

PI System 2018

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Agenda

- Review PI Server 2017 R2
- PI Server 2018 – Released in Q2 2018
- What's coming next

PI Server 2017 R2 Highlights

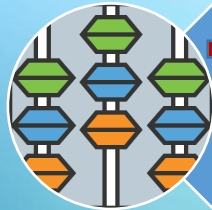


→ Hierarchical enumeration sets

→ UOM groups

→ Naming pattern

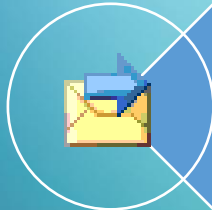
→ PI Directory



→ Automatic reconfiguration

→ Output to event

→ New function



→ Static trends

→ Authentication

→ Dynamic notification

Element Template Properties

General Attribute Templates Ports Analysis Templates Notification Rule Templates

Group by: ☐ Category ☐ Template

Filter

Name	Description	Default Value
Manufacturer		Manufacturer A Air

Manufacturer

Manufacturer A

Manufacturer B

Sort By

Air operated diaphragm

Booster

End suction

Magnetic drive

Multistage

Self-priming

Vertical sump

Series I

Series II

Series III

Limits Forecasts

OK Cancel Apply Check In

PI Server 2018 Highlights – Q2 2018





AF

- Attribute Display Digits
- Improved searches
- Bi-linear interpolation of AF tables



Asset Analytics

- MATLAB Production Server (MPS) Integration
- Arrays in analyses with new functions
- Dynamic output timestamps
- Support for Excluded attributes
- Recalculate dependent analyses

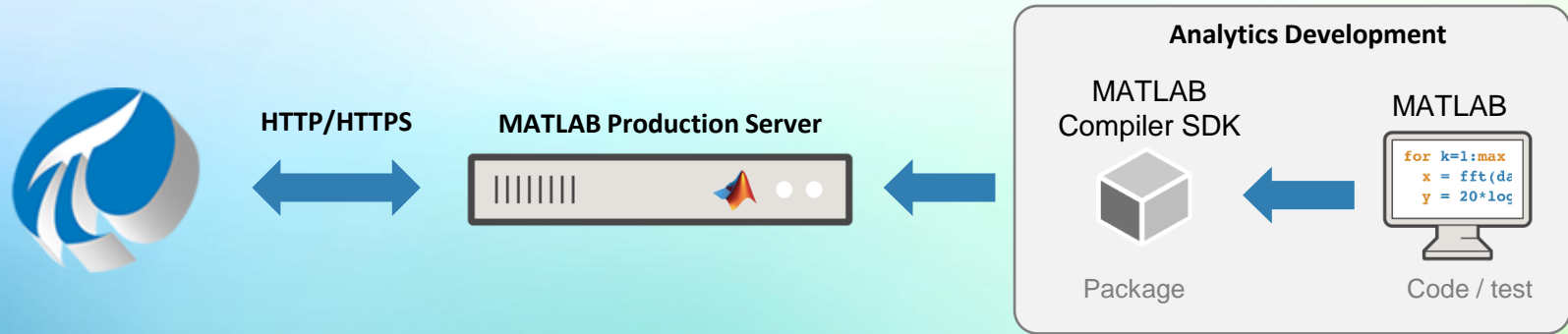


Notifications

- Notify on EF close only
- Multiple email recipients
- Support for Excluded attributes

New Capabilities and Improved Usability

Integration with MATLAB Production Server



- MATLAB functions exposed as analytics functions
- Execution in MPS
- Results written back to PI



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- **Arrays in analyses with new functions**
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New Capabilities and Improved Usability

Work with arrays..

The screenshot displays the 'Add a new variable' dialog in the OSIsoft PI Data Architect. It contains three variables:

Name	Expression	Value at Evaluation	Value at Last Trigger	Output Attribute
Variable1	<code>InterpolatedValues('Attribute3', '%-1d', '*', '+15s')</code>	[55.853, ..., 100.77]	[55.074, ..., 100.77]	Map
Variable2	<code>ArrayLength(Variable1)</code>	5761	5761	Map
Variable3	<code>FilterData(Variable1, \$val>75)</code>	[75.281, ..., 100.77]	[75.062, ..., 100.77]	Map

Below the table, a preview of the filtered data for Variable3 is shown:

