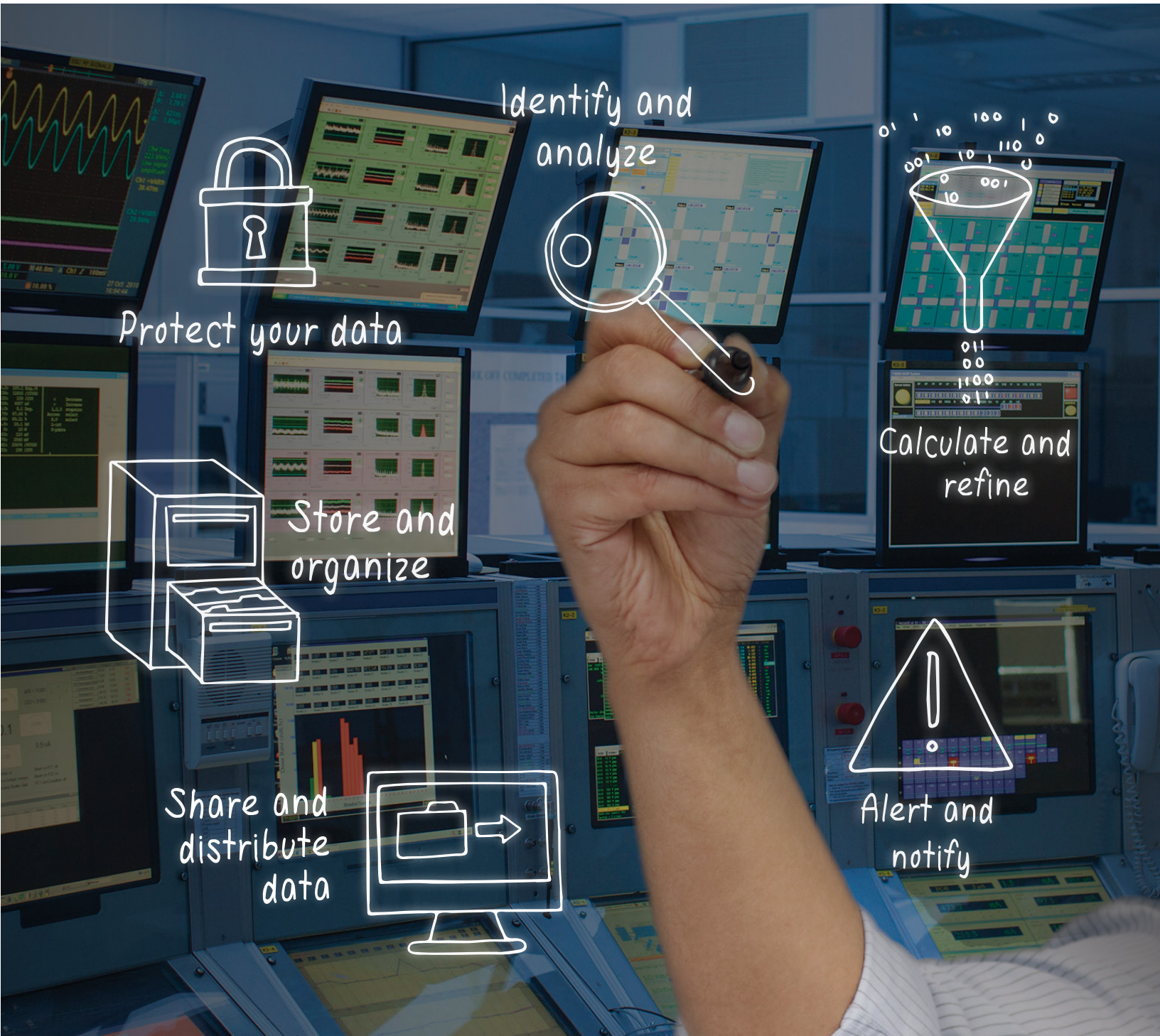


PI Server

Managing and Delivering
Sensor-Based Data



Protect your data

Identify and
analyze

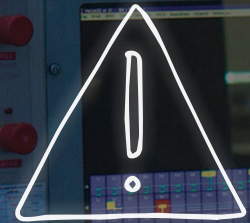


Calculate and
refine



Store and
organize

Share and
distribute
data

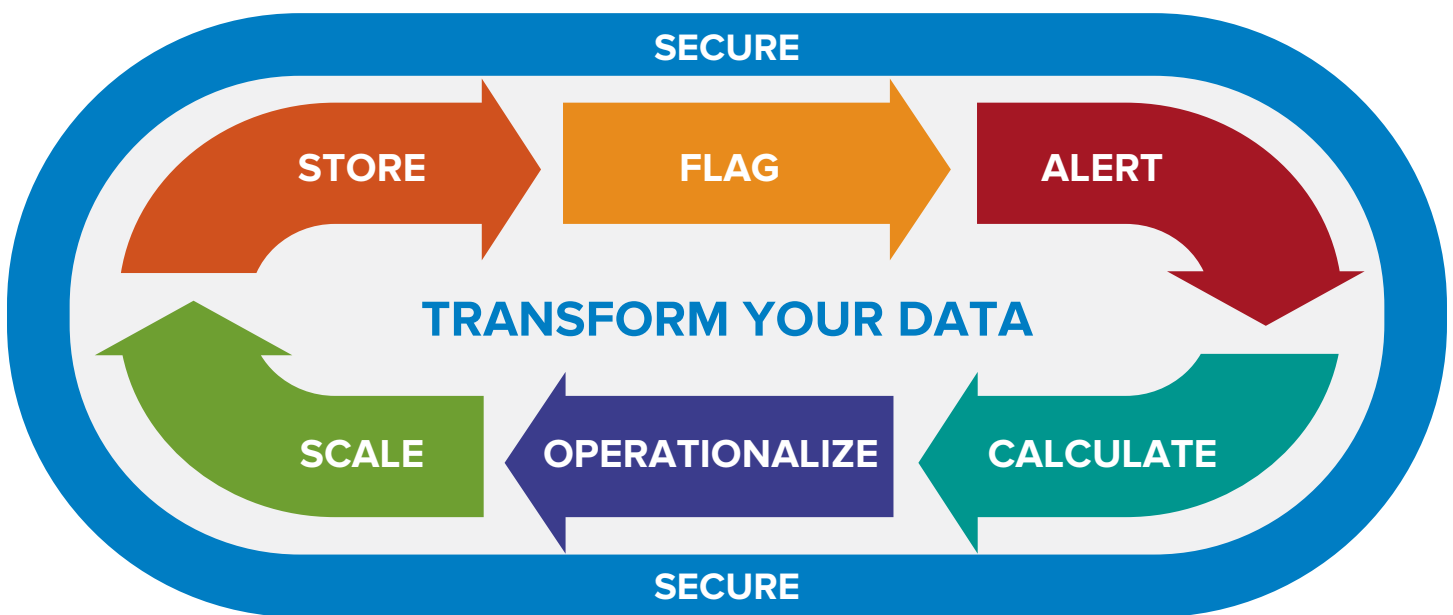


Alert and
notify

The PI Server™ is the real-time data storage and distribution engine that powers the PI System™ and provides a comprehensive real-time and historical view into your operations, enabling you to make timely and impactful decisions. The PI Server:

- receives data from your many disparate sources and consolidates it into a single system.
- transforms raw data into actionable information and makes it accessible to users at all levels of your company.
- proactively monitors your data to deliver real-time alerts when critical events occur.
- stores and secures your data so information is both accessible to your users and protected.

With the PI Server, differences in data types, delivery speeds, formats and sources no longer matter – information is instantly and uniformly available to users and applications whenever and wherever needed.



Store and Organize Data

The PI Server uses two components, the **Data Archive** and **Asset Framework (AF)** to collect, consolidate, organize, and contextualize your sensor-based data. The Data Archive can store millions of tags and thousands of values per second while preserving data at its original fidelity. With the PI Server, decades of data and petabytes of online capacity are supported so all your data – no matter how old – is there when you need it.

Modern business creates overwhelming amounts of data each day, making it challenging to find the information you need. AF makes it easier to find and share information. AF turns your streaming data into information by:

- defining relationships between data to improve understanding and make related information easily accessible.
- adding metadata to your data.
- replicating your existing structure to new equipment/assets through templates to ensure consistency across your organization and enable rapid rollout.

With AF, information is intuitively organized so users see all the information they need at a glance.

Calculate and Refine Data

Simply connecting your enterprise to raw sensor data can create an enormous amount of value. But processing raw data in real-time can provide transformational insights to your business

and improve decision making. With the PI Server suite of calculation tools [**Totalizers, Performance Equations (PE), Steam Tables, Advanced Computing Engine (ACE), and Asset Analytics**] you can perform everything from simple averages and totals to sophisticated programmatic calculations as you refine raw data, calculate KPIs, and gather valuable information about your operations.

