AF and Analytics

Empowering Business in Real Time.

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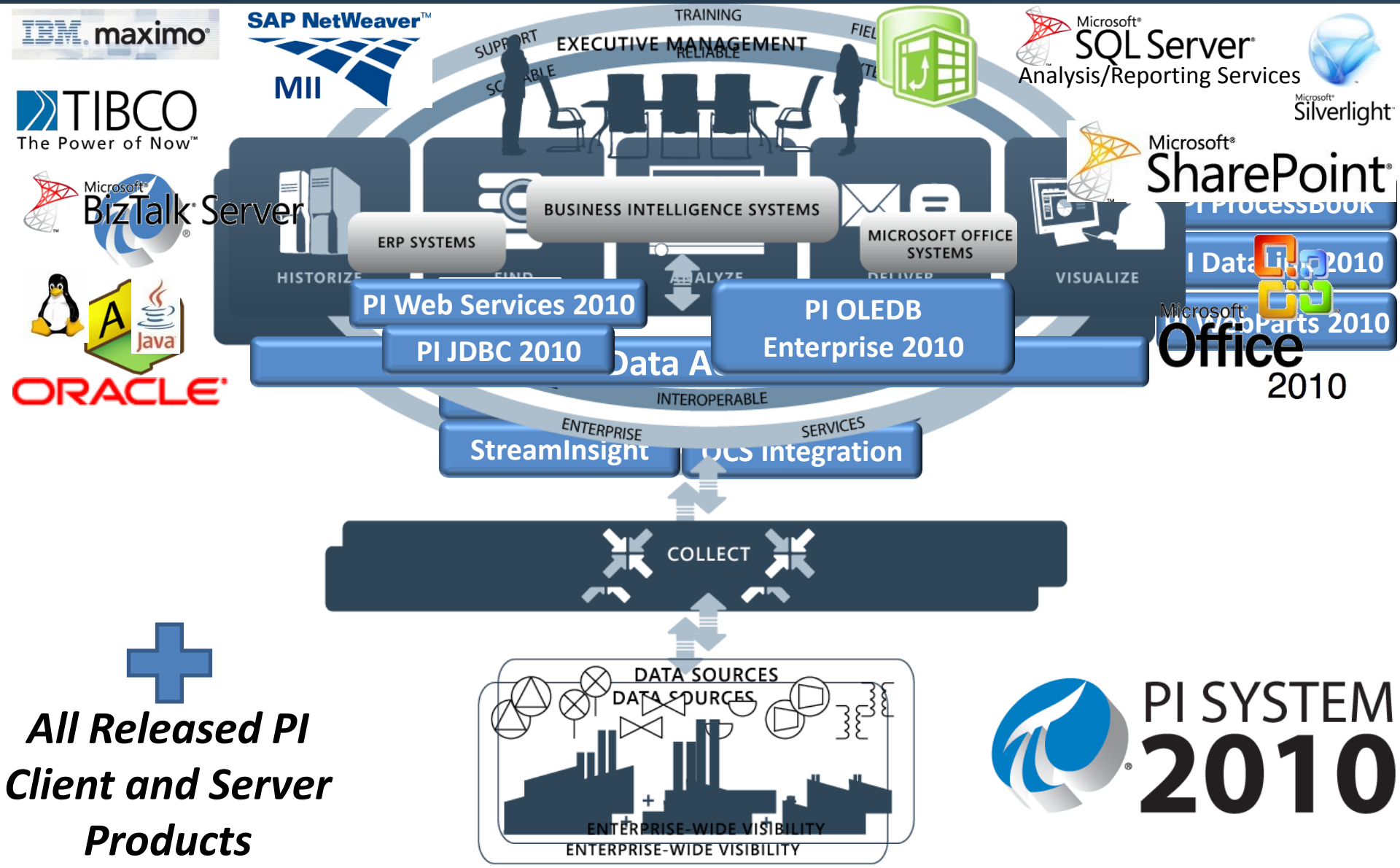

All Released PI Client and Server Products

Empowering Business in Real Time.

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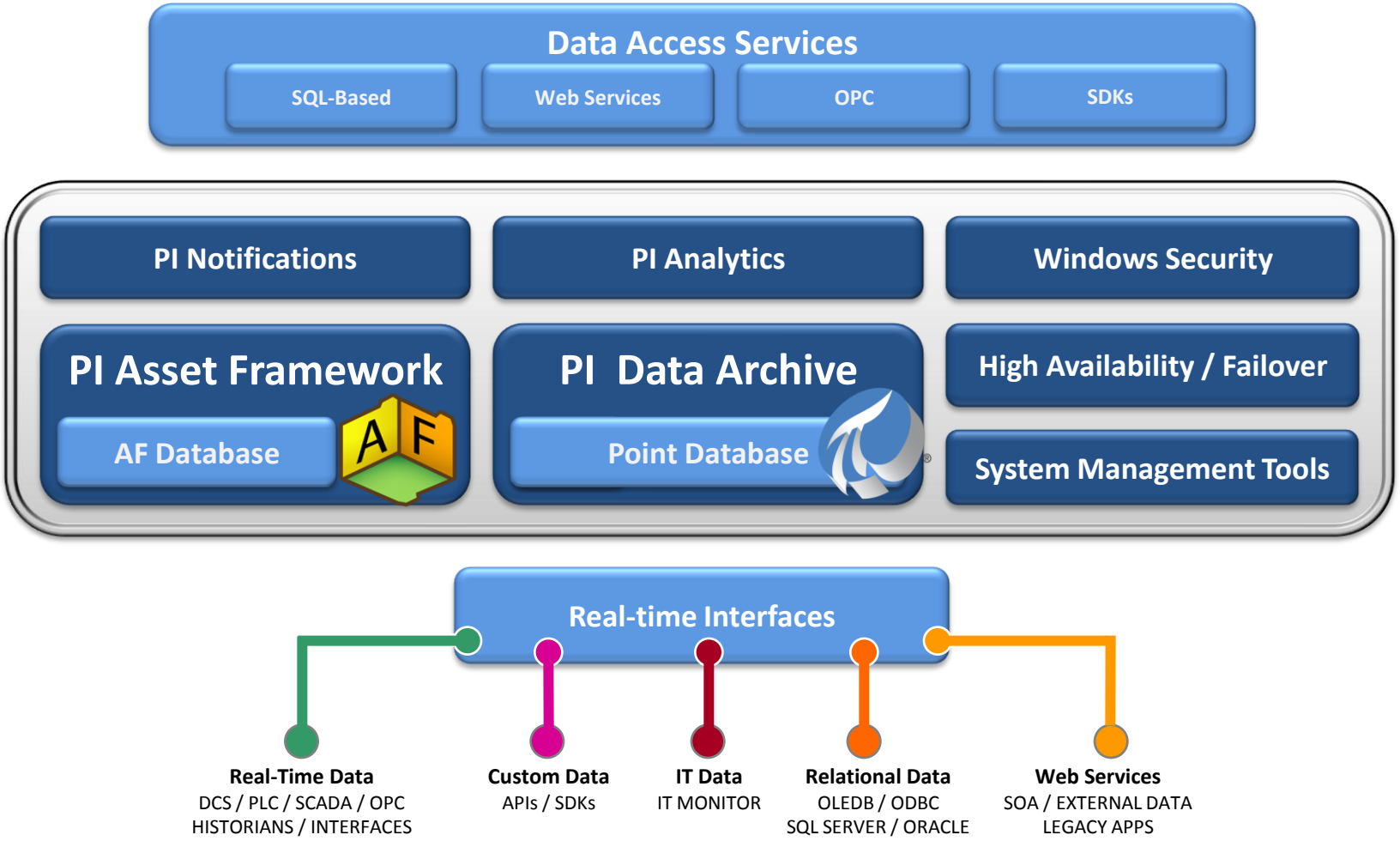
PI Server 2010