Timestamp	Value
8/20/2018 9:19:50 AM	75.281
8/20/2018 9:20:05 AM	75.637
8/20/2018 9:20:20 AM	75.992
8/20/2018 9:20:35 AM	76.348
8/20/2018 9:20:50 AM	76.144
8/20/2018 9:21:05 AM	75.59
8/20/2018 9:21:20 AM	75.037
8/20/2018 9:21:35 AM	75.661
8/20/2018 9:21:50 AM	75.864
8/20/2018 9:22:05 AM	75.511
8/20/2018 9:22:20 AM	75.158
8/20/2018 9:22:35 AM	75.158
8/20/2018 9:22:50 AM	75.158

On the right, the 'Functions' pane is open, showing 'FilterData' selected under 'Array Operations'. A blue box on the left lists functions for building arrays, performing calculations over arrays, and filtering. Arrows point from this box to the 'FilterData' function and the data preview. Another arrow points from the data preview to a box at the bottom stating 'Arrays of data right in the attribute'.

Functions for:

- build arrays of data
- Calculations over arrays
- Filtering

Arrays of data right in the attribute



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New Capabilities and Improved Usability

Performance and Scalability




Asset Analytics

- 
- Better handle dependent analyses
 - Better handle missing or un-configured PI Points



AF

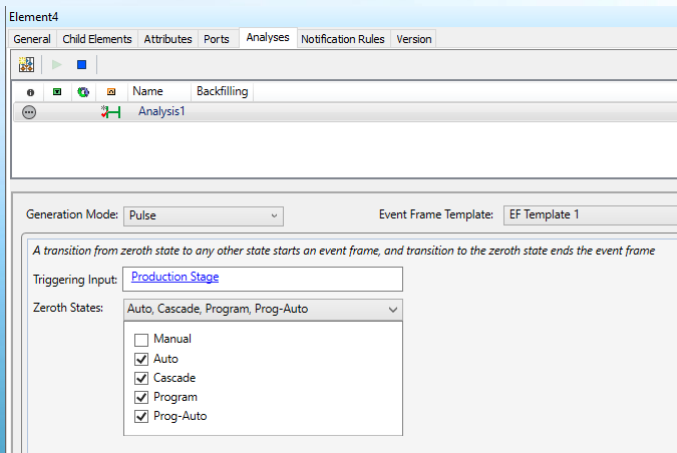
- 
- Bulk check out of event frames
 - Bulk delete of event frames



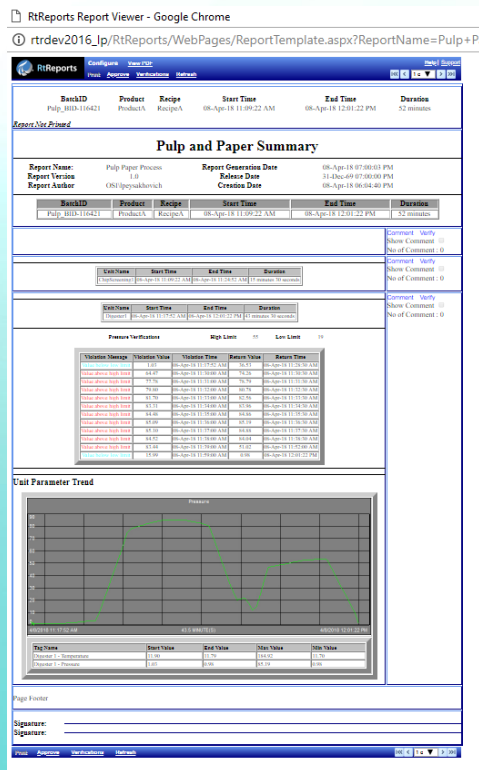
Data Archive

- 
- Debottlenecked some read operations

Event frames



Asset Analytics support for Pulse, Step and Step Continuous event frame generation



RtReport 4.0 Released

- PDF Based Browser Printing
- Supports latest operating systems
- Client-side time zone support

RtReport 4.1

- Full AF Support
- Report on Element and Event Frame attributes
- Automatic Generation of Reports
- Security Enhancements
- Beta released July 2018
- Estimated release Q4 2018



Data Archive Management

- PI Collective connection balancing and failback
- Scheduled archive shifts
- Single integrated setup kit



AF Management

- Preserve IDs on import
- Connection history
- Audit trail enhancements
- Single integrated setup kit



