

OCTOBER 24, 2023

AVEVA™ PI Vision™ and AVEVA™ PI Data Infrastructure

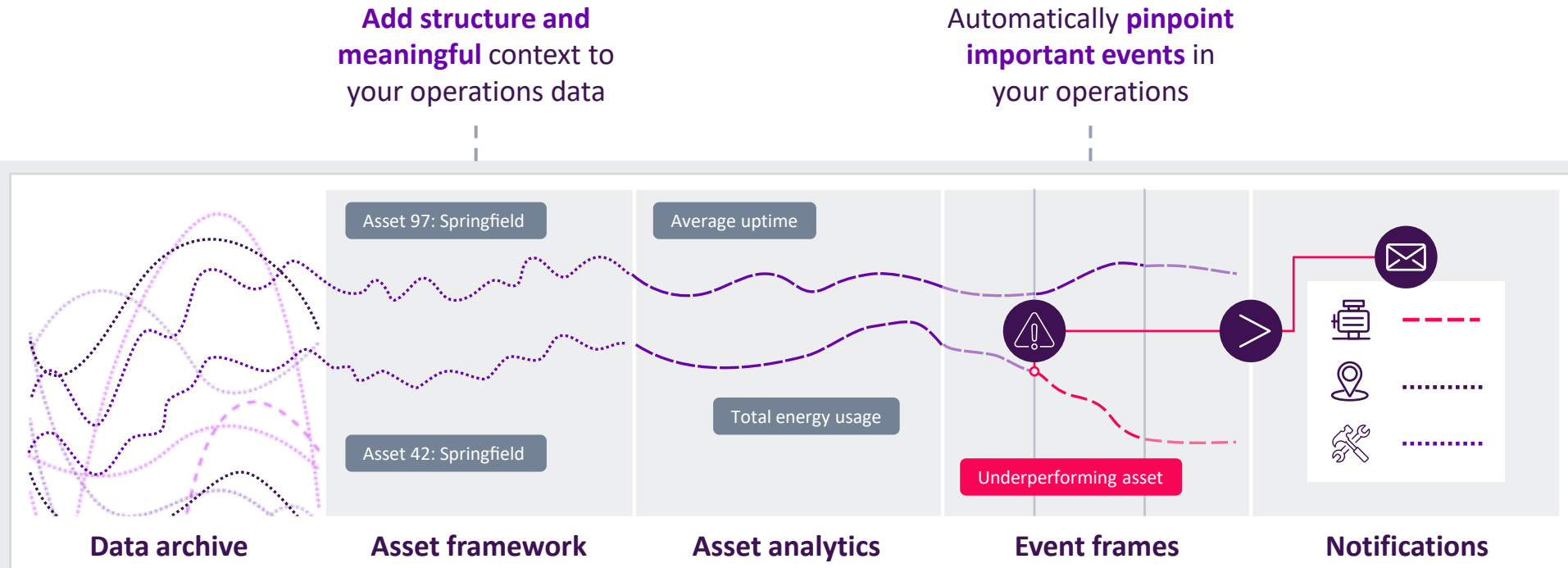
Data from everywhere viewed anywhere

Kevin Geneva

AVEVA Sr. Technical Product Manager

AVEVA

AVEVA™ PI Server turns data into information



Add structure and meaningful context to your operations data

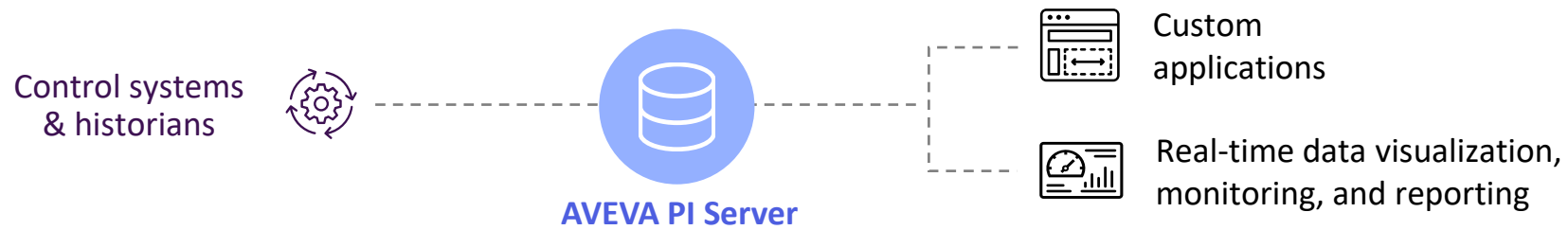
Automatically pinpoint important events in your operations

Optimized storage & access to massive volumes of operational data

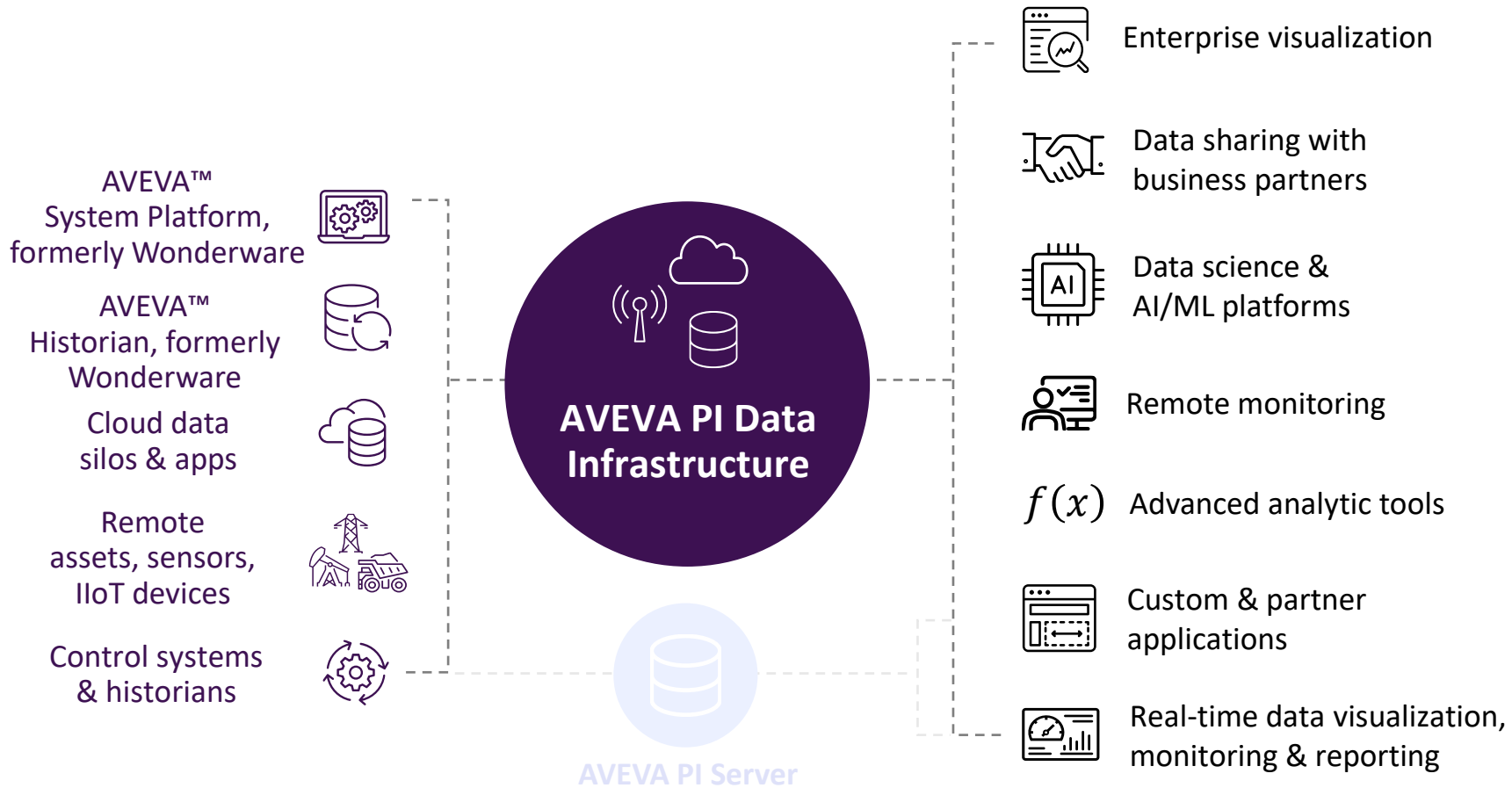
Transform raw data into actionable KPIs using streaming calculations