PI Server 2010: tags + assets

Scalability

Templates, Models, etc.

Millions of assets

Usability

Unified Data Access

Search

Flexible security

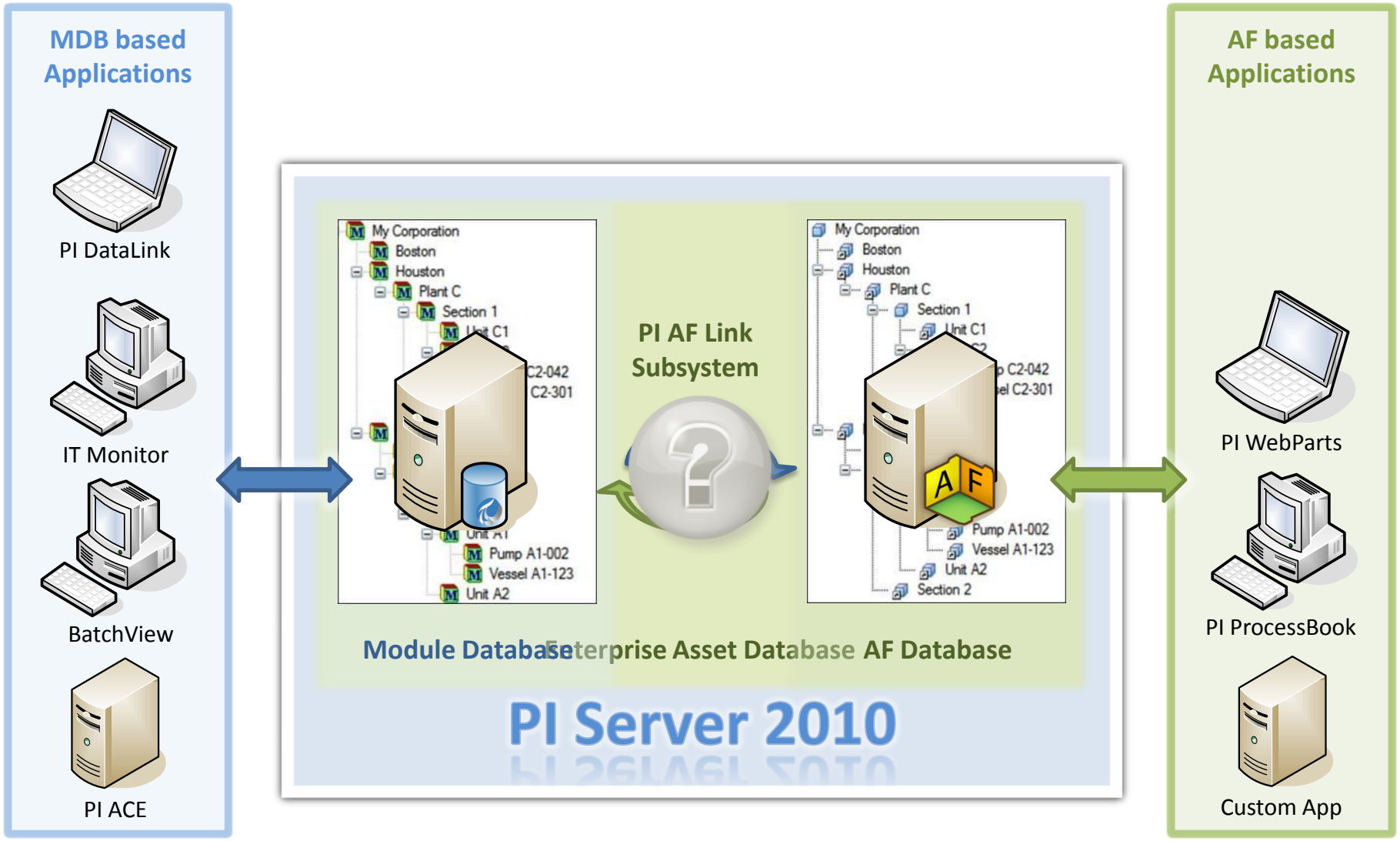
Reliability

HA Solutions

Windows Security

Preserve Your Investment: Displays, Calcs, Apps

Mixed Applications



Upgrade Steps

1. Install or Access SQL Server
2. Install AF Server 2010
3. Prepare your Module Database
4. Upgrade to PI Server 2010
5. Enjoy AF! (MDB still available)

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PI AF and MDB

- PI AF is now the system-of-record for MDB
- PI AF 2010 Enhanced to support demands of two-way multi-threaded synchronization with MDB
- You should develop new asset-based applications using PI AF (AF SDK, PI OLEDB Enterprise, PI Web Services)
- OSIsoft will maintain support for MDB applications
  - PI ACE
  - PI Batch
  - Your Applications

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Translate MDB paths to PI AF

- Use **OSIsoft.PB.MDB2AFPath** Assembly Installed into the GAC with PI ProcessBook 3.2 and PI WebParts 2010.

```
public static bool Translate(string mdbFullPath,
                             out string afFullPath,
                             out string error)
```

