Finesse

Process Measurement & Control Solutions

Control

TruHistory™

2007-0226

OSIsoft PI Enterprise Server

The PI Enterprise Server is offered as an optional feature of the TruBio™ OS. This optional feature includes the following functionality.

PI Server

The PI Server is the heart of the PI System. It acquires and routes data in real time throughout the PI System and your entire information infrastructure. Operators, engineers, managers, and other plant personnel can connect to the PI Server and view manufacturing data from PI DataStorage or from external data storage systems, which means your entire company works from a common set of real data.

You can connect the PI Server to almost any existing automation, lab, or information system. With the PI Server infrastructure, your data become instantly available for limitless analysis, simplified reporting, and clearer visual monitoring. The PI Server seamlessly connects to PI DataStorage, to non-PI data sources, such as OLEDB providers (e.g., SQL Server or Oracle), to proprietary systems (e.g., PHD and CIM/21), or to any other supported database.

You can also unite your legacy non-PI data systems with any PI application through COM Connectors. These conduits allow all your data sources to communicate through the PI infrastructure, making all your manufacturing data available to the PI System.

The PI System is a set of software modules for enterprise-wide monitoring and analysis. The PI Server is the foundation of this system. It acts as a data server for OSIsoft's Microsoft Windows-based client applications. Operators, engineers, managers, and other plant personnel use a variety of client applications to connect to PI Server to view production data stored in PI DataStorage or in external data archive systems. While data in the PI Server is usually retrieved from PI DataStorage, the Windows-based version of the PI Server is also capable of interacting with process data stored in data archiving systems other than PI.

Data may be retrieved (but will not be duplicated within the PI System) from foreign data-storage systems using COM Connectors (based on Microsoft's Component Object Model technology).

The PI Server is built for speed and efficiency, allowing the PI System to withstand high client connection loads and still archive data that constantly stream in from PI Interfaces and COM Connectors.

Additionally, the PI Server balances the storage load by holding fresh, real-time values from PI Interfaces in an incoming cache before determining whether they should be written to PI DataStorage, to a legacy data storage product (through COM Connectors), or discarded.

Since the PI Server is typically used in production systems where correct and reliable operation is important, a number of security mechanisms are available to protect against willful or accidental tampering with the system.

Features

- **Integrates Seamlessly with the Continuous Historian Feature of TruBio™ OS**
- **Unifies Data from Research, Process Development and Manufacturing into a Single Common Database**
- **Provides a Link between the Database and PC-Based Spreadsheet Packages Such as Microsoft Excel and Lotus 1-2-3 for Easy Report Generation**
- **Supports OPC DA and HDA Solutions which Enable it to Collect Data from 3rd-Party Devices**
- **Priced to Provide a Near-Term ROI**

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The security model built into PI, called PI Point Security, ensures point-by-point control over data, allowing access only to users and groups that correspond to specified tag configuration information. PI Point Security can be linked to Windows Authentication through a “trust table,” ensuring users have consistent rights across PI and Windows networks.

The PI Server also supports audit trail reporting to help companies create an environment that complies with the FDA’s 21 CFR Part 11 requirements.

PI Data Archive

The process data historian, PI Data Archive is one of the most significant components of the PI System. The Archive is where time-stamped measurements of plant process information such as pressures, flows, temperatures, set-points, on/offs, etc., are stored. The Archive is a time-series database designed and optimized to quickly receive, store and retrieve time-oriented manufacturing data. The Archive stores numerical and string data, and accommodates small and large quantities of data for extended periods. . It also retains a “ snapshot” of current values for all process variables. Support for Binary Large Objects (BLOBs) is included, allowing data such as pictures or other non-numeric data to be stored in the archive. Many customers select PI because of the quality of the process historian, and consider it to be the “heart and soul” of any PI System.

The “swinging door compression” method used by the archive allows PI to keep orders of magnitude more data on-line than conventional scanned systems. Swinging door compression discards values that fall within a threshold of a line connecting a recent time series of values that are recorded in the archive. When a new value is received by the Snapshot Subsystem, the previous value is recorded only if any of the values since the last recorded value do not fall within the compression deviation blanket (the threshold mentioned earlier). The deviation blanket is a parallelogram extending between the last recorded value and the new value with a width equal to twice the compression deviation specification. Data stored using this method is much more detailed (and therefore more useful) than in an archiving system based on averages or periodic samples. Data servers can be implemented in different system sizes ranging from a hundred tags to well over 100,000 tags.

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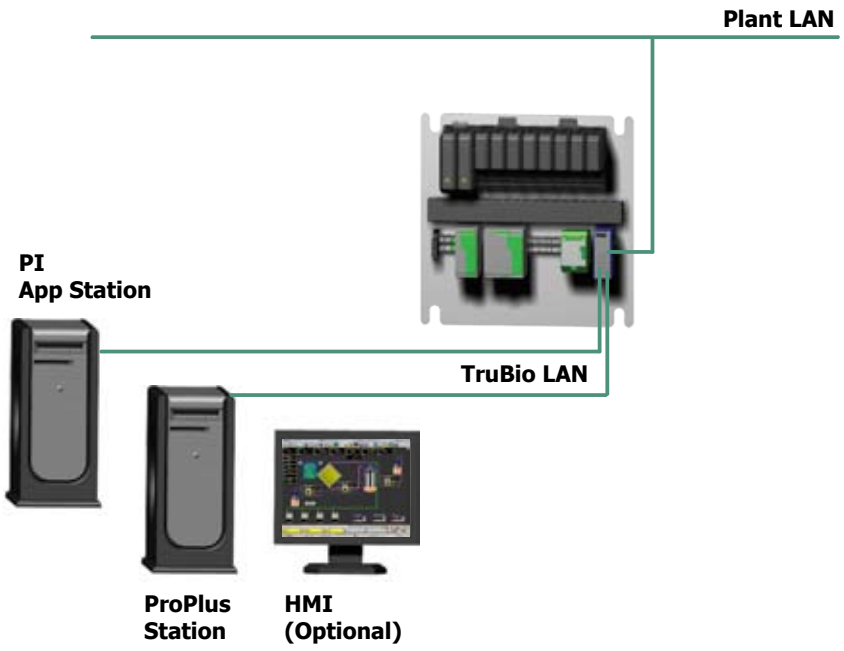
PI ProcessBook

As the easy-to-use graphical display interface to the OSIsoft PI System, PI ProcessBook makes it possible to efficiently display real-time and historical data residing in the PI System and other sources. Process owners use PI ProcessBook to create interactive graphical displays that can be saved and shared with others. Users can quickly switch between view and build modes to create dynamic, interactive displays and populate them with live data. They also can write scripts that automate displays and trends by using Microsoft Visual Basic for Applications, which is seamlessly integrated into PI ProcessBook.

PI DataLink

PI DataLink provides a live link between the PI System database and popular PC-based spreadsheet packages Microsoft Excel and Lotus 1-2-3. DataLink is installed as a spreadsheet add-in, allowing users to quickly access real time or historical data from the PI System. Using DataLink makes entering manual data and performing complex data calculations a snap. This is a popular tool for generating production reports and analyzing process data.



PI Topology

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