Send automatic alerts to the right people with the right information

Supporting the traditional data needs

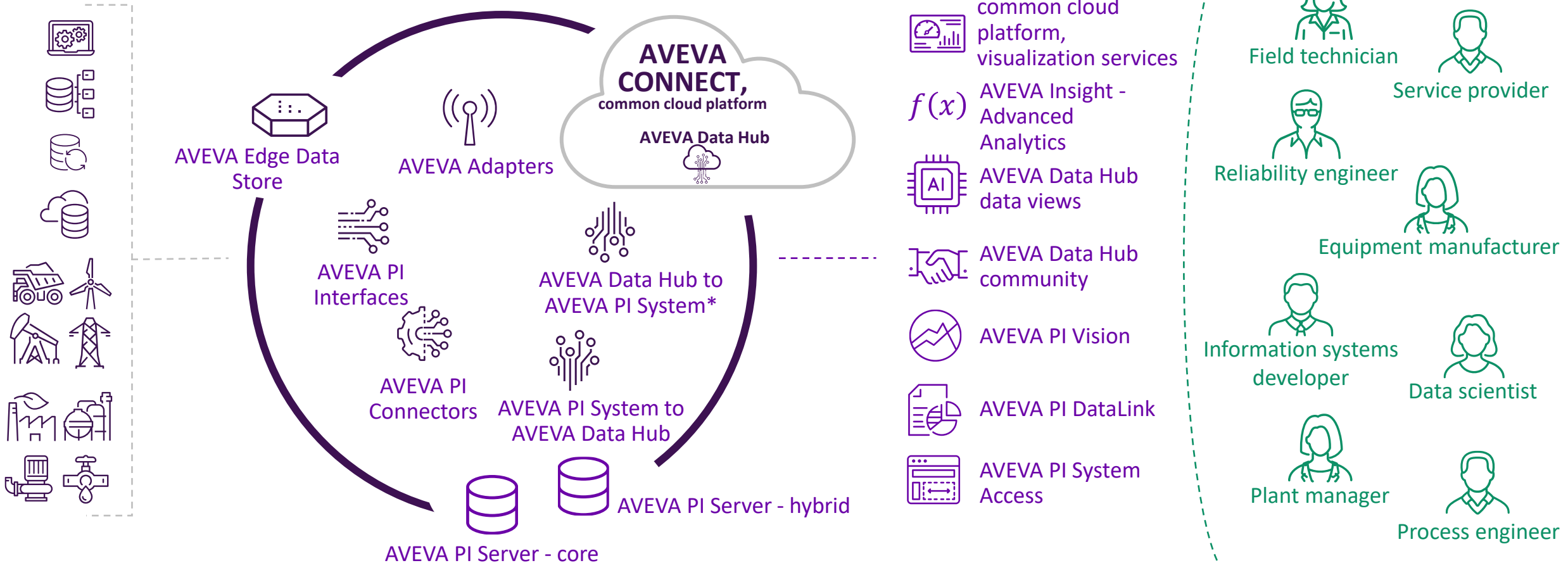


Supporting the evolving data needs



A hybrid data infrastructure from edge to plant to community

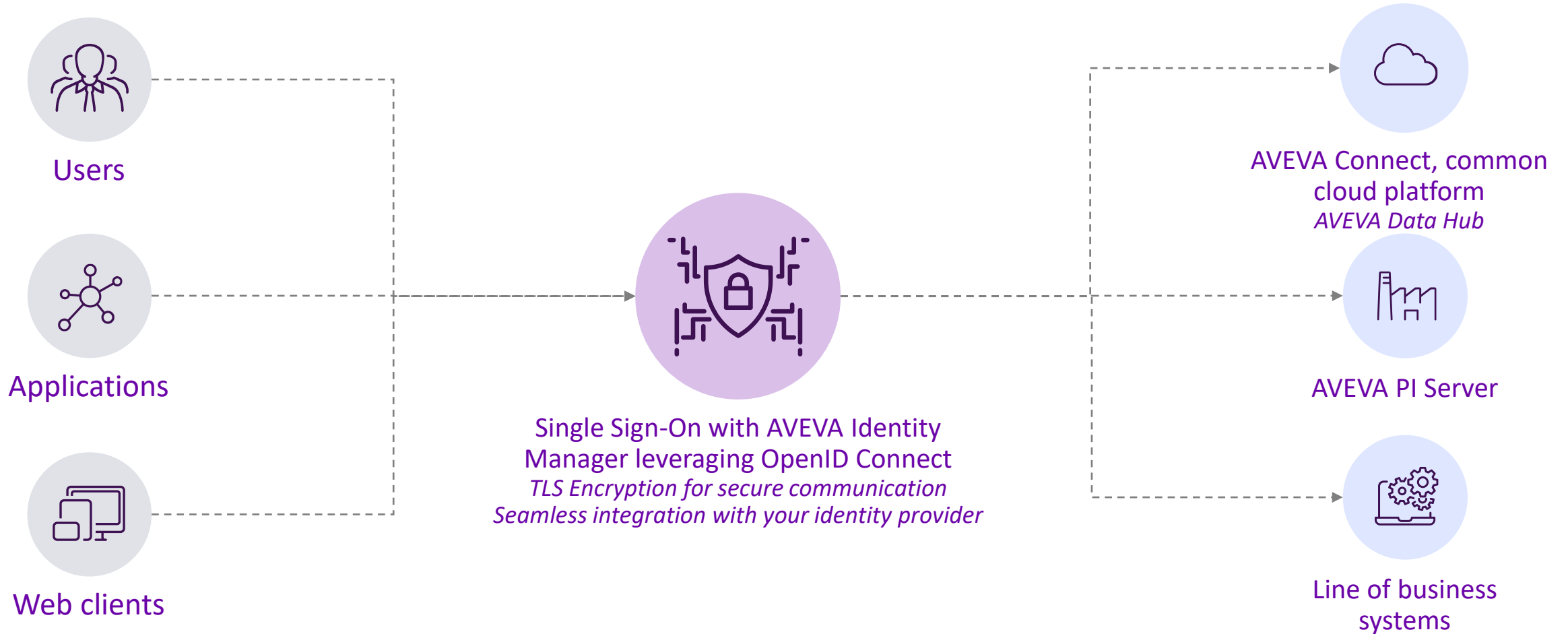
AVEVA PI Data Infrastructure



AVEVA™ PI Server - hybrid



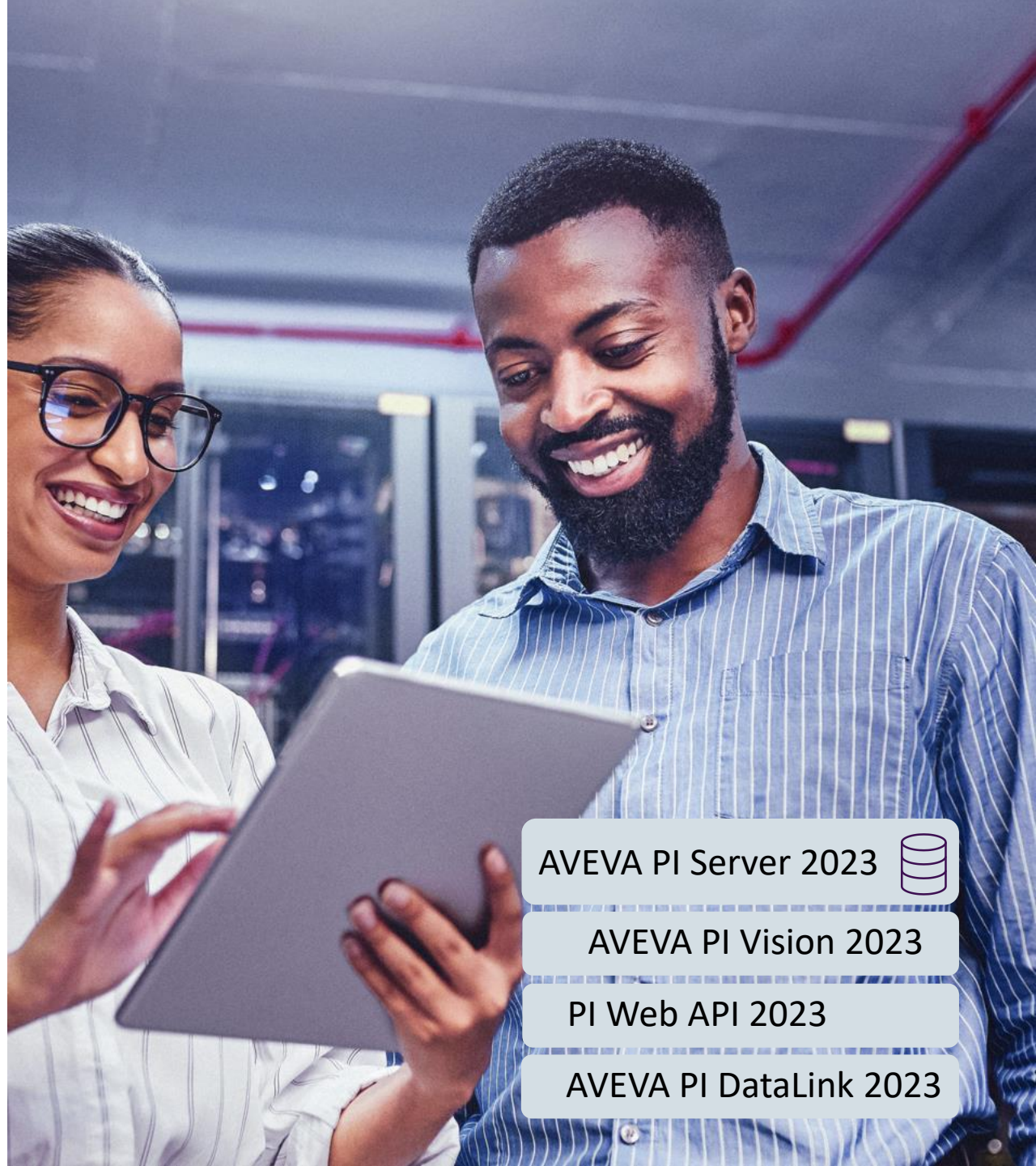
Modern authentication and AVEVA™ PI System™




Streamlined, secure access: modern authentication comes to AVEVA™ PI System™

Reducing IT effort and enabling single sign-on (SSO)

- OpenID Connect (OIDC) authentication and support for Transport Layer Security (TLS) coming soon
 - Backward compatible with clients leveraging Windows Integrated Security (WIS)
- Integrate AVEVA PI System with your enterprise identity service of choice
 - Enabling **single sign-on (SSO)**, helping you to more easily and securely manage resources and users across your enterprise



AVEVA PI Server 2023 

AVEVA PI Vision 2023

PI Web API 2023

AVEVA PI DataLink 2023

TLS Certificate rotation – Work in progress

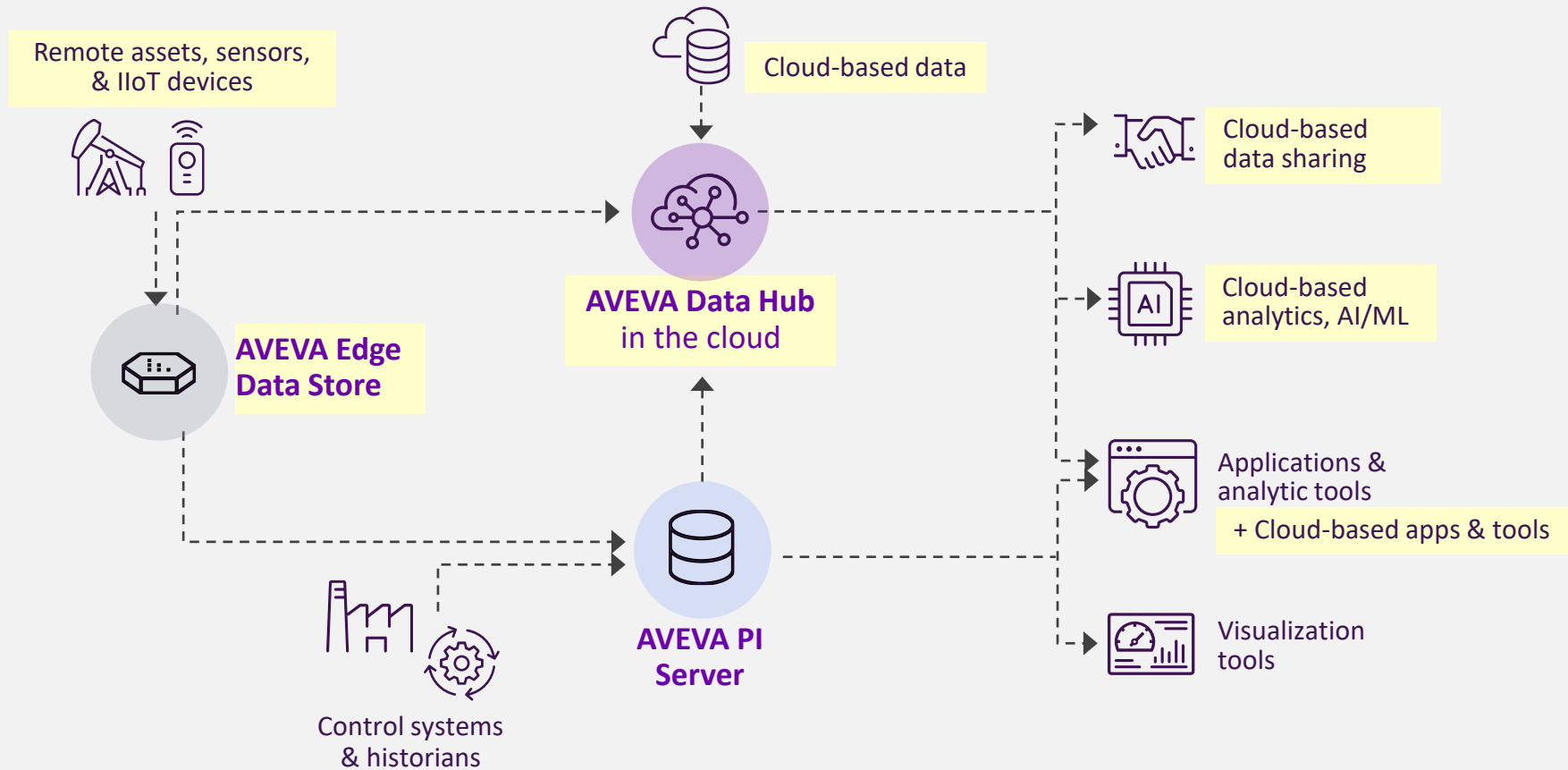
Automate secure connections for AVEVA PI Server 2023 with AVEVA System Platform, formerly Wonderware, common services

