

Regional Seminar Series Southern California



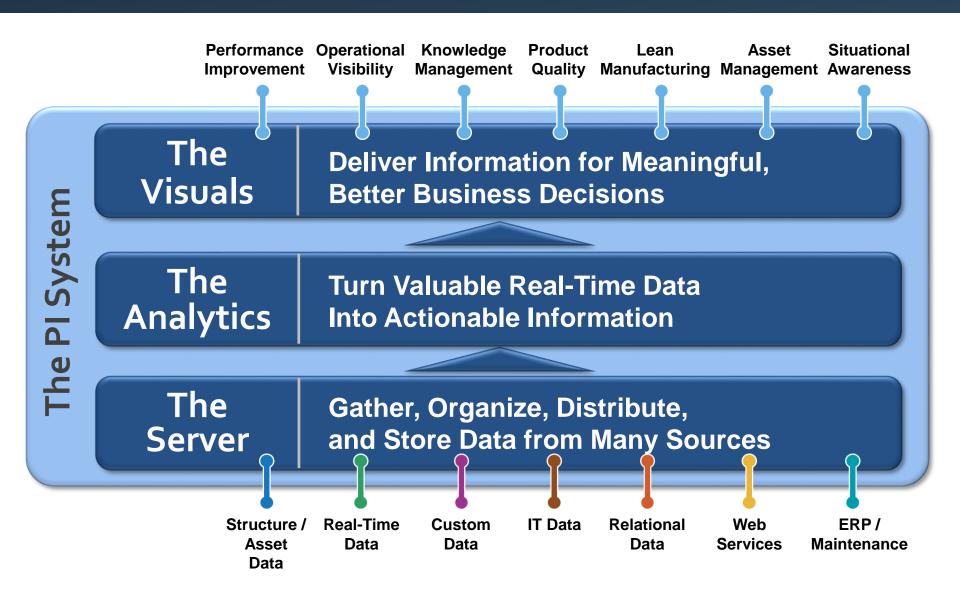
PI System Roadmap

John Baier Director, Product Management OSIsoft, LLC

January 21, 2010

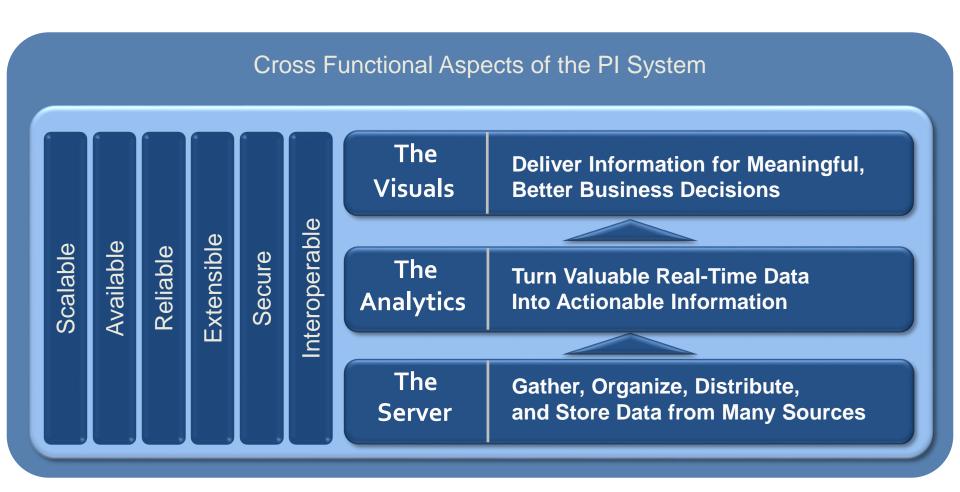
Functional Groups of The PI System





Aspects of The PI System





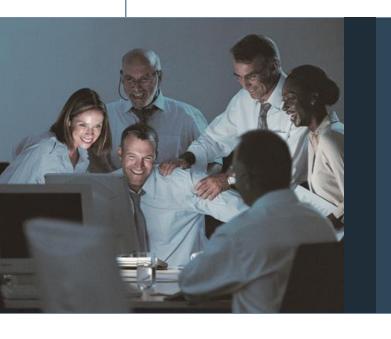
Roadmap Themes for 2009-2010



- Security
- Scalability
 - 64-bit Support
- High Availability
- Single Data Directory Model AF
- Office 2010 Integration
- Usability / Productivity Improvements

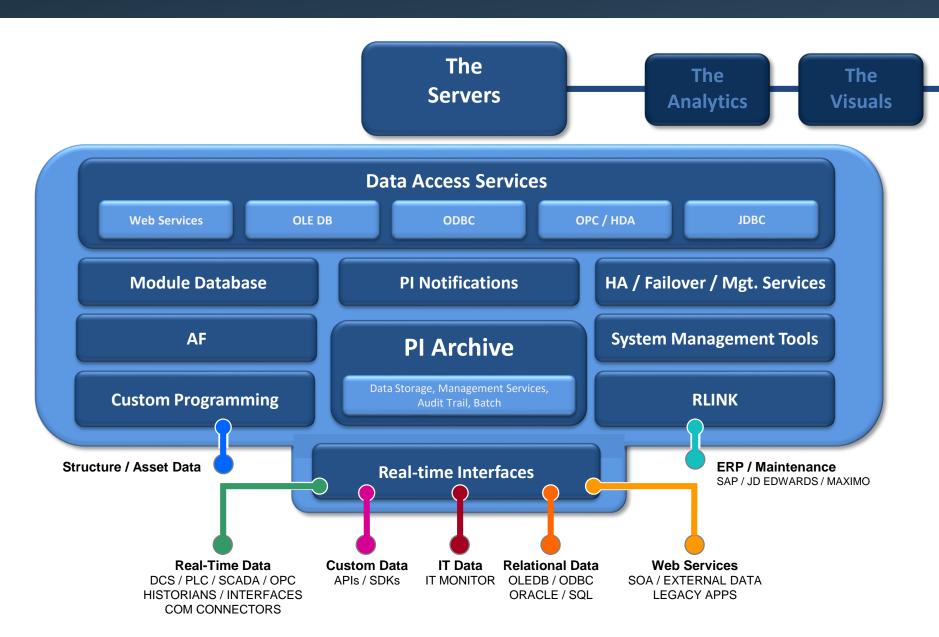


The Servers



The PI Servers





3 concurrent releases for 3 themes



- Releases
 - PI Server 3.4.380 with Windows Integrated Security
 - Released September 21, 2009
 - PI AF 2.1
 - Released September 1, 2009
 - PI Notifications 1.1
 - Released September 30, 2009
- Integration with Windows Security
- High Availability
- More Scalability and Manageability

Security



- PI AF 2.x uses Windows Security since the first release
- The PI Server can leverage Windows authentication mechanism
- PI Notifications leverages both PI AF and the PI Server security



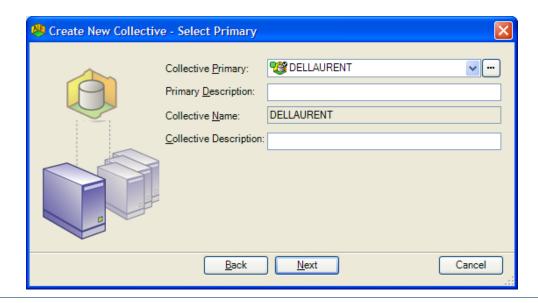




High Availability



- The PI Server has been HA for 3 years
 - Released in Q1 2007
- PI Notifications has been HA since the first release
 - Released in Q1 2008
- PI AF 2.1 is now Highly Available



Scalability and Manageability



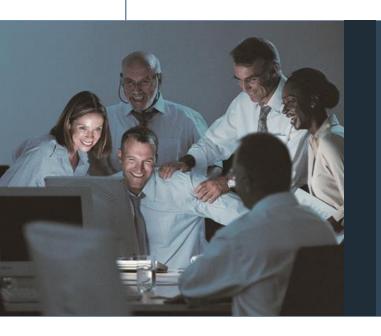
- Better performance, scalability and throughput for the PI Server, PI AF and PI Notifications
- Support for 64bits
 - Native support for the PI Server and PI AF
 - PI Notifications tested as a 32bits running on 64bits



- New PI SMT 3 plug-ins to manage the new security model
- Improved manageability for PI Notifications leveraging PI AF Notifications templates



PI Server 3.4.380 WIS



Technical Overview and Value proposition

WIS Value Proposition



- True Single Sign-On (SSO)
- Easier to Manage
 - User Accounts in Windows/AD Only
 - Leverage AD Tools and Security
 Policies
- Upgrade Experience
 - Backward Compatibility
 - Simply Requires PI SDK 1.3.6



WIS Value Proposition



More Secure

- SSPI*-based Kerberos or NTLM**
- Server-Side Authentication Control
- No More Default User



More Flexible

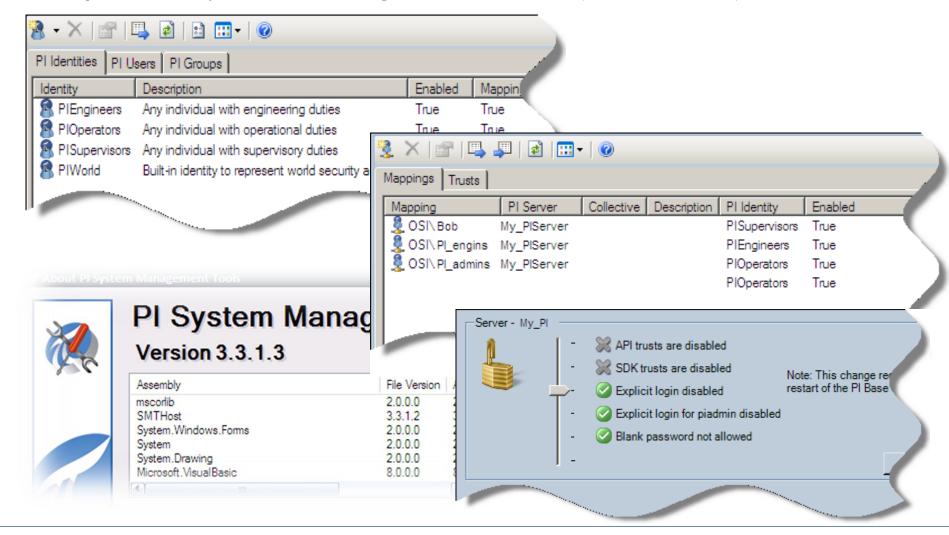
Unlimited Access Control Lists (ACLs)

Point	Point Security	Data Security
SINUSOID	Asia-Pacific: A(r) Antarctica: A(r,w) Americas: A(r) Europe: A(r)	Green: A(r)

