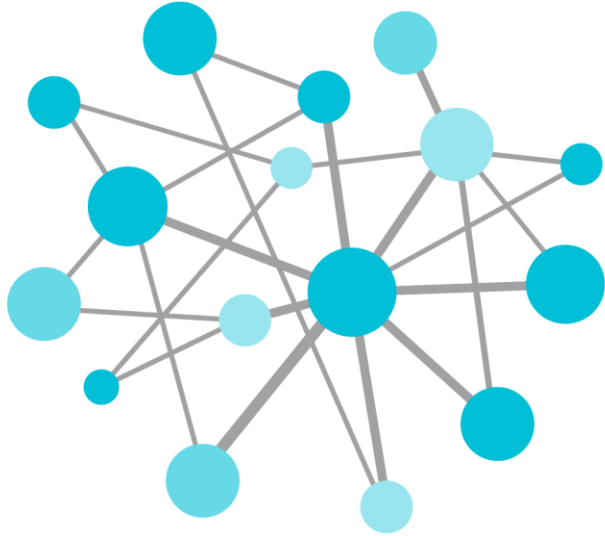


PI Batch Users: Batch Migration to PI Event Frames

Presented by **Todd Brown, Product Manager**
Max Podkolzin, System Engineer



OSIsoft.

USERS 2014 CONFERENCE

The **Power** of **Data**

E M E A



DECISION READY IN REAL-TIME



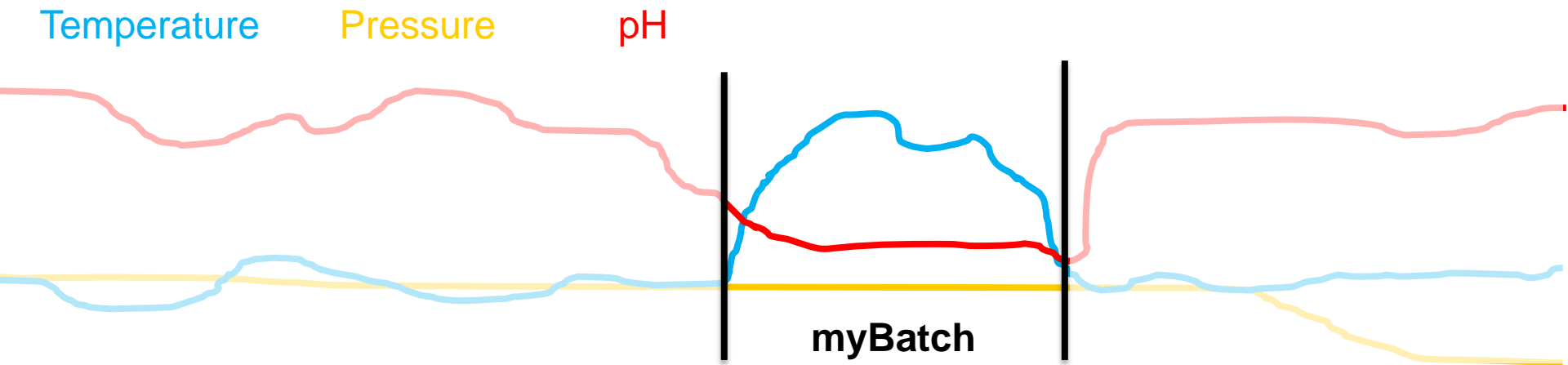
Batch Customers

Today's Agenda

- Batch Roadmap
- PI Server 2015: Migration
- PI DataLink 2014: Batches in Excel
- PI Coresight 2014: Batch Trend
- Conclusions



PI BATCH & PI EVENT FRAMES – A Simple Concept



myBatch Info







Batch ID = myBatch
Product = Super Chemical
Recipe = Type A
Procedure = Heating

myBatch Summary Data

Temperature.Start = 120.3 deg C
Temperature.End = 121.7 deg C
Temperature.Min = 120.3 deg C
Temperature.Max = 145.8 deg C
Temperature.Avg = 138.4 deg C

Current State of BATCH Capabilities in the PI System

PI Batch
PI Event Frames

Database First Released	Supporting Data Structure	Overlapping Events on Unit	Scalability / Performance	High Availability	Data Access Technologies
Nov 2011 PI Server 2010 R3 Data Stored in PI AF DB (SQL Server) 	Supports Templates & is flexible. Event attributes can be easily tailored to business needs. 	<u>Yes</u>: Unlimited Events on a Unit at a Time See a full picture of your asset. Batches, excursions, downtimes. 	Millions of Events Most types of customer searches will perform better 	<u>Yes</u>: HA Supported PI EF can be architected via a HA write PI AF Architecture 	Newer Technologies PI AF SDK, PI OLEDB Enterprise, PI Web Services, PI JDBC, PI Web API 
March 2001 PI Server 3.3.361.43 Data Stored in Proprietary Tag Structure in PI Data Archive	Fixed & not flexible. Supports Batch ID, Product, Recipe, Procedure, and nothing else.	<u>No</u>: 1 Unit Batch on a PI Unit at a time Customers create 'phantom PI Units' in MDB to get around this.	Tens of Thousands of Events Batch customers have complained about performance on systems with many batches.	<u>No</u>: HA is not supported with PI Batch Long-standing request from batch customers.	Older Technologies PI SDK, PI ODBC Client

Current State of BATCH Functionality in the PI System

BES / MES
Interfaces

DB Storage &
Audit Trail

Excel
Integration

Trend Single
Batch

Overlay Trend
Batches

Compliance
Reporting

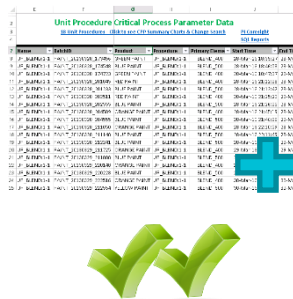
PI Interfaces



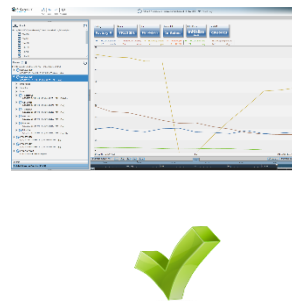
PI AF / PI EF



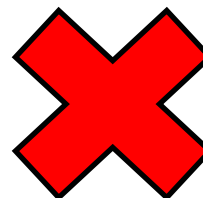
PI DataLink



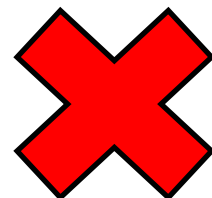
PI Coresight



PI Coresight



RtReports



PI Interfaces



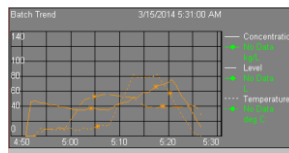
PI Batch DB



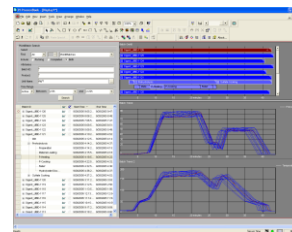
PI BatchView

Batch ID	Batch Name	Batch Type	Batch Status	Batch Date	Batch Time
1	Batch 1	Batch 1	Batch 1	Batch 1	Batch 1
2	Batch 2	Batch 2	Batch 2	Batch 2	Batch 2
3	Batch 3	Batch 3	Batch 3	Batch 3	Batch 3
4	Batch 4	Batch 4	Batch 4	Batch 4	Batch 4
5	Batch 5	Batch 5	Batch 5	Batch 5	Batch 5