- Remove the burden of certificate management in AVEVA PI System
- Leverage capabilities of existing software
- Automatically renew certificates for all AVEVA PI System-related services



AVEVA's architectural advantage

Expanded, hybrid data infrastructure



Nothing is more important
than your operations

AVEVA™ PI Server - core

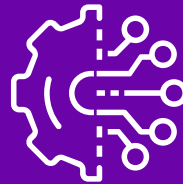
AVEVA™ PI Server is a rich product that offers a wide range of capabilities

Reliable



Dependable source
of data

Scalable



Store and serve
billions of values

Secure



Fix issues and inform
customers

AVEVA™ PI Server 2018 SP3



New in AVEVA™ PI Server 2018 SP3 Patch 5

Quickly and easily see analytics health and find problematic analyses

The screenshot displays the 'Management' interface of the AVEVA PI Server. The main area is a table listing various analyses, organized by site (Houston and Montreal) and analysis type. A search and filter overlay is present in the center of the table.

Status	Element	Name	Template	Backfilling
<input type="checkbox"/>	Houston	Total Good Tires Produced	Total Good Tires Produced	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Houston	Site Average Stress Score	Site Average Stress Score	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Houston\HOU.Press.01	Tracking Downtime	Tracking Downtime	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Houston\HOU.Press.01	Tracking OOC Events	Tracking OOC Events	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Houston\HOU.Press.01	Stress Calculation	Stress Calculation	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Houston\HOU.Press.01	Production Rate	Production Rate	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Houston\HOU.Press.01	OEE Metrics	OEE Metrics	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Houston\HOU.Press.02	Tracking Downtime	Tracking Downtime	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Houston\HOU.Press.02	Tracking OOC Events	Tracking OOC Events	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Houston\HOU.Press.02	Stress Calculation	Stress Calculation	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Houston\HOU.Press.02	Production Rate	Production Rate	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Houston\HOU.Press.02	OEE Metrics	OEE Metrics	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Houston\HOU.Press.03	Tracking Downtime	Tracking Downtime	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Houston\HOU.Press.03	Tracking OOC Events	Tracking OOC Events	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Houston\HOU.Press.03	Stress Calculation	Stress Calculation	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Houston\HOU.Press.03	Production Rate	Production Rate	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Houston\HOU.Press.03	OEE Metrics	OEE Metrics	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Houston\HOU.Press.04	Tracking OOC Events	Tracking OOC Events	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Houston\HOU.Press.04	Tracking Downtime	Tracking Downtime	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Houston\HOU.Press.04	Production Rate	Production Rate	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Houston\HOU.Press.04	Stress Calculation	Stress Calculation	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Houston\HOU.Press.04	OEE Metrics	OEE Metrics	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Montreal	Total Good Tires Produced	Total Good Tires Produced	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Montreal	Site Average Stress Score	Site Average Stress Score	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Montreal\MTL.Press.01	Production Rate	Production Rate	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Montreal\MTL.Press.01	Tracking Downtime	Tracking Downtime	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Montreal\MTL.Press.01	Tracking OOC Events	Tracking OOC Events	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Montreal\MTL.Press.01	Stress Calculation	Stress Calculation	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Montreal\MTL.Press.01	OEE Metrics	OEE Metrics	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Montreal\MTL.Press.02	Production Rate	Production Rate	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Montreal\MTL.Press.02	Tracking OOC Events	Tracking OOC Events	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Montreal\MTL.Press.02	Tracking Downtime	Tracking Downtime	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Montreal\MTL.Press.02	Stress Calculation	Stress Calculation	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Montreal\MTL.Press.02	OEE Metrics	OEE Metrics	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Montreal\MTL.Press.03	Production Rate	Production Rate	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Montreal\MTL.Press.03	Tracking OOC Events	Tracking OOC Events	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Montreal\MTL.Press.03	Tracking Downtime	Tracking Downtime	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Montreal\MTL.Press.03	Stress Calculation	Stress Calculation	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Montreal\MTL.Press.03	OEE Metrics	OEE Metrics	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Montreal\MTL.Press.04	Tracking Downtime	Tracking Downtime	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Montreal\MTL.Press.04	Production Rate	Production Rate	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Montreal\MTL.Press.04	Stress Calculation	Stress Calculation	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Montreal\MTL.Press.04	Tracking OOC Events	Tracking OOC Events	<input checked="" type="checkbox"/>

0 total analyses selected (0 on this page) 66 of 1 - 66 of 66

Operations
Enable | Disable selected analyses
Enable | Disable automatic recalculation for selected analyses
Custom | Cancel backfilling or recalculation for selected analyses

Pending Operations
No pending operations

Improved analyses search & filter

New in AVEVA™ PI Server 2018 SP3 Patch 5

Quickly and easily see analytics health and find problematic analyses

The screenshot displays the 'Management' console in AVEVA PI Server. The interface includes a navigation bar with tabs for 'Analyses', 'Performance', 'Service Summary', and 'Service Details'. A search bar at the top contains the text 'mtl'. Below the search bar, a message indicates '0 total analyses selected (0 on this page)' and '20 of 1 - 66 of 66'. The main area is a table with columns for 'Status', 'Element', 'Name', 'Template', and 'Backfilling'. The table lists various analyses such as 'Tracking OOC Events', 'OEE Metrics', 'Tracking Downtime', 'Production Rate', and 'Stress Calculation'. A blue callout box with a play button icon is overlaid on the table, containing the text 'Improved analyses search & filter'. On the right side, there are sections for 'Operations' and 'Pending Operations', both showing 'No pending operations'.

Status	Element	Name	Template	Backfilling
<input type="checkbox"/>	Montreal/MTL.Press.01	Tracking OOC Events	Tracking OOC Events	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Montreal/MTL.Press.01	OEE Metrics	OEE Metrics	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Montreal/MTL.Press.01	Tracking Downtime	Tracking Downtime	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Montreal/MTL.Press.01	Production Rate	Production Rate	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Montreal/MTL.Press.01	Stress Calculation	Stress Calculation	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Montreal/MTL.Press.02	OEE Metrics	OEE Metrics	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Montreal/MTL.Press.02	Tracking Downtime	Tracking Downtime	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Montreal/MTL.Press.02	Production Rate	Production Rate	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Montreal/MTL.Press.02	Tracking OOC Events	Tracking OOC Events	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Montreal/MTL.Press.02	Stress Calculation	Stress Calculation	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Montreal/MTL.Press.03	Tracking OOC Events	Tracking OOC Events	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Montreal/MTL.Press.03	Tracking Downtime	Tracking Downtime	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Montreal/MTL.Press.03	Stress Calculation	Stress Calculation	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Montreal/MTL.Press.03	Production Rate	Production Rate	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Montreal/MTL.Press.03	OEE Metrics	OEE Metrics	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Montreal/MTL.Press.04	Stress Calculation	Stress Calculation	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Montreal/MTL.Press.04	Production Rate	Production Rate	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Montreal/MTL.Press.04	Tracking OOC Events	Tracking OOC Events	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Montreal/MTL.Press.04	Tracking Downtime	Tracking Downtime	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Montreal/MTL.Press.04	OEE Metrics	OEE Metrics	<input checked="" type="checkbox"/>

New in AVEVA™ PI Server 2018 SP3 Patch 5

Quickly and easily see analytics health and find problematic analyses

The screenshot displays the 'Management' console in AVEVA PI Server, specifically the 'Analyses' tab. A table lists various analysis templates with columns for Element Template, Group Name, AF Database, Impact Score, Schedule, Skip Count, Success Count, Error Count, Average Elapsed (ms), Average Trigger (ms), and Group Trigger Ratio. A purple callout box highlights the 'Average Elapsed (ms)' column, indicating that it can be sorted. The table is sorted by this column in descending order, with the highest value being 3600000.00.