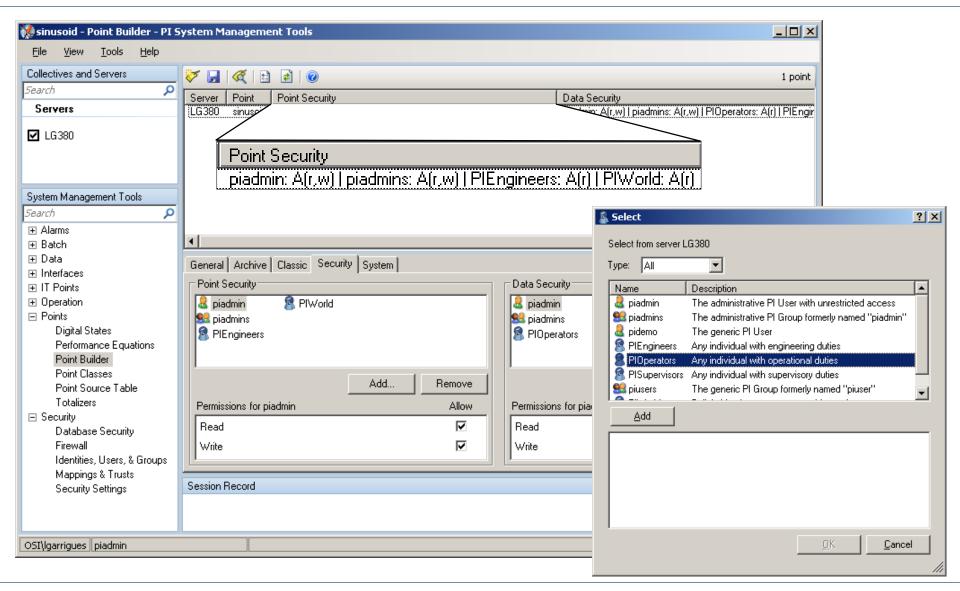
*Security Support Provider Interface
** NT LAN Manager



Improved System Management Tools (PI SMT 3.3)



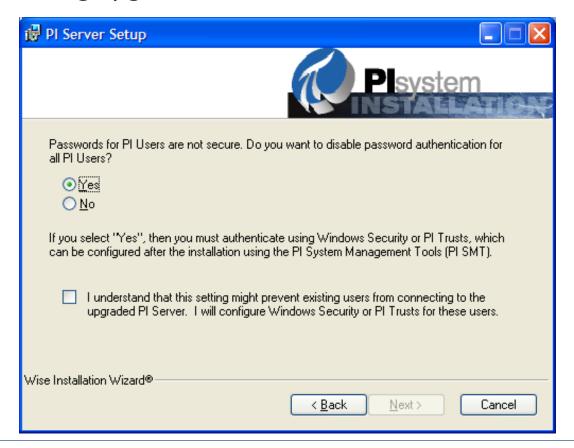






Setup

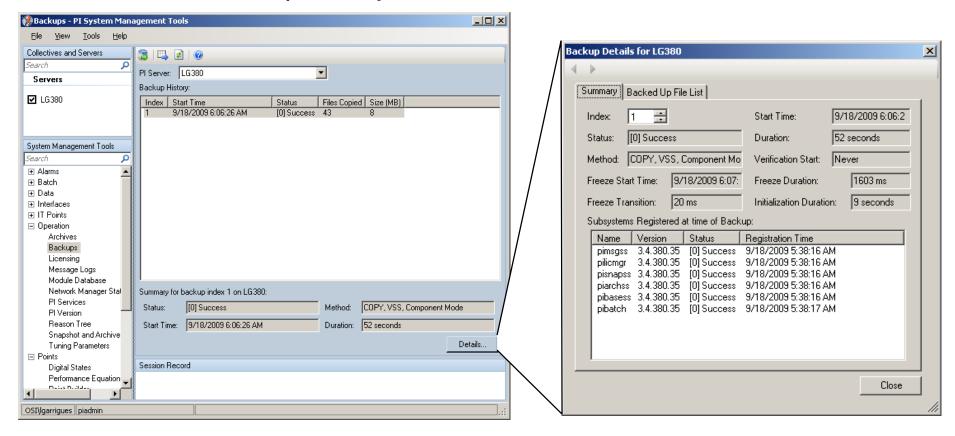
 Secure configuration by default, with database consistency checks during upgrade





PI Backups

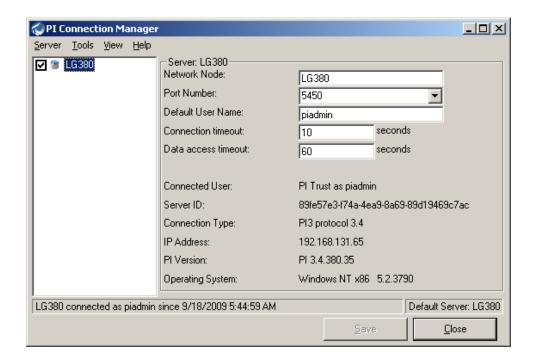
 Added support for incremental backups, verified backups, and a full backup history



Clients apps and the 3.4.380 release

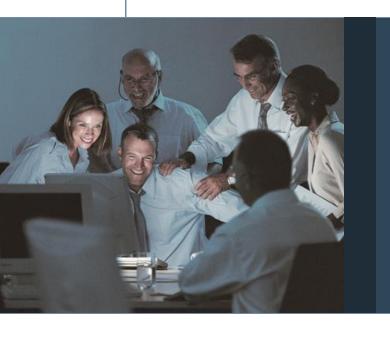


- Clients apps only need to upgrade the PI SDK 1.3.6 (released in Q3 2008) to take advantage of the new Security Model
- Most clients, like PI ProcessBook 3.x and PI Datalink 4.x are already shipping with the PI SDK 1.3.6



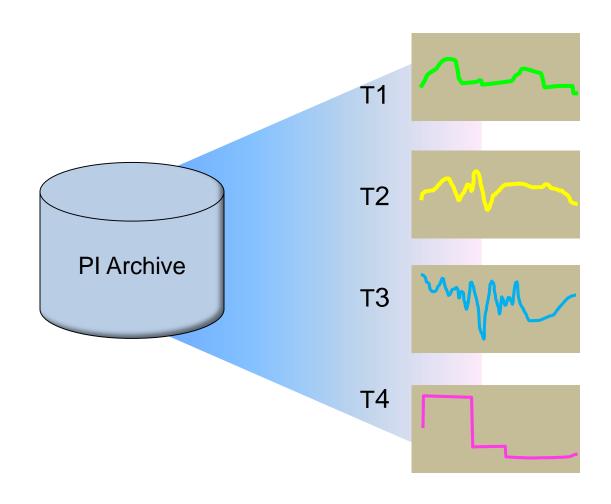


The PI AF Server



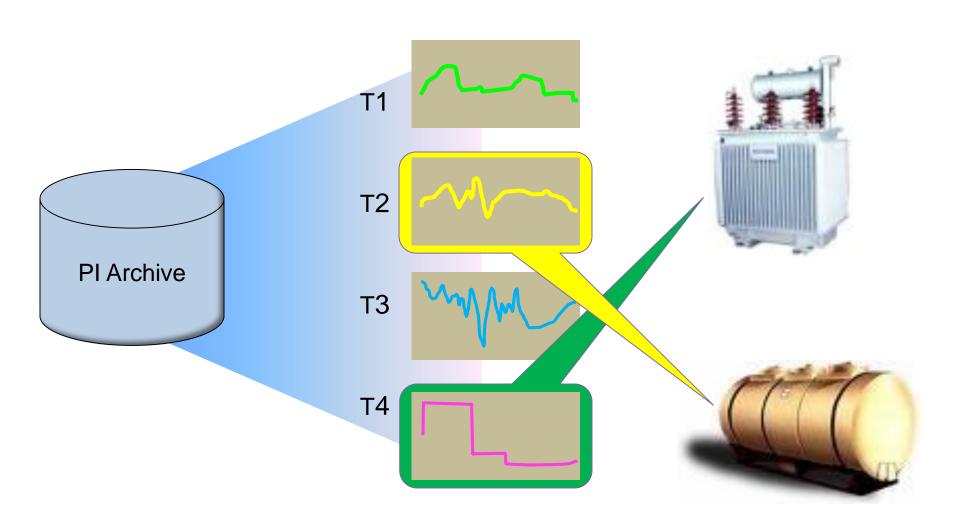
PI is about time series ... and tags!





But Tags mostly relate to assets





Who is using AF today?





Oil &Gas

• Shell, Chevron, TOTAL



Power Generation, T&D

 AMI, Xcel Energy, AEP, DTE, KCPL, Hydro-Quebec



Pulp & Papers

Appleton, International Paper, Tembec

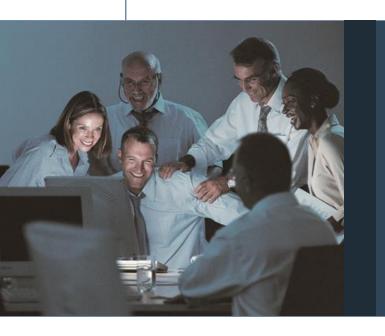


Data Centers

Microsoft, HP, Cornell



PI AF 2.1



Technical Overview and Value proposition

High Availability Value proposition



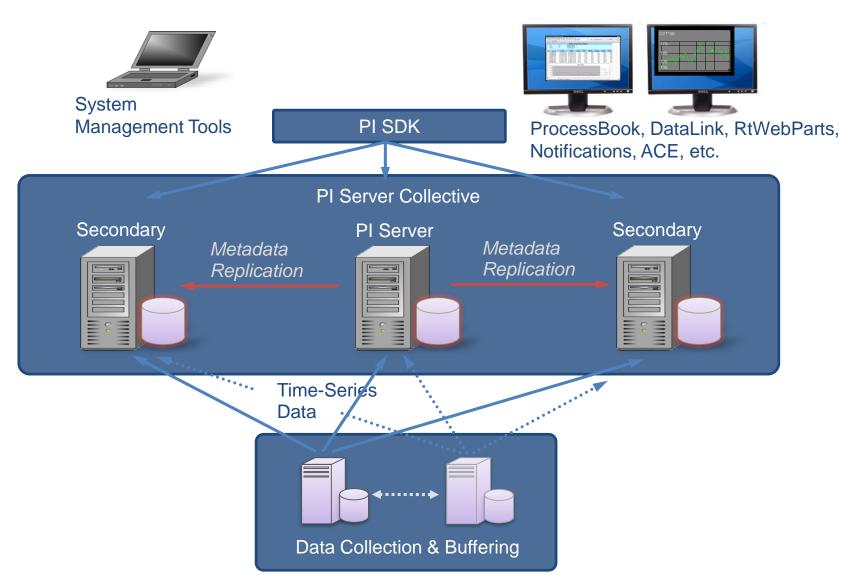
- Network Failure
- Administrative/User Failure
- Upgrades and Migrations
 - Hardware