PI BatchView



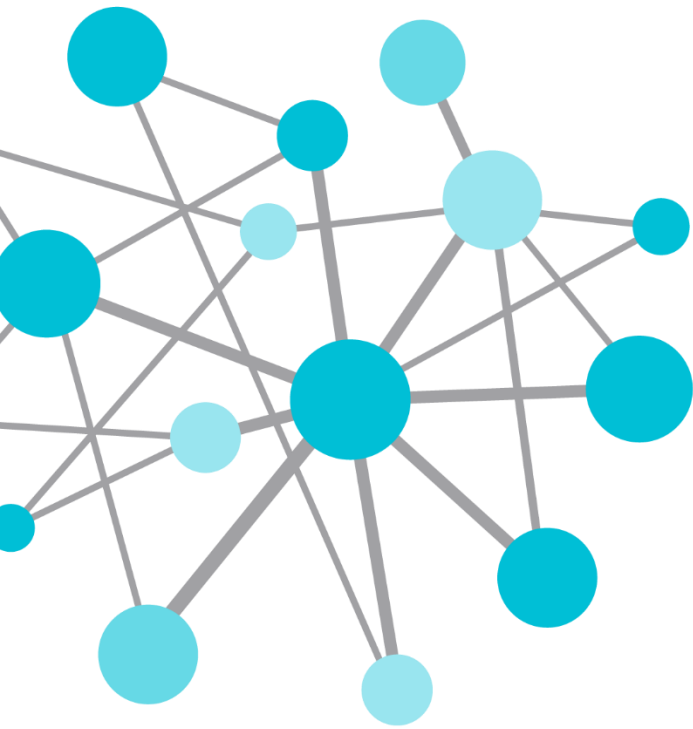
PI BatchView



RtReports

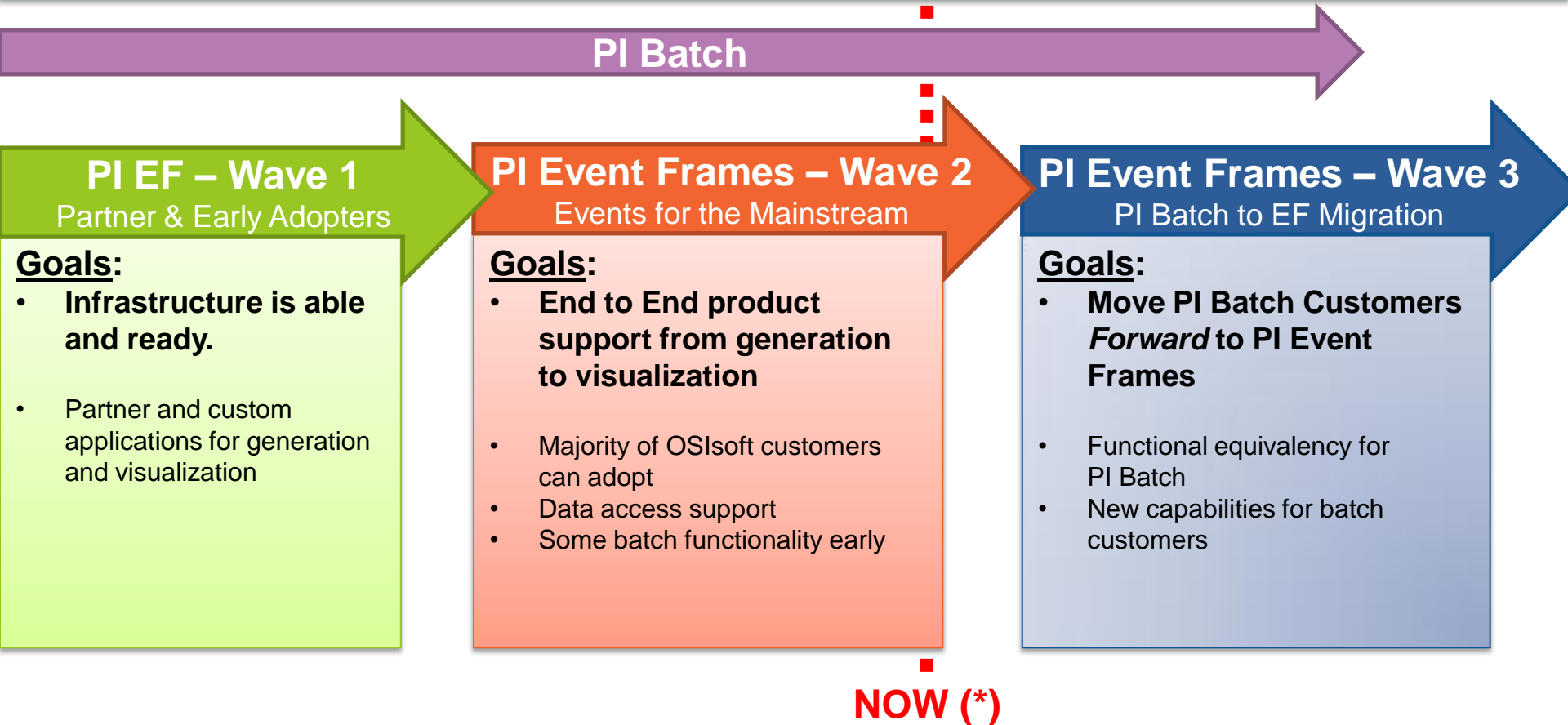
Batch ID	Batch Name	Batch Type	Batch Status	Batch Date	Batch Time
1	Batch 1	Batch 1	Batch 1	Batch 1	Batch 1
2	Batch 2	Batch 2	Batch 2	Batch 2	Batch 2
3	Batch 3	Batch 3	Batch 3	Batch 3	Batch 3
4	Batch 4	Batch 4	Batch 4	Batch 4	Batch 4
5	Batch 5	Batch 5	Batch 5	Batch 5	Batch 5





Batch Roadmap

PI Event Frames & Batch Roadmap Strategy



2013	2014		2015		FUTURE
Year	1H	2H	1H	2H	See PI System Roadmap on Tech Support site for updates

EF Wave 2 – PI Event Frames for the Mainstream

★ PI Event Frames Generator

★ PI Interfaces for BES / MES

★ ★ ★ ★ ★

Batch Intf

★ PI System Access

PI Coresight

Related Events

PI Coresight

Hierarchical Events

★ PI AF Asset Based Analytics

Event Detection

★ PI DataLink

Batch Events in Excel

★ PI AF Audit Trail

Audit Viewer

★ PI AuditTrail Viewer

2012 SP1 (1.4.5)

★ RtReports 3.4

Revamped Printing

★ PI Web API v1.0

Initial Event Support

EF Wave 3 – PI Batch to PI Event Frames [+]

PI Server 2015

Batch to EF Migration

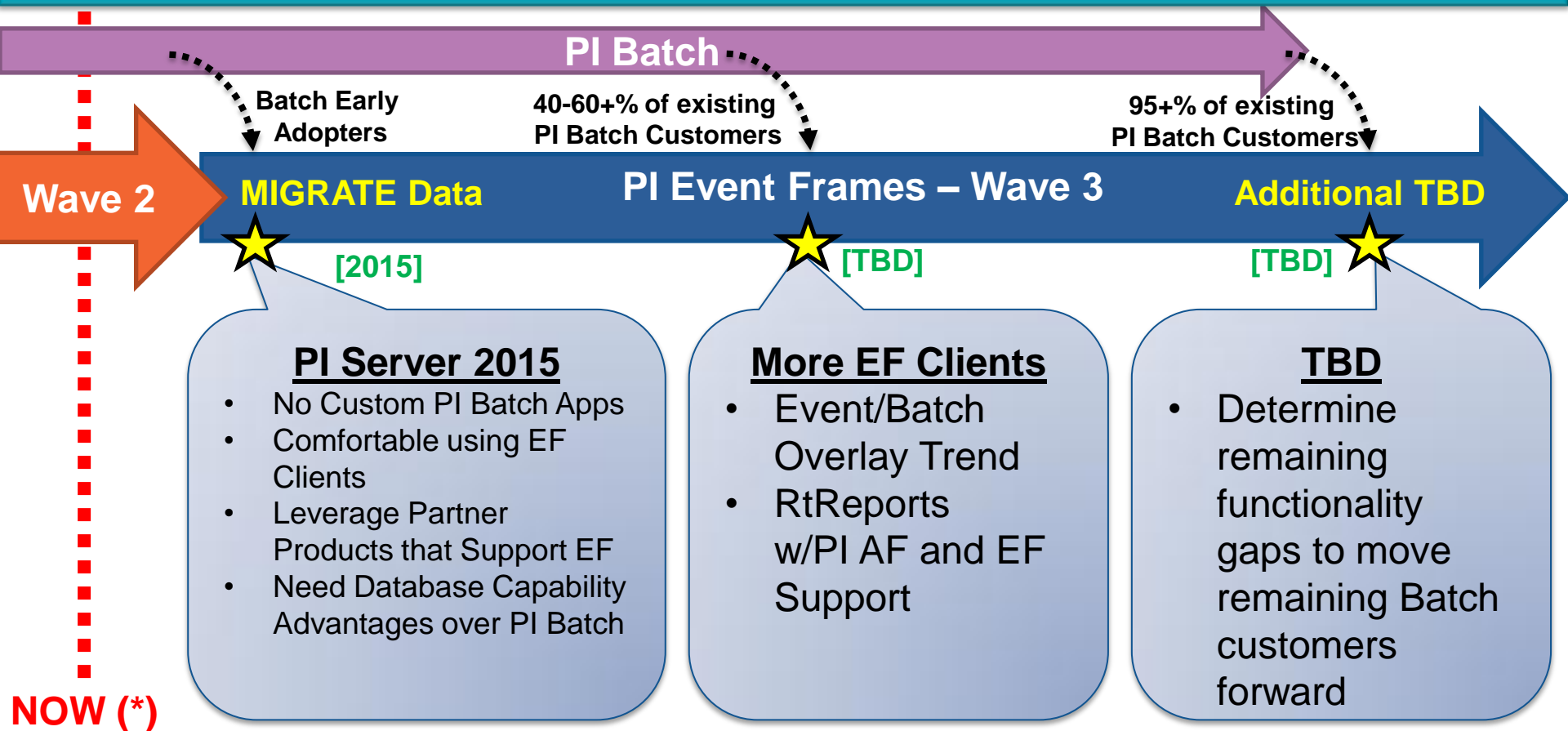
(Kickoff of Wave 3)

