



Roadmap for the Developer Technologies 2015

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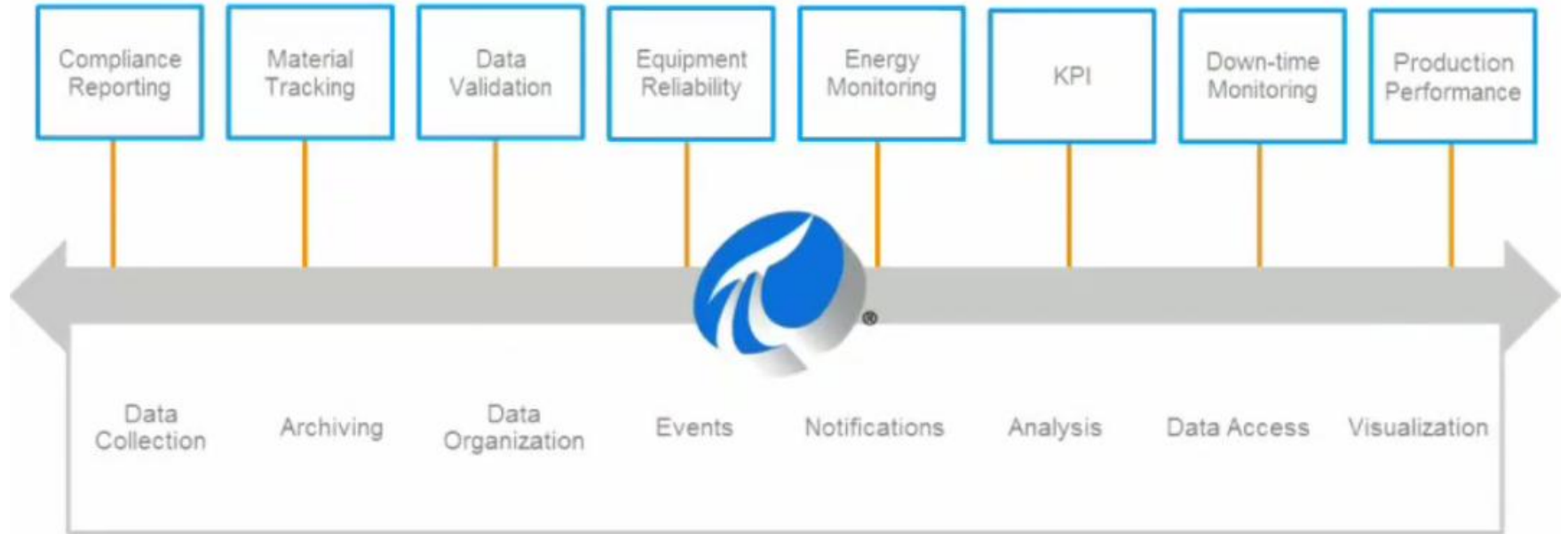
Developer Technologies and YOU!

Reliability
Millions of Streams
Real-time
Visualization
CBM
Scalability
Asset Framework
PI System
Analytics
Quality
IoT
Connectivity
Sensor-based Data
Big Data
Infrastructure
High Speed
Business Transformation
Security
Connected Services
Operational Intelligence
Regulatory Compliance
Enterprise Agreement
Business Impact
Enterprise
Process
Operational Efficiency
Time Series
Event Frames
Future Data
Energy Management
Streaming Data
Open System
Asset Health
Safety



Roadmap Introduction

Working Together to add Value



Developer Technologies

PI AF SDK

- A single high-performance .NET Framework SDK that gives you to access all PI System data

PI Web API

- Modern REST-based web service standard, ideally suited for many platforms

PI SQL Framework

- Enables access to PI from SQL client applications
- Integration with business systems