25

- Operating System Software (Patches)
- Applications Software

PI High Availability Architecture

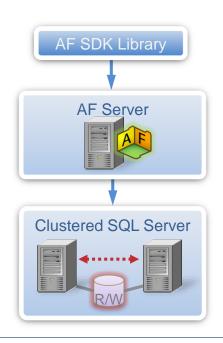


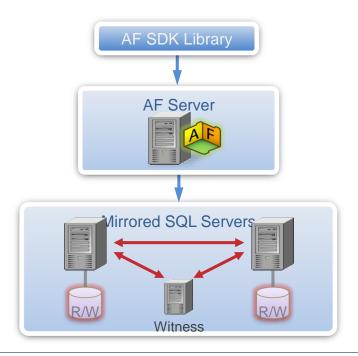


High Availability for AF 2.1



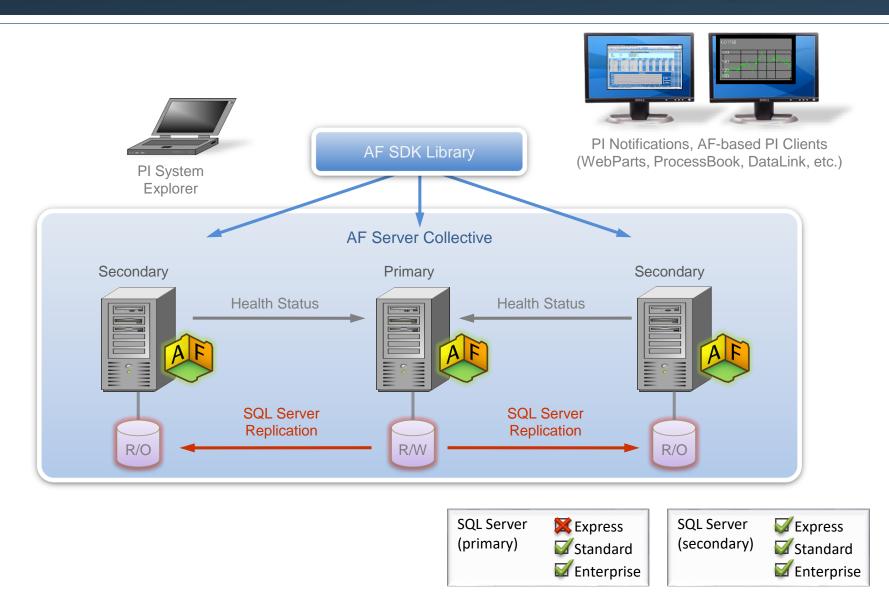
- Support for Clustering, Mirroring, and Replication (HA)
- Conceptually very similar to HA for the PI Server
 - Automatic Failover for clients
 - SQL replication for the AF database





AF 2.1 HA Collective





64 bit support



- 2.0 Server was 64-bit capable
- Can use either 32 or 64 bit SQL Server
 - · 2005 or 2008
- Same install kit for 32 vs. 64 bit versions of AF Client or AF Server
- PI System Explorer can run as a 32 bit application on 64 bits





PI Enterprise Server 2010 - PI MDB to PI AF



Motivation for MDB to AF upgrade



Moves you forward

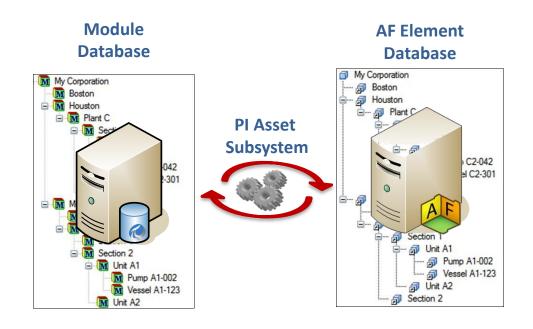
- AF is the future for PI applications
- AF is richer, more scalable and more flexible

Protects your investment

- No customer left behind policy
 - MDB based solutions keep working
- Automatic Migration and Synchronization
- Gradual upgrade process from MDB to AF
 - The back-end first, and then the applications

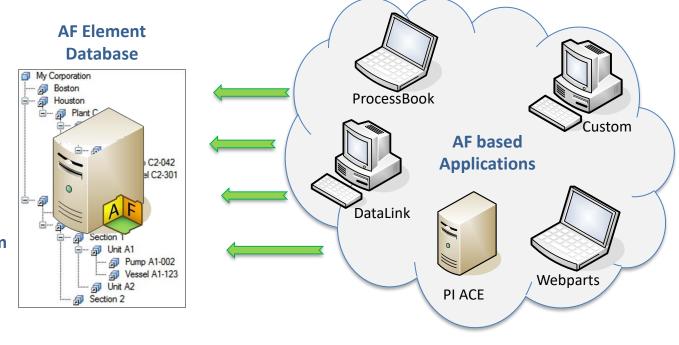
Asset Centric PI: AF Element DB Synch





Asset Centric PI: AF Element DB





Module Database PI Asset Subsystem



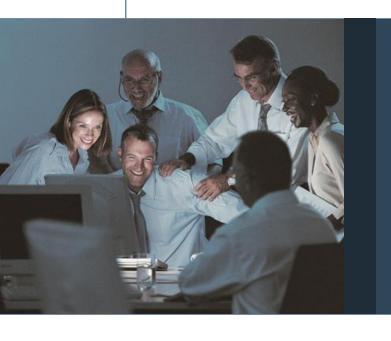
PI Enterprise Server 2010



- PI Enterprise Server 2010 delivers the MDB to AF subsystem
 - Migration
 - Synchronization
- Requirements:
 - AF Server 2.1 must be installed
 - Must upgrade PI Server to 3.4.380 first
- Most applications can use AF natively
- Some will continue to use MDB for now
- Release in 2Q 2010

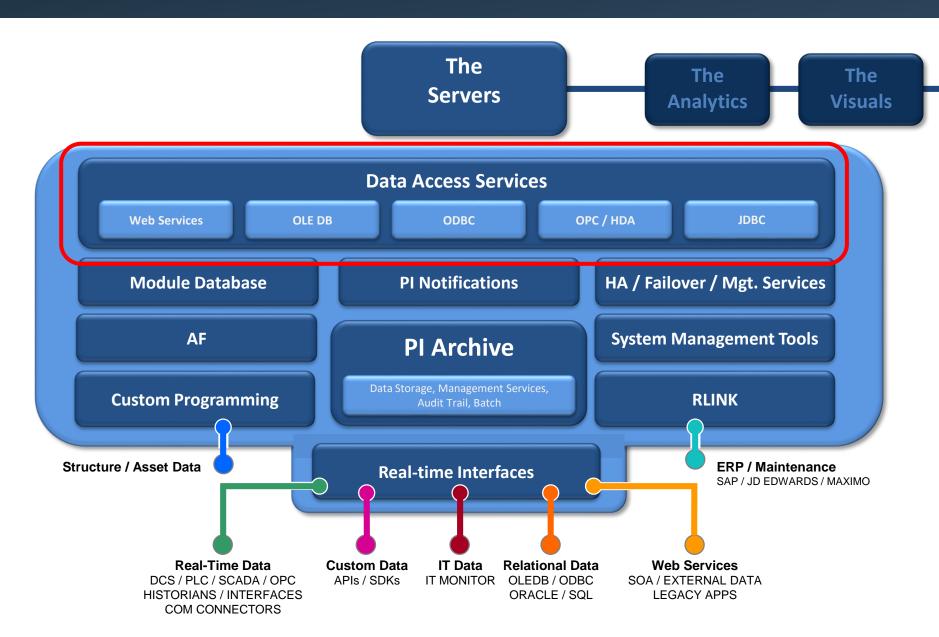


Data Access



The PI Servers





Data Access Products



- Collection of all products that offer programmatic data access to all or part of the PI System
 - SQL tools
 - PI OLEDB Provider
 - PI JDBC Driver
 - PI ODBC Client
 - Web Services
 - PI Web Services (CTP available on OSIsoft vCampus)
 - OPC
 - OPC DA/HDA Server
 - OPC UA Server (CTP available on OSIsoft vCampus)
 - SDKs (for partners/developers)
 - PI SDK
 - AF SDK

Use Cases for Data Access



- Integrate with 3rd party products (SQL, Office, SAP)
- Create reports (SQL Reporting Services, Crystal Reports, Cognos, etc)
- Share PI data on the Web (SharePoint, ASP.NET, etc)
- Enterprise Application Integration EAI (BizTalk, Tibco, etc)
- Extract, Transform and Load PI data ETL (SQL, SAP BO, etc)
- Combine PI with data in other systems (SQL, Oracle, etc)
- Online Analytical Processing OLAP (SQL)
- Visualize with HMI (OPC clients)
- Develop custom interfaces to PI system
- Manage PI systems
- Support virtually any custom application in any programming language on any platform!

PI Data Access Roadmap



- PI Web Services 2010 (2Q 2010)
 - OSIsoft vCampus CTP available now
- PI OLEDB 3.3 (Released)
 - Support both 32-bit and 64-bit providers
- PI OLEDB 2010 (2Q 2010)
 - Support for entire PI system, both Tags and AF
- PI JDBC 1.0 (Released)
 - JDBC-OLEDB Bridge for Windows and Linux, OSIsoft vCampus

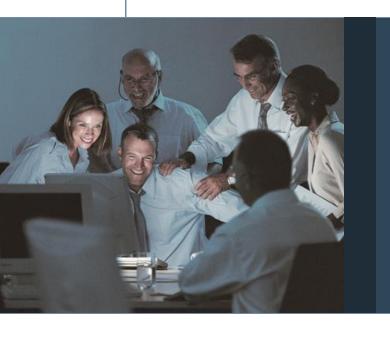
PI Data Access Roadmap (continued)



- OPC DA/HDA Server 1.2.6 (Released)
 - Achieved Self-Certification Logo from OPC Foundation
- PI OPC UA Server Technical Preview (Released)
 - OSIsoft vCampus online, hosted environment
- PI SDK 1.3.8 (Released)
 - Support for both 32-bit and 64-bit providers
- AF SDK 2.1 (Released)
 - Support for both 32-bit and 64-bit providers
- PI SDK 1.4.0 (1Q 2010)
 - Client-side buffering for manually entered data, ACE calculations writing to PI, and custom SDK-based interfaces