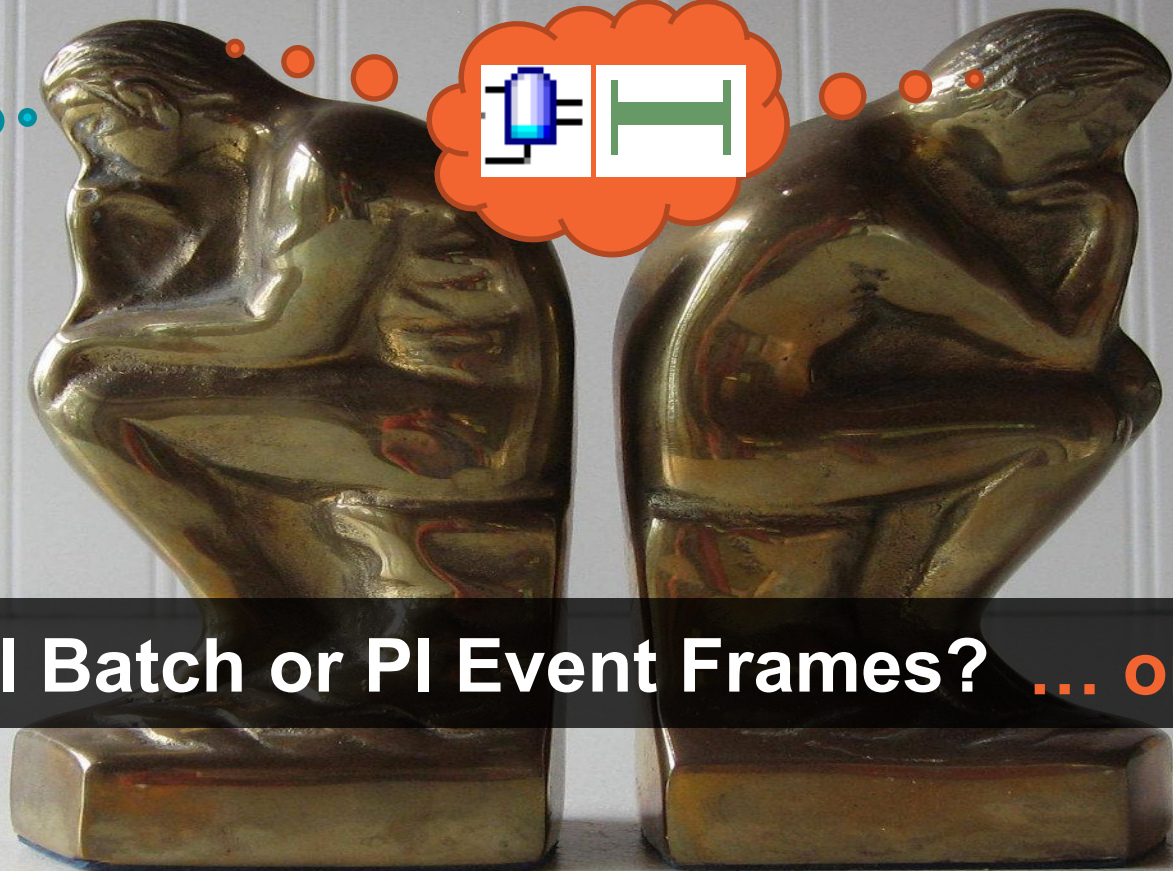
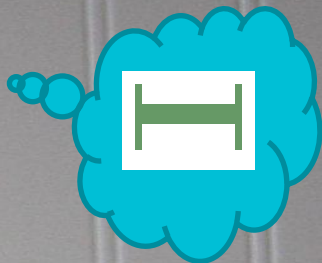
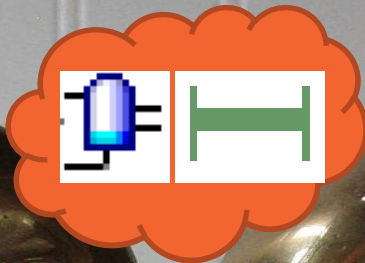
BETA AVAILABLE NOW!!!

Product	Theme	Release Dates TBD
PI Coresight	Event Comparison / Overlay Trending	
RtReports	AF/EF Integrated into Compliance Reports	
PI Notifications	Event Subscription & Notification	

NOTE: Future dates & plans are subject to change. Last Updated: Sept-23-2014

PI Event Frames & Batch Roadmap Strategy – Wave 3

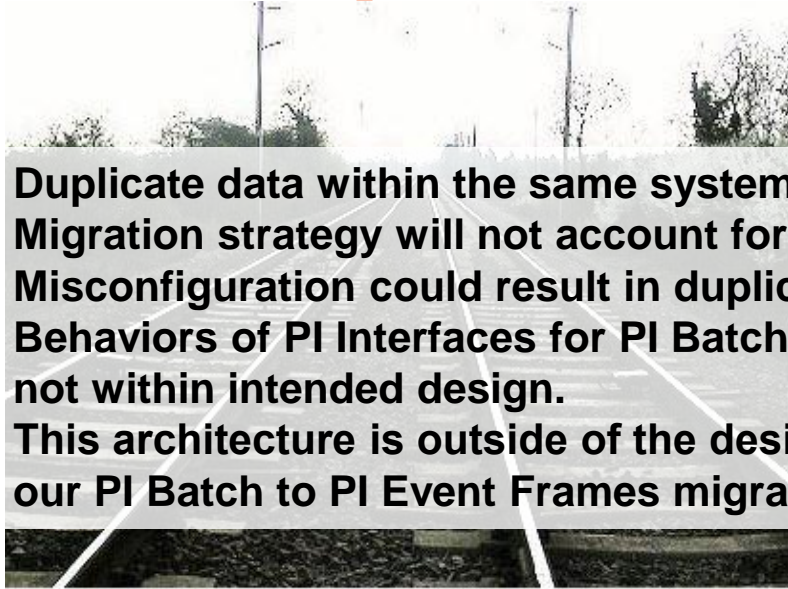




Hmm ... PI Batch or PI Event Frames? ... or Both?

**This is not supported
in a production environment.**

- Duplicate data within the same system.
- Migration strategy will not account for this scenario.
- Misconfiguration could result in duplicate tag values.
- Behaviors of PI Interfaces for PI Batch running in parallel are unknown, not within intended design.
- This architecture is outside of the design assumptions we're making for our PI Batch to PI Event Frames migration strategy.



PI Batch or PI Event Frames?

PI Event Frames – Wave 3

Requirements→

New
PI System
site
→

PI Event Frames – Wave 3				
(A) Basic Batch Trending + Excel Reporting + Data Access	(B) Batch Overlay Trending		(C) RtReports Compliance Reporting	(D) Custom Apps, 3 rd Party Integration, Significant PI Batch Usage
PI Event Frames	PI Event Frames + Partner (Mirabo LivePoint)	PI Batch	PI Batch	PI Event Frames

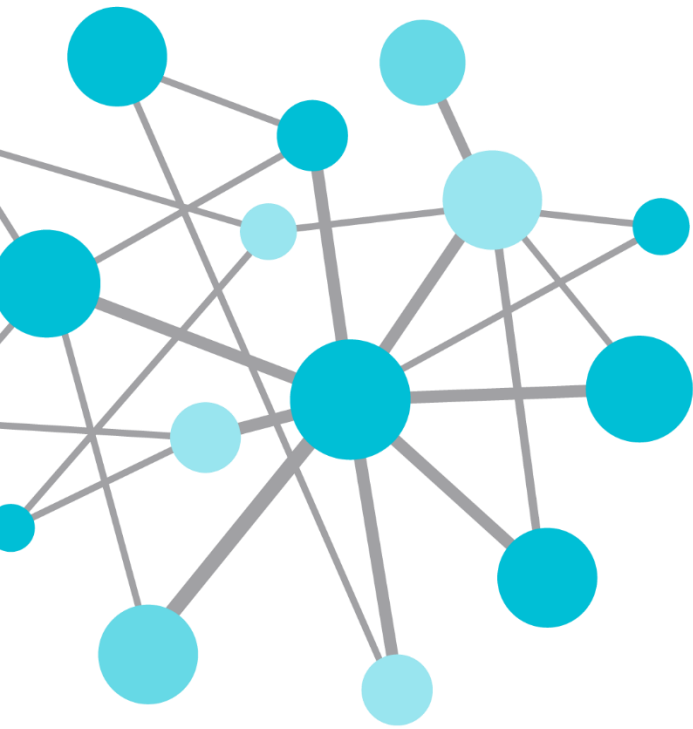
PI Batch or PI Event Frames?

