

Cloud-based Data Science Enablement for the PI System

Dallas Swift and Edith Monino



Agenda

- OSIssoft Cloud Services overview
- Demo 1: Predicting heating/cooling for rooms
- Data Science Enablement tools in OCS
- Demo 2: Weather conditions and energy use
- Demo 3: Building a data view
- Conclusion

OSIsoft Cloud Services Overview

Managed, secure, multi-tenant data platform

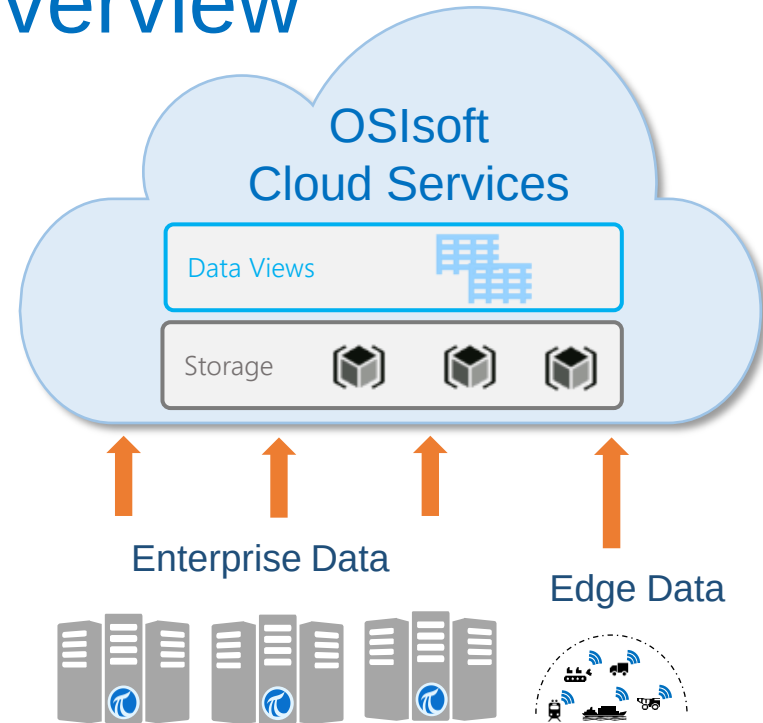
Operated & maintained by OSIsoft

High speed, scalable, elastic data ingress

Flexible, resilient, data storage

Accessible with modern, secure REST APIs

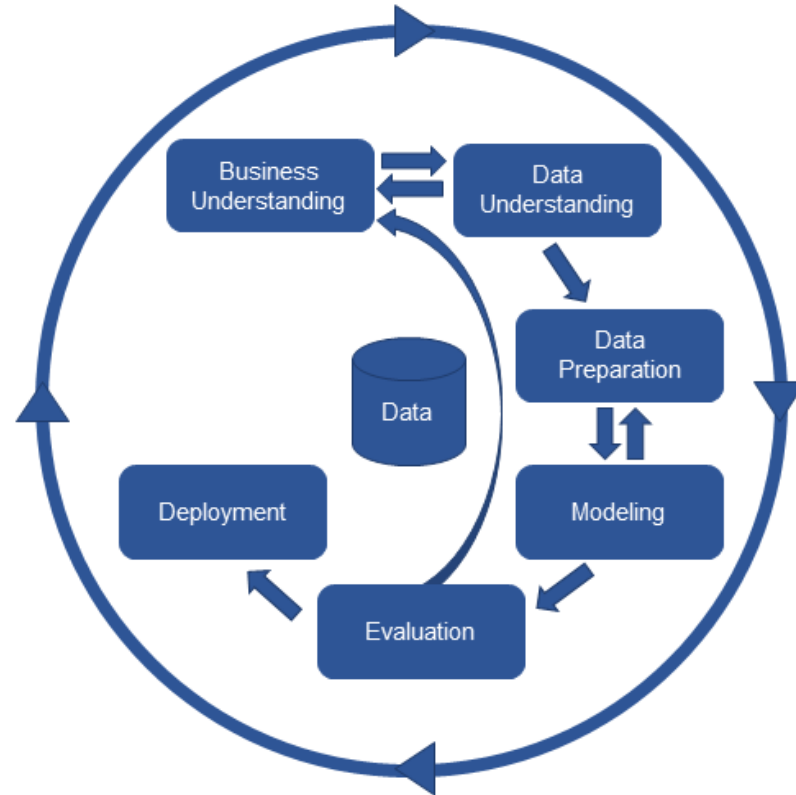
Built and deployed on Microsoft Azure



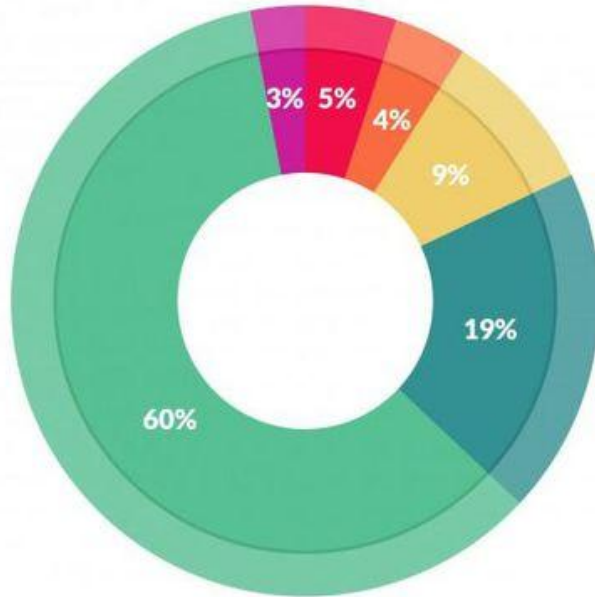
DEMO

Predicting heating/cooling for rooms

CRISP-DM methodology



Data preparation takes time



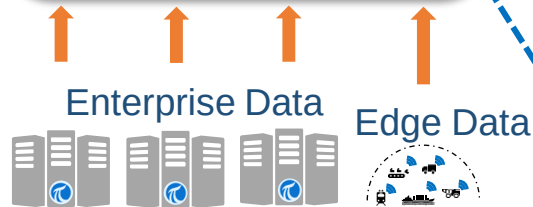
What data scientists spend the most time doing