Element Template	Group Name	AF Database	Impact Score	Schedule	Skip Count	Success Count	Error Count	Average Elapsed (ms)	Average Trigger (ms)	Group Trigger Ratio
EventDetailsChildLabels	Analysis Template8	Database1	0.00	Natural	0	402	0	0	118279	0.00
WellTemplate	Analysis1	Database1	0.00	Natural	0	942	0	0	50879	0.00
Mining_Mine Truck	Calc Pitch	EF_MiningSim	0.00	Natural	0	1663	0	0	28843	0.00
Mining_Engine	Calc Pitch	EF_MiningSim	0.00	Natural	0	587	0	0	81548	0.00
Mining_Mine Truck	Calc Pitch	traits	0.00	Natural	0	1663	0	0	28843	0.00
Mining_Mine Truck	Calc Rack	traits	0.00	Natural	0	1663	0	0	28843	0.00
Mining_Mine Truck	Calc Rack	EF_MiningSim	0.00	Natural	0	1663	0	0	28843	0.00
Mining_Engine	Calc Rack	EF_MiningSim	0.00	Natural	0	587	0	0	81548	0.00
Mining_Mine Truck	Calc Roll	traits	0.00	Natural	0	1663	0	0	28843	0.00
Mining_Mine Truck	Calc Roll	EF_MiningSim	0.00	Natural	0	1663	0	0	28843	0.00
Mining_Engine	Calc Roll	EF_MiningSim	0.00	Natural	0	587	0	0	81548	0.00
CatalystTemplate	CatalystCycle_HDS	traits	0.00	Natural	0	944	0	0	50771	0.00
Tank Derived1	DerivedEF	CSPI Speedys Pizza	0.00	Natural	0	794	0	1	60605	0.00
Kettles	EFGen	SameNameEFs	0.00	Natural	0	2061	0	46	23345	0.00
JCar SuperVan	Engine Temperature High	CSPI Speedys Pizza	0.00	Natural	0	270	0	1	176643	0.00
Vehicle	Gas Tank Level Low	CSPI Speedys Pizza	0.00	Natural	0	270	0	0	176643	0.00
SK - OSisoft Office	Humidity	EF_MiningSim	0.00	Periodic[Frequency=3600]	0	0	0	0	3600000	0.00
Tank Template	Level Eq Zero	CSPI Speedys Pizza	0.00	Natural	0	0	0	9	53819	0.00
Tank	Low Tank Temperature	Velocity Terminals	0.00	Natural	0	0	0	0	9111	0.00
None	None-LoadSheddingNotSupported	CSPI Speedys Pizza	0.00	Natural	0	0	0	6	18130	0.00
None	None-LoadSheddingNotSupported	traits	0.01	Periodic[Frequency=300]	0	0	2178	300000	0.01	0.00
None	None-LoadSheddingNotSupported	Database1	0.00	Periodic[Frequency=30]	0	0	0	0	30000	0.00
None	None-LoadSheddingSupported	Wind Farm Small	0.09	Periodic[Frequency=30]	0	0	0	2576	30000	0.09
None	None-LoadSheddingSupported	EF_MiningSim	0.67	Natural	0	52405	0	20	918	0.02
None	None-LoadSheddingSupported	traits	0.01	Periodic[Frequency=5]	0	9599	0	49	5014	0.01
PressTemplate	OEE Metrics	Big Tires Co	0.06	Periodic[Frequency=300]	0	161	0	1425	300000	0.00
Mining_Mine Truck	OperationState Totals	EF_MiningSim	0.00	Periodic[Frequency=1]	0	47893	0	0	1005	0.00
Mining_Mine Truck	Periodic-FirstWeekdayOfTheMonth	EF_MiningSim	0.00	Periodic[Offset=43200;Day=Sun, Mon, Tue, Wed, Thu, Fri, Sat]	0	1	0	0	0	0.00
Mining_Mine Truck	Periodic-FirstWeekdayOfTheMonth	EF_MiningSim	0.00	Periodic[Offset=32400;Day=Sun, Mon, Tue, Wed, Thu, Fri, Sat]	0	1	0	7	0	0.00
Mining_Engine	Periodic-FirstWeekdayOfTheMonth	EF_MiningSim	0.00	Periodic[Offset=32400;Day=Sun, Mon, Tue, Wed, Thu, Fri, Sat]	0	1	0	6	0	0.00
Mining_BrakeandAxel	Periodic-FirstWeekdayOfTheMonth	EF_MiningSim	0.00	Periodic[Offset=32400;Day=Sun, Mon, Tue, Wed, Thu, Fri, Sat]	0	1	0	6	0	0.00
Tank Template	Pressure High Reason	CSPI Speedys Pizza	0.00	Natural	0	981	0	1	49038	0.00
PressTemplate	Production Rate	Big Tires Co	0.00	Natural	0	1503	0	0	31973	0.00
SiteTemplate	Site Average Stress Score	Big Tires Co	0.00	Natural	0	1933	0	0	24891	0.00
PressTemplate	Stress Calculation	Big Tires Co	0.00	Natural	0	2153	0	1	22347	0.00
SK - OSisoft Office	temperature data	EF_MiningSim	0.00	Periodic[Frequency=1020]	0	47	0	3	1020000	0.00
SK - OSisoft Office	temperature too low	EF_MiningSim	0.00	Natural	0	53	0	7	902308	0.00
SiteTemplate	Total Good Tires Produced	Big Tires Co	0.00	Natural	0	1503	0	0	31973	0.00
PressTemplate	Tracking Downtime	Big Tires Co	0.00	Natural	0	573	0	11	83748	0.00
PressTemplate	Tracking OOC Events	Big Tires Co	0.00	Natural	0	3988	0	1	12067	0.00
Mining_Mine Truck	Truck Accelerometer Front	EF_MiningSim	0.00	Natural	0	1219	0	0	39308	0.00
Mining_BrakeandAxel	Truck Accelerometer Front	EF_MiningSim	0.00	Natural	0	434	0	0	110224	0.00
Mining_Engine	Truck Accelerometer Front	EF_MiningSim	0.00	Natural	0	434	0	0	110224	0.00
Mining_Mine Truck	Truck Accelerometer Front1	EF_MiningSim	0.00	Natural	0	1219	0	1	39308	0.00
Mining_BrakeandAxel	Truck Accelerometer Front1	EF_MiningSim	0.00	Natural	0	434	0	0	110224	0.00
Mining_Engine	Truck Accelerometer Front1	EF_MiningSim	0.00	Natural	0	434	0	0	110224	0.00
Mining_Mine Truck	Truck Accelerometer Left	EF_MiningSim	0.00	Natural	0	1211	0	0	39617	0.00
Mining_BrakeandAxel	Truck Accelerometer Left	EF_MiningSim	0.00	Natural	0	411	0	0	116554	0.00

New table view with column sorting

New in AVEVA™ PI Server 2018 SP3 Patch 5

Quickly and easily see analytics health and find problematic analyses

The screenshot displays the 'Management' console in AVEVA PI Server, specifically the 'Analyses' tab. The main area is a table listing various analysis elements. A purple callout box with the text 'New table view with column sorting' is overlaid on the table. On the right side, a context menu is open, showing a list of columns that can be displayed or hidden. The 'Average Analysis Count' column is highlighted in blue in the menu.

Element Template	Group Name	AF Database	Impact Score	Schedule	Skip Count	Success Count	Error Count	Average Elapsed (ms)	Average Trigger (ms)	Group Trigger Ratio
None	None-LoadSheddingSupported	EF_MiningSim	0.67	Natural	0	52405	0	20	918	0.02
None	None-LoadSheddingSupported	Wind Farm Small	0.09	Periodic[Frequency=30]	0	1604	0	2576	30000	0.09
PressTemplate	OEE Metrics	Big Tires Co	0.06	Periodic[Frequency=300]	0	161	0	1425	300000	0.00
Mining_Mine Truck	Truck Motor Amps Excursion	EF_MiningSim	0.03	Natural	0	2709	0	42	17768	0.00
Mining_Mine Truck	Truck Payload Excursion	EF_MiningSim	0.02	Natural	0	3146	0	22	15300	0.00
Mining_Mine Truck	Truck Motor Amps Excursion	traits	0.02	Natural	0	2256	0	72	21338	0.00
None	None-LoadSheddingNotSupported	traits	0.01	Periodic[Frequency=300]	0	161	0	2178	300000	0.01
Mining_Mine Truck	Truck Engine RPM Excursion	EF_MiningSim	0.01	Natural	0	3484	0	13	13815	0.00
None	None-LoadSheddingSupported	traits	0.01	Periodic[Frequency=5]	0	9599	0	49	5014	0.01
Mining_Mine Truck	Truck Payload Excursion	traits	0.00	Natural	0	2942	0	13	16361	0.00
Kettles	EFGen	SameNameEFs	0.00	Natural	0	2061	0	46	23345	0.00
Mining_Mine Truck	OperationState Totals	EF_MiningSim	0.00	Periodic[Frequency=1]	0	47893	0	0	1005	0.00
None	None-LoadSheddingNotSupported	CSPI Speedys Pizza	0.00	Natural	0	2655	0	6	18130	0.00
Mining_Mine Truck	Truck Engine RPM Excursion	traits	0.00	Natural	0	3229	0	6	14906	0.00
PressTemplate	Tracking Downtime	Big Tires Co	0.00	Natural	0	573	0	11	83748	0.00
Mining_Mine Truck	Truck Tire Pressure	EF_MiningSim	0.00	Natural	0	573	0	2	15497	0.00
Tank	Low Tank Temperature	Velocity Terminals	0.00	Natural	0	0	0	0	9111	0.00
Tank Template	Level Eq Zero	CSPI Speedys Pizza	0.00	Natural	0	0	0	9	53819	0.00
Mining_Mine Truck	Truck Brake Temp LR Excursion	EF_MiningSim	0.00	Natural	0	0	0	1	17315	0.00
Mining_Mine Truck	Truck Brake Temp RR Excursion	EF_MiningSim	0.00	Natural	0	0	0	1	16478	0.00
PressTemplate	Stress Calculation	Big Tires Co	0.00	Natural	0	0	0	1	22347	0.00
Mining_Mine Truck	Truck Brake Temp LF Excursion	EF_MiningSim	0.00	Natural	0	0	0	1	16245	0.00
PressTemplate	Tracking OOC Events	Big Tires Co	0.00	Natural	0	0	0	1	12067	0.00
Mining_Mine Truck	Truck Accelerometer Front1	EF_MiningSim	0.00	Natural	0	1219	0	1	39308	0.00
Mining_Mine Truck	Truck Brake Temp RF Excursion	EF_MiningSim	0.00	Natural	0	2957	0	1	16278	0.00
Mining_Engine	Truck Engine RPM Excursion	EF_MiningSim	0.00	Natural	0	2159	0	7	22297	0.00
Mining_Mine Truck	Truck Brake Temp RR Excursion	traits	0.00	Natural	0	2489	0	1	19340	0.00
Mining_Engine	Truck Payload Excursion	EF_MiningSim	0.00	Natural	0	1539	0	7	31285	0.00
SK - OSisoft Office	temperature too low	EF_MiningSim	0.00	Natural	0	53	0	7	902308	0.00
Mining_Engine	Truck Motor Amps Excursion	EF_MiningSim	0.00	Natural	0	209	0	44	226154	0.00
PressTemplate	Production Rate	Big Tires Co	0.00	Natural	0	1503	0	0	31973	0.00
Mining_Mine Truck	Calc Pitch	EF_MiningSim	0.00	Natural	0	1643	0	0	28843	0.00
Mining_Mine Truck	Calc Rack	EF_MiningSim	0.00	Natural	0	1643	0	0	28843	0.00
Tank Template	Pressure High Reason	CSPI Speedys Pizza	0.00	Natural	0	981	0	1	49038	0.00
Mining_Mine Truck	Truck Brake Temp LF Excursion	traits	0.00	Natural	0	2520	0	0	19102	0.00
Mining_Mine Truck	Truck Brake Temp RF Excursion	traits	0.00	Natural	0	2511	0	0	19170	0.00
Mining_Mine Truck	Truck Brake Temp LR Excursion	traits	0.00	Natural	0	2399	0	0	20065	0.00
SK - OSisoft Office	temperature data	EF_MiningSim	0.00	Periodic[Frequency=1020]	0	47	0	3	1020000	0.00
Tank Derived1	DerivedEF	CSPI Speedys Pizza	0.00	Natural	0	794	0	1	60605	0.00
Mining_Mine Truck	Truck Accelerometer Front	EF_MiningSim	0.00	Natural	0	1219	0	0	39308	0.00
XCar SuperVan	Engine Temperature High	CSPI Speedys Pizza	0.00	Natural	0	270	0	1	176643	0.00
Mining_Mine Truck	Truck Frame Pitch Excursion	EF_MiningSim	0.00	Natural	0	1567	0	0	30611	0.00
Mining_Mine Truck	Truck Frame Rack Excursion	EF_MiningSim	0.00	Natural	0	1567	0	0	30611	0.00
Vehicle	Gas Tank Level Low	CSPI Speedys Pizza	0.00	Natural	0	270	0	0	176643	0.00
Mining_Mine Truck	Truck Accelerometer Rear	EF_MiningSim	0.00	Natural	0	1361	0	0	35248	0.00
Mining_Mine Truck	Calc Roll	EF_MiningSim	0.00	Natural	0	1663	0	0	28843	0.00
Mining_Mine Truck	Truck Frame Roll Excursion	EF_MiningSim	0.00	Natural	0	1567	0	0	30611	0.00
Mining_Mine Truck	Truck Accelerometer Left	EF_MiningSim	0.00	Natural	0	1211	0	0	39617	0.00
Mining_Mine Truck	Truck Accelerometer Right	EF_MiningSim	0.00	Natural	0	1211	0	0	39617	0.00