PI OPC Servers

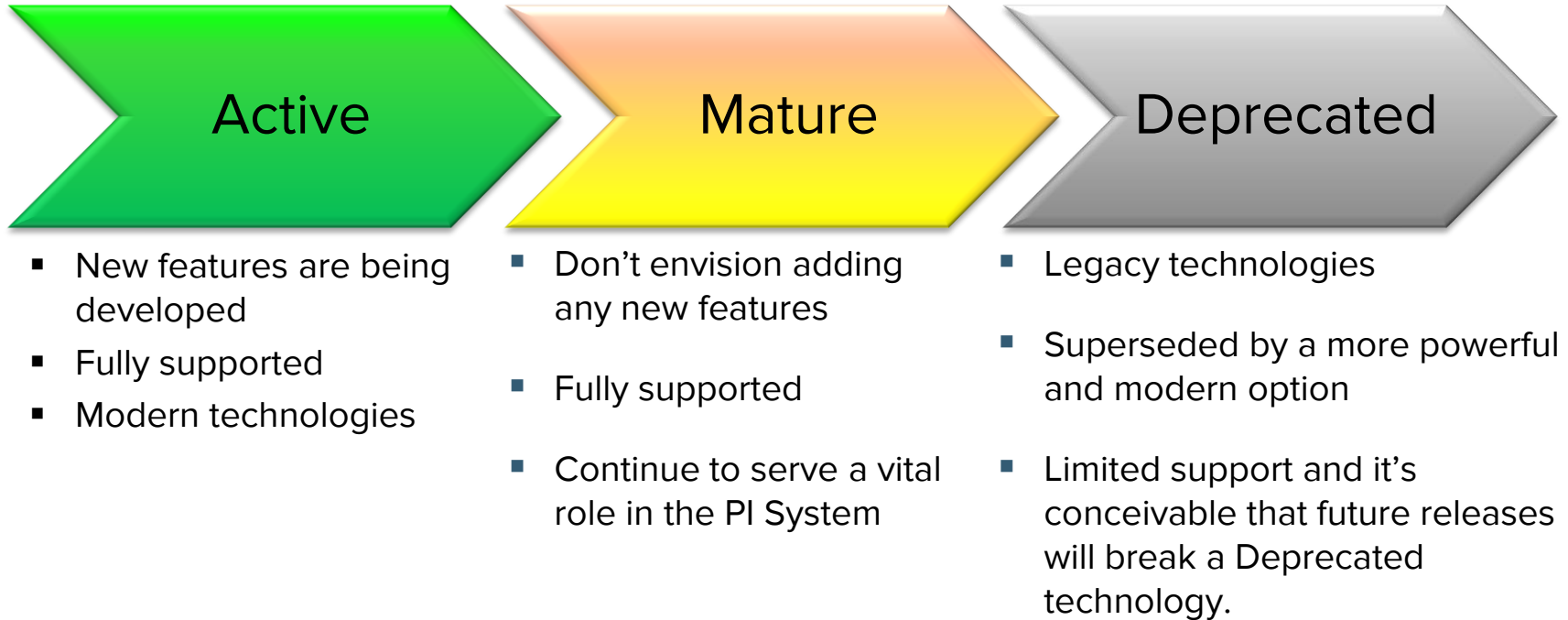
- Enables access to PI from OPC client applications
- Integration with industrial information systems

Developer Technologies Features

Name	Type	PI Data Archive?	PI Asset Framework?	Event Frames?	Example Use
PI AF SDK	.NET SDK	RW	RW	RW	Custom development
PI Web API	REST Services	RW	RW	RW	<ul style="list-style-type: none">• Custom development, including mobile and non-Windows• REST clients
PI OLEDB Enterprise	Standard OLEDB COM	RW	R	R	<ul style="list-style-type: none">• SQL clients• Microsoft SQL Server Linked Server
PI OLEDB Provider	Standard OLEDB COM	RW	-	-	Same as PI OLEDB Enterprise
PI JDBC	Standard JDBC	RW	R	R	Java clients on Windows and Linux
PI ODBC	Standard ODBC	RW	R	R	ODBC clients on Windows
PI OPC DA Server PI OPC HDA Server	Standard OPC DA and HDA	RW	-	-	OPC clients on Windows

More details: <https://techsupport.osisoft.com/Troubleshooting/KB/KB01046>

Innovation State



License Types

Open



- Developer documentation made publicly available
- No fee associated with the PI Developer Technologies
- PI Developer's Club membership no longer required

Restricted

- Technologies that extend the PI System's internal behaviors
- Help you make good decisions around usage of these technologies
- Paid membership to PI Developer's Club required to request access

Browser address bar: <https://pisquare.osisoft.com/community/developers-club/blog/2015/04/01/pi-developer-technologies>

Navigation bar: PeopleFluent, ADP ezLaborManager, Cisco Router, Concur, Family Safety, OSI AXIOM Travel, Suggested Sites, PI Developers Club


Header:
 

 OSisoft Home • Worldwide Locations • Tech Support • Learning

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Breadcrumb: All Places > PI Developers Club > Blog > 2015 > April > 01