OSIsoft vCampus



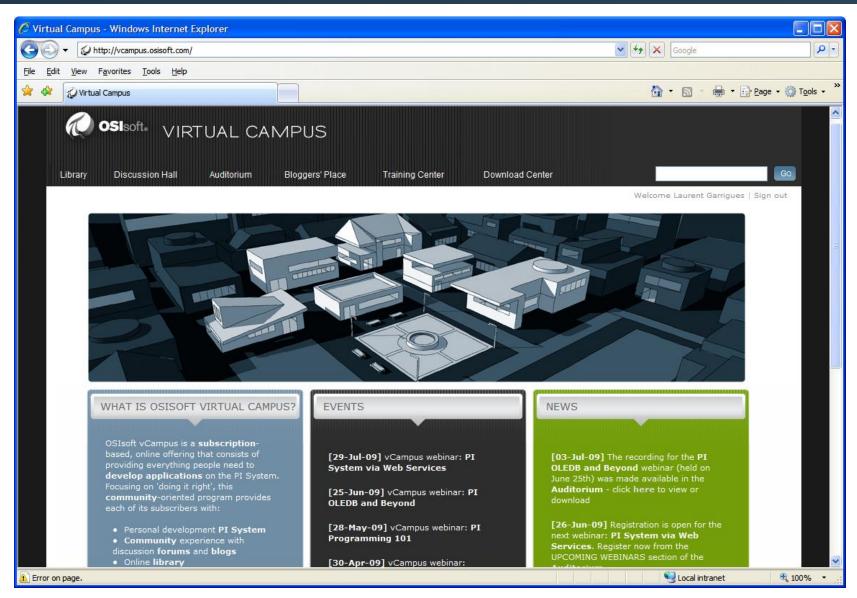
OSIsoft vCampus Offering

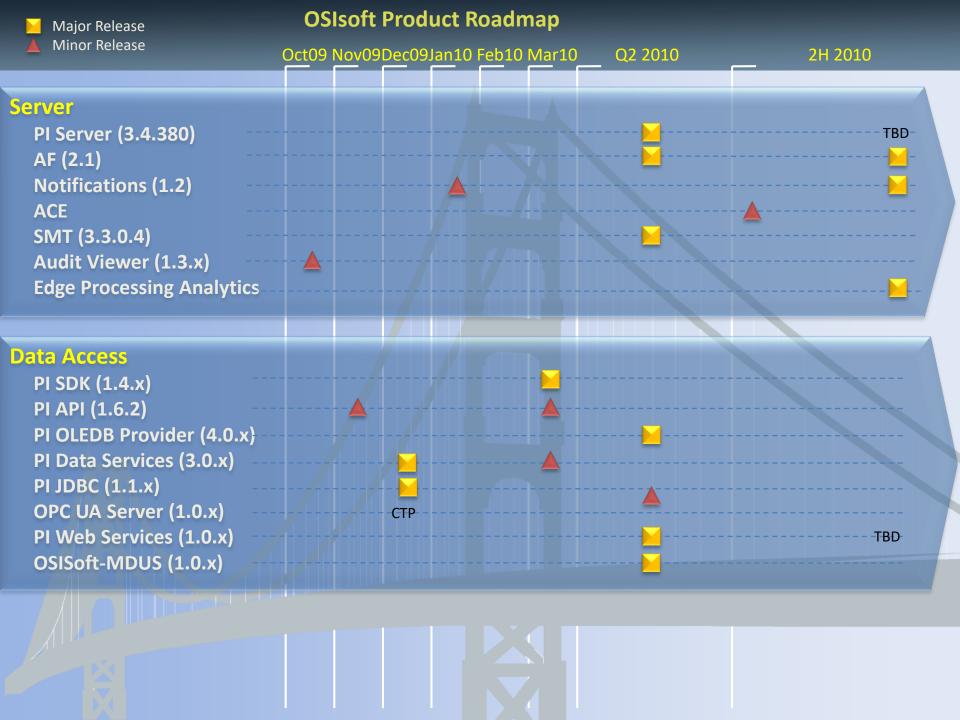


- Includes access to all programmatic interfaces to PI System: AF/AN SDK, PI OLEDB/ODBC, PI SDK, OPC DA/HDA/UA Server
- Development license for programmatic interfaces
- Runtime licensing is separate PAL
- Programming examples and documentation
- PI Virtual Campus community collaboration site
 - Forums
 - Blogs

OSIsoft vCampus Website







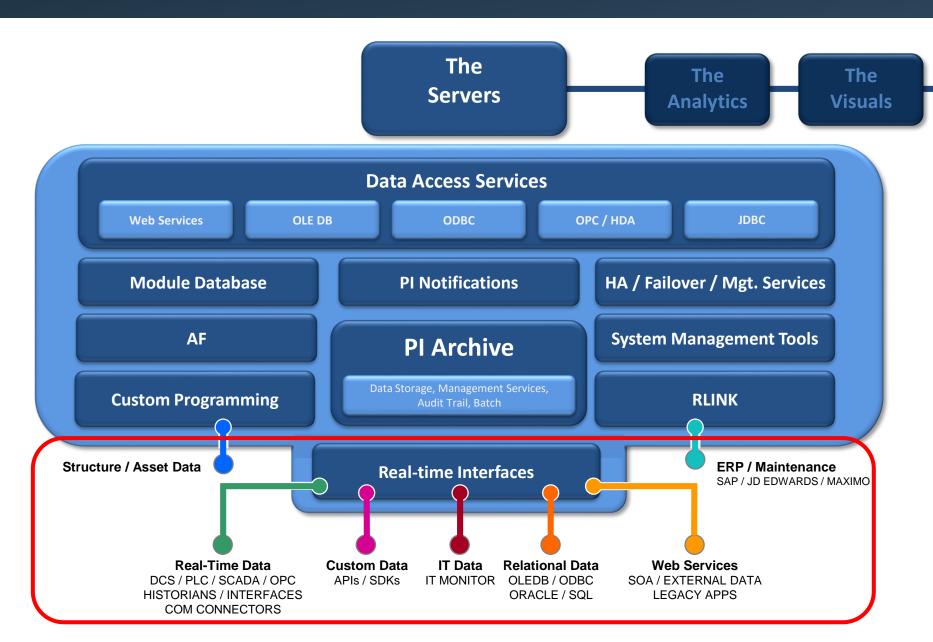


PI Interfaces



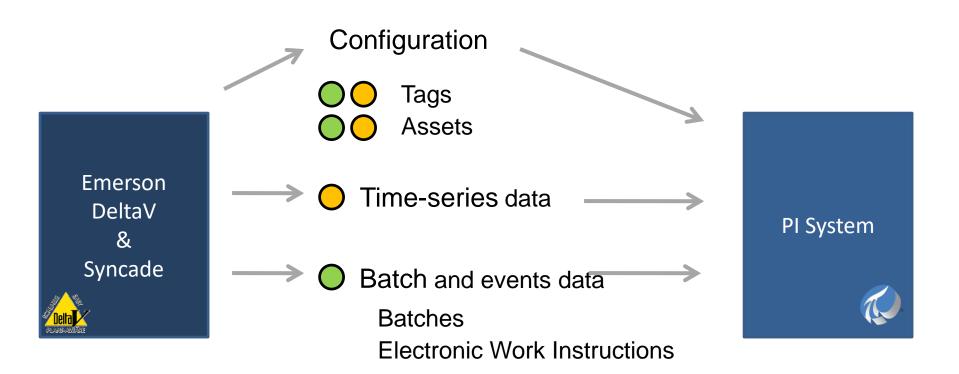
The PI Servers



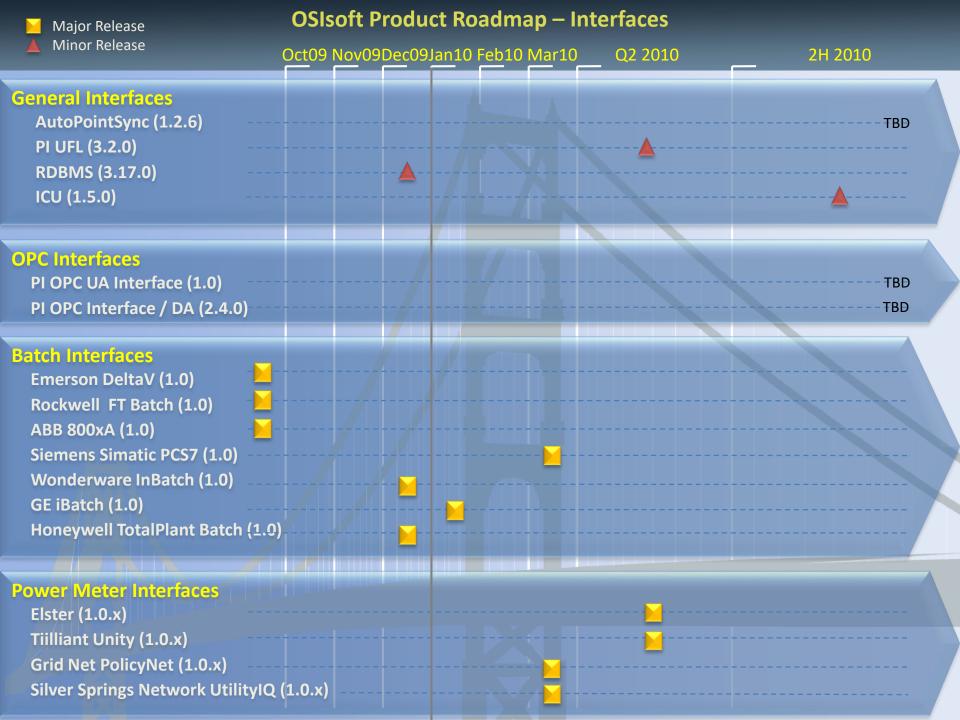


Emerson DeltaV Advanced Interface



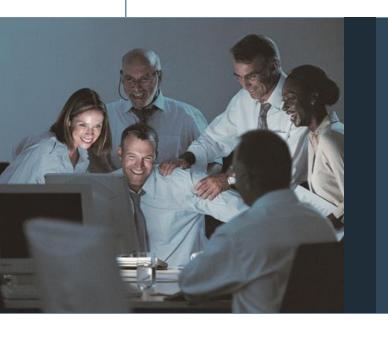








PI Analytics



The Analytics within the PI System



The Server Analytics The Visuals

Advanced Computing Engine (ACE) AF Analytics RtReports PI Notifications PI Analytics (PI Performance Equations, PI Totalizers, PI Alarms, PI RTSQC)

The Analytics Landscape



		Configuration	Programming
Specific Content	PI Tags	PI PE, PI Totalizers, PI Alarms, PI RT SQC	PI ACE, PI SDK (Custom applications)
Generic Content	PI Module DB	None	PI ACE, PI SDK (Custom applications)
	PI AF	AF Analysis Rules • PE syntax • AF formula DR syntax • Additional ARs (roll- up etc.) Clock & Event based scheduling Export results to PI tags	Custom AF Data References Custom AF Analysis Rules Custom applications (AF SDK)
		Goal	