PI Event Frames – Wave 3

Requirements→

**Existing
PI Batch
Site →**

PI Event Frames – Wave 3					
(A) Basic Batch Trending + Excel Reporting + Data Access	(B) Batch Overlay Trending		(C) RtReports Compliance Reporting	(D) Custom Apps, 3 rd Party Integration, Significant PI Batch Usage	(E) Non Batch Process Monitoring Use Case (Downtime, Excursions, etc.)
PI Event Frames + PI Server 2015 (Migration).	PI Event Frames + Partner (Mirabo LivePoint) + PI Server 2015 (Migration).	PI Batch	PI Batch	PI Batch Custom PI Batch applications will not work against PI Event Frames following migration.	PI Event Frames



RtReports

In case you haven't heard ...



- RtReports is a supported OSIsoft product
- OSIsoft is enhancing RtReports

RtReports 3.4 – Revamped Printing – Released!!!



Removes dependency on Microsoft Word for printing reports.

Printing bug fixes & enhancements



Setup Package includes RtReports 3.3 Patches

Bug Fixes

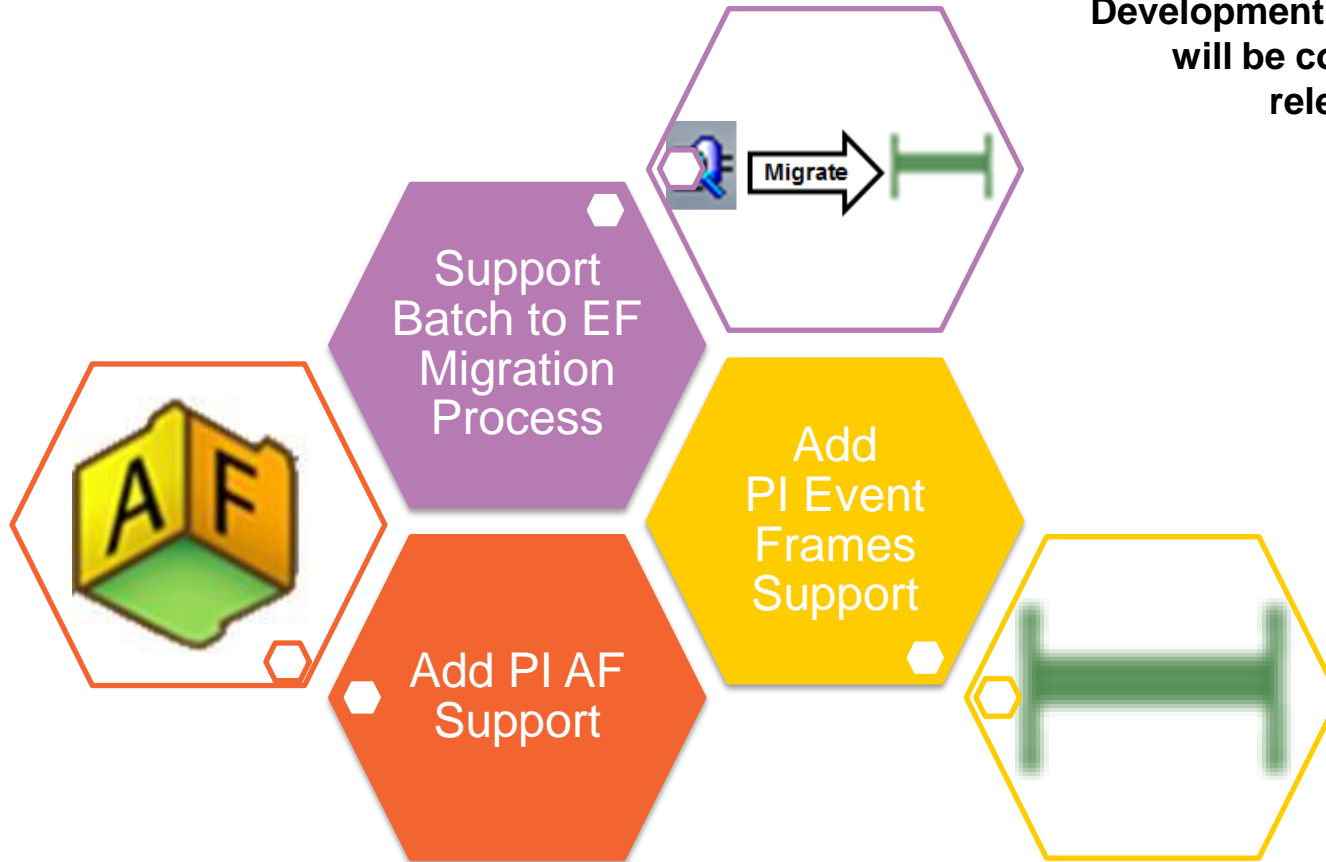
- ✓ Report backgrounds are now printed.
- ✓ Page breaks are no longer ignored.
- ✓ Table row height is correctly honored in printed reports.
- ✓ RtReports trends having a large volume of data no longer fail to print.
- ✓ Unable to start the MS word application error no longer occurs.

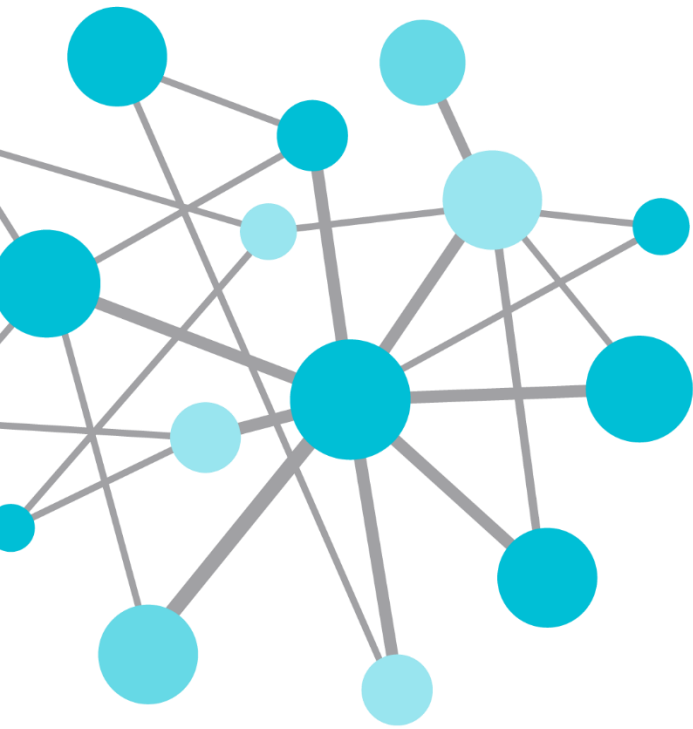
Enhancements

- ✓ Print jobs are now processed asynchronously.
- ✓ Different paper formats can now be specified.
- ✓ IE 10 is now supported.

