



DATASHEET

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# AVEVA™ PI Server

Proven industrial data storage, enrichment and analysis engine

AVEVA PI Server is industry's leading enterprise-class solution for aggregating, contextualizing, and using real-time operations data across your enterprise. Now you can give decision-makers within operations and beyond a single, trusted source of high-fidelity data to discover valuable insights and make data-driven decisions.

**AVEVA**

# Transforming data into information

By the time you take your first sip of coffee, this morning's data is already old news. Your business can't afford to miss out on the critical operations insights that come from accurate and reliable real-time data. Unfortunately, critical operations data is too often scattered, siloed, or difficult to access, making it hard for your engineers and analysts to benefit from the data.

That's where AVEVA PI Server comes in. It acts as a single source of truth for operations data, allowing you to easily share it across your enterprise. AVEVA PI Server delivers real-time, contextualized information so users can quickly gain insights and make those critical decisions that drive progress, fuel digital transformation, and benefit your bottom line.

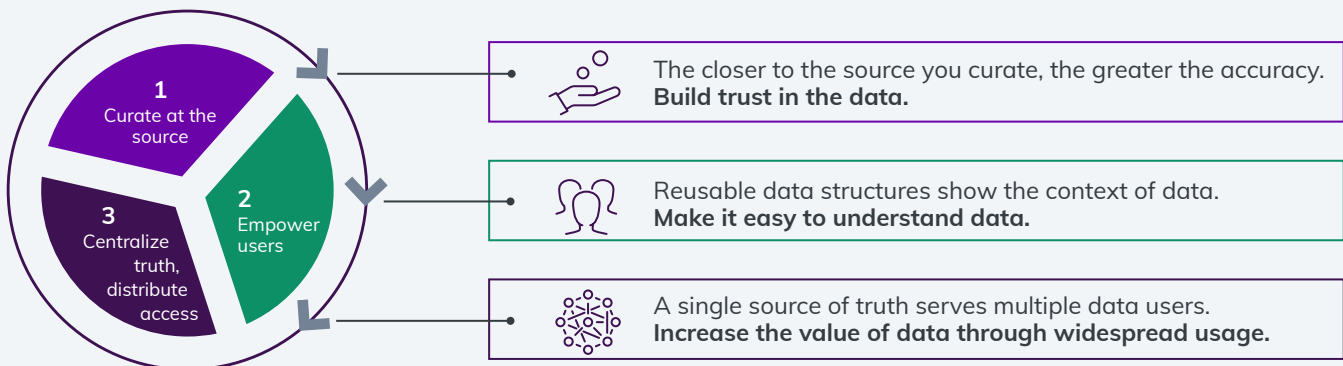
AVEVA PI Server unifies disparate data sources to create a foundational system of record for your operations data. When your data is in one accessible place, it's easier to identify anomalies, monitor health and safety, track resource usage, and find ways to boost productivity. It transforms raw historical data streams and context into valuable, predictive information and operations insight.

Trusted by thousands of companies – and more than two-thirds of the industrial Fortune 500 – AVEVA PI Server is far more than just a datastore.

## At a glance:

- Securely archive decades worth of time-series and operations data. Make it available to the people who need it at every level of your organization.
- Gather data from disparate sources and formats into a single location.
- Contextualize, refine, and analyze data to uncover operations and business insights.
- Capture and compare data from events you define.
- Set up notifications to receive automatic alerts about changes in your operations.
- Enable secure audit trails to ensure you remain compliant with government and industry regulations.
- Protect your valuable data through robust end-to-end security.
- Make operations data available to decision-makers at every level of your organization.

## Accelerate data-driven operations



Three data management design principles help you create a data-driven culture for operations. The keys are building trust through early curation, leveraging existing expertise, and removing barriers to access so that you engage your entire organization.

# Anatomy of AVEVA PI Server

## AVEVA PI Server: Store, structure, analyze, notify

The key functions of AVEVA PI Server include the data archive, asset framework, asset analytics, event frames, and notifications. These powerful features work together to turn raw data into meaningful operations insight.