StreamInsight Platform

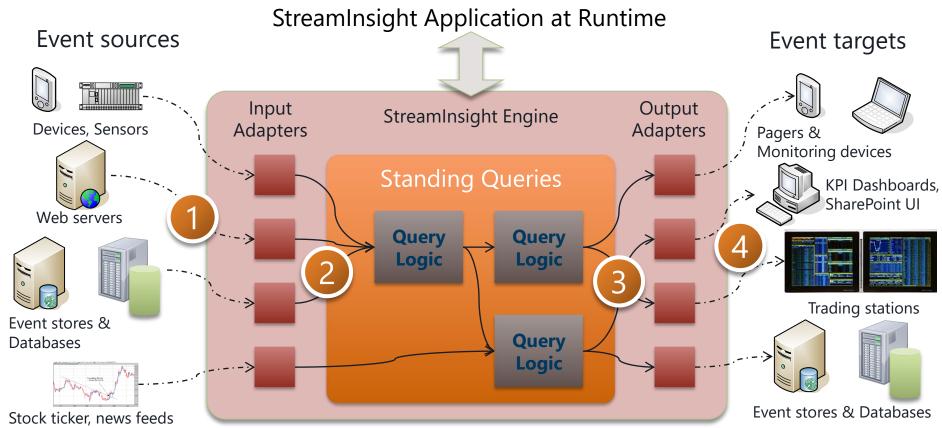


StreamInsight Application Development



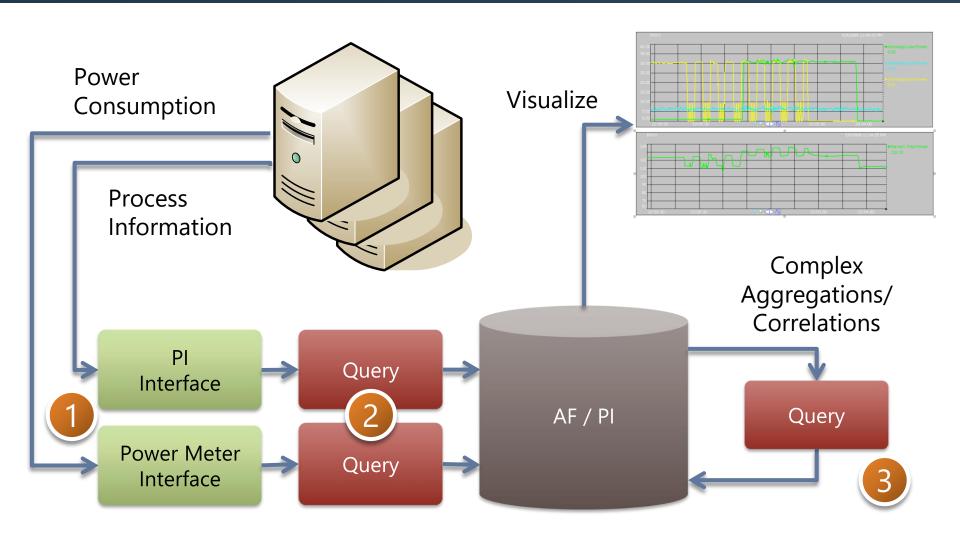






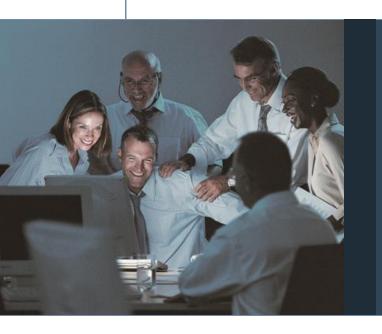
Power Consumption Monitoring







PI Notifications 1.1

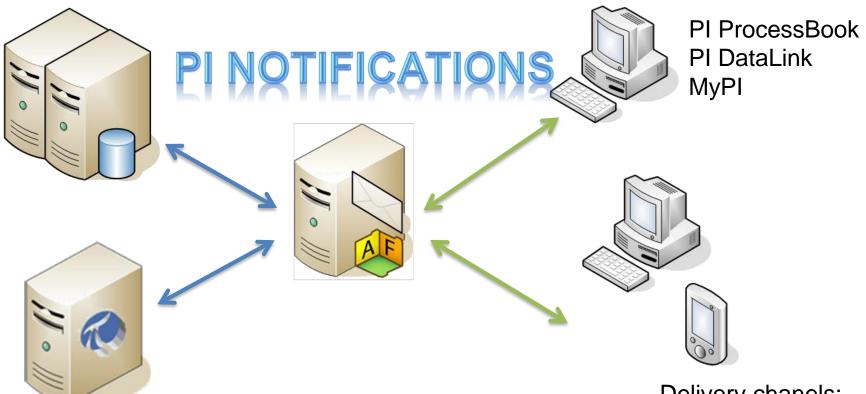


Technical Overview and Value proposition

PI Notifications Architecture reminder



Others data sources



PI Server

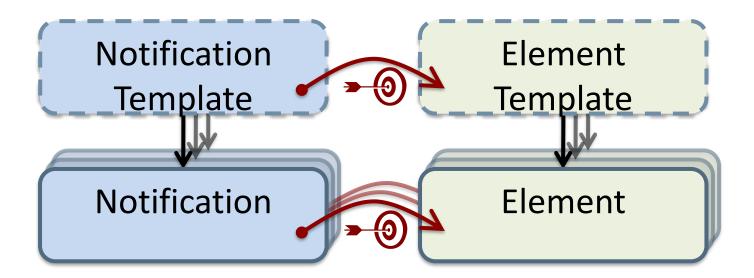
Delivery chanels:

- Email
- Web services
- OCS v1.0
- Custom developed

PI AF support for PI Notifications 1.1



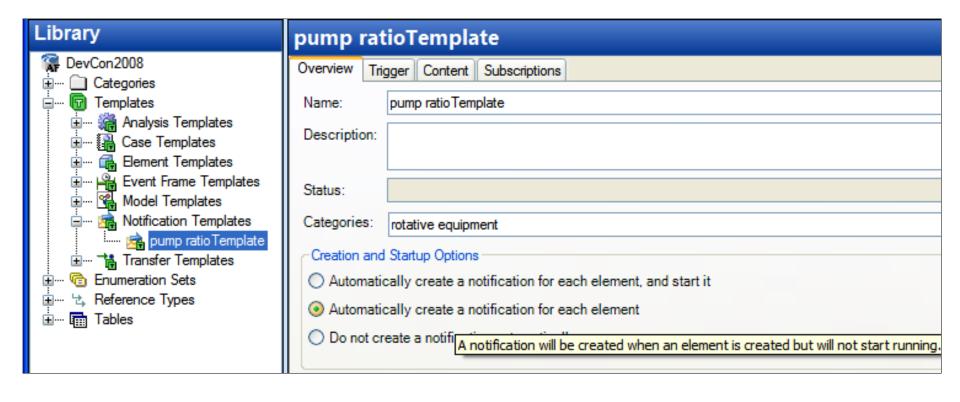
- Performance Improvements (start-up and retrieval)
- Notification Templates enable rapid and automatic creation of maintainable notifications



New with the PI Notifications 1.1 release



- Notification templates
 - Automate the creation and maintenance process

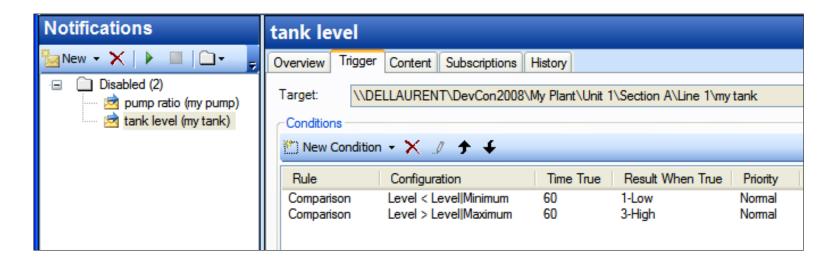


New with the PI Notifications 1.1 release



Performance improvements

 Can support up to 10k Notifications with multiples rules per Notifications server



Can process up to 60k events/minute

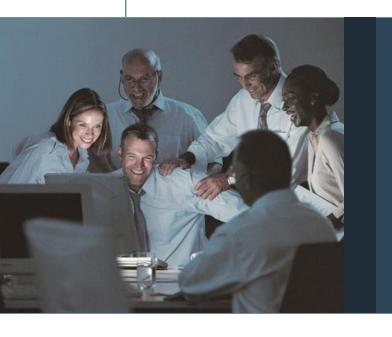
New with the PI Notifications 1.1 release



- Native Office Communication Server 2007 R2(OCS)delivery channel
 - v1.0 released in November 2009
 - Support presence and Instant Messaging (IM)
 - Ships as a plug-in for PI Notifications 1.1
 - Applications available for major cell phones
 - Windows Mobile
 - BlackBerry
 - iPhone
- Can use Email service to send an SMS message (offered by most wireless providers)



OSIsoft Meter Data Unification System (MDUS)



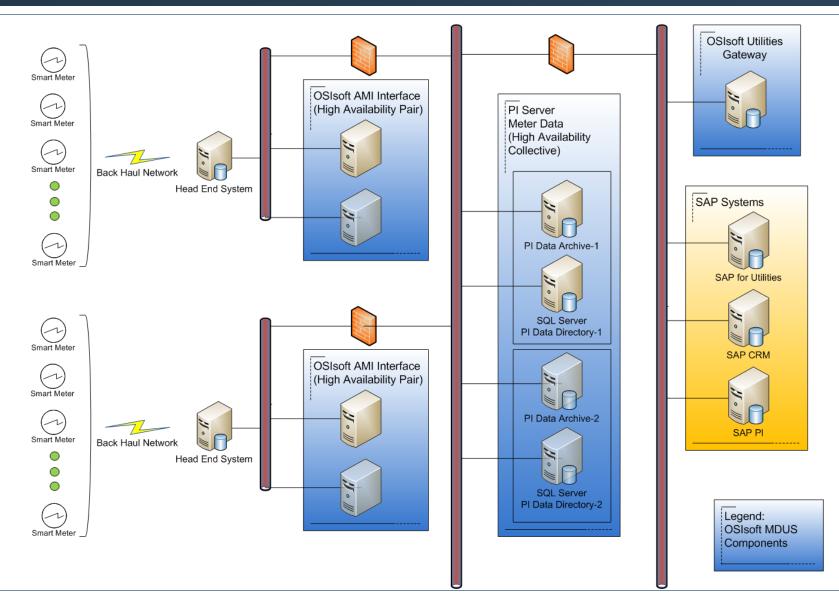
OSIsoft Meter Data Unification System



- Package of software products and services
 - Software products
 - AMI Interfaces
 - PI Server (PI Data Archive and PI AF)
 - Analytics Framework
 - Web service based interface to SAP Utilities EhP 4
 - OSIsoft Utilities Gateway
 - Services
 - Pre-sale consulting
 - Architecture and implementation
 - Support

OSIsoft MDUS Overview





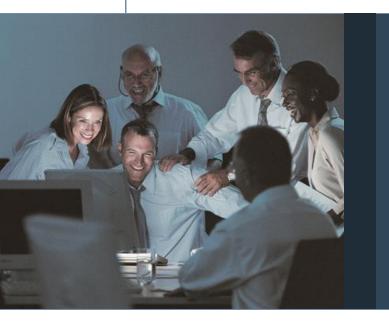
What is the SAP EBS?



- SAP Endorsed Business Solution contract is a joint development/marketing/sales /support agreement for OSIsoft to license "OSIsoft MDUS" into SAP Utilities customer base, specifically for AMI.
 - Meter Data Unification System. The enabling real-time infrastructure.
- Application level integration with **Solution Qualification** to ensure end-to-end business processes for AMI.
- OSIsoft MDUS is a complimentary solution selected by SAP Product and Industry groups.
- Product roadmap guided by SAP based on Cooperative Development Agreement
- Endorsed by SAP sold by OSIsoft
- See the great work done so far → http://tswiki.osisoft.int/smartgrid/index.cgi?smart_grid