MDB Path Format:
\\piserver\module
\\piserver\module|alias
\\piserver\module||property

AF Path Format:
\\afserver\database\element
\\afserver\database\element|attribute

Uses AF Element established by the PI 2010 AF Link sub-system

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Add PI AF capabilities to your Applications

- **Find / Search**
- **Bulk Operations**
- Notifications
- Templates
- Relational Data
- Custom data sources

- Units of Measure
- GUI Components
- Relationships and Modeling
- Import / Export

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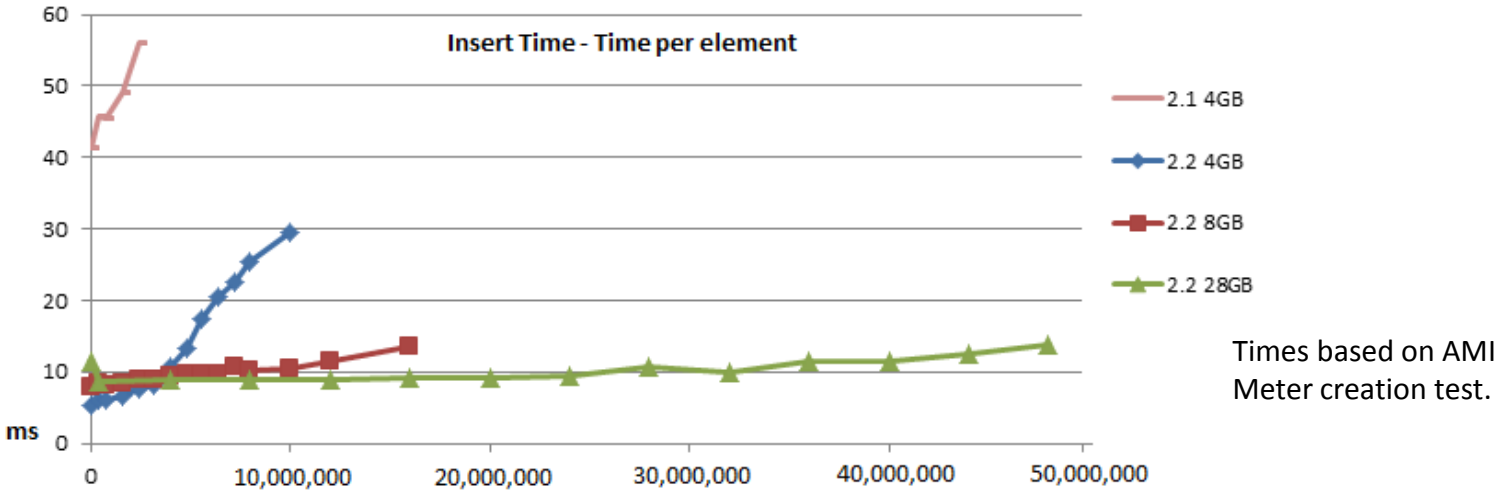
PI AF Performance & Scalability

- Element Creation
  - 10x increase in element creation performance
  - 10x improvement in element scalability



Times based on AMI Meter creation test.

  - Support for roughly 10 million* templated elements

(* can vary significantly based on element structure and use)

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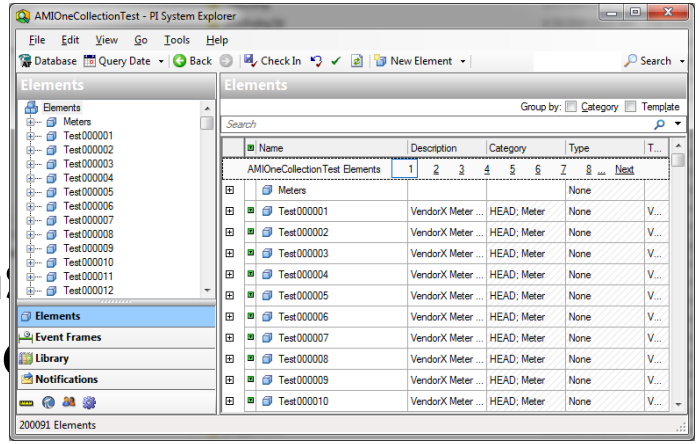
Large Collections

- Paging of Collections
  - Support for large element collections



- Improved behavior for applications processes/threads add to the same

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Manageability

AF Builder for Excel allows creation or modification of:

- Elements
- Templates
- Categories
- Enumeration Sets
- Notifications
- Analyses
- Event Frames