- Building training sets: 3%
- Cleaning and organizing data: 60%
- Collecting data sets: 19%
- Mining data for patterns: 9%
- Refining algorithms: 4%
- Other: 5%

Data
View

TempExt	WindDir	WindSpeed	GasUsage	WaterUsage	PowerUsage	Timestamp
62.394566	246.99243	4.040866	NaN	NaN	67.2	2018-02-01T00:00:00Z
62.693740	250.98997	4.145184	2.8496	41.094	59.2	2018-02-01T01:00:00Z
62.992916	254.98753	4.249502	2.8496	41.050	36.0	2018-02-01T02:00:00Z
63.292095	258.98507	4.353820	2.8477	41.075	27.2	2018-02-01T03:00:00Z
63.591270	262.98263	4.458138	2.8496	41.063	27.2	2018-02-01T04:00:00Z

OSIsoft
Cloud Services
cloud.osisoft.com



Data View

AC Unit	Room	%Heating	%Cooling	Timestamp
2-01	Rm. 231	16.55741	0	2018-02-01T00:00:00Z
2-01	Rm. 231	43.81835	0	2018-02-01T01:00:00Z
3-02	Rm. 333	0	56.16753	2018-02-01T00:00:00Z
3-02	Rm. 333	0	57.97177	2018-02-01T01:00:00Z
4-01	Rm. 431	18.40983	56.20139	2018-02-01T00:00:00Z
4-01	Rm. 431	17.64198	58.00438	2018-02-01T01:00:00Z

DEMO

Weather conditions and energy use

Data
View

TempExt	WindDir	WindSpeed	GasUsage	WaterUsage	PowerUsage	Timestamp
62.394566	246.99243	4.040866	NaN	NaN	67.2	2018-02-01T00:00:00Z
62.693740	250.98997	4.145184	2.8496	41.094	59.2	2018-02-01T01:00:00Z
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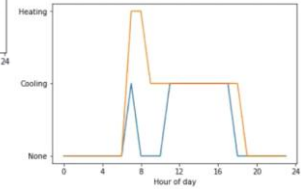
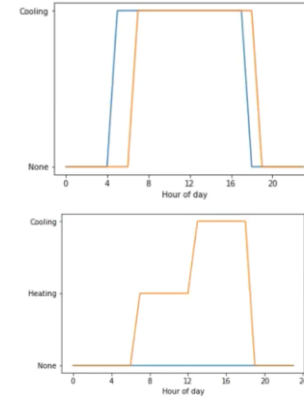
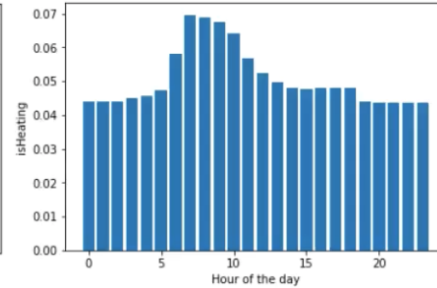
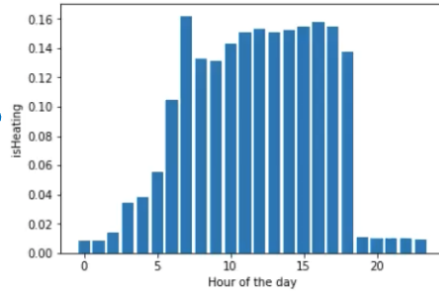
Data View

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DEMO

Building a data view

AC Unit	Room	%Heating	%Cooling	Timestamp
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Join the preview!



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➞ Product Booth

Data Science Enablement

- Data science use cases
- PI Integrators
- DSE with OSIsoft Cloud Services

*Product Expo – Yosemite Ballroom
@ Hilton*



➞ OSIsoft Talks

Cloud-based Data Science
Enablement for the PI System
Today @ 2:30 PM - Developer Track

PI System for Critical Operations
and Advanced Analytics
Day 1 - Product Track

Cloud Services
Day 1 - Product Track



➞ Customer Talks

TransCanada's Journey to
Advanced Analytics – Integrating
TransCanada's PI AF/EF with
AWS Machine Learning

Real-time GIS Data for
Optimized Operations

Data Analytics to enhance
Advanced Energy Communities
Planning and Operation



IT'S THROWBACK THURSDAY AT GEEK NIGHT TONIGHT!

Hilton – Grand Ballroom 7:00 – 10:00 PM

FINAL TRAINING LABS START TOMORROW AT 9:00 AM

All labs require pre-registration

Check the back of your badge for room locations and visit the registration desk with any questions!

Speakers



- Dallas Swift
- Data Scientist
- OSIsoft
- tswift@osisoft.com



- Edith Monino
- Sr Software Developer
- OSIsoft
- emonino@osisoft.com

Questions?

Please wait for
the **microphone**

State your
name & company



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