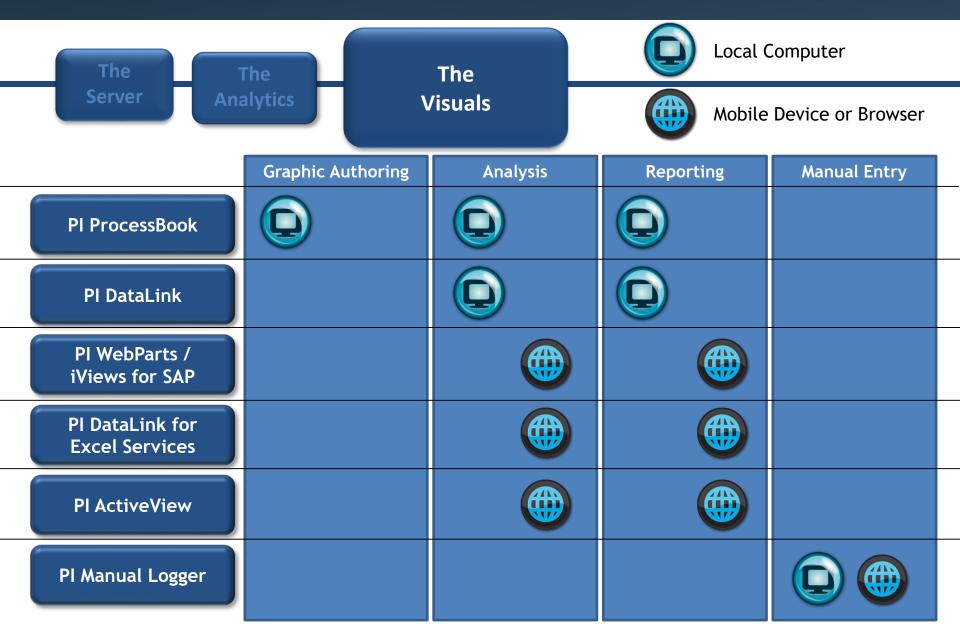


The Visuals



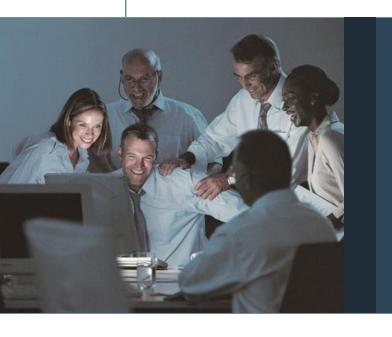
The Visuals within the PI System







PI ProcessBook



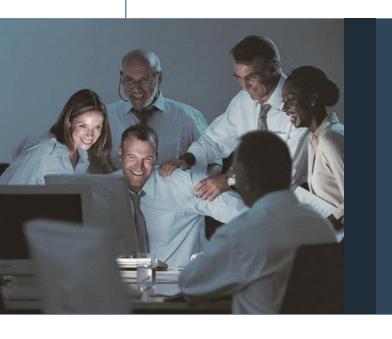
PI ProcessBook Recent Releases



- ProcessBook 3.1 (Released October 2008)
 - Windows security integration
 - PI Notifications integration
 - Trending enhancements
- ProcessBook 3.2 (Released September 2009)
 - AF Element Relative Displays
 - Display Playback
 - Display Browsing and Bookmarking
 - Office Communicator collaboration integration
 - Statistical Quality Control (SQC) symbol now included



PI ProcessBook 3.1



Requests Addressed in PB 3.1 (Released)

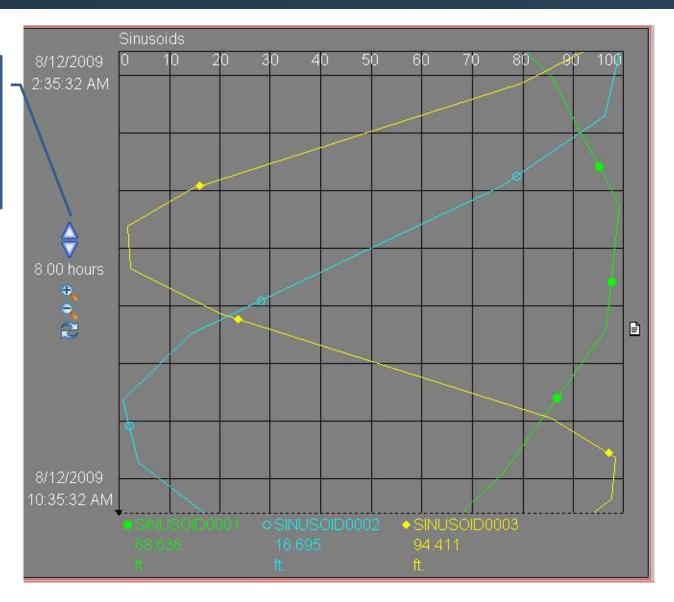


- Easier Symbol Formatting
- Quick Trend Zoom & Pan
- Data Details in a table
- Annotations on PI events
- Vertical Trends available
- Linear Regression Line on trends
- Tooltip Statistics on all dynamic symbols
- Drag and Drop symbol configuration

Trend Formatting

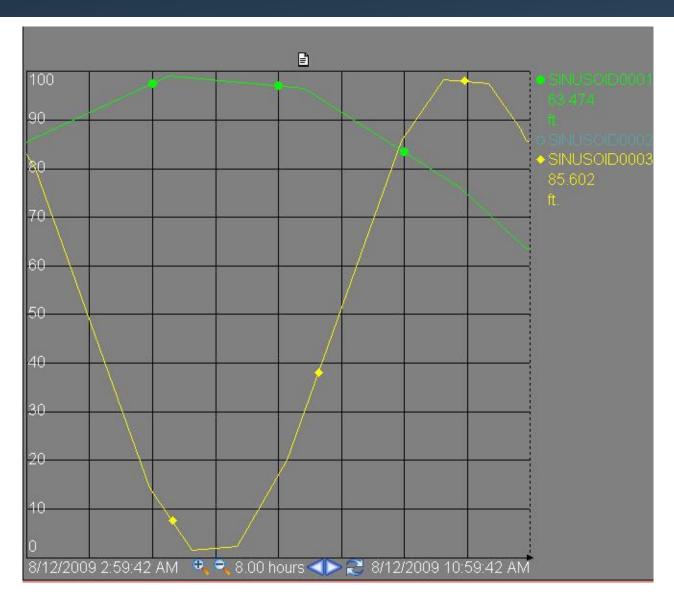


Scroll Zoom Revert



Hide/Show Individual Traces

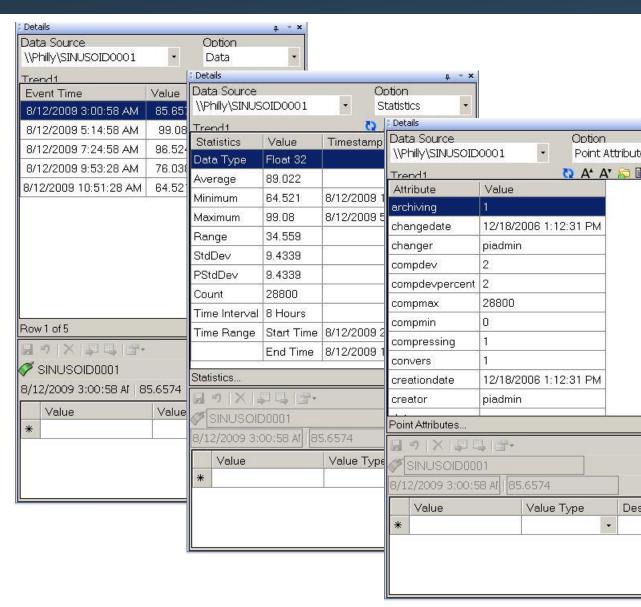




Details Pane

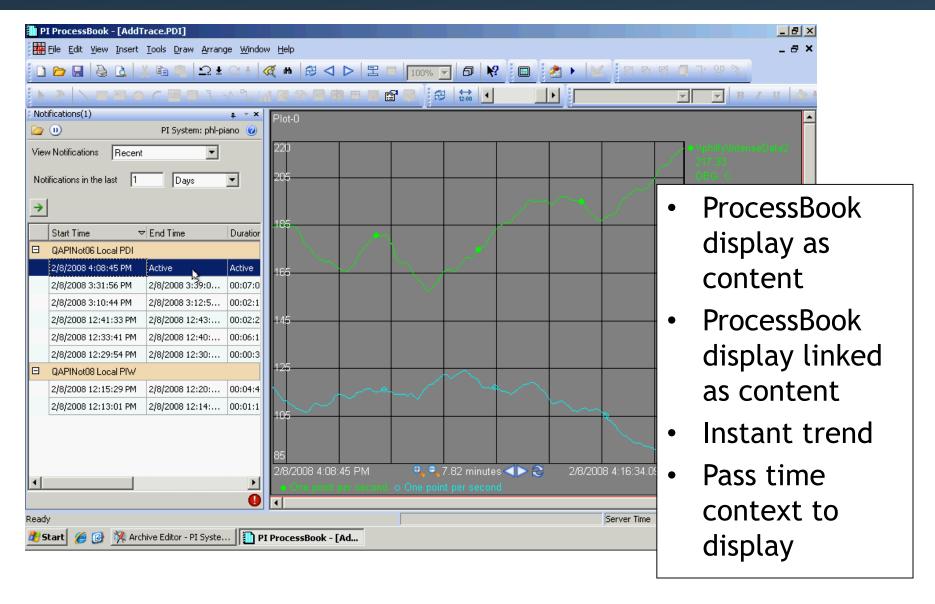


- Data
- Statistics
- Point Attributes



PI Notifications

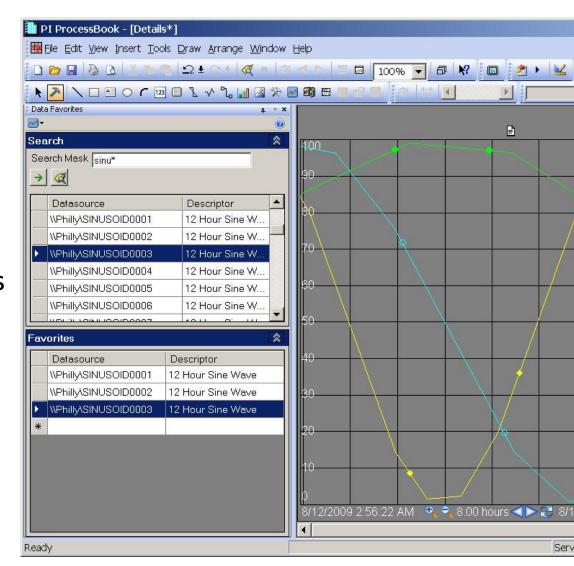




Data Favorites



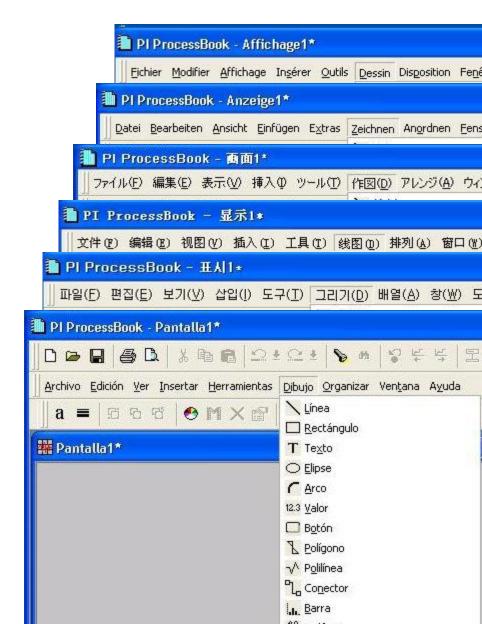
- Search
- Create new Symbols
- Drag and Drop
 - To Display Elements
 - From Search
 - From Favorites
 - To Other applications (Microsoft Excel)
- Favorites



Localization

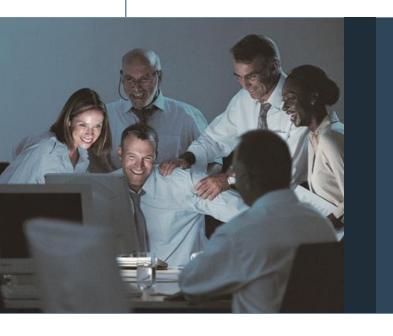


- ProcessBook and ActiveView
 - English
 - French
 - German
 - Spanish
 - Simplified Chinese
 - Japanese
 - Korean
 - Russian (coming soon)
 - Brazilian Portuguese (coming soon)
- BatchView
 - Japanese