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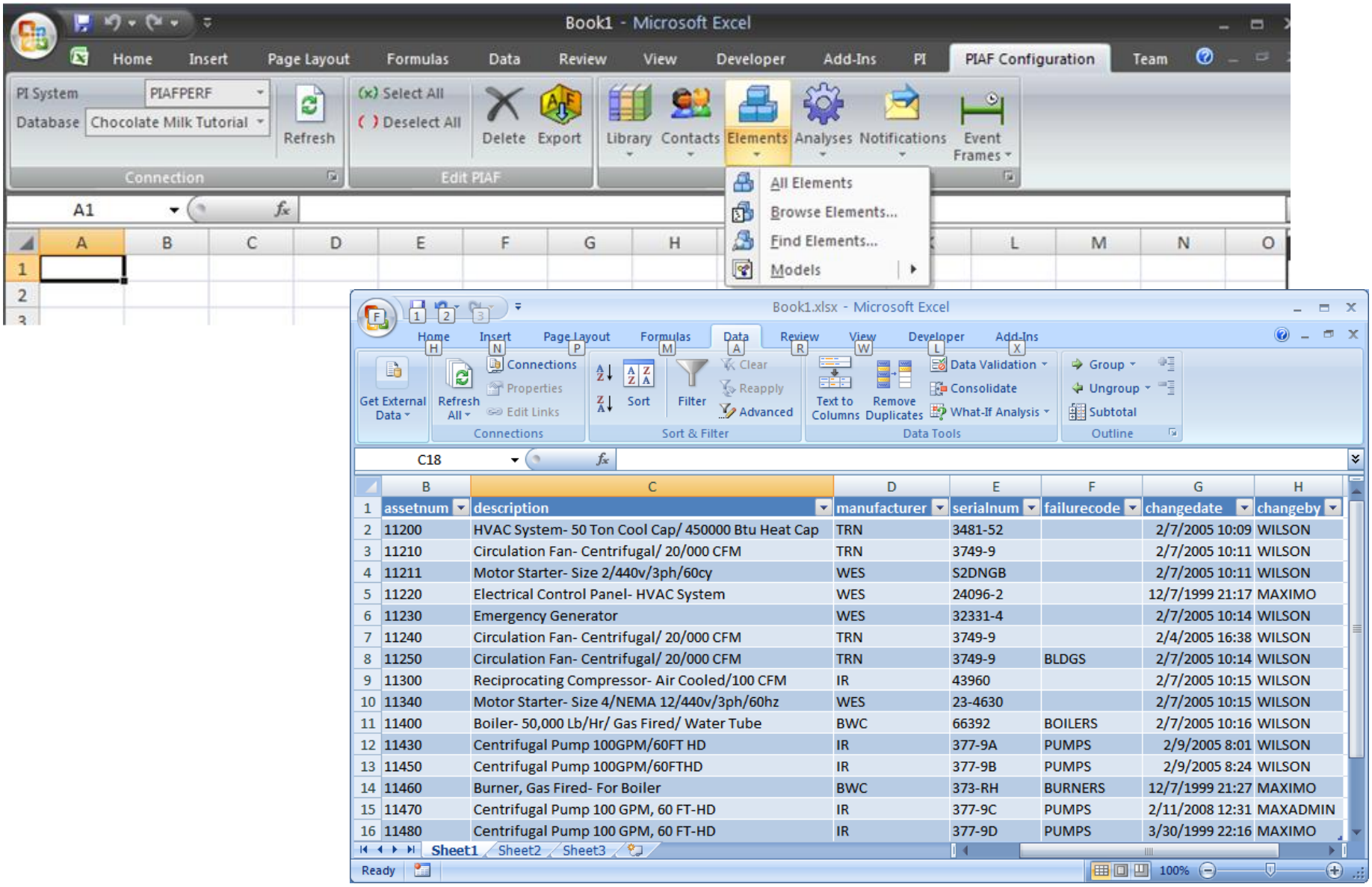
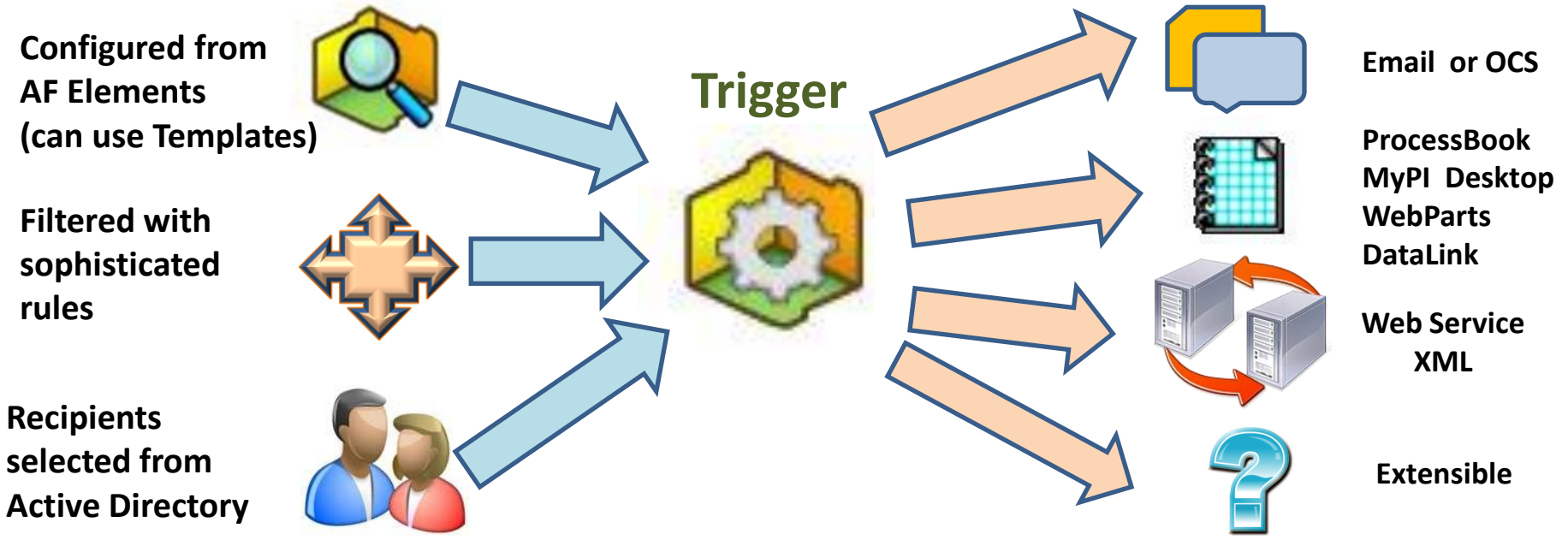
AF Builder for Excel



	B	C	D	E	F	G	H
1	assetnum	description	manufacturer	serialnum	failurecode	changedate	changeby
2	11200	HVAC System- 50 Ton Cool Cap/ 450000 Btu Heat Cap	TRN	3481-52		2/7/2005 10:09	WILSON
3	11210	Circulation Fan- Centrifugal/ 20/000 CFM	TRN	3749-9		2/7/2005 10:11	WILSON
4	11211	Motor Starter- Size 2/440v/3ph/60cy	WES	S2DNGB		2/7/2005 10:11	WILSON
5	11220	Electrical Control Panel- HVAC System	WES	24096-2		12/7/1999 21:17	MAXIMO
6	11230	Emergency Generator	WES	32331-4		2/7/2005 10:14	WILSON
7	11240	Circulation Fan- Centrifugal/ 20/000 CFM	TRN	3749-9		2/4/2005 16:38	WILSON
8	11250	Circulation Fan- Centrifugal/ 20/000 CFM	TRN	3749-9	BLDGS	2/7/2005 10:14	WILSON
9	11300	Reciprocating Compressor- Air Cooled/100 CFM	IR	43960		2/7/2005 10:15	WILSON
10	11340	Motor Starter- Size 4/NEMA 12/440v/3ph/60hz	WES	23-4630		2/7/2005 10:15	WILSON
11	11400	Boiler- 50,000 Lb/Hr/ Gas Fired/ Water Tube	BWC	66392	BOILERS	2/7/2005 10:16	WILSON
12	11430	Centrifugal Pump 100GPM/60FT HD	IR	377-9A	PUMPS	2/9/2005 8:01	WILSON
13	11450	Centrifugal Pump 100GPM/60FTHD	IR	377-9B	PUMPS	2/9/2005 8:24	WILSON
14	11460	Burner, Gas Fired- For Boiler	BWC	373-RH	BURNERS	12/7/1999 21:27	MAXIMO
15	11470	Centrifugal Pump 100 GPM, 60 FT-HD	IR	377-9C	PUMPS	2/11/2008 12:31	MAXADMIN
16	11480	Centrifugal Pump 100 GPM, 60 FT-HD	IR	377-9D	PUMPS	3/30/1999 22:16	MAXIMO