With PI Server calculations you can:

- put your information in context, for example, instead of showing total volume of fuel remaining, show that at current production levels you have enough fuel left for six days.
- templize standard calculations for an asset and deploy it fleet-wide to all similar assets.
- calculate energy and heat usage to optimize usage during peak times and lower operating costs.
- perform rollup calculations on equipment such as wells to gain insight into your production.
- calculate equipment efficiencies to aid your workers to improving processes.
- use historical data to validate new calculations and ensure that algorithms are performing as intended.

Identify and Analyze Events

Shifts, batches, curtailments, equipment startups, and changes in grades are significant events in your business that are best understood when analyzed in context and compared with similar events. With **Event Frames** and **Batch** you can identify and analyze your data within the context of your events. When data is framed by events, you can perform “apples to apples” comparisons across assets, optimize production in real-time, perform root cause analysis, ensure consistency, and replicate best practices throughout your fleet.

Alert and Notify Users

Deviations in operations and processes can cost millions which makes quickly detecting and responding to them critical. **Notifications** monitors your PI Server data, batches, and events in real-time,

instantly detects deviations, and alerts your users. With **Notifications**, users not only know about problems, they have the information they need to solve them as alerts can include links to FAQs and best practices, PI Client displays, current data values, and more. When alerts are acknowledged, **Notifications** captures comments from the acknowledger so their operational knowledge and insights are preserved and available to future users and regulators months or years later.

Secure Data and Ensure Availability

Your data is a vital business asset. The PI Server is designed to run as a mission-critical system, protecting your data and ensuring information availability. To protect your data integrity, the PI Server includes a built-in **Audit Trail** that records the who, what, and when for all changes that affect your data. The Audit Trail supports stringent industry electronic reporting requirements such as US FDA 21 CFR part 11 and those imposed by the Environmental Protection Agency (EPA) and other quality oversight agencies. To help protect your IT network, the PI Server includes a suite of interfaces for monitoring your IT infrastructure. With the **PI Interfaces for System Monitoring** you can detect possible anomalies and deviations before they impact performance and your system administrators have real-time and historical network performance data for troubleshooting issues.

For users with disaster recovery or five 9s requirements, OSIsoft offers **High Availability (HA)**, an add-on for the PI Server. HA uses standard, non-fault tolerant, hardware, to provide dynamic failover and redundant reliability that ensures continuous collection, storage, and availability of your data. HA is unique. It protects everything from raw data to metadata to calculations, makes system administration work such as hardware swaps and machine updates invisible to users, and ensures that information is continuously available to users. HA can also provide data to emergency operations centers in the event of local disasters. With the PI Server your data is treated as a mission critical business resource.

Deliver **decades of data**

Store **millions** of tags

Accepts **10,000s** of values at **sub-second speeds**

Over **17,000** PI Servers installed

Access **petabytes of information**

The PI Server is much more than just a data historian or a data aggregator. The PI Server:

- is a complete foundation for enterprise wide data storage, refinement, and analysis.
- scales across operational and geographic boundaries.
- makes all your data available – regardless of source, format, or age.
- grows with your business, easily accommodating new equipment, more data sources, larger volumes of information, and more users.
- makes real-time data continuously available and delivers decades of historical data in mere seconds – no matter where your users are.
- organizes and contextualizes your data so it is easier to find, easier to use, and easier to understand.
- proactively alerts you to key changes in your operations.
- accepts data from more sources than any other operational data collection system.

The PI Server removes data bottle necks in your operations so information seamlessly flows – unifying corporate divisions, field workers, and geographically disperse operations and empowering operational intelligence. With the PI Server, the right information reaches the right users at the right time in a context and format they understand so they can make the right decisions.

The PI Server package includes:

- Data Archive
- Asset Framework
- Notifications
- Event Frames
- Advanced Computing Engine
- Asset Analytics
- Performance Equations
- Steam Tables
- Totalizers
- PI Interfaces for System Monitoring
- System Management Tools

To further enhance your PI System, High Availability and Batch can be added as options to your PI Server.

To learn more about the PI Server and how the PI System from OSIsoft can solve the data needs of your enterprise, please visit www.osisoft.com

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