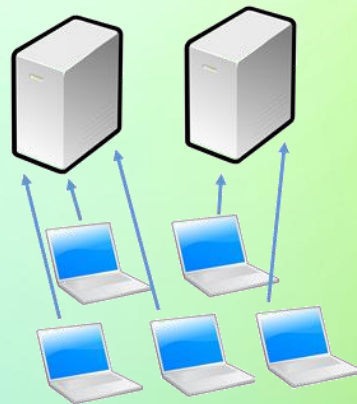
System Management

- PI System Directory
- Single integrated setup kit

System Manageability

Improved client connections management

- Client side connection balancing and failback for PI Collectives
- Distribute initial connections among collective members
- Minimize manual configuration of Known Server Tables
- After disconnection, attempt to restore the original connection
 - Honor connection priorities
 - Restore load distribution

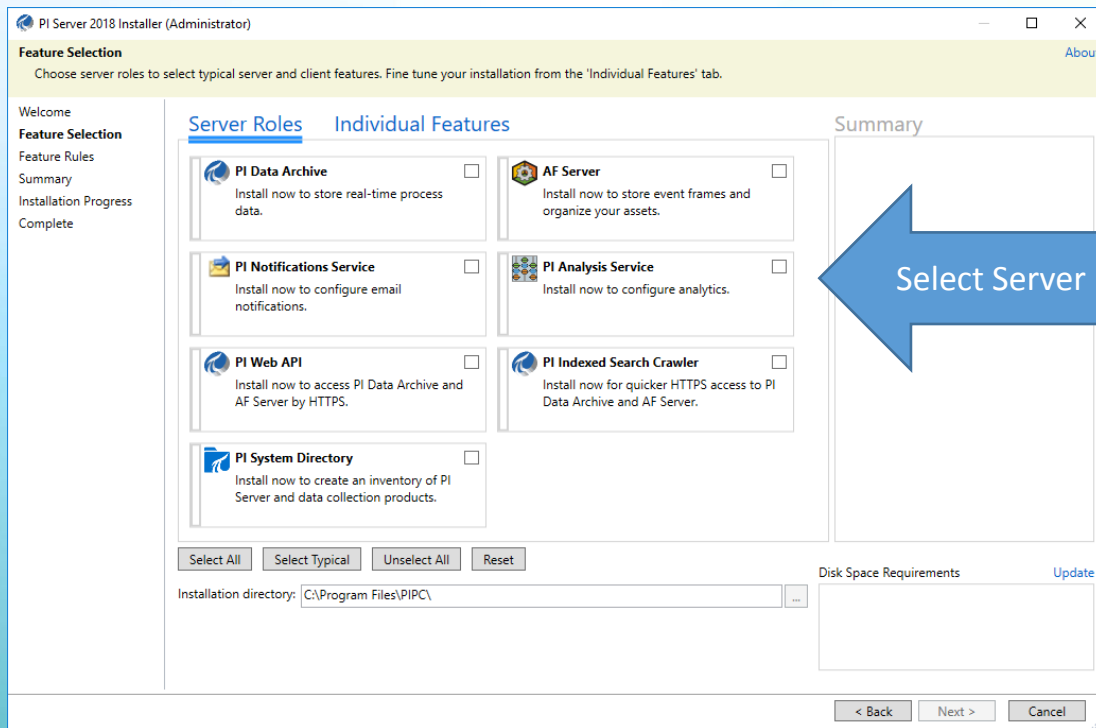


Improved Archive Management

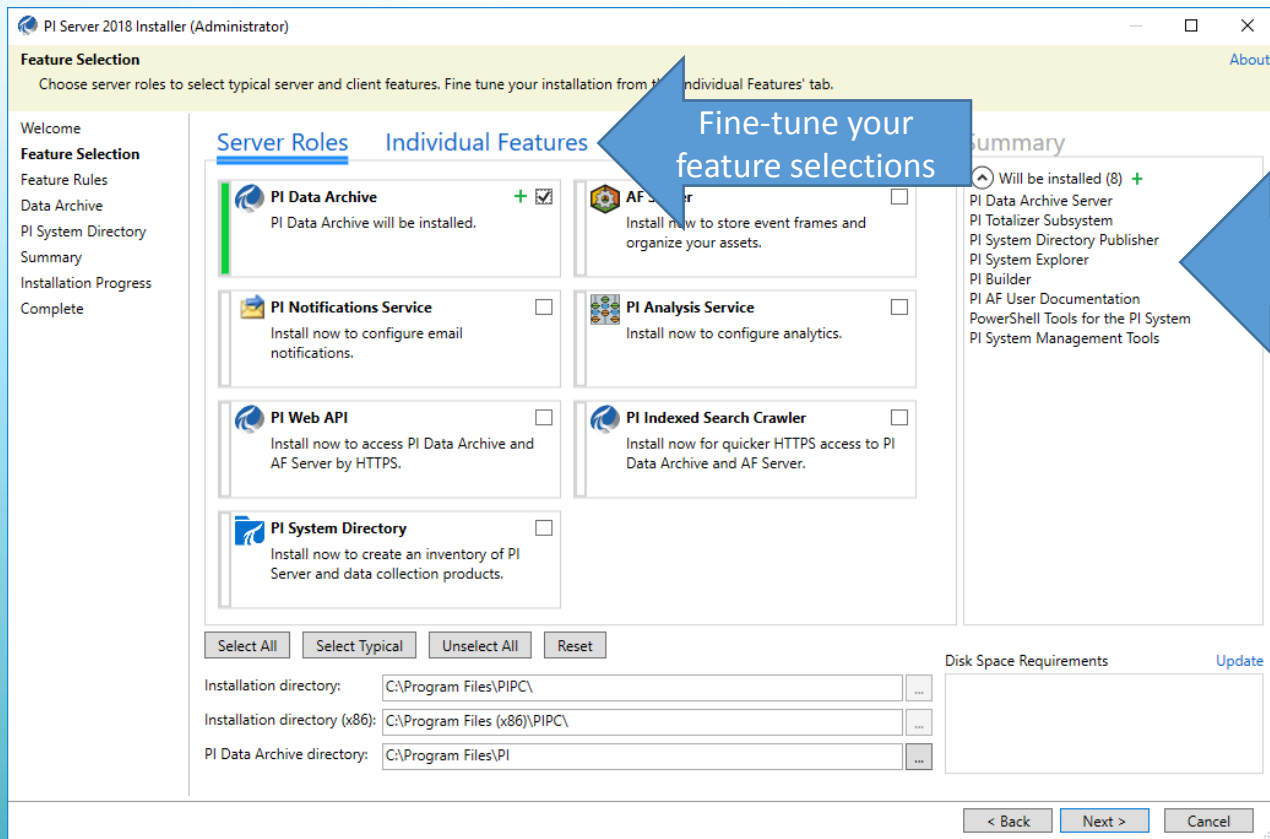
- Archive shifts at fixed duration – daily, weekly, monthly
- Auto archive sizing
 - Based on data rate and expected archive duration
- Align archives amongst collective members
 - Handles time zone differences

#	Start Time	End Time	Duration	Size (MB)	% Full	Corrupt	Archive File
0	4/18/2018 12:00:00 AM	Current Time	00d 20:26:03	338	5.3		C:\Program
1	4/17/2018 12:00:00 AM	4/18/2018 12:00:00 AM	01d 00:00:00	416	79.2		C:\Program
2	4/16/2018 12:00:00 AM	4/17/2018 12:00:00 AM	01d 00:00:00	416	97.7		C:\Program
3	4/15/2018 12:00:00 AM	4/16/2018 12:00:00 AM	01d 00:00:00	420	96.9		C:\Program

Improved Installation Experience



Improved Installation Experience



Improved Installation Experience

PI Server 2018 Installer (Administrator)

Feature Selection [About](#)

Choose server roles to select typical server and client features. Fine tune your installation from the 'Individual Features' tab.