PI Developers Club



PI Developer Technologies now freely available for download


Posted by Raymond Verhoeff in PI Developers Club on Apr 1, 2015 8:50:00 PM

We have made our [PI Developer Technologies](#) more easily available. Anyone with an account on the [Tech Support website](#) or [PI Square](#) is now able to download the [PI AF SDK](#), [PI Web API](#), the [PI OPC DA and PI OPC HDA Servers](#), and all products in the PI SQL Framework ([PI OLEDB Provider](#), [PI OLEDB Enterprise](#), [PI JDBC Driver](#) and [PI ODBC Driver](#)). We are doing this to make it easier for you to build applications that leverage PI System data. We are also allowing you to blog in public forums about using our PI Developer Technologies products, and to contribute to open-source projects that involve the PI System.

This does not mean that the PI Developer Technologies are license-free. You still need a PI System Access (PSA) license to *deploy* your applications. This is not a new requirement and we are not changing it. You might think of this as a run-time license. Note that the PI OPC DA and HDA Servers were also available under the older DA license. Talk to your Account Manager if you have questions about PSA or DA licenses.


567 Views Tags (edit): [pi web api](#), [sql](#), [opc](#), [developer](#), [opc da and hda](#)

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(2 ratings)

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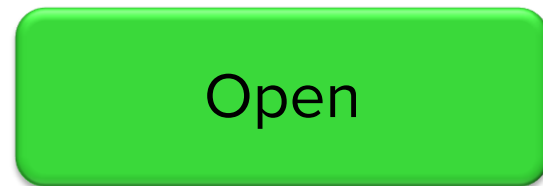
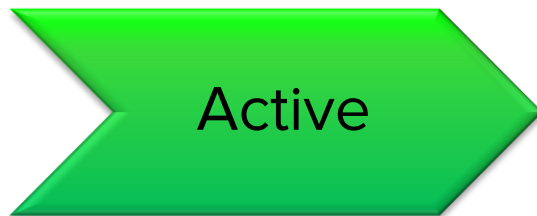
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ACTIONS

- Edit
- Move
- Delete
- View as PDF
- View feeds
- Feature on your profile
- Mark for Action
- Mark as Success

Launching Open Licensing Rights



Developer Technology	
PI .NET Framework	AF SDK
PI Web API	Core Services Indexed Search
PI SQL Framework	PI OLEDB Enterprise PI OLEDB Provider PI ODBC PI JDBC
PI OPC Servers	PI OPC DA Server PI OPC HDA Server

OSIsoft Licensing Model:

- Introducing Open Licensing Rights:
 - OK to use PI Developer Technologies to build applications at no charge
 - OK to blog about (your) code
 - OK to post open-source projects that use PI Developer Technologies

Fine print from our lawyers...

- You may not redistribute our SDKs
- You may not decompile or reverse-engineer
- You need a licensed PI System for development
 - Your site PI System is fine
 - Paid PI Developer's Club membership is another way to get this
- You still need the PSA license to deploy
 - *For PI OPC Servers*, DA license is also OK

Restricted Licensing Rights

Developer Technology	
PI API	Transitioning to Deprecated
ANSDK	
Notifications Delivery Channel	
AF Data Reference	
PI Connector Framework	
AF Analysis Rule	
AF Time Rule	

What is this Deprecated Thing?

- We are not cancelling anything...
- We need a response to the changing technology landscape
- We need to have a discussion about alternatives and roadmap
- We need a process to get there...

To be Deprecated...

- PI API
- PI SDK
- PI Web Services

OData CTP ends...

History

- First released with PI Web API in November 2014
- Included in PI Web API 2015 and 2015 R2
- Removed from PI Web API 2015 R3

Findings

- Uptake of OData in the user community is too low
- Viable data access alternatives exist

Open Source

- Not releasing our products as open source...
- Requests for:
 - “How do I...?” sample code
 - Sample applications
 - Add-ons and wrappers for OSIsoft products
- Direct support for development environments
 - No more ZIP files in blog posts
- Support contributions from you!

About Github


- Cloud-based source code control
- Integrated bug and work item lists
- Support for “fork” and “pull”
- Publicize your license type
- Visual Studio consumes Git natively
- Allows you to collaborate with us!