What's next after RtReports 3.4? **RtReports 4.0!!!**

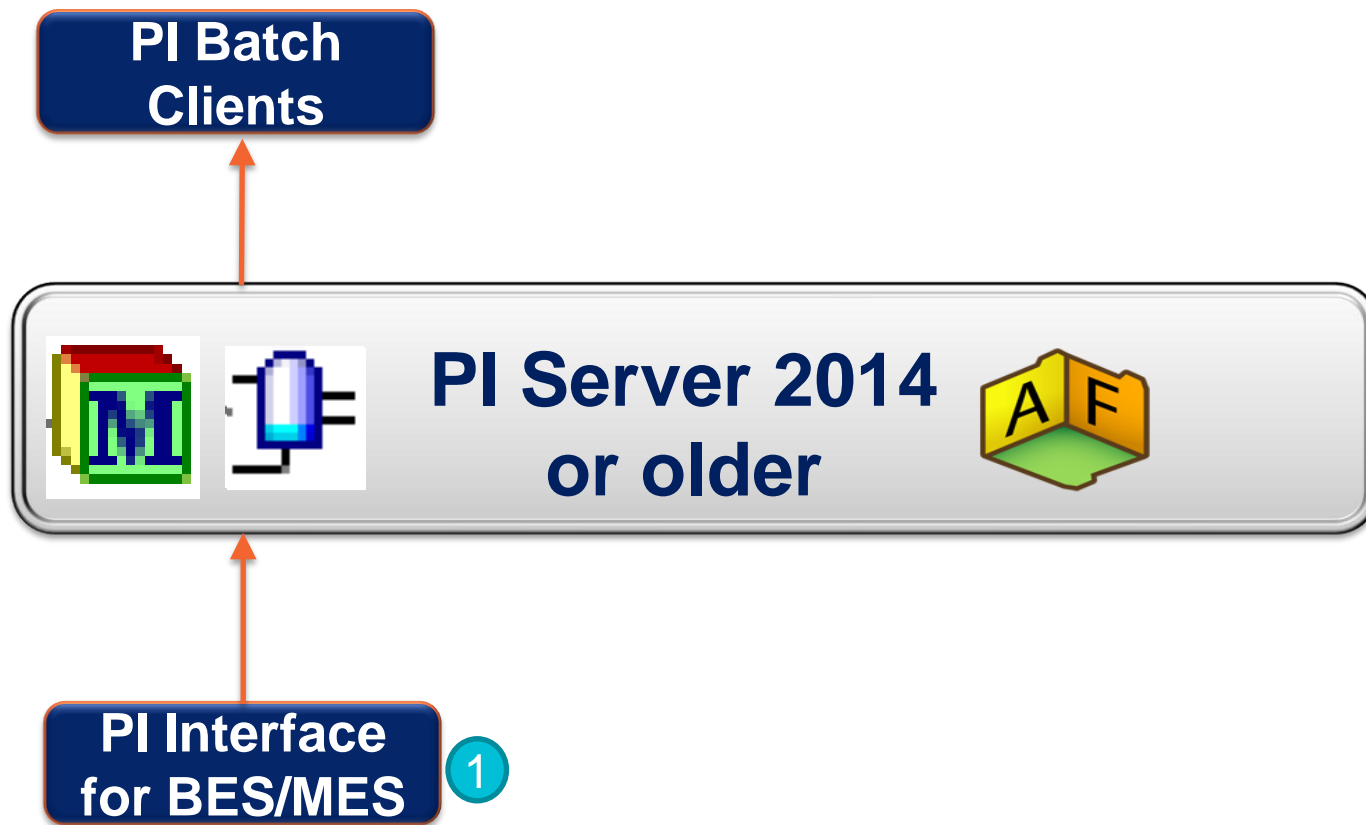
Development has already started and
will be continuing into 2015,
release date TBD





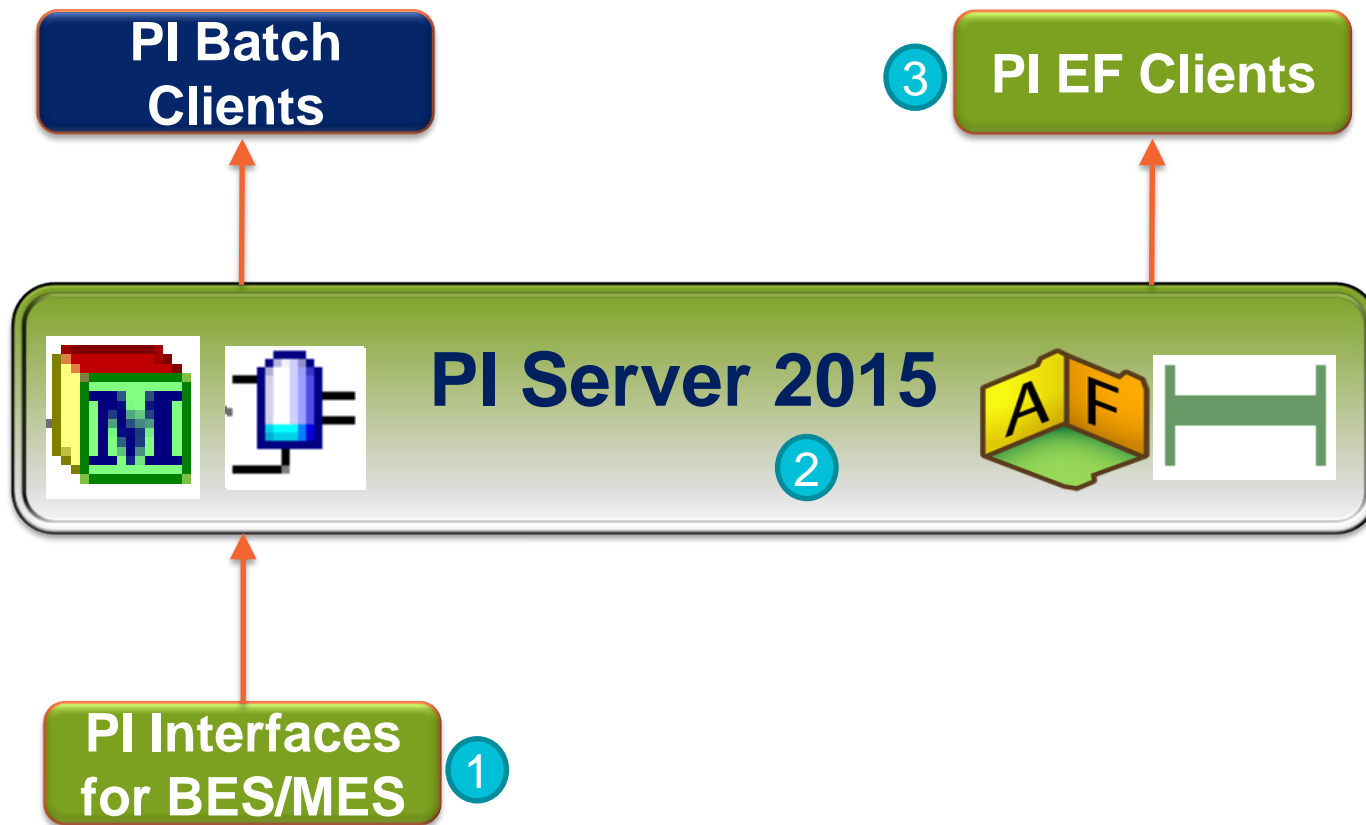
PI Server 2015 (Batch to EF Migration)

Batch to PI Event Frames Migration Process



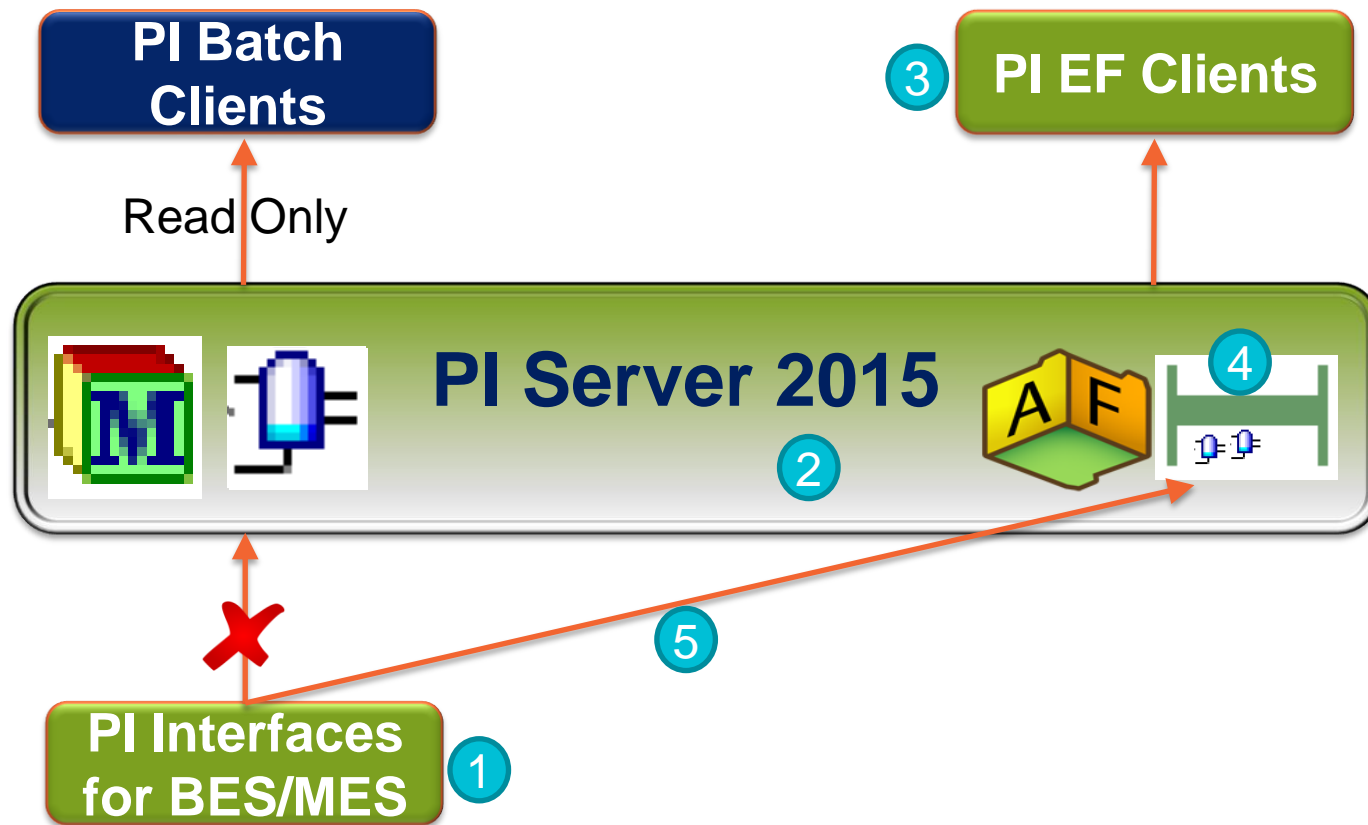
- 1 Upgrade Interfaces
- 2 Upgrade Server

