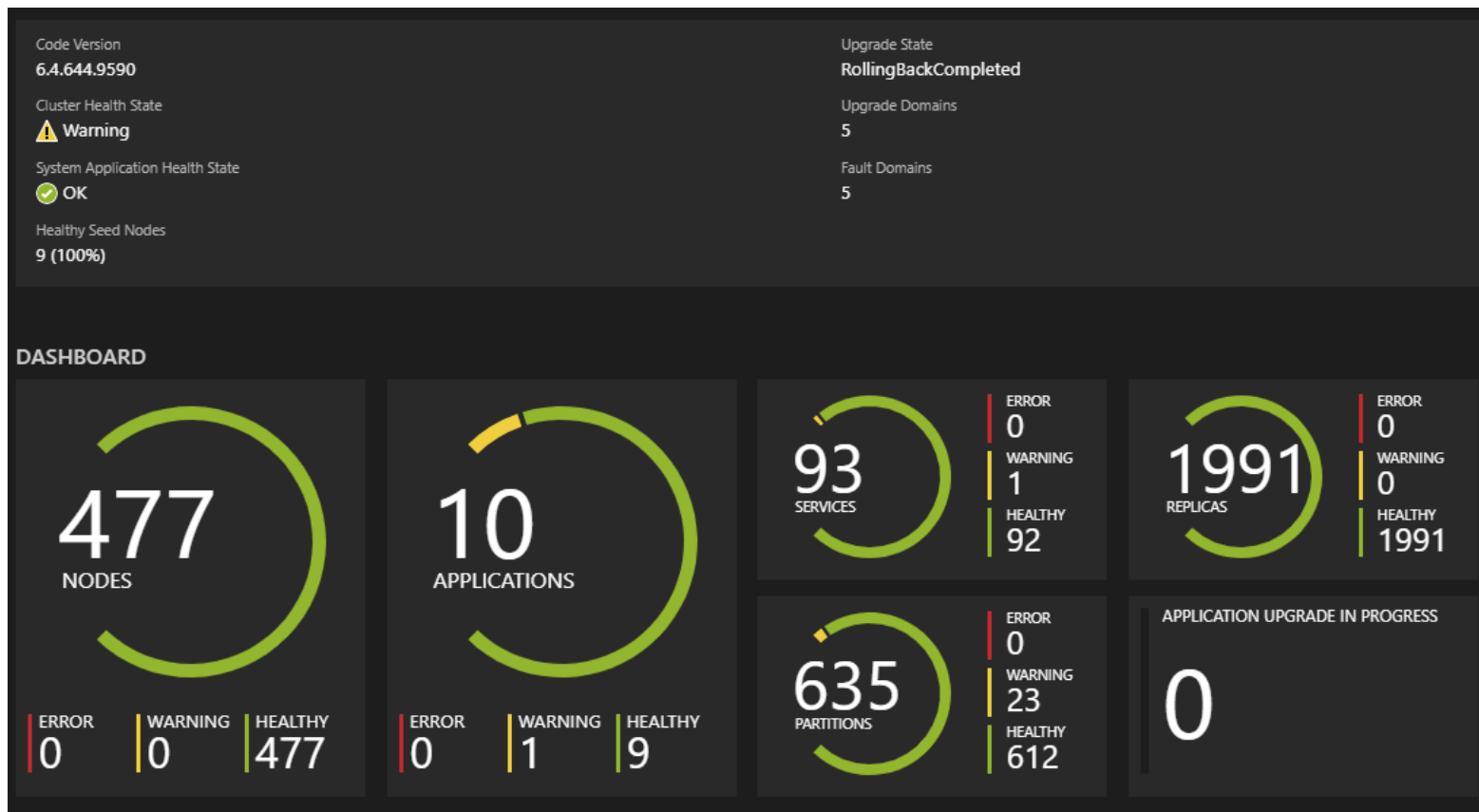


* We're pretty sure this is how it works...

Get Bigger...



Monitoring the Cluster...



Some Numbers...

Data

- ~2 Billion equivalent PI Tags
 - ~100M AMI Meters
 - 20 properties each
- ~64M events/sec ingress
- Trillions of events stored

OCS Cluster

- 477 nodes
- 3132 Cores
- 11TB of RAM

Questions?

Please wait for
the **microphone**

State your
name & company



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Complete Survey!

Navigate to this session in
mobile agenda for survey