Welcome
Feature Selection
Feature Rules
Data Archive
PI System Directory
Summary
Installation Progress
Complete

Server Roles **Individual Features**

PI Data Archive

- ☒ PI Data Archive Server - version 3.4.420.1182 will be installed
- ☒ PI Totalizer Subsystem - version 3.4.420.1182 will be installed
- ☐ PI AF Link Subsystem
- ☐ PI Alarm Subsystem
- ☐ PI Performance Equation Scheduler
- ☐ PI Batch Subsystem

AF Server

- ☐ AF SQL database scripts
- ☐ AF SQL script execution
- ☐ PI AF Application Service
- ☐ PI SQL Data Access Server (RTQP Engine)

Analysis and Notifications

- ☐ PI Notifications Service
- ☐ PI Analysis Service

PI Web API

- ☐ PI Web API Core Services
- ☐ PI Indexed Search
- ☐ PI Web API Stream Updates Services CTR

Installation directory: C:\Program Files\PIPC\

Installation directory (x86): C:\Program Files (x86)\PIPC\

PI Data Archive directory: C:\Program Files\PI

Summary

Will be installed (8) +

- PI Data Archive Server
- PI Totalizer Subsystem
- PI System Directory Publisher
- PI System Explorer
- PI Builder
- PI AF User Documentation
- PowerShell Tools for the PI System
- PI System Management Tools

Disk Space Requirements [Update](#)

< Back Next > Cancel



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System Management

- PI System Directory
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System Manageability

What's next ?