Batch to PI Event Frames Migration Process



- 1 Upgrade Interfaces
- 2 Upgrade Server
- 3 Install EF Clients

Batch to PI Event Frames Migration Process



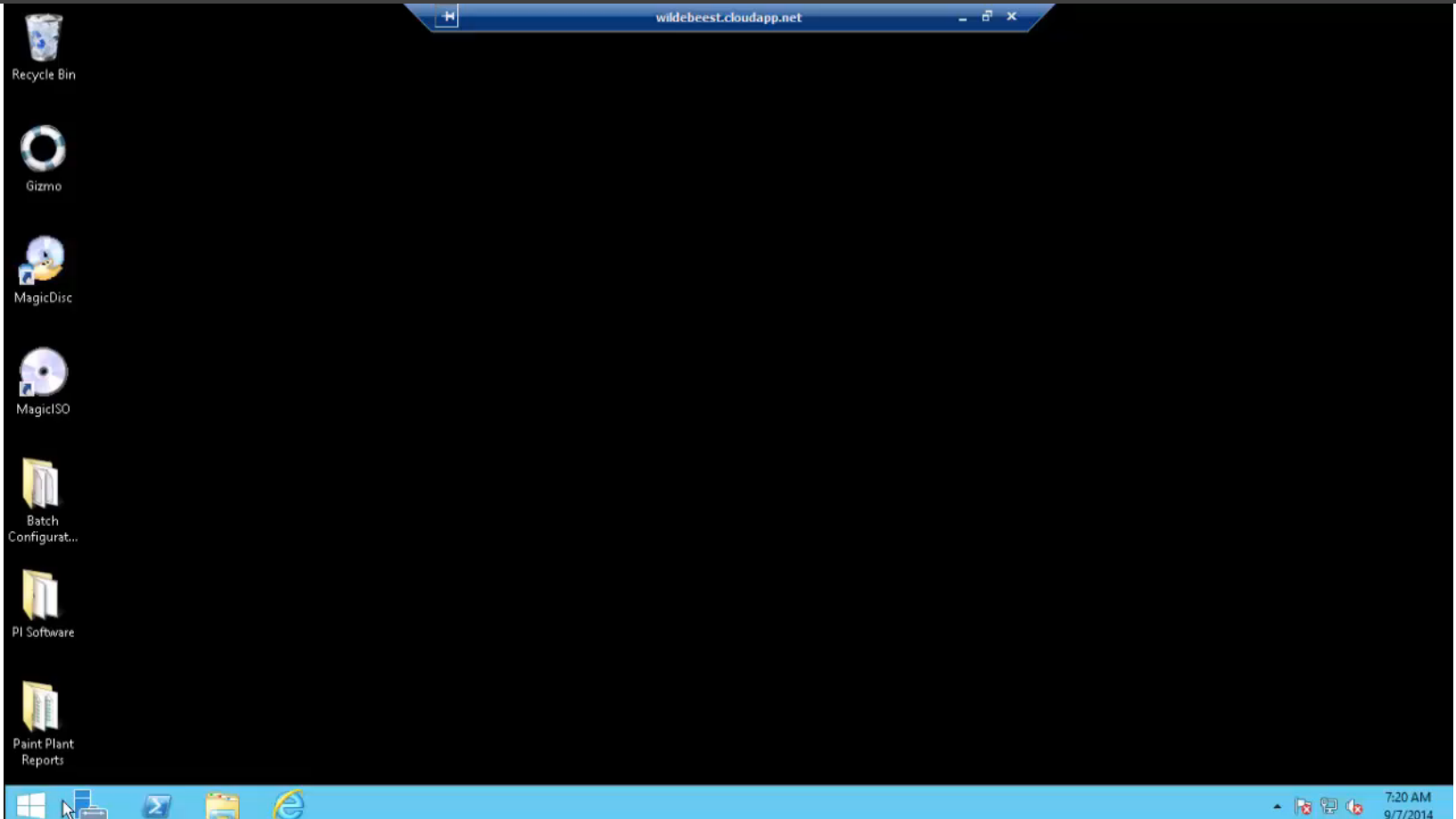
- 1 Upgrade Interfaces
- 2 Upgrade Server
- 3 Install EF Clients
- 4 Migrate Batch Data
- 5 Switch Interfaces



PI Server 2015 (Batch to EF Migration)

DEMO

PI Server 2015 – PI Batch to PI Event Frames Migration





PI DataLink 2014 (Batches in Excel)

DEMO

PI DataLink 2014 – Batches in Excel

The screenshot displays the PI DataLink 2014 Excel application. The ribbon includes tabs for FILE, HOME, INSERT, PAGE LAYOUT, FORMULAS, DATA, REVIEW, VIEW, and PI DATALINK. The PI DATALINK tab is active, showing options like Search Filter, Asset Filter, Properties, Update, About, and Help. The main worksheet area shows a search filter configuration for 'AF DB' with a search start date of 8/14/2014 and a search end date of 8/14/2014. The search filter is set to 'Value' and the search is for 'WILDEBEEST'.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1		Search Filter	Value											
2		AF DB	WILDEBEEST	WDB-EF Migration										
3		Search Start	8/14/2014											
4		Search End	*											
5		EF Name	*											
6		EF Template	PIBatch											
7		Unit Name	*											
8														
9		Product	YELLOW PAINT											
10														
11														
12														
13		Instructions for a smooth live batch demo												
14		EF Attribute Filter on Product												
15		Select some additional Procedure Attributes												
16		3 Sublevels												
17		Filter on Product												
18														
19														
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32														
33														
34														

The bottom of the screen shows the taskbar with various application icons and the system clock indicating 4:31 AM on 9/3/2014.

PI Batch / PI Event Frames Demo Recap

PI Server 2015 (Batch to EF Migration)

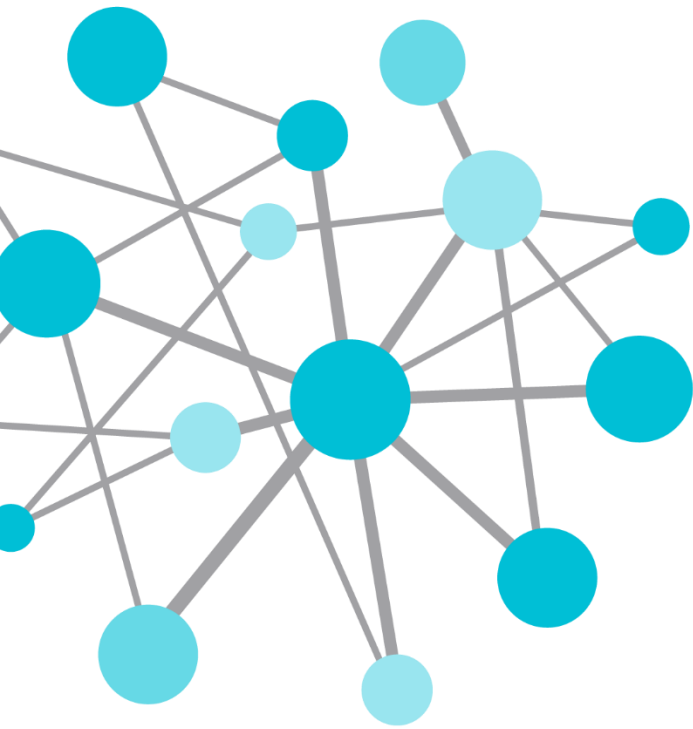
- Migrates data
- Leverages existing proven technology (PI AFLink)
- PI Batch read-only following migration
- **NOT RELEASED (2Q/3Q 2015)**

PI DataLink 2014 (Batch Events in Excel)

- Explore Batches
- Compare Data across Batches
- Batch Attribute Data Automatically Calculated by AF/EF
- Phase Searches and Analysis

PI Coresight (Batch & Phase Trending)

- Trend Unit Batch / Unit Procedure
- Trend SubBatches / Operations / Phases
- View Batch Attribute Data