OSIsoft, LLC · GitHub

GitHub, Inc. (US) | <https://github.com/osisoft?utf8=✓&query=PI>

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Repositories People 0

Filters PI

PI-AF-SDK-large-asset-count-Project C# ★ 0 0
Updated 2 days ago

PI-Web-API-White-Paper C# ★ 0 0
Supporting files for White Paper - Developing with PI Web API
Updated 6 days ago

People 0 >

This organization has no public members.
You must be a member to see who's a part of this organization.



Releases in 2015

Release Themes

Asset-based PI



Event Frames



Future Data



Visualization





PI .NET Framework

AF SDK

The Road Behind



2008 – AF 2.0

- Merge of MDB and AF 1.x

2010 – AF 2.2

- Scale to millions of elements

2010 R3 – AF 2.4

- Event Frames – laying the groundwork for Batch migration

2012 – AF 2.5

- RDA - Merge of PI SDK functionality into AF SDK

2014 – AF 2.6

- High performance Analytics
- AF Data Pipe and AF Data Cache
- Buffered Writes

The Milestone We Just Passed

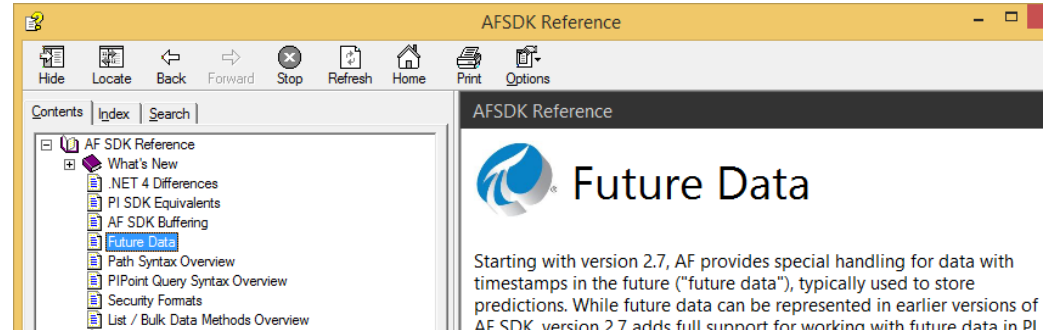
AF 2015 (2.7) – Future Data



- Future Data
- Security Model Changes
- Excluded and Hidden Attributes
- Batch Migration
- Removal of PI SDK dependency
- Performance

Future Data

AF SDK Goal:
Make Future Data easy
to consume



Does an Attribute / PI Point support Future Data?

- PIPoint.Future Property
- AFAttribute.SupportedDataMethods with AFDataMethods.Future

Clarify Snapshot vs. Current Value vs. End-of-Stream

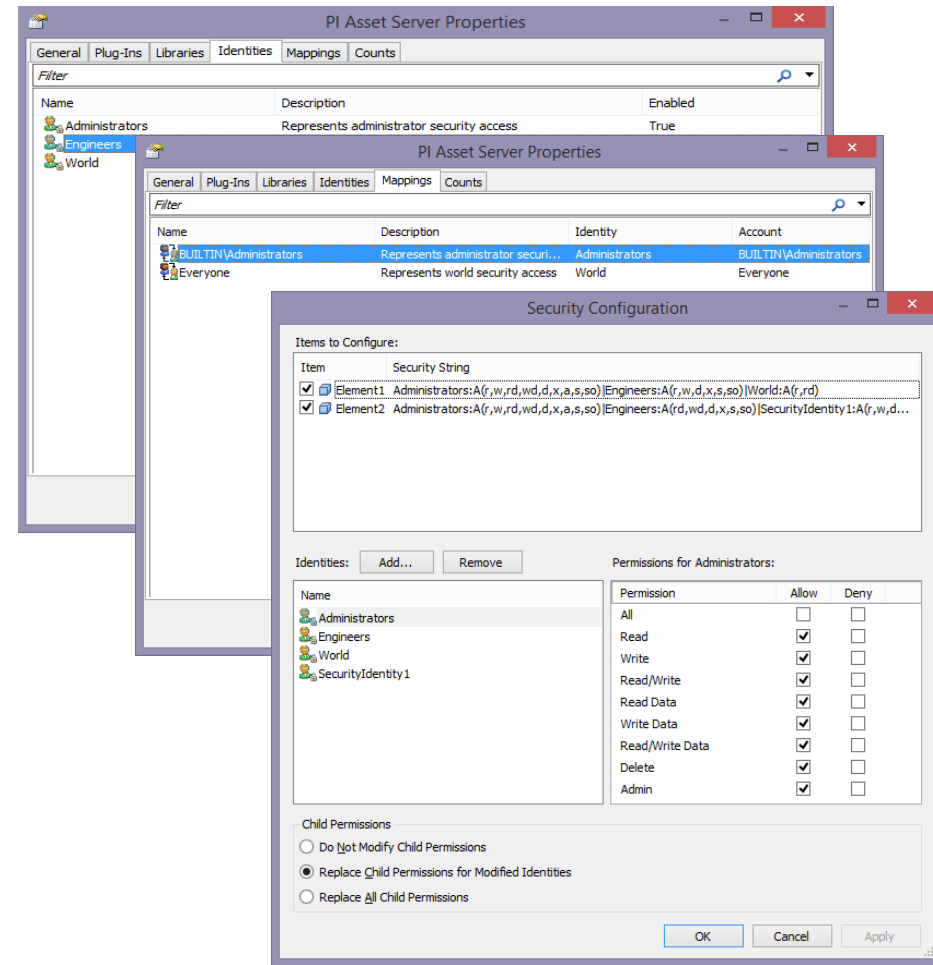
- AFAttribute: AFData and AFListData add EndOfStream
- AFAttribute.GetValue() returns "Current Value"
- PIPoint.CurrentValue added
- PIPoint.EndOfStream added
- PIPoint.Snapshot obsoleted.