PI Notifications



Features

- Templates
- Custom Content
- Acknowledgement and Escalation

Delivery Channels

- User can create their own
- OSIsoft vCampus – XML & Skype

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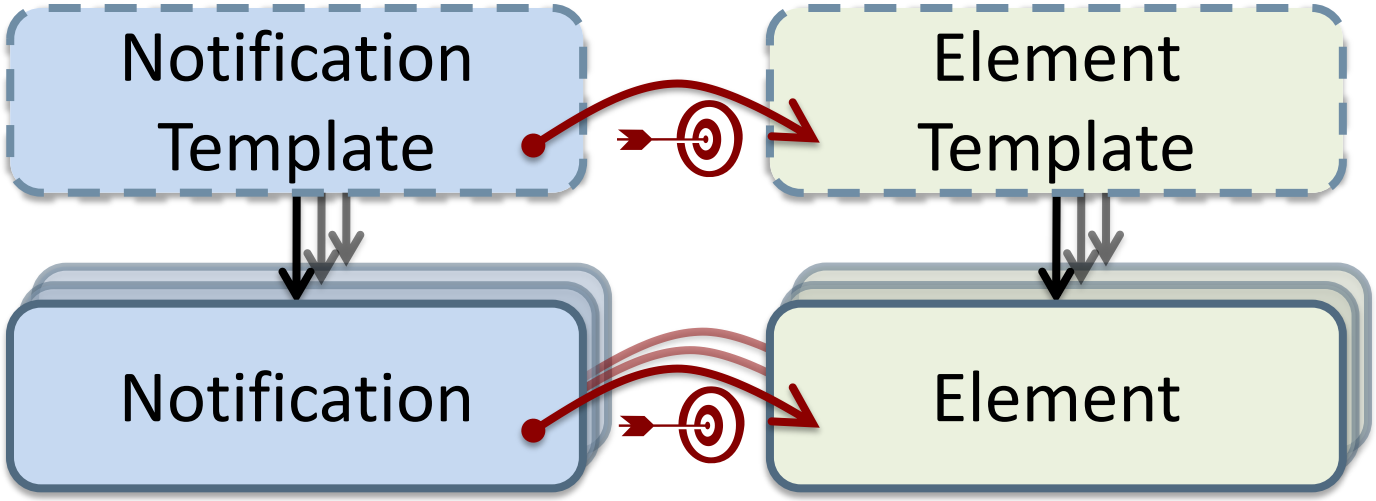
PI Notifications Templates

- Enable rapid and automatic creation of maintainable notifications



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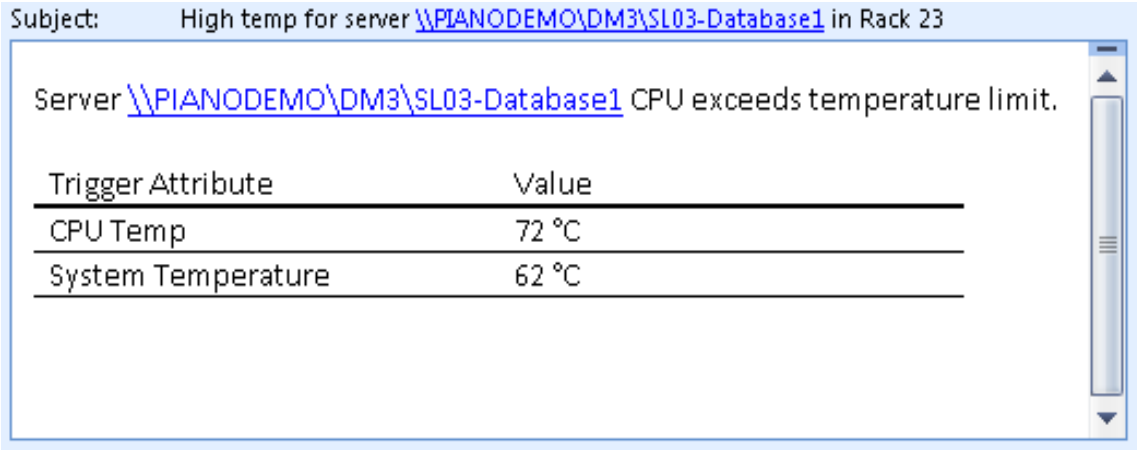
What's Coming in PI Notifications 2010?

- Message Formatting
  - Control appearance of subject and body
- Performance
  - **History retrieval** is improved by an order of magnitude
  - Native 64-bit operating system support
- Internationalization