Conclusions

PI Event Frames & Batch Customer – Release Pipeline Summary

Planning / Research

PI Manual Logger
PI Cloud Connect – Event Exchange

Planned Releases

[2H2015]
PI Notifications
PI AF Asset Based Analytics – More EF Support

Current Development

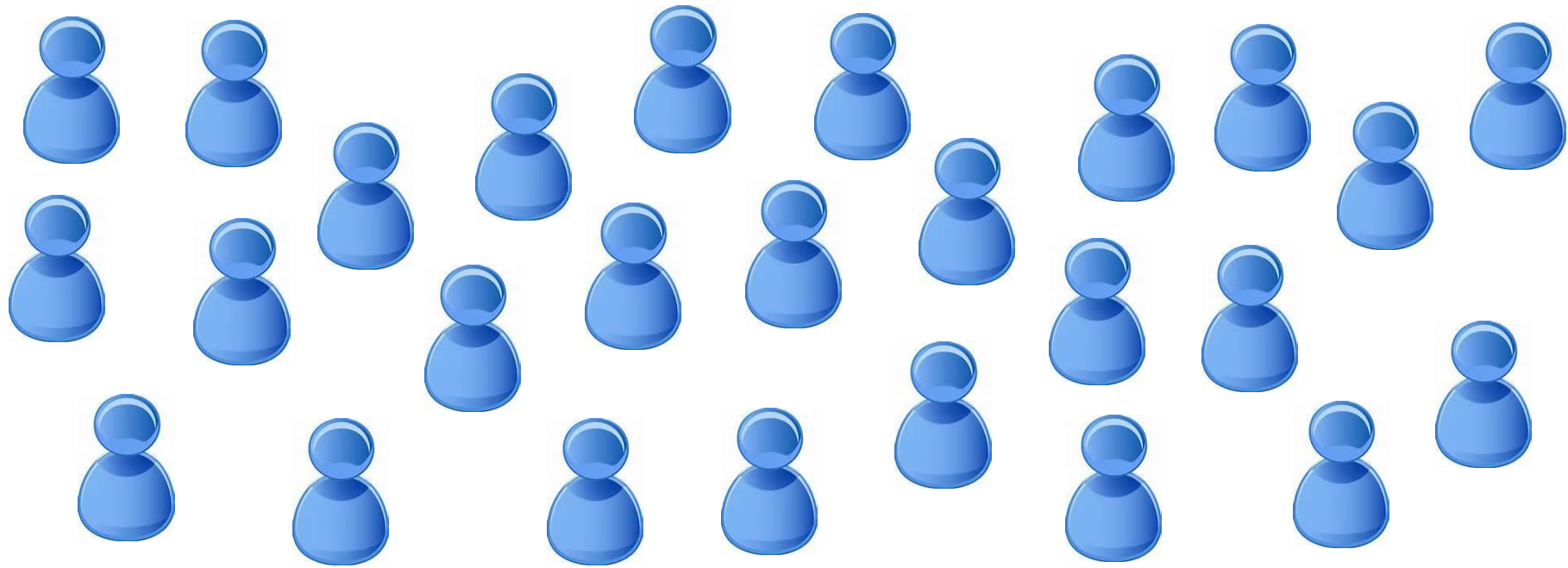
[2Q/3Q 2015]
PI Server 2015 – Batch to EF Migration

[2H2015 – 2016]
PI Coresight – Overlay Trending
RtReports 4.0 – AF/EF

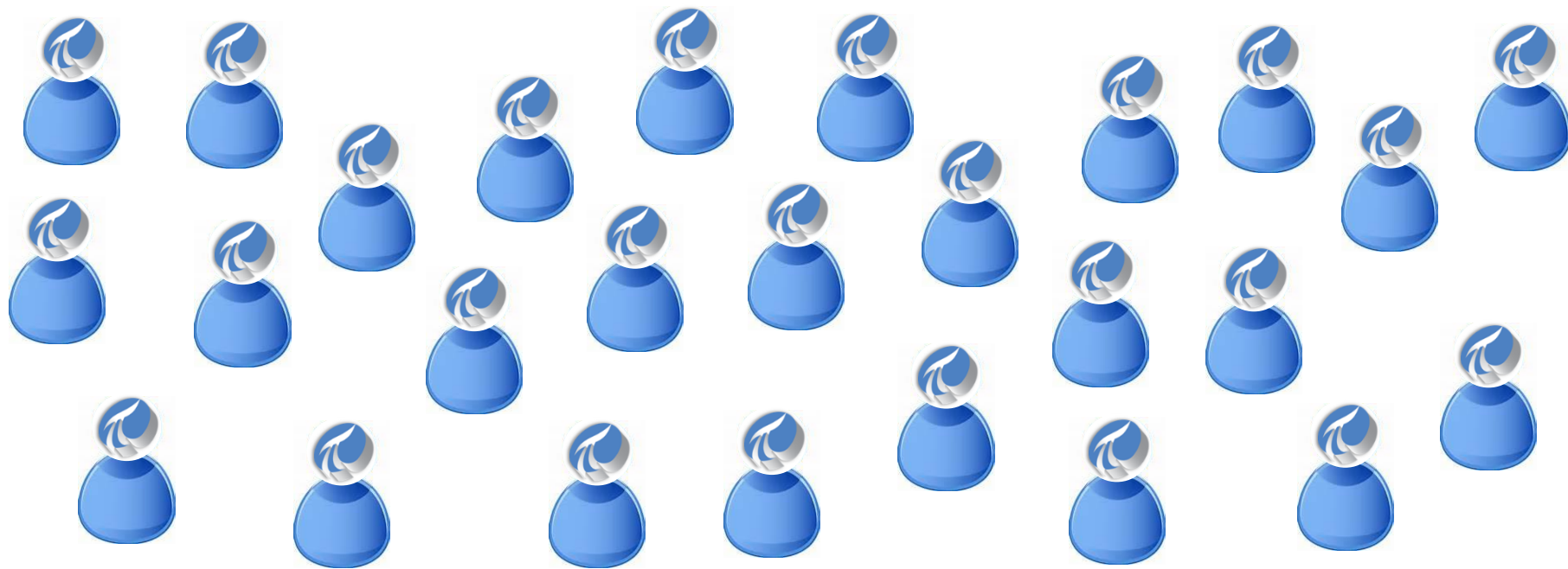
Released

PI Event Frames DB
PI Event Frames Generator
9 PI Interfaces for BES/MES
PI OLEDB Enterprise
PI JDBC Driver
PI Web Services
PI Coresight – Event/Batch/Phase Trending
PI AF Asset Based Analytics
PI AF Audit Trail Viewer
PI Audit Trail Viewer SP
PI DataLink 2014
RtReports 3.4 – Printing
PI Web API

So what does all this mean for Batch Customers?

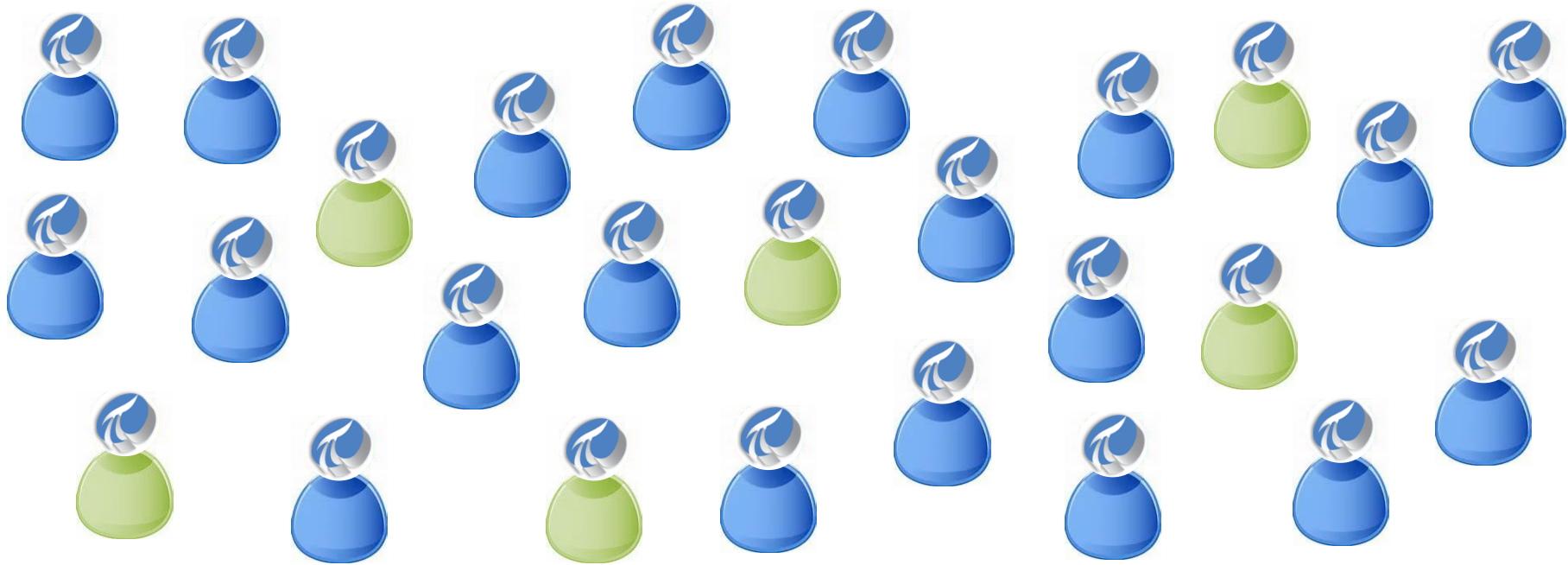


So what does all this mean for PI Batch Customers?