Data Pipes and AFDataCache

- EventHorizonMode and EventHorizonOffset in AFDataPipe and AFDataCache
- New "Time-Series" mode in PIDataPipe combines archive and snapshot pipes
- Future Tags are not supported in archive or snapshot pipes (only time-series pipe)

Security Model Changes

- Same as Data Archive
- Make security easier to manage and configure
- No direct Windows ACLs on AF Objects
- Improved out-of-the-box experience
- Backward compatibility
- New SDK methods for taking apart ACL's



2.7 Excluded and Hidden Attributes

Goal

- Allow templates to be used for more device types
- Simplify asset presentation to client users

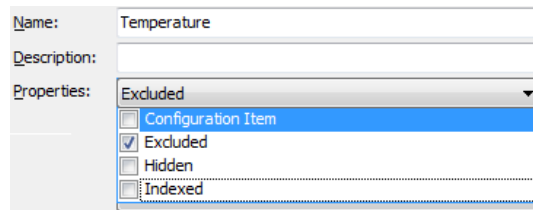
Excluded

- Allows individual attributes of a template to be “removed” from an element or event frame instance.
- Can default to excluded or not excluded
- AFAttribute.IsExcluded and AFAttributeTemplate.IsExcluded



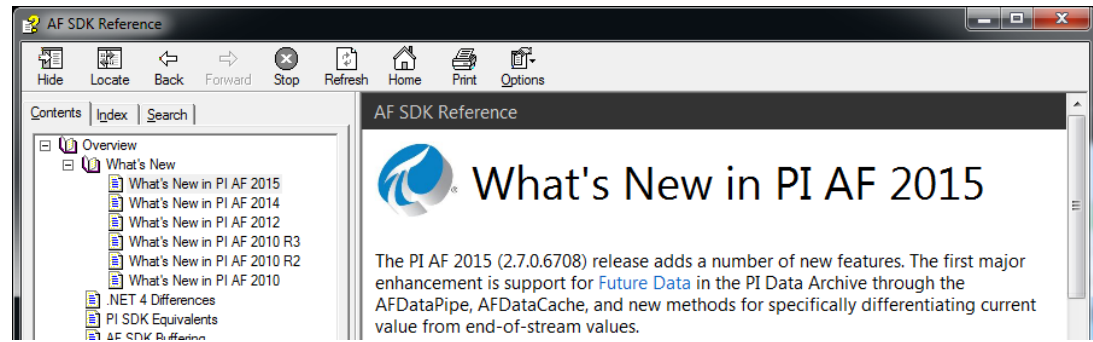
Hidden

- Will not be returned in attribute searches
- Client decides if appropriate to display
- AFAttribute.IsHidden and AFAttributeTemplate.IsHidden



The screenshot shows a configuration window for an attribute named "Temperature". It has fields for "Name:" (Temperature) and "Description:". Below these is a "Properties:" section with a dropdown menu currently set to "Excluded". The dropdown menu is open, showing four options: "Configuration Item" (unchecked), "Excluded" (checked), "Hidden" (unchecked), and "Indexed" (unchecked).

AF 2015 ...