New in AVEVA™ PI Server 2018 SP3 Patch 5

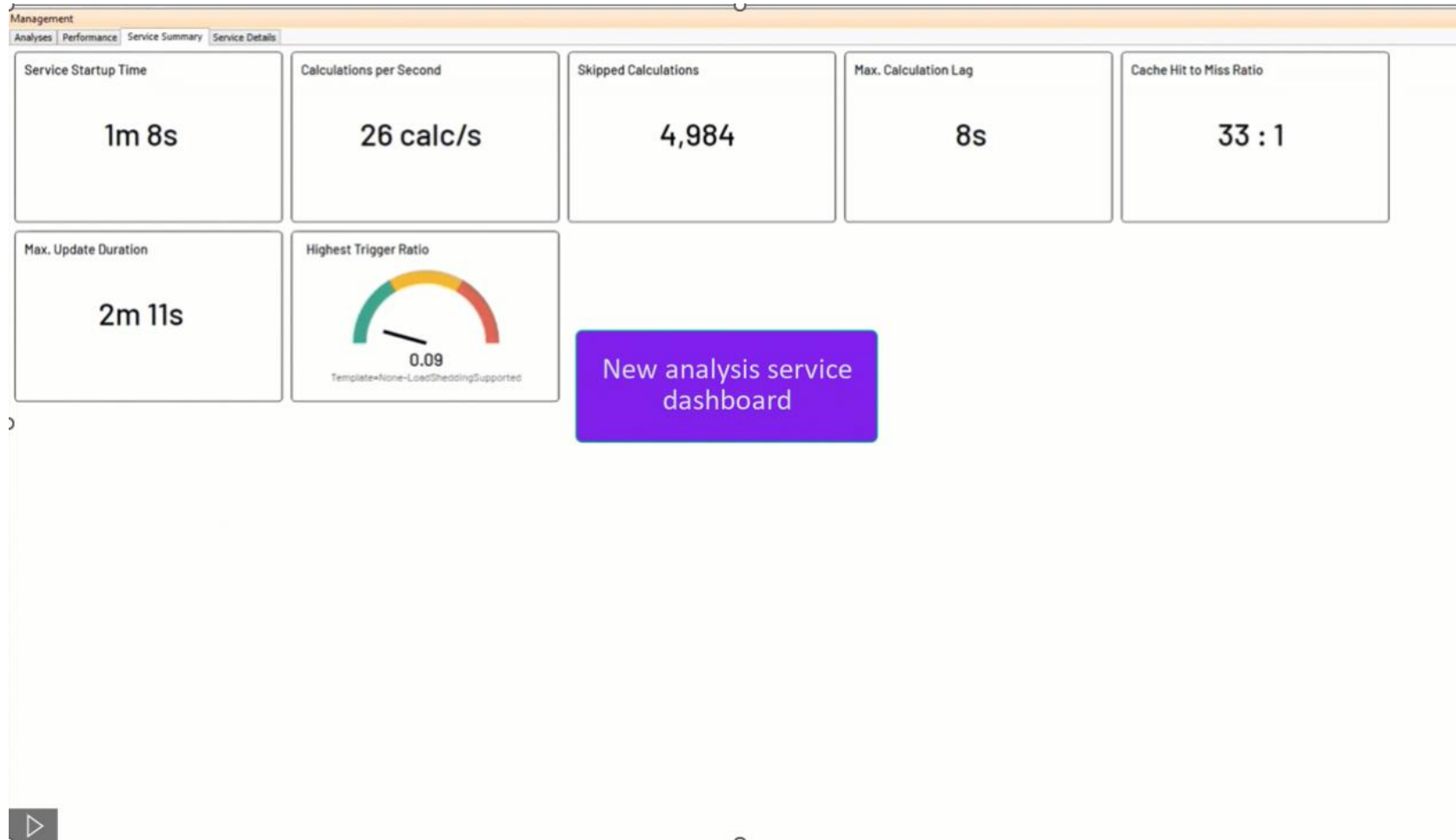
Quickly and easily see analytics health and find problematic analyses

The screenshot displays the 'Management' console in AVEVA PI Server, specifically the 'Analyses' tab. The interface includes a 'Filter' section and a 'Group by' dropdown set to 'Template'. The main area contains a table with the following columns: Element Template, Group Name, AF Database, Impact Score, Schedule, Skip Count, Success Count, Error Count, Average Elapsed (ms), Average Trigger (ms), Group Trigger Ratio, First Trigger Time, and Last Trigger Time. The table lists various analysis templates such as 'None-LoadSheddingSupported', 'PresTemplate', 'Mining_Mine Truck', 'Mining_Engine', and 'SK - OSisoft Office', each with associated performance metrics and trigger times.