### Data archive

Data archive is the industrial-focused data storage and access engine of AVEVA PI Server. It can store millions of tags and thousands of values per second over multiple decades. No matter what kind of sensor-based measurements or process data you collect, data archive lets you store and retrieve it rapidly. Thanks to its native support for data with future time stamps, you can even store forecasts, predictions, and projections—meaning you can foresee challenges and make adjustments in real time.

### Asset framework

Asset framework (AF) is a flexible, no-code tool for building custom data structures that add meaningful context and actionable insight to your operations data. With AF, you can:

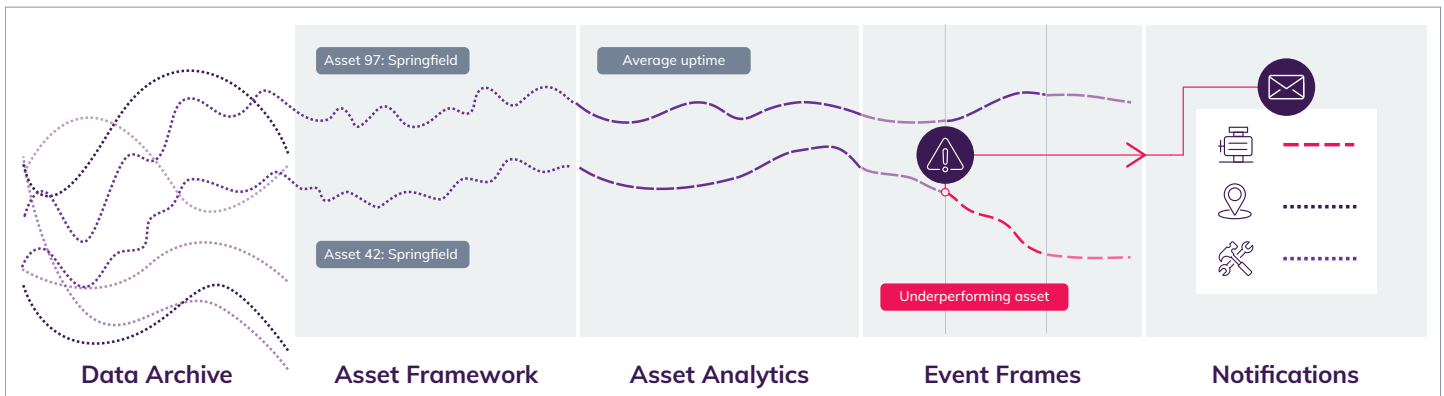
- **Attach descriptive, human-friendly labels.** For example, you can mark an individual data tag or data stream as a “flow rate,” “temperature,” or “vibration.” Forget about cryptic codes; with AF, data makes sense to people across your enterprise – not just SCADA experts.

- **Organize data intuitively into logical asset hierarchies and reusable data structures.** You can group data related to a specific piece of equipment or asset, combine data from multiple assets at a given site, roll up those KPIs, and compare sites across the company. Rapidly compare asset performance and health by plant, geography, process line, or any other representation that makes sense to your organization.
- **Incorporate data from outside AVEVA™ PI System™.** AF can organize and display data from other sources, such as relational data from an external maintenance database or an ERP system. No matter how many operations or enterprise databases you have, AF ensures you'll have a single access point. System administrators can enjoy peace of mind knowing that AF maintains permissions securely and centrally.

### Asset analytics

Asset analytics allow you to transform raw data into actionable KPIs using customizable calculations. Create simple or complex calculations with an easy-to-use interface and a rich set of built-in functions. Perform everything from simple averages and unit conversions to more complex calculations such as total energy used or days of raw material remaining. Say goodbye to hundreds of spreadsheets and arguments over miscalculations. With asset analytics, every calculation is consistent, centralized, and visible to everyone in the organization.

## AVEVA PI Server turns data into decision-ready information



Take the guesswork out of deciphering data. Translate high-fidelity data from machine-speak into human language with intuitive descriptors, standardized KPIs, and configurable event summaries and alerts.