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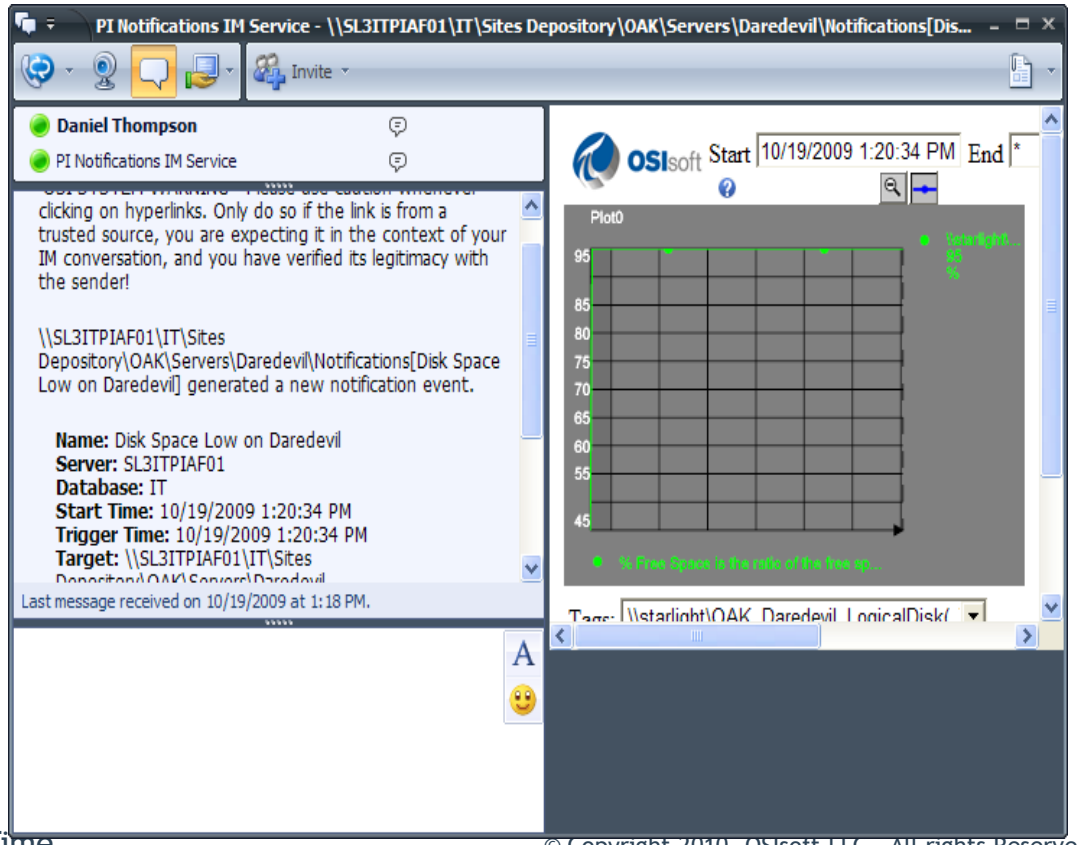
Office Communication Server 2007 R2

- Native Delivery Channel
- Supports presence and Instant Messaging (IM)
- Applications for phones
  - Windows Mobile
  - BlackBerry
  - iPhone



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PI Analytics 2010 – Future Releases

- PI ACE 2010

- PI for StreamInsight

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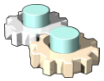
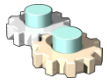
ACE 2010 Enhancements Overview

- Multiple Schedulers


ACE Scheduler 1


ACE Scheduler N

- Performance Improvements
  - Components re-written in .NET

- Visual Studio 2010 support

Microsoft Visual Studio

- Native 64-bit operating system support

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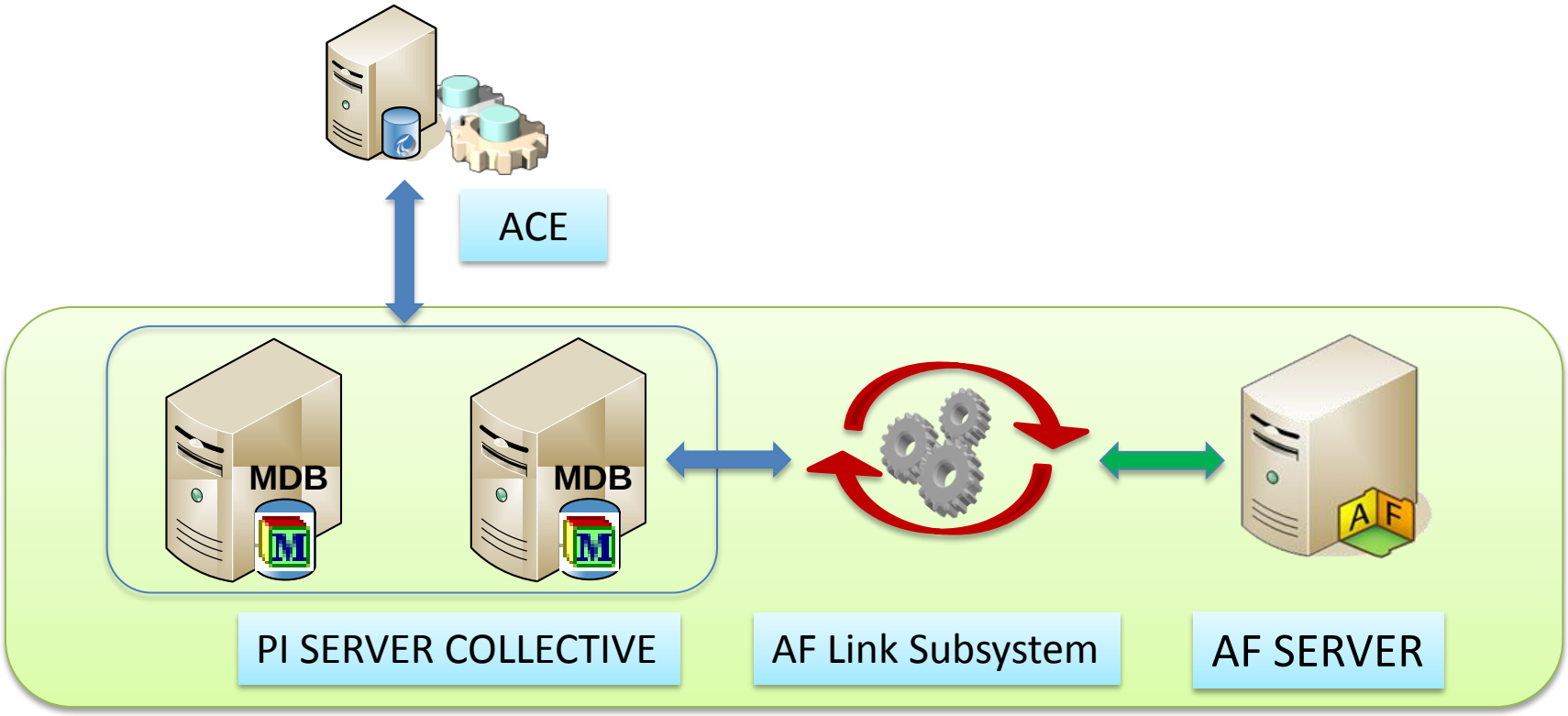
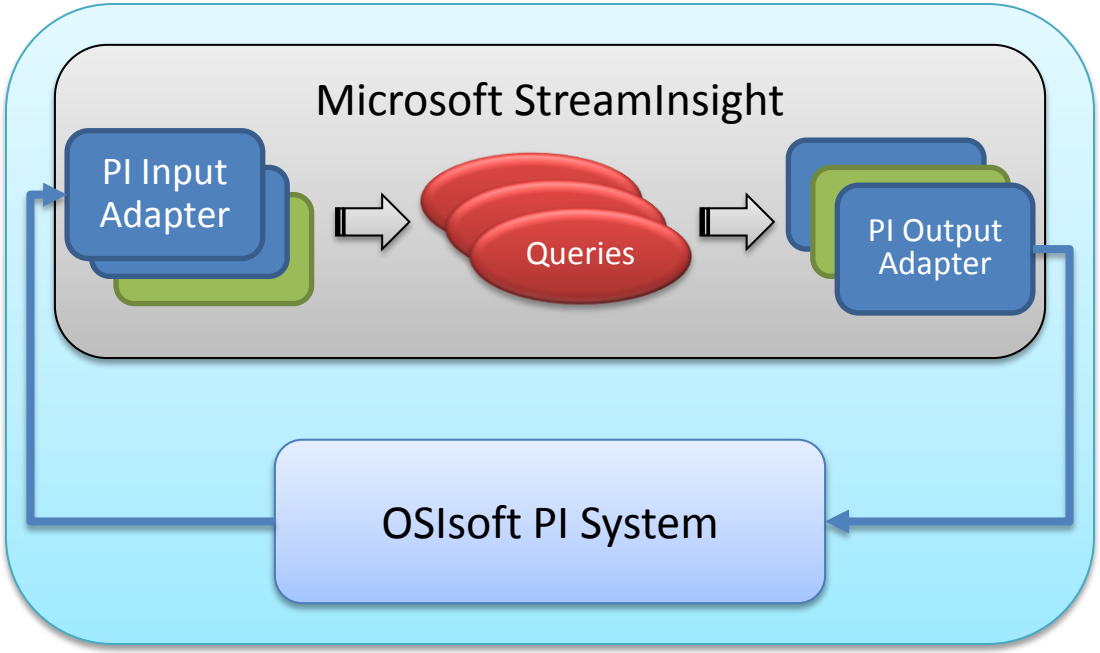
ACE and Asset Framework (AF)