Element Template	Group Name	AF Database	Impact Score	Schedule	Skip Count	Success Count	Error Count	Average Elapsed (ms)	Average Trigger (ms)	Group Trigger Ratio	First Trigger Time	Last Trigger Time
None	None-LoadSheddingSupported	EF_MiningSim	0.67	Natural	0	52405	0	20	918	0.02	9/15/2022 6:38:01 AM	9/15/2022 8:00:13 PM
None	None-LoadSheddingSupported	Wind Farm Small	0.09	Periodic(Frequency=30)	0	1604	0	2576	30000	0.09	9/15/2022 6:38:30 AM	9/15/2022 8:00:00 PM
PresTemplate	QEE Metrics	Big Tires Co	0.06	Periodic(Frequency=300)	0	161	0	1425	300000	0.00	9/15/2022 6:40:00 AM	9/15/2022 8:00:00 PM
Mining_Mine Truck	Truck Motor Amps Excursion	EF_MiningSim	0.03	Natural	0	2709	0	42	17768	0.00	9/15/2022 6:38:01 AM	9/15/2022 7:59:58 PM
Mining_Mine Truck	Truck Payload Excursion	EF_MiningSim	0.02	Natural	0	3146	0	22	15300	0.00	9/15/2022 6:38:01 AM	9/15/2022 7:59:58 PM
Mining_Mine Truck	Truck Motor Amps Excursion	trafts	0.02	Natural	0	2256	0	72	21338	0.00	9/15/2022 6:38:01 AM	9/15/2022 7:59:58 PM
None	None-LoadSheddingNotSupported	trafts	0.01	Periodic(Frequency=300)	0	161	0	2178	300000	0.01	9/15/2022 6:40:00 AM	9/15/2022 8:00:00 PM
Mining_Mine Truck	Truck Engine RPM Excursion	EF_MiningSim	0.01	Natural	0	3484	0	13	13815	0.00	9/15/2022 6:38:01 AM	9/15/2022 7:59:58 PM
None	None-LoadSheddingSupported	trafts	0.01	Periodic(Frequency=5)	0	9599	0	49	5014	0.01	9/15/2022 6:38:05 AM	9/15/2022 8:00:10 PM
Mining_Mine Truck	Truck Payload Excursion	trafts	0.00	Natural	0	2942	0	13	16361	0.00	9/15/2022 6:38:01 AM	9/15/2022 7:59:58 PM
Kettles	EFGen	SameNameEfs	0.00	Natural	0	2061	0	46	23345	0.00	9/15/2022 6:38:35 AM	9/15/2022 8:00:05 PM
Mining_Mine Truck	OperationState Totals	EF_MiningSim	0.00	Periodic(Frequency=1)	0	47893	0	0	1005	0.00	9/15/2022 6:38:01 AM	9/15/2022 8:00:13 PM
None	None-LoadSheddingNotSupported	CSPI Speedys Pizza	0.00	Natural	0	2655	0	6	18130	0.00	9/15/2022 6:38:05 AM	9/15/2022 8:00:01 PM
Mining_Mine Truck	Truck Engine RPM Excursion	trafts	0.00	Natural	0	3229	0	6	14906	0.00	9/15/2022 6:38:01 AM	9/15/2022 7:59:58 PM
PresTemplate	Tracking Downtime	Big Tires Co	0.00	Natural	0	573	0	11	83748	0.00	9/15/2022 6:39:37 AM	9/15/2022 7:58:01 PM
Mining_Mine Truck	Truck Tire Pressure	EF_MiningSim	0.00	Natural	0	3106	0	2	15497	0.00	9/15/2022 6:38:01 AM	9/15/2022 7:59:58 PM
Tank	Low Tank Temperature	Velocity Terminals	0.00	Natural	0	5283	0	0	9111	0.00	9/15/2022 6:38:01 AM	9/15/2022 8:00:05 PM
Tank Template	Level Eq Zero	CSPI Speedys Pizza	0.00	Natural	0	895	0	9	53819	0.00	9/15/2022 6:38:07 AM	9/15/2022 8:00:01 PM
Mining_Mine Truck	Truck Brake Temp LR Excursion	EF_MiningSim	0.00	Natural	0	2780	0	1	17315	0.00	9/15/2022 6:38:01 AM	9/15/2022 7:59:58 PM
Mining_Mine Truck	Truck Brake Temp RR Excursion	EF_MiningSim	0.00	Natural	0	2921	0	1	16478	0.00	9/15/2022 6:38:01 AM	9/15/2022 7:59:58 PM
PresTemplate	Stress Calculation	Big Tires Co	0.00	Natural	0	2153	0	1	22347	0.00	9/15/2022 6:38:30 AM	9/15/2022 8:00:00 PM
Mining_Mine Truck	Truck Brake Temp LF Excursion	EF_MiningSim	0.00	Natural	0	2963	0	1	16245	0.00	9/15/2022 6:38:01 AM	9/15/2022 7:59:58 PM
PresTemplate	Tracking OOC Events	Big Tires Co	0.00	Natural	0	3988	0	1	12067	0.00	9/15/2022 6:38:07 AM	9/15/2022 8:00:00 PM
Mining_Mine Truck	Truck Accelerometer Front1	EF_MiningSim	0.00	Natural	0	1219	0	1	39308	0.00	9/15/2022 6:41:01 AM	9/15/2022 7:58:58 PM
Mining_Mine Truck	Truck Brake Temp RF Excursion	EF_MiningSim	0.00	Natural	0	2957	0	1	16278	0.00	9/15/2022 6:38:01 AM	9/15/2022 7:59:58 PM
Mining_Engine	Truck Engine RPM Excursion	EF_MiningSim	0.00	Natural	0	2159	0	7	22297	0.00	9/15/2022 6:38:01 AM	9/15/2022 7:59:58 PM
Mining_Mine Truck	Truck Brake Temp RR Excursion	trafts	0.00	Natural	0	2489	0	1	19340	0.00	9/15/2022 6:38:01 AM	9/15/2022 7:59:58 PM
Mining_Engine	Truck Payload Excursion	EF_MiningSim	0.00	Natural	0	1539	0	7	31285	0.00	9/15/2022 6:38:01 AM	9/15/2022 7:59:58 PM
SK - OSisoft Office	temperature too low	EF_MiningSim	0.00	Natural	0	53	0	7	902308	0.00	9/15/2022 6:50:00 AM	9/15/2022 7:52:00 PM
Mining_Engine	Truck Motor Amps Excursion	EF_MiningSim	0.00	Natural	0	209	0	44	226154	0.00	9/15/2022 6:49:58 AM	9/15/2022 7:53:58 PM
PresTemplate	Production Rate	Big Tires Co	0.00	Natural	0	1503	0	0	31973	0.00	9/15/2022 6:38:07 AM	9/15/2022 7:58:31 PM
Mining_Mine Truck	Calc Pitch	EF_MiningSim	0.00	Natural	0	1663	0	0	28843	0.00	9/15/2022 6:41:01 AM	9/15/2022 7:59:58 PM
Mining_Mine Truck	Calc Rack	EF_MiningSim	0.00	Natural	0	1663	0	0	28843	0.00	9/15/2022 6:41:01 AM	9/15/2022 7:59:58 PM
Tank Template	Pressure High Reason	CSPI Speedys Pizza	0.00	Natural	0	981	0	1	49038	0.00	9/15/2022 6:38:01 AM	9/15/2022 7:58:58 PM
Mining_Mine Truck	Truck Brake Temp LF Excursion	trafts	0.00	Natural	0	2520	0	0	19102	0.00	9/15/2022 6:38:01 AM	9/15/2022 7:59:58 PM
Mining_Mine Truck	Truck Brake Temp RF Excursion	trafts	0.00	Natural	0	2511	0	0	19170	0.00	9/15/2022 6:38:01 AM	9/15/2022 7:59:58 PM
Mining_Mine Truck	Truck Brake Temp LR Excursion	trafts	0.00	Natural	0	2399	0	0	20065	0.00	9/15/2022 6:38:01 AM	9/15/2022 7:59:58 PM
SK - OSisoft Office	temperature data	EF_MiningSim	0.00	Periodic(Frequency=1020)	0	47	0	3	1020000	0.00	9/15/2022 6:50:00 AM	9/15/2022 7:52:00 PM
Tank Derived1	DerivedEF	CSPI Speedys Pizza	0.00	Natural	0	794	0	1	60605	0.00	9/15/2022 6:39:00 AM	9/15/2022 8:00:00 PM
Mining_Mine Truck	Truck Accelerometer Front	EF_MiningSim	0.00	Natural	0	1219	0	0	39308	0.00	9/15/2022 6:41:01 AM	9/15/2022 7:58:58 PM
JCar SuperVan	Engine Temperature High	CSPI Speedys Pizza	0.00	Natural	0	270	0	1	176643	0.00	9/15/2022 6:41:01 AM	9/15/2022 7:52:58 PM
Mining_Mine Truck	Truck Frame Pitch Excursion	EF_MiningSim	0.00	Natural	0	1567	0	0	30611	0.00	9/15/2022 6:41:01 AM	9/15/2022 7:59:58 PM
Mining_Mine Truck	Truck Frame Rack Excursion	EF_MiningSim	0.00	Natural	0	1567	0	0	30611	0.00	9/15/2022 6:41:01 AM	9/15/2022 7:59:58 PM
Vehicle	Gas Tank Level Low	CSPI Speedys Pizza	0.00	Natural	0	270	0	0	176643	0.00	9/15/2022 6:41:01 AM	9/15/2022 7:52:58 PM
Mining_Mine Truck	Truck Accelerometer Rear	EF_MiningSim	0.00	Natural	0	1361	0	0	35248	0.00	9/15/2022 6:41:01 AM	9/15/2022 7:59:58 PM
Mining_Mine Truck	Calc Roll	EF_MiningSim	0.00	Natural	0	1663	0	0	28843	0.00	9/15/2022 6:41:01 AM	9/15/2022 7:59:58 PM
Mining_Mine Truck	Truck Frame Roll Excursion	EF_MiningSim	0.00	Natural	0	1567	0	0	30611	0.00	9/15/2022 6:41:01 AM	9/15/2022 7:59:58 PM
Mining_Mine Truck	Truck Accelerometer Left	EF_MiningSim	0.00	Natural	0	1211	0	0	39617	0.00	9/15/2022 6:41:01 AM	9/15/2022 7:59:58 PM
Mining_Mine Truck	Truck Accelerometer Right	EF_MiningSim	0.00	Natural	0	1211	0	0	39617	0.00	9/15/2022 6:41:01 AM	9/15/2022 7:59:58 PM

New in AVEVA™ PI Server 2018 SP3 Patch 5

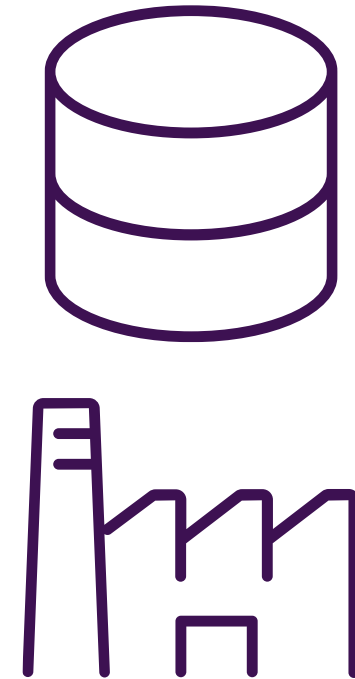
Quickly and easily see analytics health and find problematic analyses



AVEVA™ PI Server 2018 SP3 Patch 6

Continuing our commitment to core AVEVA™ PI Server capabilities

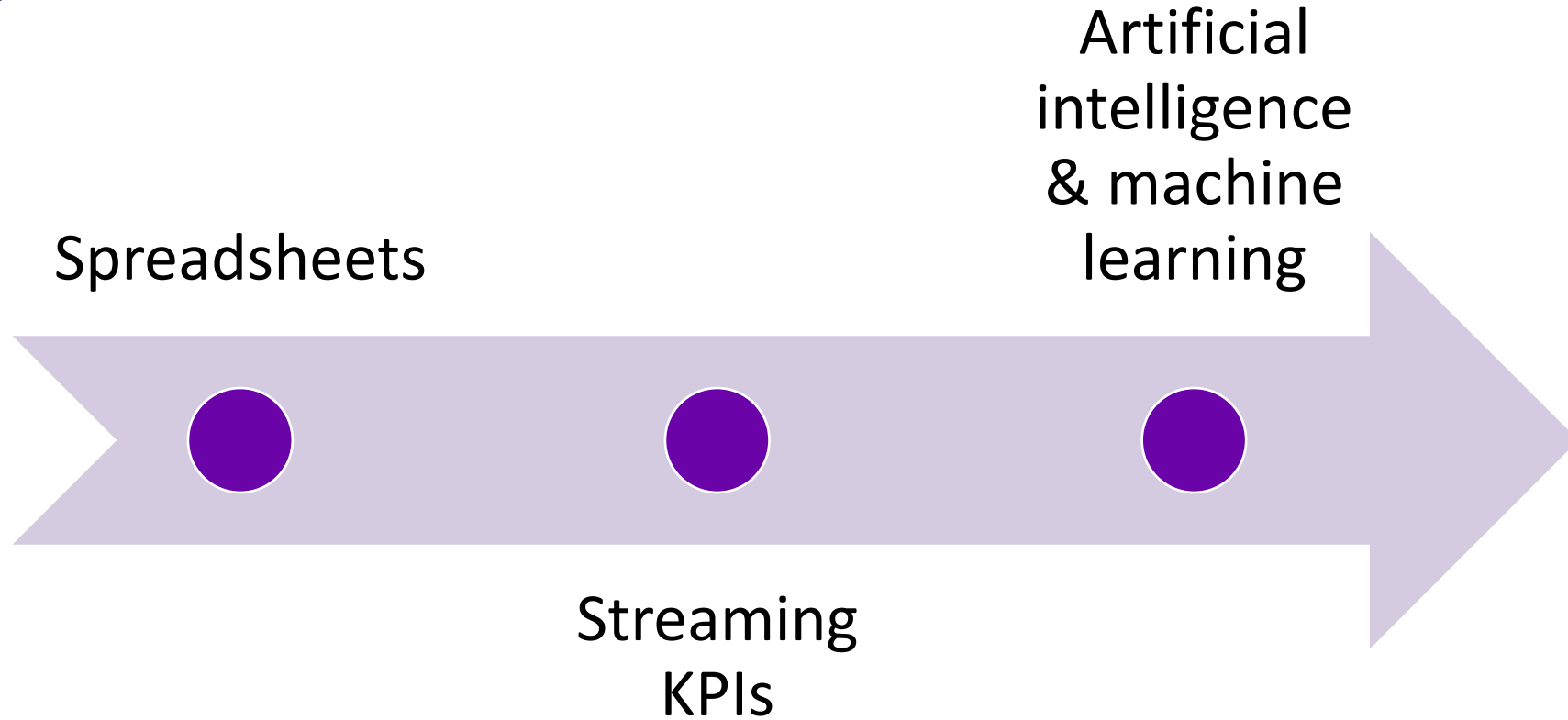
- Incorporating high-priority fixes
- We will continue to do what is right
- This is the start of this branch