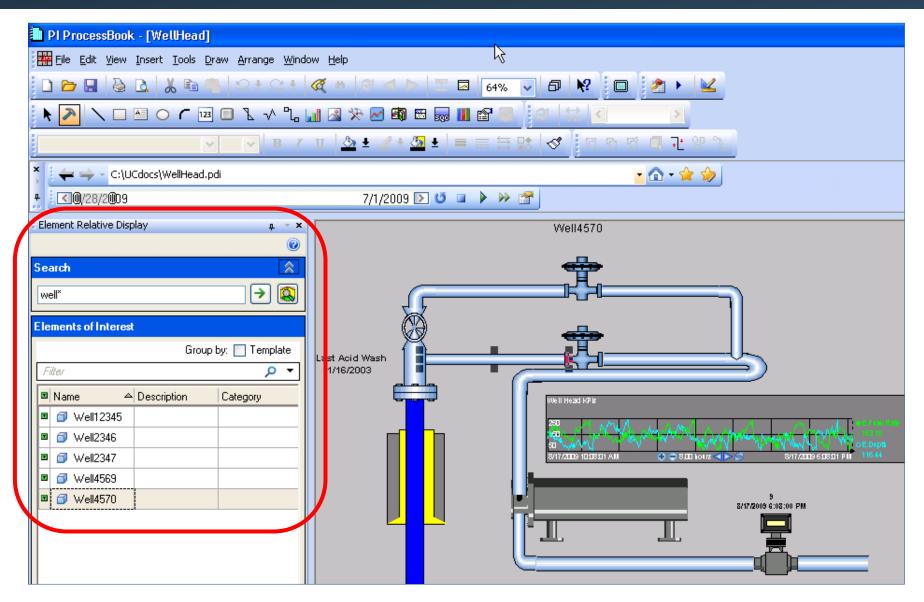


PI ProcessBook 3.2



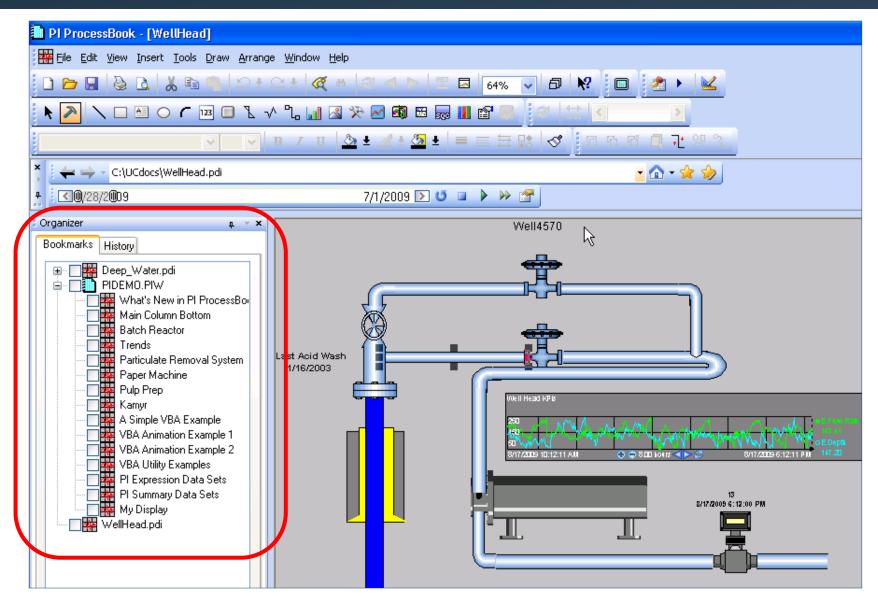
PB 3.2 - AF Element Relative Displays





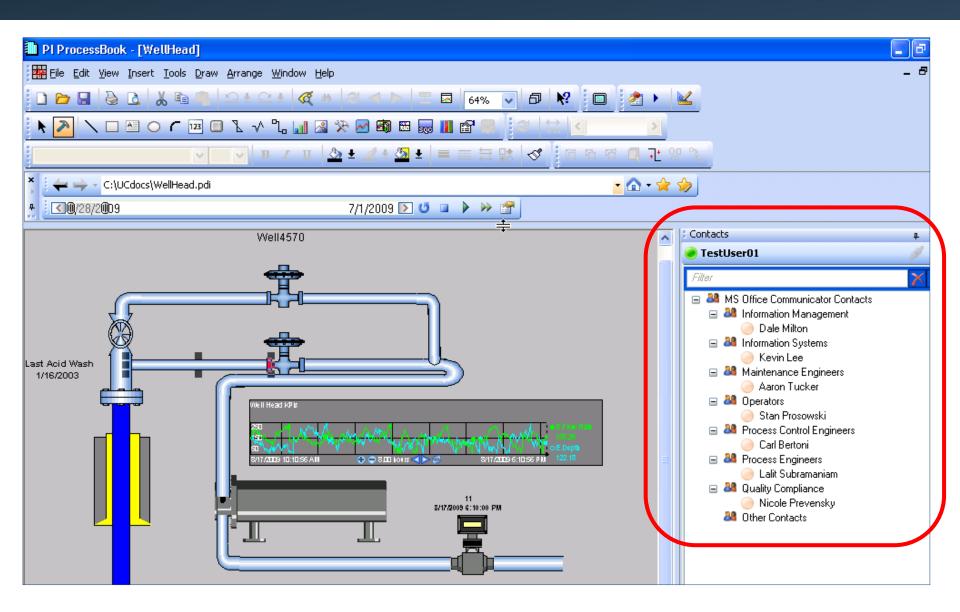
PB 3.2 - Display Browsing and Bookmarking



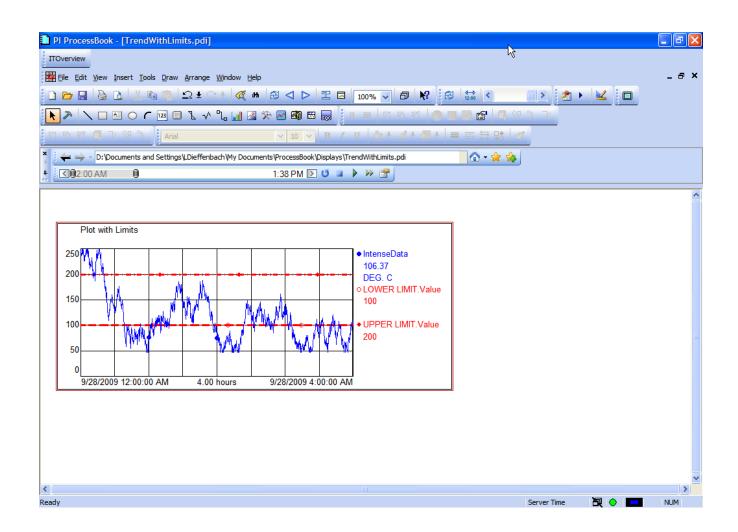


PB 3.2 - Office Communicator Integration

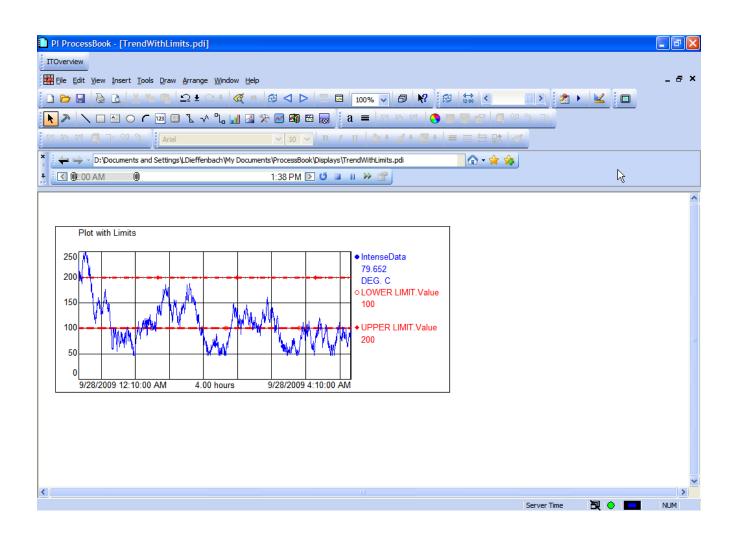




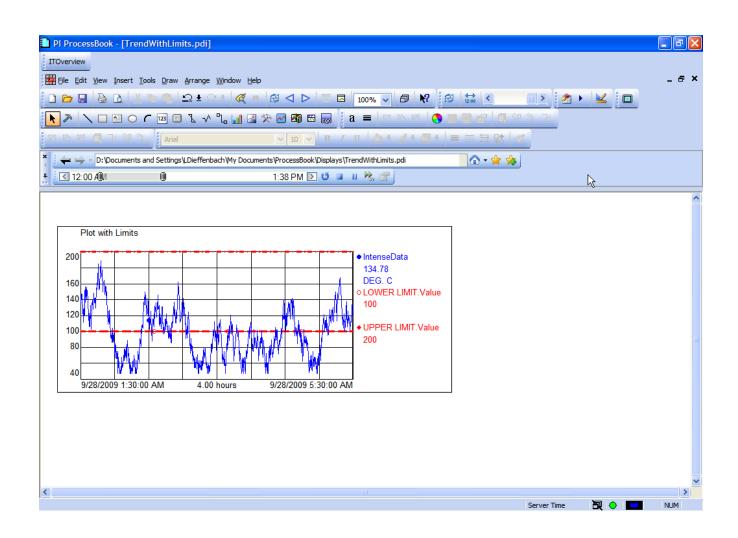




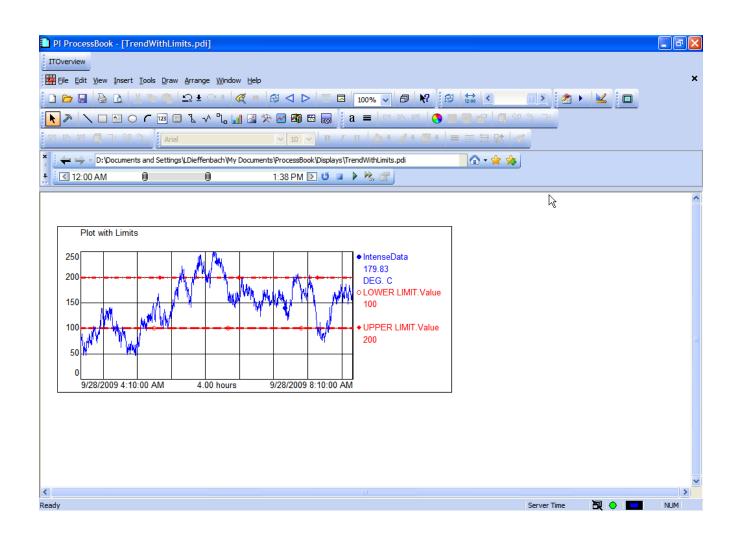












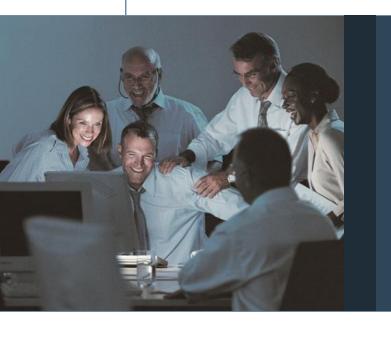
ProcessBook Playback Options



Playback Options	X
Time Ranges	
Display Range:	
*-4 Hour	
Playback Period	
Start:	
9/28/2009 12:00 AM 😂 📺	
End:	
9/28/2009 1:38 PM 😂 🚃	
Refresh	
Refresh Rate (Sec):	
5 (\$)	
Speed:	
1 Minutes Per Second	
	_
OK Cancel Help	