- More Search options
- Faster bulk delete of elements
- Enhanced path options
- AFDataPipe and AFDataCache can be made to detect Meta Data changes.
- Ability to change a reference type of existing element hierarchy
- Analysis Bulk operations
- PI Point Source exposure
- Digital State Editing in PI Builder
- Performance of finding and enumerating PI Points increased
- Additional PI Data Archive security model exposure
- PI Data Archive Point Count
- Visual Studio Intellisense always installed. AF SDK reference documentation online at <https://techsupport.osisoft.com/documentation>

The Road Ahead



2015 R2

- Case sensitive UOM Abbreviations
- Typed AF Value access
- Analysis and Notification Performance improvements

2016

- Specialized Attributes
Limits, Prediction
- In-Process Buffering
- Event Frame Annotations
- Improved searching API
- Notifications Overhaul



PI Web API 2015

PI Web API 2015 Release Review

Focus: Growth of Service Footprint

- PI Web API: Now with >112% more core services
- Indexed Search enhancements and fixes
- Unified installation experience of Indexed Search crawler

Schedule

- CTP released late December 2014
- R1 Released in February 2015
- R2 Released in June 2015
- R3 Released in October 2015

PI Web API 2015: New Services

Read/Create/Modify/Delete

- AF Enumeration Sets and Enumeration Values
- PI Digital States and State Sets
- AF Tables
- AF Categories
- AF Units of Measure and Unit of Measure Classes
- PI Point Attributes

Create/Modify

(These were previously read-only)

- Event Frames
- AF Databases
- PI Point definitions

PI Web API 2015: Platform Updates

Online Help

- Online developer reference re-vamped, functional API samples provided
- Integrated tutorial in the product with working sample code

Aspects

- Compression of API responses
- Improved event tracing, including debug logs
- Telemetry data: sampling, aggregates, and errors
- Rate limiting to protect against DoS attacks

These enhancements to the PI Web API platform benefit all hosted services.

PI Web API 2015 R2

Focus: PI Server 2015 Support

- Tested with and supports Data Archive/AF Server 2015, ships with AF

Schedule

- Released in June 2015!

PI Web API 2015 R3

Focus: Performance and Experience

- Improved Setup Experience
- Configuration and Administration Utility
- Expanded Search Capabilities
- Improved JSON serialization
 - This is currently the biggest performance bottleneck
 - We are replacing Microsoft's libraries with our own
 - Multiple PI Web API requests in bulk

Focus: New Features (CTP!)

- Multiple PI Web API Request in Batch
- Channels (also known as Web Socket support!)

Schedule

- 3rd Quarter, 2015 release

Indexed Search (PI Web API 2015 R3)

Features

- New Searches
 - Attributes by PI Point Data Reference
 - Static Attribute Value
 - Attribute Categories
 - **Event Frames return relevant Web ID's**
- Ability to jump to First and Last page results

Improvements

- Crawl Progress indicator on Admin Page
- Improved Crawler Performance when using AF Server 2.7 or later.
- More relevant information in logging
- Updated Help-related Documentation
- Search Performance



PI SQL Framework

PI ODBC 2014

Status

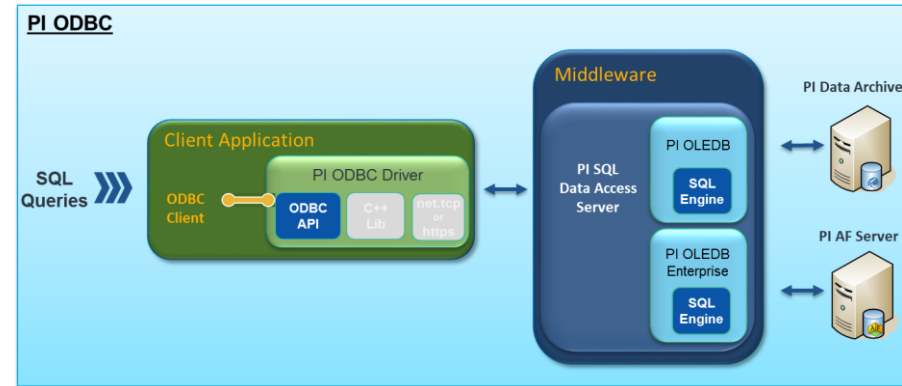
- Released February 17th, 2015
in both 32- and 64-bit versions

