

DATASHEET



PI Enterprise Gateway Allows Enterprises to:

Exchange Data in a Business Context

Send and receive information in a business context using web services for PI System data. The Gateway allows ad hoc or scheduled as well as synchronous or asynchronous read/write for the PI System, and read/write for external systems that support web services.

Configure/Deploy/Monitor

The Gateway is configured using PI-AF tools and is deployed to run as a back-end process. The system is monitored using actionable performance counters that are surfaced as web services. PI System Enterprise Gateway runs on Windows 2003 and requires SQL 2005.

Extend/Customize

Gateway functionality can be extended or customized using the .NET framework to develop new modules. Data exchange can include data from relational databases and other non-PI data sources through customizable PI data references.

Scale/Audit/Secure

The Gateway is scalable and secure. It includes time-stamped records of service requests and responses for auditing and tracking.



Empowering Business in Real Time
PI Infrastructure for the Enterprise

PI System Enterprise Gateway

Business Challenge/Opportunity

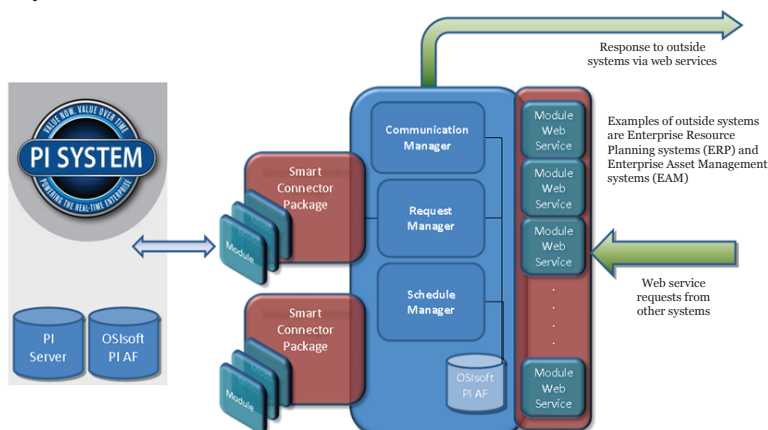
Every enterprise uses many different applications to support a variety of business functions and related tasks. But in today's changing, fast-paced world, companies in all sectors are under pressure to have these applications share data seamlessly for operational transparency and efficiency.

Service Oriented Architecture (SOA) is a flexible, standardized architecture that supports the sharing of data amongst applications. SOA reduces the cost of integration and allows all levels within the enterprise to respond quickly to changes in business strategy.

Connect to Data with PI Enterprise Gateway

The PI System Enterprise Gateway provides seamless integration between the PI System (PI) and external systems that support web services. It uses SOA for a bi-directional exchange of data in a business context with external systems by receiving, scheduling, and responding to web service requests.

The Gateway consists of one or more extensible packages called "Smart Connector Packages." Each package provides a specific business function. Examples include automated meter reading for utilities and integration between asset operations and asset maintenance systems. A package consists of one or more modules. Each module encapsulates the business logic for the reading/writing of data for both the PI System and the external system.



Above: The PI Enterprise Gateway architecture. A module in the Gateway corresponds to an individual web service and a business unit of work and the related reading and writing of data for the PI System. The Communication Manager, Request Manager, and Schedule Manager work together to receive and respond to web service requests from external systems. The service requests may be ad hoc or scheduled, and synchronous or asynchronous.

Web Services Interaction Use Cases

Several web services-based business integration scenarios are supported, such as:

- Ad hoc service request initiated by the external system for PI data; request/response may be synchronous or asynchronous.
- Scheduled service request initiated by the external system for PI data.
- Scheduled service request initiated by the Gateway for data from the external system; often these are run at a configurable frequency by the Gateway.
- Bundled service request initiated by the Gateway for data from the external system; these contain multiple transactions of the same type.
- Bundled service request initiated by the Gateway for data from the external system; these contain multiple transactions of different but related types to complete a business task.