PI DataLink



DataLink and DataLink for Excel Services

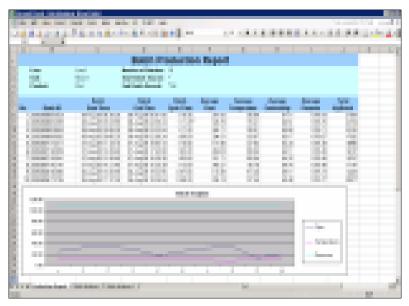


PI DataLink:

Excel add-in for access to real-time and historical PI data

PI DataLink for Excel Services (DLES):

DataLink spreadsheets on the Web



Reports · Reference Library III Recycle Sin 06-Jun-07 10:06:21 06-3un-07 09:06:21 86.63660095 06-Jun-0708:06:21 84:84183502 20.06704909 06-3-m-07 07-06-21 83 87042999 21 82993139 06-Jun-07 06:06:21 84.94693756 20,75888834 06-Jun-07 05:06:21 82.18384552 19,80713083 06-3un-07-04:06:21 82,9772832 20.02935026 06-3un-07-03:06:21 84-11688232 21 44130896 05-Jun-07 02:06:21 83 34800873 20.4305477 06-Jun-07-01:06:21 84:48925018 20,6157856 06-Jun-07 00:06:21 84:08872223 21,31993254 05-Jun-07 23:06:21 83,94387054 21,741806D 05-Jun-07 22:06:21 86,03512578 20.81959343 52,87559509 STAGE I 05-Jun-07 21:06:21 85:75177765 53.97544861 STAGE 1 20.87041479 Apply Clear # # # # Sheet1 Sheet2 Sheet3

DataLink

DataLink for Excel Services

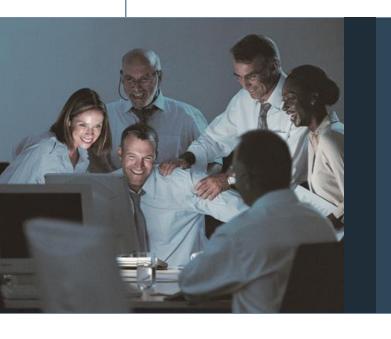
DataLink and DLES Roadmap



- DataLink 4.1 (Released)
 - Support for automatic updating
- DataLink for Excel Services 4.1 (Released December 2009)
 - Support for 64-bit SharePoint 2007
- See "OSIsoft Products and Office 2007 Compatibility FAQ" on Tech Support site
- PI DataLink 2010 (1H 2010)
 - Support for Office 2010
 - Better Business Intelligence Support



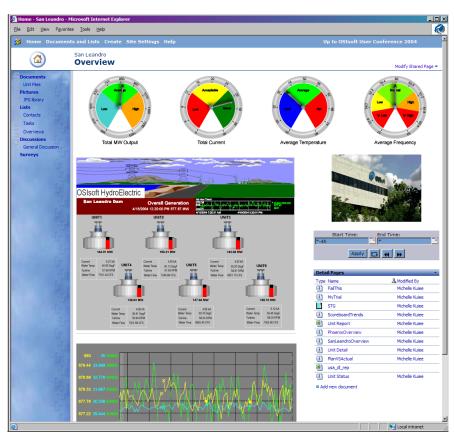
PI WebParts / iViews

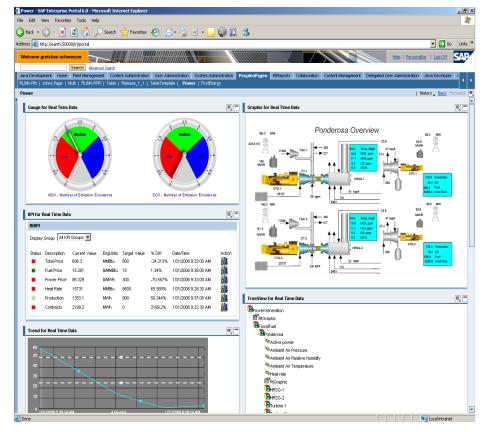


PI Web Parts - Typical Uses



- Integration and Collaboration
- Access to Process Information
- Analysis and Reporting

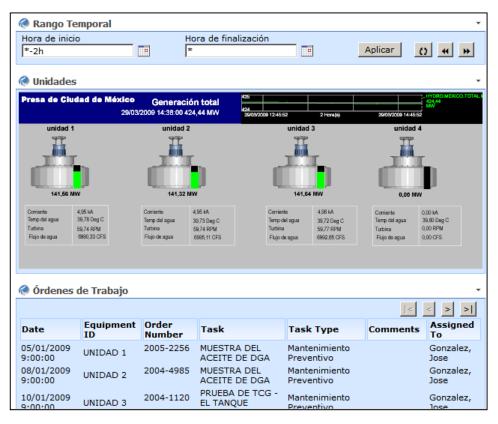




PI WebParts today ...



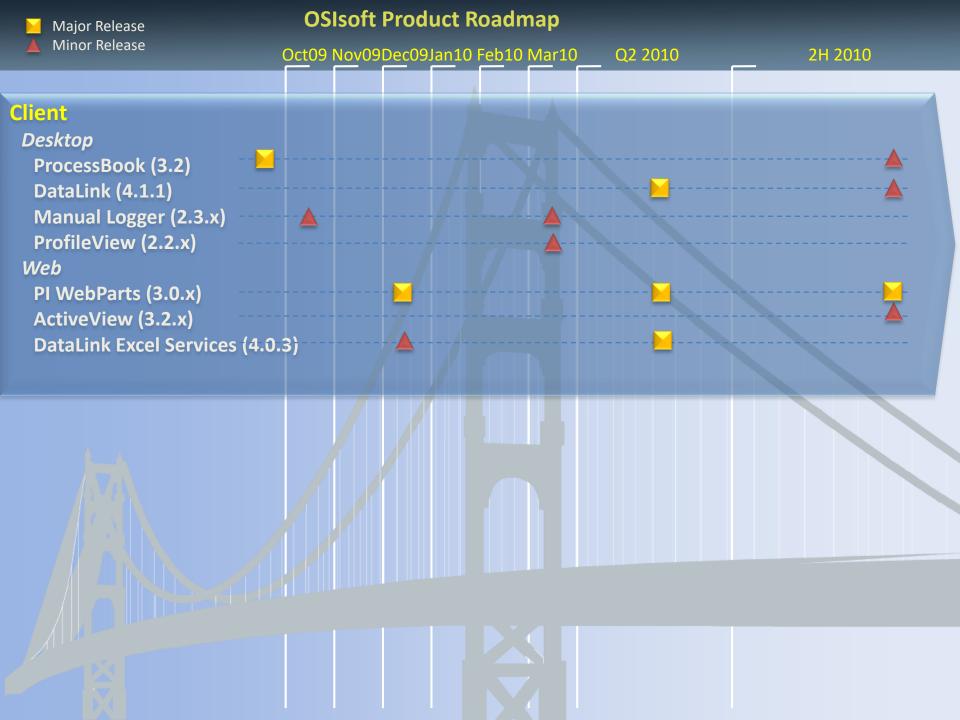
- RtWebParts 2.2 (September 2008 Released)
- PI Web Parts 3.0 (December 2009 Limited Release)
- 8 Language Packs (Released for 2.2, 3.0 in April 2010)
 - Japanese
 - Simplified Chinese
 - Korean
 - French
 - Brazilian Portuguese
 - German
 - Spanish
 - Russian



PI WebParts Roadmap

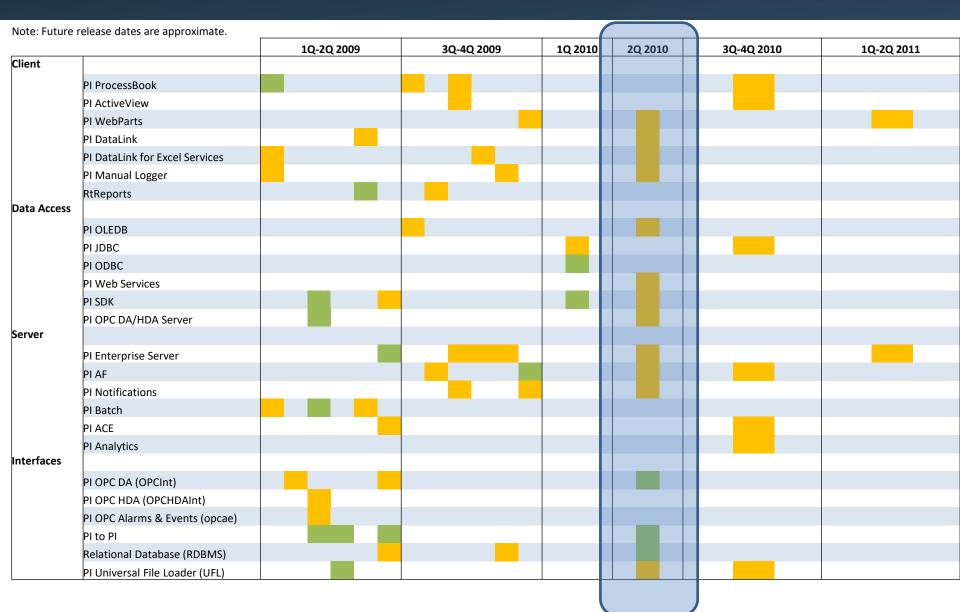


- PI WebParts 3.0 (Released in December 2009)
 - Product officially rebranded PI WebParts
 - Support for 64-bit operating systems (server side)
 - Support for AF
 - No Support for MDB
 - Fine for AF applications, but MDB based apps must wait
 - PI Enterprise Server 2010 will provide MDB->AF support necessary if you rely on MDB access in Web Parts
- PI Web Parts 2010 (1H 2010)
 - Support for Office 2010



2009-2010 Roadmap





PI Roadmap - Important Releases



Server:

- PI Server 3.4.380 Released September 2009 (Security)
- PI AF 2.1 August 2009 (64-bit, HA) Released
- PI Notifications 1.1 September 2009 (OCS, Templates)
- PI Data and Web Services December 2009 (64-bit)
- PI Enterprise Server 2010 2Q 2010 (MDB to AF)

Clients:

- PI ProcessBook 3.2 Released September 2009 (AF relative displays, Usability)
- PI WebParts 3.0 Released December 2009 (64-bit, AF Support)
- PI DataLink 4.1 for Excel Services (64-bit) Released December 2009
- PI WebParts and DataLinkx 2010 Office 2010



Thank you

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777 Davis St., Suite 250 San Leandro, CA 94577