Standard

- Latest ODBC 3.8 API

Functionality

- Access to AF data
 - Query processing provided by PI OLEDB Enterprise
- Support important ODBC clients, such as:
 - Microsoft Access
 - Oracle ODBC Database Gateway
 - Oracle dropped support for OLE DB in its heterogeneous gateway starting with Oracle 11g



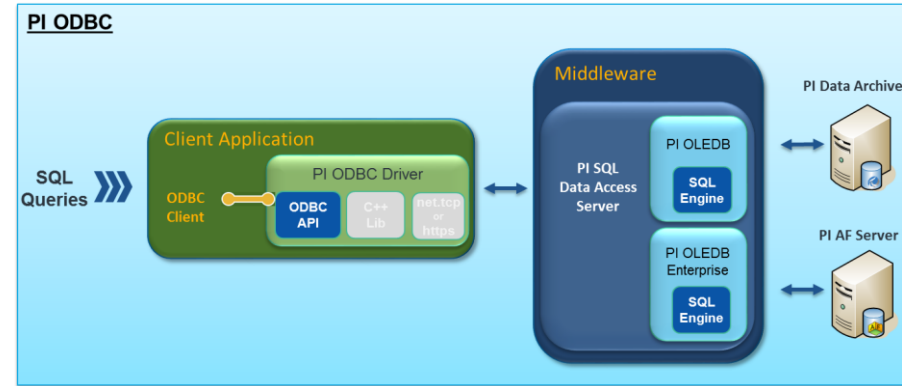
PI ODBC 2015

Schedule

- Planned for Q3 2015, in final testing

Functionality

- Bug fixes and workarounds for 3rd party clients
- Expose PI Integrator for Business Analytics PI Views
- Additional 3rd party products supported (e.g. Tableau, Spotfire, QlikView)



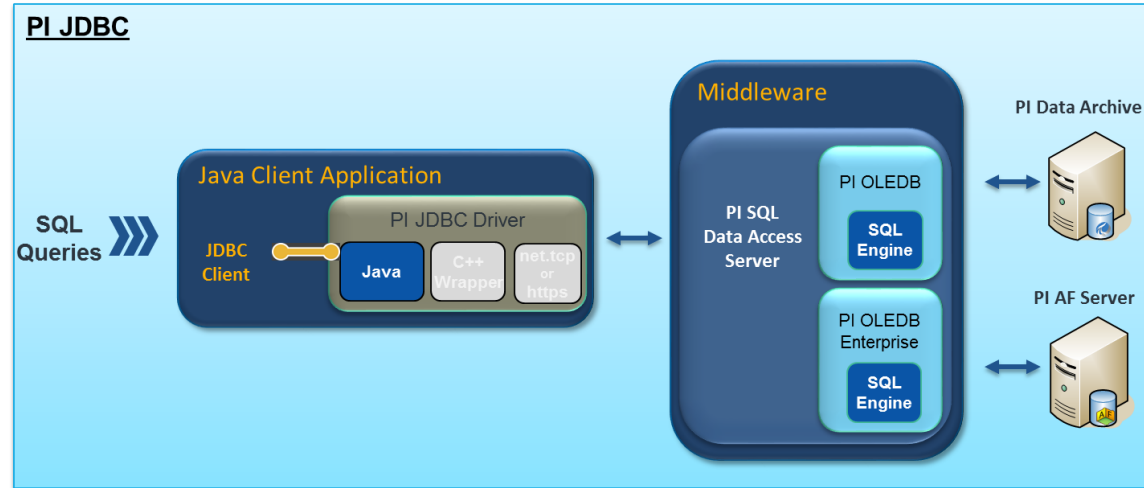
PI JDBC 2015 (Windows)

Schedule

- Planned for Q3 2015, in final testing

Functionality

- Bug fixes
- Java 8
- Support PI Integrator for Business Analytics
- Support PI Integrator for SAP HANA



PI JDBC 2015 R2 (Windows + Linux)

Schedule

- Planned for Q1 2016

Functionality

- Support Linux distributions:
 - SUSE Linux Enterprise Server (SLES)
 - Red Hat
- Performance improvements (ETL)
- Support for DatabaseMetaData.getFunctions()

PI OLEDB Enterprise 2015

PI OLEDB Provider 2015

Status

- Originally planned for Q2 2015
- Now postponed until Q1 2016
 - This is to allow the SQL team to focus on PI ODBC support for the PI Integrator for Business Analytics