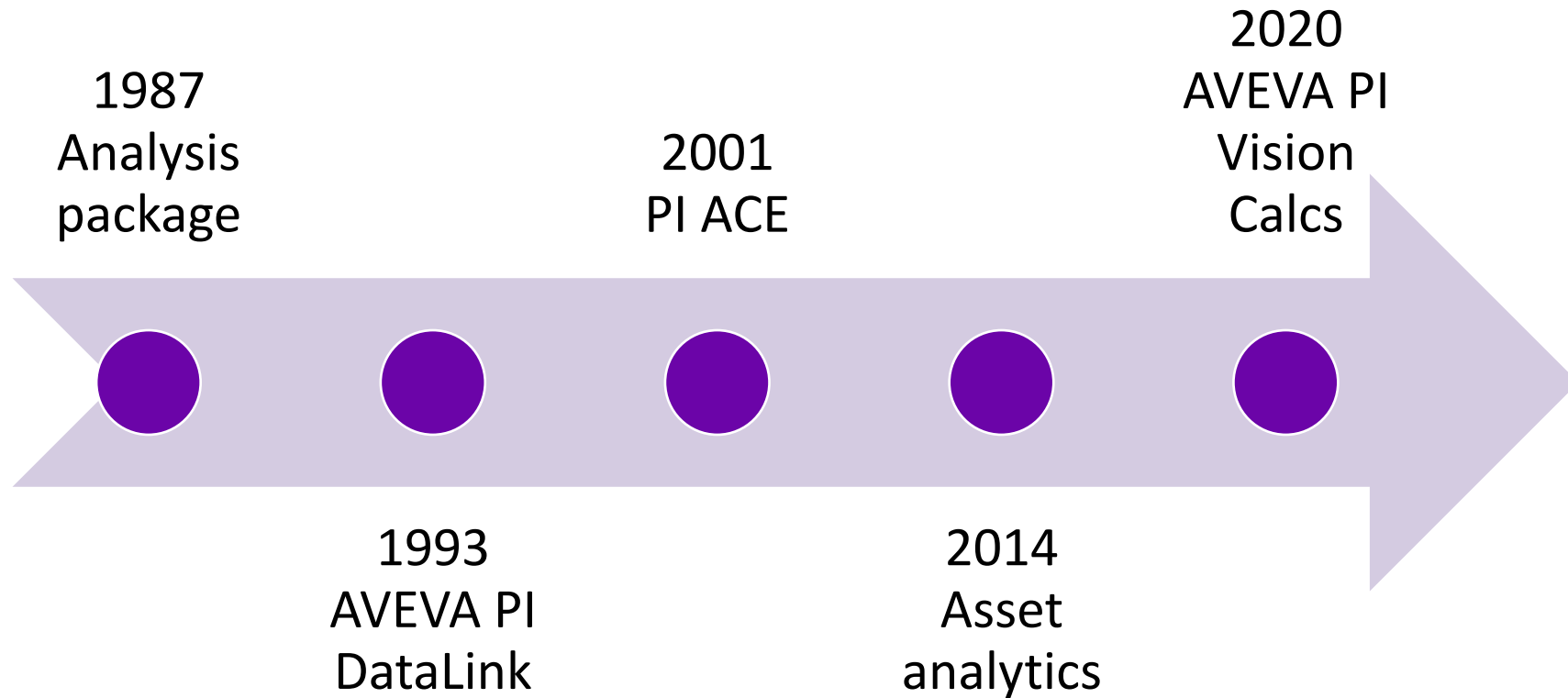
Supporting evolving calculation needs



Evolving calculation needs



AVEVA™ PI System™ - the journey with calculations



AVEVA™ PI Server turns data into information

Calculations are critical

- Ability to quickly deploy meaningful calculations to an entire fleet and backfill years of data with a few clicks
- Consolidate millions of data points into actionable information
- Roughly 1/3 of all feedback items are for analytics and event frames

$$f(x)$$

Asset Analytics



Event Frames

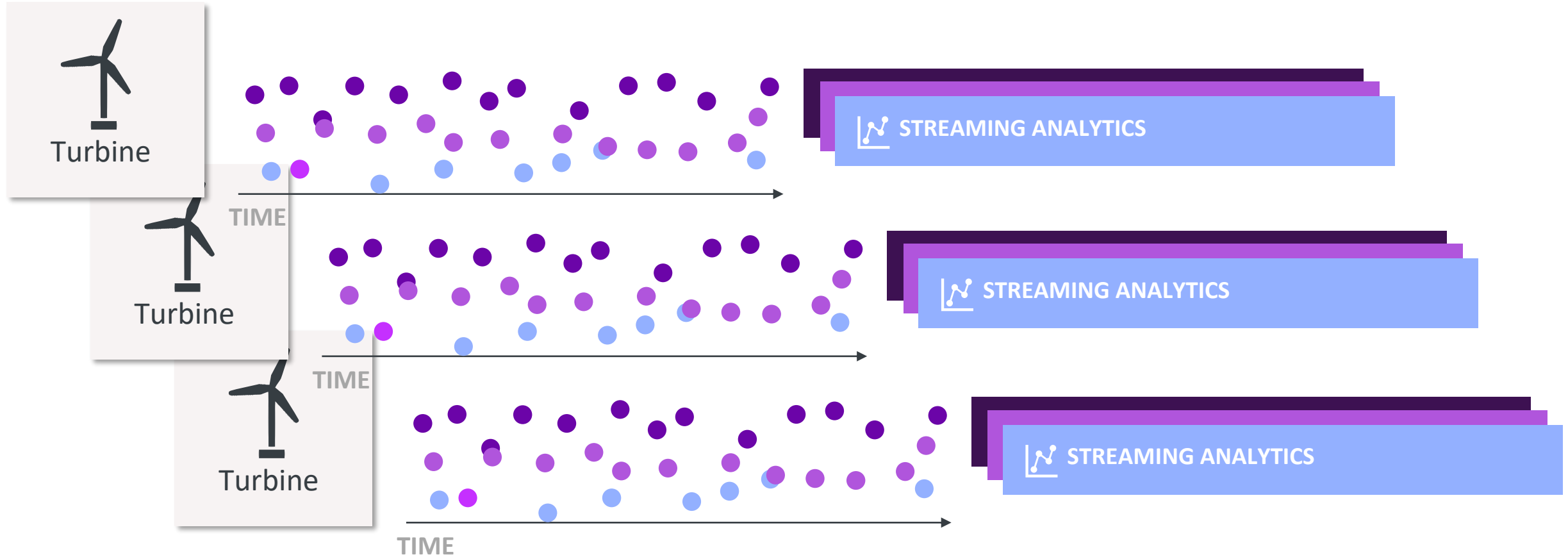
Think of AVEVA™ PI Server as a milkshake

- Fresh data is continuously refilling
- Straws are data consumers
- Asset Analytics is a fire hose
- Out-of-order data is cream and sugar
- The glass is the hardware



Backfilling improvements

Reducing the impact of out of order writes



Update manager enhancements

- Increase AVEVA PI System data archive's ability to serve consumers and producers of data

Improve Asset Analytics Data Cache performance to handle large scale changes

There is a considerable amount of downtime in our system (20+ minutes) when a template change is performed. The root cause is a limitation on how the analysis service handles the removal of AF Attributes from the Data Cache. Due to this limitation it takes a considerable amount of time to rebuild the cache.

Analytics come in different shapes, forms, and levels of complexity

Continuing to invest on-premises and complementing with unparalleled capabilities of cloud

Simple or more advanced streaming analytics

Name	Expression
BOW	IF Weekday('*') = 1 THEN 't' ELSE 't' - 86400 *
AvgWTD	TagAvg('Feed Rate', BOW, '*')
MaxDif	IF Weekday('*') = 1 AND '*' = Bod('*') THEN 0 E
TarWTD	Roundfrac(Convert(Convert('Daily Target' * Week
ActWTD	Roundfrac(Convert(Convert(Int(TagTot('Feed Rate
CurDif	Abs(TarWTD-ActWTD)

E.g., unit % uptime, the overall efficiency, total power, etc

On-prem AI and ML with AVEVA Predictive Analytics



E.g., Anomaly detection, fault diagnostics, time to failure forecast, prescriptive guidance

Cloud DATA SCIENCE and advanced analytics

AVEVA™ Data Hub > Data Views

Name	Description	Description...	Data View Shape
Wind Turbine Analysis			

Filter Fields... + Add Edit Auto Refresh

Index Field

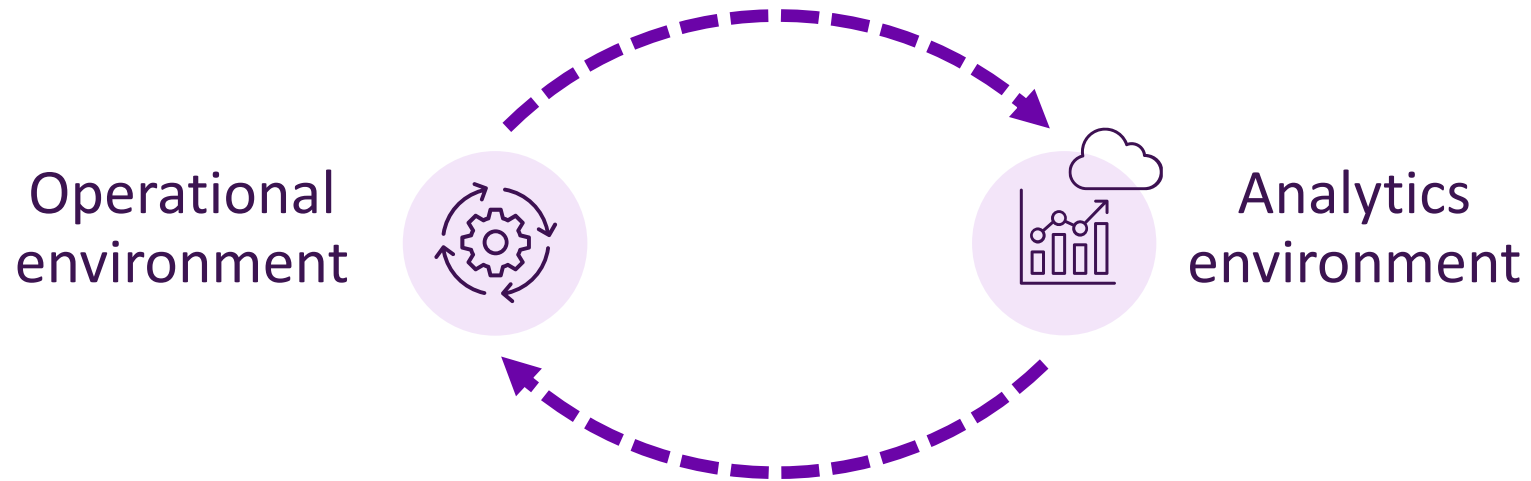
Timestamp

Timestamp	Name	Turbine Name	Rotor Speed Value
Oct 18, 2022, 12:00:00 AM	Wind Turbine 01	WTG	12.065339659452144
Oct 18, 2022, 1:00:00 AM	Wind Turbine 01	WTG	12.173735265638864
Oct 18, 2022, 2:00:00 AM	Wind Turbine 01	WTG	12.615554143718391
Oct 18, 2022, 3:00:00 AM	Wind Turbine 01	WTG	8.111737703558182
Oct 18, 2022, 4:00:00 AM	Wind Turbine 01	WTG	13.222879141151453
Oct 18, 2022, 5:00:00 AM	Wind Turbine 01	WTG	12.025364649177364
Oct 18, 2022, 6:00:00 AM	Wind Turbine 01	WTG	11.58120830274004
Oct 18, 2022, 7:00:00 AM	Wind Turbine 01	WTG	13.188860061406111
Oct 18, 2022, 8:00:00 AM	Wind Turbine 01	WTG	13.421918409665951
Oct 18, 2022, 9:00:00 AM	Wind Turbine 01	WTG	13.38923969778691

E.g., How do we predict blockages in fuel mills before they cause costly outages?