Coming soon...



AF Improvements



Analytics Improvements

Coming soon...



Performance and Scalability

- Event frame searches
- 'OR' searches



Usability and Manageability

- Improved PI Point DigitalState support in PSE
- Expose user's effective access in PSE
- Import analyses/notifications in disabled state
- Base template only templates
- Set Default PI Server per AF Database
- Write to PI Point Array from Analytics

Asset Framework

Coming soon...



Asset Analytics

- Integration with partner calculation engine (EBSILON)
- Enhanced built-in functions for arrays
- Better and more consistent error handling for improved manageability
- Conditional exits from expressions
- Expose analysis status and health via AF SDK for monitoring and manageability

New capabilities and improved manageability

Coming soon...

Coming soon...




HTTPS



- Asset Framework
- Asset Analytics

VTU energy

Distributed Calculation Platform



Username

Password

☐ Remember login

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EBSILON® Professional

1 Boundary Input Value	2 Throttle	3 Mixer with Throttle	4 Splitter (mass defined)	5 Steam Generator	6 Steam Turbine
7 Condenser	8 Pump	9 Feed Water Container	10 Feed Water Preheater	11 Generator	12 Controller (External Set Value)
13 Piping	14 Control Valve	15 Heat Extraction	16 Heat Injection	17 Splitter (with characteristics)	18 Splitter (% of flow)
19 Drain	20 Drum	21 Fluid Bed Firing	22 Combustion Chamber of a GT	23 Gas Turbine	24 Compressor
25 Air Preheater	26 ECO/Evaporator	27 Aftercooler	28 Water Tank (mixing point)	29 Motor	30 Difference Meter
31 Power Summarizer	32 ETA=?	33 Input of Value	34 Expander	35 Heat Consumer	36 Value Transmitter



VTU Energy GmbH

VTU Energy combines core competence in thermodynamic simulation of power generation systems and in-depth know-how in both, software development and software application.

steag

STEAG Energy Services GmbH

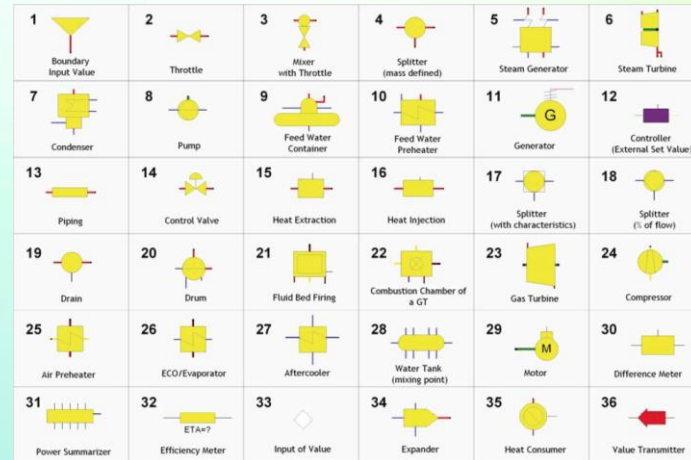
STEAG Energy Services has a long-lasting experience in the implementation of Performance Monitoring Solutions for Power-Plants world-wide and offers Fleetwide-Monitoring and EBSILON®Professional based on PI-System.

Do more with your PI data



- Real time asset performance calculations
- Closed balances of mass and energy
- Calculate parameters that are not measured
- Data reconciliation via mass and energy balances
- What-if calculations
 - Max. capacity
 - Cost of next MWh
 - Power/steam reserve
 - Etc.

EBSILON®Professional



100+ component library

<https://partners.osisoft.com/directory/partner/260707/steag-energy-services-gmbh>

Conclusions

- Making the PI Server work better for you
 - Security
 - Performance and scalability
 - Reliability
 - Usability
 - Manageability
- Do more with the PI System
- Feedback and requests: <https://feedback.osisoft.com>



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Questions?

Please wait for
the **microphone**

State your
name & company



Please rate this session in the mobile app!