Functionality

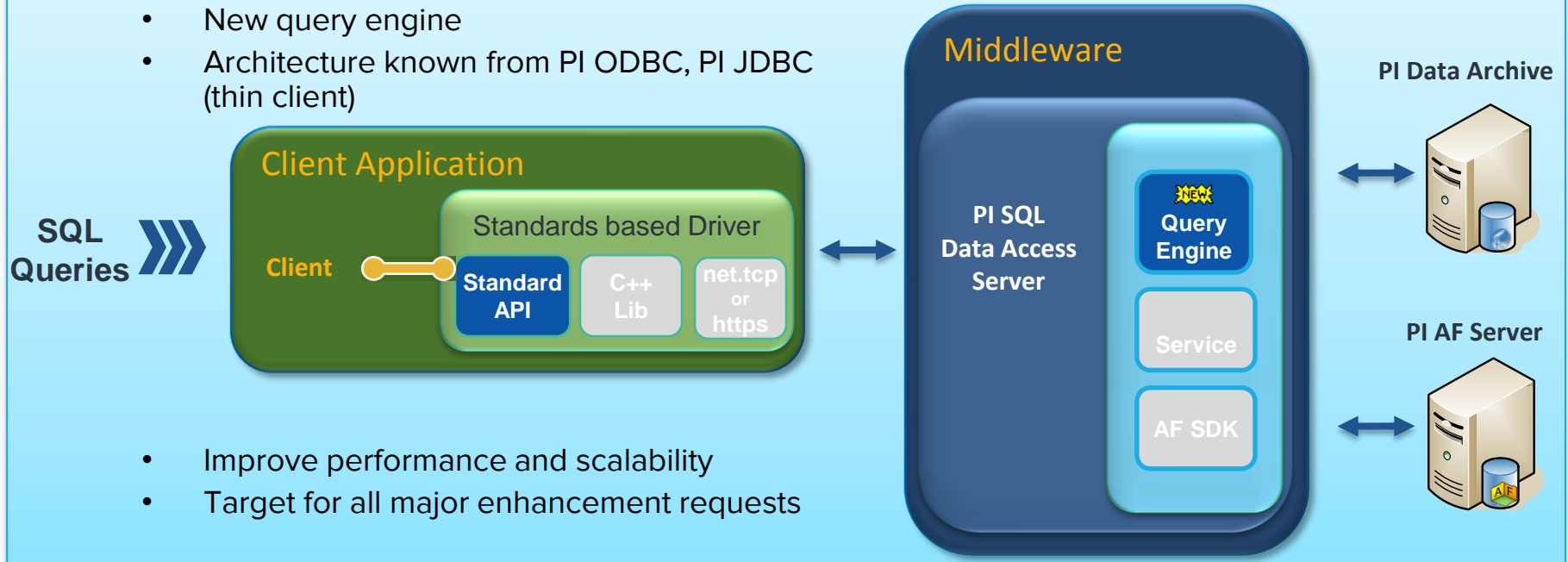
- Important bug fixes
- Improved performance
- Support for SAP Business Objects
- Support for Future Data tags



PI OLEDB Enterprise Future

Redesign

- New query engine
- Architecture known from PI ODBC, PI JDBC (thin client)



- Improve performance and scalability
- Target for all major enhancement requests

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Questions

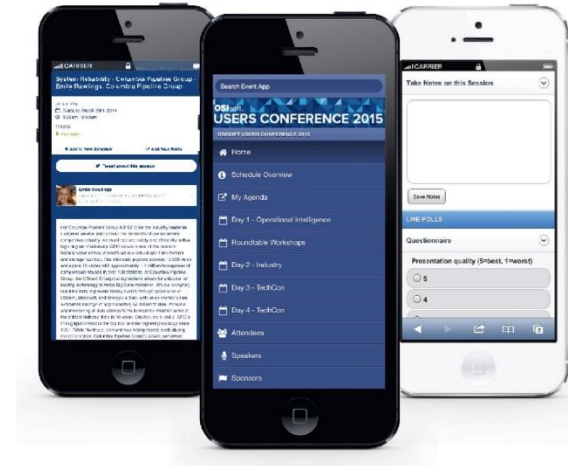
Please wait for the **microphone** before asking your questions



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name & company

Please don't forget to...

Complete the Online Survey
for this session



<http://eventmobi.com/emeauc15>



감사합니다

谢谢

Danke

Merci

Gracias

Thank You

ありがとう

Спасибо

Obrigado