- PI Server 2010 enables MDB to AF link and synchronization



PI for StreamInsight

- Data Access to the PI System for Microsoft StreamInsight
- Developers can create applications with StreamInsight using PI data
- Natural query language (LINQ)



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What is Microsoft StreamInsight™

- StreamInsight is the Microsoft implementation of Complex Event Processing (CEP)
- What is CEP?
  - CEP is all about the ability to compute interesting patterns for events over multiple data sources
- How does StreamInsight work?
  - Developer creates queries based on business requirements
  - Queries are loaded by StreamInsight
  - Queries are executed based on time windows
  - Queries are applied to the data stream received during that period

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SQL Family - What's New

- PI OLEDB 64-bit
- PI JDBC 2010
  - Bring data to the Java world
- PI OLEDB Enterprise 2010
  - Brand new product
  - Access to AF via SQL
  - Supports custom applications and many integration scenarios
    - PI WebParts
    - PowerPivot in Excel
    - SQL Server (Reporting/Analysis Services)

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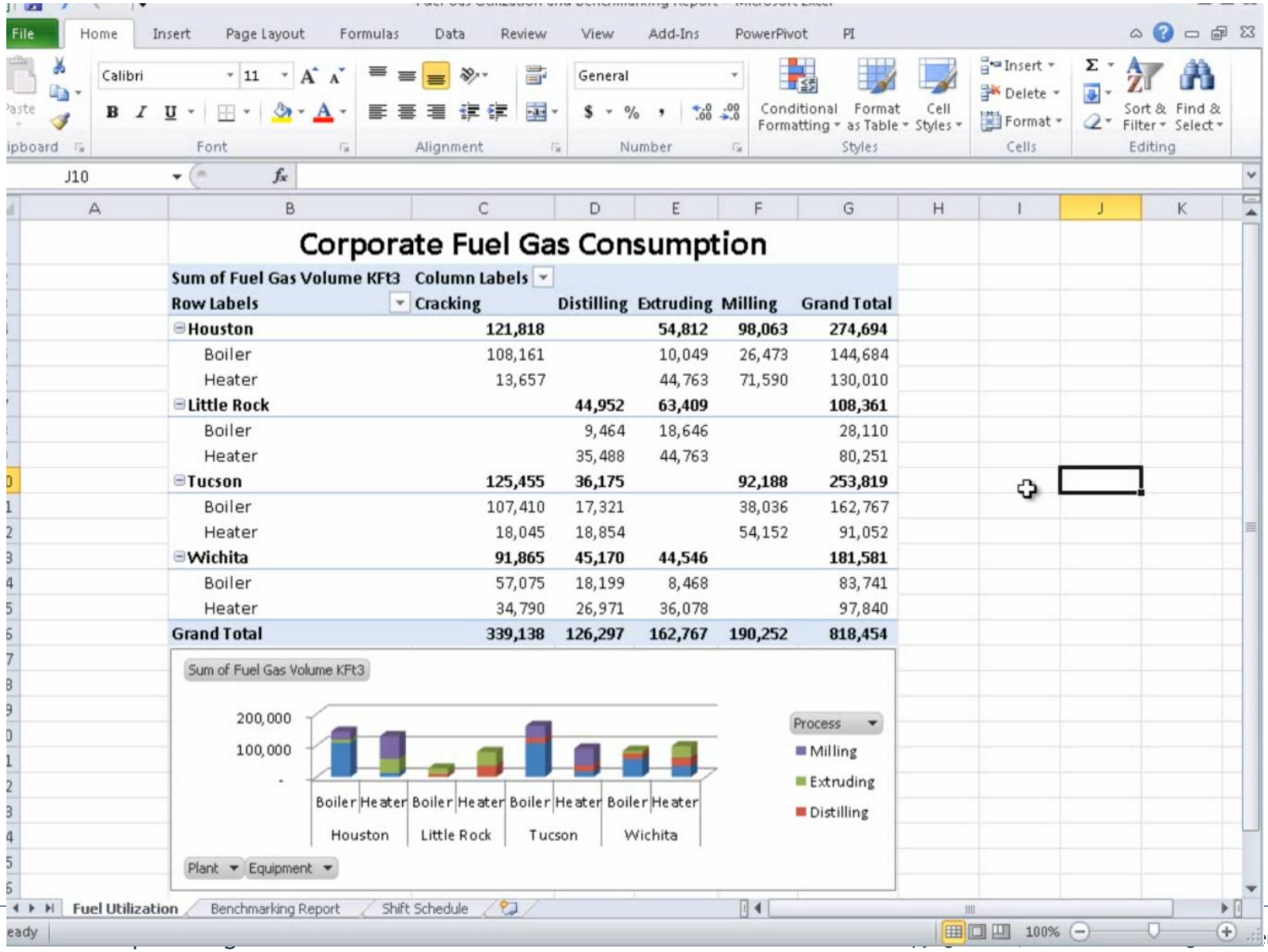
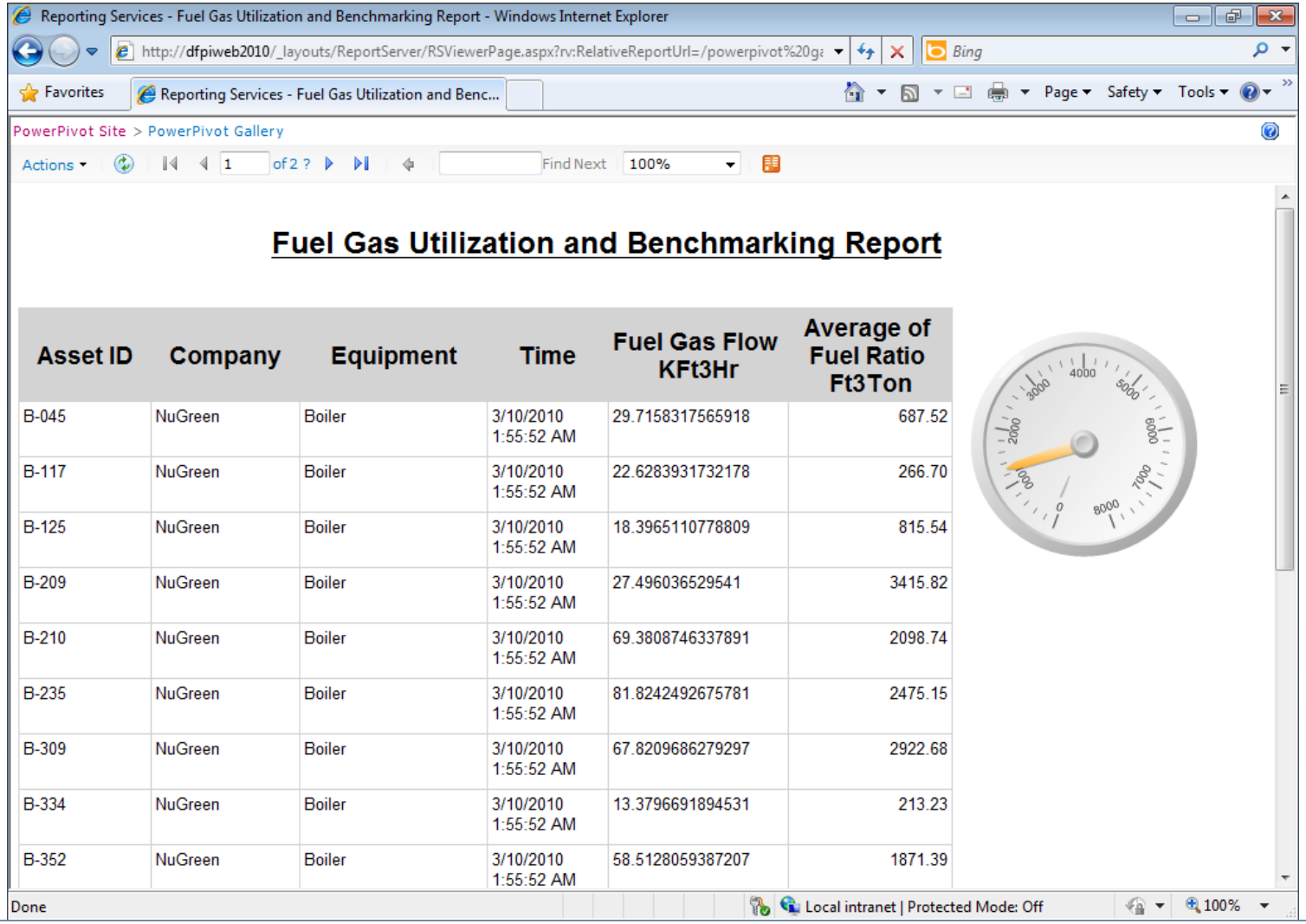
PI OLEDB Enterprise in Microsoft PowerPivot



Corporate Fuel Gas Consumption

Sum of Fuel Gas Volume KFt3	Column Labels				
Row Labels	Cracking	Distilling	Extruding	Milling	Grand Total
Houston	**121,818**		**54,812**	**98,063**	**274,694**
Boiler	108,161		10,049	26,473	144,684
Heater	13,657		44,763	71,590	130,010
Little Rock		**44,952**	**63,409**		**108,361**
Boiler		9,464	18,646		28,110
Heater		35,488	44,763		80,251
Tucson	**125,455**	**36,175**		**92,188**	**253,819**
Boiler	107,410	17,321		38,036	162,767
Heater	18,045	18,854		54,152	91,052
Wichita	**91,865**	**45,170**	**44,546**		**181,581**
Boiler	57,075	18,199	8,468		83,741
Heater	34,790	26,971	36,078		97,840
Grand Total	**339,138**	**126,297**	**162,767**	**190,252**	**818,454**

PI OLEDB Enterprise in SQL Server Reporting Services



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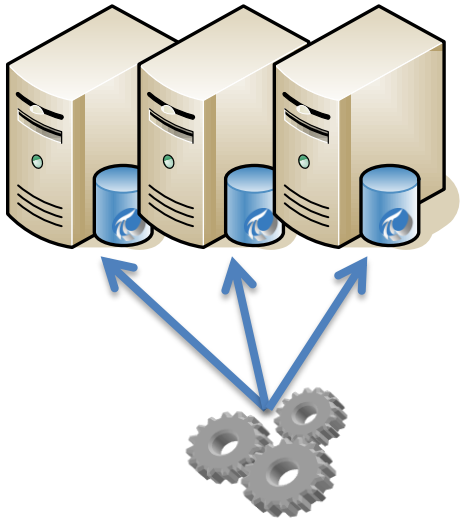
OSIsoft SDKs - What's New

- Windows Integrated Security
  - PI SDK 1.3.6
- 64-bit
  - PI SDK 1.3.8
  - AF SDK 2.1
- Client-Side Buffering
  - PI SDK 2010 (coming)



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