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INCLUDED PACKAGES for SAP Enterprise Repository Services:

**Automated Metering
Infrastructure (AMI) Smart
Connector Package** is a
collection of modules to support
tasks such as:

- Create a meter
- Read a meter
- Create a meter register
- Obtain interval data for a register, i.e., how often the meter is to be read

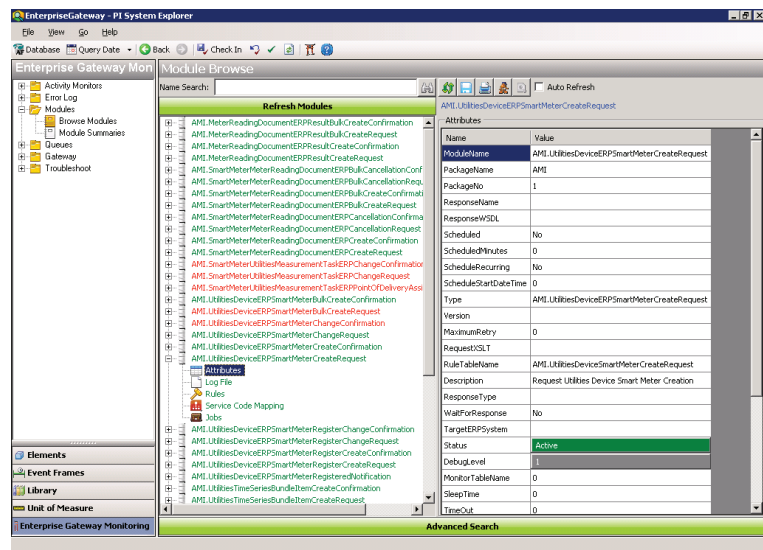
The AMI Smart Connector synchronizes with meters defined in the PI System that collect data from field devices. It also provides the data model for AMI information required for data synchronization between the PI System and SAP.

**Enterprise Asset
Management (EAM) Smart
Connector Package** is a
collection of modules to support
tasks related to:

- Selected asset synchronization with the PI System
- Measurement point synchronization
- Measurement reading downloads to the PI System
- Optional alerting via PI Notification

Enterprise Gateway Features and Benefits

- Each Gateway can be configured for a specific business function based on requirements, work load, and throughput. A federated environment of Gateway servers can be used when business functions need to be isolated.
- Conditions for managing and executing web services are decoupled from the information mapping and application data contained in the web services. These conditions are defined using a flexible rule structure.
- Supports the use of XSLT to transform outgoing XML messages.
- Time-stamped records track all service requests including the identity and source of the request as invoked, thus providing an audit trail as well as recovery features.
- Services can be scheduled (single or recurring events) or responded to in an ad hoc manner.
- Exposes coarse-grained business services for use in business processes that involve multi-step transactions and workflows with external systems.
- Performance monitoring counters for the Gateway process are included.
- Smart Connector Packages are extensible and new packages may be written through end-user or third-party developed custom modules.



Above: The Enterprise Gateway Monitoring AF plug-in. It is used to monitor the Gateway and provides access to configuration information and the health of Gateway processes. The example shown above illustrates the attributes for the module "AMI.UtilitiesDeviceERPSmartMeterCreateRequest." The Module Status is active as indicated by the green color and its Debug Level is set to 1.

About OSIsoft

OSIsoft (www.osisoft.com) delivers the PI System - the industry standard in enterprise infrastructure for the management of time-series data and events.

A global base of more than 14,000 installations across manufacturing, energy, utilities, life sciences, data centers, and process industries relies on the PI System. Customers use PI to capture and safeguard real-time and historical data that delivers enterprise-wide visibility into business and operations. This data, along with OSIsoft's easy-to-use, latest-technology tools enable all levels of the enterprise to better manage assets, mitigate risks, improve processes, drive innovation, make business decisions in real time, and identify competitive business and market opportunities.

Founded in 1980, OSIsoft is privately held and headquartered in San Leandro, California, with operations worldwide.

For more information about PI Enterprise Gateway, PI AF, and other products from OSIsoft, please visit our website at www.osisoft.com or call (01) 510-297-5800, option 2.