## Event frames

Event frames allow you to pinpoint key events in your operations. Process deviations, batch phases, equipment start-ups, and other significant operations events are easiest for you to understand through comparison with similar occurrences. Event frames trigger data summaries based on user-defined process thresholds or KPIs, allowing you to bookmark distinct moments for analysis. Compare production runs, conduct downtime analysis, or replicate best practices.

Event frames are easy to configure and do not require programming skills or database expertise. The syntax can be as simple as “pump efficiency < 75%.”

## Notifications

Built on event frames, notifications keep you informed of performance anomalies or deviations by alerting you in real time when a data stream moves beyond specified parameters. Notifications make it simple for teams to isolate issues and perform root cause analysis. They can include summary statistics and links to troubleshooting displays, eliminating tedious monitoring, and giving teams the information they need to make quick decisions.

## Proven for critical operations

AVEVA PI Server has been an integral component of operations in essential industries for decades – so you can be sure it’s hardened for the highest levels of reliability, security, and mission-critical scenarios.

Software maintenance is unavoidable, hardware failure can happen, and network interruptions do occur. But AVEVA PI Server can be configured for high availability to keep your critical operations accessible no matter what.

AVEVA PI Server runs on Microsoft Windows and Windows Core OS to deliver the best possible performance. You can also deploy it on cloud infrastructure to take advantage of the cost savings of the cloud. AVEVA PI Server uses Windows authentication to ensure full and tight security across all domains.

To protect data integrity, AVEVA PI Server also provides auditing tools to record the who, what, and when for all changes that affect your data. These auditing tools support stringent industry electronic reporting requirements such as US FDA 21 CFR part 11 or rules imposed by the Environmental Protection Agency (EPA) and other quality-oversight agencies. For highly sensitive and regulated environments, AVEVA PI Server can even be implemented in compliance with NERC CIP, NIST 800-53, and NIST 800-82 requirements.

For customers who operate in an environment where stability is prioritized over new functionality and who cannot easily validate new software releases in their production environments, we continue to support a feature-stable version of AVEVA PI Server, which includes all the features noted above and only receives critical updates and fixes.

## Latest feature release

The latest version of AVEVA PI Server (2023) is available as part of an integrated, hybrid-ready solution, which is available by subscription using AVEVA Flex credits. This new solution has all the components you need to expand and scale your data infrastructure as your operations expand to encompass data sources outside the primary control network and make data available to users, tools and applications in the cloud.

AVEVA PI Server (2023) includes support for OpenID Connect (OIDC) and Transport Layer Security (TLS). OIDC support gives you the option to leverage AVEVA Connect or other OIDC-compliant identity solutions and enable single sign-on within your enterprise. TLS encryption enhancements strengthen the data privacy and integrity features built directly into AVEVA PI Server.

We understand the importance of keeping your critical software updated without disruption, which is why with each release of AVEVA PI Server, we offer deployment tests you can use to validate the new software in your environment.

# An integrated portfolio

AVEVA PI Server is the heart of the AVEVA PI System, a portfolio of integrated solutions that help you collect, enrich, visualize, and share operations data anywhere it can be valuable: at the industrial edge, within and across multiple plants and operating sites, in the cloud, and within a community of trusted business partners.

Expand your operations insights and apply real-time data to more use cases in your industrial environment. Discover new opportunities for operational efficiency, increase sustainability, and provide high-fidelity, real-time data to more decision-makers in your organization.

- Make real-time data available to staff monitoring operations in remote locations.
- Help new employees by presenting data organized in meaningful ways, such as by asset or location.

- Combine real-time and historical data as a basis for spotting anomalies and making predictions.
- Take advantage of integration between AVEVA PI Server and AVEVA™ Data Hub to scale your data solution as your business grows.
- Aggregate data from hundreds or thousands of IIoT devices to see across your entire operating environment.

Together, AVEVA PI System products on-premises, at the edge, and in the cloud form a secure, end-to-end solution you can use to serve decision makers anywhere in your connected industrial ecosystem.

For more information, please visit:  
[aveva.com/en/products/aveva-pi-server](https://aveva.com/en/products/aveva-pi-server)