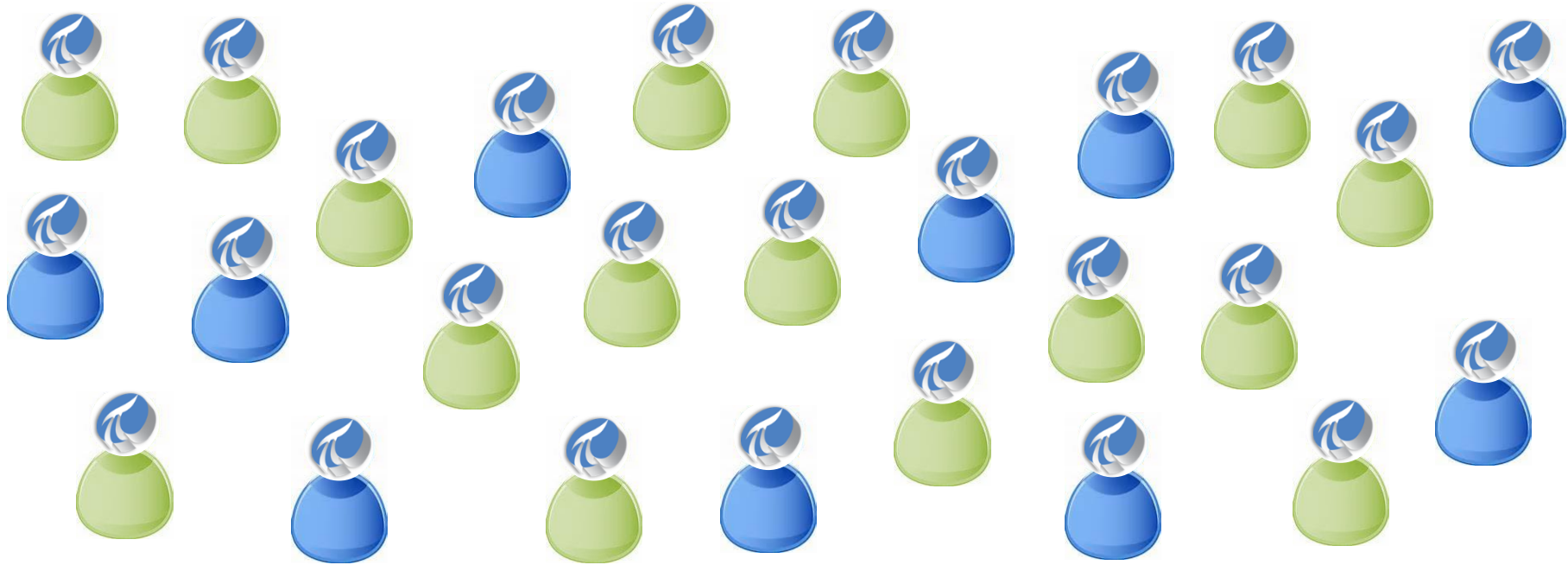
Some of you can start adopting EF now.

Comfortable with EF Clients available now; need for greater performance & scalability.



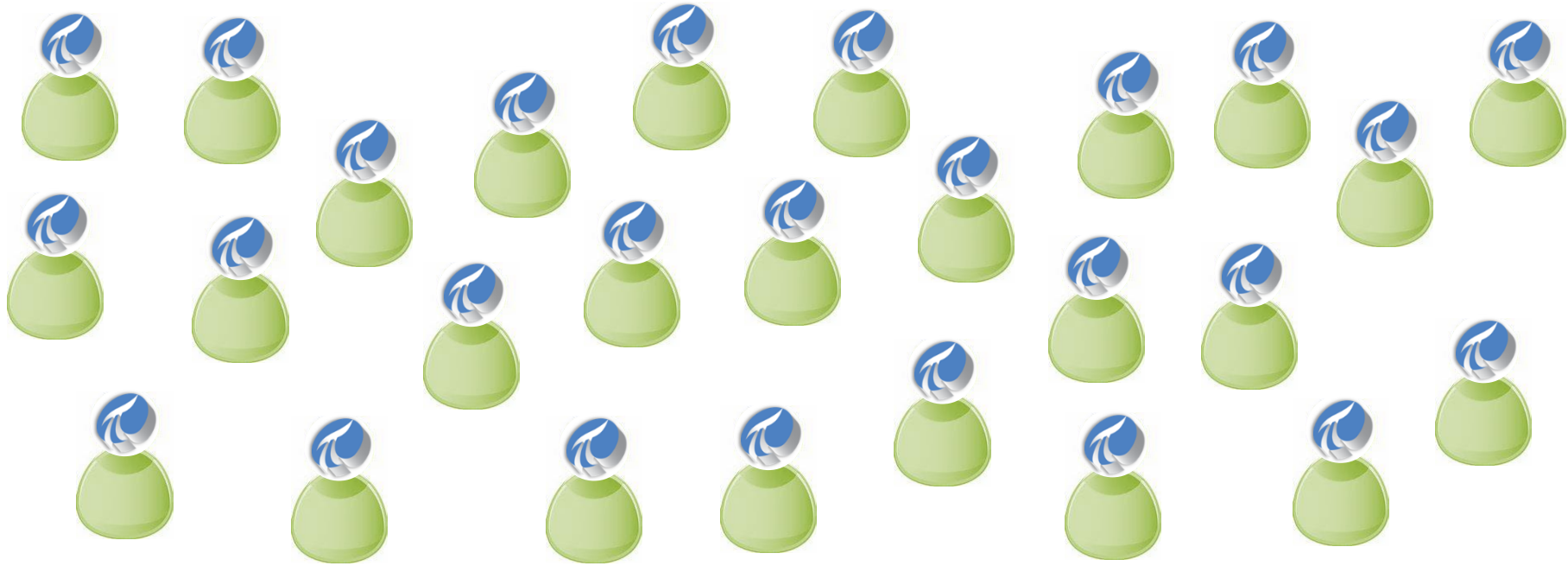
Many of you will start adopting EF in 2015!

EF Clients available now; PI Server 2015 – Batch Migration; More EF Client support coming.



ALL of you should start getting ready NOW!!!

Start implementing PI AF; Start getting familiar with PI Event Frames on demo & test systems.





Bright Future for Batch Ahead

PI Event Frames – Contact Us!

Todd Brown

tbrown@osisoft.com

Product Manager
OSIsoft, LLC

Satyam Godasi

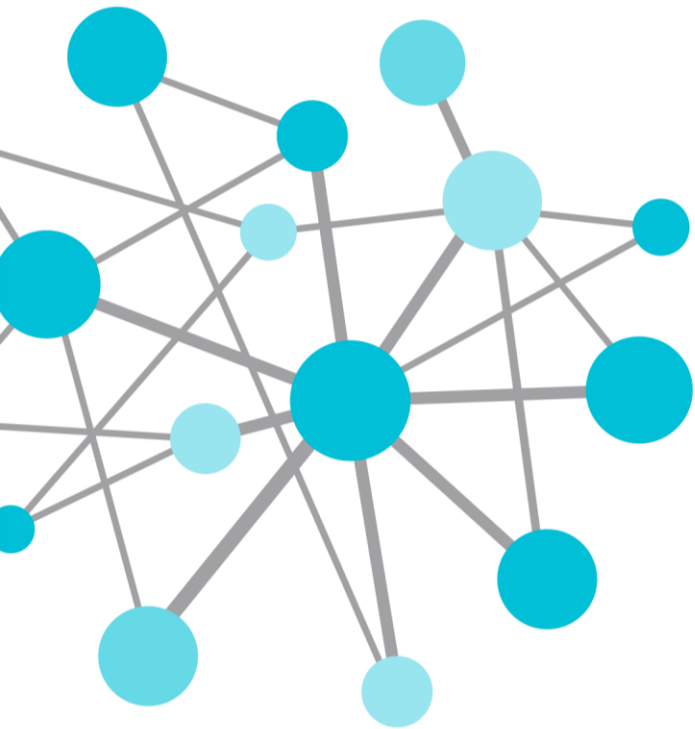
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THANK
YOU

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