Underutilized data is a gold mine for data scientists...

...but the real value is found when you return it to operations.



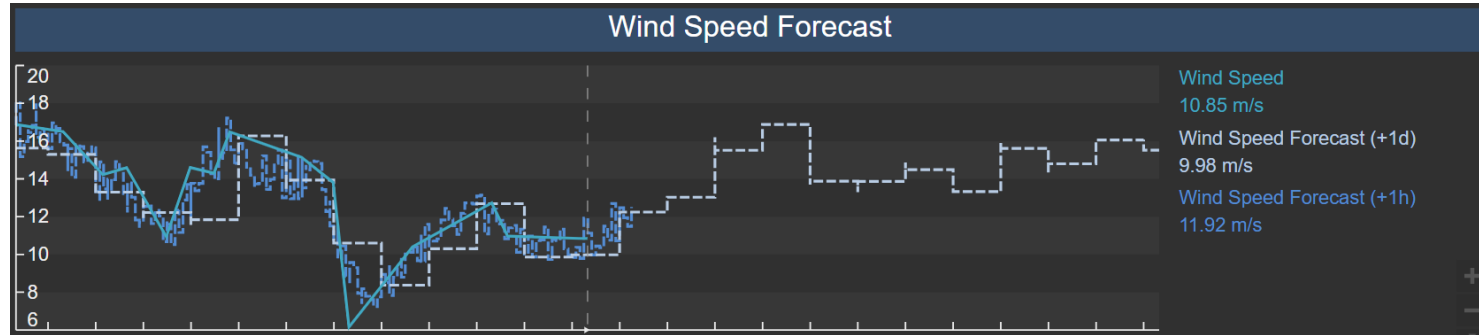
Bring AVEVA™ Data Hub data back to AVEVA™ PI Server

The screenshot displays the AVEVA Data Hub interface for a 'Wind Forecast' table. The table has the following columns: Id, Name, Description, Type, and Create Future PI Point?. There are 13 rows of data, each with a checkbox in the Id column and a trash icon in the Create Future PI Point? column.

<input type="checkbox"/>	Id	Name	Description	Type	Create Future PI Point?	
<input type="checkbox"/>	PI_forecast_1545	GE01.Wind Speed Forecast ...		PI-Float64	Yes	
<input type="checkbox"/>	PI_forecast_1815	GE05.Wind Speed Forecast ...		PI-Float64	Yes	
<input type="checkbox"/>	PI_forecast_1710	GE04.Wind Speed Forecast ...		PI-Float64	Yes	
<input type="checkbox"/>	PI_forecast_1600	GE02.Wind Speed Forecast ...		PI-Float64	Yes	
<input type="checkbox"/>	PI_forecast_1655	GE03.Wind Speed Forecast ...		PI-Float64	Yes	
<input type="checkbox"/>	PI_forecast_2085	GE09.Wind Speed Forecast ...		PI-Float64	Yes	
<input type="checkbox"/>	PI_forecast_1870	GE06.Wind Speed Forecast ...		PI-Float64	Yes	
<input type="checkbox"/>	PI_forecast_1925	GE07.Wind Speed Forecast ...		PI-Float64	Yes	
<input type="checkbox"/>	PI_forecast_2030	GE08.Wind Speed Forecast ...		PI-Float64	Yes	
<input type="checkbox"/>	PI_forecast_2140	GE10.Wind Speed Forecast ...		PI-Float64	Yes	

The search bar on the left shows 'Forecast' and a list of 13 items with checkboxes. The bottom status bar shows '0 Streams Selected' and a 'Save and Close' button.

Bring AVEVA™ Data Hub data back to AVEVA™ PI Server



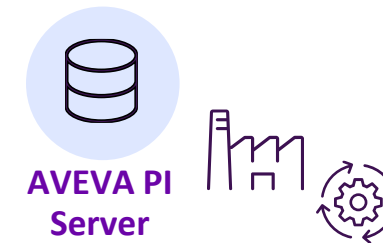
Wind Forecast

Search for Forecast

Id	Name	Description	Type	Create Future PI Point?	
PI_forecast_1545	GE01 Wind Speed Forecast ...		PI-Float64	Yes	<input type="checkbox"/>
PI_forecast_1815	GE05 Wind Speed Forecast ...		PI-Float64	Yes	<input type="checkbox"/>
PI_forecast_1710	GE04 Wind Speed Forecast ...		PI-Float64	Yes	<input type="checkbox"/>
PI_forecast_1600	GE02 Wind Speed Forecast ...		PI-Float64	Yes	<input type="checkbox"/>
PI_forecast_1655	GE03 Wind Speed Forecast ...		PI-Float64	Yes	<input type="checkbox"/>
PI_forecast_2085	GE09 Wind Speed Forecast ...		PI-Float64	Yes	<input type="checkbox"/>
PI_forecast_1870	GE06 Wind Speed Forecast ...		PI-Float64	Yes	<input type="checkbox"/>
PI_forecast_1925	GE07 Wind Speed Forecast ...		PI-Float64	Yes	<input type="checkbox"/>
PI_forecast_2030	GE08 Wind Speed Forecast ...		PI-Float64	Yes	<input type="checkbox"/>
PI_forecast_2140	GE10 Wind Speed Forecast ...		PI-Float64	Yes	<input type="checkbox"/>

1 - 13 of 13

0 Streams Selected Add Close Save and Close



Recently released in AVEVA™ PI Server

Released: AVEVA PI Server 2018 SP3 Patch 5

Diagnostics for analytics

Displaying the performance and health of calculations

Released: AVEVA PI Server 2023 (as part of AVEVA PI Data Infrastructure)

Modern authentication

OpenID Connect

TLS communication

Transport security

Manageable software

Seamless infrastructure

Increased value and scope of data

What is next for AVEVA™ PI Server?

In Development

Automatic TLS certificate rotation

Continued integration with AVEVA Platform Common Services' capabilities

Out-of-order events improvements

Enabling large writes and reads at the same time

Update manager improvements

Ability to quickly serve consumers after an outage or change

More data archive efficiencies

Implement efficiencies to remove identified bottlenecks

AVEVA Data Hub to AVEVA PI Server writes

Leveraging the advanced analytics capabilities in the cloud and bringing the results and insight back to AVEVA PI Server

.NET 8 AF SDK

New PI AF SDK version so that AVEVA PI System data can be more easily consumed by modern applications

PI Server 2018 SP3 Patch 6

High-value remediations

Continuing our commitment to the security, scalability, and reliability of AVEVA PI Server core

Researching

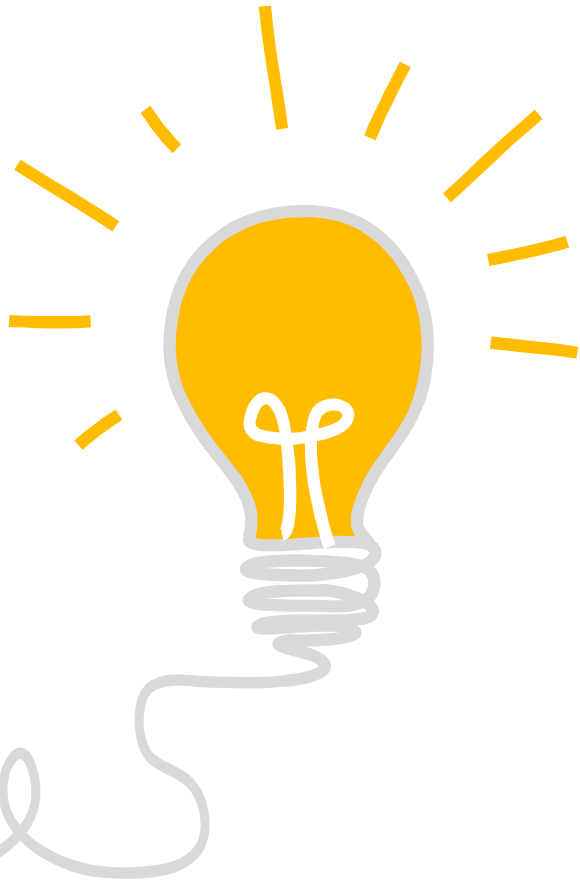
Azure SQL support

Ability to use Azure SQL as a host for the asset framework database

Asset management across AVEVA PI Data Infrastructure

Ability to govern assets from AVEVA Data Hub to AVEVA PI Server and beyond

Influence AVEVA™ PI System™ roadmap



<https://feedback.aveva.com>

Let us know your product feedback!



Kevin Geneva

Sr Technical Product Manager

- AVEVA
- kevin.geneva@aveva.com

Questions?

Please wait for the microphone.
State your name and company.



Please remember to...

Navigate to this session in the mobile app to complete the survey.



Thank you!

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ABOUT AVEVA

AVEVA is a world leader in industrial software, providing engineering and operational solutions across multiple industries, including oil and gas, chemical, pharmaceutical, power and utilities, marine, renewables, and food and beverage. Our agnostic and open architecture helps organizations design, build, operate, maintain and optimize the complete lifecycle of complex industrial assets, from production plants and offshore platforms to manufactured consumer goods.

Over 20,000 enterprises in over 100 countries rely on AVEVA to help them deliver life's essentials: safe and reliable energy, food, medicines, infrastructure and more. By connecting people with trusted information and AI-enriched insights, AVEVA enables teams to engineer efficiently and optimize operations, driving growth and sustainability.

Named as one of the world's most innovative companies, AVEVA supports customers with open solutions and the expertise of more than 6,400 employees, 5,000 partners and 5,700 certified developers. The company is headquartered in Cambridge, UK.

Learn more at www.aveva.com